

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)

Report No.: RFBBQZ-WTW-P23070188

FCC ID: PY323200598

Product: Orbi WiFi 7 Router, Orbi WiFi 7 Satellite
(Refer to item 3.1 for the more details)

Brand: NETGEAR

Model No.: RBE771

Series Model: RBE770 (Refer to item 3.1 for the more details)

Received Date: 2023/7/11

Test Date: 2023/8/23 ~ 2024/1/18

Issued Date: 2024/3/22

Applicant and Manufacturer: NETGEAR, Inc.

Address: 350 East Plumeria Drive San Jose, CA 95134

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kewi Shan Dist., Taoyuan City 33383, Taiwan

FCC Registration / 788550 / TW0003

Designation Number:

Approved by:

Jeremy Lin

Date:

2024/3/22

Jeremy Lin / Project Engineer

This test report consists of 70 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 : Vera 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	7
3.2 Antenna Description of EUT	9
3.3 Channel List	10
3.4 Test Mode Applicability and Tested Channel Detail	11
3.5 Duty Cycle of Test Signal	12
3.6 Test Program Used and Operation Descriptions	14
3.7 Connection Diagram of EUT and Peripheral Devices	14
3.8 Configuration of Peripheral Devices and Cable Connections	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 Conducted Out of Band Emissions	15
4.5 AC Power Conducted Emissions	16
4.6 Unwanted Emissions below 1 GHz	17
4.7 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 Conducted Out of Band Emissions	19
5.5 AC Power Conducted Emissions	19
5.6 Unwanted Emissions below 1 GHz	20
5.7 Unwanted Emissions above 1 GHz	20
6 Test Arrangements	21
6.1 RF Output Power	21
6.1.1 Test Setup	21
6.1.2 Test Procedure	21
6.2 Power Spectral Density	21
6.2.1 Test Setup	21
6.2.2 Test Procedure	21
6.3 6 dB Bandwidth	22
6.3.1 Test Setup	22
6.3.2 Test Procedure	22
6.4 Conducted Out of Band Emissions	22
6.4.1 Test Setup	22
6.4.2 Test Procedure	22
6.5 AC Power Conducted Emissions	23
6.5.1 Test Setup	23
6.5.2 Test Procedure	23
6.6 Unwanted Emissions below 1 GHz	24
6.6.1 Test Setup	24
6.6.2 Test Procedure	25
6.7 Unwanted Emissions above 1 GHz	26
6.7.1 Test Setup	26
6.7.2 Test Procedure	26
7 Test Results of Test Item	27

7.1	RF Output Power.....	27
7.2	Power Spectral Density	29
7.3	6 dB Bandwidth	31
7.4	Conducted Out of Band Emissions	33
7.5	AC Power Conducted Emissions	41
7.6	Unwanted Emissions below 1 GHz	45
7.7	Unwanted Emissions above 1 GHz.....	49
8	Pictures of Test Arrangements	69
9	Information of the Testing Laboratories	70

Release Control Record

Issue No.	Description	Date Issued
RFBBQZ-WTW-P23070188	Original Release	2024/3/22

1 Certificate

Product: Orbi WiFi 7 Router, Orbi WiFi 7 Satellite
(Refer to item 3.1 for the more details)

Brand: NETGEAR

Test Model: RBE771

Series Model: RBE770 (Refer to item 3.1 for the more details)

Sample Status: Engineering Sample

Applicant and Manufacturer: NETGEAR, Inc.

Test Date: 2023/8/23 ~ 2024/1/18

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)

Measurement procedure: ANSI C63.10-2013

KDB 558074 D01 15.247 Meas Guidance v05r02

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 C (Section 15.247)			
Standard / Clause	Test Item	Result	Remark
15.247(b)	RF Output Power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.247(a)(2)	6 dB Bandwidth	Pass	Meet the requirement of limit.
15.247(d)	Conducted Out of Band Emissions	Pass	Meet the requirement of limit.
15.207	AC Power Conducted Emissions	Pass	Minimum passing margin is -17.03 dB at 0.28006 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -5.0 dB at 52.49 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.1 dB at 2390.00 and 2483.50 MHz
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
RF Output Power	-	1.371 dB
Power Spectral Density	-	1.017 dB
6 dB Bandwidth	-	206.5 Hz
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.88 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.59 dB
	30 MHz ~ 1 GHz	3.64 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	2.29 dB
	18 GHz ~ 40 GHz	2.29 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

Product	Orbi WiFi 7 Router, Orbi WiFi 7 Satellite
Brand	NETGEAR
Test Model	RBE771
Series Model	RBE770
Model Difference	Refer to Note
Status of EUT	Engineering Sample
Power Supply Rating	Refer to Note as below
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in VHT mode 1024QAM for OFDMA in 11ax/be mode
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11 Mbps 802.11g: up to 54 Mbps 802.11n: up to 300 Mbps VHT: up to 400 Mbps 802.11ax: up to 573.5 Mbps 802.11be: up to 688.2 Mbps
Operating Frequency	2.412 GHz ~ 2.462 GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20), 802.11be (EHT20): 11 802.11n (HT40), VHT40, 802.11ax (HE40), 802.11be (EHT40): 7
Output Power	CDD Mode: 914.551 mW (29.61 dBm) Beamforming Mode: 841.836 mW (29.25 dBm)

Note:

1. All models are listed as below.

Brand	Product	Model	Difference
NETGEAR	Orbi WiFi 7 Router	RBE771	Four 2.5G Ethernet ports (1 WAN + 3 LAN)
	Orbi WiFi 7 Satellite	RBE770	Two 2.5G Ethernet ports (2 LAN)

2. The EUT uses following accessories.

AC Adapter 1	Brand	NETGEAR
	Model	ADS-40FPC-12 12030E
	Part Number	332-11700-01
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 2.5A
	DC Output Cable	1.8m non-shielded and without core
	Plug	US/EU/AU
	Color	White
AC Adapter 2	Brand	NETGEAR
	Model	2AED030FC
	Part Number	332-11713-01
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 2.5A 30W
	DC Output Cable	1.8m non-shielded and without core
	Plug	US/EU/AU
	Color	White

AC Adapter 3	Brand	NETGEAR
	Model	AD2150F10
	Part Number	332-11093-02
	AC Input	100-120V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 3.5A
	DC Output Cable	1.8m non-shielded and without core
	Plug	US
	Color	White
AC Adapter 4	Brand	NETGEAR
	Model	AD2150M20
	Part Number	332-11099-06
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 3.5A 42W
	DC Output Cable	1.8m non-shielded and without core
	Plug	US
	Color	White
AC Adapter 5	Brand	NETGEAR
	Model	AD2150M20
	Part Number	332-11099-05
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 3.5A 42W
	DC Output Cable	1.8m non-shielded and without core
	Plug	US, EU, AU
	Color	White
AC Adapter 6	Brand	NETGEAR
	Model	ADS-40FPC-12 12030E
	Part Number	332-11699-01
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 2.5A
	DC Output Cable	1.8m non-shielded and without core
	Plug	US, EU
	Color	Black
AC Adapter 7	Brand	NETGEAR
	Model	2AED030FC
	Part Number	332-11712-01
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 2.5A 30W
	DC Output Cable	1.8m non-shielded and without core
	Plug	US, EU
	Color	Black
Ethernet Cable	Brand	NETGEAR
	Model	312-10133-01
	Signal Line	2m, Unshielded

* After pretesting, Adapter 1 was the worst case and chosen for final test.

* The design of Adapter 1 and Adapter 6 are identical. The difference between them is Exterior color.

* The design of Adapter 2 and Adapter 7 are identical. The difference between them is Exterior color.

* The design of Adapter 4 and Adapter 5 are identical. The difference between them are Adapter 4 is adding more safety logos on the rating label.

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna Type	Connector Type	Frequency Range	Antenna Gain (dBi)	
			Chain 0	Chain 1
Dipole	ipex(MHF)	2400~2483.5 MHz	2.34	2.71
Dipole	ipex(MHF)	5150~5250 MHz	3.26	3.40
Dipole	ipex(MHF)	5250~5350 MHz	3.59	3.72
Dipole	ipex(MHF)	5470~5725 MHz	3.81	3.83
Dipole	ipex(MHF)	5725~5850 MHz	4.22	4.04

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

2. The EUT incorporates a MIMO function.

2.4 GHz Band			
Modulation Mode	Beamforming Mode	TX & RX Configuration	
802.11b	Not Support	2TX	2RX
802.11g	Support	2TX	2RX
802.11n (HT20)	Support	2TX	2RX
802.11n (HT40)	Support	2TX	2RX
VHT20	Support	2TX	2RX
VHT40	Support	2TX	2RX
802.11ax (HE20)	Support	2TX	2RX
802.11ax (HE40)	Support	2TX	2RX
802.11be (EHT20)	Support	2TX	2RX
802.11be (EHT40)	Support	2TX	2RX

Note:

1. All of modulation mode support beamforming function except 802.11b modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), VHT mode for 20 MHz (40 MHz), 802.11ax mode for 20 MHz (40 MHz) and 802.11be mode for 20 MHz (40 MHz), therefore the investigated worst case to representative mode in test report.
4. The EUT device modulation technique OFDMA does not support partial RUs (resource units) and channel puncturing/bandwidth reduction mechanisms.

3.3 Channel List

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20), 802.11be (EHT20):

Channel	Frequency	Channel	Frequency
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

7 channels are provided for 802.11n (HT40), VHT40, 802.11ax (HE40), 802.11be (EHT40):

Channel	Frequency	Channel	Frequency
3	2422 MHz	7	2442 MHz
4	2427 MHz	8	2447 MHz
5	2432 MHz	9	2452 MHz
6	2437 MHz		

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	The AC Adapter has the following models: ADS-40FPC-12 12030E / 2AED030FC / AD2150F10 / AD2150M20. Pre-scan these models of AC Adapters and find the worst case as a representative test condition.
Worst Case:	1. AC Adapter Worst Condition: ADS-40FPC-12 12030E 2. The EUT is usually used standing that and was therefore chosen for Unwanted Emissions.

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

Test Item	EUT Configure Mode	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	A	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
		802.11g	CDD	1, 6, 11	BPSK	6Mb/s
		802.11be (EHT20)	CDD & Beamforming	1, 6, 11	BPSK	MCS0
		802.11be (EHT40)	CDD & Beamforming	3, 6, 9	BPSK	MCS0
Power Spectral Density / 6 dB Bandwidth / Conducted Out of Band Emissions	A	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
		802.11g	CDD	1, 6, 11	BPSK	6Mb/s
		802.11be (EHT20)	CDD	1, 6, 11	BPSK	MCS0
		802.11be (EHT40)	CDD	3, 6, 9	BPSK	MCS0
AC Power Conducted Emissions	A, B	802.11g	CDD	6	BPSK	6Mb/s
Unwanted Emissions below 1 GHz	A,	802.11g	CDD	6	BPSK	6Mb/s
Unwanted Emissions above 1 GHz	A	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
		802.11g	CDD	1, 6, 11	BPSK	6Mb/s
		802.11be (EHT20)	CDD	1, 6, 11	BPSK	MCS0
		802.11be (EHT40)	CDD	3, 6, 9	BPSK	MCS0
EUT Configure Mode:	A	EUT (Model: RBE771) powered by Adapter 1				
	B	EUT (Model: RBE770) powered by Adapter 1				

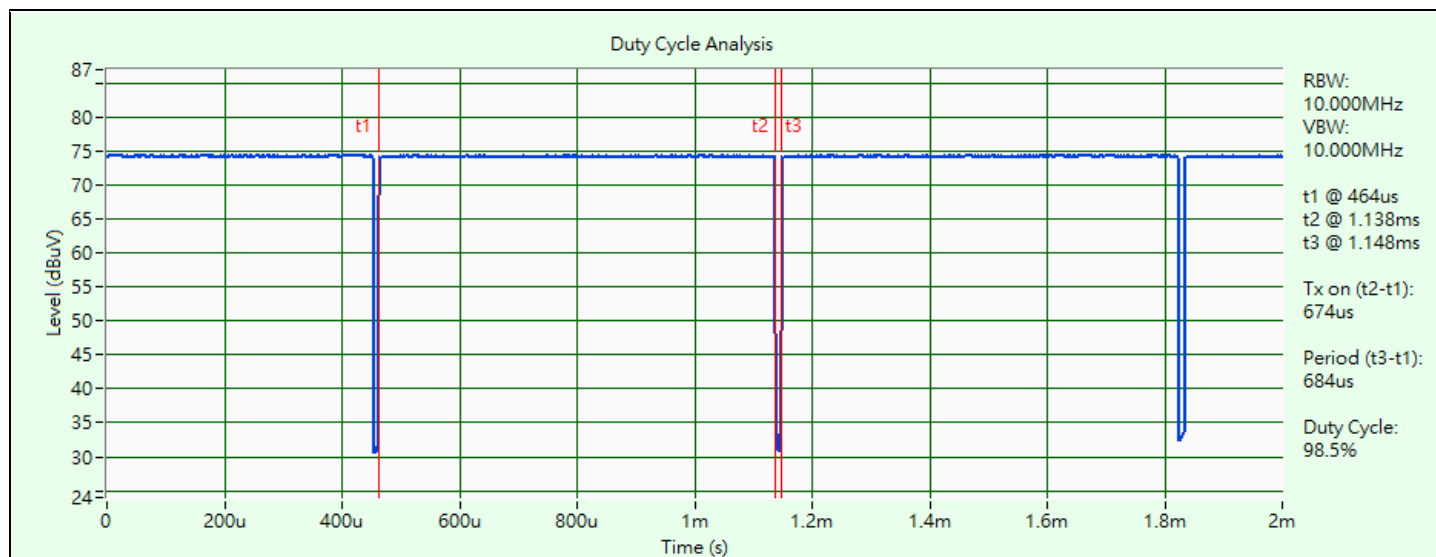
3.5 Duty Cycle of Test Signal

802.11b: Duty cycle = 0.674 ms / 0.684 ms x 100% = 98.5%

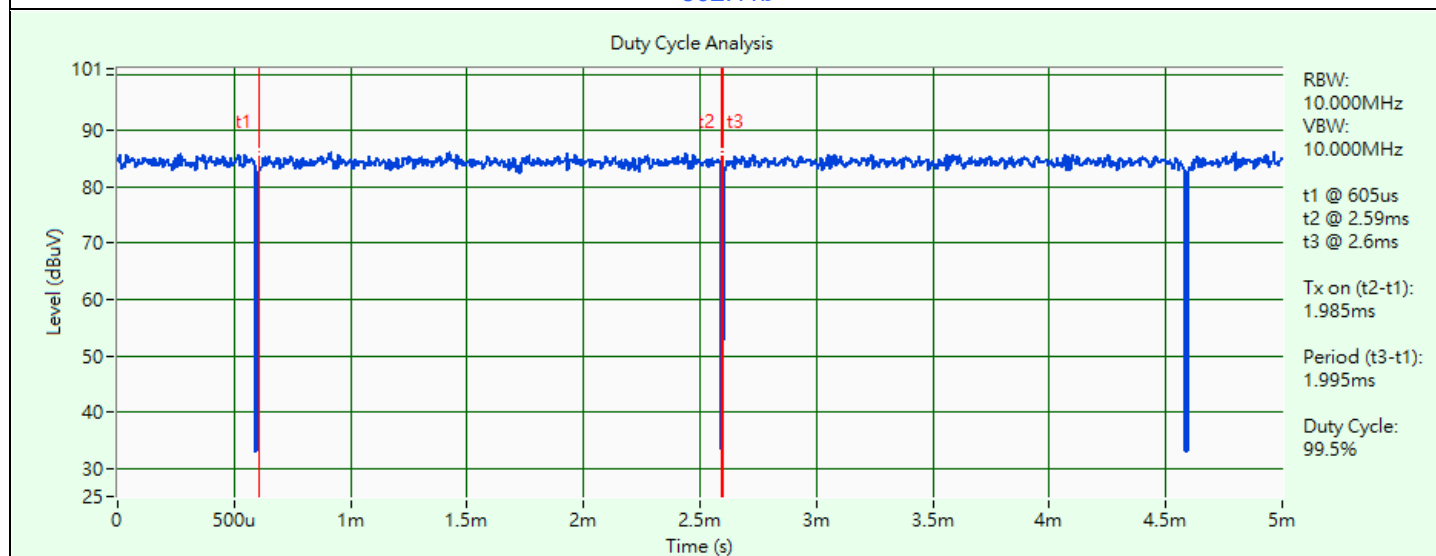
802.11g: Duty cycle = 1.985 ms / 1.995 ms x 100% = 99.5%

802.11be (EHT20): Duty cycle = 5.44 ms / 5.46 ms x 100% = 99.6%

802.11be (EHT40): Duty cycle = 5.4 ms / 5.44 ms x 100% = 99.3%

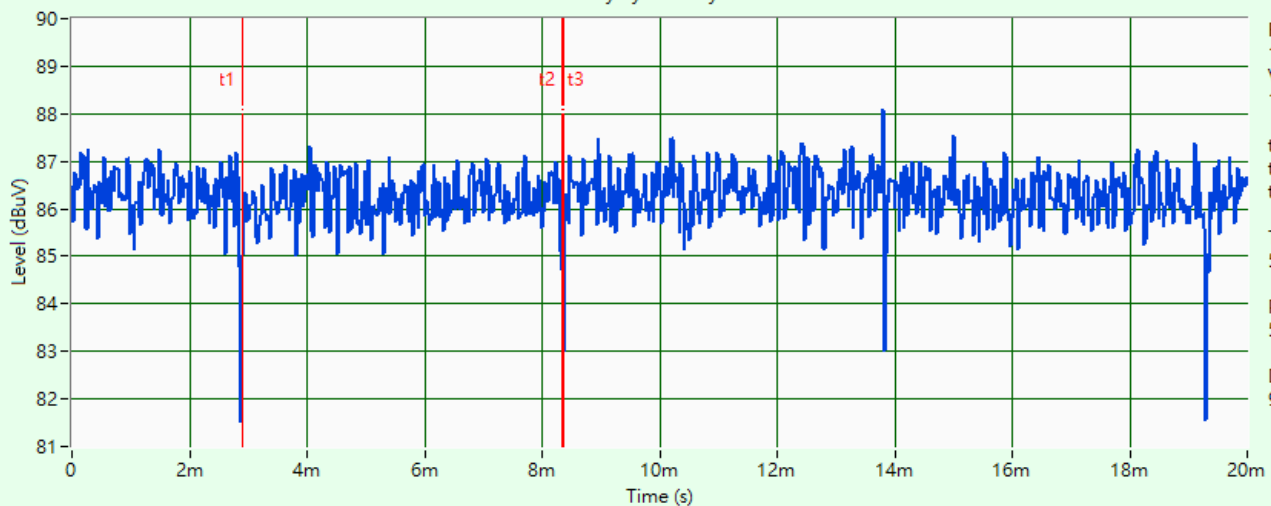


802.11b



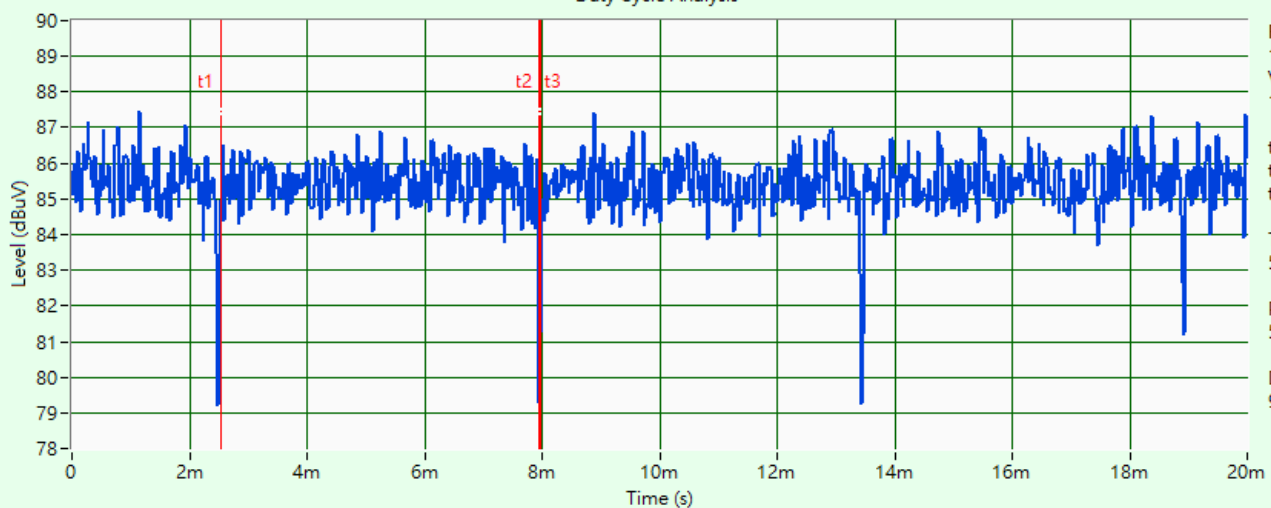
802.11g

Duty Cycle Analysis



802.11be (EHT20)

Duty Cycle Analysis



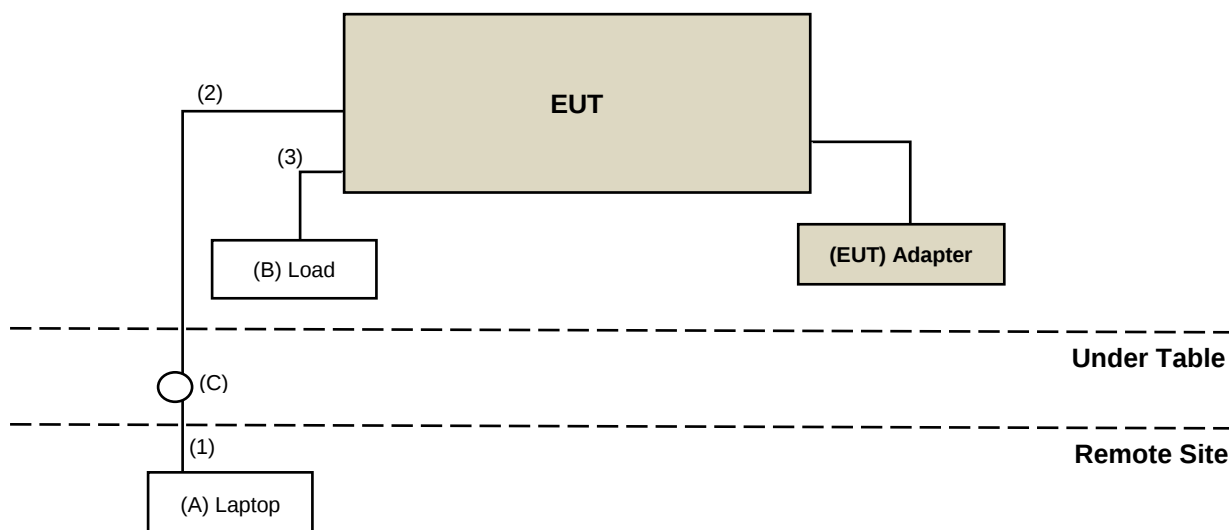
802.11be (EHT40)

3.6 Test Program Used and Operation Descriptions

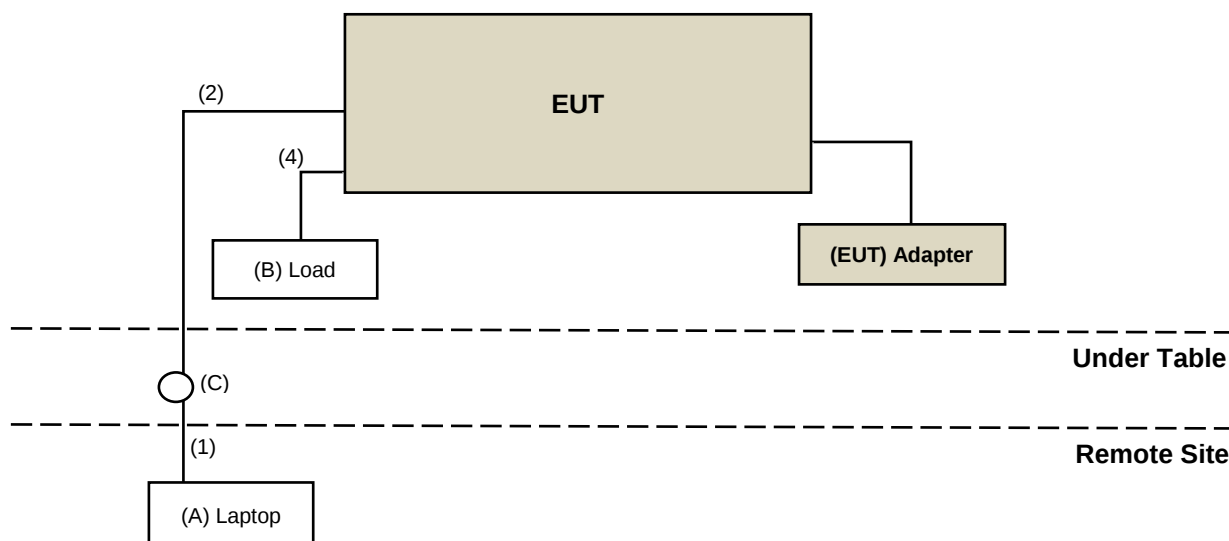
Controlling software QSPR Version 5.0-00202 has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

Mode A



Mode B



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E5430	2RL3YW1	NA	Provided by Lab
B.	Load	N/A	N/A	N/A	N/A	Provided by Lab
C.	LAN to LAN	N/A	N/A	N/A	N/A	Provided by Lab

No.	Cable Descriptions	Qty.	Length (m)	Shielded (Yes/ No)	Cores (Qty.)	Remark
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	Ethernet Cable	1	2	No	0	Accessory of EUT
3.	RJ-45 Cable	3	1.5	No	0	Provided by Lab
4.	RJ-45 Cable	1	2	No	0	Supplied by applicant

4 Test Instruments

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

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
USB Wideband Power Sensor Keysight	U2021XA	MY55050005/MY55190004/ MY55190007/MY55210005	2023/7/19	2024/7/18

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/1/14 ~ 2024/1/18

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Signal & Spectrum Analyzer R&S	FSV3044	101504	2023/6/5	2024/6/4
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/1/14 ~ 2024/1/18

4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.4 Conducted Out of Band Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Signal & Spectrum Analyzer R&S	FSV3044	101504	2023/6/5	2024/6/4
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/1/14 ~ 2024/1/18

4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance HUBER+SUHNER	E1-011276	01	2023/2/1	2024/1/31
	E1-011312	10	2023/1/30	2024/1/29
	E1-011591	17	2023/2/1	2024/1/31
DC-LISN Schwarzbeck	NNBM 8126G	8126G-069	2023/11/7	2024/11/6
EMI Test Receiver R&S	ESCI	100613	2023/12/4	2024/12/3
Fixed Attenuator Mini-Circuits	HAT-10+	PAD-COND1-01	2023/1/7 2024/1/6	2024/1/6 2025/1/5
LISN R&S	ENV216	101826	2023/3/23	2024/3/22
	ESH3-Z5	100311	2023/9/6	2024/9/5
RF Coaxial Cable Woken	5D-FB	Cable-cond1-01	2023/1/7 2024/1/6	2024/1/6 2025/1/5
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2023/8/31	2024/8/30

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2024/1/5 ~ 2024/1/15

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower inn-co GmbH	MA 4000	010303	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-155	2023/10/13	2024/10/12
EMI Test Receiver R&S	ESR3	102782	2023/12/7	2024/12/6
Loop Antenna Electro-Metrics	EM-6879	269	2023/9/23	2024/9/22
Loop Antenna TESEQ	HLA 6121	45745	2023/8/8	2024/8/7
Preamplifier Agilent	8447D	2944A10631	2023/5/7	2024/5/6
Preamplifier EMCI	EMC001340	980201	2023/9/27	2024/9/26
RF Coaxial Cable Woken	8D-FB	Cable-CH4-01	2023/7/8	2024/7/7
Signal & Spectrum Analyzer R&S	FSW43	101582	2023/4/13	2024/4/12
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 3.
2. Tested Date: 2024/1/4 ~ 2024/1/15

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower inn-co GmbH	MA 4000	010303	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	5	N/A	N/A
EMI Test Receiver R&S	ESR3	102782	2022/12/12	2023/12/11
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-408	2022/11/13 2023/11/12	2023/11/12 2024/11/11
	BBHA 9170	9170-480	2022/11/13 2023/11/12	2023/11/12 2024/11/11
		BBHA9170241	2022/10/20 2023/10/16	2023/10/19 2024/10/15
		BBHA9170243	2022/11/13 2023/11/12	2023/11/12 2024/11/11
Preamplifier EMCI	EMC 184045	980116	2022/10/1 2023/9/27	2023/9/30 2024/9/26
Preamplifier Keysight	83017A	MY53270295	2023/5/7	2024/5/6
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2023/7/8	2024/7/7
	EMC102-KM-KM-3000	150929	2023/7/8	2024/7/7
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03(250724)	2023/5/7	2024/5/6
	Sucoflex 104	MY 13380+295012/04	2023/5/7	2024/5/6
Signal & Spectrum Analyzer R&S	FSW43	101866	2023/1/10	2024/1/9
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 3.
2. Tested Date: 2023/8/23 ~ 2023/12/1

5 Limits of Test Items

5.1 RF Output Power

For systems using digital modulation in the 2400–2483.5 MHz bands: 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

The Maximum of Power Spectral Density Measurement is 8 dBm in any 3 kHz.

5.3 6 dB Bandwidth

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

5.4 Conducted Out of Band Emissions

Below 30 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

5.5 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.

5.6 Unwanted Emissions below 1 GHz

Radiated emissions up to 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 30 dB below the highest level of the desired power:

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

Notes:

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

5.7 Unwanted Emissions above 1 GHz

Radiated emissions above 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 30 dB below the highest level of the desired power:

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

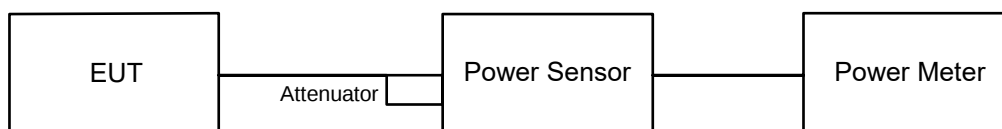
Notes:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup



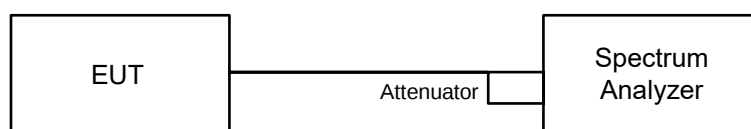
6.1.2 Test Procedure

Average Power:

Average power sensor was 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. Duty factor is not added to measured value.

6.2 Power Spectral Density

6.2.1 Test Setup



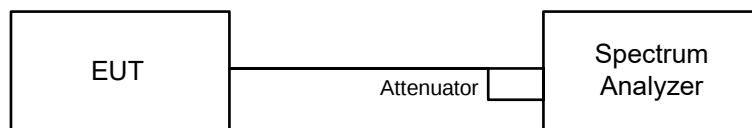
6.2.2 Test Procedure

- Measure the duty cycle (x).
- Set instrument center frequency to DTS channel center frequency.
- Set span to at least 1.5 times the OBW.
- Set RBW to: 3 kHz.
- Set VBW $\geq 3 \times$ RBW.
- Detector = power averaging (RMS) or sample detector (when RMS not available).
- Ensure that the number of measurement points in the sweep $\geq 2 \times$ span/RBW.
- Sweep time = auto couple.
- Do not use sweep triggering. Allow sweep to "free run".
- Employ trace averaging (RMS) mode over a minimum of 100 traces.
- Use the peak marker function to determine the maximum amplitude level.

Note: If Duty cycle < 98%, Add $10 \log (1/x)$, where x is the duty cycle measured in step (a), to the measured PSD to compute the average PSD during the actual transmission time.

6.3 6 dB Bandwidth

6.3.1 Test Setup

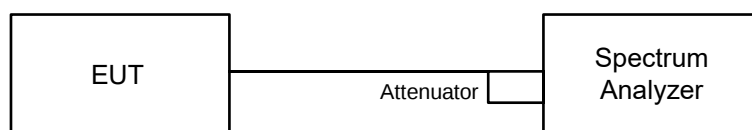


6.3.2 Test Procedure

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

6.4 Conducted Out of Band Emissions

6.4.1 Test Setup



6.4.2 Test Procedure

MEASUREMENT PROCEDURE REF

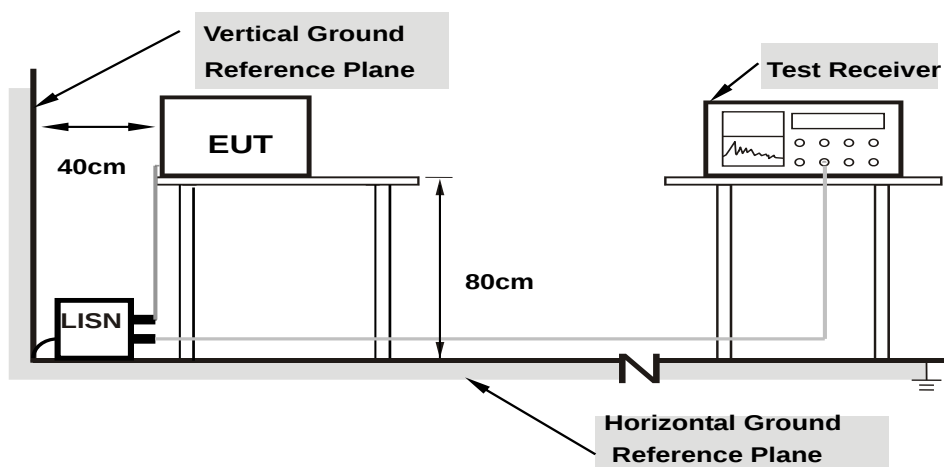
- f. Set the RBW = 100 kHz.
- g. Set the VBW ≥ 300 kHz.
- h. Detector = peak.
- i. Sweep time = auto couple.
- j. Trace mode = max hold.
- k. Allow trace to fully stabilize.
- l. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOB

- m. Set RBW = 100 kHz.
- n. Set VBW ≥ 300 kHz.
- o. Detector = peak.
- p. Sweep = auto couple.
- q. Trace Mode = max hold.
- r. Allow trace to fully stabilize.
- s. Use the peak marker function to determine the maximum amplitude level.

6.5 AC Power Conducted Emissions

6.5.1 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).

6.5.2 Test Procedure

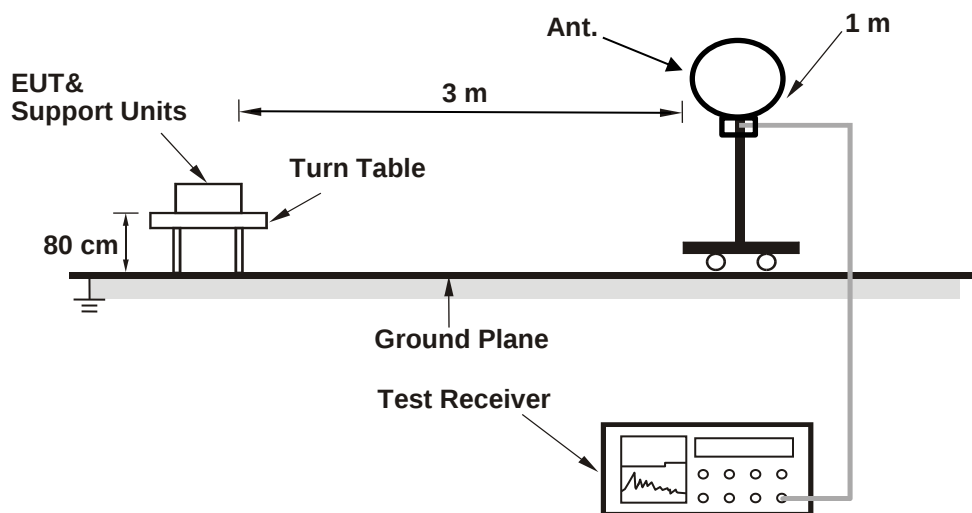
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

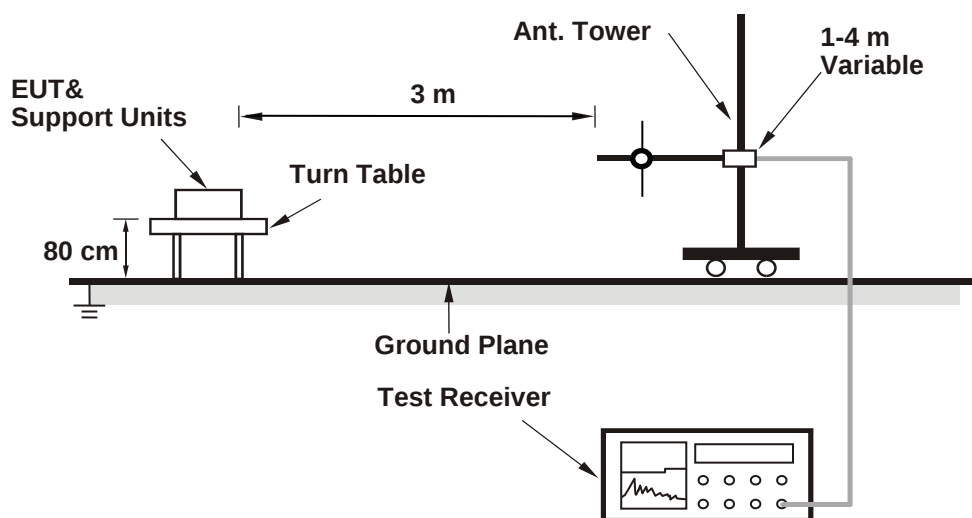
6.6 Unwanted Emissions below 1 GHz

6.6.1 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).

6.6.2 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

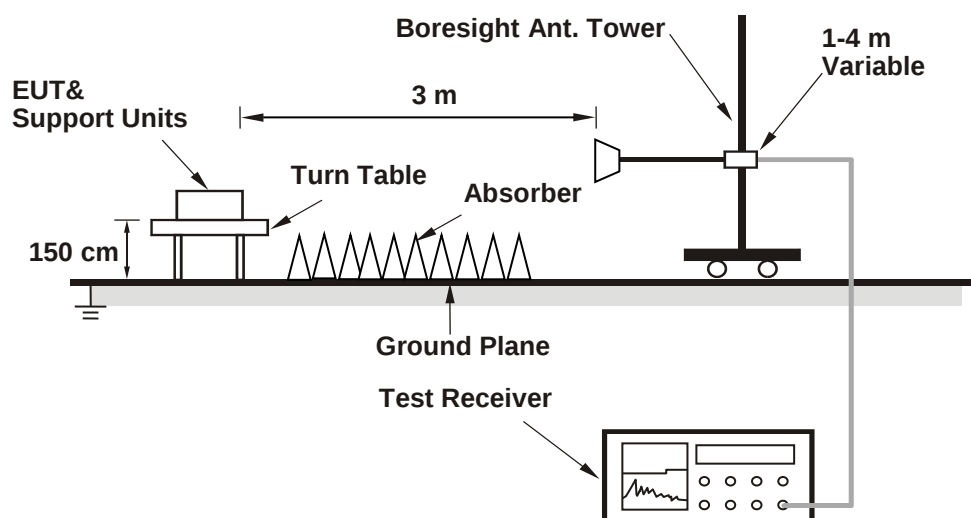
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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.

6.7 Unwanted Emissions above 1 GHz

6.7.1 Test Setup



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

6.7.2 Test Procedure

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

Notes:

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

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Matthew Yang
--------------	----------------	---------------------------	--------------	------------	--------------

802.11b CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	25.96	26.13	804.661	29.06	30	Pass
6	2437	26.14	26.04	812.941	29.10	30	Pass
11	2462	26.15	26.32	840.646	29.25	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.71 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11g CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	26.94	25.94	886.956	29.48	30	Pass
6	2437	26.91	26.27	914.551	29.61	30	Pass
11	2462	23.61	24.03	482.545	26.84	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.71 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	26.64	25.33	802.51	29.04	30	Pass
6	2437	26.89	25.48	841.836	29.25	30	Pass
11	2462	21.44	22.50	317.144	25.01	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.71 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	25.16	24.94	639.984	28.06	30	Pass
6	2437	25.10	24.95	636.202	28.04	30	Pass
9	2452	21.30	21.97	292.295	24.66	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.71 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	26.64	25.33	802.51	29.04	30	Pass
6	2437	26.89	25.48	841.836	29.25	30	Pass
11	2462	21.44	22.50	317.144	25.01	30	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. The directional gain is 5.54 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	25.16	24.94	639.984	28.06	30	Pass
6	2437	25.10	24.95	636.202	28.04	30	Pass
9	2452	21.30	21.97	292.295	24.66	30	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
2. The directional gain is 5.54 dBi < 6 dBi, so the output power limit shall not be reduced.

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Matthew Yang
--------------	----------------	---------------------------	--------------	------------	--------------

802.11b

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-3.35	-3.10	-0.21	8	Pass
6	2437	-2.75	-3.33	-0.02	8	Pass
11	2462	-2.56	-2.52	0.47	8	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 5.54 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-5.62	-6.51	-3.03	8	Pass
6	2437	-4.44	-4.90	-1.65	8	Pass
11	2462	-6.35	-6.61	-3.47	8	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 5.54 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11be (EHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-9.01	-9.41	-6.19	8	Pass
6	2437	-8.12	-8.31	-5.20	8	Pass
11	2462	-12.19	-11.73	-8.94	8	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 5.54 dBi < 6 dBi, so the power density limit shall not be reduced.

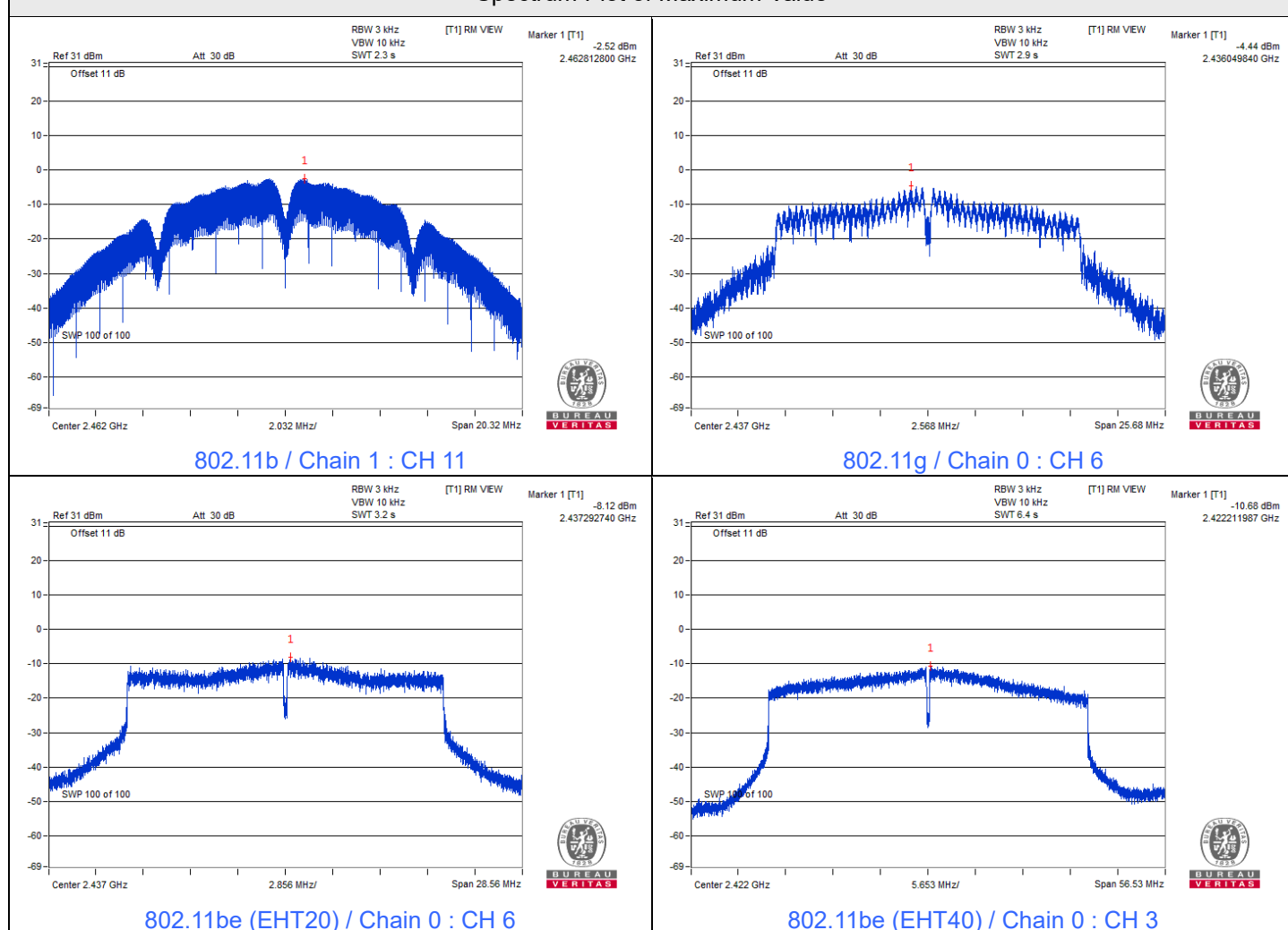
802.11be (EHT40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
3	2422	-10.68	-10.83	-7.74	8	Pass
6	2437	-10.89	-10.83	-7.85	8	Pass
9	2452	-14.59	-14.25	-11.41	8	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 5.54 dBi < 6 dBi, so the power density limit shall not be reduced.

Spectrum Plot of Maximum Value



7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Matthew Yang
--------------	----------------	---------------------------	--------------	------------	--------------

802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	7.60	7.17	0.5	Pass
6	2437	7.60	7.65	0.5	Pass
11	2462	7.65	7.66	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	15.15	15.18	0.5	Pass
6	2437	13.88	15.07	0.5	Pass
11	2462	15.11	15.03	0.5	Pass

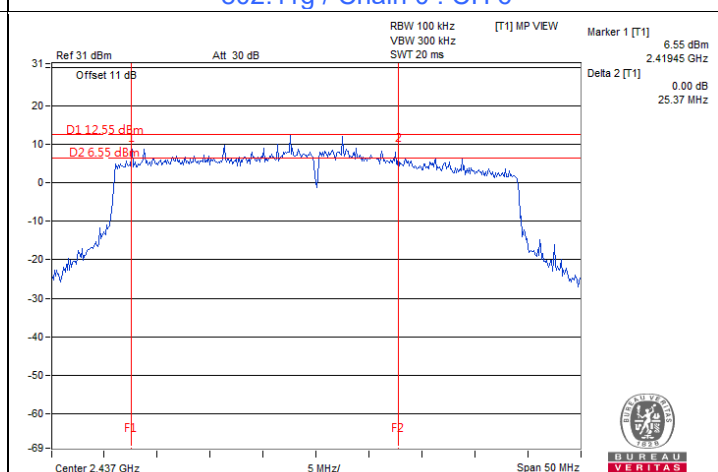
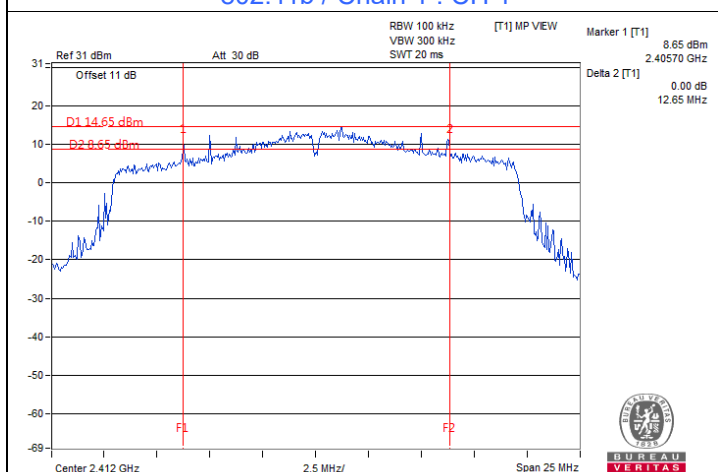
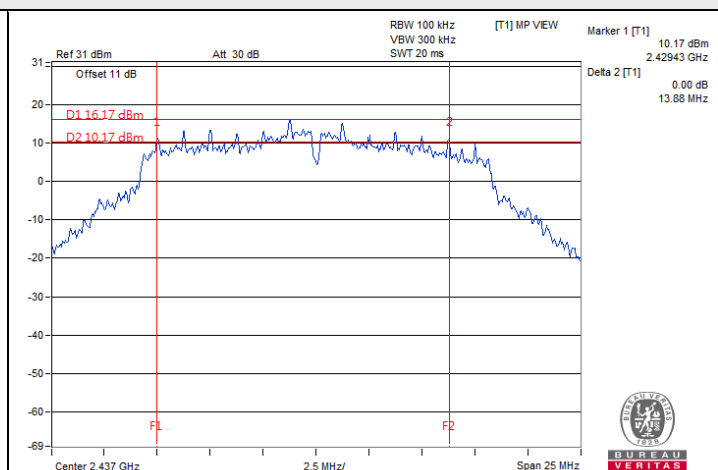
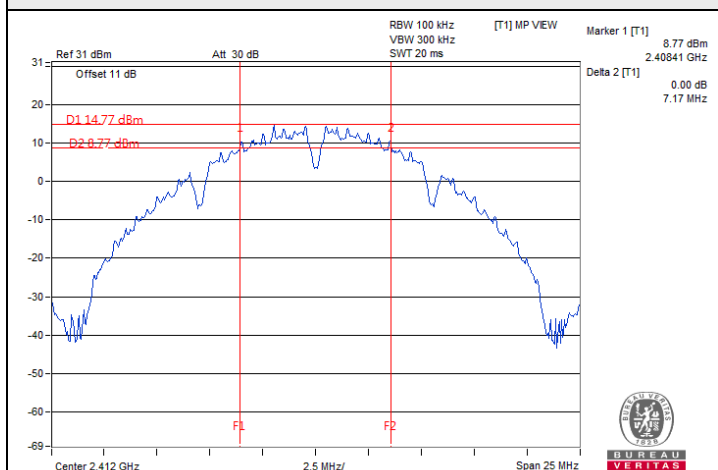
802.11be (EHT20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	13.84	12.65	0.5	Pass
6	2437	16.59	13.85	0.5	Pass
11	2462	15.06	15.53	0.5	Pass

802.11be (EHT40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
3	2422	34.00	35.13	0.5	Pass
6	2437	25.37	33.86	0.5	Pass
9	2452	35.08	36.40	0.5	Pass

Spectrum Plot of Minimum Value

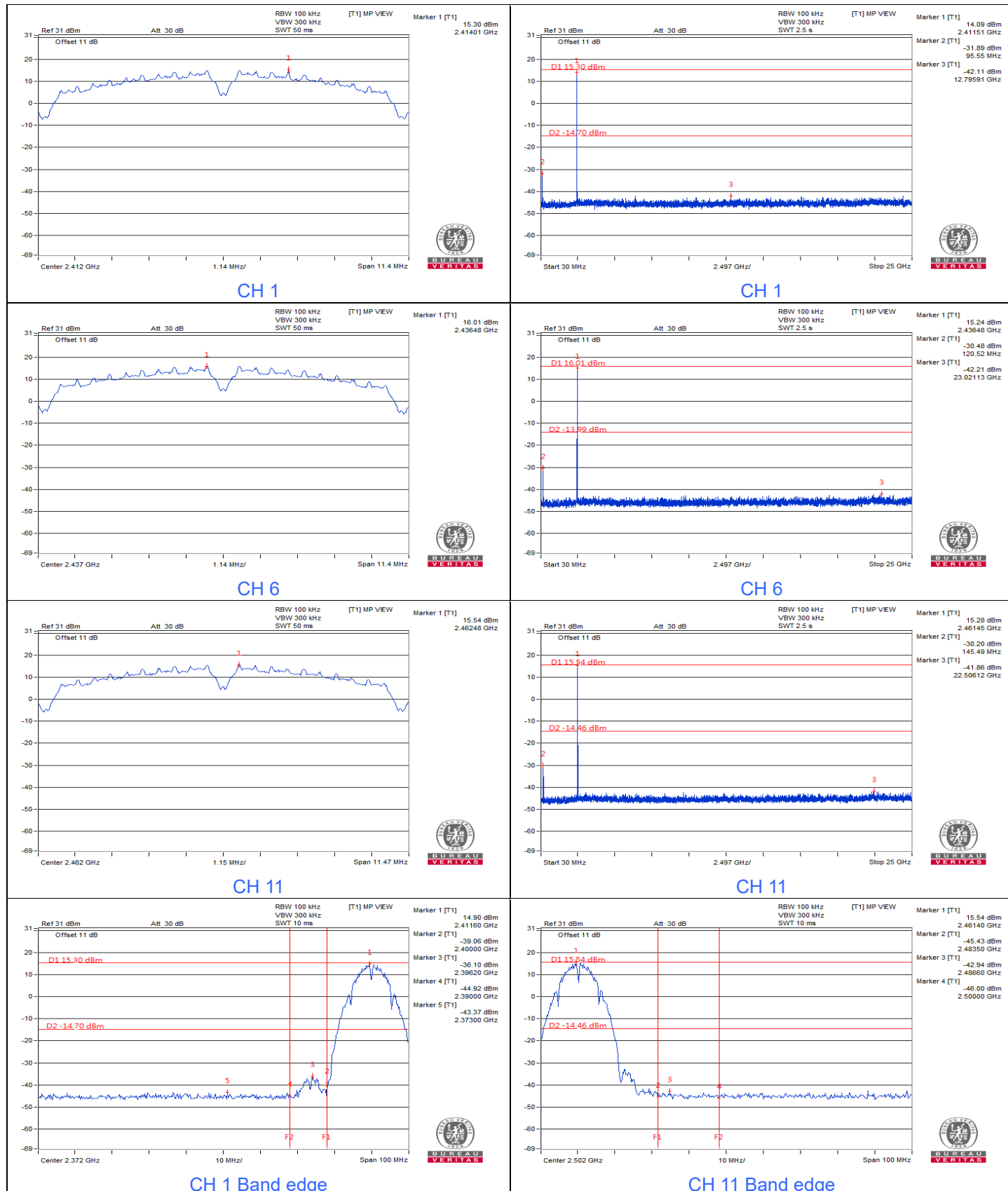


7.4 Conducted Out of Band Emissions

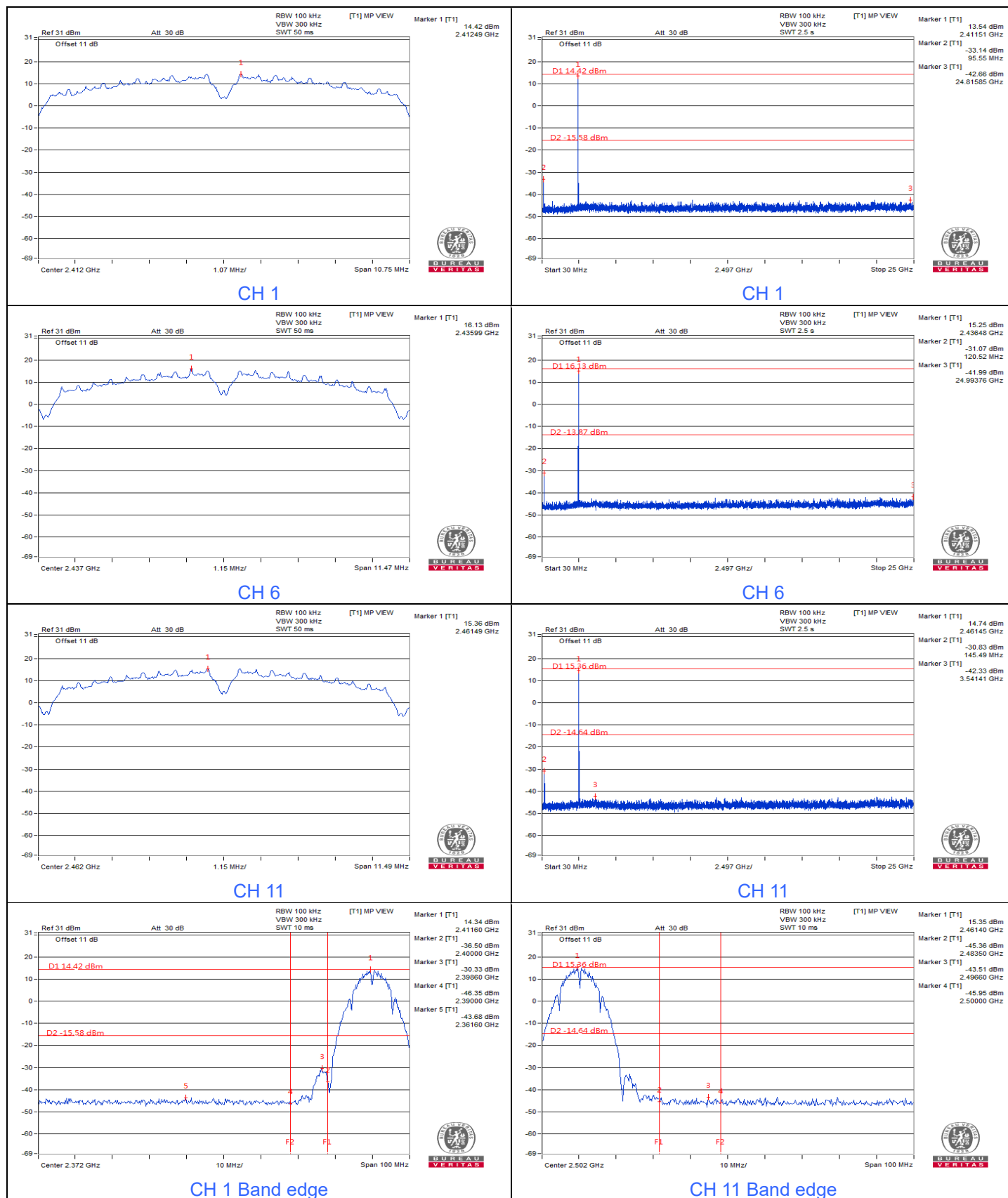
Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Wayne Lin
--------------	----------------	---------------------------	--------------	------------	-----------

802.11b

Chain 0



Chain 1



802.11g

Chain 0



Chain 1

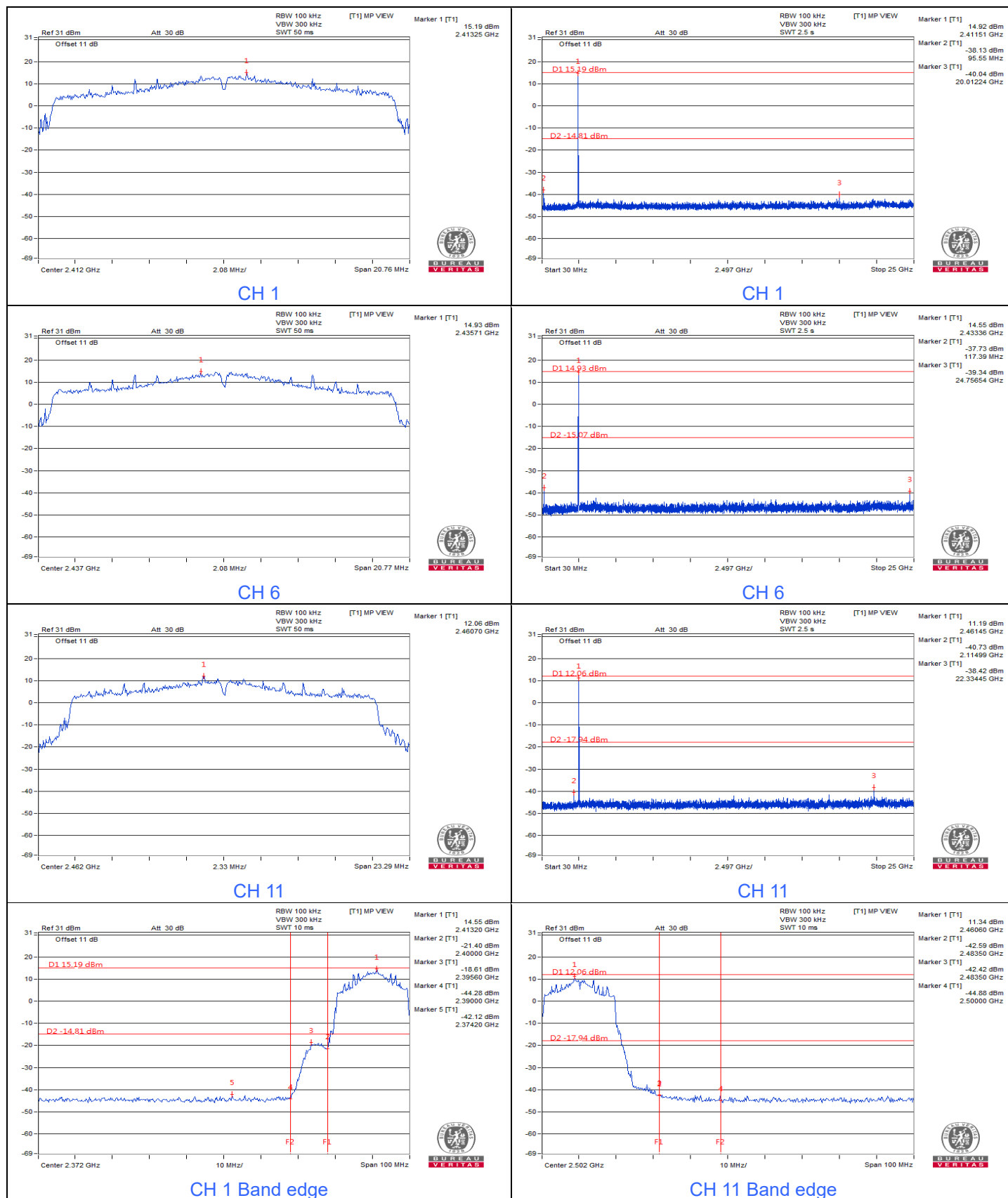


802.11be (EHT20)

Chain 0

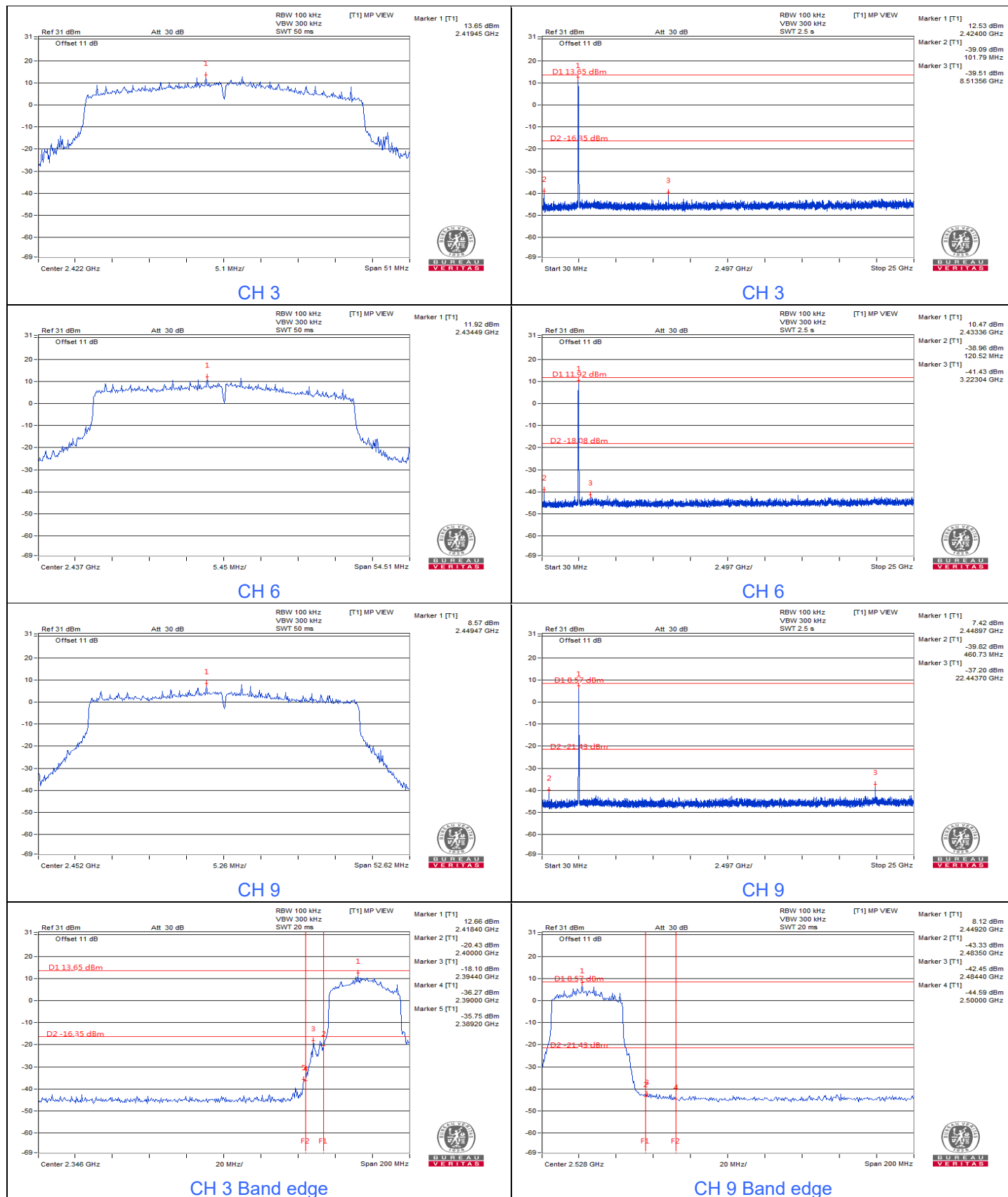


Chain 1



802.11be (EHT40)

Chain 0



Chain 1



7.5 AC Power Conducted Emissions

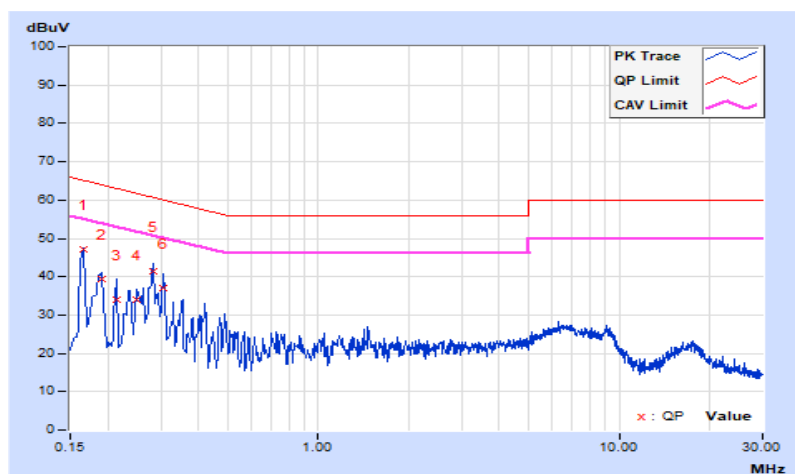
Mode A

RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Luis Lee		

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	0.16579	9.67	37.47	23.19	47.14	32.86	65.17	55.17	-18.03	-22.31
2	0.19000	9.69	29.76	19.34	39.45	29.03	64.04	54.04	-24.59	-25.01
3	0.21400	9.71	24.18	13.32	33.89	23.03	63.05	53.05	-29.16	-30.02
4	0.25000	9.72	24.18	13.29	33.90	23.01	61.76	51.76	-27.86	-28.75
5	0.28200	9.74	31.59	22.98	41.33	32.72	60.76	50.76	-19.43	-18.04
6	0.30600	9.75	27.36	18.07	37.11	27.82	60.08	50.08	-22.97	-22.26

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

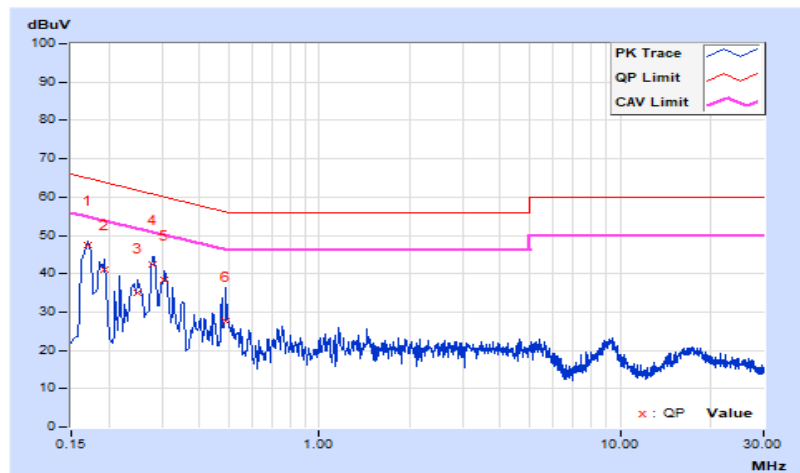


RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Luis Lee		

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	0.16977	9.68	37.94	23.43	47.62	33.11	64.97	54.97	-17.35	-21.86
2	0.19400	9.70	31.27	20.28	40.97	29.98	63.86	53.86	-22.89	-23.88
3	0.25000	9.72	25.38	18.44	35.10	28.16	61.76	51.76	-26.66	-23.60
4	0.28006	9.73	32.62	24.05	42.35	33.78	60.81	50.81	-18.46	-17.03
5	0.30600	9.74	28.49	20.59	38.23	30.33	60.08	50.08	-21.85	-19.75
6	0.49000	9.78	17.82	4.52	27.60	14.30	56.17	46.17	-28.57	-31.87

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



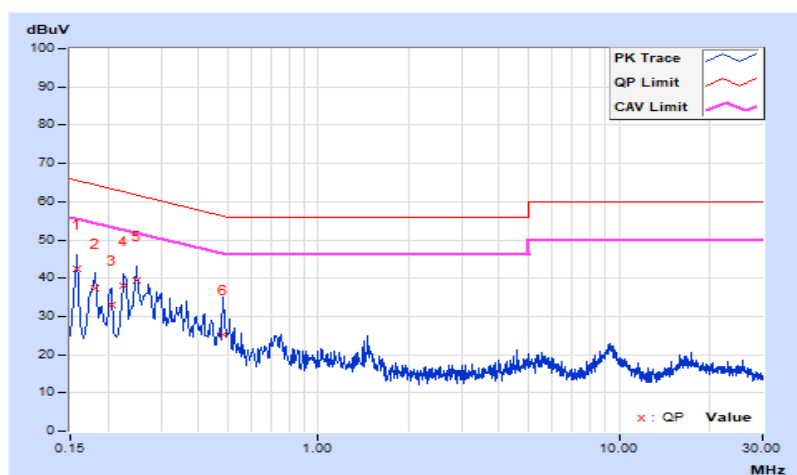
Mode B

RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

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	0.15800	9.68	32.86	19.59	42.54	29.27	65.57	55.57	-23.03	-26.30
2	0.18180	9.69	27.59	15.92	37.28	25.61	64.40	54.40	-27.12	-28.79
3	0.20577	9.70	23.18	6.58	32.88	16.28	63.37	53.37	-30.49	-37.09
4	0.22600	9.72	28.35	15.45	38.07	25.17	62.60	52.60	-24.53	-27.43
5	0.25000	9.73	29.83	22.21	39.56	31.94	61.76	51.76	-22.20	-19.82
6	0.48190	9.82	15.53	3.56	25.35	13.38	56.31	46.31	-30.96	-32.93

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

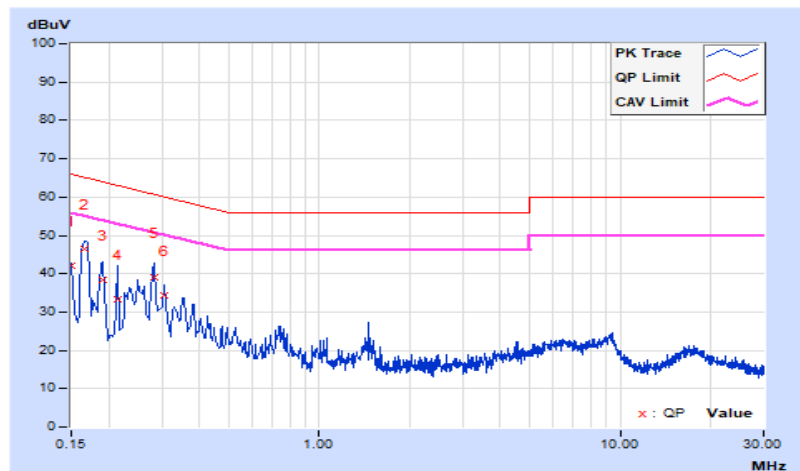


RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.68	32.55	22.36	42.23	32.04	66.00	56.00	-23.77	-23.96
2	0.16579	9.69	36.86	21.59	46.55	31.28	65.17	55.17	-18.62	-23.89
3	0.19000	9.70	28.58	15.84	38.28	25.54	64.04	54.04	-25.76	-28.50
4	0.21400	9.71	23.56	8.26	33.27	17.97	63.05	53.05	-29.78	-35.08
5	0.28200	9.76	29.21	17.31	38.97	27.07	60.76	50.76	-21.79	-23.69
6	0.30600	9.77	24.68	16.34	34.45	26.11	60.08	50.08	-25.63	-23.97

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



7.6 Unwanted Emissions below 1 GHz

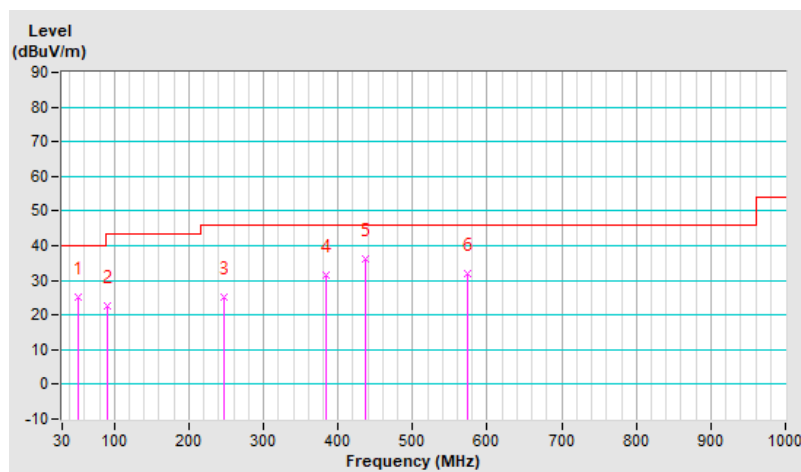
Mode A

RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

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	51.09	25.0 QP	40.0	-15.0	1.50 H	109	33.6	-8.6
2	90.45	22.5 QP	43.5	-21.0	1.50 H	332	36.8	-14.3
3	247.90	25.2 QP	46.0	-20.8	1.00 H	103	34.5	-9.3
4	384.26	31.5 QP	46.0	-14.5	1.00 H	143	37.4	-5.9
5	436.28	36.2 QP	46.0	-9.8	1.50 H	148	41.1	-4.9
6	574.04	32.1 QP	46.0	-13.9	1.50 H	147	34.3	-2.2

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 frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

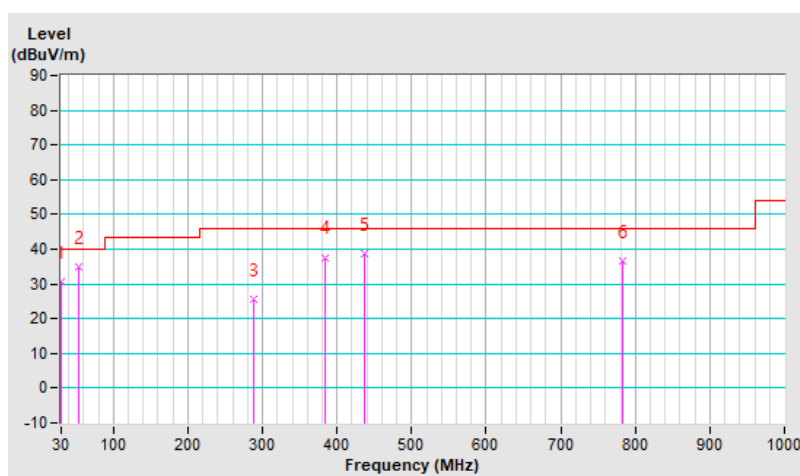


RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

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	30.00	30.6 QP	40.0	-9.4	1.00 V	267	40.8	-10.2
2	52.49	35.0 QP	40.0	-5.0	1.00 V	267	43.6	-8.6
3	288.67	25.6 QP	46.0	-20.4	1.99 V	57	33.4	-7.8
4	384.26	37.7 QP	46.0	-8.3	1.49 V	306	43.6	-5.9
5	436.28	38.8 QP	46.0	-7.2	1.00 V	74	43.7	-4.9
6	783.51	36.8 QP	46.0	-9.2	1.00 V	36	34.3	2.5

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 of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



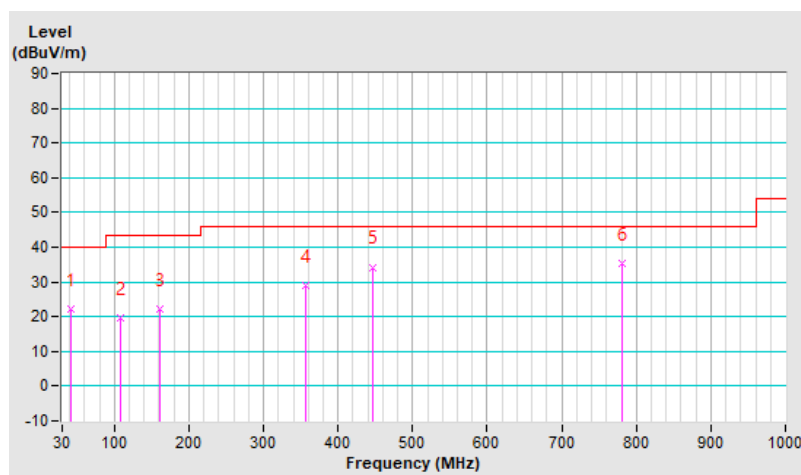
Mode B

RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

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	41.25	22.1 QP	40.0	-17.9	1.50 H	140	31.2	-9.1
2	107.32	19.6 QP	43.5	-23.9	1.00 H	313	31.6	-12.0
3	160.74	22.4 QP	43.5	-21.1	1.50 H	220	30.9	-8.5
4	356.14	29.0 QP	46.0	-17.0	1.00 H	139	35.6	-6.6
5	446.12	34.3 QP	46.0	-11.7	1.50 H	177	39.1	-4.8
6	780.70	35.4 QP	46.0	-10.6	1.50 H	85	33.0	2.4

Remarks:

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

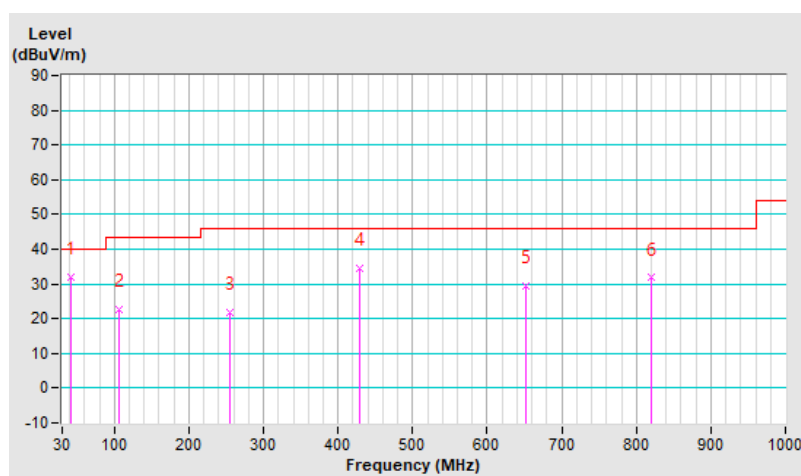


RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

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	42.65	31.8 QP	40.0	-8.2	1.00 V	159	40.8	-9.0
2	105.91	22.5 QP	43.5	-21.0	1.99 V	6	34.7	-12.2
3	254.93	21.7 QP	46.0	-24.3	1.49 V	121	30.8	-9.1
4	429.25	34.5 QP	46.0	-11.5	1.00 V	80	39.6	-5.1
5	652.77	29.3 QP	46.0	-16.7	1.99 V	337	29.8	-0.5
6	820.06	31.7 QP	46.0	-14.3	1.49 V	139	28.6	3.1

Remarks:

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



7.7 Unwanted Emissions above 1 GHz

RF Mode	802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	2390.00	57.9 PK	74.0	-16.1	3.36 H	236	24.1	33.8
2	2390.00	45.6 AV	54.0	-8.4	3.36 H	236	11.8	33.8
3	*2412.00	113.9 PK			3.36 H	236	80.1	33.8
4	*2412.00	111.6 AV			3.36 H	236	77.8	33.8
5	4824.00	52.5 PK	74.0	-21.5	2.58 H	139	39.5	13.0
6	4824.00	45.6 AV	54.0	-8.4	2.58 H	139	32.6	13.0
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	2390.00	58.1 PK	74.0	-15.9	1.53 V	68	24.3	33.8
2	2390.00	46.1 AV	54.0	-7.9	1.53 V	68	12.3	33.8
3	*2412.00	116.4 PK			1.53 V	68	82.6	33.8
4	*2412.00	113.9 AV			1.53 V	68	80.1	33.8
5	4824.00	55.8 PK	74.0	-18.2	1.56 V	170	42.8	13.0
6	4824.00	50.6 AV	54.0	-3.4	1.56 V	170	37.6	13.0

Remarks:

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

RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	*2437.00	115.1 PK			3.45 H	232	81.3	33.8
2	*2437.00	112.9 AV			3.45 H	232	79.1	33.8
3	4874.00	51.0 PK	74.0	-23.0	2.55 H	135	37.7	13.3
4	4874.00	40.0 AV	54.0	-14.0	2.55 H	135	26.7	13.3
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	*2437.00	118.0 PK			1.86 V	158	84.2	33.8
2	*2437.00	115.7 AV			1.86 V	158	81.9	33.8
3	4874.00	51.3 PK	74.0	-22.7	1.66 V	167	38.0	13.3
4	4874.00	40.9 AV	54.0	-13.1	1.66 V	167	27.6	13.3

Remarks:

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

RF Mode	802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	*2462.00	115.1 PK			3.07 H	225	81.2	33.9
2	*2462.00	112.8 AV			3.07 H	225	78.9	33.9
3	2483.50	59.3 PK	74.0	-14.7	3.07 H	225	25.5	33.8
4	2483.50	48.3 AV	54.0	-5.7	3.07 H	225	14.5	33.8
5	4924.00	50.5 PK	74.0	-23.5	2.59 H	145	37.2	13.3
6	4924.00	38.1 AV	54.0	-15.9	2.59 H	145	24.8	13.3
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	*2462.00	118.3 PK			2.10 V	171	84.4	33.9
2	*2462.00	115.9 AV			2.10 V	171	82.0	33.9
3	2483.50	60.1 PK	74.0	-13.9	2.10 V	171	26.3	33.8
4	2483.50	50.4 AV	54.0	-3.6	2.10 V	171	16.6	33.8
5	4924.00	50.7 PK	74.0	-23.3	1.90 V	172	37.4	13.3
6	4924.00	38.3 AV	54.0	-15.7	1.90 V	172	25.0	13.3

Remarks:

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

RF Mode	802.11g	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	2390.00	68.2 PK	74.0	-5.8	3.16 H	236	34.4	33.8
2	2390.00	52.6 AV	54.0	-1.4	3.16 H	236	18.8	33.8
3	*2412.00	118.8 PK			3.16 H	236	85.0	33.8
4	*2412.00	110.1 AV			3.16 H	236	76.3	33.8
5	4824.00	53.2 PK	74.0	-20.8	2.45 H	152	40.2	13.0
6	4824.00	40.2 AV	54.0	-13.8	2.45 H	152	27.2	13.0
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	2390.00	71.6 PK	74.0	-2.4	1.06 V	62	37.8	33.8
2	2390.00	53.9 AV	54.0	-0.1	1.06 V	62	20.1	33.8
3	*2412.00	122.5 PK			1.06 V	62	88.7	33.8
4	*2412.00	113.2 AV			1.06 V	62	79.4	33.8
5	4824.00	53.8 PK	74.0	-20.2	1.58 V	167	40.8	13.0
6	4824.00	41.0 AV	54.0	-13.0	1.58 V	167	28.0	13.0

Remarks:

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

RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	*2437.00	117.9 PK			3.16 H	225	84.1	33.8
2	*2437.00	108.4 AV			3.16 H	225	74.6	33.8
3	4874.00	50.9 PK	74.0	-23.1	2.54 H	154	37.6	13.3
4	4874.00	40.0 AV	54.0	-14.0	2.54 H	154	26.7	13.3
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	*2437.00	120.8 PK			1.81 V	151	87.0	33.8
2	*2437.00	112.1 AV			1.81 V	151	78.3	33.8
3	4874.00	51.2 PK	74.0	-22.8	1.62 V	165	37.9	13.3
4	4874.00	40.7 AV	54.0	-13.3	1.62 V	165	27.4	13.3

Remarks:

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

RF Mode	802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	*2462.00	115.2 PK			3.08 H	240	81.3	33.9
2	*2462.00	105.8 AV			3.08 H	240	71.9	33.9
3	2483.50	62.8 PK	74.0	-11.2	3.08 H	240	29.0	33.8
4	2483.50	50.0 AV	54.0	-4.0	3.08 H	240	16.2	33.8
5	4924.00	50.1 PK	74.0	-23.9	2.48 H	156	36.8	13.3
6	4924.00	37.8 AV	54.0	-16.2	2.48 H	156	24.5	13.3
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	*2462.00	118.8 PK			2.20 V	175	84.9	33.9
2	*2462.00	109.7 AV			2.20 V	175	75.8	33.9
3	2483.50	68.2 PK	74.0	-5.8	2.20 V	175	34.4	33.8
4	2483.50	53.4 AV	54.0	-0.6	2.20 V	175	19.6	33.8
5	4924.00	50.3 PK	74.0	-23.7	1.88 V	175	37.0	13.3
6	4924.00	38.0 AV	54.0	-16.0	1.88 V	175	24.7	13.3

Remarks:

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

RF Mode	802.11be (EHT20)	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	2390.00	68.3 PK	74.0	-5.7	3.27 H	232	34.5	33.8
2	2390.00	53.0 AV	54.0	-1.0	3.27 H	232	19.2	33.8
3	*2412.00	121.0 PK			3.27 H	232	87.2	33.8
4	*2412.00	110.2 AV			3.27 H	232	76.4	33.8
5	4824.00	53.0 PK	74.0	-21.0	2.54 H	152	40.0	13.0
6	4824.00	41.2 AV	54.0	-12.8	2.54 H	152	28.2	13.0
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	2390.00	68.9 PK	74.0	-5.1	1.10 V	67	35.1	33.8
2	2390.00	53.9 AV	54.0	-0.1	1.10 V	67	20.1	33.8
3	*2412.00	123.5 PK			1.10 V	67	89.7	33.8
4	*2412.00	111.8 AV			1.10 V	67	78.0	33.8
5	4824.00	55.1 PK	74.0	-18.9	1.55 V	172	42.1	13.0
6	4824.00	42.3 AV	54.0	-11.7	1.55 V	172	29.3	13.0

Remarks:

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

RF Mode	802.11be (EHT20)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	*2437.00	120.8 PK			2.97 H	236	87.0	33.8
2	*2437.00	109.1 AV			2.97 H	236	75.3	33.8
3	4874.00	51.1 PK	74.0	-22.9	2.39 H	148	37.8	13.3
4	4874.00	39.8 AV	54.0	-14.2	2.39 H	148	26.5	13.3
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	*2437.00	124.1 PK			2.03 V	207	90.3	33.8
2	*2437.00	112.4 AV			2.03 V	207	78.6	33.8
3	4874.00	51.4 PK	74.0	-22.6	1.65 V	169	38.1	13.3
4	4874.00	40.9 AV	54.0	-13.1	1.65 V	169	27.6	13.3

Remarks:

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

RF Mode	802.11be (EHT20)	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	*2462.00	117.2 PK			1.63 H	244	83.3	33.9
2	*2462.00	104.8 AV			1.63 H	244	70.9	33.9
3	2483.50	61.2 PK	74.0	-12.8	1.63 H	244	27.4	33.8
4	2483.50	49.2 AV	54.0	-4.8	1.63 H	244	15.4	33.8
5	4924.00	50.3 PK	74.0	-23.7	2.39 H	158	37.0	13.3
6	4924.00	37.8 AV	54.0	-16.2	2.39 H	158	24.5	13.3
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	*2462.00	120.5 PK			2.05 V	167	86.6	33.9
2	*2462.00	108.8 AV			2.05 V	167	74.9	33.9
3	2483.50	69.3 PK	74.0	-4.7	2.05 V	167	35.5	33.8
4	2483.50	53.9 AV	54.0	-0.1	2.05 V	167	20.1	33.8
5	4924.00	50.5 PK	74.0	-23.5	1.85 V	177	37.2	13.3
6	4924.00	38.2 AV	54.0	-15.8	1.85 V	177	24.9	13.3

Remarks:

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

RF Mode	802.11be (EHT40)	Channel	CH 3 : 2422 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	2390.00	64.5 PK	74.0	-9.5	2.01 H	242	30.7	33.8
2	2390.00	51.0 AV	54.0	-3.0	2.01 H	242	17.2	33.8
3	*2422.00	118.8 PK			2.01 H	242	85.0	33.8
4	*2422.00	107.2 AV			2.01 H	242	73.4	33.8
5	4844.00	53.4 PK	74.0	-20.6	2.33 H	156	40.2	13.2
6	4844.00	40.2 AV	54.0	-13.8	2.33 H	156	27.0	13.2
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	2390.00	70.4 PK	74.0	-3.6	2.40 V	173	36.6	33.8
2	2390.00	53.4 AV	54.0	-0.6	2.40 V	173	19.6	33.8
3	*2422.00	121.2 PK			2.40 V	173	87.4	33.8
4	*2422.00	109.3 AV			2.40 V	173	75.5	33.8
5	4844.00	54.6 PK	74.0	-19.4	1.59 V	175	41.4	13.2
6	4844.00	41.1 AV	54.0	-12.9	1.59 V	175	27.9	13.2

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.

RF Mode	802.11be (EHT40)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	*2437.00	118.8 PK			1.99 H	242	85.0	33.8
2	*2437.00	106.8 AV			1.99 H	242	73.0	33.8
3	2483.50	67.5 PK	74.0	-6.5	1.99 H	242	33.7	33.8
4	2483.50	52.3 AV	54.0	-1.7	1.99 H	242	18.5	33.8
5	4874.00	50.8 PK	74.0	-23.2	2.53 H	154	37.5	13.3
6	4874.00	39.5 AV	54.0	-14.5	2.53 H	154	26.2	13.3
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	*2437.00	120.8 PK			1.94 V	164	87.0	33.8
2	*2437.00	109.4 AV			1.94 V	164	75.6	33.8
3	2483.50	68.9 PK	74.0	-5.1	1.94 V	164	35.1	33.8
4	2483.50	53.5 AV	54.0	-0.5	1.94 V	164	19.7	33.8
5	4874.00	51.2 PK	74.0	-22.8	1.72 V	165	37.9	13.3
6	4874.00	40.1 AV	54.0	-13.9	1.72 V	165	26.8	13.3

Remarks:

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

RF Mode	802.11be (EHT40)	Channel	CH 9 : 2452 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	TitanHSU		

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	*2452.00	115.4 PK			3.04 H	230	81.5	33.9
2	*2452.00	102.4 AV			3.04 H	230	68.5	33.9
3	2483.50	64.1 PK	74.0	-9.9	3.04 H	230	30.3	33.8
4	2483.50	48.8 AV	54.0	-5.2	3.04 H	230	15.0	33.8
5	4904.00	50.2 PK	74.0	-23.8	2.39 H	149	36.7	13.5
6	4904.00	38.0 AV	54.0	-16.0	2.39 H	149	24.5	13.5
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	*2452.00	117.8 PK			1.99 V	165	83.9	33.9
2	*2452.00	106.0 AV			1.99 V	165	72.1	33.9
3	2483.50	67.4 PK	74.0	-6.6	1.99 V	165	33.6	33.8
4	2483.50	53.9 AV	54.0	-0.1	1.99 V	165	20.1	33.8
5	4904.00	50.4 PK	74.0	-23.6	1.85 V	173	36.9	13.5
6	4904.00	38.2 AV	54.0	-15.8	1.85 V	173	24.7	13.5

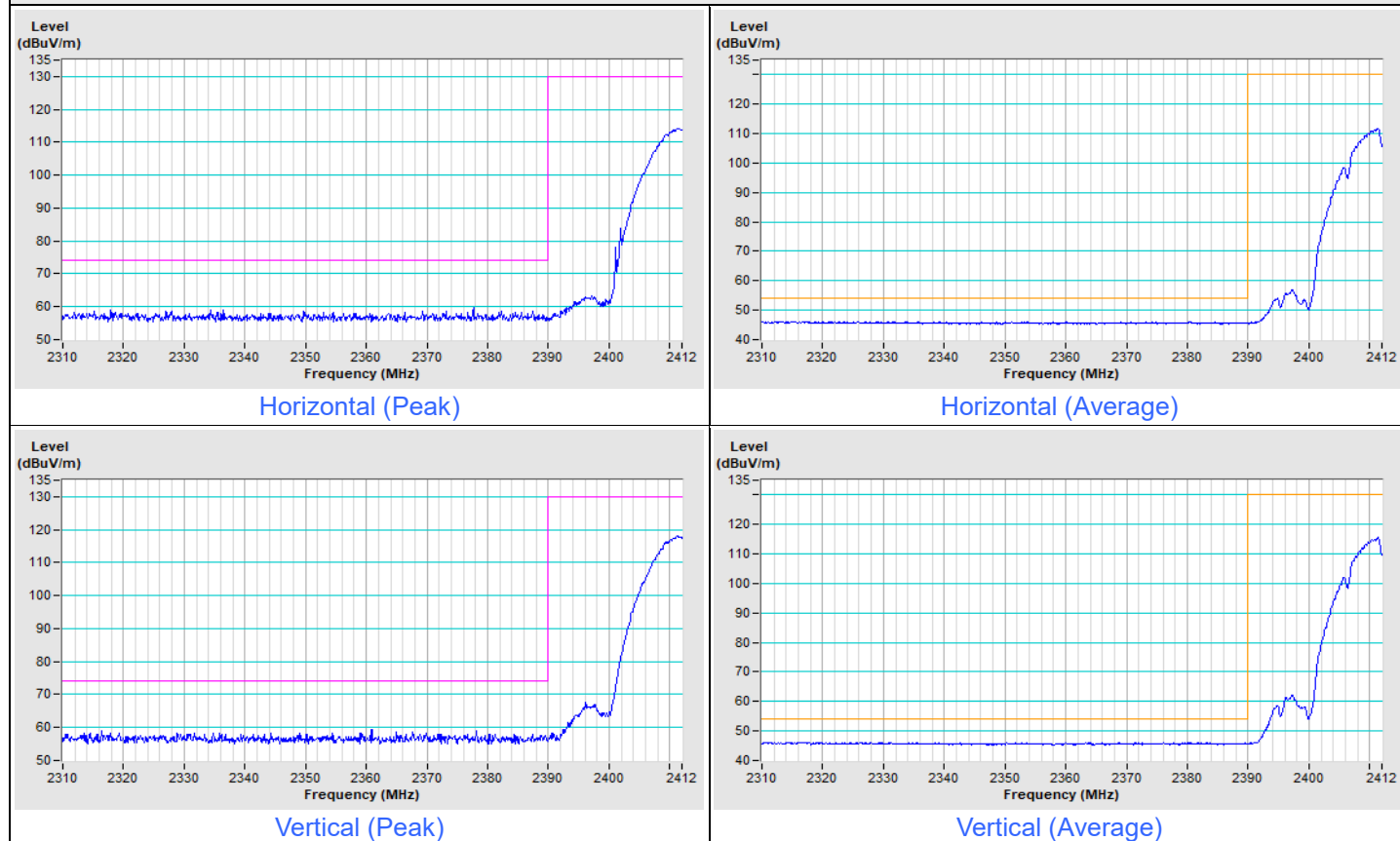
Remarks:

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.

Plot of Band Edge

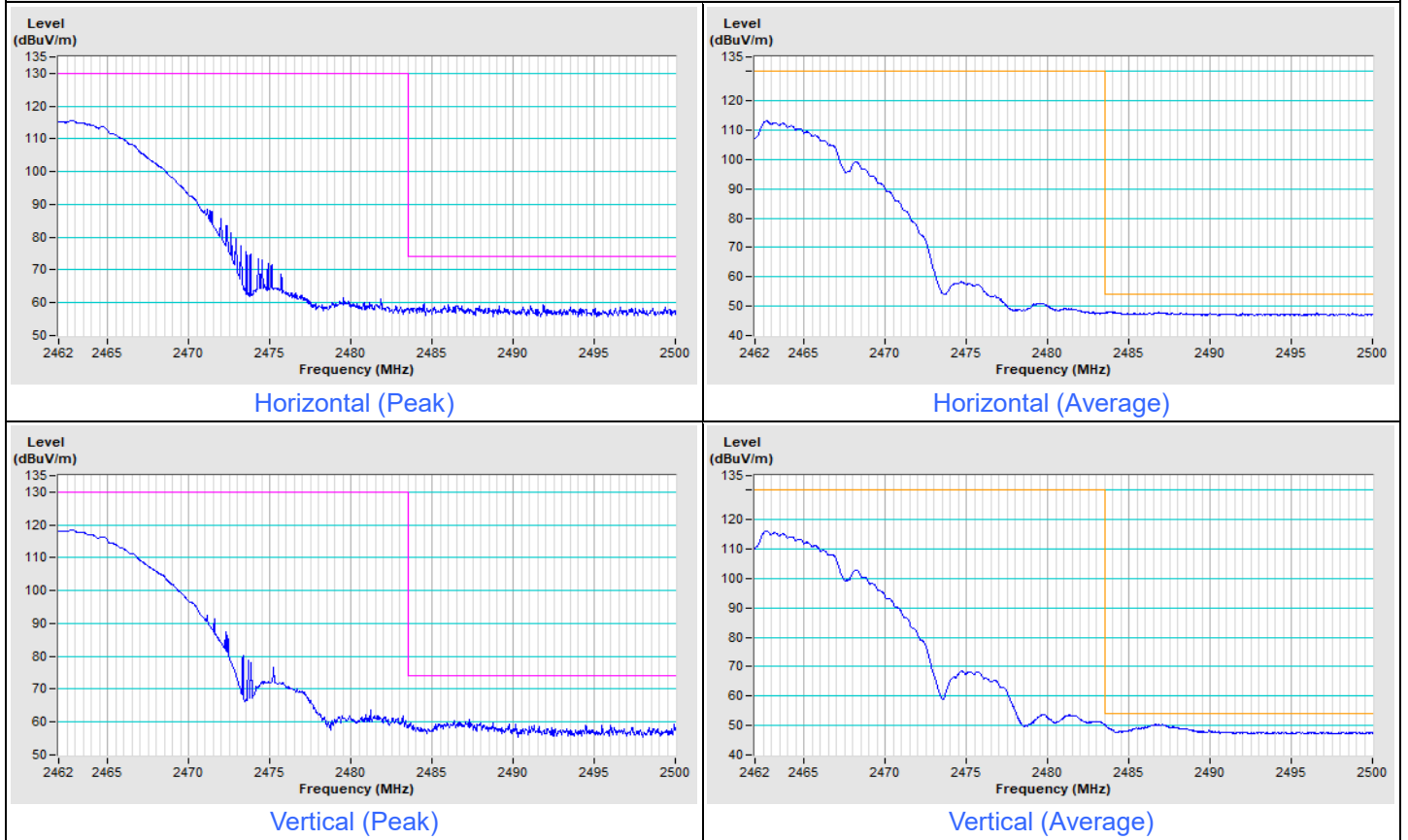
Frequency Range	2.31 GHz ~ 2.412 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
-----------------	----------------------	-------------------------------	--

802.11b Channel 1



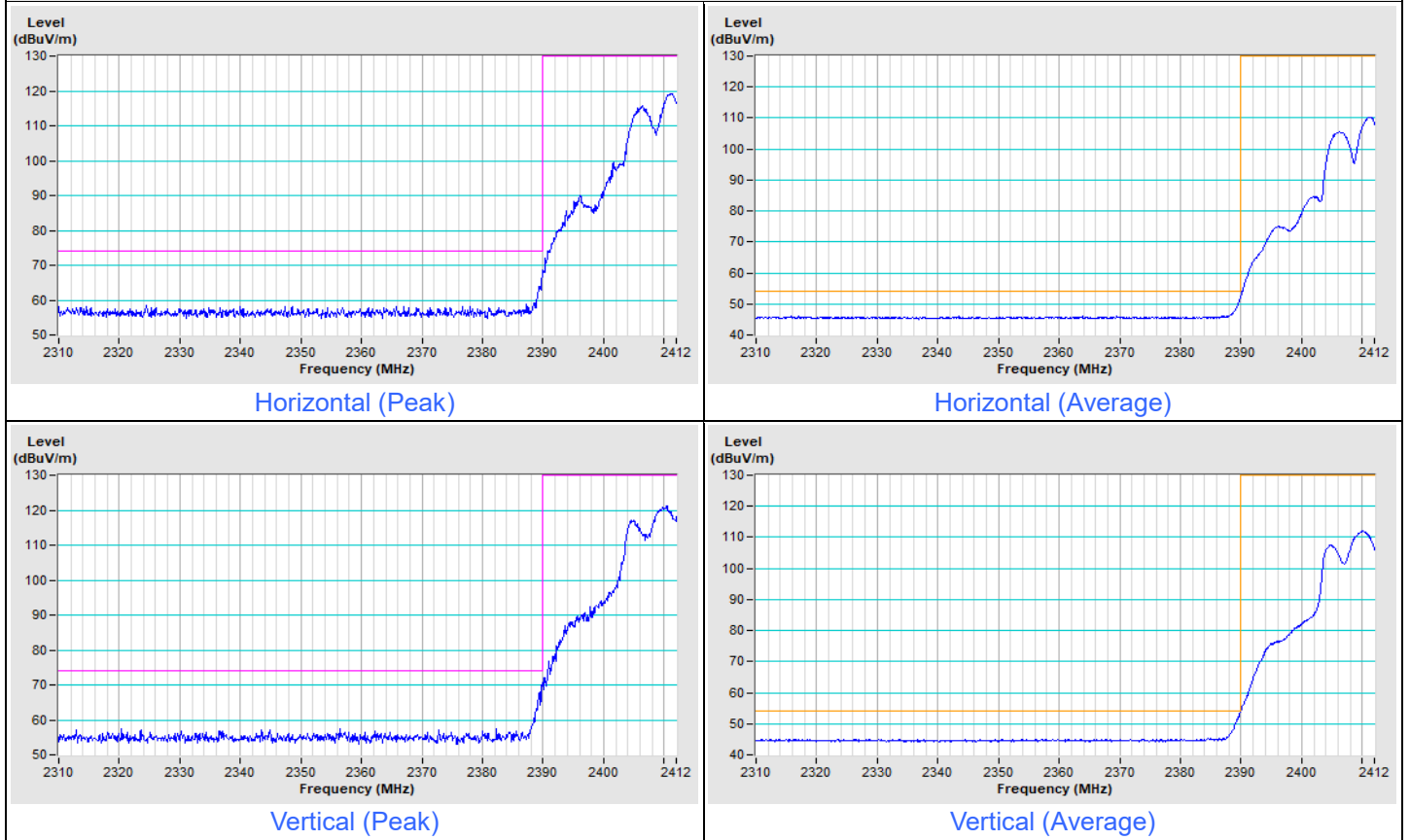
Frequency Range	2.462 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
-----------------	---------------------	-------------------------------	--

802.11b Channel 11



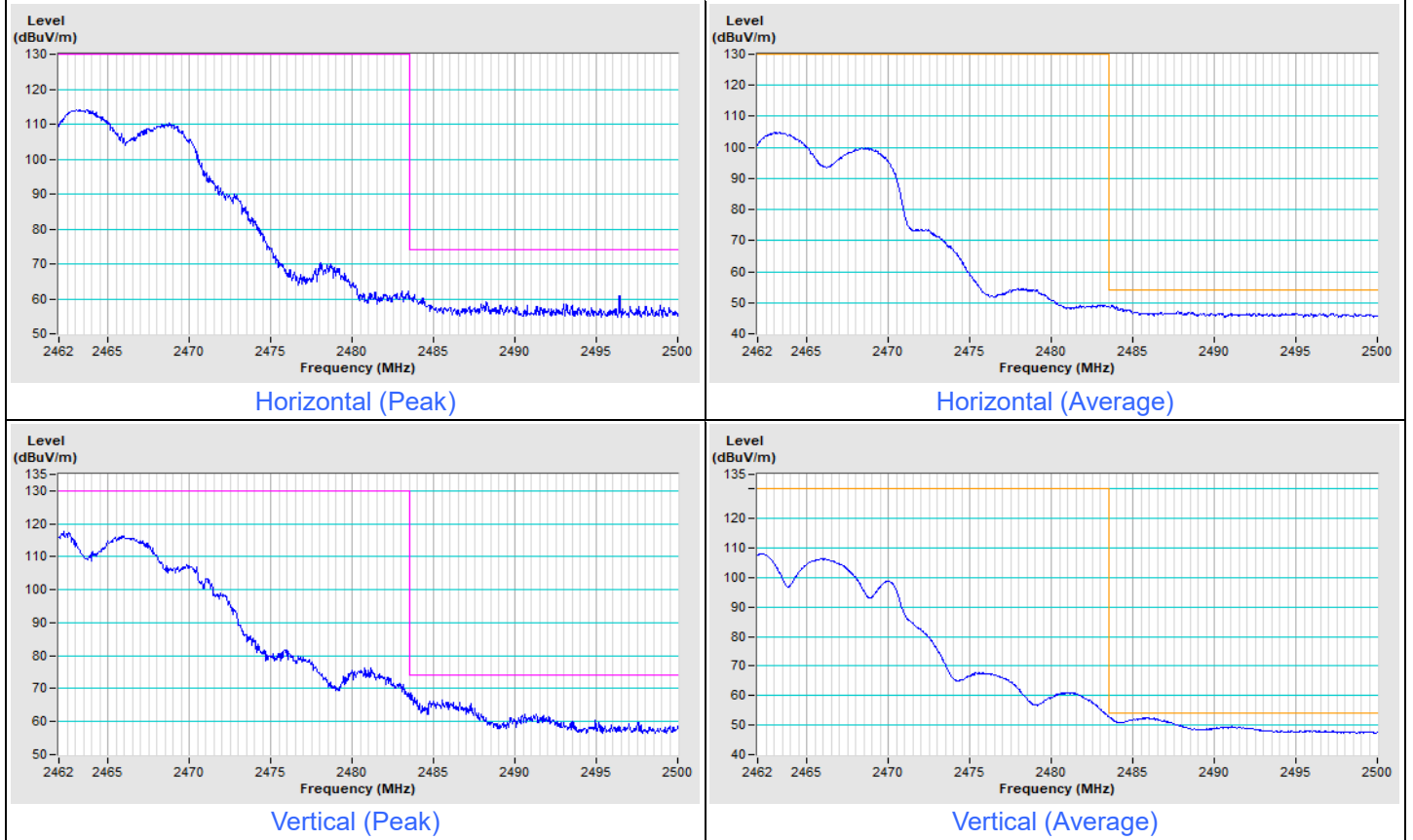
Frequency Range	2.31 GHz ~ 2.412 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
-----------------	----------------------	-------------------------------	--

802.11g Channel 1



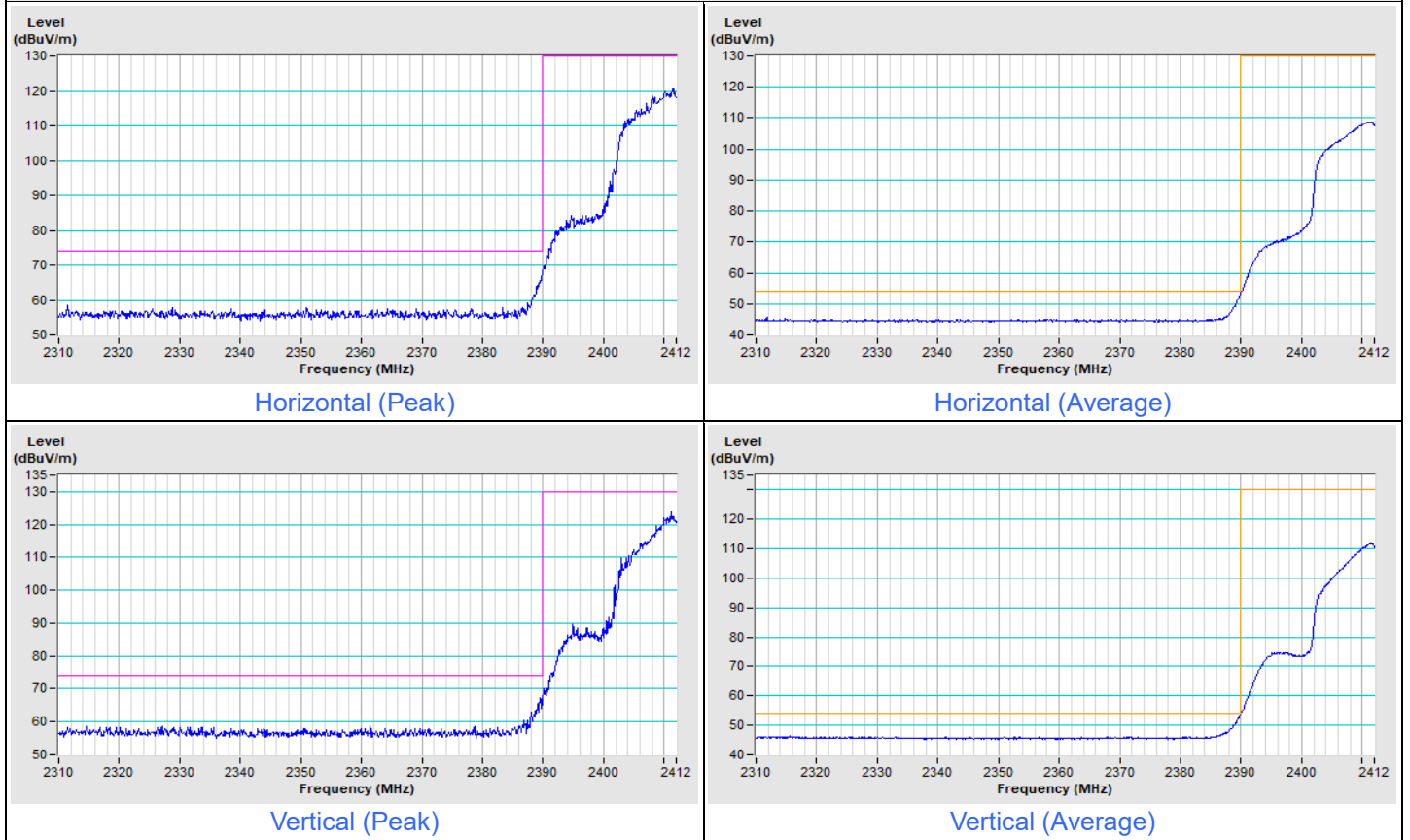
Frequency Range	2.462 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
-----------------	---------------------	-------------------------------	--

802.11g Channel 11



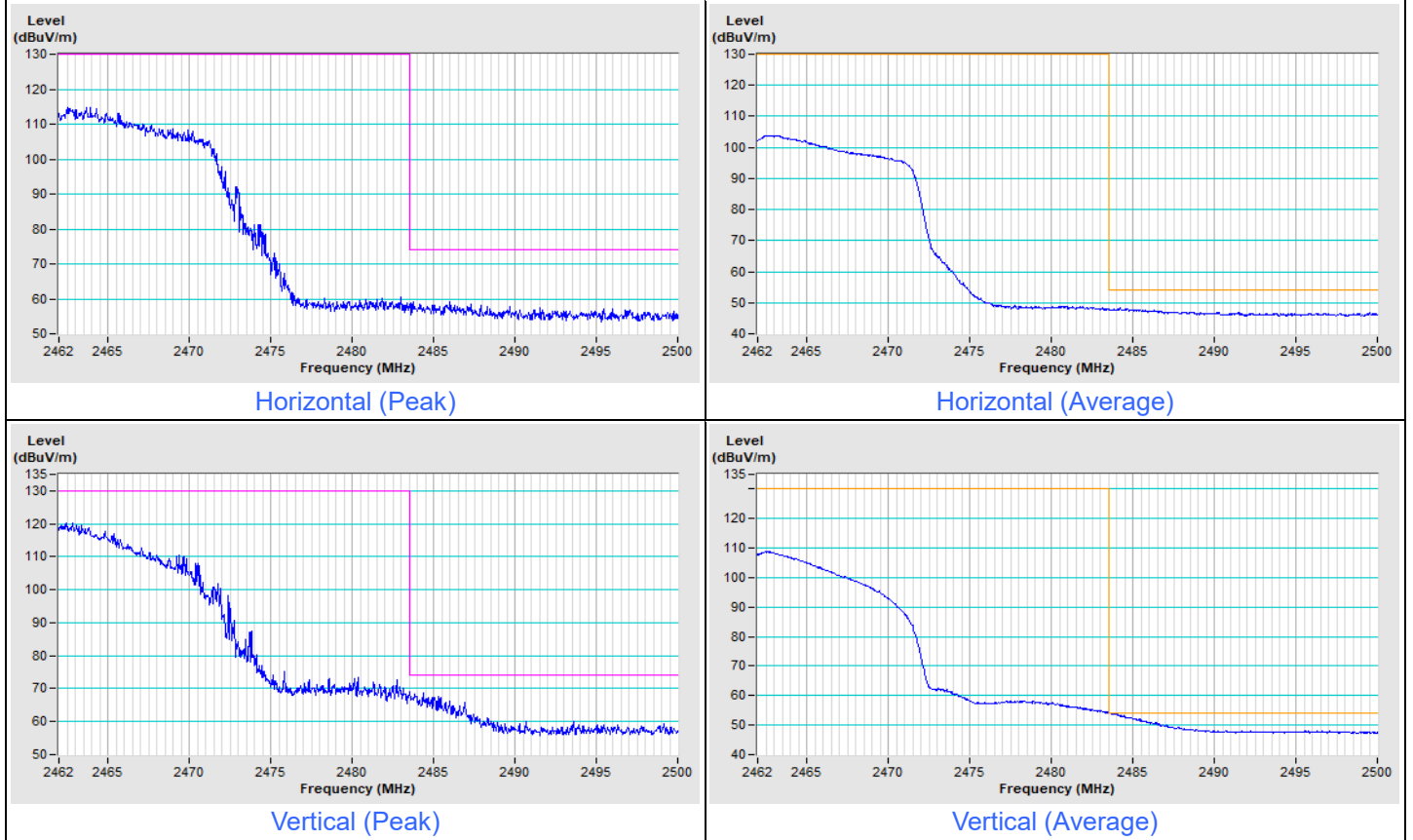
Frequency Range	2.31 GHz ~ 2.412 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
-----------------	----------------------	-------------------------------	--

802.11be (EHT20) Channel 1



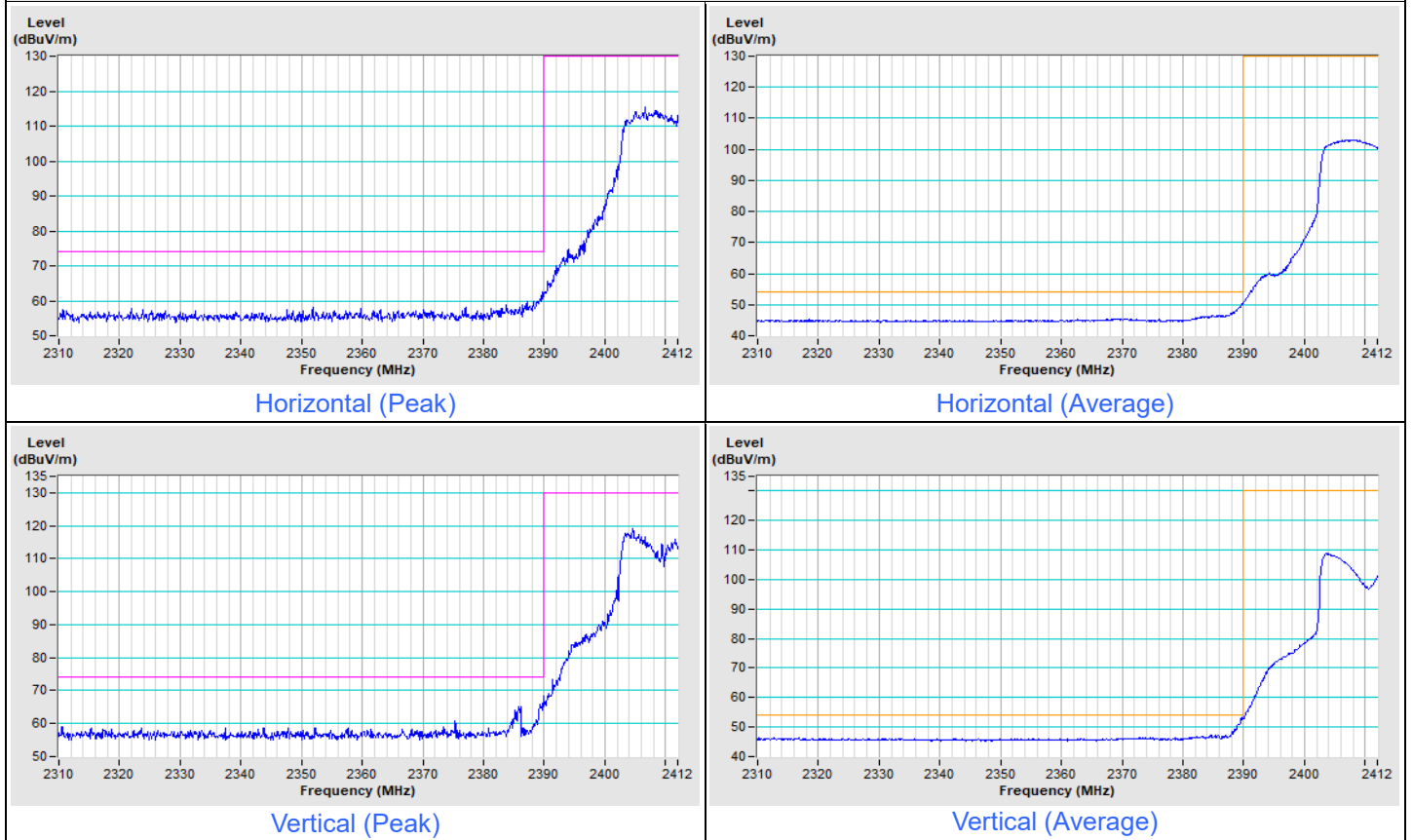
Frequency Range	2.462 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
-----------------	---------------------	-------------------------------	--

802.11be (EHT20) Channel 11



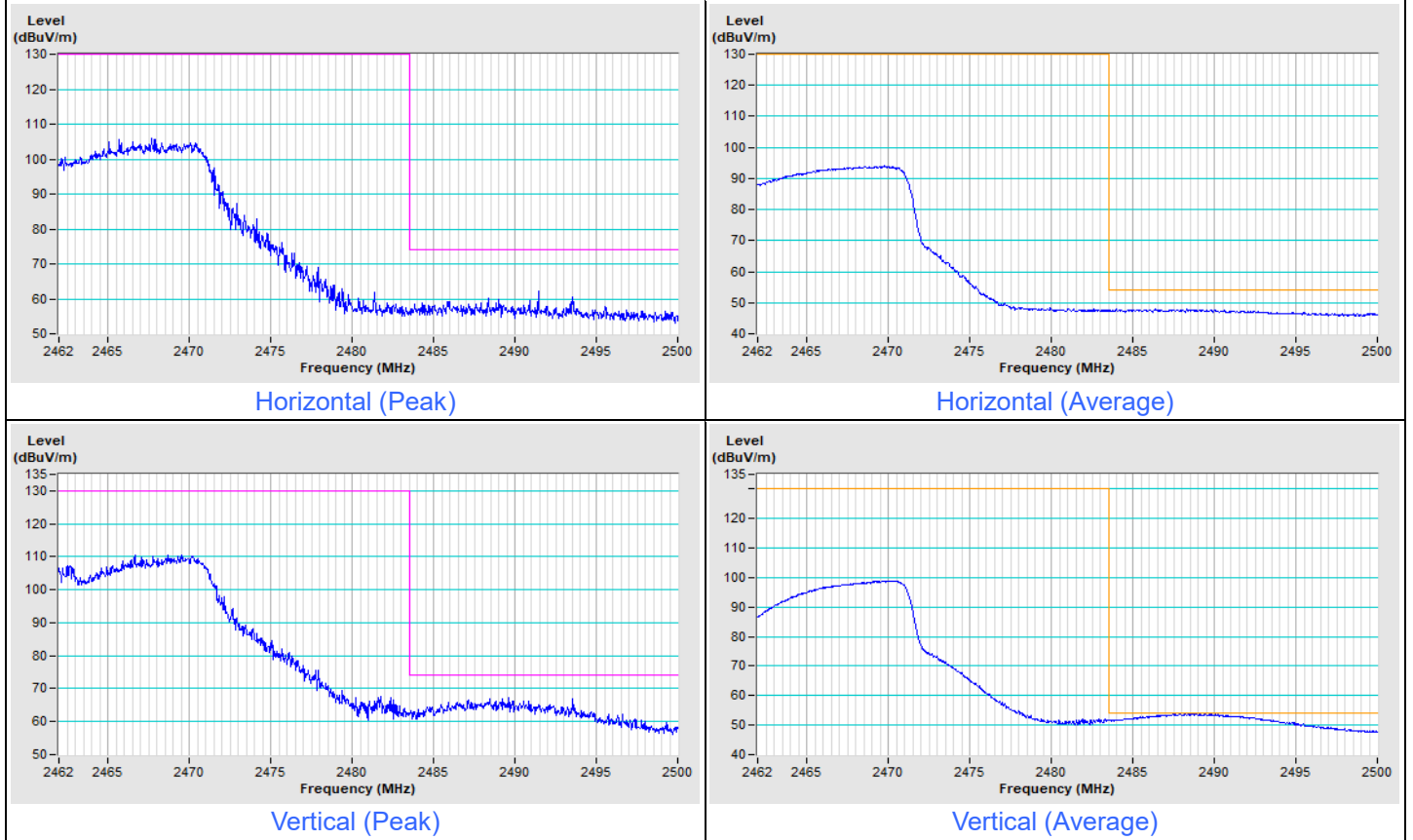
Frequency Range	2.31 GHz ~ 2.412 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
-----------------	----------------------	-------------------------------	--

802.11be (EHT40) Channel 3



Frequency Range	2.462 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
-----------------	---------------------	-------------------------------	--

802.11be (EHT40) Channel 9



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 ---