

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)
Report No.: RFBDMW-WTW-P22090030-1
FCC ID: M4Y-AS240
Product: 802.11ax Access Point
Brand: ZCOM
Model No.: AS240
Received Date: 2022/9/5
Test Date: 2022/10/7 ~ 2022/11/3
Issued Date: 2022/11/16

Applicant: Z-COM, INC.
Address: 5F, No.8, HSIN ANN RD., HSINCH SCIENCE PARK, HSINCHU, 300 TAIWAN
Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory
Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / 723255 / TW2022
Designation Number:

Approved by: _____, **Date:** 2022/11/16
May Chen / Manager

This test report consists of 92 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The test results in the report only apply to the tested sample. The test results in this report are traceable to the national or international standards.

Prepared by : Vivian Huang / Specialist



This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

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	11
3.6 Test Program Used and Operation Descriptions	13
3.7 Connection Diagram of EUT and Peripheral Devices	13
3.8 Configuration of Peripheral Devices and Cable Connections	14
4 Test Instruments	15
4.1 RF Output Power	15
4.2 Power Spectral Density	15
4.3 6 dB Bandwidth	15
4.4 Occupied Bandwidth	15
4.5 Frequency Stability	16
4.6 AC Power Conducted Emissions	16
4.7 Unwanted Emissions below 1 GHz	17
4.8 Unwanted Emissions above 1 GHz	18
5 Limits of Test Items	19
5.1 RF Output Power	19
5.2 Power Spectral Density	19
5.3 6 dB Bandwidth	19
5.4 Occupied Bandwidth	19
5.5 Frequency Stability	19
5.6 AC Power Conducted Emissions	20
5.7 Unwanted Emissions below 1 GHz	20
5.8 Unwanted Emissions above 1 GHz	21
6 Test Arrangements	22
6.1 RF Output Power	22
6.1.1 Test Setup	22
6.1.2 Test Procedure	22
6.2 Power Spectral Density	22
6.2.1 Test Setup	22
6.2.2 Test Procedure	22
6.3 6 dB Bandwidth	23
6.3.1 Test Setup	23
6.3.2 Test Procedure	23
6.4 Occupied Bandwidth	23
6.4.1 Test Setup	23
6.4.2 Test Procedure	23
6.5 Frequency Stability	24
6.5.1 Test Setup	24
6.5.2 Test Procedure	24
6.6 AC Power Conducted Emissions	25
6.6.1 Test Setup	25
6.6.2 Test Procedure	25
6.7 Unwanted Emissions below 1 GHz	26
6.7.1 Test Setup	26
6.7.2 Test Procedure	27



6.8	Unwanted Emissions above 1 GHz.....	28
6.8.1	Test Setup	28
6.8.2	Test Procedure.....	28
7	Test Results of Test Item	29
7.1	RF Output Power.....	29
7.2	Power Spectral Density	32
7.3	6 dB Bandwidth	36
7.4	Occupied Bandwidth.....	38
7.5	Frequency Stability	43
7.6	AC Power Conducted Emissions	44
7.7	Unwanted Emissions below 1 GHz	46
7.8	Unwanted Emissions above 1 GHz.....	48
8	Pictures of Test Arrangements	91
9	Information of the Testing Laboratories	92



Release Control Record

Issue No.	Description	Date Issued
RFBDMW-WTW-P22090030-1	Original release.	2022/11/16

1 Certificate

Product: 802.11ax Access Point

Brand: ZCOM

Test Model: AS240

Sample Status: Engineering sample

Applicant: Z-COM, INC.

Test Date: 2022/10/7 ~ 2022/11/3

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

Measurement ANSI C63.10-2013

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

KDB 662911 D01 Multiple Transmitter Output v02r01

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

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(1/2/3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
---	Occupied Bandwidth	-	Reference only.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -3.13 dB at 20.11719 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -4.6 dB at 39.61 MHz
15.407(b)(1/2/3/4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -3.2 dB at 5926.00 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:

Measurement	Specification	Expanded Uncertainty (k=2) (±)
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.1 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.1 dB
	18 GHz ~ 40 GHz	5.3 dB

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

2.2 Supplementary Information

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

3 General Information

3.1 General Description of EUT

Product	802.11ax Access Point
Brand	ZCOM
Test Model	AS240
Status of EUT	Engineering sample
Power Supply Rating	48Vdc from POE
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 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7 Mbps 802.11ax: up to 1201 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	5.18 GHz ~ 5.24 GHz : 218.997 mW (23.4 dBm) 5.745 GHz ~ 5.825 GHz : 467.008 mW (26.69 dBm)
EUT Category	Indoor Access Point

Note:

1. Simultaneously transmission condition.

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

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

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna No.	RF Chain No.	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type
1	Chain 0	2.85	2.4~2.4835	PIFA PCB	none
		4.48	5.15~5.85		
2	Chain 1	3.97	2.4~2.4835	PIFA PCB	none
		3.65	5.15~5.85		

* 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:

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

3.3 Channel List

FOR 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 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"> EUT can be used in the following ways: Laying/ Wall Mount. Pre-scan these ways 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:	1. Laying/ Wall Mount Worst Condition: Laying

Note: Partial RU (resource unit) configurations not supported.

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

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

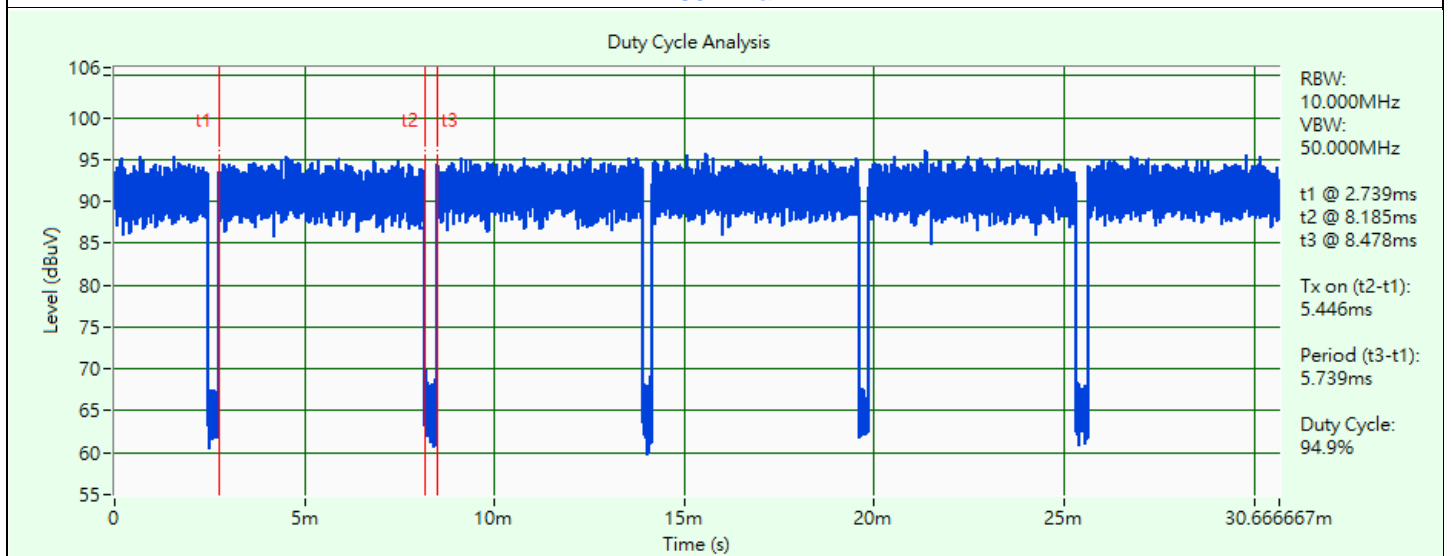
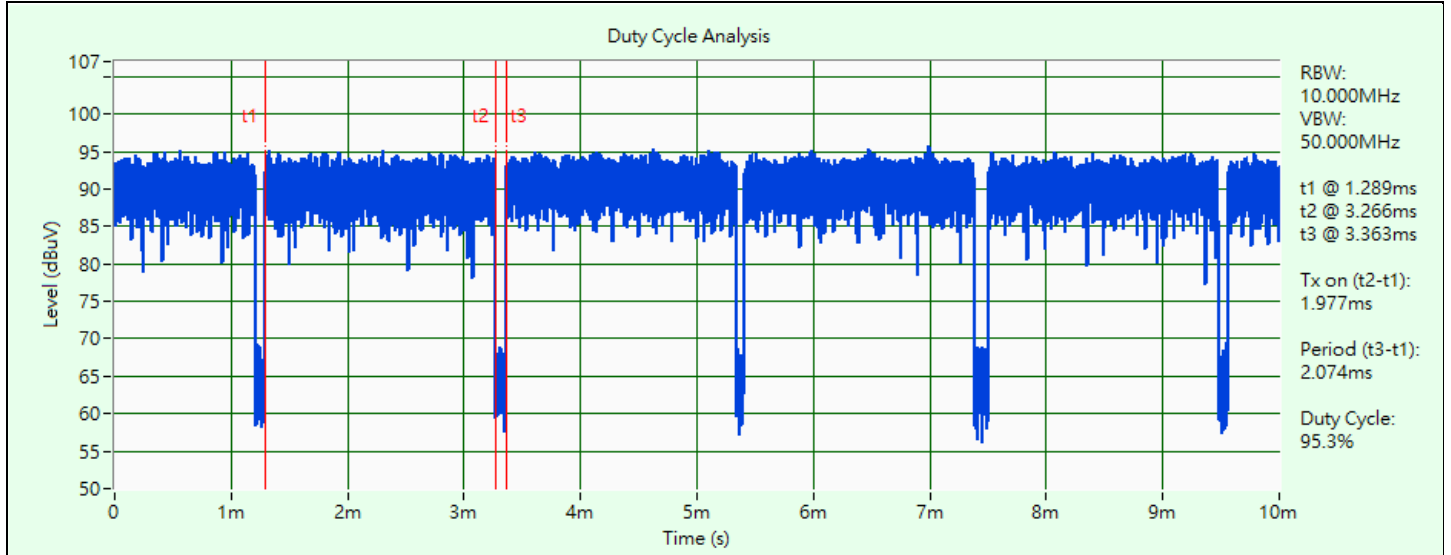
3.5 Duty Cycle of Test Signal

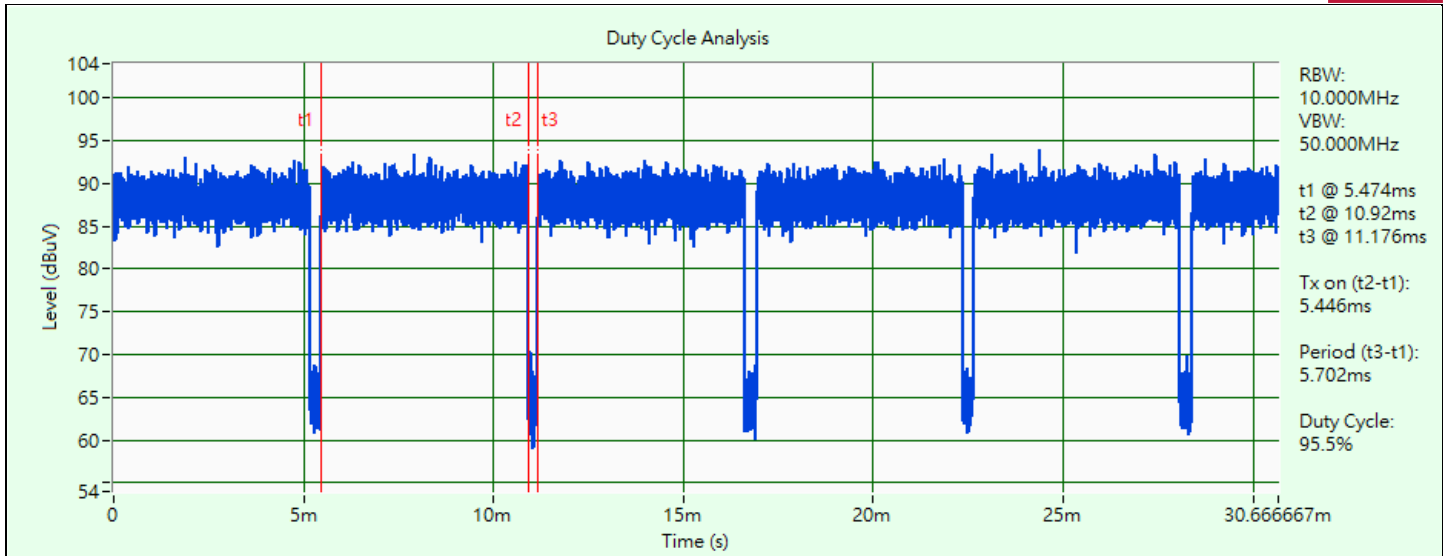
802.11a: Duty cycle = 1.977 ms / 2.074 ms x 100% = 95.3%, duty factor = 10 * log (1/Duty cycle) = 0.21 dB

802.11ax (HE20): Duty cycle = 5.446 ms / 5.739 ms x 100% = 94.9%, duty factor = 10 * log (1/Duty cycle) = 0.23 dB

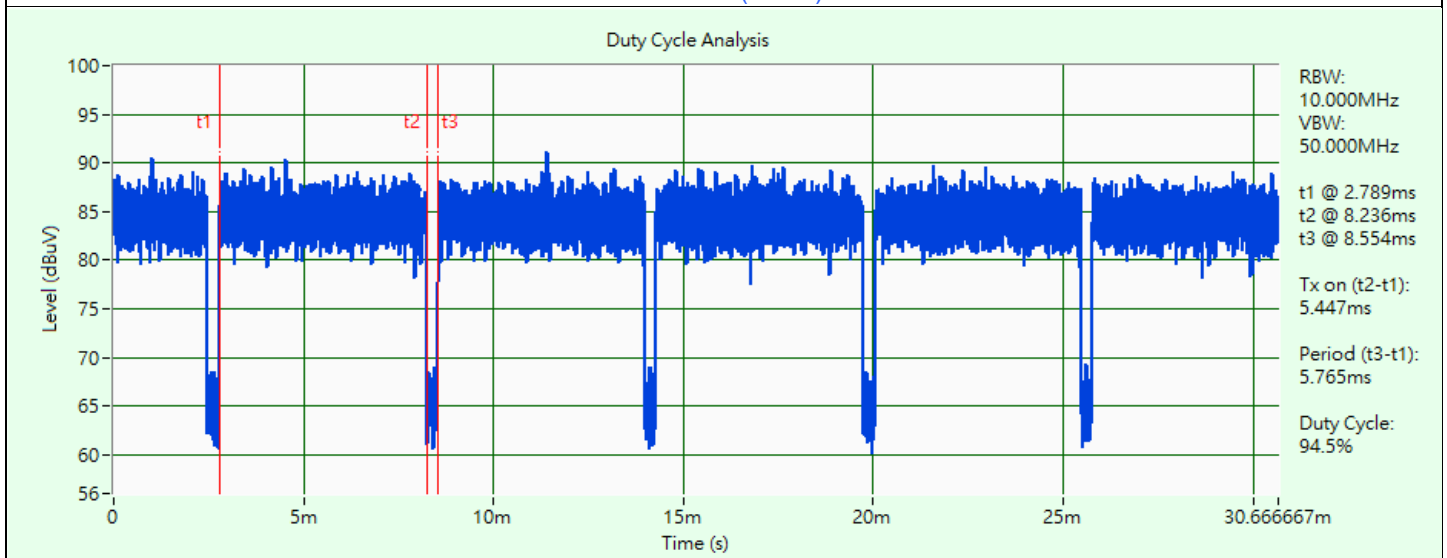
802.11ax (HE40): Duty cycle = 5.446 ms / 5.702 ms x 100% = 95.5%, duty factor = 10 * log (1/Duty cycle) = 0.20 dB

802.11ax (HE80): Duty cycle = 5.447 ms / 5.765 ms x 100% = 94.5%, duty factor = 10 * log (1/Duty cycle) = 0.25 dB





802.11ax (HE40)



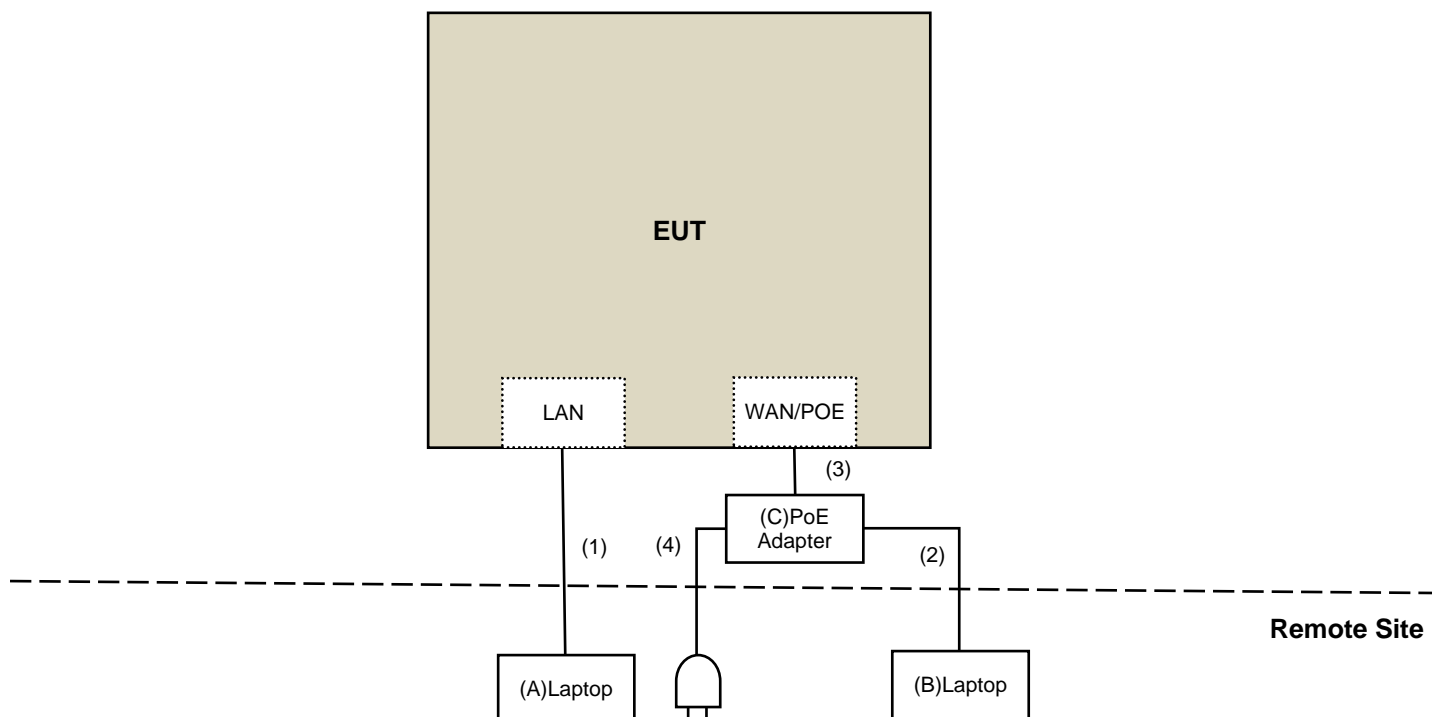
802.11ax (HE80)

3.6 Test Program Used and Operation Descriptions

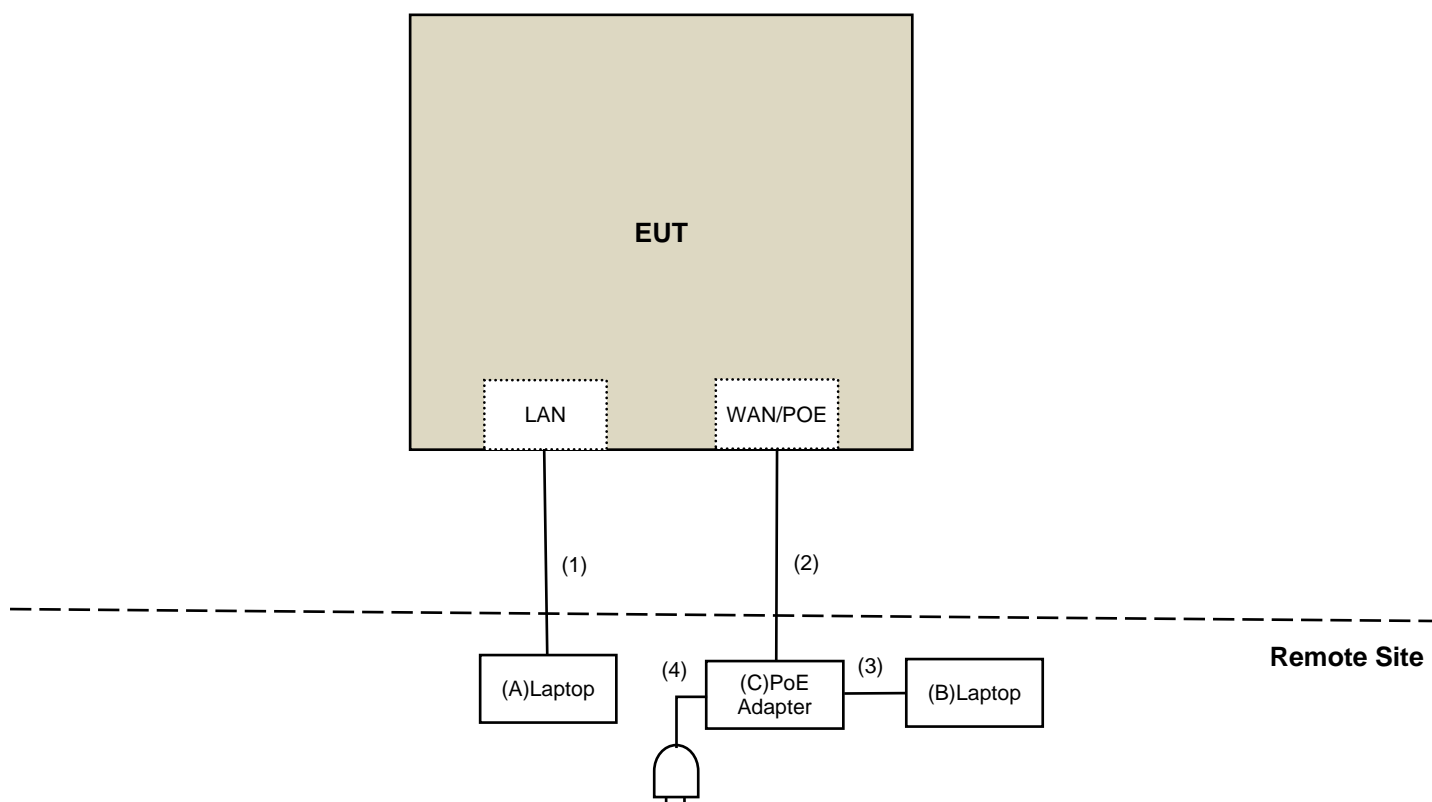
Controlling software (qdart_conn.win.1.0_installer_00077.1) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

For AC Power Conducted Emission test



For Unwanted Emission test



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	N/A	Provided by Lab
B	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	N/A	Provided by Lab
C	PoE Adapter	Gigabit	PSE301G	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	10	No	0	Provided by Lab
2	RJ-45 Cable	1	10	No	0	Provided by Lab
3	RJ-45 Cable	1	3	No	0	Provided by Lab
4	AC Power Cable	1	1.8	No	0	Provided by Lab

4 Test Instruments

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

4.1 RF Output Power

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

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/10/24

4.2 Power Spectral Density

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

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/10/24

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
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
DC POWER SUPPLY Topward	6603D	795558	N/A	N/A
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112409	2022/3/11	2023/3/10
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2022/1/14	2023/1/13
True RMS Clamp Meter Fluke	325	31130711WS	2022/6/9	2023/6/8

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/10/24

4.6 AC Power Conducted Emissions

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

Notes:

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

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bilog Antenna Schwarzbeck	VULB 9168	9168-0842	2021/10/26	2022/10/25
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	2022/1/10	2023/1/9
LOOP ANTENNA Electro-Metrics	EM-6879	264	2022/3/18	2023/3/17
Pre_Amplifier Agilent	8447D	2944A10636	2022/3/19	2023/3/18
Pre_Amplifier EMCI	EMC330N	980538	2022/4/25	2023/4/24
RF Coaxial Cable COMMATE/PEWC	8D	966-5-1	2022/4/25	2023/4/24
		966-5-2	2022/4/25	2023/4/24
		966-5-3	2022/4/25	2023/4/24
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/1/6	2023/1/5
		LOOPCAB-002	2022/1/6	2023/1/5
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112410	2022/3/13	2023/3/12
Test Receiver R&S	ESR3	102528	2022/2/25	2023/2/24

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2022/10/13 ~ 2022/10/16

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-1819	2021/11/14	2022/11/13
	BBHA 9170	9170-739	2021/11/14	2022/11/13
Pre_Amplifier EMCI	EMC12630SE	980509	2022/4/25	2023/4/24
	EMC184045SE	980387	2022/1/10	2023/1/9
RF Cable-Frequency range: 1- 40GHz EMCI	EMC102-KM-KM-1200	160924	2022/1/10	2023/1/9
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2022/3/8	2023/3/7
	EMC104-SM-SM-1500	180503	2022/4/25	2023/4/24
	EMC104-SM-SM-2000	180501	2022/4/25	2023/4/24
	EMC104-SM-SM-6000	180506	2022/4/25	2023/4/24
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112410	2022/3/13	2023/3/12
Test Receiver R&S	ESR3	102528	2022/2/25	2023/2/24

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2022/10/7 ~ 2022/11/3

5 Limits of Test Items

5.1 RF Output Power

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

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

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

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

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

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

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

5.2 Power Spectral Density

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

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

5.3 6 dB Bandwidth

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

5.4 Occupied Bandwidth

The results are for reference only.

5.5 Frequency Stability

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

5.6 AC Power Conducted Emissions

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

Notes:

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

5.7 Unwanted Emissions below 1 GHz

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

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

Notes:

3. The lower limit shall apply at the transition frequencies.
4. 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:

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

Limits of unwanted emission out of the restricted bands

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

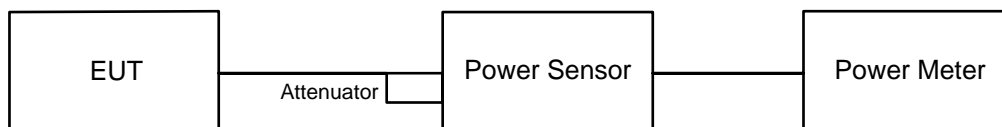
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

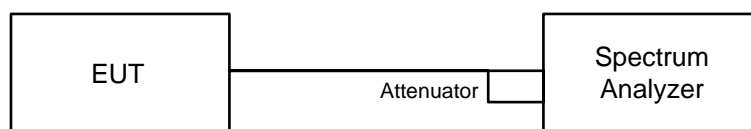


6.1.2 Test Procedure

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-2

- a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- b. Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- c. 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.)
- d. Sweep time = auto, trigger set to "free run".
- e. Trace average at least 100 traces in power averaging mode.
- f. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- g. Record the max value and add 10 log (1/duty cycle).

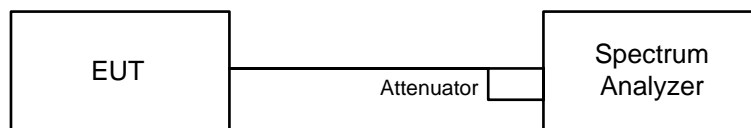
For specified measurement bandwidth 500 kHz:

Method SA-2

- a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- b. Set RBW = 300 kHz, Set VBW \geq 1 MHz, Detector = RMS
- c. Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where $\text{BWCF} = 10\log(500 \text{ kHz}/300 \text{ kHz})$
- d. 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.)
- e. Sweep time = auto, trigger set to "free run".
- f. Trace average at least 100 traces in power averaging mode.
- g. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- h. Record the max value and add 10 log (1/duty cycle).

6.3 6 dB Bandwidth

6.3.1 Test Setup

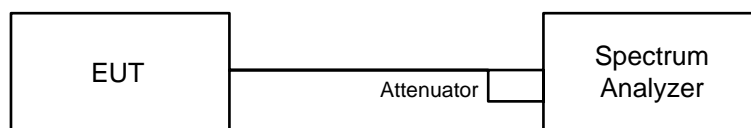


6.3.2 Test Procedure

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

6.4 Occupied Bandwidth

6.4.1 Test Setup

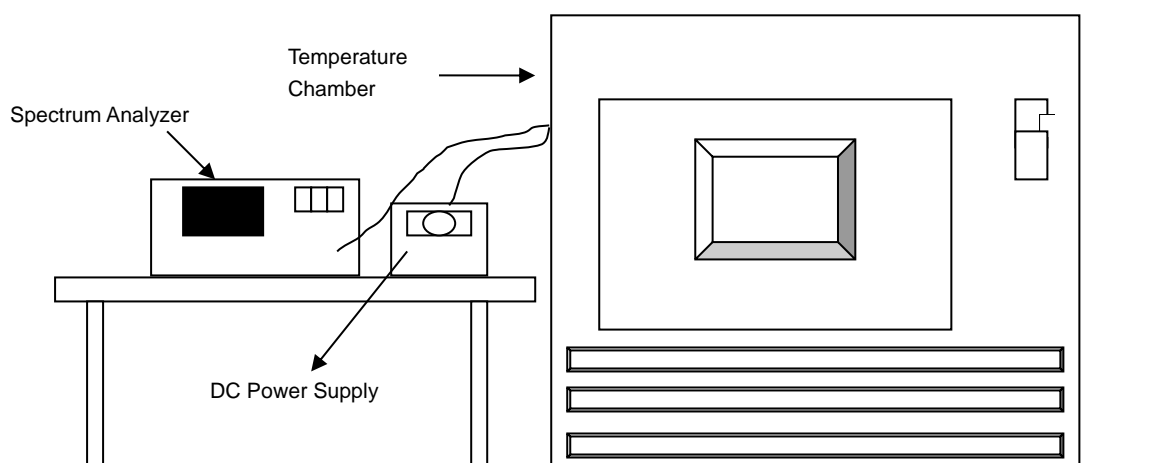
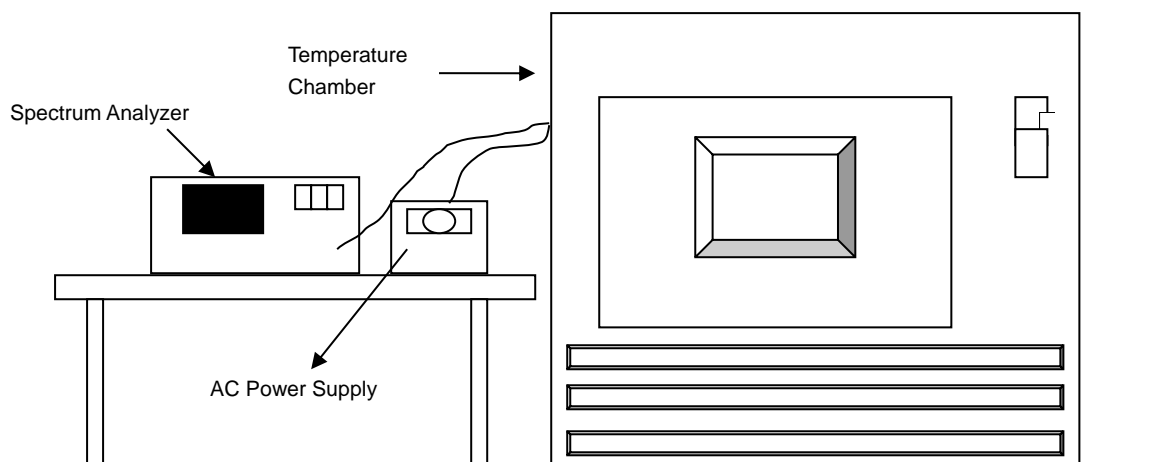


6.4.2 Test Procedure

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

6.5 Frequency Stability

6.5.1 Test Setup

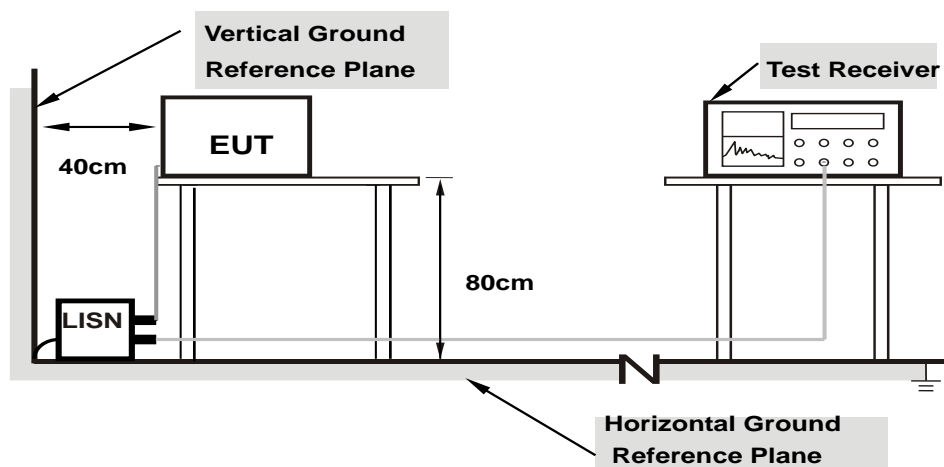


6.5.2 Test Procedure

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

6.6 AC Power Conducted Emissions

6.6.1 Test Setup



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

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

6.6.2 Test Procedure

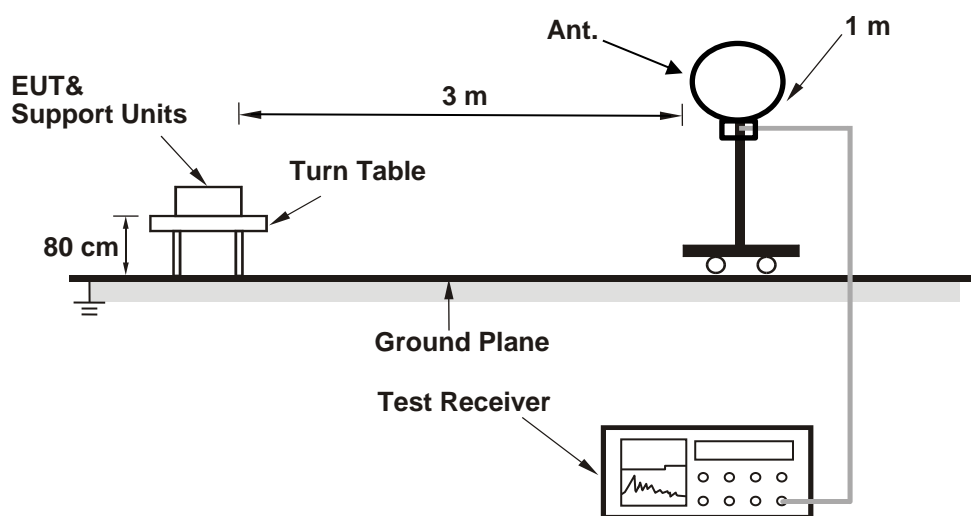
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

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

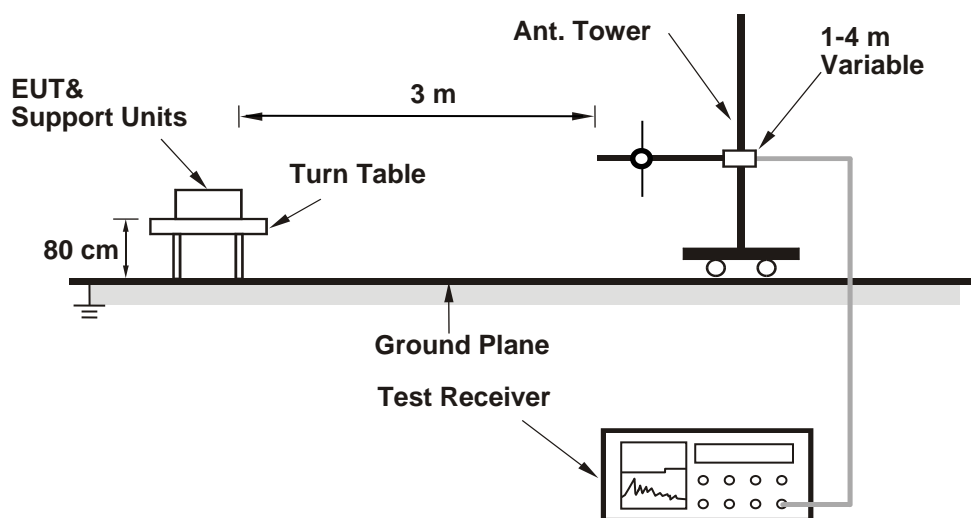
6.7 Unwanted Emissions below 1 GHz

6.7.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.7.2 Test Procedure

For Radiated emission below 30 MHz

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

Notes:

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

For Radiated emission above 30 MHz

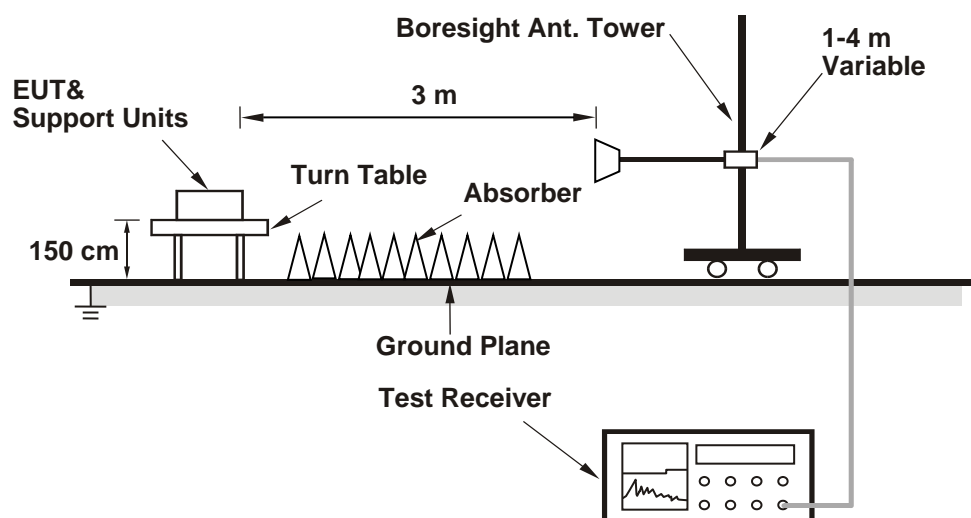
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the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

Notes:

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

6.8 Unwanted Emissions above 1 GHz

6.8.1 Test Setup



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

6.8.2 Test Procedure

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

Notes:

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

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	48 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko
--------------	--------	---------------------------	--------------	------------	----------

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	18.31	18.00	130.86	21.17	30	Pass
40	5200	20.73	20.03	218.997	23.40	30	Pass
48	5240	20.49	20.15	215.458	23.33	30	Pass
149	5745	23.34	23.62	445.919	26.49	30	Pass
157	5785	23.57	23.66	459.783	26.63	30	Pass
165	5825	23.56	23.72	462.491	26.65	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	17.65	17.19	110.57	20.44	30	Pass
40	5200	20.52	19.82	208.66	23.19	30	Pass
48	5240	20.25	19.90	203.649	23.09	30	Pass
149	5745	22.95	23.48	420.086	26.23	30	Pass
157	5785	23.12	23.44	425.917	26.29	30	Pass
165	5825	23.33	23.65	447.018	26.50	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	15.31	14.61	62.869	17.98	30	Pass
46	5230	17.93	17.49	118.192	20.73	30	Pass
151	5755	19.74	20.82	214.97	23.32	30	Pass
159	5795	21.52	23.11	346.55	25.40	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	14.72	14.44	57.445	17.59	30	Pass
155	5775	15.72	16.55	82.511	19.17	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	17.88	17.37	115.952	20.64	30	Pass
40	5200	20.70	20.00	217.49	23.37	30	Pass
48	5240	20.43	20.12	213.209	23.29	30	Pass
149	5745	23.17	23.69	441.375	26.45	30	Pass
157	5785	23.36	23.62	446.915	26.50	30	Pass
165	5825	23.52	23.84	467.008	26.69	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	15.51	14.81	65.832	18.18	30	Pass
46	5230	18.13	17.69	123.762	20.93	30	Pass
151	5755	19.94	21.02	225.102	23.52	30	Pass
159	5795	21.72	23.31	362.883	25.60	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	14.97	14.61	60.312	17.80	30	Pass
155	5775	15.94	16.77	86.798	19.39	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 4.48 dBi < 6 dBi, so the output power limit shall not be reduced.

7.2 Power Spectral Density

Input Power:	48 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko
--------------	--------	---------------------------	--------------	------------	----------

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
36	5180	5.03	5.33	0.21	8.40	15.91	Pass
40	5200	7.40	7.52	0.21	10.68	15.91	Pass
48	5240	7.46	7.36	0.21	10.63	15.91	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 7.09 dBi > 6dBi, so the power density limit shall be reduced to $17-(7.09-6) = 15.91$ dBm/MHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
36	5180	4.15	4.33	0.23	7.48	15.91	Pass
40	5200	6.84	6.77	0.23	10.05	15.91	Pass
48	5240	6.64	6.88	0.23	10.00	15.91	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 7.09 dBi > 6dBi, so the power density limit shall be reduced to $17-(7.09-6) = 15.91$ dBm/MHz.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
38	5190	-1.77	-4.39	0.20	0.32	15.91	Pass
46	5230	1.24	-1.07	0.20	3.45	15.91	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 7.09 dBi > 6dBi, so the power density limit shall be reduced to $17-(7.09-6) = 15.91$ dBm/MHz.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
42	5210	-4.82	-7.51	0.25	-2.70	15.91	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 7.09 dBi > 6dBi, so the power density limit shall be reduced to $17-(7.09-6) = 15.91$ dBm/MHz.

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
149	5745	4.79	4.72	7.77	0.21	10.20	28.91	Pass
157	5785	4.57	4.68	7.64	0.21	10.07	28.91	Pass
165	5825	4.80	4.90	7.86	0.21	10.29	28.91	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 7.09 dBi > 6 dBi, so the power density limit shall be reduced to $30-(7.09-6) = 28.91$ dBm/500kHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
149	5745	3.65	3.90	6.79	0.23	9.24	28.91	Pass
157	5785	3.91	2.22	6.16	0.23	8.61	28.91	Pass
165	5825	3.92	1.94	6.05	0.23	8.50	28.91	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 7.09 dBi > 6 dBi, so the power density limit shall be reduced to $30-(7.09-6) = 28.91$ dBm/500kHz.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
151	5755	-2.31	-2.70	0.51	0.2	2.93	28.91	Pass
159	5795	-0.54	-1.08	2.21	0.2	4.63	28.91	Pass

Notes:

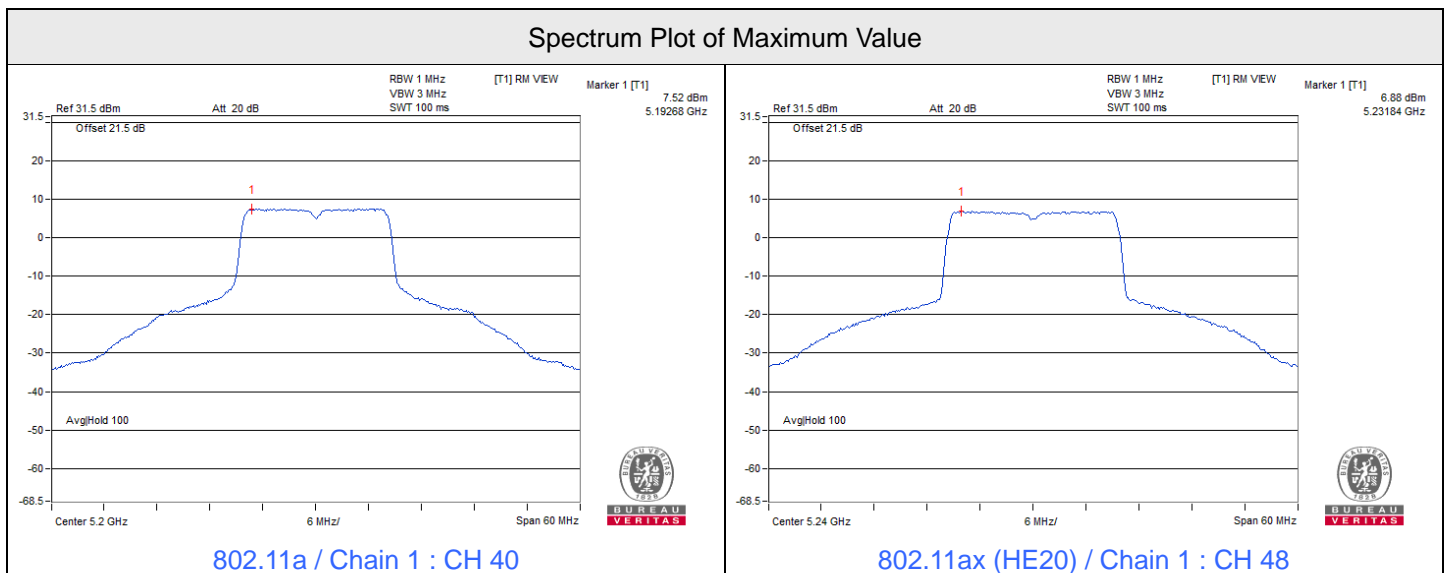
- Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-3, the directional gain is 7.09 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (7.09 - 6) = 28.91 \text{ dBm/500kHz}$.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
155	5775	-9.52	-10.18	-6.83	0.25	-4.36	28.91	Pass

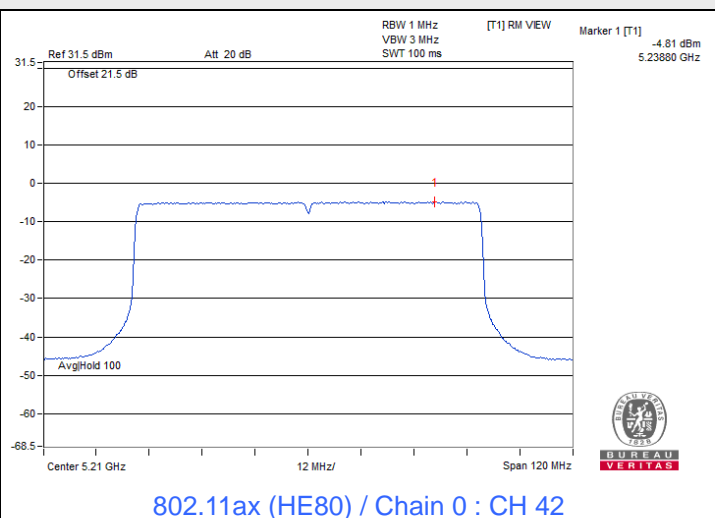
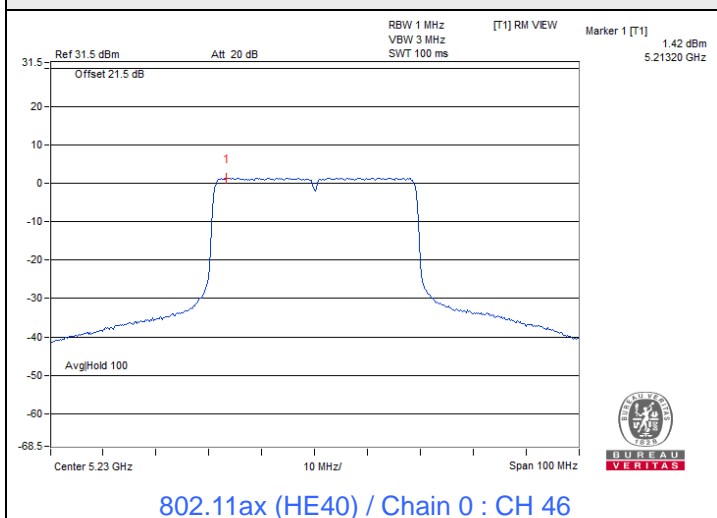
Notes:

- 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 7.09 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (7.09 - 6) = 28.91 \text{ dBm/500kHz}$.



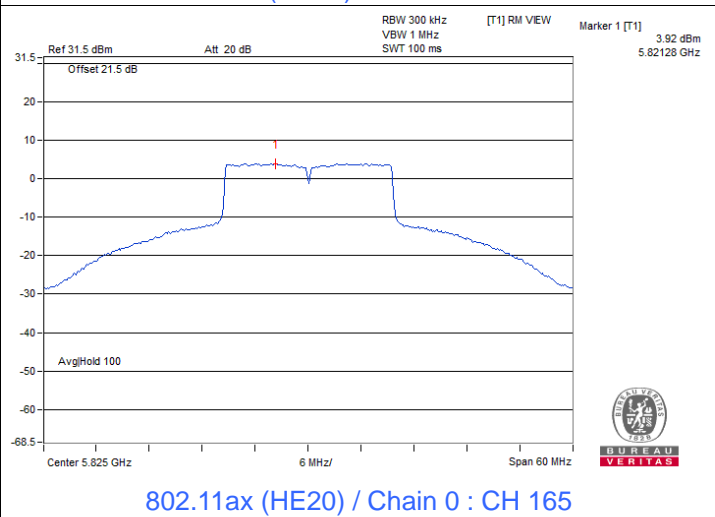
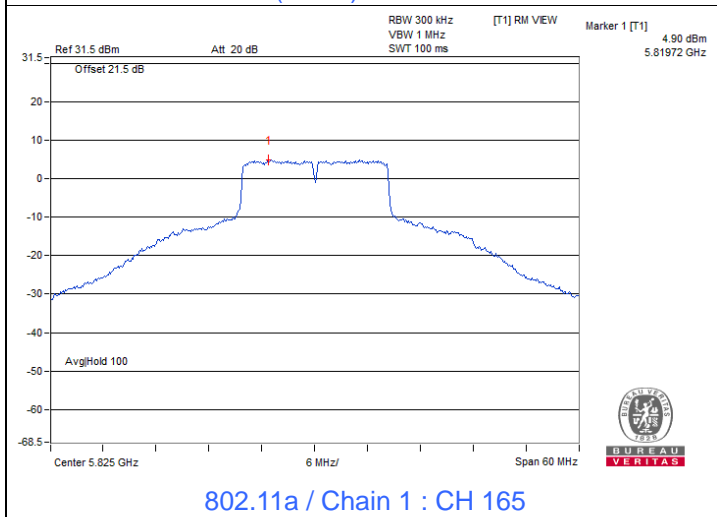


Spectrum Plot of Maximum Value



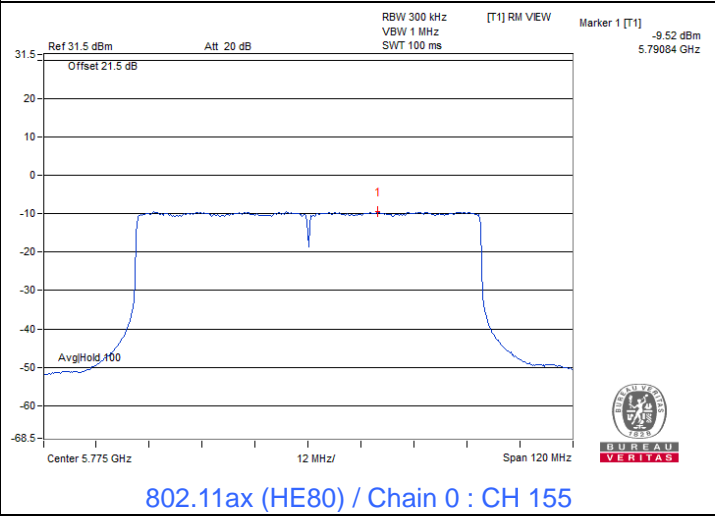
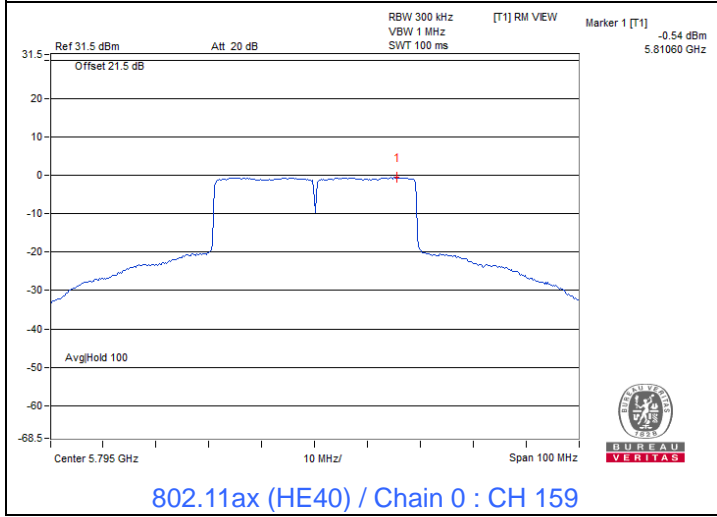
802.11ax (HE40) / Chain 0 : CH 46

802.11ax (HE80) / Chain 0 : CH 42



802.11a / Chain 1 : CH 165

802.11ax (HE20) / Chain 0 : CH 165



802.11ax (HE40) / Chain 0 : CH 159

802.11ax (HE80) / Chain 0 : CH 155

7.3 6 dB Bandwidth

Input Power:	48 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko
--------------	--------	---------------------------	--------------	------------	----------

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	16.32	16.34	0.5	Pass
157	5785	16.01	16.33	0.5	Pass
165	5825	16.33	15.91	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	18.90	18.82	0.5	Pass
157	5785	18.96	18.59	0.5	Pass
165	5825	18.85	18.84	0.5	Pass

802.11ax (HE40)

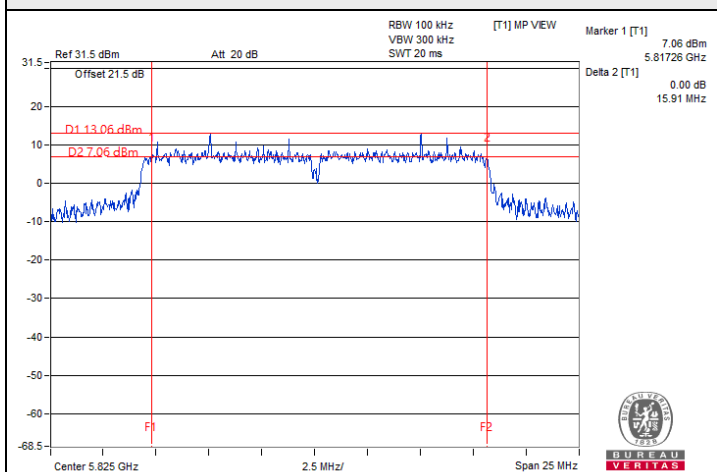
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
151	5755	38.00	38.22	0.5	Pass
159	5795	38.05	38.18	0.5	Pass

802.11ax (HE80)

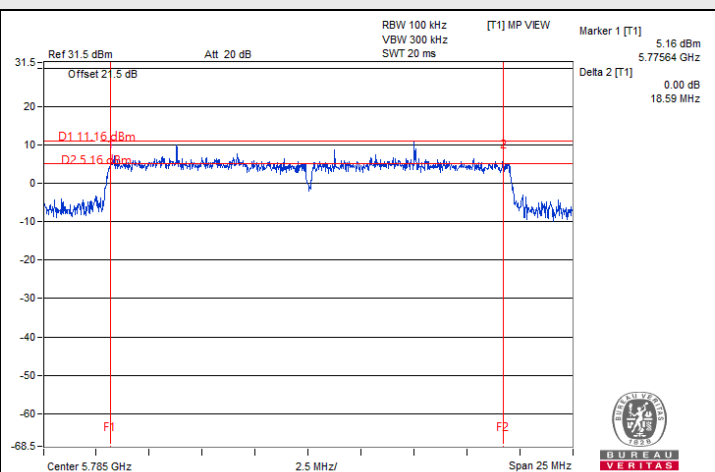
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
155	5775	77.94	77.56	0.5	Pass



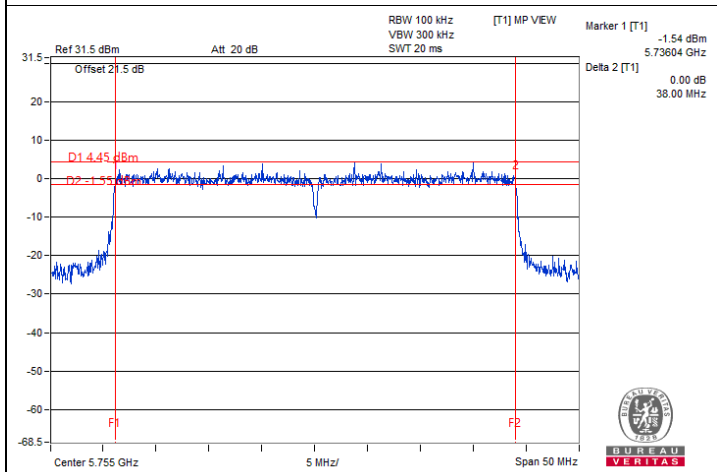
Spectrum Plot of Minimum Value



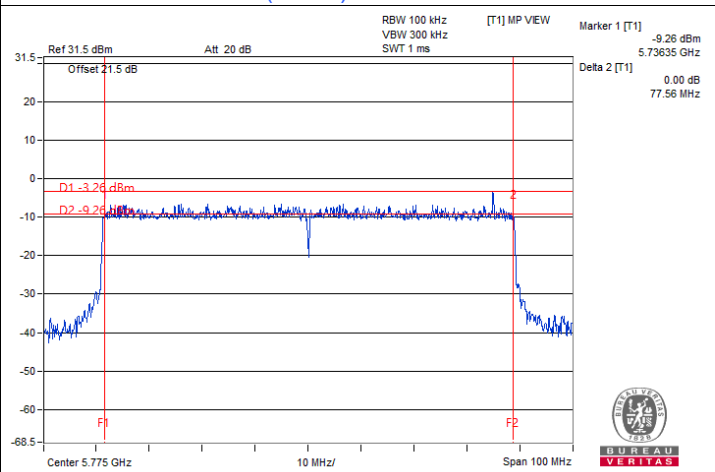
802.11a / Chain1 : CH 165



802.11ax (HE20) / Chain1 : CH 157



802.11ax (HE40) / Chain0 : CH 151



802.11ax (HE80) / Chain1 : CH 155

7.4 Occupied Bandwidth

Input Power:	48 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko
--------------	--------	---------------------------	--------------	------------	----------

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.74	16.74
40	5200	18.30	18.24
48	5240	17.34	17.40
149	5745	28.86	28.68
157	5785	31.20	31.14
165	5825	31.86	31.56

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	19.14	19.14
40	5200	19.68	19.80
48	5240	19.32	19.26
149	5745	30.42	29.28
157	5785	33.78	41.52
165	5825	34.44	43.08

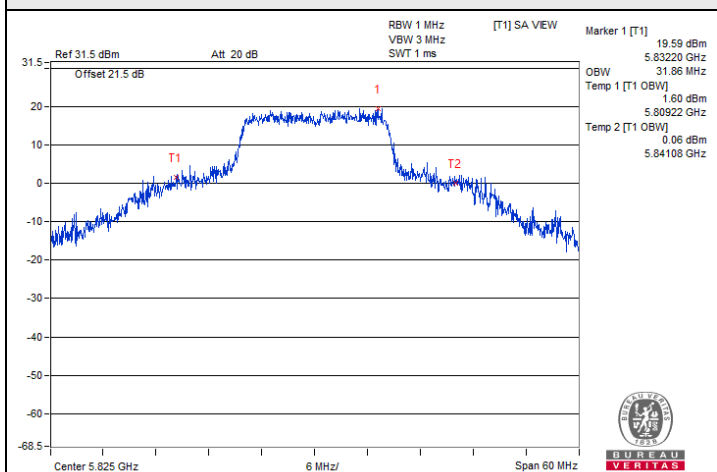
802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	38.16	38.04
46	5230	38.28	38.28
151	5755	38.28	52.80
159	5795	41.04	76.08

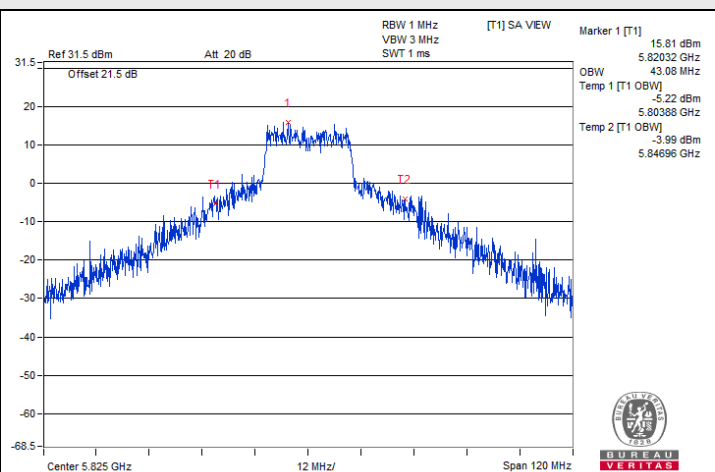
802.11ax (HE80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	77.52	77.28
155	5775	77.52	77.76

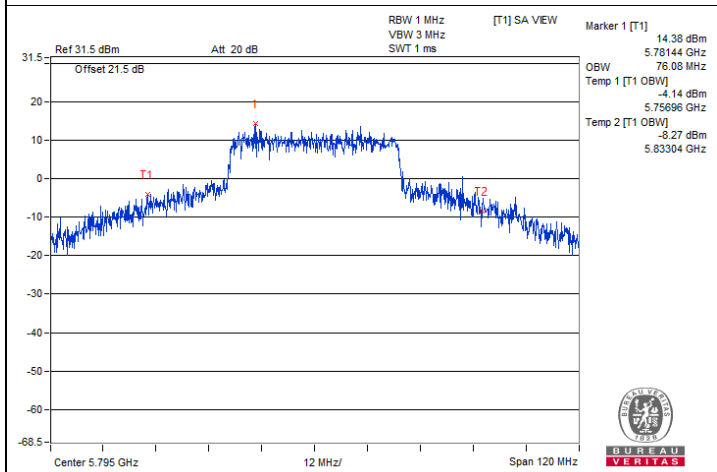
Spectrum Plot of Maximum Value



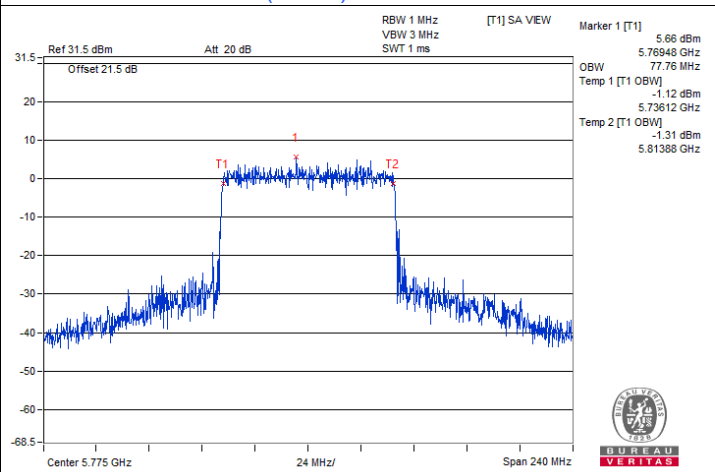
802.11a / Chain0 : CH 165



802.11ax (HE20) / Chain1 : CH 165

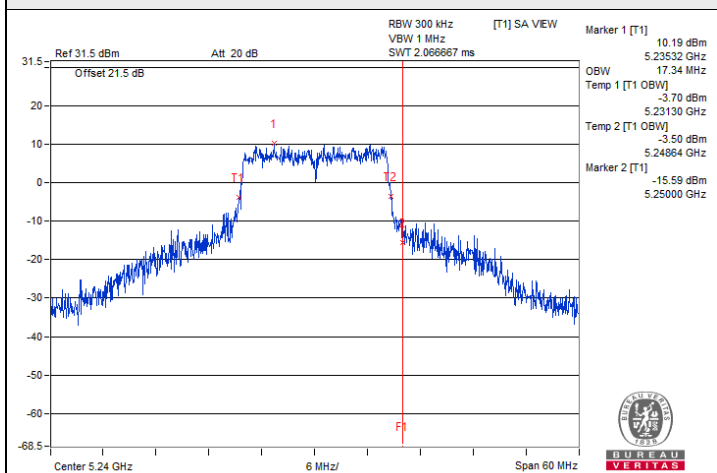


802.11ax (HE40) / Chain1 : CH 159

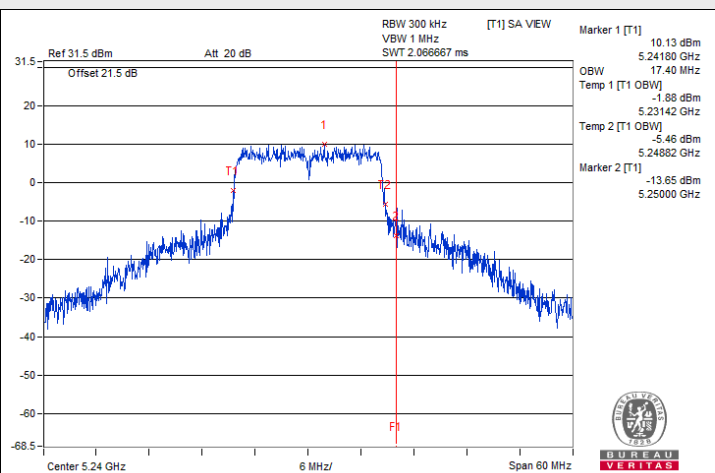


802.11ax (HE80) / Chain1 : CH 155

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



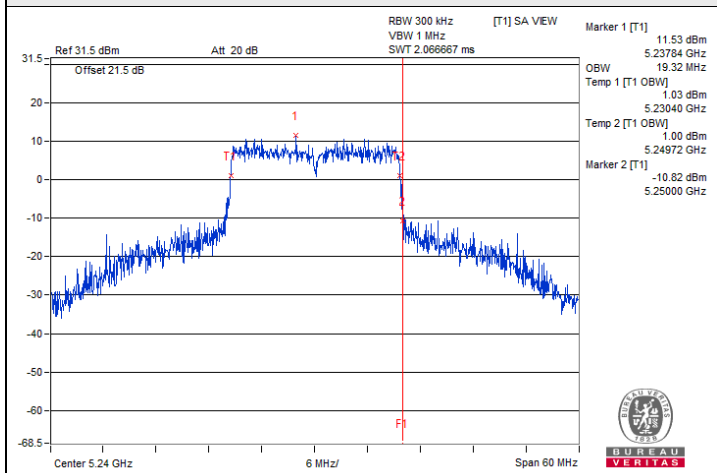
802.11a / Chain 0 : CH 48



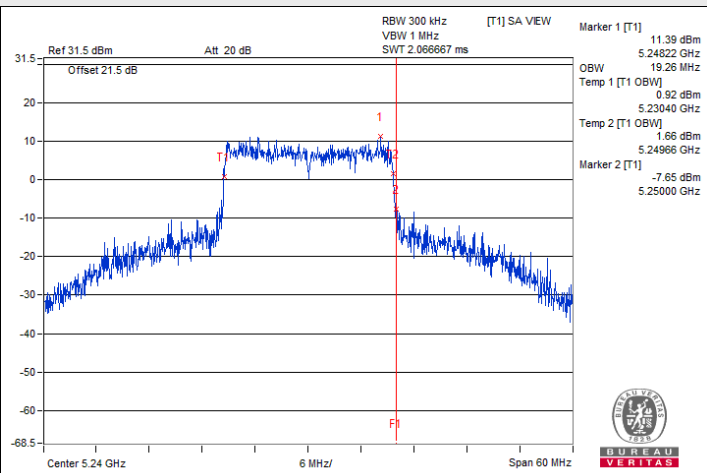
802.11a / Chain 1 : CH 48



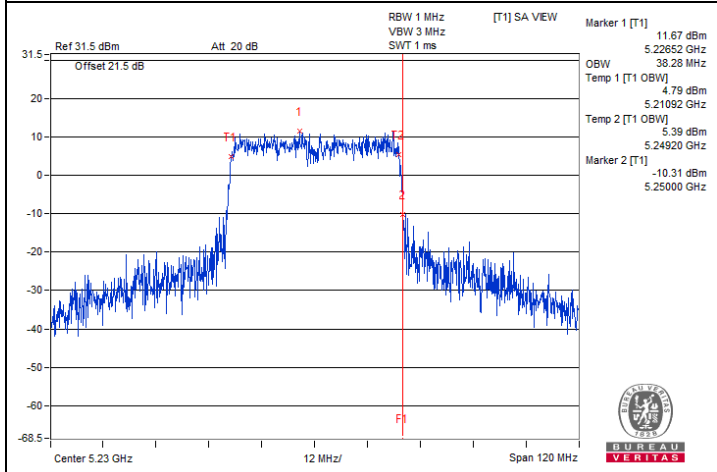
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



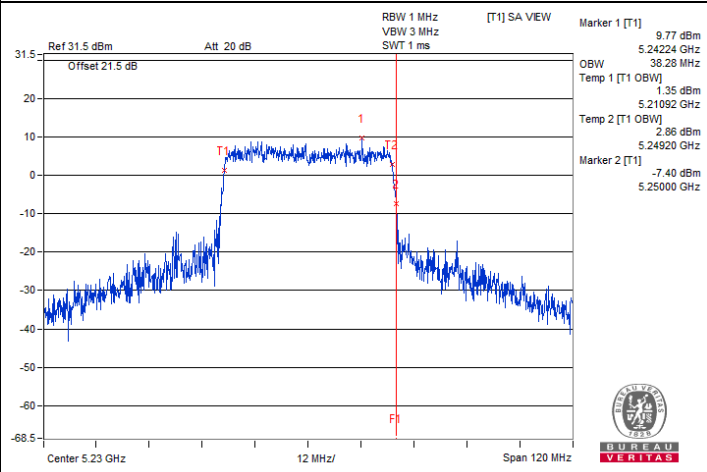
802.11ax (HE20) / Chain 0 : CH 48



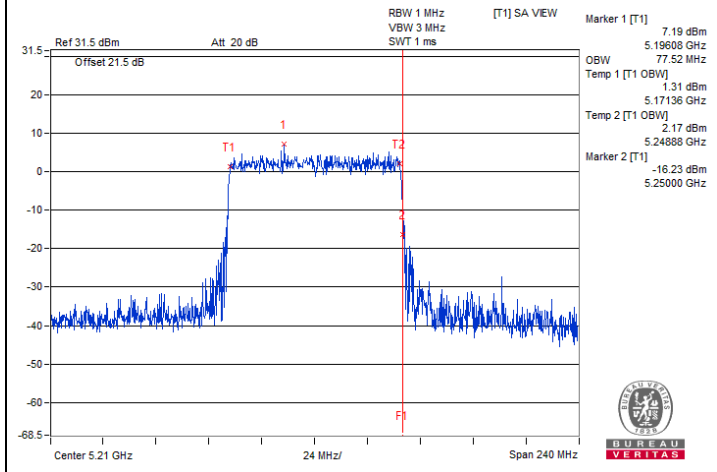
802.11ax (HE20) / Chain 1 : CH 48



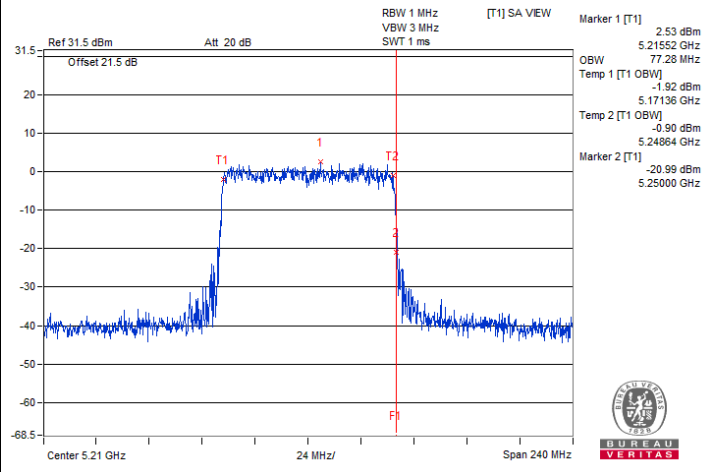
802.11ax (HE40) / Chain 0 : CH 46



802.11ax (HE40) / Chain 1 : CH 46



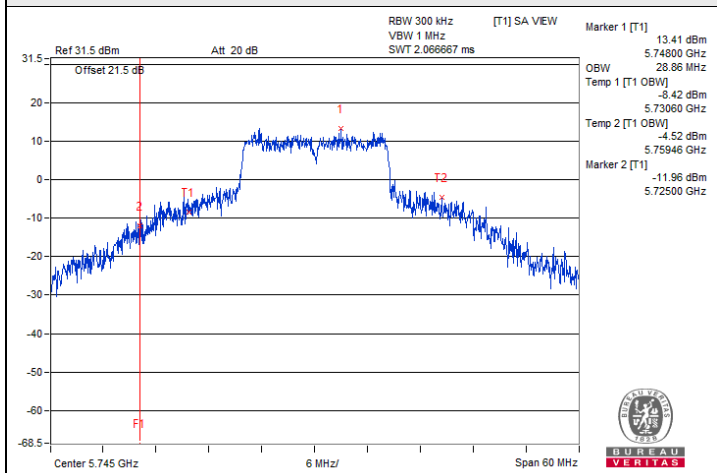
802.11ax (HE80) / Chain 0 : CH 42



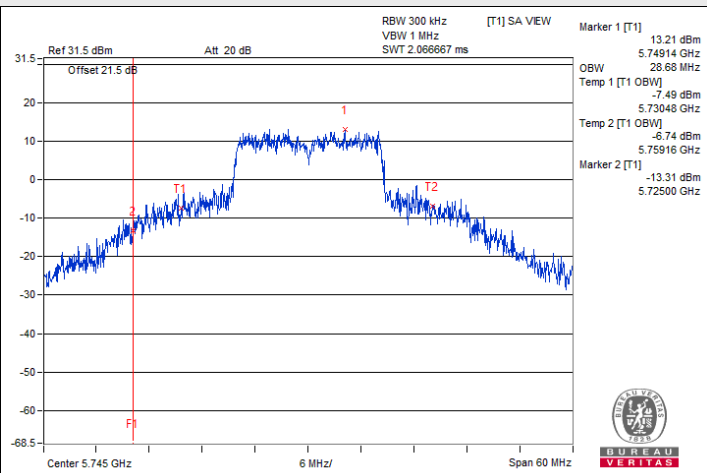
802.11ax (HE80) / Chain 1 : CH 42



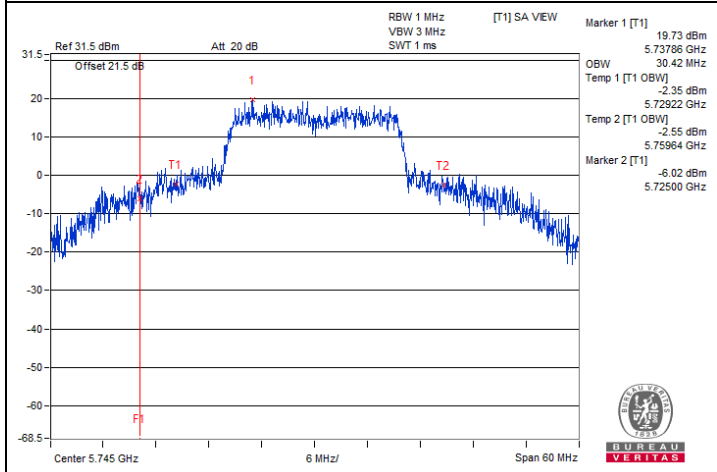
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C)



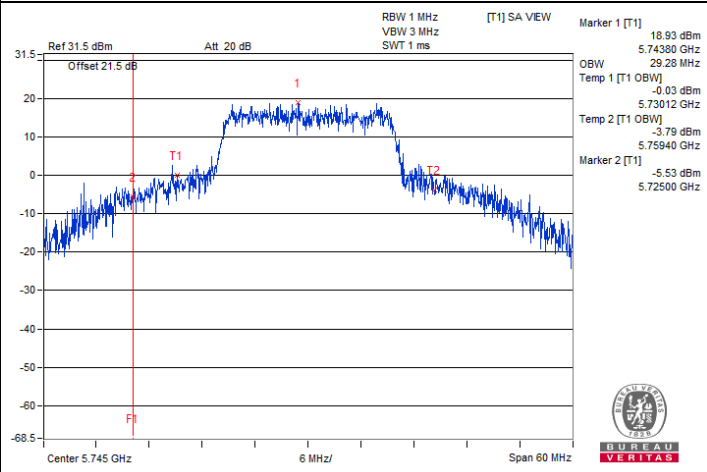
802.11a / Chain 0 : CH 149



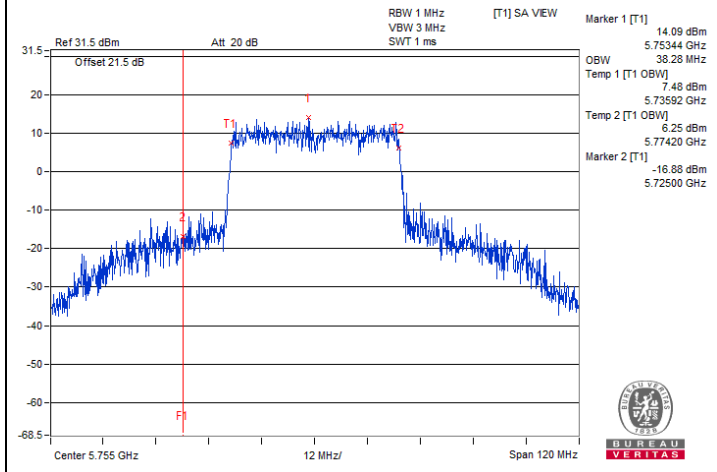
802.11a / Chain 1 : CH 149



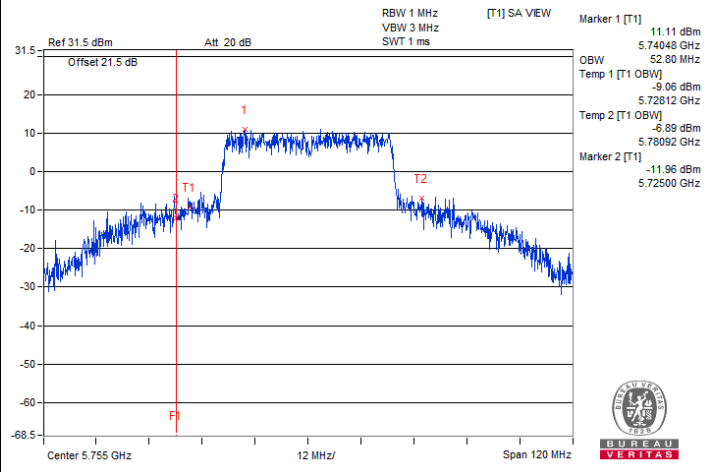
802.11ax (HE20) / Chain 0 : CH 149



802.11ax (HE20) / Chain 1 : CH 149

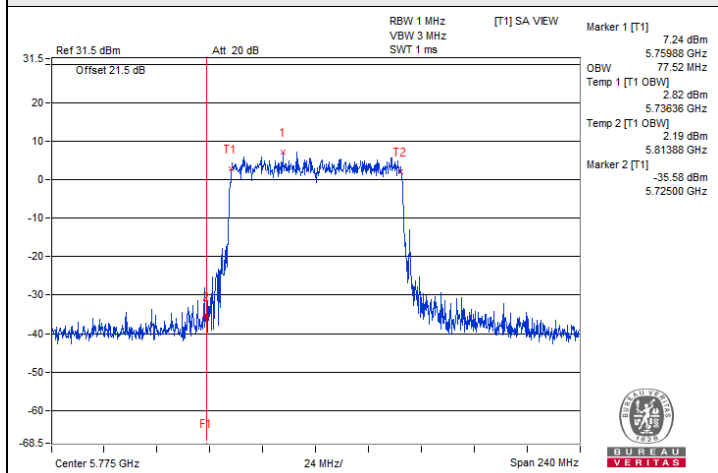


802.11ax (HE40) / Chain 0 : CH 151

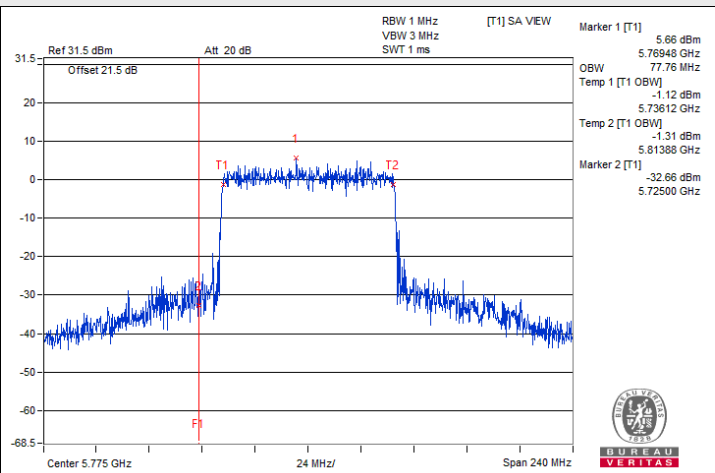


802.11ax (HE40) / Chain 1 : CH 151

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



802.11ax (HE80) / Chain 0 : CH 155



802.11ax (HE80) / Chain 1 : CH 155

7.5 Frequency Stability

Input Power:	48 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko
--------------	--------	---------------------------	--------------	------------	----------

802.11a

Frequency Stability Versus Temperature									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
55	48	5180.013	Pass	5180.0119	Pass	5180.0139	Pass	5180.0129	Pass
50	48	5179.9994	Pass	5180.0004	Pass	5179.9987	Pass	5179.9987	Pass
40	48	5179.9899	Pass	5179.9913	Pass	5179.9935	Pass	5179.9896	Pass
30	48	5179.9913	Pass	5179.9879	Pass	5179.9917	Pass	5179.9869	Pass
20	48	5180.003	Pass	5180.0027	Pass	5180.0021	Pass	5180.004	Pass
10	48	5180.0007	Pass	5179.9977	Pass	5180.0002	Pass	5180.0008	Pass
0	48	5180.0156	Pass	5180.0159	Pass	5180.0173	Pass	5180.0195	Pass
-10	48	5180.0159	Pass	5180.0169	Pass	5180.0164	Pass	5180.0193	Pass
-15	48	5180.0247	Pass	5180.0267	Pass	5180.0235	Pass	5180.0229	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	55.2	5180.0087	Pass	5180.0096	Pass	5180.0097	Pass	5180.0095	Pass
	48	5180.003	Pass	5180.0027	Pass	5180.0021	Pass	5180.004	Pass
	40.8	5180.0055	Pass	5180.0048	Pass	5180.0055	Pass	5180.0085	Pass

7.6 AC Power Conducted Emissions

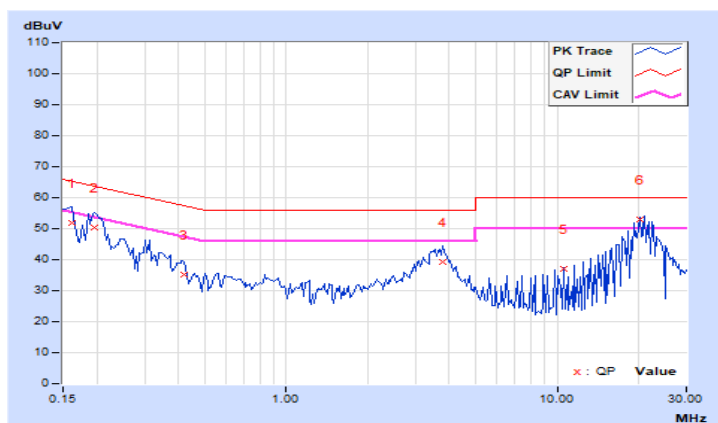
RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Tom Yang		

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	9.96	42.01	25.41	51.97	35.37	65.38	55.38	-13.41	-20.01
2	0.19687	9.96	40.36	26.31	50.32	36.27	63.74	53.74	-13.42	-17.47
3	0.41953	9.97	25.21	14.38	35.18	24.35	57.46	47.46	-22.28	-23.11
4	3.77734	10.14	29.28	20.33	39.42	30.47	56.00	46.00	-16.58	-15.53
5	10.64844	10.53	26.43	26.30	36.96	36.83	60.00	50.00	-23.04	-13.17
6	20.11719	11.10	41.94	35.56	53.04	46.66	60.00	50.00	-6.96	-3.34

Remarks:

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

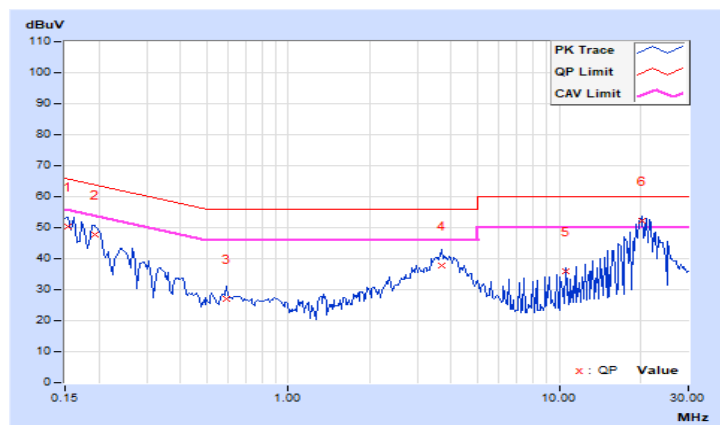


RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Tom Yang		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.93	40.58	27.09	50.51	37.02	65.79	55.79	-15.28	-18.77
2	0.19297	9.94	37.80	28.15	47.74	38.09	63.91	53.91	-16.17	-15.82
3	0.59141	9.95	16.99	12.25	26.94	22.20	56.00	46.00	-29.06	-23.80
4	3.68750	10.09	27.81	19.95	37.90	30.04	56.00	46.00	-18.10	-15.96
5	10.64844	10.40	25.39	24.80	35.79	35.20	60.00	50.00	-24.21	-14.80
6	20.11719	10.83	41.47	36.04	52.30	46.87	60.00	50.00	-7.70	-3.13

Remarks:

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



7.7 Unwanted Emissions below 1 GHz

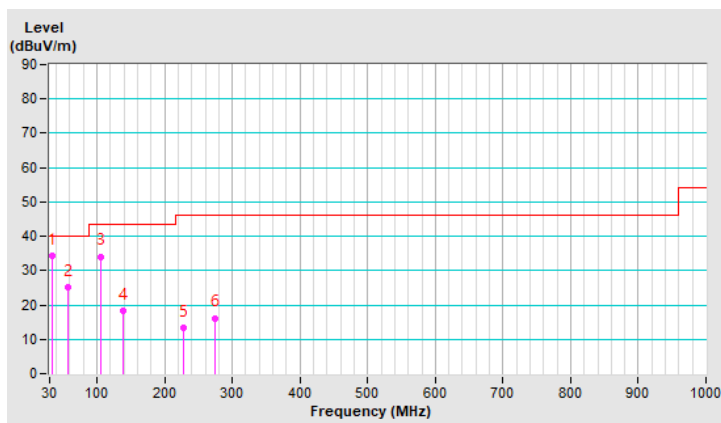
RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	31°C, 76% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.51	34.2 QP	40.0	-5.8	1.00 H	151	48.0	-13.8
2	57.60	25.2 QP	40.0	-14.8	3.00 H	262	38.4	-13.2
3	106.21	34.1 QP	43.5	-9.4	2.00 H	256	50.4	-16.3
4	139.20	18.2 QP	43.5	-25.3	2.00 H	248	31.4	-13.2
5	227.10	13.2 QP	46.0	-32.8	1.00 H	72	28.9	-15.7
6	275.40	16.2 QP	46.0	-29.8	1.00 H	148	29.1	-12.9

Remarks:

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

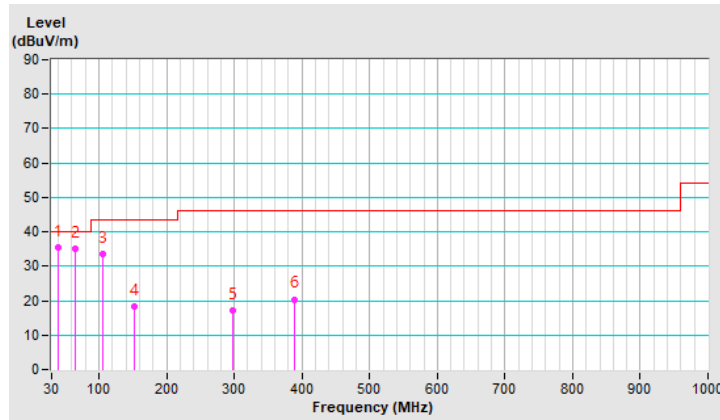


RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	31°C, 76% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	39.61	35.4 QP	40.0	-4.6	1.00 V	152	48.7	-13.3
2	65.12	35.1 QP	40.0	-4.9	1.00 V	351	49.4	-14.3
3	106.22	33.4 QP	43.5	-10.1	2.00 V	172	49.7	-16.3
4	152.10	18.2 QP	43.5	-25.3	1.00 V	206	30.8	-12.6
5	297.60	17.2 QP	46.0	-28.8	3.00 V	0	29.5	-12.3
6	388.40	20.4 QP	46.0	-25.6	3.00 V	360	30.6	-10.2

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 of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



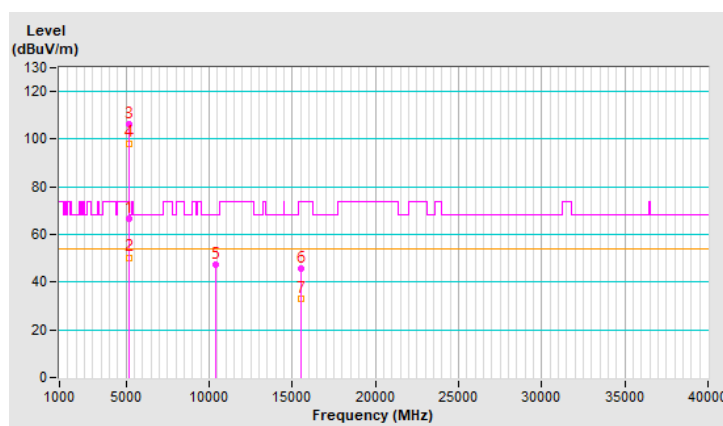
7.8 Unwanted Emissions above 1 GHz

RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	66.7 PK	74.0	-7.3	1.29 H	97	64.3	2.4
2	5150.00	50.4 AV	54.0	-3.6	1.29 H	97	48.0	2.4
3	*5180.00	106.1 PK			1.29 H	97	103.9	2.2
4	*5180.00	98.3 AV			1.29 H	97	96.1	2.2
5	#10360.00	47.1 PK	68.2	-21.1	1.67 H	146	35.4	11.7
6	15540.00	45.7 PK	74.0	-28.3	2.25 H	256	33.9	11.8
7	15540.00	32.8 AV	54.0	-21.2	2.25 H	256	21.0	11.8

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.

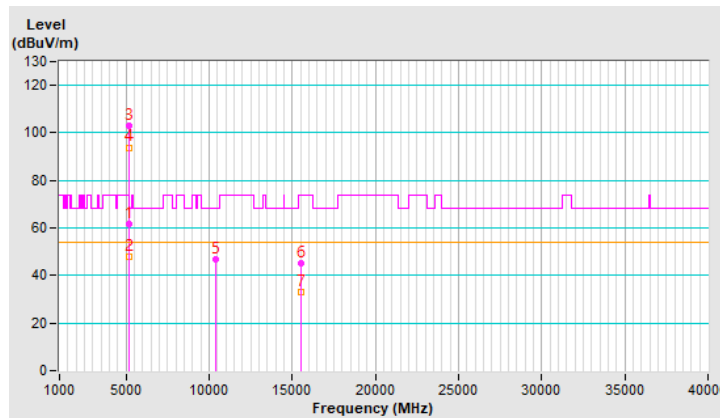


RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	61.8 PK	74.0	-12.2	2.10 V	21	59.4	2.4
2	5150.00	47.7 AV	54.0	-6.3	2.10 V	21	45.3	2.4
3	*5180.00	102.8 PK			2.10 V	21	100.6	2.2
4	*5180.00	93.9 AV			2.10 V	21	91.7	2.2
5	#10360.00	46.8 PK	68.2	-21.4	1.12 V	345	35.1	11.7
6	15540.00	45.1 PK	74.0	-28.9	4.00 V	264	33.3	11.8
7	15540.00	33.1 AV	54.0	-20.9	4.00 V	264	21.3	11.8

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.

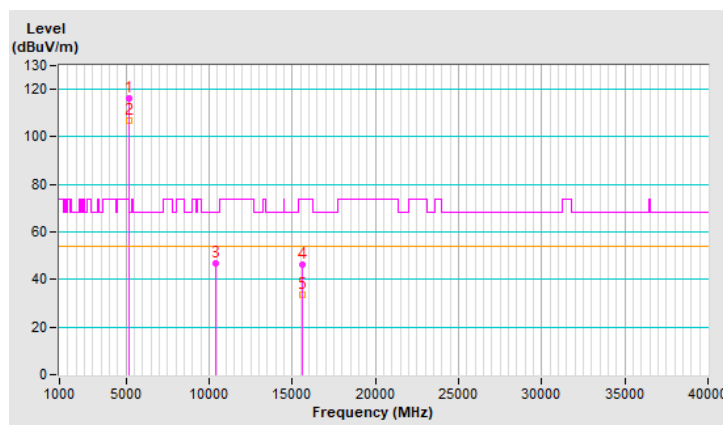


RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	116.0 PK			1.26 H	79	113.9	2.1
2	*5200.00	107.0 AV			1.26 H	79	104.9	2.1
3	#10400.00	47.0 PK	68.2	-21.2	1.69 H	153	35.1	11.9
4	15600.00	46.2 PK	74.0	-27.8	2.30 H	282	34.7	11.5
5	15600.00	33.6 AV	54.0	-20.4	2.30 H	282	22.1	11.5

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.

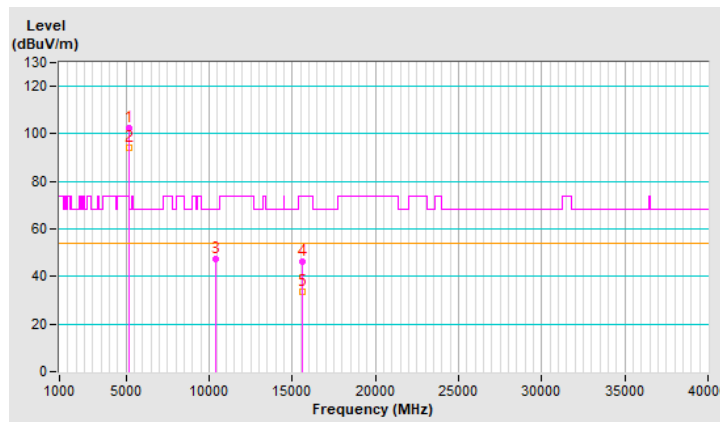


RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	102.6 PK			2.20 V	28	100.5	2.1
2	*5200.00	94.2 AV			2.20 V	28	92.1	2.1
3	#10400.00	47.2 PK	68.2	-21.0	1.36 V	300	35.3	11.9
4	15600.00	46.2 PK	74.0	-27.8	1.90 V	4	34.7	11.5
5	15600.00	33.8 AV	54.0	-20.2	1.90 V	4	22.3	11.5

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.

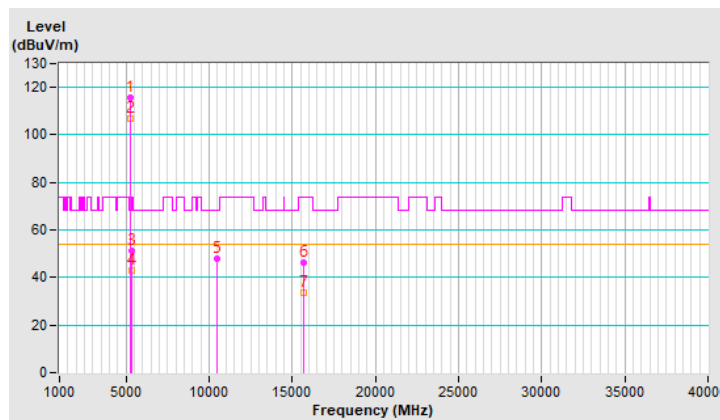


RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	115.7 PK			1.35 H	84	113.8	1.9
2	*5240.00	106.9 AV			1.35 H	84	105.0	1.9
3	5350.00	51.2 PK	74.0	-22.8	1.35 H	84	49.2	2.0
4	5350.00	42.9 AV	54.0	-11.1	1.35 H	84	40.9	2.0
5	#10480.00	47.7 PK	68.2	-20.5	1.55 H	176	35.8	11.9
6	15720.00	46.5 PK	74.0	-27.5	2.20 H	292	34.8	11.7
7	15720.00	33.7 AV	54.0	-20.3	2.20 H	292	22.0	11.7

Remarks:

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

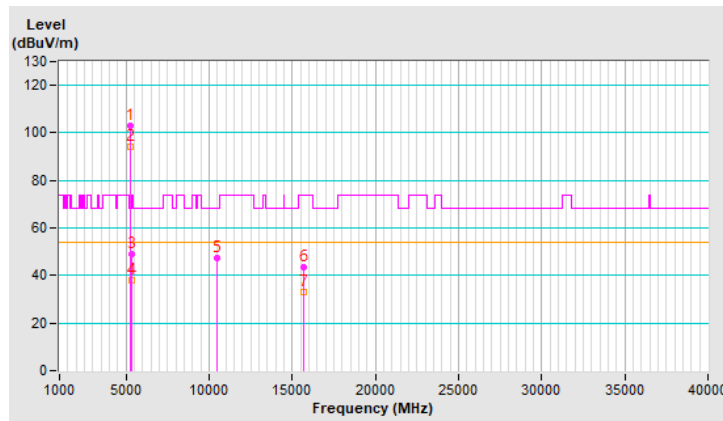


RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	102.8 PK			2.17 V	22	100.9	1.9
2	*5240.00	94.4 AV			2.17 V	22	92.5	1.9
3	5350.00	49.2 PK	74.0	-24.8	2.17 V	22	47.2	2.0
4	5350.00	37.8 AV	54.0	-16.2	2.17 V	22	35.8	2.0
5	#10480.00	47.3 PK	68.2	-20.9	1.31 V	204	35.4	11.9
6	15720.00	43.5 PK	74.0	-30.5	1.48 V	133	31.8	11.7
7	15720.00	33.2 AV	54.0	-20.8	1.48 V	133	21.5	11.7

Remarks:

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

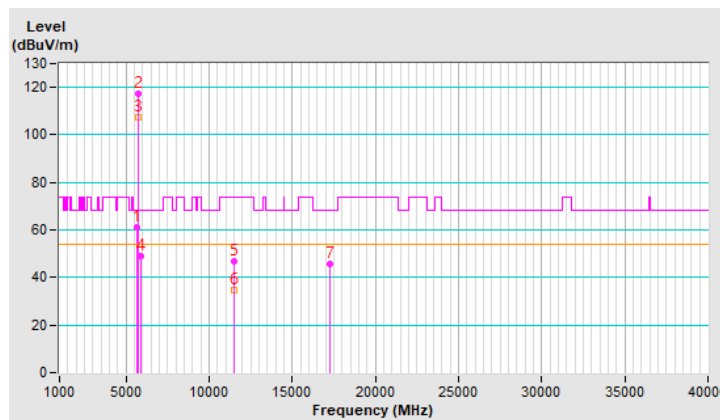


RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5645.10	61.3 PK	68.2	-6.9	1.12 H	82	59.0	2.3
2	*5745.00	117.3 PK			1.12 H	82	114.8	2.5
3	*5745.00	107.2 AV			1.12 H	82	104.7	2.5
4	#5928.50	49.0 PK	68.2	-19.2	1.12 H	82	46.1	2.9
5	11490.00	46.9 PK	74.0	-27.1	1.65 H	135	34.5	12.4
6	11490.00	34.5 AV	54.0	-19.5	1.65 H	135	22.1	12.4
7	#17235.00	45.6 PK	68.2	-22.6	2.31 H	265	28.9	16.7

Remarks:

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

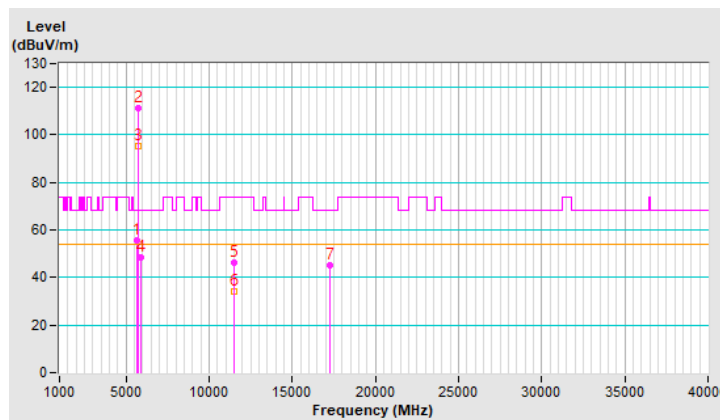


RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5649.80	55.5 PK	68.2	-12.7	1.91 V	13	53.2	2.3
2	*5745.00	111.0 PK			1.91 V	13	108.5	2.5
3	*5745.00	95.3 AV			1.91 V	13	92.8	2.5
4	#5925.80	48.7 PK	68.2	-19.5	1.91 V	13	45.8	2.9
5	11490.00	46.2 PK	74.0	-27.8	1.17 V	343	33.8	12.4
6	11490.00	34.0 AV	54.0	-20.0	1.17 V	343	21.6	12.4
7	#17235.00	44.9 PK	68.2	-23.3	4.00 V	279	28.2	16.7

Remarks:

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

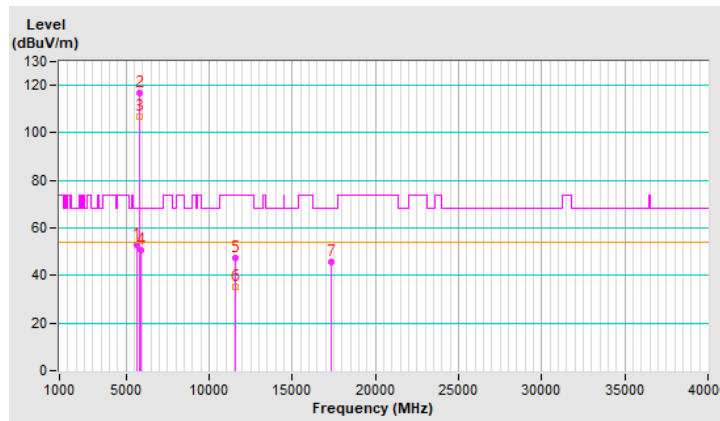


RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5645.40	53.1 PK	68.2	-15.1	1.13 H	111	50.8	2.3
2	*5785.00	116.6 PK			1.13 H	111	113.9	2.7
3	*5785.00	106.7 AV			1.13 H	111	104.0	2.7
4	#5926.00	50.8 PK	68.2	-17.4	1.13 H	111	47.9	2.9
5	11570.00	47.4 PK	74.0	-26.6	1.64 H	139	35.0	12.4
6	11570.00	35.4 AV	54.0	-18.6	1.64 H	139	23.0	12.4
7	#17355.00	45.5 PK	68.2	-22.7	2.27 H	256	27.9	17.6

Remarks:

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

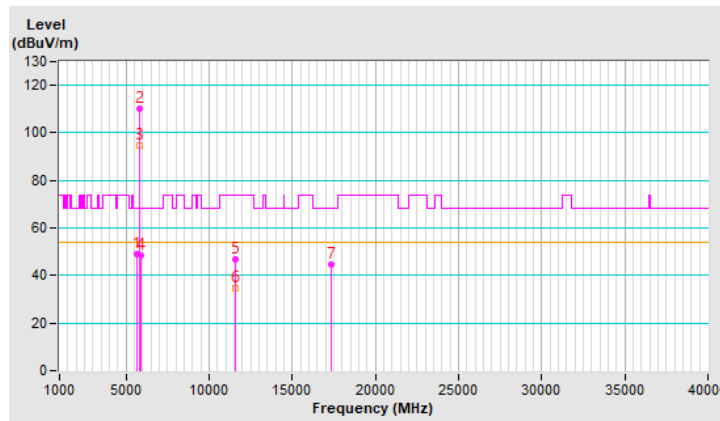


RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5656.60	49.1 PK	68.2	-19.1	2.10 V	11	46.8	2.3
2	*5785.00	109.9 PK			2.10 V	11	107.2	2.7
3	*5785.00	94.8 AV			2.10 V	11	92.1	2.7
4	#5925.90	48.4 PK	68.2	-19.8	2.10 V	11	45.5	2.9
5	11570.00	46.8 PK	74.0	-27.2	1.16 V	336	34.4	12.4
6	11570.00	34.6 AV	54.0	-19.4	1.16 V	336	22.2	12.4
7	#17355.00	44.5 PK	68.2	-23.7	4.00 V	250	26.9	17.6

Remarks:

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

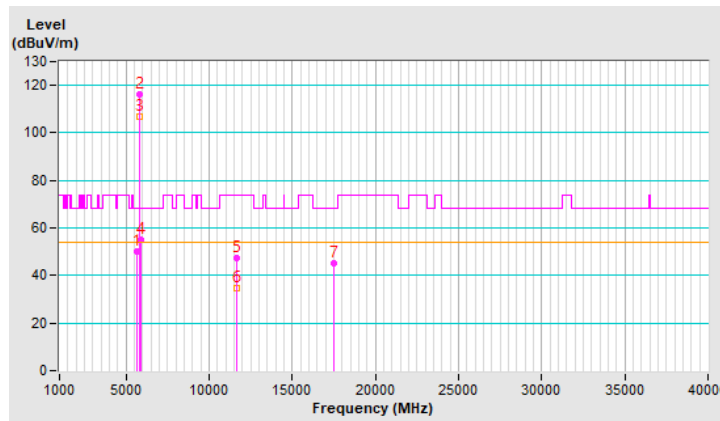


RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.80	50.0 PK	68.2	-18.2	1.01 H	86	47.7	2.3
2	*5825.00	116.0 PK			1.01 H	86	113.2	2.8
3	*5825.00	106.8 AV			1.01 H	86	104.0	2.8
4	#5931.00	54.9 PK	68.2	-13.3	1.01 H	86	52.0	2.9
5	11650.00	47.2 PK	74.0	-26.8	1.69 H	133	35.3	11.9
6	11650.00	34.9 AV	54.0	-19.1	1.69 H	133	23.0	11.9
7	#17475.00	45.3 PK	68.2	-22.9	2.30 H	241	26.8	18.5

Remarks:

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

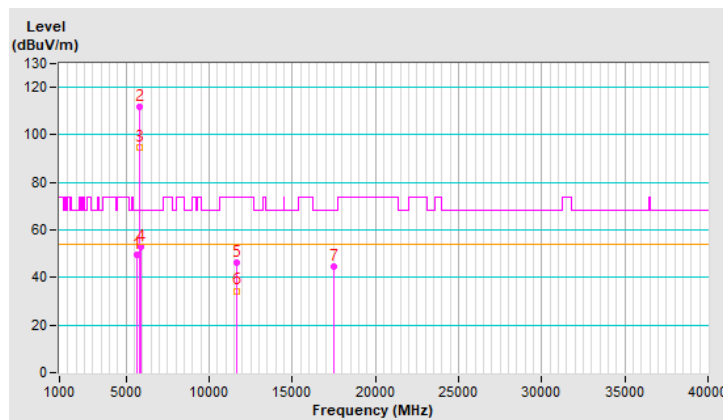


RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5649.36	49.7 PK	68.2	-18.5	2.17 V	13	47.4	2.3
2	*5825.00	111.9 PK			2.17 V	13	109.1	2.8
3	*5825.00	94.9 AV			2.17 V	13	92.1	2.8
4	#5925.37	52.9 PK	68.2	-15.3	2.17 V	13	50.0	2.9
5	11650.00	46.5 PK	74.0	-27.5	1.16 V	340	34.6	11.9
6	11650.00	34.4 AV	54.0	-19.6	1.16 V	340	22.5	11.9
7	#17475.00	44.7 PK	68.2	-23.5	4.00 V	271	26.2	18.5

Remarks:

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

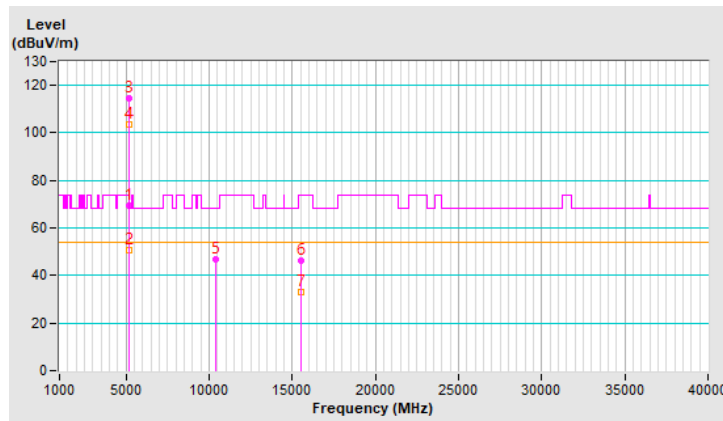


RF Mode	802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	69.4 PK	74.0	-4.6	1.33 H	98	67.0	2.4
2	5150.00	50.6 AV	54.0	-3.4	1.33 H	98	48.2	2.4
3	*5180.00	114.6 PK			1.33 H	98	112.4	2.2
4	*5180.00	103.6 AV			1.33 H	98	101.4	2.2
5	#10360.00	46.6 PK	68.2	-21.6	1.63 H	134	34.9	11.7
6	15540.00	46.2 PK	74.0	-27.8	2.23 H	259	34.4	11.8
7	15540.00	33.0 AV	54.0	-21.0	2.23 H	259	21.2	11.8

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.

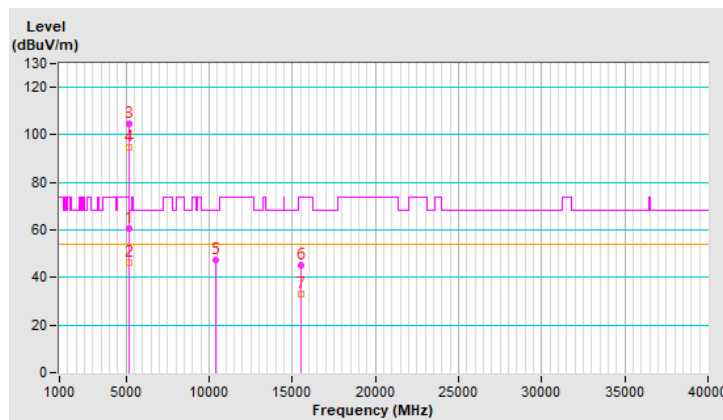


RF Mode	802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	60.4 PK	74.0	-13.6	2.07 V	37	58.0	2.4
2	5150.00	46.0 AV	54.0	-8.0	2.07 V	37	43.6	2.4
3	*5180.00	104.7 PK			2.07 V	37	102.5	2.2
4	*5180.00	94.7 AV			2.07 V	37	92.5	2.2
5	#10360.00	47.6 PK	68.2	-20.6	1.09 V	331	35.9	11.7
6	15540.00	45.0 PK	74.0	-29.0	4.00 V	251	33.2	11.8
7	15540.00	32.9 AV	54.0	-21.1	4.00 V	251	21.1	11.8

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.

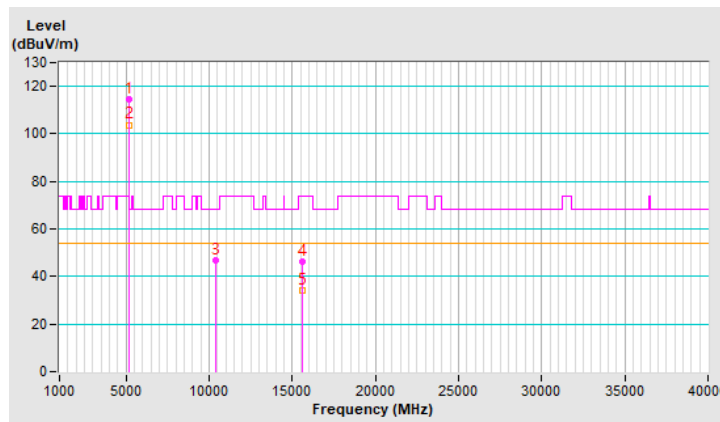


RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	114.7 PK			1.30 H	106	112.6	2.1
2	*5200.00	103.8 AV			1.30 H	106	101.7	2.1
3	#10400.00	47.0 PK	68.2	-21.2	1.75 H	141	35.1	11.9
4	15600.00	46.5 PK	74.0	-27.5	2.34 H	266	35.0	11.5
5	15600.00	33.9 AV	54.0	-20.1	2.34 H	266	22.4	11.5

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.

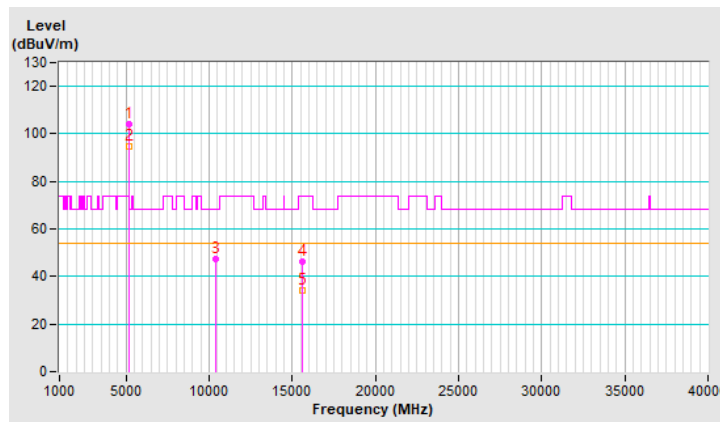


RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	104.3 PK			2.01 V	48	102.2	2.1
2	*5200.00	94.5 AV			2.01 V	48	92.4	2.1
3	#10400.00	47.1 PK	68.2	-21.1	1.42 V	294	35.2	11.9
4	15600.00	46.5 PK	74.0	-27.5	1.90 V	20	35.0	11.5
5	15600.00	34.0 AV	54.0	-20.0	1.90 V	20	22.5	11.5

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.

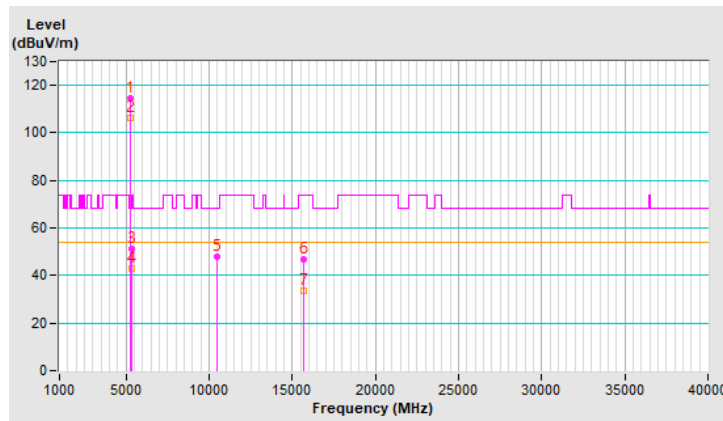


RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	114.6 PK			1.26 H	106	112.7	1.9
2	*5240.00	106.1 AV			1.26 H	106	104.2	1.9
3	5350.00	51.3 PK	74.0	-22.7	1.26 H	106	49.3	2.0
4	5350.00	43.0 AV	54.0	-11.0	1.26 H	106	41.0	2.0
5	#10480.00	48.0 PK	68.2	-20.2	1.53 H	176	36.1	11.9
6	15720.00	46.6 PK	74.0	-27.4	2.15 H	282	34.9	11.7
7	15720.00	33.6 AV	54.0	-20.4	2.15 H	282	21.9	11.7

Remarks:

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

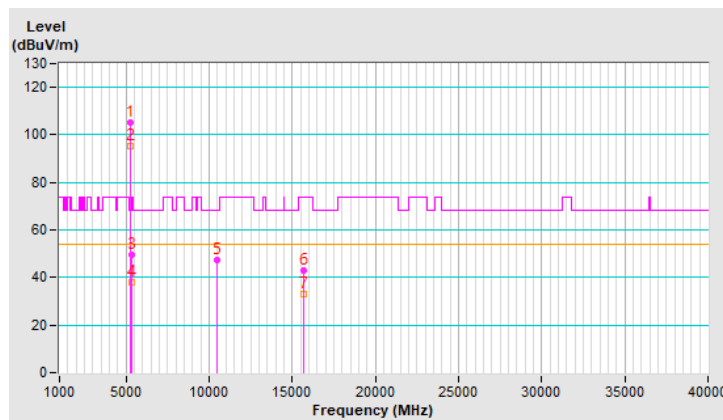


RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	105.3 PK			2.07 V	56	103.4	1.9
2	*5240.00	95.4 AV			2.07 V	56	93.5	1.9
3	5350.00	49.6 PK	74.0	-24.4	2.07 V	56	47.6	2.0
4	5350.00	38.0 AV	54.0	-16.0	2.07 V	56	36.0	2.0
5	#10480.00	47.6 PK	68.2	-20.6	1.34 V	218	35.7	11.9
6	15720.00	42.9 PK	74.0	-31.1	1.47 V	123	31.2	11.7
7	15720.00	32.9 AV	54.0	-21.1	1.47 V	123	21.2	11.7

Remarks:

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

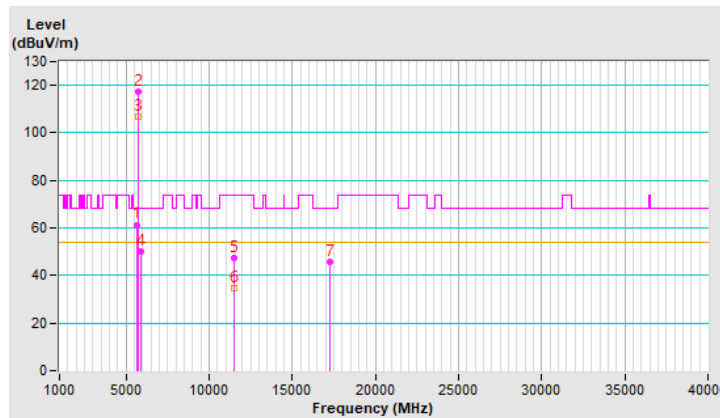


RF Mode	802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5651.00	61.4 PK	68.2	-6.8	1.12 H	68	59.1	2.3
2	*5745.00	117.5 PK			1.12 H	68	115.0	2.5
3	*5745.00	106.8 AV			1.12 H	68	104.3	2.5
4	#5926.00	50.0 PK	68.2	-18.2	1.12 H	68	47.1	2.9
5	11490.00	47.6 PK	74.0	-26.4	1.66 H	127	35.2	12.4
6	11490.00	34.9 AV	54.0	-19.1	1.66 H	127	22.5	12.4
7	#17235.00	45.7 PK	68.2	-22.5	2.31 H	269	29.0	16.7

Remarks:

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

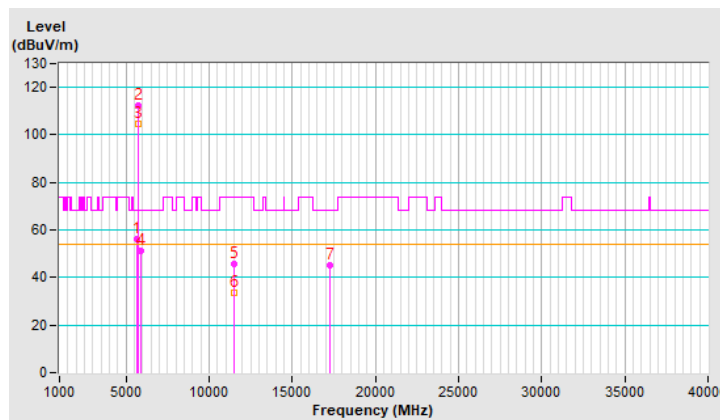


RF Mode	802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.00	56.2 PK	68.2	-12.0	1.96 V	4	53.9	2.3
2	*5745.00	112.3 PK			1.96 V	4	109.8	2.5
3	*5745.00	104.5 AV			1.96 V	4	102.0	2.5
4	#5927.00	51.3 PK	68.2	-16.9	1.96 V	4	48.4	2.9
5	11490.00	45.9 PK	74.0	-28.1	1.23 V	349	33.5	12.4
6	11490.00	33.8 AV	54.0	-20.2	1.23 V	349	21.4	12.4
7	#17235.00	45.4 PK	68.2	-22.8	4.00 V	293	28.7	16.7

Remarks:

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

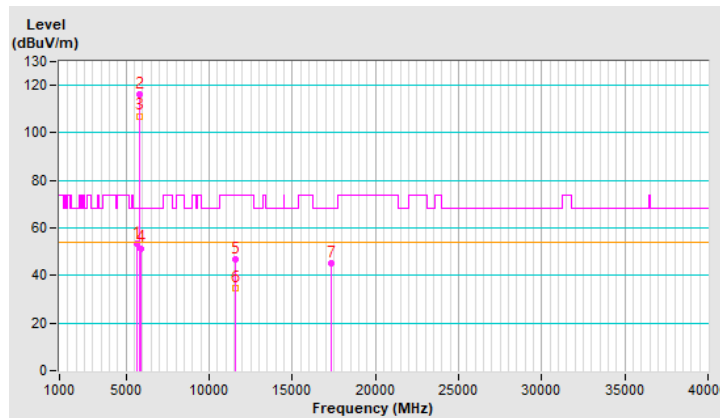


RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.70	53.5 PK	68.2	-14.7	1.15 H	108	51.2	2.3
2	*5785.00	116.2 PK			1.15 H	108	113.5	2.7
3	*5785.00	107.1 AV			1.15 H	108	104.4	2.7
4	#5925.80	51.5 PK	68.2	-16.7	1.15 H	108	48.6	2.9
5	11570.00	46.7 PK	74.0	-27.3	1.60 H	127	34.3	12.4
6	11570.00	34.9 AV	54.0	-19.1	1.60 H	127	22.5	12.4
7	#17355.00	45.2 PK	68.2	-23.0	2.32 H	242	27.6	17.6

Remarks:

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

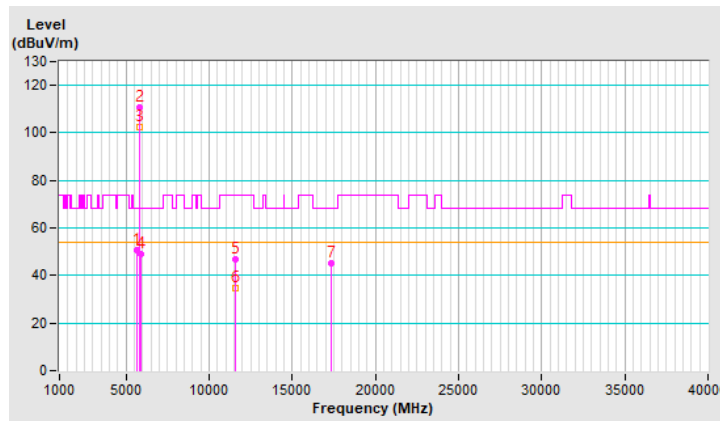


RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5648.00	50.5 PK	68.2	-17.7	2.07 V	13	48.2	2.3
2	*5785.00	110.7 PK			2.07 V	13	108.0	2.7
3	*5785.00	102.4 AV			2.07 V	13	99.7	2.7
4	#5926.00	49.2 PK	68.2	-19.0	2.07 V	13	46.3	2.9
5	11570.00	46.6 PK	74.0	-27.4	1.11 V	325	34.2	12.4
6	11570.00	34.5 AV	54.0	-19.5	1.11 V	325	22.1	12.4
7	#17355.00	45.0 PK	68.2	-23.2	4.00 V	242	27.4	17.6

Remarks:

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

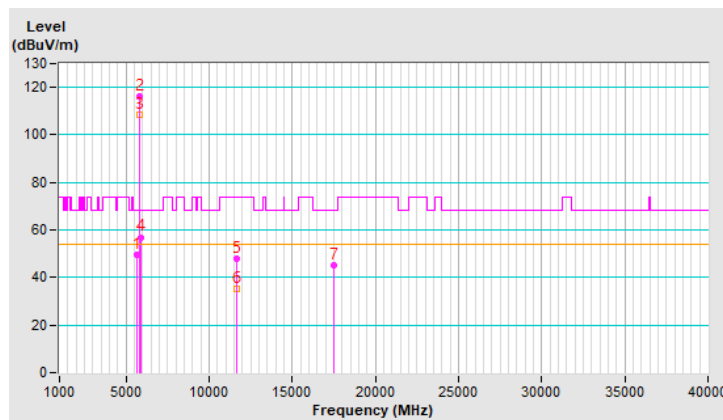


RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.80	49.8 PK	68.2	-18.4	1.05 H	90	47.5	2.3
2	*5825.00	116.4 PK			1.05 H	90	113.6	2.8
3	*5825.00	108.4 AV			1.05 H	90	105.6	2.8
4	#5928.80	57.0 PK	68.2	-11.2	1.05 H	90	54.1	2.9
5	11650.00	47.9 PK	74.0	-26.1	1.73 H	124	36.0	11.9
6	11650.00	35.4 AV	54.0	-18.6	1.73 H	124	23.5	11.9
7	#17475.00	45.3 PK	68.2	-22.9	2.25 H	257	26.8	18.5

Remarks:

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

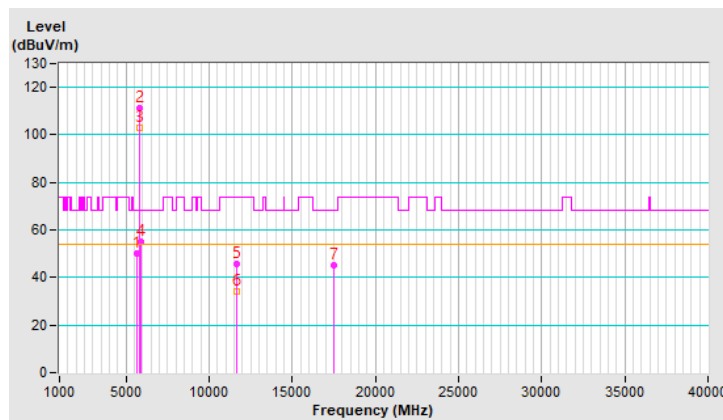


RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.40	50.0 PK	68.2	-18.2	2.19 V	25	47.7	2.3
2	*5825.00	111.4 PK			2.19 V	25	108.6	2.8
3	*5825.00	102.8 AV			2.19 V	25	100.0	2.8
4	#5926.10	55.1 PK	68.2	-13.1	2.19 V	25	52.2	2.9
5	11650.00	45.8 PK	74.0	-28.2	1.12 V	327	33.9	11.9
6	11650.00	33.9 AV	54.0	-20.1	1.12 V	327	22.0	11.9
7	#17475.00	44.9 PK	68.2	-23.3	4.00 V	275	26.4	18.5

Remarks:

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

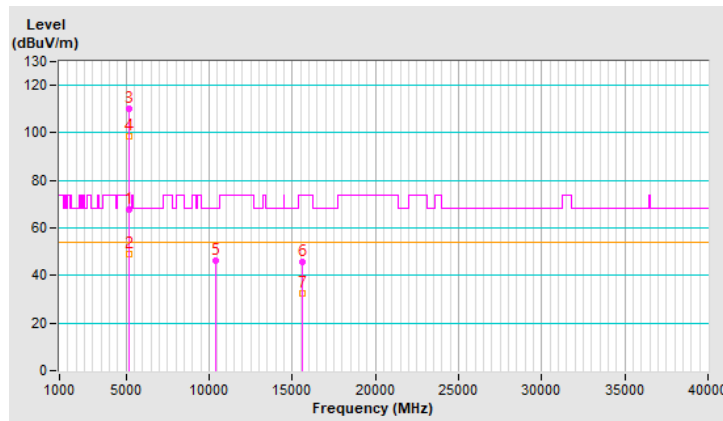


RF Mode	802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	67.8 PK	74.0	-6.2	1.36 H	92	65.4	2.4
2	5150.00	49.1 AV	54.0	-4.9	1.36 H	92	46.7	2.4
3	*5190.00	110.3 PK			1.34 H	97	108.1	2.2
4	*5190.00	98.5 AV			1.34 H	97	96.3	2.2
5	#10380.00	46.4 PK	68.2	-21.8	1.66 H	122	34.6	11.8
6	15570.00	45.6 PK	74.0	-28.4	2.25 H	257	33.8	11.8
7	15570.00	32.5 AV	54.0	-21.5	2.25 H	257	20.7	11.8

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.

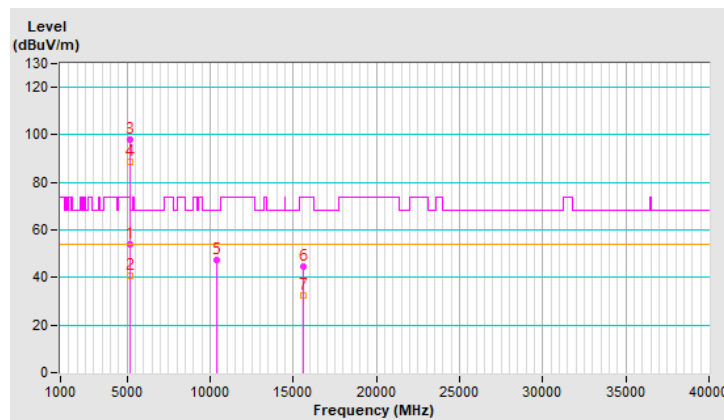


RF Mode	802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.2 PK	74.0	-19.8	2.05 V	40	51.8	2.4
2	5150.00	40.6 AV	54.0	-13.4	2.05 V	40	38.2	2.4
3	*5190.00	97.9 PK			2.11 V	22	95.7	2.2
4	*5190.00	88.6 AV			2.11 V	22	86.4	2.2
5	#10380.00	47.6 PK	68.2	-20.6	1.13 V	320	35.8	11.8
6	15570.00	44.7 PK	74.0	-29.3	4.00 V	263	32.9	11.8
7	15570.00	32.6 AV	54.0	-21.4	4.00 V	263	20.8	11.8

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.

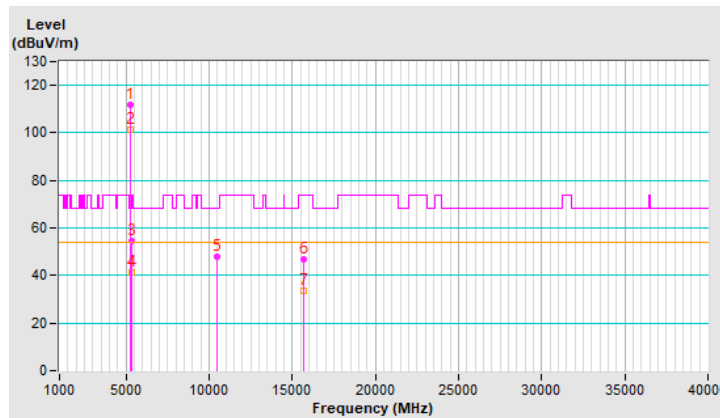


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5230.00	111.8 PK			1.20 H	113	109.8	2.0
2	*5230.00	101.5 AV			1.20 H	113	99.5	2.0
3	5350.00	54.3 PK	74.0	-19.7	1.30 H	114	52.3	2.0
4	5350.00	41.4 AV	54.0	-12.6	1.30 H	114	39.4	2.0
5	#10460.00	48.0 PK	68.2	-20.2	1.48 H	183	36.0	12.0
6	15690.00	46.8 PK	74.0	-27.2	2.21 H	292	34.9	11.9
7	15690.00	33.8 AV	54.0	-20.2	2.21 H	292	21.9	11.9

Remarks:

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

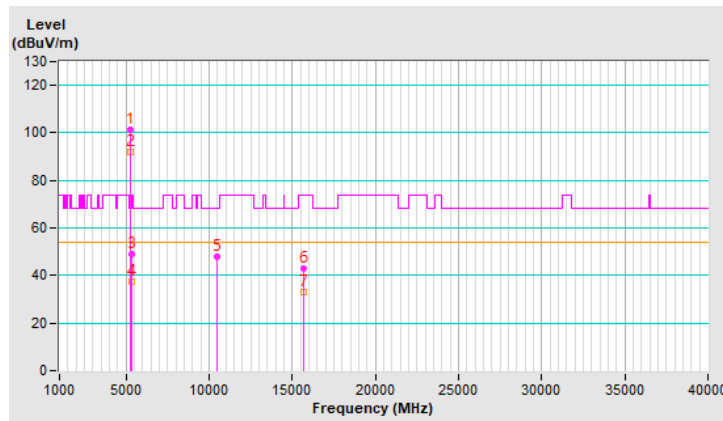


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5230.00	101.2 PK			2.12 V	72	99.2	2.0
2	*5230.00	91.8 AV			2.12 V	72	89.8	2.0
3	5350.00	49.2 PK	74.0	-24.8	2.02 V	59	47.2	2.0
4	5350.00	37.5 AV	54.0	-16.5	2.02 V	59	35.5	2.0
5	#10460.00	47.9 PK	68.2	-20.3	1.35 V	207	35.9	12.0
6	15690.00	42.9 PK	74.0	-31.1	1.48 V	112	31.0	11.9
7	15690.00	32.8 AV	54.0	-21.2	1.48 V	112	20.9	11.9

Remarks:

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

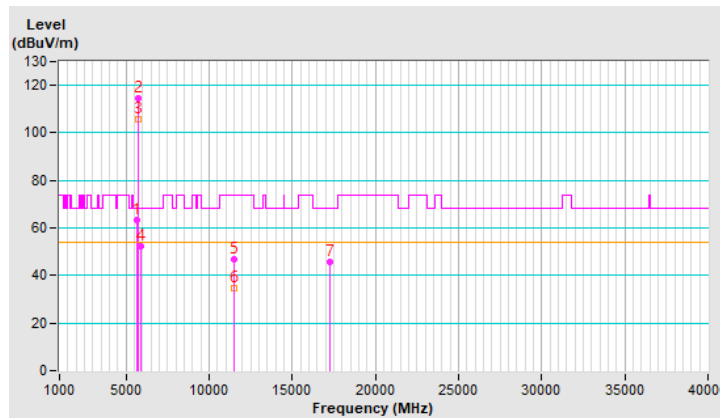


RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5645.90	63.1 PK	68.2	-5.1	1.18 H	110	60.8	2.3
2	*5755.00	114.4 PK			1.18 H	110	111.8	2.6
3	*5755.00	105.7 AV			1.18 H	110	103.1	2.6
4	#5925.60	52.2 PK	68.2	-16.0	1.18 H	110	49.3	2.9
5	11510.00	46.6 PK	74.0	-27.4	1.65 H	112	34.2	12.4
6	11510.00	34.5 AV	54.0	-19.5	1.65 H	112	22.1	12.4
7	#17265.00	45.7 PK	68.2	-22.5	2.30 H	237	28.9	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.

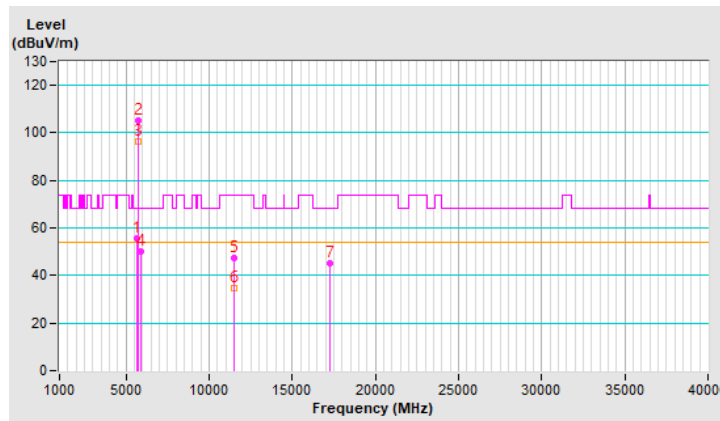


RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.00	55.8 PK	68.2	-12.4	2.08 V	18	53.5	2.3
2	*5755.00	105.2 PK			2.08 V	18	102.6	2.6
3	*5755.00	96.4 AV			2.08 V	18	93.8	2.6
4	#5929.80	50.0 PK	68.2	-18.2	2.08 V	18	47.1	2.9
5	11510.00	47.1 PK	74.0	-26.9	1.09 V	324	34.7	12.4
6	11510.00	34.9 AV	54.0	-19.1	1.09 V	324	22.5	12.4
7	#17265.00	45.3 PK	68.2	-22.9	4.00 V	240	28.5	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.

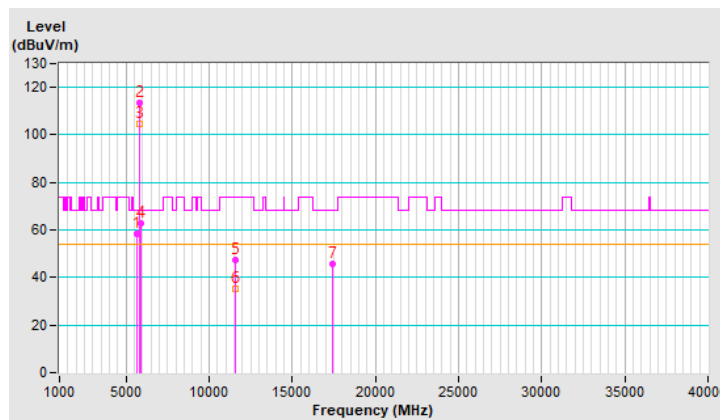


RF Mode	802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.10	58.4 PK	68.2	-9.8	1.07 H	98	56.1	2.3
2	*5795.00	113.7 PK			1.07 H	98	111.0	2.7
3	*5795.00	104.6 AV			1.07 H	98	101.9	2.7
4	#5925.40	62.8 PK	68.2	-5.4	1.07 H	98	59.9	2.9
5	11590.00	47.6 PK	74.0	-26.4	1.76 H	119	35.3	12.3
6	11590.00	35.1 AV	54.0	-18.9	1.76 H	119	22.8	12.3
7	#17385.00	45.9 PK	68.2	-22.3	2.30 H	247	28.1	17.8

Remarks:

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

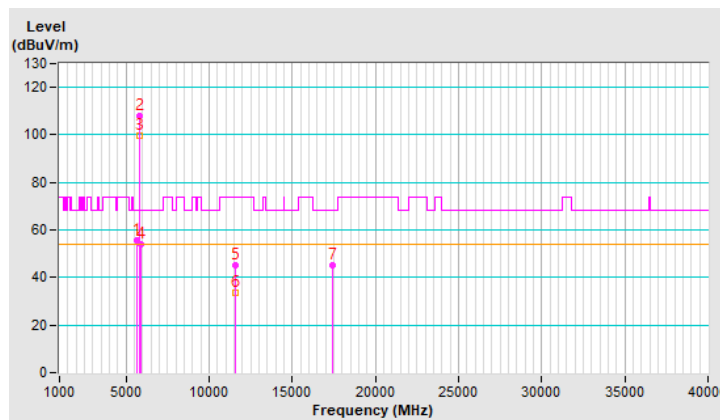


RF Mode	802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5649.10	55.5 PK	68.2	-12.7	2.15 V	18	53.2	2.3
2	*5795.00	107.8 PK			2.15 V	18	105.1	2.7
3	*5795.00	99.8 AV			2.15 V	18	97.1	2.7
4	#5923.40	53.9 PK	68.2	-14.3	2.15 V	18	51.0	2.9
5	11590.00	45.3 PK	74.0	-28.7	1.17 V	340	33.0	12.3
6	11590.00	33.5 AV	54.0	-20.5	1.17 V	340	21.2	12.3
7	#17385.00	45.1 PK	68.2	-23.1	4.00 V	265	27.3	17.8

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.

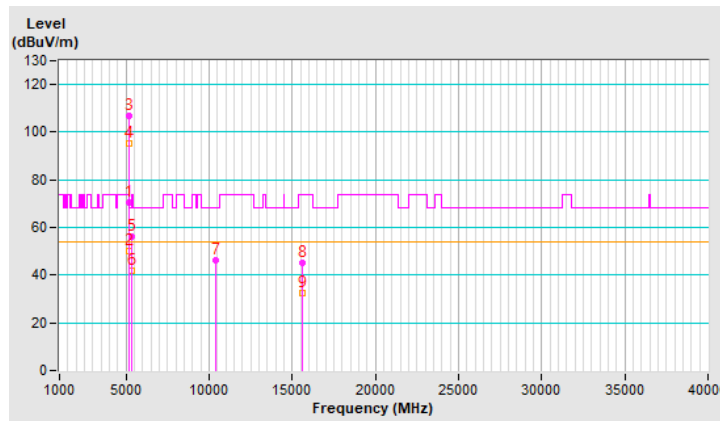


RF Mode	802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	70.3 PK	74.0	-3.7	1.40 H	89	67.9	2.4
2	5150.00	50.2 AV	54.0	-3.8	1.40 H	89	47.8	2.4
3	*5210.00	106.6 PK			1.40 H	89	104.6	2.0
4	*5210.00	95.5 AV			1.40 H	89	93.5	2.0
5	5350.00	56.3 PK	74.0	-17.7	1.40 H	89	54.3	2.0
6	5350.00	42.0 AV	54.0	-12.0	1.40 H	89	40.0	2.0
7	#10420.00	46.4 PK	68.2	-21.8	1.67 H	113	34.4	12.0
8	15630.00	45.2 PK	74.0	-28.8	2.26 H	249	33.5	11.7
9	15630.00	32.3 AV	54.0	-21.7	2.26 H	249	20.6	11.7

Remarks:

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

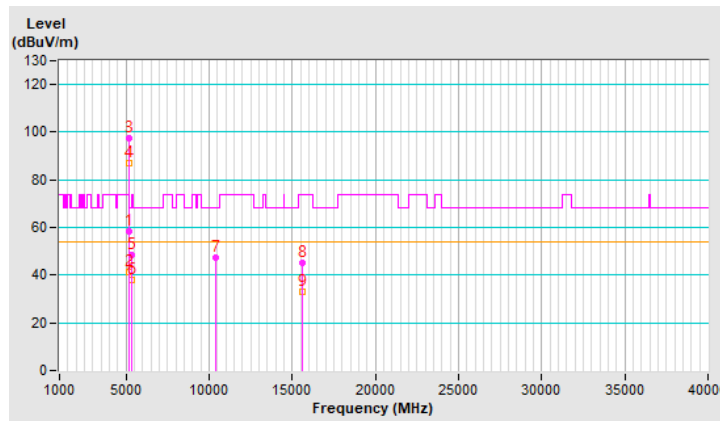


RF Mode	802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.2 PK	74.0	-15.8	2.05 V	29	55.8	2.4
2	5150.00	41.5 AV	54.0	-12.5	2.05 V	29	39.1	2.4
3	*5210.00	97.5 PK			2.05 V	29	95.5	2.0
4	*5210.00	86.8 AV			2.05 V	29	84.8	2.0
5	5350.00	48.5 PK	74.0	-25.5	2.05 V	29	46.5	2.0
6	5350.00	38.2 AV	54.0	-15.8	2.05 V	29	36.2	2.0
7	#10420.00	47.2 PK	68.2	-21.0	1.15 V	312	35.2	12.0
8	15630.00	45.2 PK	74.0	-28.8	4.00 V	255	33.5	11.7
9	15630.00	33.0 AV	54.0	-21.0	4.00 V	255	21.3	11.7

Remarks:

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

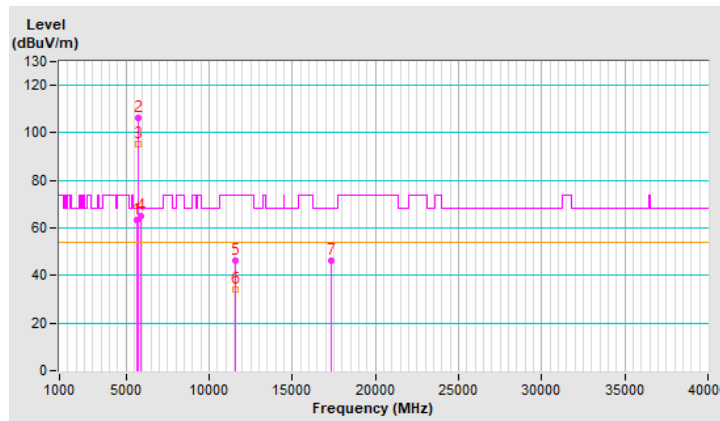


RF Mode	802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	63.1 PK	68.2	-5.1	1.20 H	118	60.8	2.3
2	*5775.00	106.5 PK			1.20 H	118	103.9	2.6
3	*5775.00	95.2 AV			1.20 H	118	92.6	2.6
4	#5926.00	65.0 PK	68.2	-3.2	1.20 H	118	62.1	2.9
5	11550.00	46.2 PK	74.0	-27.8	1.59 H	117	33.9	12.3
6	11550.00	34.3 AV	54.0	-19.7	1.59 H	117	22.0	12.3
7	#17325.00	46.1 PK	68.2	-22.1	2.26 H	249	28.9	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.

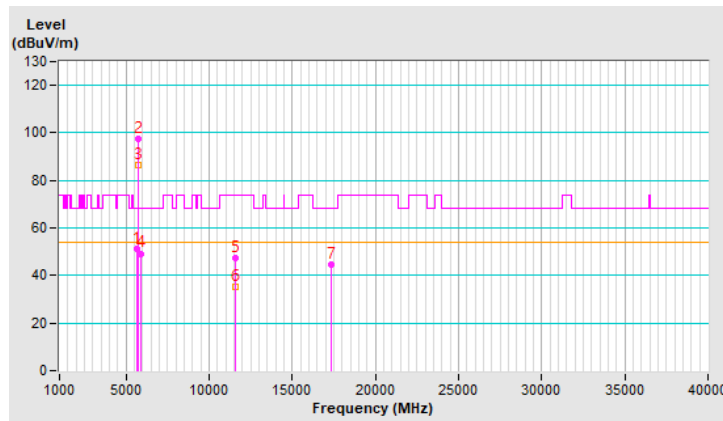


RF Mode	802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

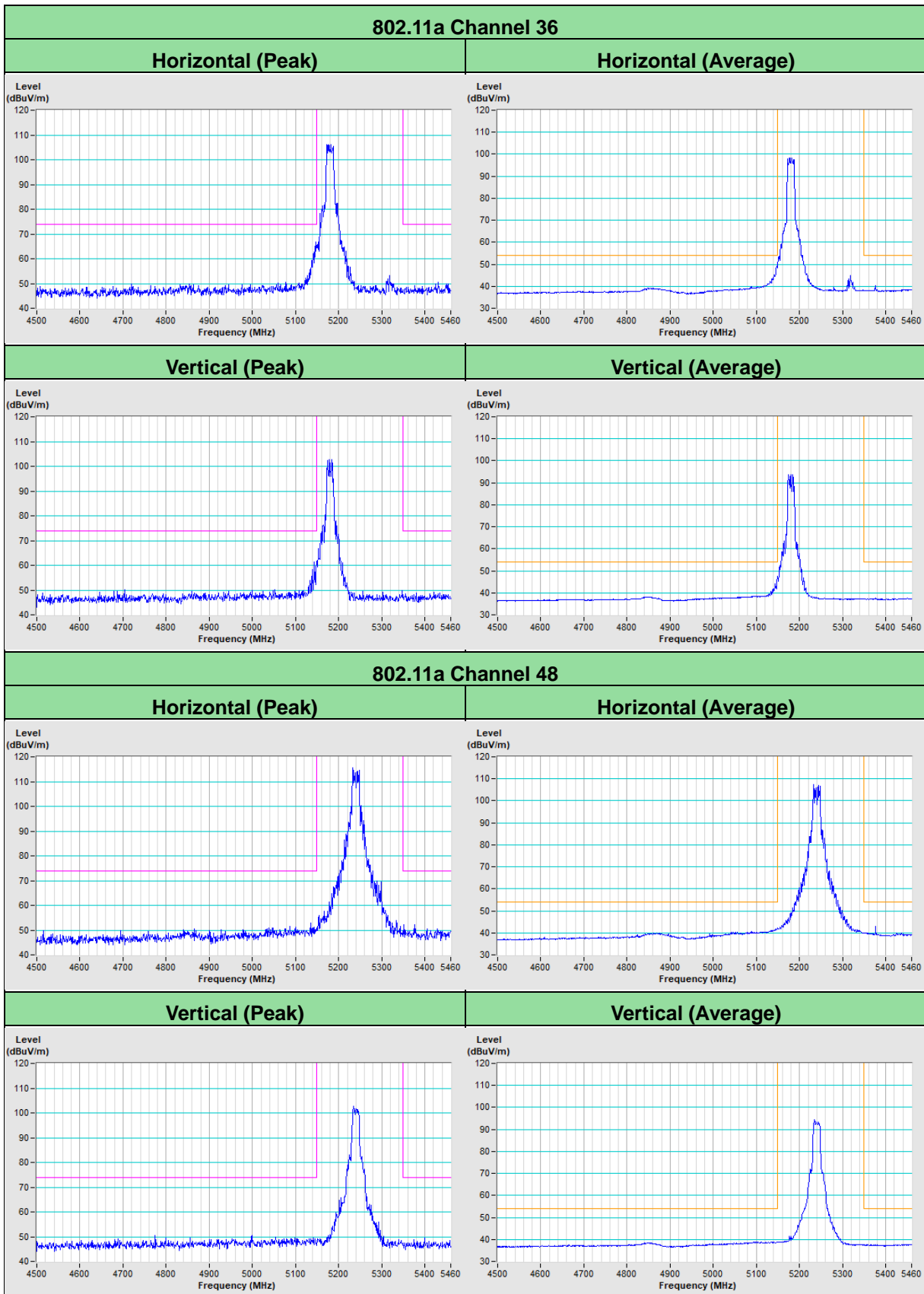
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5649.00	51.1 PK	68.2	-17.1	2.14 V	31	48.8	2.3
2	*5775.00	97.3 PK			2.14 V	31	94.7	2.6
3	*5775.00	86.6 AV			2.14 V	31	84.0	2.6
4	#5926.00	49.3 PK	68.2	-18.9	2.14 V	31	46.4	2.9
5	11550.00	47.4 PK	74.0	-26.6	1.05 V	330	35.1	12.3
6	11550.00	35.1 AV	54.0	-18.9	1.05 V	330	22.8	12.3
7	#17325.00	44.7 PK	68.2	-23.5	4.00 V	246	27.5	17.2

Remarks:

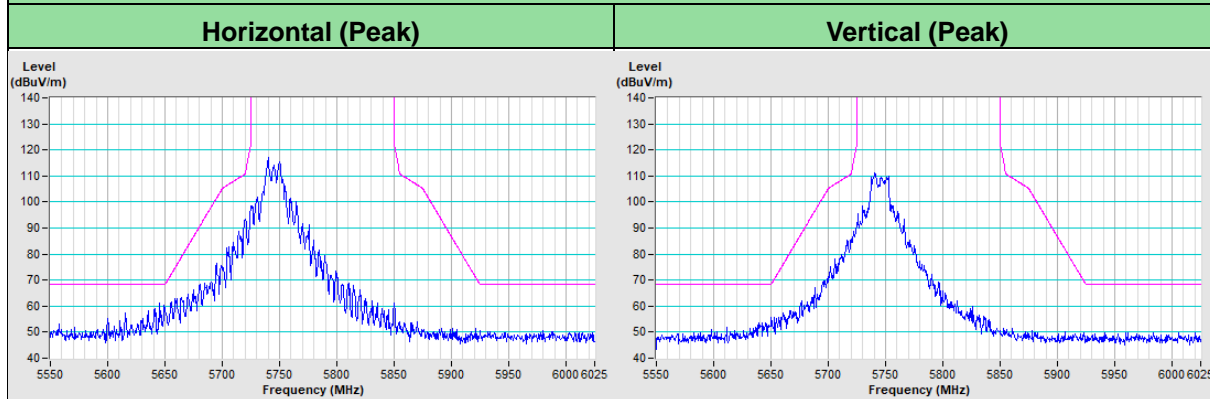
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency,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



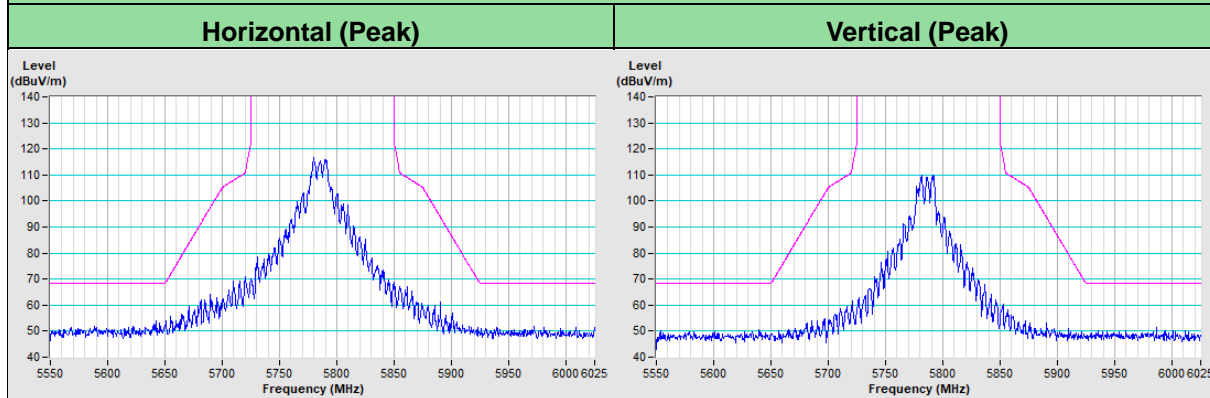
Plot of Band Edge



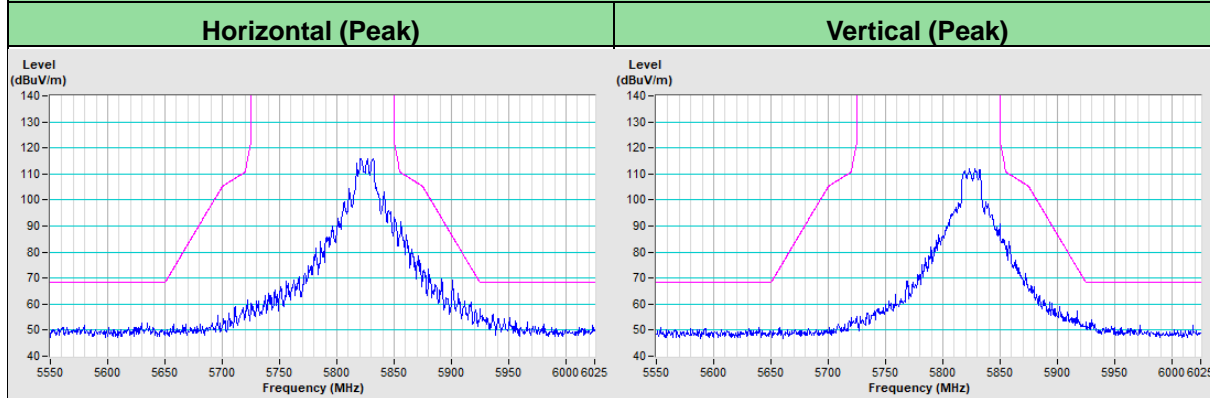
802.11a Channel 149



802.11a Channel 157

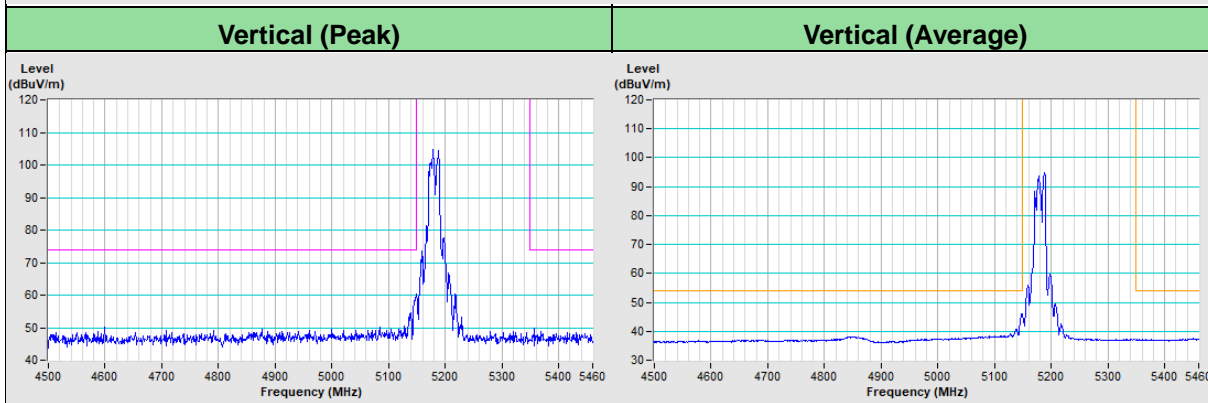
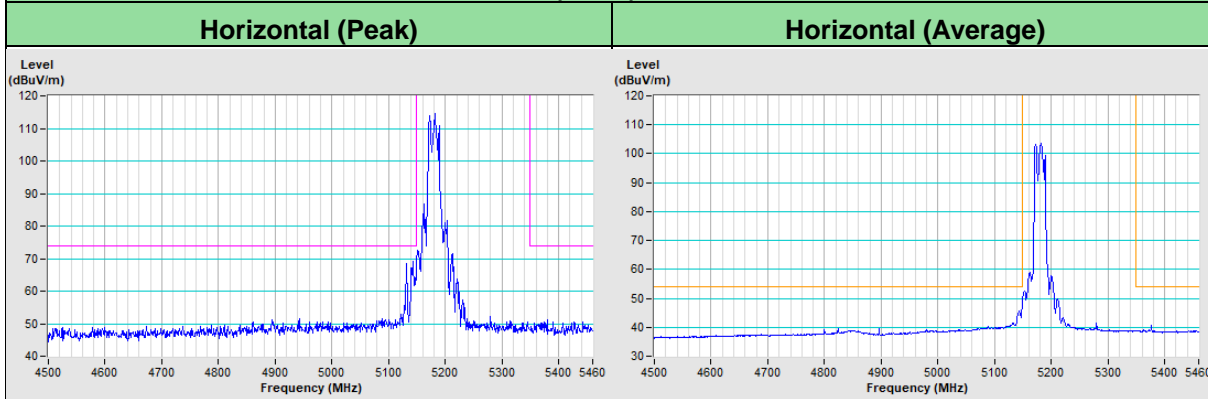


802.11a Channel 165

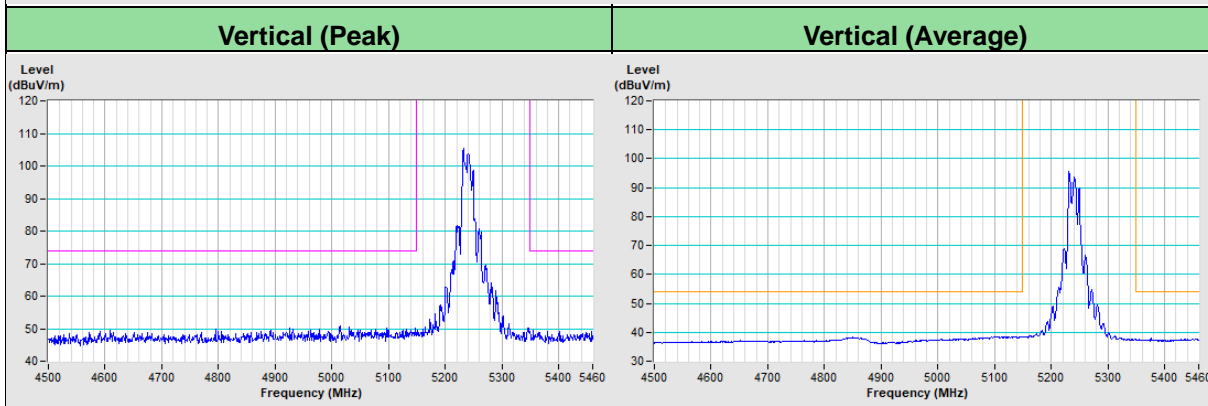
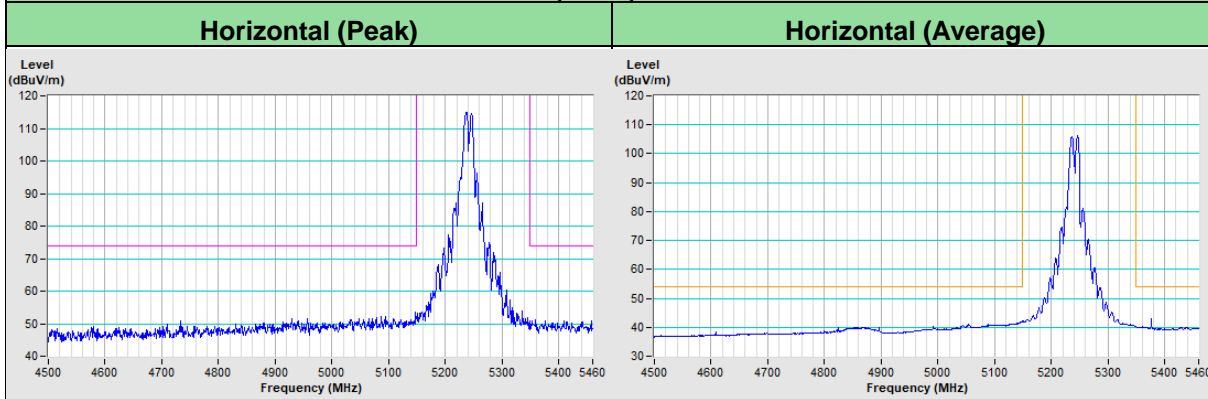




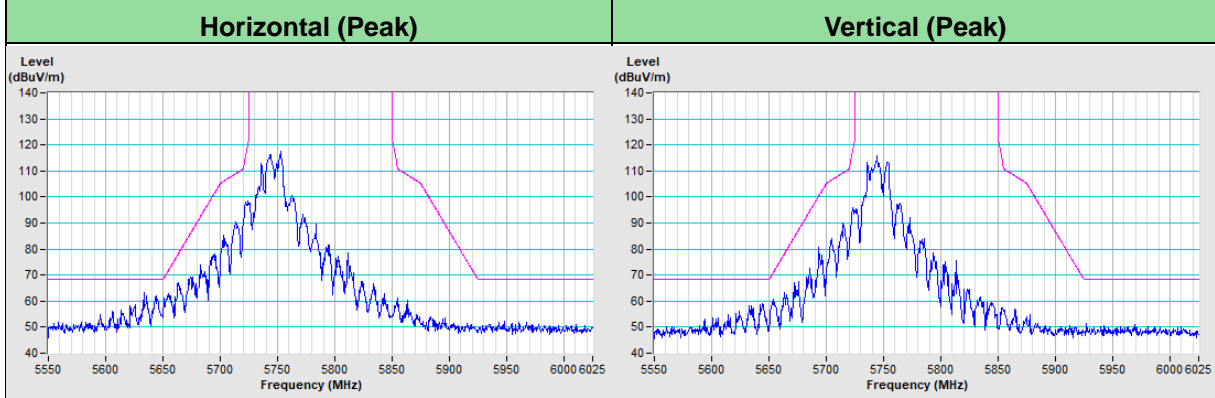
802.11ax (HE20) Channel 36



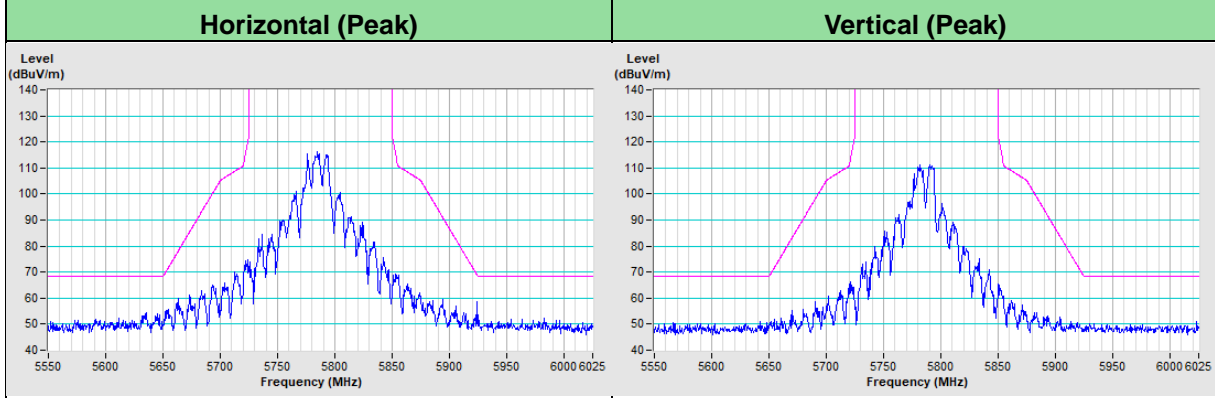
802.11ax (HE20) Channel 48



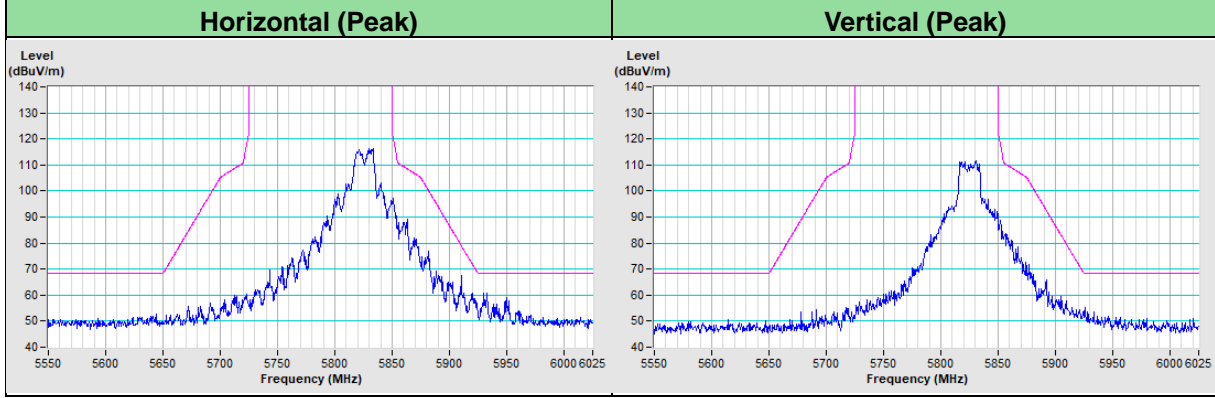
802.11ax (HE20) Channel 149



802.11ax (HE20) Channel 157

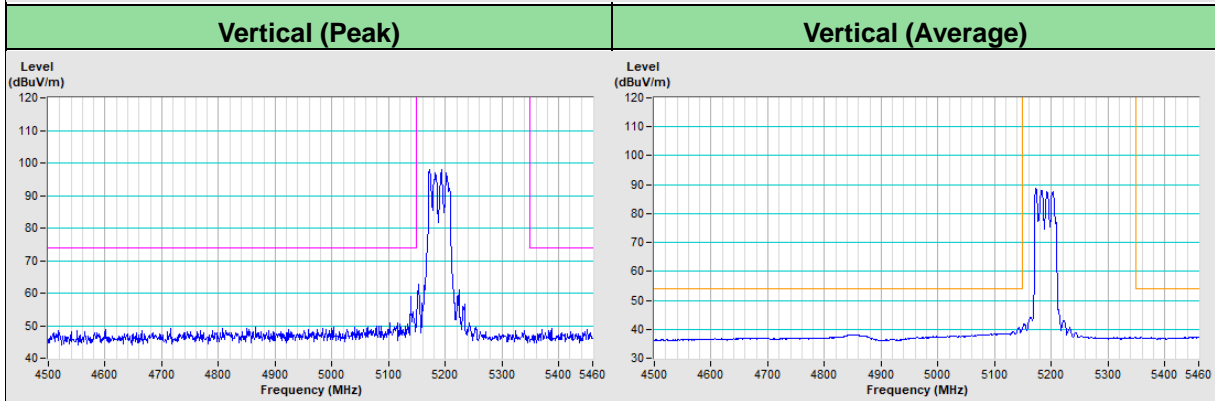
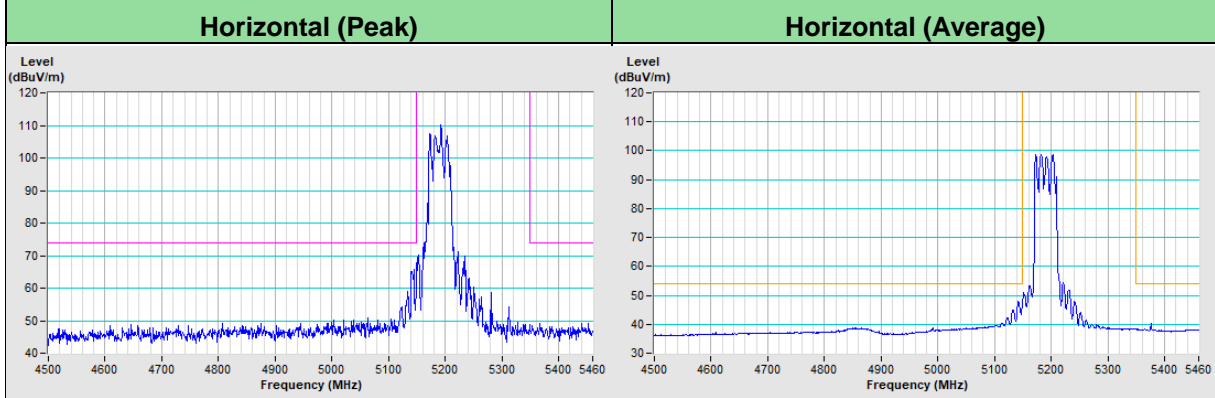


802.11ax (HE20) Channel 165

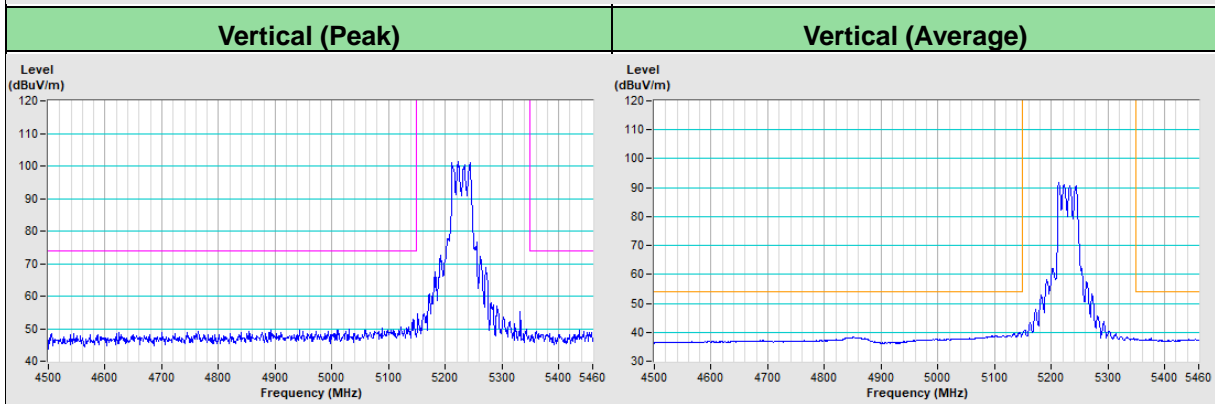
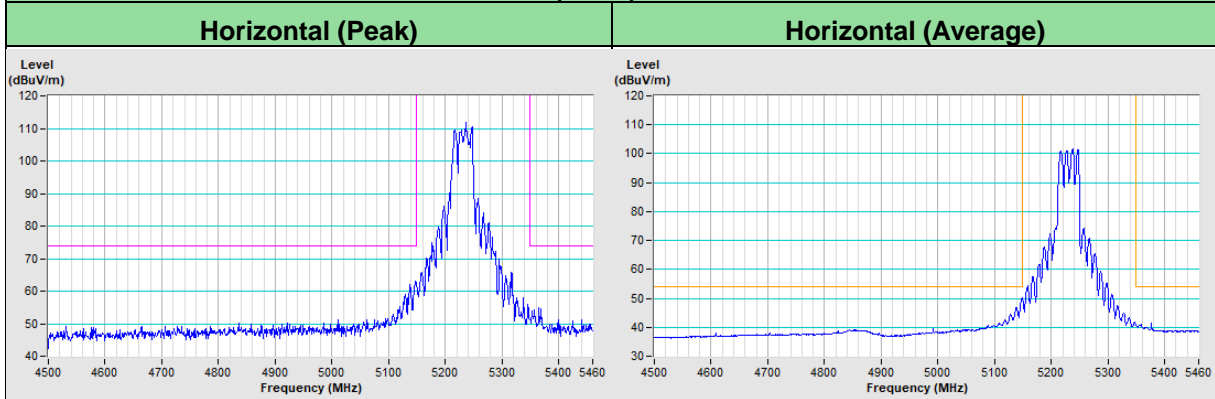




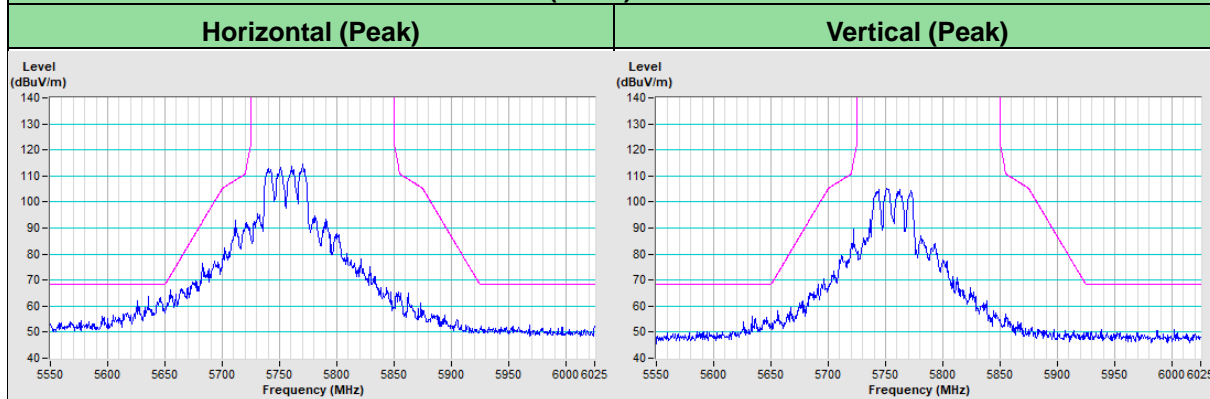
802.11ax (HE40) Channel 38



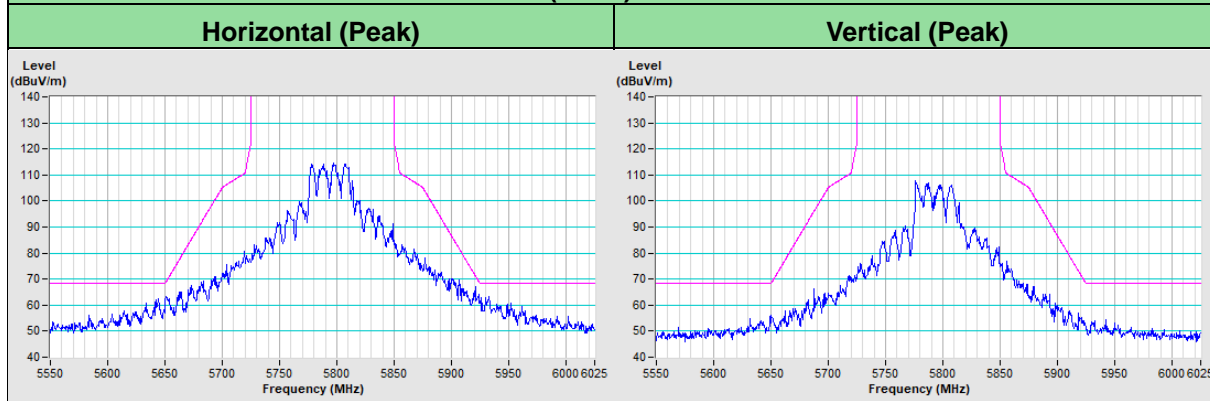
802.11ax (HE40) Channel 46



802.11ax (HE40) Channel 151



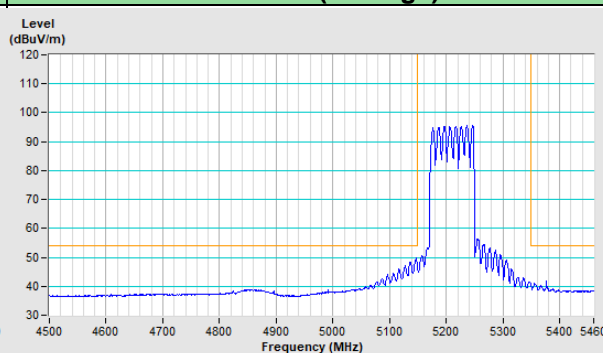
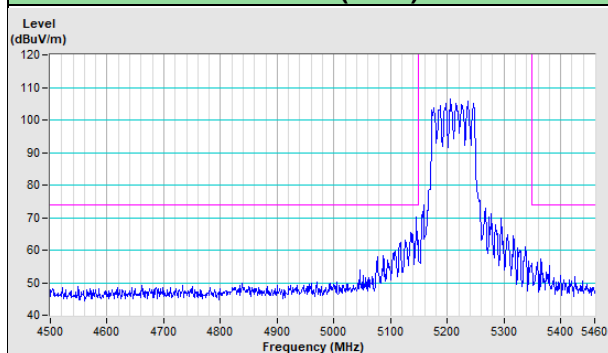
802.11ax (HE40) Channel 159





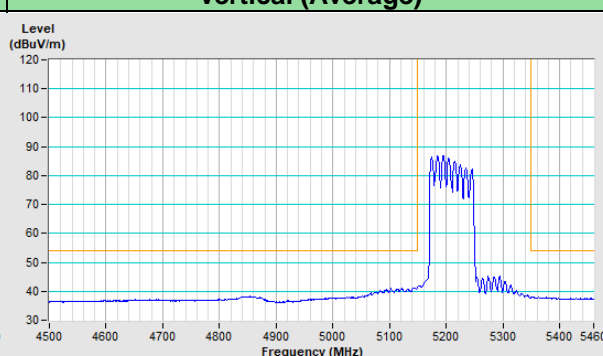
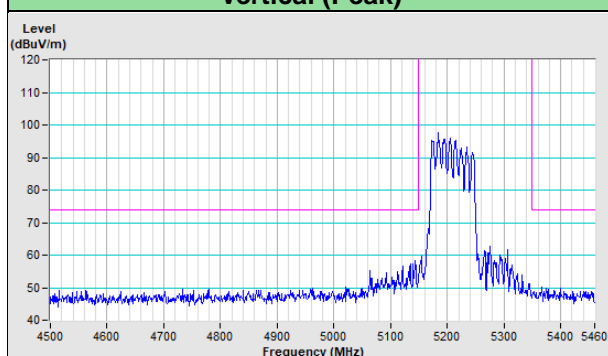
802.11ax (HE80) Channel 42

Horizontal (Peak) **Horizontal (Average)**



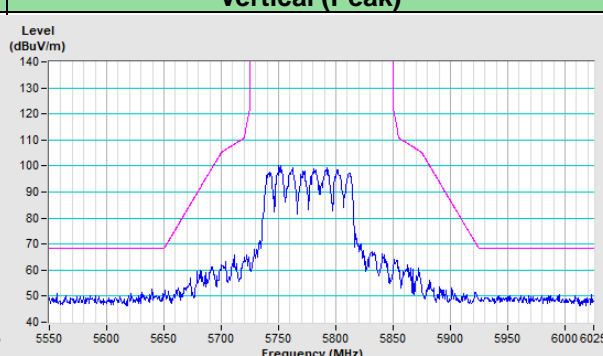
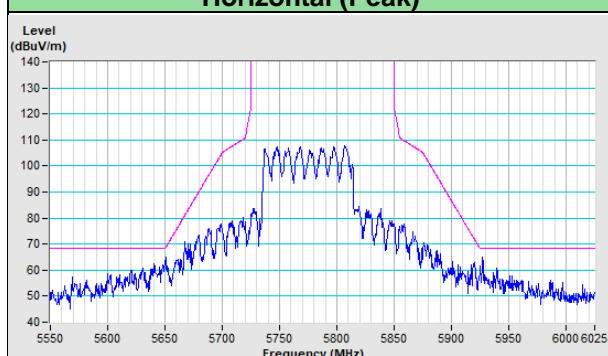
Vertical (Peak)

Vertical (Average)



802.11ax (HE80) Channel 155

Horizontal (Peak) **Vertical (Peak)**



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:

Lin Kou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

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.

--- END ---