

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)
Report No.: RFBAOZ-WTW-P23070065-1
FCC ID: RRK-BW1600A
Product: LTE Data and Voice (ATA) In-Home Gateway
Brand: Brightspeed
Model No.: BW1600A
Received Date: 2023/7/12
Test Date: 2023/7/20 ~ 2023/9/9
Issued Date: 2023/9/27

Applicant: Alpha Networks Inc.

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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: _____

2023/9/27

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Prepared by : Phoenix Huang / Specialist



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Table of Contents

Release Control Record	4
1 Certificate	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Supplementary Information	6
3 General Information	7
3.1 General Description of EUT	7
3.2 Antenna Description of EUT	8
3.3 Channel List	9
3.4 Test Mode Applicability and Tested Channel Detail	10
3.5 Duty Cycle of Test Signal	12
3.6 Test Program Used and Operation Descriptions	14
3.7 Connection Diagram of EUT and Peripheral Devices	14
3.8 Configuration of Peripheral Devices and Cable Connections	15
4 Test Instruments	16
4.1 RF Output Power	16
4.2 Power Spectral Density	16
4.3 6 dB Bandwidth	16
4.4 Occupied Bandwidth	16
4.5 Frequency Stability	17
4.6 AC Power Conducted Emissions	17
4.7 Unwanted Emissions below 1 GHz	18
4.8 Unwanted Emissions above 1 GHz	19
5 Limits of Test Items	20
5.1 RF Output Power	20
5.2 Power Spectral Density	20
5.3 6 dB Bandwidth	20
5.4 Occupied Bandwidth	20
5.5 Frequency Stability	20
5.6 AC Power Conducted Emissions	21
5.7 Unwanted Emissions below 1 GHz	21
5.8 Unwanted Emissions above 1 GHz	22
6 Test Arrangements	23
6.1 RF Output Power	23
6.1.1 Test Setup	23
6.1.2 Test Procedure	23
6.2 Power Spectral Density	23
6.2.1 Test Setup	23
6.2.2 Test Procedure	23
6.3 6 dB Bandwidth	24
6.3.1 Test Setup	24
6.3.2 Test Procedure	24
6.4 Occupied Bandwidth	24
6.4.1 Test Setup	24
6.4.2 Test Procedure	24
6.5 Frequency Stability	25
6.5.1 Test Setup	25
6.5.2 Test Procedure	25
6.6 AC Power Conducted Emissions	26
6.6.1 Test Setup	26
6.6.2 Test Procedure	26
6.7 Unwanted Emissions below 1 GHz	27
6.7.1 Test Setup	27
6.7.2 Test Procedure	28



6.8	Unwanted Emissions above 1 GHz.....	29
6.8.1	Test Setup.....	29
6.8.2	Test Procedure.....	29
7	Test Results of Test Item.....	30
7.1	RF Output Power.....	30
7.2	Power Spectral Density.....	35
7.3	6 dB Bandwidth.....	40
7.4	Occupied Bandwidth.....	42
7.5	Frequency Stability.....	48
7.6	AC Power Conducted Emissions.....	49
7.7	Unwanted Emissions below 1 GHz.....	51
7.8	Unwanted Emissions above 1 GHz.....	53
8	Pictures of Test Arrangements.....	99
9	Information of the Testing Laboratories.....	100



Release Control Record

Issue No.	Description	Date Issued
RFBAOZ-WTW-P23070065-1	Original release.	2023/9/27

1 Certificate

Product: LTE Data and Voice (ATA) In-Home Gateway

Brand: Brightspeed

Test Model: BW1600A

Sample Status: Engineering sample

Applicant: Alpha Networks Inc.

Test Date: 2023/7/20 ~ 2023/9/9

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) 15.407(a)(3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1) 15.407(a)(3)	Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
---	Occupied Bandwidth	-	Reference only.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -13.37 dB at 0.16172 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -4.9 dB at 64.22 MHz
15.407(b) (1/10) 15.407(b) (4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.1 dB at , 5150.00, 15600.00, 17235.00, 17265.00 MHz
15.203	Antenna Requirement	Pass	No antenna connector is used.

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:

Parameter	Specification	Uncertainty (±)
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	5.0 dB
	18 GHz ~ 40 GHz	5.3 dB

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

2.2 Supplementary Information

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

3 General Information

3.1 General Description of EUT

Product	LTE Data and Voice (ATA) In-Home Gateway
Brand	Brightspeed
Test Model	BW1600A
Status of EUT	Engineering sample
Power Supply Rating	12 Vdc from power adapter or 5 Vdc from USB interface
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 300 Mbps 802.11ac: up to 866.7 Mbps 802.11ax: up to 1201.0 Mbps
Operating Frequency	5.18 GHz ~ 5.24 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	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: 666.91 mW (28.24 dBm) 5.745 GHz ~ 5.825 GHz: 467.787 mW (26.7 dBm) Beamforming Mode: 5.18 GHz ~ 5.24 GHz: 666.91 mW (28.24 dBm) 5.745 GHz ~ 5.825 GHz: 467.787 mW (26.7 dBm)
EUT Category	Indoor Access Point

Note:

1. The EUT uses following accessories.

AC Adapter 1		
Brand	Model	Specification
MOSO	MS-V2000R120-024Q0-US	AC Input : 100-240V 50/60Hz 0.7A max. DC Output : 12V 2A DC Output Cable : 1.8 m Plug : White mouth with fork plug and groove
RJ14 Cable		
Specification		
Signal Line : 3.7 m		
RJ11 Cable		
Specification		
Signal Line : 3.66 m		
RJ45 Cable 1		
Model	Specification	
MT01-C076	Signal Line : 1.8 m	
RJ45 Cable 2		
Model	Specification	
MT01-C077	Signal Line : 1.8 m	

2. The EUT contains certified WWAN module which FCC ID: XMR202008EC25AFXD.

3. The EUT has below radios as following table:

Radios 1	Radios 2
WLAN 2.4GHz + WLAN 5GHz	WWAN(LTE + WCDMA)

4. Simultaneously transmission condition.

Condition	Technology		
1	WWAN	WLAN 2.4GHz	WLAN 5GHz

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

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

WLAN							
Antenna No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range (MHz)	Antenna Type	Connector Type	Cable Length (cm)
1	Quectel	Y4AXO00A1FA	3.53	2400~2500	Dipole	ipex(MHF)	5
			4.82	5150~5925			
2	Quectel	Y4AXO00A1EA	1.66	2400~2500	Dipole	ipex(MHF)	13
			4.61	5150~5925			

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

2. The EUT incorporates a MIMO function:

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

Note:

- All of modulation mode support beamforming function except 802.11a modulation mode.
- 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.
- 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 same as the 802.11ax mode 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:	<ol style="list-style-type: none"> The accessories cable has the following types: RJ11 / RJ14. Pre-scan these types and find the worst case as a representative test condition. The Ethernet cable has two models: MT01-C076 / MT01-C077. Pre-scan these types and find the worst case as a representative test condition. 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).
Worst Case:	<ol style="list-style-type: none"> For accessories cable worst condition is: RJ14 type For Ethernet cable worst condition is: MT01-C076

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

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



Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
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, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	42, 155	BPSK	MCS0

Note: Partial RU (resource unit) mechanism is not supported.

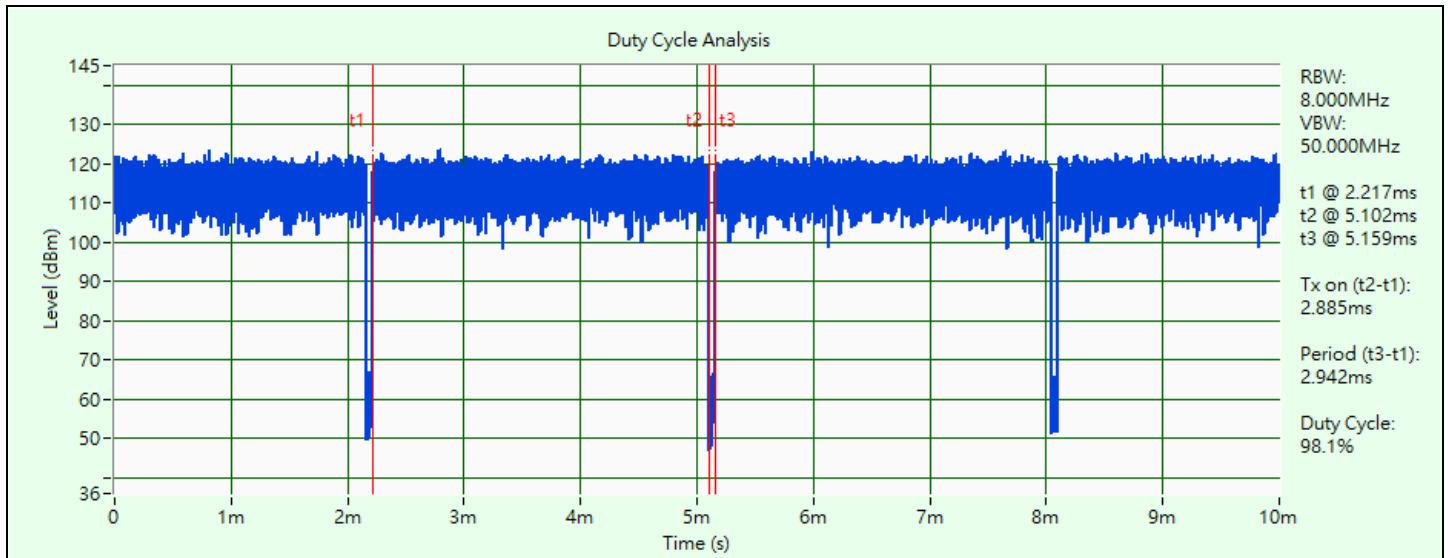
3.5 Duty Cycle of Test Signal

802.11a: Duty cycle = 2.885 ms / 2.942 ms x 100% = 98.1%

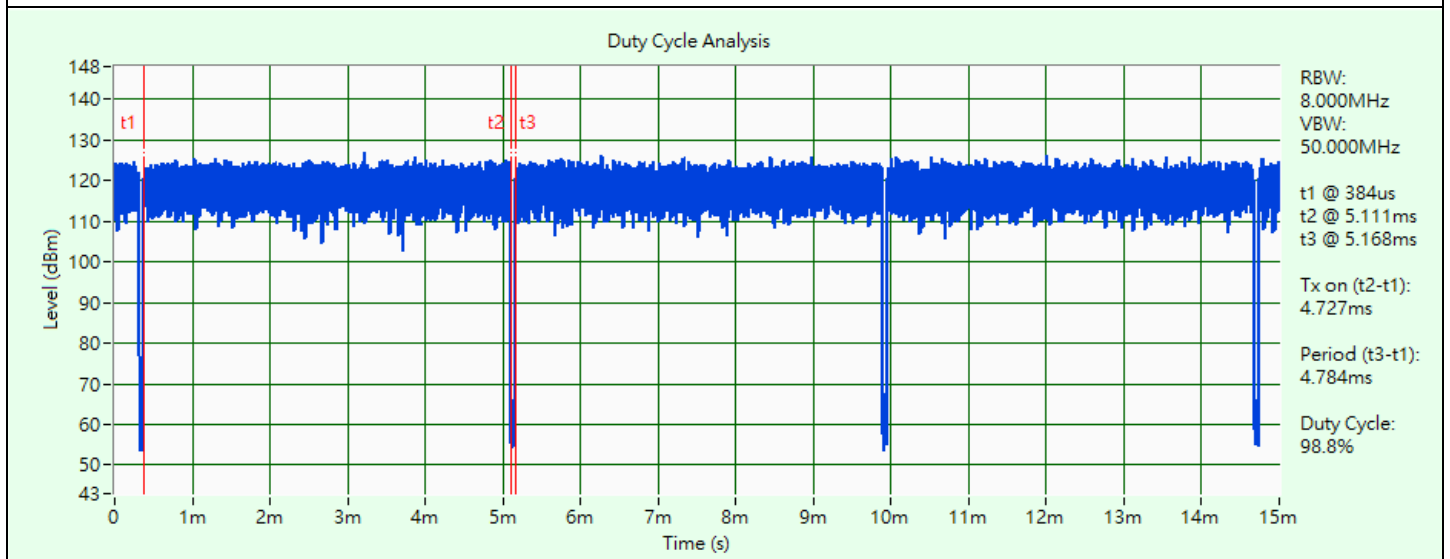
802.11ax (HE20): Duty cycle = 4.727 ms / 4.784 ms x 100% = 98.8%

802.11ax (HE40): Duty cycle = 4.719 ms / 4.776 ms x 100% = 98.8%

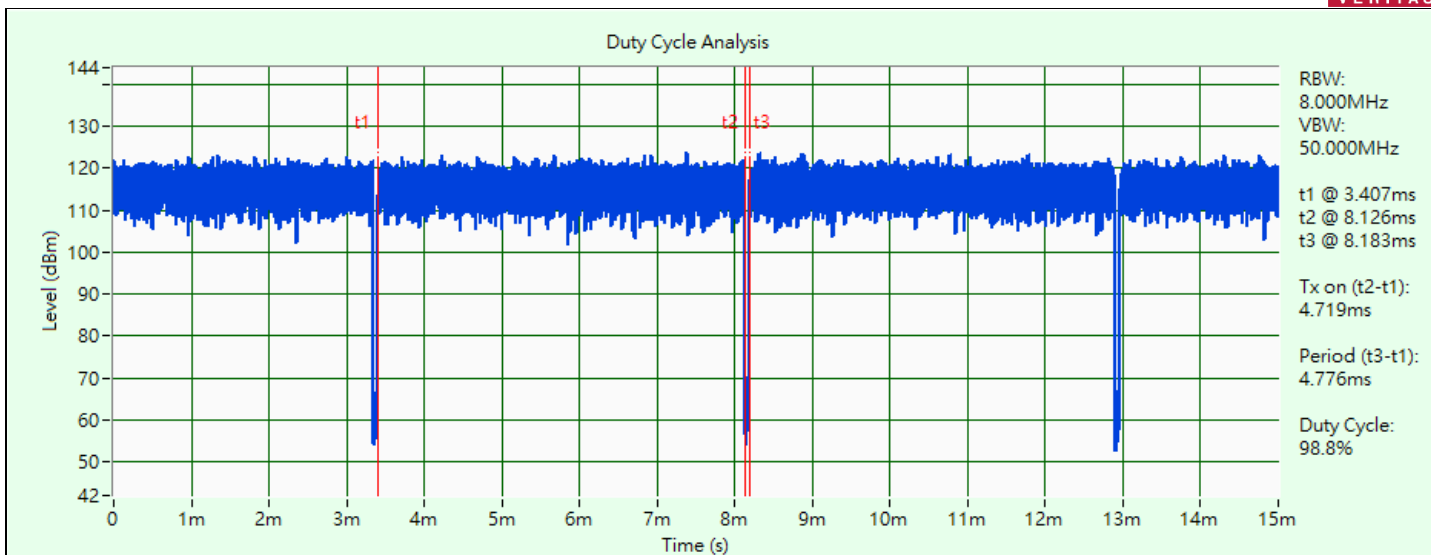
802.11ax (HE80): Duty cycle = 4.513 ms / 4.569 ms x 100% = 98.8%



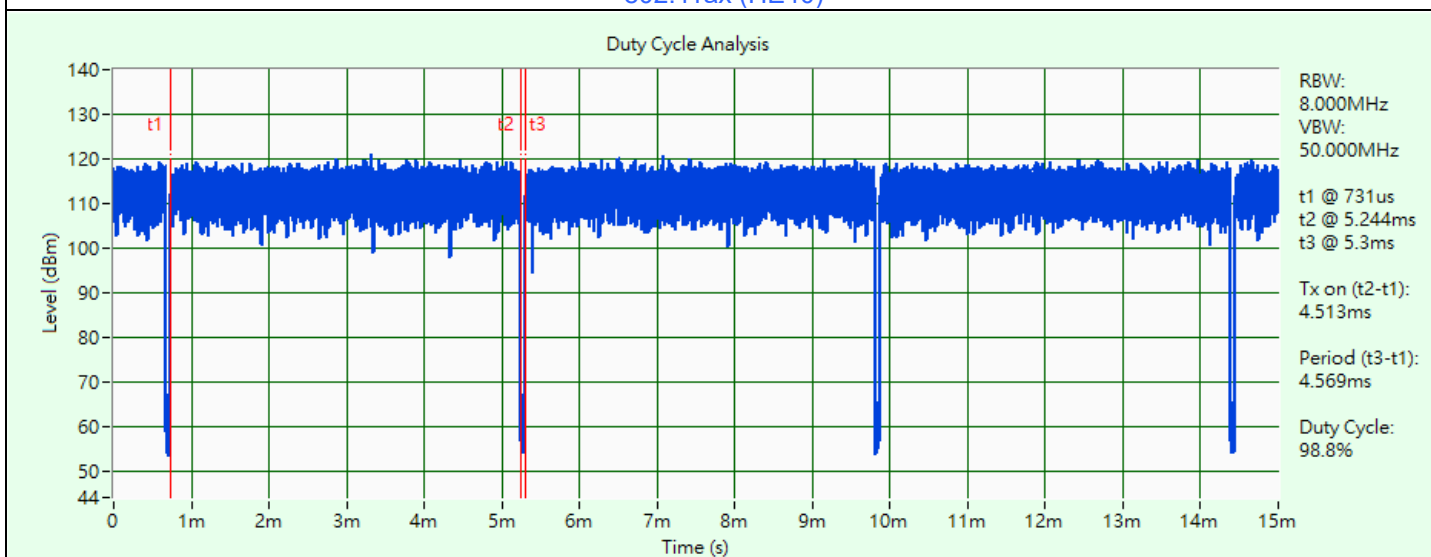
802.11a



802.11ax (HE20)



802.11ax (HE40)

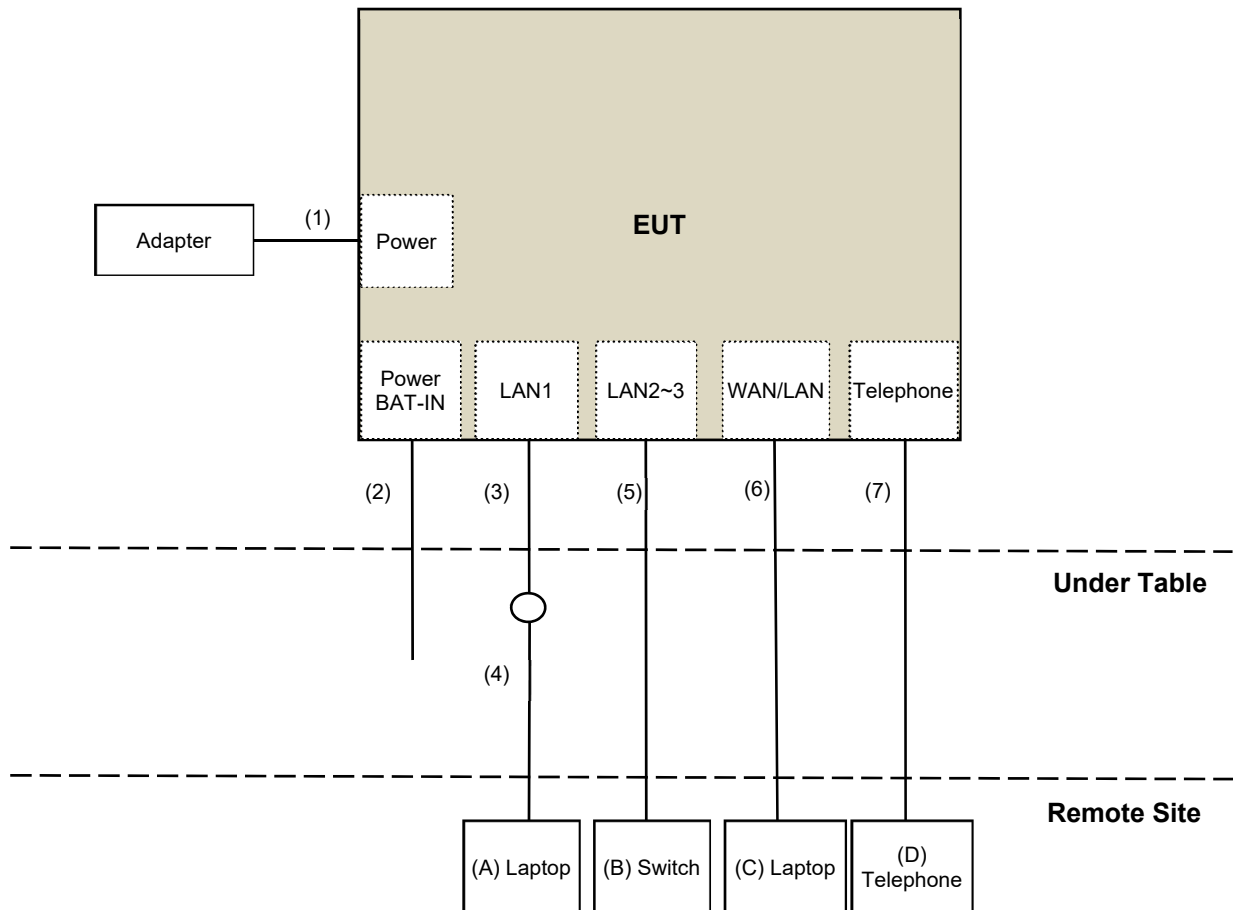


802.11ax (HE80)

3.6 Test Program Used and Operation Descriptions

Controlling software (MT7915 QA 0.0.2.17) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	N/A	Provided by Lab
B	Switch	D-Link	DGS-1005D	DR8WC92000523	N/A	Provided by Lab
C	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	N/A	Provided by Lab
D	Telephone	WONDER	WD-303	7C17KA 04011	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	Type C to Type C Cable	1	1	Yes	0	Provided by Lab
3	RJ45 Cable	1	1.8	No	0	Supplied by applicant
4	RJ45 Cable	1	10	No	0	Provided by Lab
5	RJ45 Cable	2	10	No	0	Provided by Lab
6	RJ45 Cable	1	10	No	0	Provided by Lab
7	RJ14 Cable	1	3.7	No	0	Supplied by applicant

4 Test Instruments

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

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	MDCS18N-10	MDCS18N-10-01	2023/3/27	2024/3/26
Power Meter Anritsu	ML2495A	1529002	2023/6/17	2024/6/16
Pulse Power Sensor Anritsu	MA2411B	1726434	2023/6/19	2024/6/18

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/8/2

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	MDCS18N-10	MDCS18N-10-01	2023/3/27	2024/3/26
MXA Signal Analyzer Keysight	N9020B	MY60112409	2023/2/18	2024/2/17
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: 2023/8/2

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
Fixed Attenuator Woken	MDCS18N-10	MDCS18N-10-01	2023/3/27	2024/3/26
MXA Signal Analyzer Keysight	N9020B	MY60112409	2023/2/18	2024/2/17
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2022/12/26	2023/12/25
True RMS Clamp Meter FLUKE	325	31130711WS	2023/6/8	2024/6/7

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/8/2

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
EMI Test Receiver R&S	ESCS 30	847124/029	2022/10/14	2023/10/13
Fixed Attenuator STI	STI02-2200-10	005	2023/7/1	2024/6/30
LISN R&S	ESH3-Z5	848773/004	2022/10/18	2023/10/17
RF Coaxial Cable JYBAO	5D-FB	COCCAB-001	2023/7/1	2024/6/30
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2023/9/9

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-406	2022/10/21	2023/10/20
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-03	2022/12/28	2023/12/27
Loop Antenna Electro-Metrics	EM-6879	264	2023/2/21	2024/2/20
MXA Signal Analyzer Keysight	N9020B	MY60112408	2023/3/6	2024/3/5
MXE EMI Receiver Keysight	N9038A	MY59050100	2023/6/13	2024/6/12
Preamplifier EMCI	EMC330N	980701	2023/2/18	2024/2/17
	EMC001340	980142	2023/5/8	2024/5/7
RF Coaxial Cable JYEBAO	5D-FB	LOOPCAB-001	2022/12/19	2023/12/18
		LOOPCAB-002	2022/12/19	2023/12/18
RF Coaxial Cable PEWC	8D	966-4-1	2023/2/18	2024/2/17
		966-4-2	2023/2/18	2024/2/17
		966-4-3	2023/2/18	2024/2/17
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 4.
2. Tested Date: 2023/9/9

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-406	2022/11/13	2023/11/12
	BBHA 9170	9170-739	2022/11/13	2023/11/12
MXE EMI Receiver Keysight	N9038A	MY59050100	2023/6/13	2024/6/12
Preamplifier EMCI	EMC12630SE	980384	2022/12/28	2023/12/27
	EMC184045SE	980387	2022/12/28	2023/12/27
PXA Signal Analyzer Keysight	N9030B	MY57142938	2023/4/6	2024/4/5
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2023/2/20	2024/2/19
	EMC102-KM-KM-1200	160924	2022/12/28	2023/12/27
	EMC104-SM-SM-1500	180504	2023/3/27	2024/3/26
	EMC104-SM-SM-2000	180601	2023/6/2	2024/6/1
	EMC104-SM-SM-6000	210201	2023/5/8	2024/5/7
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2023/7/20 ~ 2023/8/8

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	250mW (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.

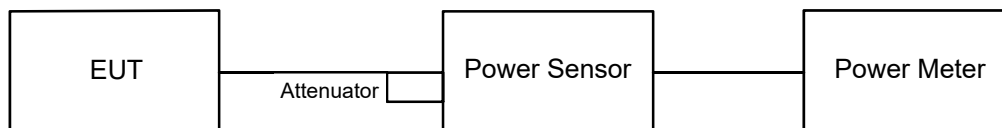
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

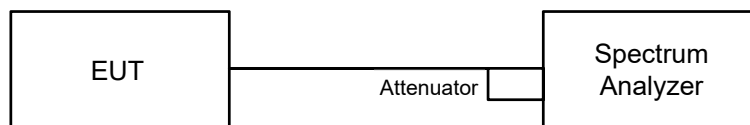


6.1.2 Test Procedure

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 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

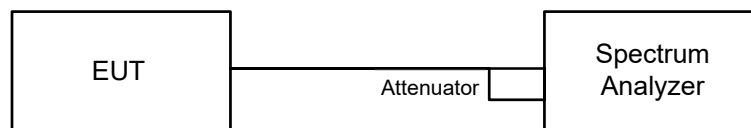
For specified measurement bandwidth 500 kHz:

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 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

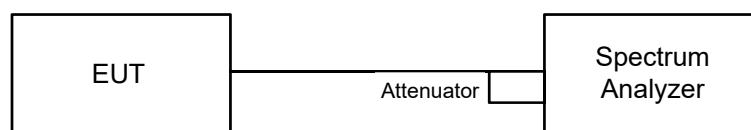


6.3.2 Test Procedure

- 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

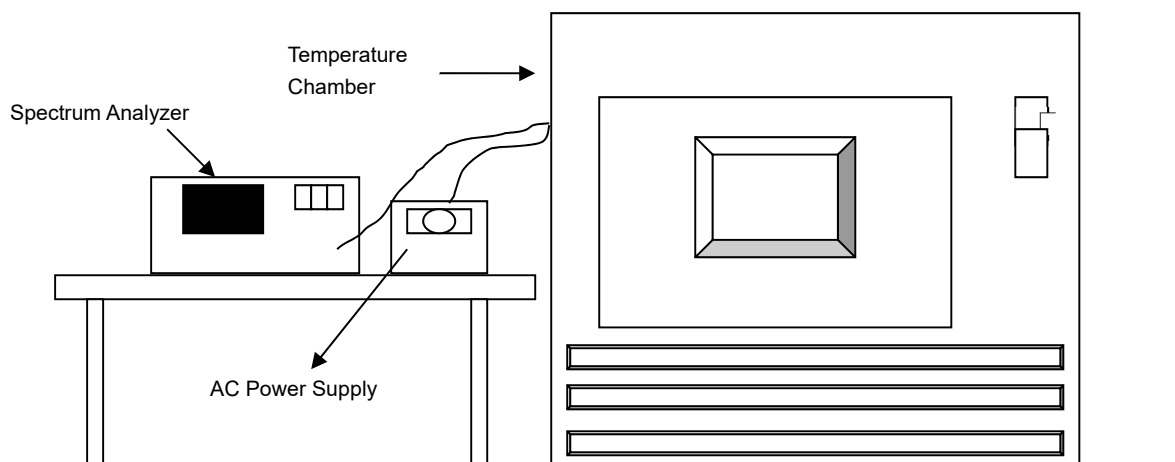


6.4.2 Test Procedure

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

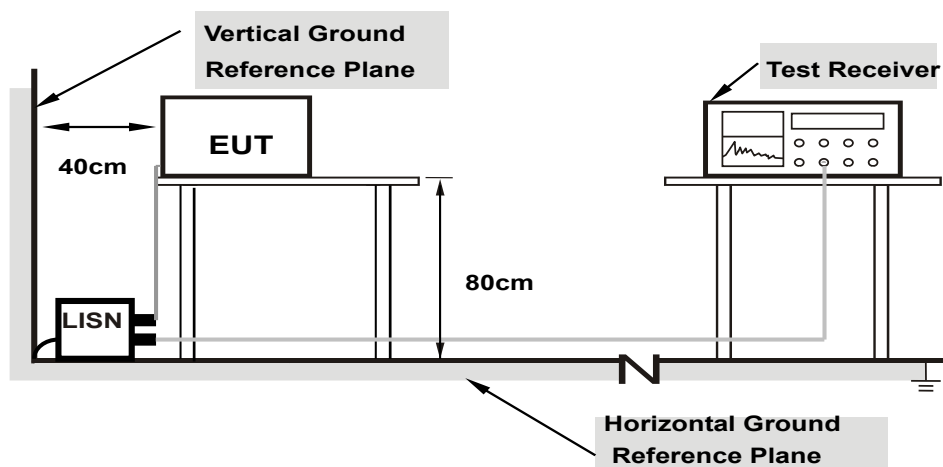


6.5.2 Test Procedure

- 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

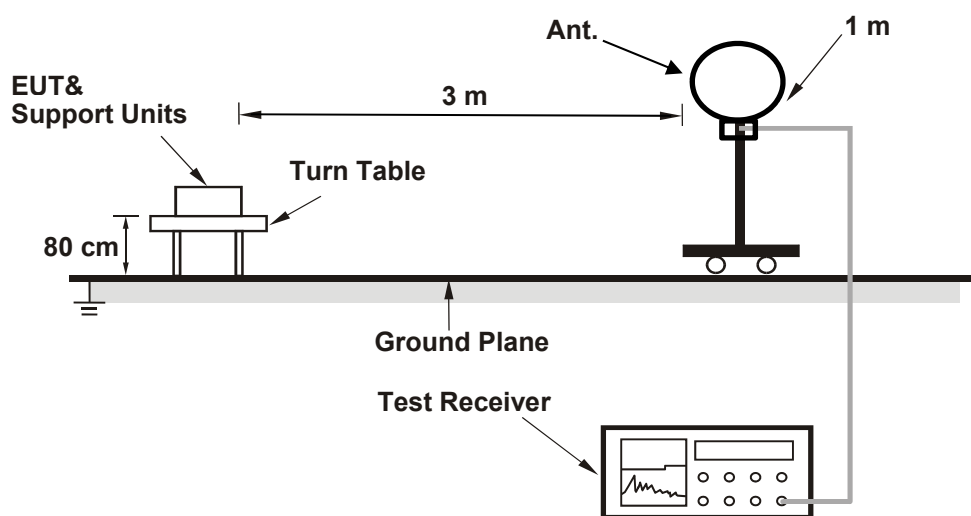
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The 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.

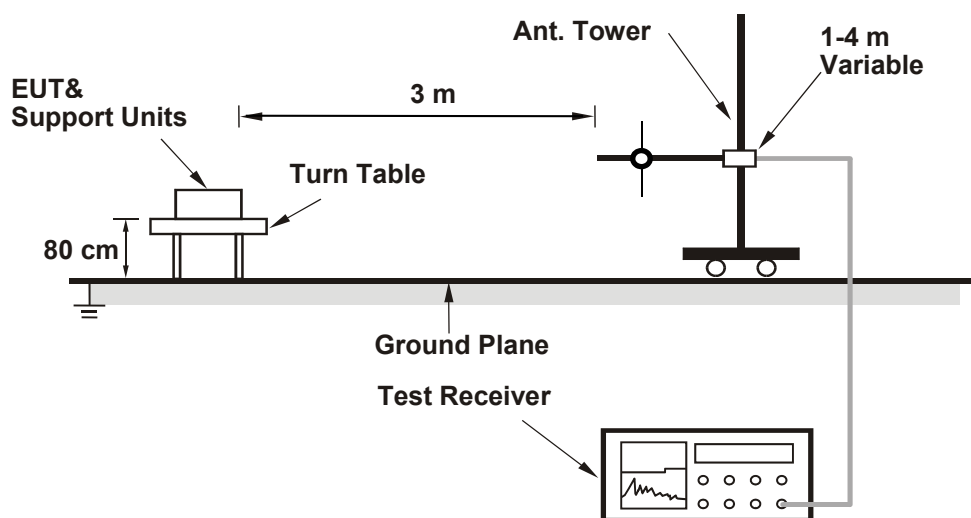
6.7 Unwanted Emissions below 1 GHz

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

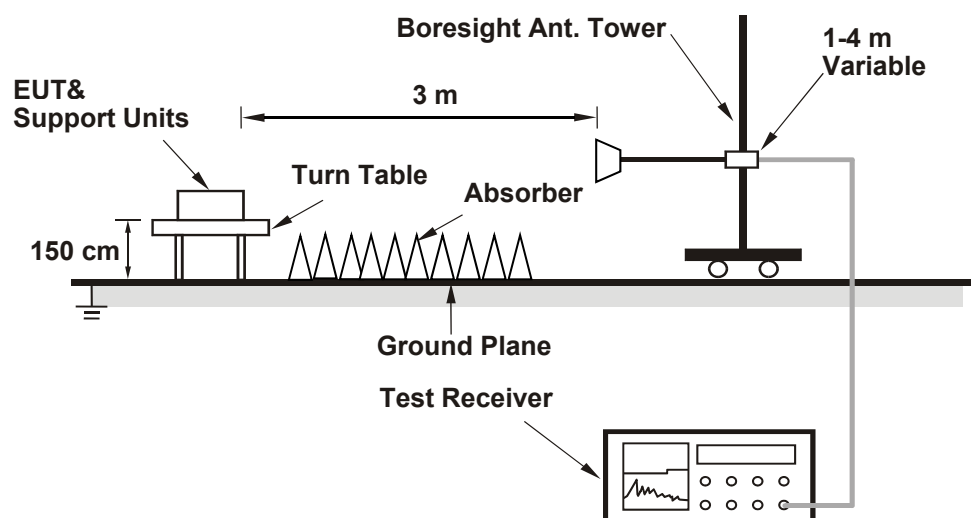
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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(QP) detect function, Average(AV) detect function, Peak(PK) 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), Average detection (AV), Peak detection (PK) at frequency (30MHz to 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:	Katina Lu
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802.11a CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	23.47	25.08	544.438	27.36	30	Pass
40	5200	24.35	25.94	664.915	28.23	30	Pass
48	5240	23.52	24.91	534.647	27.28	30	Pass
149	5745	20.78	21.03	246.439	23.92	30	Pass
157	5785	21.17	21.24	263.964	24.22	30	Pass
165	5825	22.03	22.37	332.172	25.21	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.82 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.82 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				
36	5180	21.47	23.35	356.553	25.52	30	Pass
40	5200	23.56	25.05	546.876	27.38	30	Pass
48	5240	23.66	25.15	559.614	27.48	30	Pass
149	5745	21.31	21.59	279.419	24.46	30	Pass
157	5785	21.91	21.98	313	24.96	30	Pass
165	5825	22.57	22.69	366.498	25.64	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.82 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.82 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				
38	5190	19.48	21.35	225.174	23.53	30	Pass
46	5230	24.29	25.61	632.449	28.01	30	Pass
151	5755	23.24	23.43	431.155	26.35	30	Pass
159	5795	23.47	23.41	441.611	26.45	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.82 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.82 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				
42	5210	16.90	17.81	109.373	20.39	30	Pass
155	5775	22.83	22.92	387.751	25.89	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.82 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.82 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	21.73	23.62	379.08	25.79	30	Pass
40	5200	23.63	25.31	570.3	27.56	30	Pass
48	5240	23.94	25.42	596.08	27.75	30	Pass
149	5745	21.55	21.86	296.351	24.72	30	Pass
157	5785	22.18	22.24	332.69	25.22	30	Pass
165	5825	22.81	22.93	387.321	25.88	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.82 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.82 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	19.75	21.62	239.617	23.80	30	Pass
46	5230	24.48	25.87	666.91	28.24	30	Pass
151	5755	23.48	23.67	455.653	26.59	30	Pass
159	5795	23.73	23.65	467.787	26.70	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.82 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.82 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	17.16	18.05	115.826	20.64	30	Pass
155	5775	23.09	23.17	411.196	26.14	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.82 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.82 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				
36	5180	21.47	23.35	356.553	25.52	28.27	Pass
40	5200	23.56	25.05	546.876	27.38	28.27	Pass
48	5240	23.66	25.15	559.614	27.48	28.27	Pass
149	5745	21.31	21.59	279.419	24.46	28.27	Pass
157	5785	21.91	21.98	313	24.96	28.27	Pass
165	5825	22.57	22.69	366.498	25.64	28.27	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. For U-NII-1, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (7.73 - 6) = 28.27$ dBm.
3. For U-NII-3, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (7.73 - 6) = 28.27$ 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				
38	5190	19.48	21.35	225.174	23.53	28.27	Pass
46	5230	24.29	25.61	632.449	28.01	28.27	Pass
151	5755	23.24	23.43	431.155	26.35	28.27	Pass
159	5795	23.47	23.41	441.611	26.45	28.27	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. For U-NII-1, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30-(7.73-6) = 28.27$ dBm.
3. For U-NII-3, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30-(7.73-6) = 28.27$ 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				
42	5210	16.90	17.81	109.373	20.39	28.27	Pass
155	5775	22.83	22.92	387.751	25.89	28.27	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. For U-NII-1, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30-(7.73-6) = 28.27$ dBm.
3. For U-NII-3, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30-(7.73-6) = 28.27$ 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				
36	5180	21.73	23.62	379.08	25.79	28.27	Pass
40	5200	23.63	25.31	570.3	27.56	28.27	Pass
48	5240	23.94	25.42	596.08	27.75	28.27	Pass
149	5745	21.55	21.86	296.351	24.72	28.27	Pass
157	5785	22.18	22.24	332.69	25.22	28.27	Pass
165	5825	22.81	22.93	387.321	25.88	28.27	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. For U-NII-1, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30-(7.73-6) = 28.27$ dBm.
3. For U-NII-3, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30-(7.73-6) = 28.27$ 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				
38	5190	19.75	21.62	239.617	23.80	28.27	Pass
46	5230	24.48	25.87	666.91	28.24	28.27	Pass
151	5755	23.48	23.67	455.653	26.59	28.27	Pass
159	5795	23.73	23.65	467.787	26.70	28.27	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. For U-NII-1, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (7.73 - 6) = 28.27$ dBm.
3. For U-NII-3, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (7.73 - 6) = 28.27$ 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				
42	5210	17.16	18.05	115.826	20.64	28.27	Pass
155	5775	23.09	23.17	411.196	26.14	28.27	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. For U-NII-1, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (7.73 - 6) = 28.27$ dBm.
3. For U-NII-3, the directional gain is 7.73 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (7.73 - 6) = 28.27$ dBm.

7.2 Power Spectral Density

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

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1			
36	5180	11.76	12.36	15.08	15.27	Pass
40	5200	11.97	12.46	15.23	15.27	Pass
48	5240	11.46	12.23	14.87	15.27	Pass

Notes:

- Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 7.73 dBi > 6dBi, so the power density limit shall be reduced to $17-(7.73-6) = 15.27$ 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			
36	5180	11.16	11.84	14.52	15.27	Pass
40	5200	11.40	12.18	14.82	15.27	Pass
48	5240	11.23	12.10	14.70	15.27	Pass

Notes:

- Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 7.73 dBi > 6dBi, so the power density limit shall be reduced to $17-(7.73-6) = 15.27$ 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			
38	5190	5.93	6.87	9.44	15.27	Pass
46	5230	10.45	10.78	13.63	15.27	Pass

Notes:

- Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 7.73 dBi > 6dBi, so the power density limit shall be reduced to $17-(7.73-6) = 15.27$ 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			
42	5210	1.12	0.51	3.84	15.27	Pass

Notes:

- Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 7.73 dBi > 6dBi, so the power density limit shall be reduced to $17-(7.73-6) = 15.27$ 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				
149	5745	2.40	3.06	5.75	7.97	28.27	Pass
157	5785	2.95	3.54	6.27	8.49	28.27	Pass
165	5825	3.98	4.21	7.11	9.33	28.27	Pass

Notes:

- Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-3, the directional gain is 7.73 dBi > 6 dBi, so the power density limit shall be reduced to $30-(7.73-6) = 28.27$ 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				
149	5745	1.18	1.85	4.54	6.76	28.27	Pass
157	5785	1.71	2.29	5.02	7.24	28.27	Pass
165	5825	2.75	2.81	5.79	8.01	28.27	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-3, the directional gain is 7.73 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (7.73 - 6) = 28.27$ 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				
151	5755	0.24	0.64	3.45	5.67	28.27	Pass
159	5795	0.33	0.54	3.45	5.67	28.27	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-3, the directional gain is 7.73 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (7.73 - 6) = 28.27$ dBm/500kHz.

802.11ax (HE80)

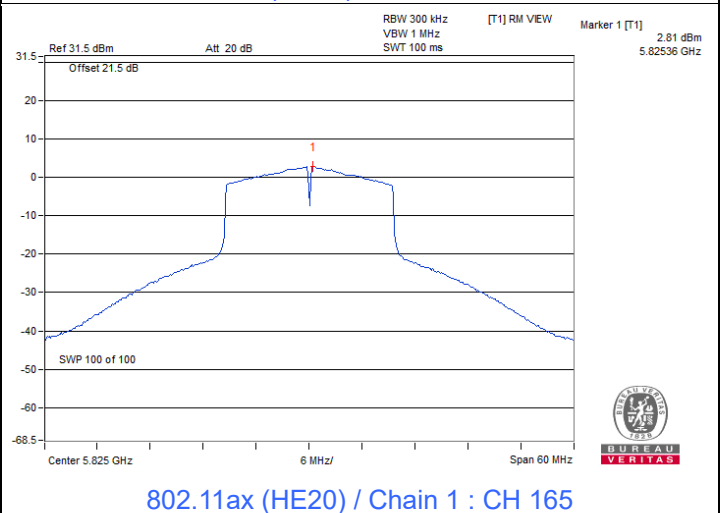
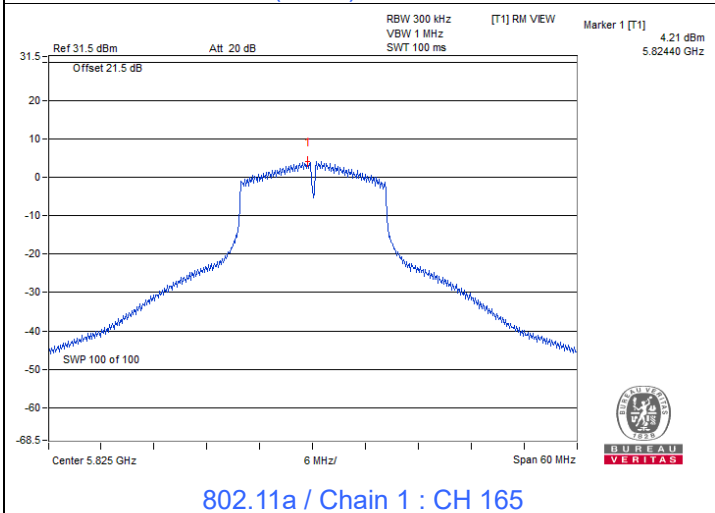
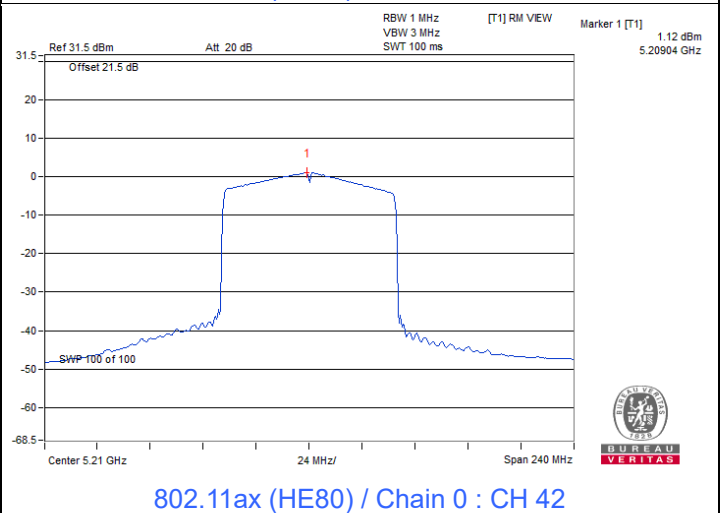
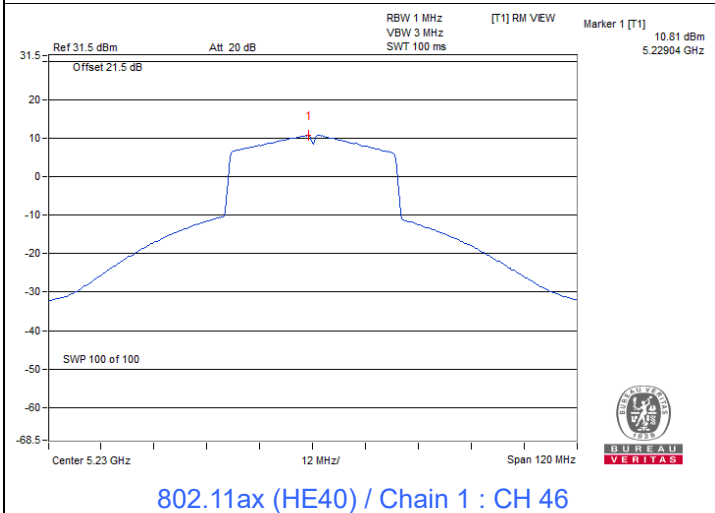
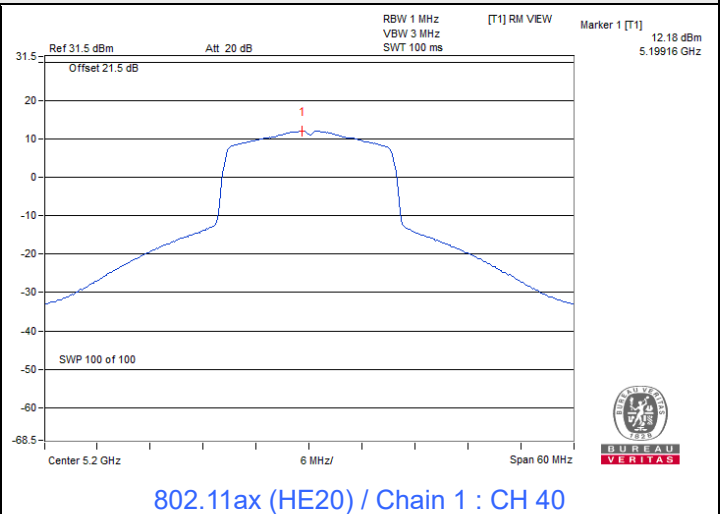
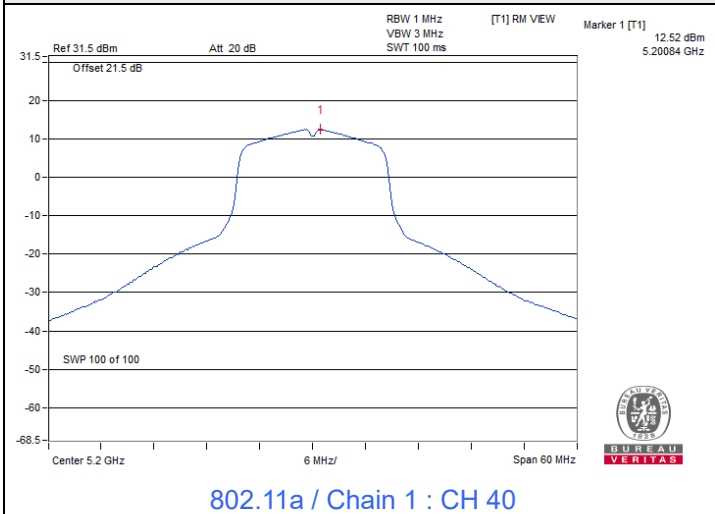
Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1				
155	5775	-3.07	-2.70	0.13	2.35	28.27	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-3, the directional gain is 7.73 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (7.73 - 6) = 28.27$ dBm/500kHz.

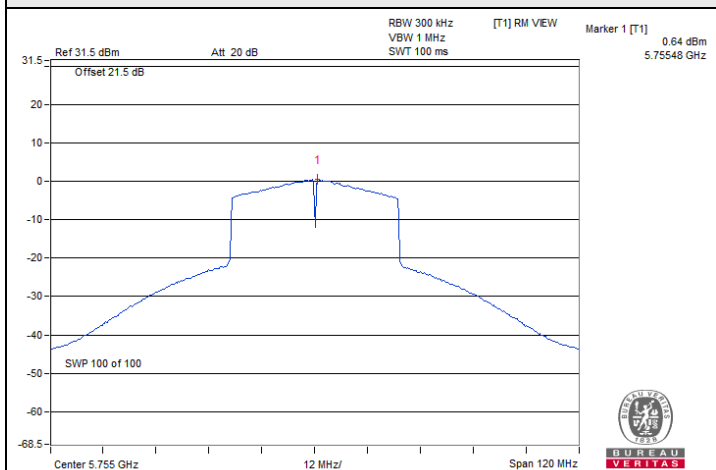


Spectrum Plot of Maximum Value

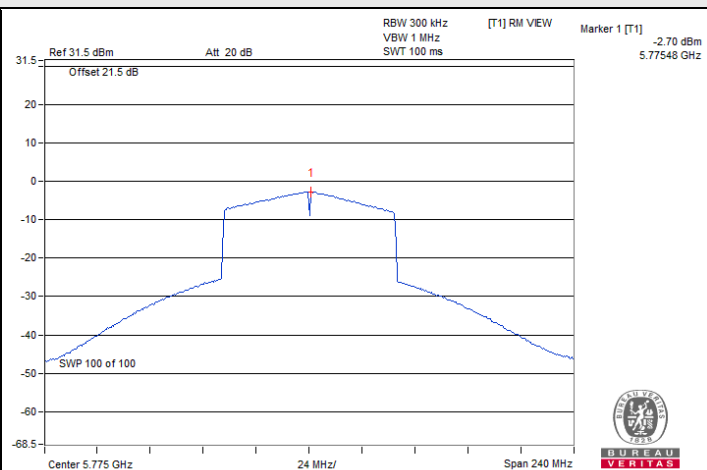




Spectrum Plot of Maximum Value



802.11ax (HE40) / Chain 1 : CH 151



802.11ax (HE80) / Chain 1 : CH 155

7.3 6 dB Bandwidth

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

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	15.15	15.14	0.5	Pass
157	5785	15.16	15.16	0.5	Pass
165	5825	15.15	15.11	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	18.50	17.55	0.5	Pass
157	5785	17.80	15.14	0.5	Pass
165	5825	16.74	15.79	0.5	Pass

802.11ax (HE40)

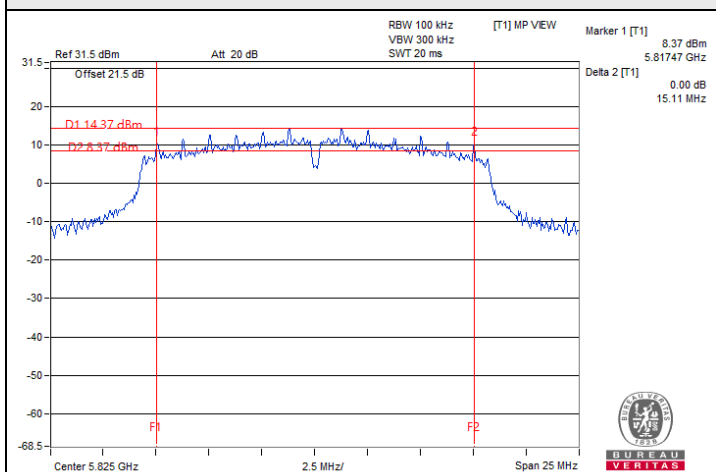
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
151	5755	35.60	34.49	0.5	Pass
159	5795	36.49	35.34	0.5	Pass

802.11ax (HE80)

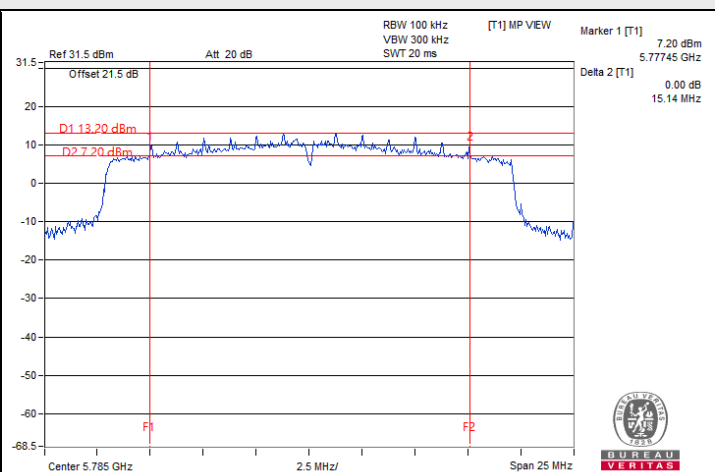
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
155	5775	74.94	72.90	0.5	Pass



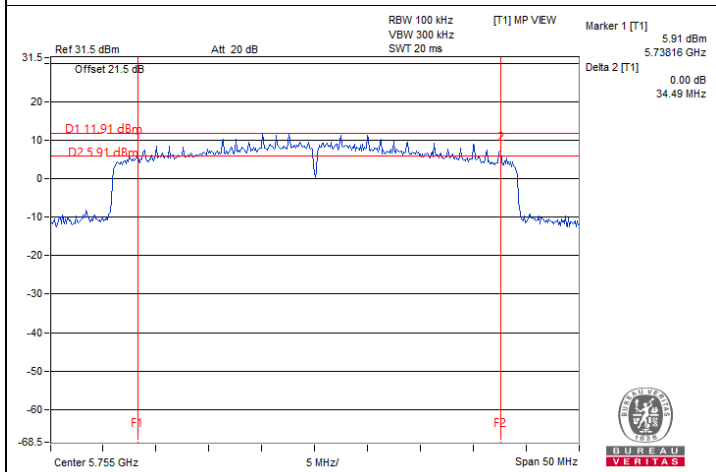
Spectrum Plot of Minimum Value



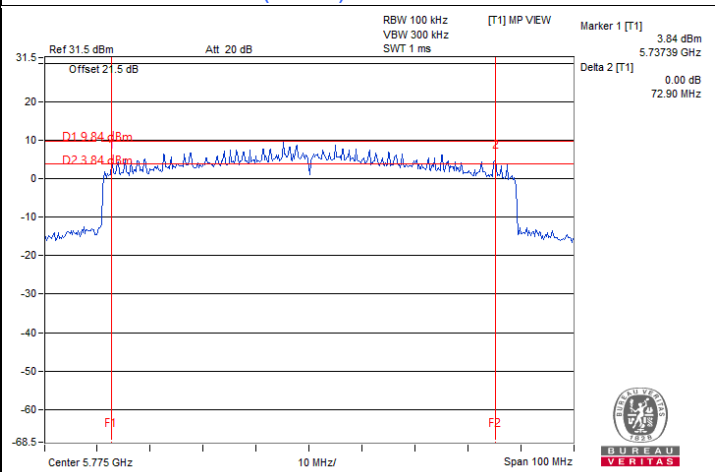
802.11a / Chain 1 : CH 165



802.11ax (HE20) / Chain 1 : CH 157



802.11ax (HE40) / Chain 1 : CH 151



802.11ax (HE80) / Chain 1 : CH 155

7.4 Occupied Bandwidth

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

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.92	18.84
40	5200	17.64	21.36
48	5240	16.92	17.88
149	5745	16.80	16.80
157	5785	16.92	16.92
165	5825	17.28	17.64

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.96	19.20
40	5200	19.20	19.80
48	5240	18.96	19.32
149	5745	19.08	19.08
157	5785	19.08	19.08
165	5825	19.32	19.44

802.11ax (HE40)

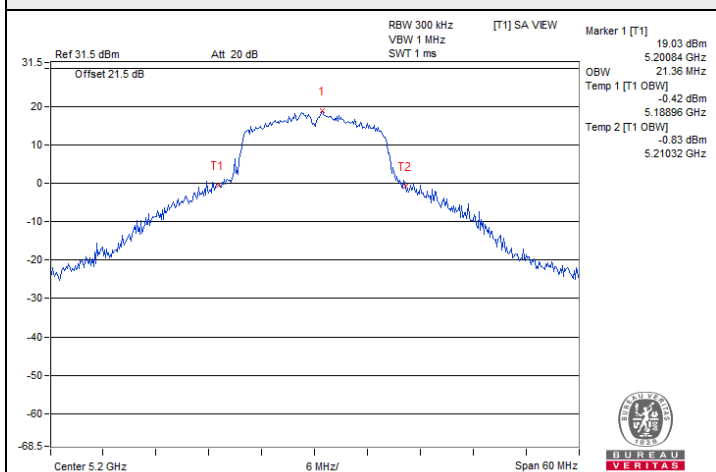
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	37.68	37.68
46	5230	38.40	40.08
151	5755	38.64	38.88
159	5795	38.88	38.88

802.11ax (HE80)

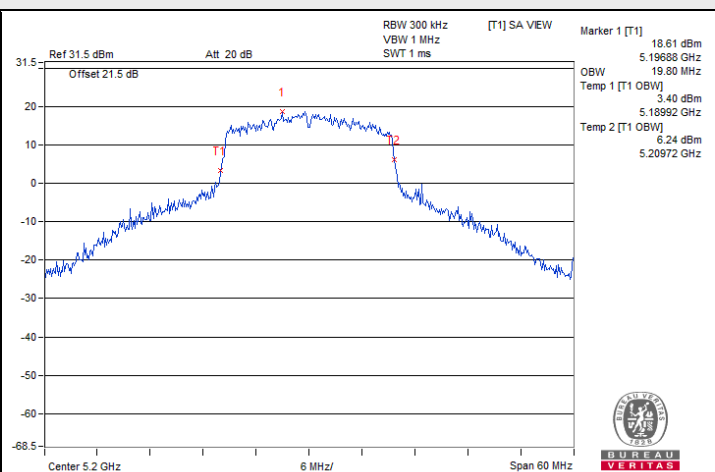
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	76.32	76.80
155	5775	77.28	77.76



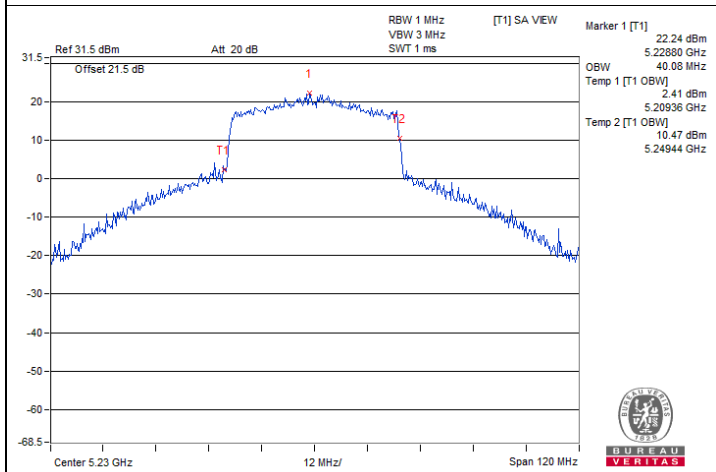
Spectrum Plot of Maximum Value



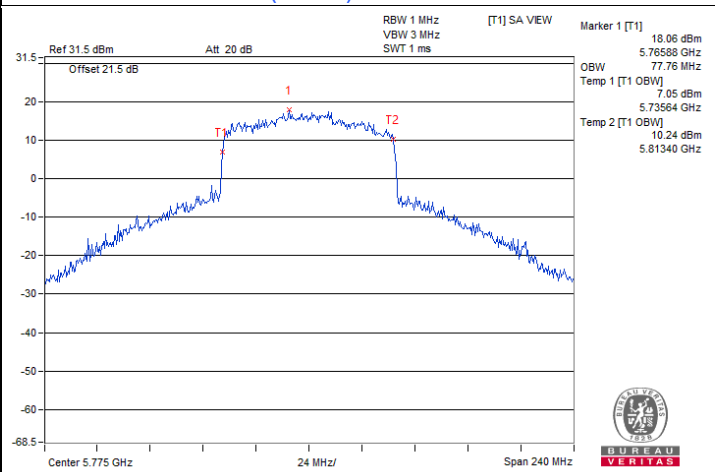
802.11a / Chain 1 : CH 40



802.11ax (HE20) / Chain 1 : CH 40



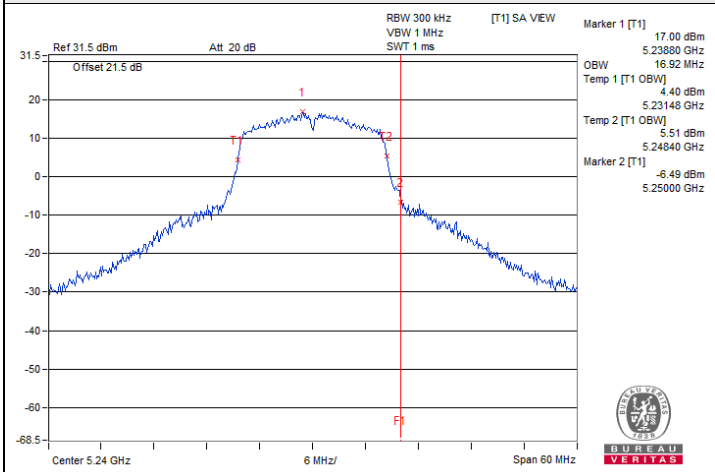
802.11ax (HE40) / Chain 1 : CH 46



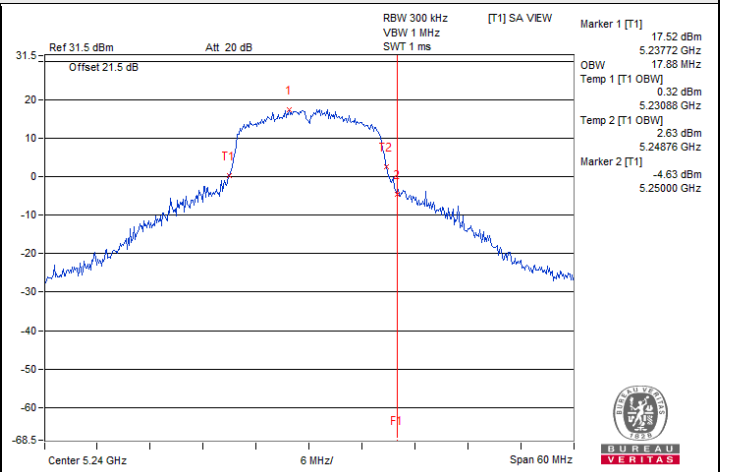
802.11ax (HE80) / Chain 1 : CH 155



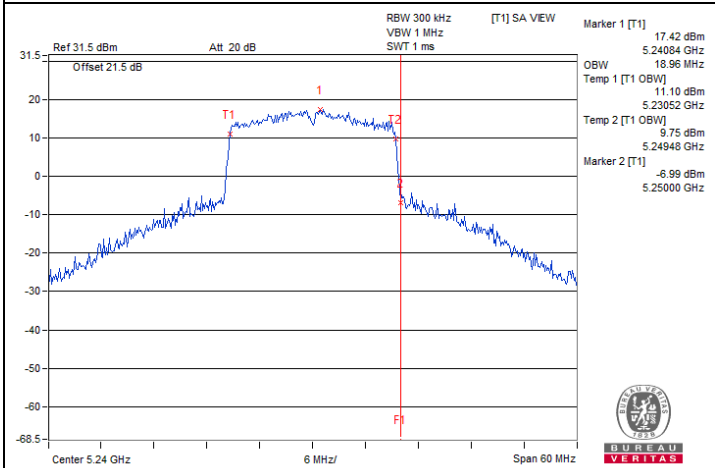
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



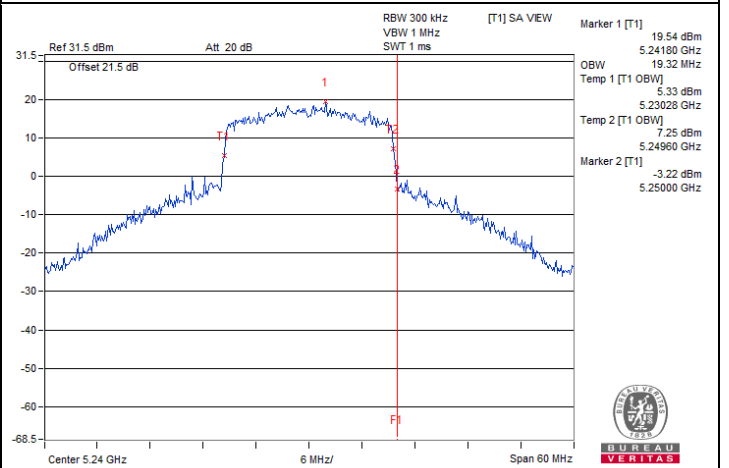
802.11a / Chain 0 : CH 48



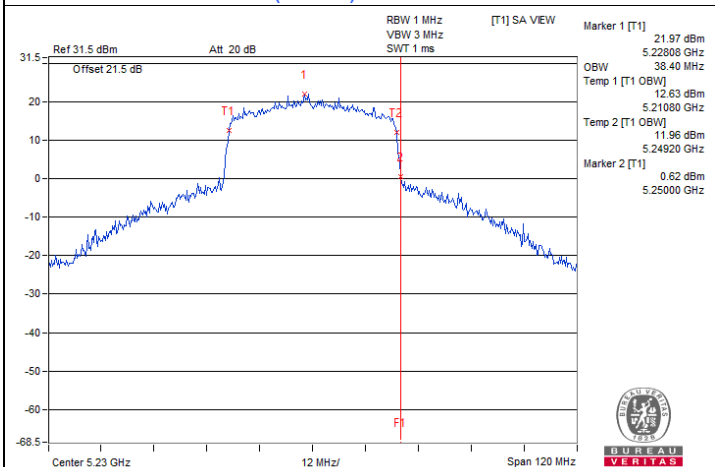
802.11a / Chain 1 : CH 48



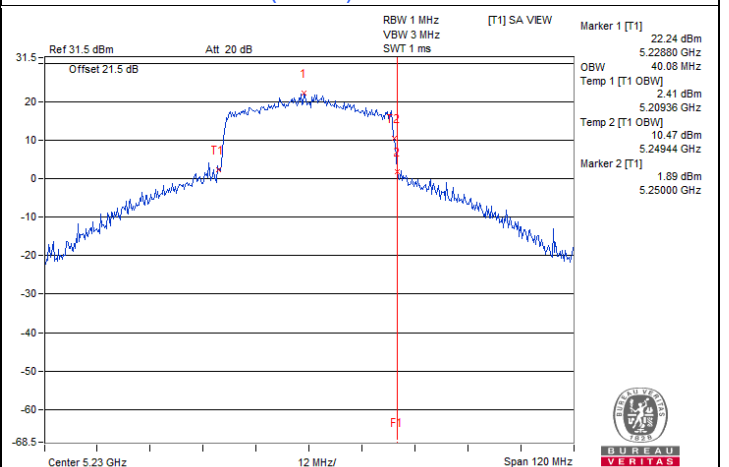
802.11ax (HE20) / Chain 0 : CH 48



802.11ax (HE20) / Chain 1 : CH 48



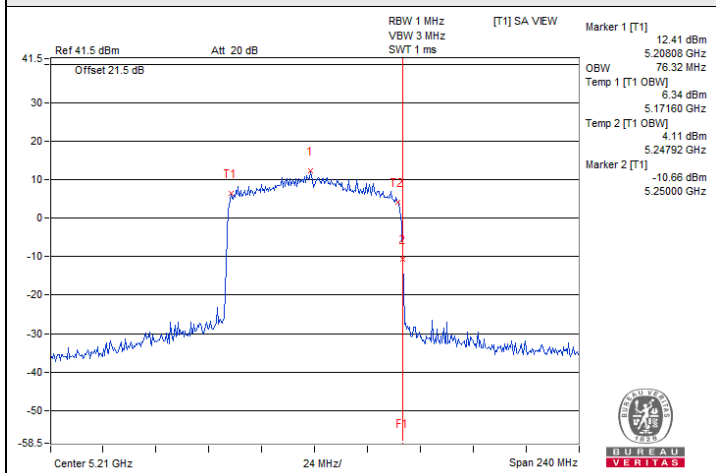
802.11ax (HE40) / Chain 0 : CH 46



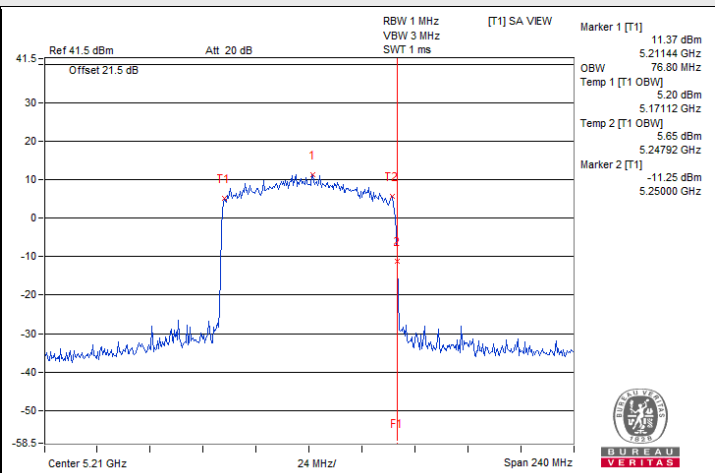
802.11ax (HE40) / Chain 1 : CH 46



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

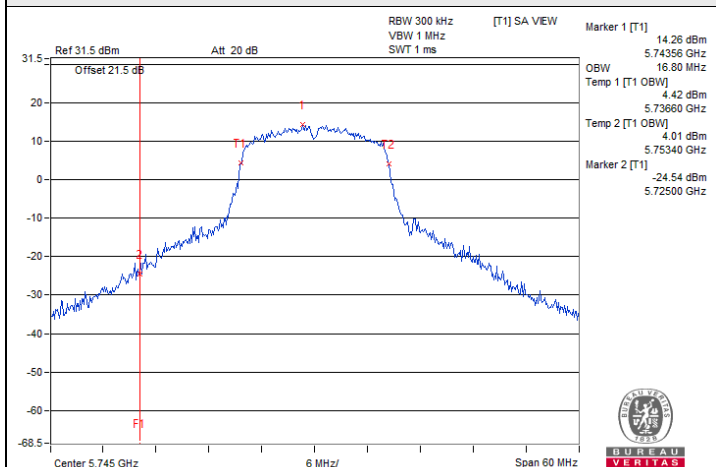


802.11ax (HE80) / Chain 0 : CH 42

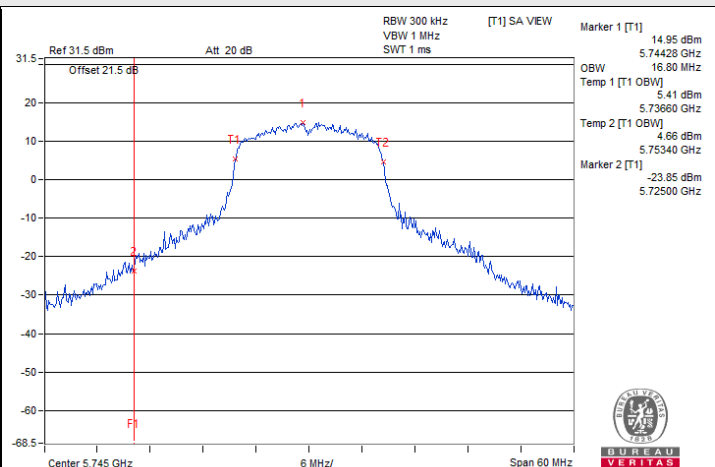


802.11ax (HE80) / Chain 1 : CH 42

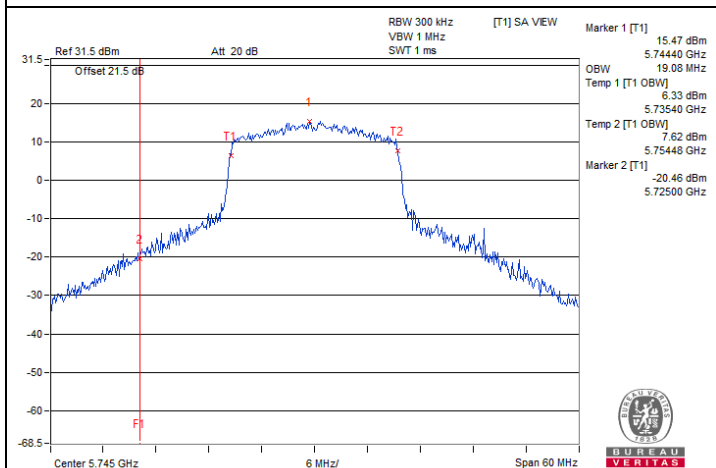
Spectrum Plot for nearby DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C)



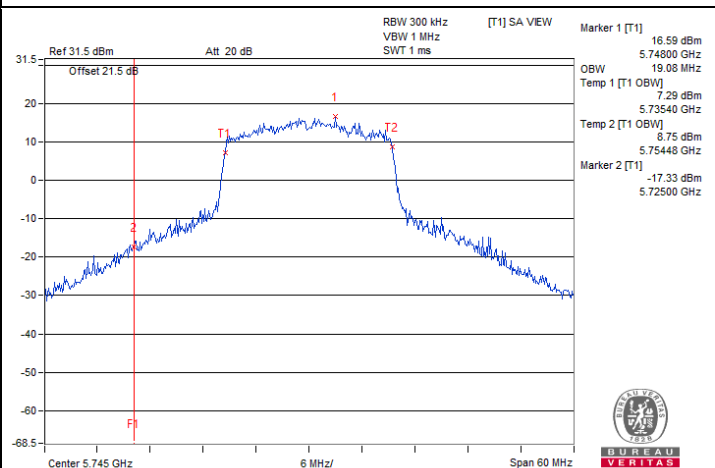
802.11a / Chain 0 : CH 149



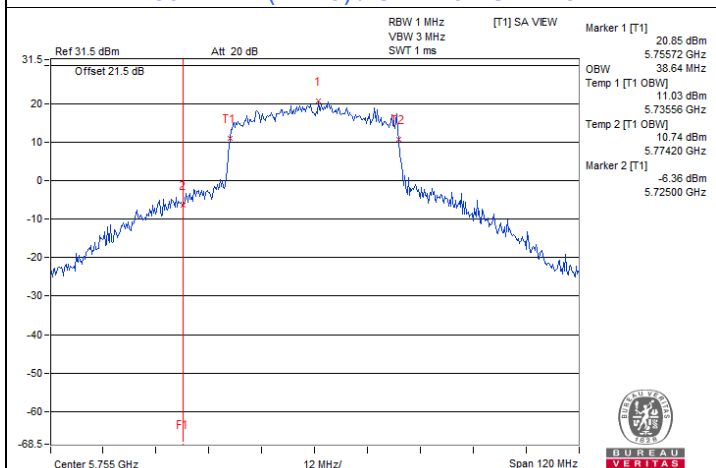
802.11a / Chain 1 : CH 149



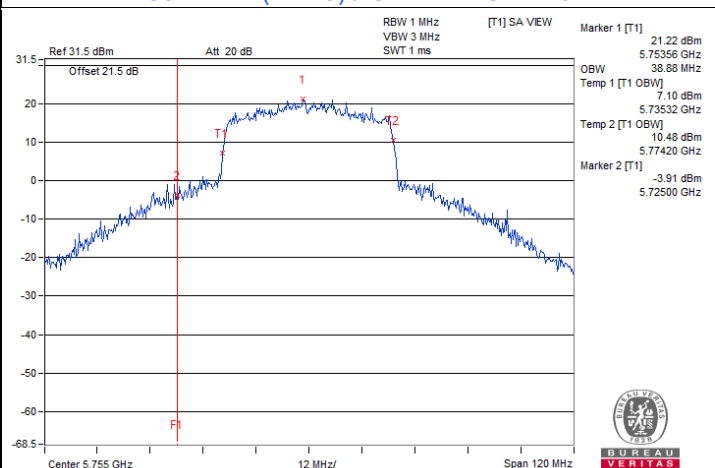
802.11ax (HE20) / Chain 0 : CH 149



802.11ax (HE20) / Chain 1 : CH 149



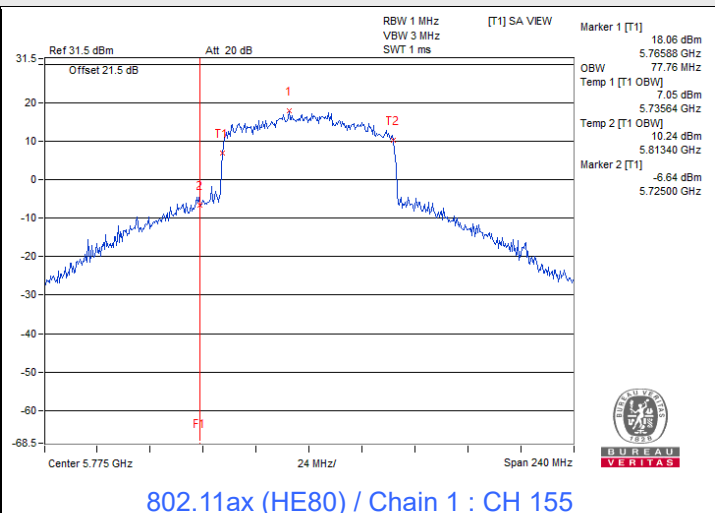
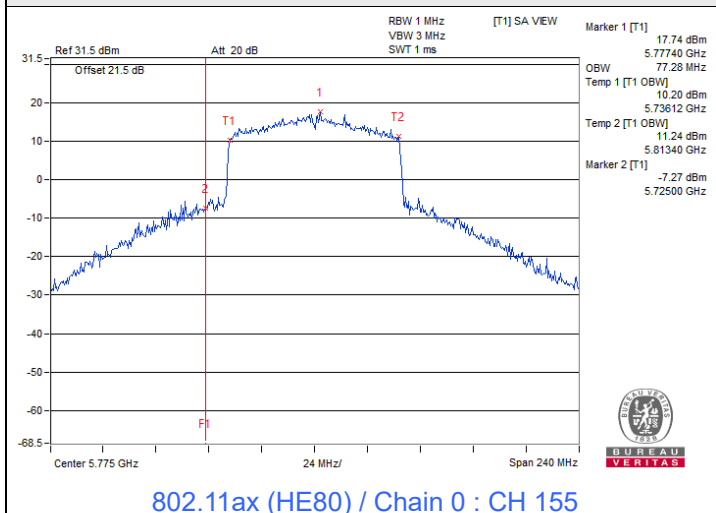
802.11ax (HE40) / Chain 0 : CH 151



802.11ax (HE40) / Chain 1 : CH 151



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



7.5 Frequency Stability

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Katina Lu
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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	5180.0095	Pass	5180.0083	Pass	5180.0104	Pass	5180.0094	Pass
30	120	5179.9959	Pass	5179.9969	Pass	5179.9952	Pass	5179.9952	Pass
20	120	5180.0177	Pass	5180.0152	Pass	5180.0174	Pass	5180.0187	Pass
10	120	5179.9772	Pass	5179.9737	Pass	5179.9775	Pass	5179.9779	Pass
0	120	5179.9888	Pass	5179.9886	Pass	5179.9931	Pass	5179.9898	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	5180.0128	Pass	5180.0098	Pass	5180.0123	Pass	5180.0129	Pass
	120	5180.0177	Pass	5180.0152	Pass	5180.0174	Pass	5180.0187	Pass
	102	5180.0212	Pass	5180.0216	Pass	5180.0179	Pass	5180.02	Pass

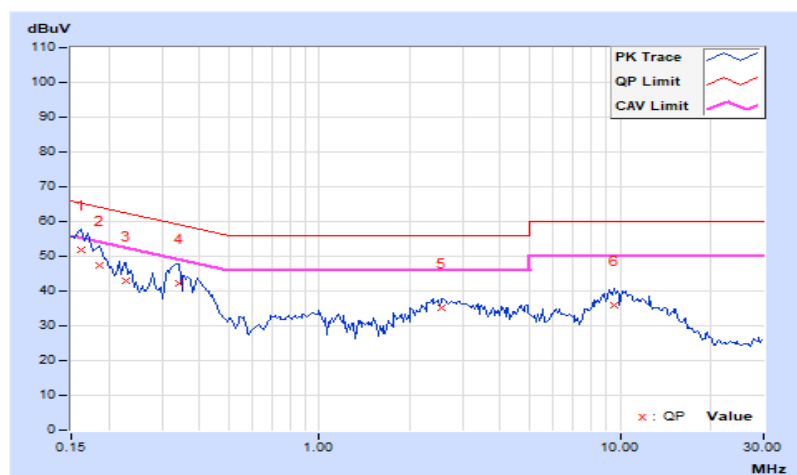
7.6 AC Power Conducted Emissions

RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 68% RH
Tested By	Sampson Chen		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16172	9.95	42.06	29.08	52.01	39.03	65.38	55.38	-13.37	-16.35
2	0.18516	9.95	37.51	24.50	47.46	34.45	64.25	54.25	-16.79	-19.80
3	0.22812	9.95	33.10	23.42	43.05	33.37	62.52	52.52	-19.47	-19.15
4	0.34141	9.96	32.37	16.13	42.33	26.09	59.17	49.17	-16.84	-23.08
5	2.55859	10.09	25.10	18.67	35.19	28.76	56.00	46.00	-20.81	-17.24
6	9.53125	10.62	25.30	19.98	35.92	30.60	60.00	50.00	-24.08	-19.40

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

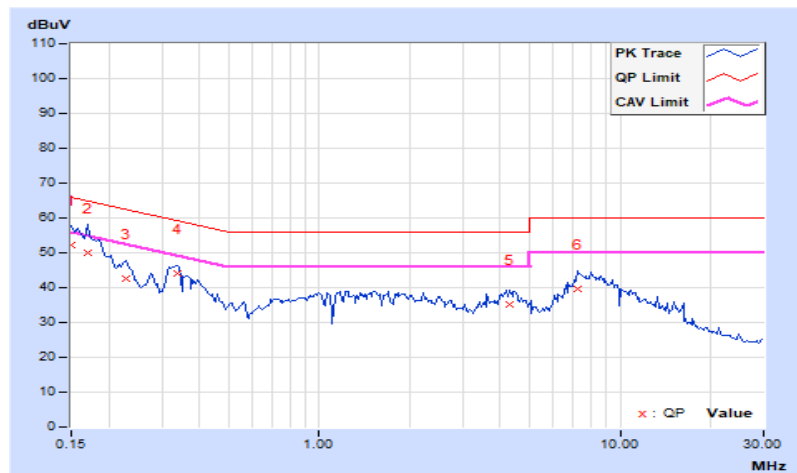


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 68% RH
Tested By	Sampson Chen		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.00	42.38	28.13	52.38	38.13	66.00	56.00	-13.62	-17.87
2	0.16953	10.00	40.17	26.37	50.17	36.37	64.98	54.98	-14.81	-18.61
3	0.22812	10.00	32.62	22.80	42.62	32.80	62.52	52.52	-19.90	-19.72
4	0.33750	10.01	33.88	19.88	43.89	29.89	59.26	49.26	-15.37	-19.37
5	4.31641	10.28	24.93	18.27	35.21	28.55	56.00	46.00	-20.79	-17.45
6	7.25000	10.47	29.23	23.70	39.70	34.17	60.00	50.00	-20.30	-15.83

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



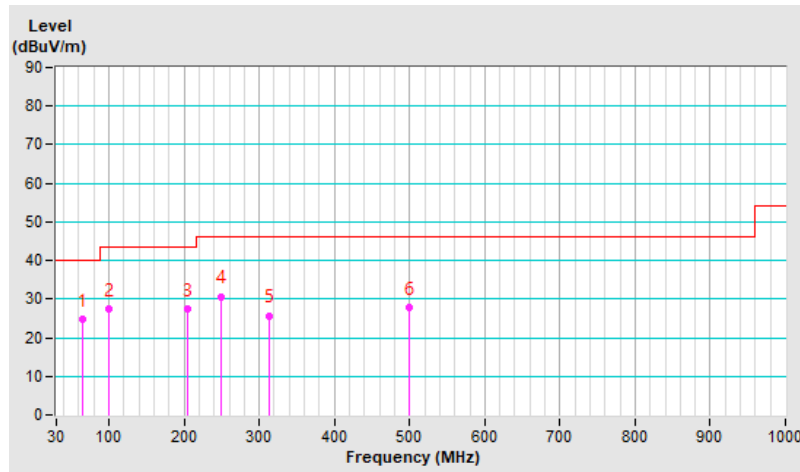
7.7 Unwanted Emissions below 1 GHz

RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 67% RH
Tested By	Sampson Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	64.34	24.9 QP	40.0	-15.1	2.00 H	94	39.4	-14.5
2	100.25	27.3 QP	43.5	-16.2	2.00 H	246	44.6	-17.3
3	204.41	27.3 QP	43.5	-16.2	1.00 H	78	43.6	-16.3
4	250.02	30.7 QP	46.0	-15.3	1.00 H	106	44.9	-14.2
5	313.75	25.7 QP	46.0	-20.3	1.00 H	299	37.8	-12.1
6	499.99	27.8 QP	46.0	-18.2	1.50 H	360	35.4	-7.6

Remarks:

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

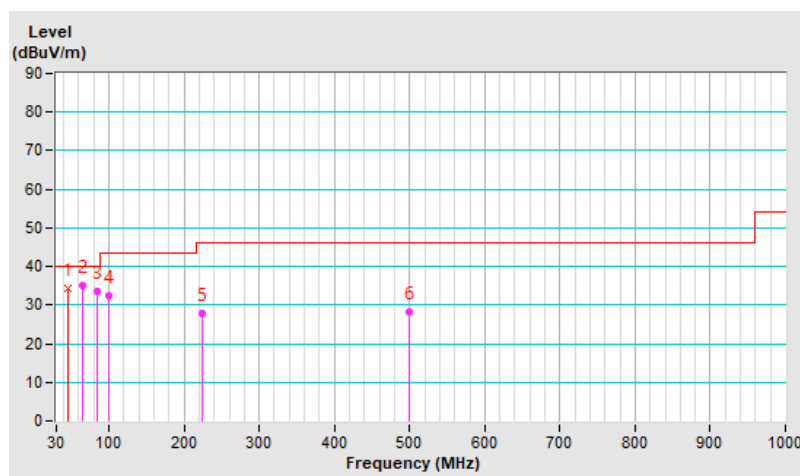


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 67% RH
Tested By	Sampson Chen		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	44.87	34.4 QP	40.0	-5.6	1.00 V	360	47.6	-13.2
2	64.22	35.1 QP	40.0	-4.9	1.00 V	348	49.5	-14.4
3	84.78	33.4 QP	40.0	-6.6	1.00 V	224	52.1	-18.7
4	100.23	32.3 QP	43.5	-11.2	1.00 V	305	49.6	-17.3
5	224.00	27.7 QP	46.0	-18.3	1.00 V	342	44.3	-16.6
6	500.01	28.0 QP	46.0	-18.0	2.00 V	360	35.6	-7.6

Remarks:

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



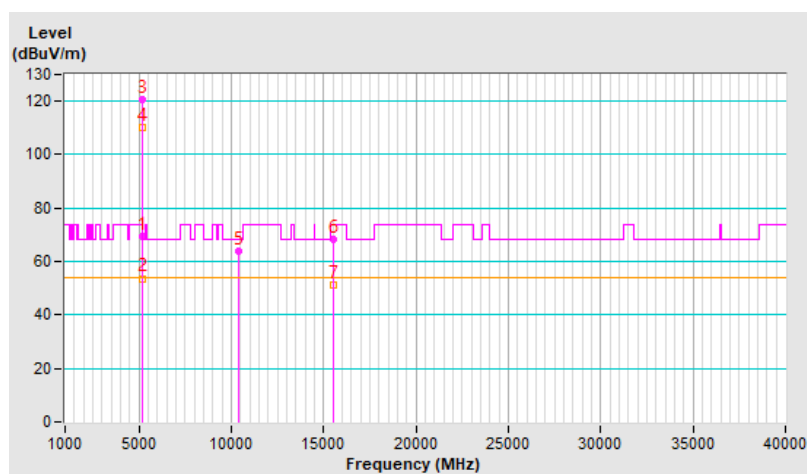
7.8 Unwanted Emissions above 1 GHz

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, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°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	5147.37	69.4 PK	74.0	-4.6	1.10 H	35	66.8	2.6
2	5147.37	53.7 AV	54.0	-0.3	1.10 H	35	51.1	2.6
3	*5180.00	120.4 PK			1.10 H	35	118.0	2.4
4	*5180.00	110.1 AV			1.10 H	35	107.7	2.4
5	#10360.00	64.1 PK	68.2	-4.1	1.72 H	219	52.9	11.2
6	15540.00	68.4 PK	74.0	-5.6	1.55 H	123	57.1	11.3
7	15540.00	51.1 AV	54.0	-2.9	1.55 H	123	39.8	11.3

Remarks:

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



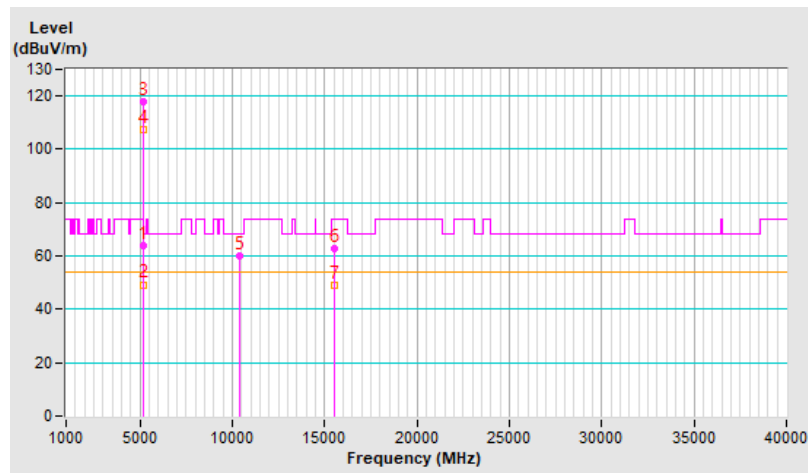
RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	5147.37	63.7 PK	74.0	-10.3	1.38 V	37	61.1	2.6
2	5147.37	49.3 AV	54.0	-4.7	1.38 V	37	46.7	2.6
3	*5180.00	117.7 PK			1.38 V	37	115.3	2.4
4	*5180.00	107.5 AV			1.38 V	37	105.1	2.4
5	#10360.00	60.0 PK	68.2	-8.2	1.58 V	335	48.8	11.2
6	15540.00	62.7 PK	74.0	-11.3	3.99 V	194	51.4	11.3
7	15540.00	48.8 AV	54.0	-5.2	3.99 V	194	37.5	11.3

Remarks:

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



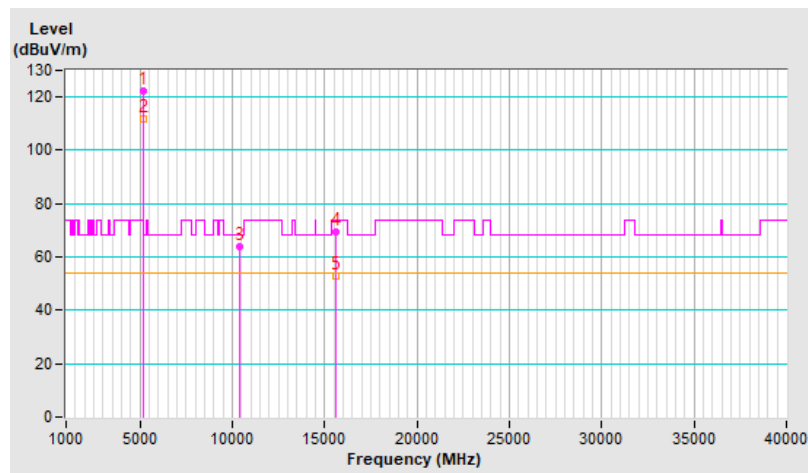
RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	*5200.00	122.4 PK			1.09 H	50	120.1	2.3
2	*5200.00	112.0 AV			1.09 H	50	109.7	2.3
3	#10400.00	63.7 PK	68.2	-4.5	1.63 H	220	52.5	11.2
4	15600.00	69.2 PK	74.0	-4.8	1.69 H	117	58.2	11.0
5	15600.00	52.9 AV	54.0	-1.1	1.69 H	117	41.9	11.0

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.

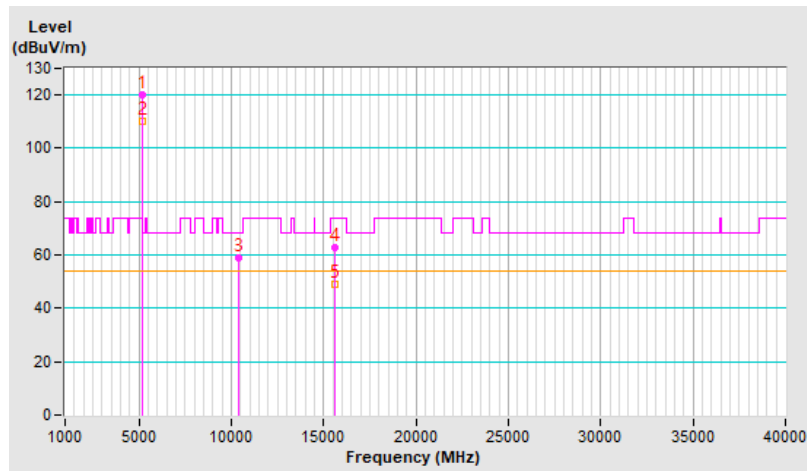


RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	*5200.00	120.1 PK			1.33 V	32	117.8	2.3
2	*5200.00	109.9 AV			1.33 V	32	107.6	2.3
3	#10400.00	59.0 PK	68.2	-9.2	1.57 V	317	47.8	11.2
4	15600.00	62.8 PK	74.0	-11.2	3.94 V	179	51.8	11.0
5	15600.00	49.0 AV	54.0	-5.0	3.94 V	179	38.0	11.0

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.



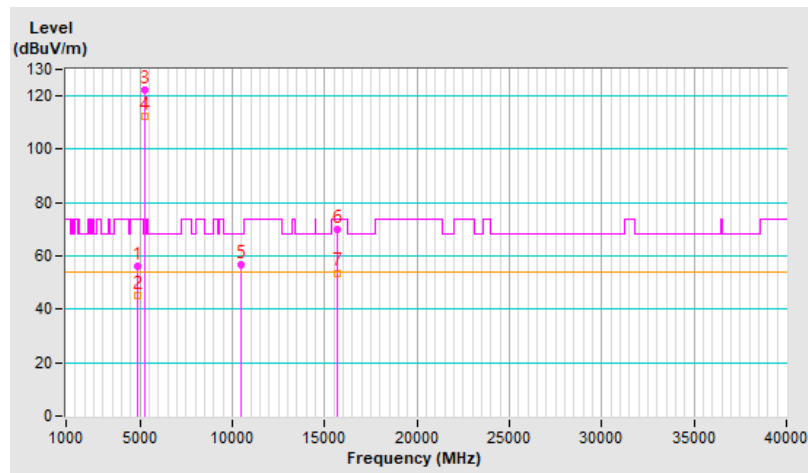
RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	4843.99	56.1 PK	74.0	-17.9	1.08 H	36	54.4	1.7
2	4843.99	45.2 AV	54.0	-8.8	1.08 H	36	43.5	1.7
3	*5240.00	122.1 PK			1.08 H	36	119.9	2.2
4	*5240.00	112.3 AV			1.08 H	36	110.1	2.2
5	#10480.00	56.8 PK	68.2	-11.4	2.35 H	153	45.3	11.5
6	15720.00	69.9 PK	74.0	-4.1	1.60 H	133	58.9	11.0
7	15720.00	53.7 AV	54.0	-0.3	1.60 H	133	42.7	11.0

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.

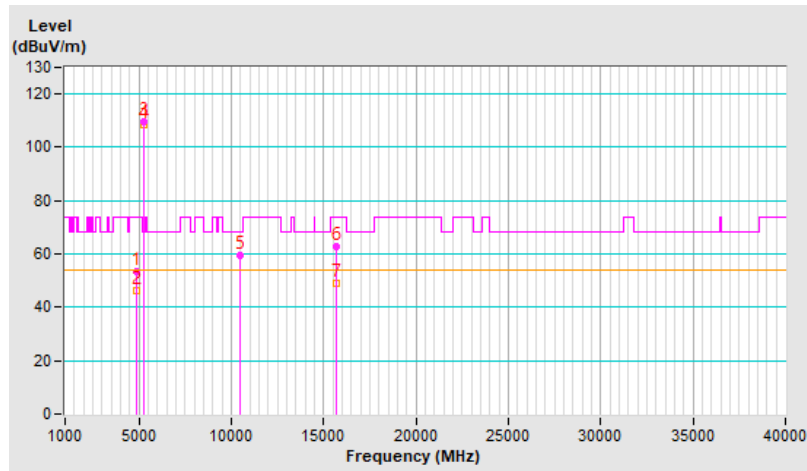


RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	4843.99	53.2 PK	74.0	-20.8	1.34 V	42	51.5	1.7
2	4843.99	46.5 AV	54.0	-7.5	1.34 V	42	44.8	1.7
3	*5240.00	109.8 PK			1.34 V	42	107.6	2.2
4	*5240.00	108.7 AV			1.34 V	42	106.5	2.2
5	#10480.00	59.4 PK	68.2	-8.8	1.55 V	340	47.9	11.5
6	15720.00	62.9 PK	74.0	-11.1	3.93 V	183	51.9	11.0
7	15720.00	49.2 AV	54.0	-4.8	3.93 V	183	38.2	11.0

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.



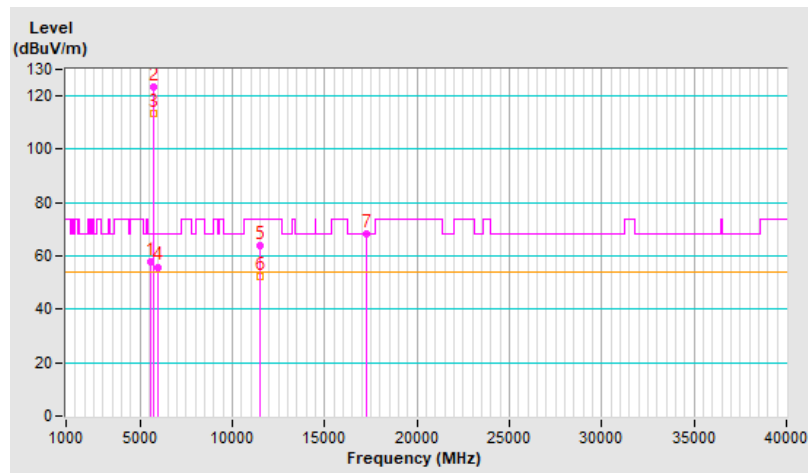
RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5590.94	57.8 PK	68.2	-10.4	2.07 H	51	55.1	2.7
2	*5745.00	123.5 PK			2.07 H	51	120.6	2.9
3	*5745.00	113.6 AV			2.07 H	51	110.7	2.9
4	#5937.83	55.9 PK	68.2	-12.3	2.07 H	51	52.3	3.6
5	11490.00	63.9 PK	74.0	-10.1	1.69 H	214	51.6	12.3
6	11490.00	52.1 AV	54.0	-1.9	1.69 H	214	39.8	12.3
7	#17235.00	68.1 PK	68.2	-0.1	1.51 H	156	51.6	16.5

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.

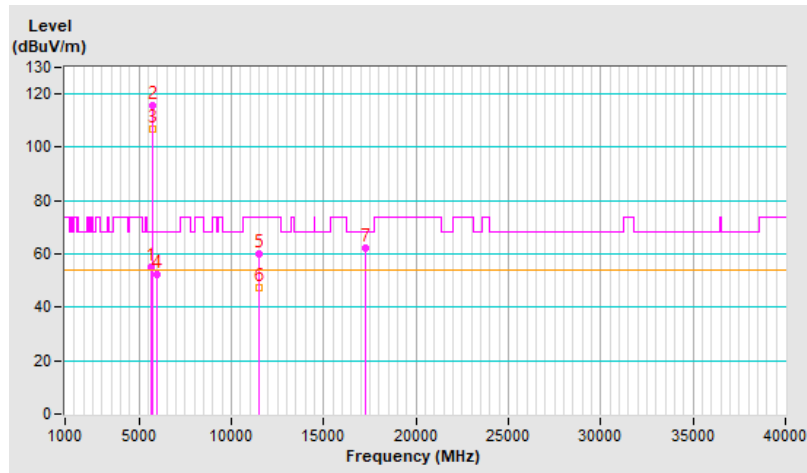


RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5631.60	55.3 PK	68.2	-12.9	1.32 V	38	52.4	2.9
2	*5745.00	115.5 PK			1.32 V	38	112.6	2.9
3	*5745.00	106.6 AV			1.32 V	38	103.7	2.9
4	#5955.35	52.2 PK	68.2	-16.0	1.32 V	38	48.5	3.7
5	11490.00	60.1 PK	74.0	-13.9	1.60 V	340	47.8	12.3
6	11490.00	47.6 AV	54.0	-6.4	1.60 V	340	35.3	12.3
7	#17235.00	62.4 PK	68.2	-5.8	3.97 V	190	45.9	16.5

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.



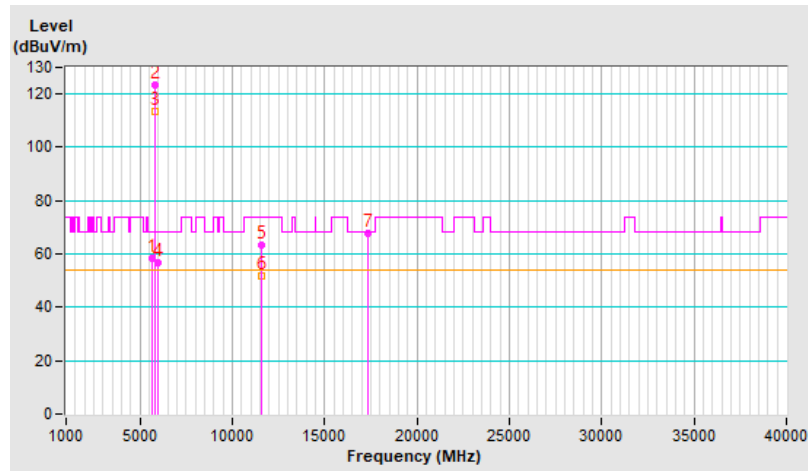
RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5641.58	58.2 PK	68.2	-10.0	2.10 H	47	55.4	2.8
2	*5785.00	123.6 PK			2.10 H	47	120.6	3.0
3	*5785.00	113.5 AV			2.10 H	47	110.5	3.0
4	#5946.03	56.9 PK	68.2	-11.3	2.10 H	47	53.2	3.7
5	11570.00	63.4 PK	74.0	-10.6	1.68 H	217	51.2	12.2
6	11570.00	51.6 AV	54.0	-2.4	1.68 H	217	39.4	12.2
7	#17355.00	67.9 PK	68.2	-0.3	1.53 H	156	50.7	17.2

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.

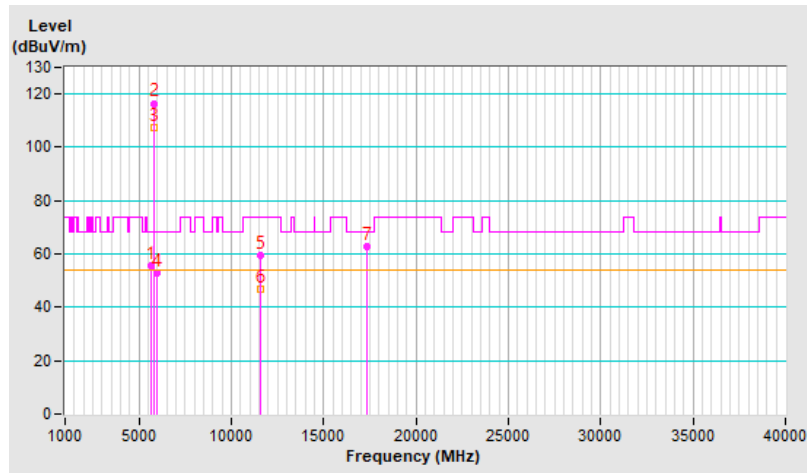


RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5634.37	55.7 PK	68.2	-12.5	1.26 V	44	52.9	2.8
2	*5785.00	116.5 PK			1.26 V	44	113.5	3.0
3	*5785.00	107.4 AV			1.26 V	44	104.4	3.0
4	#5984.45	52.7 PK	68.2	-15.5	1.26 V	44	49.1	3.6
5	11570.00	59.6 PK	74.0	-14.4	1.59 V	332	47.4	12.2
6	11570.00	47.0 AV	54.0	-7.0	1.59 V	332	34.8	12.2
7	#17355.00	62.9 PK	68.2	-5.3	4.00 V	171	45.7	17.2

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.



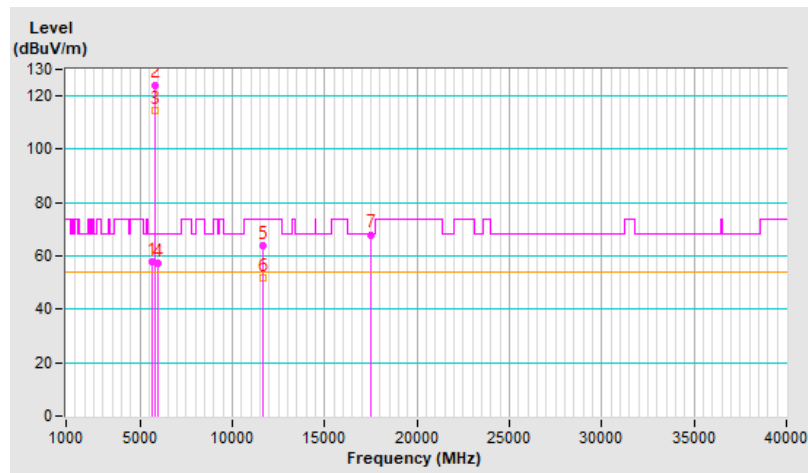
RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5626.53	57.8 PK	68.2	-10.4	2.09 H	41	55.0	2.8
2	*5825.00	124.2 PK			2.09 H	41	120.9	3.3
3	*5825.00	114.5 AV			2.09 H	41	111.2	3.3
4	#5941.20	57.1 PK	68.2	-11.1	2.09 H	41	53.5	3.6
5	11650.00	63.7 PK	74.0	-10.3	1.65 H	223	51.8	11.9
6	11650.00	51.8 AV	54.0	-2.2	1.65 H	223	39.9	11.9
7	#17475.00	68.0 PK	68.2	-0.2	1.55 H	158	49.8	18.2

Remarks:

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

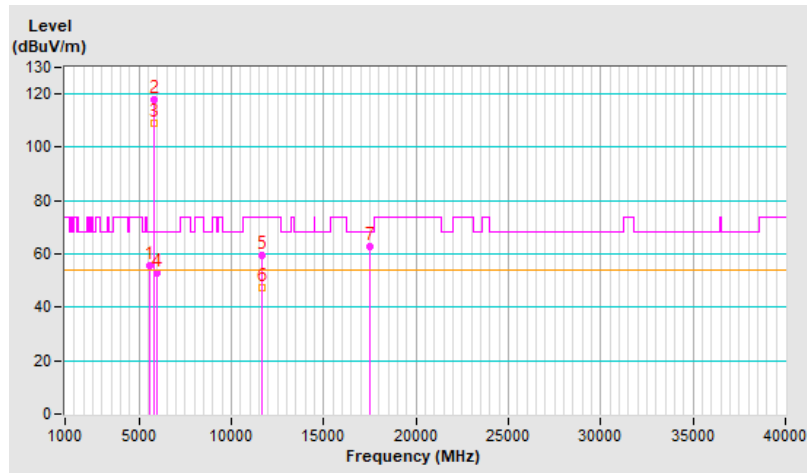


RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5585.08	55.4 PK	68.2	-12.8	1.20 V	39	52.7	2.7
2	*5825.00	117.7 PK			1.20 V	39	114.4	3.3
3	*5825.00	108.8 AV			1.20 V	39	105.5	3.3
4	#5940.48	53.1 PK	68.2	-15.1	1.20 V	39	49.5	3.6
5	11650.00	59.7 PK	74.0	-14.3	1.56 V	330	47.8	11.9
6	11650.00	47.4 AV	54.0	-6.6	1.56 V	330	35.5	11.9
7	#17475.00	62.7 PK	68.2	-5.5	3.98 V	186	44.5	18.2

Remarks:

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



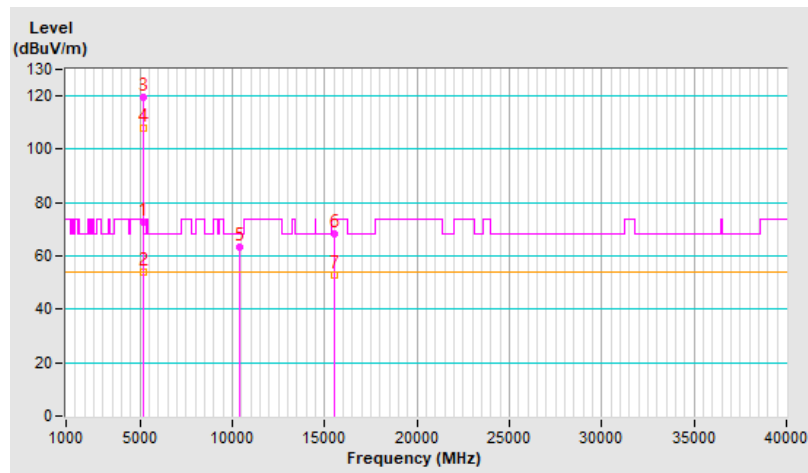
RF Mode	802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	5150.00	72.5 PK	74.0	-1.5	1.10 H	36	70.0	2.5
2	5150.00	53.8 AV	54.0	-0.2	1.10 H	36	51.3	2.5
3	*5180.00	119.5 PK			1.10 H	36	117.1	2.4
4	*5180.00	107.9 AV			1.10 H	36	105.5	2.4
5	#10360.00	63.5 PK	68.2	-4.7	1.65 H	211	52.3	11.2
6	15540.00	68.5 PK	74.0	-5.5	1.59 H	173	57.2	11.3
7	15540.00	52.9 AV	54.0	-1.1	1.59 H	173	41.6	11.3

Remarks:

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

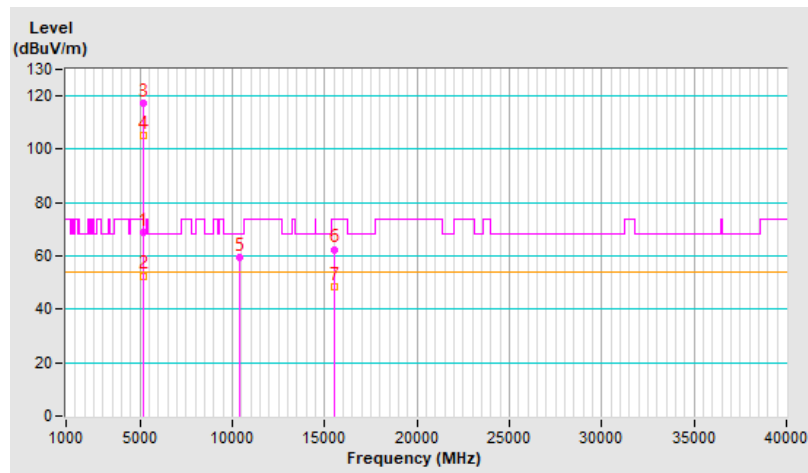


RF Mode	802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	5150.00	68.8 PK	74.0	-5.2	1.28 V	39	66.3	2.5
2	5150.00	52.6 AV	54.0	-1.4	1.28 V	39	50.1	2.5
3	*5180.00	117.4 PK			1.28 V	39	115.0	2.4
4	*5180.00	105.0 AV			1.28 V	39	102.6	2.4
5	#10360.00	59.7 PK	68.2	-8.5	1.51 V	338	48.5	11.2
6	15540.00	62.5 PK	74.0	-11.5	4.00 V	186	51.2	11.3
7	15540.00	48.7 AV	54.0	-5.3	4.00 V	186	37.4	11.3

Remarks:

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



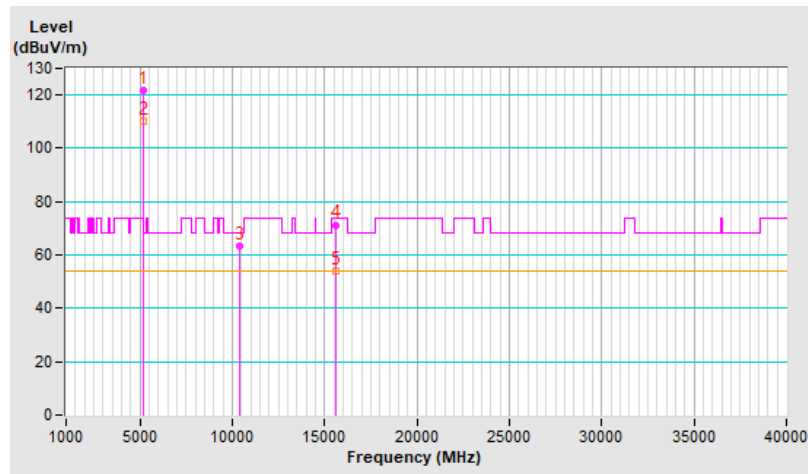
RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	*5200.00	121.9 PK			1.10 H	33	119.6	2.3
2	*5200.00	110.2 AV			1.10 H	33	107.9	2.3
3	#10400.00	63.1 PK	68.2	-5.1	1.70 H	213	51.9	11.2
4	15600.00	71.3 PK	74.0	-2.7	1.59 H	134	60.3	11.0
5	15600.00	53.9 AV	54.0	-0.1	1.59 H	134	42.9	11.0

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.

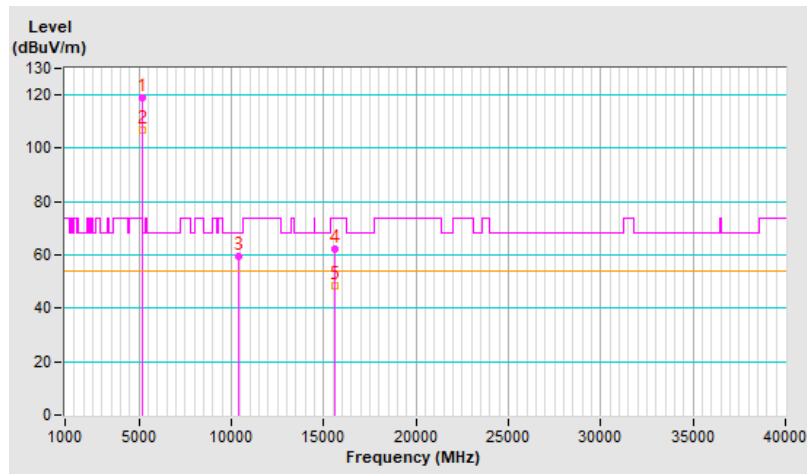


RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	*5200.00	119.0 PK			1.33 V	52	116.7	2.3
2	*5200.00	106.7 AV			1.33 V	52	104.4	2.3
3	#10400.00	59.7 PK	68.2	-8.5	1.55 V	317	48.5	11.2
4	15600.00	62.1 PK	74.0	-11.9	3.94 V	198	51.1	11.0
5	15600.00	48.4 AV	54.0	-5.6	3.94 V	198	37.4	11.0

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.



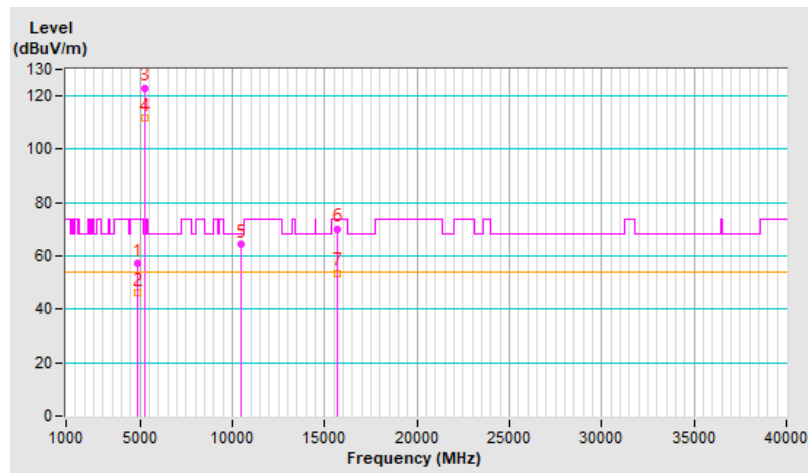
RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	4843.98	57.5 PK	74.0	-16.5	1.08 H	36	55.8	1.7
2	4843.98	46.1 AV	54.0	-7.9	1.08 H	36	44.4	1.7
3	*5240.00	123.1 PK			1.08 H	36	120.9	2.2
4	*5240.00	111.7 AV			1.08 H	36	109.5	2.2
5	#10480.00	64.2 PK	68.2	-4.0	1.71 H	220	52.7	11.5
6	15720.00	70.2 PK	74.0	-3.8	1.55 H	133	59.2	11.0
7	15720.00	53.7 AV	54.0	-0.3	1.55 H	133	42.7	11.0

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.

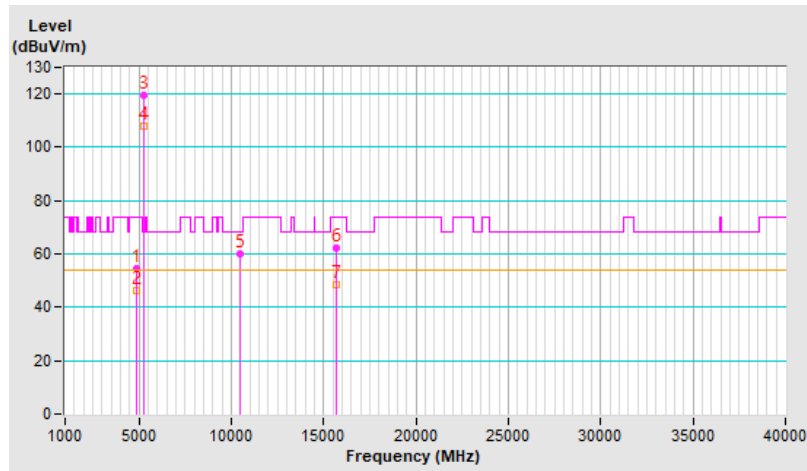


RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	4843.98	54.4 PK	74.0	-19.6	1.32 V	41	52.7	1.7
2	4843.98	46.4 AV	54.0	-7.6	1.32 V	41	44.7	1.7
3	*5240.00	119.7 PK			1.32 V	41	117.5	2.2
4	*5240.00	107.9 AV			1.32 V	41	105.7	2.2
5	#10480.00	60.1 PK	68.2	-8.1	1.56 V	338	48.6	11.5
6	15720.00	62.1 PK	74.0	-11.9	3.99 V	174	51.1	11.0
7	15720.00	48.3 AV	54.0	-5.7	3.99 V	174	37.3	11.0

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.



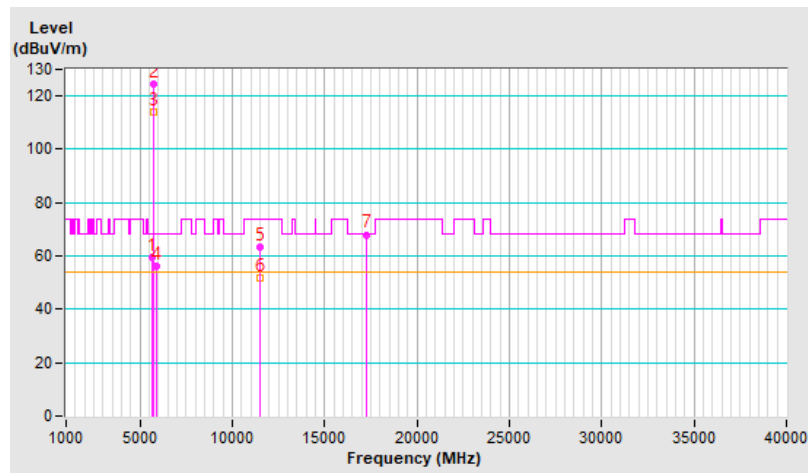
RF Mode	802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5627.48	59.5 PK	68.2	-8.7	1.04 H	53	56.6	2.9
2	*5745.00	124.5 PK			1.04 H	53	121.6	2.9
3	*5745.00	113.8 AV			1.04 H	53	110.9	2.9
4	#5928.06	56.0 PK	68.2	-12.2	1.04 H	53	52.4	3.6
5	11490.00	63.4 PK	74.0	-10.6	1.64 H	236	51.1	12.3
6	11490.00	51.8 AV	54.0	-2.2	1.64 H	236	39.5	12.3
7	#17235.00	68.0 PK	68.2	-0.2	1.53 H	158	51.5	16.5

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.

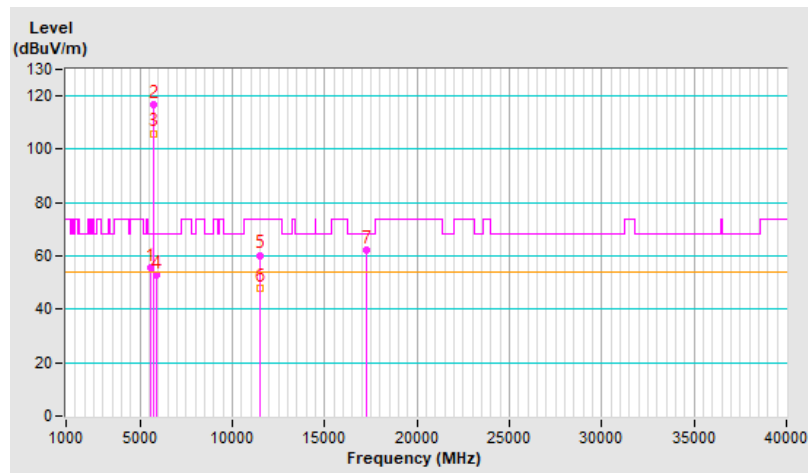


RF Mode	802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5586.07	55.7 PK	68.2	-12.5	1.30 V	42	53.0	2.7
2	*5745.00	116.9 PK			1.30 V	42	114.0	2.9
3	*5745.00	106.0 AV			1.30 V	42	103.1	2.9
4	#5932.12	53.0 PK	68.2	-15.2	1.30 V	42	49.4	3.6
5	11490.00	60.3 PK	74.0	-13.7	1.51 V	336	48.0	12.3
6	11490.00	47.7 AV	54.0	-6.3	1.51 V	336	35.4	12.3
7	#17235.00	62.1 PK	68.2	-6.1	4.00 V	182	45.6	16.5

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.



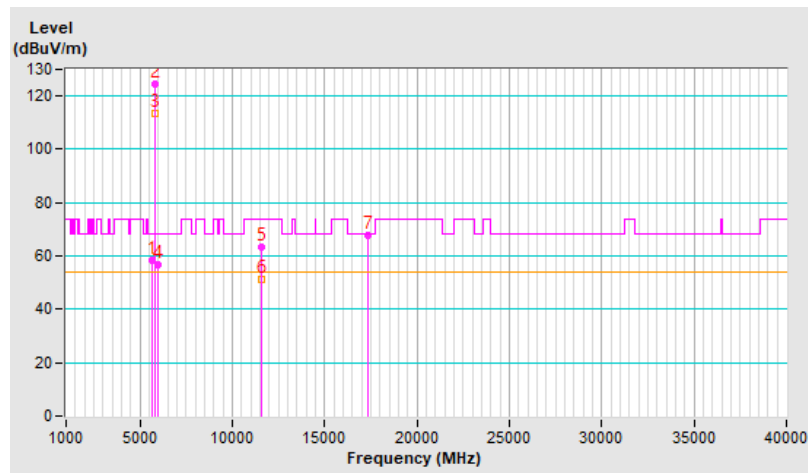
RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5634.23	58.4 PK	68.2	-9.8	1.01 H	52	55.6	2.8
2	*5785.00	124.3 PK			1.01 H	52	121.3	3.0
3	*5785.00	113.5 AV			1.01 H	52	110.5	3.0
4	#5935.90	56.5 PK	68.2	-11.7	1.01 H	52	52.9	3.6
5	11570.00	63.1 PK	74.0	-10.9	1.68 H	215	50.9	12.2
6	11570.00	51.4 AV	54.0	-2.6	1.68 H	215	39.2	12.2
7	#17355.00	67.9 PK	68.2	-0.3	1.55 H	156	50.7	17.2

Remarks:

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

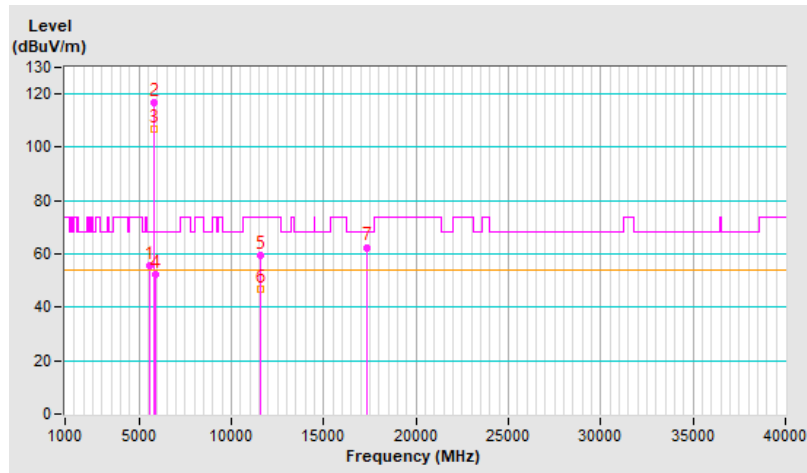


RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5584.15	55.5 PK	68.2	-12.7	1.24 V	49	52.8	2.7
2	*5785.00	116.8 PK			1.24 V	49	113.8	3.0
3	*5785.00	106.6 AV			1.24 V	49	103.6	3.0
4	#5927.87	52.3 PK	68.2	-15.9	1.24 V	49	48.7	3.6
5	11570.00	59.3 PK	74.0	-14.7	1.50 V	319	47.1	12.2
6	11570.00	47.0 AV	54.0	-7.0	1.50 V	319	34.8	12.2
7	#17355.00	62.5 PK	68.2	-5.7	3.95 V	196	45.3	17.2

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.



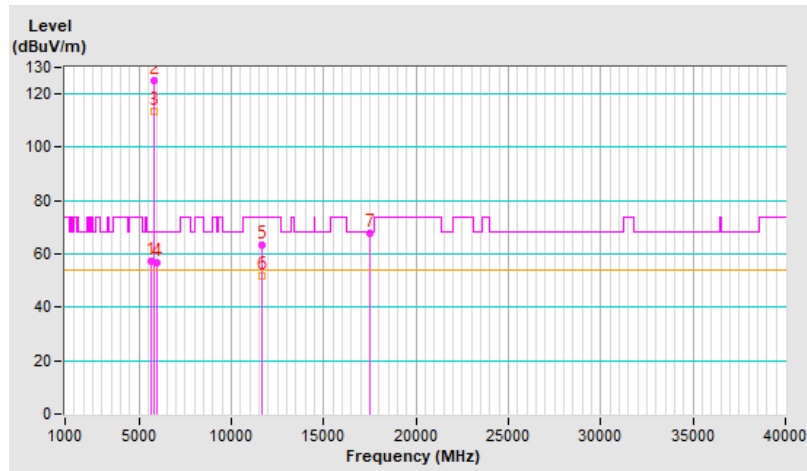
RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5647.19	57.1 PK	68.2	-11.1	1.01 H	49	54.3	2.8
2	*5825.00	125.0 PK			1.01 H	49	121.7	3.3
3	*5825.00	113.6 AV			1.01 H	49	110.3	3.3
4	#5944.17	56.9 PK	68.2	-11.3	1.01 H	49	53.2	3.7
5	11650.00	63.4 PK	74.0	-10.6	1.64 H	229	51.5	11.9
6	11650.00	51.9 AV	54.0	-2.1	1.64 H	229	40.0	11.9
7	#17475.00	67.9 PK	68.2	-0.3	1.54 H	155	49.7	18.2

Remarks:

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

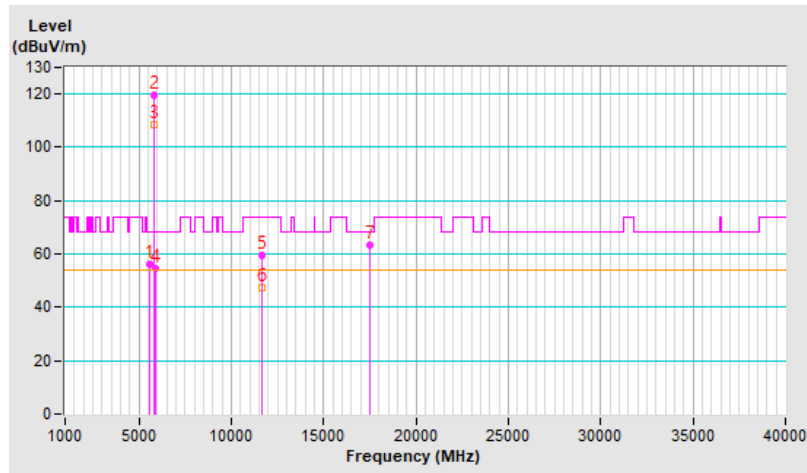


RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5574.57	56.1 PK	68.2	-12.1	1.31 V	38	53.4	2.7
2	*5825.00	119.3 PK			1.31 V	38	116.0	3.3
3	*5825.00	108.4 AV			1.31 V	38	105.1	3.3
4	#5927.28	54.3 PK	68.2	-13.9	1.31 V	38	50.7	3.6
5	11650.00	59.6 PK	74.0	-14.4	1.52 V	331	47.7	11.9
6	11650.00	47.6 AV	54.0	-6.4	1.52 V	331	35.7	11.9
7	#17475.00	63.4 PK	68.2	-4.8	4.00 V	174	45.2	18.2

Remarks:

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



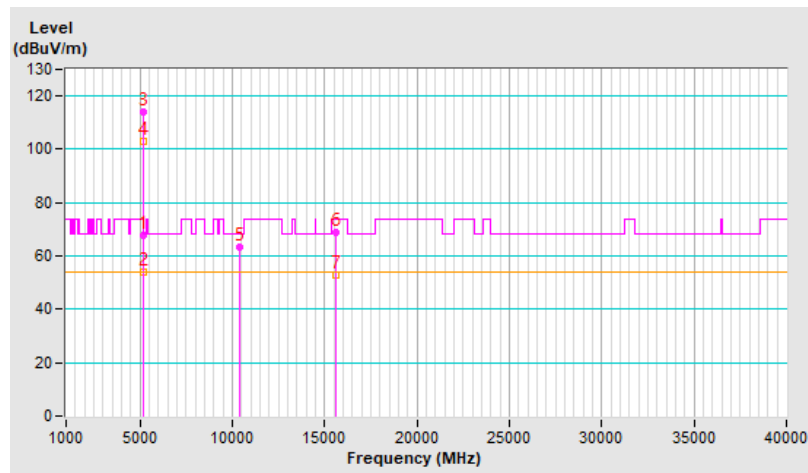
RF Mode	802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	5150.00	67.7 PK	74.0	-6.3	1.06 H	33	65.2	2.5
2	5150.00	53.9 AV	54.0	-0.1	1.06 H	33	51.4	2.5
3	*5190.00	114.2 PK			1.06 H	33	111.9	2.3
4	*5190.00	102.8 AV			1.06 H	33	100.5	2.3
5	#10380.00	63.3 PK	68.2	-4.9	1.66 H	215	52.1	11.2
6	15570.00	68.6 PK	74.0	-5.4	1.56 H	170	57.4	11.2
7	15570.00	52.9 AV	54.0	-1.1	1.56 H	170	41.7	11.2

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.

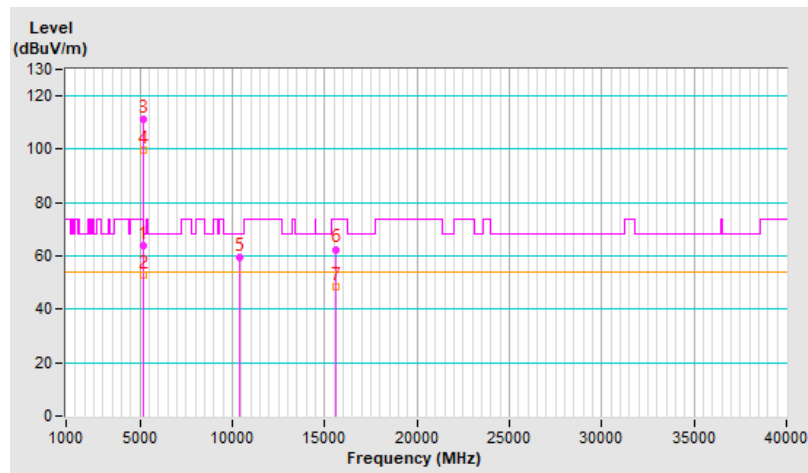


RF Mode	802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	5150.00	63.8 PK	74.0	-10.2	1.27 V	44	61.3	2.5
2	5150.00	52.9 AV	54.0	-1.1	1.27 V	44	50.4	2.5
3	*5190.00	111.5 PK			1.27 V	44	109.2	2.3
4	*5190.00	99.8 AV			1.27 V	44	97.5	2.3
5	#10380.00	59.5 PK	68.2	-8.7	1.60 V	323	48.3	11.2
6	15570.00	62.5 PK	74.0	-11.5	3.94 V	174	51.3	11.2
7	15570.00	48.4 AV	54.0	-5.6	3.94 V	174	37.2	11.2

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.

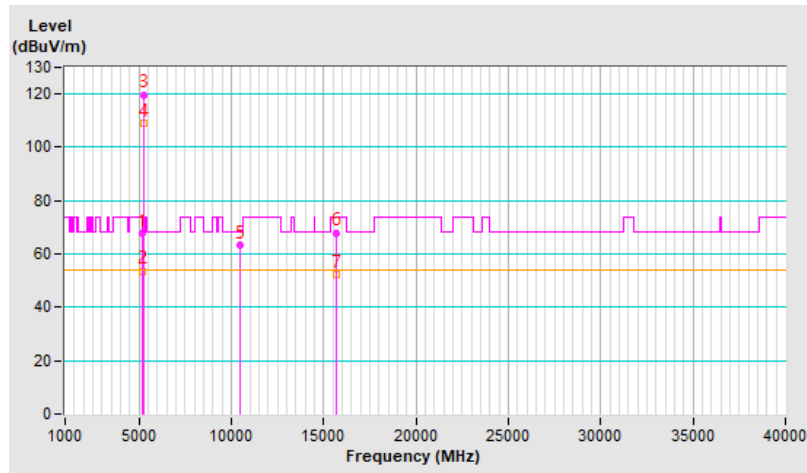


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	5150.00	67.8 PK	74.0	-6.2	1.06 H	35	65.3	2.5
2	5150.00	53.7 AV	54.0	-0.3	1.06 H	35	51.2	2.5
3	*5230.00	119.8 PK			1.06 H	35	117.6	2.2
4	*5230.00	108.9 AV			1.06 H	35	106.7	2.2
5	#10460.00	63.4 PK	68.2	-4.8	1.64 H	213	52.0	11.4
6	15690.00	68.0 PK	74.0	-6.0	1.54 H	166	57.0	11.0
7	15690.00	52.5 AV	54.0	-1.5	1.54 H	166	41.5	11.0

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.

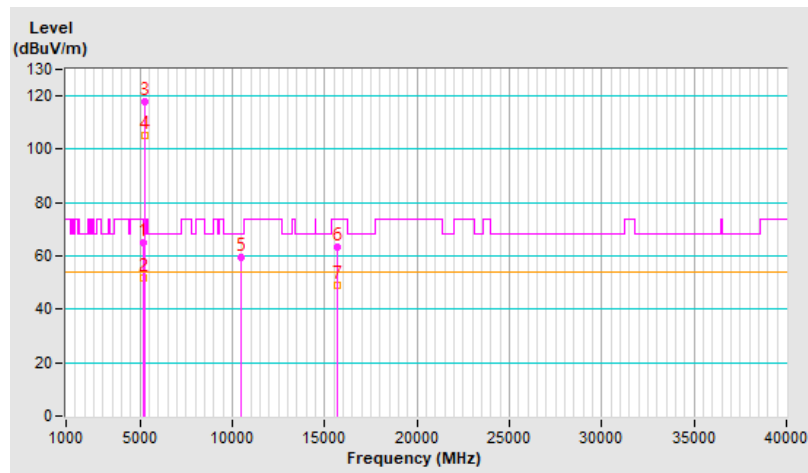


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	5150.00	64.8 PK	74.0	-9.2	1.33 V	46	62.3	2.5
2	5150.00	51.9 AV	54.0	-2.1	1.33 V	46	49.4	2.5
3	*5230.00	117.9 PK			1.33 V	46	115.7	2.2
4	*5230.00	105.3 AV			1.33 V	46	103.1	2.2
5	#10460.00	59.6 PK	68.2	-8.6	1.58 V	327	48.2	11.4
6	15690.00	63.2 PK	74.0	-10.8	4.00 V	198	52.2	11.0
7	15690.00	49.2 AV	54.0	-4.8	4.00 V	198	38.2	11.0

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.



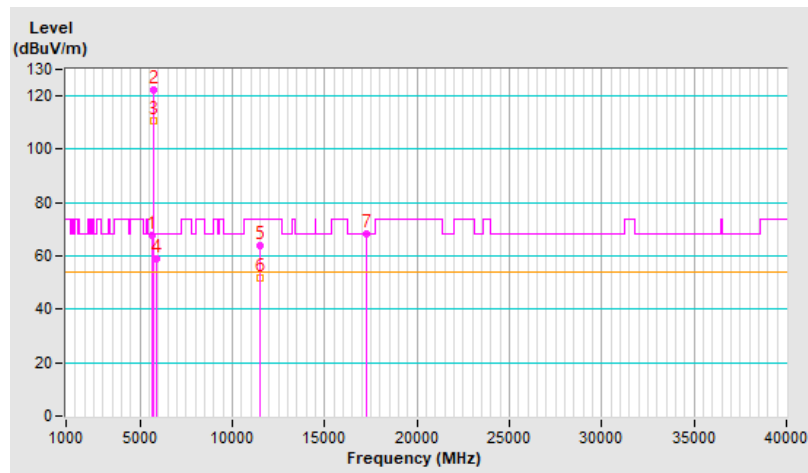
RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5649.05	67.5 PK	68.2	-0.7	1.03 H	51	64.6	2.9
2	*5755.00	122.2 PK			1.03 H	51	119.3	2.9
3	*5755.00	110.5 AV			1.03 H	51	107.6	2.9
4	#5928.02	58.9 PK	68.2	-9.3	1.03 H	51	55.3	3.6
5	11510.00	64.0 PK	74.0	-10.0	1.75 H	217	51.7	12.3
6	11510.00	51.9 AV	54.0	-2.1	1.75 H	217	39.6	12.3
7	#17265.00	68.1 PK	68.2	-0.1	1.54 H	156	51.3	16.8

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.

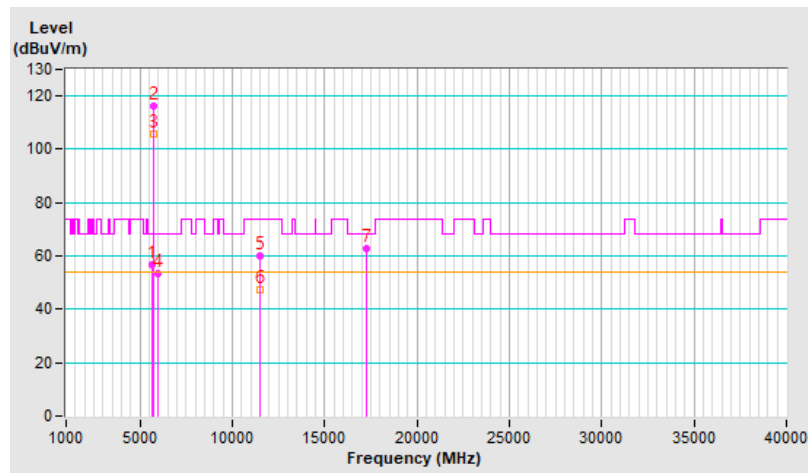


RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5625.33	56.5 PK	68.2	-11.7	1.25 V	37	53.7	2.8
2	*5755.00	116.3 PK			1.25 V	37	113.4	2.9
3	*5755.00	105.6 AV			1.25 V	37	102.7	2.9
4	#5952.05	53.2 PK	68.2	-15.0	1.25 V	37	49.5	3.7
5	11510.00	59.9 PK	74.0	-14.1	1.58 V	317	47.6	12.3
6	11510.00	47.5 AV	54.0	-6.5	1.58 V	317	35.2	12.3
7	#17265.00	62.8 PK	68.2	-5.4	3.94 V	197	46.0	16.8

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.



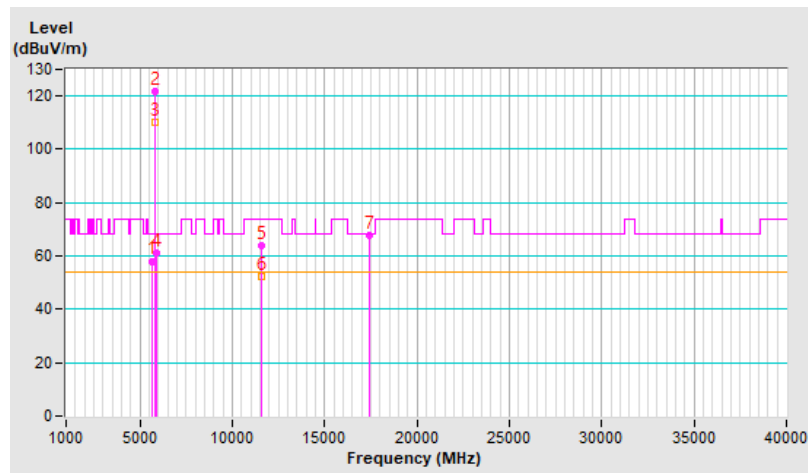
RF Mode	802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5641.97	58.1 PK	68.2	-10.1	1.03 H	50	55.3	2.8
2	*5795.00	121.7 PK			1.03 H	50	118.7	3.0
3	*5795.00	110.0 AV			1.03 H	50	107.0	3.0
4	#5930.96	61.1 PK	68.2	-7.1	1.03 H	50	57.5	3.6
5	11590.00	64.0 PK	74.0	-10.0	1.65 H	230	51.9	12.1
6	11590.00	52.3 AV	54.0	-1.7	1.65 H	230	40.2	12.1
7	#17385.00	67.9 PK	68.2	-0.3	1.54 H	157	50.7	17.2

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.

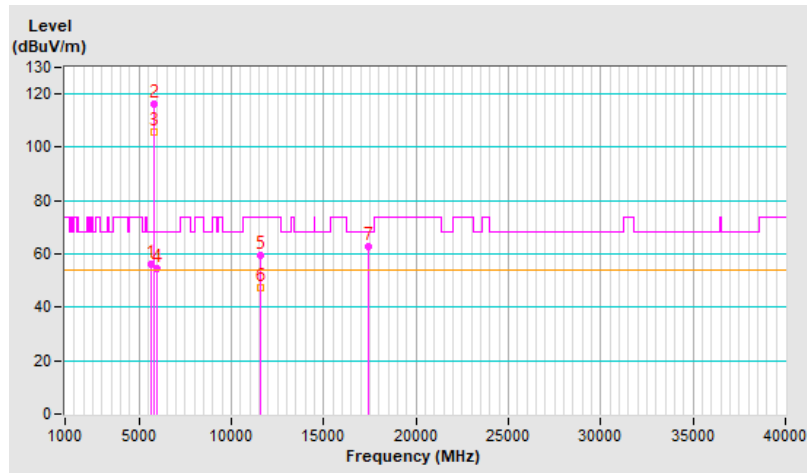


RF Mode	802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5630.06	56.2 PK	68.2	-12.0	1.25 V	39	53.3	2.9
2	*5795.00	116.3 PK			1.25 V	39	113.3	3.0
3	*5795.00	105.7 AV			1.25 V	39	102.7	3.0
4	#5947.56	54.6 PK	68.2	-13.6	1.25 V	39	50.9	3.7
5	11590.00	59.6 PK	74.0	-14.4	1.59 V	325	47.5	12.1
6	11590.00	47.4 AV	54.0	-6.6	1.59 V	325	35.3	12.1
7	#17385.00	62.9 PK	68.2	-5.3	4.00 V	194	45.7	17.2

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.



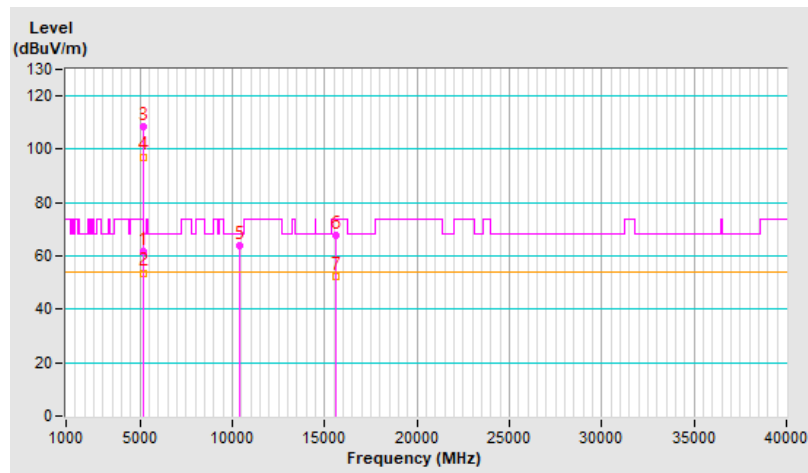
RF Mode	802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	5150.00	61.7 PK	74.0	-12.3	1.39 H	34	59.2	2.5
2	5150.00	53.7 AV	54.0	-0.3	1.39 H	34	51.2	2.5
3	*5210.00	108.7 PK			1.39 H	34	106.5	2.2
4	*5210.00	97.2 AV			1.39 H	34	95.0	2.2
5	#10420.00	63.7 PK	68.2	-4.5	1.69 H	224	52.4	11.3
6	15630.00	67.8 PK	74.0	-6.2	1.53 H	146	56.8	11.0
7	15630.00	52.2 AV	54.0	-1.8	1.53 H	146	41.2	11.0

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.

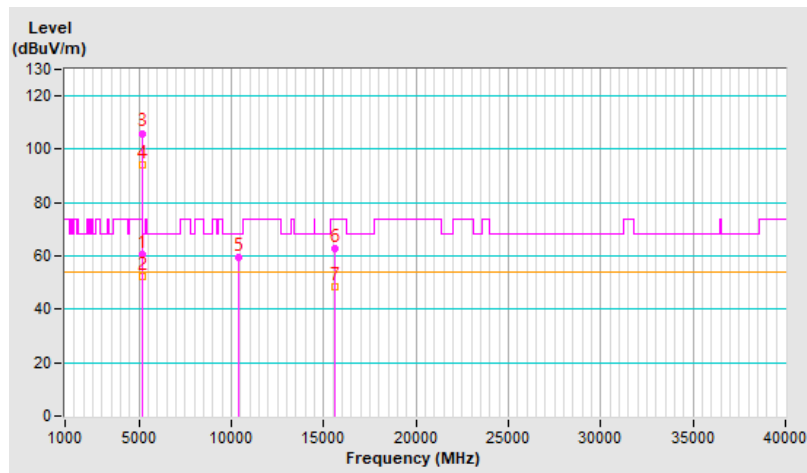


RF Mode	802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	5150.00	60.4 PK	74.0	-13.6	1.27 V	48	57.9	2.5
2	5150.00	52.2 AV	54.0	-1.8	1.27 V	48	49.7	2.5
3	*5210.00	106.0 PK			1.27 V	48	103.8	2.2
4	*5210.00	94.1 AV			1.27 V	48	91.9	2.2
5	#10420.00	59.7 PK	68.2	-8.5	1.59 V	341	48.4	11.3
6	15630.00	62.6 PK	74.0	-11.4	3.95 V	189	51.6	11.0
7	15630.00	48.3 AV	54.0	-5.7	3.95 V	189	37.3	11.0

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.



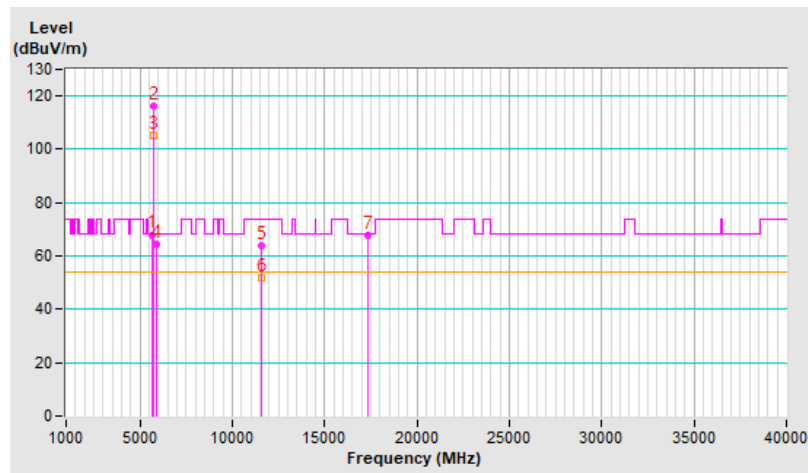
RF Mode	802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5647.76	68.0 PK	68.2	-0.2	1.01 H	51	65.2	2.8
2	*5775.00	116.3 PK			1.01 H	51	113.4	2.9
3	*5775.00	105.2 AV			1.01 H	51	102.3	2.9
4	#5927.83	64.3 PK	68.2	-3.9	1.01 H	51	60.7	3.6
5	11550.00	63.8 PK	74.0	-10.2	1.67 H	239	51.6	12.2
6	11550.00	51.8 AV	54.0	-2.2	1.67 H	239	39.6	12.2
7	#17325.00	67.5 PK	68.2	-0.7	1.50 H	154	50.3	17.2

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.

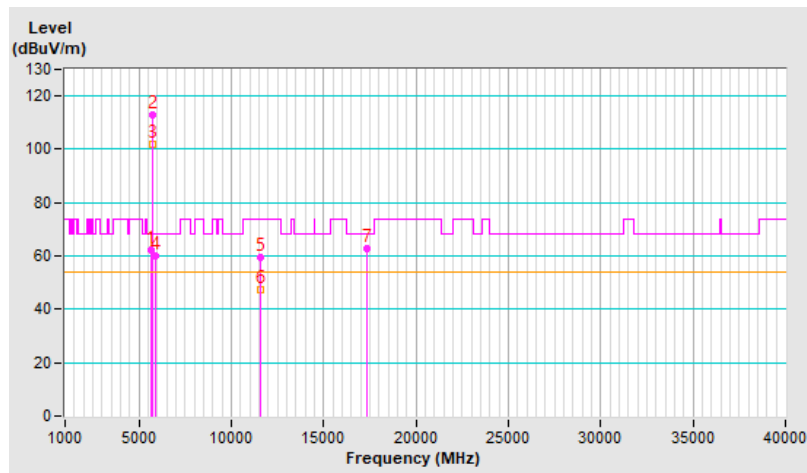


RF Mode	802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Ryan Du		

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	#5631.64	62.2 PK	68.2	-6.0	1.22 V	35	59.3	2.9
2	*5775.00	112.8 PK			1.22 V	35	109.9	2.9
3	*5775.00	102.1 AV			1.22 V	35	99.2	2.9
4	#5932.24	60.0 PK	68.2	-8.2	1.22 V	35	56.4	3.6
5	11550.00	59.7 PK	74.0	-14.3	1.52 V	334	47.5	12.2
6	11550.00	47.5 AV	54.0	-6.5	1.52 V	334	35.3	12.2
7	#17325.00	63.0 PK	68.2	-5.2	4.00 V	193	45.8	17.2

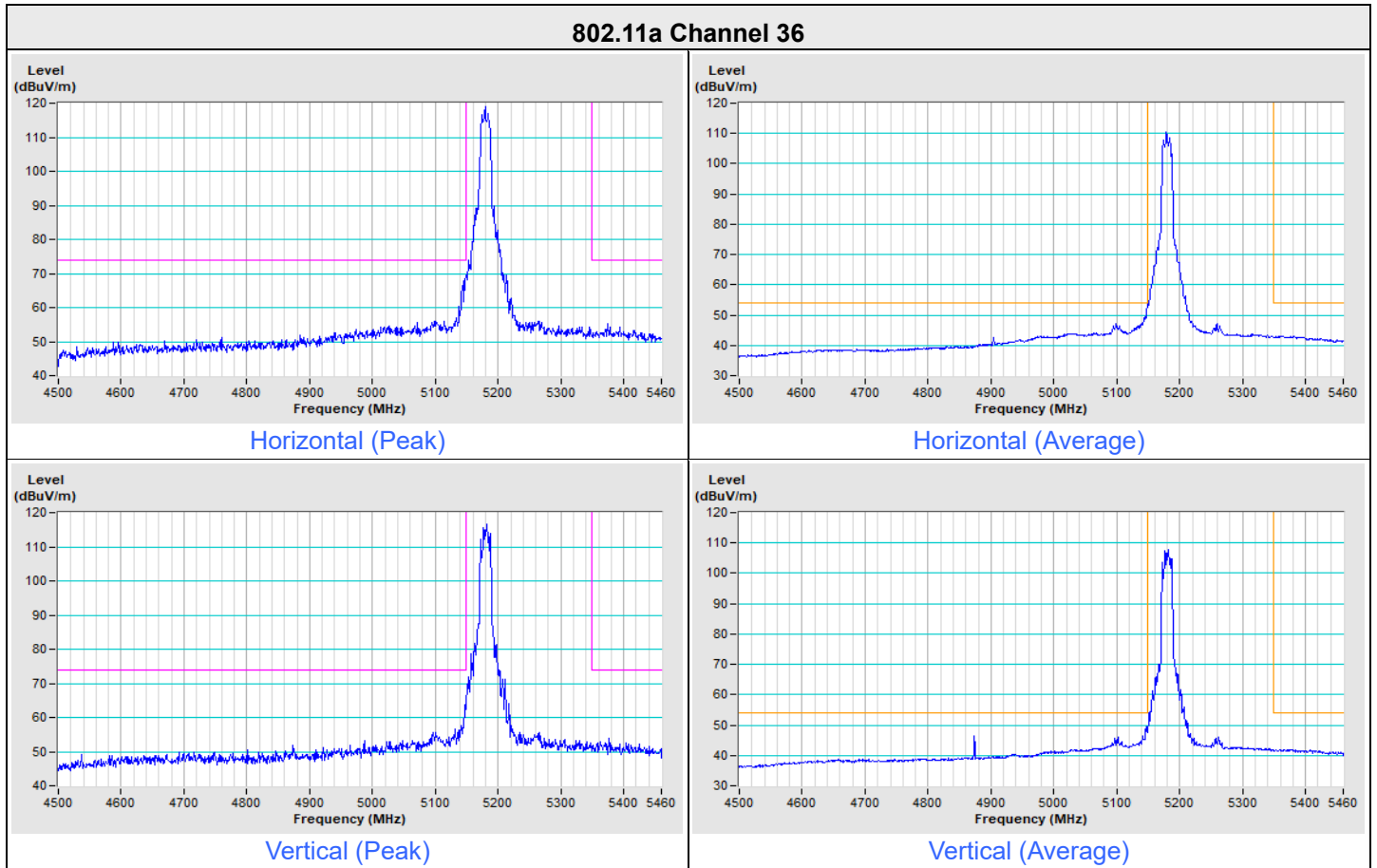
Remarks:

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.

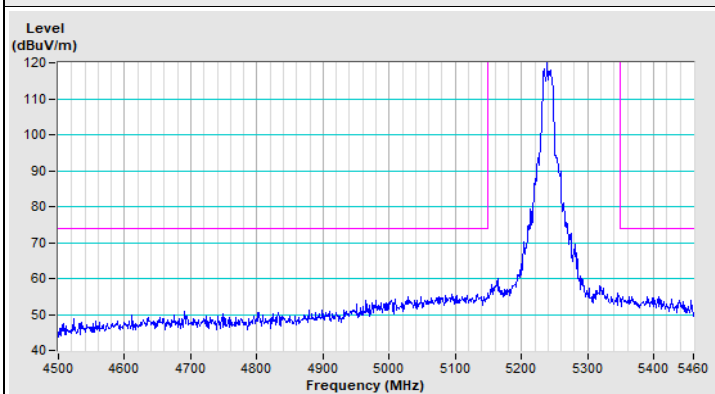


Plot of Band Edge

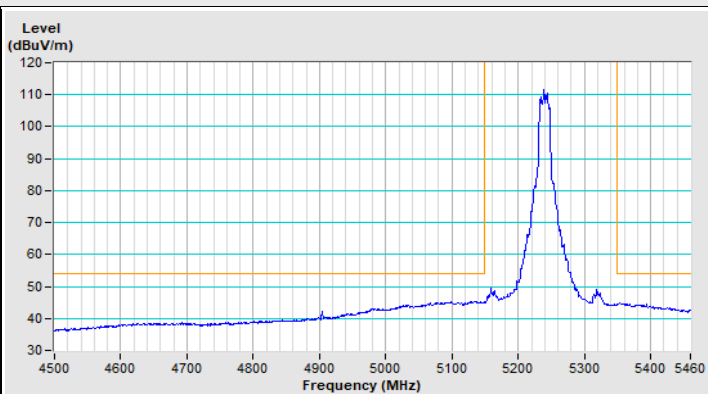
Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
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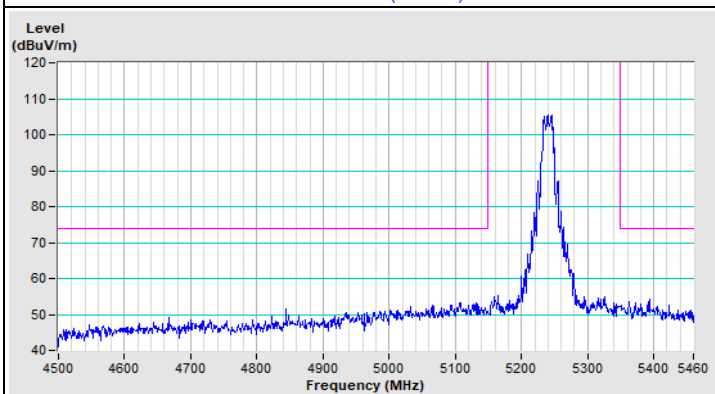
802.11a Channel 48



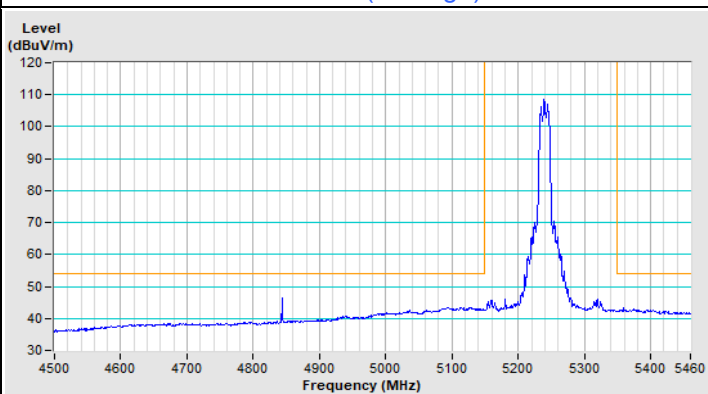
Horizontal (Peak)



Horizontal (Average)



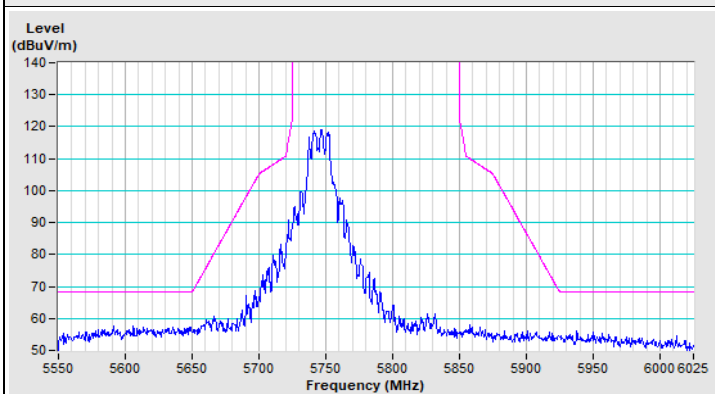
Vertical (Peak)



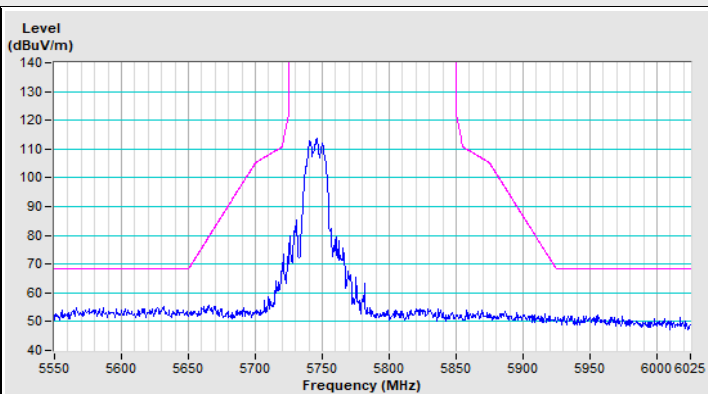
Vertical (Average)

Frequency Range	5.55 GHz ~ 6.025 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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802.11a Channel 149



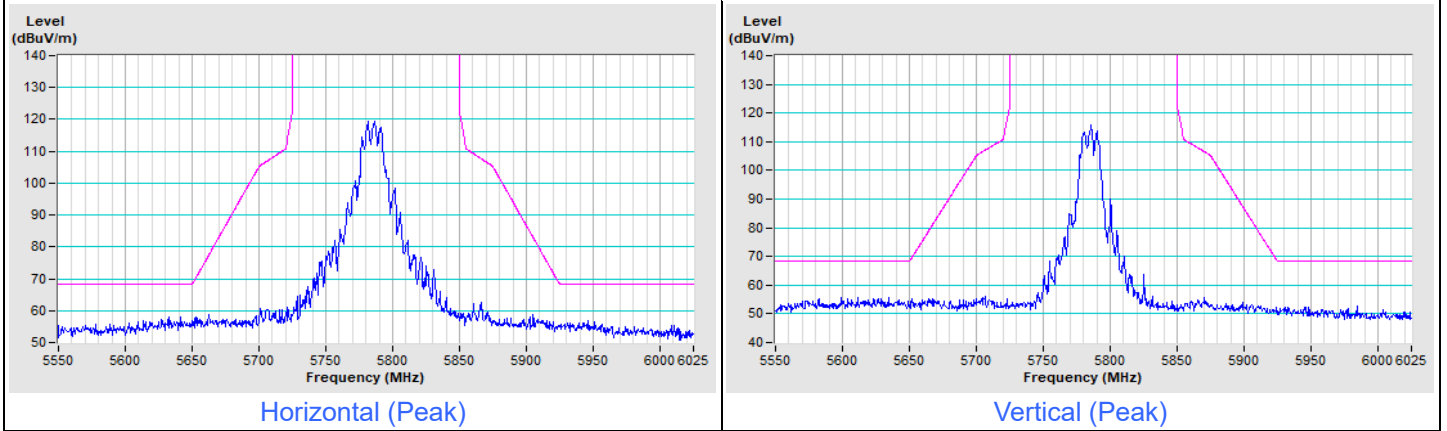
Horizontal (Peak)



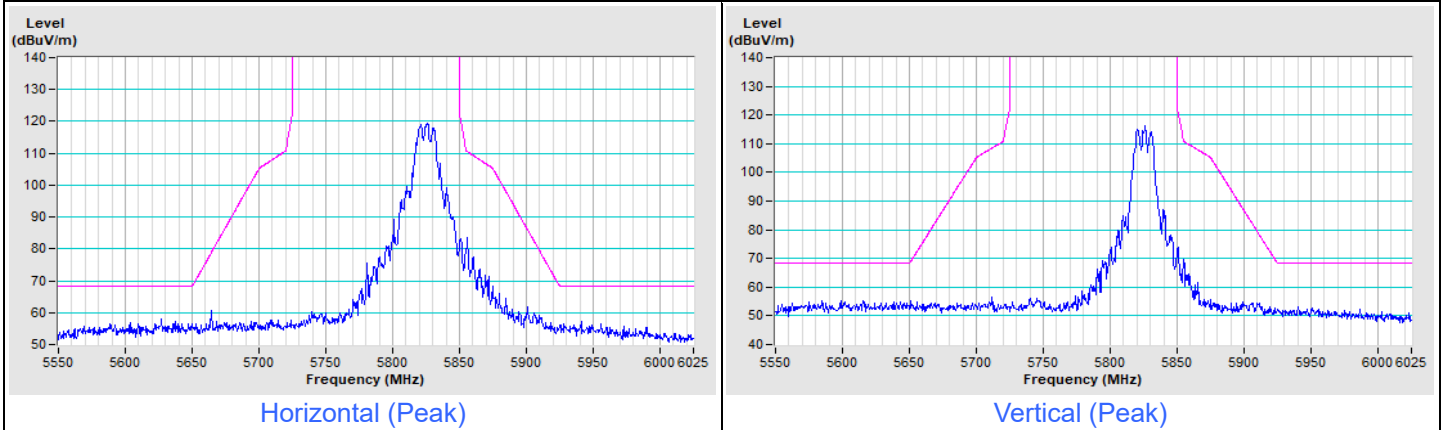
Vertical (Peak)

Frequency Range	5.825 GHz ~ 6.525 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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802.11a Channel 157

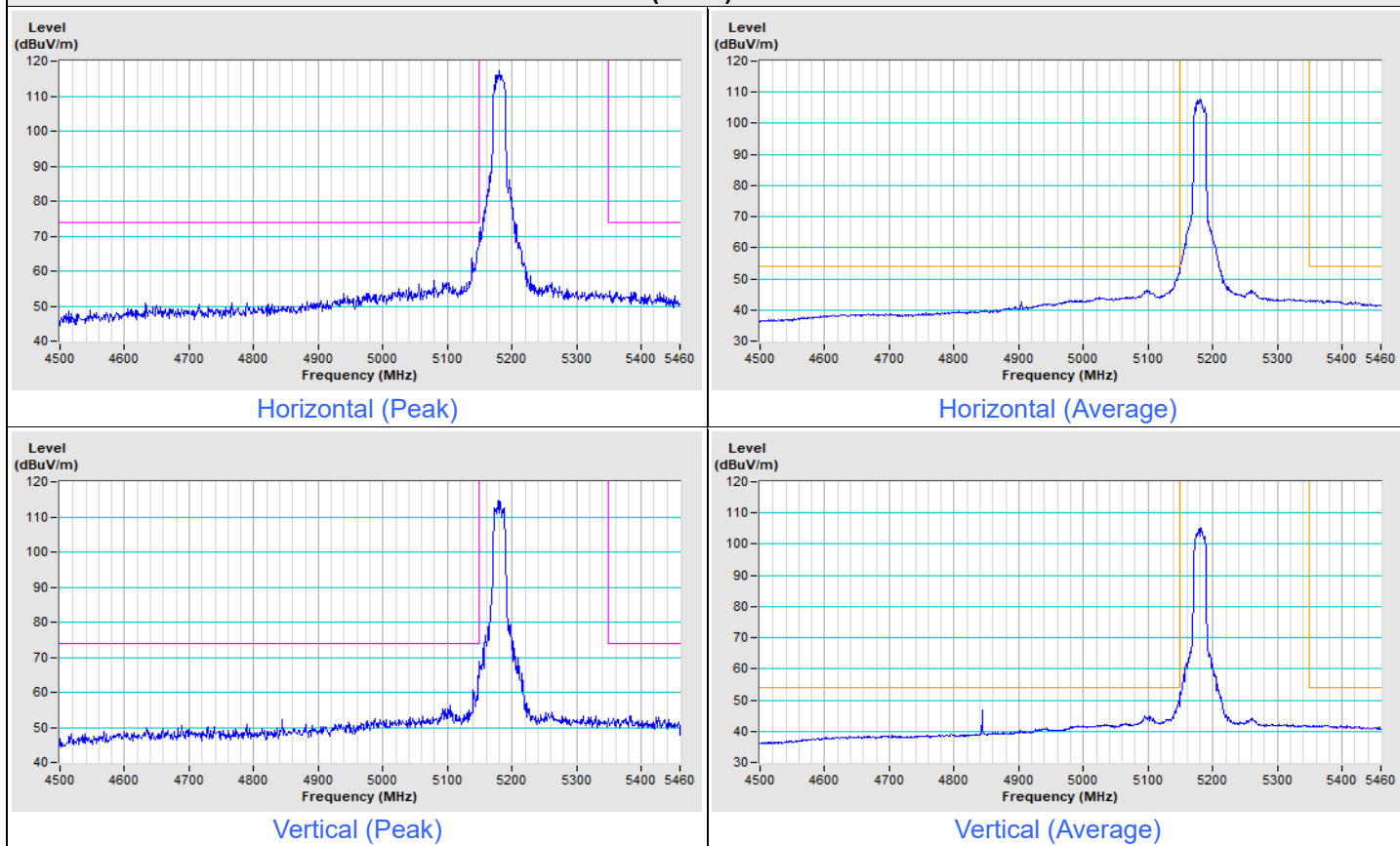


802.11a Channel 165

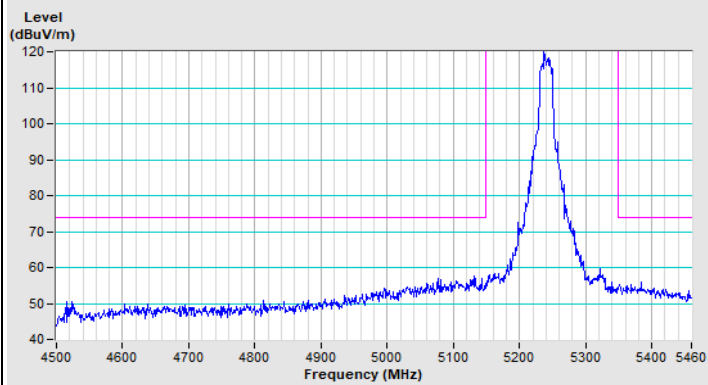


Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
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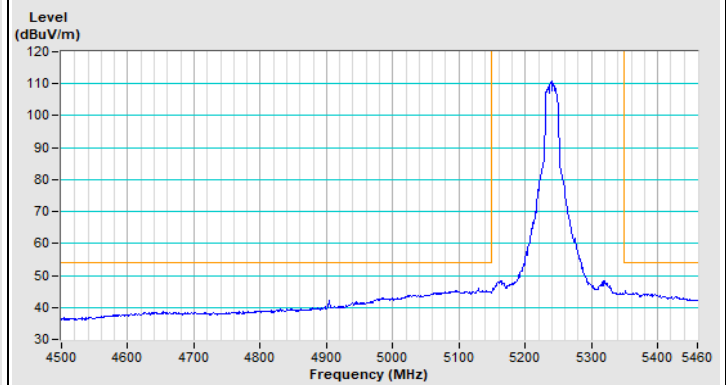
802.11ax (HE20) Channel 36



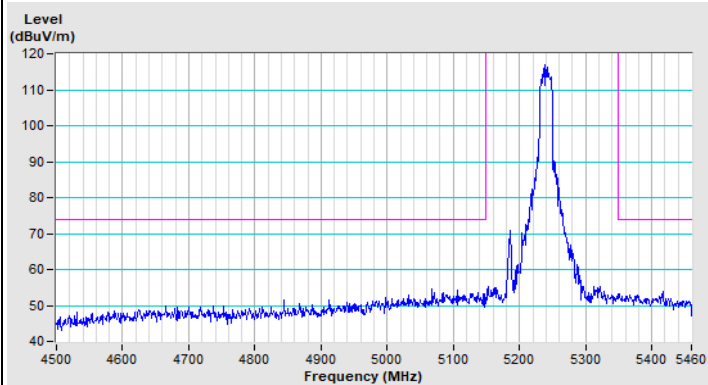
802.11ax (HE20) Channel 48



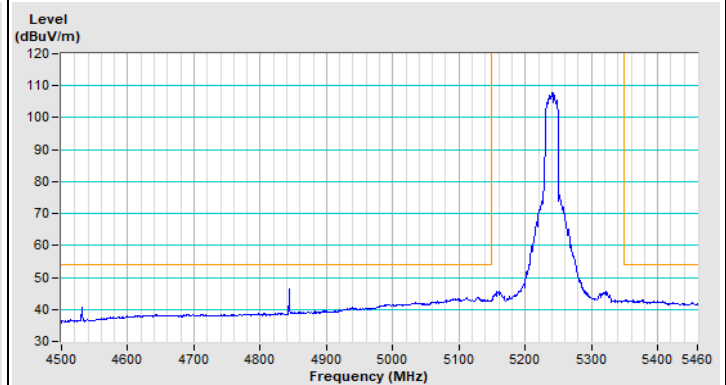
Horizontal (Peak)



Horizontal (Average)



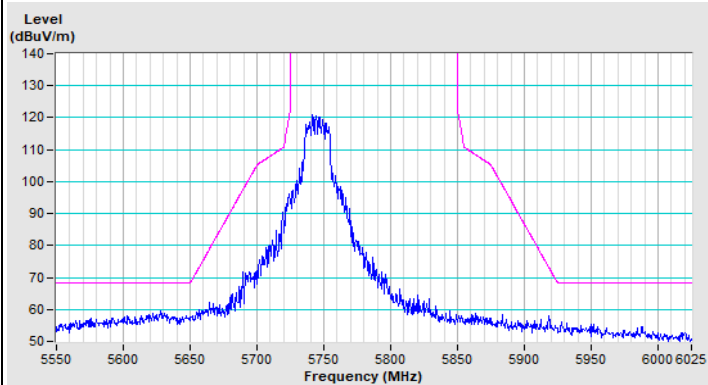
Vertical (Peak)



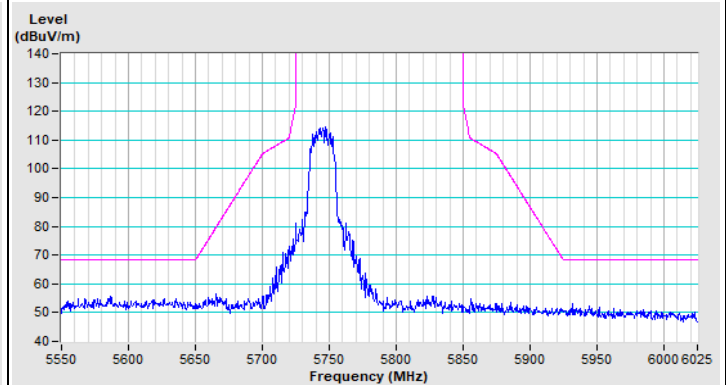
Vertical (Average)

Frequency Range	5.825 GHz ~ 6.525 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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802.11ax (HE20) Channel 149

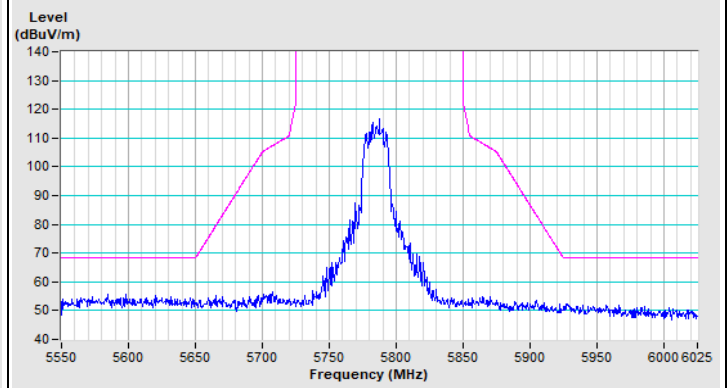
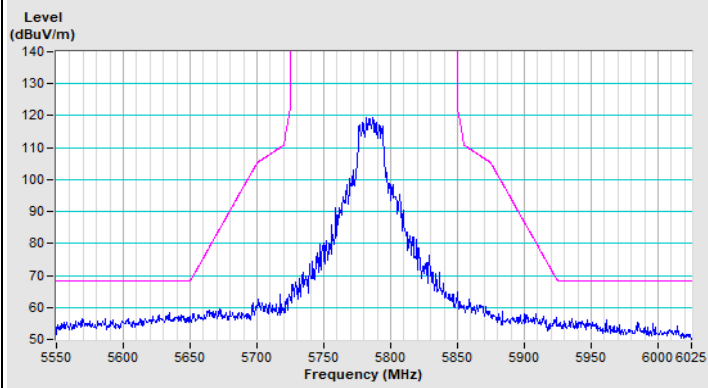


Horizontal (Peak)

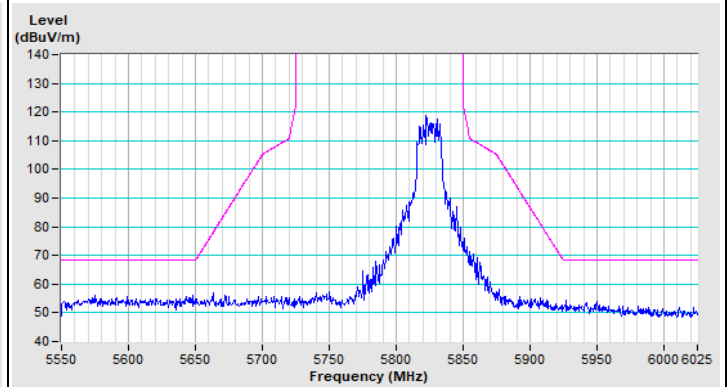
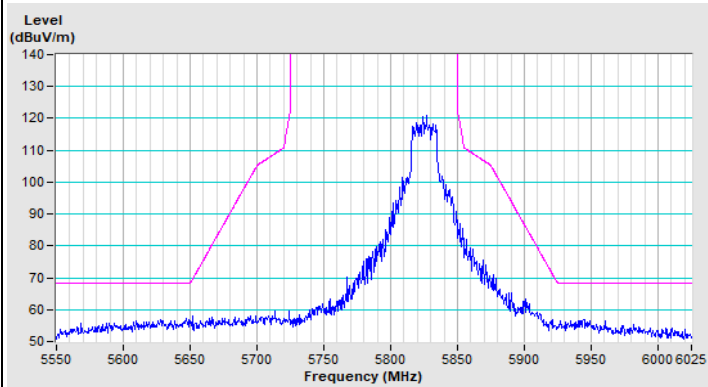


Vertical (Peak)

802.11ax (HE20) Channel 157

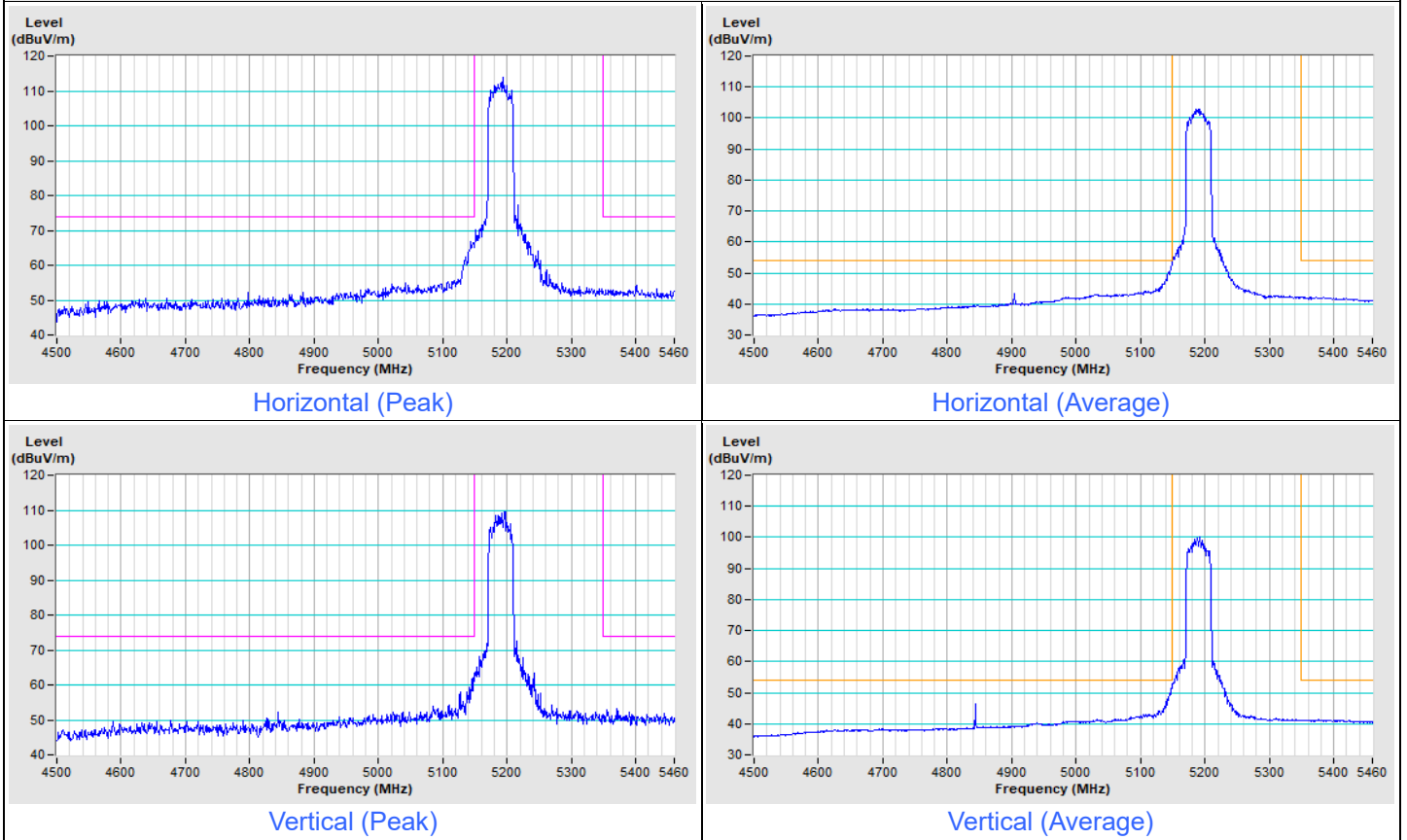


802.11ax (HE20) Channel 165

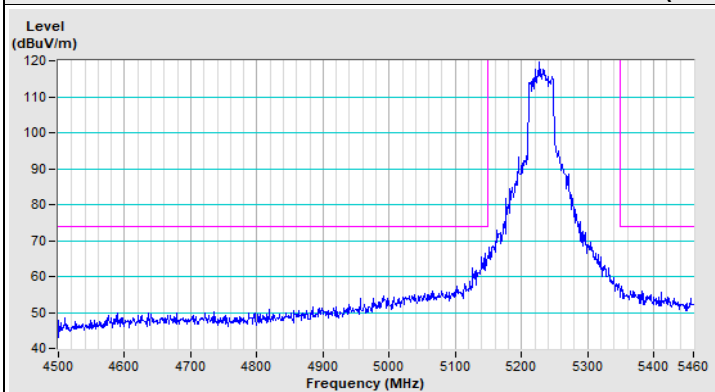


Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
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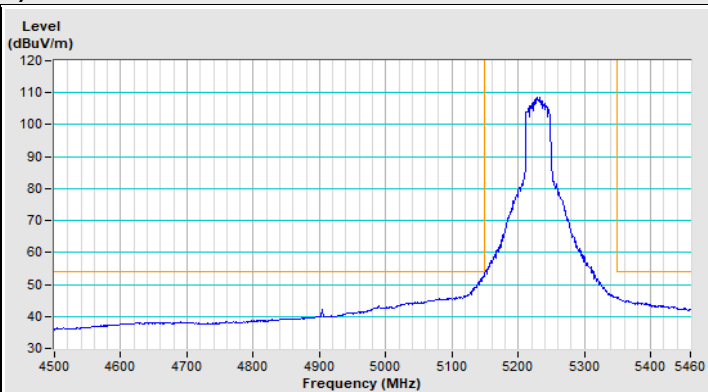
802.11ax (HE40) Channel 38



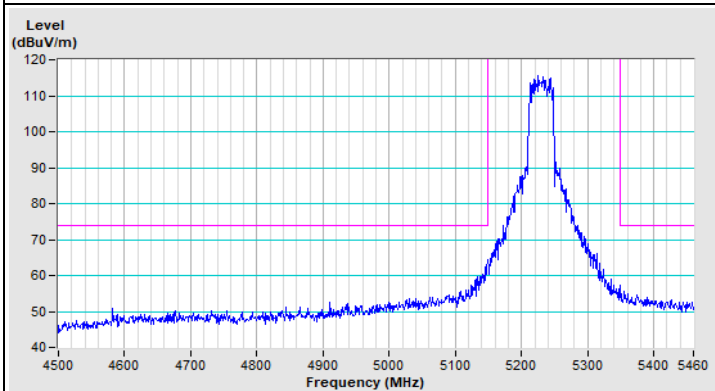
802.11ax (HE40) Channel 46



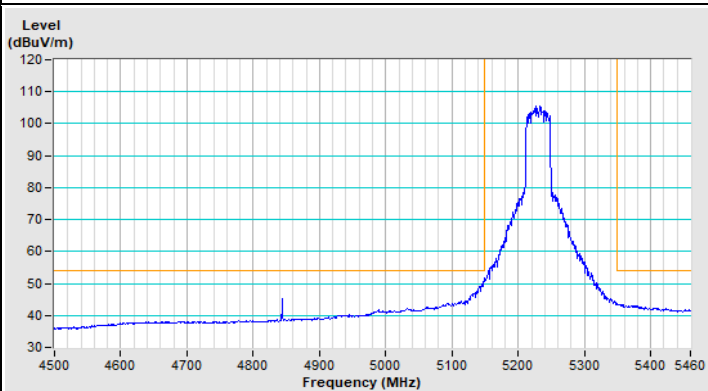
Horizontal (Peak)



Horizontal (Average)



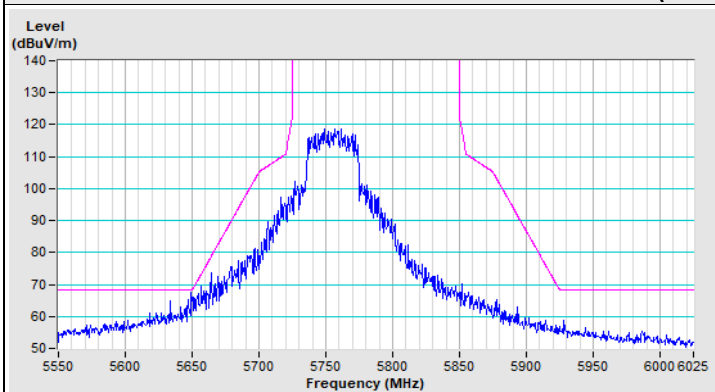
Vertical (Peak)



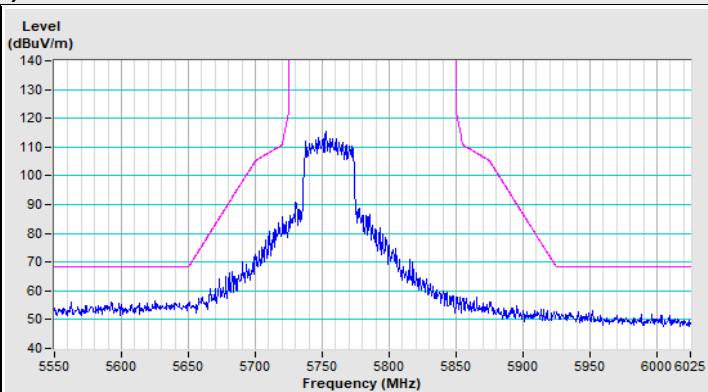
Vertical (Average)

Frequency Range	5.825 GHz ~ 6.525 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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802.11ax (HE40) Channel 151

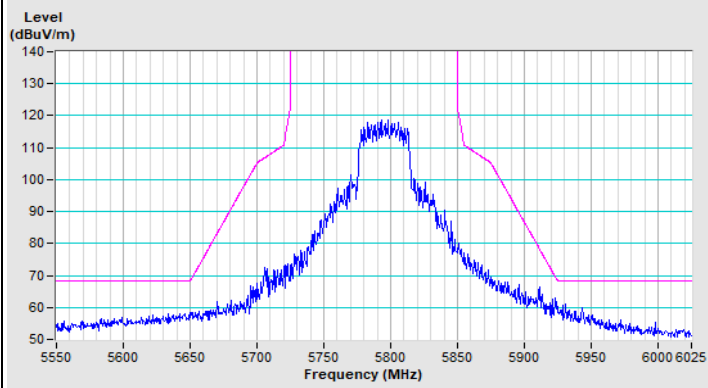


Horizontal (Peak)

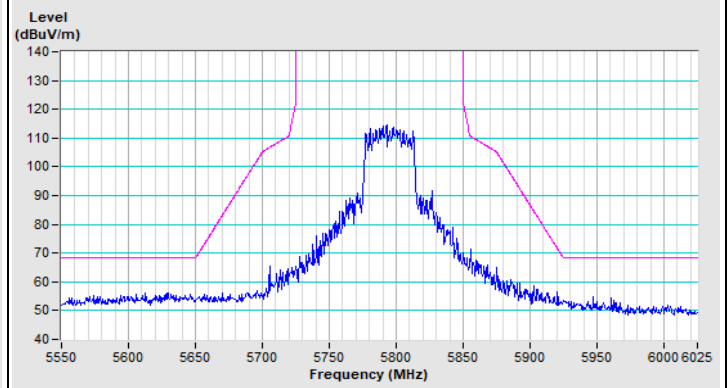


Vertical (Peak)

802.11ax (HE40) Channel 159



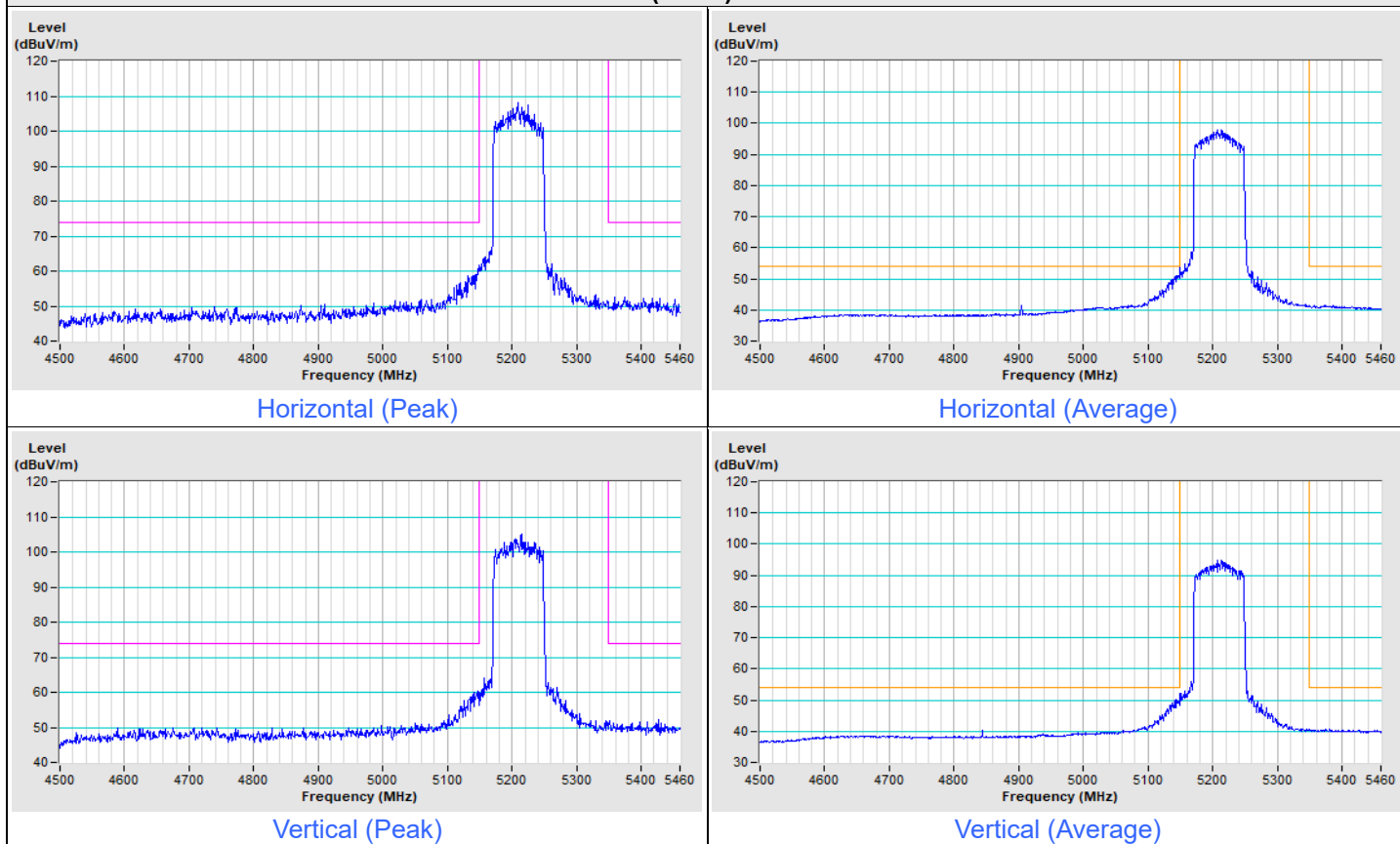
Horizontal (Peak)



Vertical (Peak)

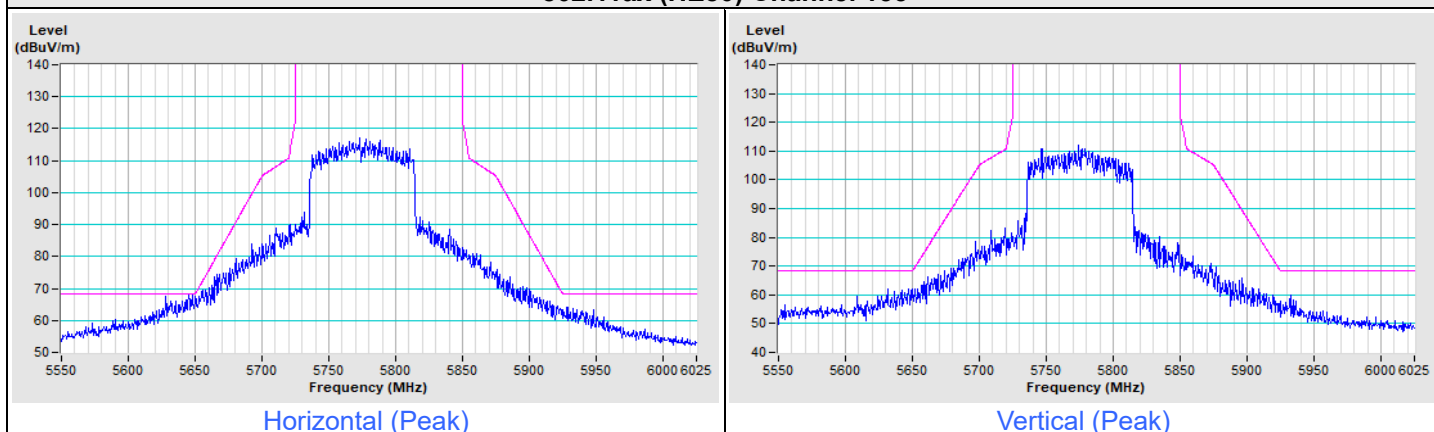
Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
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802.11ax (HE80) Channel 42



Frequency Range	5.55 GHz ~ 6.025 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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802.11ax (HE80) Channel 155



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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Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

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Fax: 886-3-6668323

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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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