

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBAPP-WTW-P25060159-2

FCC ID: UDX-600196027

Product: C8121-CW-G2, C8121-W-G2

Brand: Cisco

Model No.: C8121-CW-G2

Series Model.: C8121-W-G2 (refer to item 3.1 for more details)

Received Date: 2025/6/3

Test Date: 2025/6/11 ~ 2025/9/3

Issued Date: 2025/11/21

Applicant: Cisco Systems, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 788550 / TW0003

Designation Number:

Approved by: Jeremy Lin, Date: 2025/11/21
Jeremy Lin / Project Engineer

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Prepared by : Lena Wang / Specialist

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Table of Contents

Release Control Record	4
1 Certificate.....	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Supplementary Information	6
3 General Information	7
3.1 General Description.....	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	13
4 Test Instruments	14
4.1 RF Output Power.....	14
4.2 Power Spectral Density	14
4.3 6 dB Bandwidth	14
4.4 Conducted Out of Band Emissions	14
4.5 AC Power Conducted Emissions	15
4.6 Unwanted Emissions below 1 GHz	15
4.7 Unwanted Emissions above 1 GHz.....	16
5 Limits of Test Items.....	17
5.1 RF Output Power.....	17
5.2 Power Spectral Density	17
5.3 6 dB Bandwidth	17
5.4 Conducted Out of Band Emissions	17
5.5 AC Power Conducted Emissions	17
5.6 Unwanted Emissions below 1 GHz	18
5.7 Unwanted Emissions above 1 GHz.....	18
6 Test Arrangements.....	19
6.1 RF Output Power.....	19
6.1.1 Test Setup	19
6.1.2 Test Procedure.....	19
6.2 Power Spectral Density	19
6.2.1 Test Setup	19
6.2.2 Test Procedure.....	19
6.3 6 dB Bandwidth	20
6.3.1 Test Setup	20
6.3.2 Test Procedure.....	20
6.4 Conducted Out of Band Emissions	21
6.4.1 Test Setup	21
6.4.2 Test Procedure.....	21
6.5 AC Power Conducted Emissions	22
6.5.1 Test Setup	22
6.5.2 Test Procedure.....	22
6.6 Unwanted Emissions below 1 GHz	23
6.6.1 Test Setup	23
6.6.2 Test Procedure.....	24
6.7 Unwanted Emissions above 1 GHz.....	25
6.7.1 Test Setup	25
6.7.2 Test Procedure.....	25
7 Test Results of Test Item	26

7.1	RF Output Power.....	26
7.2	Power Spectral Density	28
7.3	6 dB Bandwidth	30
7.4	Conducted Out of Band Emissions	32
7.5	AC Power Conducted Emissions	40
7.6	Unwanted Emissions below 1 GHz	44
7.7	Unwanted Emissions above 1 GHz.....	48
8	Pictures of Test Arrangements	68
9	Information of the Testing Laboratories	69

Release Control Record

Issue No.	Description	Date Issued
RFBAPP-WTW-P25060159-2	Original release.	2025/11/21

1 Certificate

Product: C8121-CW-G2, C8121-W-G2

Brand: Cisco

Test Model: C8121-CW-G2

Series Model: C8121-W-G2 (refer to item 3.1 for more details)

Sample Status: Engineering sample

Applicant: Cisco Systems, Inc.

Test Date: 2025/6/11 ~ 2025/9/3

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

Measurement ANSI C63.10-2020

procedure: 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 -4.08 dB at 0.27000 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -4.8 dB at 34.22 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -1.1 dB at 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
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.79 dB
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	C8121-CW-G2, C8121-W-G2
Brand	Cisco
Test Model	C8121-CW-G2
Series Model	C8121-W-G2
Model Difference	Refer to Note as below
Status of EUT	Engineering sample
Power Supply Rating	54 Vdc (Adapter)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in VHT mode 1024QAM for OFDMA in 11ax mode
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	Up to 573.5 Mbps
Operating Frequency	2.412 GHz ~ 2.462 GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20):11 802.11n (HT40), VHT40, 802.11ax (HE40):7
Output Power	432.734 mW (26.36 dBm)

Note:

1. All models are listed as below.

Brand	Model	Difference
Cisco	C8121-CW-G2	WIFI+WWAN (Contains FCCC ID: N7NEM92)
	C8121-W-G2	WIFI only

2. The EUT uses following accessories.

Item	Brand	Model	Specification
AC Adapter 1	LITE-ON	PA-1251-54	AC Input : 100-240V, 4A, 50-60Hz DC Output : 54V, 4.63A, 250W DC Output Cable : 1.45M with 2 core
AC Adapter 2	DELTA	ADH-250AR B	AC Input : 100-240V, 3.2A, 50-60Hz DC Output : 54V, 4.63A, 250.02W DC Output Cable : 1.47M with 1 core
AC Adapter 3	PHIHONG	AM250U-540A	AC Input : 100-240V, 3.5A, 50-60Hz DC Output : 54V, 4.63A, 250W DC Output Cable : 1.47M with 1 core

3. There are WLAN (2.4 GHz & 5 GHz & 5.9 GHz) technology used for the EUT.

4. Simultaneously transmission combination.

Combination	Technology		
1	WLAN (2.4 GHz)	WLAN (5 GHz)	WWAN

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

5. The above EUT information is declared by manufacturer and for more detailed features description, please 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 NO.	Brand	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type
0	Aristotle	RFA-12-AUX-P6	2.28	2.4~2.4835GHz	Dipole	ipex(MHF)
			1.47	5.15~5.25GHz		
			2.19	5.25~5.35GHz		
			3.8	5.47~5.725GHz		
			3.8	5.725~5.85GHz		
			3.32	5.85~5.895GHz		
1	Aristotle	RFA-12-MAIN-P5	3.31	2.4~2.4835GHz	Dipole	ipex(MHF)
			5.01	5.15~5.25GHz		
			4.44	5.25~5.35GHz		
			4.67	5.47~5.725GHz		
			5.97	5.725~5.85GHz		
			5.26	5.85~5.895GHz		

* 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	TX & RX Configuration	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
VHT20	2TX	2RX
VHT40	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX

Note:

1. All of modulation mode support beamforming function except 802.11b / 802.11g 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) and 802.11ax mode for 20 MHz (40 MHz). Therefore, the investigated worst case is the representative mode in test report.
4. The EUT does not use channel puncturing, but does use bandwidth reduction.

3.3 Channel List

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

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):

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:	1. The AC Adapter has the following models: PA-1251-54/ADH-250AR B/AM250U-540A. Pre-scan these models of AC Adapters and find the worst case as a representative test condition. 2. EUT can be used in the following ways: Lying/ Wall Mount. Pre-scan these ways and find the worst case as a representative test condition.
Worst Case:	1. AC Adapter Worst Condition: LITE-ON PA-1251-54 2. Lying/ Wall Mount Worst Condition:Wall Mount

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
		802.11ax (HE20)	CDD & Beamforming	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD & Beamforming	3, 6, 9	BPSK	MCS0
Power Spectral Density	A	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
		802.11g	CDD	1, 6, 11	BPSK	6Mb/s
		802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0
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
		802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0
AC Power Conducted Emissions	A, B	802.11b	CDD	6	DBPSK	1Mb/s
Unwanted Emissions below 1 GHz	A, B	802.11b	CDD	11	DBPSK	1Mb/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
		802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0
EUT Configure Mode:	A	C8121-CW-G2				
	B	C8121-W-G2				

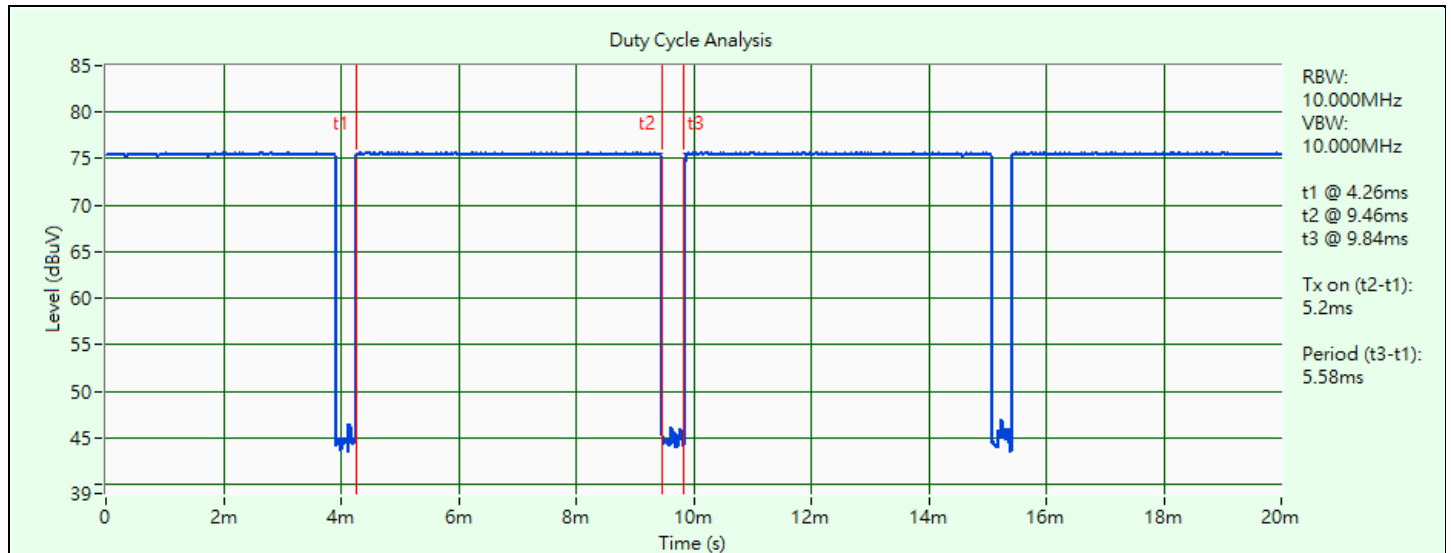
3.5 Duty Cycle of Test Signal

802.11b: Duty cycle = 5.2 ms / 5.58 ms x 100% = 93.2%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.31 \text{ dB}$

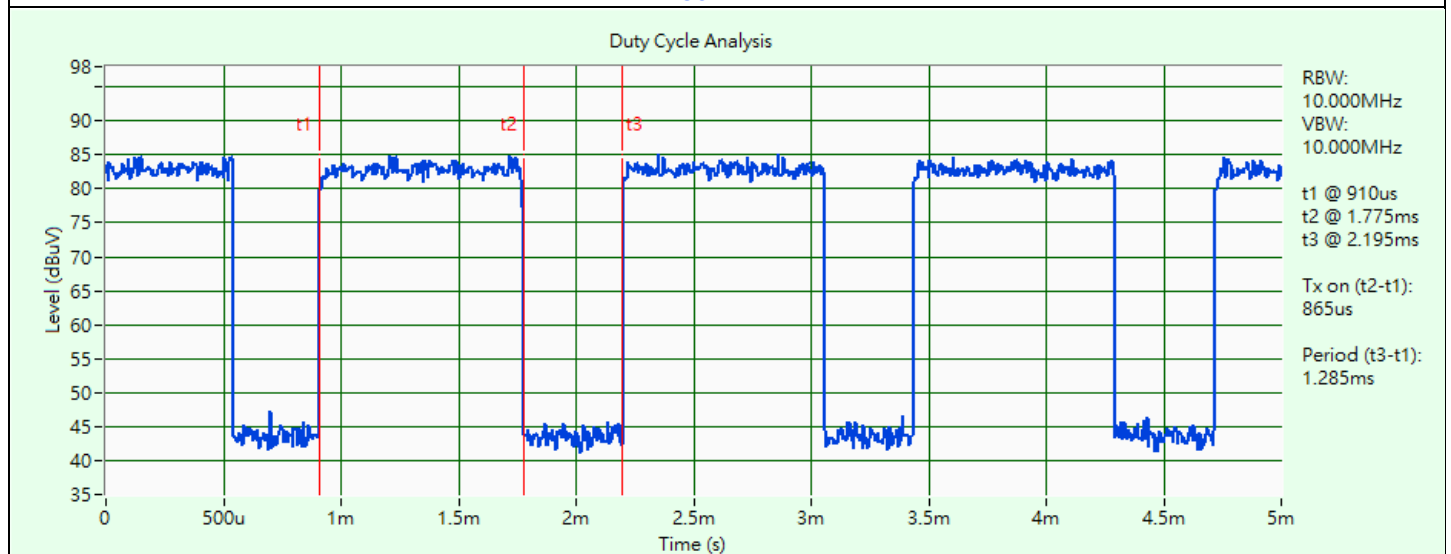
802.11g: Duty cycle = 0.865 ms / 1.285 ms x 100% = 67.3%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 1.72 \text{ dB}$

802.11ax (HE20): Duty cycle = 1.76 ms / 2.17 ms x 100% = 81.1%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.91 \text{ dB}$

802.11ax (HE40): Duty cycle = 0.915 ms / 1.33 ms x 100% = 68.8%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 1.62 \text{ dB}$

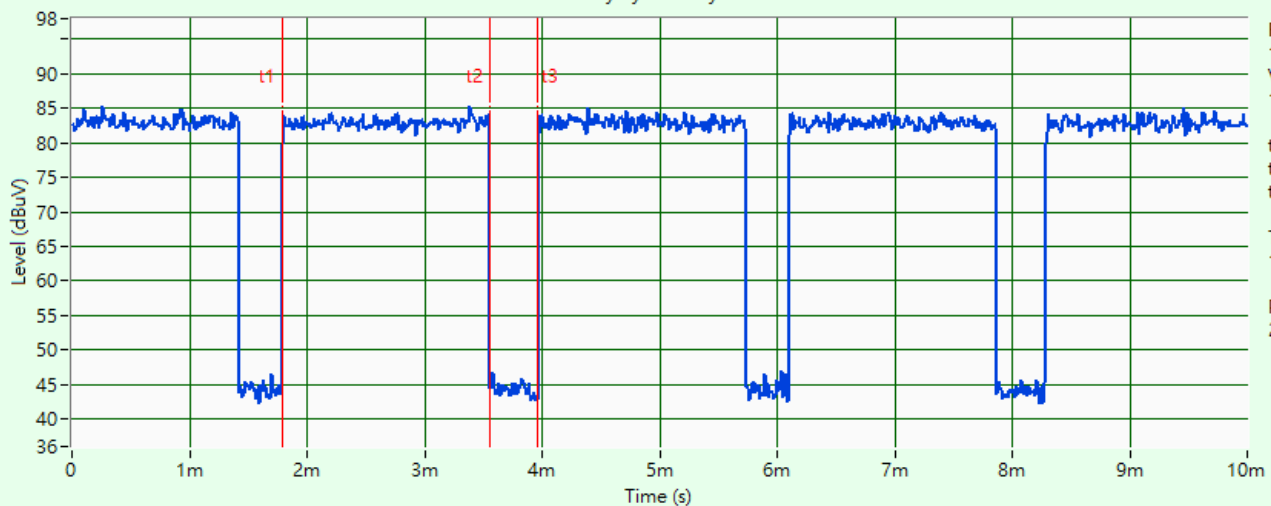


802.11b



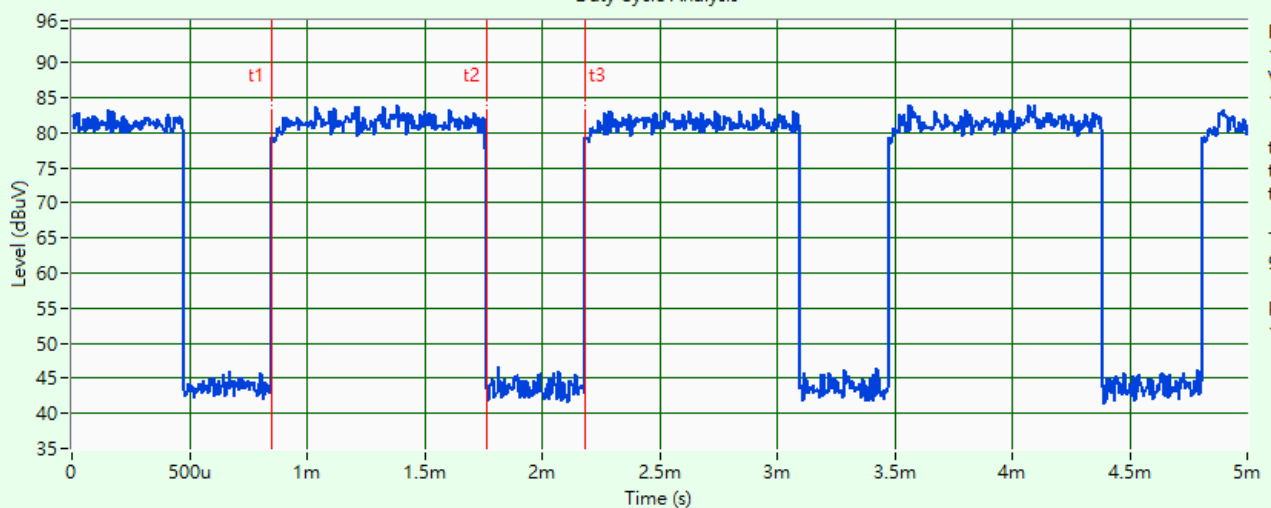
802.11g

Duty Cycle Analysis



802.11ax (HE20)

Duty Cycle Analysis

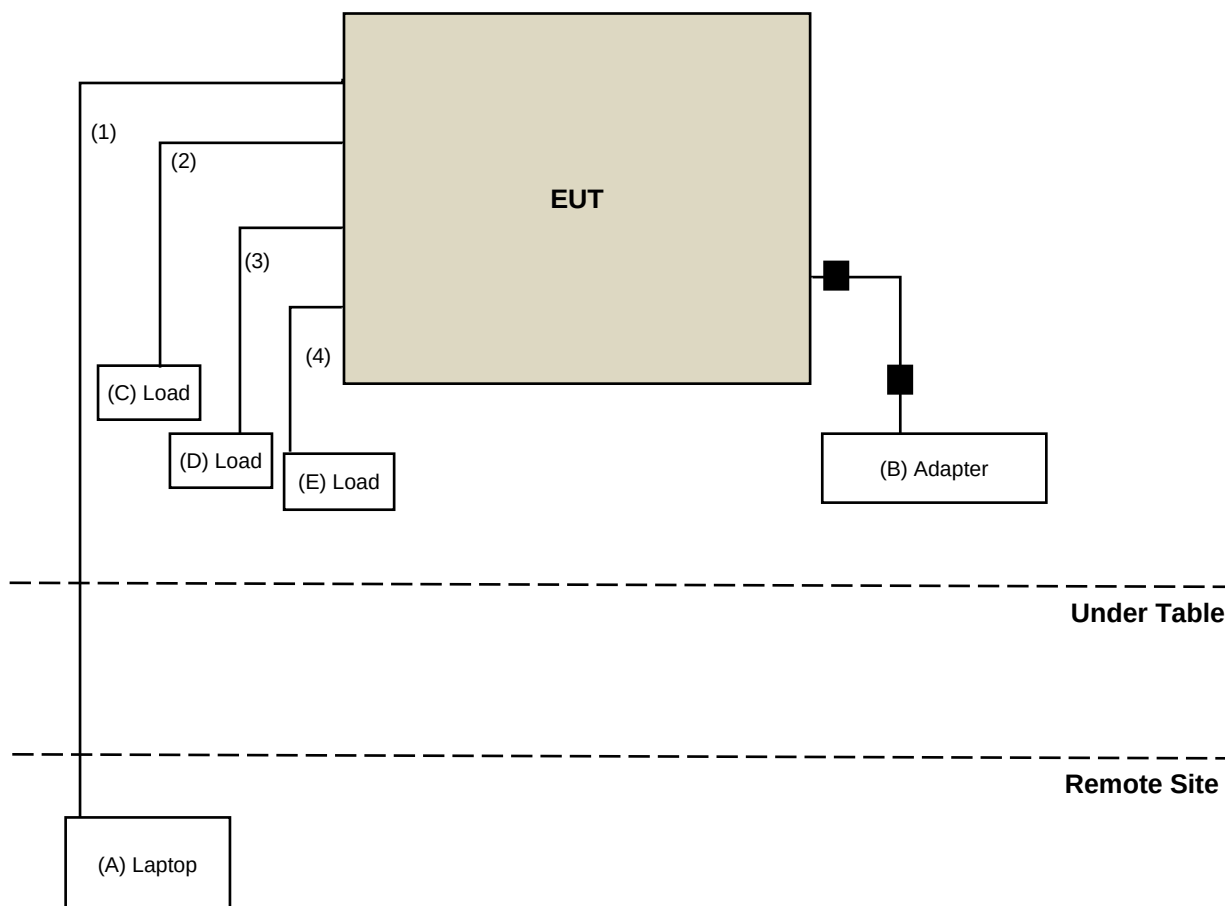


802.11ax (HE40)

3.6 Test Program Used and Operation Descriptions

Controlling software QSPR V6.00.00209.1 has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	DELL	E5430	2RL3YW1	N/A	Provided by Lab
B	Adapter	LITE-ON	PA-1251-54	N/A	N/A	Accessory of the EUT
C	Load	N/A	N/A	N/A	N/A	Provided by Lab
D	Load	N/A	N/A	N/A	N/A	Provided by Lab
E	Load	N/A	N/A	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	10	N	0	Provided by Lab
2	RJ-45 Cable	4	1.5	N	0	Provided by Lab
3	RJ-45 Cable	4	1.5	N	0	Provided by Lab
4	RJ-45 Cable	3	1.5	N	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
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2025/5/23	2026/5/22
USB Power Sensor Anritsu	MA24408A	12994	2024/12/4	2025/12/3

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2025/7/16

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2025/5/23	2026/5/22
MXA Signal Analyzer Keysight	N9020B	MY60110462	2025/4/22	2026/4/21
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: 2025/9/3

4.3 6 dB Bandwidth

Refer to section 4.2 to get the tested date and information of the instruments.

4.4 Conducted Out of Band Emissions

Refer to section 4.2 to get the tested date and information of the instruments.

4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance	E1-011279	04	2024/11/28	2025/11/27
	E1-011280	05	2024/11/28	2025/11/27
	E1-011311	09	2024/11/28	2025/11/27
DC-LISN Schwarzbeck	NNBM 8126G	8126G-069	2024/11/5	2025/11/4
EMI Test Receiver R&S	ESCI	100613	2024/11/25	2025/11/24
Fixed Attenuator Mini-Circuits	HAT-10+	PAD-COND1-01	2025/1/5	2026/1/4
LISN R&S	ENV216	101826	2025/3/24	2026/3/23
	ESH3-Z5	100311	2024/9/5	2025/9/4
RF Coaxial Cable Woken	5D-FB	Cable-cond1-01	2025/1/5	2026/1/4
Software BVADT	BVADT_Cond_ V7.4.1.0	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2024/8/28	2025/8/27

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2025/6/24 ~ 2025/7/25

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	2024/10/14	2025/10/13
EMI Test Receiver R&S	ESR3	102782	2024/12/10	2025/12/9
Loop Antenna TESEQ	HLA 6121	45745	2024/8/21	2025/8/20
Preamplifier Agilent	8447D	2944A10631	2025/4/27	2026/4/26
RF Coaxial Cable Woken	8D-FB	Cable-CH4-01	2024/7/6 2025/6/30	2025/7/5 2026/6/29
Signal & Spectrum Analyzer R&S	FSV3044	101105	2025/2/25	2026/2/24
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: 2025/6/23 ~ 2025/7/25

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	2024/12/10	2025/12/9
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-408	2024/11/10	2025/11/9
	BBHA 9170	9170-480	2024/11/10	2025/11/9
		BBHA9170241	2024/10/18	2025/10/17
		BBHA9170243	2024/11/10	2025/11/9
Preamplifier EMCI	EMC 184045	980116	2024/9/24	2025/9/23
Preamplifier Keysight	83017A	MY53270295	2025/4/27	2026/4/26
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2024/7/6	2025/7/5
	EMC102-KM-KM-3000	150929	2024/7/6	2025/7/5
RF Coaxial Cable HUBER+SUHNER	EMC104-SM-SM-10000	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-4)	2025/4/27	2026/4/26
	SUCOFLEX 104	Cable-CH4-03(250724)	2025/4/27	2026/4/26
Signal & Spectrum Analyzer R&S	FSV3044	101105	2025/2/25	2026/2/24
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: 2025/6/11 ~ 2025/6/18

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

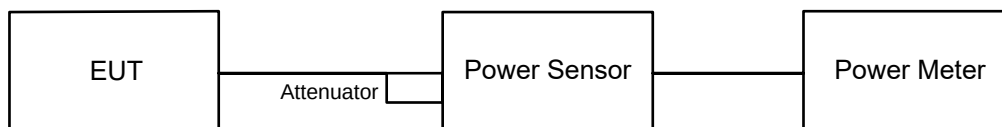
Notes:

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



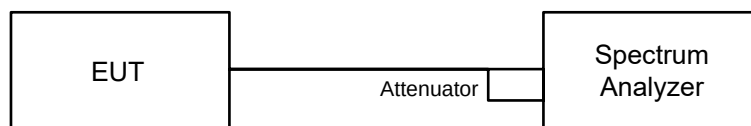
6.1.2 Test Procedure

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

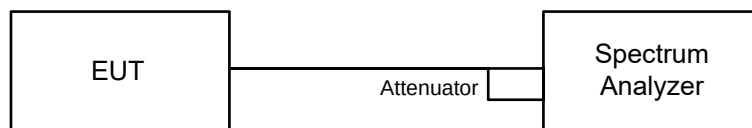


6.2.2 Test Procedure

- Measure the duty cycle (D) of the transmitter output signal.
- Set instrument center frequency to DTS channel center frequency.
- Set span to > 1.5 times the OBW.
- Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set VBW $\geq [3 \times \text{RBW}]$.
- Detector = power averaging (rms) or sample detector (when rms not available).
- Ensure that the number of measurement points in the sweep $\geq [2 \times \text{span} / \text{RBW}]$.
- 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.
- Add $[10 \log (1 / D)]$, where D is the duty cycle measured in step a), to the measured PSD to compute the average PSD during the actual transmission time.
- If measured value exceeds requirement specified by regulatory agency, then reduce RBW (but no less than 3 kHz) and repeat (note that this might require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced)

6.3 6 dB Bandwidth

6.3.1 Test Setup

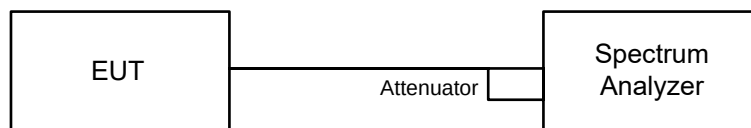


6.3.2 Test Procedure

- a. Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
- b. Set the VBW $\geq [3 \times \text{RBW}]$.
- c. Detector = peak.
- d. Trace mode = max-hold.
- e. Sweep = No faster than coupled (auto) time.
- f. Allow the trace to stabilize.
- g. Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-6 dB down amplitude”. If a marker is below this “-6 dB down amplitude” value, then it shall be as close as possible to this value.

6.4 Conducted Out of Band Emissions

6.4.1 Test Setup



6.4.2 Test Procedure

MEASUREMENT PROCEDURE REF

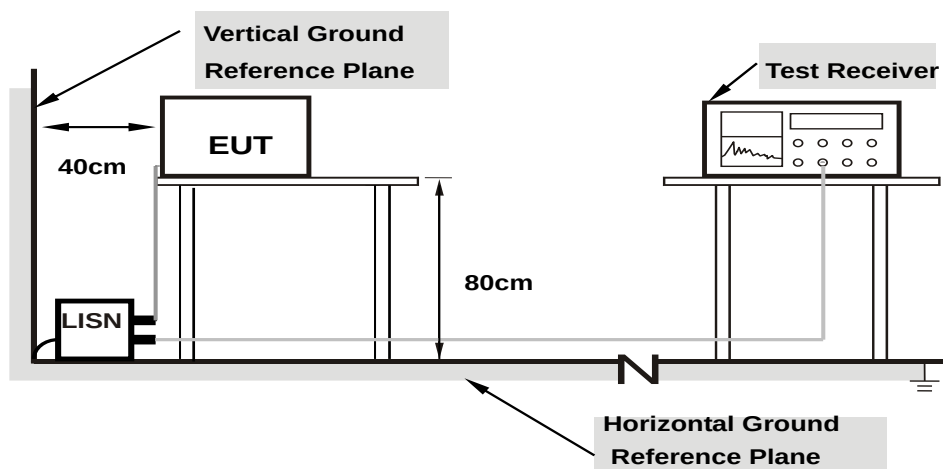
- Set instrument center frequency to DTS channel center frequency.
 - Set the span to ≥ 1.5 times the DTS bandwidth.
 - Set the RBW = 100 kHz.
 - Set the VBW $\geq [3 \times \text{RBW}]$.
 - Detector = peak.
 - Sweep time = No faster than coupled (auto) time.
 - Trace mode = max-hold.
 - Allow trace to fully stabilize.
 - Use the peak marker function to determine the maximum PSD level.
- Note that the channel found to contain the maximum PSD level can be used to establish the reference level

MEASUREMENT PROCEDURE OOB

- Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.
NOTE—the number of points can also be increased for large spans to retain frequency resolution
- Set the RBW = 100 kHz.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Sweep time = No faster than coupled (auto) time.
- Trace mode = max-hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

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

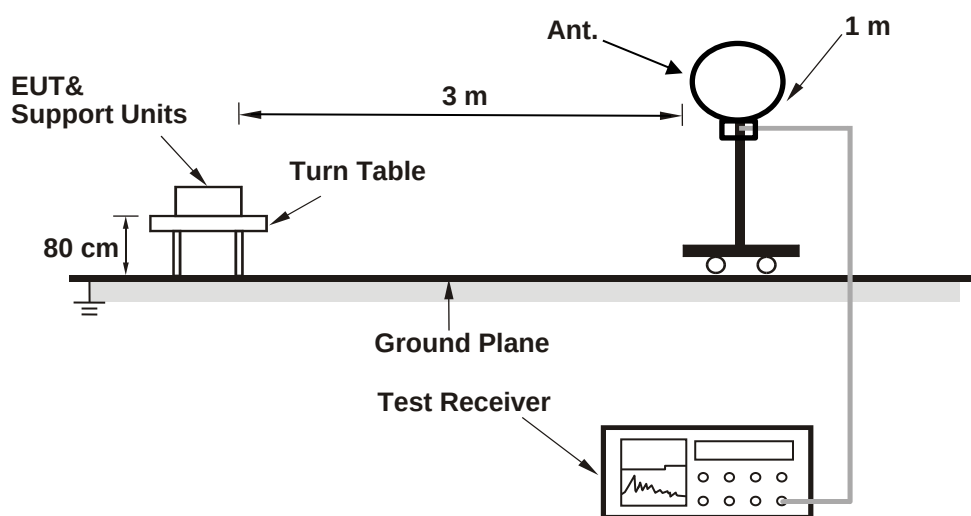
- Exploratory ac power-line conducted emission measurements: The EUT shall be operated on the mid channel and in the mode with highest output power unless the fundamental operates in the AC power-line emission test range then the EUT shall be operated in the range of typical modes of operation.
- The 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.

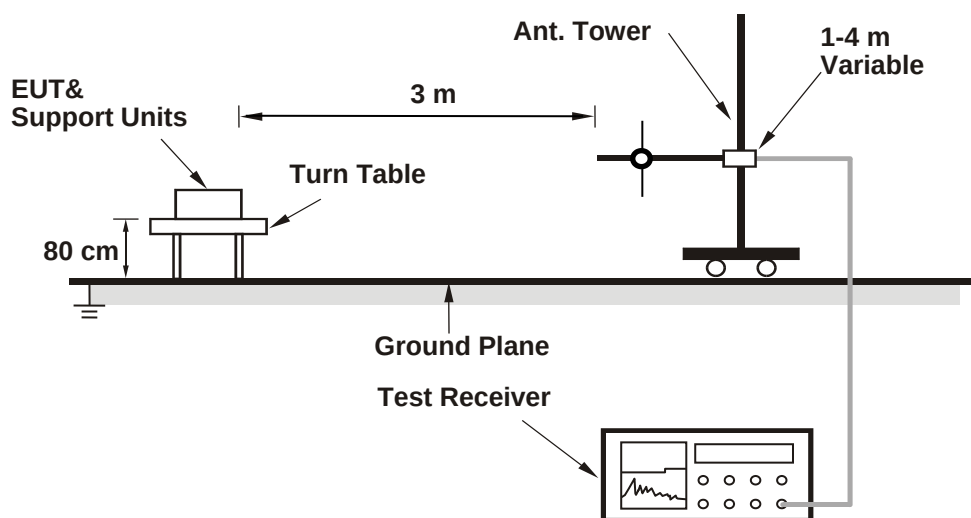
6.6 Unwanted Emissions below 1 GHz

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

- 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- 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.
- 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:

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

For Radiated emission above 30 MHz

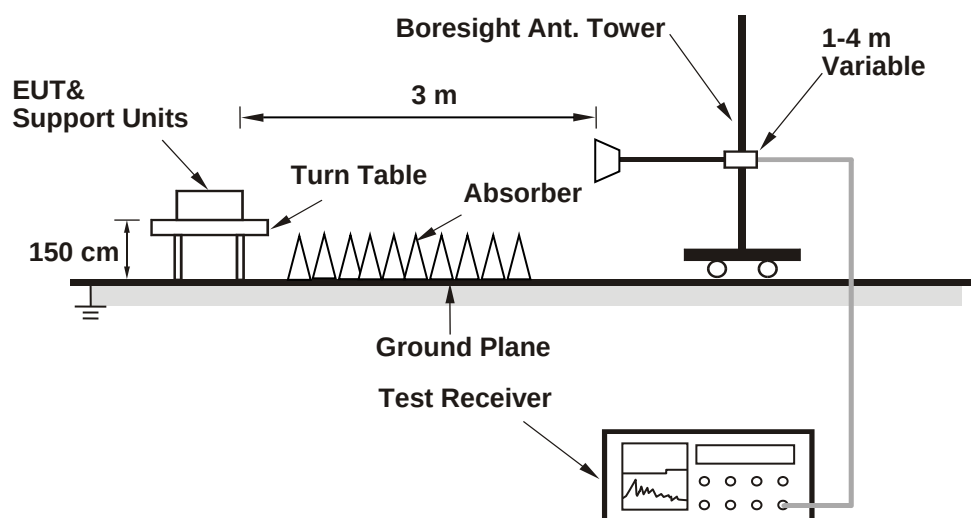
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
- 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:	Kevin Kuo
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802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	23.20	23.44	429.73	26.33	30	Pass
6	2437	23.17	23.50	431.363	26.35	30	Pass
11	2462	23.10	23.59	432.734	26.36	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.31 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	22.51	22.75	366.603	25.64	30	Pass
6	2437	22.91	23.29	408.738	26.11	30	Pass
11	2462	22.34	22.90	366.38	25.64	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.31 dBi $\leq$ 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				
1	2412	22.69	22.90	380.765	25.81	30	Pass
6	2437	23.16	23.50	430.886	26.34	30	Pass
11	2462	19.54	19.82	185.89	22.69	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.31 dBi $\leq$ 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				
3	2422	21.11	21.52	271.028	24.33	30	Pass
6	2437	22.60	23.96	430.856	26.34	30	Pass
9	2452	21.62	22.05	305.536	24.85	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.31 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	22.69	22.90	380.765	25.81	30	Pass
6	2437	23.16	23.50	430.886	26.34	30	Pass
11	2462	19.54	19.82	185.89	22.69	30	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. The directional gain is 3.31 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	21.11	21.52	271.028	24.33	30	Pass
6	2437	22.60	23.96	430.856	26.34	30	Pass
9	2452	21.62	22.05	305.536	24.85	30	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. The directional gain is 3.31 dBi $\leq$ 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:	Kevin Kuo
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802.11b

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/3kHz)		Duty Factor (dB)	Conducted PSD (dBm/3kHz)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1					
1	2412	-5.87	-4.87	0.31	-2.33	-2.02	8	Pass
6	2437	-4.87	-5.55	0.31	-2.19	-1.88	8	Pass
11	2462	-6.08	-4.99	0.31	-2.49	-2.18	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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. The directional gain is 3.31 dBi $\leq$ 6 dBi, so the power density limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/3kHz)		Duty Factor (dB)	Conducted PSD (dBm/3kHz)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1					
1	2412	-9.52	-10.41	1.72	-6.93	-5.21	8	Pass
6	2437	-9.38	-8.50	1.72	-5.91	-4.19	8	Pass
11	2462	-10.36	-9.66	1.72	-6.99	-5.27	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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. The directional gain is 3.31 dBi $\leq$ 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/3kHz)		Duty Factor (dB)	Conducted PSD (dBm/3kHz)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1					
1	2412	-9.56	-10.24	0.91	-6.88	-5.97	8	Pass
6	2437	-9.90	-8.98	0.91	-6.41	-5.50	8	Pass
11	2462	-13.36	-12.58	0.91	-9.94	-9.03	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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. The directional gain is 3.31 dBi $\leq$ 6 dBi, so the power density limit shall not be reduced.

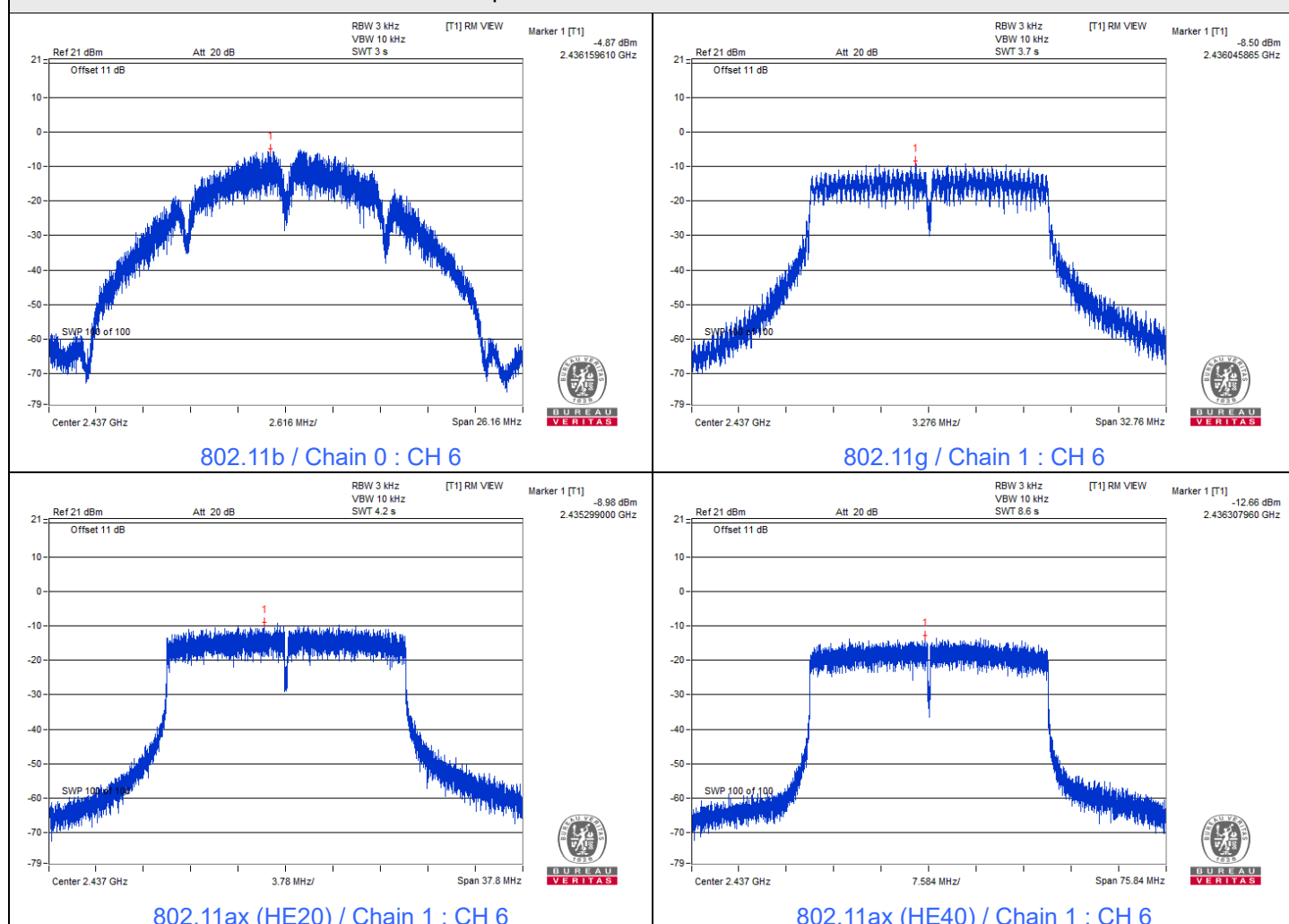
802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/3kHz)		Duty Factor (dB)	Conducted PSD (dBm/3kHz)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1					
3	2422	-15.75	-14.23	1.62	-11.91	-10.29	8	Pass
6	2437	-13.92	-12.66	1.62	-10.23	-8.61	8	Pass
9	2452	-13.21	-13.61	1.62	-10.40	-8.78	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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. The directional gain is 3.31 dBi $\leq$ 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:	Kevin Kuo
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802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	8.14	8.20	0.5	Pass
6	2437	8.22	8.23	0.5	Pass
11	2462	8.21	8.21	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	16.44	16.15	0.5	Pass
6	2437	16.39	16.50	0.5	Pass
11	2462	16.38	16.43	0.5	Pass

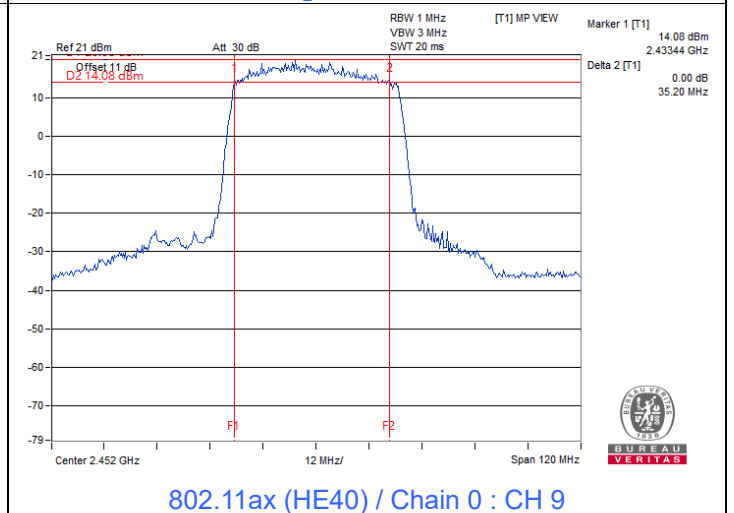
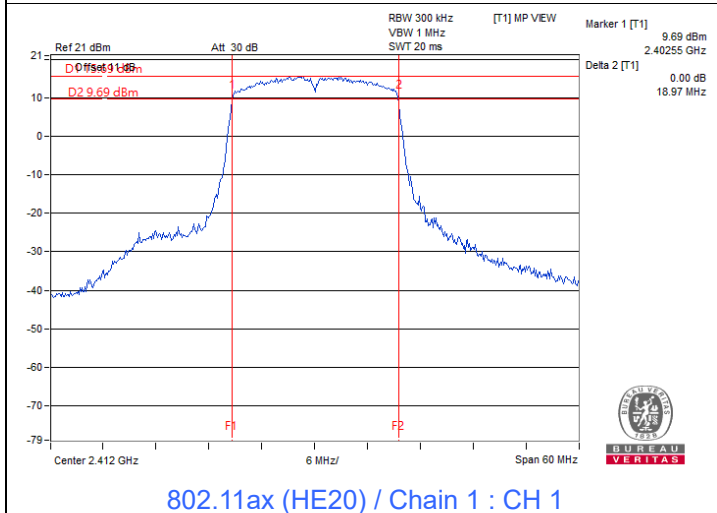
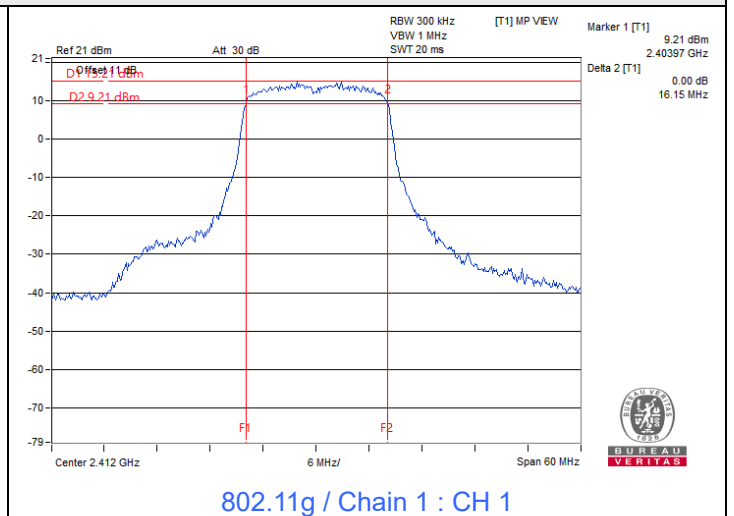
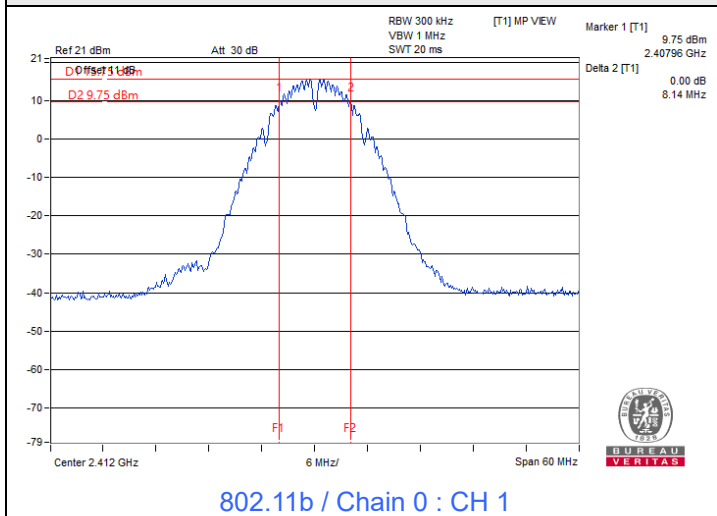
802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	19.13	18.97	0.5	Pass
6	2437	19.10	19.15	0.5	Pass
11	2462	19.12	19.12	0.5	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
3	2422	37.76	37.46	0.5	Pass
6	2437	37.95	37.13	0.5	Pass
9	2452	35.20	37.17	0.5	Pass

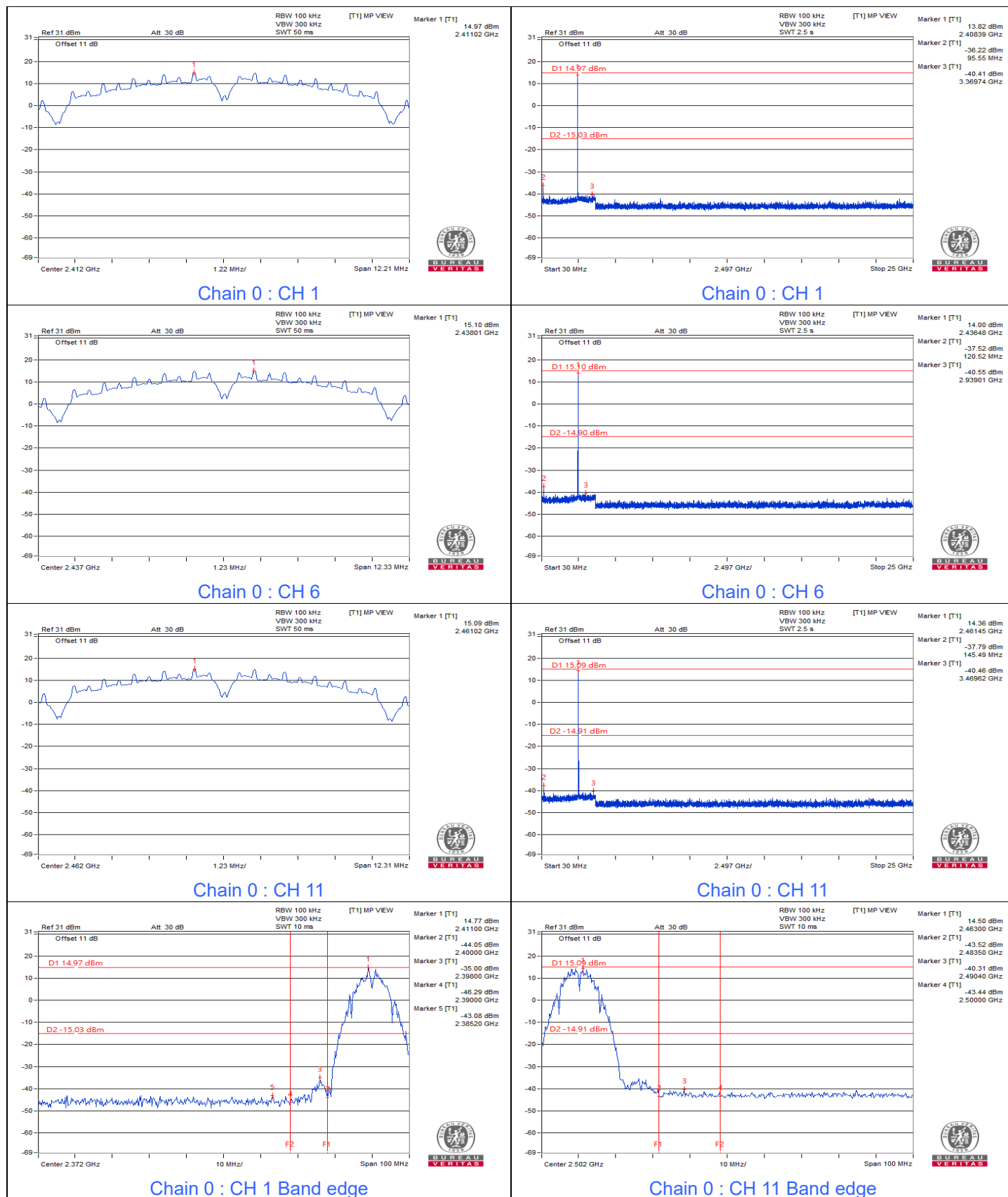
Spectrum Plot of Minimum Value

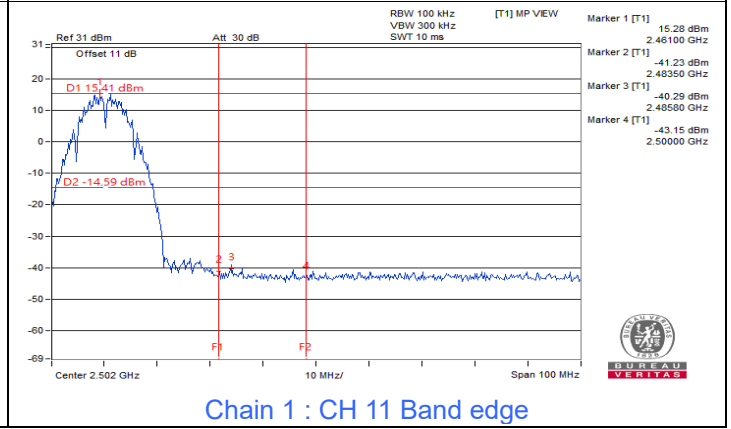
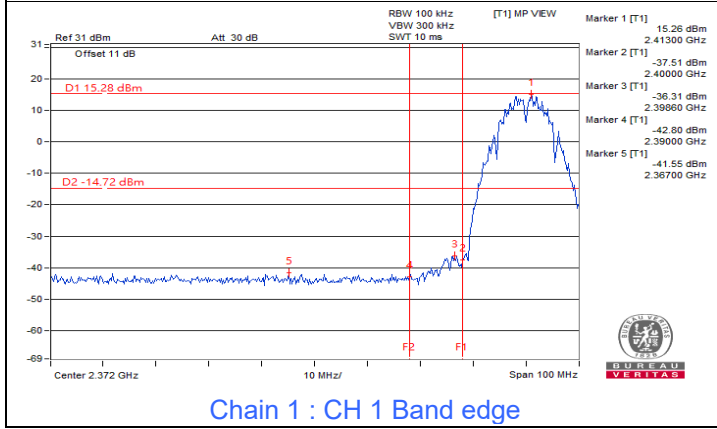
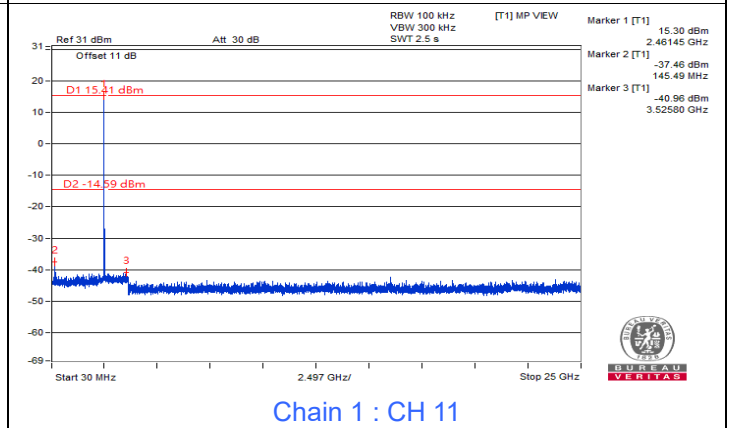
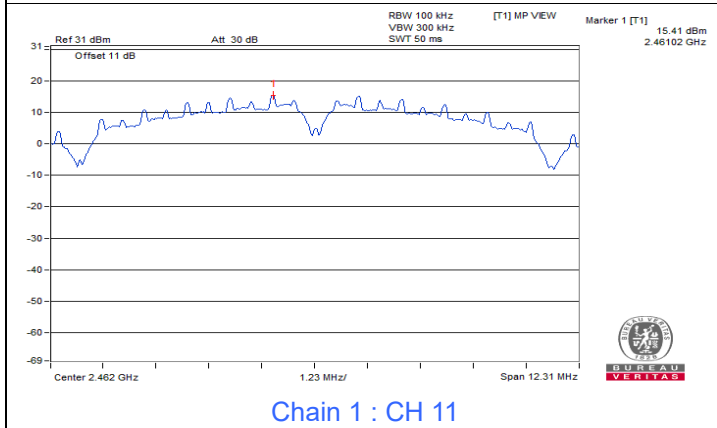
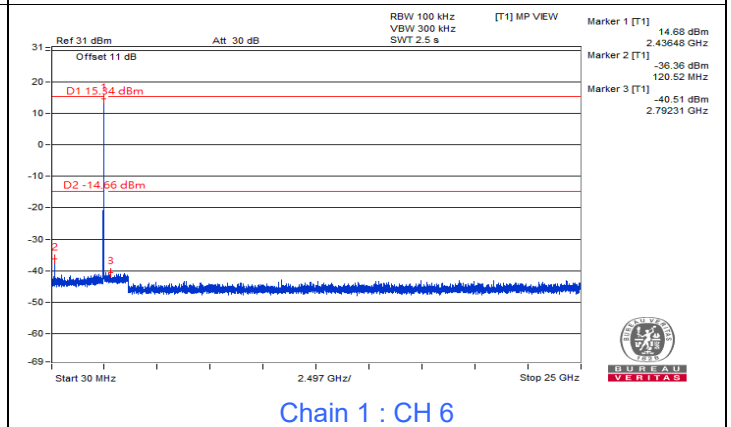
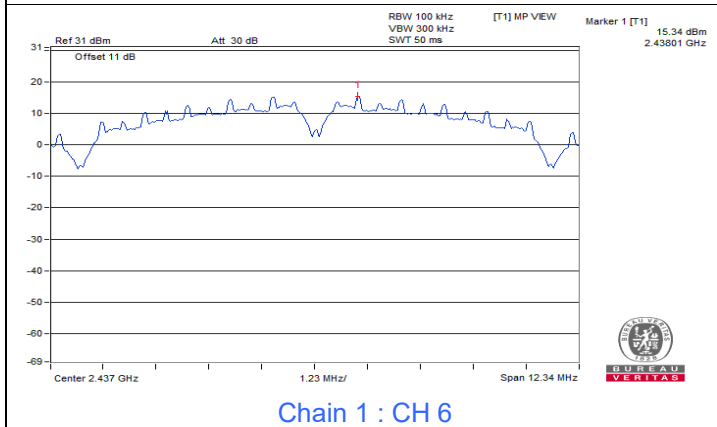
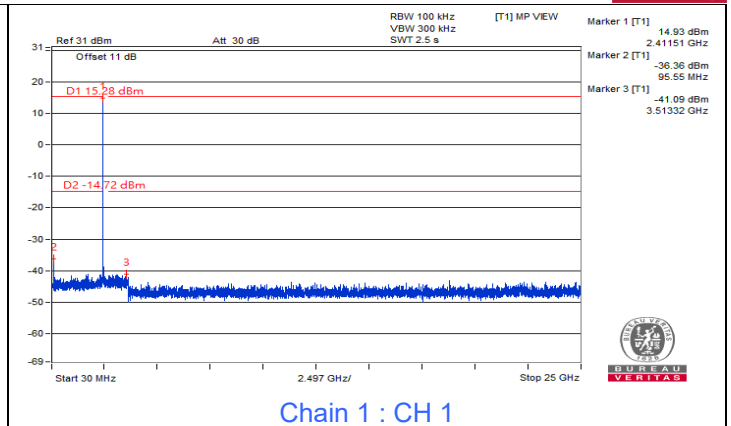
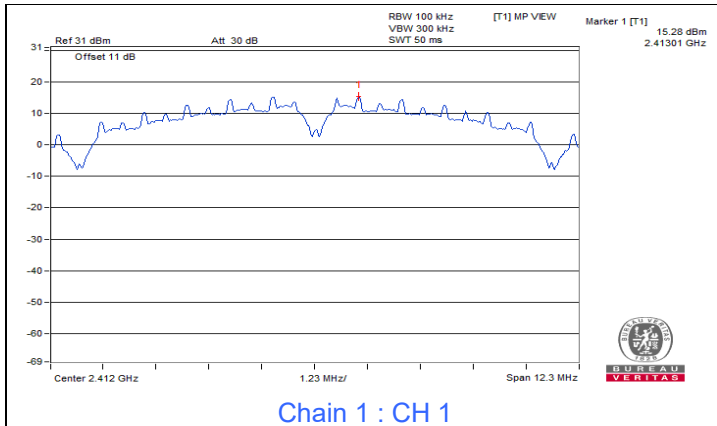


7.4 Conducted Out of Band Emissions

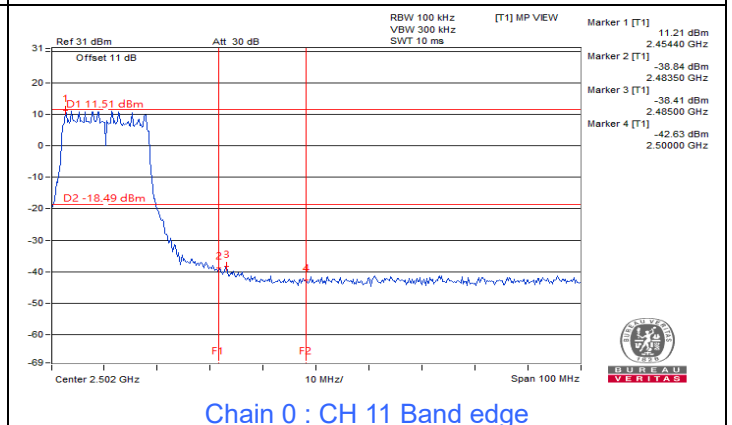
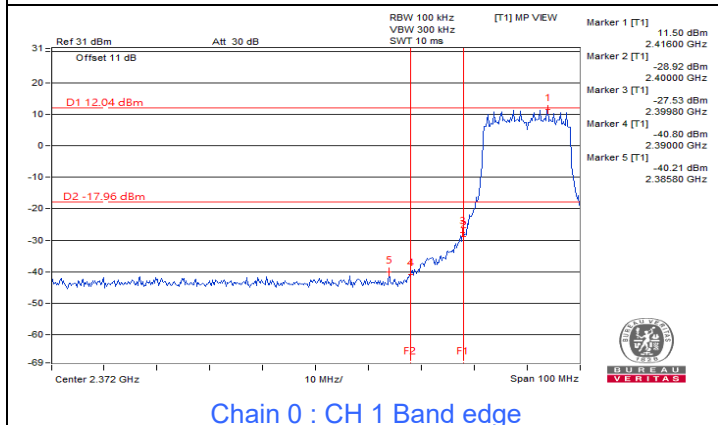
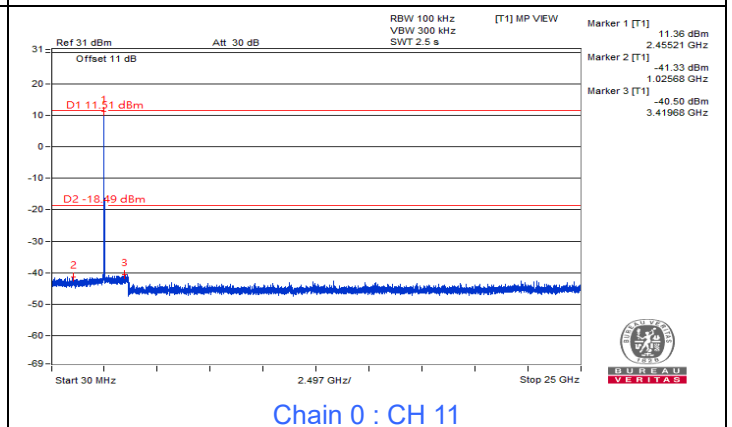
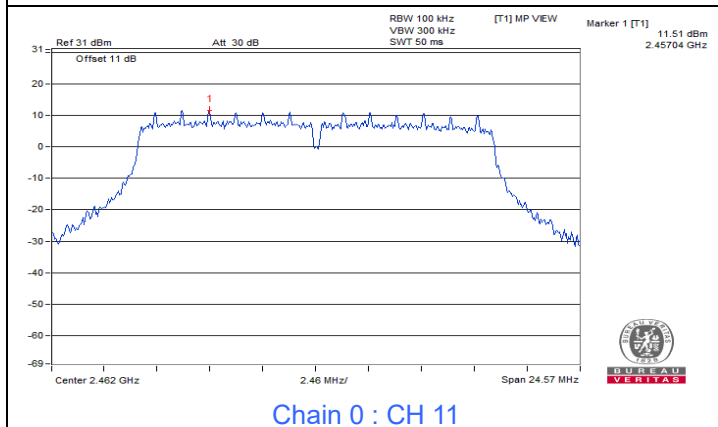
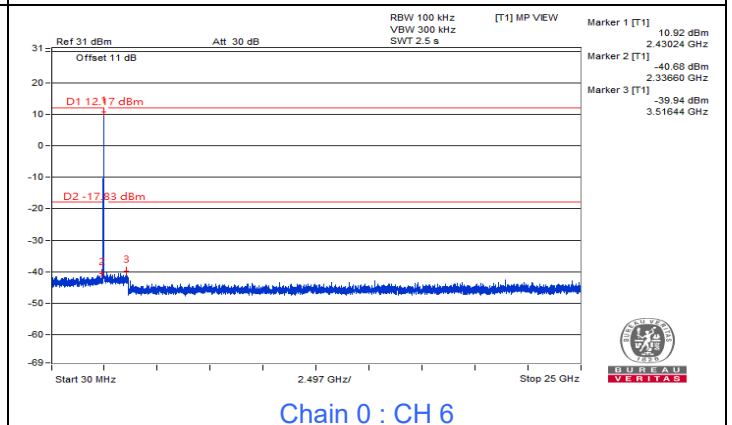
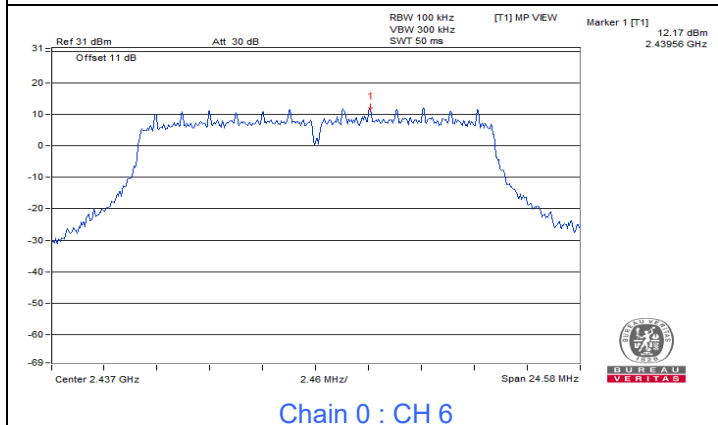
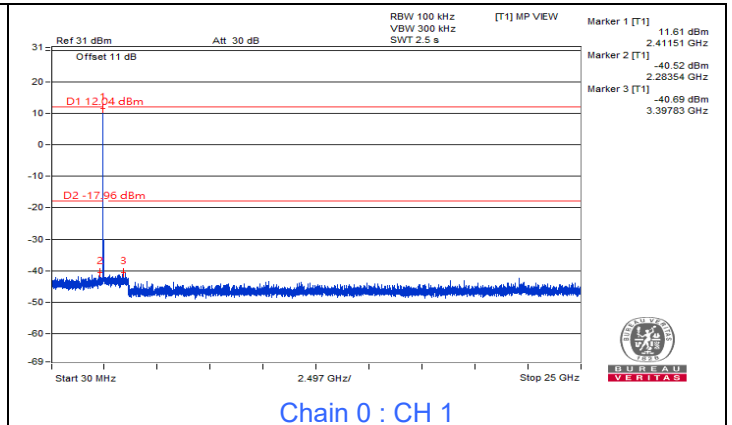
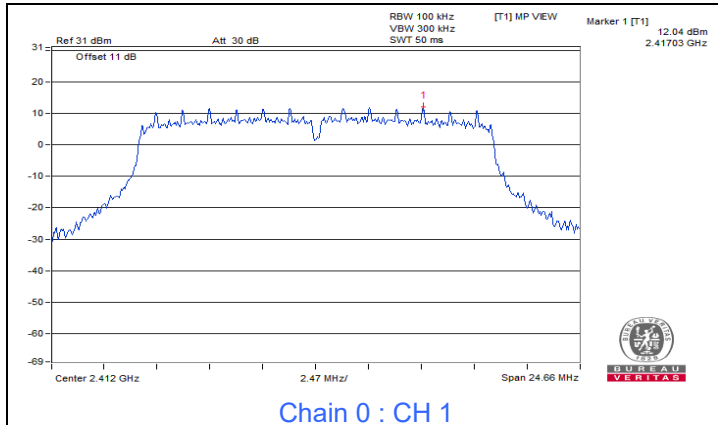
Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Kuo
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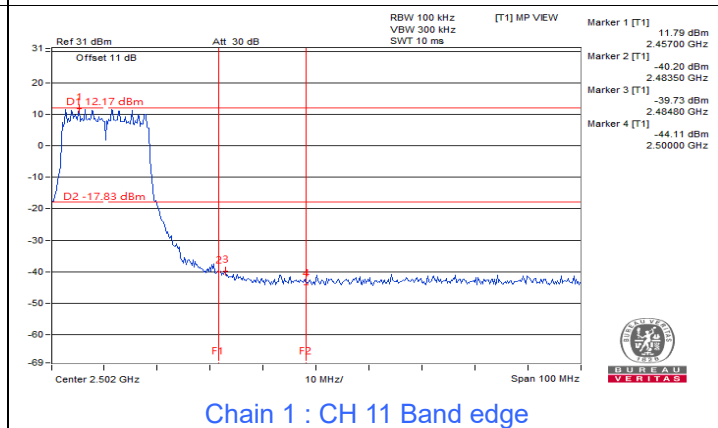
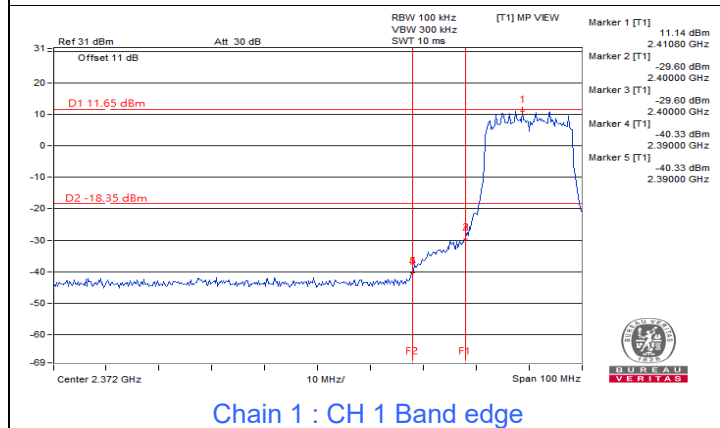
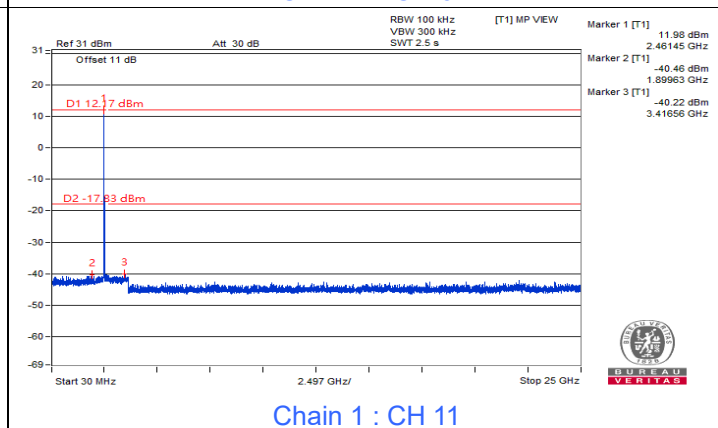
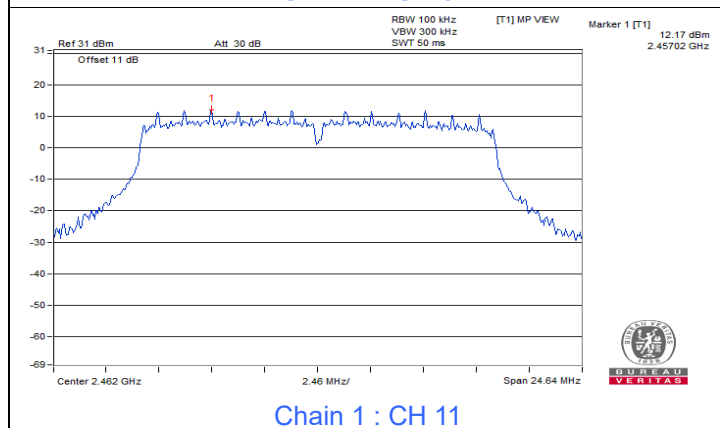
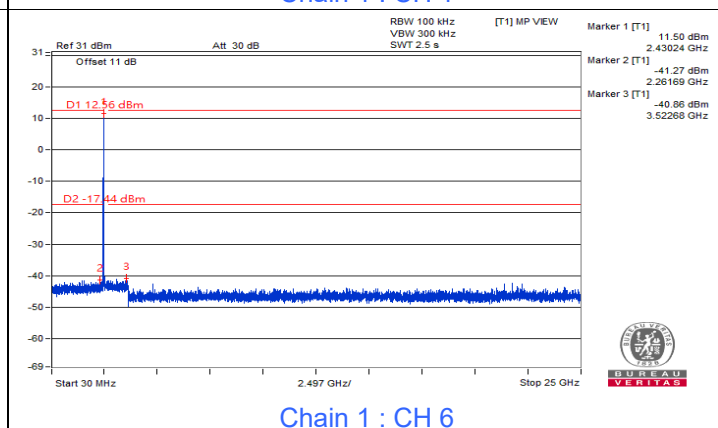
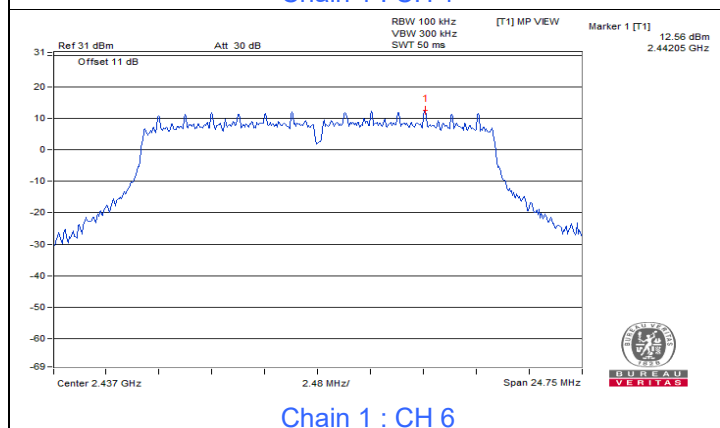
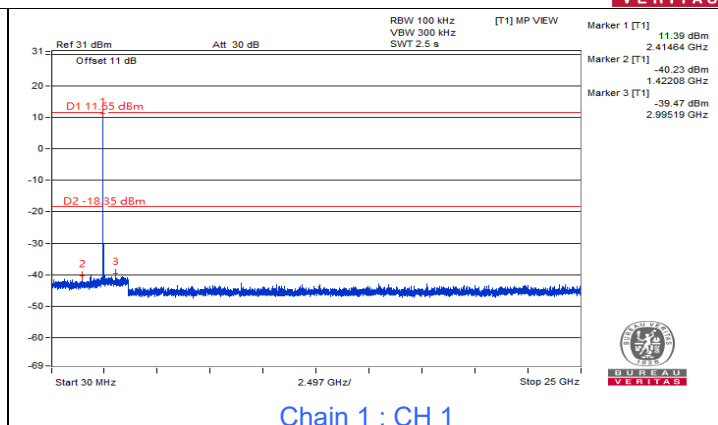
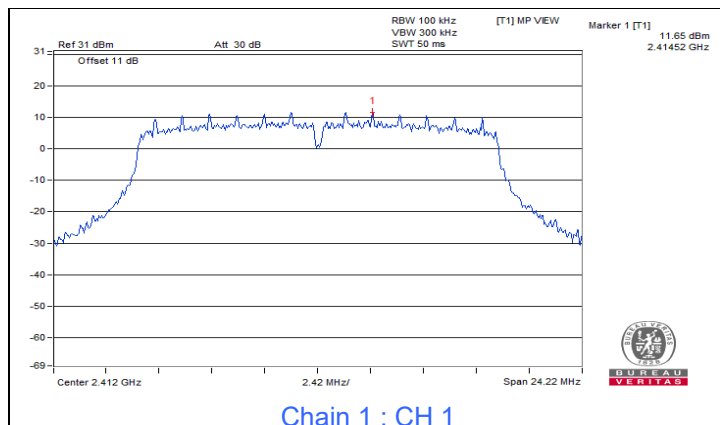
802.11b



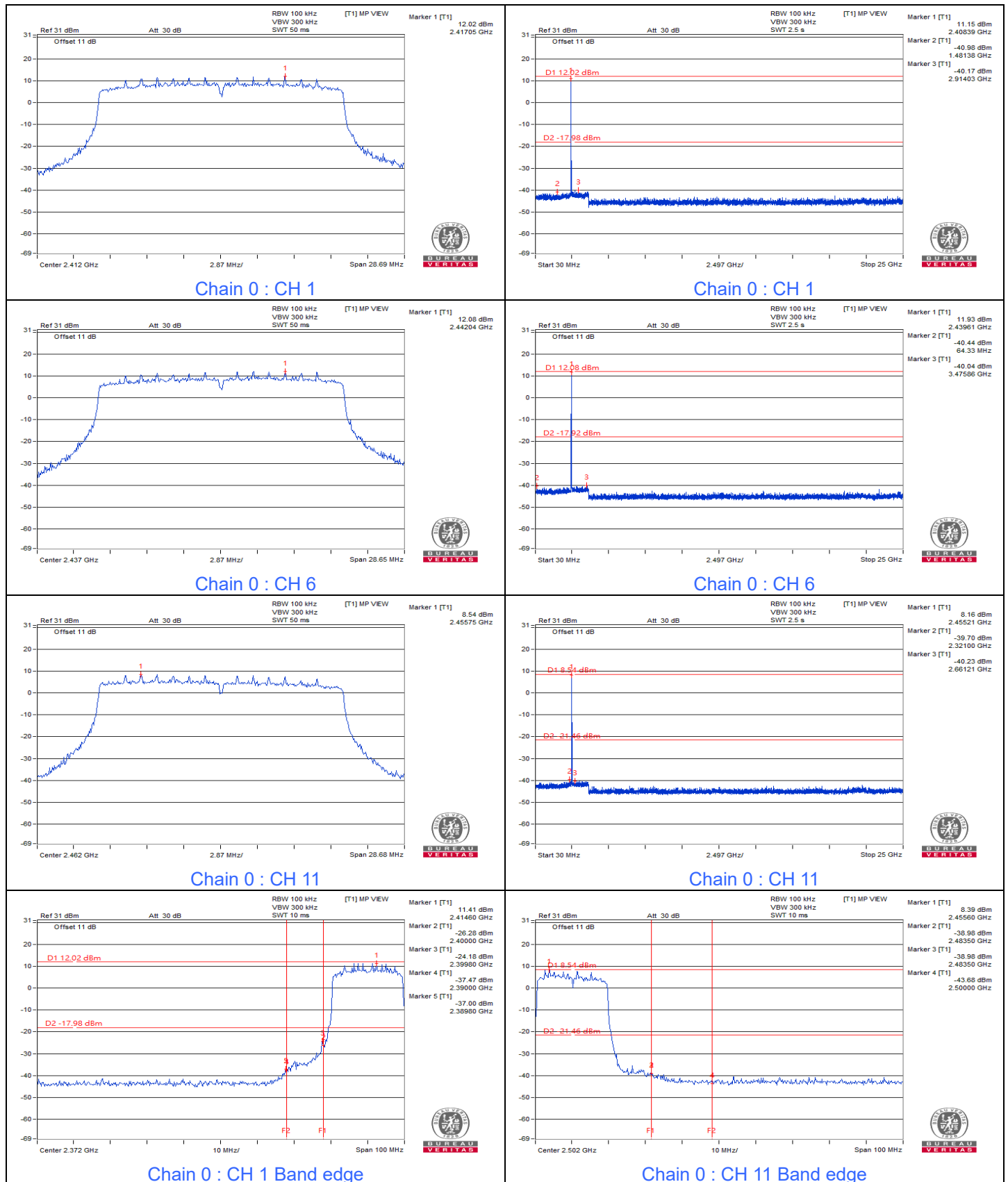


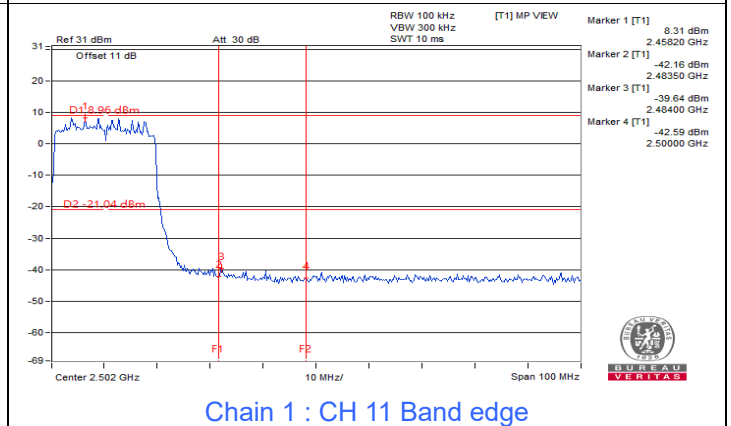
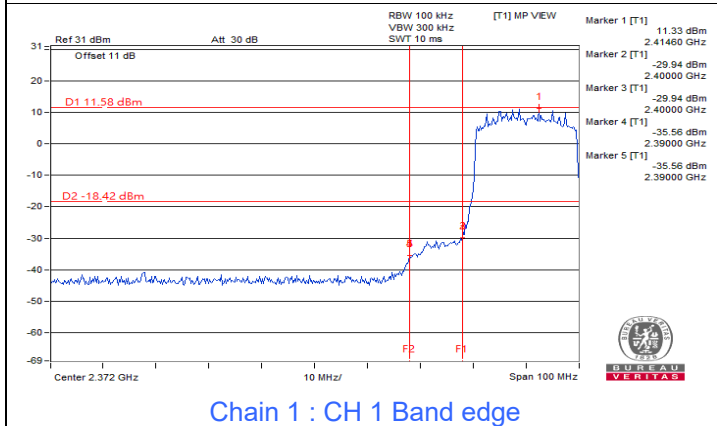
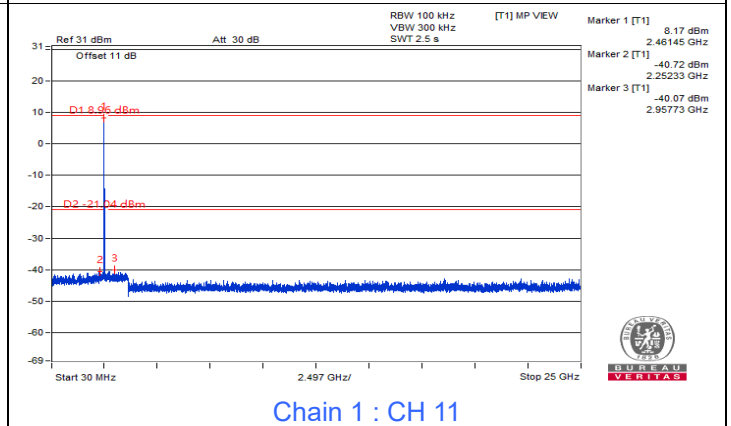
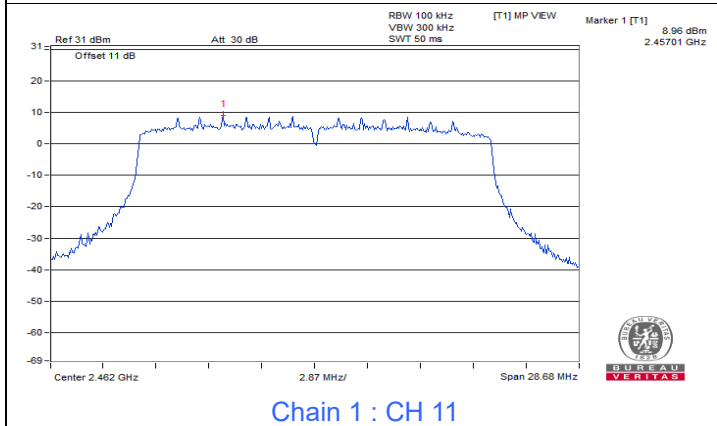
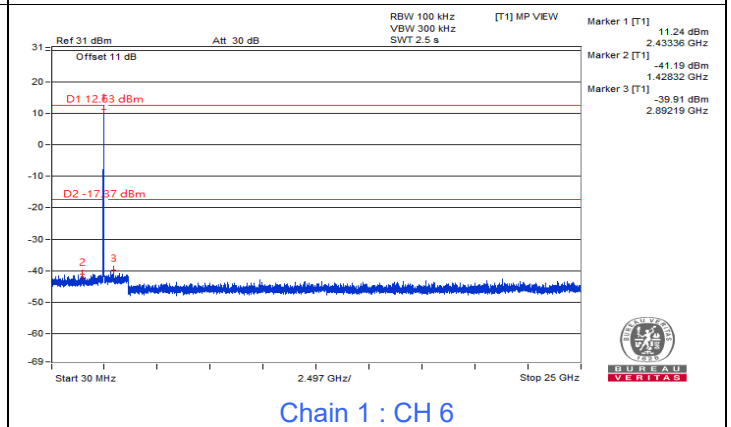
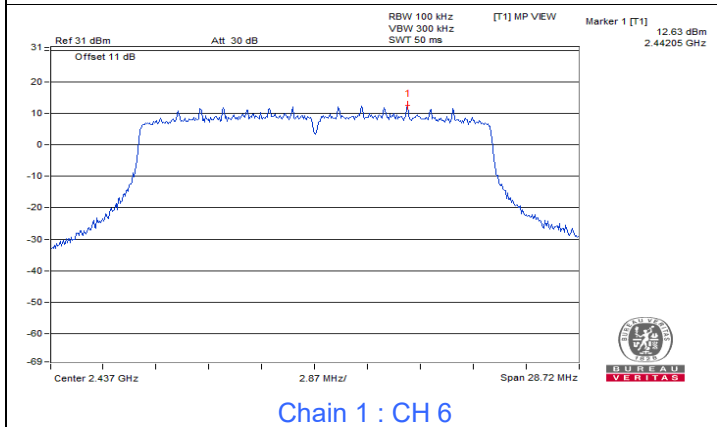
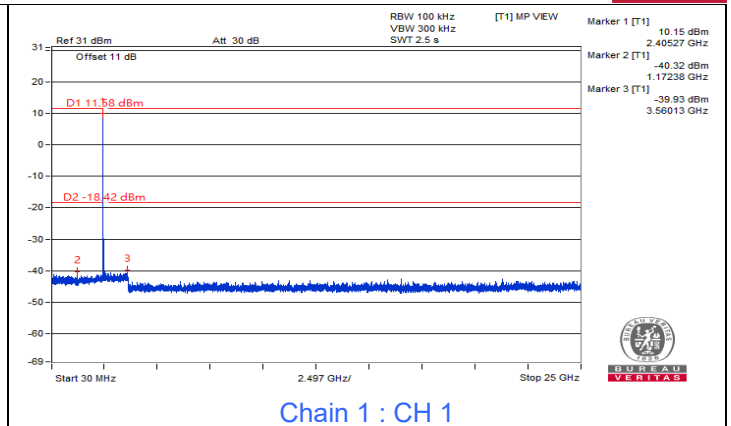
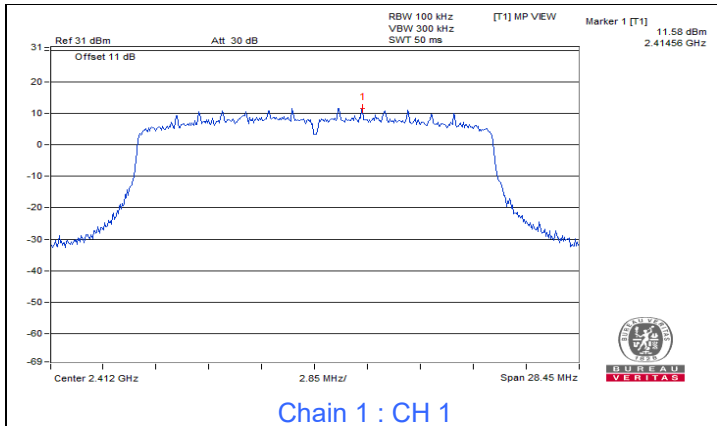
802.11g



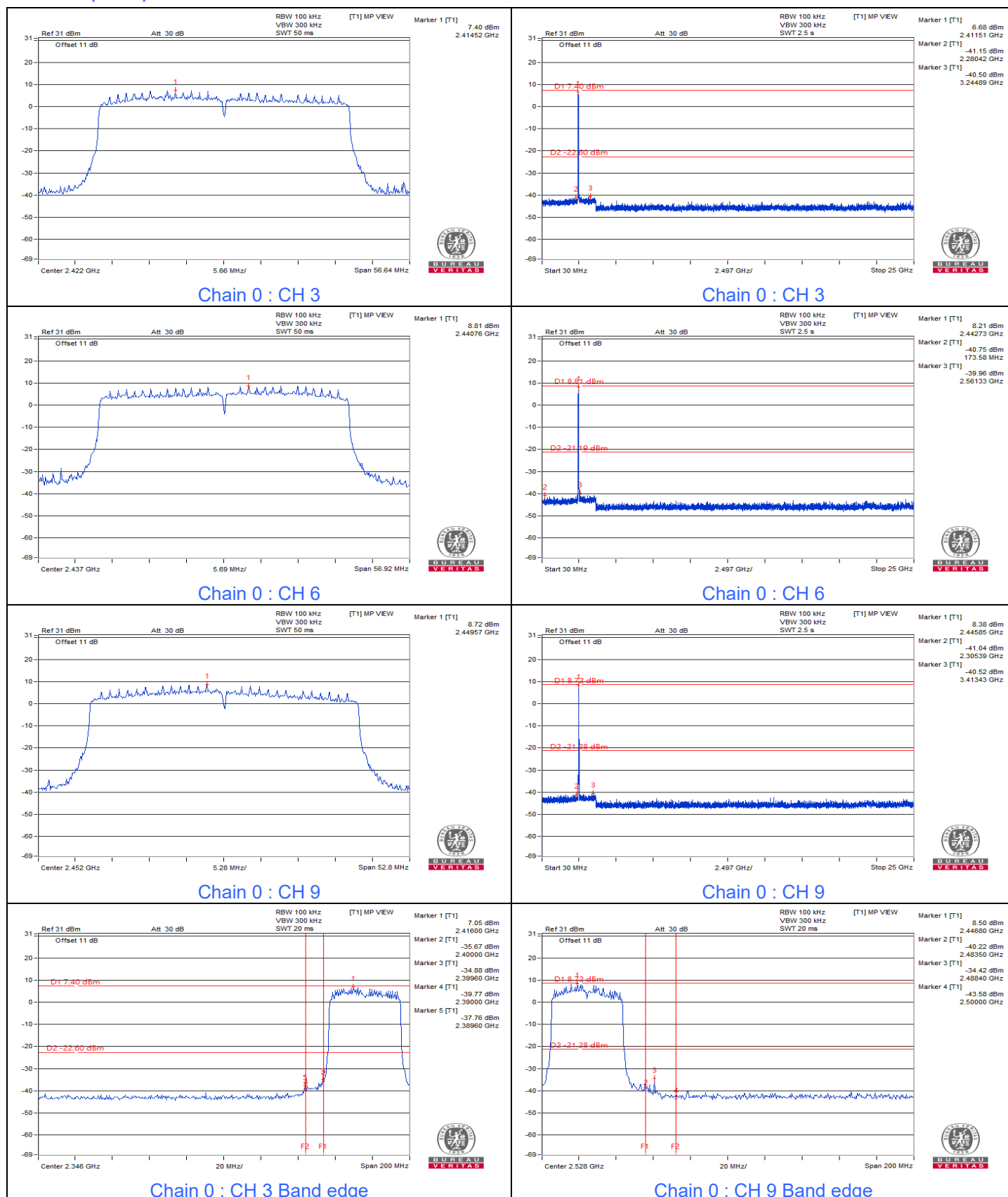


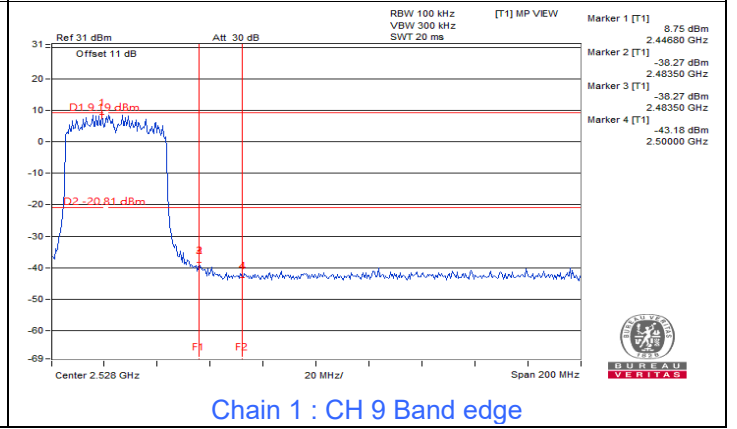
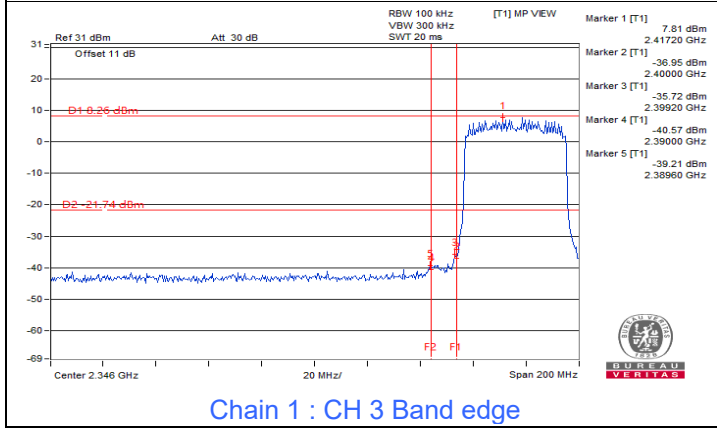
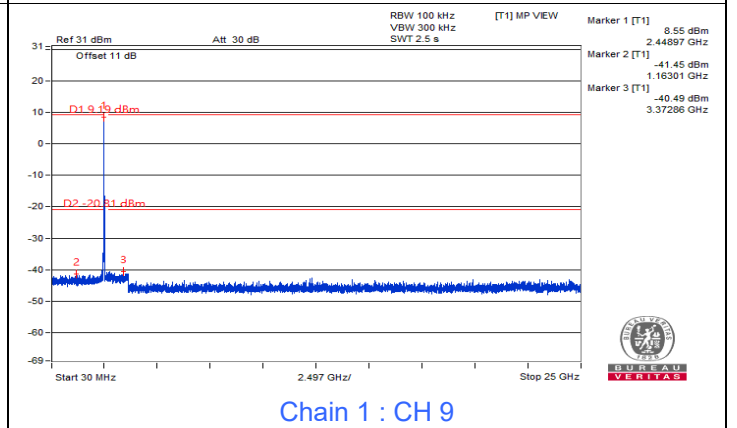
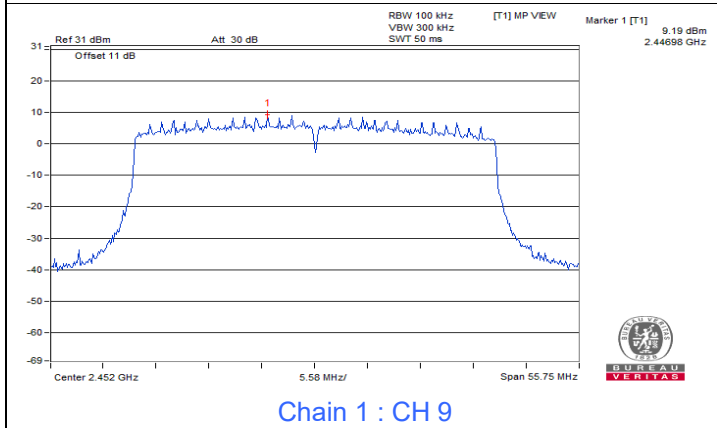
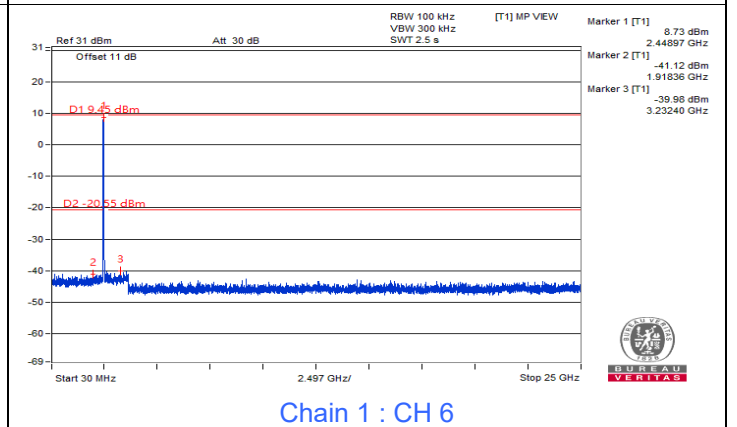
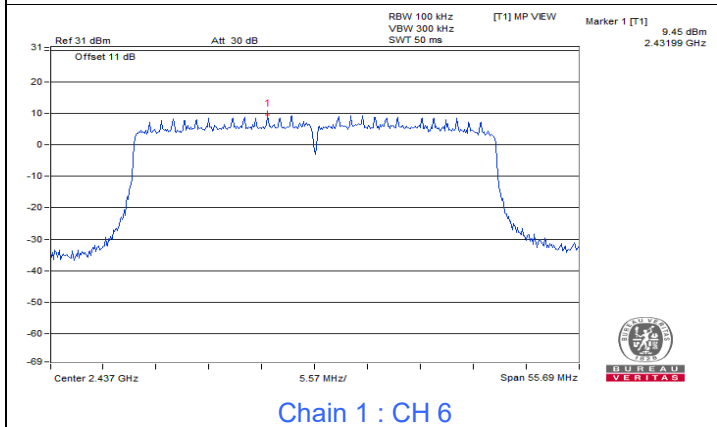
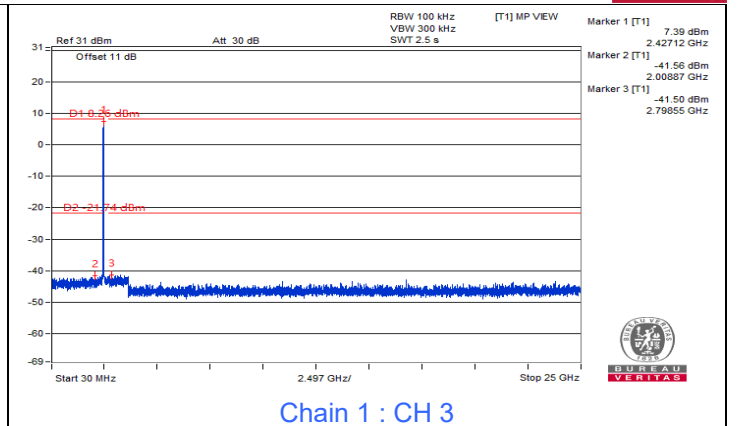
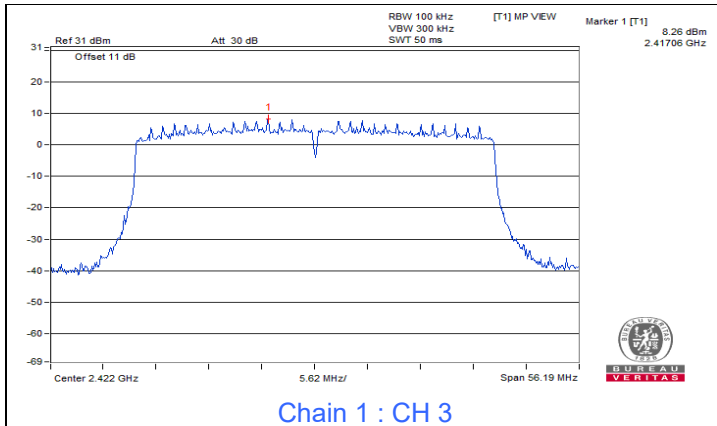
802.11ax (HE20)





802.11ax (HE40)





7.5 AC Power Conducted Emissions

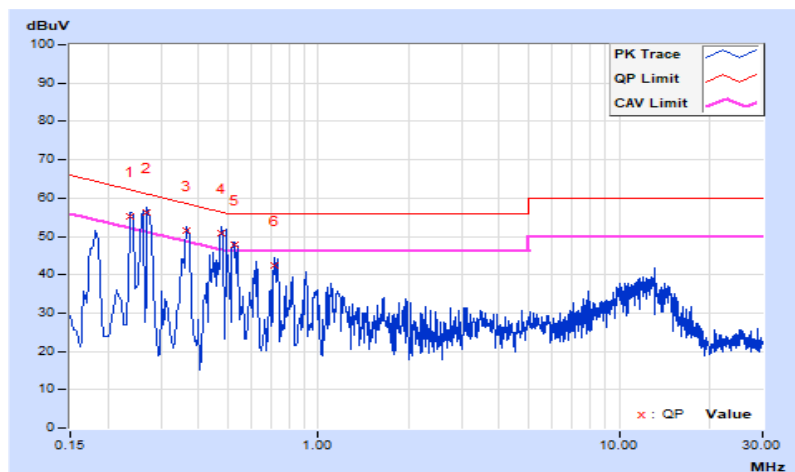
Mode A

RF Mode	802.11b	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, 70% 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	0.23800	9.71	45.42	36.24	55.13	45.95	62.17	52.17	-7.04	-6.22
2	0.27000	9.71	46.42	37.33	56.13	47.04	61.12	51.12	-4.99	-4.08
3	0.36600	9.72	41.69	33.94	51.41	43.66	58.59	48.59	-7.18	-4.93
4	0.47435	9.73	41.10	27.91	50.83	37.64	56.44	46.44	-5.61	-8.80
5	0.52846	9.73	38.02	21.27	47.75	31.00	56.00	46.00	-8.25	-15.00
6	0.71400	9.76	32.67	18.70	42.43	28.46	56.00	46.00	-13.57	-17.54

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

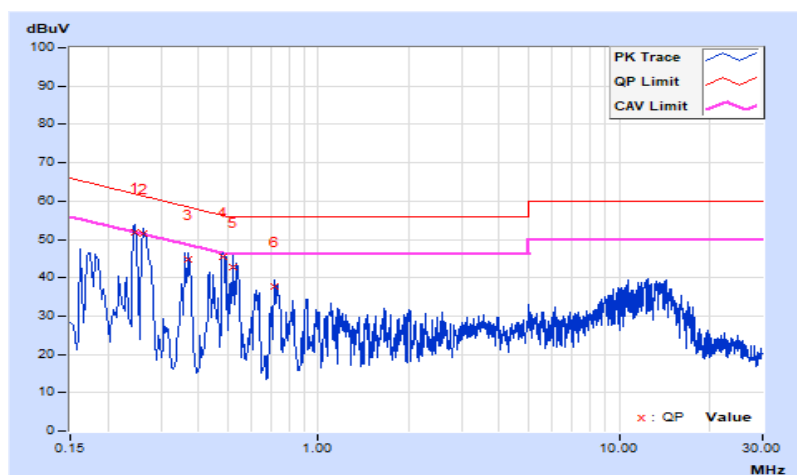


RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 70% RH
Tested By	Luis Lee		

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	0.24600	9.68	42.23	28.30	51.91	37.98	61.89	51.89	-9.98	-13.91
2	0.26200	9.68	41.81	24.43	51.49	34.11	61.37	51.37	-9.88	-17.26
3	0.37000	9.72	35.17	25.37	44.89	35.09	58.50	48.50	-13.61	-13.41
4	0.48191	9.74	35.62	23.37	45.36	33.11	56.31	46.31	-10.95	-13.20
5	0.52200	9.75	33.01	16.47	42.76	26.22	56.00	46.00	-13.24	-19.78
6	0.71800	9.77	27.78	15.51	37.55	25.28	56.00	46.00	-18.45	-20.72

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



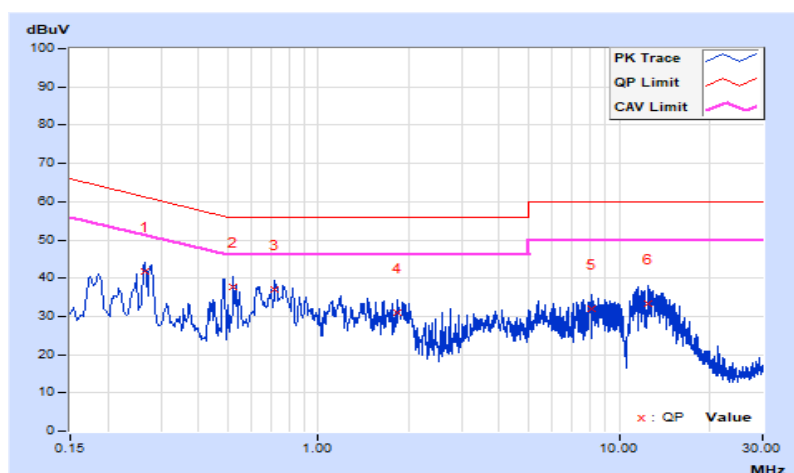
Mode B

RF Mode	802.11b	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, 68% RH
Tested By	Edison 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	0.26600	9.71	32.08	20.94	41.79	30.65	61.24	51.24	-19.45	-20.59
2	0.52200	9.73	28.10	17.96	37.83	27.69	56.00	46.00	-18.17	-18.31
3	0.71800	9.76	27.23	18.87	36.99	28.63	56.00	46.00	-19.01	-17.37
4	1.83000	9.79	21.05	12.80	30.84	22.59	56.00	46.00	-25.16	-23.41
5	8.15000	9.94	22.03	9.22	31.97	19.16	60.00	50.00	-28.03	-30.84
6	12.47800	10.00	23.36	9.26	33.36	19.26	60.00	50.00	-26.64	-30.74

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

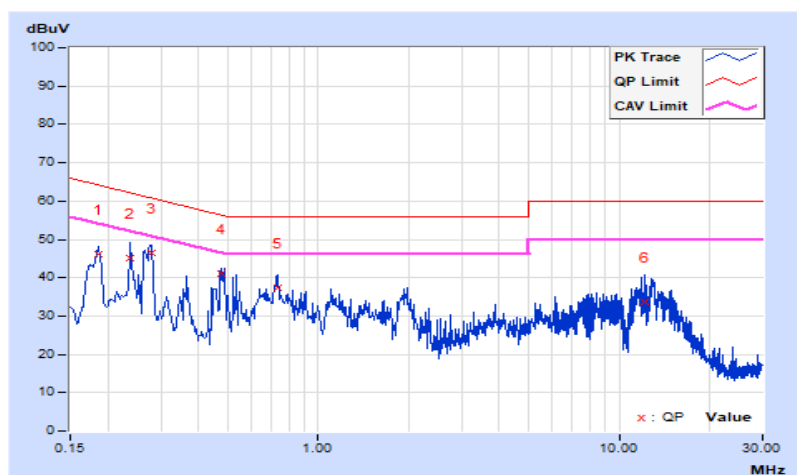


RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 68% RH
Tested By	Edison Lee		

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	0.18600	9.66	36.52	27.76	46.18	37.42	64.21	54.21	-18.03	-16.79
2	0.23800	9.67	35.39	25.74	45.06	35.41	62.17	52.17	-17.11	-16.76
3	0.27786	9.69	36.68	28.41	46.37	38.10	60.88	50.88	-14.51	-12.78
4	0.47400	9.74	31.26	20.04	41.00	29.78	56.44	46.44	-15.44	-16.66
5	0.73000	9.77	27.58	21.01	37.35	30.78	56.00	46.00	-18.65	-15.22
6	12.18600	10.07	23.72	9.57	33.79	19.64	60.00	50.00	-26.21	-30.36

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

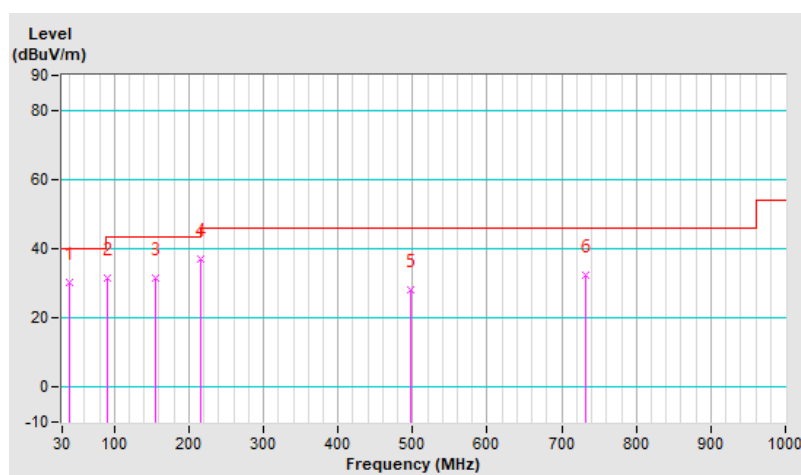
Mode A

RF Mode	802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 66% RH
Tested By	Luis Lee		

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	39.84	30.4 QP	40.0	-9.6	1.50 H	70	39.9	-9.5
2	90.45	31.5 QP	43.5	-12.0	1.50 H	199	46.1	-14.6
3	155.12	31.4 QP	43.5	-12.1	1.50 H	86	39.9	-8.5
4	215.57	36.9 QP	43.5	-6.6	1.50 H	211	48.1	-11.2
5	498.13	28.1 QP	46.0	-17.9	1.01 H	326	31.8	-3.7
6	731.49	32.2 QP	46.0	-13.8	1.50 H	6	30.3	1.9

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

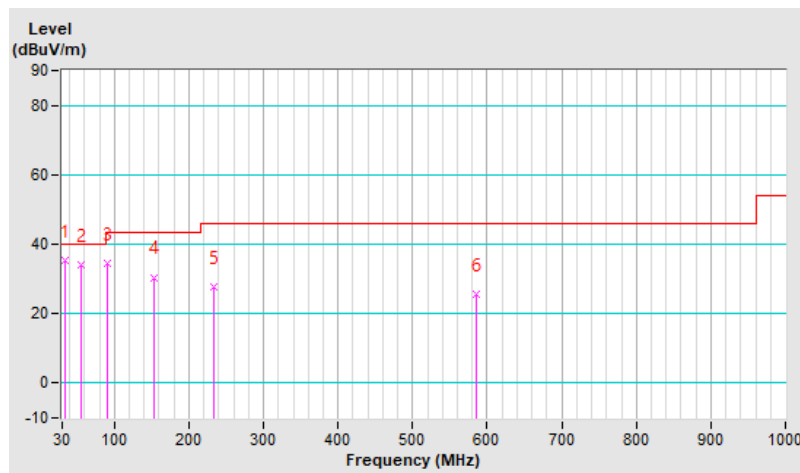


RF Mode	802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 66% RH
Tested By	Luis Lee		

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	34.22	35.2 QP	40.0	-4.8	1.00 V	339	45.5	-10.3
2	55.30	34.0 QP	40.0	-6.0	1.50 V	76	43.0	-9.0
3	90.45	34.5 QP	43.5	-9.0	1.50 V	21	49.1	-14.6
4	152.30	30.5 QP	43.5	-13.0	1.50 V	1	39.1	-8.6
5	232.43	27.6 QP	46.0	-18.4	1.00 V	190	38.3	-10.7
6	585.29	25.7 QP	46.0	-20.3	1.00 V	51	27.3	-1.6

Remarks:

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



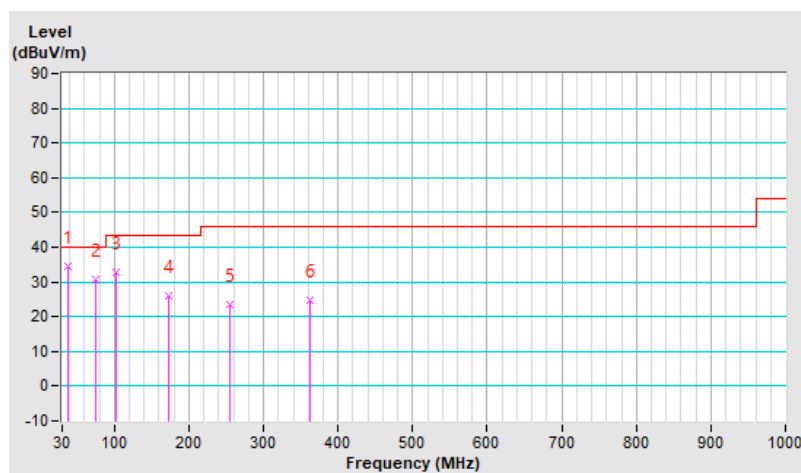
Mode B

RF Mode	802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 68% RH
Tested By	Edison Lee		

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	38.43	34.3 QP	40.0	-5.7	1.00 H	83	43.9	-9.6
2	74.99	30.7 QP	40.0	-9.3	1.00 H	341	42.4	-11.7
3	101.70	32.7 QP	43.5	-10.8	1.00 H	273	45.7	-13.0
4	173.39	26.0 QP	43.5	-17.5	1.49 H	280	35.2	-9.2
5	254.93	23.5 QP	46.0	-22.5	1.00 H	232	32.5	-9.0
6	361.77	24.9 QP	46.0	-21.1	1.00 H	72	31.1	-6.2

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.

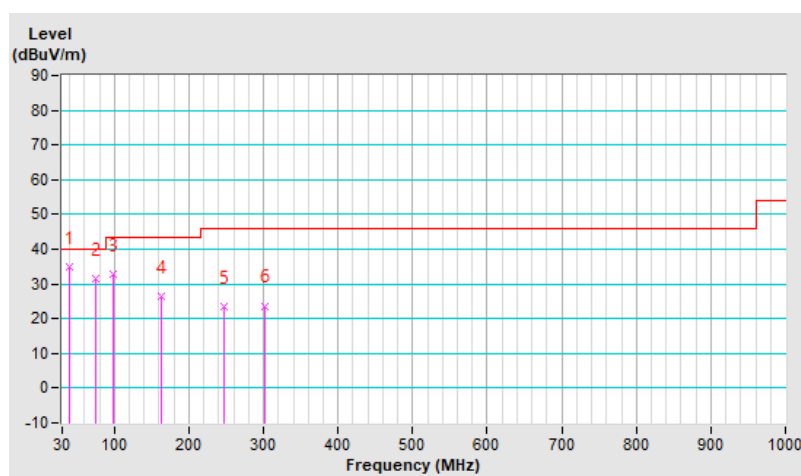


RF Mode	802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 68% RH
Tested By	Edison Lee		

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	39.84	34.9 QP	40.0	-5.1	1.01 V	150	44.4	-9.5
2	74.99	31.7 QP	40.0	-8.3	1.01 V	322	43.4	-11.7
3	98.88	32.8 QP	43.5	-10.7	1.01 V	311	46.1	-13.3
4	163.55	26.4 QP	43.5	-17.1	1.50 V	238	34.9	-8.5
5	247.90	23.3 QP	46.0	-22.7	1.01 V	241	32.5	-9.2
6	301.32	23.7 QP	46.0	-22.3	1.01 V	227	30.9	-7.2

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.



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=1 kHz, 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	59.9 PK	74.0	-14.1	2.09 H	189	25.5	34.4
2	2390.00	46.4 AV	54.0	-7.6	2.09 H	189	12.0	34.4
3	*2412.00	116.1 PK			2.09 H	189	81.9	34.2
4	*2412.00	113.6 AV			2.09 H	189	79.4	34.2
5	4824.00	50.3 PK	74.0	-23.7	1.30 H	128	38.6	11.7
6	4824.00	39.2 AV	54.0	-14.8	1.30 H	128	27.5	11.7
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	59.4 PK	74.0	-14.6	1.49 V	184	25.0	34.4
2	2390.00	46.2 AV	54.0	-7.8	1.49 V	184	11.8	34.4
3	*2412.00	109.9 PK			1.49 V	184	75.7	34.2
4	*2412.00	107.5 AV			1.49 V	184	73.3	34.2
5	4824.00	49.2 PK	74.0	-24.8	1.95 V	223	37.5	11.7
6	4824.00	36.4 AV	54.0	-17.6	1.95 V	223	24.7	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.

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=1 kHz, 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	116.5 PK			1.88 H	191	82.3	34.2
2	*2437.00	114.3 AV			1.88 H	191	80.1	34.2
3	4874.00	49.8 PK	74.0	-24.2	1.30 H	127	38.2	11.6
4	4874.00	37.8 AV	54.0	-16.2	1.30 H	127	26.2	11.6
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	110.1 PK			1.50 V	205	75.9	34.2
2	*2437.00	107.6 AV			1.50 V	205	73.4	34.2
3	4874.00	48.7 PK	74.0	-25.3	1.93 V	223	37.1	11.6
4	4874.00	35.9 AV	54.0	-18.1	1.93 V	223	24.3	11.6

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.

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=1 kHz, 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	116.6 PK			1.69 H	189	82.6	34.0
2	*2462.00	114.2 AV			1.69 H	189	80.2	34.0
3	2483.50	60.9 PK	74.0	-13.1	1.69 H	189	27.0	33.9
4	2483.50	51.1 AV	54.0	-2.9	1.69 H	189	17.2	33.9
5	4924.00	49.2 PK	74.0	-24.8	1.30 H	129	37.5	11.7
6	4924.00	36.2 AV	54.0	-17.8	1.30 H	129	24.5	11.7
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	111.8 PK			1.93 V	263	77.8	34.0
2	*2462.00	109.3 AV			1.93 V	263	75.3	34.0
3	2483.50	59.6 PK	74.0	-14.4	1.93 V	263	25.7	33.9
4	2483.50	48.9 AV	54.0	-5.1	1.93 V	263	15.0	33.9
5	4924.00	48.9 PK	74.0	-25.1	1.93 V	221	37.2	11.7
6	4924.00	36.3 AV	54.0	-17.7	1.93 V	221	24.6	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.

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=2 kHz, 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	64.4 PK	74.0	-9.6	2.03 H	191	30.0	34.4
2	2390.00	49.7 AV	54.0	-4.3	2.03 H	191	15.3	34.4
3	*2412.00	116.5 PK			2.03 H	191	82.3	34.2
4	*2412.00	106.8 AV			2.03 H	191	72.6	34.2
5	4824.00	49.7 PK	74.0	-24.3	1.32 H	127	38.0	11.7
6	4824.00	37.2 AV	54.0	-16.8	1.32 H	127	25.5	11.7
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	62.4 PK	74.0	-11.6	1.00 V	231	28.0	34.4
2	2390.00	47.8 AV	54.0	-6.2	1.00 V	231	13.4	34.4
3	*2412.00	112.1 PK			1.00 V	231	77.9	34.2
4	*2412.00	102.2 AV			1.00 V	231	68.0	34.2
5	4824.00	49.3 PK	74.0	-24.7	1.90 V	227	37.6	11.7
6	4824.00	36.1 AV	54.0	-17.9	1.90 V	227	24.4	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.

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=2 kHz, 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	117.5 PK			1.86 H	191	83.3	34.2
2	*2437.00	108.0 AV			1.86 H	191	73.8	34.2
3	4874.00	49.1 PK	74.0	-24.9	1.35 H	122	37.5	11.6
4	4874.00	37.1 AV	54.0	-16.9	1.35 H	122	25.5	11.6
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	113.0 PK			1.00 V	242	78.8	34.2
2	*2437.00	102.6 AV			1.00 V	242	68.4	34.2
3	4874.00	48.8 PK	74.0	-25.2	1.96 V	223	37.2	11.6
4	4874.00	36.1 AV	54.0	-17.9	1.96 V	223	24.5	11.6

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.

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=2 kHz, 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			1.66 H	191	83.2	34.0
2	*2462.00	107.6 AV			1.66 H	191	73.6	34.0
3	2483.50	63.9 PK	74.0	-10.1	1.66 H	191	30.0	33.9
4	2483.50	52.3 AV	54.0	-1.7	1.66 H	191	18.4	33.9
5	4924.00	48.9 PK	74.0	-25.1	1.35 H	131	37.2	11.7
6	4924.00	35.9 AV	54.0	-18.1	1.35 H	131	24.2	11.7
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	112.6 PK			1.00 V	243	78.6	34.0
2	*2462.00	102.8 AV			1.00 V	243	68.8	34.0
3	2483.50	61.9 PK	74.0	-12.1	1.00 V	243	28.0	33.9
4	2483.50	49.2 AV	54.0	-4.8	1.00 V	243	15.3	33.9
5	4924.00	48.7 PK	74.0	-25.3	1.93 V	220	37.0	11.7
6	4924.00	35.7 AV	54.0	-18.3	1.93 V	220	24.0	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.

RF Mode	802.11ax (HE20)	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=1 kHz, 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	65.7 PK	74.0	-8.3	2.06 H	191	31.3	34.4
2	2390.00	51.4 AV	54.0	-2.6	2.06 H	191	17.0	34.4
3	*2412.00	119.7 PK			2.06 H	191	85.5	34.2
4	*2412.00	107.6 AV			2.06 H	191	73.4	34.2
5	4824.00	49.4 PK	74.0	-24.6	1.35 H	125	37.7	11.7
6	4824.00	37.0 AV	54.0	-17.0	1.35 H	125	25.3	11.7
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	64.0 PK	74.0	-10.0	1.16 V	184	29.6	34.4
2	2390.00	49.9 AV	54.0	-4.1	1.16 V	184	15.5	34.4
3	*2412.00	113.8 PK			1.00 V	184	79.6	34.2
4	*2412.00	102.5 AV			1.00 V	184	68.3	34.2
5	4824.00	48.8 PK	74.0	-25.2	1.96 V	223	37.1	11.7
6	4824.00	36.0 AV	54.0	-18.0	1.96 V	223	24.3	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.

RF Mode	802.11ax (HE20)	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=1 kHz, 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	120.7 PK			1.86 H	191	86.5	34.2
2	*2437.00	108.9 AV			1.86 H	191	74.7	34.2
3	4874.00	49.1 PK	74.0	-24.9	1.32 H	126	37.5	11.6
4	4874.00	36.9 AV	54.0	-17.1	1.32 H	126	25.3	11.6
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	114.2 PK			1.32 V	239	80.0	34.2
2	*2437.00	102.4 AV			1.32 V	239	68.2	34.2
3	4874.00	48.8 PK	74.0	-25.2	1.98 V	223	37.2	11.6
4	4874.00	36.2 AV	54.0	-17.8	1.98 V	223	24.6	11.6

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.

RF Mode	802.11ax (HE20)	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=1 kHz, 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	116.2 PK			1.67 H	190	82.2	34.0
2	*2462.00	104.7 AV			1.67 H	190	70.7	34.0
3	2483.50	63.1 PK	74.0	-10.9	1.67 H	190	29.2	33.9
4	2483.50	51.9 AV	54.0	-2.1	1.67 H	190	18.0	33.9
5	4924.00	48.9 PK	74.0	-25.1	1.33 H	129	37.2	11.7
6	4924.00	36.0 AV	54.0	-18.0	1.33 H	129	24.3	11.7
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	112.0 PK			1.00 V	240	78.0	34.0
2	*2462.00	99.8 AV			1.00 V	240	65.8	34.0
3	2483.50	59.4 PK	74.0	-14.6	1.00 V	240	25.5	33.9
4	2483.50	48.2 AV	54.0	-5.8	1.00 V	240	14.3	33.9
5	4924.00	48.7 PK	74.0	-25.3	1.98 V	228	37.0	11.7
6	4924.00	35.8 AV	54.0	-18.2	1.98 V	228	24.1	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.

RF Mode	802.11ax (HE40)	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=2 kHz, 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	63.4 PK	74.0	-10.6	1.97 H	191	29.0	34.4
2	2390.00	49.4 AV	54.0	-4.6	1.97 H	191	15.0	34.4
3	*2422.00	116.3 PK			1.97 H	191	82.0	34.3
4	*2422.00	103.3 AV			1.97 H	191	69.0	34.3
5	4844.00	49.2 PK	74.0	-24.8	1.32 H	130	37.5	11.7
6	4844.00	36.9 AV	54.0	-17.1	1.32 H	130	25.2	11.7
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	60.8 PK	74.0	-13.2	1.51 V	181	26.4	34.4
2	2390.00	48.3 AV	54.0	-5.7	1.51 V	181	13.9	34.4
3	*2422.00	110.5 PK			1.51 V	181	76.2	34.3
4	*2422.00	98.8 AV			1.51 V	181	64.5	34.3
5	4844.00	48.8 PK	74.0	-25.2	1.90 V	226	37.1	11.7
6	4844.00	36.0 AV	54.0	-18.0	1.90 V	226	24.3	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.

RF Mode	802.11ax (HE40)	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=2 kHz, 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	118.7 PK			1.76 H	192	84.5	34.2
2	*2437.00	105.2 AV			1.76 H	192	71.0	34.2
3	2483.50	66.3 PK	74.0	-7.7	1.76 H	192	32.4	33.9
4	2483.50	51.4 AV	54.0	-2.6	1.76 H	192	17.5	33.9
5	4874.00	48.9 PK	74.0	-25.1	1.35 H	125	37.3	11.6
6	4874.00	36.6 AV	54.0	-17.4	1.35 H	125	25.0	11.6
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	112.2 PK			1.50 V	200	78.0	34.2
2	*2437.00	99.7 AV			1.50 V	200	65.5	34.2
3	2483.50	59.7 PK	74.0	-14.3	1.50 V	200	25.8	33.9
4	2483.50	48.4 AV	54.0	-5.6	1.50 V	200	14.5	33.9
5	4874.00	48.6 PK	74.0	-25.4	1.88 V	220	37.0	11.6
6	4874.00	36.4 AV	54.0	-17.6	1.88 V	220	24.8	11.6

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.

RF Mode	802.11ax (HE40)	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=2 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 66% RH
Tested By	TitanHSU		

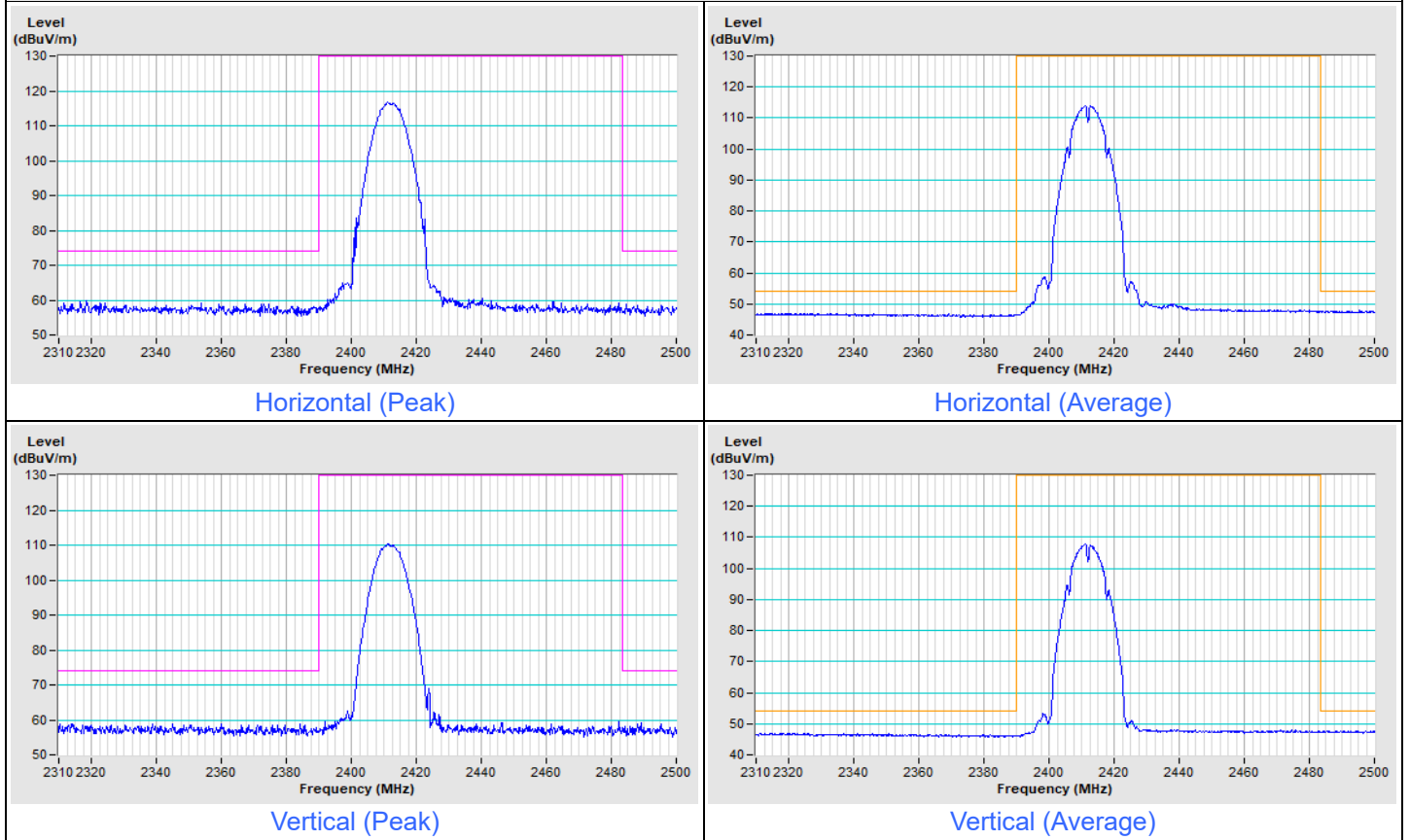
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2452.00	117.6 PK			2.02 H	215	83.5	34.1
2	*2452.00	104.9 AV			2.02 H	215	70.8	34.1
3	2483.50	67.7 PK	74.0	-6.3	2.02 H	215	33.8	33.9
4	2483.50	52.9 AV	54.0	-1.1	2.02 H	215	19.0	33.9
5	4904.00	48.9 PK	74.0	-25.1	1.36 H	131	37.2	11.7
6	4904.00	35.9 AV	54.0	-18.1	1.36 H	131	24.2	11.7
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	111.6 PK			1.26 V	204	77.5	34.1
2	*2452.00	99.7 AV			1.26 V	204	65.6	34.1
3	2483.50	60.5 PK	74.0	-13.5	1.26 V	204	26.6	33.9
4	2483.50	48.9 AV	54.0	-5.1	1.26 V	204	15.0	33.9
5	4904.00	48.7 PK	74.0	-25.3	1.89 V	219	37.0	11.7
6	4904.00	35.7 AV	54.0	-18.3	1.89 V	219	24.0	11.7

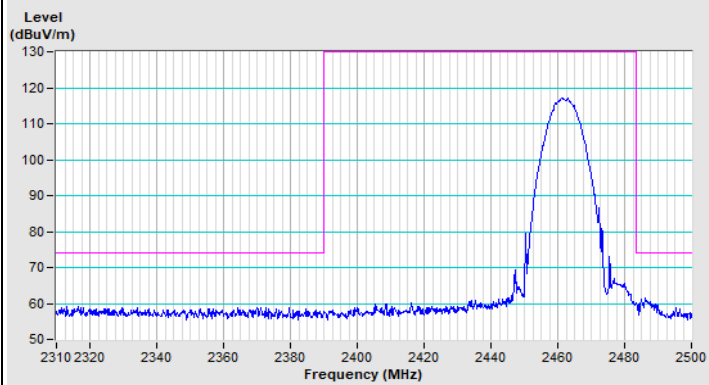
Remarks:

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.

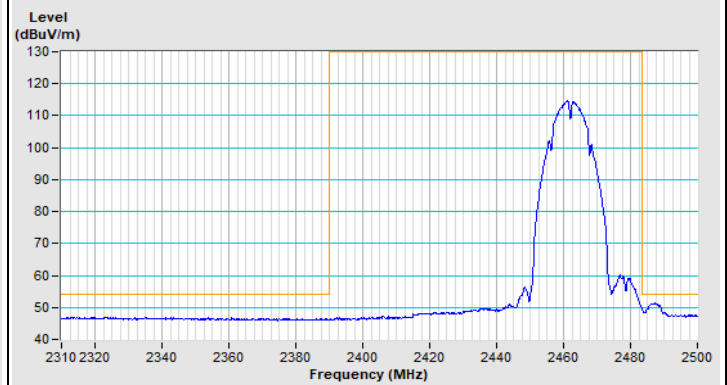
Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
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802.11b Channel 1

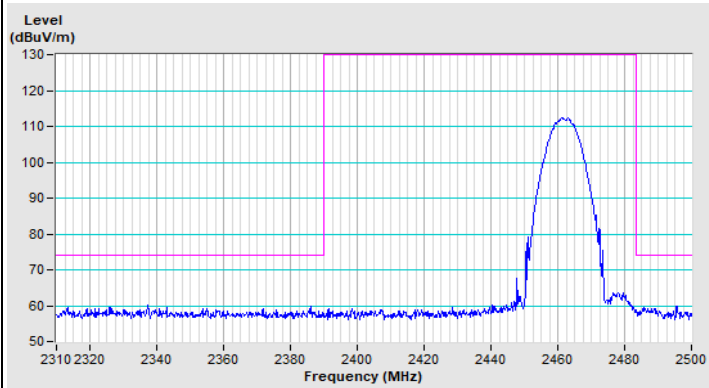


802.11b Channel 11

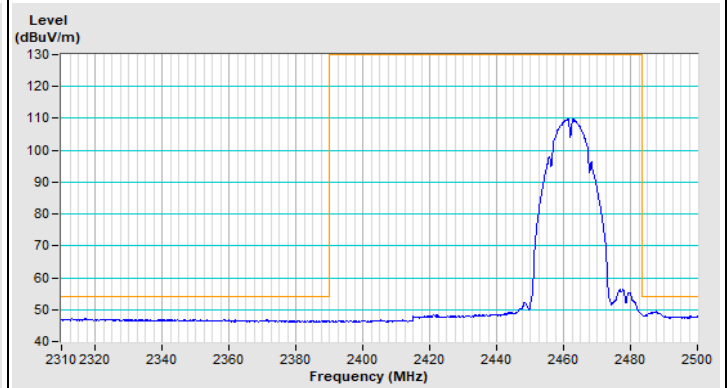
Horizontal (Peak)



Horizontal (Average)



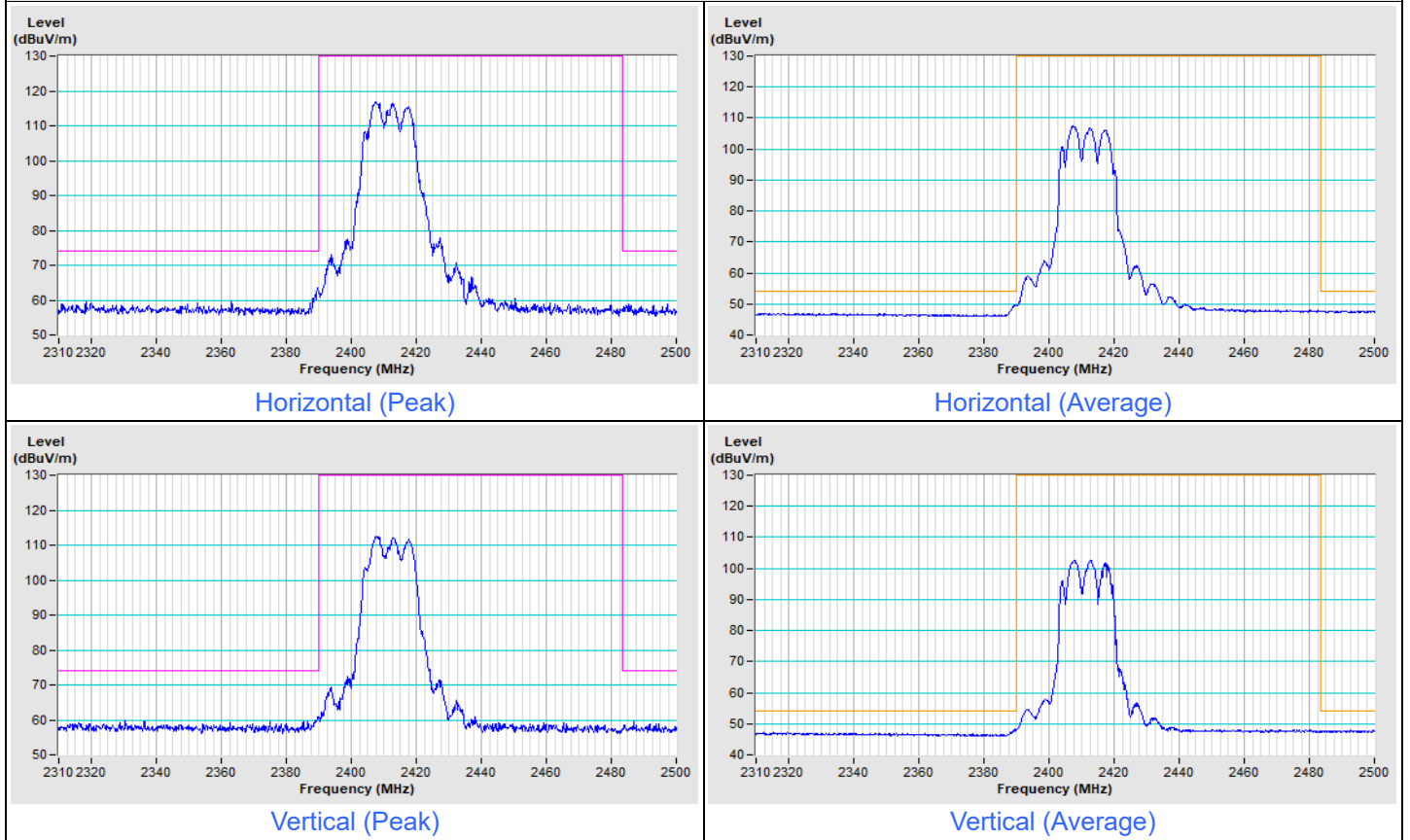
Vertical (Peak)



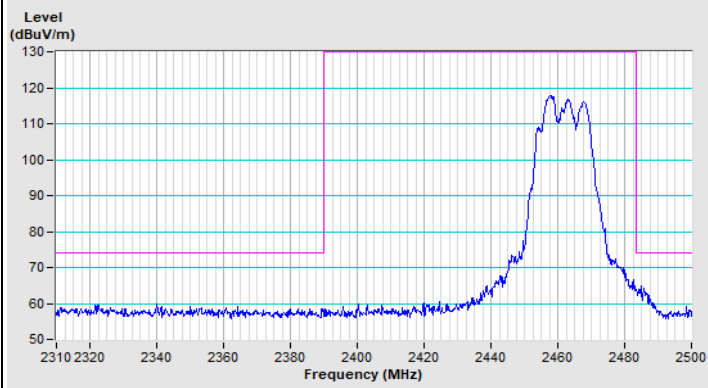
Vertical (Average)

Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=2 kHz, DET=Peak
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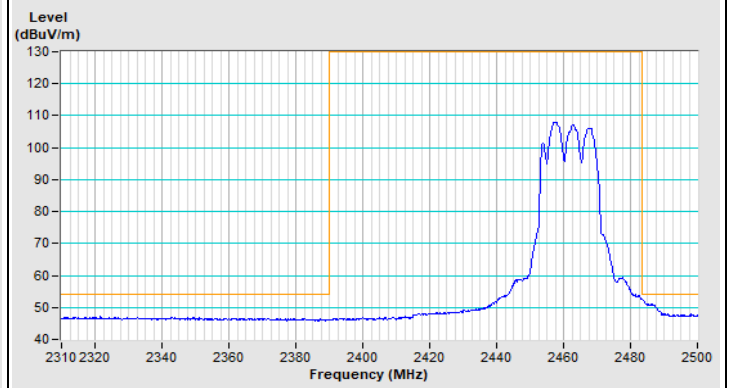
802.11g Channel 1



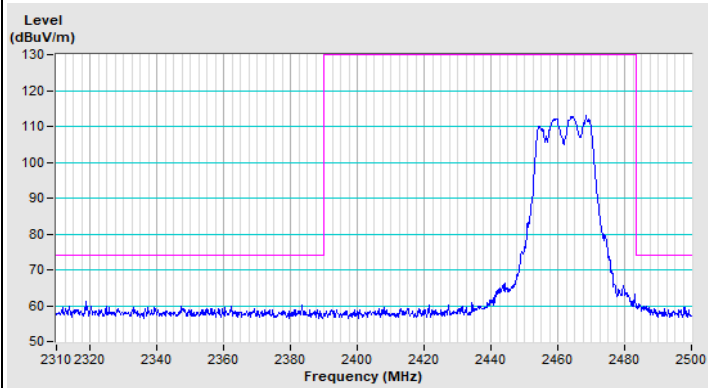
802.11g Channel 11



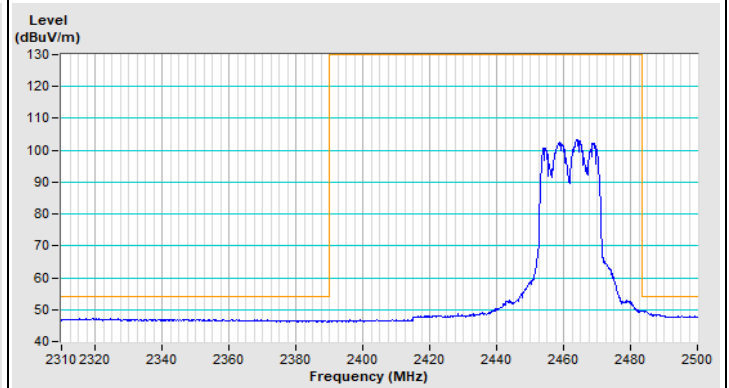
Horizontal (Peak)



Horizontal (Average)



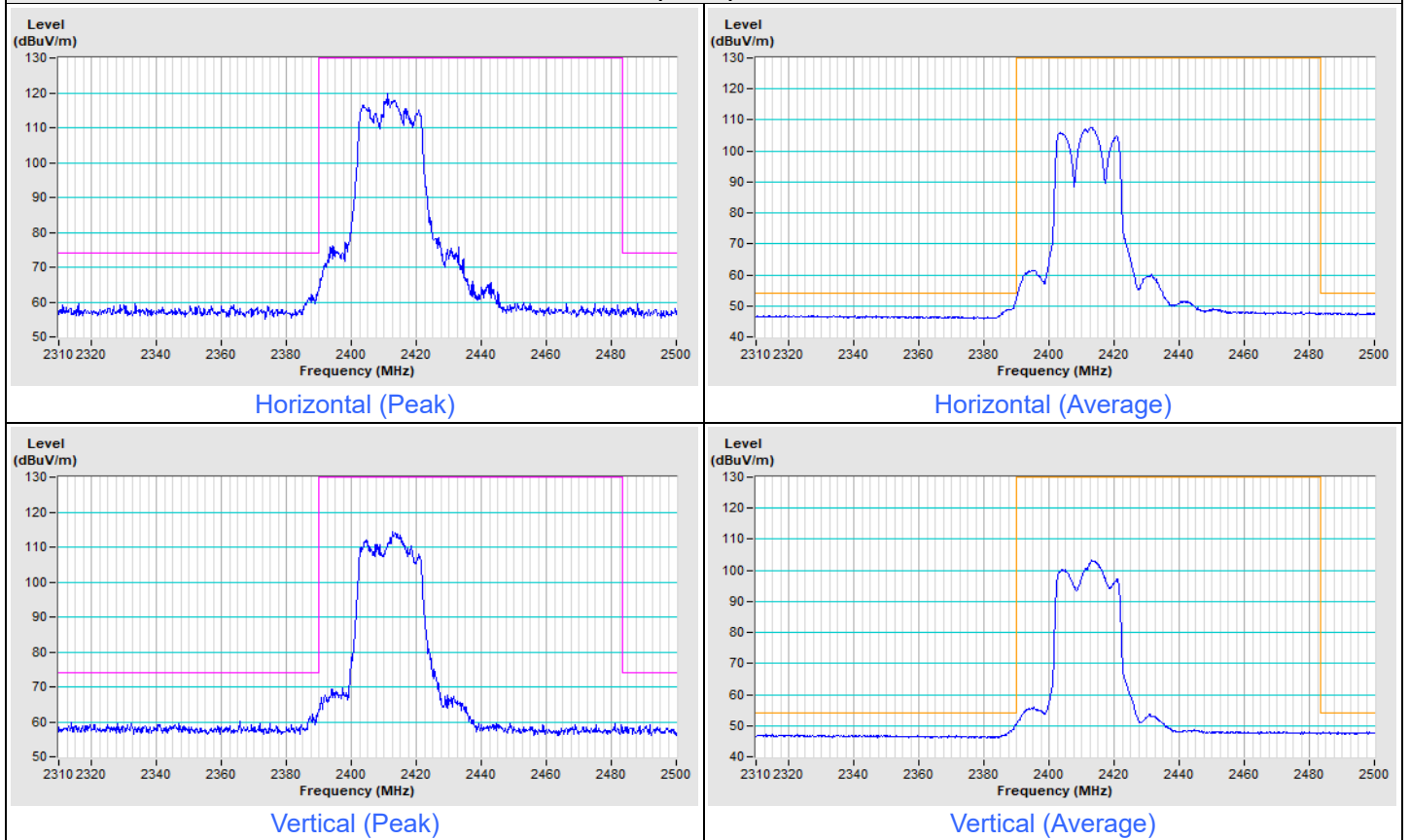
Vertical (Peak)



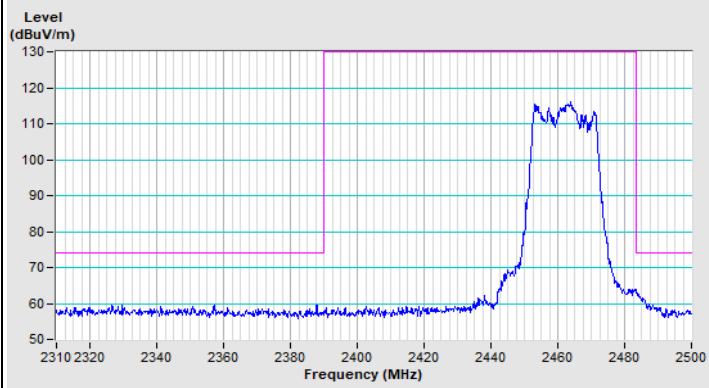
Vertical (Average)

Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
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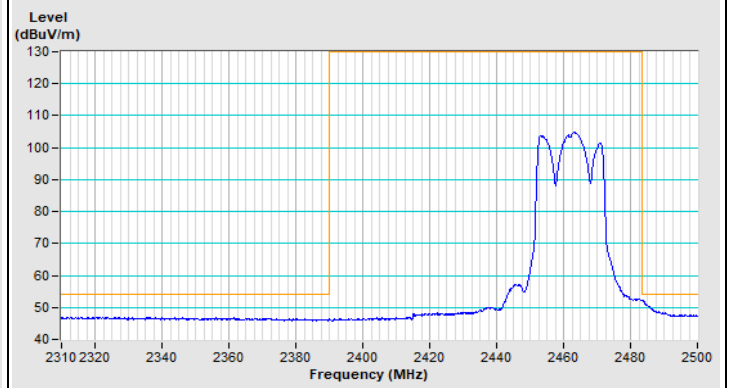
802.11ax (HE20) Channel 1



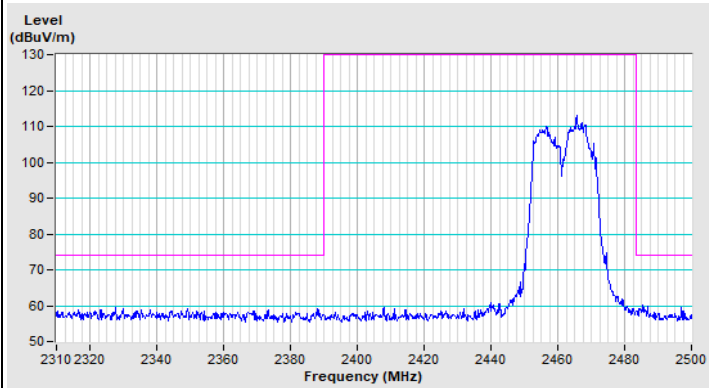
802.11ax (HE20) Channel 11



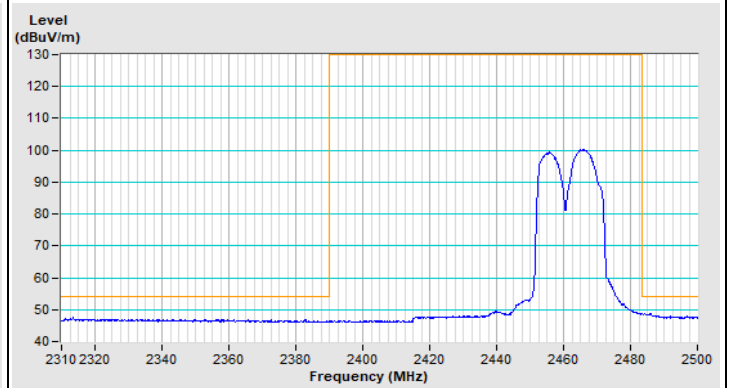
Horizontal (Peak)



Horizontal (Average)



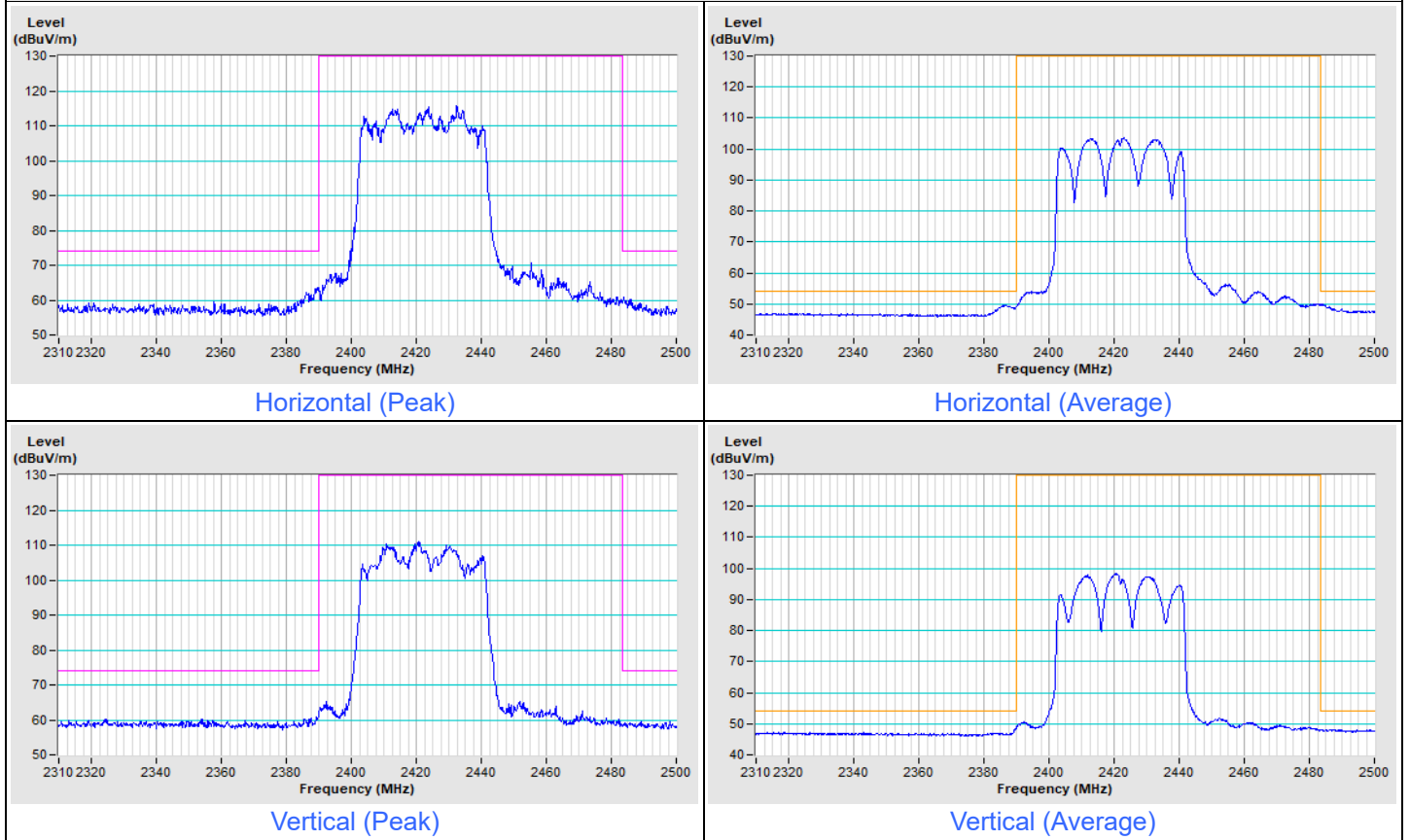
Vertical (Peak)



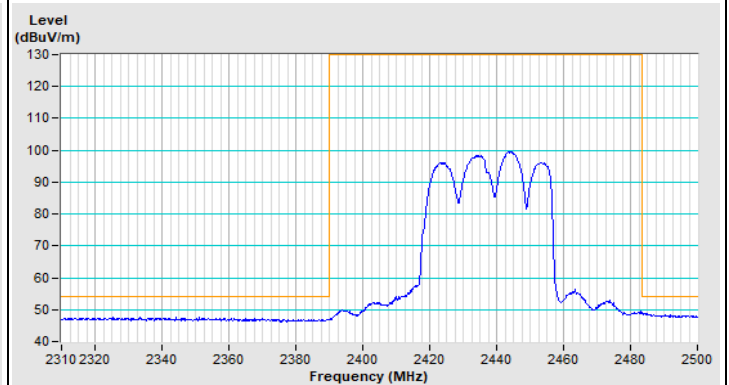
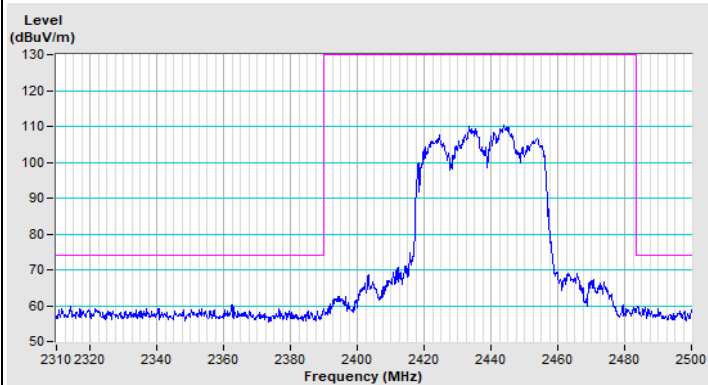
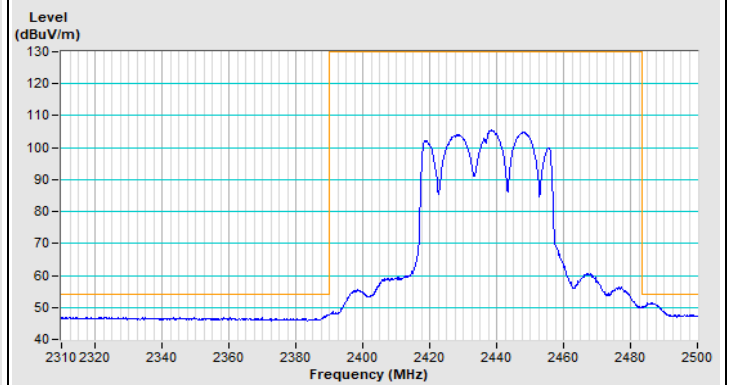
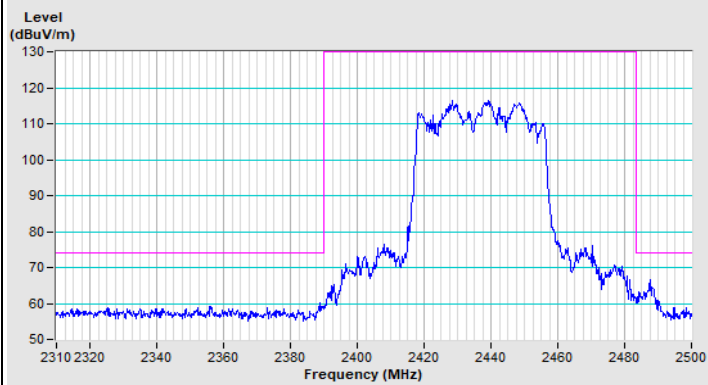
Vertical (Average)

Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=2 kHz, DET=Peak
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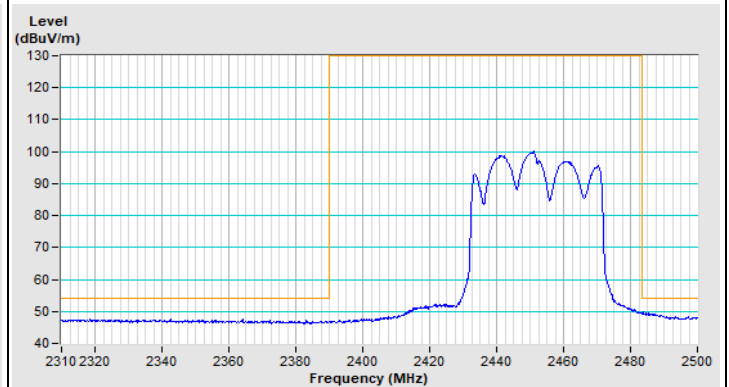
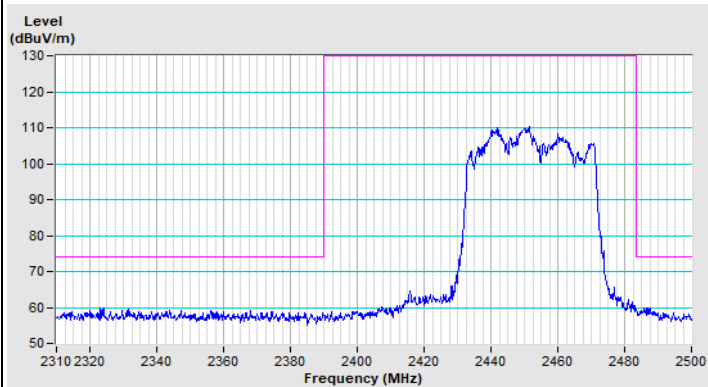
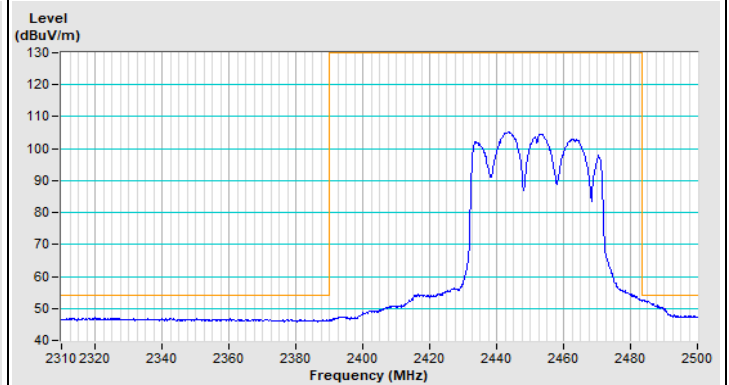
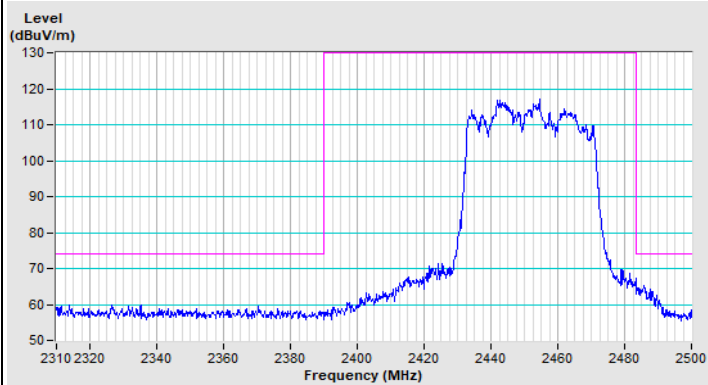
802.11ax (HE40) Channel 3



802.11ax (HE40) Channel 6



802.11ax (HE40) 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:

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

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

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