TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart E (Section 15.407)**
Report No.:	RFCDVB-WTW-P24010023-3
FCC ID:	QYLAX211NG
Product:	Wireless Module
Brand:	Getac
Model No.:	AX211NGW
Received Date:	2024/1/20
Test Date:	2024/2/20 ~ 2024/3/15
Issued Date:	2024/3/28
Applicant:	Getac Technology Corporation.
Address:	5F., Building A, No. 209, Sec.1, Nangang Rd.,Nangang Dist., Taipei City 11568, Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kewi Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

Approved by: Jeremy . Lin , **Date:** **2024/3/28**

Jeremy Lin / Project Engineer

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Prepared by : Gina Liu / Specialist

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RFCDVB-WTW-P24010023-3	Original release.	2024/3/28

1 Certificate

Product:	Wireless Module
Brand:	Getac
Test Model:	AX211NGW
Sample Status:	Engineering sample
Applicant:	Getac Technology Corporation.
Test Date:	2024/2/20 ~ 2024/3/15
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407)
Measurement procedure:	ANSI C63.10-2013 KDB 789033 D02 General UNII Test Procedure New Rules v02r01 KDB 662911 D01 Multiple Transmitter Output v02r01

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

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(2)	26 dB Bandwidth	N/A	Refer to Note
15.407(a)(1) 15.407(a)(2) 15.407(a)(3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1) 15.407(a)(2) 15.407(a)(3)	Power Spectral Density	N/A	Refer to Note
15.407(e)	6 dB Bandwidth	N/A	Refer to Note
---	Occupied Bandwidth	N/A	Refer to Note
15.407(g)	Frequency Stability	N/A	Refer to Note
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -20.35 dB at 0.55000 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -6.6 dB at 425.76 MHz
15.407(b) (1/10) 15.407(b) (2/10) 15.407(b) (3/10) 15.407(b) (4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.7 dB at 5725.00 MHz
15.203	Antenna Requirement	Pass	Antenna connector is MHF-4 not a standard connector.

Notes:

1. Only test item of Output Power, AC Power Conducted Emissions and Unwanted Emissions were performed for this report. Other testing data please refer to module report No.: 200611-01.TR01, 200611-01.TR02 and 200611-01.TR03 (Brand: Intel® Wi-Fi 6E AX211, Model: AX211NGW).
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
RF Output Power	-	1.371 dB
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.88 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	2.44 dB
	30 MHz ~ 1 GHz	2.95 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

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

2.2 Supplementary Information

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

3 General Information

3.1 General Description of EUT

Product	Wireless Module
Brand	Getac
Test Model	AX211NGW
Status of EUT	Engineering sample
Power Supply Rating	End-product: 19.0 Vdc (from adapter) 10.8 Vdc (from battery)
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	Up to 2402.0 Mbps
Operating Frequency	5.18 GHz ~ 5.32 GHz 5.5 GHz ~ 5.72 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ax (HE20): 25 802.11n (HT40), 802.11ax (HE40): 12 802.11ac (VHT80), 802.11ax (HE80): 6 802.11ac (VHT160), 802.11ax (HE160): 2
Output Power	5.18 GHz ~ 5.25 GHz : 180.73 mW (22.57 dBm) 5.26 GHz ~ 5.32 GHz : 192.101 mW (22.84 dBm) 5.5 GHz ~ 5.72 GHz : 247.19 mW (23.93 dBm) 5.745 GHz ~ 5.825 GHz : 253.585 mW (24.04 dBm)
EUT Category	Client device

Note:

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report to module report No.: 200611-01.TR01, 200611-01.TR02 and 200611-01.TR03 (Brand: Intel® Wi-Fi 6E AX211, Model: AX211NGW). The difference compared with original report are adding End-product. Therefore, only Output Power, AC Power Conducted Emission and Radiated Emissions were verified and recorded in this report. AC Power Conducted Emission and Radiated Emission tests according to module report radiated emission worst channel, and Conducted power were re-test.
2. The EUT is authorized for use in specific End-product. Please refer to below for more details.

Product	Brand	Model	Difference
Notebook	Getac	S510	marketing purpose
		S510Y (Y= 10 characters, Y can be 0 to 9, A to Z, a to z, “/”, “\”, “-”, “_” or blank for marketing purpose)	

3. The End-product contains following accessory devices.

Battery		
Brand	Model	Specification
Getac	BP3S2P3450P-04	Power Rating : Rating: 10.8Vdc , 6600mAh, 72Wh Typical Capacity: 6900mAh, 75Wh
AC Adapter 1		
Brand	Model	Specification
FSP	FSP065-RBBN3	AC Input : 100-240 Vac； 50-60 Hz； 1.5 A DC Output : 19.0Vdc； 3.42A, 65.0W DC Output Cable : 1.45M / 1 core
AC Adapter 2		
Brand	Model	Specification
FSP	FSP090-ABBN3	AC Input : 100-240 Vac； 50-60 Hz； 1.2 A DC Output : 19.0Vdc； 4.74A, 90.0W DC Output Cable : 1.2M / 1 core
Touch Pen		
Brand	Model	
Getac	340GA8900001	

*After the pretesting, adapter 2 mode is found to be the worse case and therefore had been chosen for final test.

4. The EUT support OFDMA and Partial RU mode, therefore partial RU combination were investigated and the worst case scenario was identified.
5. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna No.	2.4GHz 2400-2483.5 MHz	5.2GHz 5150-5250 MHz	5.3GHz 5250-5350 MHz	5.6GHz 5470-5725 MHz	5.8GHz 5725-5850 MHz	5.9GHz 5850-5895 MHz	6.2GHz 5925-6425 MHz	6.5GHz 6425-6525 MHz	6.7GHz 6525-6875 MHz	7.0GHz 6875-7125 MHz	Antenna Type	Connector Type
1	2.41	1.39	1.21	2.45	2.41	2.39	2.18	1.46	1.83	1.56	PIFA	MHF-4
2	1.68	1.22	1.17	1.8	1.78	0.52	1.2	1.18	1.14	2.3	PIFA	MHF-4

* 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	1Tx Diversity	1Rx diversity
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX
802.11ac (VHT160)	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX
802.11ax (HE160)	2TX	2RX
802.11ax (RU26/52/106/242/484/996/996x2)	2TX	2RX

Note:
1. The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), 802.11ac mode for 80 MHz (160 MHz) and 802.11ax mode for 20 MHz (40 MHz, 80 MHz, 160 MHz) therefore the manufacturer will control the power for 802.11n/ac mode is same as the 802.11ax mode or lower than it and investigated worst case to representative mode in test report.

3.3 Channel List

FOR 5180 ~ 5320 MHz

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

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

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

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

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

Channel	Frequency	Channel	Frequency
42	5210 MHz	58	5290 MHz

1 straddle channel is provided for 802.11ac (VHT160), 802.11ax (HE160):

Channel	Frequency
50	5250 MHz

FOR 5500 ~ 5720 MHz

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

6 channels are provided for 802.11n (HT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

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

Channel	Frequency	Channel	Frequency
106	5530 MHz	138	5690 MHz
122	5610 MHz		

1 straddle channel is provided for 802.11ac (VHT160), 802.11ax (HE160):

Channel	Frequency
114	5570 MHz

FOR 5745 ~ 5825 MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 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), 802.11ax (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

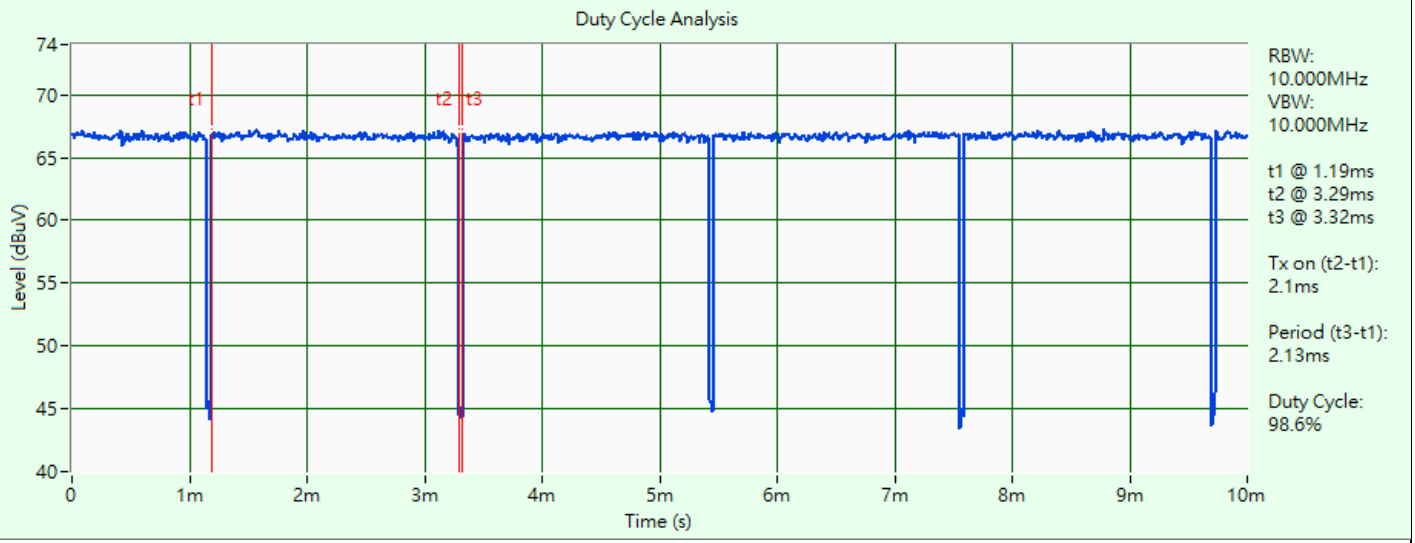
Following channel(s) was (were) selected for the final test as listed below:

Test Item	Ant. Mode	Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	SISO B	802.11a	36, 40, 48, 52, 60, 64, 100, 116, 140, 144, 149, 157, 165	BPSK	6Mb/s
	MIMO	802.11n (HT20)	36, 40, 48, 52, 60, 64, 100, 116, 140, 144, 149, 157, 165	BPSK	MCS0
	MIMO	802.11n (HT40)	38, 46, 54, 62, 102, 110, 134, 142, 151, 159	BPSK	MCS0
	MIMO	802.11ac (VHT80)	42, 58, 106, 122, 138, 155	BPSK	MCS0
	MIMO	802.11ac (VHT160)	50, 114	BPSK	MCS0
	MIMO	802.11ax (HE20)	36, 40, 48, 52, 60, 64, 100, 116, 140, 144, 149, 157, 165	BPSK	MCS0
	MIMO	802.11ax (HE40)	38, 46, 54, 62, 102, 110, 134, 142, 151, 159	BPSK	MCS0
	MIMO	802.11ax (HE80)	42, 58, 106, 122, 138, 155	BPSK	MCS0
	MIMO	802.11ax (HE160)	50, 114	BPSK	MCS0
	MIMO	802.11ax (HE20) 26-tone RU	36, 64, 100, 140, 149	BPSK	MCS0
	MIMO	802.11ax (HE20) 52-tone RU	36, 64, 100, 140, 149	BPSK	MCS0
	MIMO	802.11ax (HE20) 106-tone RU	36, 64, 100, 140, 149	BPSK	MCS0
	MIMO	802.11ax (HE40) 242-tone RU	38, 62, 102, 134, 151	BPSK	MCS0
	MIMO	802.11ax (HE80) 484-tone RU	42, 58, 106, 122, 138, 155	BPSK	MCS0
	MIMO	802.11ax (HE160) 996-tone RU	50, 114	BPSK	MCS0
AC Power Conducted Emissions	MIMO	802.11ax (HE20)	157	BPSK	6Mb/s
Unwanted Emissions below 1 GHz	MIMO	802.11ax (HE20)	157	BPSK	6Mb/s
Unwanted Emissions above 1 GHz	SISO B	802.11a	52	BPSK	6Mb/s
	MIMO	802.11n (HT20)	140, 157	BPSK	MCS0
	MIMO	802.11n (HT40)	38	BPSK	MCS0
	MIMO	802.11ax (HE20)	140, 157	BPSK	MCS0
	MIMO	802.11ax (HE40)	38	BPSK	MCS0

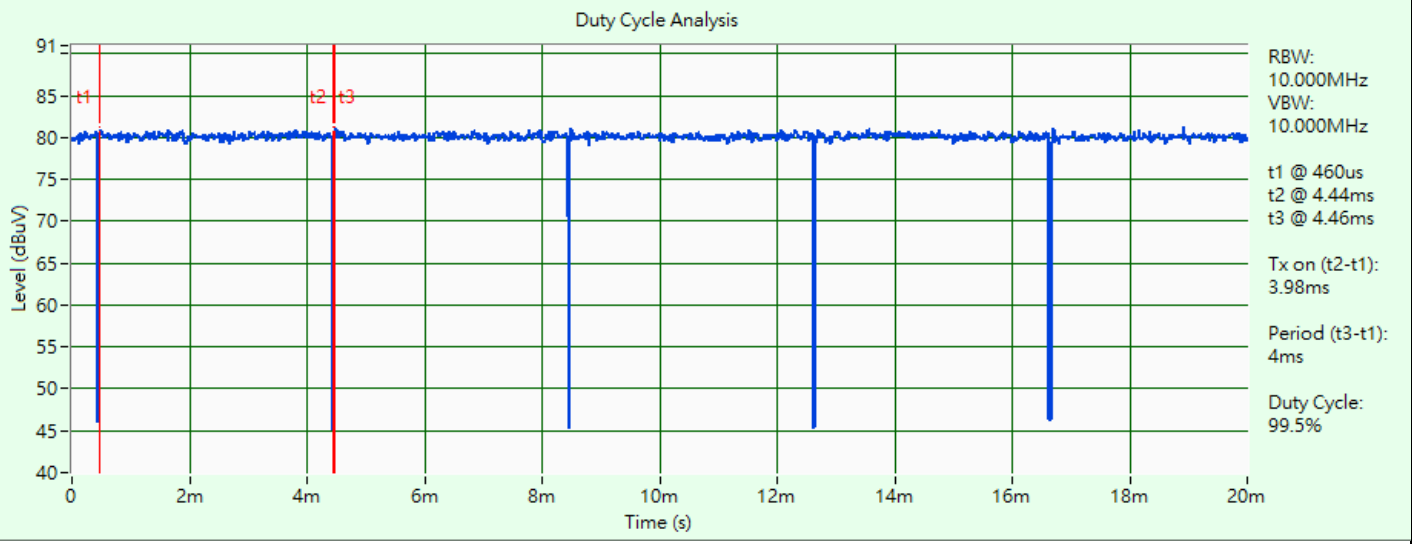
Note: The EUT is designed to be positioned on the NB Mode only.

3.5 Duty Cycle of Test Signal

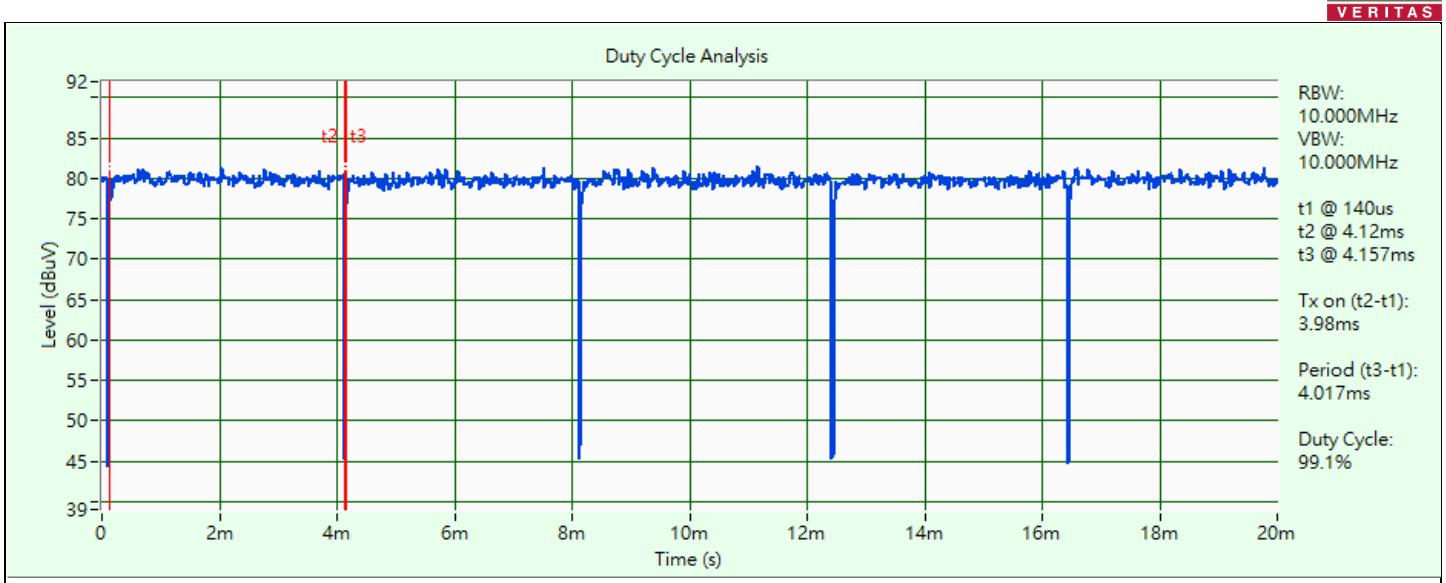
802.11a: Duty cycle = 2.1 ms / 2.13 ms x 100% = 98.6%
802.11n (HT20): Duty cycle = 3.98 ms / 4 ms x 100% = 99.5%
802.11n (HT40): Duty cycle = 3.98 ms / 4.017 ms x 100% = 99.1%
802.11ax (HE20): Duty cycle = 4 ms / 4.02 ms x 100% = 99.5%
802.11ax (HE40): Duty cycle = 3.983 ms / 4.02 ms x 100% = 99.1%



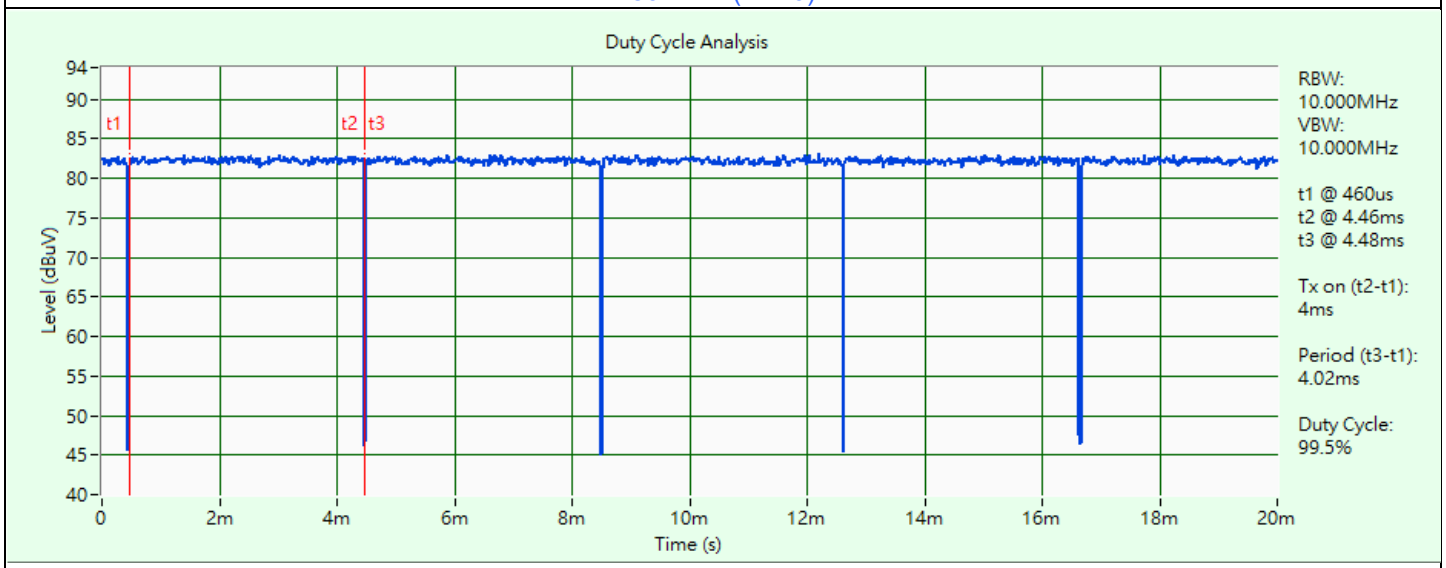
802.11a



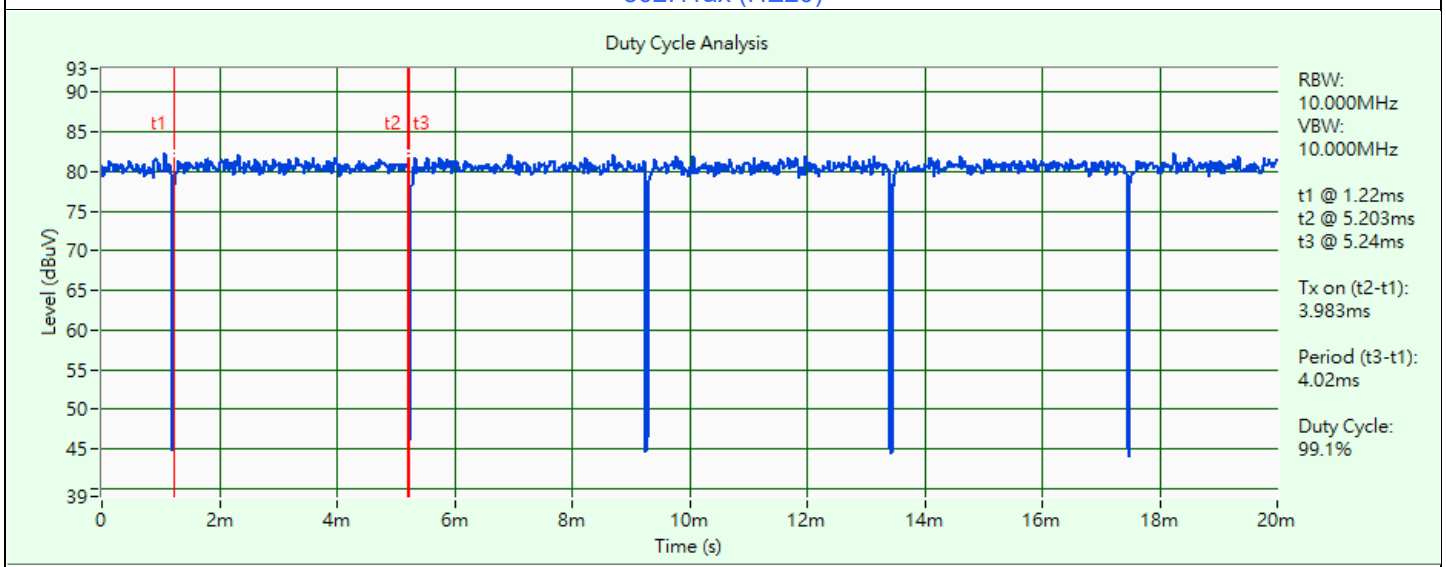
802.11n (HT20)



802.11n (HT40)



802.11ax (HE20)

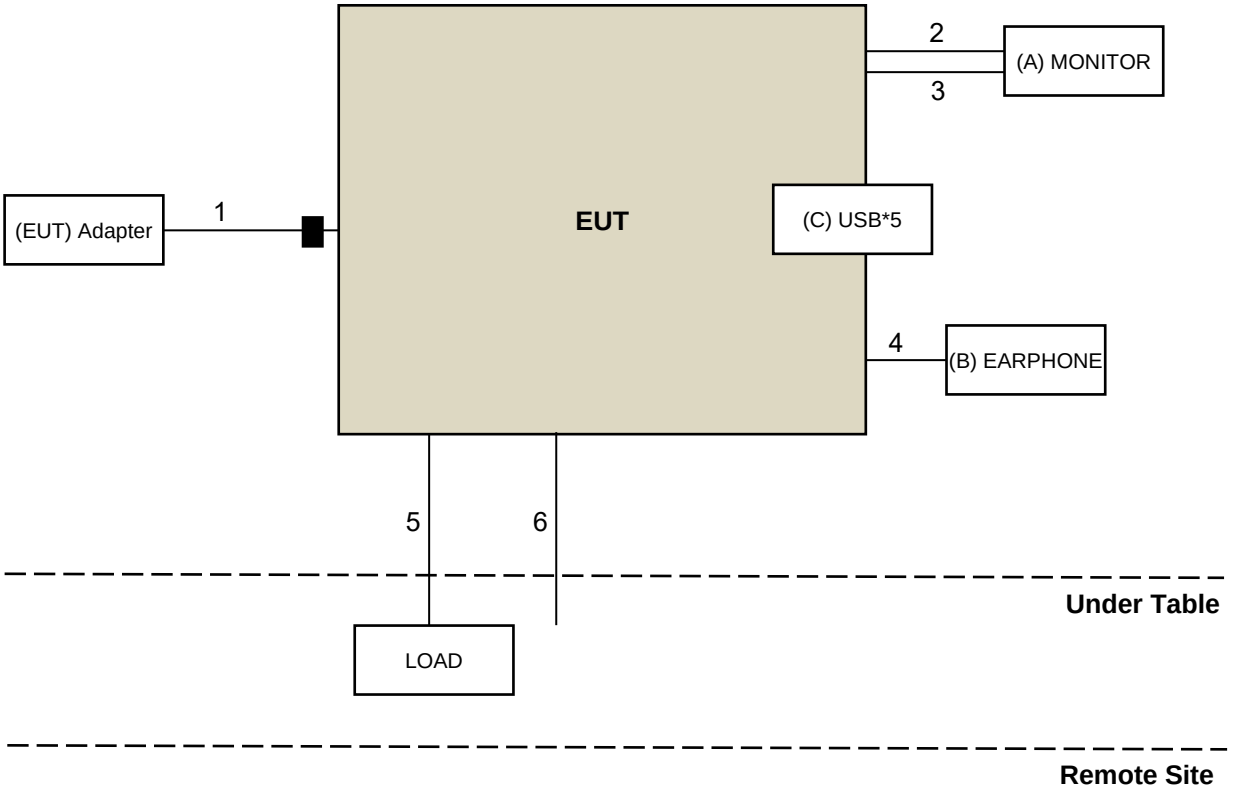


802.11ax (HE40)

3.6 Test Program Used and Operation Descriptions

Controlling software DRTU 22.100.1.1 has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Monitor	DELL	A14S2421HSXmTW	CN-01KWFW-WSL00-24C-711B	N/A	Provided by Lab
B	EARPHONE	APPLE	MB77PFEB	N/A	N/A	Provided by Lab
C	USB*5	SanDisk	SDDDC3-032G	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	ADAPTER	1	1.2	Y	1	Accessory of EUT
2	HDMI	1	1.8	Y	0	Provided by Lab
3	DP	1	1.8	Y	0	Provided by Lab
4	AUDIO	1	1.2	N	0	Provided by Lab
5	LAN	1	1.8	N	0	Provided by Lab
6	RS232	1	1.5	N	0	Provided by Lab

4 Test Instruments

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

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Peak Power Analyzer Keysight	8990B	MY51000485	2024/1/21	2025/1/20
Signal & Spectrum Analyzer R&S	FSV3044	101504	2023/6/5	2024/6/4
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A
Wideband Power Sensor Keysight	N1923A	MY58020002	2024/1/18	2025/1/17
		MY58140009	2024/1/18	2025/1/17

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/3/14 ~ 2024/3/15

4.2 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance HUBER+SUHNER	E1-011315	13	2023/11/22	2024/11/21
50 ohm terminal resistance	E1-011279	04	2023/11/22	2024/11/21
	E1-011280	05	2023/11/22	2024/11/21
DC-LISN Schwarzbeck	NNBM 8126G	8126G-069	2023/11/7	2024/11/6
EMI Test Receiver R&S	ESR3	102783	2023/12/13	2024/12/12
Fixed Attenuator SGH	BNC10W10dB	PAD-COND2-01	2023/9/2	2024/9/1
LISN R&S	ESH2-Z5	100100	2023/3/7	2024/3/6
	ESH3-Z5	100312	2023/9/12	2024/9/11
RF Coaxial Cable Woken	5D-FB	Cable-cond2-01	2023/9/2	2024/9/1
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2023/8/31	2024/8/30

Notes:

1. The test was performed in HY - Conduction 2.
2. Tested Date: 2024/2/22

4.3 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower &Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-472	2023/10/16	2024/10/15
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/12/28	2024/12/27
Loop Antenna Electro-Metrics	EM-6879	269	2023/9/23	2024/9/22
Loop Antenna TESEQ	HLA 6121	45745	2023/8/8	2024/8/7
MXE EMI Receiver Keysight	N9038A	MY55420137	2023/5/3	2024/5/2
Preamplifier EMCI	EMC 330H	980112	2023/9/27	2024/9/26
	EMC001340	980201	2023/9/27	2024/9/26
RF Coaxial Cable Woken	8D-FB	Cable-Ch10-01	2023/9/27	2024/9/26
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2024/2/21

4.4 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower &Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	7	N/A	N/A
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/12/28	2024/12/27
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-969	2023/11/12	2024/11/11
	BBHA 9170	148	2023/11/12	2024/11/11
MXE EMI Receiver Keysight	N9038A	MY55420137	2023/5/3	2024/5/2
Notch Filter Micro-Tronics	BRM17690	004	2024/1/23	2025/1/22
	BRM50716	060	2023/12/25	2024/12/24
Preamplifier EMCI	EMC 012645	980115	2023/9/27	2024/9/26
	EMC 184045	980116	2023/9/27	2024/9/26
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2023/7/8	2024/7/7
	EMC102-KM-KM-3000	150929	2023/7/8	2024/7/7
	EMC104-SM-SM-8000+3000	171005	2023/9/27	2024/9/26
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	2023/9/27	2024/9/26
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2024/2/20

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

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

*B is the 26 dB emission bandwidth in megahertz

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

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

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

5.2 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.

5.3 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).

5.4 Unwanted Emissions above 1 GHz

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

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

Notes:

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

Limits of unwanted emission out of the restricted bands

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

For transmitters operating in the 5.15-5.25 GHz band:

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

For transmitters operating in the 5.25-5.35 GHz band:

Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
15.407(b)(2)	PK: -27 (dBm/MHz)	PK: 68.2 (dBµV/m)

For transmitters operating in the 5.47-5.725 GHz band:

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

For transmitters operating in the 5.725-5.850 GHz band:

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

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

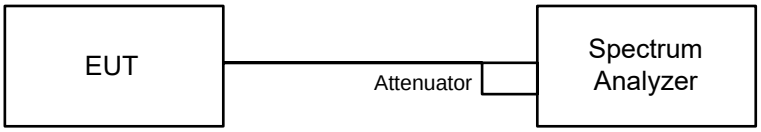
$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts).

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

For channel straddling:



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.

For channel straddling:

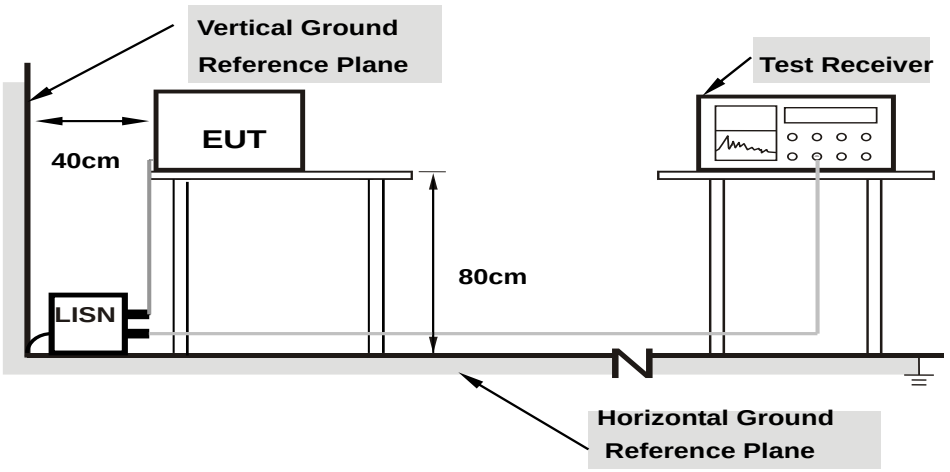
Method SA-2

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

Note: When measuring straddle channel power, use compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.

6.2 AC Power Conducted Emissions

6.2.1 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).

6.2.2 Test Procedure

a. The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.

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

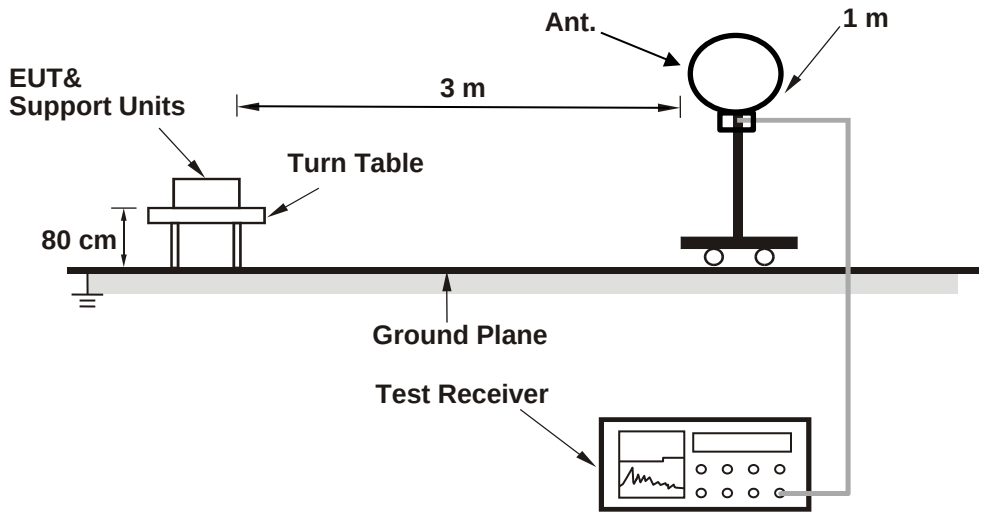
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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

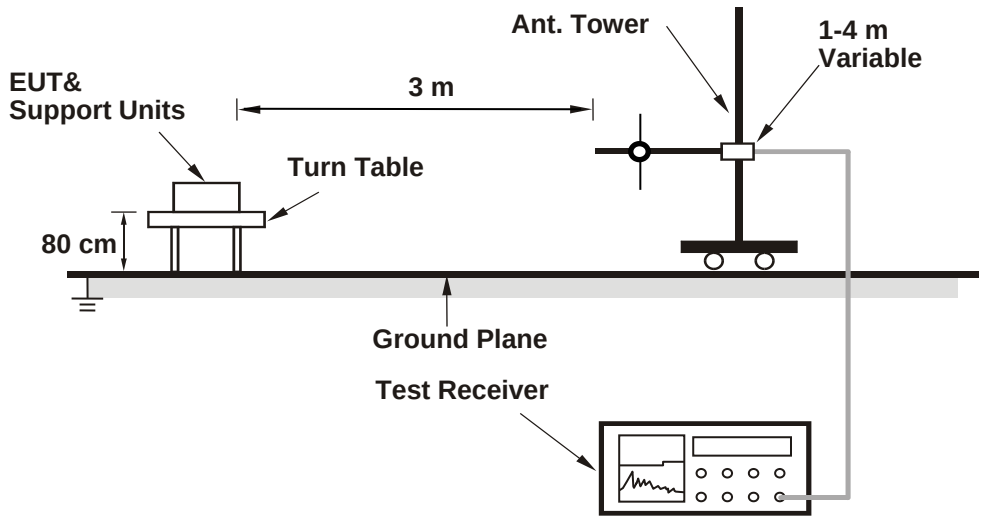
6.3 Unwanted Emissions below 1 GHz

6.3.1 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).

6.3.2 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.

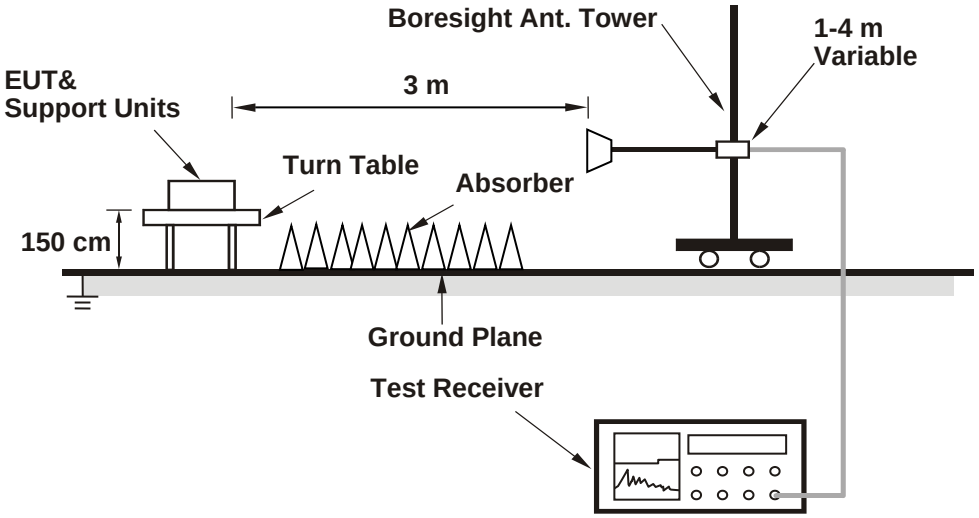
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

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.

6.4 Unwanted Emissions above 1 GHz

6.4.1 Test Setup



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

6.4.2 Test Procedure

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

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

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

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

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

Notes:

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

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	10.8 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Charles Hsiao

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
36	5180	64.714	18.11	24	Pass
40	5200	117.49	20.70	24	Pass
48	5240	116.95	20.68	24	Pass
52	5260	117.49	20.70	24	Pass
60	5300	123.88	20.93	24	Pass
64	5320	74.131	18.70	24	Pass
100	5500	106.414	20.27	24	Pass
116	5580	124.165	20.94	24	Pass
140	5700	104.713	20.20	24	Pass
149	5745	125.893	21.00	30	Pass
157	5785	125.314	20.98	30	Pass
165	5825	123.027	20.90	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-2A, the antenna gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-2C, the antenna gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-3, the antenna gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	17.10	17.11	102.691	20.12	24	Pass
40	5200	17.97	17.99	125.612	20.99	24	Pass
48	5240	17.90	17.91	123.461	20.92	24	Pass
52	5260	18.21	18.22	132.596	21.23	24	Pass
60	5300	18.18	18.20	131.835	21.20	24	Pass
64	5320	17.50	17.52	112.728	20.52	24	Pass
100	5500	18.57	18.58	144.056	21.59	24	Pass
116	5580	18.52	18.53	142.407	21.54	24	Pass
140	5700	18.62	18.64	145.892	21.64	24	Pass
*144 (U-NII-2C)	5720	16.95	16.84	97.851	19.91	24	Pass
*144 (U-NII-3)	5720	9.90	9.51	18.705	12.72	30	Pass
149	5745	20.82	20.84	242.12	23.84	30	Pass
157	5785	20.88	20.91	245.772	23.91	30	Pass
165	5825	20.93	20.95	248.331	23.95	30	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
6. For U-NII-3, the maximum gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	16.25	16.26	84.437	19.27	24	Pass
46	5230	19.55	19.57	180.73	22.57	24	Pass
54	5270	19.82	19.83	192.101	22.84	24	Pass
62	5310	16.49	16.50	89.234	19.51	24	Pass
102	5510	17.48	17.49	112.081	20.50	24	Pass
110	5550	20.91	20.93	247.19	23.93	24	Pass
134	5670	20.00	20.03	200.693	23.03	24	Pass
*142 (U-NII-2C)	5710	17.63	17.52	114.437	20.59	24	Pass
*142 (U-NII-3)	5710	5.13	5.08	6.479	8.12	30	Pass
151	5755	20.40	20.41	219.548	23.42	30	Pass
159	5795	20.92	20.93	247.474	23.94	30	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
6. For U-NII-3, the maximum gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	16.25	16.28	84.632	19.28	24	Pass
58	5290	15.92	16.00	78.895	18.97	24	Pass
106	5530	17.16	17.19	104.36	20.19	24	Pass
122	5610	20.21	20.24	210.636	23.24	24	Pass
*138 (U-NII-2C)	5690	17.80	17.71	119.276	20.77	24	Pass
*138 (U-NII-3)	5690	1.26	1.61	2.785	4.45	30	Pass
155	5775	18.15	18.17	130.928	21.17	30	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
6. For U-NII-3, the maximum gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT160)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
*50 (U-NII-1)	5250	9.83	9.85	19.277	12.85	24	Pass
*50 (U-NII-2A)	5250	9.94	9.96	19.771	12.96	24	Pass
114	5570	14.06	14.08	51.054	17.08	24	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) 26-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	10.90	10.94	24.719	13.93	24	Pass
64	5320	10.29	10.32	21.455	13.32	24	Pass
100	5500	10.37	10.41	21.879	13.40	24	Pass
140	5700	10.33	10.36	21.654	13.36	24	Pass
149	5745	17.88	17.94	123.606	20.92	30	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
6. For U-NII-3, the maximum gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) 52-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	13.75	13.82	47.813	16.80	24	Pass
64	5320	13.19	13.23	41.883	16.22	24	Pass
100	5500	13.38	13.40	43.655	16.40	24	Pass
140	5700	13.07	13.14	40.883	16.12	24	Pass
149	5745	13.92	13.95	49.492	16.95	30	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
6. For U-NII-3, the maximum gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) 106-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	15.95	15.97	78.892	18.97	24	Pass
64	5320	16.18	16.22	83.375	19.21	24	Pass
100	5500	15.76	15.84	76.041	18.81	24	Pass
140	5700	16.22	16.30	84.537	19.27	24	Pass
149	5745	17.81	17.85	121.349	20.84	30	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
6. For U-NII-3, the maximum gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	17.73	17.86	120.387	20.81	24	Pass
40	5200	18.65	18.67	146.903	21.67	24	Pass
48	5240	18.80	18.82	152.066	21.82	24	Pass
52	5260	18.77	18.78	150.845	21.79	24	Pass
60	5300	18.70	18.71	148.433	21.72	24	Pass
64	5320	16.74	16.75	94.521	19.76	24	Pass
100	5500	18.83	18.85	153.12	21.85	24	Pass
116	5580	18.80	18.81	151.89	21.82	24	Pass
140	5700	18.68	18.70	147.921	21.70	24	Pass
*144 (U-NII-2C)	5720	16.75	17.00	97.434	19.89	24	Pass
*144 (U-NII-3)	5720	9.67	9.85	18.929	12.77	30	Pass
149	5745	20.95	21.00	250.344	23.99	30	Pass
157	5785	20.85	20.88	244.08	23.88	30	Pass
165	5825	21.00	21.03	252.658	24.03	30	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
6. For U-NII-3, the maximum gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) 242-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	17.45	17.51	111.954	20.49	24	Pass
62	5310	17.22	17.23	105.568	20.24	24	Pass
102	5510	18.44	18.50	140.618	21.48	24	Pass
134	5670	18.79	18.84	152.243	21.83	24	Pass
151	5755	20.94	21.12	253.585	24.04	30	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
6. For U-NII-3, the maximum gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	15.17	15.18	65.846	18.19	24	Pass
46	5230	18.96	18.97	157.591	21.98	24	Pass
54	5270	19.31	19.32	170.817	22.33	24	Pass
62	5310	15.88	15.89	77.541	18.90	24	Pass
102	5510	16.96	17.02	100.009	20.00	24	Pass
110	5550	20.56	20.61	228.843	23.60	24	Pass
134	5670	20.04	20.07	202.55	23.07	24	Pass
*142 (U-NII-2C)	5710	17.25	17.16	105.088	20.22	24	Pass
*142 (U-NII-3)	5710	5.55	5.43	7.081	8.50	30	Pass
151	5755	20.14	20.15	206.79	23.16	30	Pass
159	5795	20.98	21.00	251.207	24.00	30	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
6. For U-NII-3, the maximum gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80) 484-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	15.26	15.30	67.458	18.29	24	Pass
58	5290	15.08	15.11	64.645	18.11	24	Pass
106	5530	16.60	16.71	92.59	19.67	24	Pass
155	5775	20.22	20.25	211.122	23.25	30	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
6. For U-NII-3, the maximum gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	16.25	16.33	85.123	19.30	24	Pass
58	5290	15.97	15.99	79.256	18.99	24	Pass
106	5530	17.18	17.20	104.72	20.20	24	Pass
122	5610	20.28	20.30	213.812	23.30	24	Pass
*138 (U-NII-2C)	5690	17.32	17.33	108.026	20.34	24	Pass
*138 (U-NII-3)	5690	1.84	1.90	3.076	4.88	30	Pass
155	5775	18.20	18.23	132.597	21.23	30	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.
6. For U-NII-3, the maximum gain is 2.41 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE160) 996-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
*50 (U-NII-1)@67	5250	14.09	14.11	51.408	17.11	24	Pass
*50 (U-NII-2A)@67	5250	-21.47	-21.56	0.014111	-18.50	24	Pass
*50 (U-NII-1)@S67	5250	-20.29	-20.31	0.018665	-17.29	24	Pass
*50 (U-NII-2A)@S67	5250	14.97	15.00	63.028	18.00	24	Pass
114 (U-NII-1)@67	5570	15.51	15.55	71.455	18.54	24	Pass
114 (U-NII-1)@S67	5570	18.60	18.72	146.917	21.67	24	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
*50 (U-NII-1)	5250	9.71	9.74	18.773	12.74	24	Pass
*50 (U-NII-2A)	5250	9.84	9.88	19.366	12.87	24	Pass
114	5570	15.11	15.14	65.093	18.14	24	Pass

Notes:

1. * : 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.
2. Directional gain is the maximum gain of antennas.
3. For U-NII-1, the maximum gain is 1.39 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-2A, the maximum gain is 1.21 dBi < 6 dBi, so the output power limit shall not be reduced.
5. For U-NII-2C, the maximum gain is 2.45 dBi < 6 dBi, so the output power limit shall not be reduced.

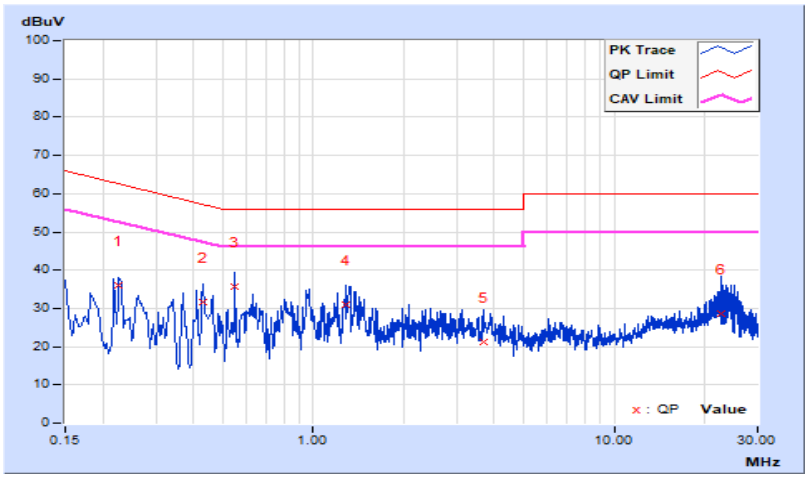
7.2 AC Power Conducted Emissions

RF Mode	802.11n (HT20)	**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**	22°C, 67% RH
Tested By	Vincent Chen		

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	0.22600	10.35	25.76	11.74	36.11	22.09	62.60	52.60	-26.49	-30.51
2	0.43000	10.42	21.10	5.88	31.52	16.30	57.25	47.25	-25.73	-30.95
3	**0.55000**	**10.42**	**25.23**	**5.33**	**35.65**	**15.75**	**56.00**	**46.00**	**-20.35**	**-30.25**
4	1.27800	10.43	20.42	4.31	30.85	14.74	56.00	46.00	-25.15	-31.26
5	3.67000	10.50	10.59	0.31	21.09	10.81	56.00	46.00	-34.91	-35.19
6	22.59400	10.66	17.83	5.70	28.49	16.36	60.00	50.00	-31.51	-33.64

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

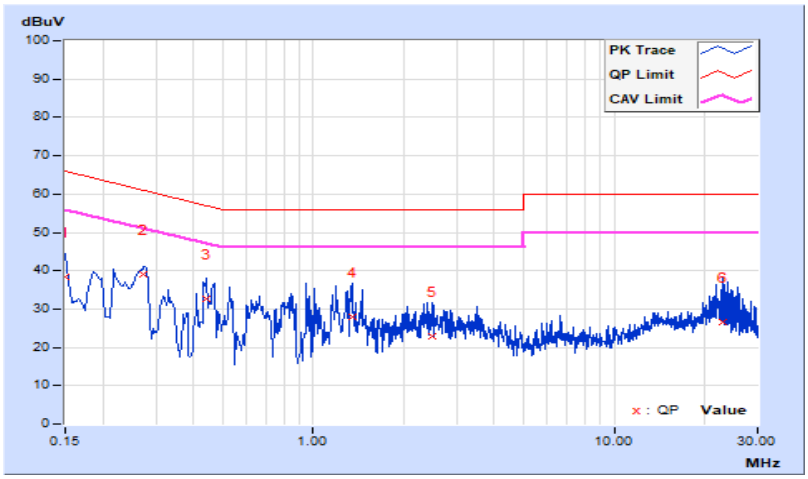


RF Mode	802.11n (HT20)	**Channel**	CH 157：5785 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 67% RH
Tested By	Vincent Chen		

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	10.33	27.97	12.26	38.30	22.59	66.00	56.00	-27.70	-33.41
2	0.27400	10.39	28.78	18.27	39.17	28.66	61.00	51.00	-21.83	-22.34
3	0.44200	10.44	22.29	6.04	32.73	16.48	57.02	47.02	-24.29	-30.54
4	1.34998	10.45	17.52	1.90	27.97	12.35	56.00	46.00	-28.03	-33.65
5	2.48200	10.47	12.52	1.40	22.99	11.87	56.00	46.00	-33.01	-34.13
6	23.06600	10.81	15.94	3.74	26.75	14.55	60.00	50.00	-33.25	-35.45

Remarks:

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



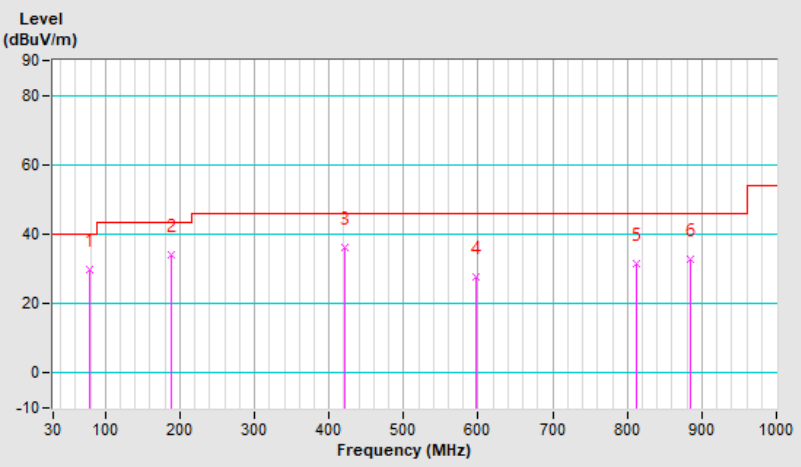
7.3 Unwanted Emissions below 1 GHz

RF Mode	802.11n (HT20)	**Channel**	CH 157：5785 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 68% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	78.50	29.7 QP	40.0	-10.3	1.00 H	2	46.7	-17.0
2	188.11	34.1 QP	43.5	-9.4	2.00 H	122	49.1	-15.0
3	420.91	36.2 QP	46.0	-9.8	2.00 H	261	45.2	-9.0
4	597.45	27.8 QP	46.0	-18.2	1.50 H	238	33.0	-5.2
5	812.79	31.5 QP	46.0	-14.5	2.00 H	82	32.5	-1.0
6	884.57	32.8 QP	46.0	-13.2	1.50 H	349	33.6	-0.8

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

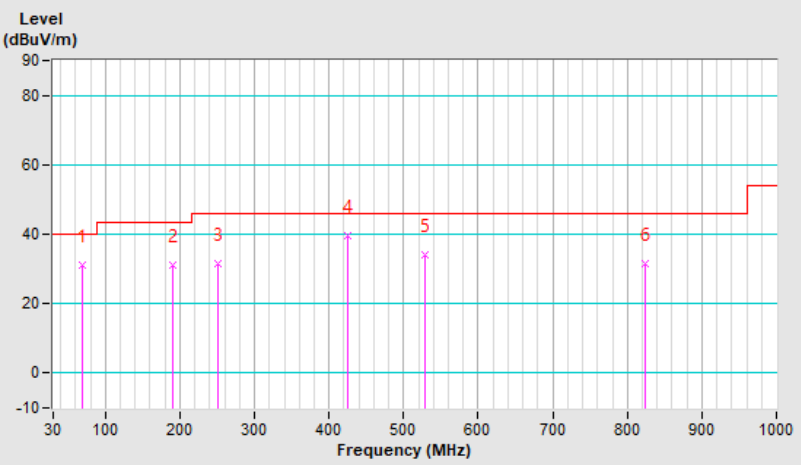


RF Mode	802.11n (HT20)	**Channel**	CH 157：5785 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 68% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	69.77	31.2 QP	40.0	-8.8	1.00 V	162	46.0	-14.8
2	191.02	30.9 QP	43.5	-12.6	2.00 V	64	46.2	-15.3
3	250.19	31.7 QP	46.0	-14.3	1.50 V	2	45.5	-13.8
4	**425.76**	**39.4 QP**	**46.0**	**-6.6**	**1.00 V**	**18**	**48.3**	**-8.9**
5	529.55	34.0 QP	46.0	-12.0	1.00 V	211	40.3	-6.3
6	824.43	31.5 QP	46.0	-14.5	2.00 V	209	32.4	-0.9

Remarks:

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



7.4 Unwanted Emissions above 1 GHz

RF Mode	802.11a	**Channel**	CH 52：5260 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 68% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5150.00	57.4 PK	74.0	-16.6	2.01 H	254	53.7	3.7
2	5150.00	44.4 AV	54.0	-9.6	2.01 H	254	40.7	3.7
3	*5260.00	110.6 PK			2.01 H	254	69.9	40.7
4	*5260.00	99.5 AV			2.01 H	254	58.8	40.7
5	#10520.00	60.9 PK	68.2	-7.3	1.56 H	187	48.5	12.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5150.00	57.3 PK	74.0	-16.7	1.67 V	159	53.6	3.7
2	5150.00	44.3 AV	54.0	-9.7	1.67 V	159	40.6	3.7
3	*5260.00	109.8 PK			1.67 V	159	69.1	40.7
4	*5260.00	99.2 AV			1.67 V	159	58.5	40.7
5	#10520.00	60.6 PK	68.2	-7.6	2.34 V	102	48.2	12.4

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	802.11n (HT20)	Channel	CH 140：5700 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 68% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	109.0 PK			1.50 H	104	67.6	41.4
2	*5700.00	98.1 AV			1.50 H	104	56.7	41.4
3	#5725.00	64.1 PK	68.2	-4.1	1.50 H	104	60.3	3.8
4	11400.00	60.7 PK	74.0	-13.3	2.14 H	153	48.5	12.2
5	11400.00	48.5 AV	54.0	-5.5	2.14 H	153	36.3	12.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	113.6 PK			1.48 V	157	72.2	41.4
2	*5700.00	102.8 AV			1.48 V	157	61.4	41.4
3	#5725.00	67.4 PK	68.2	-0.8	1.48 V	157	63.6	3.8
4	11400.00	61.1 PK	74.0	-12.9	1.86 V	245	48.9	12.2
5	11400.00	48.7 AV	54.0	-5.3	1.86 V	245	36.5	12.2

Remarks:

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

RF Mode	802.11n (HT20)	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 68% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5630.00	57.8 PK	68.2	-10.4	1.52 H	123	54.1	3.7
2	*5785.00	110.0 PK			1.52 H	123	68.3	41.7
3	*5785.00	99.9 AV			1.52 H	123	58.2	41.7
4	#5930.80	57.9 PK	68.2	-10.3	1.52 H	123	53.4	4.5
5	11570.00	61.4 PK	74.0	-12.6	1.87 H	258	49.8	11.6
6	11570.00	49.1 AV	54.0	-4.9	1.87 H	258	37.5	11.6
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	#5605.20	56.9 PK	68.2	-11.3	1.56 V	155	53.3	3.6
2	*5785.00	114.4 PK			1.56 V	155	72.7	41.7
3	*5785.00	103.3 AV			1.56 V	155	61.6	41.7
4	#5932.40	58.6 PK	68.2	-9.6	1.56 V	155	54.1	4.5
5	11570.00	61.6 PK	74.0	-12.4	2.04 V	165	50.0	11.6
6	11570.00	49.3 AV	54.0	-4.7	2.04 V	165	37.7	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.

RF Mode	802.11n (HT40)	Channel	CH 38：5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 68% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.2 PK	74.0	-15.8	1.99 H	102	54.5	3.7
2	5150.00	44.6 AV	54.0	-9.4	1.99 H	102	40.9	3.7
3	*5190.00	105.6 PK			1.99 H	102	64.6	41.0
4	*5190.00	95.2 AV			1.99 H	102	54.2	41.0
5	#10380.00	60.4 PK	68.2	-7.8	2.86 H	158	48.4	12.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.1 PK	74.0	-15.9	2.67 V	171	54.4	3.7
2	5150.00	44.8 AV	54.0	-9.2	2.67 V	171	41.1	3.7
3	*5190.00	107.7 PK			2.67 V	171	66.7	41.0
4	*5190.00	97.3 AV			2.67 V	171	56.3	41.0
5	#10380.00	60.9 PK	68.2	-7.3	1.52 V	287	48.9	12.0

Remarks:

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

RF Mode	802.11ax (HE20)	**Channel**	CH 140：5700 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 68% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*5700.00	109.9 PK			1.48 H	124	68.5	41.4
2	*5700.00	97.2 AV			1.48 H	124	55.8	41.4
3	#5725.00	64.0 PK	68.2	-4.2	1.48 H	124	60.2	3.8
4	11400.00	61.2 PK	74.0	-12.8	1.82 H	221	49.0	12.2
5	11400.00	48.8 AV	54.0	-5.2	1.82 H	221	36.6	12.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*5700.00	114.4 PK			1.48 V	157	73.0	41.4
2	*5700.00	101.6 AV			1.48 V	157	60.2	41.4
3	**#5725.00**	**67.5 PK**	**68.2**	**-0.7**	**1.48 V**	**157**	**63.7**	**3.8**
4	11400.00	61.3 PK	74.0	-12.7	1.75 V	235	49.1	12.2
5	11400.00	48.9 AV	54.0	-5.1	1.75 V	235	36.7	12.2

Remarks:

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

RF Mode	802.11ax (HE20)	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 68% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5629.20	57.1 PK	68.2	-11.1	1.52 H	124	53.4	3.7
2	*5785.00	112.2 PK			1.52 H	124	70.5	41.7
3	*5785.00	98.5 AV			1.52 H	124	56.8	41.7
4	#5991.20	57.9 PK	68.2	-10.3	1.52 H	124	53.4	4.5
5	11570.00	61.5 PK	74.0	-12.5	2.05 H	111	49.9	11.6
6	11570.00	49.2 AV	54.0	-4.8	2.05 H	111	37.6	11.6
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	#5618.40	56.7 PK	68.2	-11.5	1.50 V	162	53.0	3.7
2	*5785.00	115.4 PK			1.50 V	162	73.7	41.7
3	*5785.00	102.0 AV			1.50 V	162	60.3	41.7
4	#5976.00	57.9 PK	68.2	-10.3	1.50 V	162	53.3	4.6
5	11570.00	61.7 PK	74.0	-12.3	2.06 V	178	50.1	11.6
6	11570.00	49.4 AV	54.0	-4.6	2.06 V	178	37.8	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.

RF Mode	802.11ax (HE40)	Channel	CH 38：5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 68% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.3 PK	74.0	-15.7	2.04 H	103	54.6	3.7
2	5150.00	44.7 AV	54.0	-9.3	2.04 H	103	41.0	3.7
3	*5190.00	107.7 PK			2.04 H	103	66.7	41.0
4	*5190.00	94.0 AV			2.04 H	103	53.0	41.0
5	#10380.00	60.5 PK	68.2	-7.7	2.45 H	136	48.5	12.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.8 PK	74.0	-15.2	2.65 V	176	55.1	3.7
2	5150.00	44.9 AV	54.0	-9.1	2.65 V	176	41.2	3.7
3	*5190.00	109.7 PK			2.65 V	176	68.7	41.0
4	*5190.00	96.5 AV			2.65 V	176	55.5	41.0
5	#10380.00	61.0 PK	68.2	-7.2	1.78 V	225	49.0	12.0

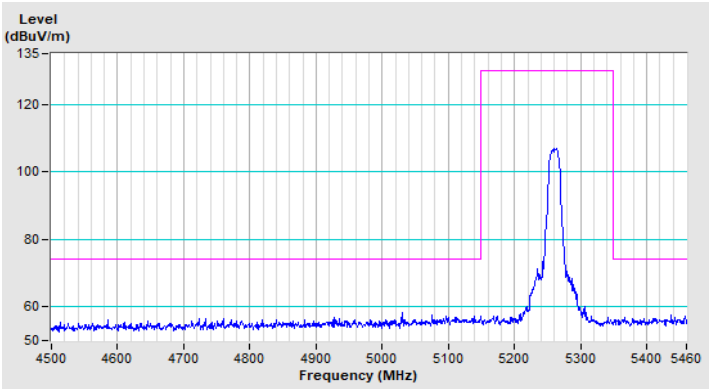
Remarks:

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

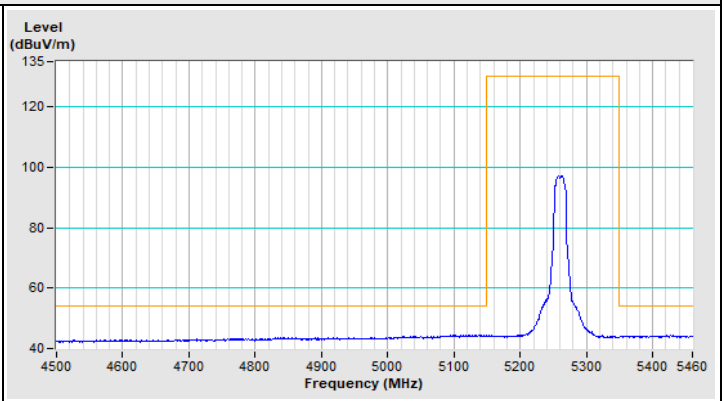
Plot of Band Edge

Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak

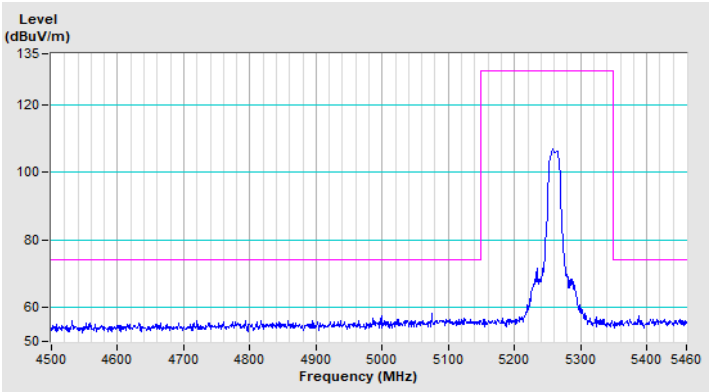
802.11a Channel 52



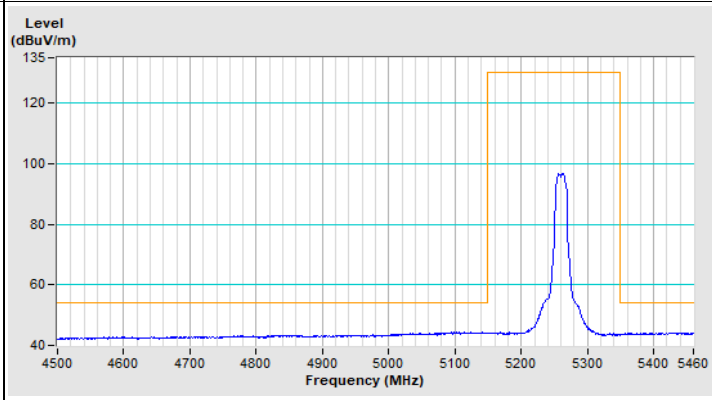
Horizontal (Peak)



Horizontal (Average)



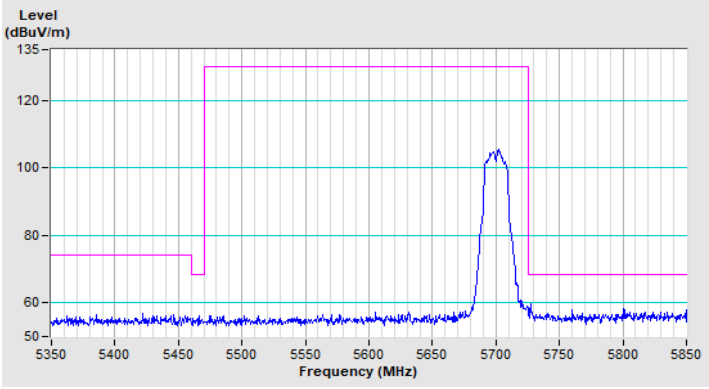
Vertical (Peak)



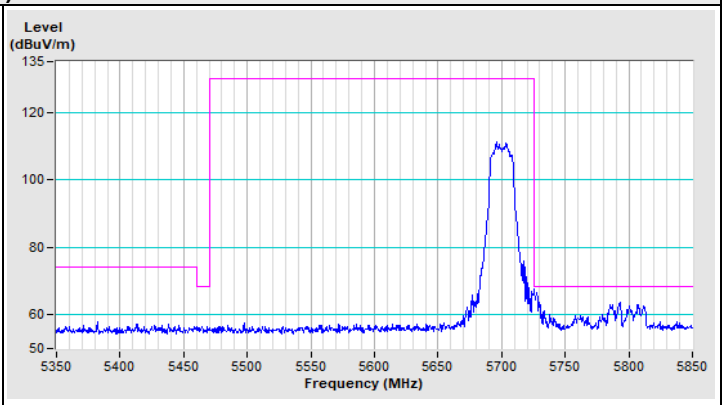
Vertical (Average)

Frequency Range	5.35 GHz ~ 5.85 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak

802.11n (HT20) Channel 140



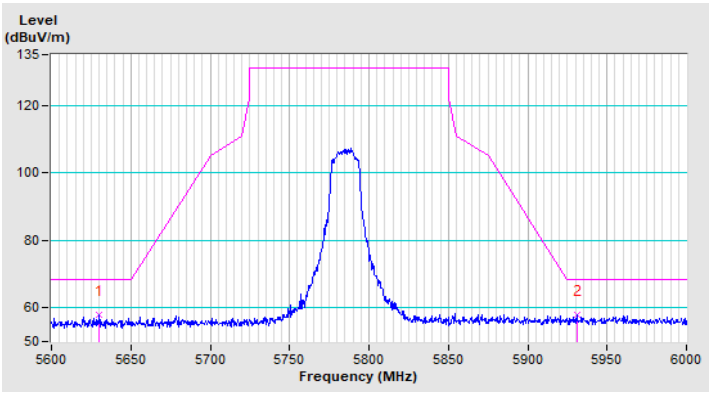
Horizontal (Peak)



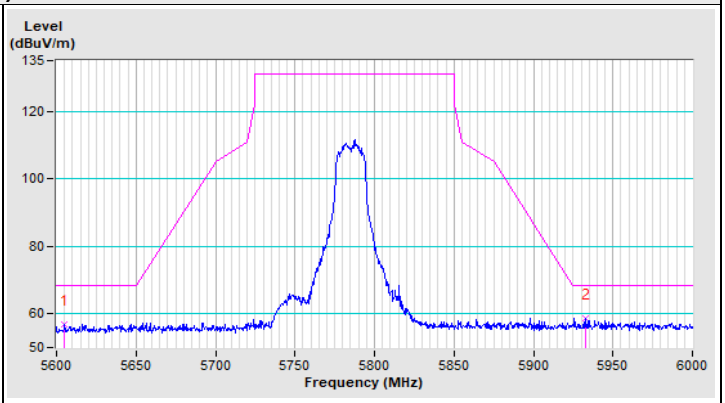
Vertical (Peak)

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

802.11n (HT20) Channel 157



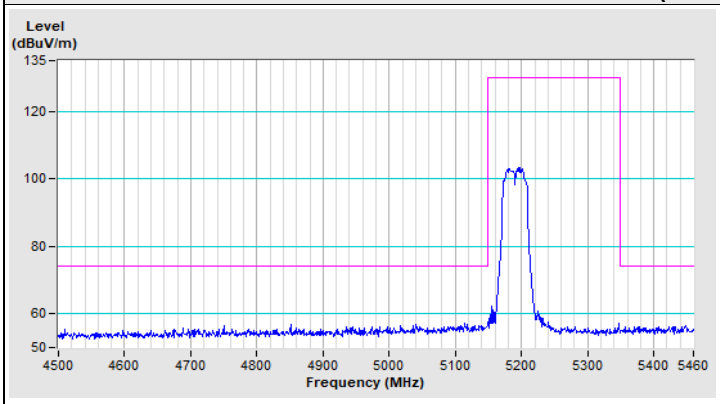
Horizontal (Peak)



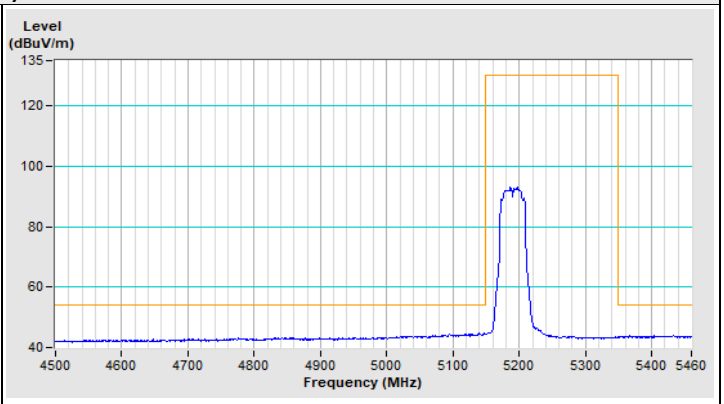
Vertical (Peak)

Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak

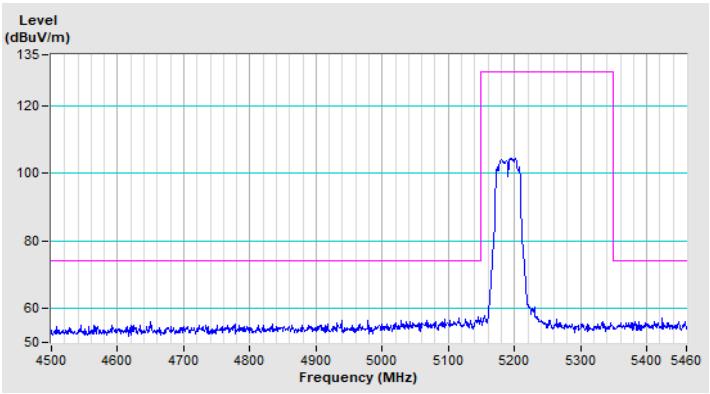
802.11n (HT40) Channel 38



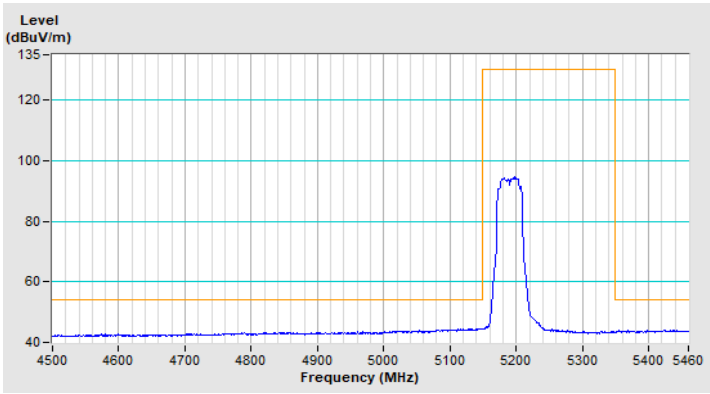
Horizontal (Peak)



Horizontal (Average)



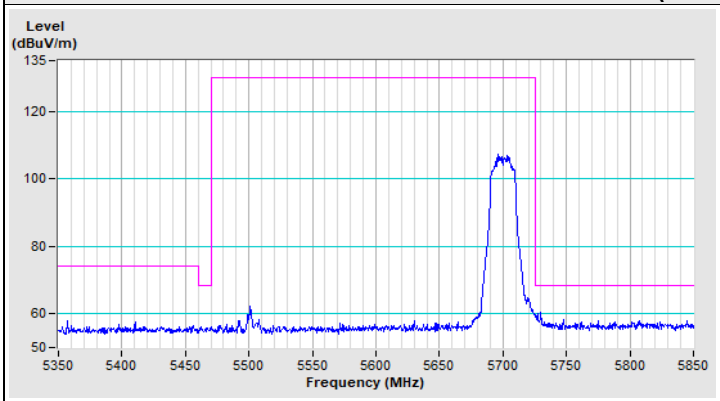
Vertical (Peak)



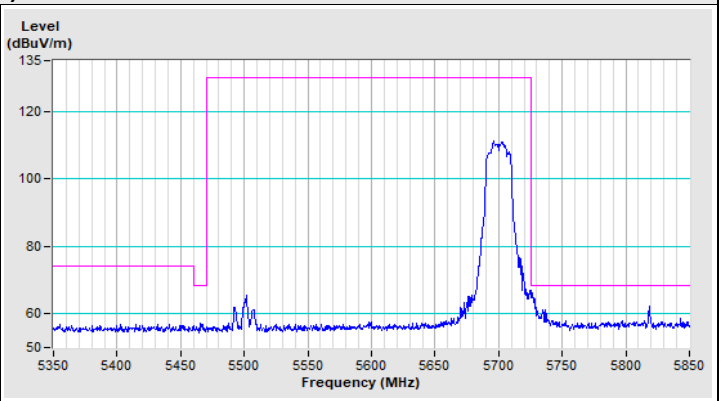
Vertical (Average)

Frequency Range	5.35 GHz ~ 5.85 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak

802.11ax (HE20) Channel 140



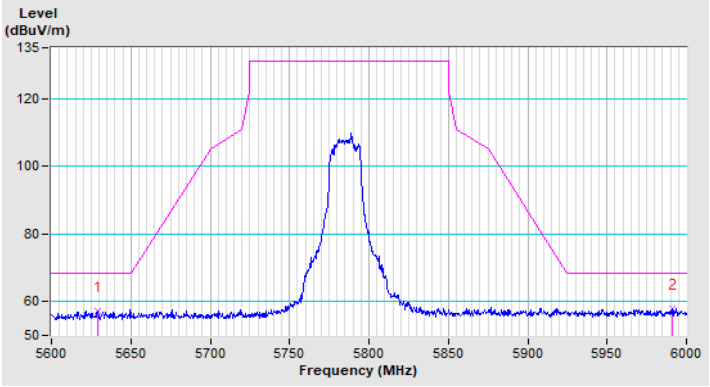
Horizontal (Peak)



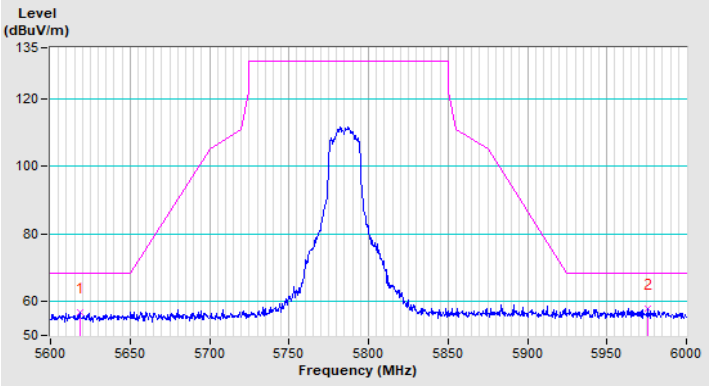
Vertical (Peak)

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

802.11ax (HE20) Channel 157



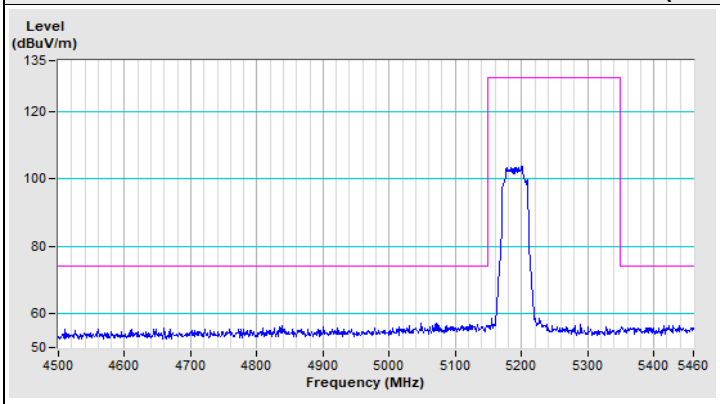
Horizontal (Peak)



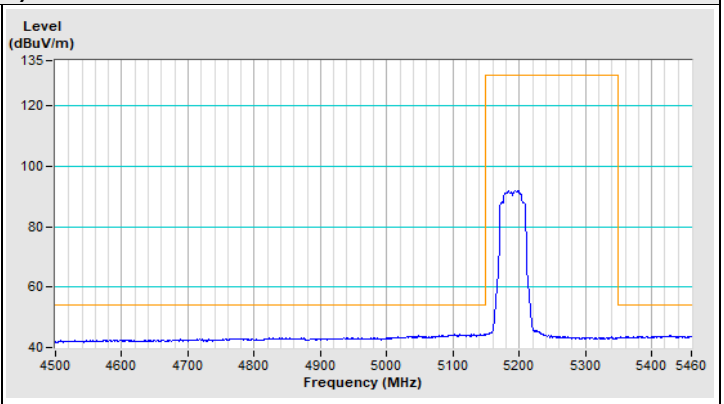
Vertical (Peak)

Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak

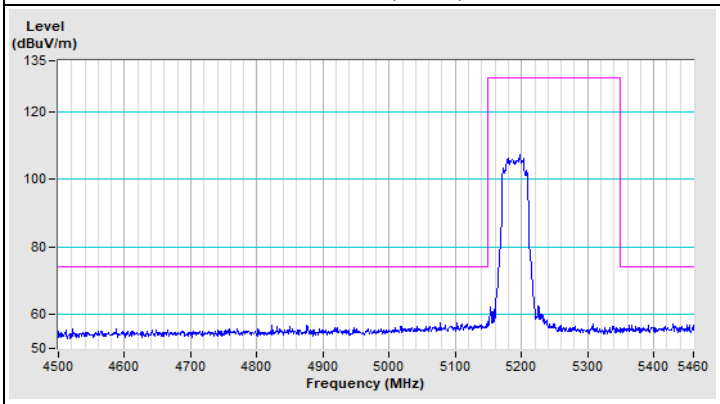
802.11ax (HE40) Channel 38



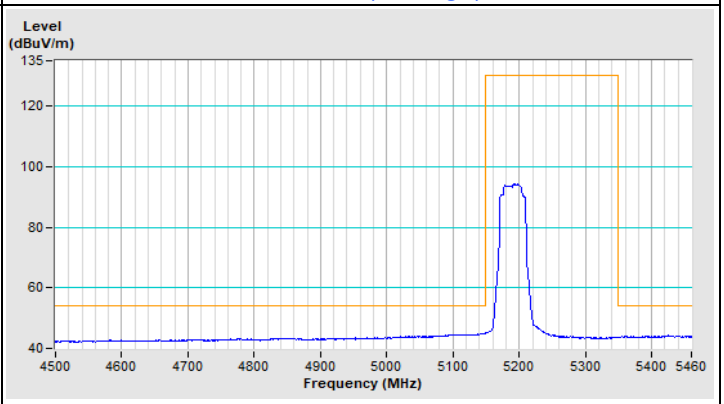
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)



Vertical (Average)

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

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

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

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

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