TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart E (Section 15.407)**
Report No.:	RFBEMV-WTW-P22070474-1
FCC ID:	XCNUBC1330
Product:	Docsis3.1 advance WiFi 6E Voice Gateway
Brand:	Ubee
Model No.:	UBC1330
Received Date:	2022/8/4
Test Date:	2022/8/9 ~ 2022/11/19
Issued Date:	2022/12/14
Applicant:	Ubee Interactive Holding Corp. Taiwan Branch
Address:	10F-1, No.5, Taiyuan 1st St. Jhubei Hsinchu, 302, Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Approved by: _____ , **Date:** **2022/12/14**

May Chen / Manager

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Prepared by : Vito Lung / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBEMV-WTW-P22070474-1	Original release.	2022/12/14

1 Certificate

Product:	Docsis3.1 advance WiFi 6E Voice Gateway
Brand:	Ubee
Test Model:	UBC1330
Sample Status:	Engineering sample
Applicant:	Ubee Interactive Holding Corp. Taiwan Branch
Test Date:	2022/8/9 ~ 2022/11/19
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 -13.08 dB at 0.15391 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -6.5 dB at 644.54 MHz
15.407(b) (1/2/3/4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.1 dB at 5149.18 MHz
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.4 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.0 dB
	18 GHz ~ 40 GHz	5.3 dB

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

2.2 Supplementary Information

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

3 General Information

3.1 General Description of EUT

Product	Docsis3.1 advance WiFi 6E Voice Gateway
Brand	Ubee
Test Model	UBC1330
Status of EUT	Engineering sample
Power Supply Rating	12Vdc from power 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: up to 54Mbps 802.11n: up to 600Mbps 802.11ac: up to 3466.7Mbps 802.11ax: up to 4803.9Mbps
Operating Frequency	5.18 GHz ~ 5.24 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):9 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):4 802.11ac (VHT80), 802.11ax (HE80):2
Output Power	**CDD Mode:** 5.18 GHz ~ 5.24 GHz : 546.614 mW (27.38 dBm) 5.745 GHz ~ 5.825 GHz : 811.865 mW (29.09 dBm) **Beamforming Mode:** 5.18 GHz ~ 5.24 GHz : 431.528 mW (26.35 dBm) 5.745 GHz ~ 5.825 GHz : 405.67 mW (26.08 dBm)
EUT Category	Indoor Access Point

Note:

1. Simultaneously transmission condition.

Condition	Technology		
1	WLAN 2.4GHz	WLAN 5GHz	WLAN 6GHz
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.			

2. The EUT uses following accessories.

AC Adapter 1		
Brand	Model	Specification
I.T.E	MU48AY120400-A1	AC Input: 100 - 240 Vac, 50/60 Hz, 1.5 A DC Output: 12 Vdc, 4 A DC Output Cable: unshielded, 1.5 m, without core
RJ 45 Cable		
Specification		
Signal Line : 1500+-30mm unshieled, without core		

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna No.	RF Chain No.	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
1	5G chain0 2G chain3	3.48	2.4~2.4835	Dipole	ipex(MHF)	282
		3.05	5.15~5.25			
		3.48	5.25~5.35			
		3.31	5.47~5.725			
		3.41	5.725~5.85			
4	5G chain1 2G chain2	3.39	2.4~2.4835	Dipole	ipex(MHF)	199
		3.79	5.15~5.25			
		3.68	5.25~5.35			
		3.67	5.47~5.725			
		3.96	5.725~5.85			
6	5G chain3 2G chain0	3.49	2.4~2.4835	Dipole	ipex(MHF)	56
		3.55	5.15~5.25			
		3.89	5.25~5.35			
		3.62	5.47~5.725			
		3.82	5.725~5.85			
8	5G chain2 2G chain1	3.39	2.4~2.4835	Dipole	ipex(MHF)	97
		3.47	5.15~5.25			
		3.94	5.25~5.35			
		3.93	5.47~5.725			
		3.93	5.725~5.85			
2	6G chain3	3.45	5.925~6.425	Dipole	ipex(MHF4)	134.5
		3.43	6.425~6.525			
		3.45	6.525~6.875			
		3.2	6.875~7.125			
3	6G chain2	3.43	5.925~6.425	Dipole	ipex(MHF4)	109.5
		3.33	6.425~6.525			
		3.43	6.525~6.875			
		3.46	6.875~7.125			
5	6G chain1	3.48	5.925~6.425	Dipole	ipex(MHF4)	43
		3.5	6.425~6.525			
		3.5	6.525~6.875			
		3.49	6.875~7.125			
7	6G chain0	3.37	5.925~6.425	Dipole	ipex(MHF4)	115
		3.48	6.425~6.525			
		3.48	6.525~6.875			
		3.49	6.875~7.125			

* 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	4TX	4RX
802.11n (HT20)	4TX	4RX
802.11n (HT40)	4TX	4RX
802.11ac (VHT20)	4TX	4RX
802.11ac (VHT40)	4TX	4RX
802.11ac (VHT80)	4TX	4RX
802.11ax (HE20)	4TX	4RX
802.11ax (HE40)	4TX	4RX
802.11ax (HE80)	4TX	4RX

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), 802.11ax (HE20):

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

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

Channel	Frequency
42	5210 MHz

FOR 5745 ~ 5825 MHz:

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

Channel	Frequency	Channel	Frequency
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

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

Channel	Frequency
155	5775 MHz

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	2. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

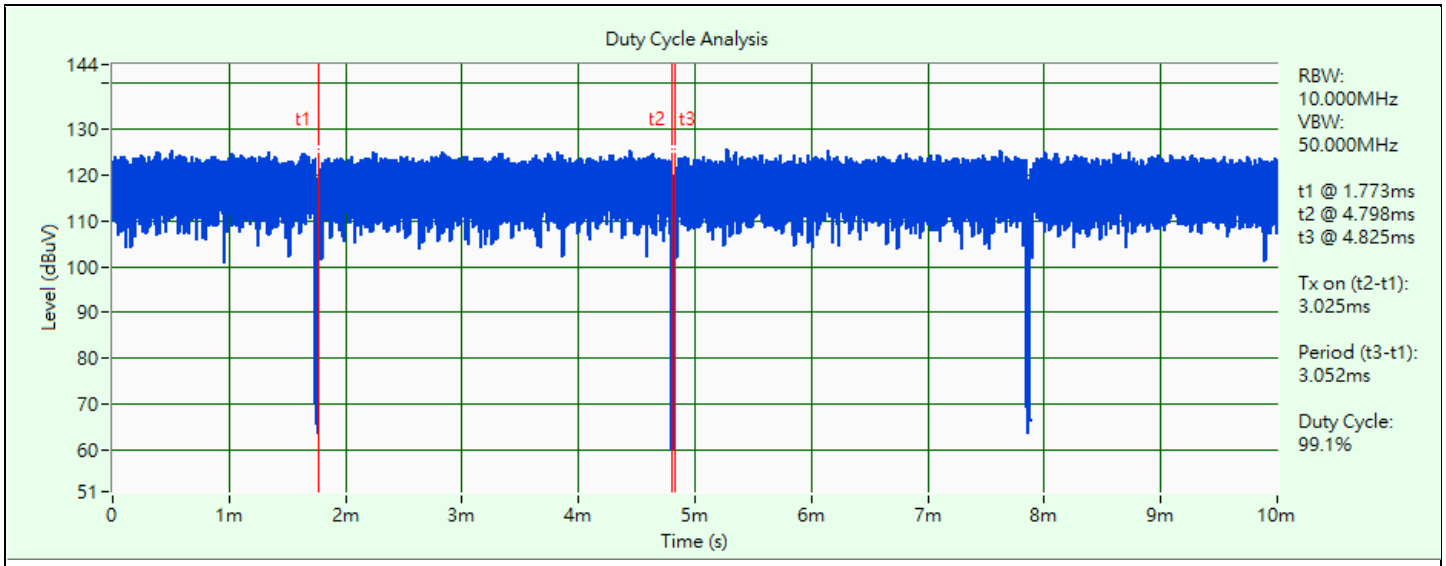
Following channel(s) was (were) selected for the final test as listed below:

Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ac (VHT20)	CDD & Beamforming	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ac (VHT40)	CDD & Beamforming	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ac (VHT80)	CDD & Beamforming	42, 155	BPSK	MCS0
	802.11ax (HE20)	CDD & Beamforming	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD & Beamforming	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD & Beamforming	42, 155	BPSK	MCS0
Power Spectral Density	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	42, 155	BPSK	MCS0
6 dB Bandwidth	802.11a	CDD	149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD	149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD	151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	155	BPSK	MCS0
Occupied Bandwidth	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	42, 155	BPSK	MCS0
Frequency Stability	802.11a	-	36	un-modulation	-
AC Power Conducted Emissions	802.11ax (HE80)	CDD	155	BPSK	MCS0
Unwanted Emissions below 1 GHz	802.11ax (HE80)	CDD	155	BPSK	MCS0

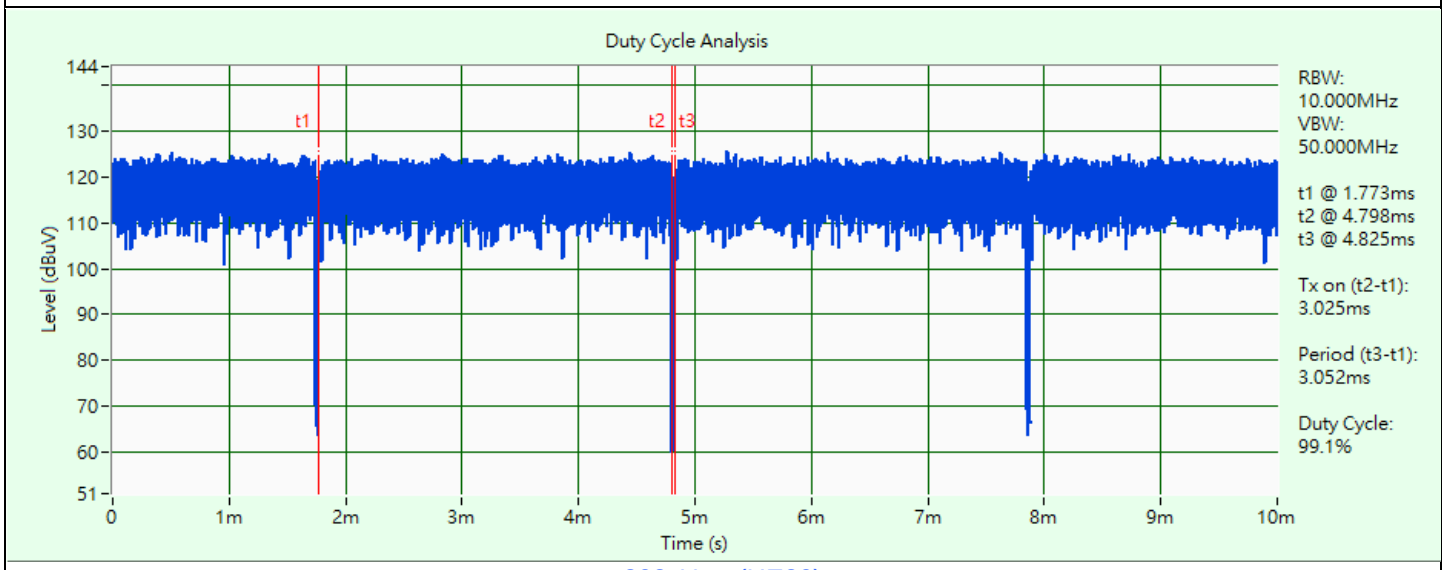
Unwanted Emissions above 1 GHz	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	42, 155	BPSK	MCS0
Note: Partial RU (resource unit) configurations not supported.					

3.5 Duty Cycle of Test Signal

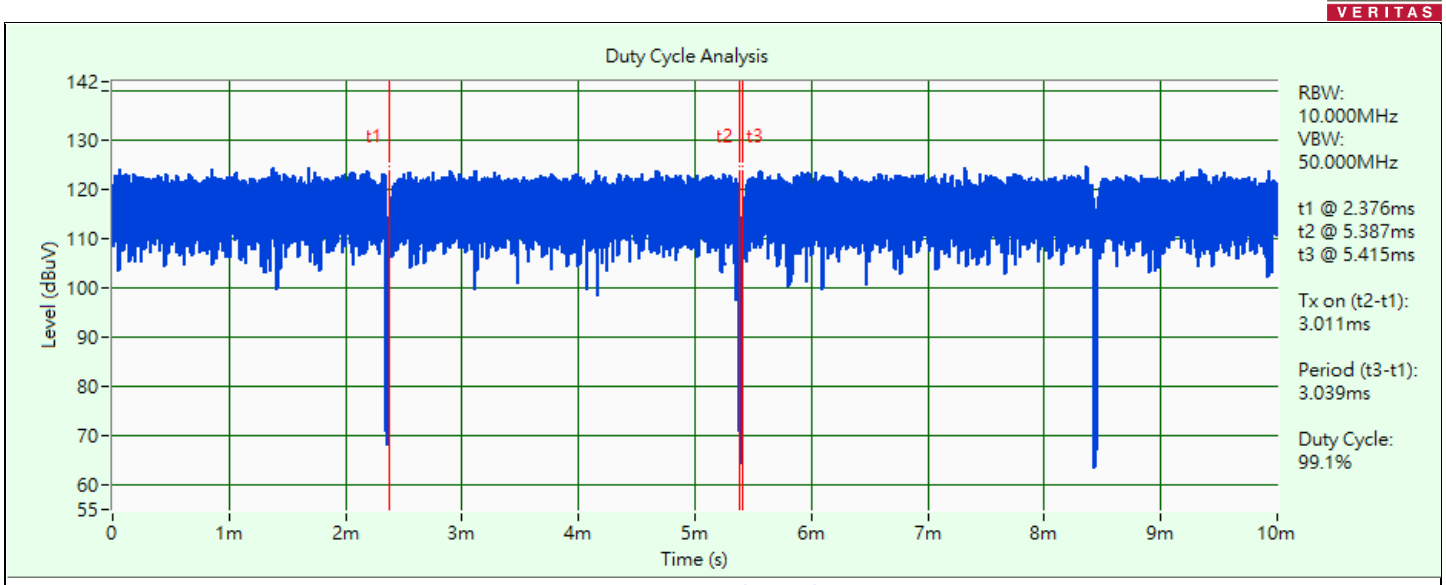
802.11a: Duty cycle = 3.025 ms / 3.052 ms x 100% = 99.1%
802.11ax (HE20): Duty cycle = 3.025 ms / 3.052 ms x 100% = 99.1%
802.11ax (HE40): Duty cycle = 3.011 ms / 3.039 ms x 100% = 99.1%
802.11ax (HE80): Duty cycle = 2.998 ms / 3.025 ms x 100% = 99.1%



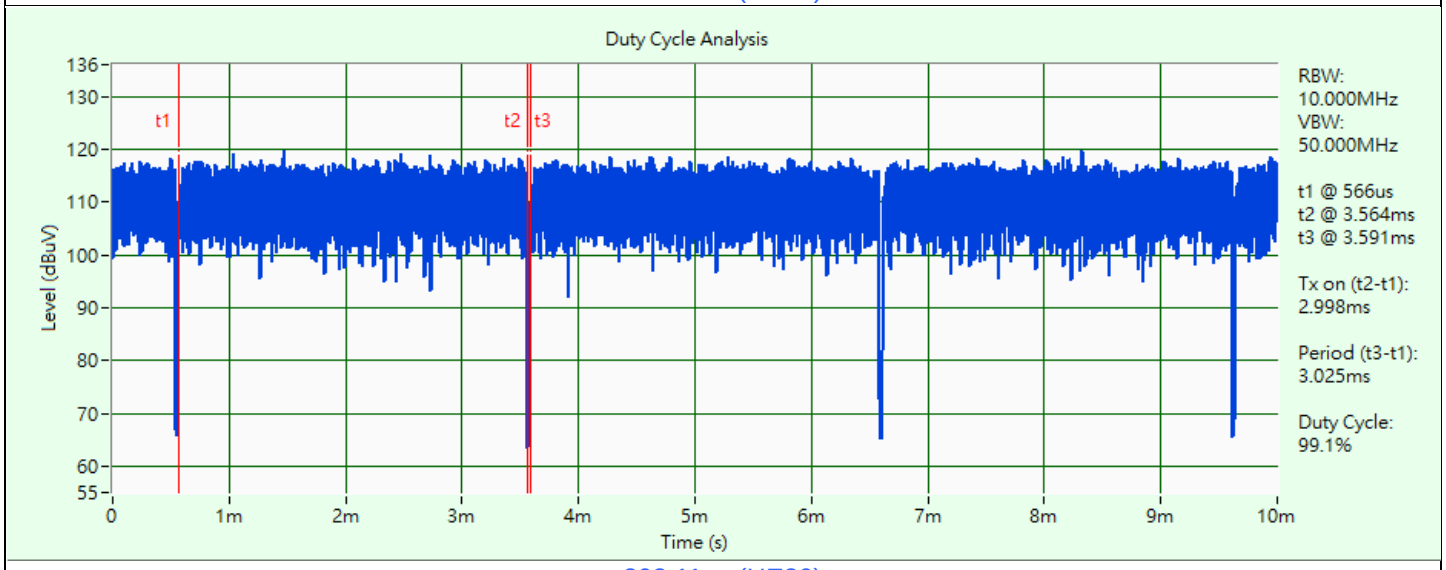
802.11a



802.11ax (HE20)



802.11ax (HE40)

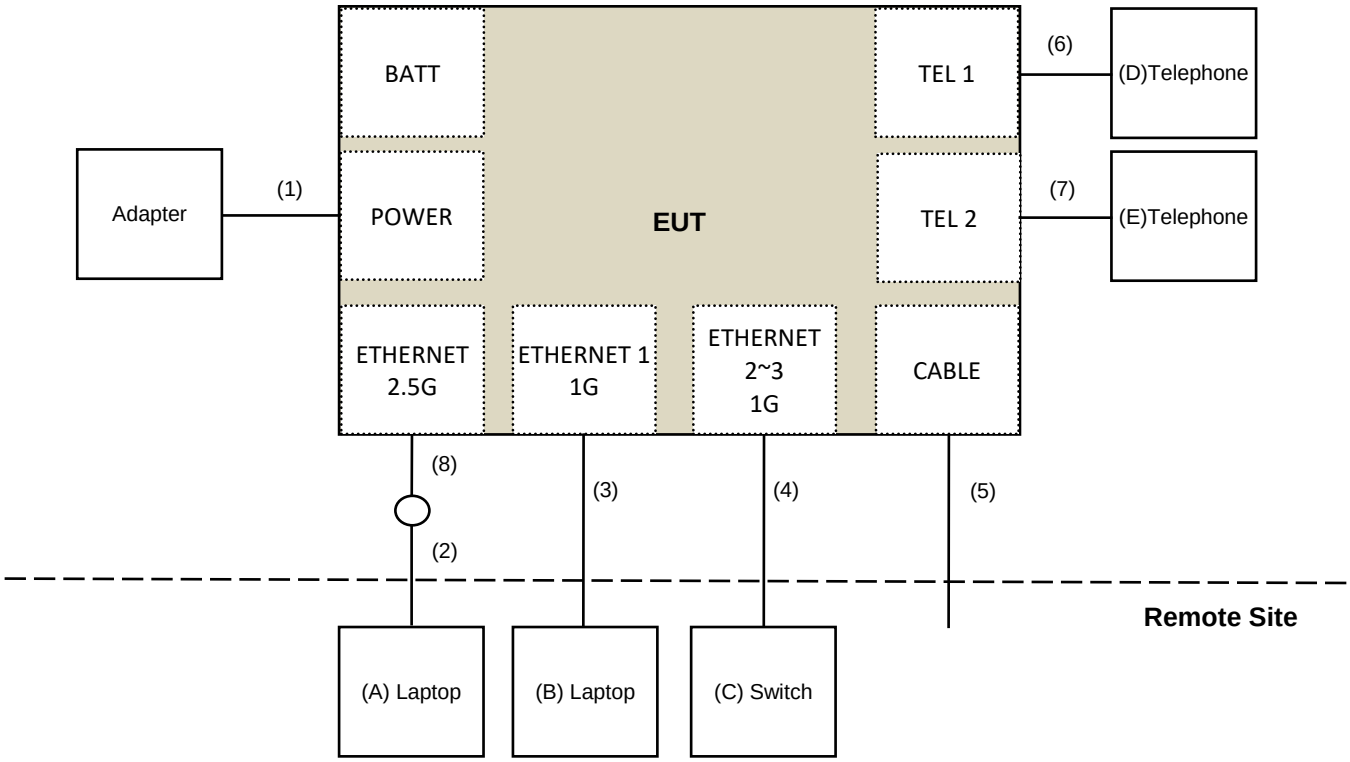


802.11ax (HE80)

3.6 Test Program Used and Operation Descriptions

Controlling software (AccessMTool Version 3.2.1.4) 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	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	N/A	Provided by Lab
B	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	N/A	Provided by Lab
C	Switch	D-Link	DGS-1005D	DR8WC92000523	N/A	Provided by Lab
D	Telephone	WONDER	WD-303	3C166GA02994	DoC	Provided by Lab
E	Telephone	WONDER	WD-303	1C166JA01766	DoC	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	1.5	No	0	Supplied by applicant
2	RJ45 Cable	1	10	No	0	Provided by Lab
3	RJ45 Cable	1	10	No	0	Provided by Lab
4	RJ45 Cable	2	10	No	0	Provided by Lab
5	Coaxial Cable	1	10	Yes	0	Provided by Lab
6	RJ11 Cable	1	10	No	0	Provided by Lab
7	RJ11 Cable	1	10	No	0	Provided by Lab
8	RJ45 Cable	1	1.5	No	0	Supplied by applicant

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
Power Meter Anritsu	ML2495A	1529002	2022/6/22	2023/6/21
Pulse Power Sensor Anritsu	MA2411B	1726434	2022/6/22	2023/6/21
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/10/28

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112409	2022/3/11	2023/3/10

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/10/28

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 GOOD WILL	6905S	1991551	N/A	N/A
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112409	2022/3/11	2023/3/10
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2022/1/14	2023/1/13
True RMS Clamp Meter Fluke	325	31130711WS	2022/6/9	2023/6/8

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/10/28

4.6 AC Power Conducted Emissions

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

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2022/11/19

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	2022/9/14	2023/9/13
LOOP ANTENNA Electro-Metrics	EM-6879	264	2022/3/18	2023/3/17
Pre_Amplifier Agilent	8447D	2944A10636	2022/3/19	2023/3/18
Pre_Amplifier Mini-Circuits	ZFL-1000VH2	QA0838008	2022/10/4	2023/10/3
RF Coaxial Cable COMMATE/PEWC	8D	966-3-2	2022/2/26	2023/2/25
		966-3-3	2022/2/26	2023/2/25
		966-4-1	2022/3/8	2023/3/7
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/1/6	2023/1/5
		LOOPCAB-002	2022/1/6	2023/1/5
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2022/4/26	2023/4/25
Test Receiver KEYSIGHT	N9038A	MY59050100	2022/6/20	2023/6/19
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-361	2022/10/21	2023/10/20

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/11/18

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9170	9170-739	2021/11/14	2022/11/13
	BBHA9120-D	9120D-406	2021/11/14	2022/11/13
Pre_Amplifier EMCI	EMC12630SE	980384	2022/1/10	2023/1/9
	EMC184045SE	980387	2022/1/10	2023/1/9
RF Cable EMCI	EMC104-SM-SM-6000	210201	2022/5/10	2023/5/9
RF Cable-Frequency range: 1-40GHz EMCI	EMC102-KM-KM-1200	160924	2022/1/10	2023/1/9
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2022/3/8	2023/3/7
	EMC104-SM-SM-1500	180504	2022/4/25	2023/4/24
	EMC104-SM-SM-2000	180601	2022/6/6	2023/6/5
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2022/4/26	2023/4/25
Test Receiver KEYSIGHT	N9038A	MY59050100	2022/6/20	2023/6/19

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/8/9 ~ 2022/9/2

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	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

<table>
<tr><th colspan="2">Applicable To</th><th colspan="2">Limit</th></tr>
<tr><td colspan="2" rowspan="2">789033 D02 General UNII Test Procedure New Rules v02r01</td><td colspan="2">Field Strength at 3 m</td></tr>
<tr><td>PK: 74 (dBµV/m)</td><td>AV: 54 (dBµV/m)</td></tr>
<tr><th>Frequency Band</th><th>Applicable To</th><th>EIRP Limit</th><th>Equivalent Field Strength at 3 m</th></tr>
<tr><td>5150~5250 MHz</td><td>15.407(b)(1)</td><td rowspan="3">PK: -27 (dBm/MHz)</td><td rowspan="3">PK: 68.2 (dBµV/m)</td></tr>
<tr><td>5250~5350 MHz</td><td>15.407(b)(2)</td></tr>
<tr><td>5470~5725 MHz</td><td>15.407(b)(3)</td></tr>
<tr><td>5725~5850 MHz</td><td>15.407(b)(4)(i)</td><td>PK: -27 (dBm/MHz) *1
PK: 10 (dBm/MHz) *2
PK: 15.6 (dBm/MHz) *3
PK: 27 (dBm/MHz) *4</td><td>PK: 68.2 (dBµV/m) *1
PK: 105.2 (dBµV/m) *2
PK: 110.8 (dBµV/m) *3
PK: 122.2 (dBµV/m) *4</td></tr>
<tr><td colspan="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.</td></tr>
</table>

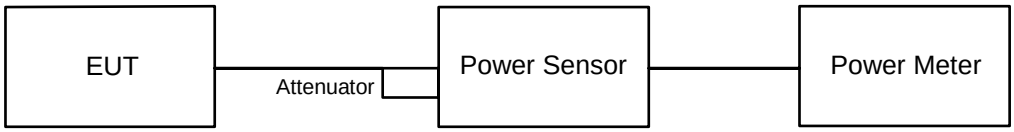
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

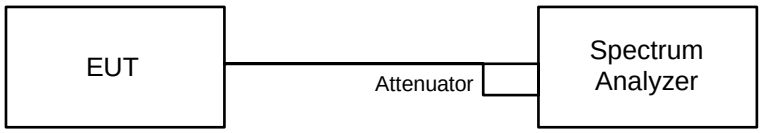


6.1.2 Test Procedure

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

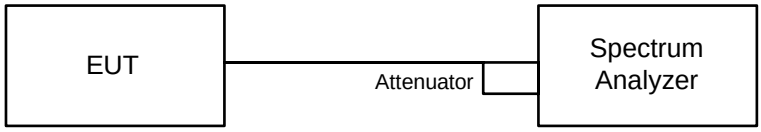
a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
c. Sweep points ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
d. Sweep time = auto, trigger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

For specified measurement bandwidth 500 kHz:
Method SA-1

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
c. 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 BWCF = 10log(500 kHz/300 kHz)
d. Sweep points ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
e. Sweep time = auto, trigger set to “free run”.
f. Trace average at least 100 traces in power averaging mode.
g. Record the max value

6.3 6 dB Bandwidth

6.3.1 Test Setup

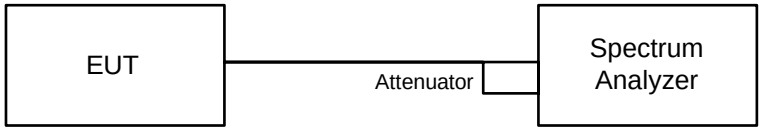


6.3.2 Test Procedure

a. Set resolution bandwidth (RBW) = 100 kHz.
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. 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

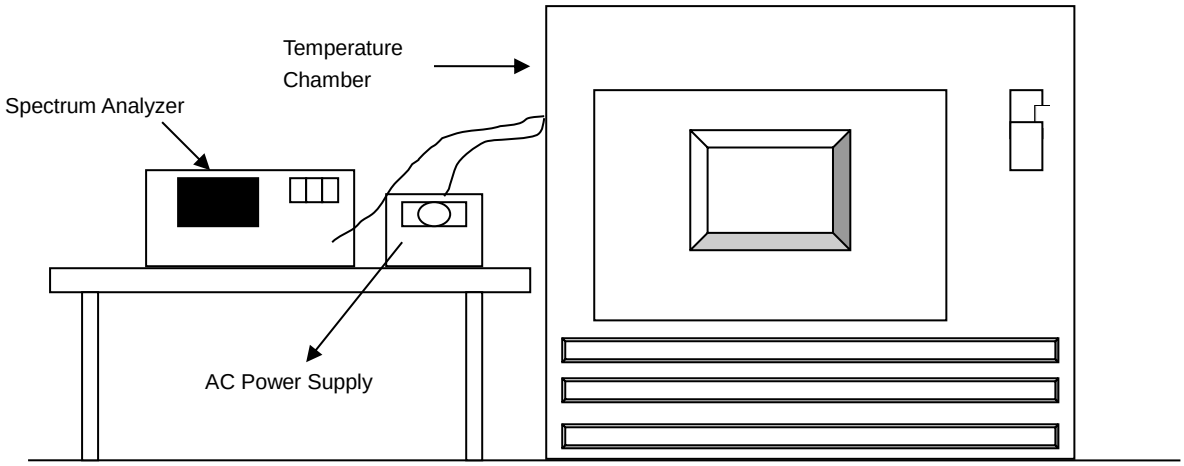


6.4.2 Test Procedure

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

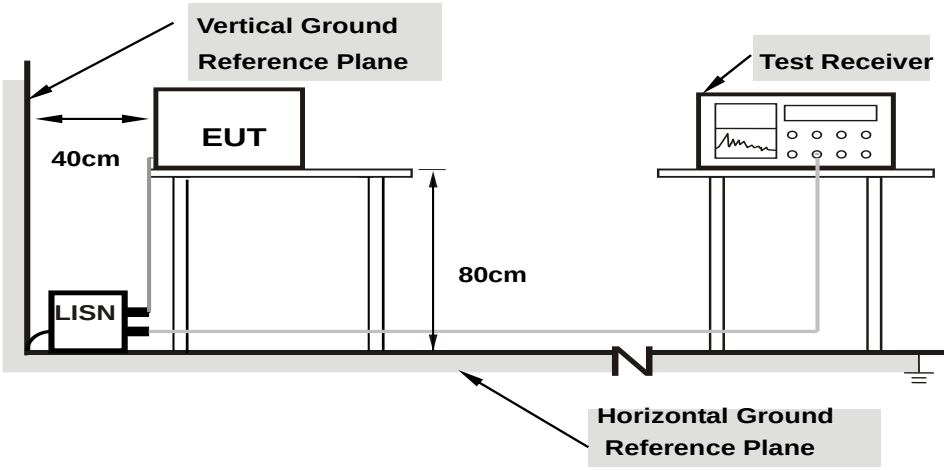


6.5.2 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. 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.
e. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
f. 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

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.

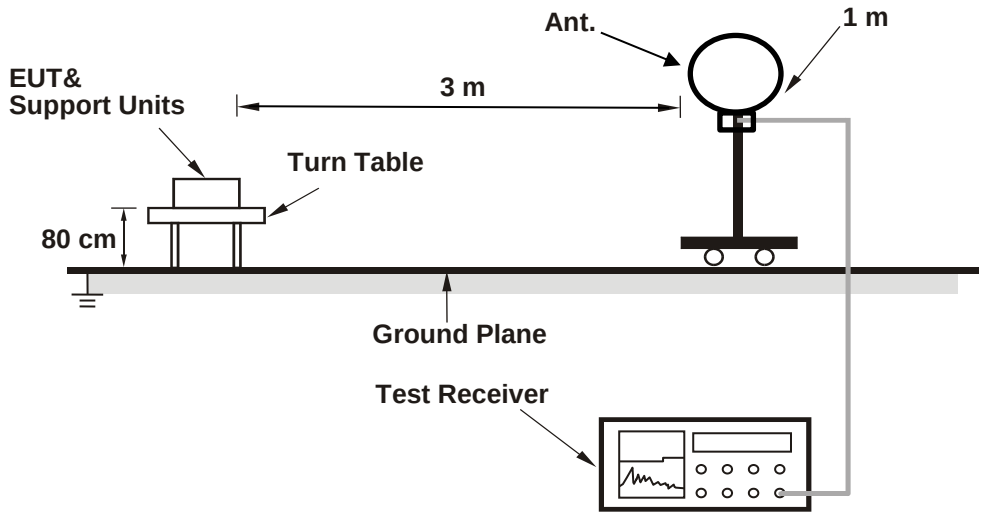
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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.

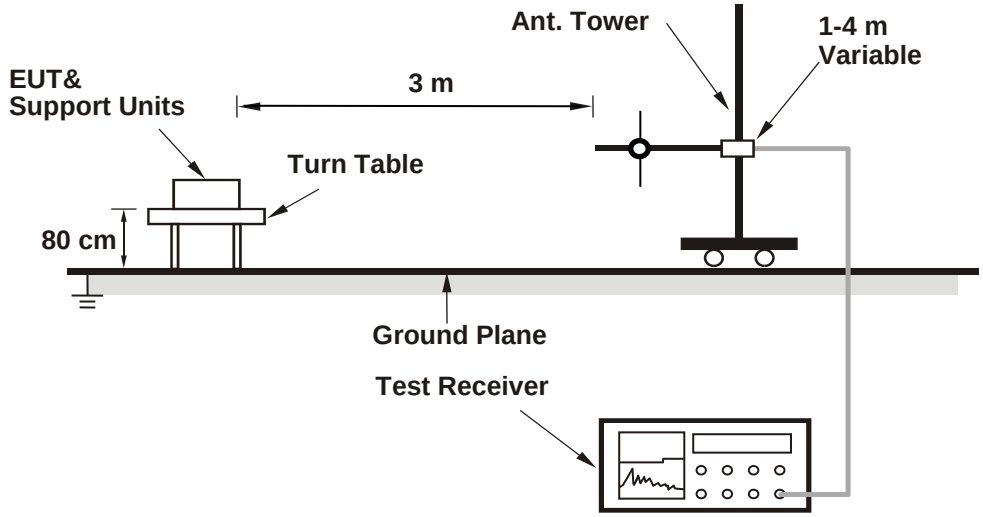
6.7 Unwanted Emissions below 1 GHz

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.

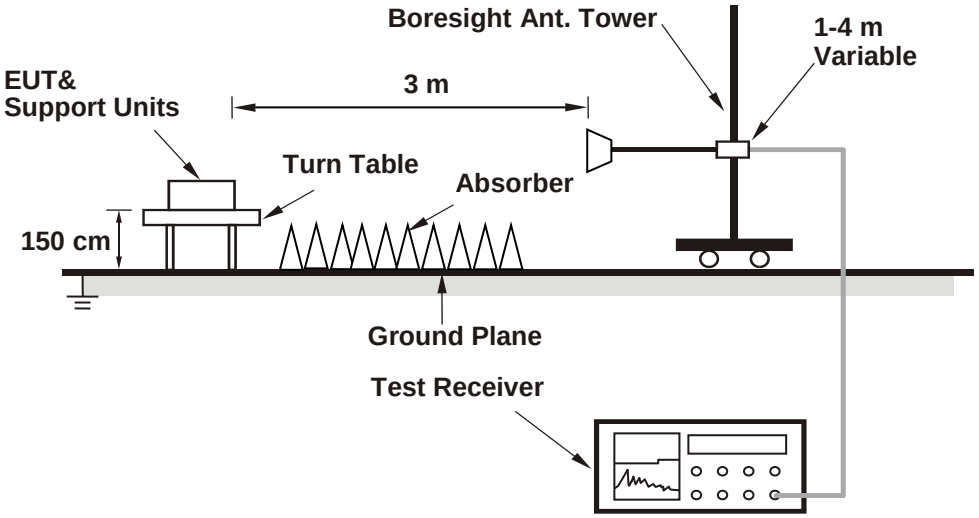
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

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

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:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	John Peng

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	Chain 2	Chain 3				
36	5180	20.61	20.08	20.77	20.33	444.233	26.48	30	Pass
40	5200	20.54	20.06	20.68	20.25	437.506	26.41	30	Pass
48	5240	20.19	19.71	20.46	20.15	412.7	26.16	30	Pass
149	5745	22.32	22.61	23.03	22.47	730.511	28.64	30	Pass
157	5785	22.44	22.64	22.73	22.27	715.197	28.54	30	Pass
165	5825	21.37	20.98	21.67	20.68	526.245	27.21	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the directional gain is 3.79 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 3.96 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	20.28	19.60	21.01	19.92	422.218	26.26	30	Pass
40	5200	20.89	19.69	20.69	19.89	430.573	26.34	30	Pass
48	5240	20.64	20.13	20.53	20.34	440.039	26.43	30	Pass
149	5745	22.30	22.65	22.93	22.41	724.418	28.60	30	Pass
157	5785	22.44	22.56	22.70	22.28	710.943	28.52	30	Pass
165	5825	21.56	20.97	21.66	20.69	532.019	27.26	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the directional gain is 3.79 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 3.96 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	17.80	17.00	17.76	17.10	221.364	23.45	30	Pass
46	5230	21.23	21.19	21.08	20.95	516.946	27.13	30	Pass
151	5755	22.77	22.48	23.30	22.90	775.026	28.89	30	Pass
159	5795	22.92	22.20	23.09	22.83	757.414	28.79	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 3.79 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 3.96 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	16.91	16.35	17.41	16.62	193.243	22.86	30	Pass
155	5775	21.51	20.89	21.79	21.38	552.736	27.43	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 3.79 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 3.96 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	Chain 2	Chain 3				
36	5180	20.51	19.83	21.18	20.07	441.467	26.45	30	Pass
40	5200	21.13	19.87	20.86	20.13	451.706	26.55	30	Pass
48	5240	20.82	20.28	20.69	20.54	457.901	26.61	30	Pass
149	5745	22.51	22.81	23.14	22.58	756.42	28.79	30	Pass
157	5785	22.66	22.78	22.86	22.45	743.161	28.71	30	Pass
165	5825	21.78	21.17	21.82	20.91	556.944	27.46	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the directional gain is 3.79 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 3.96 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	Chain 2	Chain 3				
38	5190	18.03	17.16	17.99	17.30	232.186	23.66	30	Pass
46	5230	21.47	21.42	21.33	21.20	546.614	27.38	30	Pass
151	5755	22.96	22.70	23.48	23.12	811.865	29.09	30	Pass
159	5795	23.16	22.41	23.24	23.01	792.182	28.99	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 3.79 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 3.96 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	Chain 2	Chain 3				
42	5210	17.15	16.52	17.59	16.81	202.14	23.06	30	Pass
155	5775	21.70	21.13	22.01	21.61	581.361	27.64	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 3.79 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 3.96 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	20.01	19.33	20.67	19.61	394.027	25.96	26.51	Pass
40	5200	20.65	19.39	20.36	19.68	404.58	26.07	26.51	Pass
48	5240	20.33	19.80	20.19	20.04	408.791	26.12	26.51	Pass
149	5745	19.61	19.89	20.17	19.59	383.894	25.84	26.2	Pass
157	5785	19.66	19.81	19.93	19.64	378.635	25.78	26.2	Pass
165	5825	19.82	19.56	20.08	19.40	375.261	25.74	26.2	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20} + 10^{Chain3/20})^2$ / 4]
2. For U-NII-1, the directional gain is 9.49 dBi > 6 dBi, so the output power limit shall be reduced to 30-(9.49-6) = 26.51 dBm.
3. For U-NII-3, the directional gain is 9.8 dBi> 6 dBi, so the output power limit shall be reduced to 30-(9.8-6) = 26.2 dBm.

802.11ac (VHT40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	17.80	17.00	17.76	17.10	221.364	23.45	26.51	Pass
46	5230	20.18	20.15	19.97	19.95	405.913	26.08	26.51	Pass
151	5755	19.65	19.38	20.19	19.82	379.365	25.79	26.2	Pass
159	5795	19.83	19.04	19.96	19.68	368.309	25.66	26.2	Pass

Notes:

1. Directional gain = 10 log[($10^{Chain0/20}$ + $10^{Chain1/20}$ + $10^{Chain2/20}$ + $10^{Chain3/20}$)^2 / 4]
2. For U-NII-1, the directional gain is 9.49 dBi > 6 dBi, so the output power limit shall be reduced to 30-(9.49-6) = 26.51 dBm.
3. For U-NII-3, the directional gain is 9.8 dBi> 6 dBi, so the output power limit shall be reduced to 30-(9.8-6) = 26.2 dBm.

802.11ac (VHT80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	16.91	16.35	17.41	16.62	193.243	22.86	26.51	Pass
155	5775	19.91	19.33	20.21	19.82	384.547	25.85	26.2	Pass

Notes:

1. Directional gain = 10 log[($10^{Chain0/20}$ + $10^{Chain1/20}$ + $10^{Chain2/20}$ + $10^{Chain3/20}$)^2 / 4]
2. For U-NII-1, the directional gain is 9.49 dBi > 6 dBi, so the output power limit shall be reduced to 30-(9.49-6) = 26.51 dBm.
3. For U-NII-3, the directional gain is 9.8 dBi> 6 dBi, so the output power limit shall be reduced to 30-(9.8-6) = 26.2 dBm.

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	20.24	19.58	20.92	19.85	416.664	26.20	26.51	Pass
40	5200	20.89	19.63	20.61	19.90	427.381	26.31	26.51	Pass
48	5240	20.57	20.04	20.43	20.26	431.528	26.35	26.51	Pass
149	5745	19.85	20.12	20.41	19.83	405.469	26.08	26.2	Pass
157	5785	19.89	20.04	20.17	19.79	397.696	26.00	26.2	Pass
165	5825	20.06	19.79	20.32	19.64	396.362	25.98	26.2	Pass

Notes:

1. Directional gain = 10 log[($10^{Chain0/20}$ + $10^{Chain1/20}$ + $10^{Chain2/20}$ + $10^{Chain3/20}$)^2 / 4]
2. For U-NII-1, the directional gain is 9.49 dBi > 6 dBi, so the output power limit shall be reduced to 30-(9.49-6) = 26.51 dBm.
3. For U-NII-3, the directional gain is 9.8 dBi> 6 dBi, so the output power limit shall be reduced to 30-(9.8-6) = 26.2 dBm.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	18.03	17.16	17.99	17.30	232.186	23.66	26.51	Pass
46	5230	20.45	20.37	20.24	20.16	429.245	26.33	26.51	Pass
151	5755	19.89	19.62	20.43	20.04	400.454	26.03	26.2	Pass
159	5795	20.06	19.29	20.17	19.92	388.476	25.89	26.2	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20} + 10^{Chain3/20})^2$ / 4]
2. For U-NII-1, the directional gain is 9.49 dBi > 6 dBi, so the output power limit shall be reduced to 30-(9.49-6) = 26.51 dBm.
3. For U-NII-3, the directional gain is 9.8 dBi> 6 dBi, so the output power limit shall be reduced to 30-(9.8-6) = 26.2 dBm.

802.11ax (HE80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	17.15	16.52	17.59	16.81	202.14	23.06	26.51	Pass
155	5775	20.14	19.57	20.44	20.05	405.67	26.08	26.2	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20} + 10^{Chain3/20})^2$ / 4]
2. For U-NII-1, the directional gain is 9.49 dBi > 6 dBi, so the output power limit shall be reduced to 30-(9.49-6) = 26.51 dBm.
3. For U-NII-3, the directional gain is 9.8 dBi> 6 dBi, so the output power limit shall be reduced to 30-(9.8-6) = 26.2 dBm.

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	John Peng

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	7.26	7.16	7.08	6.61	13.06	13.51	Pass
40	5200	7.25	7.08	7.21	6.54	13.05	13.51	Pass
48	5240	7.40	7.09	7.07	6.49	13.05	13.51	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[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20} + 10^{Chain3/20})^2$ / 4]
3. For U-NII-1, the directional gain is 9.49 dBi > 6dBi, so the power density limit shall be reduced to 17-(9.49-6) = 13.51 dBm/MHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	6.95	6.93	7.06	6.71	12.93	13.51	Pass
40	5200	7.47	7.37	7.14	6.84	13.23	13.51	Pass
48	5240	7.48	7.21	7.12	6.93	13.21	13.51	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[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20} + 10^{Chain3/20})^2$ / 4]
3. For U-NII-1, the directional gain is 9.49 dBi > 6dBi, so the power density limit shall be reduced to 17-(9.49-6) = 13.51 dBm/MHz.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
38	5190	1.55	1.38	1.69	1.59	7.57	13.51	Pass
46	5230	5.46	5.25	5.23	5.24	11.32	13.51	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[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20} + 10^{Chain3/20})^2$ / 4]
3. For U-NII-1, the directional gain is 9.49 dBi > 6dBi, so the power density limit shall be reduced to 17-(9.49-6) = 13.51 dBm/MHz.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
42	5210	-1.51	-2.17	-1.48	-2.61	4.10	13.51	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[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20} + 10^{Chain3/20})^2$ / 4]
3. For U-NII-1, the directional gain is 9.49 dBi > 6dBi, so the power density limit shall be reduced to 17-(9.49-6) = 13.51 dBm/MHz.

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	4.79	5.31	5.18	4.53	10.98	13.20	26.2	Pass
157	5785	4.73	5.16	4.99	4.70	10.92	13.14	26.2	Pass
165	5825	3.32	4.08	4.05	3.91	9.87	12.09	26.2	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[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20} + 10^{Chain3/20})^2$ / 4]
3. For U-NII-3, the directional gain is 9.8 dBi > 6 dBi, so the power density limit shall be reduced to 30-(9.8-6) = 26.2 dBm/500kHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	4.08	4.57	4.57	3.92	10.32	12.54	26.2	Pass
157	5785	3.99	4.60	4.29	4.07	10.26	12.48	26.2	Pass
165	5825	2.73	3.23	3.44	3.33	9.21	11.43	26.2	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[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20} + 10^{Chain3/20})^2$ / 4]
3. For U-NII-3, the directional gain is 9.8 dBi > 6 dBi, so the power density limit shall be reduced to 30-(9.8-6) = 26.2 dBm/500kHz.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
151	5755	1.69	1.47	1.88	1.49	7.66	9.88	26.2	Pass
159	5795	1.61	1.44	1.72	1.82	7.67	9.89	26.2	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$^{Chain0/20}$ + 10$^{Chain1/20}$ + 10$^{Chain2/20}$ + 10$^{Chain3/20}$)^2 / 4]
3. For U-NII-3, the directional gain is 9.8 dBi > 6 dBi, so the power density limit shall be reduced to 30-(9.8-6) = 26.2 dBm/500kHz.

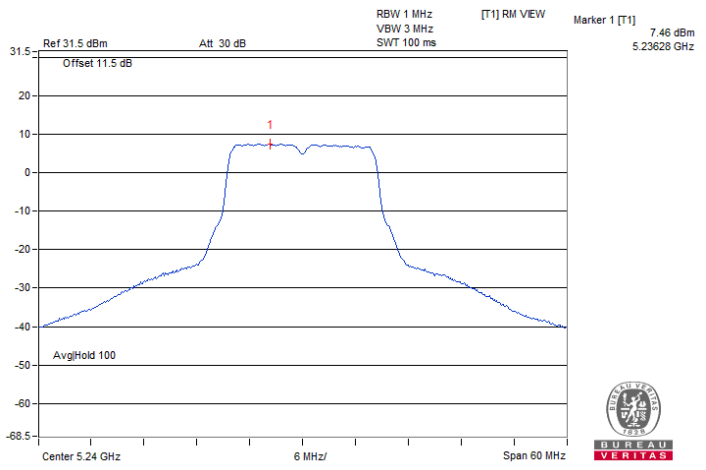
802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
155	5775	-2.71	-2.64	-2.37	-2.68	3.42	5.64	26.2	Pass

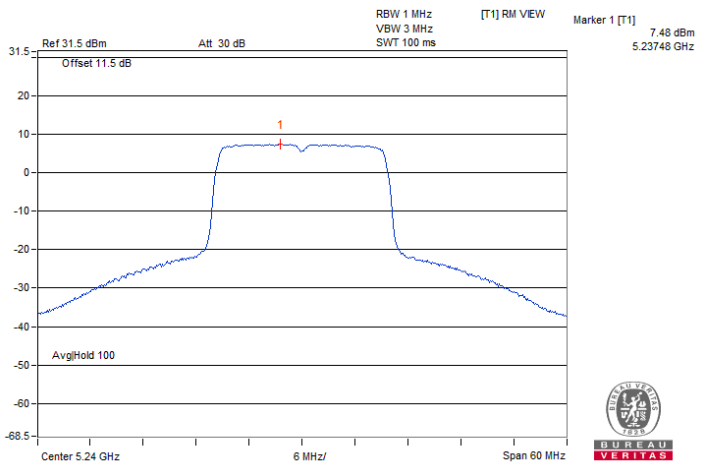
Notes:

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$^{Chain0/20}$ + 10$^{Chain1/20}$ + 10$^{Chain2/20}$ + 10$^{Chain3/20}$)^2 / 4]
3. For U-NII-3, the directional gain is 9.8 dBi > 6 dBi, so the power density limit shall be reduced to 30-(9.8-6) = 26.2 dBm/500kHz.

Spectrum Plot of Maximum Value

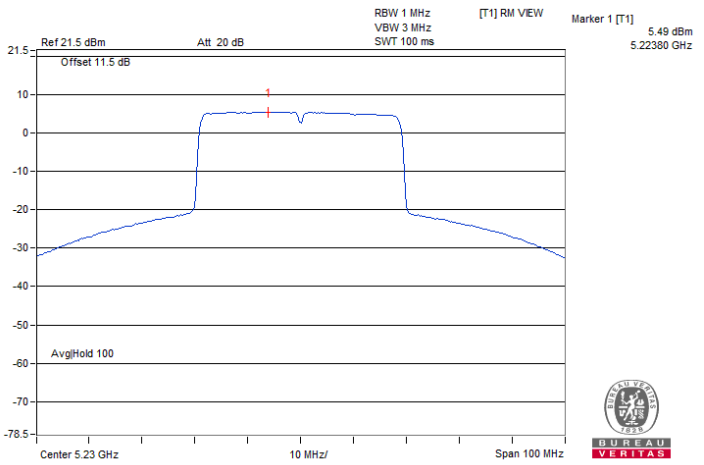


802.11a / Chain 0 : CH 48

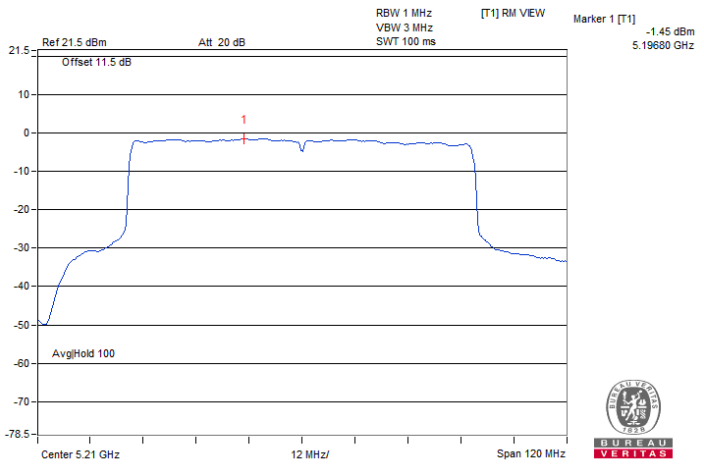


802.11ax (HE20) / Chain 0 : CH 48

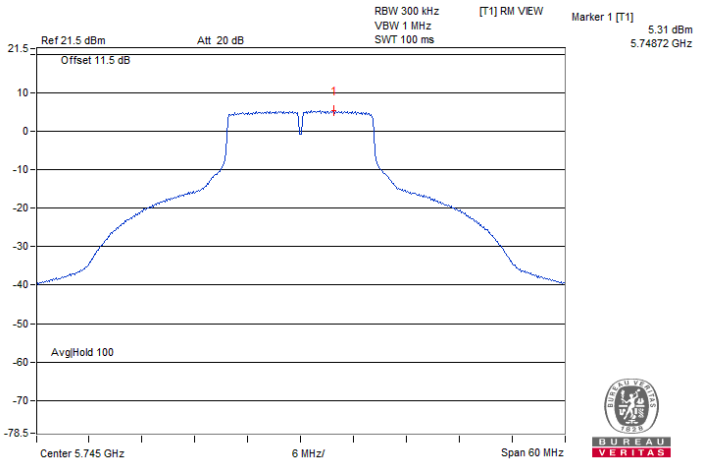
Spectrum Plot of Maximum Value



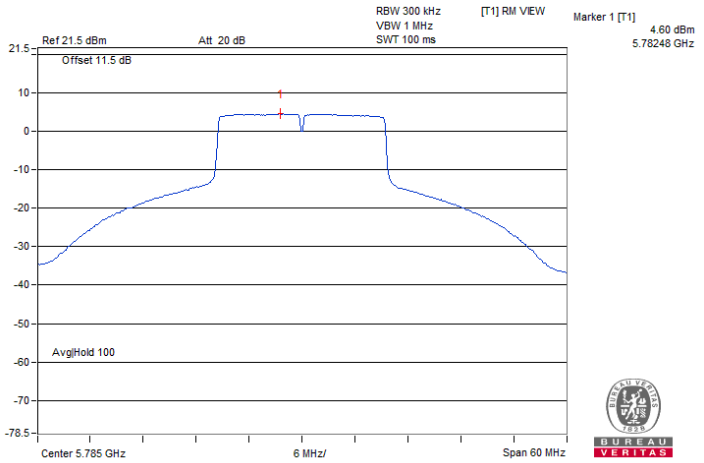
802.11ax (HE40) / Chain 0 : CH 46



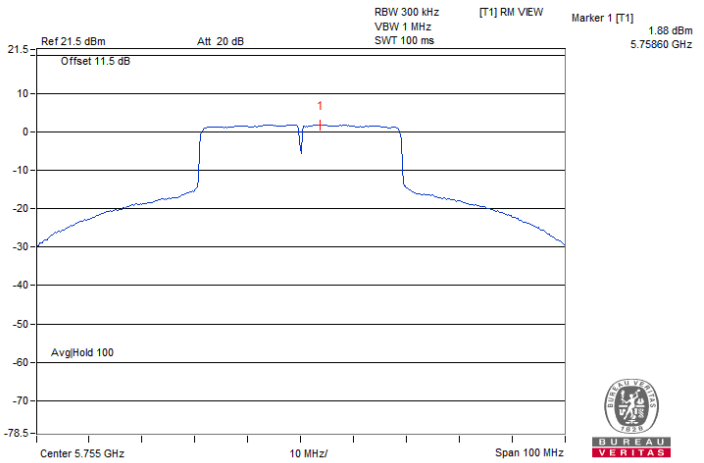
802.11ax (HE80) / Chain 2 : CH 42



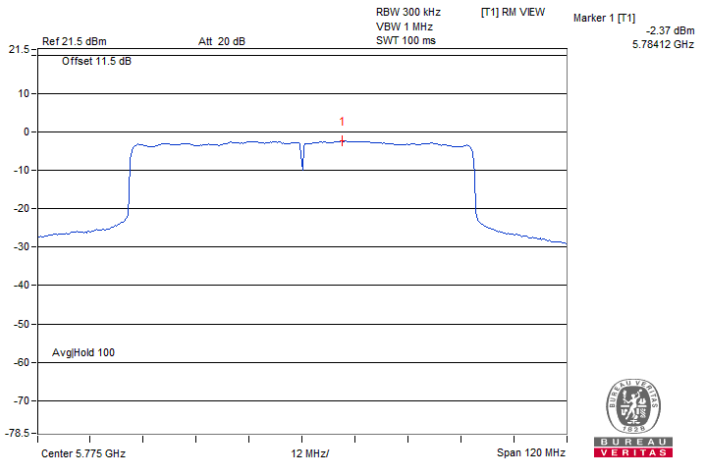
802.11a / Chain 1 : CH 149



802.11ax (HE20) / Chain 1 : CH 157



802.11ax (HE40) / Chain 2 : CH 151



802.11ax (HE80) / Chain 2 : CH 155

7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	John Peng

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	16.34	16.33	16.35	16.34	0.5	Pass
157	5785	16.33	16.33	16.32	16.31	0.5	Pass
165	5825	16.33	16.33	16.38	16.32	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	18.86	18.76	18.91	18.92	0.5	Pass
157	5785	18.87	18.66	18.80	18.95	0.5	Pass
165	5825	18.20	18.83	18.91	18.84	0.5	Pass

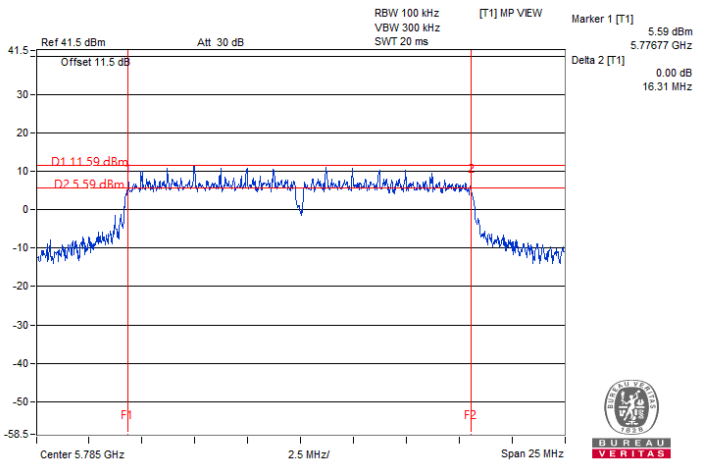
802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	37.91	37.64	37.85	37.70	0.5	Pass
159	5795	37.84	37.28	37.89	37.82	0.5	Pass

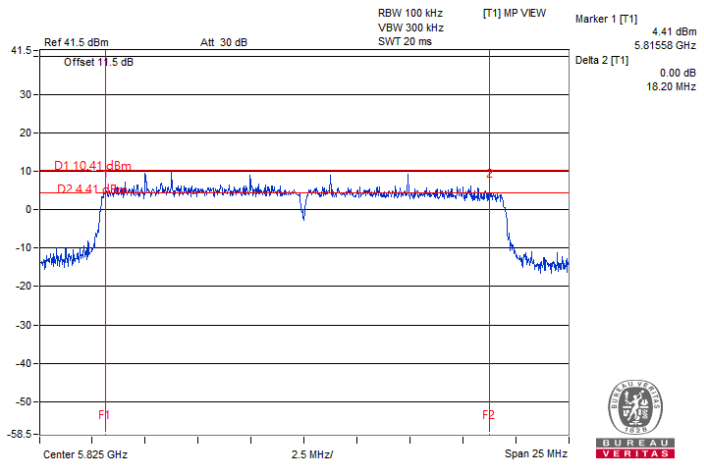
802.11ax (HE80)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	75.95	76.70	76.93	76.61	0.5	Pass

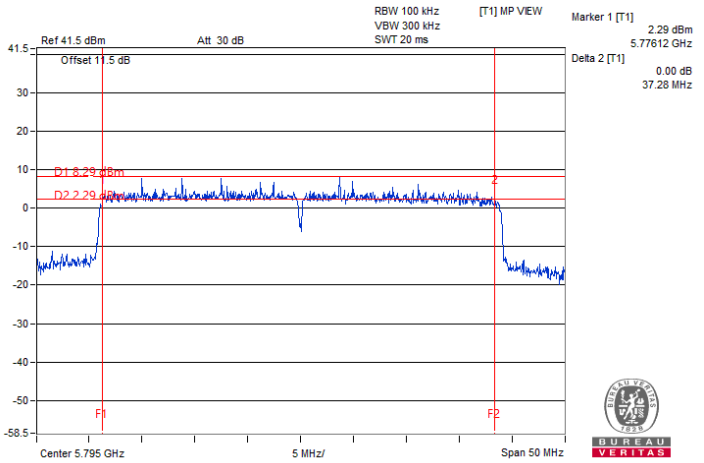
Spectrum Plot of Minimum Value



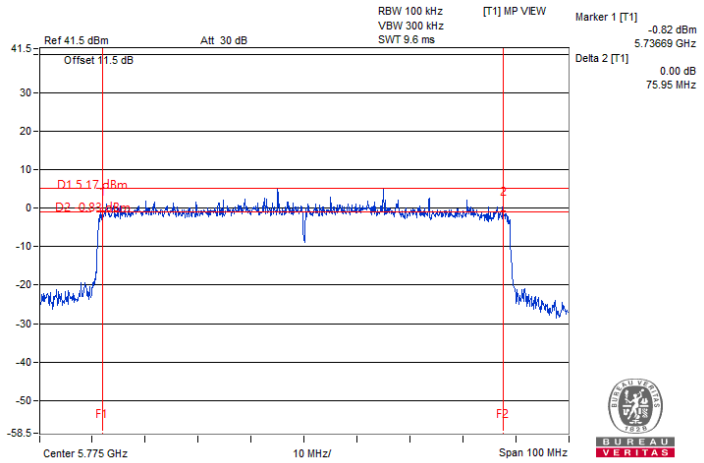
802.11a / Chain 3 : CH 157



802.11ax (HE20) / Chain 0 : CH 165



802.11ax (HE40) / Chain 1 : CH 159



802.11ax (HE80) / Chain 0 : CH 155

7.4 Occupied Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	John Peng

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	17.10	17.10	16.98	17.04
40	5200	17.04	17.04	16.92	16.92
48	5240	16.86	16.86	16.86	16.80
149	5745	17.76	20.58	20.28	19.98
157	5785	18.72	22.02	22.50	22.20
165	5825	19.92	23.76	23.52	22.32

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	19.14	19.08	19.20	19.14
40	5200	19.08	19.14	19.20	19.14
48	5240	19.08	19.14	19.14	19.14
149	5745	19.26	21.48	20.70	21.96
157	5785	19.56	24.06	24.06	23.04
165	5825	21.06	26.16	24.72	24.42

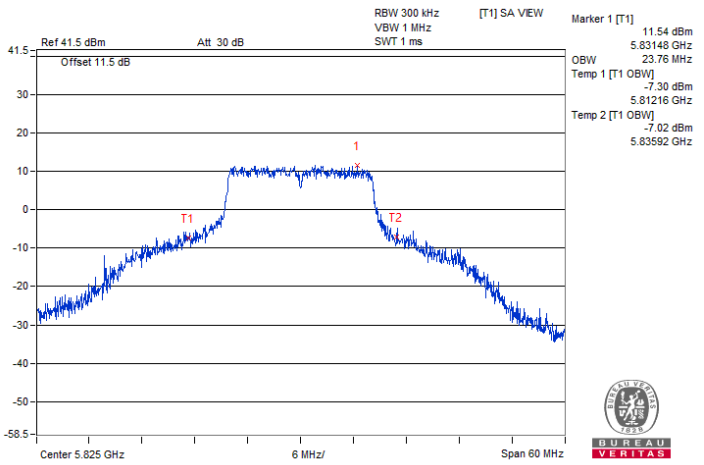
802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
38	5190	37.98	37.98	37.98	37.98
46	5230	38.16	38.04	38.16	38.04
151	5755	39.00	39.48	48.72	47.88
159	5795	40.50	41.58	44.46	48.06

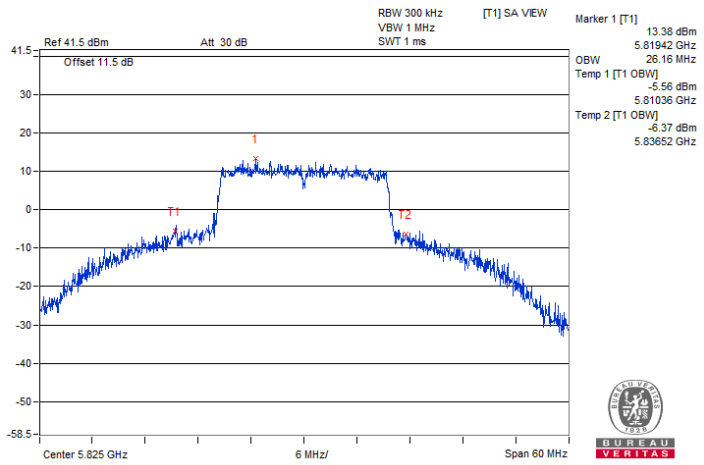
802.11ax (HE80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	77.28	77.28	77.28	77.52
155	5775	77.52	77.52	77.52	77.52

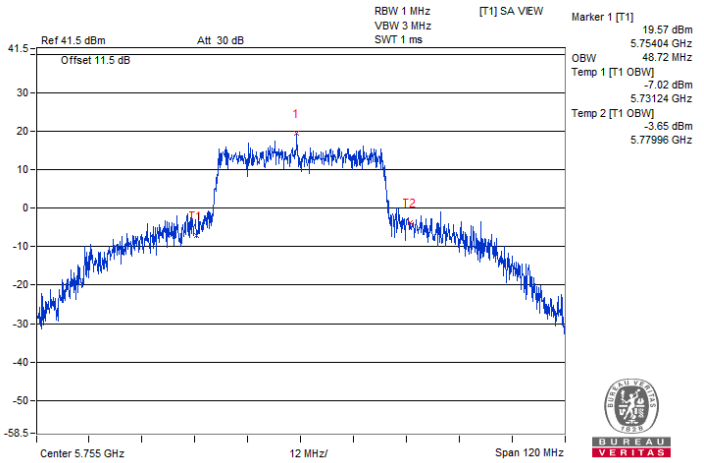
Spectrum Plot of Maximum Value



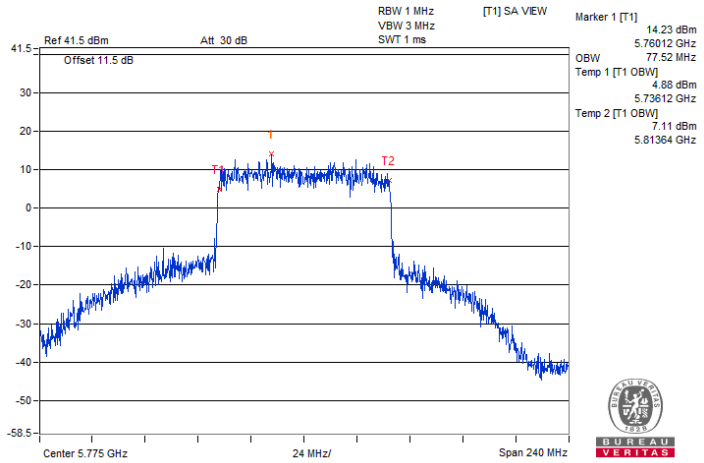
802.11a / Chain 1 : CH 165



802.11ax (HE20) / Chain 1 : CH 165



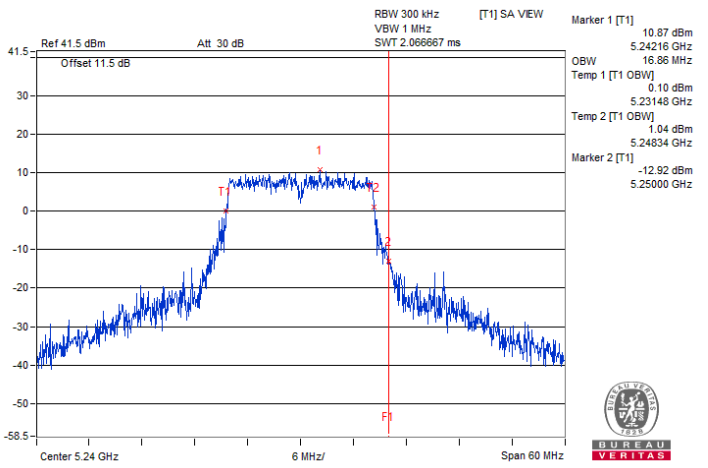
802.11ax (HE40) / Chain 2 : CH 151



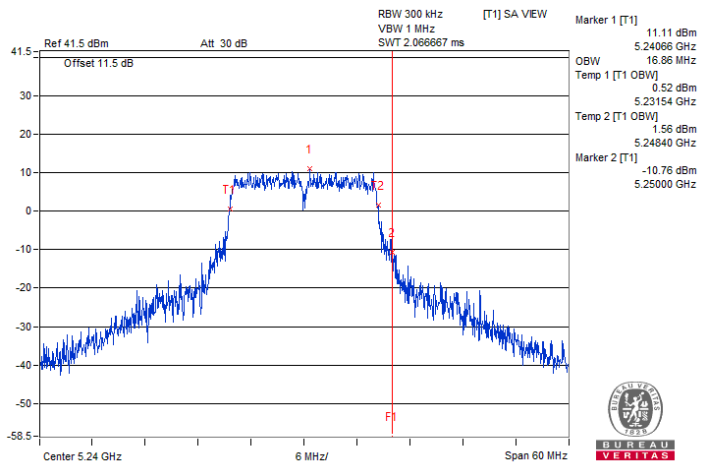
802.11ax (HE80) / Chain 0 : CH 155

Spectrum Plot for nearby DFS band

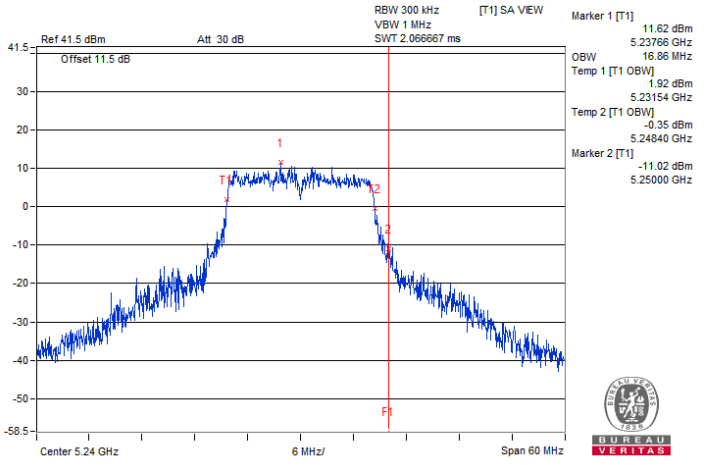
(DFS is required, if 99% OCP straddle into U-NII-2A)



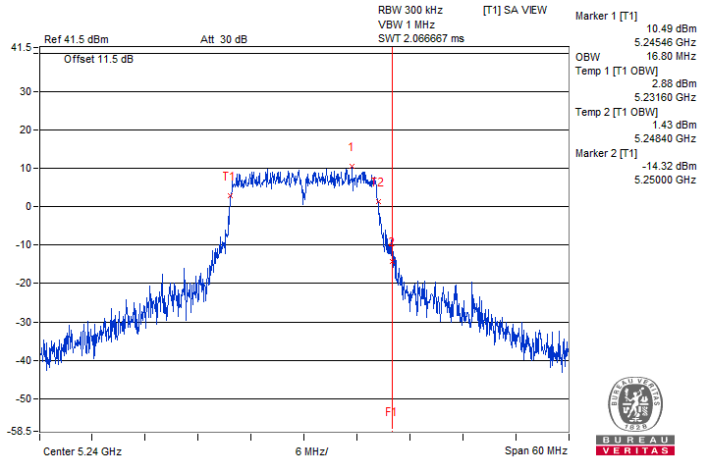
802.11a / Chain 0 : CH 48



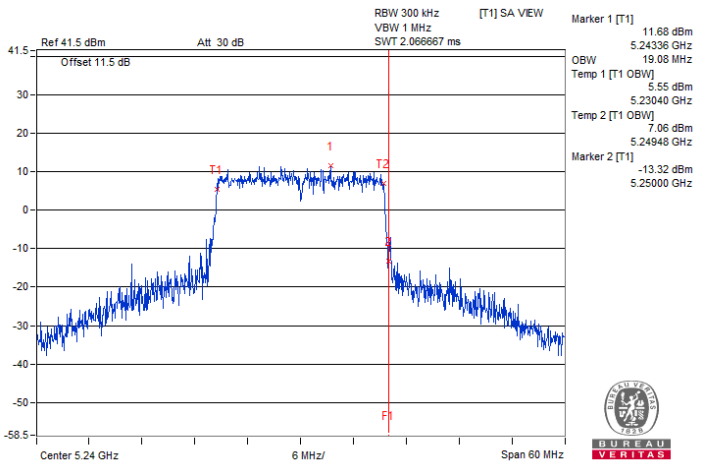
802.11a / Chain 1 : CH 48



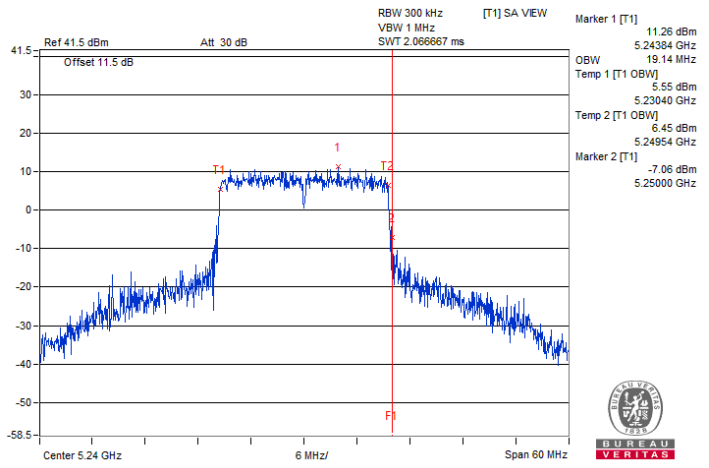
802.11a / Chain 2 : CH 48



802.11a / Chain 3 : CH 48



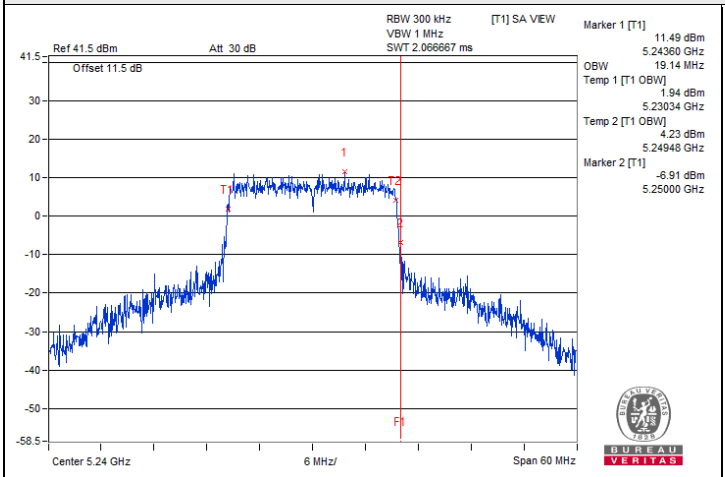
802.11ax (HE20) / Chain 0 : CH 48



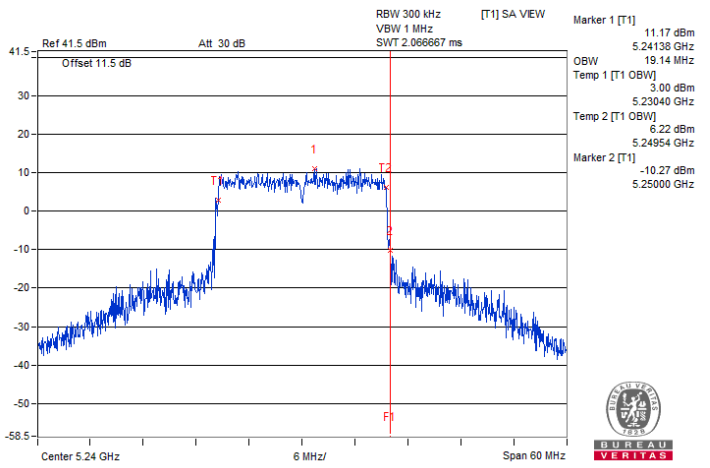
802.11ax (HE20) / Chain 1 : CH 48

Spectrum Plot for nearby DFS band

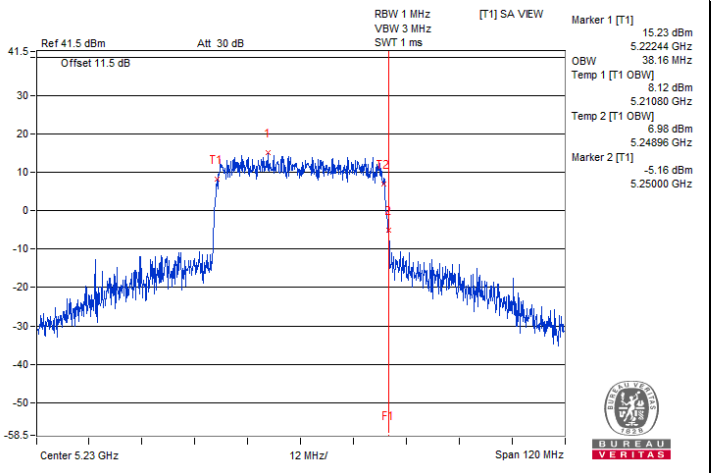
(DFS is required, if 99% OCP straddle into U-NII-2A)



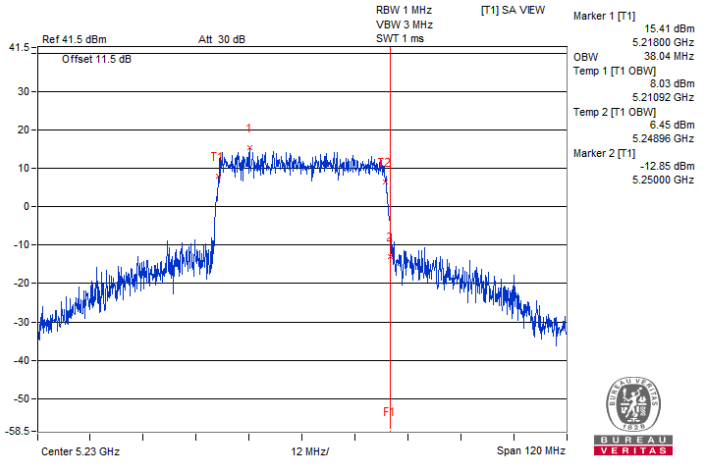
802.11ax (HE20) / Chain 2 : CH 48



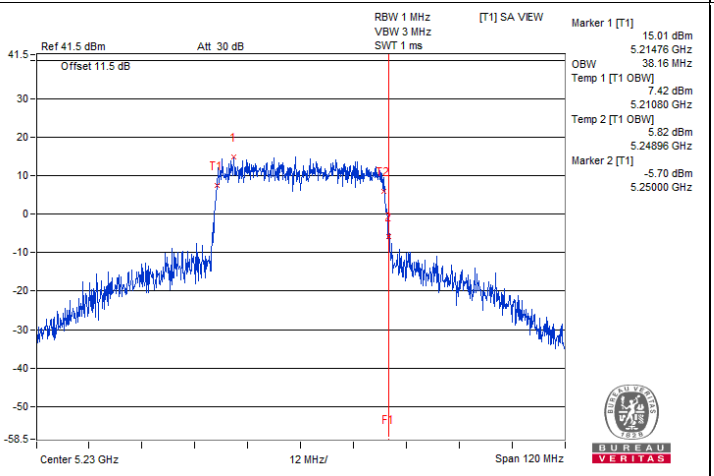
802.11ax (HE20) / Chain 3 : CH 48



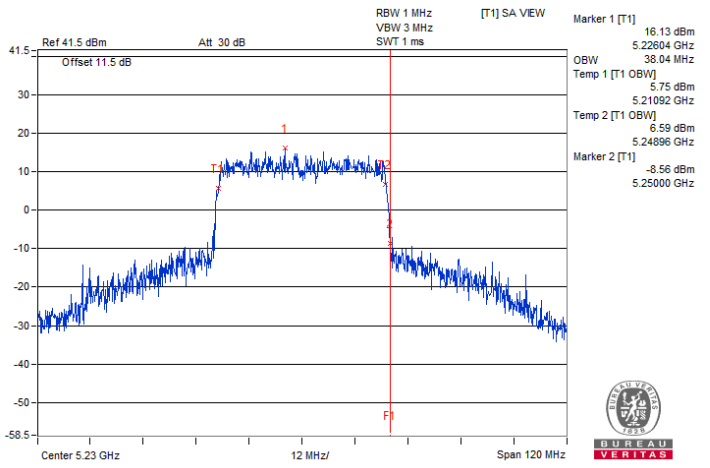
802.11ax (HE40) / Chain 0 : CH 46



802.11ax (HE40) / Chain 1 : CH 46



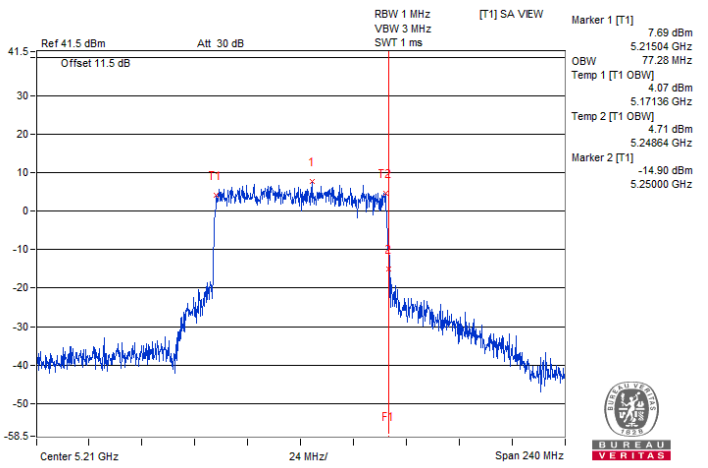
802.11ax (HE40) / Chain 2 : CH 46



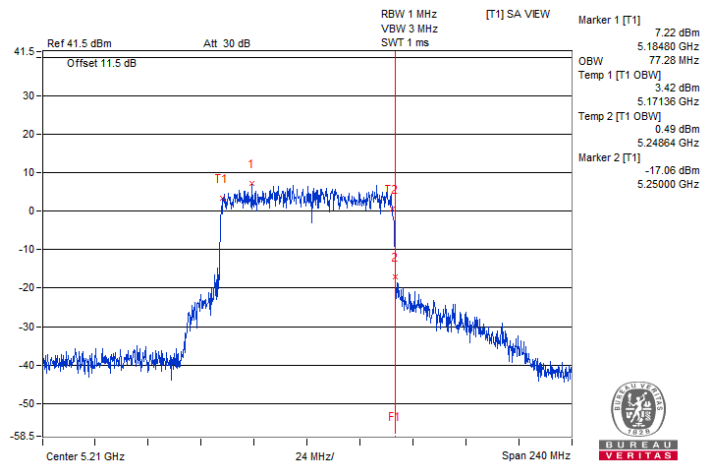
802.11ax (HE40) / Chain 3 : CH 46

Spectrum Plot for nearby DFS band

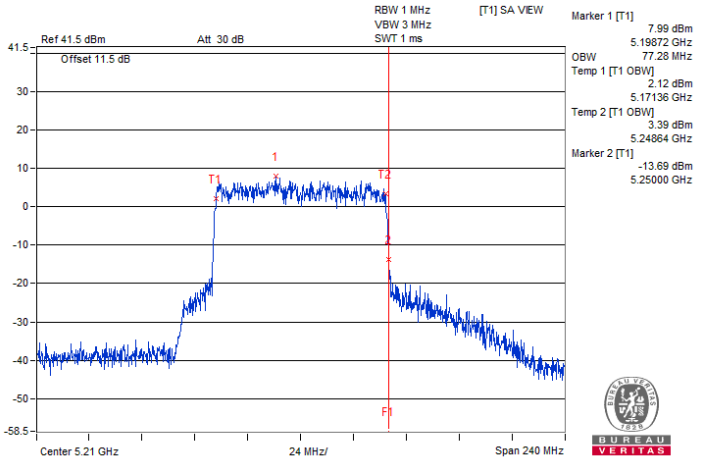
(DFS is required, if 99% OCP straddle into U-NII-2A)



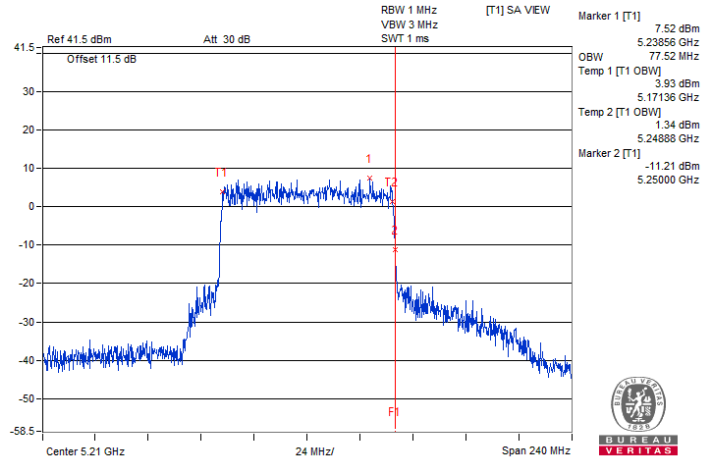
802.11ax (HE80) / Chain 0 : CH 42



802.11ax (HE80) / Chain 1 : CH 42



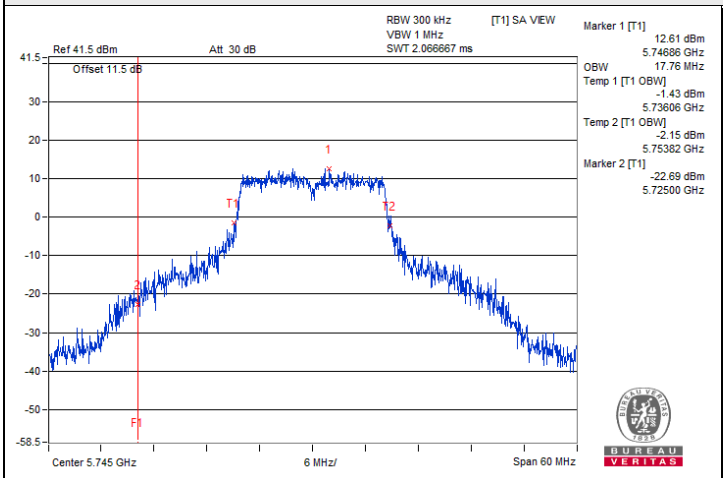
802.11ax (HE80) / Chain 2 : CH 42



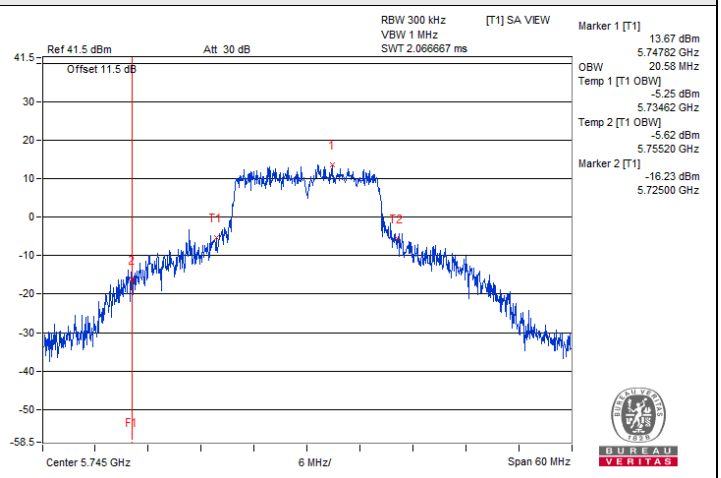
802.11ax (HE80) / Chain 3 : CH 42

Spectrum Plot for nearby DFS band

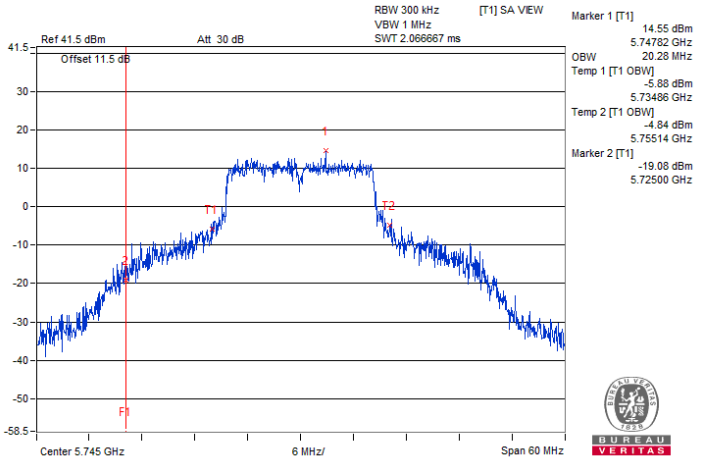
(DFS is required, if 99% OCP straddle into U-NII-2C)



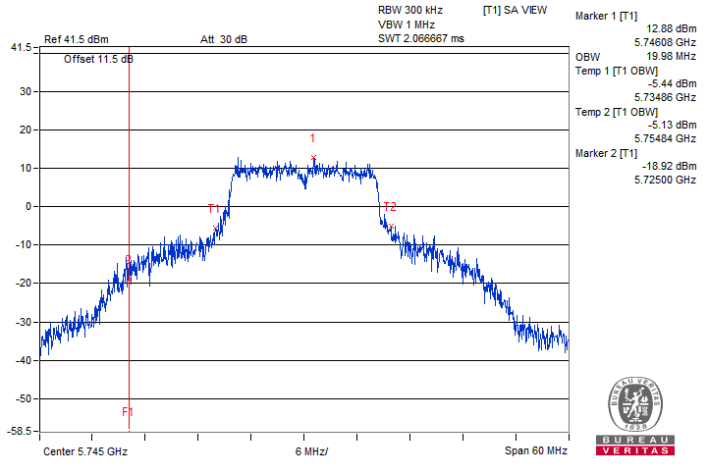
802.11a / Chain 0 : CH 149



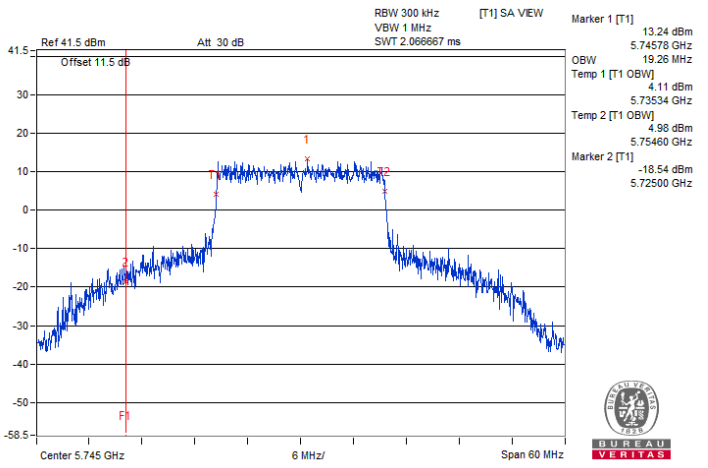
802.11a / Chain 1 : CH 149



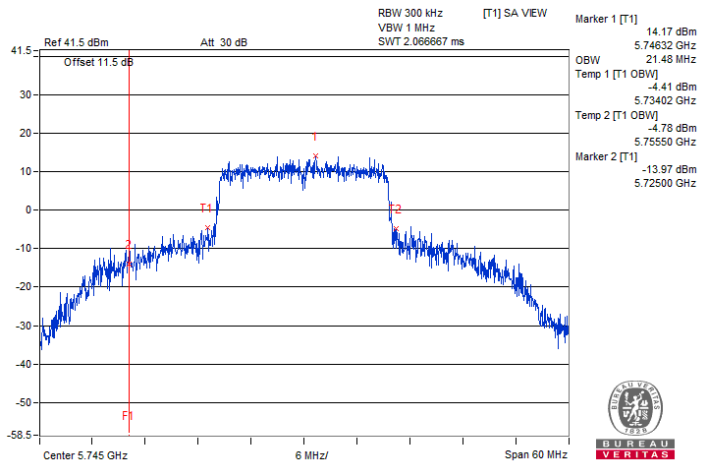
802.11a / Chain 2 : CH 149



802.11a / Chain 3 : CH 149



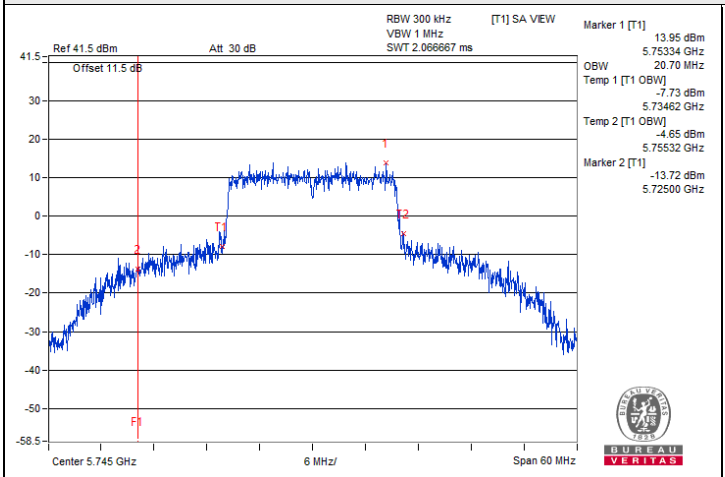
802.11ax (HE20) / Chain 0 : CH 149



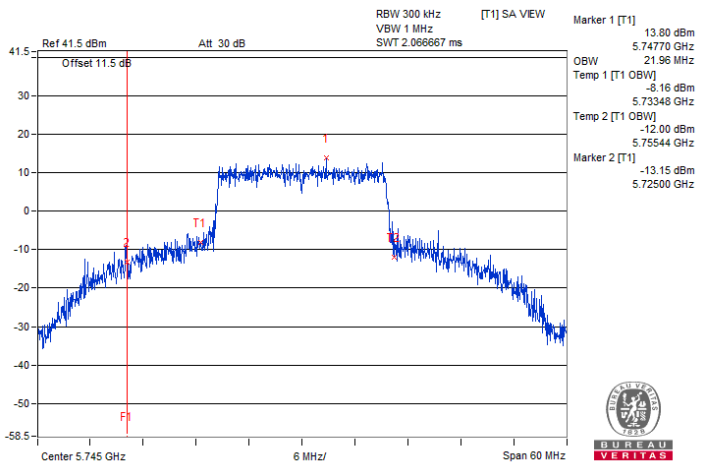
802.11ax (HE20) / Chain 1 : CH 149

Spectrum Plot for nearby DFS band

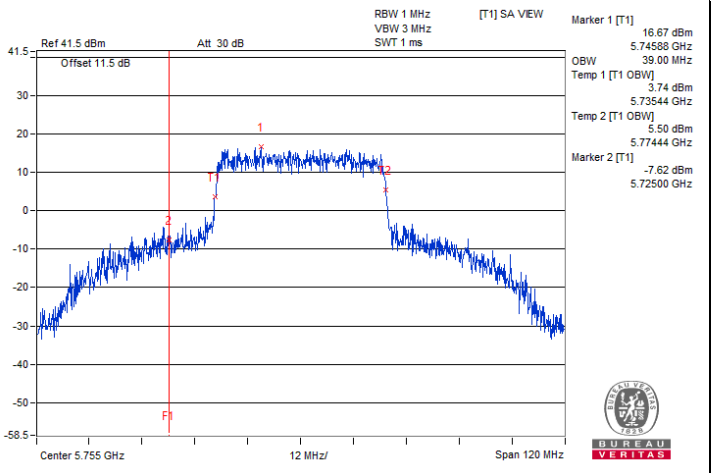
(DFS is required, if 99% OCP straddle into U-NII-2C)



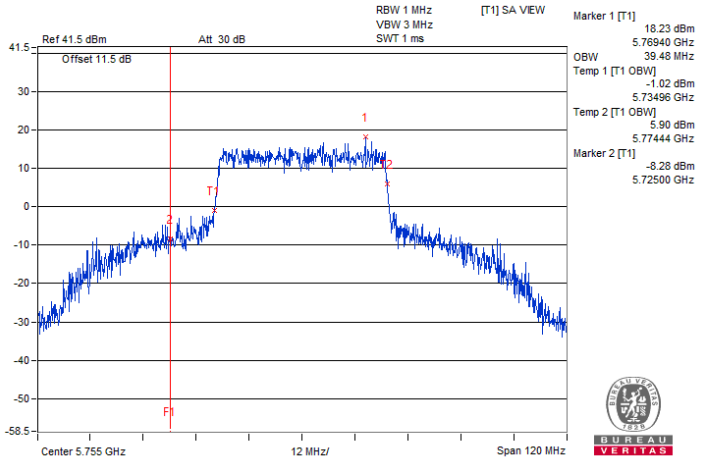
802.11ax (HE20) / Chain 2 : CH 149



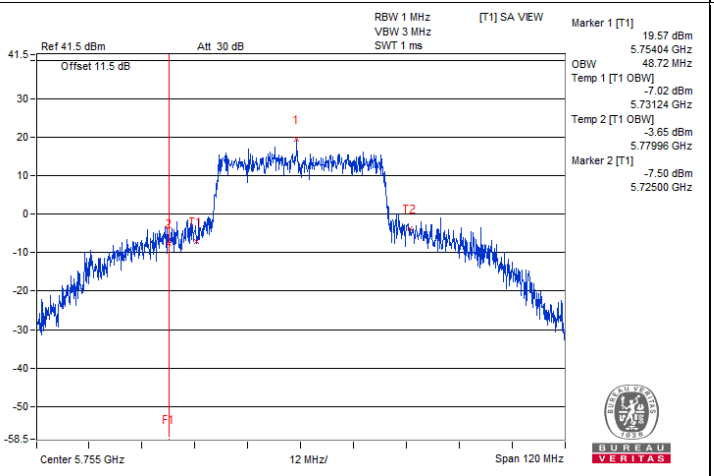
802.11ax (HE20) / Chain 3 : CH 149



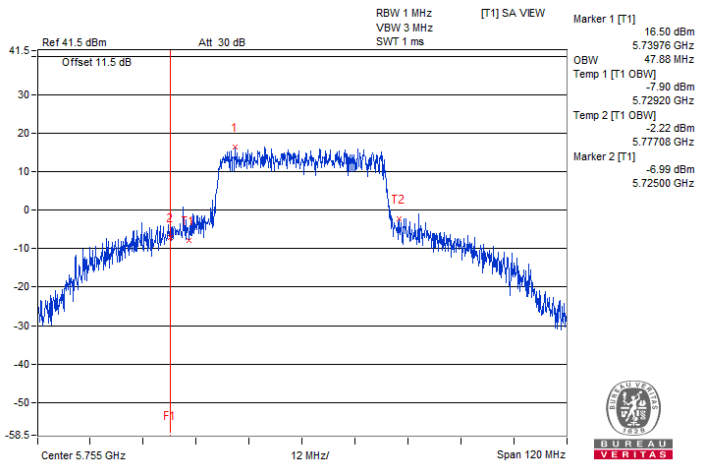
802.11ax (HE40) / Chain 0 : CH 151



802.11ax (HE40) / Chain 1 : CH 151



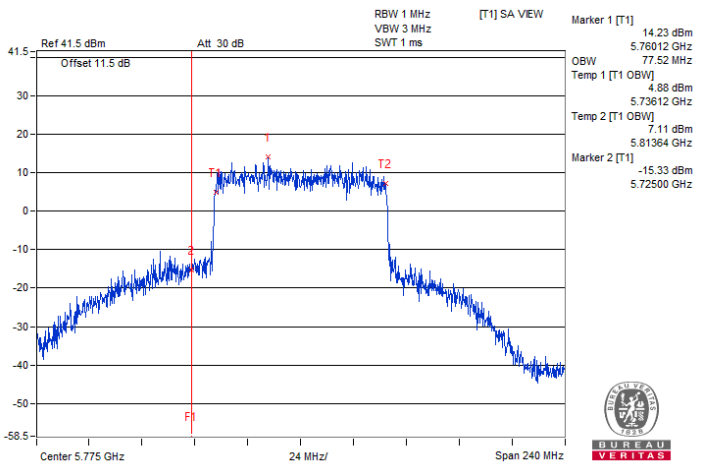
802.11ax (HE40) / Chain 2 : CH 151



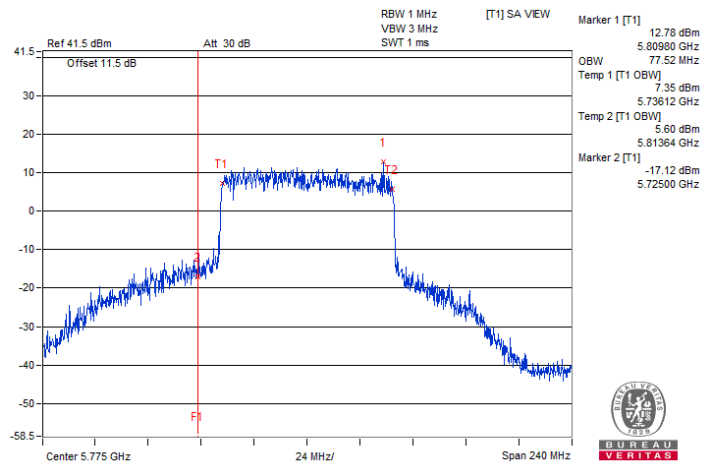
802.11ax (HE40) / Chain 3 : CH 151

Spectrum Plot for nearby DFS band

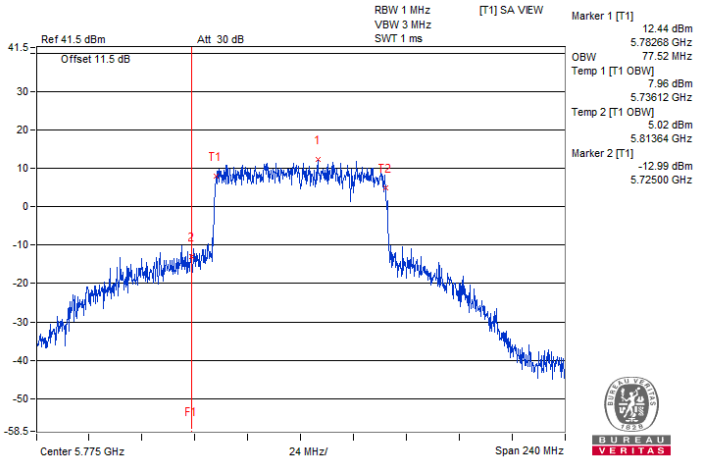
(DFS is required, if 99% OCP straddle into U-NII-2C)



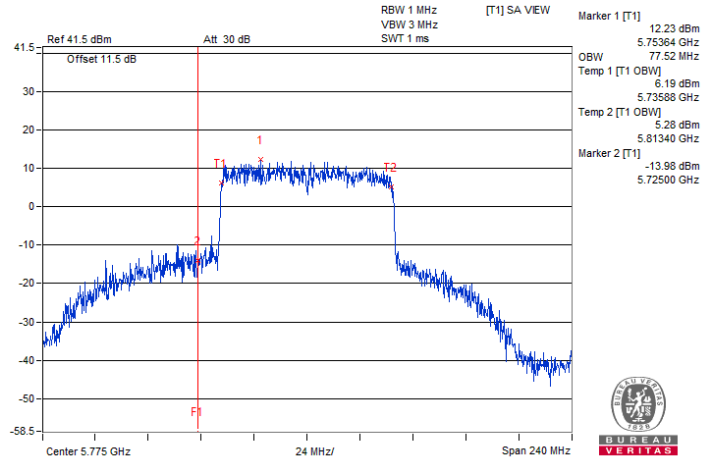
802.11ax (HE80) / Chain 0 : CH 155



802.11ax (HE80) / Chain 1 : CH 155



802.11ax (HE80) / Chain 2 : CH 155



802.11ax (HE80) / Chain 3 : CH 155

7.5 Frequency Stability

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	John Peng

802.11a

Frequency Stability Versus Temperature									
Operating Frequency: 5180 MHz									
Temp. (℃)	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	5179.9846	Pass	5179.9887	Pass	5179.9869	Pass	5179.9859	Pass
30	120	5179.9861	Pass	5179.9871	Pass	5179.9854	Pass	5179.9854	Pass
20	120	5179.9819	Pass	5179.9795	Pass	5179.9776	Pass	5179.9788	Pass
10	120	5179.9996	Pass	5180.0013	Pass	5179.9999	Pass	5180.0003	Pass
0	120	5180.0164	Pass	5180.0162	Pass	5180.0156	Pass	5180.0136	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (℃)	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	5179.9912	Pass	5179.9934	Pass	5179.9907	Pass	5179.9913	Pass
	120	5179.9819	Pass	5179.9795	Pass	5179.9776	Pass	5179.9788	Pass
	102	5179.9791	Pass	5179.9794	Pass	5179.9808	Pass	5179.9778	Pass

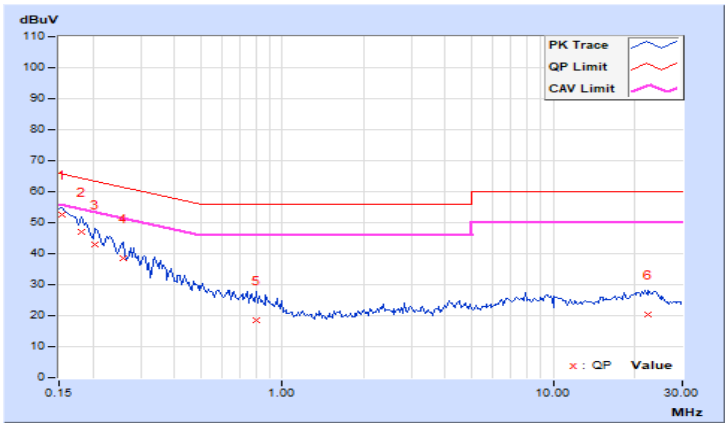
7.6 AC Power Conducted Emissions

RF Mode	802.11ax (HE80)	**Channel**	CH 155：5775 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Sampson 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	**0.15391**	**9.95**	**42.76**	**27.06**	**52.71**	**37.01**	**65.79**	**55.79**	**-13.08**	**-18.78**
2	0.18125	9.96	37.06	21.79	47.02	31.75	64.43	54.43	-17.41	-22.68
3	0.20469	9.96	33.13	18.78	43.09	28.74	63.42	53.42	-20.33	-24.68
4	0.25938	9.96	28.66	16.51	38.62	26.47	61.45	51.45	-22.83	-24.98
5	0.79844	9.99	8.57	3.35	18.56	13.34	56.00	46.00	-37.44	-32.66
6	22.47266	11.24	9.24	3.96	20.48	15.20	60.00	50.00	-39.52	-34.80

Remarks:

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

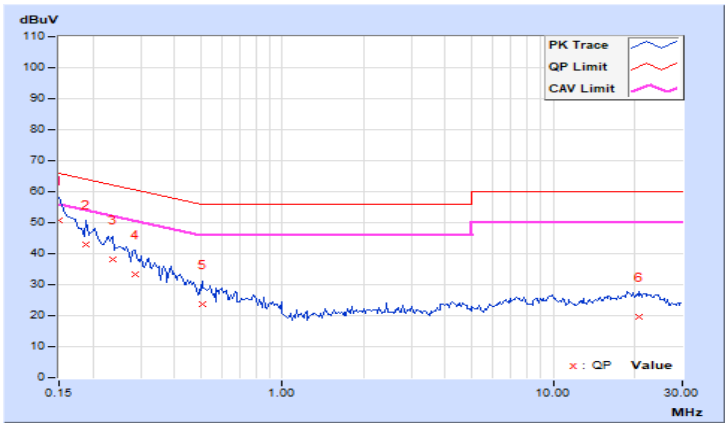


RF Mode	802.11ax (HE80)	**Channel**	CH 155：5775 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Sampson Chen		

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	9.95	40.79	25.20	50.74	35.15	66.00	56.00	-15.26	-20.85
2	0.18906	9.96	33.07	14.99	43.03	24.95	64.08	54.08	-21.05	-29.13
3	0.23594	9.96	28.34	13.01	38.30	22.97	62.24	52.24	-23.94	-29.27
4	0.28672	9.96	23.54	9.87	33.50	19.83	60.62	50.62	-27.12	-30.79
5	0.50547	9.97	13.56	-2.65	23.53	7.32	56.00	46.00	-32.47	-38.68
6	20.84375	10.98	8.52	3.04	19.50	14.02	60.00	50.00	-40.50	-35.98

Remarks:

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



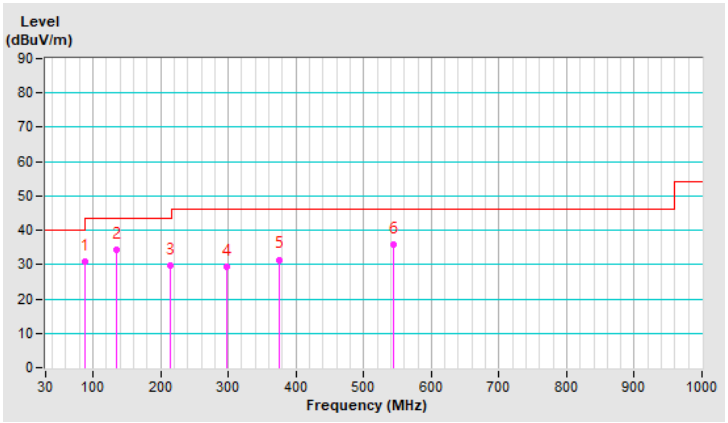
7.7 Unwanted Emissions below 1 GHz

RF Mode	802.11ax (HE80)	**Channel**	CH 155：5775 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Tom Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	88.18	30.9 QP	43.5	-12.6	2.00 H	238	44.8	-13.9
2	134.69	34.2 QP	43.5	-9.3	2.00 H	270	43.0	-8.8
3	214.45	29.8 QP	43.5	-13.7	1.00 H	246	40.9	-11.1
4	296.94	29.5 QP	46.0	-16.5	1.00 H	113	37.2	-7.7
5	375.34	31.5 QP	46.0	-14.5	1.00 H	69	37.2	-5.7
6	544.78	35.7 QP	46.0	-10.3	1.50 H	291	37.8	-2.1

Remarks:

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

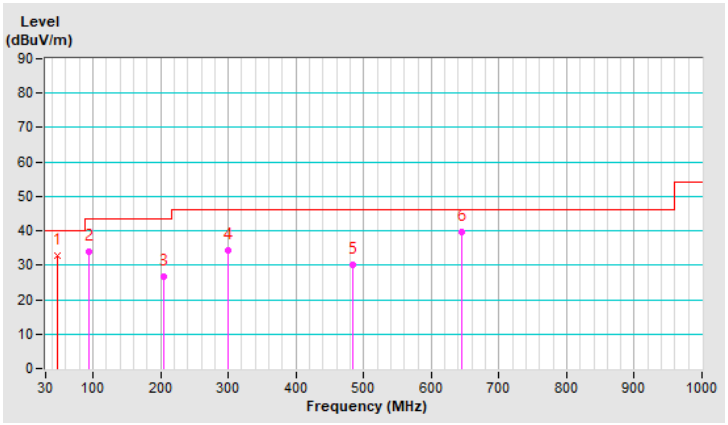


RF Mode	802.11ax (HE80)	**Channel**	CH 155：5775 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Tom Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	47.18	32.8 QP	40.0	-7.2	1.50 V	0	41.0	-8.2
2	93.10	33.8 QP	43.5	-9.7	1.50 V	85	47.4	-13.6
3	204.55	26.8 QP	43.5	-16.7	1.00 V	57	37.9	-11.1
4	299.10	34.4 QP	46.0	-11.6	2.00 V	272	42.0	-7.6
5	483.23	30.1 QP	46.0	-15.9	1.00 V	175	33.2	-3.1
6	**644.54**	**39.5 QP**	**46.0**	**-6.5**	**1.50 V**	**139**	**39.1**	**0.4**

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 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.



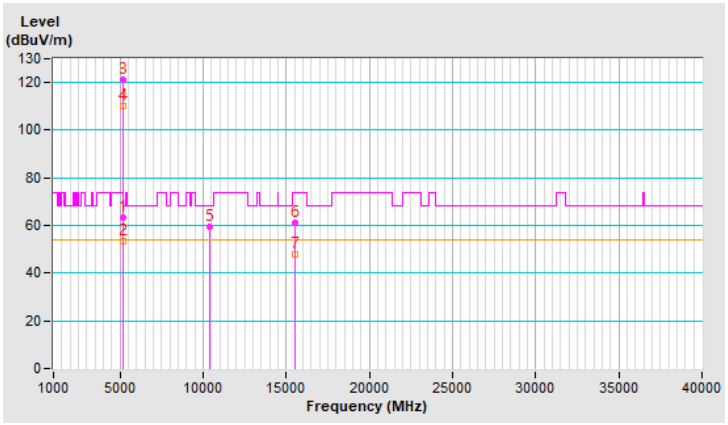
7.8 Unwanted Emissions above 1 GHz

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**	25°C, 75% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5150.00	63.3 PK	74.0	-10.7	1.77 H	286	58.5	4.8
2	5150.00	53.3 AV	54.0	-0.7	1.77 H	286	48.5	4.8
3	*5180.00	121.4 PK			1.77 H	286	116.7	4.7
4	*5180.00	109.9 AV			1.77 H	286	105.2	4.7
5	#10360.00	59.5 PK	68.2	-8.7	1.49 H	79	45.3	14.2
6	15540.00	61.1 PK	74.0	-12.9	1.40 H	26	46.6	14.5
7	15540.00	47.8 AV	54.0	-6.2	1.40 H	26	33.3	14.5

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.

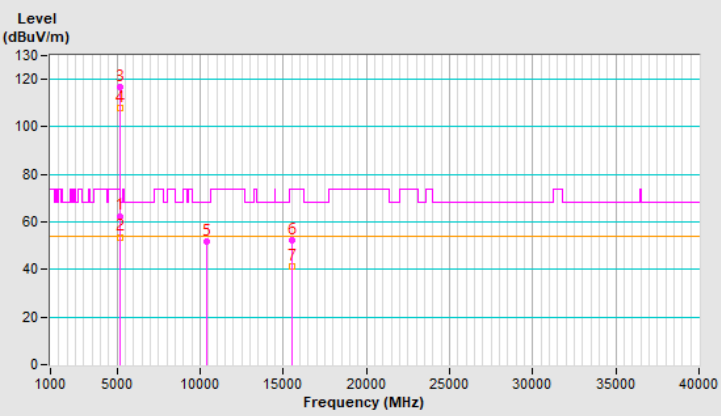


RF Mode	TX 802.11a	Channel	CH 36：5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	62.5 PK	74.0	-11.5	2.36 V	266	57.7	4.8
2	5150.00	53.7 AV	54.0	-0.3	2.36 V	266	48.9	4.8
3	*5180.00	116.6 PK			2.36 V	266	111.9	4.7
4	*5180.00	107.7 AV			2.36 V	266	103.0	4.7
5	#10360.00	51.8 PK	68.2	-16.4	1.52 V	304	37.6	14.2
6	15540.00	52.3 PK	74.0	-21.7	2.98 V	102	37.8	14.5
7	15540.00	41.2 AV	54.0	-12.8	2.98 V	102	26.7	14.5

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.

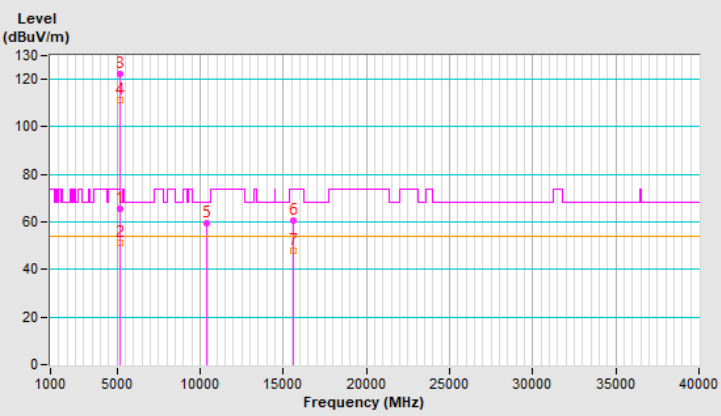


RF Mode	TX 802.11a	Channel	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.5 PK	74.0	-8.5	1.66 H	284	60.7	4.8
2	5150.00	51.3 AV	54.0	-2.7	1.66 H	284	46.5	4.8
3	*5200.00	122.2 PK			1.66 H	284	117.5	4.7
4	*5200.00	111.3 AV			1.66 H	284	106.6	4.7
5	#10400.00	59.4 PK	68.2	-8.8	1.51 H	75	45.2	14.2
6	15600.00	60.5 PK	74.0	-13.5	1.42 H	36	46.3	14.2
7	15600.00	47.7 AV	54.0	-6.3	1.42 H	36	33.5	14.2

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.

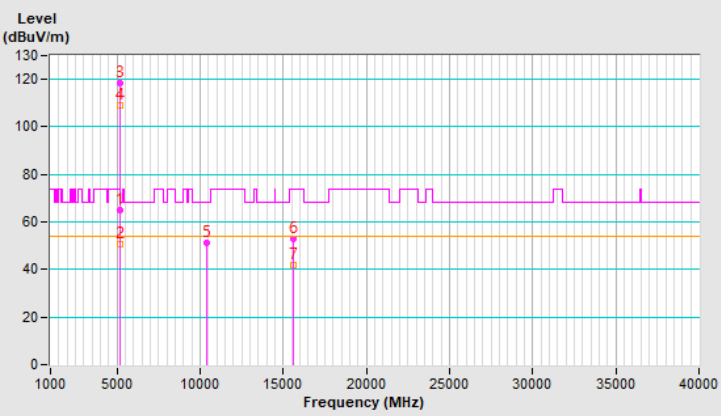


RF Mode	TX 802.11a	Channel	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	65.2 PK	74.0	-8.8	2.40 V	255	60.4	4.8
2	5150.00	50.7 AV	54.0	-3.3	2.40 V	255	45.9	4.8
3	*5200.00	118.2 PK			2.40 V	255	113.5	4.7
4	*5200.00	109.2 AV			2.40 V	255	104.5	4.7
5	#10400.00	51.1 PK	68.2	-17.1	1.53 V	305	36.9	14.2
6	15600.00	52.8 PK	74.0	-21.2	2.96 V	87	38.6	14.2
7	15600.00	41.7 AV	54.0	-12.3	2.96 V	87	27.5	14.2

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.

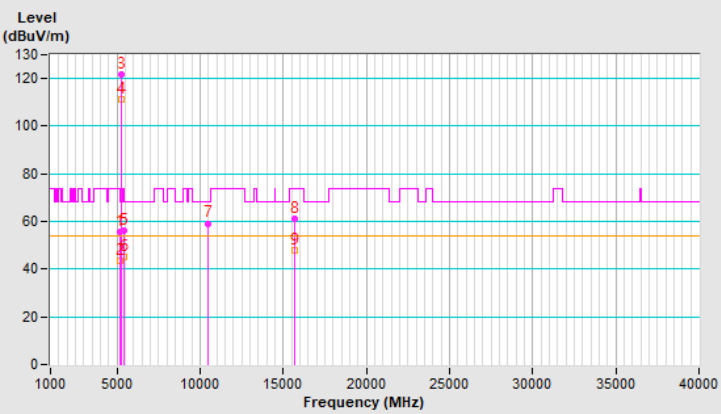


RF Mode	TX 802.11a	Channel	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	55.8 PK	74.0	-18.2	2.31 H	286	51.0	4.8
2	5150.00	43.5 AV	54.0	-10.5	2.31 H	286	38.7	4.8
3	*5240.00	121.7 PK			2.31 H	286	117.3	4.4
4	*5240.00	111.4 AV			2.31 H	286	107.0	4.4
5	5433.65	56.3 PK	74.0	-17.7	2.31 H	286	51.6	4.7
6	5433.65	45.3 AV	54.0	-8.7	2.31 H	286	40.6	4.7
7	#10480.00	59.2 PK	68.2	-9.0	1.46 H	66	44.8	14.4
8	15720.00	60.9 PK	74.0	-13.1	1.36 H	24	47.6	13.3
9	15720.00	47.8 AV	54.0	-6.2	1.36 H	24	34.5	13.3

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.

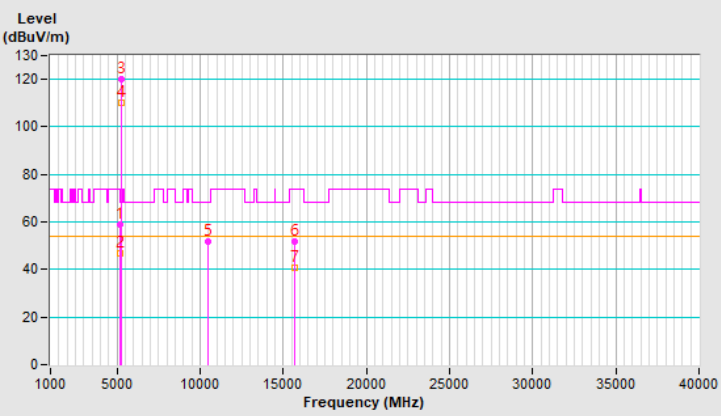


RF Mode	TX 802.11a	**Channel**	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Nelson Teng		

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	5146.46	58.7 PK	74.0	-15.3	2.34 V	262	53.9	4.8
2	5146.46	46.8 AV	54.0	-7.2	2.34 V	262	42.0	4.8
3	*5240.00	119.9 PK			2.34 V	262	115.5	4.4
4	*5240.00	110.4 AV			2.34 V	262	106.0	4.4
5	#10480.00	51.7 PK	68.2	-16.5	1.52 V	291	37.3	14.4
6	15720.00	51.7 PK	74.0	-22.3	3.01 V	95	38.4	13.3
7	15720.00	40.7 AV	54.0	-13.3	3.01 V	95	27.4	13.3

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.

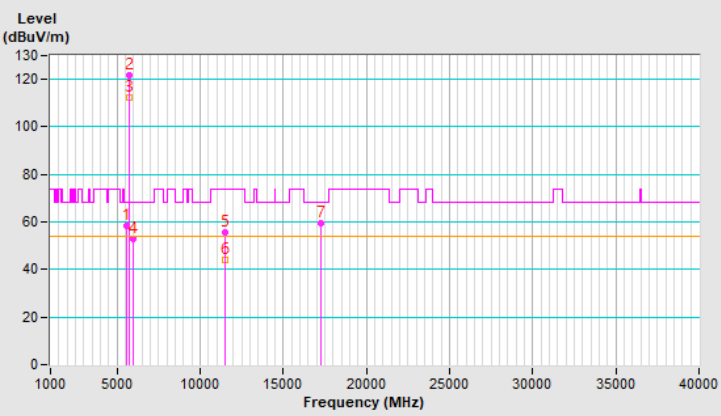


RF Mode	TX 802.11a	Channel	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5612.21	58.3 PK	68.2	-9.9	2.18 H	195	53.4	4.9
2	*5745.00	121.9 PK			2.18 H	195	116.8	5.1
3	*5745.00	112.4 AV			2.18 H	195	107.3	5.1
4	#5949.27	52.9 PK	68.2	-15.3	2.18 H	195	47.3	5.6
5	11490.00	55.4 PK	74.0	-18.6	1.67 H	324	40.2	15.2
6	11490.00	44.0 AV	54.0	-10.0	1.67 H	324	28.8	15.2
7	#17235.00	59.3 PK	68.2	-8.9	1.77 H	308	40.8	18.5

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.

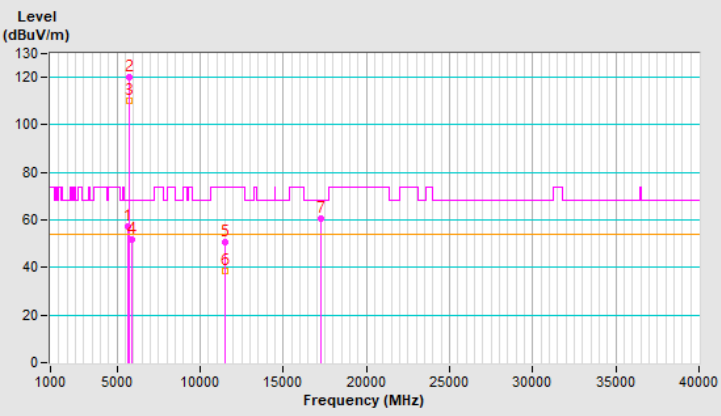


RF Mode	TX 802.11a	Channel	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5649.26	57.1 PK	68.2	-11.1	2.88 V	270	52.2	4.9
2	*5745.00	119.9 PK			2.88 V	270	114.8	5.1
3	*5745.00	110.1 AV			2.88 V	270	105.0	5.1
4	#5927.53	51.8 PK	68.2	-16.4	2.88 V	270	46.2	5.6
5	11490.00	50.9 PK	74.0	-23.1	1.56 V	289	35.7	15.2
6	11490.00	38.4 AV	54.0	-15.6	1.56 V	289	23.2	15.2
7	#17235.00	60.5 PK	68.2	-7.7	2.96 V	108	42.0	18.5

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.

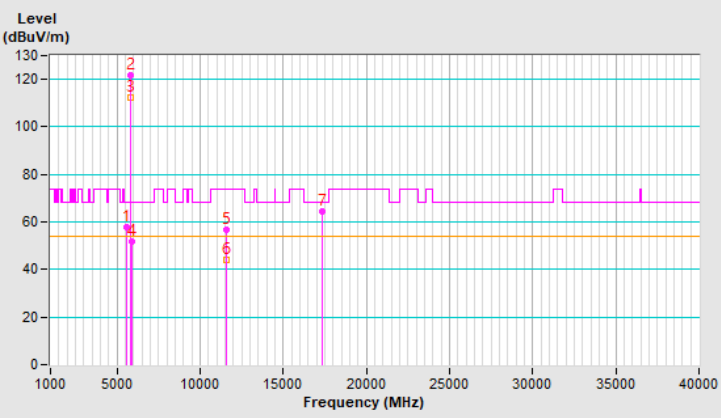


RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5580.34	57.7 PK	68.2	-10.5	2.17 H	193	52.8	4.9
2	*5785.00	121.7 PK			2.17 H	193	116.5	5.2
3	*5785.00	112.3 AV			2.17 H	193	107.1	5.2
4	#5927.13	52.0 PK	68.2	-16.2	2.17 H	193	46.4	5.6
5	11570.00	56.5 PK	74.0	-17.5	2.66 H	312	41.3	15.2
6	11570.00	44.3 AV	54.0	-9.7	2.66 H	312	29.1	15.2
7	#17355.00	64.6 PK	68.2	-3.6	3.28 H	68	45.7	18.9

Remarks:

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

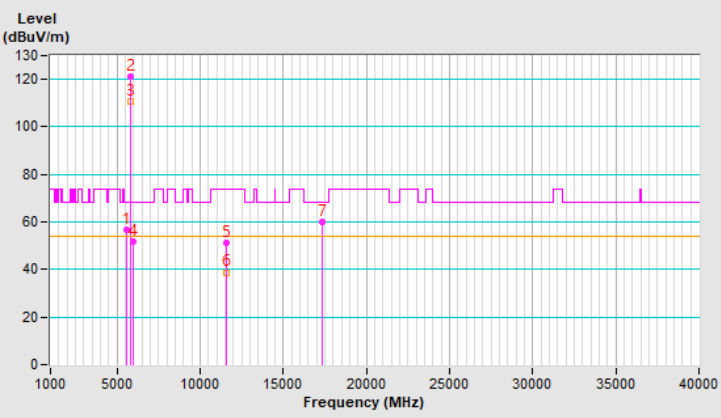


RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5576.84	56.8 PK	68.2	-11.4	3.29 V	265	51.9	4.9
2	*5785.00	121.0 PK			3.29 V	265	115.8	5.2
3	*5785.00	110.7 AV			3.29 V	265	105.5	5.2
4	#5980.11	51.9 PK	68.2	-16.3	3.29 V	265	46.3	5.6
5	11570.00	51.1 PK	74.0	-22.9	1.49 V	284	35.9	15.2
6	11570.00	38.8 AV	54.0	-15.2	1.49 V	284	23.6	15.2
7	#17355.00	59.8 PK	68.2	-8.4	2.98 V	117	40.9	18.9

Remarks:

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

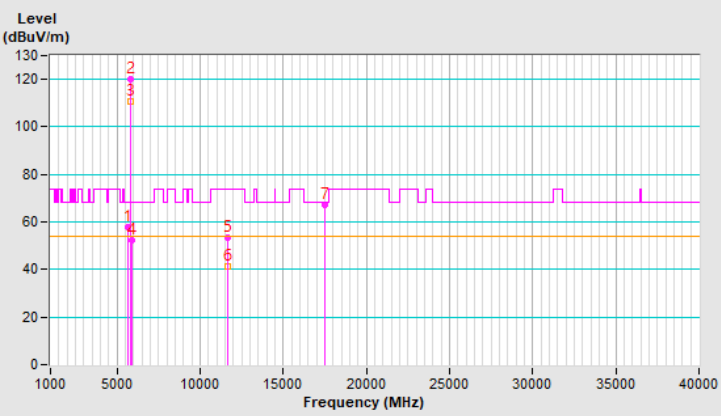


RF Mode	TX 802.11a	Channel	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5622.13	57.6 PK	68.2	-10.6	2.18 H	195	52.7	4.9
2	*5825.00	120.3 PK			2.18 H	195	114.9	5.4
3	*5825.00	110.9 AV			2.18 H	195	105.5	5.4
4	#5926.77	52.2 PK	68.2	-16.0	2.18 H	195	46.6	5.6
5	11650.00	53.2 PK	74.0	-20.8	1.17 H	328	38.1	15.1
6	11650.00	41.5 AV	54.0	-12.5	1.17 H	328	26.4	15.1
7	#17475.00	67.3 PK	68.2	-0.9	1.07 H	19	48.3	19.0

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.

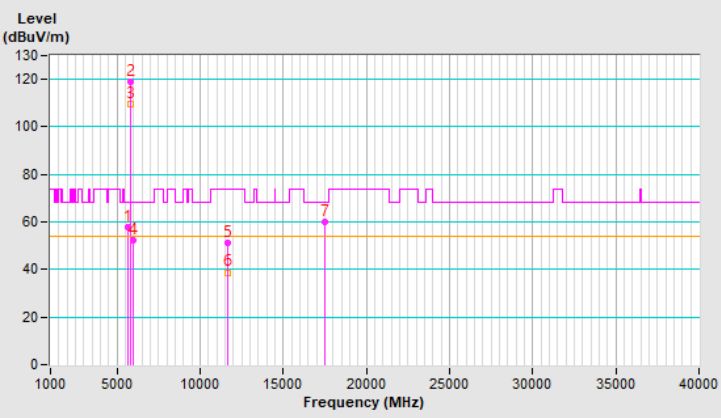


RF Mode	TX 802.11a	Channel	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5618.55	57.7 PK	68.2	-10.5	3.15 V	292	52.8	4.9
2	*5825.00	118.8 PK			3.15 V	292	113.4	5.4
3	*5825.00	109.5 AV			3.15 V	292	104.1	5.4
4	#5964.15	52.2 PK	68.2	-16.0	3.15 V	292	46.6	5.6
5	11650.00	51.2 PK	74.0	-22.8	1.51 V	295	36.1	15.1
6	11650.00	38.8 AV	54.0	-15.2	1.51 V	295	23.7	15.1
7	#17475.00	60.0 PK	68.2	-8.2	2.96 V	103	41.0	19.0

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.

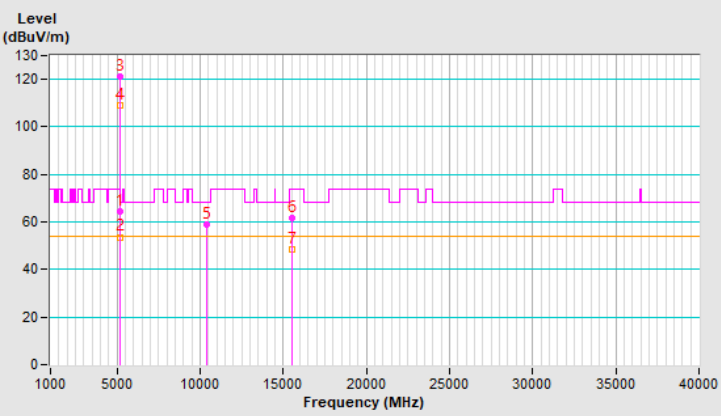


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 36：5180 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5147.90	64.3 PK	74.0	-9.7	1.05 H	157	59.5	4.8
2	5147.90	53.7 AV	54.0	-0.3	1.05 H	157	48.9	4.8
3	*5180.00	121.3 PK			1.05 H	157	116.6	4.7
4	*5180.00	108.8 AV			1.05 H	157	104.1	4.7
5	#10360.00	58.8 PK	68.2	-9.4	1.41 H	52	44.6	14.2
6	15540.00	61.6 PK	74.0	-12.4	1.31 H	28	47.1	14.5
7	15540.00	48.3 AV	54.0	-5.7	1.31 H	28	33.8	14.5

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.

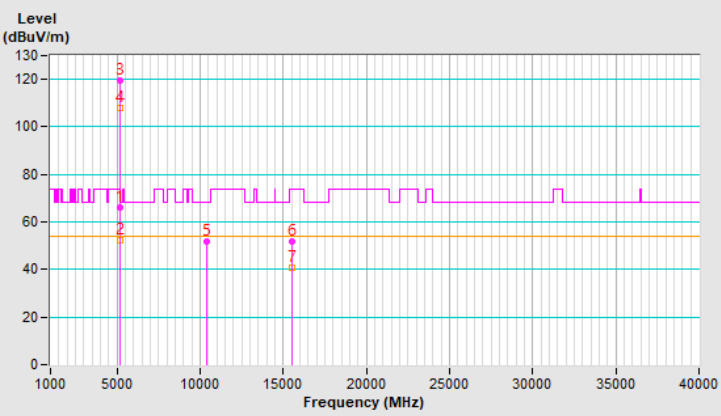


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 36：5180 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Nelson Teng		

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	5146.15	65.9 PK	74.0	-8.1	2.29 V	265	61.1	4.8
2	5146.15	52.1 AV	54.0	-1.9	2.29 V	265	47.3	4.8
3	*5180.00	119.7 PK			2.29 V	265	115.0	4.7
4	*5180.00	107.9 AV			2.29 V	265	103.2	4.7
5	#10360.00	51.8 PK	68.2	-16.4	1.54 V	281	37.6	14.2
6	15540.00	51.7 PK	74.0	-22.3	3.01 V	80	37.2	14.5
7	15540.00	40.7 AV	54.0	-13.3	3.01 V	80	26.2	14.5

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.

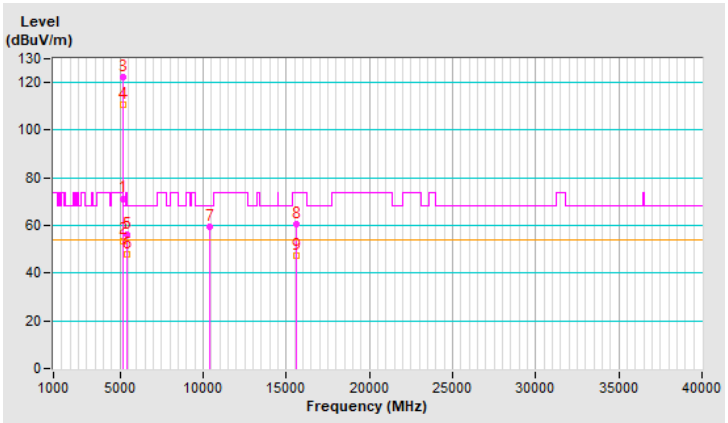


RF Mode	TX 802.11ax (HE20)	Channel	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5147.69	71.3 PK	74.0	-2.7	1.19 H	163	66.5	4.8
2	5147.69	53.7 AV	54.0	-0.3	1.19 H	163	48.9	4.8
3	*5200.00	122.5 PK			1.19 H	163	117.8	4.7
4	*5200.00	110.9 AV			1.19 H	163	106.2	4.7
5	5399.93	56.3 PK	74.0	-17.7	1.19 H	163	51.6	4.7
6	5399.93	47.8 AV	54.0	-6.2	1.19 H	163	43.1	4.7
7	#10400.00	59.3 PK	68.2	-8.9	1.43 H	66	45.1	14.2
8	15600.00	60.7 PK	74.0	-13.3	1.33 H	35	46.5	14.2
9	15600.00	47.6 AV	54.0	-6.4	1.33 H	35	33.4	14.2

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.

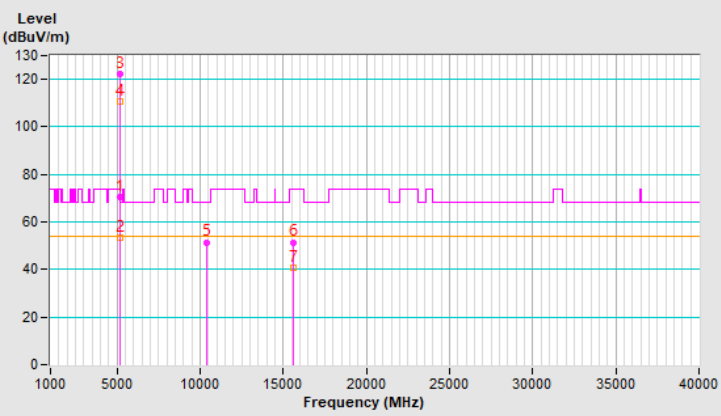


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Nelson Teng		

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	70.7 PK	74.0	-3.3	2.28 V	261	65.9	4.8
2	5150.00	53.2 AV	54.0	-0.8	2.28 V	261	48.4	4.8
3	*5200.00	122.3 PK			2.28 V	261	117.6	4.7
4	*5200.00	110.6 AV			2.28 V	261	105.9	4.7
5	#10400.00	51.5 PK	68.2	-16.7	1.58 V	276	37.3	14.2
6	15600.00	51.5 PK	74.0	-22.5	3.00 V	103	37.3	14.2
7	15600.00	40.5 AV	54.0	-13.5	3.00 V	103	26.3	14.2

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.

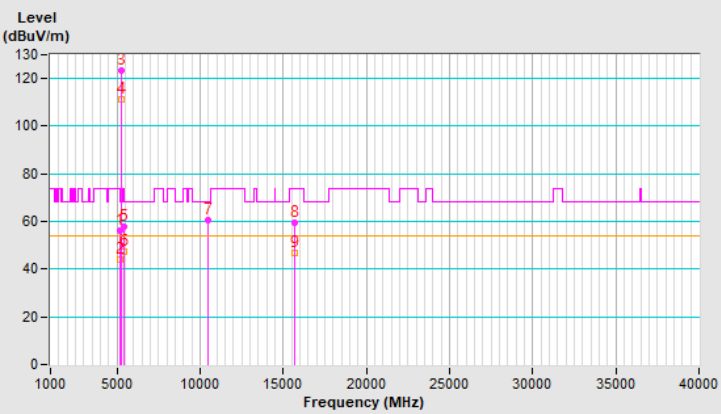


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Nelson Teng		

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	56.3 PK	74.0	-17.7	1.21 H	169	51.5	4.8
2	5150.00	44.1 AV	54.0	-9.9	1.21 H	169	39.3	4.8
3	*5240.00	123.3 PK			1.21 H	169	118.9	4.4
4	*5240.00	111.1 AV			1.21 H	169	106.7	4.4
5	5399.94	57.6 PK	74.0	-16.4	1.21 H	169	52.9	4.7
6	5399.94	47.3 AV	54.0	-6.7	1.21 H	169	42.6	4.7
7	#10480.00	60.6 PK	68.2	-7.6	1.56 H	92	46.2	14.4
8	15720.00	59.6 PK	74.0	-14.4	1.50 H	338	46.3	13.3
9	15720.00	46.9 AV	54.0	-7.1	1.50 H	338	33.6	13.3

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.

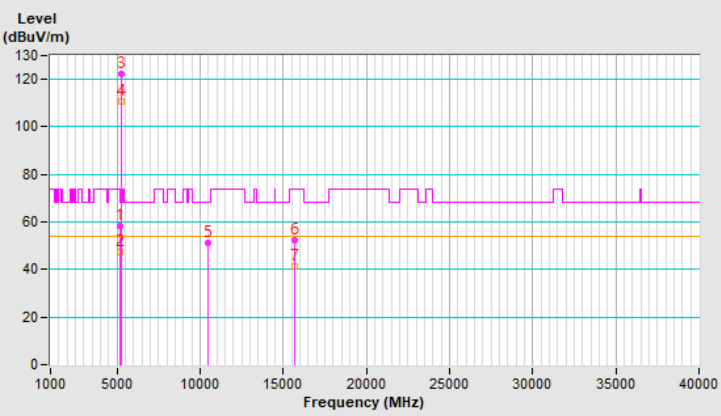


RF Mode	TX 802.11ax (HE20)	Channel	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.3 PK	74.0	-15.7	2.35 V	264	53.5	4.8
2	5150.00	47.3 AV	54.0	-6.7	2.35 V	264	42.5	4.8
3	*5240.00	122.1 PK			2.35 V	264	117.7	4.4
4	*5240.00	110.6 AV			2.35 V	264	106.2	4.4
5	#10480.00	51.3 PK	68.2	-16.9	1.50 V	304	36.9	14.4
6	15720.00	52.3 PK	74.0	-21.7	3.03 V	86	39.0	13.3
7	15720.00	41.1 AV	54.0	-12.9	3.03 V	86	27.8	13.3

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.

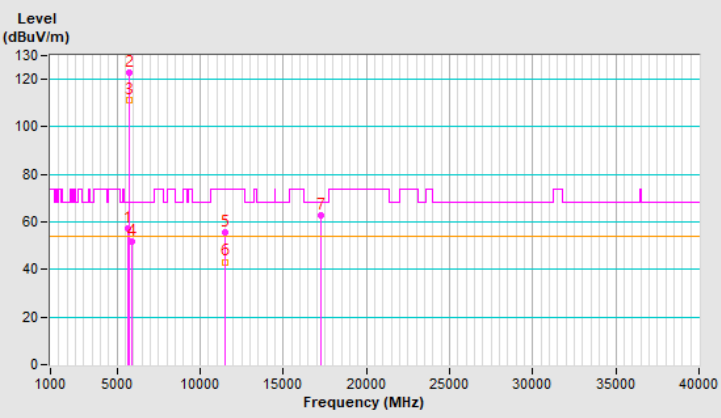


RF Mode	TX 802.11ax (HE20)	Channel	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5628.30	57.4 PK	68.2	-10.8	1.59 H	175	52.5	4.9
2	*5745.00	122.6 PK			1.59 H	175	117.5	5.1
3	*5745.00	111.0 AV			1.59 H	175	105.9	5.1
4	#5924.18	51.9 PK	68.2	-16.3	1.59 H	175	46.3	5.6
5	11490.00	55.4 PK	74.0	-18.6	2.46 H	316	40.2	15.2
6	11490.00	43.2 AV	54.0	-10.8	2.46 H	316	28.0	15.2
7	#17235.00	63.0 PK	68.2	-5.2	3.41 H	241	44.5	18.5

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.

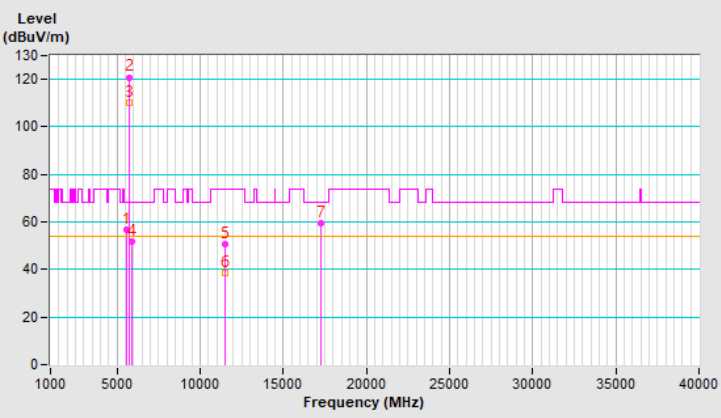


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Nelson Teng		

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	#5562.37	56.8 PK	68.2	-11.4	3.16 V	270	51.9	4.9
2	*5745.00	120.9 PK			3.16 V	270	115.8	5.1
3	*5745.00	110.0 AV			3.16 V	270	104.9	5.1
4	#5927.26	51.7 PK	68.2	-16.5	3.16 V	270	46.1	5.6
5	11490.00	50.8 PK	74.0	-23.2	1.45 V	287	35.6	15.2
6	11490.00	38.6 AV	54.0	-15.4	1.45 V	287	23.4	15.2
7	#17235.00	59.6 PK	68.2	-8.6	2.93 V	120	41.1	18.5

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.

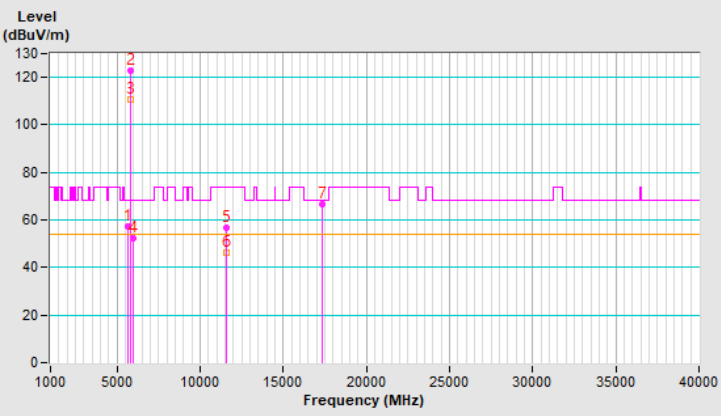


RF Mode	TX 802.11ax (HE20)	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5641.10	57.5 PK	68.2	-10.7	1.56 H	176	52.6	4.9
2	*5785.00	122.6 PK			1.56 H	176	117.4	5.2
3	*5785.00	110.8 AV			1.56 H	176	105.6	5.2
4	#6006.24	52.2 PK	68.2	-16.0	1.56 H	176	46.7	5.5
5	11570.00	56.8 PK	74.0	-17.2	1.29 H	330	41.6	15.2
6	11570.00	46.1 AV	54.0	-7.9	1.29 H	330	30.9	15.2
7	#17355.00	66.6 PK	68.2	-1.6	3.14 H	68	47.7	18.9

Remarks:

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

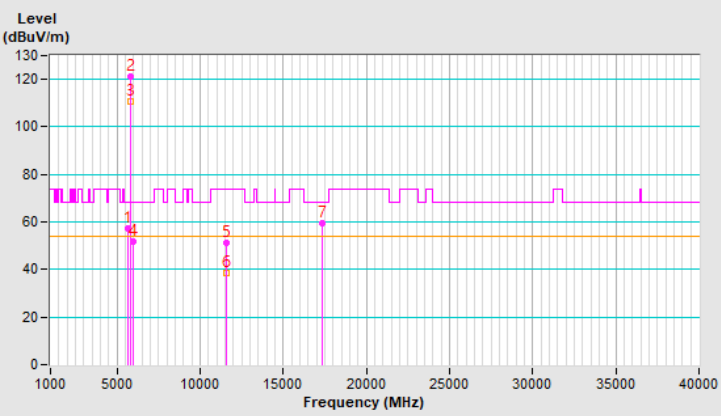


RF Mode	TX 802.11ax (HE20)	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5633.08	57.5 PK	68.2	-10.7	3.10 V	268	52.6	4.9
2	*5785.00	121.4 PK			3.10 V	268	116.2	5.2
3	*5785.00	110.5 AV			3.10 V	268	105.3	5.2
4	#5953.18	51.7 PK	68.2	-16.5	3.10 V	268	46.1	5.6
5	11570.00	51.1 PK	74.0	-22.9	1.49 V	285	35.9	15.2
6	11570.00	38.7 AV	54.0	-15.3	1.49 V	285	23.5	15.2
7	#17355.00	59.7 PK	68.2	-8.5	3.04 V	113	40.8	18.9

Remarks:

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

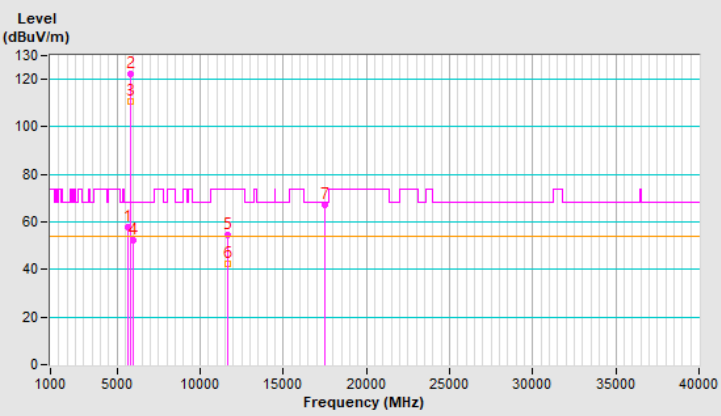


RF Mode	TX 802.11ax (HE20)	Channel	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5619.42	58.0 PK	68.2	-10.2	1.62 H	224	53.1	4.9
2	*5825.00	122.4 PK			1.62 H	224	117.0	5.4
3	*5825.00	110.6 AV			1.62 H	224	105.2	5.4
4	#5957.40	52.3 PK	68.2	-15.9	1.62 H	224	46.7	5.6
5	11650.00	54.6 PK	74.0	-19.4	2.00 H	319	39.5	15.1
6	11650.00	42.2 AV	54.0	-11.8	2.00 H	319	27.1	15.1
7	#17475.00	67.2 PK	68.2	-1.0	1.27 H	321	48.2	19.0

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.

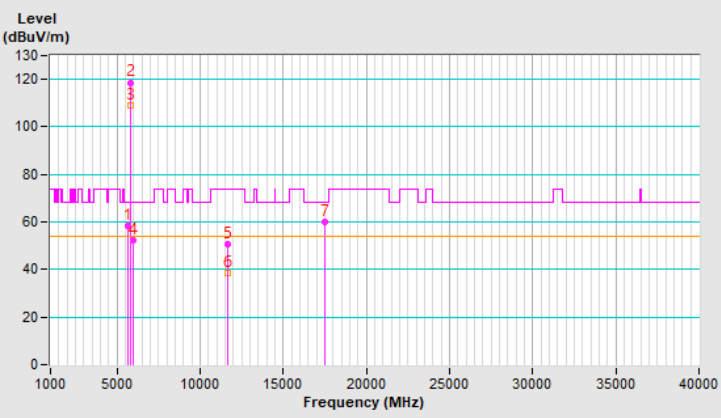


RF Mode	TX 802.11ax (HE20)	Channel	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5626.72	58.4 PK	68.2	-9.8	3.08 V	269	53.5	4.9
2	*5825.00	118.7 PK			3.08 V	269	113.3	5.4
3	*5825.00	108.9 AV			3.08 V	269	103.5	5.4
4	#5959.64	52.5 PK	68.2	-15.7	3.08 V	269	46.9	5.6
5	11650.00	50.6 PK	74.0	-23.4	1.51 V	297	35.5	15.1
6	11650.00	38.5 AV	54.0	-15.5	1.51 V	297	23.4	15.1
7	#17475.00	59.9 PK	68.2	-8.3	2.97 V	106	40.9	19.0

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.

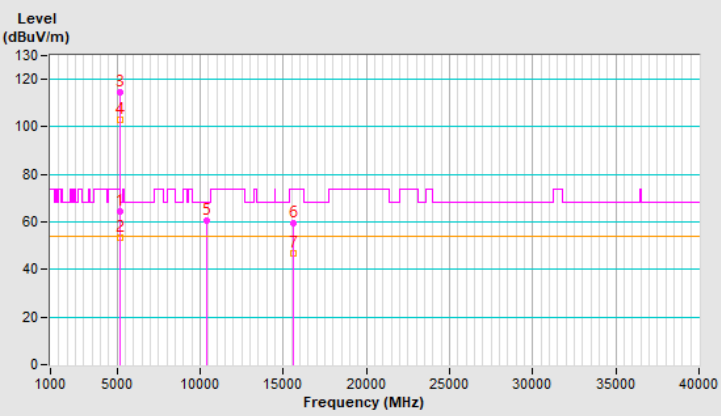


RF Mode	TX 802.11ax (HE40)	Channel	CH 38：5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5147.73	64.2 PK	74.0	-9.8	1.18 H	165	59.4	4.8
2	5147.73	53.5 AV	54.0	-0.5	1.18 H	165	48.7	4.8
3	*5190.00	114.6 PK			1.18 H	165	110.0	4.6
4	*5190.00	103.1 AV			1.18 H	165	98.5	4.6
5	#10380.00	60.4 PK	68.2	-7.8	1.52 H	104	46.2	14.2
6	15570.00	59.4 PK	74.0	-14.6	1.53 H	339	45.2	14.2
7	15570.00	46.7 AV	54.0	-7.3	1.53 H	339	32.5	14.2

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.

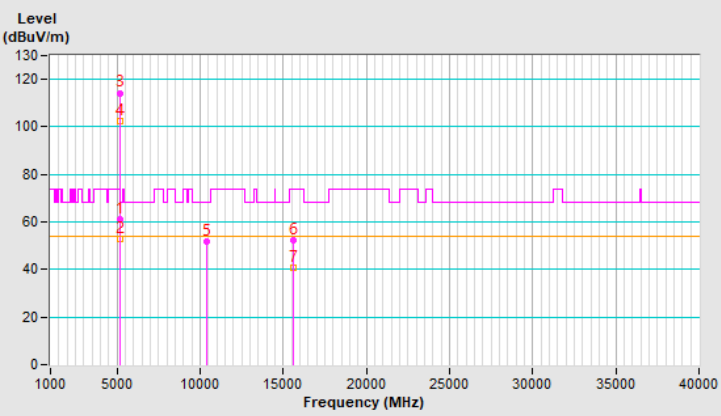


RF Mode	TX 802.11ax (HE40)	Channel	CH 38：5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	5146.03	61.2 PK	74.0	-12.8	2.31 V	264	56.4	4.8
2	5146.03	52.9 AV	54.0	-1.1	2.31 V	264	48.1	4.8
3	*5190.00	114.3 PK			2.31 V	264	109.7	4.6
4	*5190.00	102.4 AV			2.31 V	264	97.8	4.6
5	#10380.00	52.0 PK	68.2	-16.2	1.45 V	309	37.8	14.2
6	15570.00	52.1 PK	74.0	-21.9	3.01 V	98	37.9	14.2
7	15570.00	40.9 AV	54.0	-13.1	3.01 V	98	26.7	14.2

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.

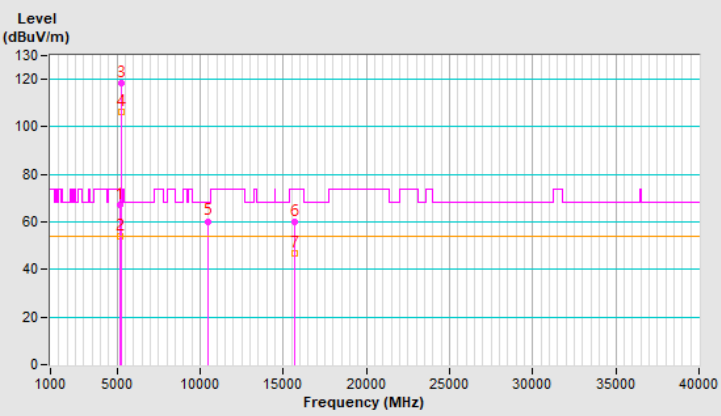


RF Mode	TX 802.11ax (HE40)	**Channel**	CH 46：5230 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Nelson Teng		

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	5149.18	67.3 PK	74.0	-6.7	2.01 H	280	62.5	4.8
2	**5149.18**	**53.9 AV**	**54.0**	**-0.1**	**2.01 H**	**280**	**49.1**	**4.8**
3	*5230.00	118.4 PK			2.01 H	280	113.9	4.5
4	*5230.00	106.1 AV			2.01 H	280	101.6	4.5
5	#10460.00	60.3 PK	68.2	-7.9	1.62 H	105	45.9	14.4
6	15690.00	59.8 PK	74.0	-14.2	1.54 H	324	46.4	13.4
7	15690.00	46.9 AV	54.0	-7.1	1.54 H	324	33.5	13.4

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.

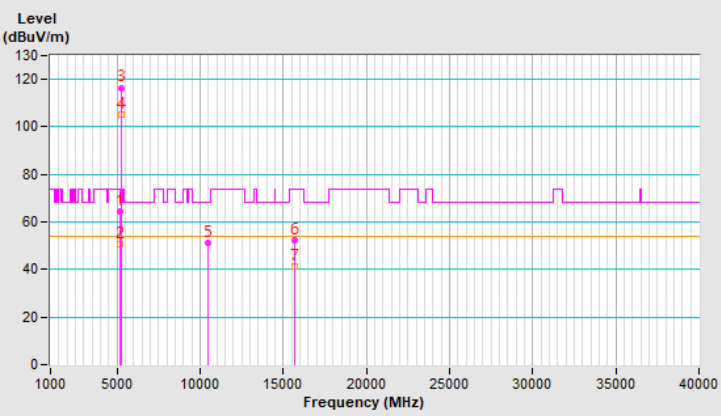


RF Mode	TX 802.11ax (HE40)	**Channel**	CH 46：5230 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Nelson Teng		

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	5149.32	64.6 PK	74.0	-9.4	2.51 V	270	59.8	4.8
2	5149.32	50.8 AV	54.0	-3.2	2.51 V	270	46.0	4.8
3	*5230.00	116.5 PK			2.51 V	270	112.0	4.5
4	*5230.00	105.3 AV			2.51 V	270	100.8	4.5
5	#10460.00	51.4 PK	68.2	-16.8	1.55 V	317	37.0	14.4
6	15690.00	52.3 PK	74.0	-21.7	2.99 V	92	38.9	13.4
7	15690.00	41.4 AV	54.0	-12.6	2.99 V	92	28.0	13.4

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.

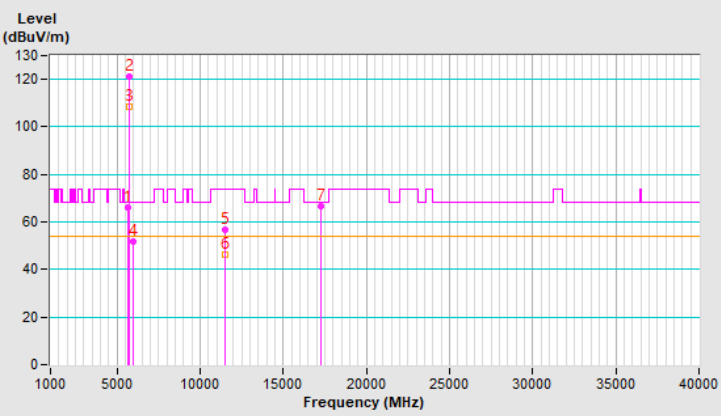


RF Mode	TX 802.11ax (HE40)	Channel	CH 151：5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5647.39	66.1 PK	68.2	-2.1	1.58 H	176	61.2	4.9
2	*5755.00	121.0 PK			1.58 H	176	115.9	5.1
3	*5755.00	108.5 AV			1.58 H	176	103.4	5.1
4	#5958.50	51.9 PK	68.2	-16.3	1.58 H	176	46.3	5.6
5	11510.00	56.9 PK	74.0	-17.1	1.29 H	318	41.8	15.1
6	11510.00	46.5 AV	54.0	-7.5	1.29 H	318	31.4	15.1
7	#17265.00	66.4 PK	68.2	-1.8	3.11 H	61	47.8	18.6

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.

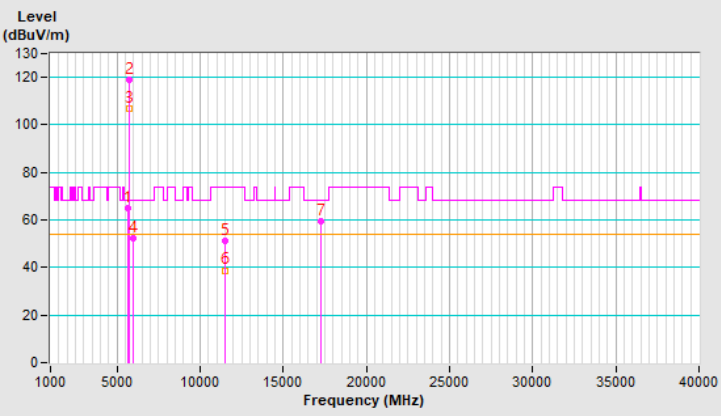


RF Mode	TX 802.11ax (HE40)	**Channel**	CH 151：5755 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	#5644.60	65.0 PK	68.2	-3.2	2.91 V	274	60.1	4.9
2	*5755.00	118.8 PK			2.91 V	274	113.7	5.1
3	*5755.00	107.0 AV			2.91 V	274	101.9	5.1
4	#5945.89	52.3 PK	68.2	-15.9	2.91 V	274	46.7	5.6
5	11510.00	51.4 PK	74.0	-22.6	1.49 V	277	36.3	15.1
6	11510.00	38.8 AV	54.0	-15.2	1.49 V	277	23.7	15.1
7	#17265.00	59.4 PK	68.2	-8.8	2.98 V	105	40.8	18.6

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.

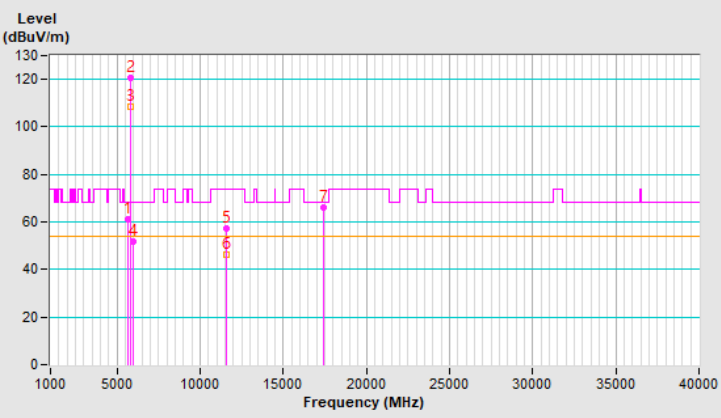


RF Mode	TX 802.11ax (HE40)	Channel	CH 159：5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5646.00	61.0 PK	68.2	-7.2	2.15 H	201	56.1	4.9
2	*5795.00	120.7 PK			2.15 H	201	115.5	5.2
3	*5795.00	108.4 AV			2.15 H	201	103.2	5.2
4	#5995.44	51.7 PK	68.2	-16.5	2.15 H	201	46.2	5.5
5	11590.00	57.4 PK	74.0	-16.6	1.32 H	343	42.2	15.2
6	11590.00	46.5 AV	54.0	-7.5	1.32 H	343	31.3	15.2
7	#17385.00	66.3 PK	68.2	-1.9	3.09 H	76	47.2	19.1

Remarks:

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

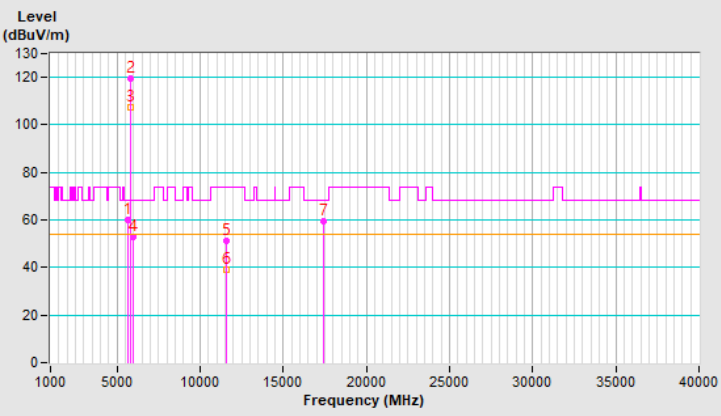


RF Mode	TX 802.11ax (HE40)	Channel	CH 159：5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5639.92	60.2 PK	68.2	-8.0	2.64 V	273	55.3	4.9
2	*5795.00	119.3 PK			2.64 V	273	114.1	5.2
3	*5795.00	107.5 AV			2.64 V	273	102.3	5.2
4	#5997.59	52.7 PK	68.2	-15.5	2.64 V	273	47.2	5.5
5	11590.00	51.1 PK	74.0	-22.9	1.46 V	275	35.9	15.2
6	11590.00	38.9 AV	54.0	-15.1	1.46 V	275	23.7	15.2
7	#17385.00	59.6 PK	68.2	-8.6	3.05 V	103	40.5	19.1

Remarks:

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

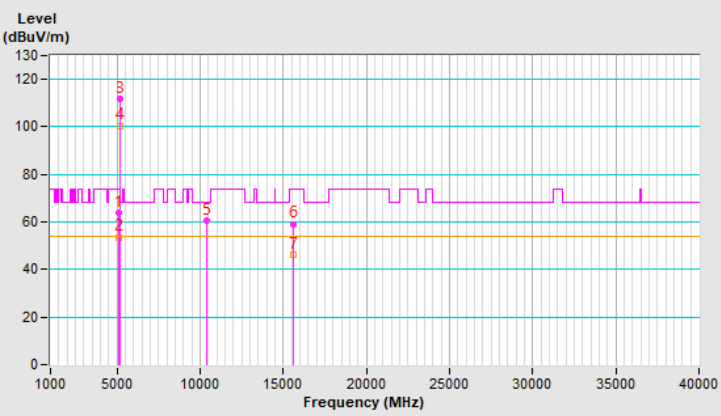


RF Mode	TX 802.11ax (HE80)	Channel	CH 42：5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	5139.36	64.0 PK	74.0	-10.0	1.57 H	281	59.2	4.8
2	5139.36	53.7 AV	54.0	-0.3	1.57 H	281	48.9	4.8
3	*5210.00	111.8 PK			1.57 H	281	107.2	4.6
4	*5210.00	100.5 AV			1.57 H	281	95.9	4.6
5	#10420.00	60.5 PK	68.2	-7.7	1.52 H	89	46.2	14.3
6	15630.00	59.2 PK	74.0	-14.8	1.52 H	341	45.4	13.8
7	15630.00	46.5 AV	54.0	-7.5	1.52 H	341	32.7	13.8

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.

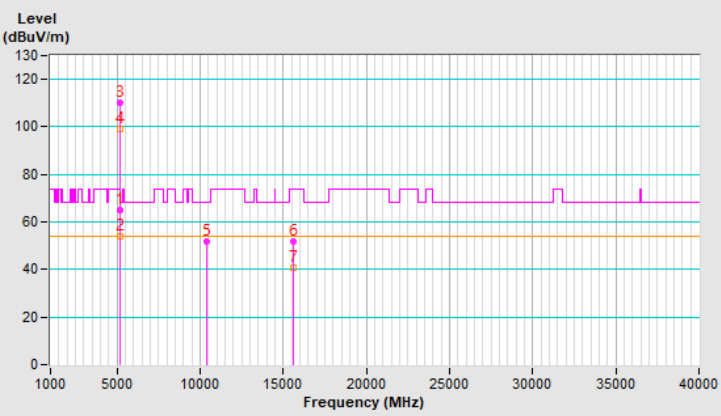


RF Mode	TX 802.11ax (HE80)	Channel	CH 42：5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	5146.08	65.0 PK	74.0	-9.0	2.42 V	264	60.2	4.8
2	5146.08	53.8 AV	54.0	-0.2	2.42 V	264	49.0	4.8
3	*5210.00	110.4 PK			2.42 V	264	105.8	4.6
4	*5210.00	99.2 AV			2.42 V	264	94.6	4.6
5	#10420.00	52.0 PK	68.2	-16.2	1.51 V	302	37.7	14.3
6	15630.00	51.9 PK	74.0	-22.1	3.06 V	98	38.1	13.8
7	15630.00	40.7 AV	54.0	-13.3	3.06 V	98	26.9	13.8

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.

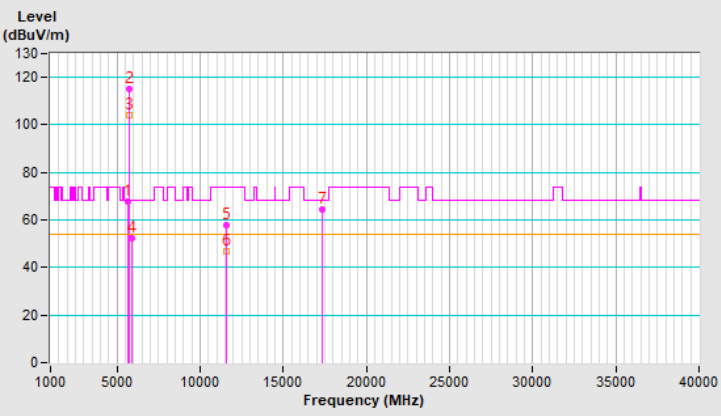


RF Mode	TX 802.11ax (HE80)	Channel	CH 155：5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5647.59	67.9 PK	68.2	-0.3	1.50 H	175	63.0	4.9
2	*5775.00	115.2 PK			1.50 H	175	110.0	5.2
3	*5775.00	104.0 AV			1.50 H	175	98.8	5.2
4	#5927.86	52.2 PK	68.2	-16.0	1.50 H	175	46.6	5.6
5	11550.00	57.7 PK	74.0	-16.3	1.27 H	355	42.6	15.1
6	11550.00	46.7 AV	54.0	-7.3	1.27 H	355	31.6	15.1
7	#17325.00	64.6 PK	68.2	-3.6	3.07 H	88	45.7	18.9

Remarks:

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

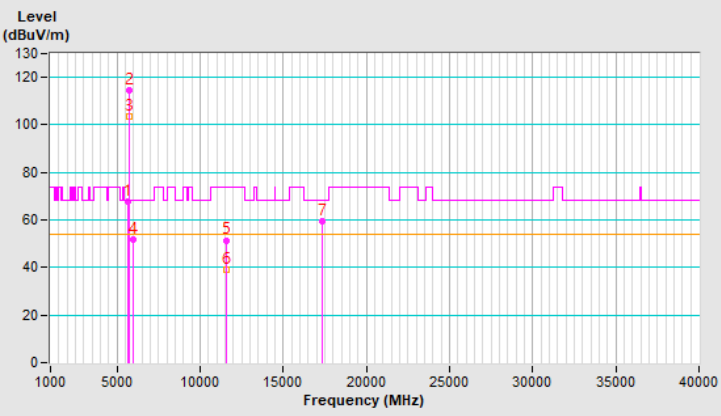


RF Mode	TX 802.11ax (HE80)	Channel	CH 155：5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Nelson Teng		

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	#5649.13	67.6 PK	68.2	-0.6	1.70 V	271	62.7	4.9
2	*5775.00	114.8 PK			1.70 V	271	109.6	5.2
3	*5775.00	103.6 AV			1.70 V	271	98.4	5.2
4	#5937.79	51.9 PK	68.2	-16.3	1.70 V	271	46.3	5.6
5	11550.00	51.5 PK	74.0	-22.5	1.48 V	285	36.4	15.1
6	11550.00	39.0 AV	54.0	-15.0	1.48 V	285	23.9	15.1
7	#17325.00	59.3 PK	68.2	-8.9	3.00 V	91	40.4	18.9

Remarks:

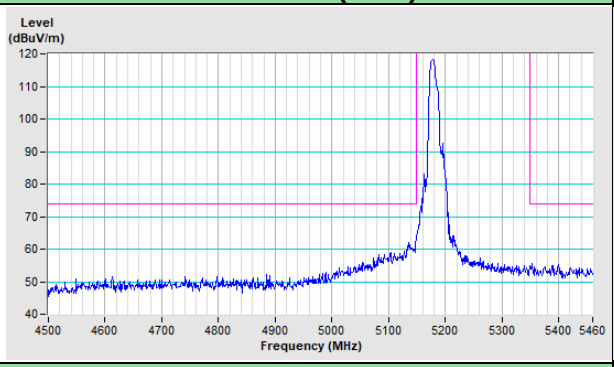
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency,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



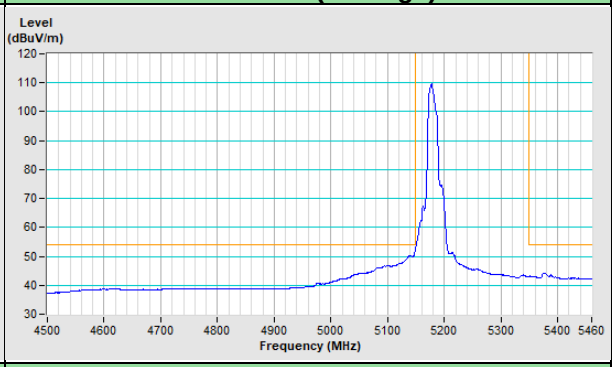
Plot of Band Edge

802.11a Channel 36

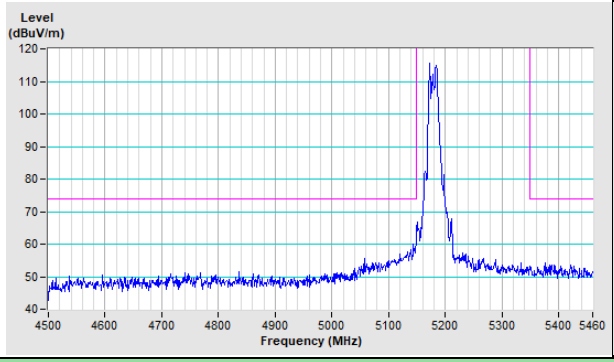
Horizontal (Peak)



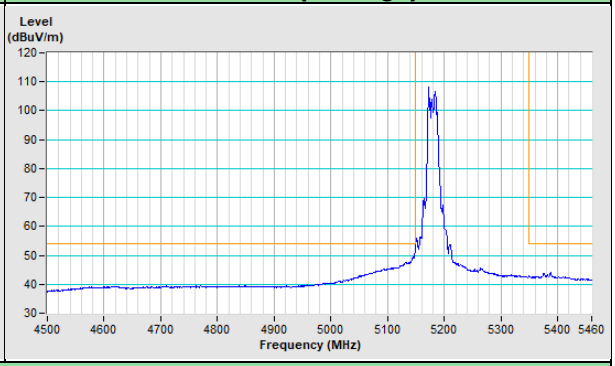
Horizontal (Average)



Vertical (Peak)

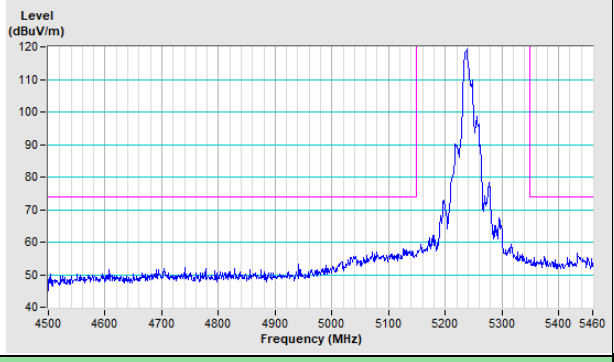


Vertical (Average)

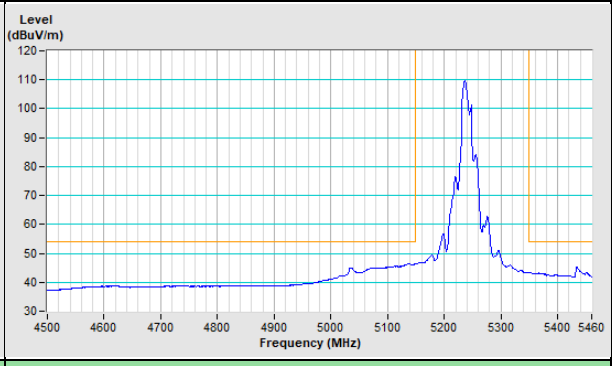


802.11a Channel 48

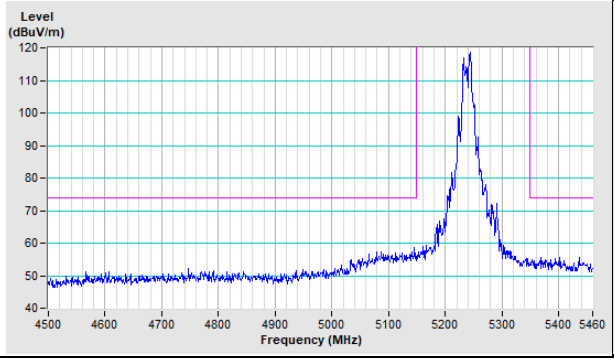
Horizontal (Peak)



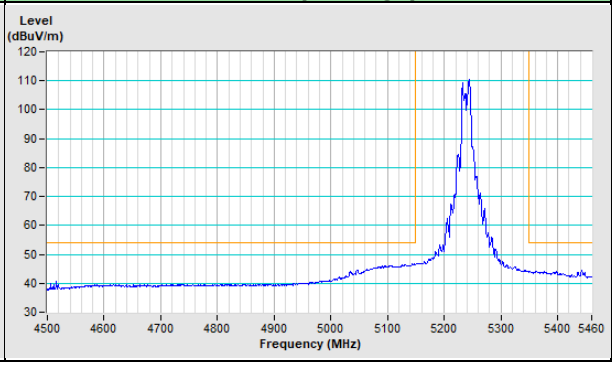
Horizontal (Average)

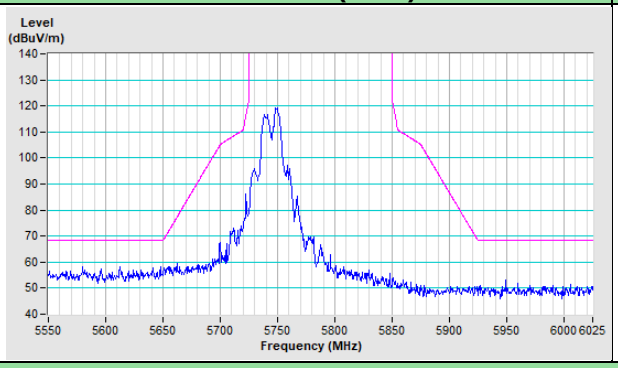
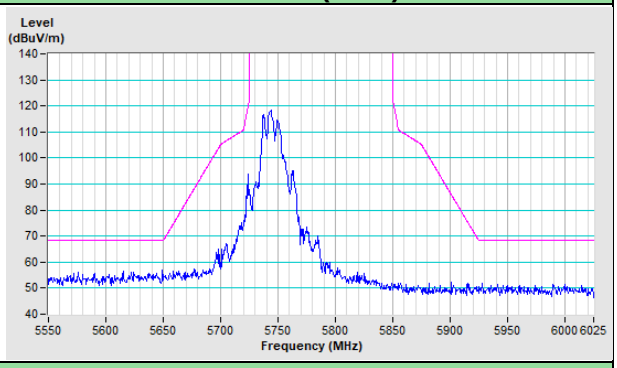


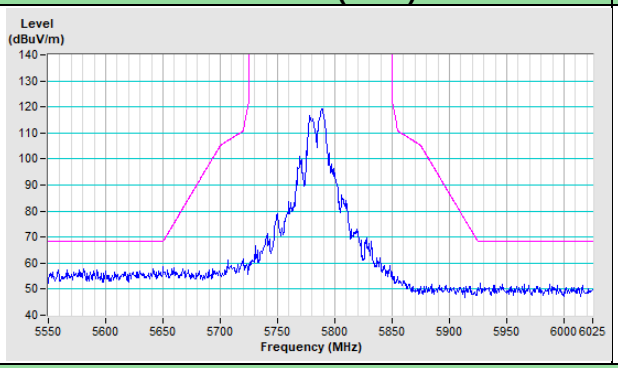
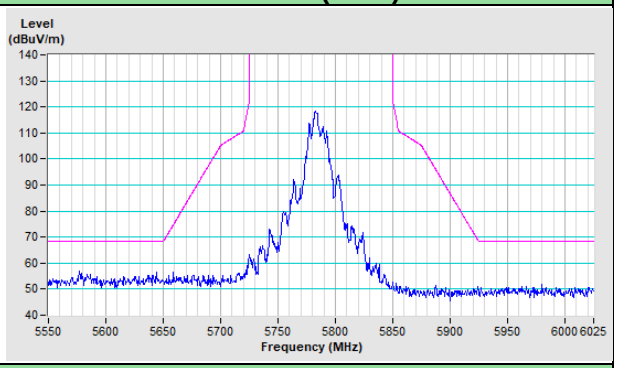
Vertical (Peak)

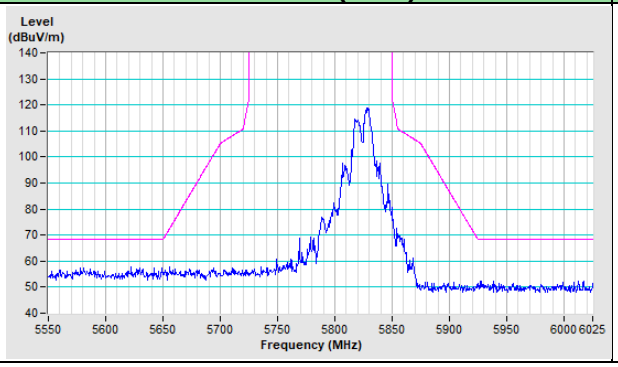
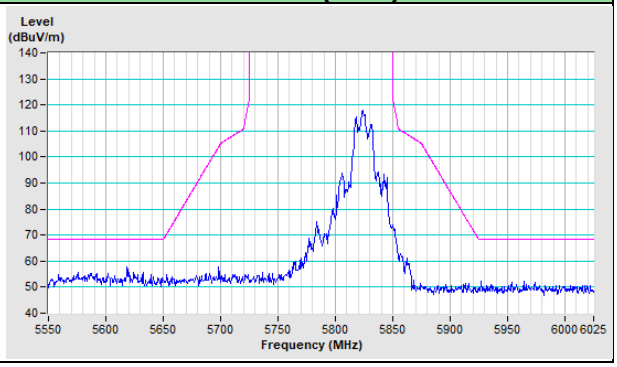


Vertical (Average)



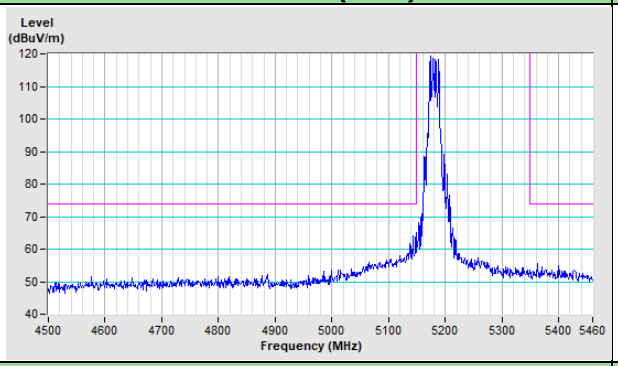
802.11a Channel 149	
Horizontal (Peak)	Vertical (Peak)
	

802.11a Channel 157	
Horizontal (Peak)	Vertical (Peak)
	

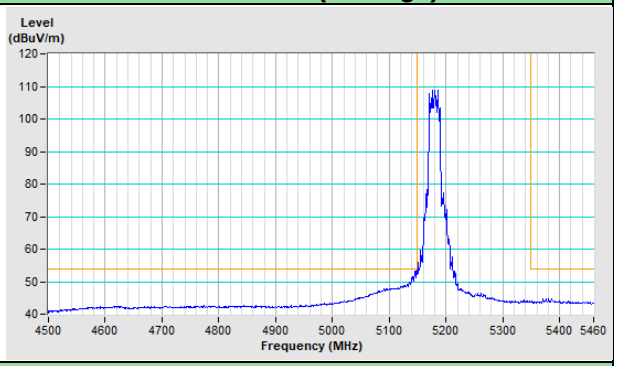
802.11a Channel 165	
Horizontal (Peak)	Vertical (Peak)
	

802.11ax (HE20) Channel 36

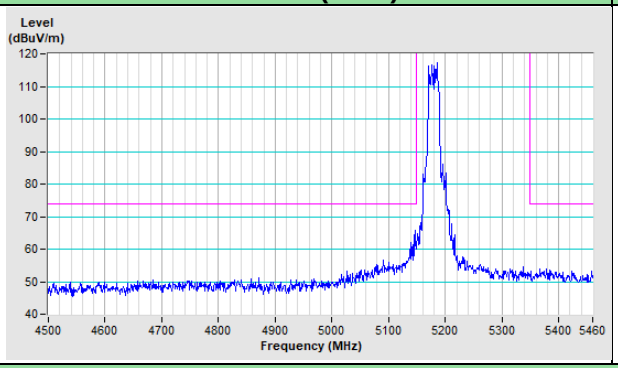
Horizontal (Peak)



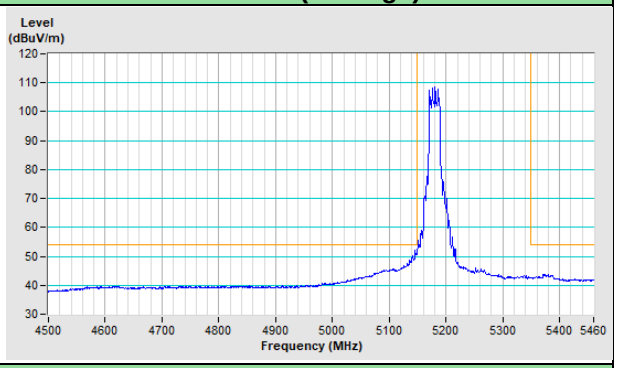
Horizontal (Average)



Vertical (Peak)

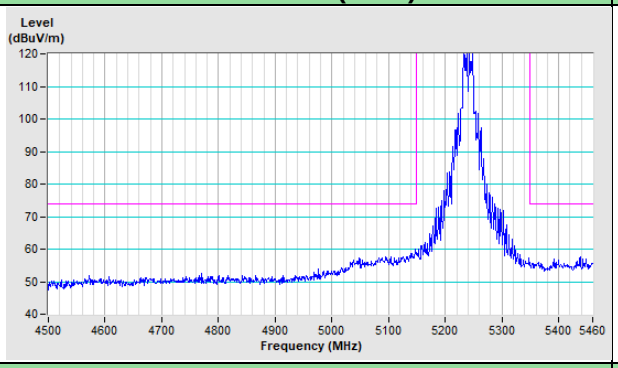


Vertical (Average)

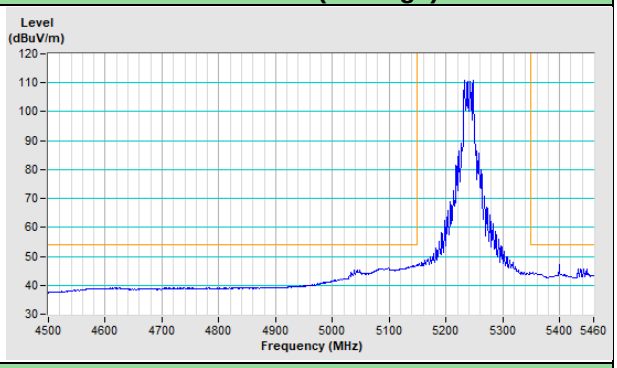


802.11ax (HE20) Channel 48

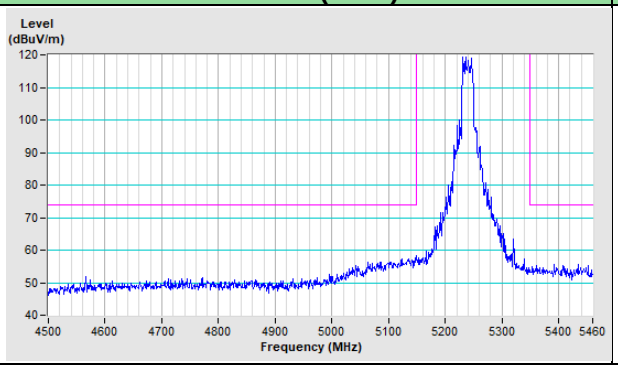
Horizontal (Peak)



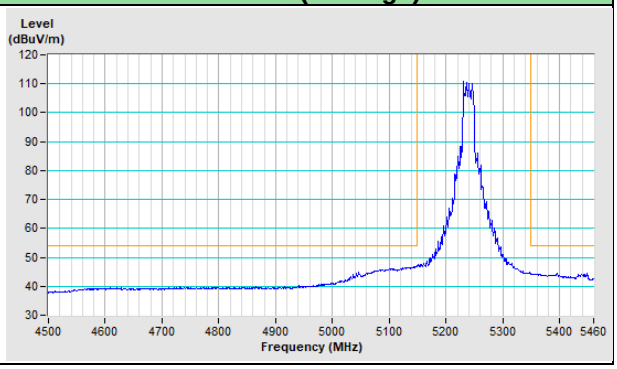
Horizontal (Average)

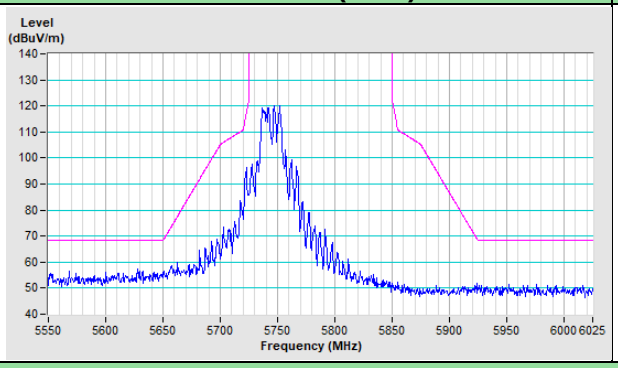
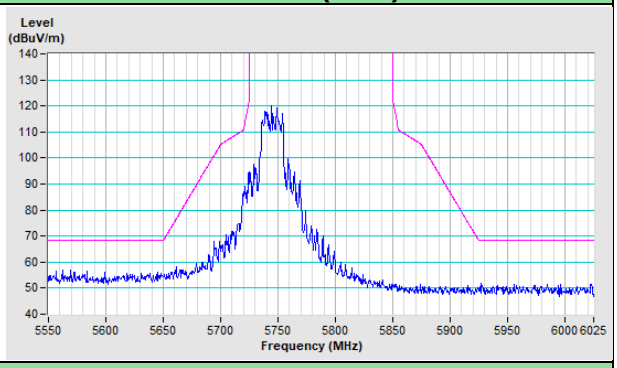


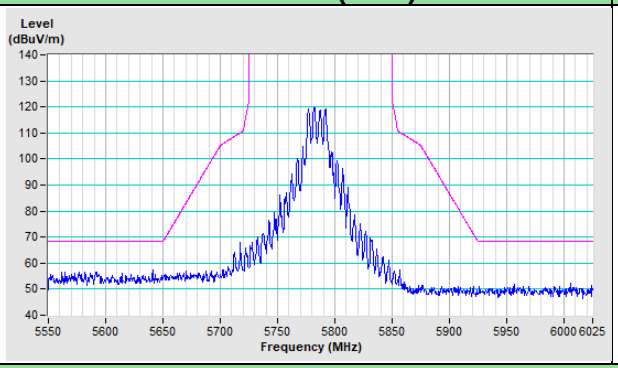
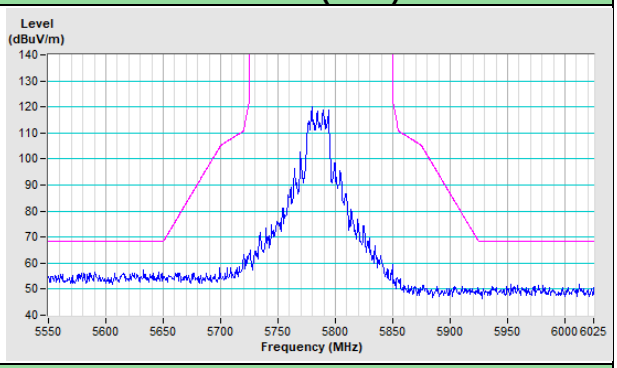
Vertical (Peak)

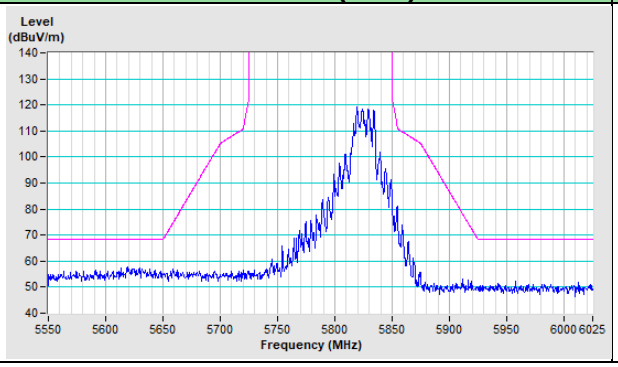
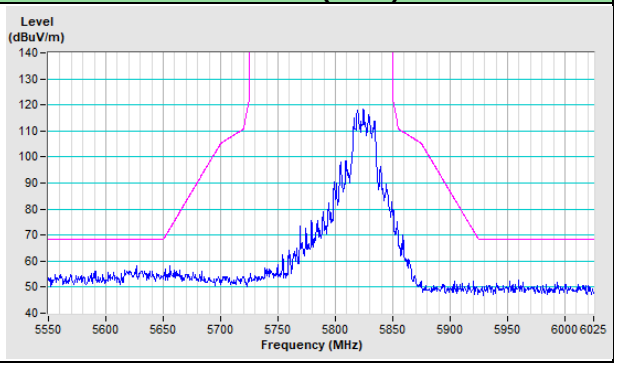


Vertical (Average)



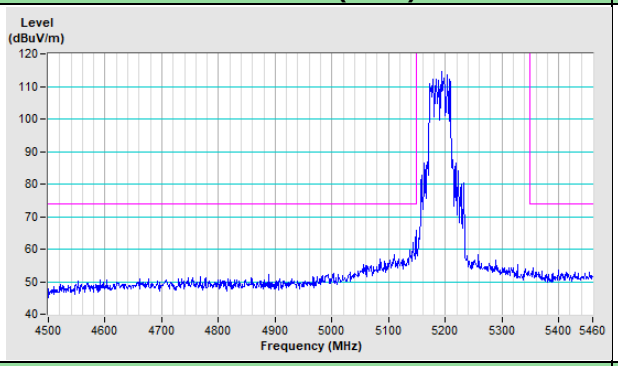
802.11ax (HE20) Channel 149	
Horizontal (Peak)	Vertical (Peak)
	

802.11ax (HE20) Channel 157	
Horizontal (Peak)	Vertical (Peak)
	

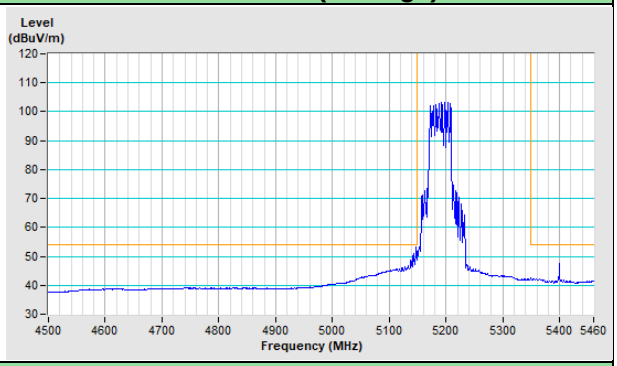
802.11ax (HE20) Channel 165	
Horizontal (Peak)	Vertical (Peak)
	

802.11ax (HE40) Channel 38

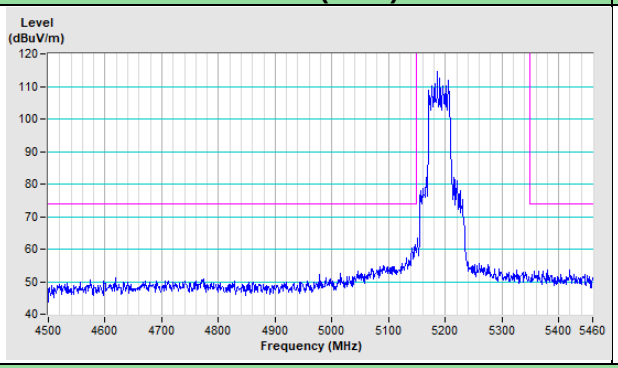
Horizontal (Peak)



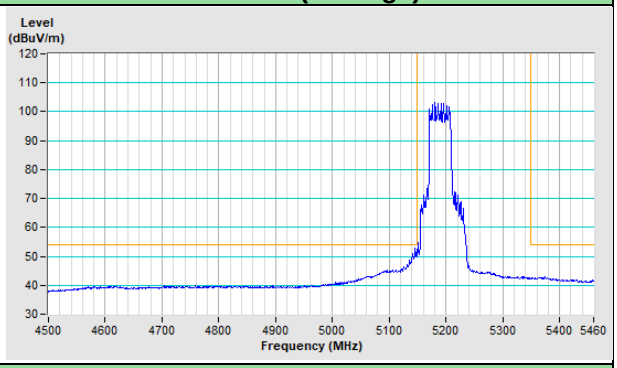
Horizontal (Average)



Vertical (Peak)

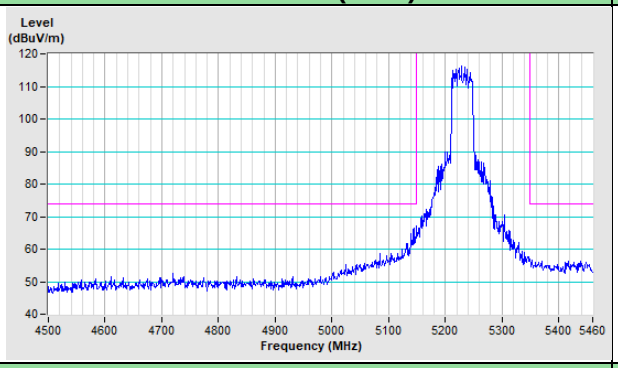


Vertical (Average)

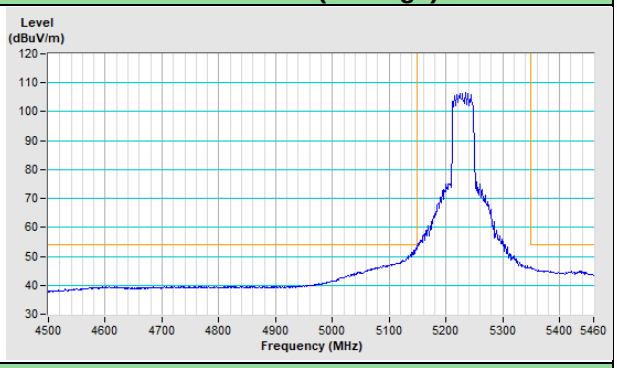


802.11ax (HE40) Channel 46

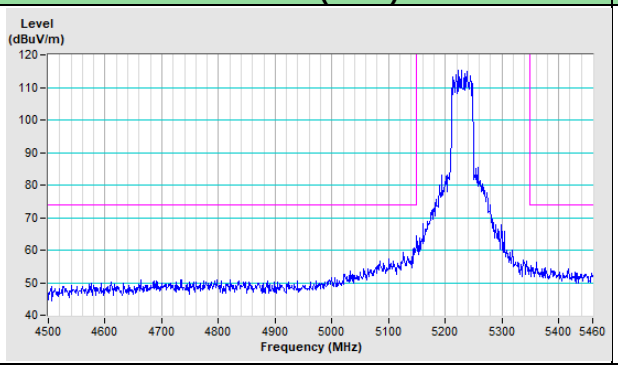
Horizontal (Peak)



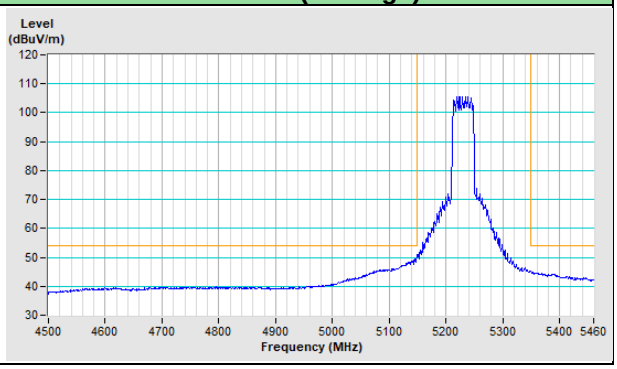
Horizontal (Average)

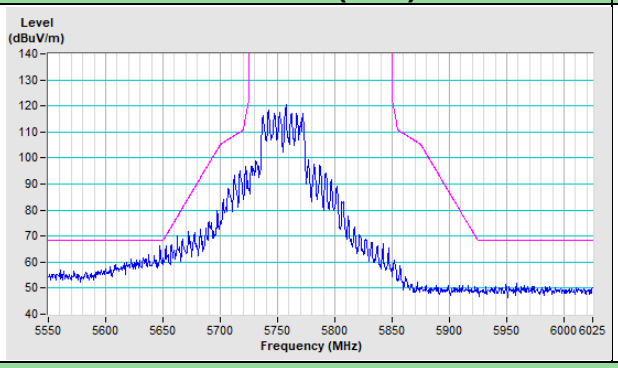
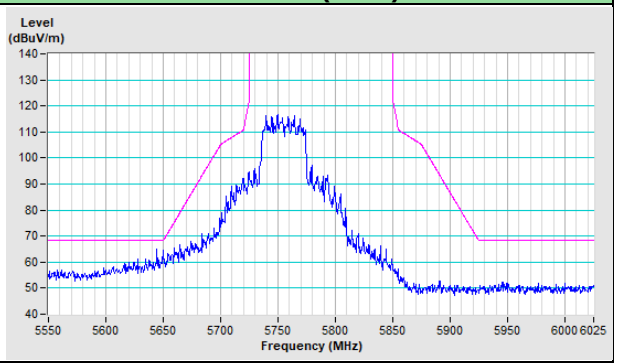


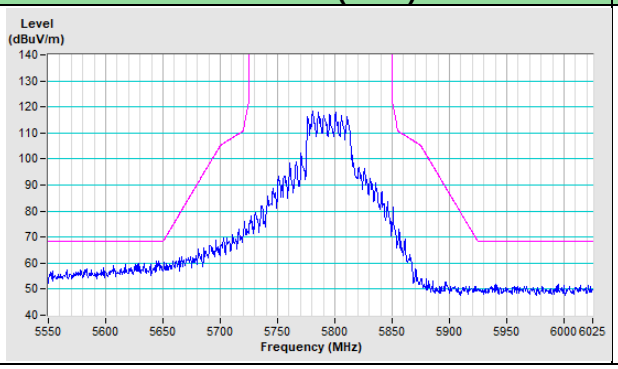
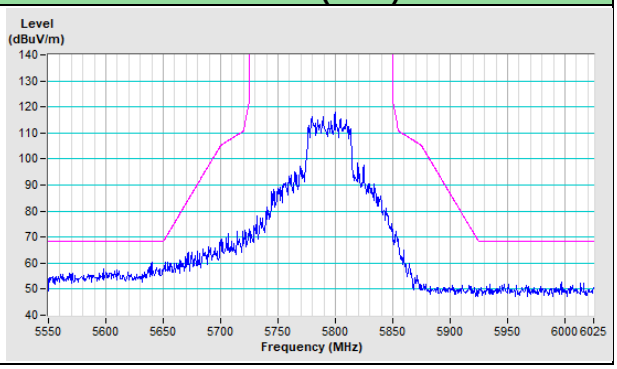
Vertical (Peak)

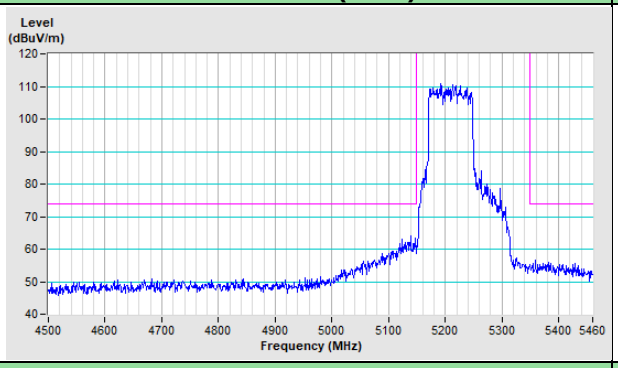
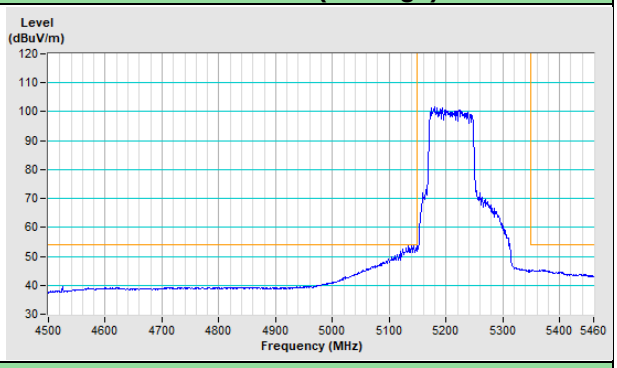
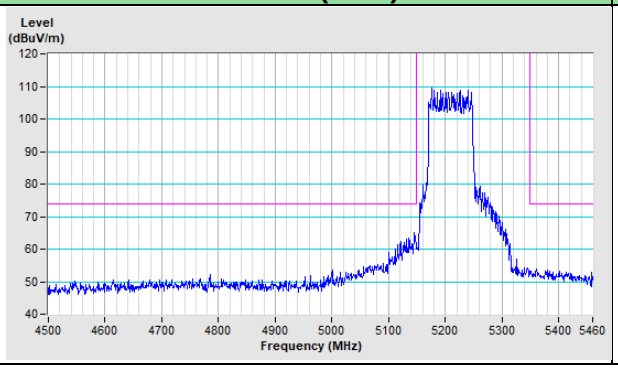
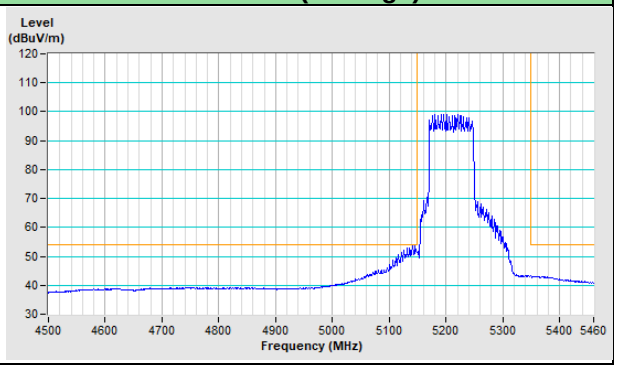


Vertical (Average)



802.11ax (HE40) Channel 151	
Horizontal (Peak)	Vertical (Peak)
	

802.11ax (HE40) Channel 159	
Horizontal (Peak)	Vertical (Peak)
	

802.11ax (HE80) Channel 42	
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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