

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBHQC-WTW-P22070552-1

FCC ID: XCNUBN2315

Product: GPON IAD

Brand:



Model No.: UBN2315

Received Date: 2022/7/28

Test Date: 2022/11/19 ~ 2022/12/20

Issued Date: 2023/2/3

Applicant: Ubee Interactive Holding Corp. Taiwan Branch

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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:


May Chen / Manager

Date:

2023/2/3

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Prepared by : Vivian Huang / Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBHQC-WTW-P22070552-1	Original release.	2023/2/3

1 Certificate

Product: GPON IAD

Brand:



Test Model: UBN2315

Sample Status: Mass product

Applicant: Ubee Interactive Holding Corp. Taiwan Branch

Test Date: 2022/11/19 ~ 2022/12/20

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

Measurement ANSI C63.10-2013

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

KDB 662911 D01 Multiple Transmitter Output v02r01

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

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(1/2/3)	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 -11.39 dB at 0.34922 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -8.2 dB at 52.99 MHz
15.407(b)(1/2/3/4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.1 dB at 5148.89, 5150.00 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	5.5 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.1 dB
	18 GHz ~ 40 GHz	5.3 dB

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

2.2 Supplementary Information

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

3 General Information

3.1 General Description of EUT

Product	GPON IAD
Brand	
Test Model	UBN2315
Status of EUT	Mass product
Power Supply Rating	Refer to Note 3
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 600 Mbps 802.11ac: up to 1733.3 Mbps 802.11ax: up to 2401.9 Mbps
Operating Frequency	5.18 GHz ~ 5.24 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 9 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 4 802.11ac (VHT80), 802.11ax (HE80): 2
Output Power	CDD Mode: 5.18 GHz ~ 5.24 GHz : 637.036 mW (28.04 dBm) 5.745 GHz ~ 5.825 GHz : 983.189 mW (29.93 dBm) Beamforming Mode: 5.18 GHz ~ 5.24 GHz : 417.215 mW (26.20 dBm) 5.745 GHz ~ 5.825 GHz : 419.461 mW (26.23 dBm)
EUT Category	Indoor Access Point

Note:

1. The EUT has three radios as following table:

Radio 1	Radio 2	Radio 3
WLAN (2.4 GHz)	WLAN (5 GHz)	WLAN (6 GHz)

2. Simultaneously transmission condition.

Condition	Technology		
1	WLAN (2.4 GHz)	WLAN (5 GHz)	WLAN (6 GHz)

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

3. The EUT uses following accessories.

AC Adapter 1		
Brand	Model	Specification
MOSO	MSS-V2500WR120-030E0-US	AC Input : 100-240V~50/60Hz 1.0A max. DC Output : 30.0W 12.0V 2.5A DC Output Cable : 1.8m non-shielded, without core

4. 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.	RF Chain NO.	Brand	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type
1	2.4G Chain0 / 5G Chain 3	Whayu	N/A	3.5	2.4~2.4835GHz	Dipole	ipex(MHF)
				4	5.15~5.85GHz	Dipole	ipex(MHF)
2	5G Chain1	Whayu	N/A	3.4	5.15~5.85GHz	Dipole	ipex(MHF)
3	5G Chain0	Whayu	N/A	3.4	5.15~5.85GHz	Dipole	ipex(MHF)
4	2.4G Chain1 / 5G Chain 2	Whayu	N/A	3.3	2.4~2.4835GHz	Dipole	ipex(MHF)
				3.8	5.15~5.85GHz	Dipole	ipex(MHF)
5	Chain4	Whayu	N/A	3.5	5.925GHz~7.125GHz	Dipole	ipex(MHF)
6	Chain5	Whayu	N/A	3.4	5.925GHz~7.125GHz	Dipole	ipex(MHF)
7	Chain6	Whayu	N/A	3.4	5.925GHz~7.125GHz	Dipole	ipex(MHF)
8	Chain7	Whayu	N/A	3.4	5.925GHz~7.125GHz	Dipole	ipex(MHF)

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

2. The EUT incorporates a MIMO function:

5 GHz Band		
Modulation Mode	TX & RX Configuration	
802.11a	4TX	4RX
802.11n (HT20)	4TX	4RX
802.11n (HT40)	4TX	4RX
802.11ac (VHT20)	4TX	4RX
802.11ac (VHT40)	4TX	4RX
802.11ac (VHT80)	4TX	4RX
802.11ax (HE20)	4TX	4RX
802.11ax (HE40)	4TX	4RX
802.11ax (HE80)	4TX	4RX

Note:

1. All of modulation mode support beamforming function except 802.11a modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), 802.11ac mode for 20 MHz (40 MHz, 80 MHz) and 802.11ax mode for 20 MHz (40 MHz, 80 MHz), therefore the manufacturer will control the power for 802.11n/ac mode is the same as the 802.11ax or more lower than it and investigated worst case to representative mode in test report.

3.3 Channel List

FOR 5180 ~ 5240 MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

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

Channel	Frequency
42	5210 MHz

FOR 5745 ~ 5825 MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

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

Channel	Frequency
155	5775 MHz

3.4 Test Mode Applicability and Tested Channel Detail

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

Unwanted Emissions above 1 GHz	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	42, 155	BPSK	MCS0
Note: The EUT doesn't support partial RU.					

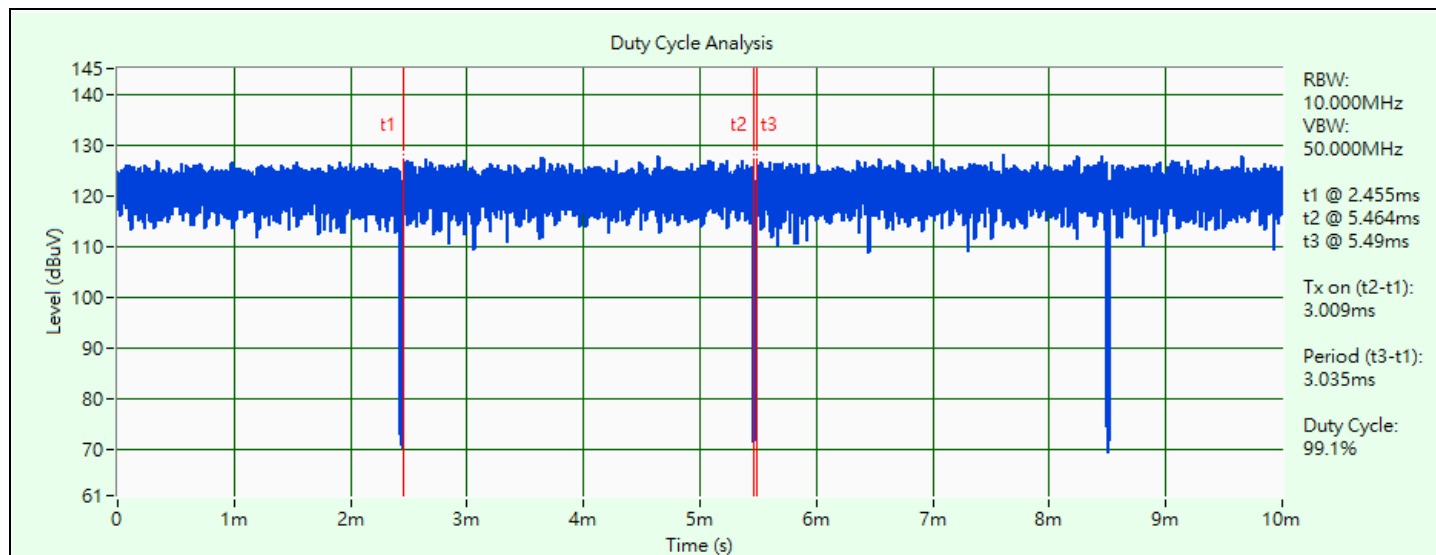
3.5 Duty Cycle of Test Signal

802.11a: Duty cycle = 3.009 ms / 3.035 ms x 100% = 99.1%

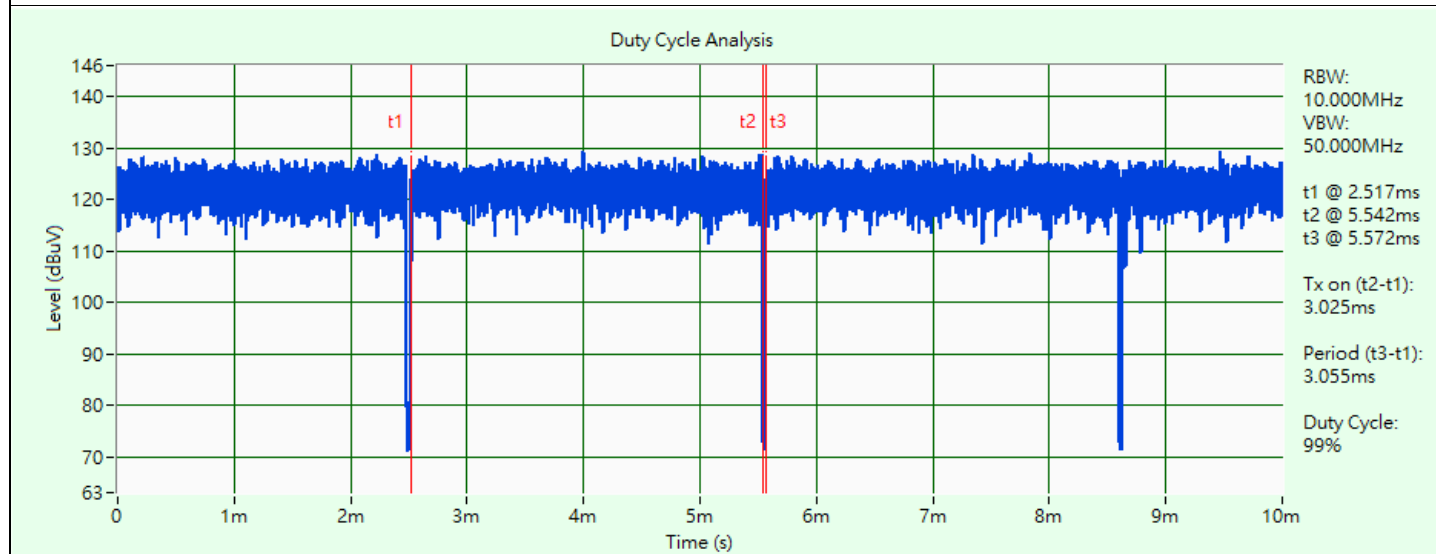
802.11ax (HE20): Duty cycle = 3.025 ms / 3.055 ms x 100% = 99.0%

802.11ax (HE40): Duty cycle = 3.011 ms / 3.041 ms x 100% = 99.0%

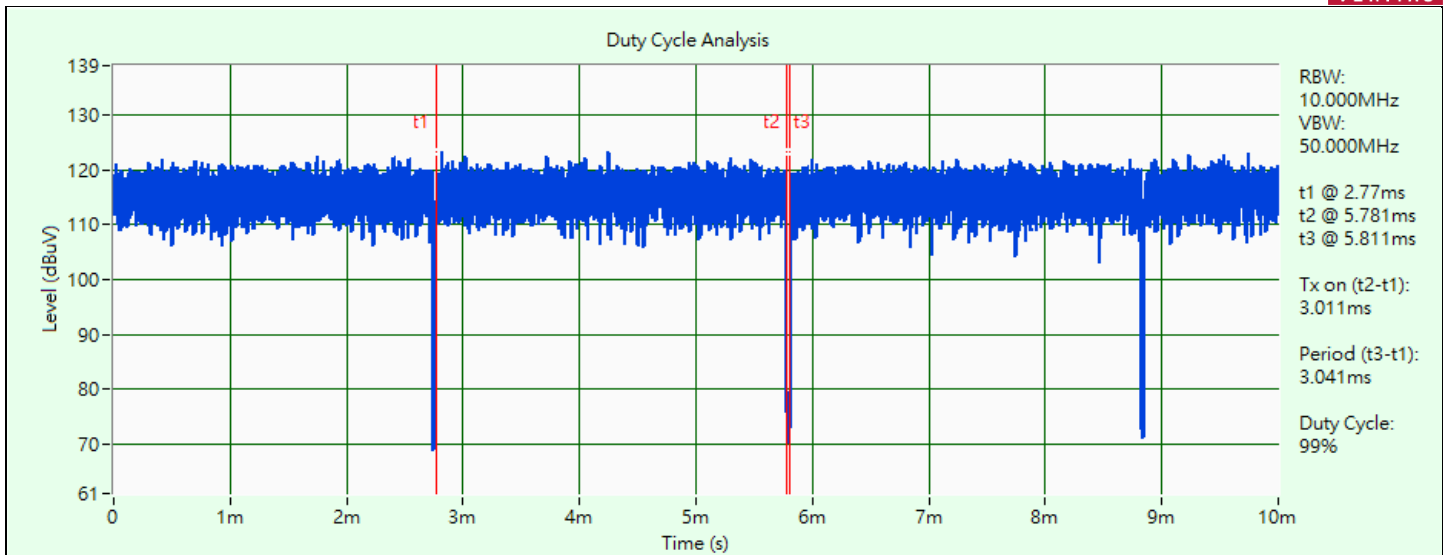
802.11ax (HE80): Duty cycle = 2.997 ms / 3.027 ms x 100% = 99.0%



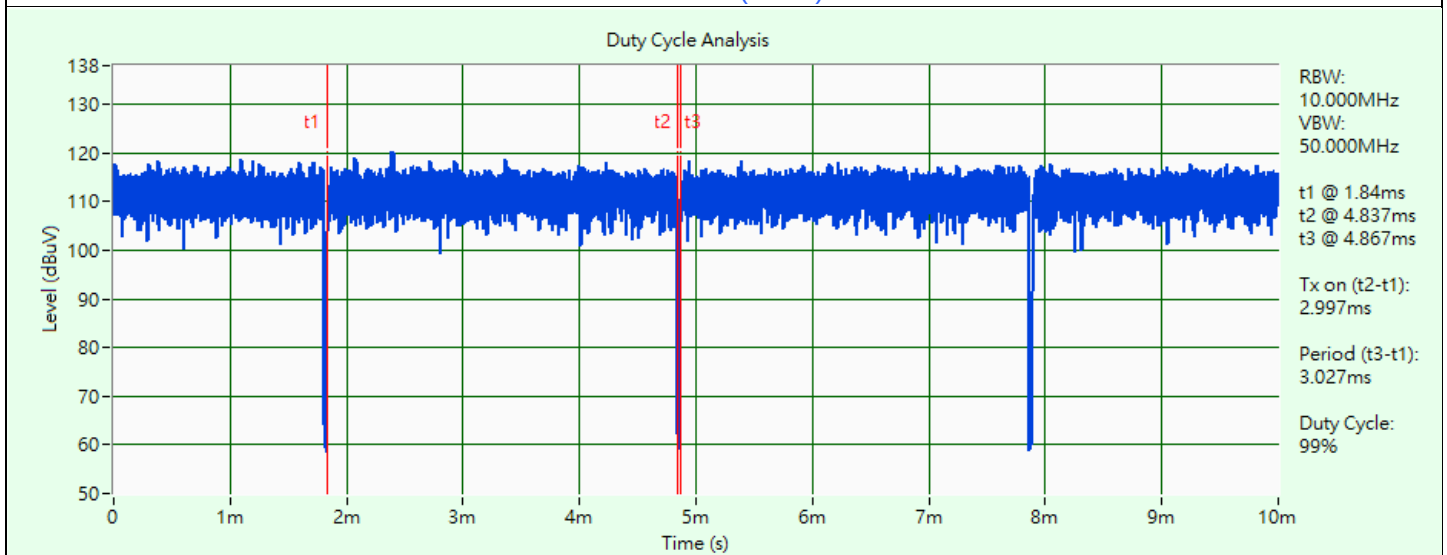
802.11a



802.11ax (HE20)



802.11ax (HE40)

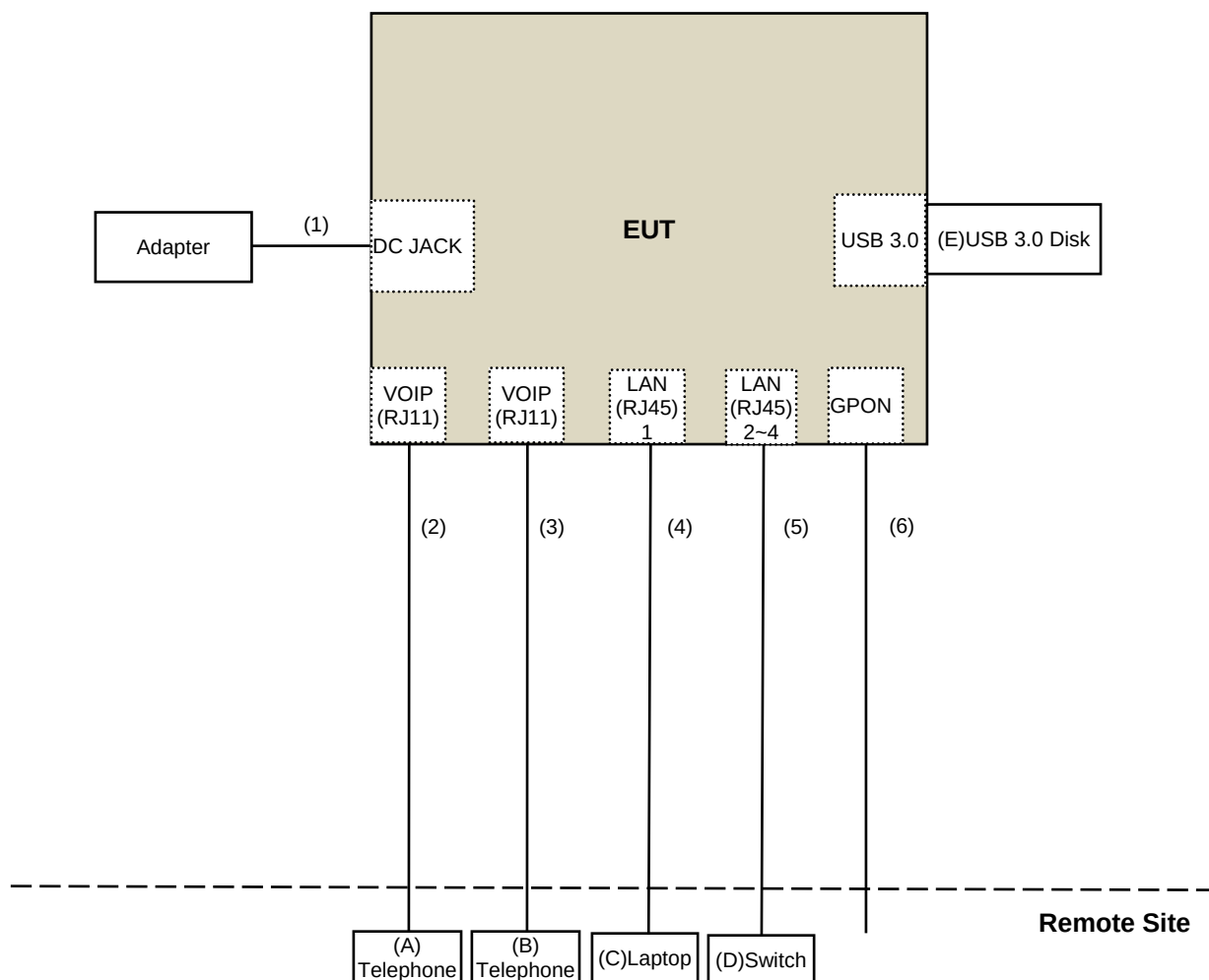


802.11ax (HE80)

3.6 Test Program Used and Operation Descriptions

Controlling software (accessMTool_REL_3_3_0_0) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Telephone	Romeo	TE-812	97285638	N/A	Provided by Lab
B	Telephone	Romeo	TE-812	97280903	N/A	Provided by Lab
C	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	N/A	Provided by Lab
D	Switch	D-Link	DGS-1005D	DR8WC92000523	N/A	Provided by Lab
E	USB 3.0 Disk	SanDisk	BM181225896Z	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	1.8	No	0	Supplied by applicant
2	RJ-11 Cable	1	10	No	0	Provided by Lab
3	RJ-11 Cable	1	10	No	0	Provided by Lab
4	RJ-45 Cable	1	10	No	0	Provided by Lab
5	RJ-45 Cable	3	10	No	0	Provided by Lab
6	Fiber Cable	1	10	No	0	Provided by Lab

4 Test Instruments

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

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Power Meter Anritsu	ML2495A	1529002	2022/6/22	2023/6/21
Pulse Power Sensor Anritsu	MA2411B	1726434	2022/6/22	2023/6/21
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/12/20

4.2 Power Spectral Density

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

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/12/20

4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.4 Occupied Bandwidth

Refer to section 4.2 to get information of the instruments.

4.5 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
AC Power Source GOOD WILL	6905S	1991551	N/A	N/A
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112409	2022/3/11	2023/3/10
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2022/1/14	2023/1/13
True RMS Clamp Meter Fluke	325	31130711WS	2022/6/9	2023/6/8

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/12/20

4.6 AC Power Conducted Emissions

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

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2022/11/20

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-03	2022/1/10	2023/1/9
LOOP ANTENNA Electro-Metrics	EM-6879	264	2022/3/18	2023/3/17
Pre_Amplifier Agilent	8447D	2944A10636	2022/3/19	2023/3/18
Pre_Amplifier EMCI	EMC330N	980701	2022/3/8	2023/3/7
RF Coaxial Cable COMMATE/PEWC	8D	966-4-1	2022/3/8	2023/3/7
		966-4-2	2022/3/8	2023/3/7
		966-4-3	2022/3/8	2023/3/7
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/1/6	2023/1/5
		LOOPCAB-002	2022/1/6	2023/1/5
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2022/4/26	2023/4/25
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-406	2022/10/21	2023/10/20

Notes:

1. The test was performed in 966 Chamber No. 4.
2. Tested Date: 2022/11/19

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-783	2022/11/13	2023/11/12
	BBHA 9170	9170-739	2022/11/13	2023/11/12
Pre_Amplifier EMCI	EMC12630SE	980688	2022/10/4	2023/10/3
	EMC184045SE	980387	2022/1/10	2023/1/9
RF Cable-Frequency Range : 1- 26.5GHz EMCI	EMC104-SM-SM-1200	160922	2021/12/24	2022/12/23
RF Cable-Frequency range: 1- 40GHz EMCI	EMC102-KM-KM-1200	160924	2022/1/10	2023/1/9
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2022/3/8	2023/3/7
	EMC104-SM-SM-2000	180502	2022/4/25	2023/4/24
	EMC104-SM-SM-6000	210704	2022/11/4	2023/11/3
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112410	2022/3/13	2023/3/12

Notes:

1. The test was performed in 966 Chamber No. 4.
2. Tested Date: 2022/12/12 ~ 2022/12/13

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)

For transmitters operating in the 5.15-5.25 GHz band:

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

For transmitters operating in the 5.725-5.850 GHz band:

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

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

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

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

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

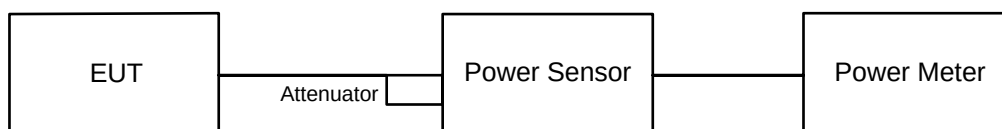
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

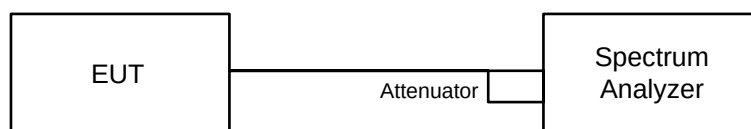


6.1.2 Test Procedure

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

6.2 Power Spectral Density

6.2.1 Test Setup



6.2.2 Test Procedure

For specified measurement bandwidth 1 MHz:

Method SA-1

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

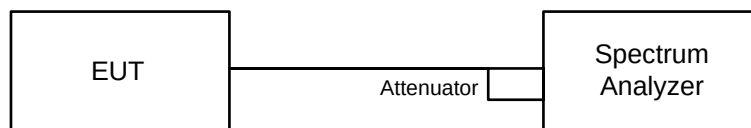
For specified measurement bandwidth 500 kHz:

Method SA-1

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

6.3 6 dB Bandwidth

6.3.1 Test Setup

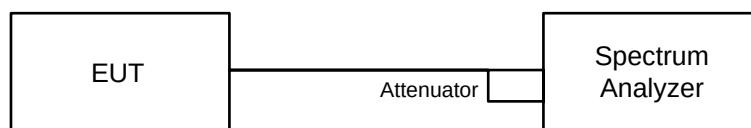


6.3.2 Test Procedure

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

6.4 Occupied Bandwidth

6.4.1 Test Setup

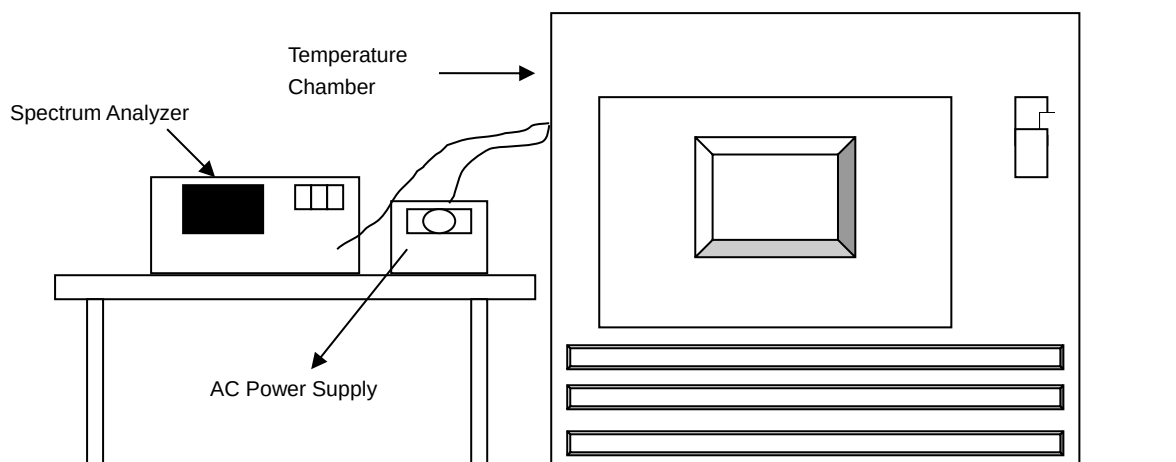


6.4.2 Test Procedure

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

6.5 Frequency Stability

6.5.1 Test Setup

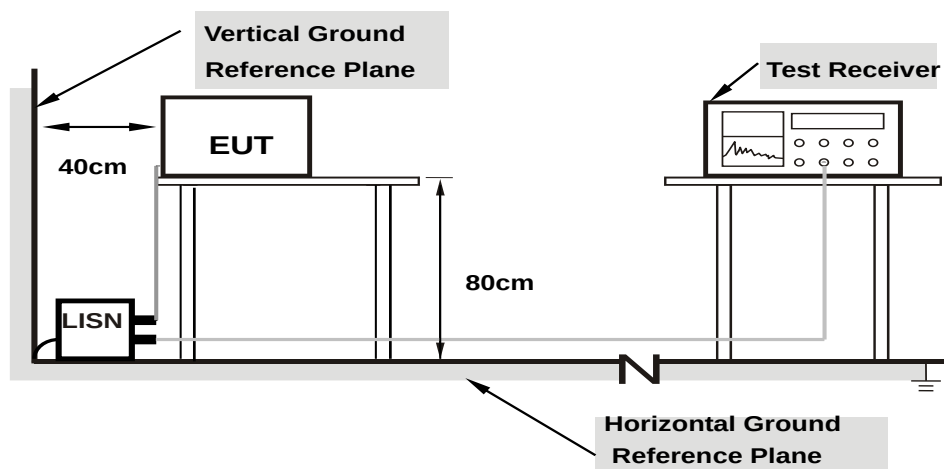


6.5.2 Test Procedure

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

6.6 AC Power Conducted Emissions

6.6.1 Test Setup



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

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

6.6.2 Test Procedure

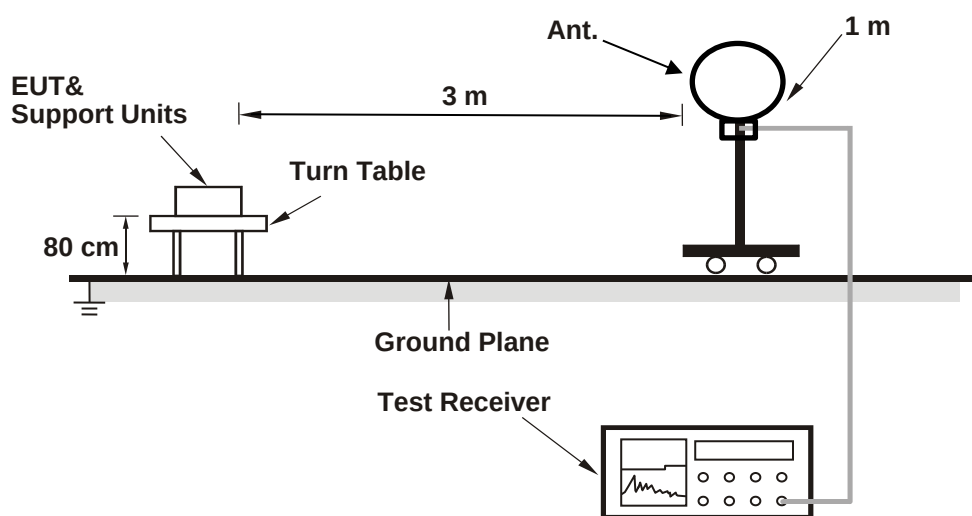
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

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

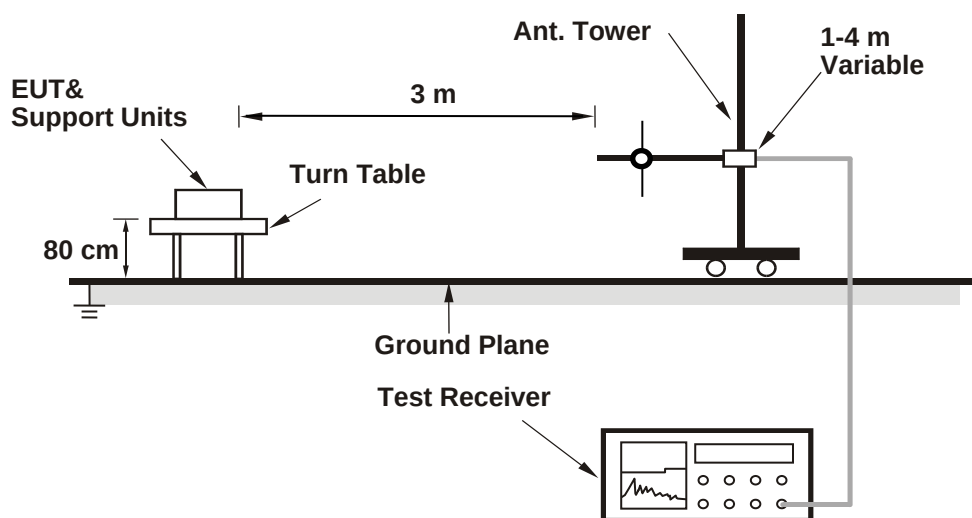
6.7 Unwanted Emissions below 1 GHz

6.7.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.7.2 Test Procedure

For Radiated emission below 30 MHz

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

Notes:

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

For Radiated emission above 30 MHz

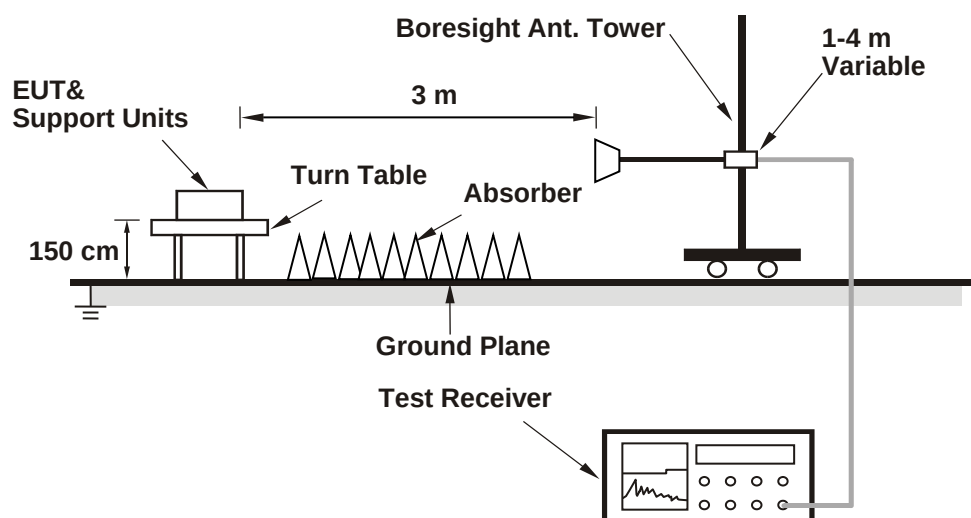
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the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

Notes:

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

6.8 Unwanted Emissions above 1 GHz

6.8.1 Test Setup



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

6.8.2 Test Procedure

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

Notes:

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

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	John Peng
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802.11a CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	20.03	19.92	20.44	19.79	404.81	26.07	30	Pass
40	5200	20.34	20.16	20.13	20.22	420.131	26.23	30	Pass
48	5240	20.31	20.24	20.07	20.18	418.937	26.22	30	Pass
149	5745	23.99	23.92	23.77	23.94	983.189	29.93	30	Pass
157	5785	23.83	23.79	23.64	23.75	949.222	29.77	30	Pass
165	5825	23.87	23.85	23.61	23.73	952.105	29.79	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the directional gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.72	19.70	20.41	20.12	399.784	26.02	30	Pass
40	5200	19.94	19.91	19.88	20.10	396.181	25.98	30	Pass
48	5240	19.94	19.91	19.95	20.00	395.432	25.97	30	Pass
149	5745	23.71	23.74	23.35	23.13	893.416	29.51	30	Pass
157	5785	23.72	23.70	23.27	23.16	889.266	29.49	30	Pass
165	5825	23.78	23.77	23.32	23.03	892.705	29.51	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the directional gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	18.42	18.02	18.35	18.70	275.412	24.40	30	Pass
46	5230	21.98	21.62	21.85	22.12	619.011	27.92	30	Pass
151	5755	22.79	22.95	22.88	22.89	775.975	28.90	30	Pass
159	5795	23.77	23.60	23.50	23.50	915.063	29.61	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	17.12	16.78	17.48	17.62	212.951	23.28	30	Pass
155	5775	20.48	20.25	20.21	20.42	432.72	26.36	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.88	19.77	20.56	20.27	412.294	26.15	30	Pass
40	5200	20.18	20.14	20.12	20.29	417.215	26.20	30	Pass
48	5240	20.15	20.08	20.14	20.21	413.604	26.17	30	Pass
149	5745	23.94	23.92	23.54	23.31	934.579	29.71	30	Pass
157	5785	23.89	23.95	23.51	23.35	933.88	29.70	30	Pass
165	5825	23.95	23.95	23.56	23.22	933.507	29.70	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the directional gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	18.55	18.12	18.49	18.87	284.2	24.54	30	Pass
46	5230	22.09	21.72	21.91	22.34	637.036	28.04	30	Pass
151	5755	23.03	23.12	23.04	23.09	811.102	29.09	30	Pass
159	5795	23.98	23.83	23.75	23.67	961.527	29.83	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	17.21	16.85	17.58	17.77	218.14	23.39	30	Pass
155	5775	20.51	20.38	20.41	20.54	444.745	26.48	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.72	19.70	20.41	20.12	399.784	26.02	26.33	Pass
40	5200	19.94	19.91	19.88	20.10	396.181	25.98	26.33	Pass
48	5240	19.94	19.91	19.95	20.00	395.432	25.97	26.33	Pass
149	5745	20.31	20.08	19.82	19.52	394.735	25.96	26.33	Pass
157	5785	20.22	20.26	19.90	19.54	399.039	26.01	26.33	Pass
165	5825	20.33	20.24	19.82	19.62	401.139	26.03	26.33	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20} + 10^{\text{Chain2}/20} + 10^{\text{Chain3}/20})^2 / 4]$
2. For U-NII-1, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to 30-(9.67-6) = 26.33 dBm.
3. For U-NII-3, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to 30-(9.67-6) = 26.33 dBm.

802.11ac (VHT40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	18.42	18.02	18.35	18.70	275.412	24.40	26.33	Pass
46	5230	19.75	19.80	19.73	19.88	381.152	25.81	26.33	Pass
151	5755	19.89	19.89	19.73	19.74	383.159	25.83	26.33	Pass
159	5795	19.69	19.68	19.66	19.62	370.099	25.68	26.33	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}} + 10^{\text{Chain2/20}} + 10^{\text{Chain3/20}})^2 / 4]$
2. For U-NII-1, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm.
3. For U-NII-3, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm.

802.11ac (VHT80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	17.12	16.78	17.48	17.62	212.951	23.28	26.33	Pass
155	5775	19.93	20.01	19.54	19.51	377.912	25.77	26.33	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}} + 10^{\text{Chain2/20}} + 10^{\text{Chain3/20}})^2 / 4]$
2. For U-NII-1, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm.
3. For U-NII-3, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm.

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.88	19.77	20.56	20.27	412.294	26.15	26.33	Pass
40	5200	20.18	20.14	20.12	20.29	417.215	26.20	26.33	Pass
48	5240	20.15	20.08	20.14	20.21	413.604	26.17	26.33	Pass
149	5745	20.52	20.28	19.98	19.74	413.109	26.16	26.33	Pass
157	5785	20.46	20.44	20.11	19.78	419.461	26.23	26.33	Pass
165	5825	20.49	20.39	20.03	19.81	417.752	26.21	26.33	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}} + 10^{\text{Chain2/20}} + 10^{\text{Chain3/20}})^2 / 4]$
2. For U-NII-1, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm.
3. For U-NII-3, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	18.55	18.12	18.49	18.87	284.2	24.54	26.33	Pass
46	5230	20.00	19.99	19.92	20.05	399.103	26.01	26.33	Pass
151	5755	20.11	20.04	19.97	19.96	401.885	26.04	26.33	Pass
159	5795	19.93	19.89	19.87	19.83	389.112	25.90	26.33	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}} + 10^{\text{Chain2/20}} + 10^{\text{Chain3/20}})^2 / 4]$
2. For U-NII-1, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm.
3. For U-NII-3, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm.

802.11ax (HE80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	17.21	16.85	17.58	17.77	218.14	23.39	26.33	Pass
155	5775	20.09	20.17	19.75	19.72	394.248	25.96	26.33	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}} + 10^{\text{Chain2/20}} + 10^{\text{Chain3/20}})^2 / 4]$
2. For U-NII-1, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm.
3. For U-NII-3, the directional gain is 9.67 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm.

7.2 Power Spectral Density

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

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	7.09	7.45	6.74	7.35	13.19	13.33	Pass
40	5200	6.95	7.54	6.83	7.43	13.22	13.33	Pass
48	5240	6.91	7.43	6.63	7.01	13.03	13.33	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 = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}} + 10^{\text{Chain2/20}} + 10^{\text{Chain3/20}})^2 / 4]$
- For U-NII-1, the directional gain is 9.67 dBi > 6dBi, so the power density limit shall be reduced to $17 - (9.67 - 6) = 13.33$ dBm/MHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	5.84	6.14	6.89	6.16	12.30	13.33	Pass
40	5200	7.04	6.90	6.32	6.98	12.84	13.33	Pass
48	5240	6.35	6.98	6.75	7.04	12.81	13.33	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 = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}} + 10^{\text{Chain2/20}} + 10^{\text{Chain3/20}})^2 / 4]$
- For U-NII-1, the directional gain is 9.67 dBi > 6dBi, so the power density limit shall be reduced to $17 - (9.67 - 6) = 13.33$ dBm/MHz.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
38	5190	-1.80	-2.17	-1.51	-1.76	4.22	13.33	Pass
46	5230	6.38	6.44	6.50	6.33	12.43	13.33	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 = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}} + 10^{\text{Chain2/20}} + 10^{\text{Chain3/20}})^2 / 4]$
- For U-NII-1, the directional gain is 9.67 dBi > 6dBi, so the power density limit shall be reduced to $17 - (9.67 - 6) = 13.33$ dBm/MHz.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
42	5210	-5.21	-5.58	-5.14	-5.32	0.71	13.33	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 = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20} + 10^{\text{Chain2}/20} + 10^{\text{Chain3}/20})^2 / 4]$
3. For U-NII-1, the directional gain is 9.67 dBi > 6dBi, so the power density limit shall be reduced to $17-(9.67-6) = 13.33$ dBm/MHz.

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	2.65	3.03	2.72	2.72	8.8	11.02	26.33	Pass
157	5785	1.93	2.28	1.92	1.94	8.04	10.26	26.33	Pass
165	5825	0.61	0.10	-0.19	0.07	6.18	8.40	26.33	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 = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20} + 10^{\text{Chain2}/20} + 10^{\text{Chain3}/20})^2 / 4]$
3. For U-NII-3, the directional gain is 9.67 dBi > 6 dBi, so the power density limit shall be reduced to $30-(9.67-6) = 26.33$ dBm/500kHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	1.04	0.91	1.05	1.06	7.04	9.26	26.33	Pass
157	5785	0.81	0.39	0.36	0.26	6.48	8.70	26.33	Pass
165	5825	-0.77	-1.88	-1.52	-1.89	4.53	6.75	26.33	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 = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20} + 10^{\text{Chain2}/20} + 10^{\text{Chain3}/20})^2 / 4]$
3. For U-NII-3, the directional gain is 9.67 dBi > 6 dBi, so the power density limit shall be reduced to $30-(9.67-6) = 26.33$ dBm/500kHz.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
151	5755	-2.09	-2.19	-1.90	-1.91	4	6.22	26.33	Pass
159	5795	-2.13	-2.71	-2.31	-2.50	3.61	5.83	26.33	Pass

Notes:

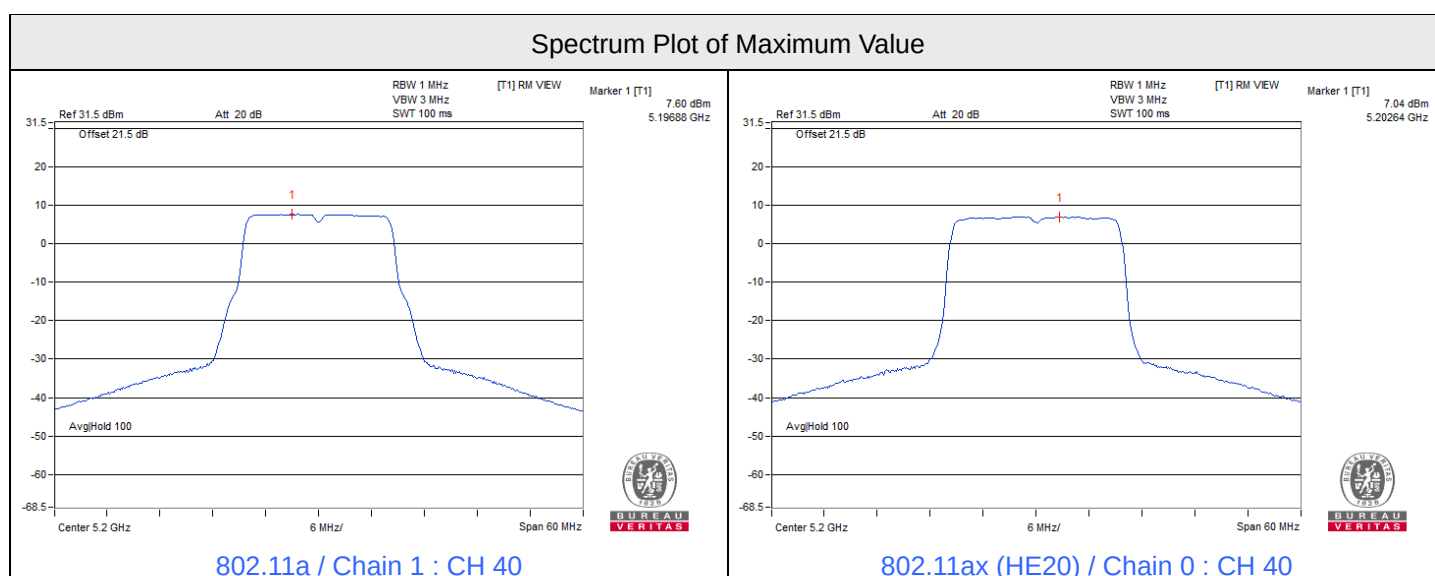
1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20} + 10^{\text{Chain2}/20} + 10^{\text{Chain3}/20})^2 / 4]$
3. For U-NII-3, the directional gain is 9.67 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm/500kHz.

802.11ax (HE80)

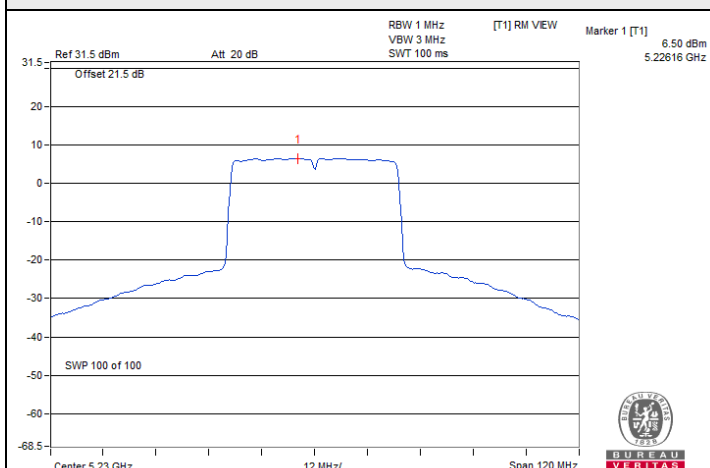
Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
155	5775	-7.54	-7.37	-7.14	-6.93	-1.22	1.00	26.33	Pass

Notes:

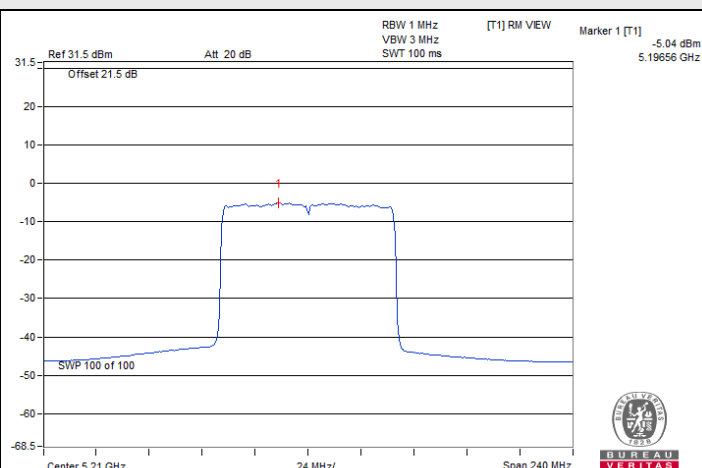
1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20} + 10^{\text{Chain2}/20} + 10^{\text{Chain3}/20})^2 / 4]$
3. For U-NII-3, the directional gain is 9.67 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (9.67 - 6) = 26.33$ dBm/500kHz.



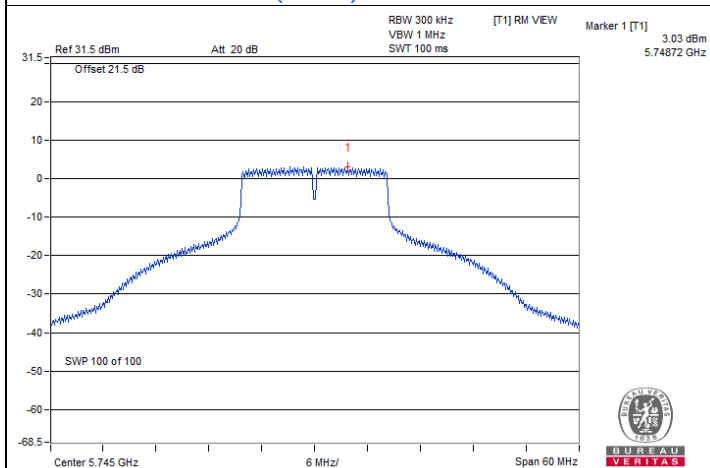
Spectrum Plot of Maximum Value



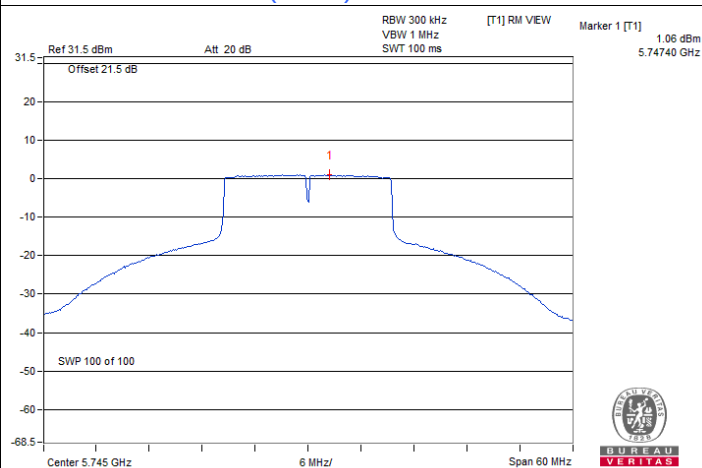
802.11ax (HE40) / Chain 2 : CH 46



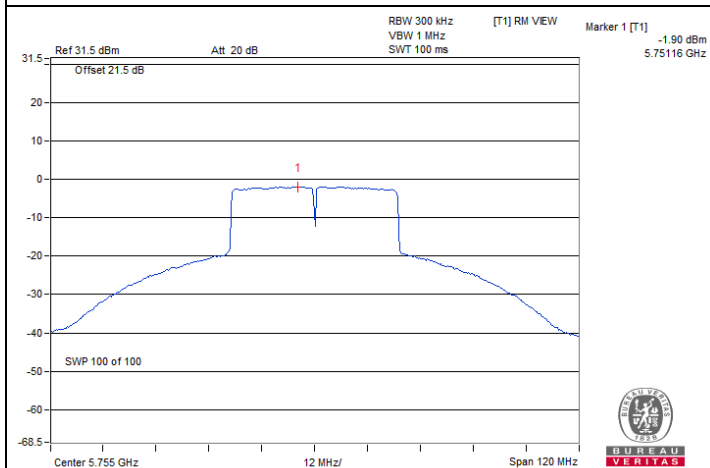
802.11ax (HE80) / Chain 2 : CH 42



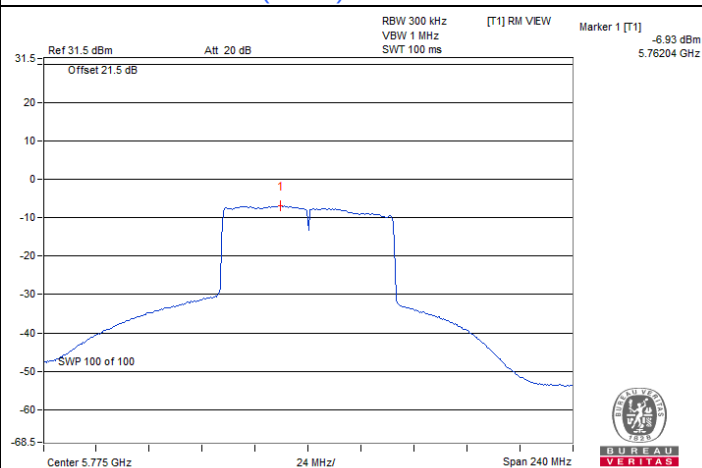
802.11a / Chain 1 : CH 149



802.11ax (HE20) / Chain 3 : CH 149



802.11ax (HE40) / Chain 2 : CH 151



802.11ax (HE80) / Chain 3 : CH 155

7.3 6 dB Bandwidth

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

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	16.43	16.39	16.42	16.39	0.5	Pass
157	5785	16.41	16.42	16.41	16.39	0.5	Pass
165	5825	16.15	16.42	16.40	16.40	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	19.05	18.96	18.90	18.90	0.5	Pass
157	5785	18.95	18.93	18.85	18.98	0.5	Pass
165	5825	18.86	18.91	18.94	18.85	0.5	Pass

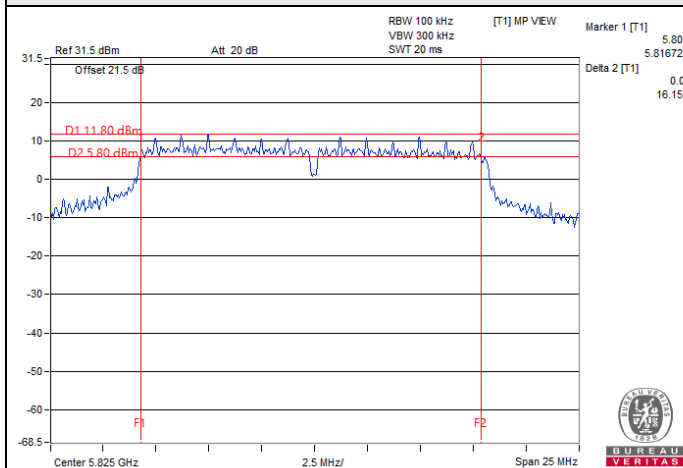
802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	37.87	37.77	37.82	37.92	0.5	Pass
159	5795	37.90	37.87	37.74	37.51	0.5	Pass

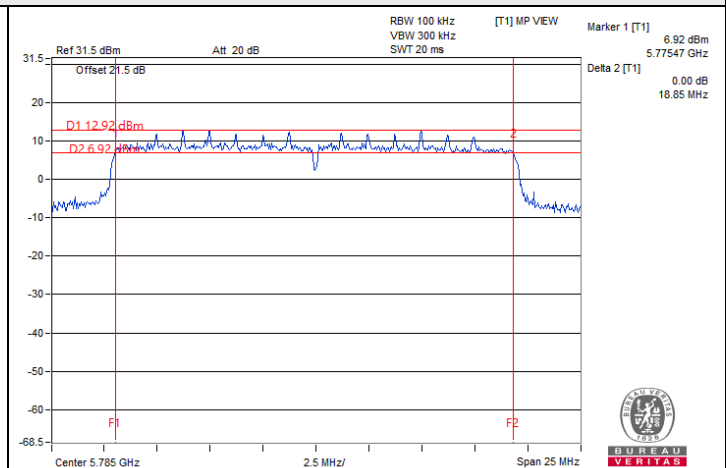
802.11ax (HE80)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	77.88	77.41	77.90	77.01	0.5	Pass

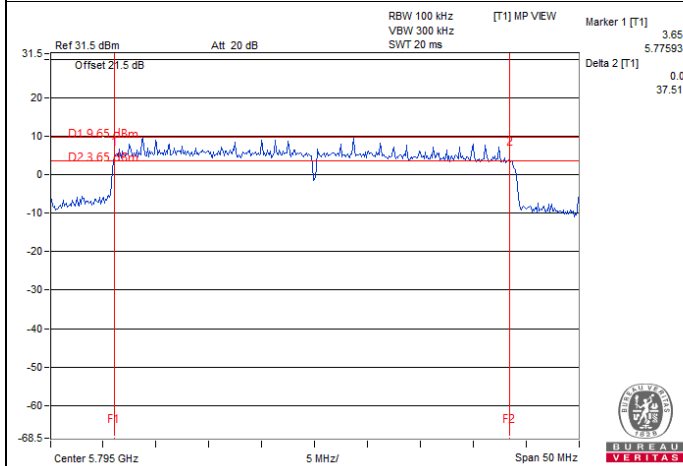
Spectrum Plot of Minimum Value



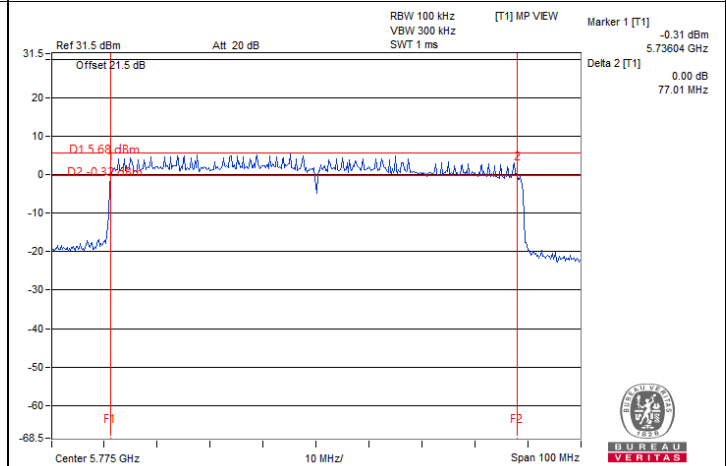
802.11a / Chain 0 : CH 165



802.11ax (HE20) / Chain 2 : CH 157



802.11ax (HE40) / Chain 3 : CH 159



802.11ax (HE80) / Chain 3 : CH 155

7.4 Occupied Bandwidth

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

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	17.16	17.16	17.16	16.92
40	5200	17.16	17.16	17.16	16.92
48	5240	17.16	17.16	17.28	17.16
149	5745	28.08	28.20	28.44	29.52
157	5785	26.76	27.96	27.96	29.52
165	5825	25.44	29.52	28.68	39.24

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	19.20	19.08	19.08	19.20
40	5200	19.08	19.20	19.20	19.20
48	5240	19.20	19.32	19.20	19.32
149	5745	27.24	29.16	28.20	29.16
157	5785	26.64	27.60	27.24	29.40
165	5825	24.84	43.56	29.64	33.60

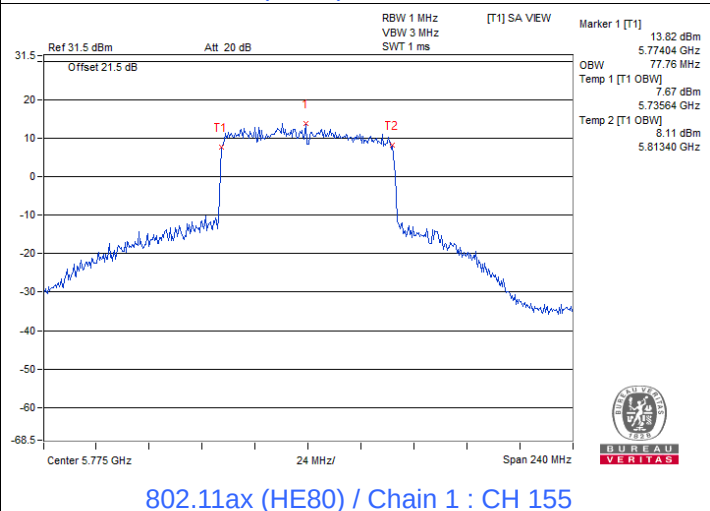
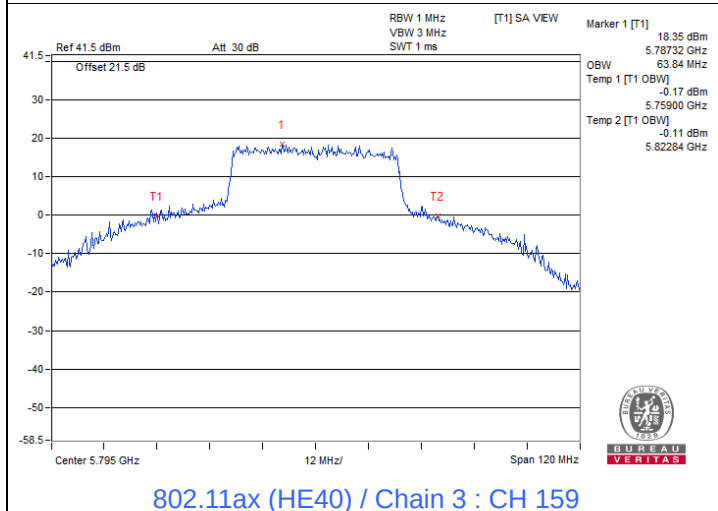
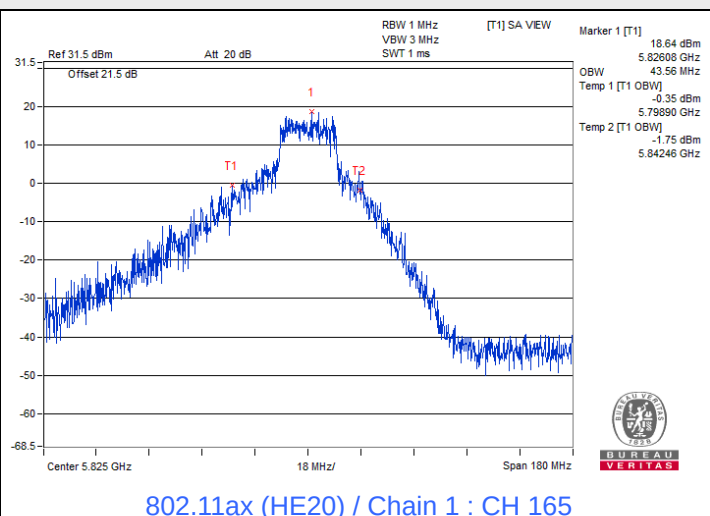
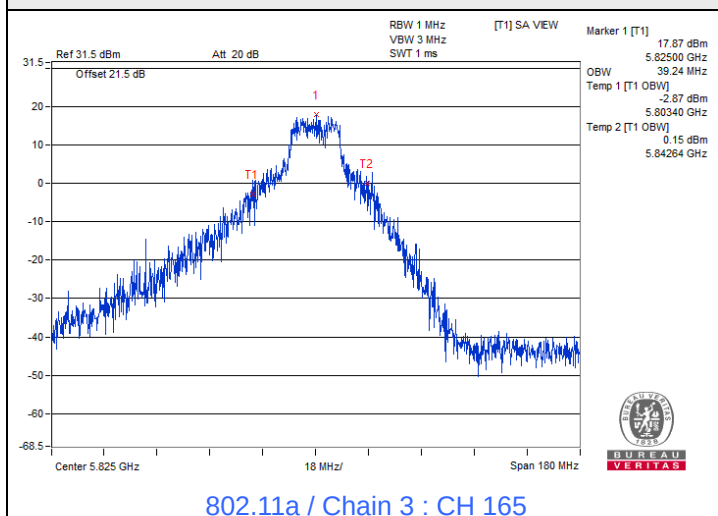
802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
38	5190	38.16	37.92	38.16	38.16
46	5230	38.16	38.16	38.40	38.16
151	5755	49.20	49.20	53.52	54.72
159	5795	58.80	59.04	62.88	63.84

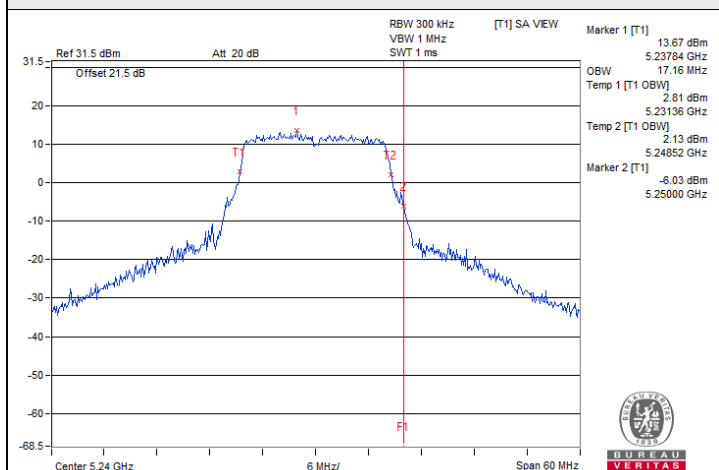
802.11ax (HE80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	77.28	77.28	77.28	77.76
155	5775	77.28	77.76	77.76	77.76

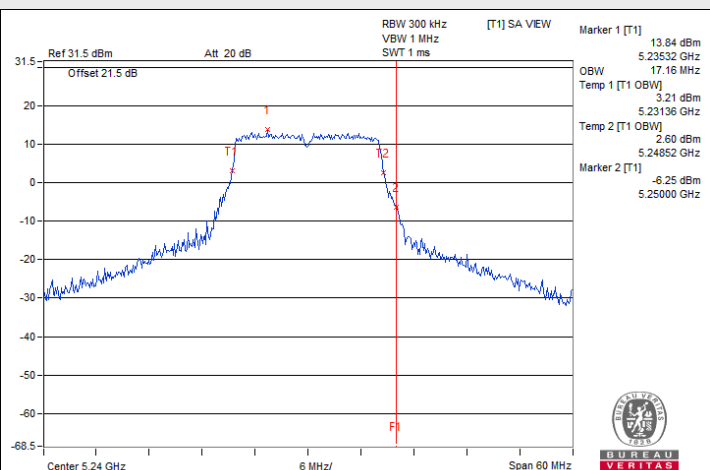
Spectrum Plot of Maximum Value



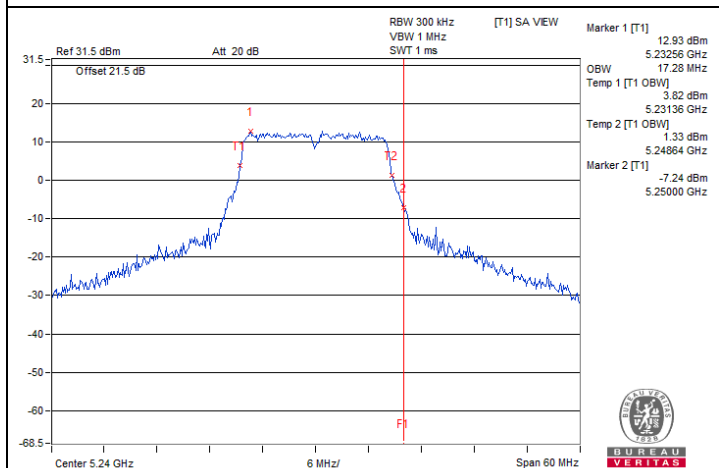
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



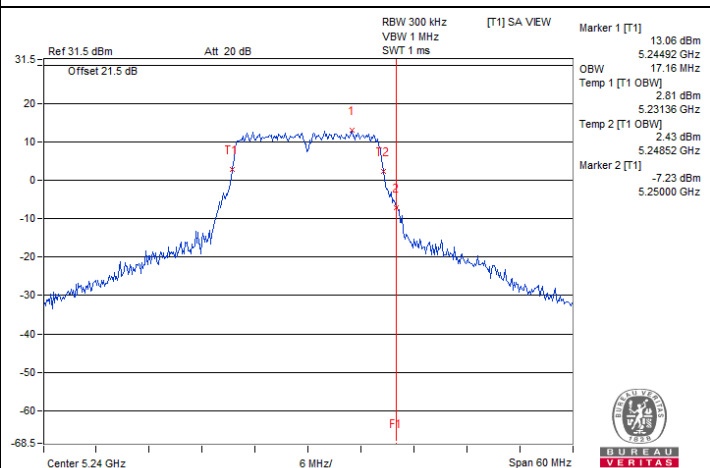
802.11a / Chain 0 : CH 48



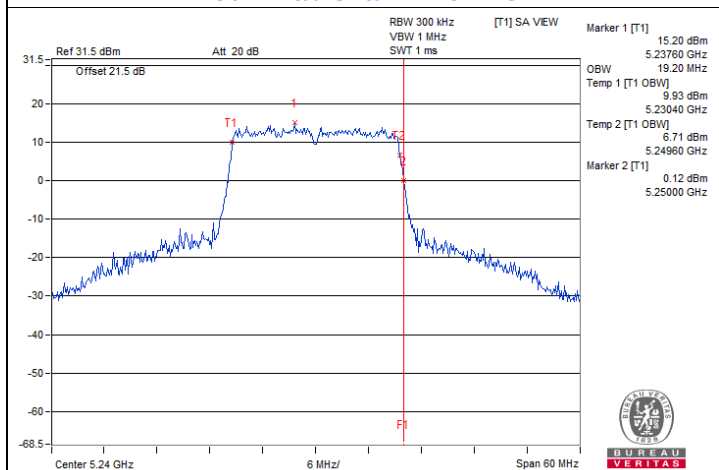
802.11a / Chain 1 : CH 48



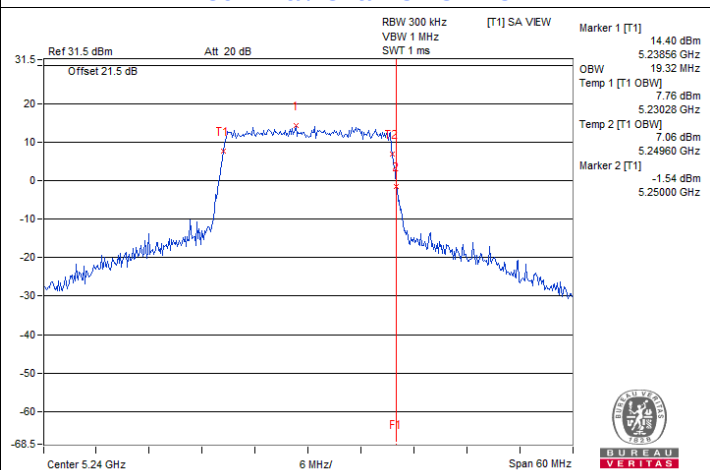
802.11a / Chain 2 : CH 48



802.11a / Chain 3 : CH 48

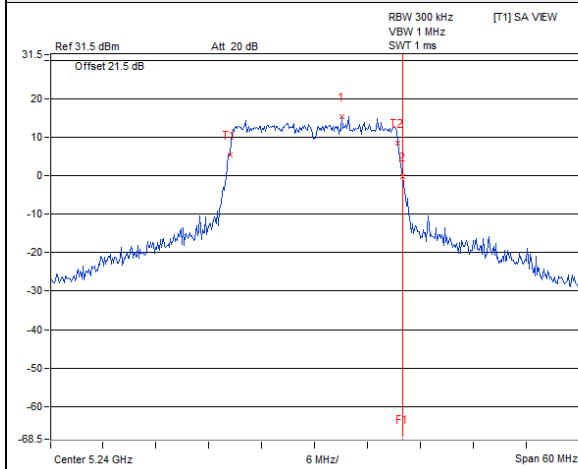


802.11ax (HE20) / Chain 0 : CH 48

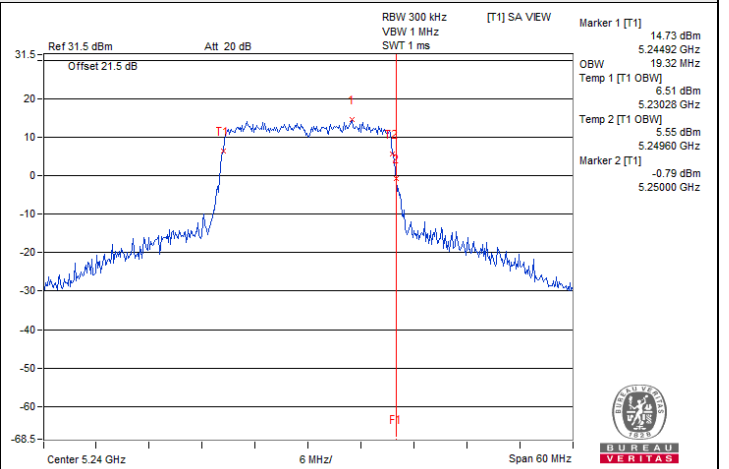


802.11ax (HE20) / Chain 1 : CH 48

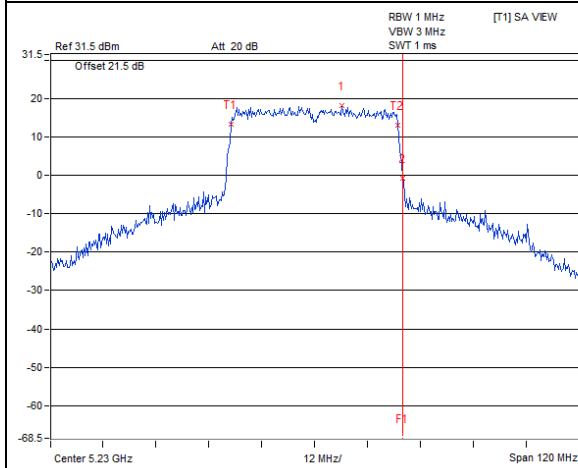
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



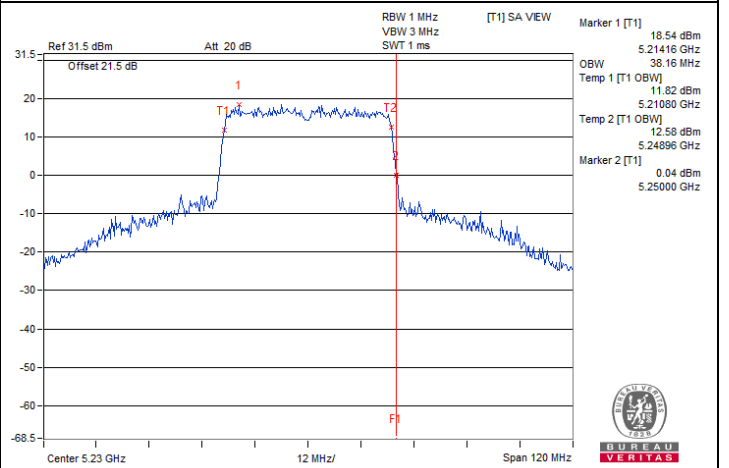
802.11ax (HE20) / Chain 2 : CH 48



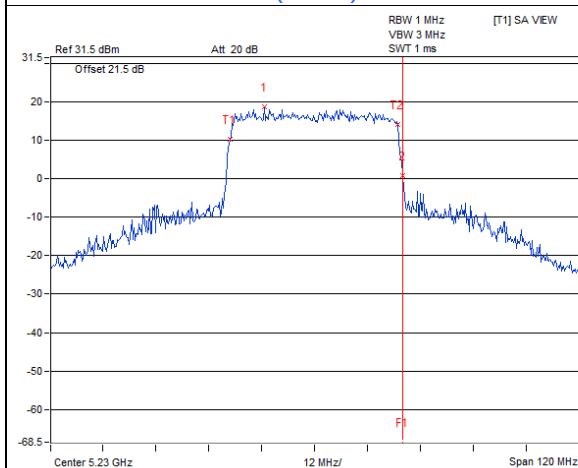
802.11ax (HE20) / Chain 3 : CH 48



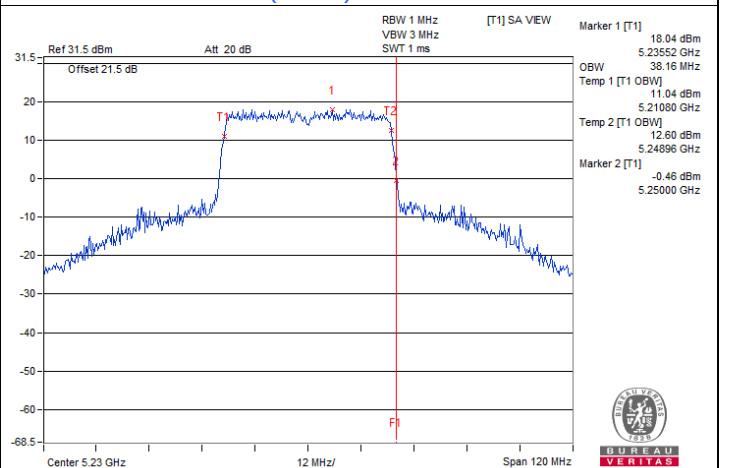
802.11ax (HE40) / Chain 0 : CH 46



802.11ax (HE40) / Chain 1 : CH 46

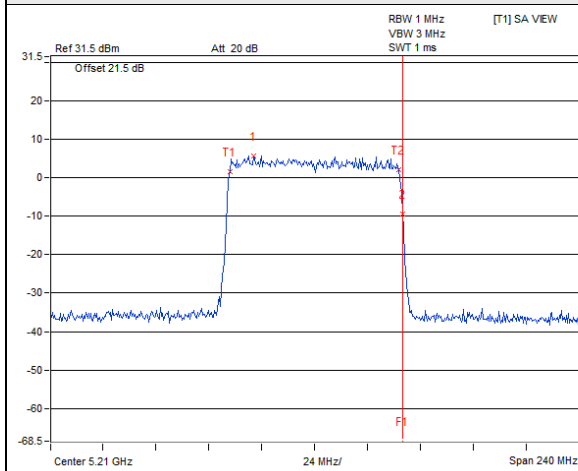


802.11ax (HE40) / Chain 2 : CH 46

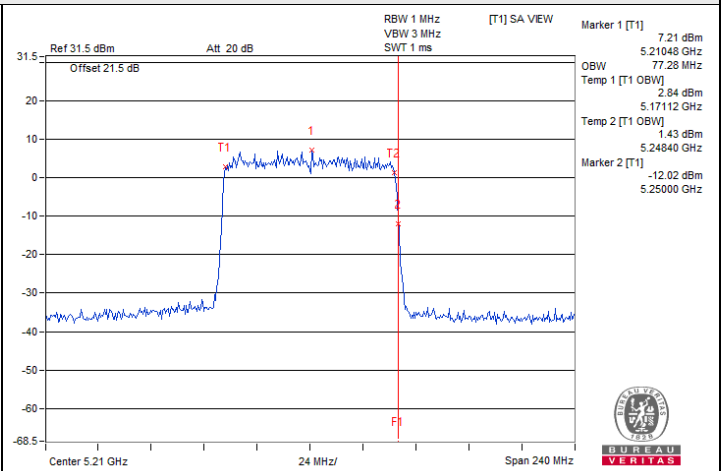


802.11ax (HE40) / Chain 3 : CH 46

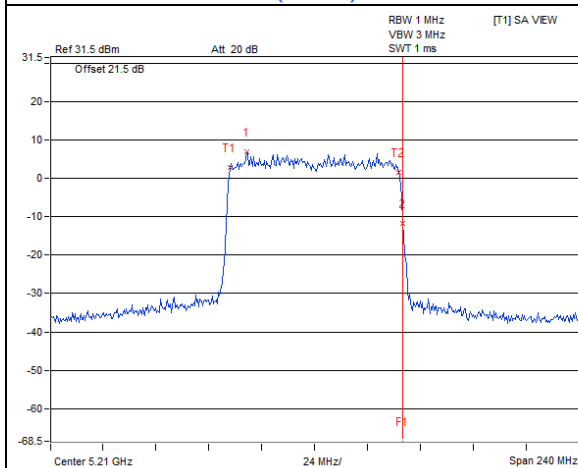
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



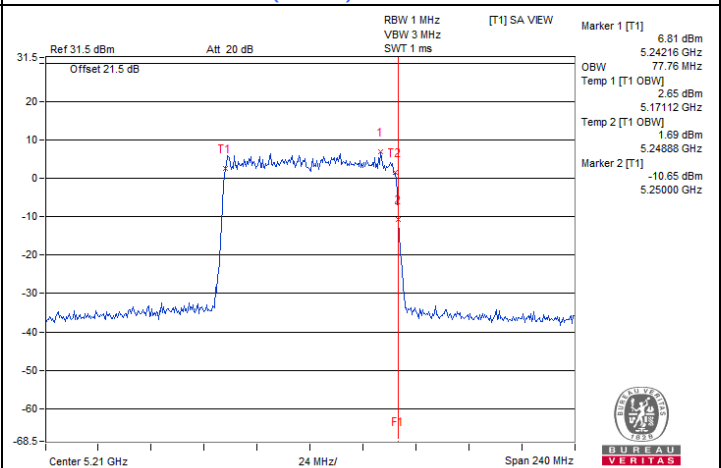
802.11ax (HE80) / Chain 0 : CH 42



802.11ax (HE80) / Chain 1 : CH 42

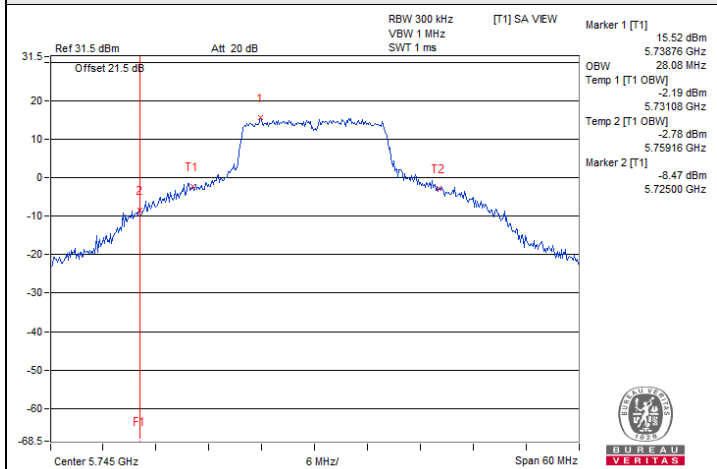


802.11ax (HE80) / Chain 2 : CH 42

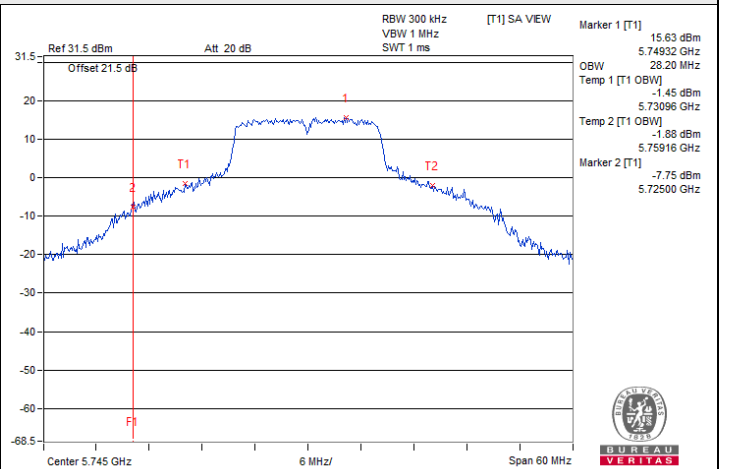


802.11ax (HE80) / Chain 3 : CH 42

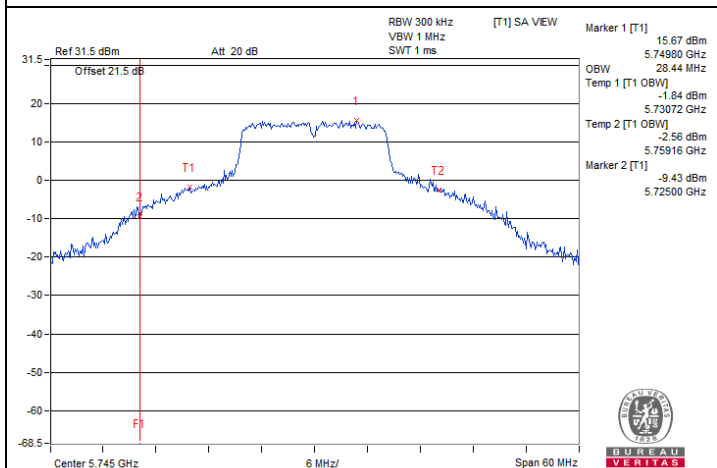
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C)



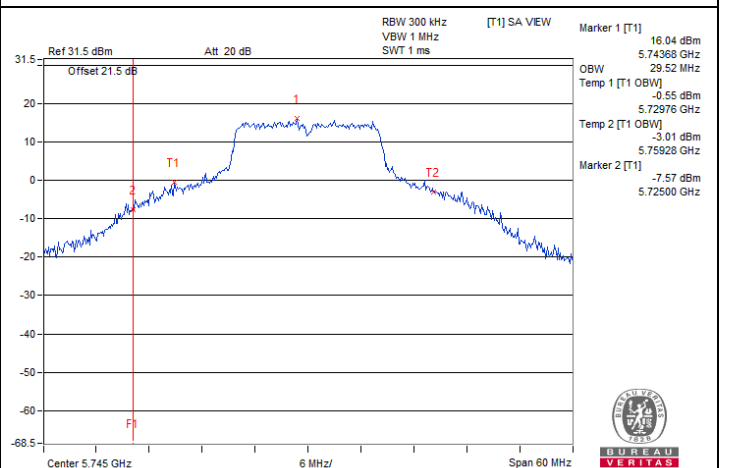
802.11a / Chain 0 : CH 149



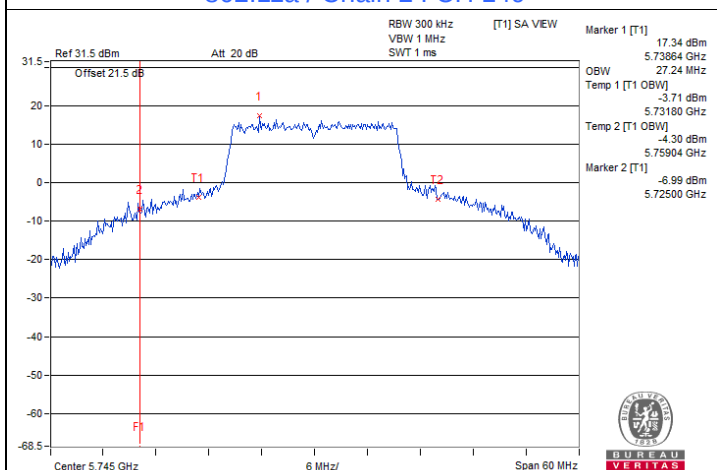
802.11a / Chain 1 : CH 149



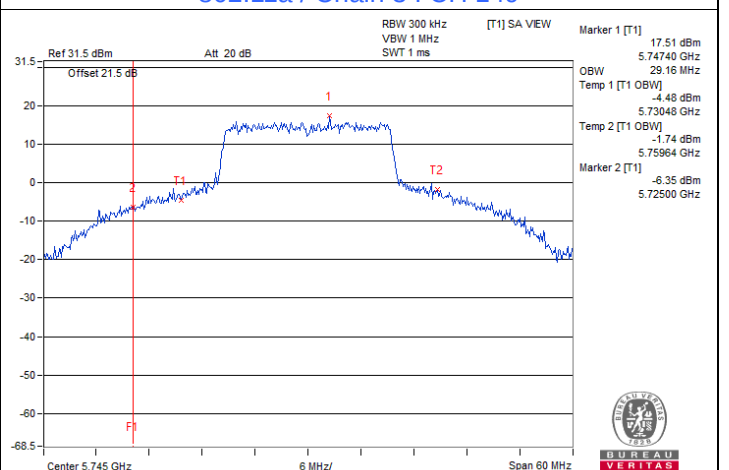
802.11a / Chain 2 : CH 149



802.11a / Chain 3 : CH 149

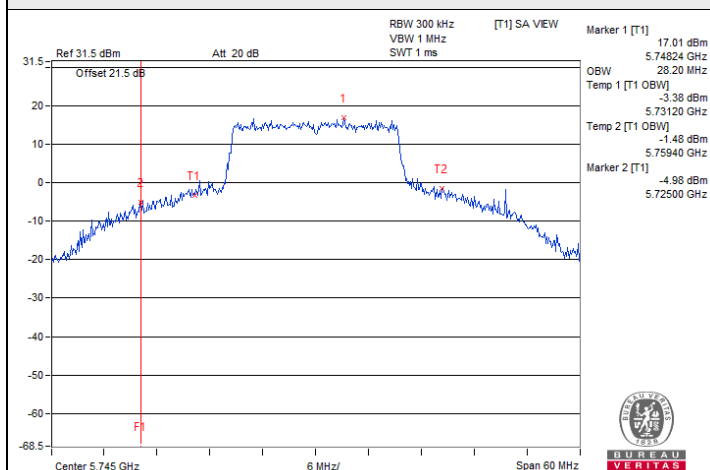


802.11ax (HE20) / Chain 0 : CH 149

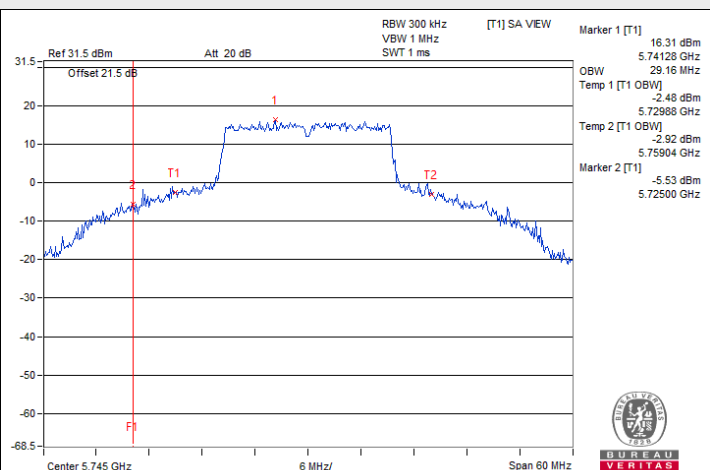


802.11ax (HE20) / Chain 1 : CH 149

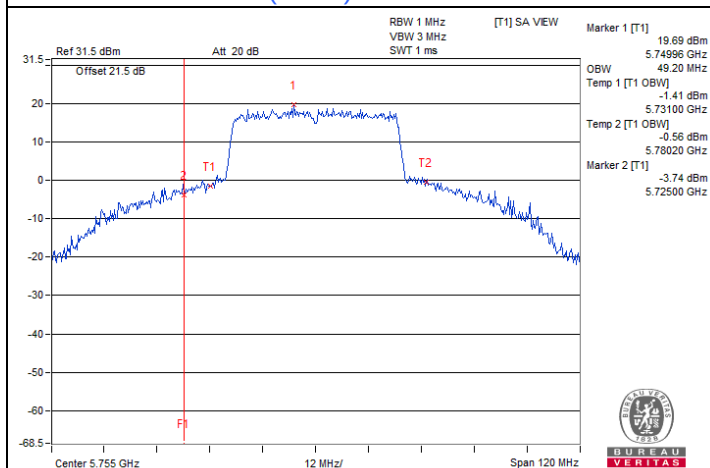
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C)



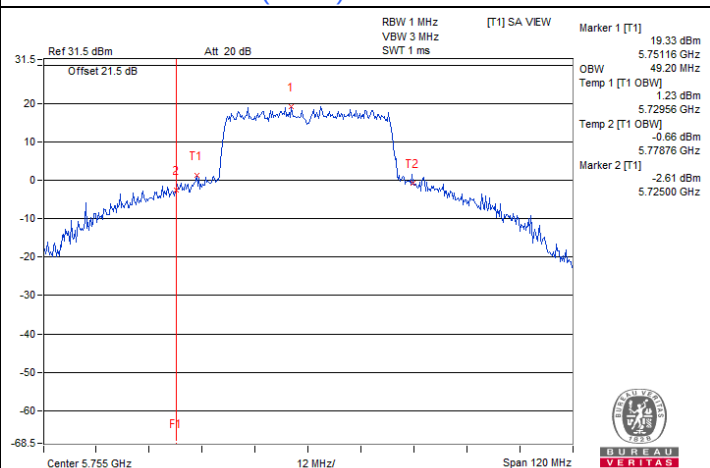
802.11ax (HE20) / Chain 2 : CH 149



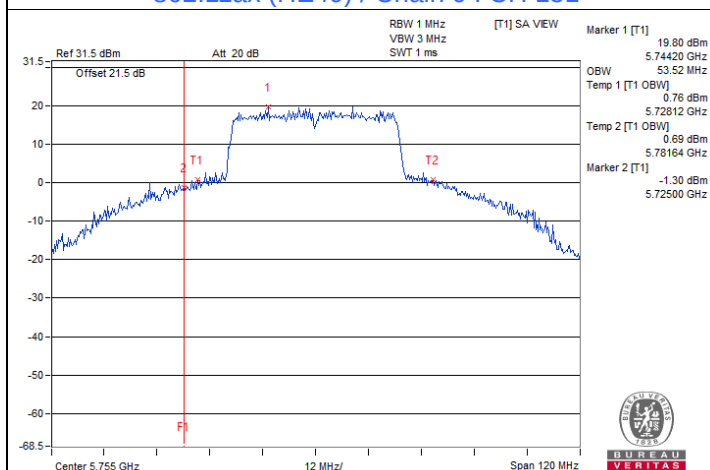
802.11ax (HE20) / Chain 3 : CH 149



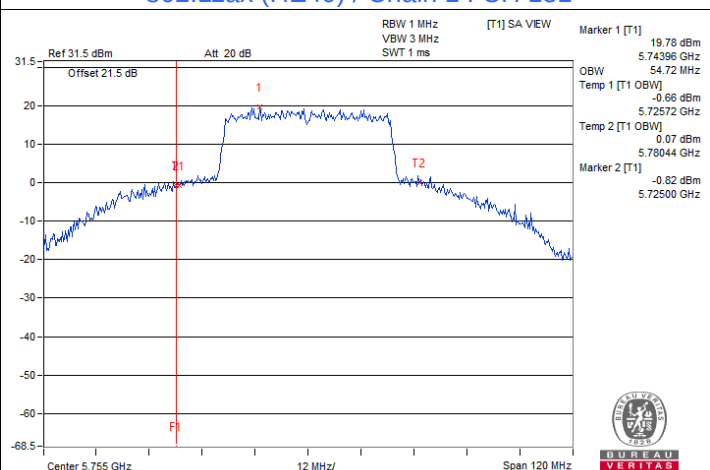
802.11ax (HE40) / Chain 0 : CH 151



802.11ax (HE40) / Chain 1 : CH 151

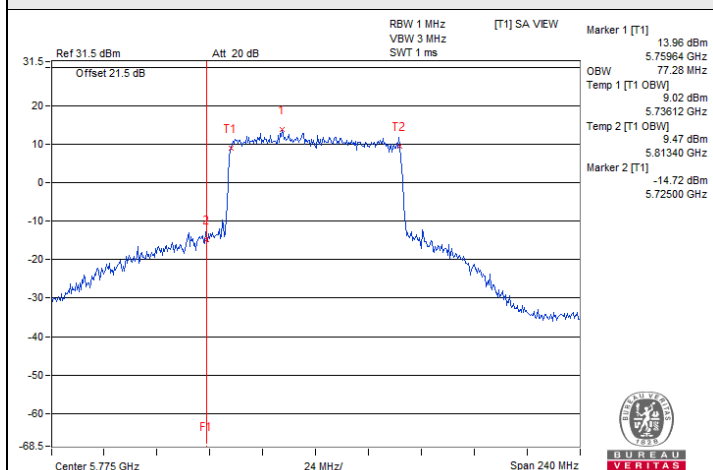


802.11ax (HE40) / Chain 2 : CH 151

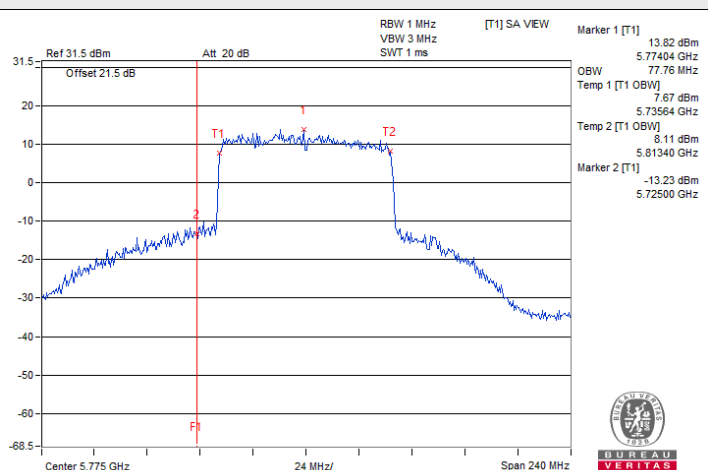


802.11ax (HE40) / Chain 3 : CH 151

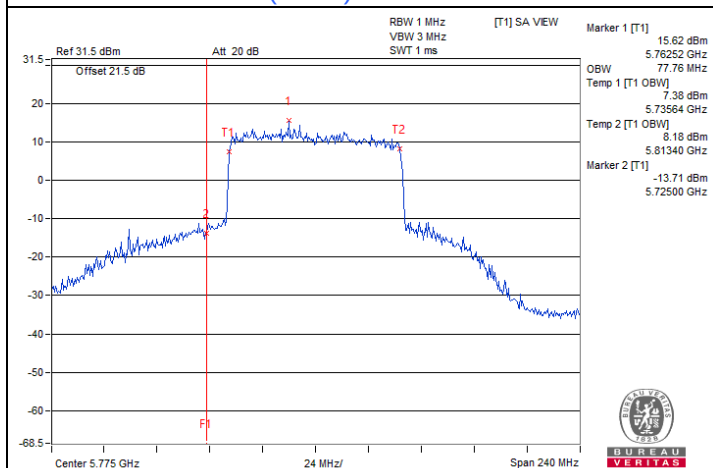
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C)



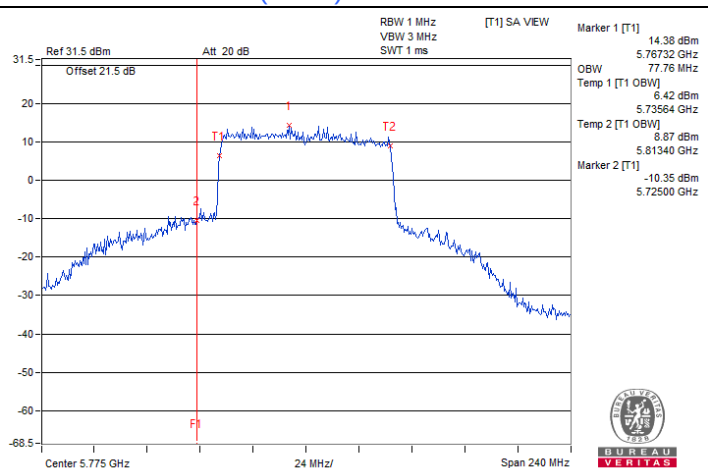
802.11ax (HE80) / Chain 0 : CH 155



802.11ax (HE80) / Chain 1 : CH 155



802.11ax (HE80) / Chain 2 : CH 155



802.11ax (HE80) / Chain 3 : CH 155

7.5 Frequency Stability

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

Frequency Stability Versus Temperature									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
40	120	5180.0152	Pass	5180.013	Pass	5180.0134	Pass	5180.0137	Pass
30	120	5179.9907	Pass	5179.9871	Pass	5179.9903	Pass	5179.9887	Pass
20	120	5179.9738	Pass	5179.9759	Pass	5179.9735	Pass	5179.974	Pass
10	120	5179.9942	Pass	5179.9925	Pass	5179.9938	Pass	5179.9926	Pass
0	120	5180.0259	Pass	5180.0281	Pass	5180.028	Pass	5180.0256	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	138	5179.9724	Pass	5179.971	Pass	5179.9714	Pass	5179.9688	Pass
	120	5179.9738	Pass	5179.9759	Pass	5179.9735	Pass	5179.974	Pass
	102	5179.9755	Pass	5179.9749	Pass	5179.9768	Pass	5179.9765	Pass

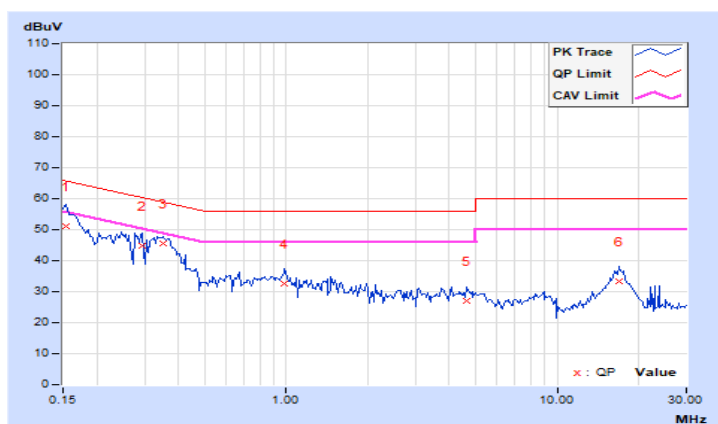
7.6 AC Power Conducted Emissions

RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Ryan Du		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.95	41.07	32.15	51.02	42.10	65.79	55.79	-14.77	-13.69
2	0.29453	9.96	34.84	21.59	44.80	31.55	60.40	50.40	-15.60	-18.85
3	0.34922	9.96	35.54	27.63	45.50	37.59	58.98	48.98	-13.48	-11.39
4	0.98594	10.00	22.66	13.44	32.66	23.44	56.00	46.00	-23.34	-22.56
5	4.63672	10.24	16.87	9.25	27.11	19.49	56.00	46.00	-28.89	-26.51
6	16.96875	11.02	22.24	13.79	33.26	24.81	60.00	50.00	-26.74	-25.19

Remarks:

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

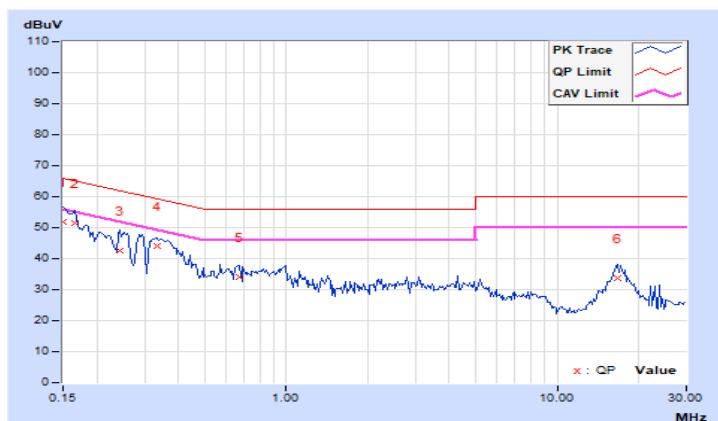


RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Ryan Du		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.95	41.81	32.05	51.76	42.00	66.00	56.00	-14.24	-14.00
2	0.16562	9.95	41.37	31.01	51.32	40.96	65.18	55.18	-13.86	-14.22
3	0.24375	9.96	32.54	23.84	42.50	33.80	61.97	51.97	-19.47	-18.17
4	0.33359	9.96	34.22	21.46	44.18	31.42	59.36	49.36	-15.18	-17.94
5	0.66953	9.98	23.95	13.04	33.93	23.02	56.00	46.00	-22.07	-22.98
6	16.72266	10.84	22.84	14.40	33.68	25.24	60.00	50.00	-26.32	-24.76

Remarks:

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



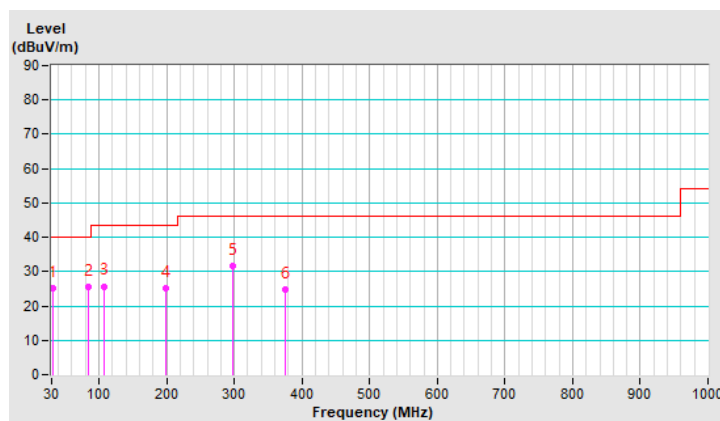
7.7 Unwanted Emissions below 1 GHz

RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	31.01	25.3 QP	40.0	-14.7	1.00 H	39	39.2	-13.9
2	84.10	25.6 QP	40.0	-14.4	2.00 H	251	43.6	-18.0
3	108.02	25.7 QP	43.5	-17.8	1.50 H	244	40.8	-15.1
4	199.36	25.2 QP	43.5	-18.3	1.00 H	267	40.1	-14.9
5	297.52	31.5 QP	46.0	-14.5	1.00 H	134	42.3	-10.8
6	375.38	24.7 QP	46.0	-21.3	1.00 H	228	33.3	-8.6

Remarks:

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

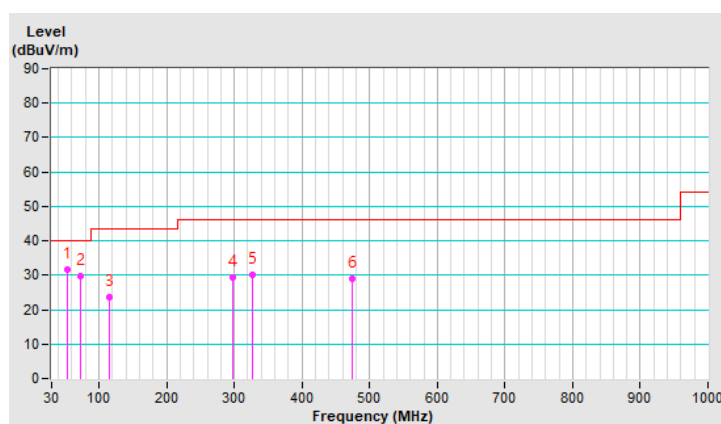


RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	52.99	31.8 QP	40.0	-8.2	1.50 V	14	44.4	-12.6
2	72.98	29.7 QP	40.0	-10.3	1.00 V	125	45.2	-15.5
3	115.34	23.6 QP	43.5	-19.9	1.00 V	334	38.2	-14.6
4	297.52	29.5 QP	46.0	-16.5	1.50 V	352	40.3	-10.8
5	326.21	30.1 QP	46.0	-15.9	1.50 V	32	40.0	-9.9
6	473.67	29.1 QP	46.0	-16.9	1.50 V	8	34.8	-5.7

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.



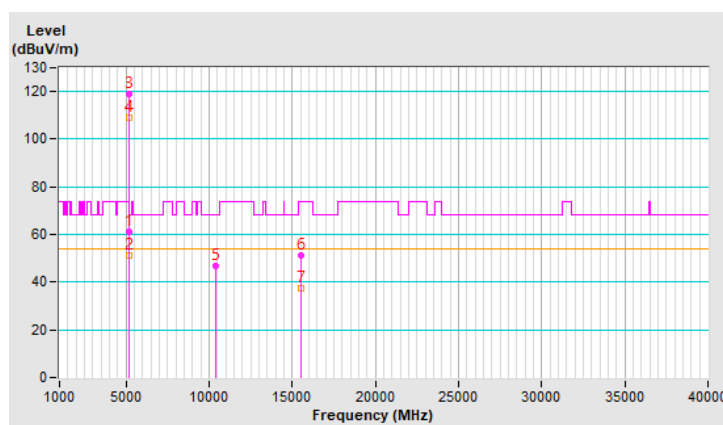
7.8 Unwanted Emissions above 1 GHz

RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% 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	5148.74	61.0 PK	74.0	-13.0	1.40 H	7	56.5	4.5
2	5148.74	51.4 AV	54.0	-2.6	1.40 H	7	46.9	4.5
3	*5180.00	119.2 PK			1.40 H	7	114.8	4.4
4	*5180.00	109.3 AV			1.40 H	7	104.9	4.4
5	#10360.00	46.7 PK	68.2	-21.5	1.87 H	229	32.6	14.1
6	15540.00	51.2 PK	74.0	-22.8	1.80 H	48	36.5	14.7
7	15540.00	37.6 AV	54.0	-16.4	1.80 H	48	22.9	14.7

Remarks:

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

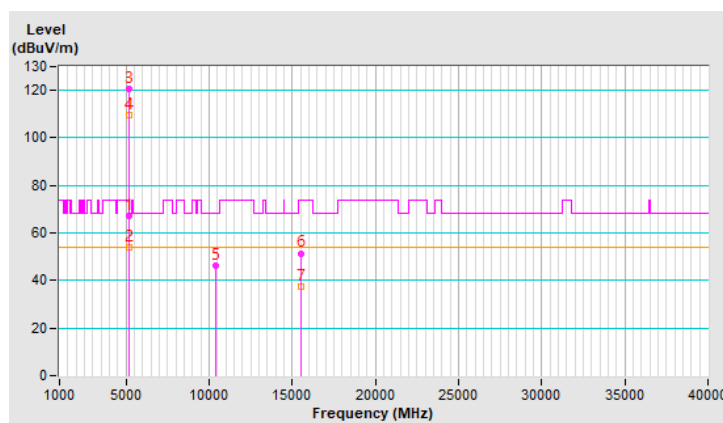


RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	67.1 PK	74.0	-6.9	1.75 V	263	62.6	4.5
2	5150.00	53.8 AV	54.0	-0.2	1.75 V	263	49.3	4.5
3	*5180.00	120.7 PK			1.75 V	263	116.3	4.4
4	*5180.00	109.7 AV			1.75 V	263	105.3	4.4
5	#10360.00	46.3 PK	68.2	-21.9	1.61 V	159	32.2	14.1
6	15540.00	51.5 PK	74.0	-22.5	1.84 V	138	36.8	14.7
7	15540.00	37.6 AV	54.0	-16.4	1.84 V	138	22.9	14.7

Remarks:

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

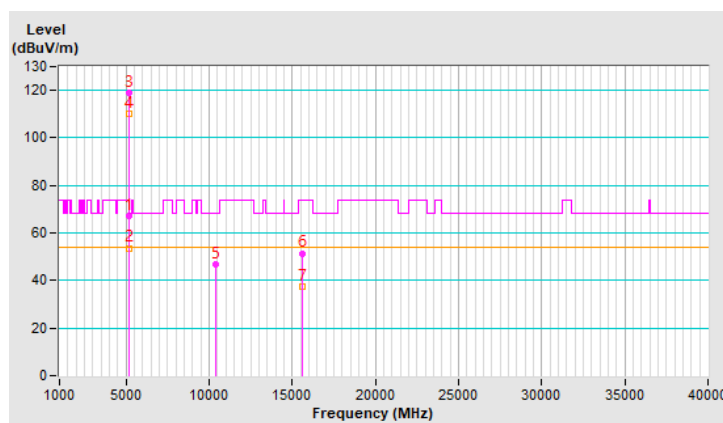


RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	67.2 PK	74.0	-6.8	1.46 H	179	62.7	4.5
2	5150.00	53.7 AV	54.0	-0.3	1.46 H	179	49.2	4.5
3	*5200.00	119.2 PK			1.46 H	179	115.0	4.2
4	*5200.00	110.0 AV			1.46 H	179	105.8	4.2
5	#10400.00	46.8 PK	68.2	-21.4	1.84 H	227	32.8	14.0
6	15600.00	51.5 PK	74.0	-22.5	1.82 H	60	36.8	14.7
7	15600.00	37.6 AV	54.0	-16.4	1.82 H	60	22.9	14.7

Remarks:

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

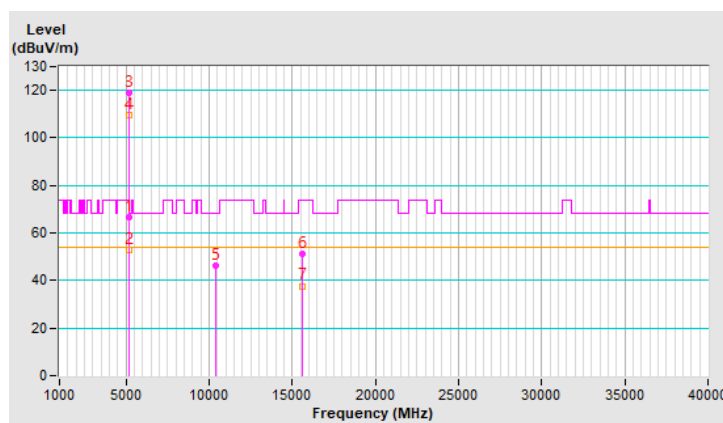


RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	66.4 PK	74.0	-7.6	1.75 V	274	61.9	4.5
2	5150.00	52.7 AV	54.0	-1.3	1.75 V	274	48.2	4.5
3	*5200.00	118.8 PK			1.75 V	274	114.6	4.2
4	*5200.00	109.7 AV			1.75 V	274	105.5	4.2
5	#10400.00	46.1 PK	68.2	-22.1	1.61 V	155	32.1	14.0
6	15600.00	51.3 PK	74.0	-22.7	1.86 V	152	36.6	14.7
7	15600.00	37.7 AV	54.0	-16.3	1.86 V	152	23.0	14.7

Remarks:

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

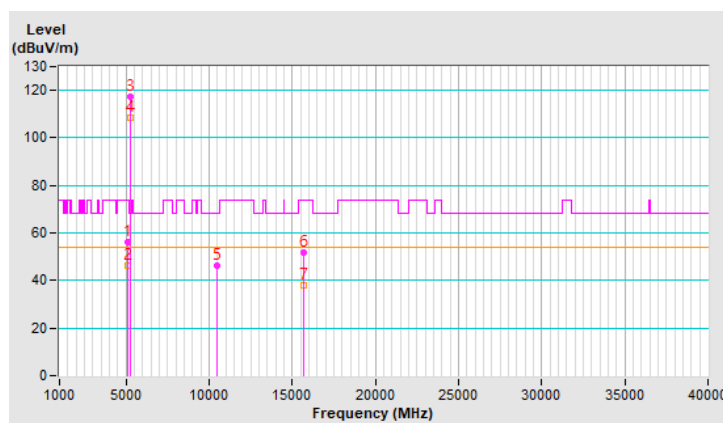


RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	5141.37	56.4 PK	74.0	-17.6	1.42 H	175	51.9	4.5
2	5141.37	46.5 AV	54.0	-7.5	1.42 H	175	42.0	4.5
3	*5240.00	117.5 PK			1.42 H	175	113.5	4.0
4	*5240.00	108.3 AV			1.42 H	175	104.3	4.0
5	#10480.00	46.4 PK	68.2	-21.8	1.90 H	229	32.2	14.2
6	15720.00	51.6 PK	74.0	-22.4	1.82 H	41	37.4	14.2
7	15720.00	38.0 AV	54.0	-16.0	1.82 H	41	23.8	14.2

Remarks:

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

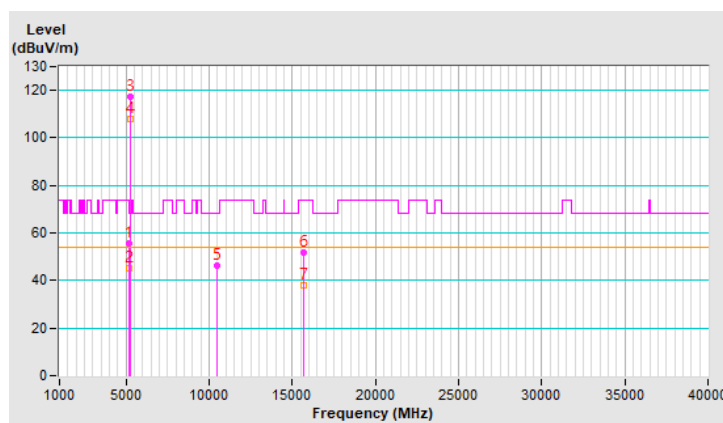


RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	5145.17	55.5 PK	74.0	-18.5	1.83 V	264	51.0	4.5
2	5145.17	45.4 AV	54.0	-8.6	1.83 V	264	40.9	4.5
3	*5240.00	117.5 PK			1.83 V	264	113.5	4.0
4	*5240.00	108.1 AV			1.83 V	264	104.1	4.0
5	#10480.00	46.0 PK	68.2	-22.2	1.66 V	168	31.8	14.2
6	15720.00	51.8 PK	74.0	-22.2	1.85 V	144	37.6	14.2
7	15720.00	38.0 AV	54.0	-16.0	1.85 V	144	23.8	14.2

Remarks:

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

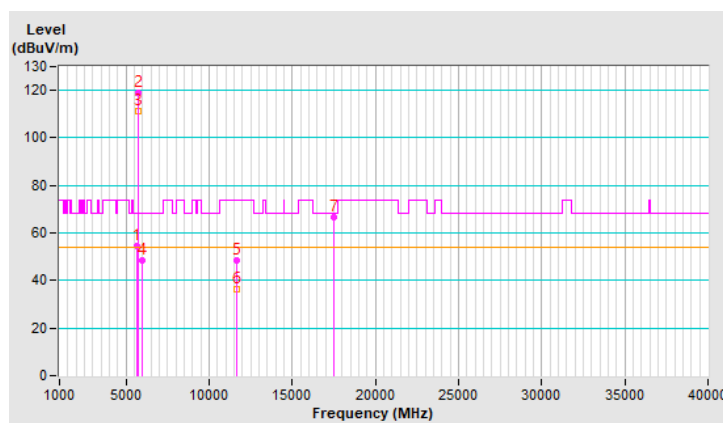


RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5648.60	54.6 PK	68.2	-13.6	1.77 H	6	49.8	4.8
2	*5745.00	118.9 PK			1.77 H	6	114.2	4.7
3	*5745.00	111.2 AV			1.77 H	6	106.5	4.7
4	#6007.32	48.5 PK	68.2	-19.7	1.77 H	6	43.3	5.2
5	11650.00	48.6 PK	74.0	-25.4	1.79 H	270	33.7	14.9
6	11650.00	36.5 AV	54.0	-17.5	1.79 H	270	21.6	14.9
7	#17475.00	66.8 PK	68.2	-1.4	2.36 H	309	46.8	20.0

Remarks:

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

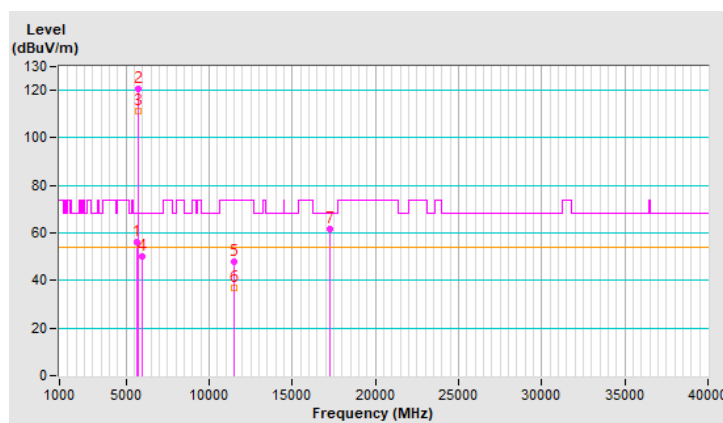


RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5621.61	56.2 PK	68.2	-12.0	1.93 V	247	51.6	4.6
2	*5745.00	120.8 PK			1.93 V	247	116.1	4.7
3	*5745.00	111.3 AV			1.93 V	247	106.6	4.7
4	#5960.35	50.2 PK	68.2	-18.0	1.93 V	247	45.0	5.2
5	11490.00	48.1 PK	74.0	-25.9	1.64 V	144	33.1	15.0
6	11490.00	36.7 AV	54.0	-17.3	1.64 V	144	21.7	15.0
7	#17235.00	61.7 PK	68.2	-6.5	1.87 V	159	42.8	18.9

Remarks:

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

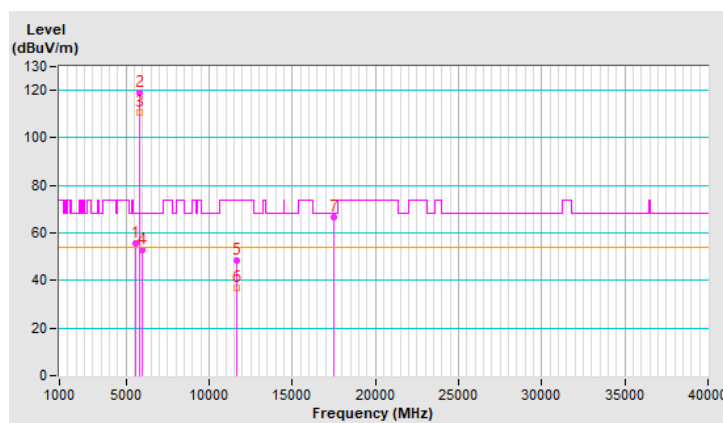


RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5591.18	55.7 PK	68.2	-12.5	1.83 H	13	51.3	4.4
2	*5785.00	119.2 PK			1.83 H	13	114.3	4.9
3	*5785.00	110.9 AV			1.83 H	13	106.0	4.9
4	#5987.55	53.1 PK	68.2	-15.1	1.83 H	13	47.9	5.2
5	11650.00	48.5 PK	74.0	-25.5	1.75 H	256	33.6	14.9
6	11650.00	36.9 AV	54.0	-17.1	1.75 H	256	22.0	14.9
7	#17475.00	66.7 PK	68.2	-1.5	2.27 H	308	46.7	20.0

Remarks:

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

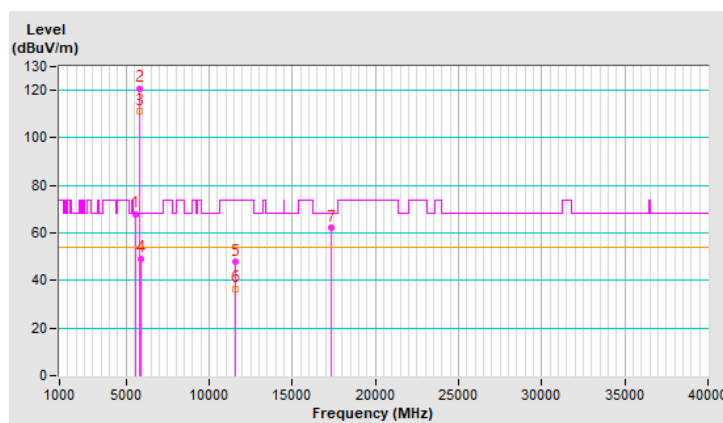


RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5611.63	68.0 PK	68.2	-0.2	1.89 V	247	63.4	4.6
2	*5785.00	120.9 PK			1.89 V	247	116.0	4.9
3	*5785.00	111.5 AV			1.89 V	247	106.6	4.9
4	#5927.27	49.3 PK	68.2	-18.9	1.89 V	247	44.2	5.1
5	11570.00	48.0 PK	74.0	-26.0	1.61 V	141	33.1	14.9
6	11570.00	36.6 AV	54.0	-17.4	1.61 V	141	21.7	14.9
7	#17355.00	62.0 PK	68.2	-6.2	1.87 V	146	42.8	19.2

Remarks:

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

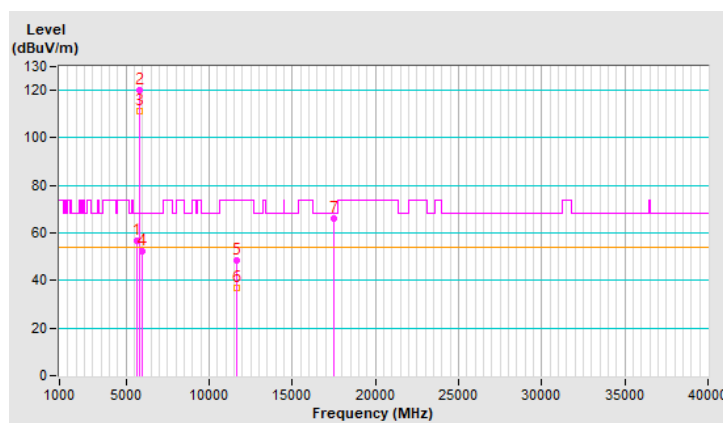


RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5630.47	56.5 PK	68.2	-11.7	1.65 H	4	51.8	4.7
2	*5825.00	120.3 PK			1.65 H	4	115.2	5.1
3	*5825.00	111.2 AV			1.65 H	4	106.1	5.1
4	#5976.22	52.5 PK	68.2	-15.7	1.65 H	4	47.3	5.2
5	11650.00	48.6 PK	74.0	-25.4	1.75 H	266	33.7	14.9
6	11650.00	36.8 AV	54.0	-17.2	1.75 H	266	21.9	14.9
7	#17475.00	65.9 PK	68.2	-2.3	2.38 H	310	45.9	20.0

Remarks:

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

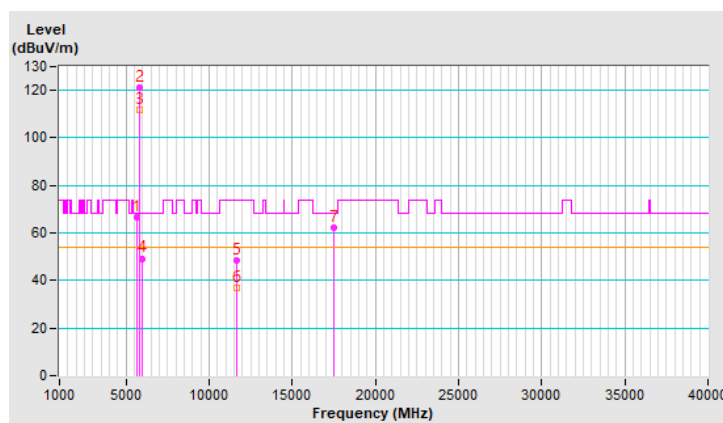


RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5643.95	66.6 PK	68.2	-1.6	1.78 V	242	61.8	4.8
2	*5825.00	121.3 PK			1.78 V	242	116.2	5.1
3	*5825.00	112.0 AV			1.78 V	242	106.9	5.1
4	#5962.59	49.3 PK	68.2	-18.9	1.78 V	242	44.1	5.2
5	11650.00	48.3 PK	74.0	-25.7	1.63 V	145	33.4	14.9
6	11650.00	36.8 AV	54.0	-17.2	1.63 V	145	21.9	14.9
7	#17475.00	62.2 PK	68.2	-6.0	1.87 V	144	42.2	20.0

Remarks:

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

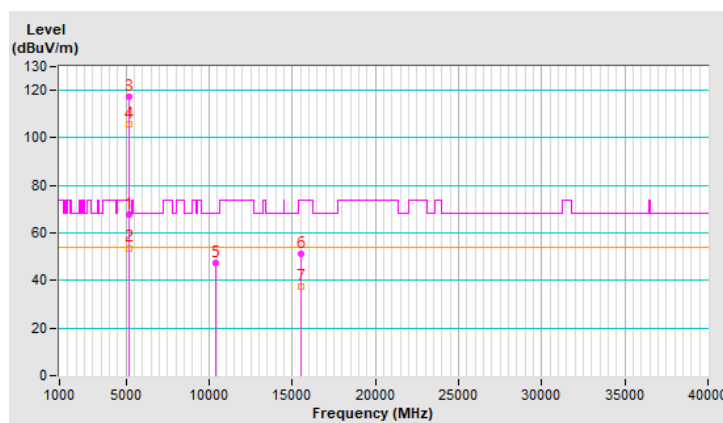


RF Mode	802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	5148.77	67.9 PK	74.0	-6.1	1.47 H	176	63.4	4.5
2	5148.77	53.7 AV	54.0	-0.3	1.47 H	176	49.2	4.5
3	*5180.00	117.5 PK			1.47 H	176	113.1	4.4
4	*5180.00	105.6 AV			1.47 H	176	101.2	4.4
5	#10360.00	47.3 PK	68.2	-20.9	1.89 H	225	33.2	14.1
6	15540.00	51.1 PK	74.0	-22.9	1.79 H	40	36.4	14.7
7	15540.00	37.2 AV	54.0	-16.8	1.79 H	40	22.5	14.7

Remarks:

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

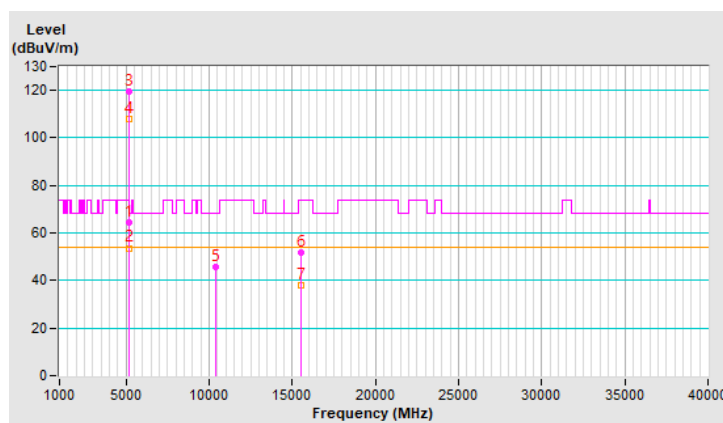


RF Mode	802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	64.5 PK	74.0	-9.5	1.74 V	267	60.0	4.5
2	5150.00	53.7 AV	54.0	-0.3	1.74 V	267	49.2	4.5
3	*5180.00	119.7 PK			1.74 V	267	115.3	4.4
4	*5180.00	107.8 AV			1.74 V	267	103.4	4.4
5	#10360.00	45.9 PK	68.2	-22.3	1.60 V	153	31.8	14.1
6	15540.00	51.6 PK	74.0	-22.4	1.84 V	145	36.9	14.7
7	15540.00	37.8 AV	54.0	-16.2	1.84 V	145	23.1	14.7

Remarks:

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

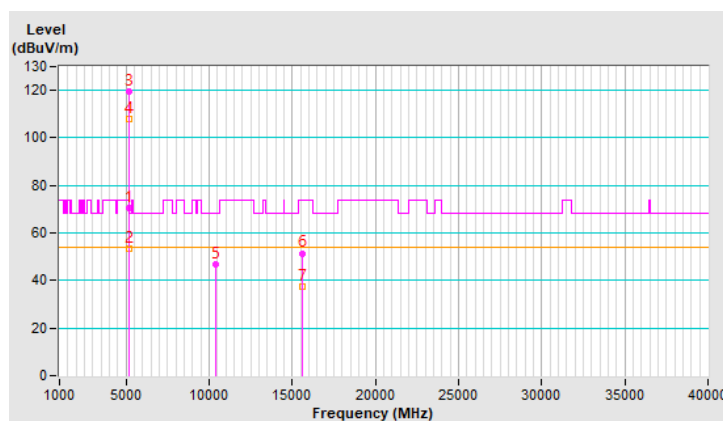


RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	70.5 PK	74.0	-3.5	1.47 H	179	66.0	4.5
2	5150.00	53.6 AV	54.0	-0.4	1.47 H	179	49.1	4.5
3	*5200.00	119.3 PK			1.47 H	179	115.1	4.2
4	*5200.00	107.9 AV			1.47 H	179	103.7	4.2
5	#10400.00	46.7 PK	68.2	-21.5	1.92 H	234	32.7	14.0
6	15600.00	51.5 PK	74.0	-22.5	1.76 H	47	36.8	14.7
7	15600.00	37.6 AV	54.0	-16.4	1.76 H	47	22.9	14.7

Remarks:

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

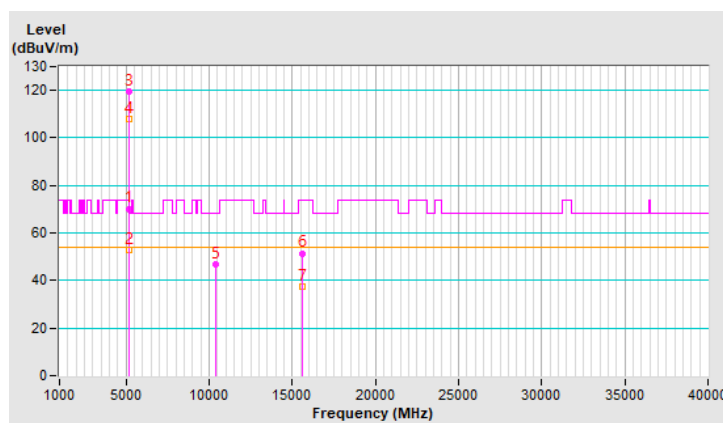


RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	70.2 PK	74.0	-3.8	1.71 V	259	65.7	4.5
2	5150.00	52.9 AV	54.0	-1.1	1.71 V	259	48.4	4.5
3	*5200.00	119.5 PK			1.71 V	259	115.3	4.2
4	*5200.00	108.0 AV			1.71 V	259	103.8	4.2
5	#10400.00	46.7 PK	68.2	-21.5	1.58 V	161	32.7	14.0
6	15600.00	51.5 PK	74.0	-22.5	1.84 V	149	36.8	14.7
7	15600.00	37.6 AV	54.0	-16.4	1.84 V	149	22.9	14.7

Remarks:

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

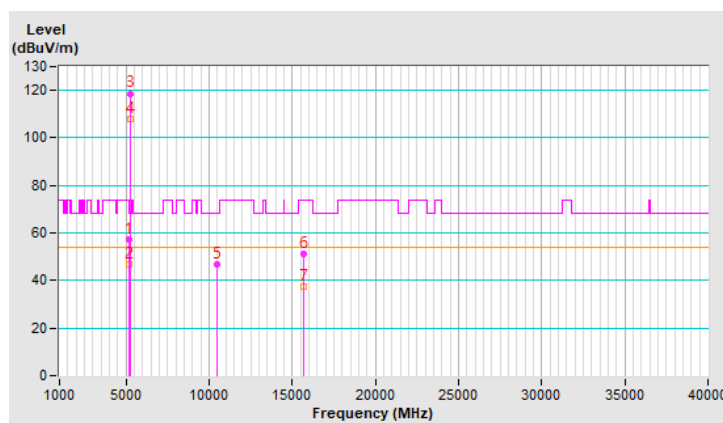


RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	57.1 PK	74.0	-16.9	1.43 H	179	52.6	4.5
2	5150.00	46.8 AV	54.0	-7.2	1.43 H	179	42.3	4.5
3	*5240.00	118.7 PK			1.43 H	179	114.7	4.0
4	*5240.00	107.7 AV			1.43 H	179	103.7	4.0
5	#10480.00	46.9 PK	68.2	-21.3	1.84 H	231	32.7	14.2
6	15720.00	51.3 PK	74.0	-22.7	1.77 H	38	37.1	14.2
7	15720.00	37.6 AV	54.0	-16.4	1.77 H	38	23.4	14.2

Remarks:

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

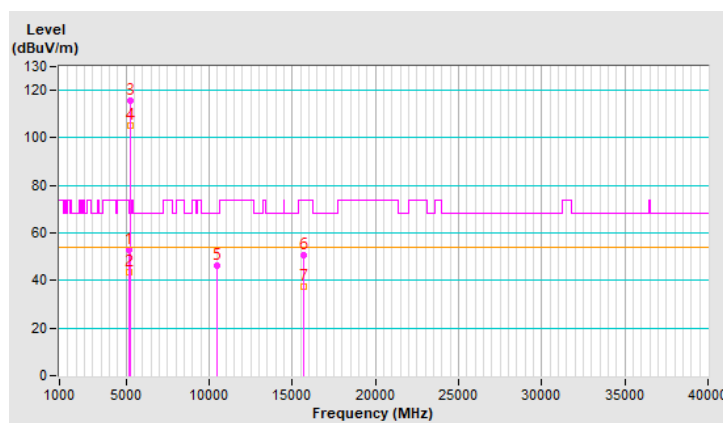


RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	52.7 PK	74.0	-21.3	1.77 V	243	48.2	4.5
2	5150.00	43.4 AV	54.0	-10.6	1.77 V	243	38.9	4.5
3	*5240.00	115.8 PK			1.77 V	243	111.8	4.0
4	*5240.00	105.4 AV			1.77 V	243	101.4	4.0
5	#10480.00	46.1 PK	68.2	-22.1	1.62 V	169	31.9	14.2
6	15720.00	50.9 PK	74.0	-23.1	1.88 V	146	36.7	14.2
7	15720.00	37.2 AV	54.0	-16.8	1.88 V	146	23.0	14.2

Remarks:

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

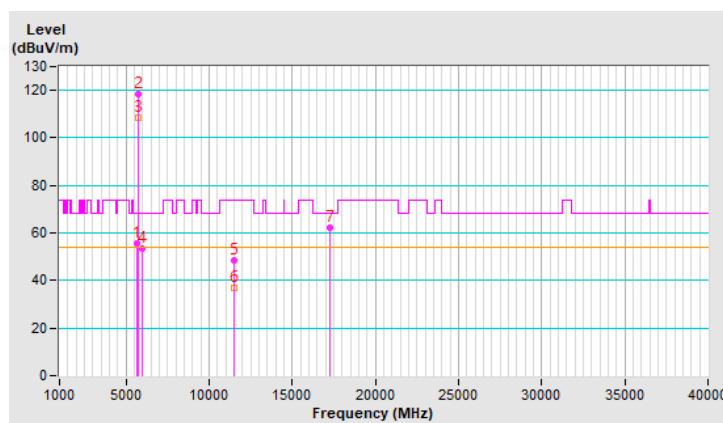


RF Mode	802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5639.44	55.5 PK	68.2	-12.7	1.68 H	9	50.8	4.7
2	*5745.00	118.2 PK			1.68 H	9	113.5	4.7
3	*5745.00	108.7 AV			1.68 H	9	104.0	4.7
4	#5944.37	53.6 PK	68.2	-14.6	1.68 H	9	48.4	5.2
5	11490.00	48.6 PK	74.0	-25.4	1.70 H	259	33.6	15.0
6	11490.00	37.0 AV	54.0	-17.0	1.70 H	259	22.0	15.0
7	#17235.00	62.2 PK	68.2	-6.0	2.36 H	300	43.3	18.9

Remarks:

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

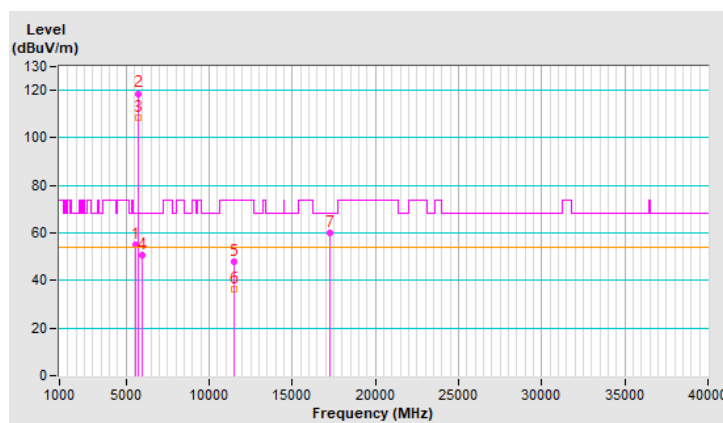


RF Mode	802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5601.11	55.0 PK	68.2	-13.2	1.74 V	263	50.5	4.5
2	*5745.00	118.7 PK			1.74 V	263	114.0	4.7
3	*5745.00	108.5 AV			1.74 V	263	103.8	4.7
4	#6011.27	50.6 PK	68.2	-17.6	1.74 V	263	45.4	5.2
5	11490.00	48.0 PK	74.0	-26.0	1.60 V	148	33.0	15.0
6	11490.00	36.5 AV	54.0	-17.5	1.60 V	148	21.5	15.0
7	#17235.00	59.9 PK	68.2	-8.3	1.87 V	152	41.0	18.9

Remarks:

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

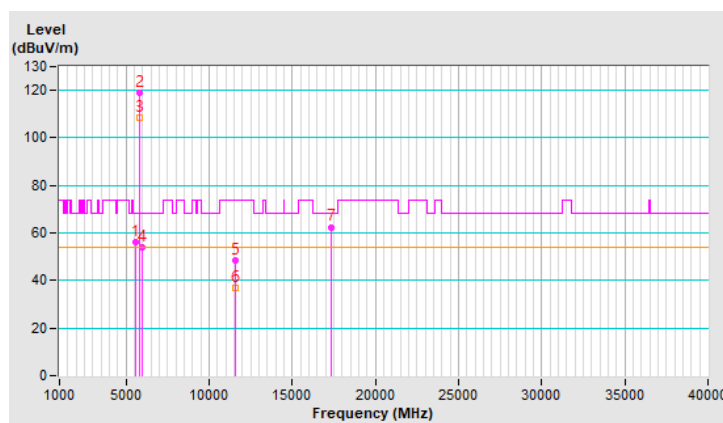


RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5553.99	56.0 PK	68.2	-12.2	1.77 H	7	51.6	4.4
2	*5785.00	118.9 PK			1.77 H	7	114.0	4.9
3	*5785.00	108.4 AV			1.77 H	7	103.5	4.9
4	#6012.44	53.9 PK	68.2	-14.3	1.77 H	7	48.7	5.2
5	11570.00	48.5 PK	74.0	-25.5	1.65 H	258	33.6	14.9
6	11570.00	37.0 AV	54.0	-17.0	1.65 H	258	22.1	14.9
7	#17355.00	62.5 PK	68.2	-5.7	2.33 H	307	43.3	19.2

Remarks:

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

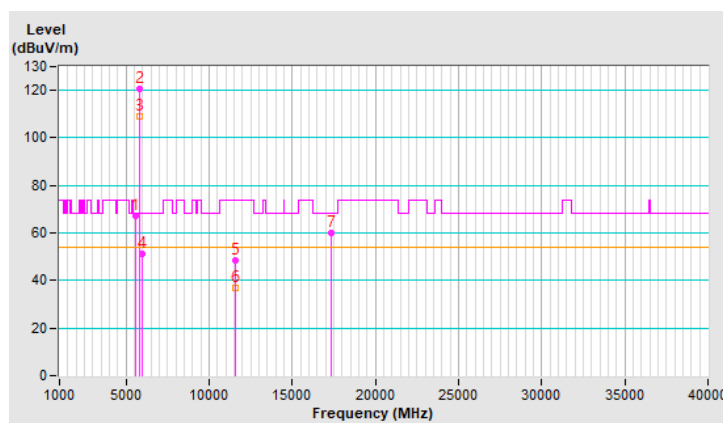


RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5613.34	67.2 PK	68.2	-1.0	1.76 V	241	62.6	4.6
2	*5785.00	120.4 PK			1.76 V	241	115.5	4.9
3	*5785.00	109.2 AV			1.76 V	241	104.3	4.9
4	#5962.77	51.3 PK	68.2	-16.9	1.76 V	241	46.1	5.2
5	11570.00	48.3 PK	74.0	-25.7	1.62 V	136	33.4	14.9
6	11570.00	36.8 AV	54.0	-17.2	1.62 V	136	21.9	14.9
7	#17355.00	60.0 PK	68.2	-8.2	1.90 V	150	40.8	19.2

Remarks:

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

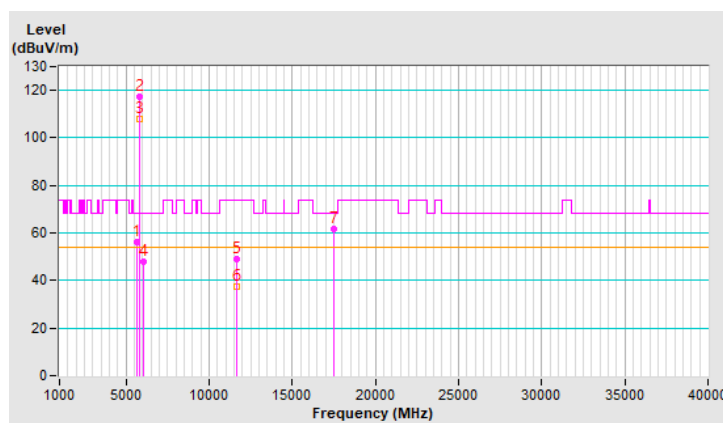


RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5642.65	56.4 PK	68.2	-11.8	1.74 H	2	51.6	4.8
2	*5825.00	117.4 PK			1.74 H	2	112.3	5.1
3	*5825.00	108.0 AV			1.74 H	2	102.9	5.1
4	#6023.69	48.0 PK	68.2	-20.2	1.74 H	2	42.7	5.3
5	11650.00	49.0 PK	74.0	-25.0	1.71 H	259	34.1	14.9
6	11650.00	37.4 AV	54.0	-16.6	1.71 H	259	22.5	14.9
7	#17475.00	61.9 PK	68.2	-6.3	2.37 H	304	41.9	20.0

Remarks:

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

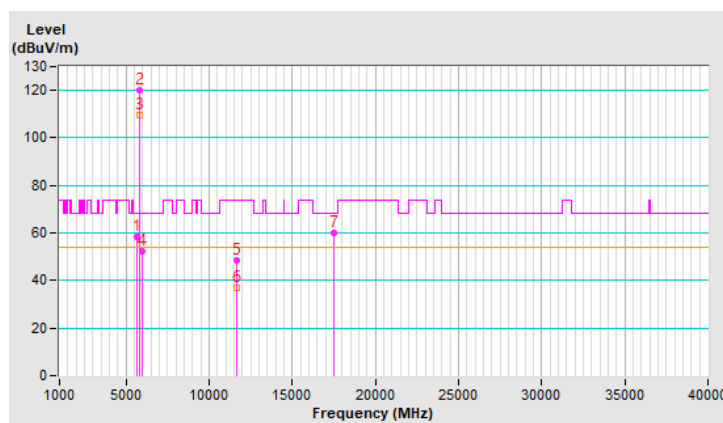


RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5629.36	58.6 PK	68.2	-9.6	1.98 V	287	53.9	4.7
2	*5825.00	119.9 PK			1.98 V	287	114.8	5.1
3	*5825.00	109.4 AV			1.98 V	287	104.3	5.1
4	#5961.10	52.4 PK	68.2	-15.8	1.98 V	287	47.2	5.2
5	11650.00	48.7 PK	74.0	-25.3	1.64 V	125	33.8	14.9
6	11650.00	37.1 AV	54.0	-16.9	1.64 V	125	22.2	14.9
7	#17475.00	60.0 PK	68.2	-8.2	1.84 V	147	40.0	20.0

Remarks:

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

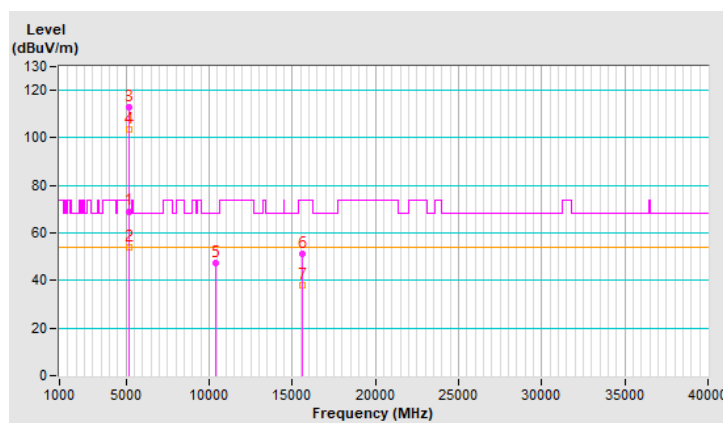


RF Mode	802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	5148.89	69.1 PK	74.0	-4.9	1.34 H	177	64.6	4.5
2	5148.89	53.9 AV	54.0	-0.1	1.34 H	177	49.4	4.5
3	*5190.00	113.0 PK			1.34 H	177	108.7	4.3
4	*5190.00	103.5 AV			1.34 H	177	99.2	4.3
5	#10380.00	47.2 PK	68.2	-21.0	1.92 H	226	33.2	14.0
6	15570.00	51.2 PK	74.0	-22.8	1.80 H	56	36.6	14.6
7	15570.00	37.8 AV	54.0	-16.2	1.80 H	56	23.2	14.6

Remarks:

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

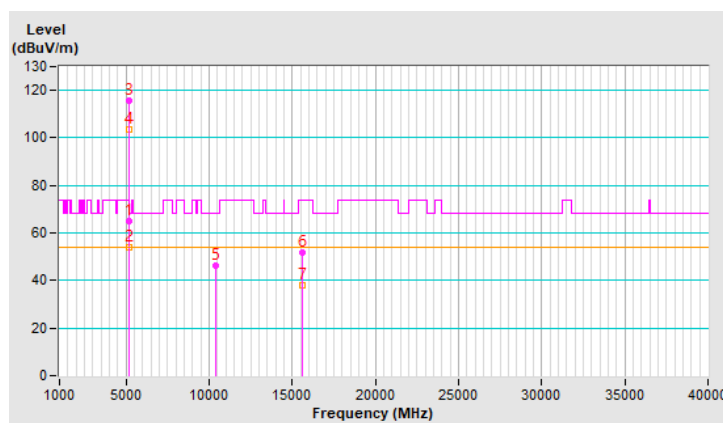


RF Mode	802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	64.8 PK	74.0	-9.2	1.62 V	266	60.3	4.5
2	5150.00	53.8 AV	54.0	-0.2	1.62 V	266	49.3	4.5
3	*5190.00	115.6 PK			1.62 V	266	111.3	4.3
4	*5190.00	103.4 AV			1.62 V	266	99.1	4.3
5	#10380.00	46.0 PK	68.2	-22.2	1.56 V	163	32.0	14.0
6	15570.00	51.7 PK	74.0	-22.3	1.86 V	139	37.1	14.6
7	15570.00	37.9 AV	54.0	-16.1	1.86 V	139	23.3	14.6

Remarks:

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

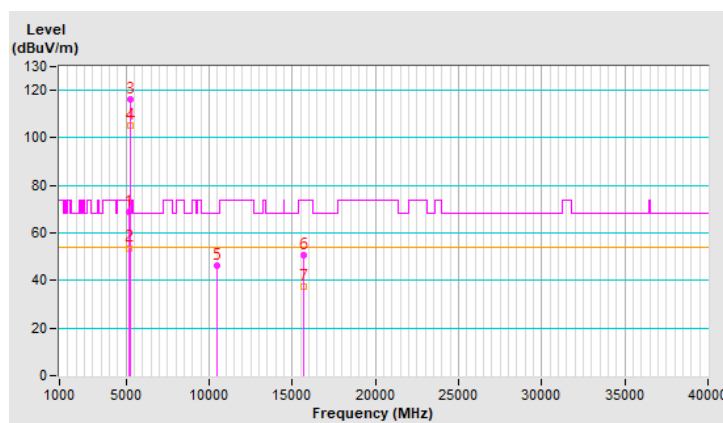


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	5148.63	69.0 PK	74.0	-5.0	1.36 H	174	64.5	4.5
2	5148.63	53.7 AV	54.0	-0.3	1.36 H	174	49.2	4.5
3	*5230.00	116.4 PK			1.36 H	174	112.3	4.1
4	*5230.00	105.0 AV			1.36 H	174	100.9	4.1
5	#10460.00	46.4 PK	68.2	-21.8	1.81 H	226	32.2	14.2
6	15690.00	50.7 PK	74.0	-23.3	1.83 H	49	36.3	14.4
7	15690.00	37.3 AV	54.0	-16.7	1.83 H	49	22.9	14.4

Remarks:

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

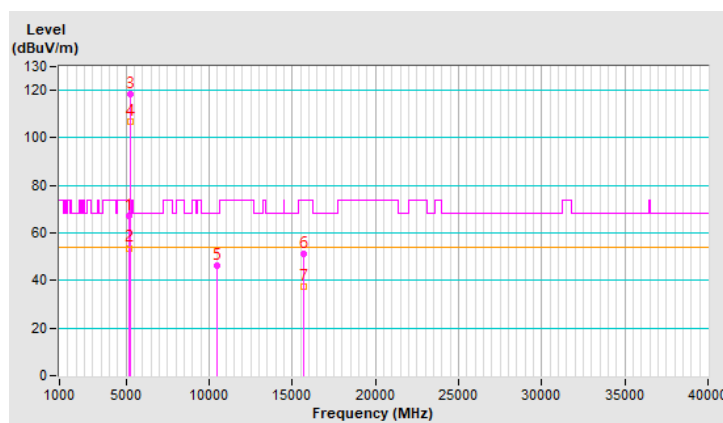


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	67.2 PK	74.0	-6.8	1.72 V	266	62.7	4.5
2	5150.00	53.7 AV	54.0	-0.3	1.72 V	266	49.2	4.5
3	*5230.00	118.5 PK			1.72 V	266	114.4	4.1
4	*5230.00	106.8 AV			1.72 V	266	102.7	4.1
5	#10460.00	46.0 PK	68.2	-22.2	1.60 V	165	31.8	14.2
6	15690.00	51.4 PK	74.0	-22.6	1.85 V	126	37.0	14.4
7	15690.00	37.4 AV	54.0	-16.6	1.85 V	126	23.0	14.4

Remarks:

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

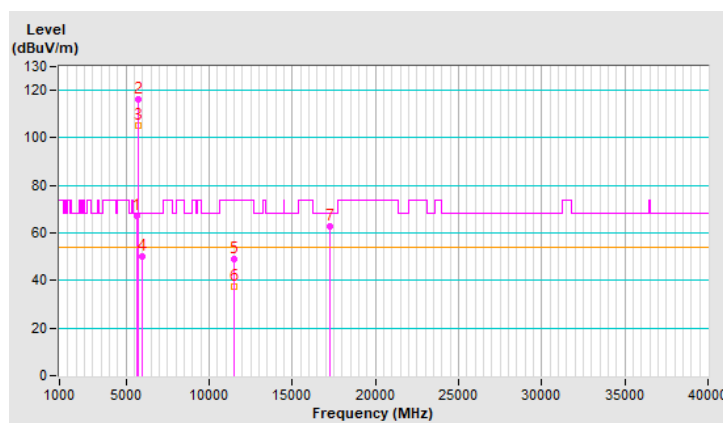


RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5649.32	67.3 PK	68.2	-0.9	2.03 H	190	62.5	4.8
2	*5755.00	116.2 PK			2.03 H	190	111.6	4.6
3	*5755.00	105.1 AV			2.03 H	190	100.5	4.6
4	#5950.69	50.0 PK	68.2	-18.2	2.03 H	190	44.8	5.2
5	11510.00	48.9 PK	74.0	-25.1	1.71 H	263	33.9	15.0
6	11510.00	37.3 AV	54.0	-16.7	1.71 H	263	22.3	15.0
7	#17265.00	62.9 PK	68.2	-5.3	2.32 H	294	44.1	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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

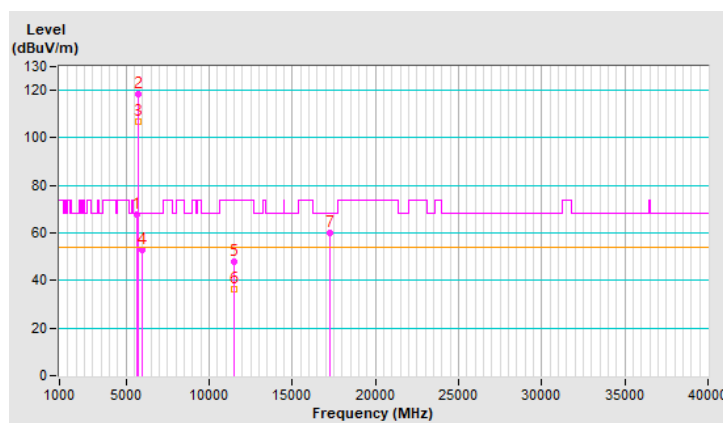


RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5647.99	67.9 PK	68.2	-0.3	2.84 V	55	63.1	4.8
2	*5755.00	118.3 PK			2.84 V	55	113.7	4.6
3	*5755.00	106.7 AV			2.84 V	55	102.1	4.6
4	#6001.64	52.8 PK	68.2	-15.4	2.84 V	55	47.6	5.2
5	11510.00	47.7 PK	74.0	-26.3	1.61 V	134	32.7	15.0
6	11510.00	36.2 AV	54.0	-17.8	1.61 V	134	21.2	15.0
7	#17265.00	59.9 PK	68.2	-8.3	1.89 V	157	41.1	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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

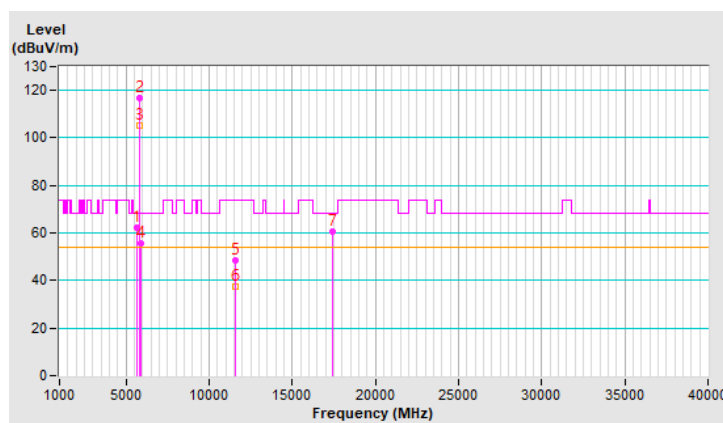


RF Mode	802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.45	62.4 PK	68.2	-5.8	1.89 H	191	57.6	4.8
2	*5795.00	116.8 PK			1.89 H	191	111.8	5.0
3	*5795.00	105.3 AV			1.89 H	191	100.3	5.0
4	#5920.29	55.7 PK	68.2	-12.5	1.89 H	191	50.7	5.0
5	11590.00	48.7 PK	74.0	-25.3	1.68 H	267	33.9	14.8
6	11590.00	37.2 AV	54.0	-16.8	1.68 H	267	22.4	14.8
7	#17385.00	60.8 PK	68.2	-7.4	1.68 H	61	41.4	19.4

Remarks:

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

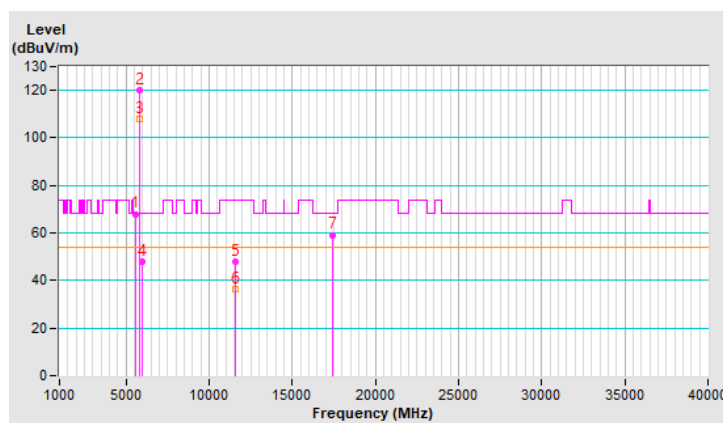


RF Mode	802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5615.60	68.0 PK	68.2	-0.2	2.74 V	63	63.4	4.6
2	*5795.00	120.2 PK			2.74 V	63	115.2	5.0
3	*5795.00	107.8 AV			2.74 V	63	102.8	5.0
4	#5944.37	47.8 PK	68.2	-20.4	2.74 V	63	42.6	5.2
5	11590.00	47.9 PK	74.0	-26.1	1.59 V	149	33.1	14.8
6	11590.00	36.5 AV	54.0	-17.5	1.59 V	149	21.7	14.8
7	#17385.00	59.2 PK	68.2	-9.0	1.88 V	140	39.8	19.4

Remarks:

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

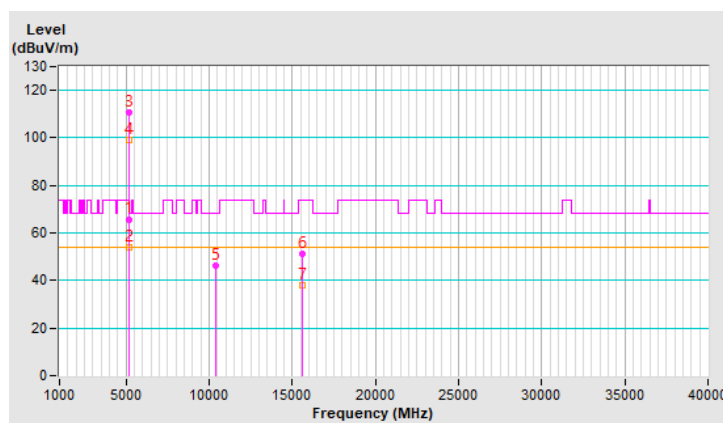


RF Mode	802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.8 PK	74.0	-8.2	1.37 H	3	61.3	4.5
2	5150.00	53.9 AV	54.0	-0.1	1.37 H	3	49.4	4.5
3	*5210.00	110.8 PK			1.37 H	3	106.6	4.2
4	*5210.00	99.0 AV			1.37 H	3	94.8	4.2
5	#10420.00	46.3 PK	68.2	-21.9	1.82 H	235	32.3	14.0
6	15630.00	51.3 PK	74.0	-22.7	1.77 H	35	36.8	14.5
7	15630.00	37.9 AV	54.0	-16.1	1.77 H	35	23.4	14.5

Remarks:

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

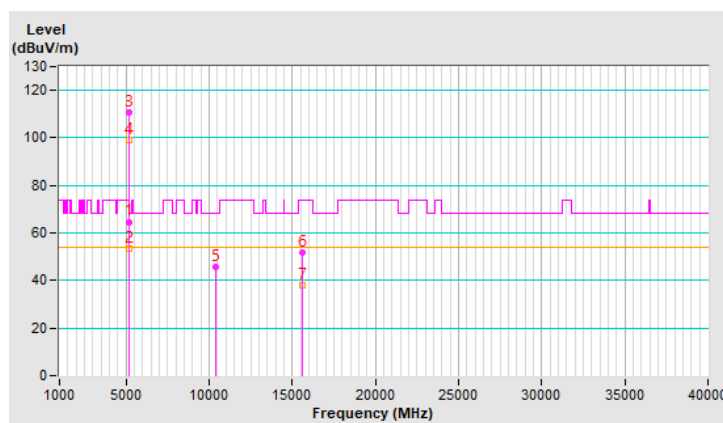


RF Mode	802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	64.7 PK	74.0	-9.3	1.81 V	266	60.2	4.5
2	5150.00	53.6 AV	54.0	-0.4	1.81 V	266	49.1	4.5
3	*5210.00	110.9 PK			1.81 V	266	106.7	4.2
4	*5210.00	99.1 AV			1.81 V	266	94.9	4.2
5	#10420.00	45.9 PK	68.2	-22.3	1.59 V	151	31.9	14.0
6	15630.00	51.7 PK	74.0	-22.3	1.88 V	140	37.2	14.5
7	15630.00	38.0 AV	54.0	-16.0	1.88 V	140	23.5	14.5

Remarks:

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

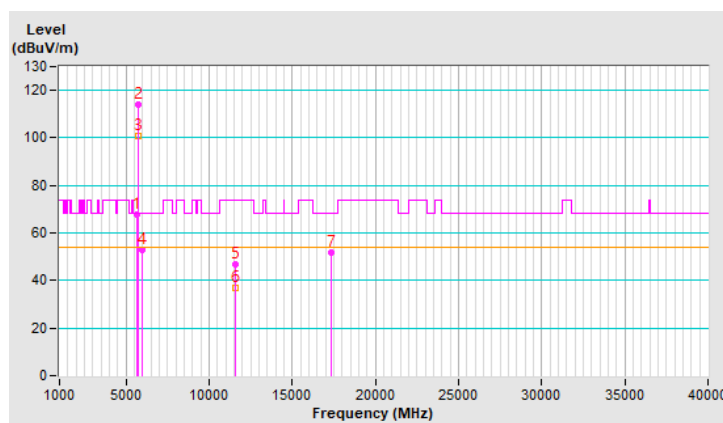


RF Mode	802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

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	#5639.47	67.9 PK	68.2	-0.3	1.95 H	189	63.2	4.7
2	*5775.00	114.2 PK			1.95 H	189	109.4	4.8
3	*5775.00	101.0 AV			1.95 H	189	96.2	4.8
4	#5961.27	52.8 PK	68.2	-15.4	1.95 H	189	47.6	5.2
5	11550.00	46.7 PK	74.0	-27.3	1.89 H	231	31.9	14.8
6	11550.00	36.7 AV	54.0	-17.3	1.89 H	231	21.9	14.8
7	#17325.00	52.0 PK	68.2	-16.2	1.83 H	52	33.0	19.0

Remarks:

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

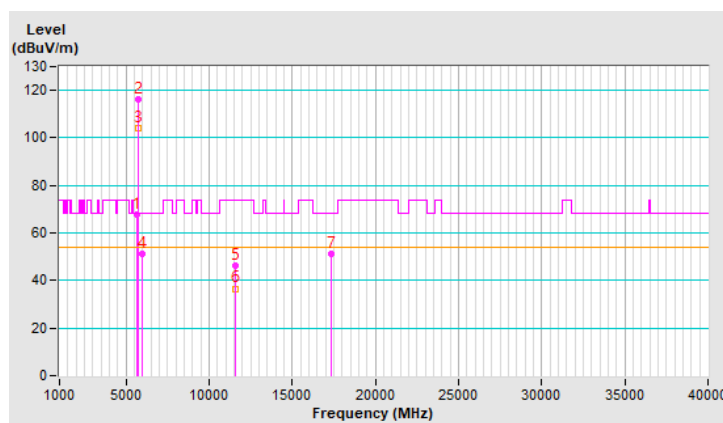


RF Mode	802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 70% RH
Tested By	Nelson Teng		

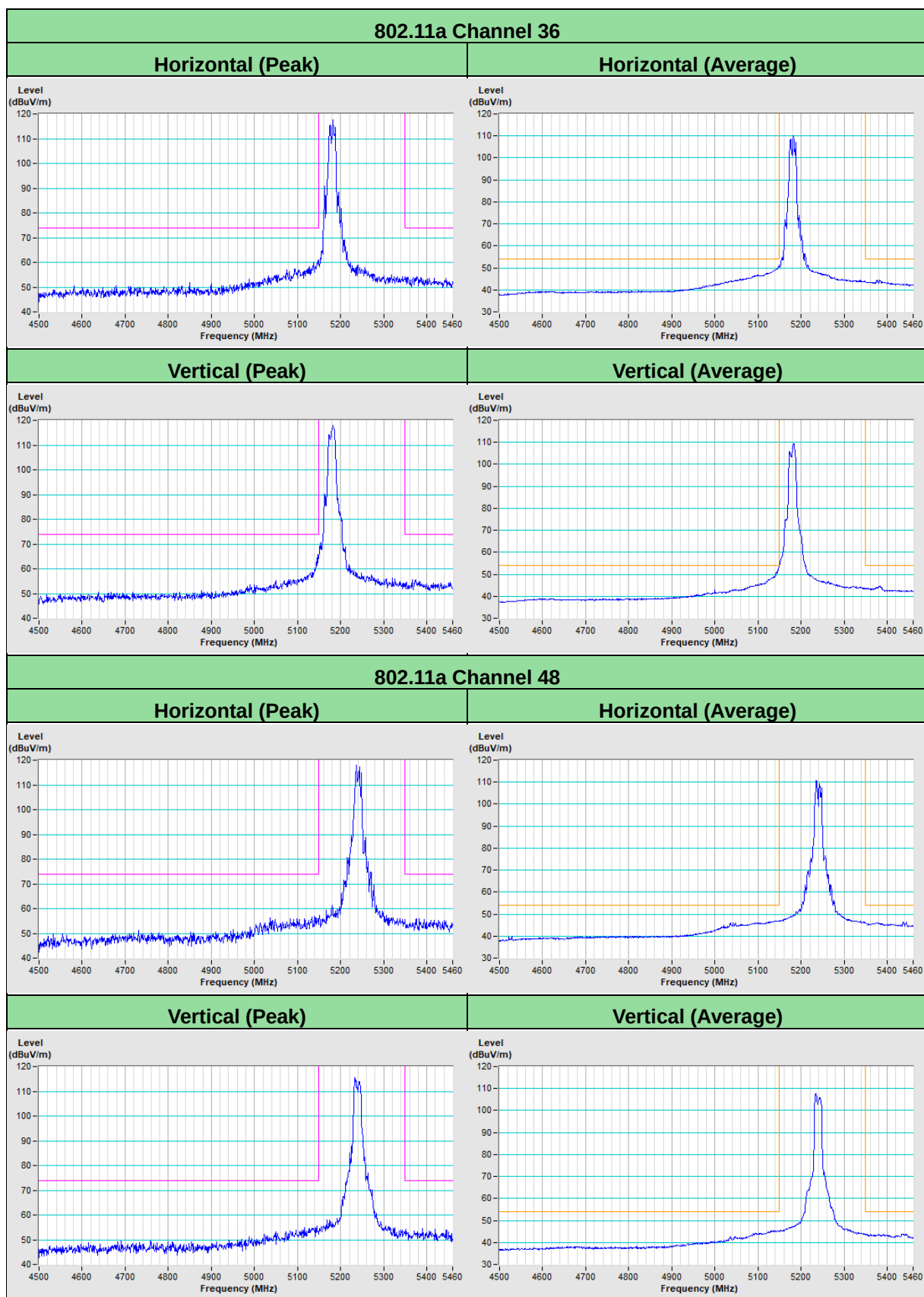
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.61	67.9 PK	68.2	-0.3	2.22 V	246	63.1	4.8
2	*5775.00	116.4 PK			2.22 V	246	111.6	4.8
3	*5775.00	104.2 AV			2.22 V	246	99.4	4.8
4	#5995.80	51.4 PK	68.2	-16.8	2.22 V	246	46.2	5.2
5	11550.00	46.4 PK	74.0	-27.6	1.63 V	164	31.6	14.8
6	11550.00	36.6 AV	54.0	-17.4	1.63 V	164	21.8	14.8
7	#17325.00	51.2 PK	68.2	-17.0	1.86 V	152	32.2	19.0

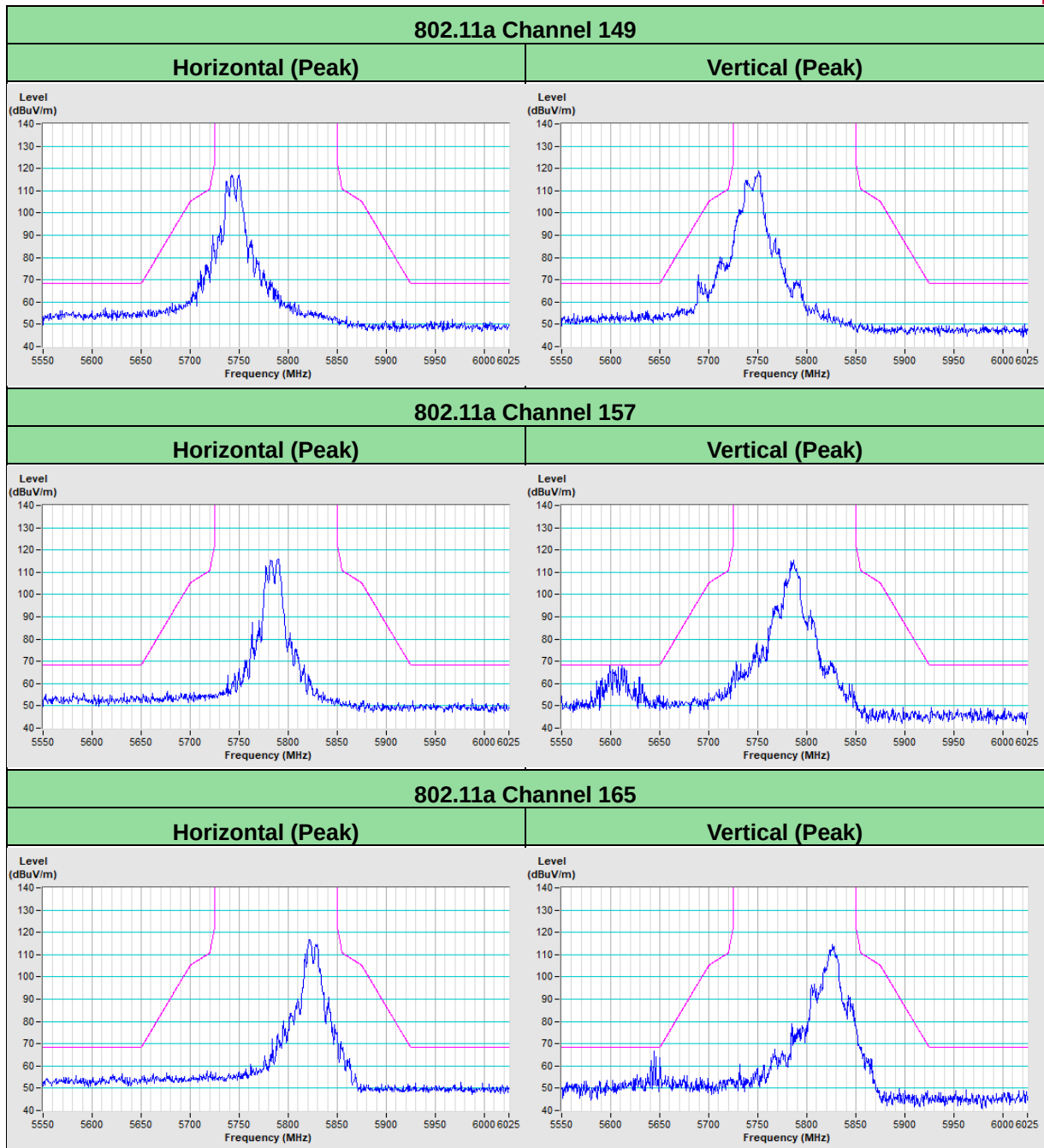
Remarks:

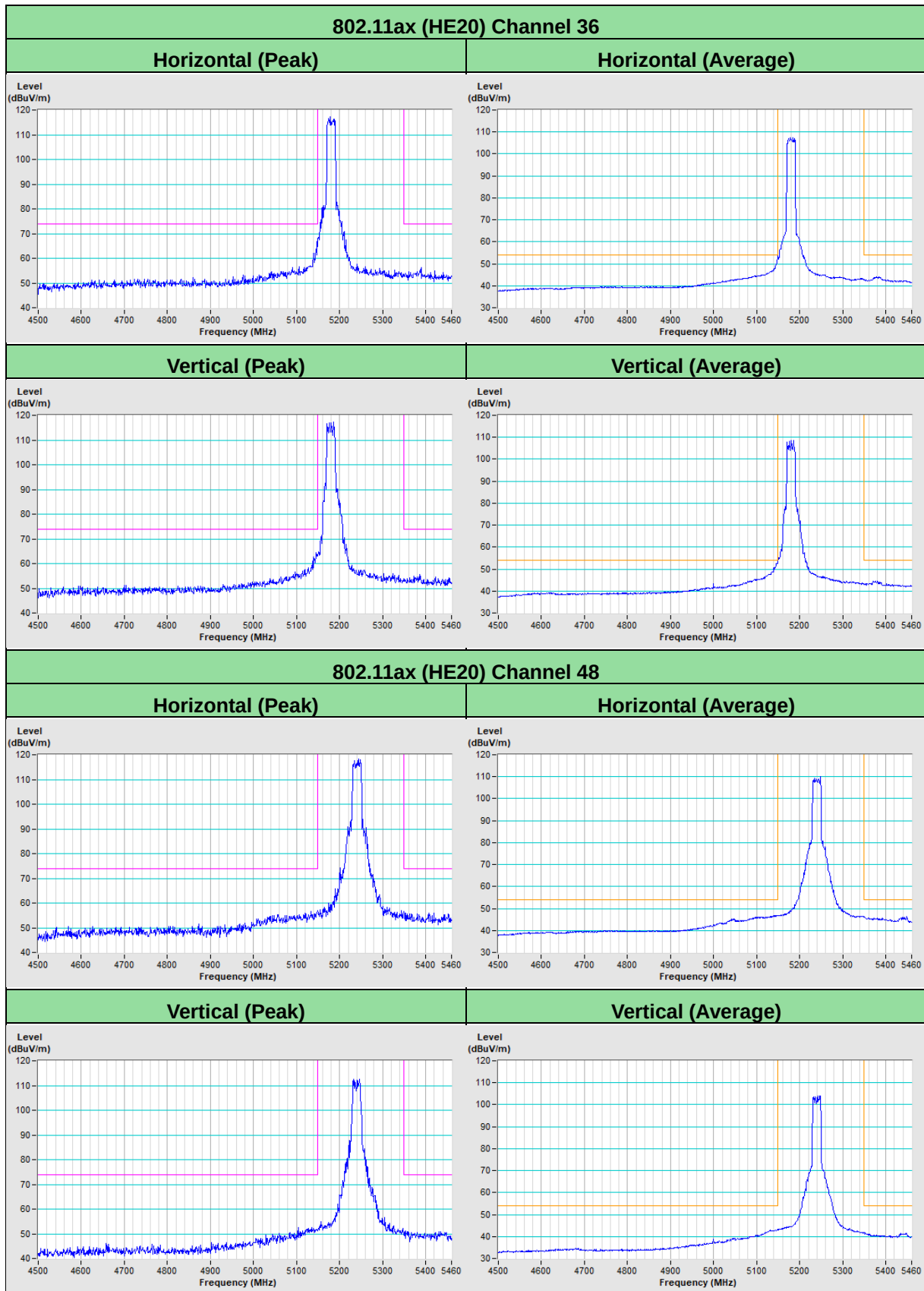
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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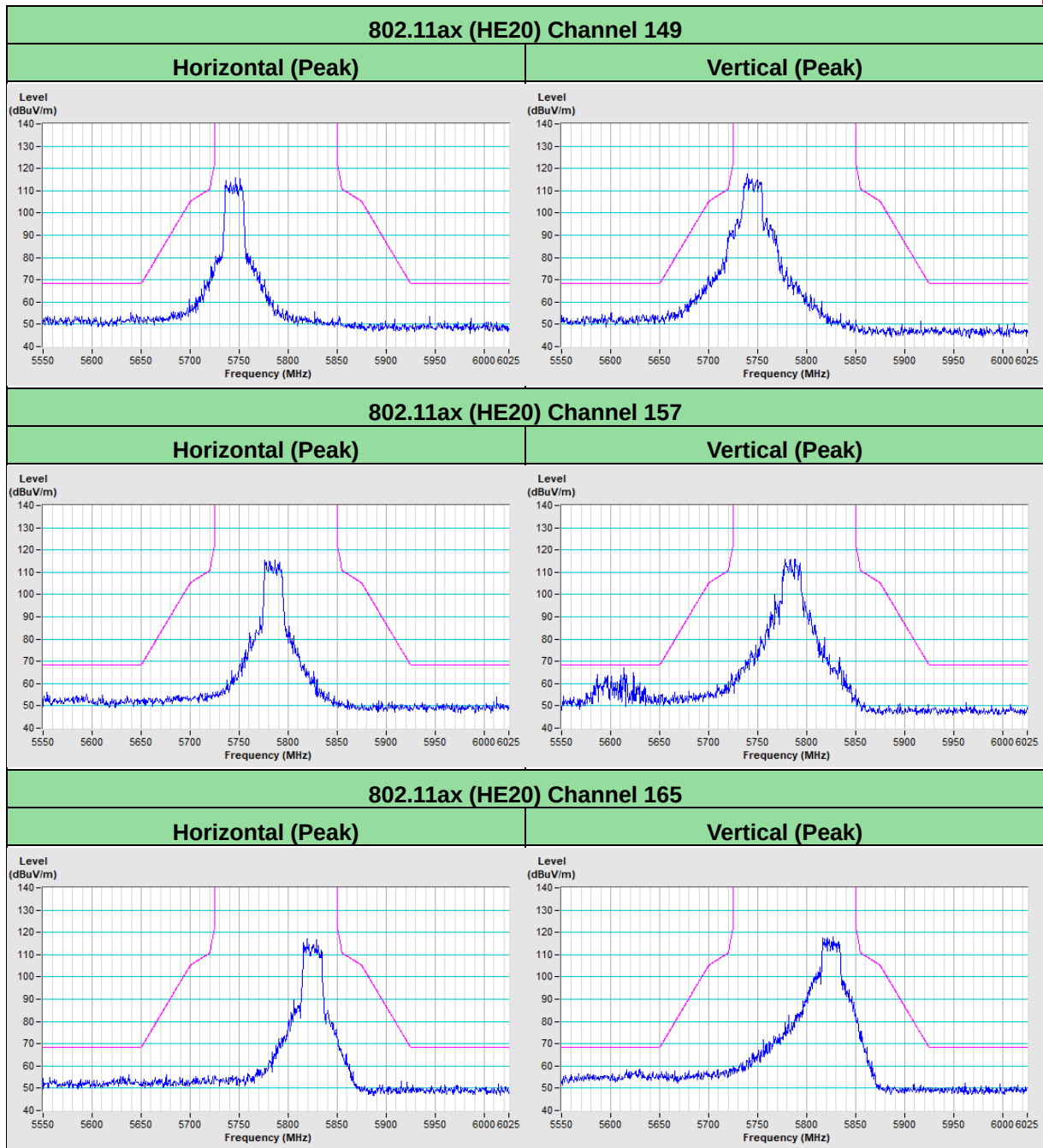


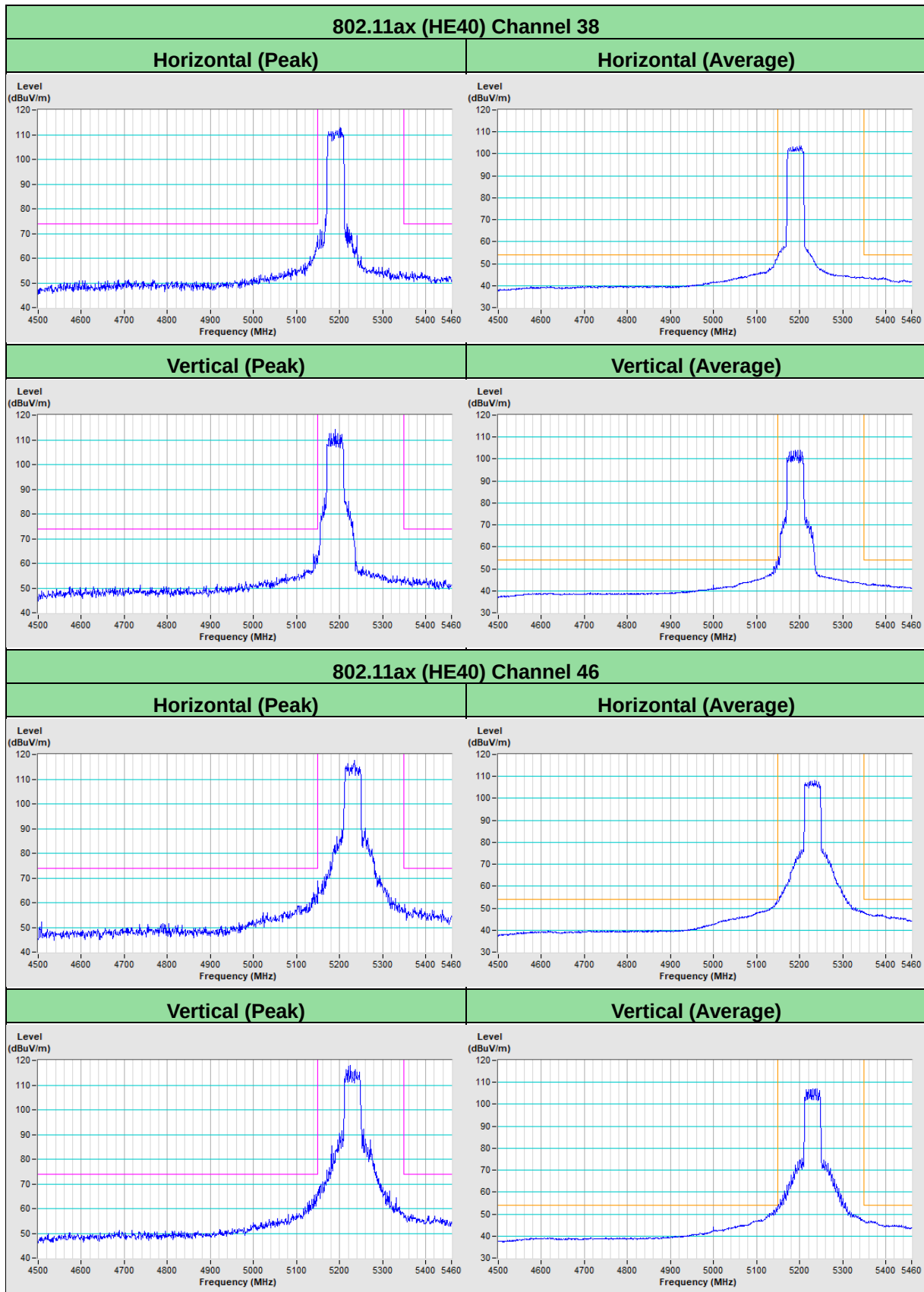
Plot of Band Edge

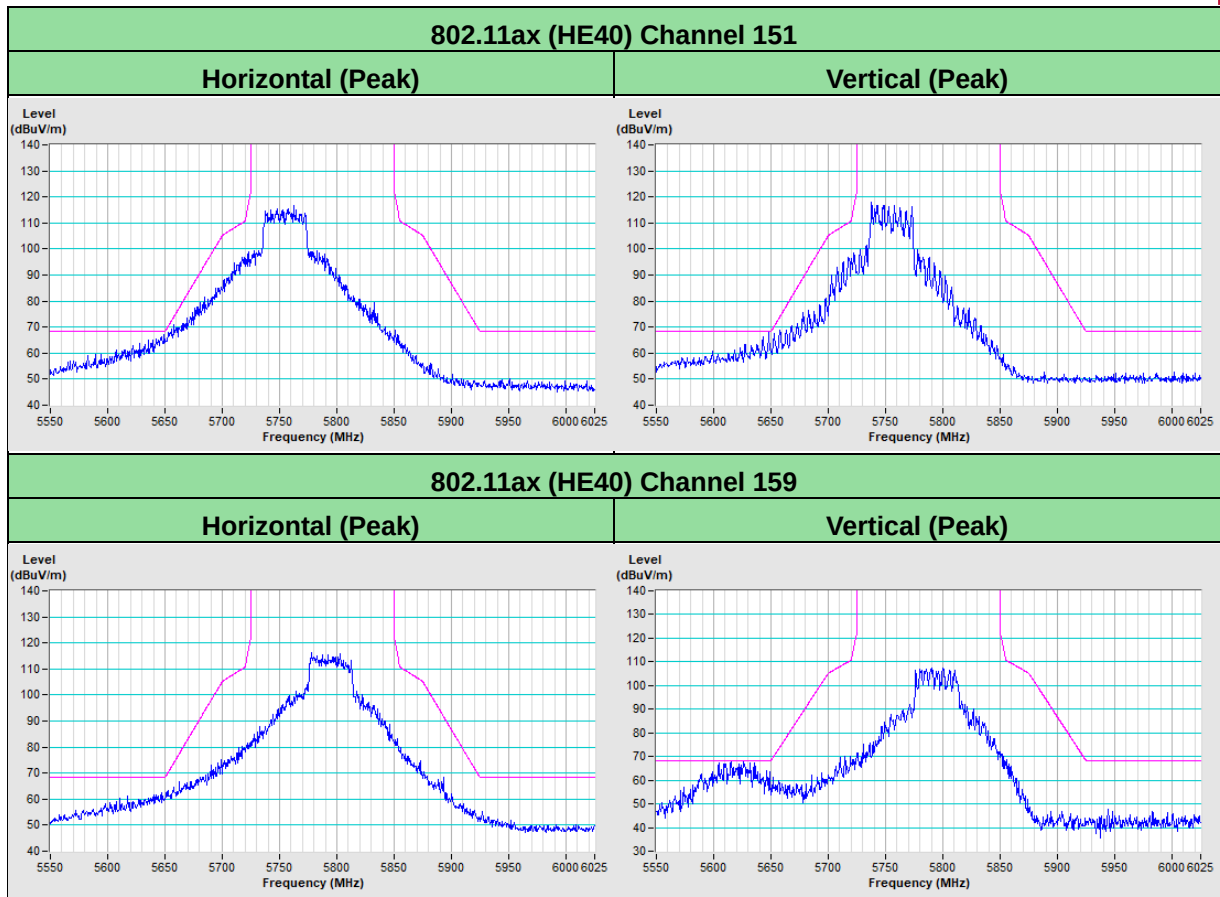


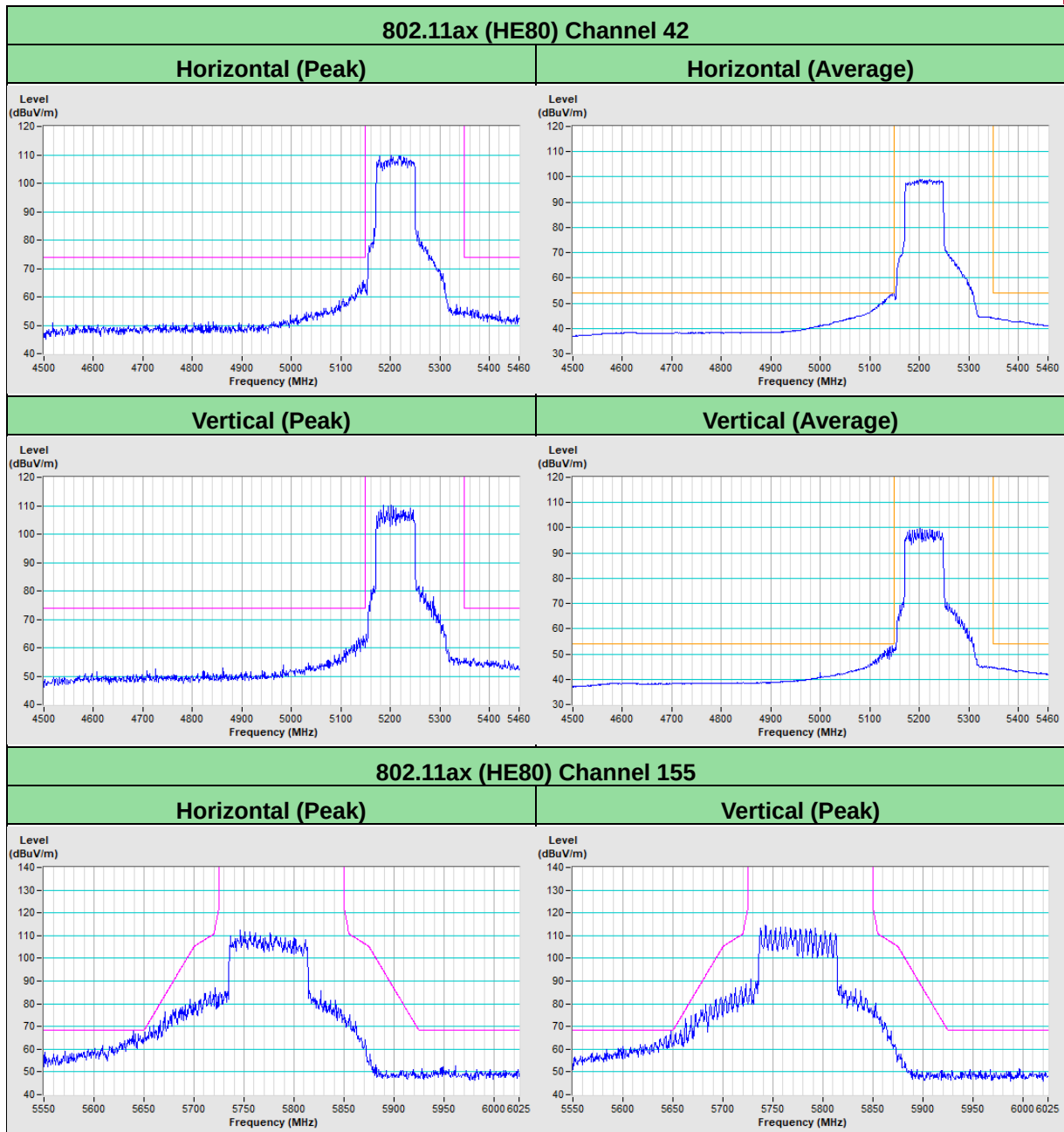












8 Pictures of Test Arrangements

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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Email: service.adt@bureauveritas.com

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

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

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