

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBBQZ-WTW-P21120286-1

FCC ID: PY322100553

Model No.: MM32X

Received Date: 2022/1/20

Test Date: 2022/2/28 ~ 2022/3/11

Issued Date: 2022/4/1

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

Designation Number:

Approved by:



Clark Lin / Technical Manager

Date:

2022/4/1

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Prepared by : Cherry Chuo / Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBBQZ-WTW-P21120286-1	Original release.	2022/4/1

1 Certificate

Product: Wireless Module

Brand: NETGEAR

Test Model: MM32X

Sample Status: Engineering sample

**Applicant and
Manufacturer:** NETGEAR, Inc.

Test Date: 2022/2/28 ~ 2022/3/11

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 -6.56 dB at 0.36094 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -3.5 dB at 875.10 MHz
15.407(b)(1/2/3/4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.1 dB at 11570.00 MHz, 5150.00 MHz, 5350.00 MHz
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

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	Wireless Module
Brand	NETGEAR
Test Model	MM32X
FW Version	4.4.154-2.0.1
Status of EUT	Engineering sample
Power Supply Rating	12 Vdc
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	Up to 1201.0 Mbps
Operating Frequency	5180 ~ 5240 MHz 5745 ~ 5825 MHz
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	5180 ~ 5240 MHz : 247.236 mW (23.93 dBm) 5745 ~ 5825 MHz : 593.851 mW (27.74 dBm)
EUT Category	Client device

Note:

1. Simultaneously transmission condition.

Condition	Technology	
1	WLAN 2.4GHz	WLAN 5GHz

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

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna NO.	Model	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type
MC321-Ant0	907X00747X22(580)	1.03	2.4~2.4835	Dipole	ipex(MHF)
		1.36	5.15~5.25		
		1.78	5.725~5.85		
MC321-Ant1	907X00747X11(580)	1.33	2.4~2.4835	Dipole	ipex(MHF)
		2.22	5.15~5.25		
		2.24	5.725~5.85		
MC327-Ant0	907X00747X88	0.64	2.4~2.4835	Dipole	ipex(MHF)
		1.24	5.15~5.25		
		1.51	5.725~5.85		
MC327-Ant1	907X00747X35	1.61	2.4~2.4835	Dipole	ipex(MHF)
		2.03	5.15~5.25		
		2.33	5.725~5.85		

*The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2. The EUT incorporates a MIMO function:

5 GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX

Note:

- 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 (40MHz, 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 ~ 5240MHz

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 channels are 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

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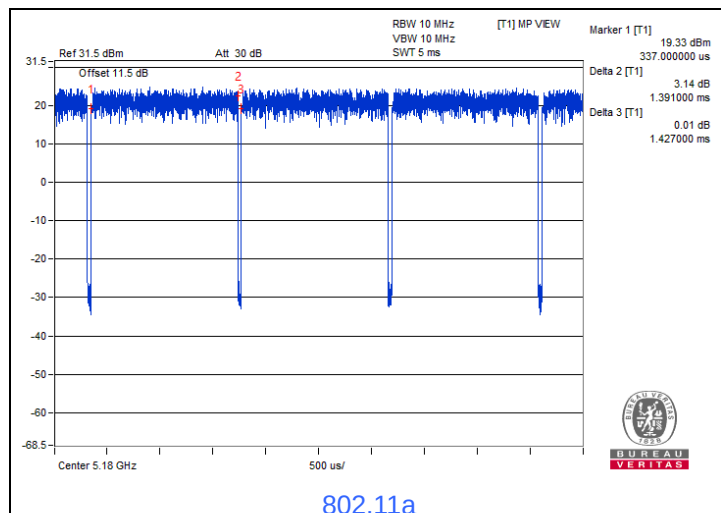
Following channel(s) was (were) selected for the final test as listed below:

Test Item	Mode	Tested Channel	Modulation	Data Rate Parameter
AC Power Conducted Emissions	802.11ax (HE40)	151	BPSK	MCS0
Unwanted Emissions below 1 GHz	802.11ax (HE40)	151	BPSK	MCS0
Unwanted Emissions above 1 GHz	802.11a	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ax (HE80)	42, 155	BPSK	MCS0
RF Output Power / Power Spectral Density / Occupied Bandwidth	802.11a	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ax (HE80)	42, 155	BPSK	MCS0
6 dB Bandwidth	802.11a	149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	151, 159	BPSK	MCS0
	802.11ax (HE80)	155	BPSK	MCS0
Frequency Stability	802.11a	36	Unmodulation	-
EUT Configure Mode:	Use Antenna NO.: MC321-Ant1			

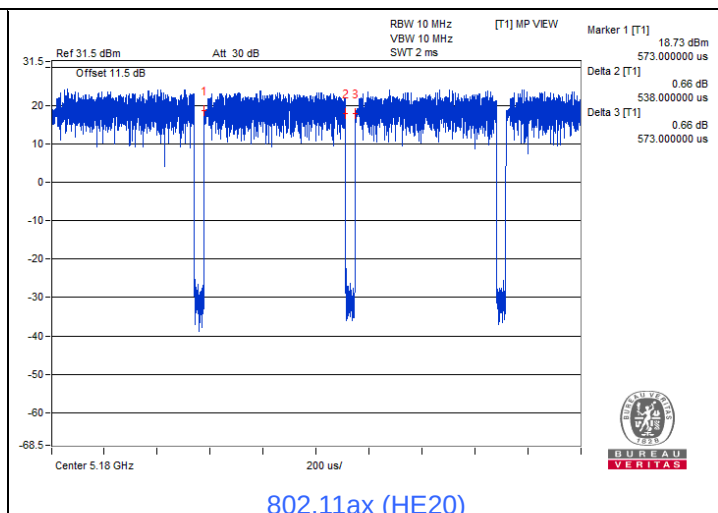
3.5 Duty Cycle of Test Signal

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

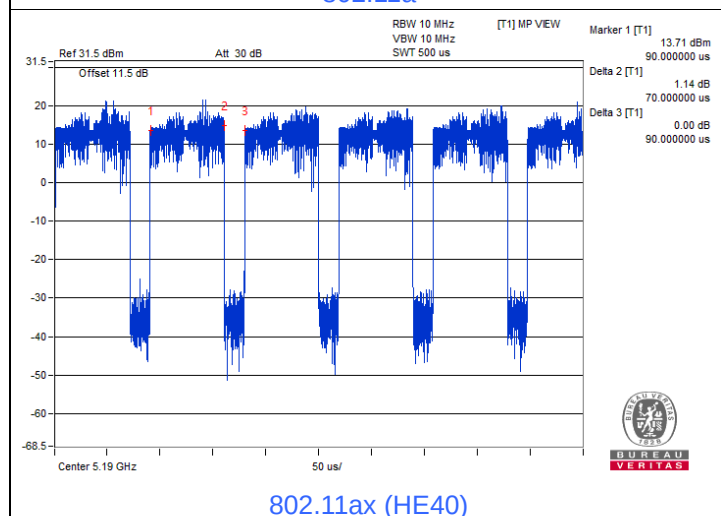
802.11a: Duty cycle = $1.391 \text{ ms} / 1.427 \text{ ms} = 97.5\%$, duty factor = $10 * \log(1/\text{Duty cycle}) = 0.11 \text{ dB}$
802.11ax (HE20): Duty cycle = $0.538 \text{ ms} / 0.573 \text{ ms} = 93.9\%$, duty factor = $10 * \log(1/\text{Duty cycle}) = 0.27 \text{ dB}$
802.11ax (HE40): Duty cycle = $0.07 \text{ ms} / 0.09 \text{ ms} = 77.8\%$, duty factor = $10 * \log(1/\text{Duty cycle}) = 1.09 \text{ dB}$
802.11ax (HE80): Duty cycle = $0.043 \text{ ms} / 0.061 \text{ ms} = 70.5\%$, duty factor = $10 * \log(1/\text{Duty cycle}) = 1.52 \text{ dB}$



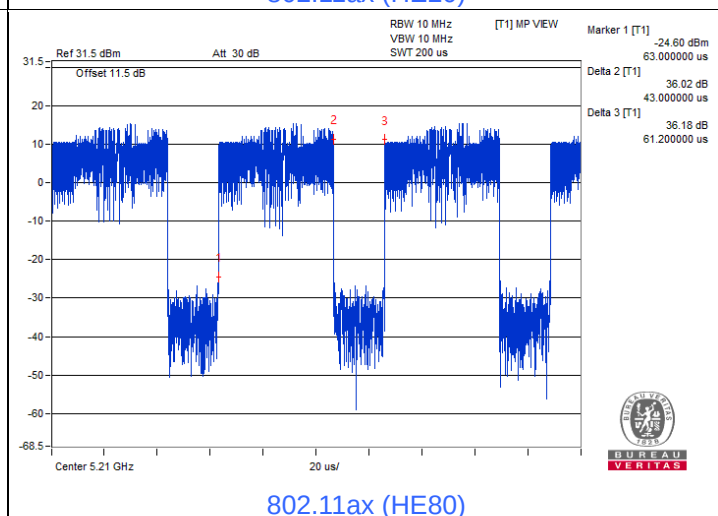
802.11a



802.11ax (HE20)



802.11ax (HE40)



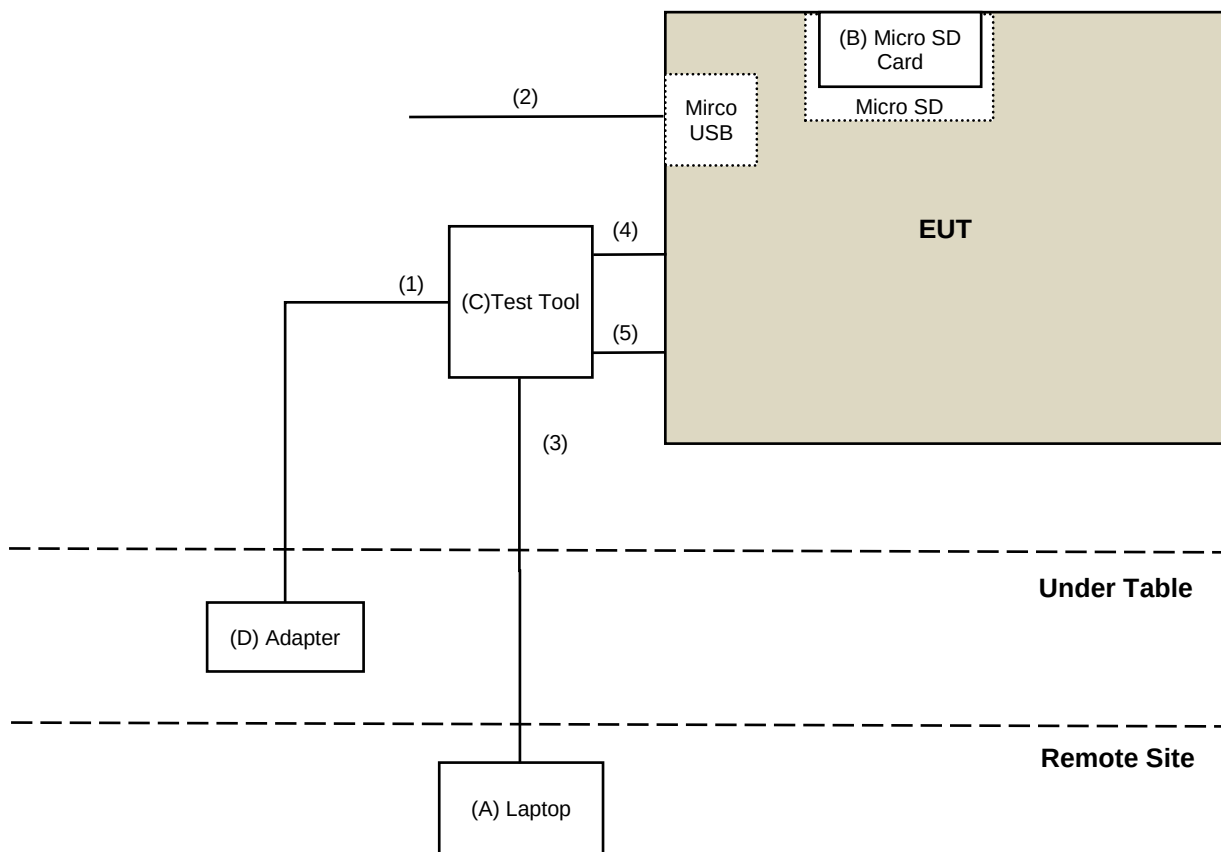
802.11ax (HE80)

3.6 Test Program Used and Operation Descriptions

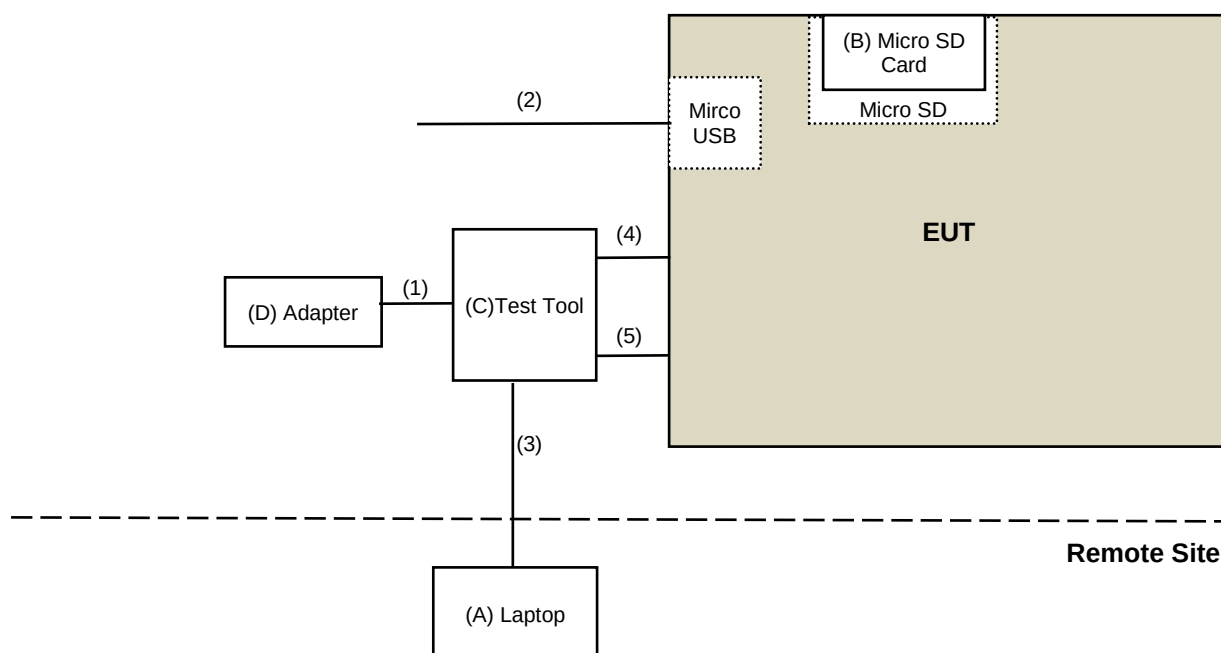
Controlling software (TeraTerm paste cmd.txt command) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

For Radiated Emission test



For AC Power Conducted Emission test



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	N/A	Provided by Lab
B	Micro SD Card	ADATA	N/A	N/A	N/A	Provided by Lab
C	Test Tool	Netgear	N/A	N/A	N/A	Supplied by applicant
D	Adapter	Netgear	ADS-40FPC-12 12030E	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	2.5	No	0	Supplied by applicant
2	Micro USB Cable	1	1	No	0	Provided by Lab
3	LAN Cable	1	10	No	0	Provided by Lab
4	Console Cable	1	0.5	No	0	Supplied by applicant
5	Console Cable	1	0.5	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
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2021/4/13	2022/4/12
Power Meter Anritsu	ML2495A	1529002	2021/6/21	2022/6/20
Pulse Power Sensor Anritsu	MA2411B	1339443	2021/5/31	2022/5/30
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	100964	2021/5/31	2022/5/30

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/3/11

4.2 Power Spectral Density

Refer to section 4.1 to get information of the instruments.

4.3 6 dB Bandwidth

Refer to section 4.1 to get information of the instruments.

4.4 Occupied Bandwidth

Refer to section 4.1 to get information of the instruments.

4.5 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
AC Power Source GOOD WILL	6905S	1991551	N/A	N/A
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2021/4/13	2022/4/12
DC POWER SUPPLY Topward	6603D	795558	N/A	N/A
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	100964	2021/5/31	2022/5/30
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	2021/6/2	2022/6/1

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/3/11

4.6 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohms Terminator	50	3	2021/10/27	2022/10/26
Fixed attenuator STI	STI02-2200-10	005	2021/8/27	2022/8/26
LISN R&S	ESH3-Z5	848773/004	2021/10/29	2022/10/28
LISN R & S	ESH3-Z5	835239/001	2021/3/26	2022/3/25
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2021/9/25	2022/9/24
Software BVADT	BVADT_Conc_V7.3.7.4	N/A	N/A	N/A
TEST RECEIVER R&S	ESCS 30	847124/029	2021/10/13	2022/10/12

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2022/3/1

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
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	2021/9/23	2022/9/22
Loop Antenna TESEQ	HLA 6121	45745	2021/7/21	2022/7/20
Pre_Amplifier EMCI	EMC001340	980142	2021/5/24	2022/5/23
Pre_Amplifier Mini-Circuits	ZFL-1000VH2	QA0838008	2021/10/19	2022/10/18
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/1/6	2023/1/5
		LOOPCAB-002	2022/1/6	2023/1/5
RF Coaxial Cable COMMATE/PEWC	8D	001	2022/2/26	2023/2/25
		966-3-2	2021/3/16	2022/3/15
		966-3-3	2022/2/26	2023/2/25
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2021/4/26	2022/4/25
Test Receiver KEYSIGHT	N9038A	MY59050100	2021/5/3	2022/5/2
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-361	2021/10/26	2022/10/25

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/3/7

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	BBHA9120-D	9120D-406	2021/11/14	2022/11/13
	BBHA 9170	BBHA9170519	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	2021/5/13	2022/5/12
RF Cable-Frequency range: 1- 40GHz EMCI	EMC102-KM-KM-1200	160924	2022/1/10	2023/1/9
RF Coaxial Cable EMCI	EMC104-SM-SM-1500	180504	2021/4/26	2022/4/25
	EMC104-SM-SM-2000	180601	2021/6/8	2022/6/7
	EMC-KM-KM-4000	200214	2021/3/10	2022/3/9
	EMC-KM-KM-4000	200214	2022/3/8	2023/3/7
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2021/4/26	2022/4/25
Spectrum Analyzer Keysight	N9030A	MY54490679	2021/7/9	2022/7/8
Test Receiver KEYSIGHT	N9038A	MY59050100	2021/5/3	2022/5/2

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/2/28 ~ 2022/3/10

5 Limits of Test Items

5.1 RF Output Power

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

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

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

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

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

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

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

5.2 Power Spectral Density

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

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

5.3 6 dB Bandwidth

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

5.4 Occupied Bandwidth

The results are for reference only.

5.5 Frequency Stability

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

5.6 AC Power Conducted Emissions

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

Notes:

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

5.7 Unwanted Emissions below 1 GHz

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

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

Notes:

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

5.8 Unwanted Emissions above 1 GHz

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

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

Notes:

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

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3 m	
		PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2 (dBμV/m) ^{*1} PK: 105.2 (dBμV/m) ^{*2} PK: 110.8 (dBμV/m) ^{*3} PK: 122.2 (dBμV/m) ^{*4}
^{*1} beyond 75 MHz or more above of the band edge. ^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above. ^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

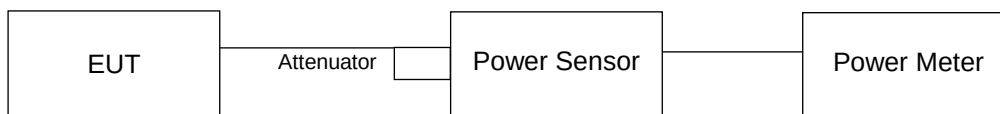
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

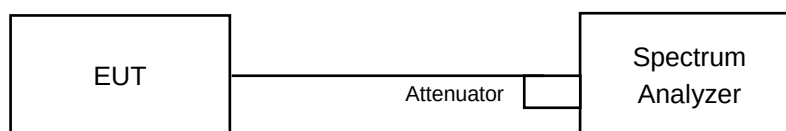


6.1.2 Test Procedure

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-2

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

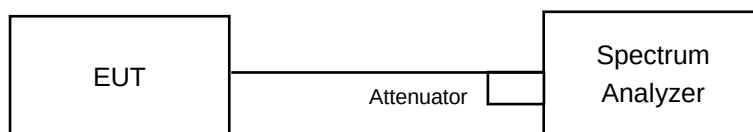
For specified measurement bandwidth 500 kHz:

Method SA-2

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

6.3 6 dB Bandwidth

6.3.1 Test Setup

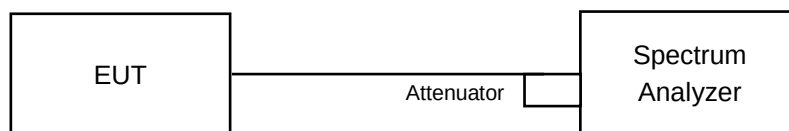


6.3.2 Test Procedure

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

6.4 Occupied Bandwidth

6.4.1 Test Setup

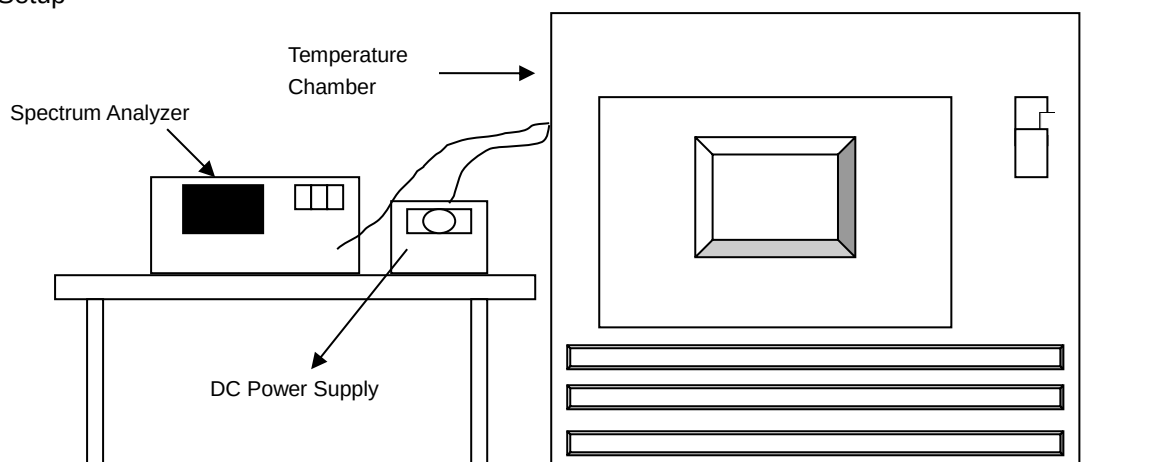


6.4.2 Test Procedure

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

6.5 Frequency Stability

6.5.1 Test Setup

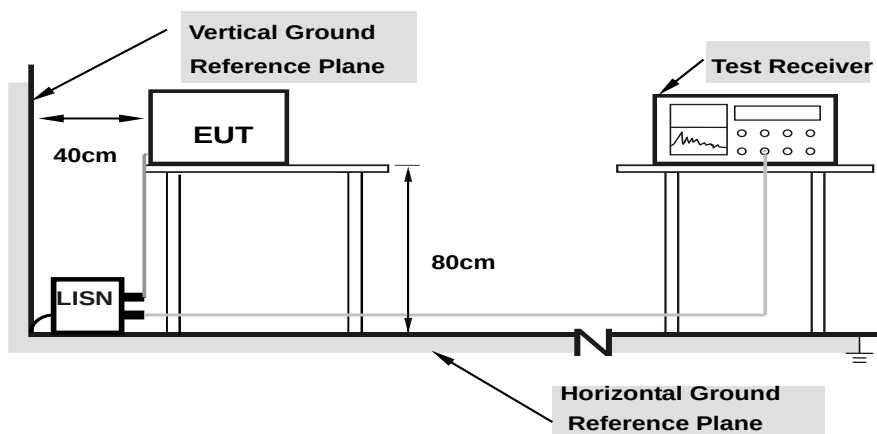


6.5.2 Test Procedure

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

6.6 AC Power Conducted Emissions

6.6.1 Test Setup



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

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

6.6.2 Test Procedure

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

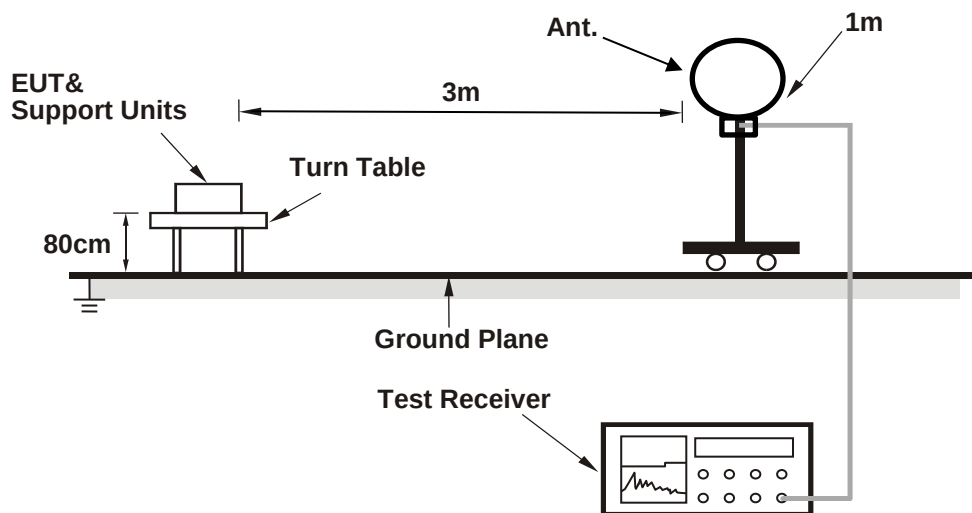
Note:

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

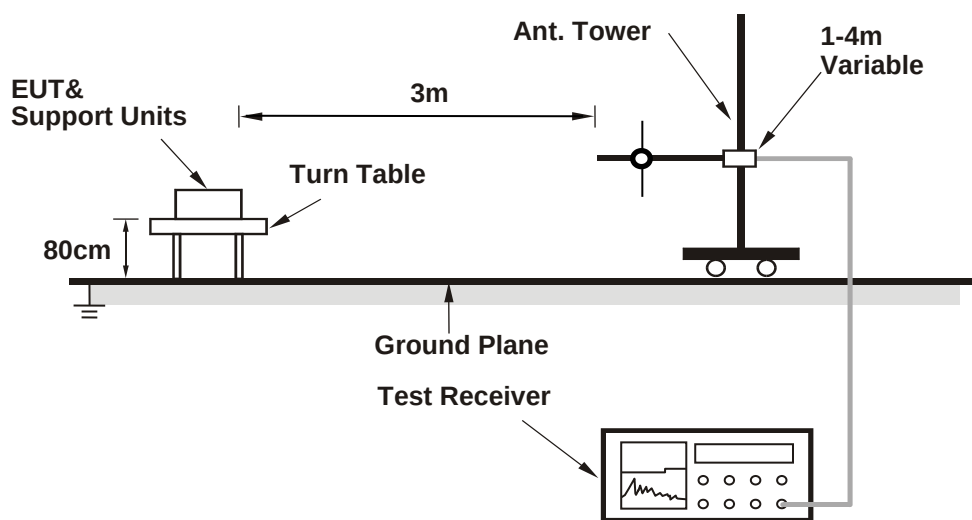
6.7 Unwanted Emissions below 1 GHz

6.7.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz at frequency below 30 MHz.
2. 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.

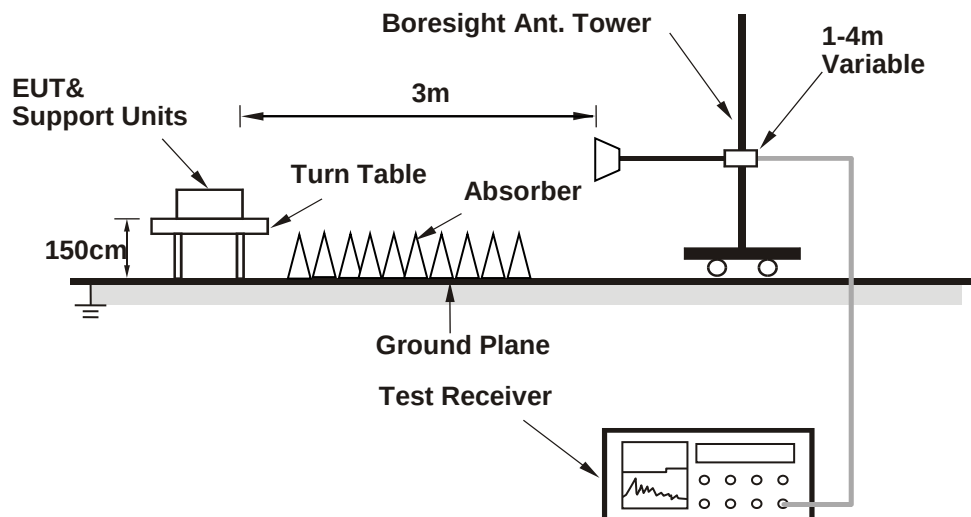
Notes:

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 Radiated emission above 1 GHz



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

6.8.2 Test Procedure

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

Notes:

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

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	12 Vdc	Environmental Conditions:	24 °C, 60 % RH	Tested By:	Eric Peng
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802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	18.97	18.45	148.87	21.73	24	Pass
40	5200	20.43	21.15	240.725	23.82	24	Pass
48	5240	20.32	21.27	241.614	23.83	24	Pass
149	5745	24.61	24.48	569.611	27.56	30	Pass
157	5785	24.02	24.81	555.039	27.44	30	Pass
165	5825	24.21	24.27	530.934	27.25	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 2.22 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 2.24 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	18.08	18.46	134.414	21.28	24	Pass
40	5200	20.72	20.97	243.058	23.86	24	Pass
48	5240	20.69	21.14	247.236	23.93	24	Pass
149	5745	23.89	24.01	496.674	26.96	30	Pass
157	5785	23.70	24.19	496.845	26.96	30	Pass
165	5825	23.69	24.14	493.302	26.93	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 2.22 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 2.24 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	17.02	17.44	105.813	20.25	24	Pass
46	5230	18.39	19.16	151.438	21.80	24	Pass
151	5755	24.22	25.18	593.851	27.74	30	Pass
159	5795	23.96	25.16	576.981	27.61	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 2.22 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 2.24 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	16.51	17.03	95.237	19.79	24	Pass
155	5775	21.79	22.32	321.616	25.07	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 2.22 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 2.24 dBi < 6 dBi, so the output power limit shall not be reduced.

7.2 Power Spectral Density

Input Power:	12 Vdc	Environmental Conditions:	24 °C, 60 % RH	Tested By:	Eric Peng
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802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
36	5180	7.20	6.02	0.11	9.77	11.00	Pass
40	5200	7.69	7.93	0.11	10.93	11.00	Pass
48	5240	7.67	7.59	0.11	10.75	11.00	Pass

Notes:

- Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 4.81 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
36	5180	6.15	6.70	0.27	9.71	11.00	Pass
40	5200	6.85	7.31	0.27	10.37	11.00	Pass
48	5240	7.01	7.43	0.27	10.51	11.00	Pass

Notes:

- Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 4.81 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
38	5190	2.06	3.47	1.09	6.92	11.00	Pass
46	5230	3.75	5.68	1.09	8.92	11.00	Pass

Notes:

- Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 4.81 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
42	5210	-1.91	-1.80	1.52	2.68	11.00	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-1, the directional gain is 4.81 dBi < 6dBi, so the power density limit shall not be reduced.

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
149	5745	8.18	8.05	11.13	0.11	13.46	30	Pass
157	5785	7.72	7.87	10.81	0.11	13.14	30	Pass
165	5825	8.19	6.92	10.61	0.11	12.94	30	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-3, the directional gain is 5.02 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
149	5745	6.67	6.66	9.68	0.27	12.17	30	Pass
157	5785	6.43	7.33	9.91	0.27	12.40	30	Pass
165	5825	6.96	6.79	9.89	0.27	12.38	30	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-3, the directional gain is 5.02 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
151	5755	5.48	6.63	9.1	1.09	12.41	30	Pass
159	5795	6.01	6.58	9.31	1.09	12.62	30	Pass

Notes:

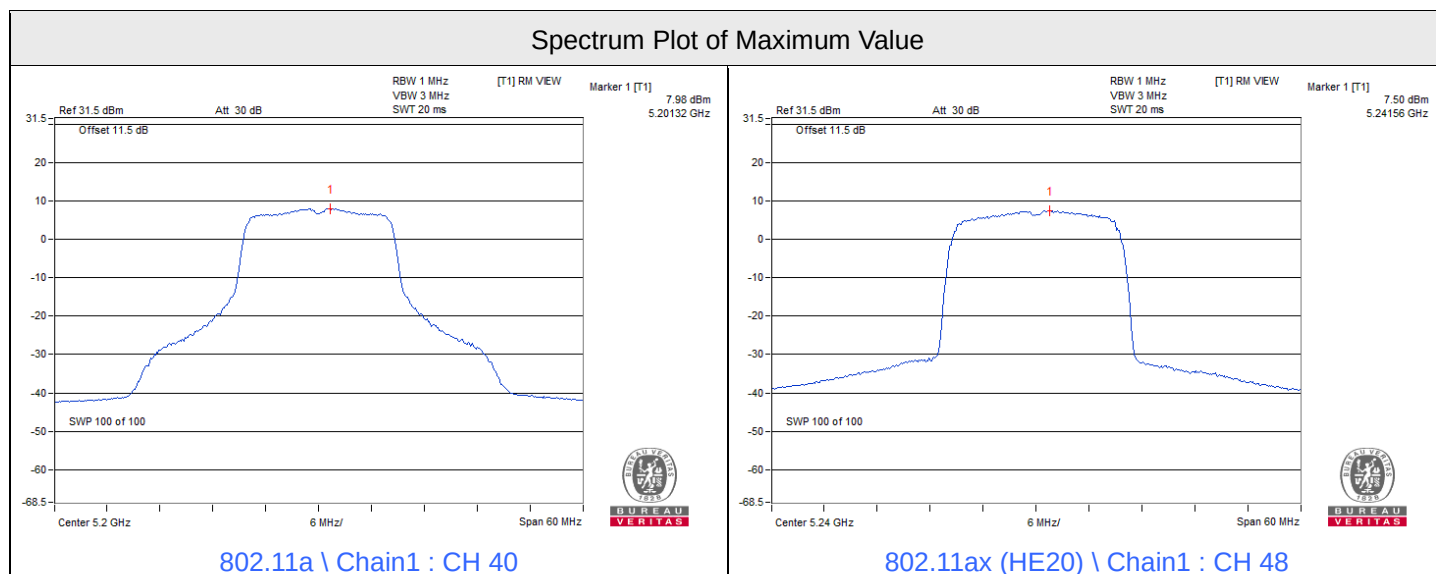
1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-3, the directional gain is 5.02 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE80)

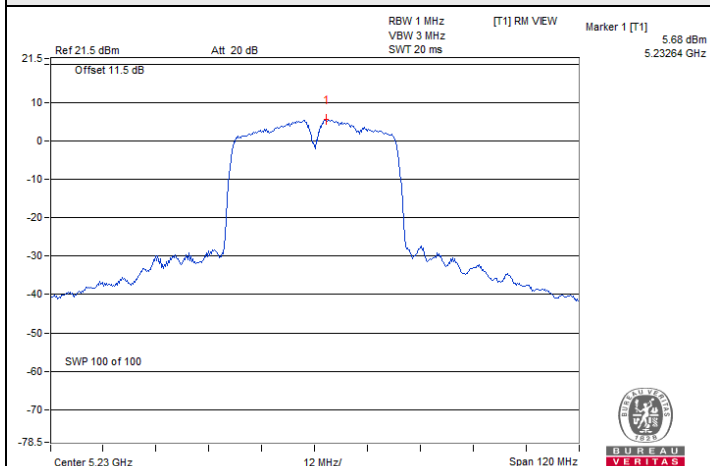
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
155	5775	-3.39	-0.19	1.51	1.52	5.25	30	Pass

Notes:

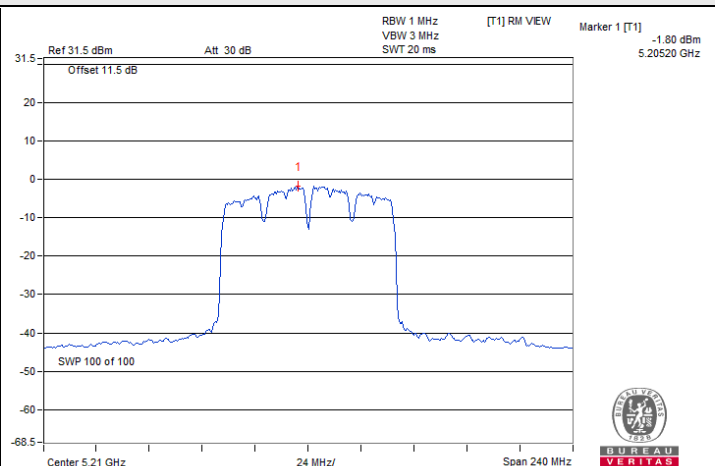
1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-3, the directional gain is 5.02 dBi < 6 dBi, so the power density limit shall not be reduced.



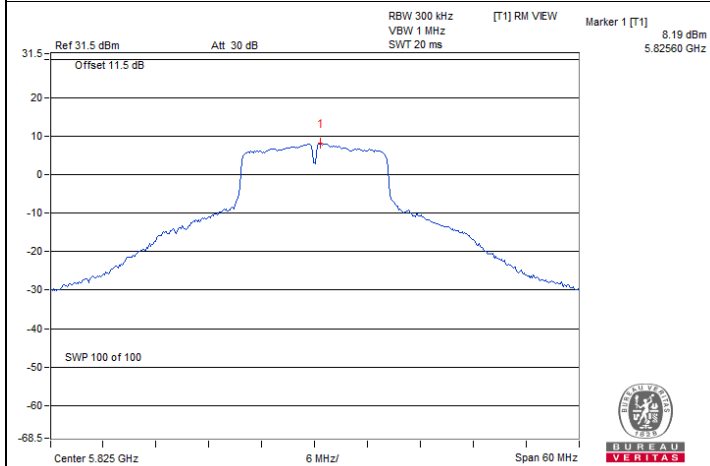
Spectrum Plot of Maximum Value



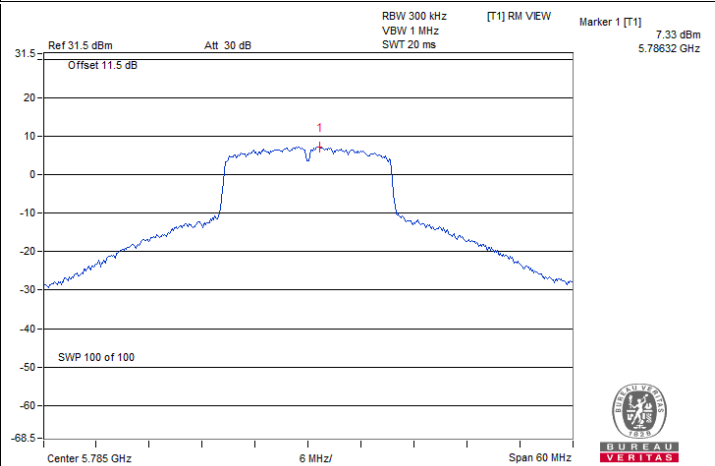
802.11ax (HE40) \ Chain1 : CH 46



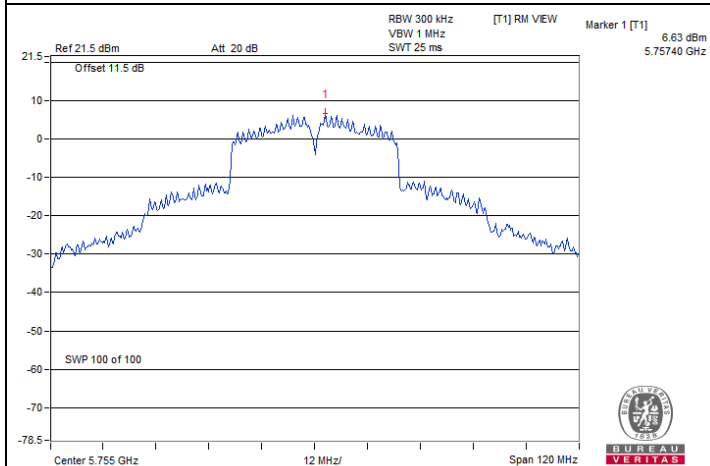
802.11ax (HE80) \ Chain1 : CH 42



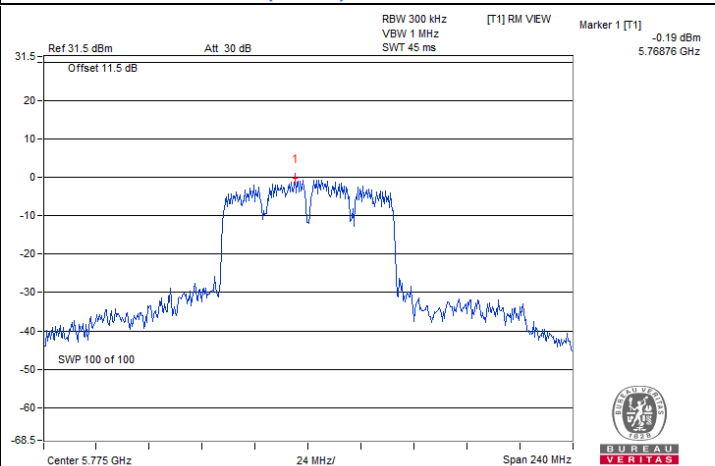
802.11a \ Chain0 : CH 165



802.11ax (HE20) \ Chain1 : CH 157



802.11ax (HE40) \ Chain1 : CH 151



802.11ax (HE80) \ Chain1 : CH 155

7.3 6 dB Bandwidth

Input Power:	12 Vdc	Environmental Conditions:	24 °C, 60 % RH	Tested By:	Eric Peng
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802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	15.78	16.37	0.5	Pass
157	5785	15.93	16.36	0.5	Pass
165	5825	15.78	16.37	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	18.76	18.92	0.5	Pass
157	5785	18.83	18.94	0.5	Pass
165	5825	18.81	18.94	0.5	Pass

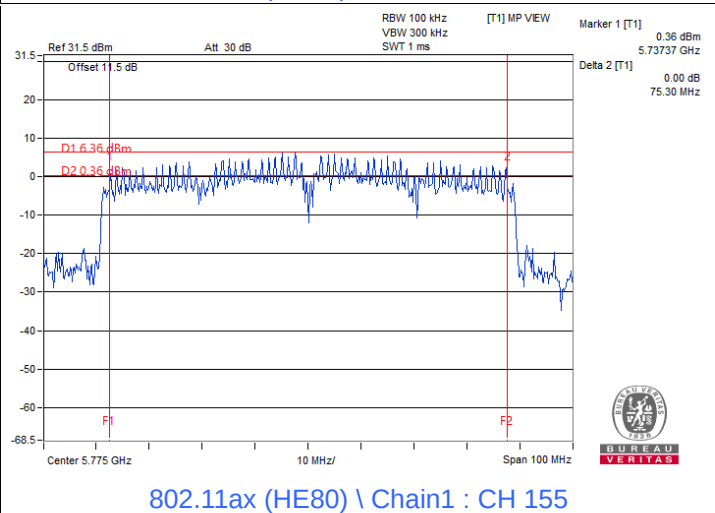
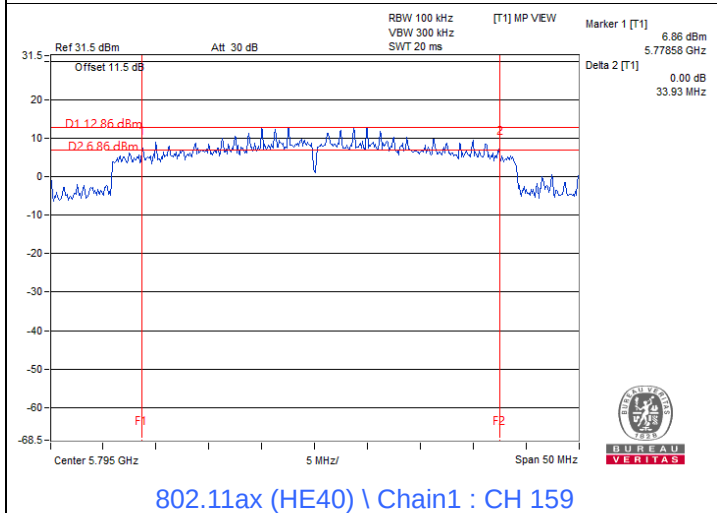
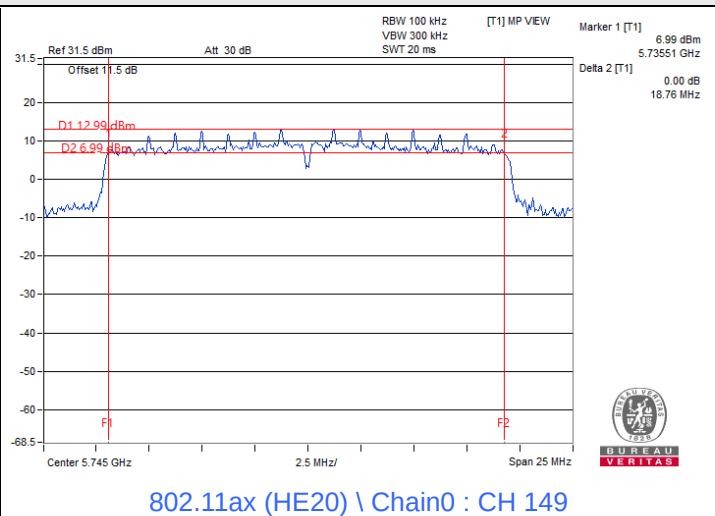
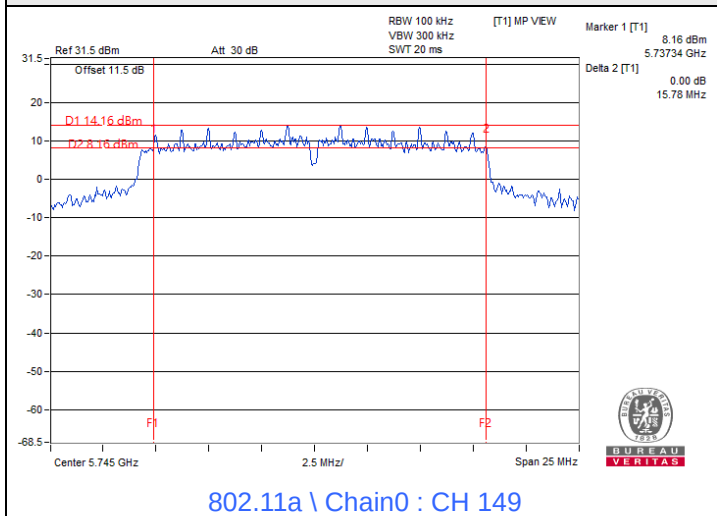
802.11ax (HE40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
151	5755	35.16	33.96	0.5	Pass
159	5795	33.98	33.93	0.5	Pass

802.11ax (HE80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
155	5775	75.32	75.3	0.5	Pass

Spectrum Plot of Minimum Value



7.4 Occupied Bandwidth

Input Power:	12 Vdc	Environmental Conditions:	24 °C, 60 % RH	Tested By:	Eric Peng
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802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18	17.04
40	5200	18.12	17.52
48	5240	17.04	16.68
149	5745	28.32	27
157	5785	26.64	26.16
165	5825	28.68	20.52

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	19.08	19.2
40	5200	19.08	19.08
48	5240	18.84	18.84
149	5745	23.16	21.72
157	5785	21.84	28.32
165	5825	25.44	22.92

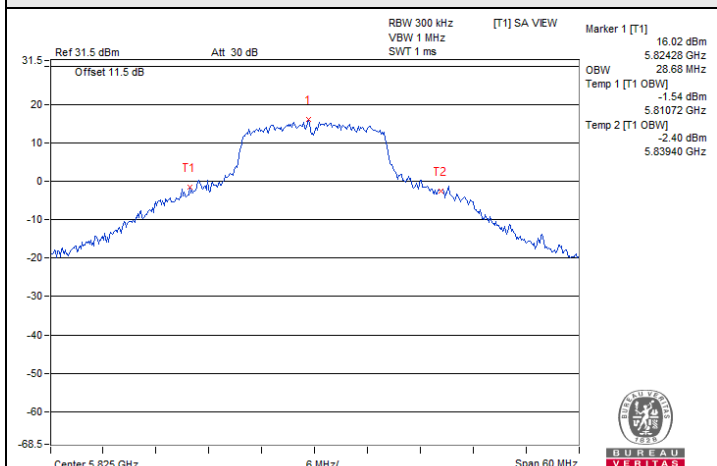
802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	37.92	37.92
46	5230	37.92	37.92
151	5755	47.76	56.64
159	5795	54	59.65

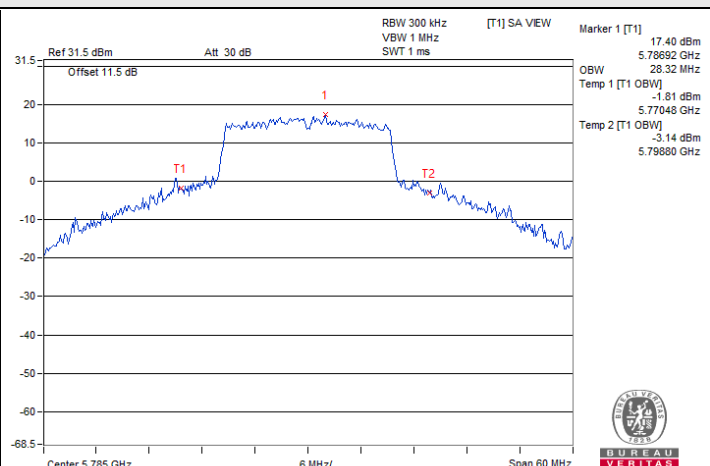
802.11ax (HE80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	76.8	76.8
155	5775	78.61	81.74

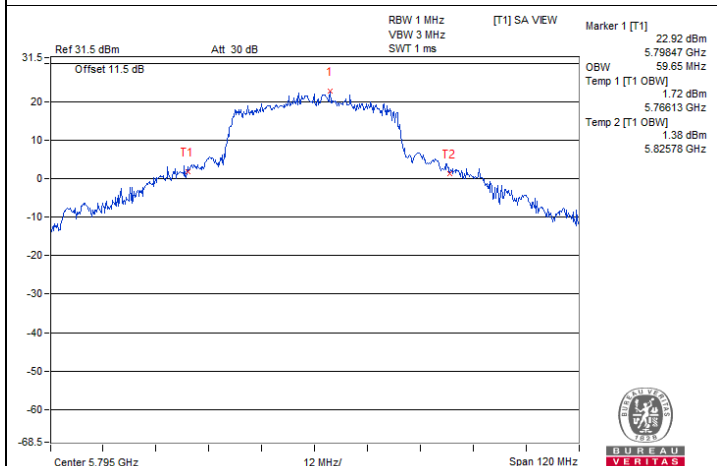
Spectrum Plot of Maximum Value



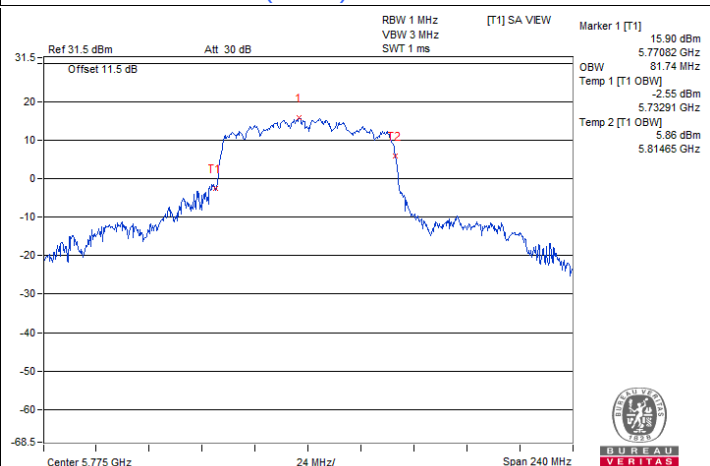
802.11a \ Chain0 : CH 165



802.11ax (HE20) \ Chain1 : CH 157

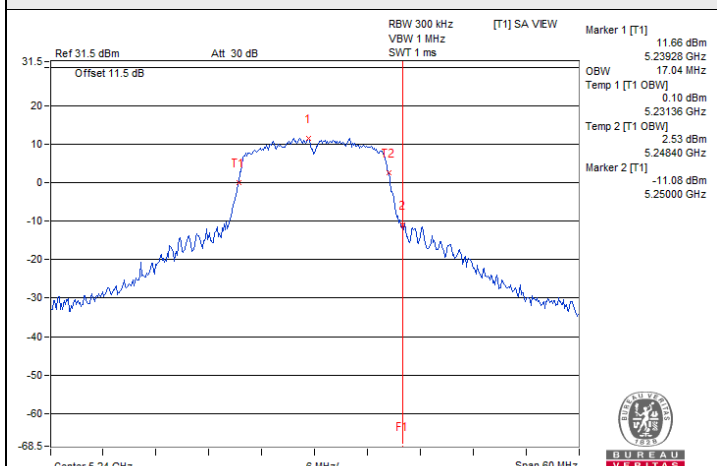


802.11ax (HE40) \ Chain1 : CH 159

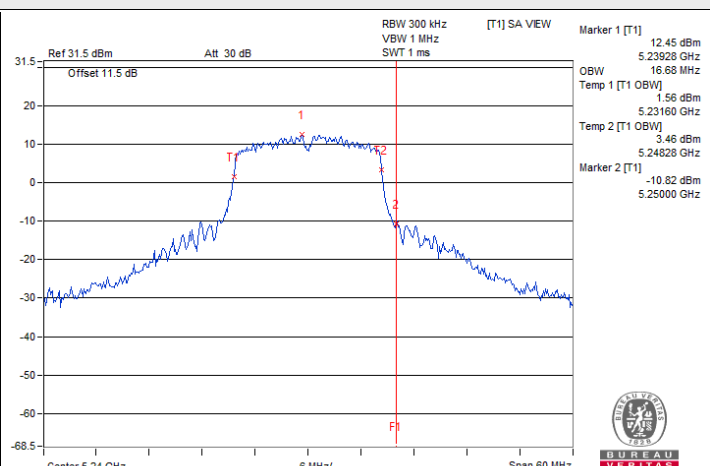


802.11ax (HE80) \ Chain1 : CH 155

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

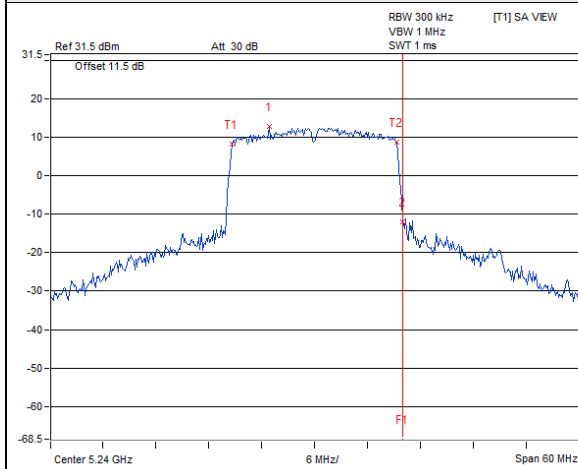


802.11a \ Chain 0 : CH 48

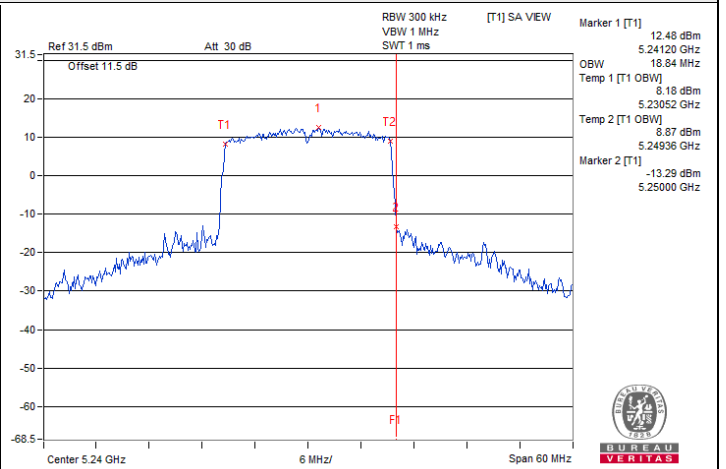


802.11a \ Chain 1 : CH 48

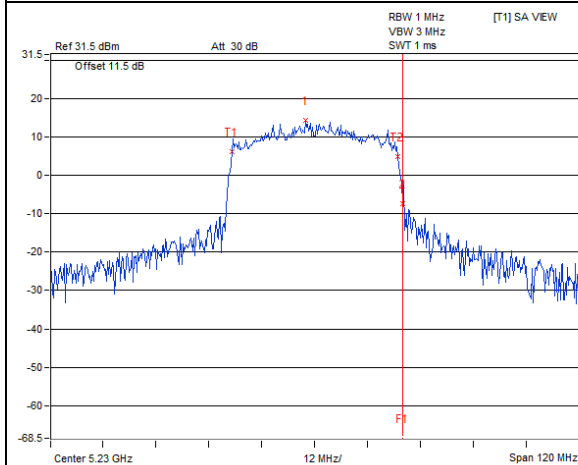
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A band)



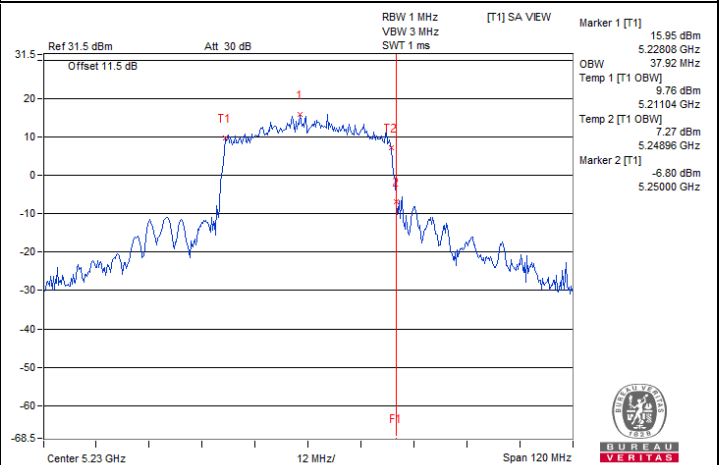
802.11ax (HE20) \ Chain 0 : CH 48



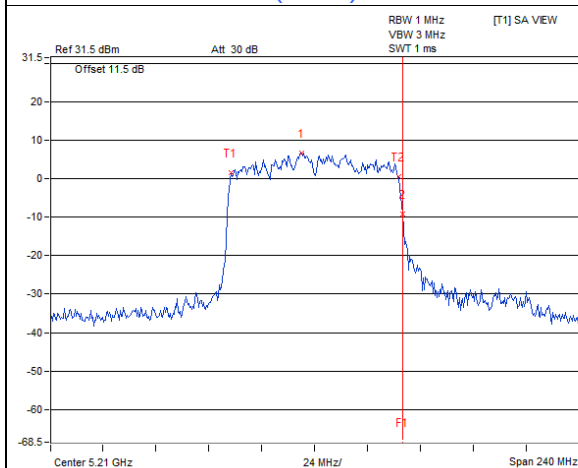
802.11ax (HE20) \ Chain 1 : CH 48



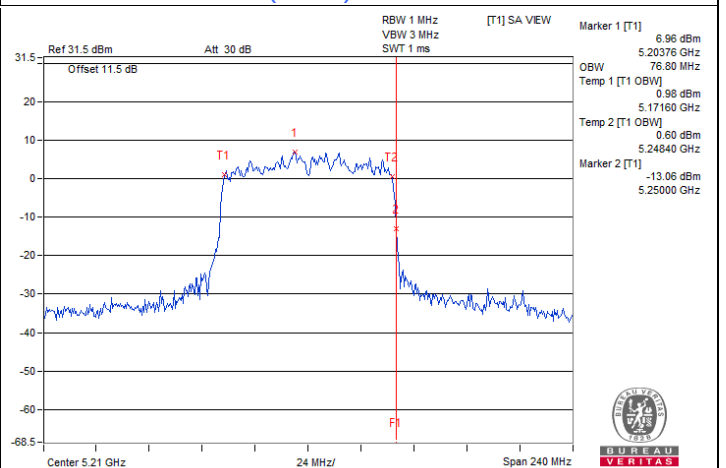
802.11ax (HE40) \ Chain 0 : CH 46



802.11ax (HE40) \ Chain 1 : CH 46

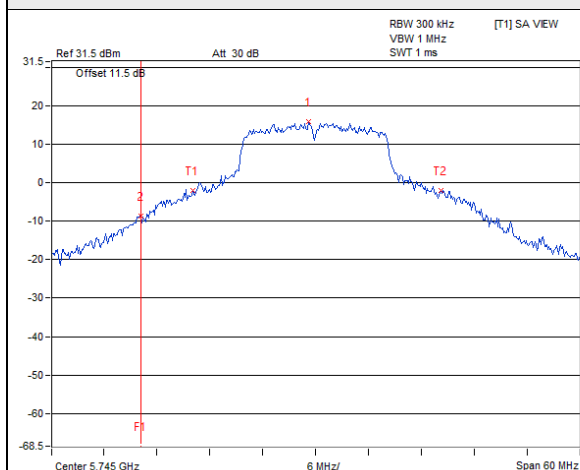


802.11ax (HE80) \ Chain 0 : CH 42

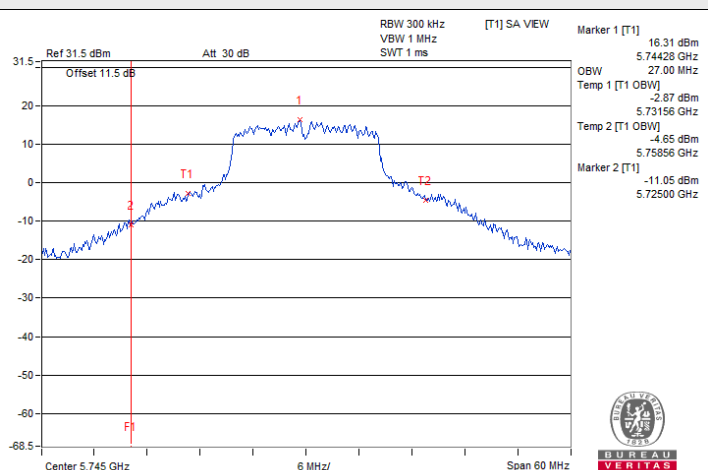


802.11ax (HE80) \ Chain 1 : CH 42

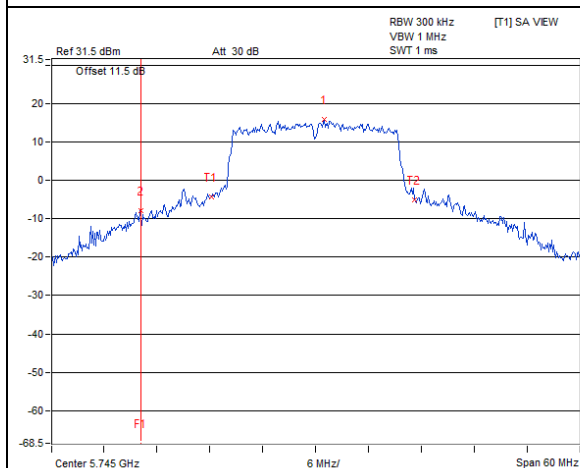
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C band)



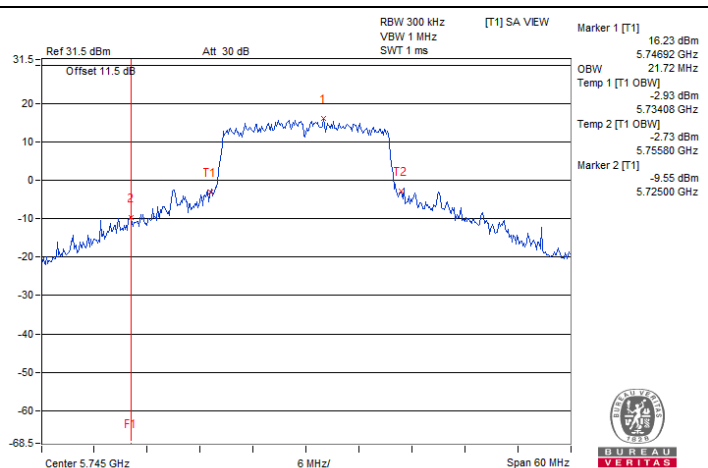
802.11a \ Chain 0 : CH 149



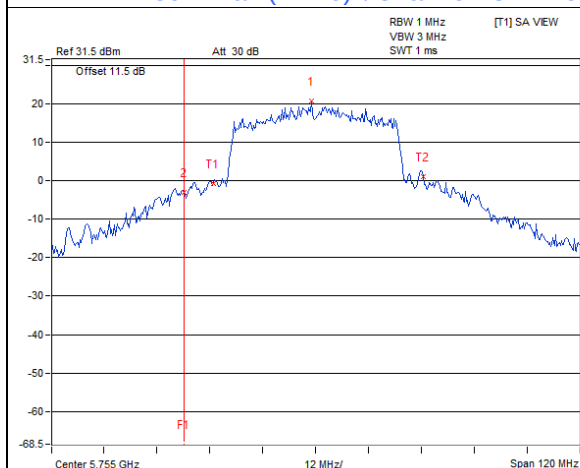
802.11a \ Chain 1 : CH 149



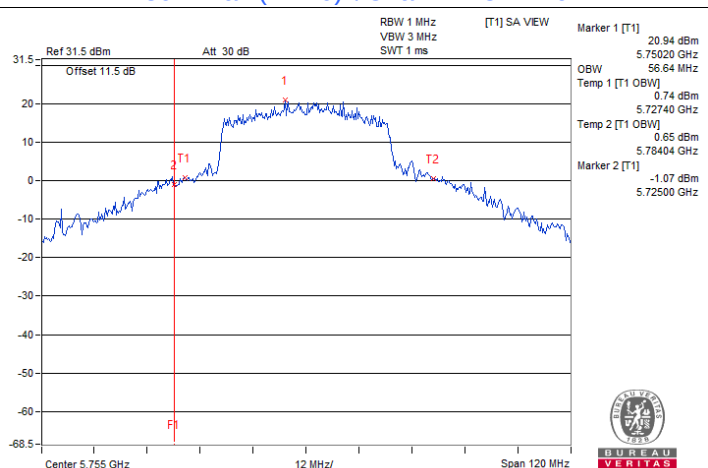
802.11ax (HE20) \ Chain 0 : CH 149



802.11ax (HE20) \ Chain 1 : CH 149

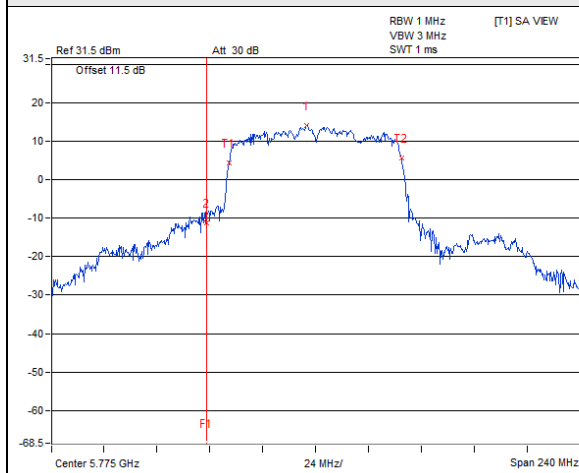


802.11ax (HE40) \ Chain 0 : CH 151

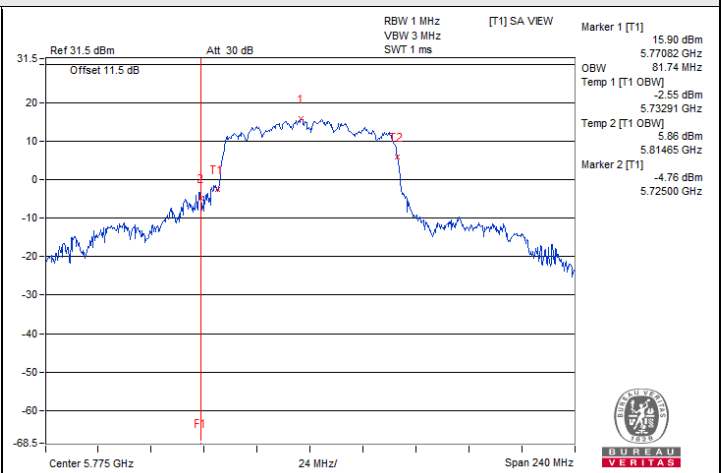


802.11ax (HE40) \ Chain 1 : CH 151

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



802.11ax (HE80) \ Chain 0 : CH 155



802.11ax (HE80) \ Chain 1 : CH 155

7.5 Frequency Stability

Input Power:	12 Vdc	Environmental Conditions:	24 °C, 60 % RH	Tested By:	Eric Peng
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802.11a

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
40	12	5179.9824	Pass	5179.9824	Pass	5179.9798	Pass	5179.9838	Pass
30	12	5180.0127	Pass	5180.014	Pass	5180.0174	Pass	5180.0157	Pass
20	12	5180.0144	Pass	5180.0135	Pass	5180.0156	Pass	5180.0171	Pass
10	12	5179.9758	Pass	5179.9765	Pass	5179.9773	Pass	5179.9734	Pass
0	12	5180.019	Pass	5180.0153	Pass	5180.0163	Pass	5180.0163	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	13.8	5180.009	Pass	5180.0119	Pass	5180.0126	Pass	5180.0131	Pass
	12	5180.0144	Pass	5180.0135	Pass	5180.0156	Pass	5180.0171	Pass
	10.2	5180.0082	Pass	5180.0086	Pass	5180.009	Pass	5180.009	Pass

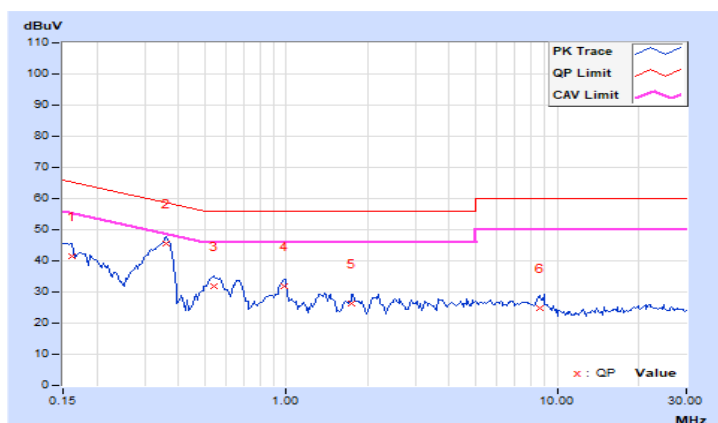
7.6 AC Power Conducted Emissions

RF Mode	TX 802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	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	0.16172	10.07	31.54	16.32	41.61	26.39	65.38	55.38	-23.77	-28.99
2	0.36094	10.10	35.64	32.05	45.74	42.15	58.71	48.71	-12.97	-6.56
3	0.54063	10.12	21.86	19.13	31.98	29.25	56.00	46.00	-24.02	-16.75
4	0.97813	10.15	21.58	18.73	31.73	28.88	56.00	46.00	-24.27	-17.12
5	1.74219	10.19	16.24	12.94	26.43	23.13	56.00	46.00	-29.57	-22.87
6	8.62500	10.68	14.28	10.62	24.96	21.30	60.00	50.00	-35.04	-28.70

Remarks:

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

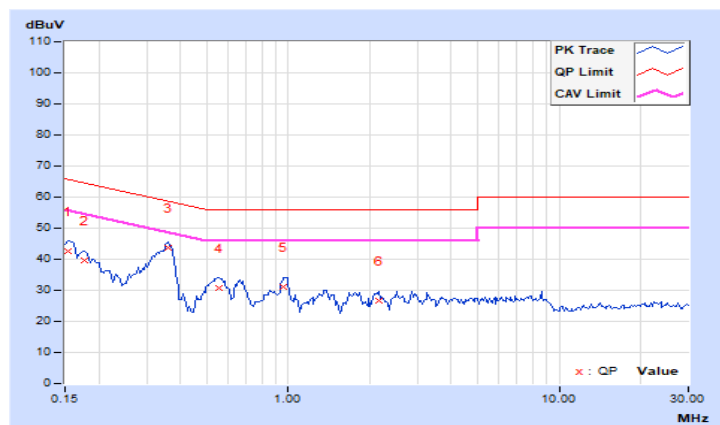


RF Mode	TX 802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 68 % RH
Tested By	Sampson Chen		

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	0.15391	10.05	32.54	18.02	42.59	28.07	65.79	55.79	-23.20	-27.72
2	0.17734	10.07	29.39	16.56	39.46	26.63	64.61	54.61	-25.15	-27.98
3	0.36094	10.10	33.46	29.95	43.56	40.05	58.71	48.71	-15.15	-8.66
4	0.55234	10.11	20.62	16.55	30.73	26.66	56.00	46.00	-25.27	-19.34
5	0.95859	10.14	21.12	17.54	31.26	27.68	56.00	46.00	-24.74	-18.32
6	2.15625	10.23	16.26	12.72	26.49	22.95	56.00	46.00	-29.51	-23.05

Remarks:

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



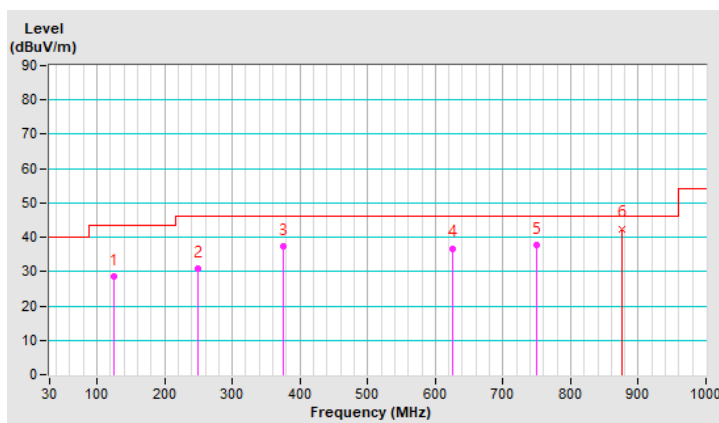
7.7 Unwanted Emissions below 1 GHz

RF Mode	TX 802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 66 % RH
Tested By	Sampson Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	124.99	28.6 QP	43.5	-14.9	1.50 H	302	38.3	-9.7
2	250.07	30.8 QP	46.0	-15.2	1.50 H	194	40.4	-9.6
3	374.98	37.5 QP	46.0	-8.5	2.00 H	159	43.4	-5.9
4	624.99	36.8 QP	46.0	-9.2	2.00 H	90	36.8	0.0
5	750.09	37.8 QP	46.0	-8.2	1.50 H	147	35.4	2.4
6	875.10	42.5 QP	46.0	-3.5	1.00 H	116	38.8	3.7

Remarks:

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

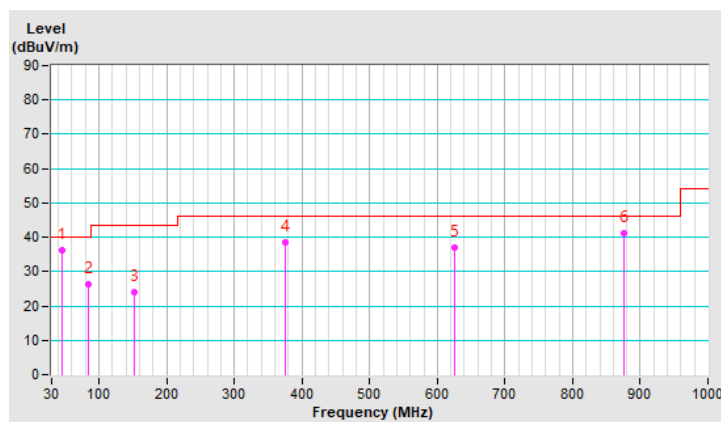


RF Mode	TX 802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 66 % RH
Tested By	Sampson Chen		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	46.25	36.2 QP	40.0	-3.8	1.00 V	153	44.5	-8.3
2	84.97	26.2 QP	40.0	-13.8	1.50 V	233	40.1	-13.9
3	151.98	24.0 QP	43.5	-19.5	1.00 V	360	32.1	-8.1
4	375.11	38.4 QP	46.0	-7.6	1.50 V	129	44.3	-5.9
5	625.13	37.1 QP	46.0	-8.9	1.50 V	347	37.1	0.0
6	875.01	41.3 QP	46.0	-4.7	1.00 V	267	37.6	3.7

Remarks:

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



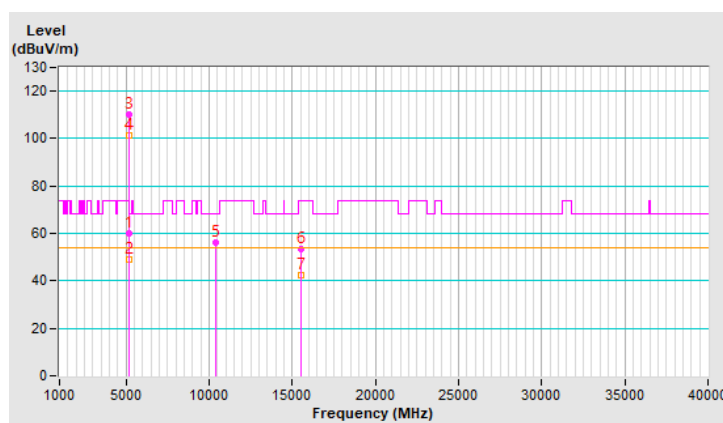
7.8 Unwanted Emissions above 1 GHz

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 = 1 kHz
Input Power (System)	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	60.0 PK	74.0	-14.0	1.81 H	64	55.4	4.6
2	5150.00	48.8 AV	54.0	-5.2	1.81 H	64	44.2	4.6
3	*5180.00	110.1 PK			1.81 H	64	105.6	4.5
4	*5180.00	101.1 AV			1.81 H	64	96.6	4.5
5	#10360.00	56.4 PK	68.2	-11.8	2.03 H	212	42.8	13.6
6	15540.00	53.4 PK	74.0	-20.6	1.43 H	123	39.3	14.1
7	15540.00	42.6 AV	54.0	-11.4	1.43 H	123	28.5	14.1

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.
6. " # " : The radiated frequency is out of the restricted band.

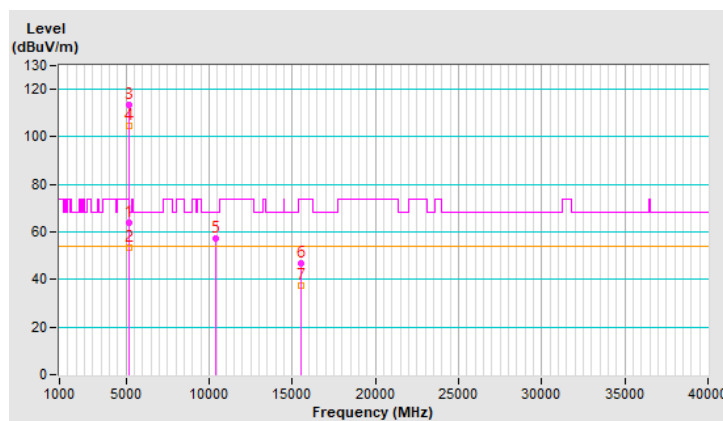


RF Mode	TX 802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	5146.05	63.9 PK	74.0	-10.1	1.48 V	228	59.3	4.6
2	5146.05	53.5 AV	54.0	-0.5	1.48 V	228	48.9	4.6
3	*5180.00	113.2 PK			1.48 V	228	108.7	4.5
4	*5180.00	104.6 AV			1.48 V	228	100.1	4.5
5	#10360.00	57.2 PK	68.2	-11.0	3.67 V	215	43.6	13.6
6	15540.00	47.0 PK	74.0	-27.0	1.60 V	145	32.9	14.1
7	15540.00	37.4 AV	54.0	-16.6	1.60 V	145	23.3	14.1

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.
6. " # ": The radiated frequency is out of the restricted band.

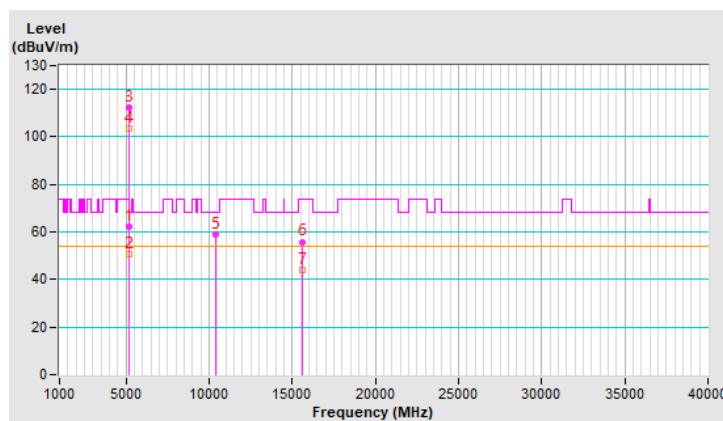


RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	62.3 PK	74.0	-11.7	1.82 H	72	57.7	4.6
2	5150.00	50.9 AV	54.0	-3.1	1.82 H	72	46.3	4.6
3	*5200.00	112.6 PK			1.82 H	72	108.2	4.4
4	*5200.00	103.7 AV			1.82 H	72	99.3	4.4
5	#10400.00	58.8 PK	68.2	-9.4	2.03 H	207	45.1	13.7
6	15600.00	55.9 PK	74.0	-18.1	1.39 H	138	41.9	14.0
7	15600.00	44.1 AV	54.0	-9.9	1.39 H	138	30.1	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

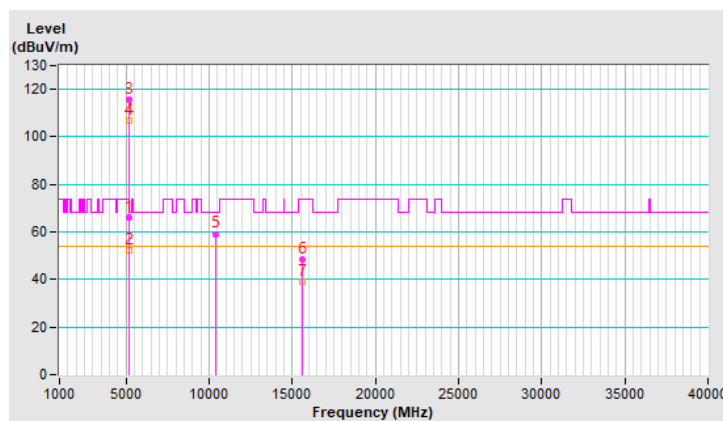


RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	65.9 PK	74.0	-8.1	1.48 V	234	61.3	4.6
2	5150.00	52.5 AV	54.0	-1.5	1.48 V	234	47.9	4.6
3	*5200.00	115.8 PK			1.48 V	234	111.4	4.4
4	*5200.00	106.7 AV			1.48 V	234	102.3	4.4
5	#10400.00	59.2 PK	68.2	-9.0	3.60 V	210	45.5	13.7
6	15600.00	48.5 PK	74.0	-25.5	1.57 V	137	34.5	14.0
7	15600.00	38.9 AV	54.0	-15.1	1.57 V	137	24.9	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

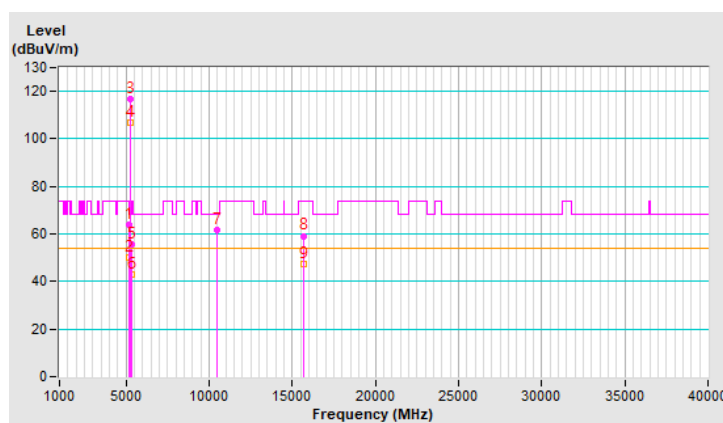


RF Mode	TX 802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	63.9 PK	74.0	-10.1	1.83 H	63	59.3	4.6
2	5150.00	50.0 AV	54.0	-4.0	1.83 H	63	45.4	4.6
3	*5240.00	116.9 PK			1.83 H	63	112.8	4.1
4	*5240.00	106.8 AV			1.83 H	63	102.7	4.1
5	5350.00	55.5 PK	74.0	-18.5	1.83 H	63	51.2	4.3
6	5350.00	43.1 AV	54.0	-10.9	1.83 H	63	38.8	4.3
7	#10480.00	61.7 PK	68.2	-6.5	2.04 H	229	47.9	13.8
8	15720.00	59.2 PK	74.0	-14.8	1.44 H	122	45.5	13.7
9	15720.00	47.1 AV	54.0	-6.9	1.44 H	122	33.4	13.7

Remarks:

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

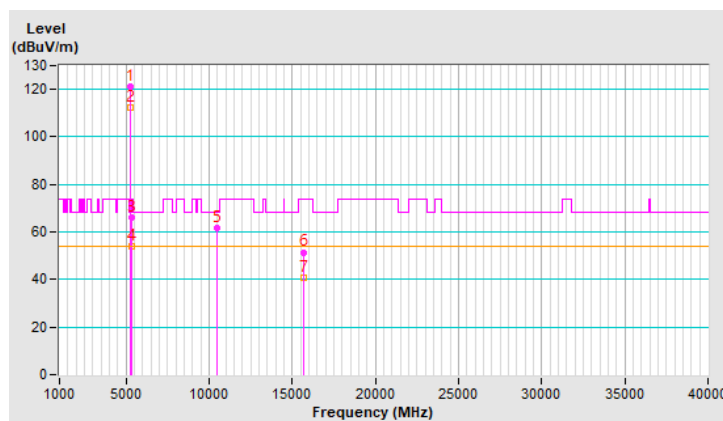


RF Mode	TX 802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	*5240.00	121.2 PK			1.70 V	240	117.1	4.1
2	*5240.00	112.3 AV			1.70 V	240	108.2	4.1
3	5350.00	66.3 PK	74.0	-7.7	1.70 V	240	62.0	4.3
4	5350.00	53.9 AV	54.0	-0.1	1.70 V	240	49.6	4.3
5	#10480.00	61.9 PK	68.2	-6.3	3.65 V	220	48.1	13.8
6	15720.00	51.5 PK	74.0	-22.5	1.56 V	152	37.8	13.7
7	15720.00	40.9 AV	54.0	-13.1	1.56 V	152	27.2	13.7

Remarks:

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

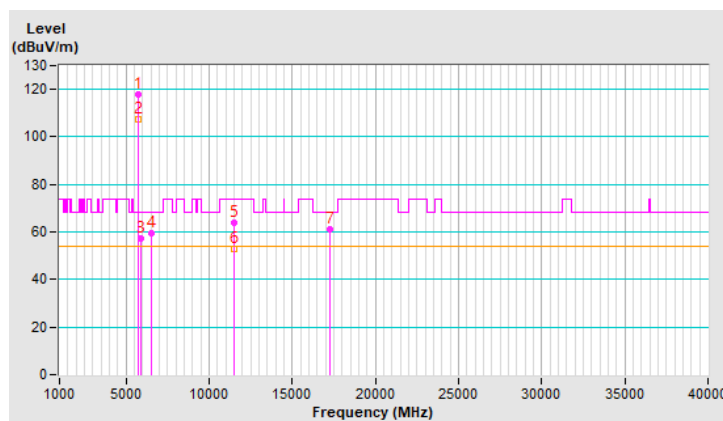


RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	*5745.00	117.7 PK			1.48 H	153	112.8	4.9
2	*5745.00	107.3 AV			1.48 H	153	102.4	4.9
3	#5925.52	57.1 PK	68.2	-11.1	1.48 H	153	51.8	5.3
4	#6538.55	59.4 PK	68.2	-8.8	1.48 H	153	51.8	7.6
5	11490.00	64.0 PK	74.0	-10.0	2.06 H	216	49.2	14.8
6	11490.00	52.7 AV	54.0	-1.3	2.06 H	216	37.9	14.8
7	#17235.00	60.9 PK	68.2	-7.3	1.44 H	136	42.7	18.2

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.
6. " # ": The radiated frequency is out of the restricted band.

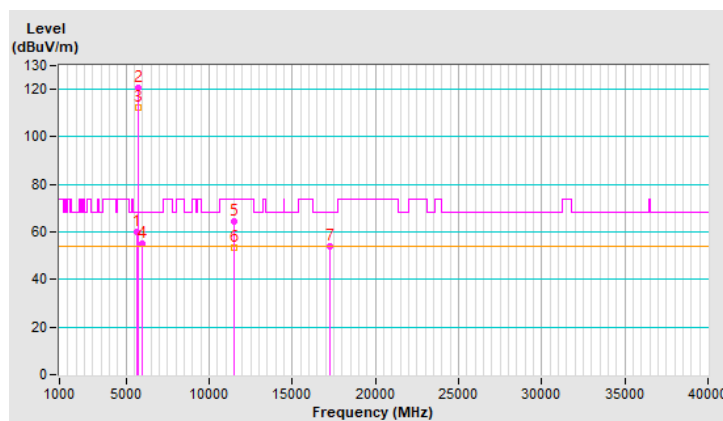


RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5645.14	59.8 PK	68.2	-8.4	1.52 V	315	55.2	4.6
2	*5745.00	120.4 PK			1.52 V	315	115.5	4.9
3	*5745.00	112.1 AV			1.52 V	315	107.2	4.9
4	#5947.59	55.1 PK	68.2	-13.1	1.52 V	315	49.8	5.3
5	11490.00	64.3 PK	74.0	-9.7	3.64 V	205	49.5	14.8
6	11490.00	53.3 AV	54.0	-0.7	3.64 V	205	38.5	14.8
7	#17235.00	54.0 PK	68.2	-14.2	1.56 V	137	35.8	18.2

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.
6. " # ": The radiated frequency is out of the restricted band.

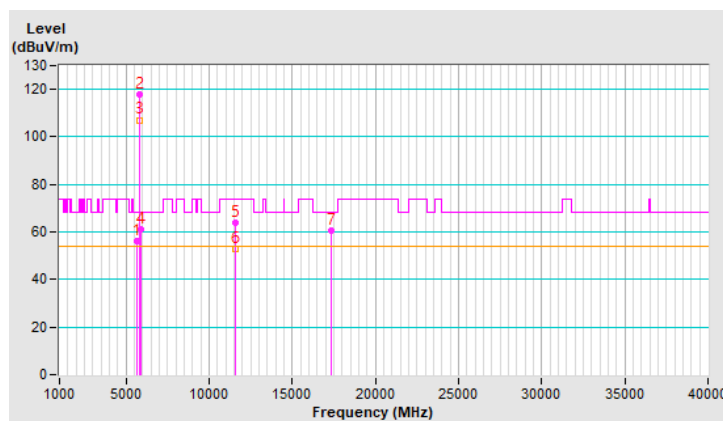


RF Mode	TX 802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5645.92	56.3 PK	68.2	-11.9	1.53 H	165	51.7	4.6
2	*5785.00	117.8 PK			1.53 H	165	112.8	5.0
3	*5785.00	107.1 AV			1.53 H	165	102.1	5.0
4	#5927.69	61.0 PK	68.2	-7.2	1.53 H	165	55.7	5.3
5	11570.00	64.1 PK	74.0	-9.9	2.03 H	222	49.1	15.0
6	11570.00	53.0 AV	54.0	-1.0	2.03 H	222	38.0	15.0
7	#17355.00	60.6 PK	68.2	-7.6	1.49 H	132	42.0	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.
6. " # " : The radiated frequency is out of the restricted band.

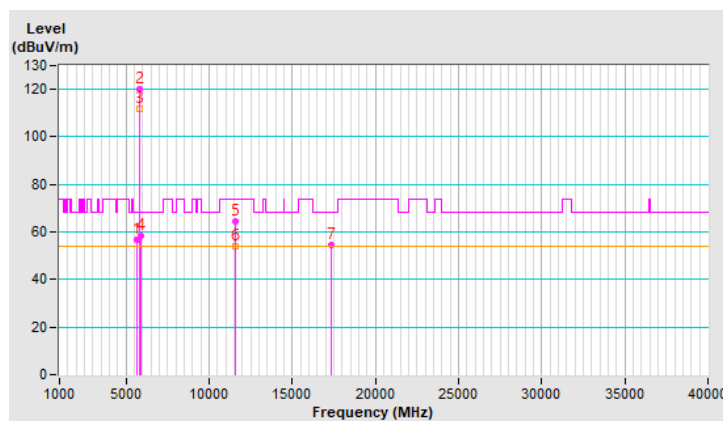


RF Mode	TX 802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5623.89	56.8 PK	68.2	-11.4	1.52 V	313	52.2	4.6
2	*5785.00	120.0 PK			1.52 V	313	115.0	5.0
3	*5785.00	111.8 AV			1.52 V	313	106.8	5.0
4	#5933.19	58.3 PK	68.2	-9.9	1.52 V	313	53.0	5.3
5	11570.00	64.3 PK	74.0	-9.7	3.72 V	187	49.3	15.0
6	11570.00	53.9 AV	54.0	-0.1	3.72 V	187	38.9	15.0
7	#17355.00	54.4 PK	68.2	-13.8	1.54 V	130	35.8	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.
6. " # ": The radiated frequency is out of the restricted band.

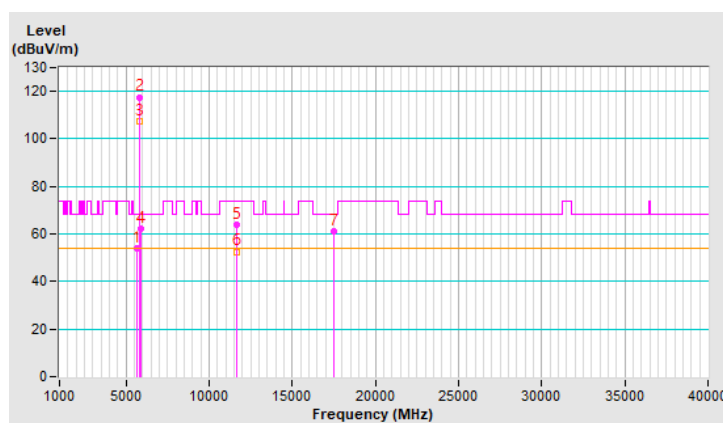


RF Mode	TX 802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5643.40	53.8 PK	68.2	-14.4	1.50 H	155	49.2	4.6
2	*5825.00	117.6 PK			1.50 H	155	112.5	5.1
3	*5825.00	107.3 AV			1.50 H	155	102.2	5.1
4	#5927.78	62.0 PK	68.2	-6.2	1.50 H	155	56.7	5.3
5	11650.00	63.8 PK	74.0	-10.2	1.98 H	235	48.9	14.9
6	11650.00	52.6 AV	54.0	-1.4	1.98 H	235	37.7	14.9
7	#17475.00	61.2 PK	68.2	-7.0	1.54 H	133	42.2	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.
6. " # " : The radiated frequency is out of the restricted band.

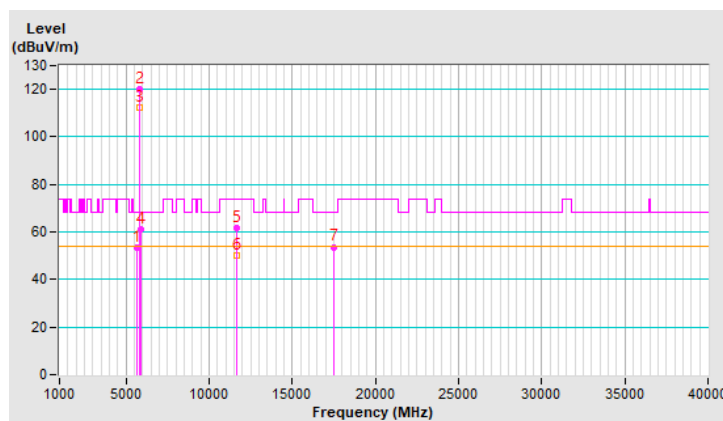


RF Mode	TX 802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5637.32	53.5 PK	68.2	-14.7	1.65 V	344	48.9	4.6
2	*5825.00	120.3 PK			1.65 V	344	115.2	5.1
3	*5825.00	112.3 AV			1.65 V	344	107.2	5.1
4	#5926.35	61.1 PK	68.2	-7.1	1.65 V	344	55.8	5.3
5	11650.00	61.9 PK	74.0	-12.1	3.86 V	208	47.0	14.9
6	11650.00	50.1 AV	54.0	-3.9	3.86 V	208	35.2	14.9
7	#17475.00	53.7 PK	68.2	-14.5	1.51 V	143	34.7	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.
6. " # ": The radiated frequency is out of the restricted band.

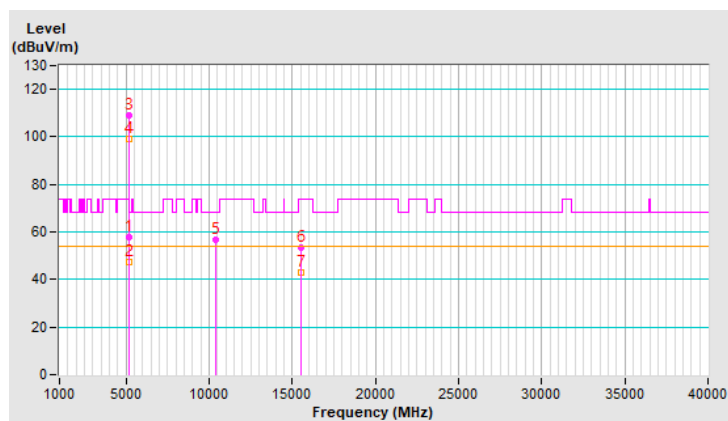


RF Mode	TX 802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	58.0 PK	74.0	-16.0	1.83 H	64	53.4	4.6
2	5150.00	47.5 AV	54.0	-6.5	1.83 H	64	42.9	4.6
3	*5180.00	109.2 PK			1.83 H	64	104.7	4.5
4	*5180.00	99.0 AV			1.83 H	64	94.5	4.5
5	#10360.00	56.8 PK	68.2	-11.4	2.01 H	209	43.2	13.6
6	15540.00	53.5 PK	74.0	-20.5	1.44 H	117	39.4	14.1
7	15540.00	42.8 AV	54.0	-11.2	1.44 H	117	28.7	14.1

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.
6. " # ": The radiated frequency is out of the restricted band.

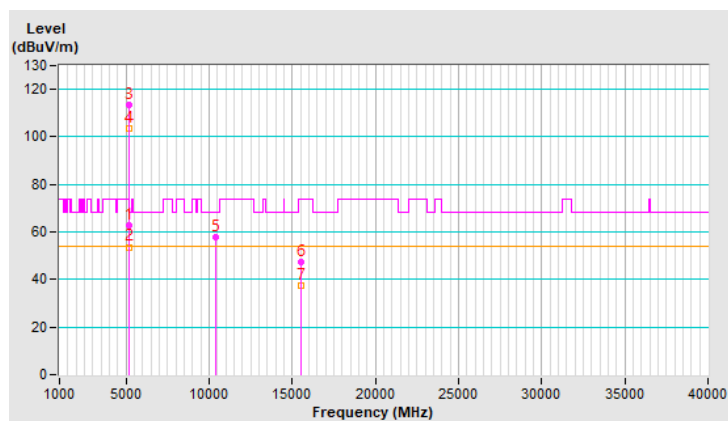


RF Mode	TX 802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	62.8 PK	74.0	-11.2	1.39 V	190	58.2	4.6
2	5150.00	53.7 AV	54.0	-0.3	1.39 V	190	49.1	4.6
3	*5180.00	113.2 PK			1.39 V	190	108.7	4.5
4	*5180.00	103.5 AV			1.39 V	190	99.0	4.5
5	#10360.00	57.6 PK	68.2	-10.6	3.67 V	227	44.0	13.6
6	15540.00	47.4 PK	74.0	-26.6	1.61 V	134	33.3	14.1
7	15540.00	37.5 AV	54.0	-16.5	1.61 V	134	23.4	14.1

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.
6. " # " : The radiated frequency is out of the restricted band.

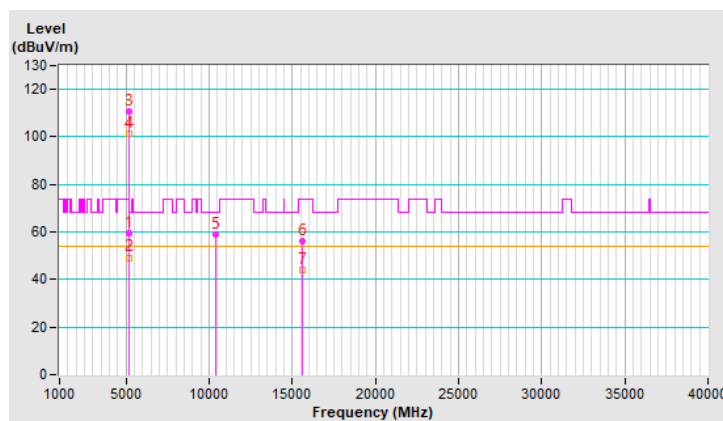


RF Mode	TX 802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	59.6 PK	74.0	-14.4	1.80 H	52	55.0	4.6
2	5150.00	49.3 AV	54.0	-4.7	1.80 H	52	44.7	4.6
3	*5200.00	110.5 PK			1.80 H	52	106.1	4.4
4	*5200.00	101.2 AV			1.80 H	52	96.8	4.4
5	#10400.00	58.9 PK	68.2	-9.3	2.01 H	202	45.2	13.7
6	15600.00	56.2 PK	74.0	-17.8	1.36 H	150	42.2	14.0
7	15600.00	44.3 AV	54.0	-9.7	1.36 H	150	30.3	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

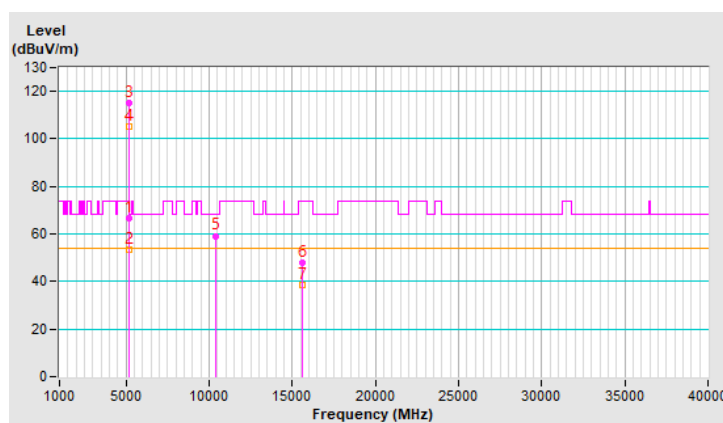


RF Mode	TX 802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	66.6 PK	74.0	-7.4	1.40 V	188	62.0	4.6
2	5150.00	53.5 AV	54.0	-0.5	1.40 V	188	48.9	4.6
3	*5200.00	114.9 PK			1.40 V	188	110.5	4.4
4	*5200.00	105.3 AV			1.40 V	188	100.9	4.4
5	#10400.00	59.2 PK	68.2	-9.0	3.61 V	196	45.5	13.7
6	15600.00	48.0 PK	74.0	-26.0	1.53 V	142	34.0	14.0
7	15600.00	38.7 AV	54.0	-15.3	1.53 V	142	24.7	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

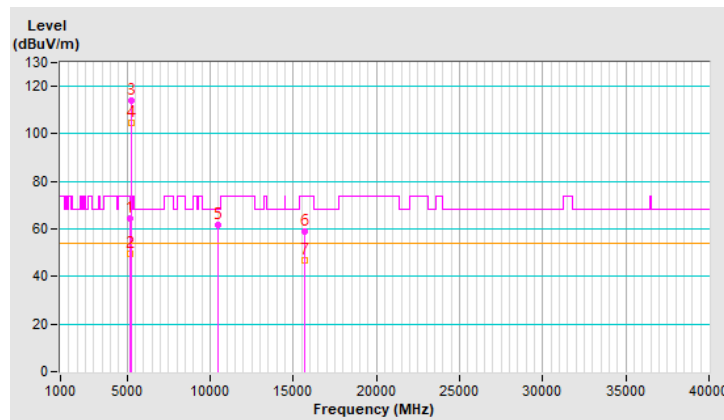


RF Mode	TX 802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	64.4 PK	74.0	-9.6	1.87 H	81	59.8	4.6
2	5150.00	49.7 AV	54.0	-4.3	1.87 H	81	45.1	4.6
3	*5240.00	113.8 PK			1.87 H	81	109.7	4.1
4	*5240.00	104.4 AV			1.87 H	81	100.3	4.1
5	#10480.00	61.7 PK	68.2	-6.5	2.05 H	225	47.9	13.8
6	15720.00	58.9 PK	74.0	-15.1	1.47 H	113	45.2	13.7
7	15720.00	46.7 AV	54.0	-7.3	1.47 H	113	33.0	13.7

Remarks:

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

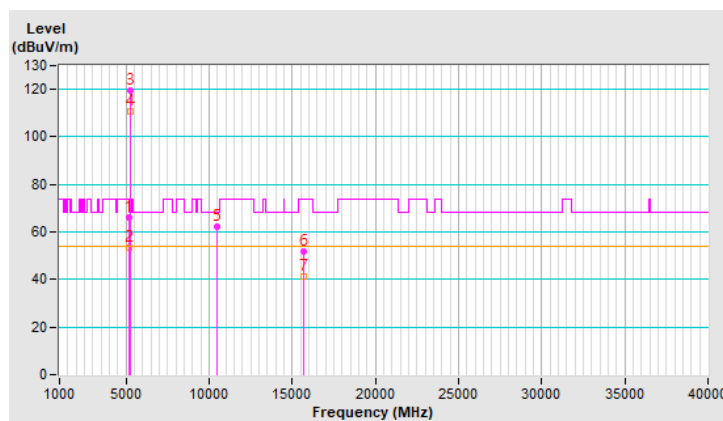


RF Mode	TX 802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	65.9 PK	74.0	-8.1	1.64 V	242	61.3	4.6
2	5150.00	53.5 AV	54.0	-0.5	1.64 V	242	48.9	4.6
3	*5240.00	119.6 PK			1.64 V	242	115.5	4.1
4	*5240.00	110.7 AV			1.64 V	242	106.6	4.1
5	#10480.00	62.2 PK	68.2	-6.0	3.62 V	210	48.4	13.8
6	15720.00	51.7 PK	74.0	-22.3	1.58 V	165	38.0	13.7
7	15720.00	41.2 AV	54.0	-12.8	1.58 V	165	27.5	13.7

Remarks:

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

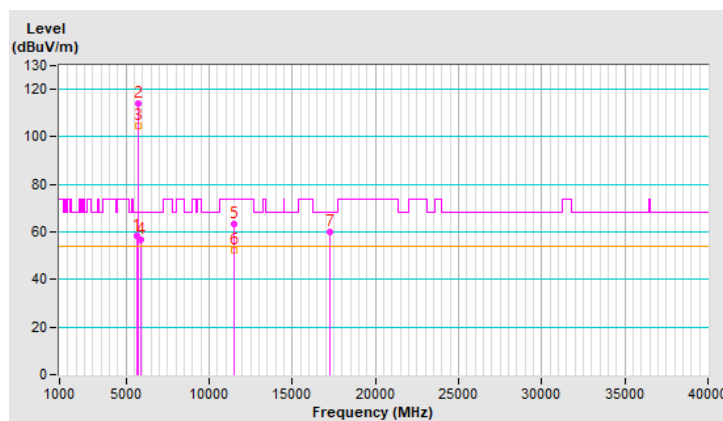


RF Mode	TX 802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5632.12	58.4 PK	68.2	-9.8	1.53 H	162	53.8	4.6
2	*5745.00	114.1 PK			1.53 H	162	109.2	4.9
3	*5745.00	104.8 AV			1.53 H	162	99.9	4.9
4	#5929.35	56.8 PK	68.2	-11.4	1.53 H	162	51.5	5.3
5	11490.00	63.4 PK	74.0	-10.6	1.98 H	224	48.6	14.8
6	11490.00	52.5 AV	54.0	-1.5	1.98 H	224	37.7	14.8
7	#17235.00	60.0 PK	68.2	-8.2	1.54 H	123	41.8	18.2

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.
6. " # ": The radiated frequency is out of the restricted band.

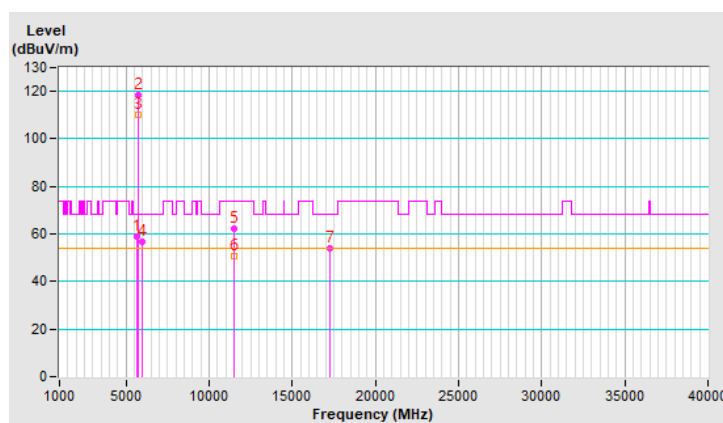


RF Mode	TX 802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5647.96	58.9 PK	68.2	-9.3	1.65 V	318	54.3	4.6
2	*5745.00	118.3 PK			1.65 V	318	113.4	4.9
3	*5745.00	110.4 AV			1.65 V	318	105.5	4.9
4	#5939.26	56.8 PK	68.2	-11.4	1.65 V	318	51.5	5.3
5	11490.00	62.1 PK	74.0	-11.9	3.81 V	199	47.3	14.8
6	11490.00	50.6 AV	54.0	-3.4	3.81 V	199	35.8	14.8
7	#17235.00	53.8 PK	68.2	-14.4	1.55 V	151	35.6	18.2

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.
6. " # ": The radiated frequency is out of the restricted band.

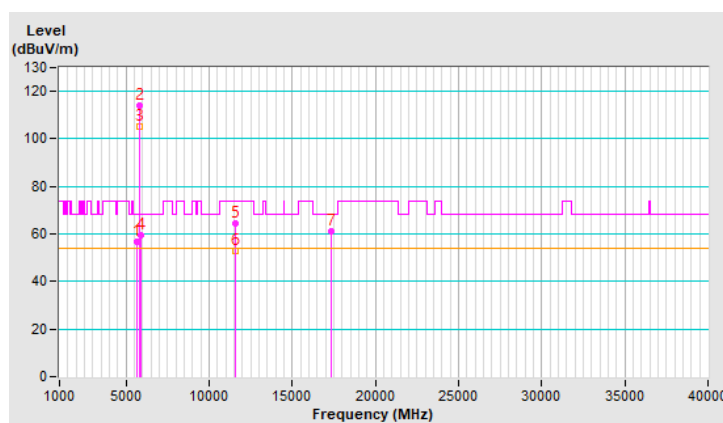


RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5644.19	56.9 PK	68.2	-11.3	1.55 H	168	52.3	4.6
2	*5785.00	114.1 PK			1.55 H	168	109.1	5.0
3	*5785.00	105.0 AV			1.55 H	168	100.0	5.0
4	#5926.32	59.3 PK	68.2	-8.9	1.55 H	168	54.0	5.3
5	11570.00	64.3 PK	74.0	-9.7	2.09 H	218	49.3	15.0
6	11570.00	53.0 AV	54.0	-1.0	2.09 H	218	38.0	15.0
7	#17355.00	60.9 PK	68.2	-7.3	1.49 H	144	42.3	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.
6. " # ": The radiated frequency is out of the restricted band.

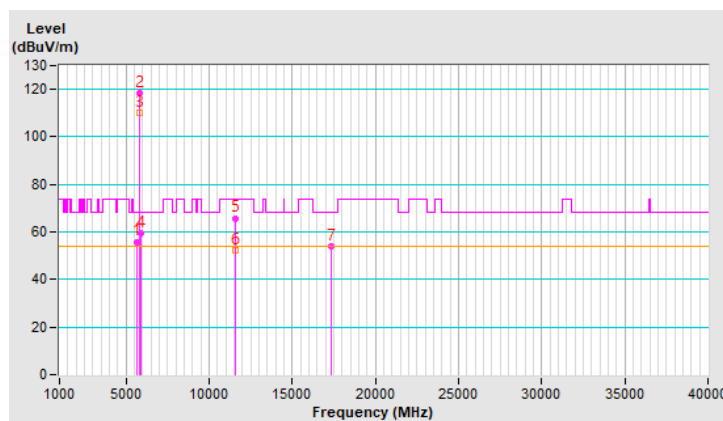


RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5639.11	55.9 PK	68.2	-12.3	1.68 V	345	51.3	4.6
2	*5785.00	118.3 PK			1.68 V	345	113.3	5.0
3	*5785.00	110.3 AV			1.68 V	345	105.3	5.0
4	#5926.22	59.3 PK	68.2	-8.9	1.68 V	345	54.0	5.3
5	11570.00	65.8 PK	74.0	-8.2	3.72 V	187	50.8	15.0
6	11570.00	52.3 AV	54.0	-1.7	3.72 V	187	37.3	15.0
7	#17355.00	54.2 PK	68.2	-14.0	1.57 V	143	35.6	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.
6. " # ": The radiated frequency is out of the restricted band.

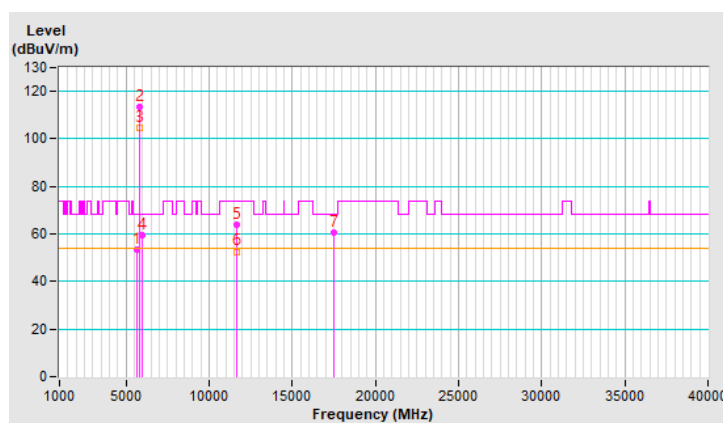


RF Mode	TX 802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5629.28	53.3 PK	68.2	-14.9	1.54 H	171	48.7	4.6
2	*5825.00	113.6 PK			1.54 H	171	108.5	5.1
3	*5825.00	104.4 AV			1.54 H	171	99.3	5.1
4	#5947.77	59.6 PK	68.2	-8.6	1.54 H	171	54.3	5.3
5	11650.00	63.8 PK	74.0	-10.2	2.02 H	206	48.9	14.9
6	11650.00	52.6 AV	54.0	-1.4	2.02 H	206	37.7	14.9
7	#17475.00	60.6 PK	68.2	-7.6	1.45 H	127	41.6	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.
6. " # " : The radiated frequency is out of the restricted band.

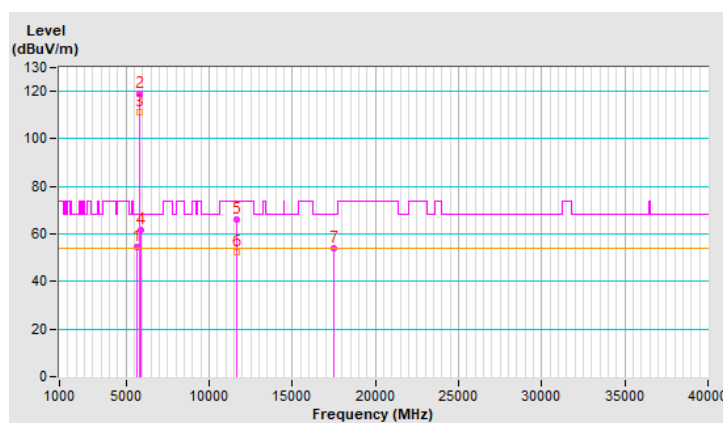


RF Mode	TX 802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5634.51	54.5 PK	68.2	-13.7	1.66 V	343	49.9	4.6
2	*5825.00	118.8 PK			1.66 V	343	113.7	5.1
3	*5825.00	111.1 AV			1.66 V	343	106.0	5.1
4	#5930.66	61.5 PK	68.2	-6.7	1.66 V	343	56.2	5.3
5	11650.00	65.9 PK	74.0	-8.1	3.68 V	186	51.0	14.9
6	11650.00	52.3 AV	54.0	-1.7	3.68 V	186	37.4	14.9
7	#17475.00	53.8 PK	68.2	-14.4	1.59 V	145	34.8	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.
6. " # " : The radiated frequency is out of the restricted band.

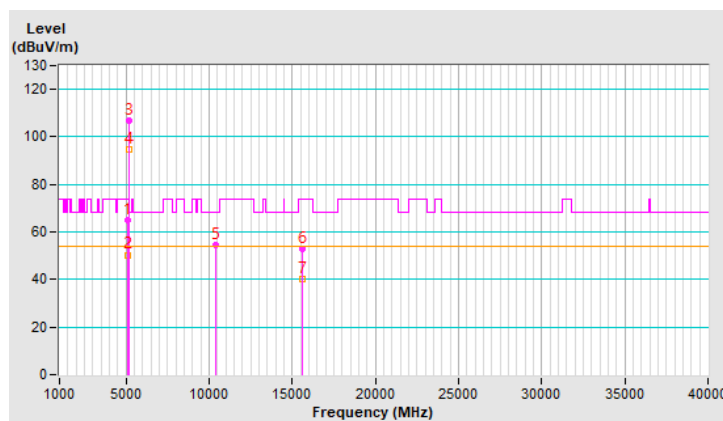


RF Mode	TX 802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 20 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	5139.55	65.1 PK	74.0	-8.9	1.85 H	57	60.5	4.6
2	5139.55	50.4 AV	54.0	-3.6	1.85 H	57	45.8	4.6
3	*5190.00	106.8 PK			1.85 H	57	102.4	4.4
4	*5190.00	94.8 AV			1.85 H	57	90.4	4.4
5	#10380.00	54.4 PK	68.2	-13.8	2.04 H	213	40.8	13.6
6	15570.00	52.7 PK	74.0	-21.3	1.41 H	138	38.7	14.0
7	15570.00	40.3 AV	54.0	-13.7	1.41 H	138	26.3	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

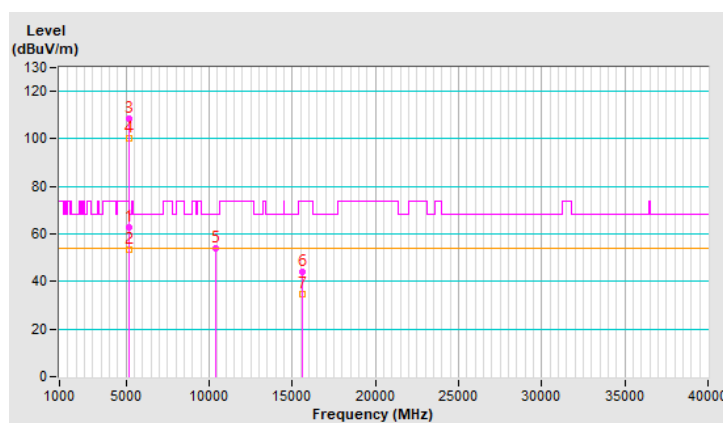


RF Mode	TX 802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 20 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	63.0 PK	74.0	-11.0	1.42 V	191	58.4	4.6
2	5150.00	53.5 AV	54.0	-0.5	1.42 V	191	48.9	4.6
3	*5190.00	108.7 PK			1.42 V	191	104.3	4.4
4	*5190.00	100.4 AV			1.42 V	191	96.0	4.4
5	#10380.00	53.8 PK	68.2	-14.4	3.65 V	223	40.2	13.6
6	15570.00	43.9 PK	74.0	-30.1	1.59 V	146	29.9	14.0
7	15570.00	34.8 AV	54.0	-19.2	1.59 V	146	20.8	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

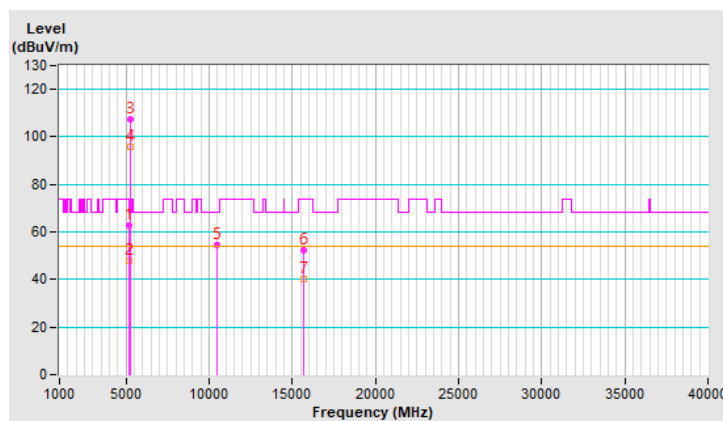


RF Mode	TX 802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 20 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	62.7 PK	74.0	-11.3	1.80 H	74	58.1	4.6
2	5150.00	47.8 AV	54.0	-6.2	1.80 H	74	43.2	4.6
3	*5230.00	107.5 PK			1.80 H	74	103.3	4.2
4	*5230.00	95.7 AV			1.80 H	74	91.5	4.2
5	#10460.00	54.4 PK	68.2	-13.8	2.01 H	206	40.6	13.8
6	15690.00	52.1 PK	74.0	-21.9	1.42 H	136	38.3	13.8
7	15690.00	40.0 AV	54.0	-14.0	1.42 H	136	26.2	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.
6. " # " : The radiated frequency is out of the restricted band.

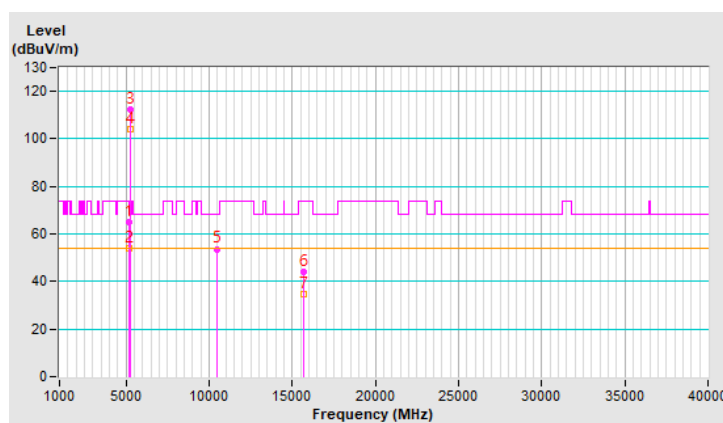


RF Mode	TX 802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 20 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	1.80 V	240	60.6	4.6
2	5150.00	53.8 AV	54.0	-0.2	1.80 V	240	49.2	4.6
3	*5230.00	112.1 PK			1.80 V	240	107.9	4.2
4	*5230.00	104.3 AV			1.80 V	240	100.1	4.2
5	#10460.00	53.7 PK	68.2	-14.5	3.65 V	212	39.9	13.8
6	15690.00	43.8 PK	74.0	-30.2	1.61 V	158	30.0	13.8
7	15690.00	34.7 AV	54.0	-19.3	1.61 V	158	20.9	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.
6. " # ": The radiated frequency is out of the restricted band.

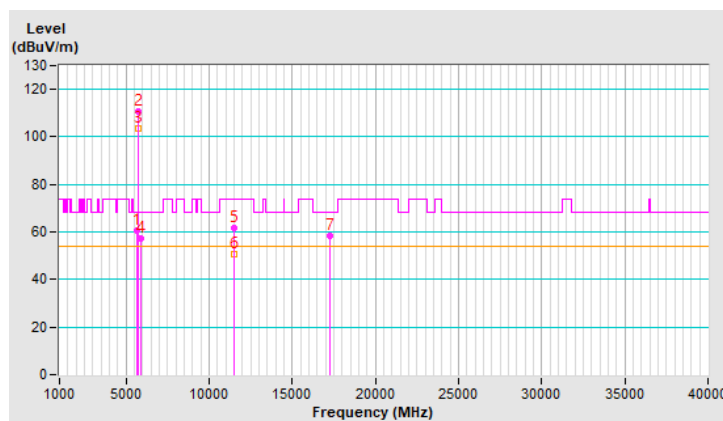


RF Mode	TX 802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 20 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5633.29	60.7 PK	68.2	-7.5	1.51 H	165	56.1	4.6
2	*5755.00	110.5 PK			1.51 H	165	105.6	4.9
3	*5755.00	103.3 AV			1.51 H	165	98.4	4.9
4	#5924.59	57.5 PK	68.2	-10.7	1.51 H	165	52.2	5.3
5	11510.00	61.6 PK	74.0	-12.4	2.05 H	225	46.8	14.8
6	11510.00	50.8 AV	54.0	-3.2	2.05 H	225	36.0	14.8
7	#17265.00	58.5 PK	68.2	-9.7	1.54 H	119	40.3	18.2

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.
6. " # " : The radiated frequency is out of the restricted band.

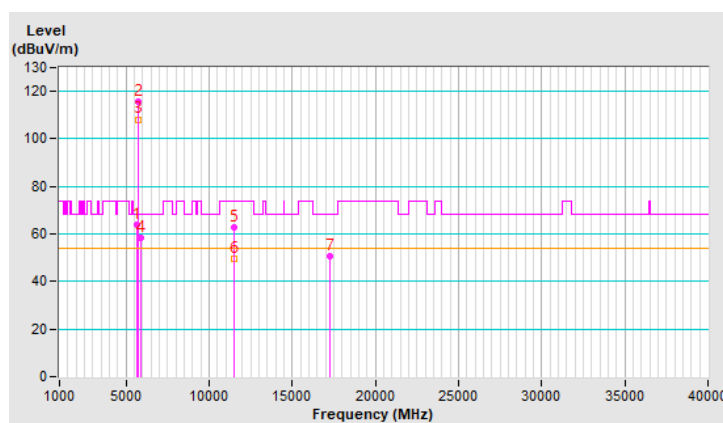


RF Mode	TX 802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 20 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5644.12	63.9 PK	68.2	-4.3	1.86 V	274	59.3	4.6
2	*5755.00	115.6 PK			1.86 V	274	110.7	4.9
3	*5755.00	108.2 AV			1.86 V	274	103.3	4.9
4	#5933.66	58.3 PK	68.2	-9.9	1.86 V	274	53.0	5.3
5	11510.00	62.9 PK	74.0	-11.1	3.76 V	189	48.1	14.8
6	11510.00	49.7 AV	54.0	-4.3	3.76 V	189	34.9	14.8
7	#17265.00	50.6 PK	68.2	-17.6	1.55 V	154	32.4	18.2

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.
6. " # ": The radiated frequency is out of the restricted band.

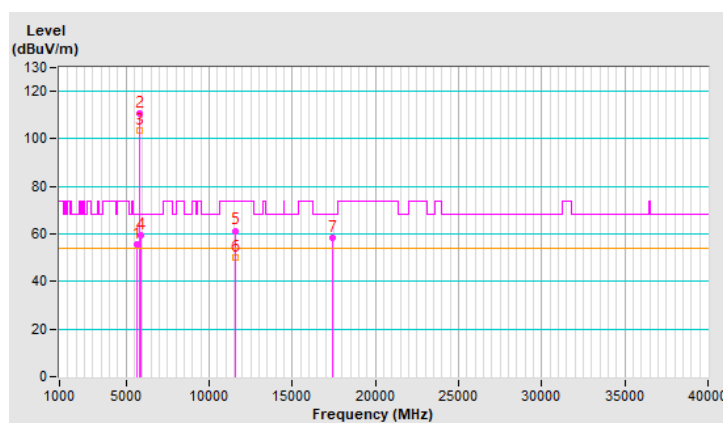


RF Mode	TX 802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 20 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5635.86	55.7 PK	68.2	-12.5	1.53 H	179	51.1	4.6
2	*5795.00	110.6 PK			1.53 H	179	105.6	5.0
3	*5795.00	103.5 AV			1.53 H	179	98.5	5.0
4	#5924.91	59.6 PK	68.2	-8.6	1.53 H	179	54.3	5.3
5	11590.00	61.4 PK	74.0	-12.6	2.03 H	217	46.3	15.1
6	11590.00	50.3 AV	54.0	-3.7	2.03 H	217	35.2	15.1
7	#17385.00	58.3 PK	68.2	-9.9	1.52 H	141	39.5	18.8

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.
6. " # ": The radiated frequency is out of the restricted band.

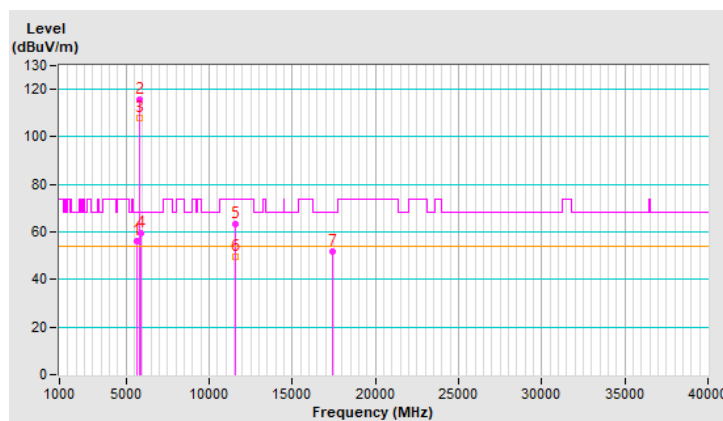


RF Mode	TX 802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 20 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5638.64	56.2 PK	68.2	-12.0	1.84 V	350	51.6	4.6
2	*5795.00	115.5 PK			1.84 V	350	110.5	5.0
3	*5795.00	108.0 AV			1.84 V	350	103.0	5.0
4	#5933.50	59.7 PK	68.2	-8.5	1.84 V	350	54.4	5.3
5	11590.00	63.3 PK	74.0	-10.7	3.70 V	195	48.2	15.1
6	11590.00	49.8 AV	54.0	-4.2	3.70 V	195	34.7	15.1
7	#17385.00	51.6 PK	68.2	-16.6	1.62 V	151	32.8	18.8

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.
6. " # ": The radiated frequency is out of the restricted band.

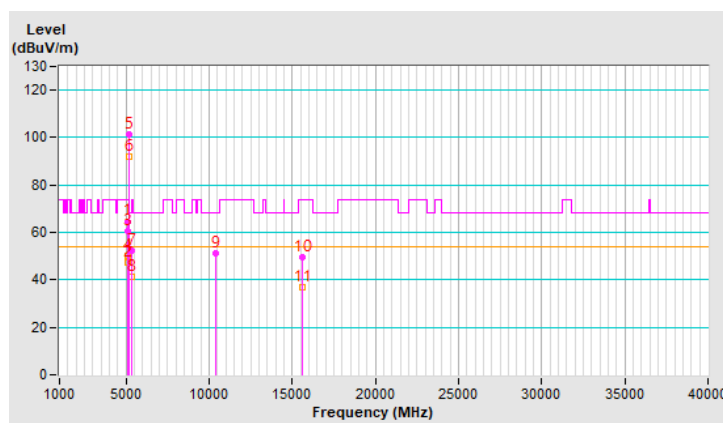


RF Mode	TX 802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 30 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	5123.85	64.7 PK	74.0	-9.3	1.96 H	69	60.1	4.6
2	5123.85	47.1 AV	54.0	-6.9	1.96 H	69	42.5	4.6
3	5142.40	60.6 PK	74.0	-13.4	1.96 H	69	56.0	4.6
4	5142.40	50.2 AV	54.0	-3.8	1.96 H	69	45.6	4.6
5	*5210.00	101.5 PK			1.96 H	69	97.2	4.3
6	*5210.00	92.2 AV			1.96 H	69	87.9	4.3
7	5350.00	52.4 PK	74.0	-21.6	1.96 H	69	48.1	4.3
8	5350.00	41.2 AV	54.0	-12.8	1.96 H	69	36.9	4.3
9	#10420.00	51.3 PK	68.2	-16.9	2.00 H	206	37.6	13.7
10	15630.00	49.7 PK	74.0	-24.3	1.37 H	127	35.8	13.9
11	15630.00	36.7 AV	54.0	-17.3	1.37 H	127	22.8	13.9

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.
6. " # ": The radiated frequency is out of the restricted band.

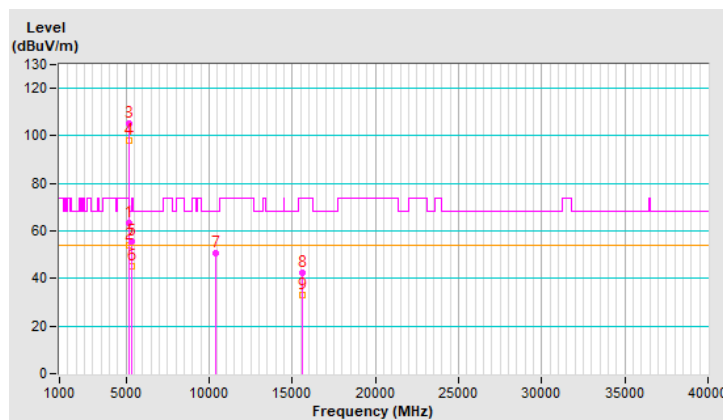


RF Mode	TX 802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 30 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	63.5 PK	74.0	-10.5	1.47 V	182	58.9	4.6
2	5150.00	53.9 AV	54.0	-0.1	1.47 V	182	49.3	4.6
3	*5210.00	105.4 PK			1.47 V	182	101.1	4.3
4	*5210.00	98.2 AV			1.47 V	182	93.9	4.3
5	5351.53	55.4 PK	74.0	-18.6	1.47 V	182	51.1	4.3
6	5351.53	45.1 AV	54.0	-8.9	1.47 V	182	40.8	4.3
7	#10420.00	50.9 PK	68.2	-17.3	3.60 V	226	37.2	13.7
8	15630.00	42.3 PK	74.0	-31.7	1.64 V	140	28.4	13.9
9	15630.00	33.1 AV	54.0	-20.9	1.64 V	140	19.2	13.9

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.
6. " # " : The radiated frequency is out of the restricted band.

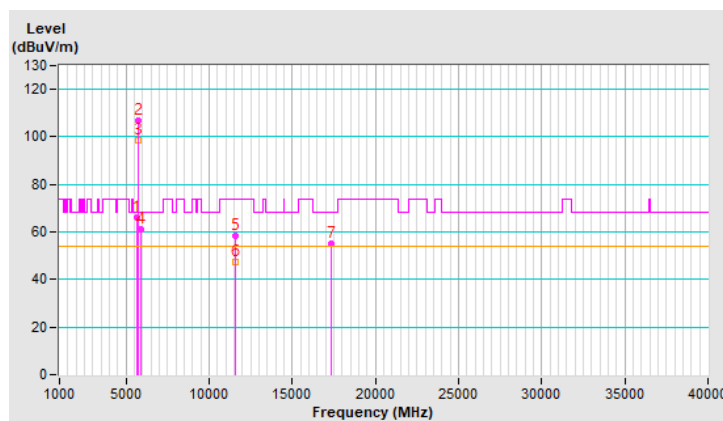


RF Mode	TX 802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 30 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

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	#5652.21	66.0 PK	68.2	-2.2	1.55 H	168	61.4	4.6
2	*5775.00	106.6 PK			1.55 H	168	101.6	5.0
3	*5775.00	98.5 AV			1.55 H	168	93.5	5.0
4	#5928.91	61.1 PK	68.2	-7.1	1.55 H	168	55.8	5.3
5	11550.00	58.2 PK	74.0	-15.8	2.00 H	232	43.3	14.9
6	11550.00	47.3 AV	54.0	-6.7	2.00 H	232	32.4	14.9
7	#17325.00	55.1 PK	68.2	-13.1	1.44 H	145	36.6	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.
6. " # ": The radiated frequency is out of the restricted band.

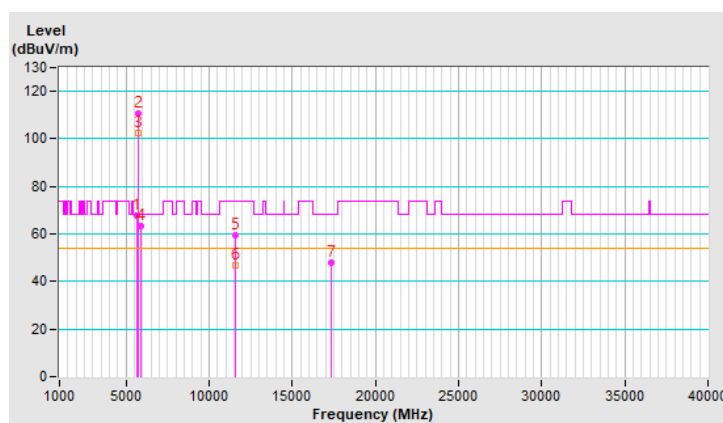


RF Mode	TX 802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 30 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Nelson Teng		

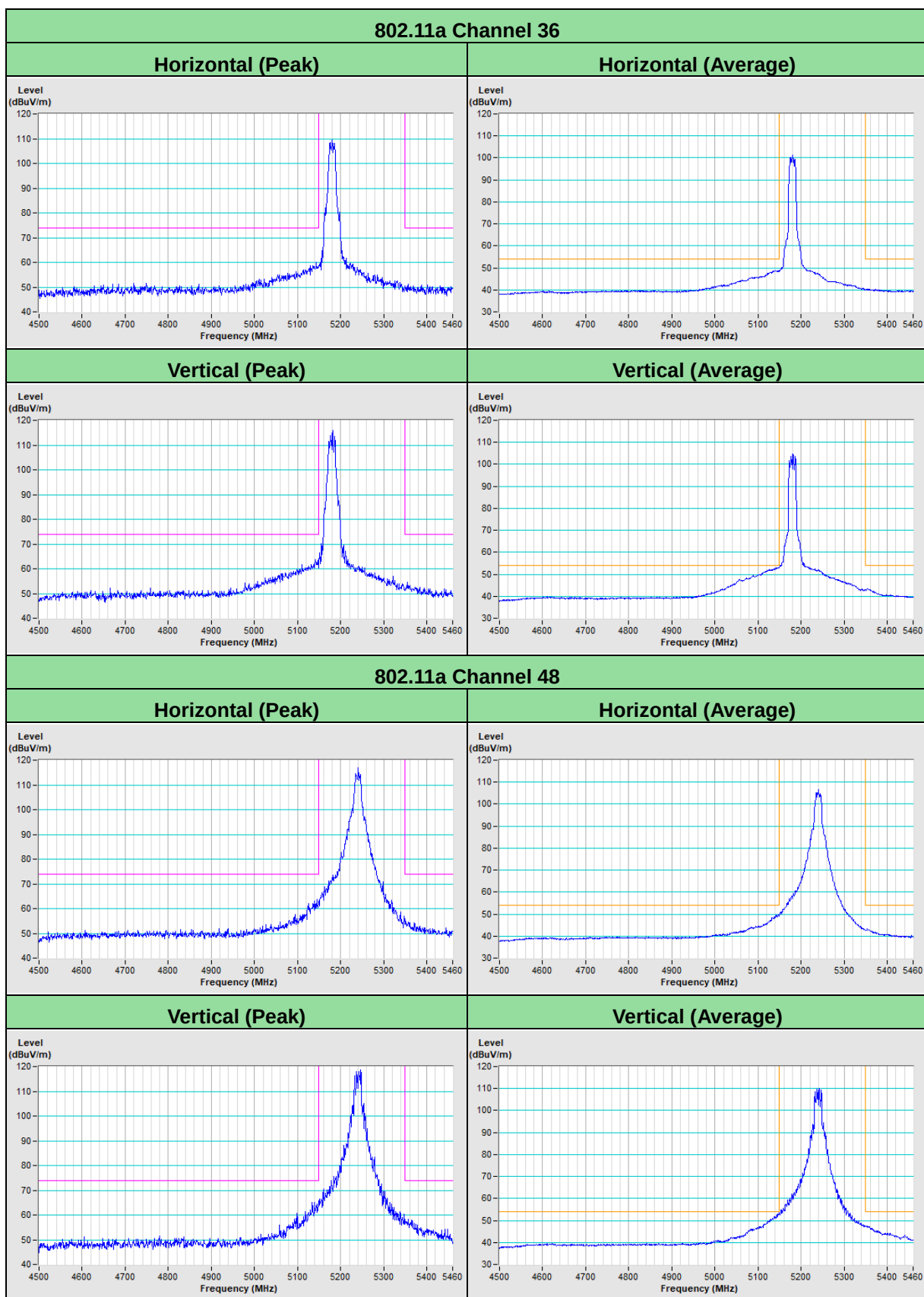
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5649.30	67.7 PK	68.2	-0.5	2.14 V	164	63.1	4.6
2	*5775.00	110.6 PK			2.14 V	164	105.6	5.0
3	*5775.00	102.2 AV			2.14 V	164	97.2	5.0
4	#5926.19	63.3 PK	68.2	-4.9	2.14 V	164	58.0	5.3
5	11550.00	59.7 PK	74.0	-14.3	3.78 V	182	44.8	14.9
6	11550.00	46.9 AV	54.0	-7.1	3.78 V	182	32.0	14.9
7	#17325.00	47.9 PK	68.2	-20.3	1.59 V	158	29.4	18.5

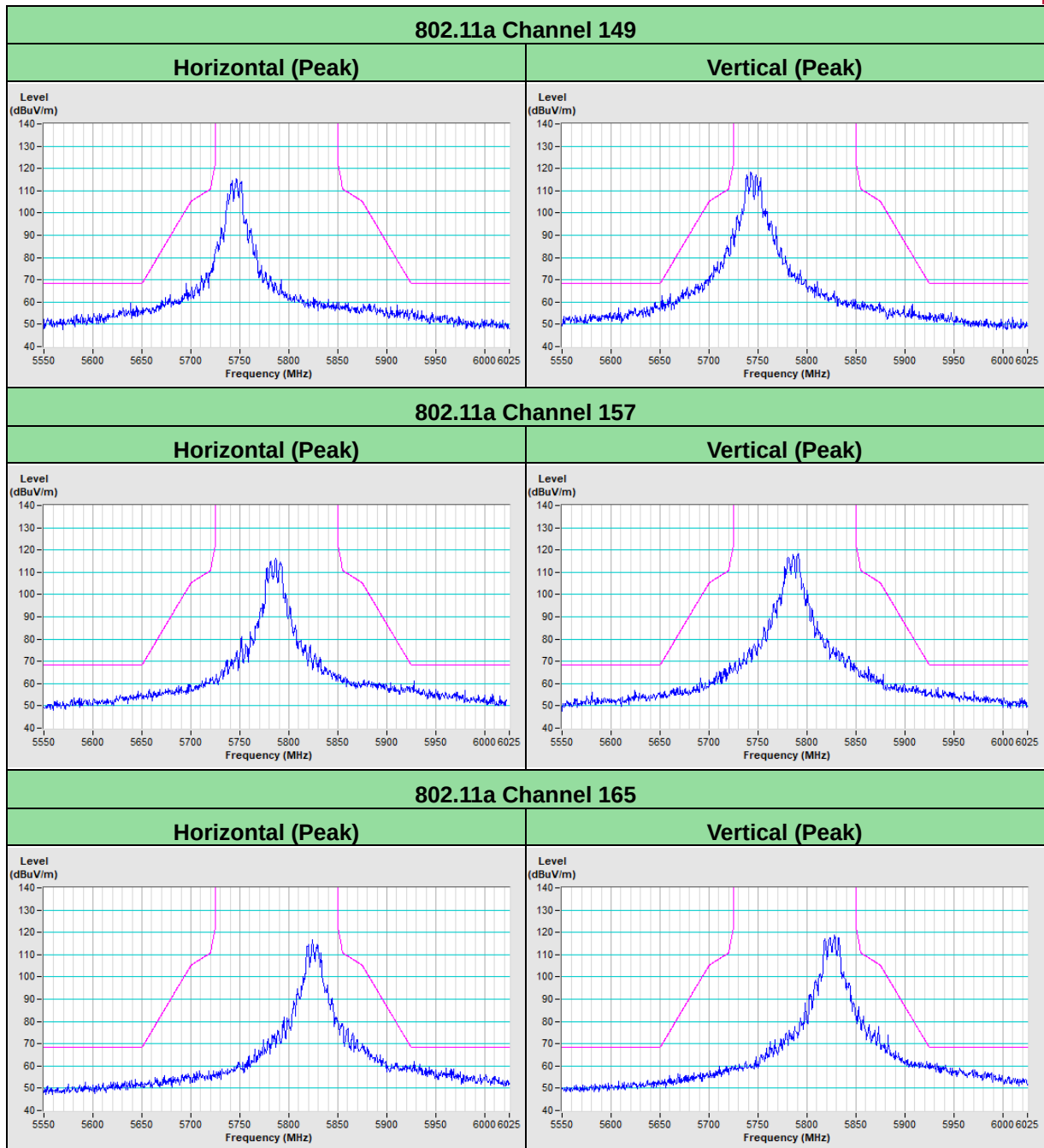
Remarks:

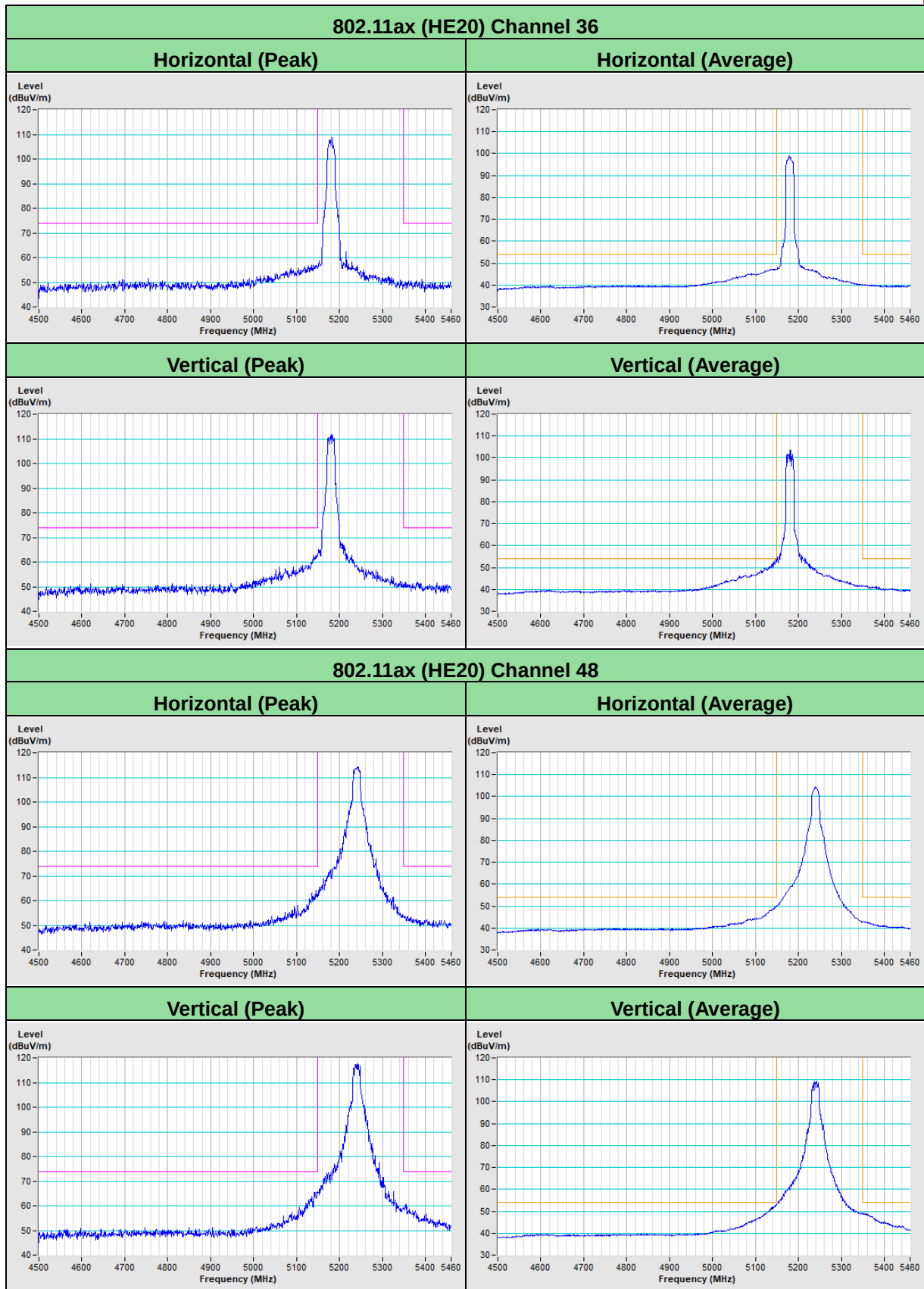
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.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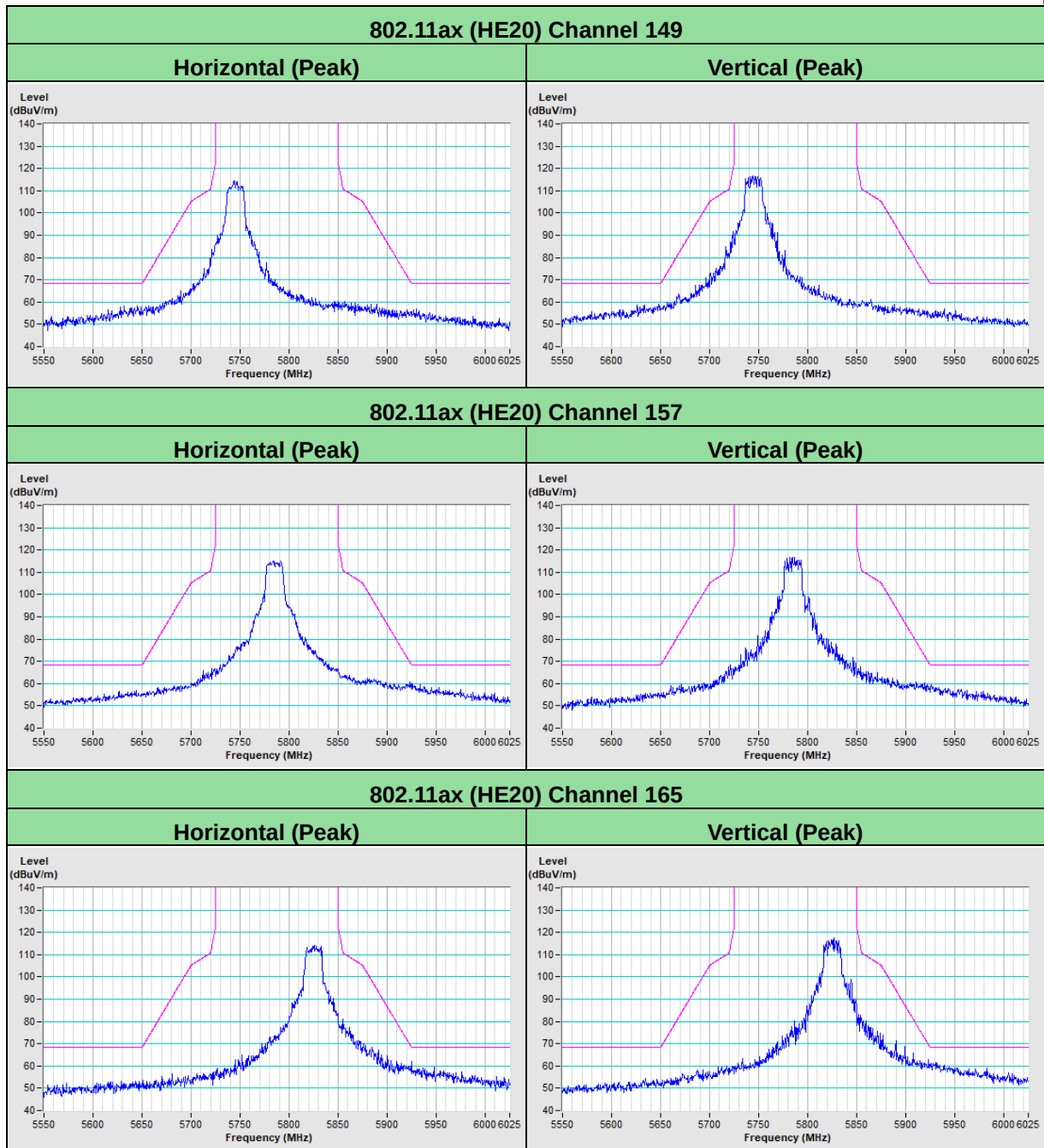


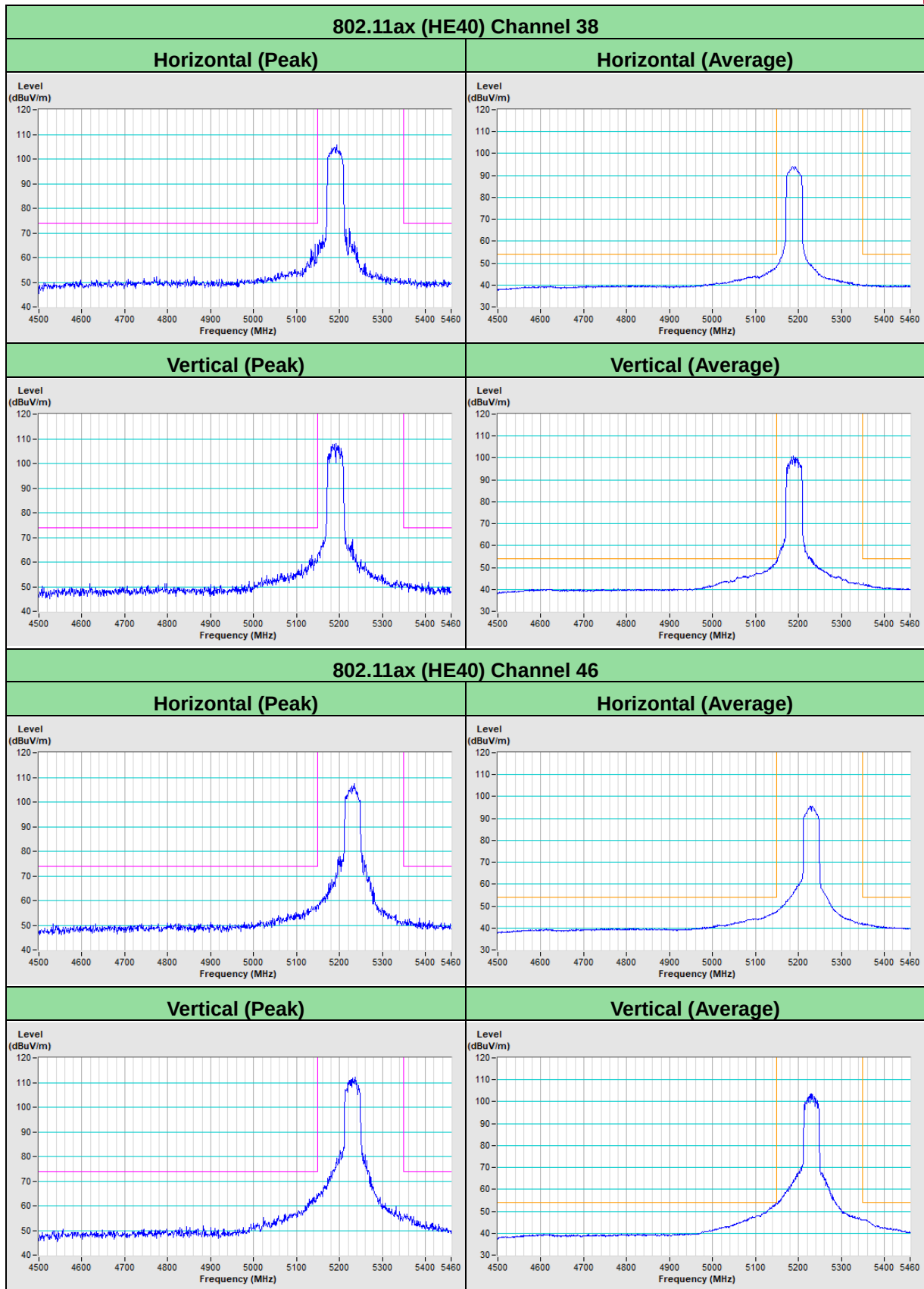
Plot of Band Edge

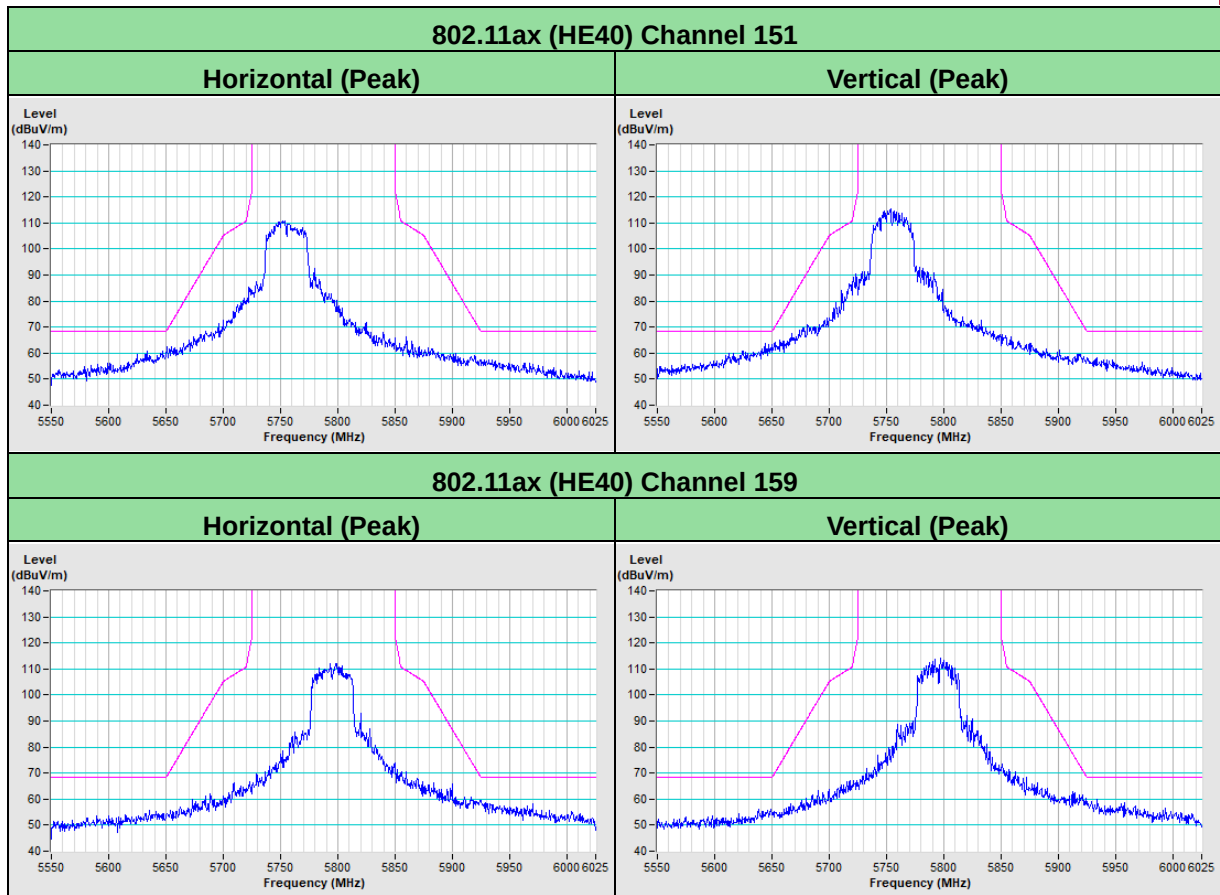


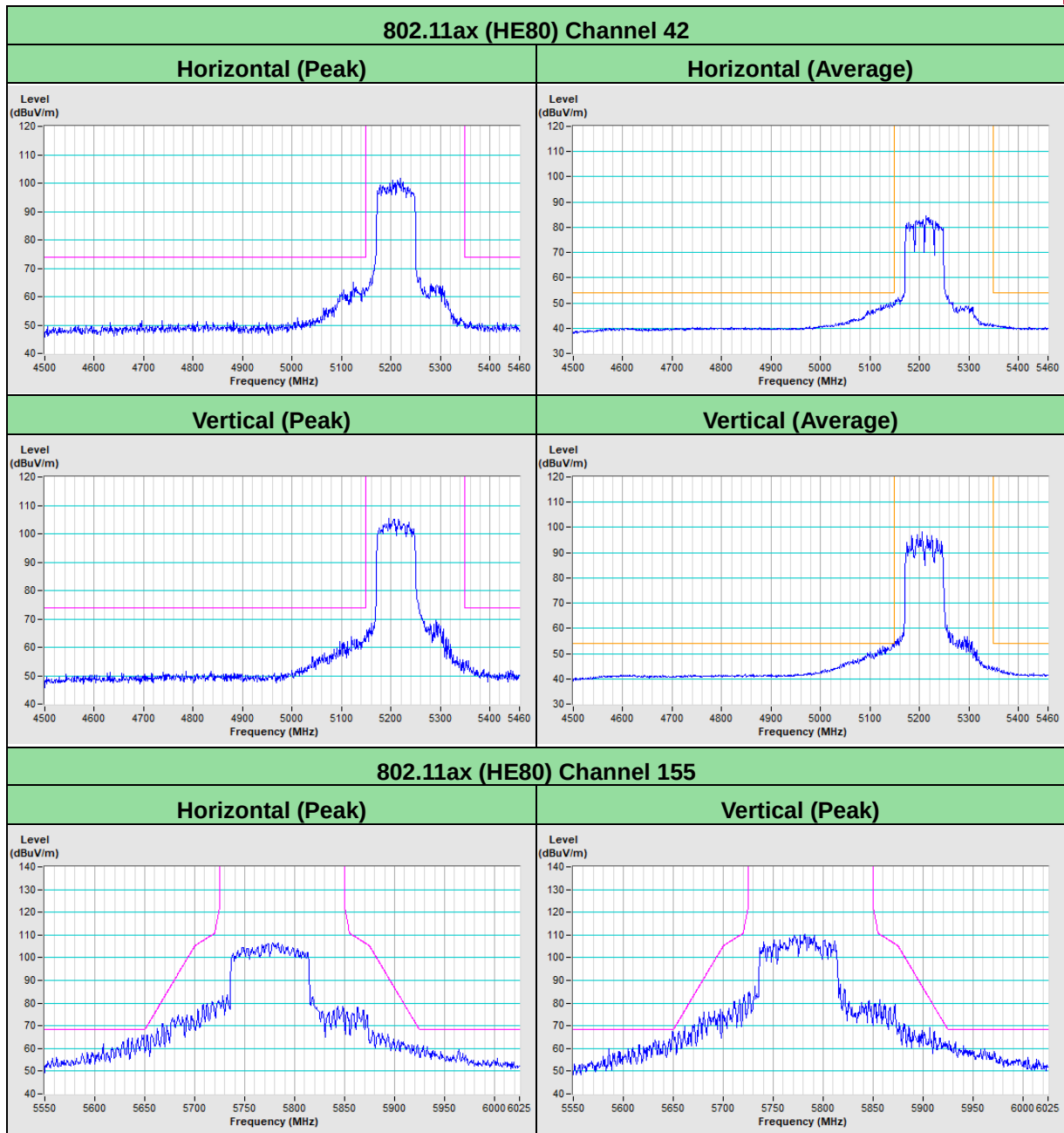












8 Pictures of Test Arrangements

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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