

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBDMW-WTW-P24080735

FCC ID: PQRFXE5000-US

Product: IEEE802.11ax/ac/n/a/b/g Wireless LAN

Brand: CONTEC

Model No.: FXE5000-US

Received Date: 2024/8/29

Test Date: 2024/11/14 ~ 2024/12/11

Issued Date: 2025/1/9

Applicant: CONTEC CO., LTD.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 736135 / TW0004

Designation Number:

Approved by: _____

May Chen / Manager

, Date: _____

2025/1/9

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Prepared by : Phoenix Huang / Specialist

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Table of Contents

Release Control Record	4
1 Certificate	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Supplementary Information	6
3 General Information	7
3.1 General Description	7
3.2 Antenna Description of EUT	8
3.3 Channel List	9
3.4 Test Mode Applicability and Tested Channel Detail	10
3.5 Duty Cycle of Test Signal	11
3.6 Test Program Used and Operation Descriptions	13
3.7 Connection Diagram of EUT and Peripheral Devices	13
3.8 Configuration of Peripheral Devices and Cable Connections	14
4 Test Instruments	15
4.1 RF Output Power	15
4.2 Power Spectral Density	15
4.3 6 dB Bandwidth	15
4.4 Conducted Out of Band Emissions	15
4.5 AC Power Conducted Emissions	15
4.6 Unwanted Emissions below 1 GHz	16
4.7 Unwanted Emissions above 1 GHz	17
5 Limits of Test Items	18
5.1 RF Output Power	18
5.2 Power Spectral Density	18
5.3 6 dB Bandwidth	18
5.4 Conducted Out of Band Emissions	18
5.5 AC Power Conducted Emissions	18
5.6 Unwanted Emissions below 1 GHz	19
5.7 Unwanted Emissions above 1 GHz	19
6 Test Arrangements	20
6.1 RF Output Power	20
6.1.1 Test Setup	20
6.1.2 Test Procedure	20
6.2 Power Spectral Density	20
6.2.1 Test Setup	20
6.2.2 Test Procedure	20
6.3 6 dB Bandwidth	21
6.3.1 Test Setup	21
6.3.2 Test Procedure	21
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	30
7.3	6 dB Bandwidth	32
7.4	Conducted Out of Band Emissions	34
7.5	AC Power Conducted Emissions	42
7.6	Unwanted Emissions below 1 GHz	44
7.7	Unwanted Emissions above 1 GHz.....	46
8	Pictures of Test Arrangements	78
9	Information of the Testing Laboratories	79

Release Control Record

Issue No.	Description	Date Issued
RFBDMW-WTW-P24080735	Original release.	2025/1/9

1 Certificate

Product: IEEE802.11ax/ac/n/a/b/g Wireless LAN
Brand: CONTEC
Test Model: FXE5000-US
Sample Status: Engineering sample
Applicant: CONTEC CO., LTD.
Test Date: 2024/11/14 ~ 2024/12/11
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 -6.85 dB at 0.59141 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -4.9 dB at 66.62 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 U.FL 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	-	1.1 dB
Power Spectral Density	-	1.3 dB
6 dB Bandwidth	-	1050.00 Hz
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.6 dB
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.4 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.0 dB
	18 GHz ~ 40 GHz	5.3 dB

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

2.2 Supplementary Information

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

3 General Information

3.1 General Description

Product	IEEE802.11ax/ac/n/a/b/g Wireless LAN
Brand	CONTEC
Test Model	FXE5000-US
Status of EUT	Engineering sample
Power Supply Rating	5 - 30 Vdc
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	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
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	CDD: 508.991 mW (27.07 dBm) Beamforming: 508.991 mW (27.07 dBm)

Note:

1. There are WLAN (2.4 GHz), WLAN (5 GHz) and WLAN (6 GHz) technology used for the EUT.
2. Simultaneously transmission combination.

Combination	Technology	
1	WLAN (2.4 GHz)	WLAN (5 GHz)
2	WLAN (2.4 GHz)	WLAN (6 GHz)

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

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 Set	RF Chain NO.	Brand	Model	Antenna Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
1	Chain 0	Johanson	2450AD18A6050	2	2.4 ~ 2.4835	Chip	U.FL	110
				1.5	5.15 ~ 5.85			
				2.7	5.925 ~ 6.425			
	Chain 1	Johanson	2450AD18A6050	2	2.4 ~ 2.4835	Chip	U.FL	45
				1.5	5.15 ~ 5.85			
				2.7	5.925 ~ 6.425			
2	Chain 0	CIROCOMM	DCAH0S17	3.8	2.4 ~ 2.4835	Chip	U.FL	160
				3.63	5.15 ~ 5.85			
				3.97	5.925 ~ 6.425			
	Chain 1	CIROCOMM	DCAH0S17	3.8	2.4 ~ 2.4835	Chip	U.FL	160
				3.63	5.15 ~ 5.85			
				3.97	5.925 ~ 6.425			

Note: Above antennas, Antenna Set 2 was selected for the final test.

* 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:

- All of modulation mode support beamforming function except 802.11b/g modulation mode.
- The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
- The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), 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.

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. EUT's antenna can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition. 2. For Unwanted Emissions and AC Power Conducted Emissions items have multiple power sources: Power connector/ AC Adapter. Pre-scan these modes and find the worst case as a representative test condition. 3. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
Worst Case:	1. EUT's antenna pre-scan X-axis/ Y-axis/ Z-axis worst condition: X-axis 2. For Unwanted Emissions and AC Power Conducted Emissions items worst condition: AC Adapter.

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

Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g		1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)	CDD / Beamforming	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)		3, 6, 9	BPSK	MCS0
Power Spectral Density	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g		1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)		1, 6, 11	BPSK	MCS0
	802.11ax (HE40)		3, 6, 9	BPSK	MCS0
6 dB Bandwidth / Conducted Out of Band Emissions	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g		1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)		1, 6, 11	BPSK	MCS0
	802.11ax (HE40)		3, 6, 9	BPSK	MCS0
AC Power Conducted Emissions	802.11ax (HE20)	CDD	6	BPSK	MCS0
Unwanted Emissions below 1 GHz	802.11ax (HE20)	CDD	6	BPSK	MCS0
Unwanted Emissions above 1 GHz	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g		1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)		1, 6, 11	BPSK	MCS0
	802.11ax (HE40)		3, 6, 9	BPSK	MCS0

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

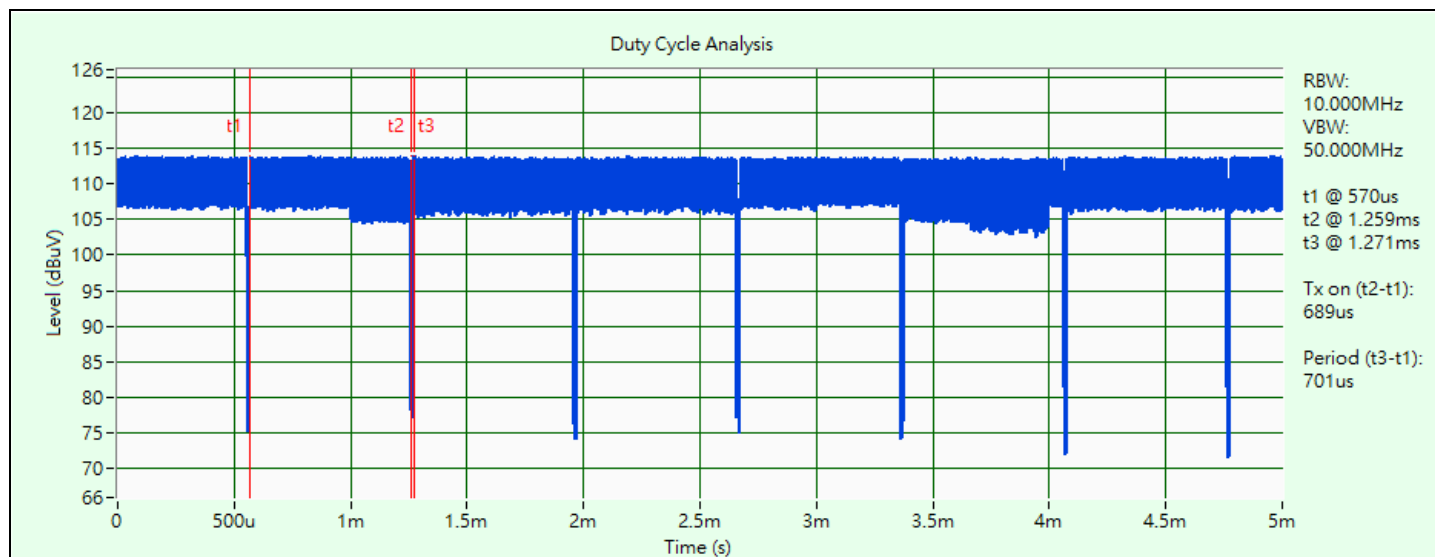
3.5 Duty Cycle of Test Signal

802.11b: Duty cycle = $0.689 \text{ ms} / 0.701 \text{ ms} \times 100\% = 98.3\%$

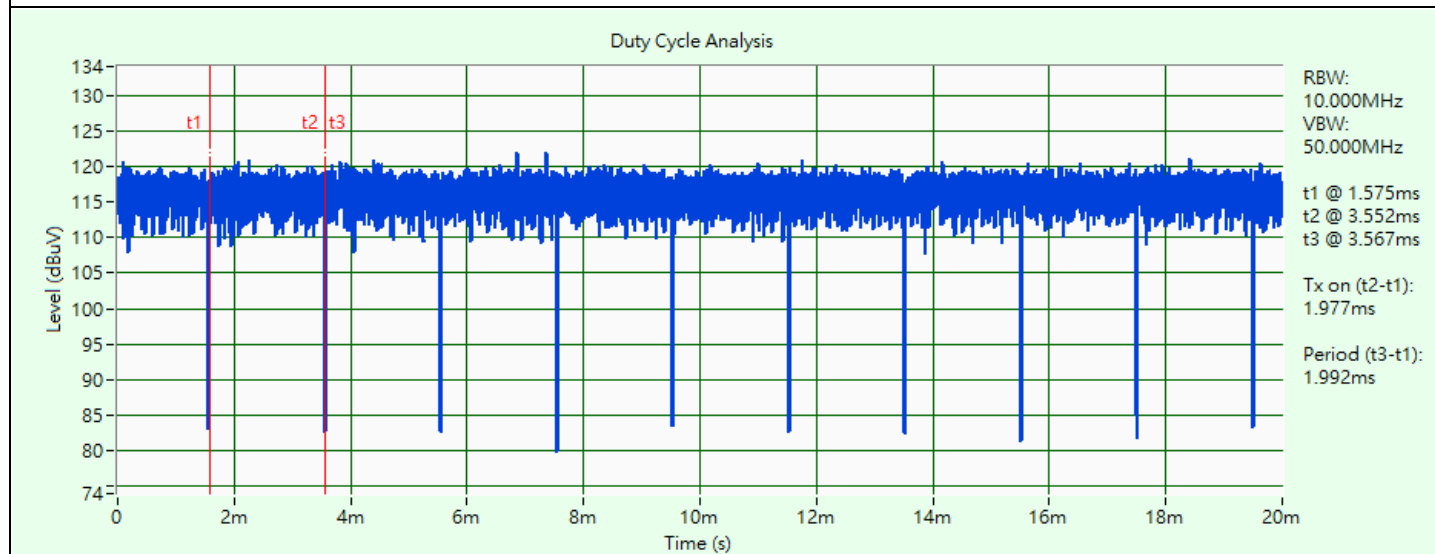
802.11g: Duty cycle = $1.977 \text{ ms} / 1.992 \text{ ms} \times 100\% = 99.2\%$

802.11ax (HE20): Duty cycle = $5.447 \text{ ms} / 5.461 \text{ ms} \times 100\% = 99.7\%$

802.11ax (HE40): Duty cycle = $5.448 \text{ ms} / 5.46 \text{ ms} \times 100\% = 99.8\%$

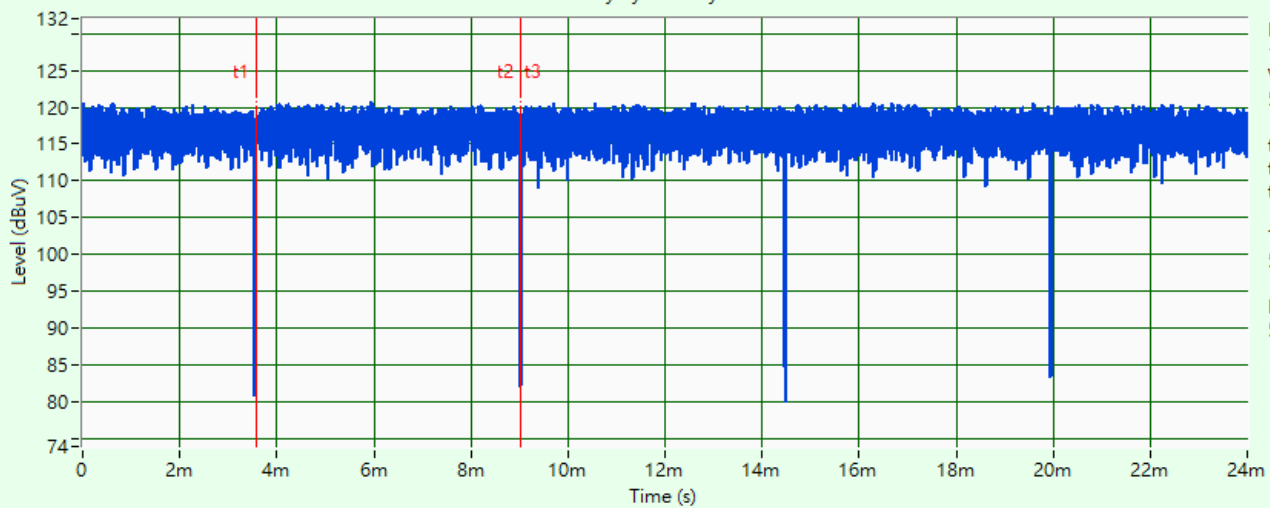


802.11b



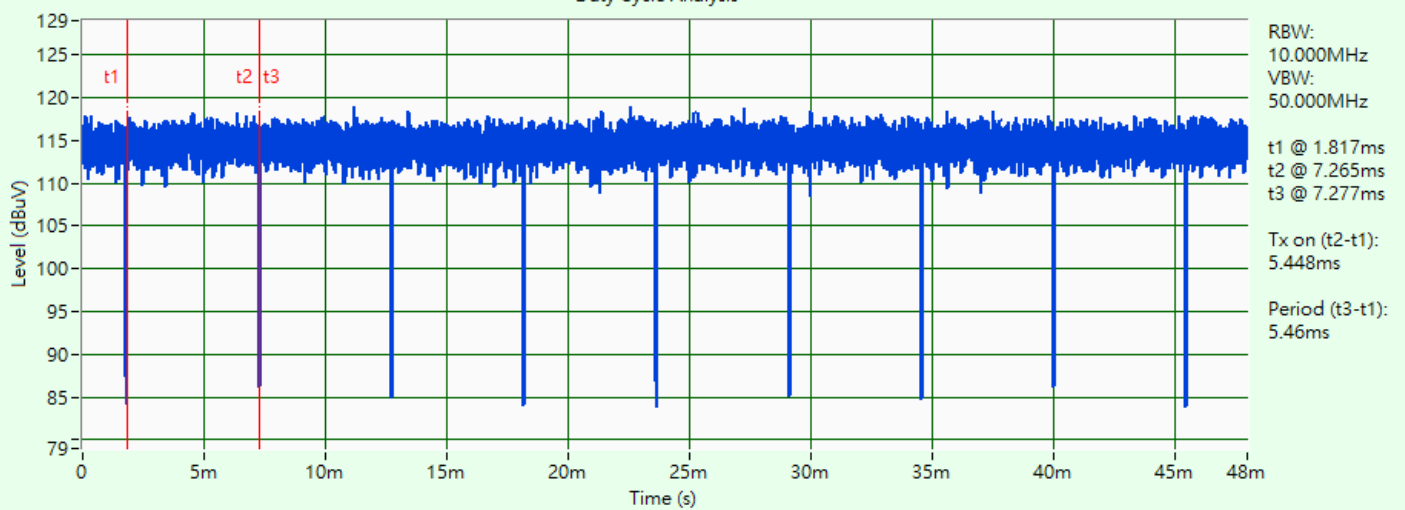
802.11g

Duty Cycle Analysis



802.11ax (HE20)

Duty Cycle Analysis



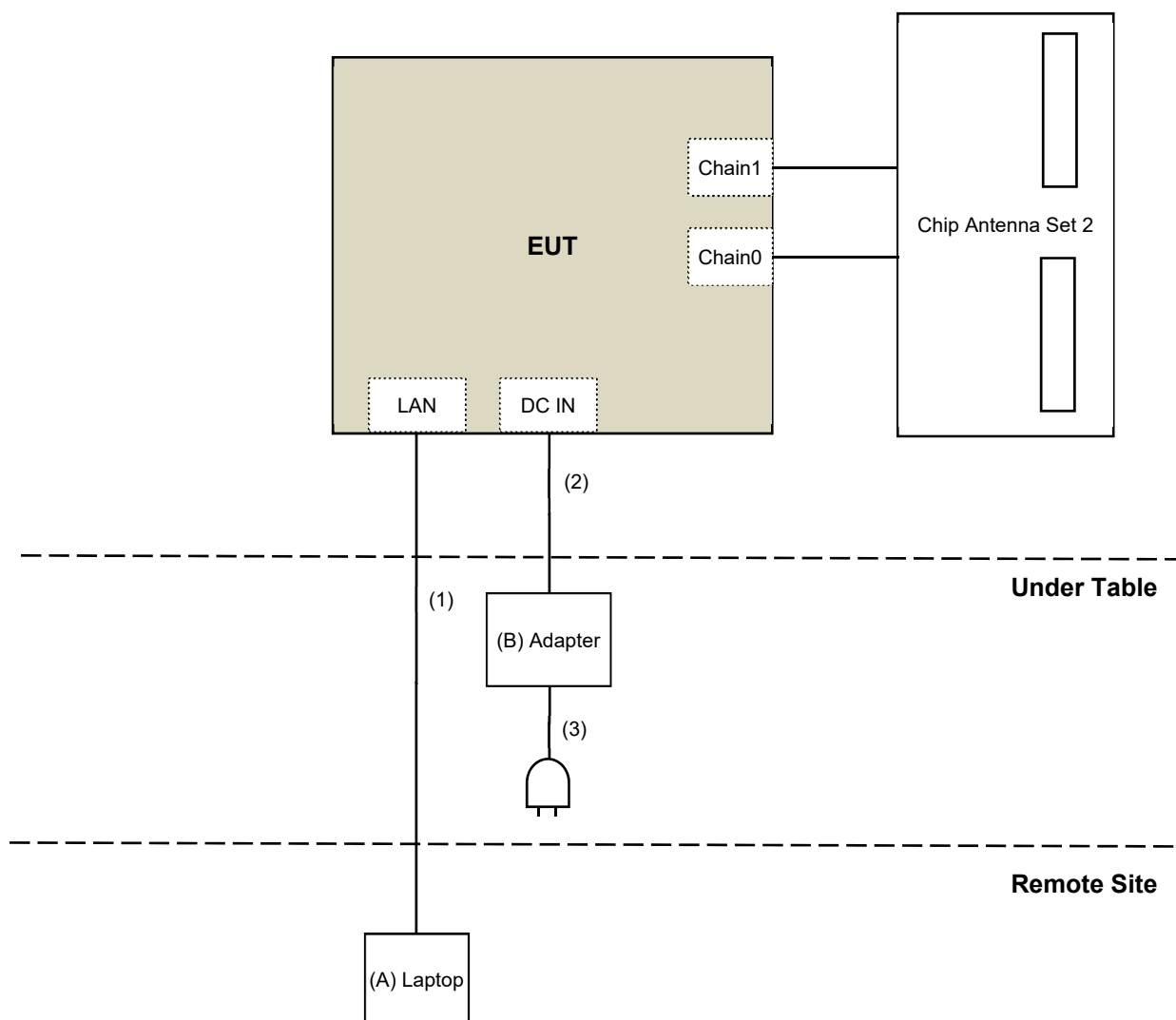
802.11ax (HE40)

3.6 Test Program Used and Operation Descriptions

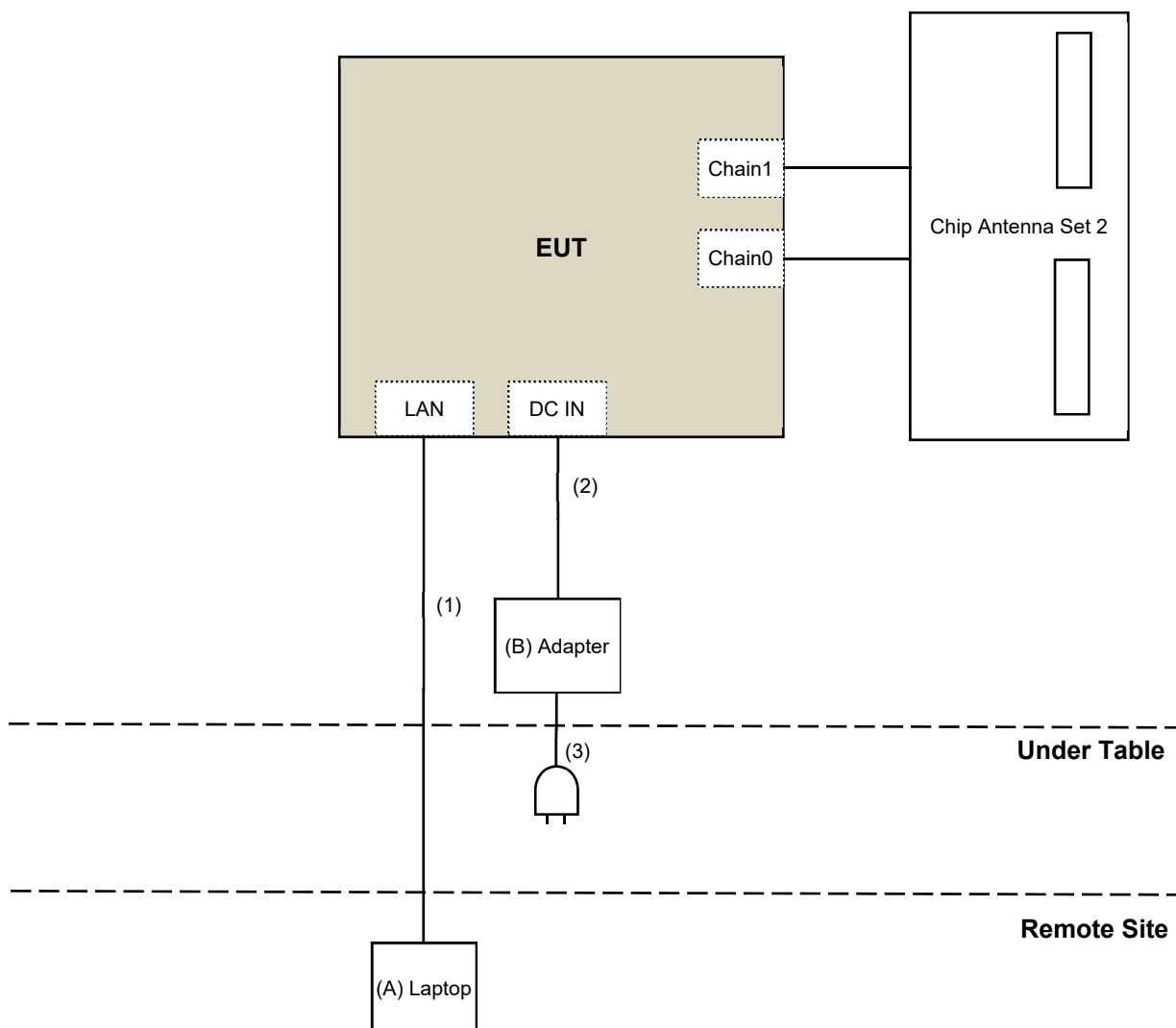
Controlling software (10-YE009-100_MP03.1_PN02.1_RDP404_RevB_20240528.cxtt) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

For Unwanted Emissions test:



For AC Power Conducted Emission test:



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Lenovo	L440	R90FM90G	N/A	Provided by Lab
B	Adapter	ADAPTER TECH	ATS018T-A050	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	10	No	0	Provided by Lab
2	DC Cable	1	1.5	No	0	Supplied by applicant
3	AC Cable	1	1.8	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
Pulse Power Sensor Anritsu	MA2411B	1726434	2024/6/7	2025/6/6
RF Power Meter Anritsu	ML2495A	1529002	2024/6/7	2025/6/6

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2024/12/11

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
MXA Signal Analyzer Keysight	N9020B	MY60112408	2024/3/7	2025/3/6
Software	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2024/12/11

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 Telegartner	50 ohm	3	2024/11/1	2025/10/31
EMI Test Receiver R&S	ESCS 30	100375	2024/5/20	2025/5/19
Fixed Attenuator STI	STI02-2200-10	005	2024/2/19	2025/2/18
LISN R&S	ESH3-Z5	835239/001	2024/4/3	2025/4/2
		848773/004	2024/10/7	2025/10/6
RF Coaxial Cable JYEBAO	5D-FB	COCCAB-001	2024/2/19	2025/2/18
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2024/11/19

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-361	2024/10/8	2025/10/7
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	2024/2/17	2025/2/16
Loop Antenna TESEQ	HLA 6121	63620	2024/10/17	2025/10/16
MXE EMI Receiver Agilent	N9038A	MY50010156	2024/6/5	2025/6/4
Preamplifier EMCI	EMC330N	980852	2024/2/17	2025/2/16
	EMC001340	980142	2024/2/19	2025/2/18
RF Coaxial Cable JYEBAO	5D-FB	LOOPCAB-001	2024/2/19	2025/2/18
		LOOPCAB-002	2024/2/19	2025/2/18
RF Coaxial Cable PEWC	8D	001	2024/2/16	2025/2/15
		966-3-2	2024/2/16	2025/2/15
		966-3-3	2024/2/16	2025/2/15
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2024/12/2

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-406	2024/11/10	2025/11/9
	BBHA 9170	9170-739	2024/11/10	2025/11/9
MXE EMI Receiver Agilent	N9038A	MY50010156	2024/6/5	2025/6/4
Preamplifier EMCI	EMC12630SE	980384	2024/1/29	2025/1/28
	EMC184045SE	980387	2024/8/8	2025/8/7
PXA Signal Analyzer Keysight	N9030B	MY57142938	2024/3/20	2025/3/19
RF Coaxial Cable EMCI	EMC102-KM-KM-1200	160924	2024/1/29	2025/1/28
	EMC102-KM-KM-4000	200214	2024/1/29	2025/1/28
	EMC104-SM-SM-1500	180504	2024/1/29	2025/1/28
	EMC104-SM-SM-2000	180601	2024/1/29	2025/1/28
	EMC104-SM-SM-6000	210201	2024/1/29	2025/1/28
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2024/11/14 ~ 2024/11/29

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 20 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 20 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 20 dB below the highest level of the desired power:

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

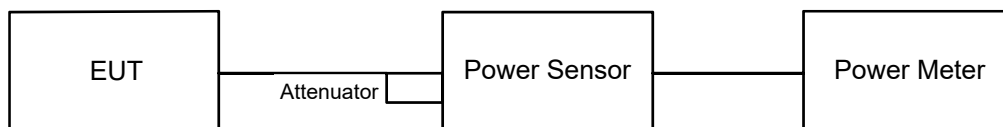
Notes:

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

Peak Power:

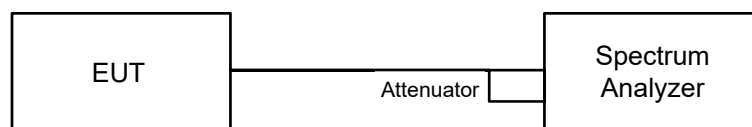
A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

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

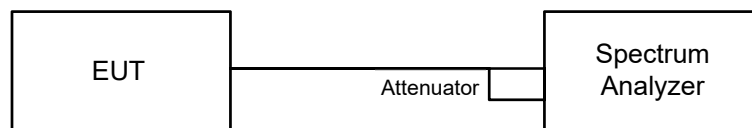


6.2.2 Test Procedure

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: 3 kHz.
- Set the VBW $\geq 3 \times$ RBW.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.

6.3 6 dB Bandwidth

6.3.1 Test Setup

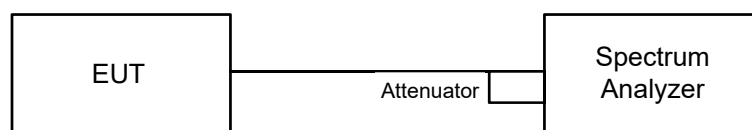


6.3.2 Test Procedure

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

6.4 Conducted Out of Band Emissions

6.4.1 Test Setup



6.4.2 Test Procedure

MEASUREMENT PROCEDURE REF

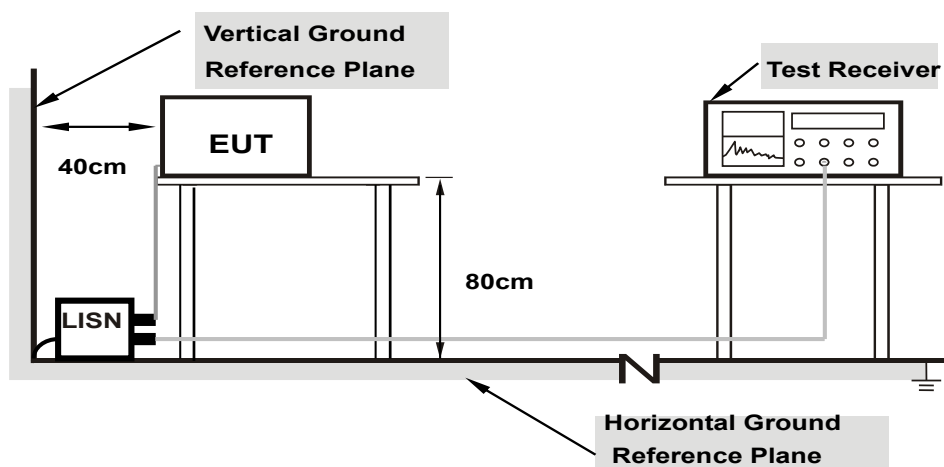
- Set the RBW = 100 kHz.
- Set the VBW ≥ 300 kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

- Set RBW = 100 kHz.
- Set VBW ≥ 300 kHz.
- Detector = peak.
- Sweep = auto couple.
- Trace Mode = max hold.
- Allow trace to fully stabilize.
- 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

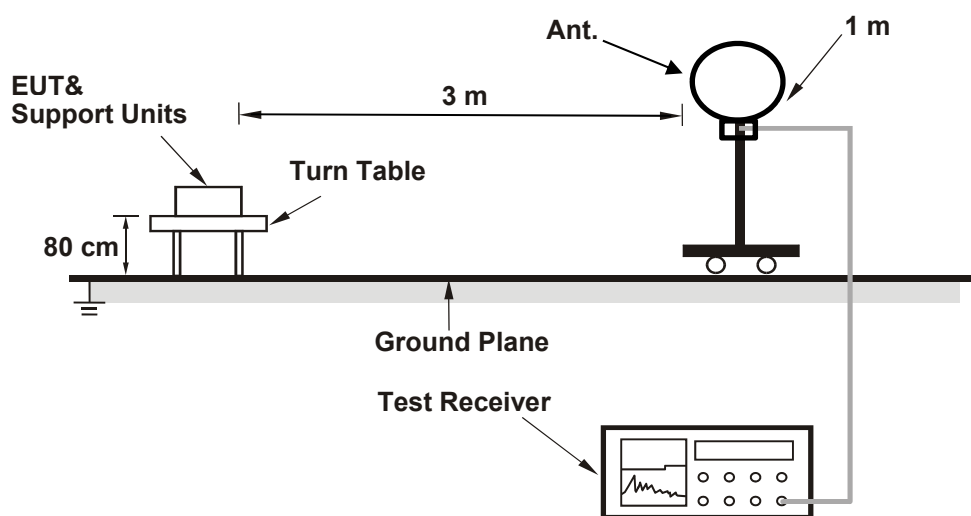
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

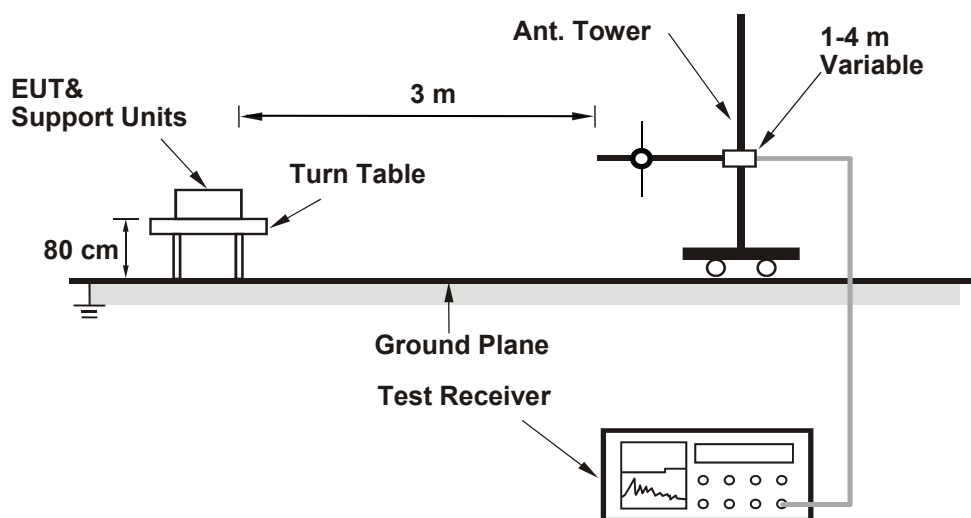
6.6 Unwanted Emissions below 1 GHz

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

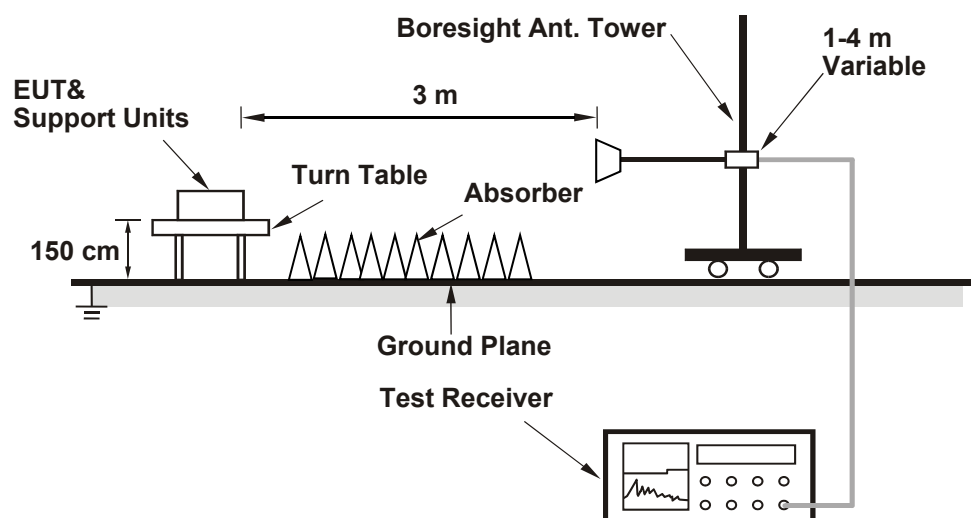
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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 (System)	Environmental Conditions:	26°C, 62% RH	Tested By:	Katina Lu
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For Peak Power

802.11b CDD

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	22.94	23.75	433.926	26.37	30	Pass
6	2437	23.38	23.94	465.513	26.68	30	Pass
11	2462	21.42	22.46	314.873	24.98	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.8 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11g CDD

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	23.51	24.05	478.485	26.80	30	Pass
6	2437	23.87	24.18	505.599	27.04	30	Pass
11	2462	22.68	22.93	381.689	25.82	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.8 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	23.10	23.71	439.137	26.43	30	Pass
6	2437	23.93	24.18	508.991	27.07	30	Pass
11	2462	23.06	23.14	408.365	26.11	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.8 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	22.86	23.24	404.06	26.06	30	Pass
6	2437	22.71	23.10	390.812	25.92	30	Pass
9	2452	21.68	22.46	323.429	25.10	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.8 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	23.10	23.71	439.137	26.43	29.19	Pass
6	2437	23.93	24.18	508.991	27.07	29.19	Pass
11	2462	23.06	23.14	408.365	26.11	29.19	Pass

Notes:

1. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
2. The directional gain is 6.81 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.81 - 6) = 29.19$ dBm.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	22.86	23.24	404.06	26.06	29.19	Pass
6	2437	22.71	23.10	390.812	25.92	29.19	Pass
9	2452	21.68	22.46	323.429	25.10	29.19	Pass

Notes:

1. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
2. The directional gain is 6.81 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.81 - 6) = 29.19$ dBm.

For Average Power

802.11b CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	20.58	21.35	250.746	23.99
6	2437	21.34	22.18	301.341	24.79
11	2462	18.64	19.58	163.896	22.15

802.11g CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	19.06	20.23	185.977	22.69
6	2437	21.04	22.46	303.255	24.82
11	2462	17.30	17.71	112.723	20.52

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	16.85	18.27	115.56	20.63
6	2437	21.66	22.15	310.614	24.92
11	2462	17.18	17.20	104.72	20.20

802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
3	2422	17.61	17.89	119.194	20.76
6	2437	17.53	17.96	119.141	20.76
9	2452	15.98	16.45	83.785	19.23

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	16.85	18.27	115.56	20.63
6	2437	21.66	22.15	310.614	24.92
11	2462	17.18	17.20	104.72	20.20

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
3	2422	17.61	17.89	119.194	20.76
6	2437	17.53	17.96	119.141	20.76
9	2452	15.98	16.45	83.785	19.23

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz (System)	Environmental Conditions:	26°C, 62% RH	Tested By:	Katina Lu
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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	0.66	-0.38	3.18	7.19	Pass
6	2437	0.99	4.25	5.93	7.19	Pass
11	2462	-2.20	-1.72	1.06	7.19	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 = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 6.81 dBi > 6 dBi, so the power density limit shall be reduced to $8-(6.81-6) = 7.19$ dBm/3kHz.

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	-2.16	-2.20	0.83	7.19	Pass
6	2437	-0.17	-0.31	2.77	7.19	Pass
11	2462	-3.57	-4.21	-0.87	7.19	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 = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 6.81 dBi > 6 dBi, so the power density limit shall be reduced to $8-(6.81-6) = 7.19$ dBm/3kHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-5.68	-4.06	-1.78	7.19	Pass
6	2437	-0.92	-0.24	2.44	7.19	Pass
11	2462	-5.99	-5.13	-2.53	7.19	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 = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 6.81 dBi > 6 dBi, so the power density limit shall be reduced to $8-(6.81-6) = 7.19$ dBm/3kHz.

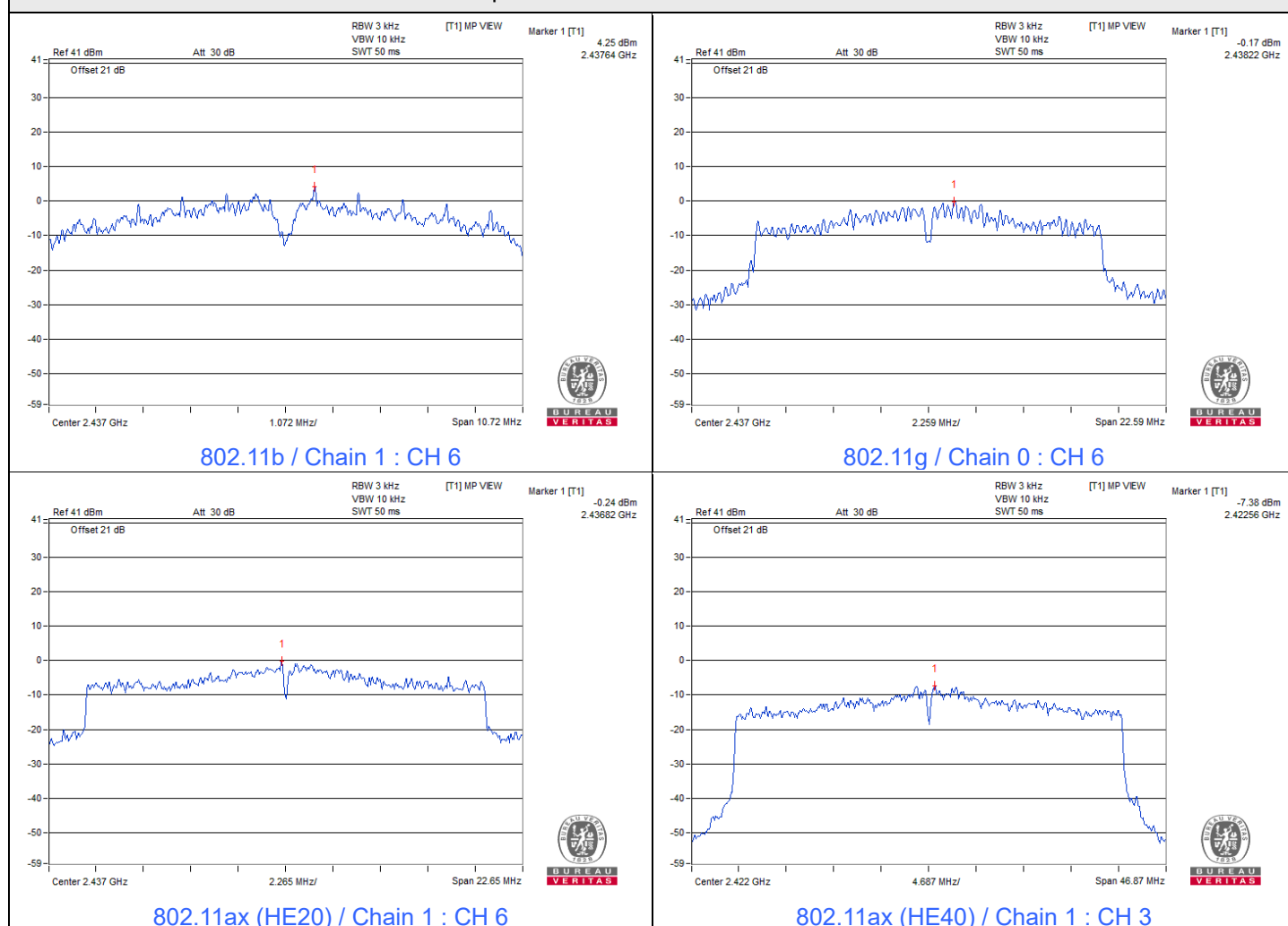
802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
3	2422	-8.02	-7.38	-4.68	7.19	Pass
6	2437	-7.65	-7.76	-4.69	7.19	Pass
9	2452	-10.34	-10.37	-7.34	7.19	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 = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 6.81 dBi > 6 dBi, so the power density limit shall be reduced to $8-(6.81-6) = 7.19$ dBm/3kHz.

Spectrum Plot of Maximum Value



7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz (System)	Environmental Conditions:	26°C, 62% RH	Tested By:	Katina Lu
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802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	7.57	8.59	0.5	Pass
6	2437	8.52	7.15	0.5	Pass
11	2462	7.10	7.09	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	13.85	15.06	0.5	Pass
6	2437	15.06	15.09	0.5	Pass
11	2462	15.06	15.06	0.5	Pass

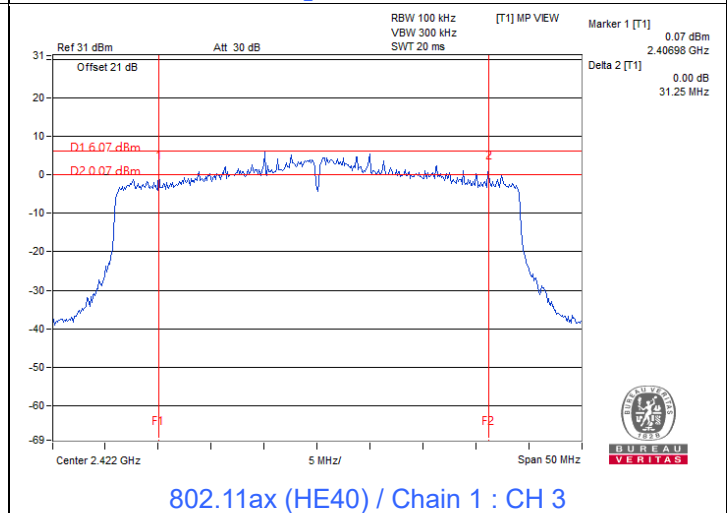
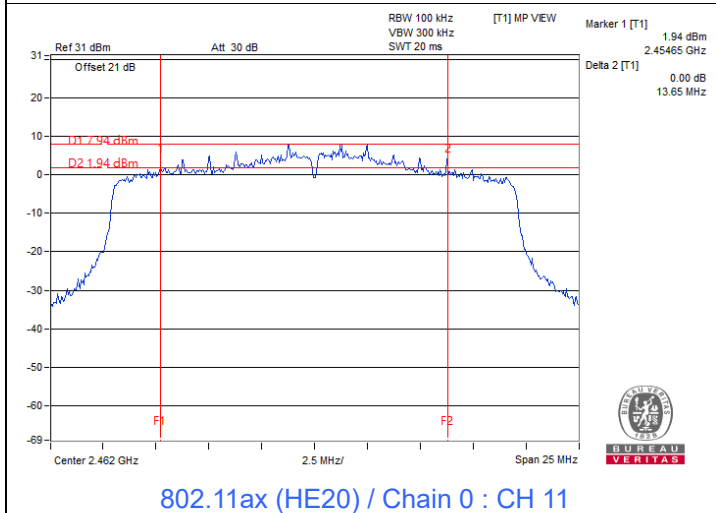
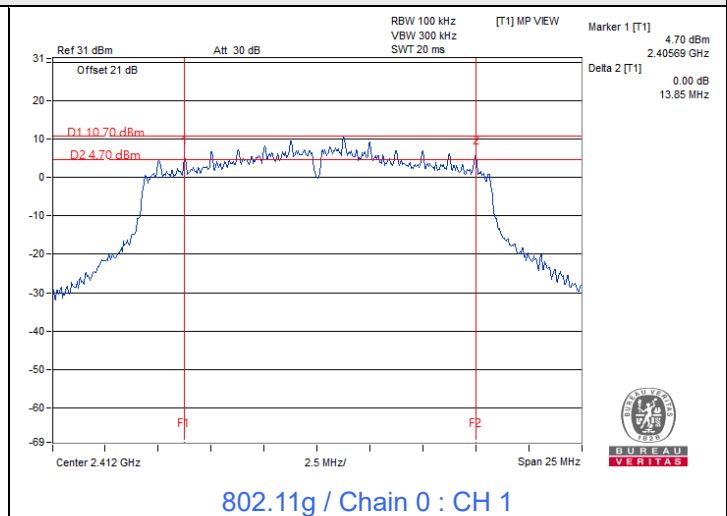
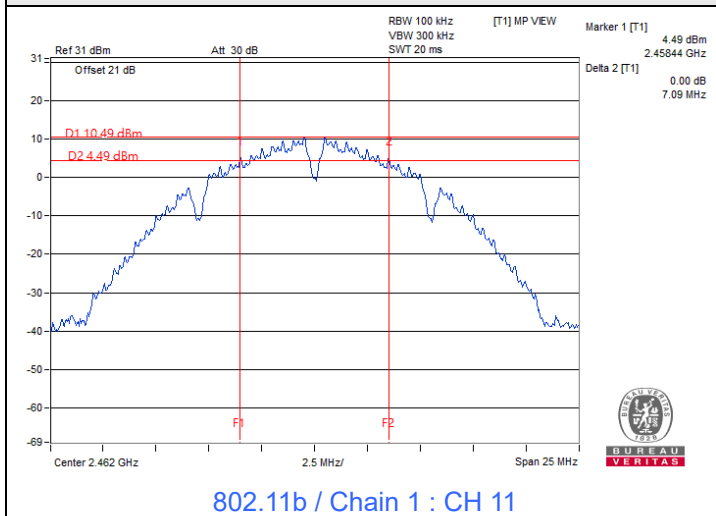
802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	15.08	15.02	0.5	Pass
6	2437	15.04	15.10	0.5	Pass
11	2462	13.65	15.04	0.5	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
3	2422	32.63	31.25	0.5	Pass
6	2437	33.83	31.46	0.5	Pass
9	2452	32.54	31.33	0.5	Pass

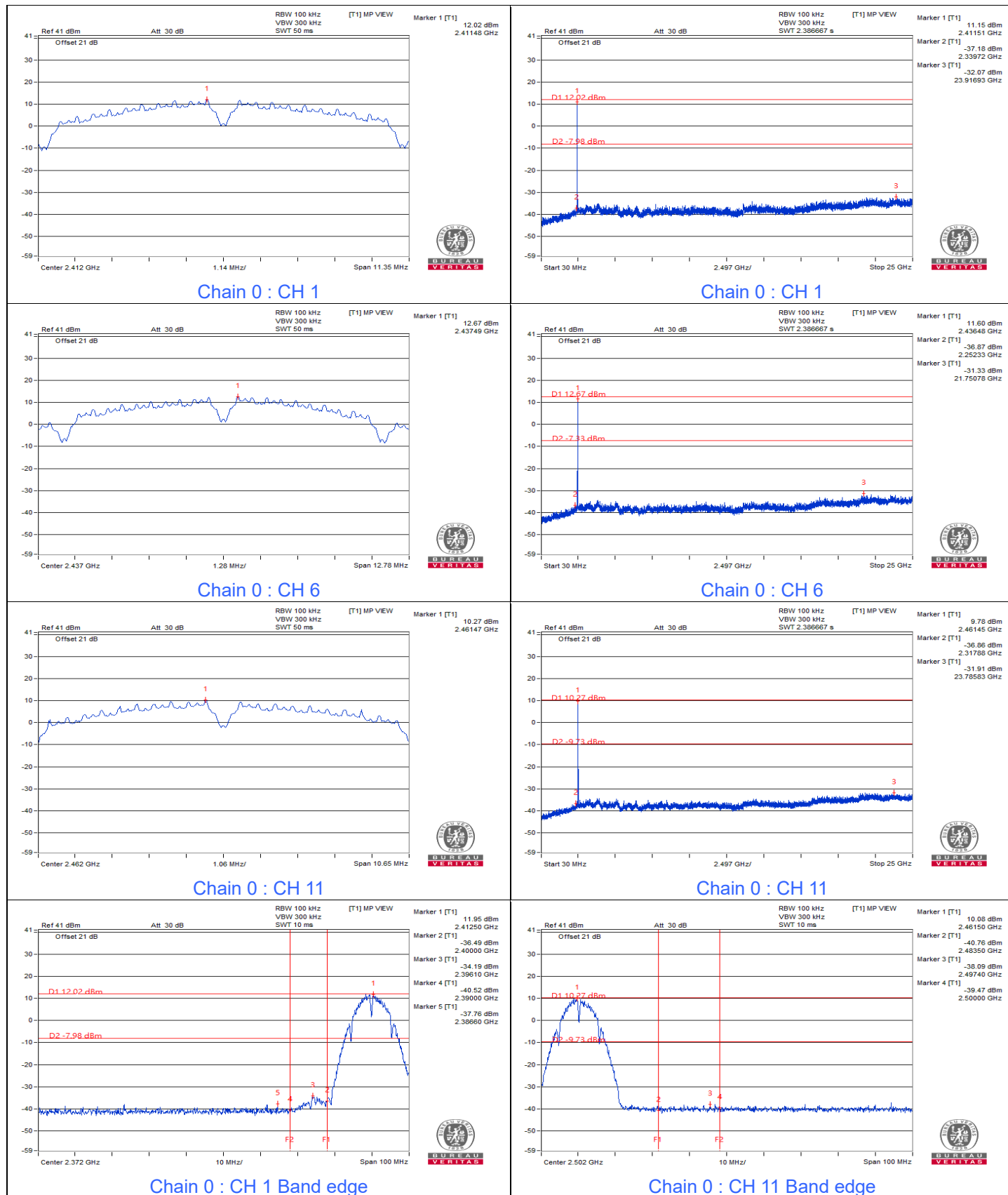
Spectrum Plot of Minimum Value

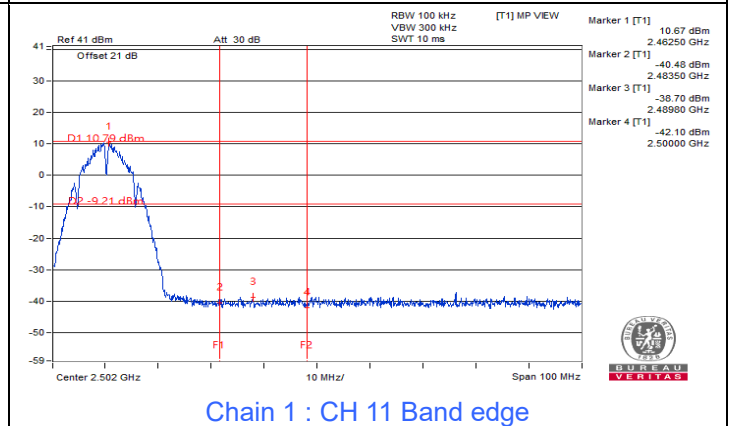
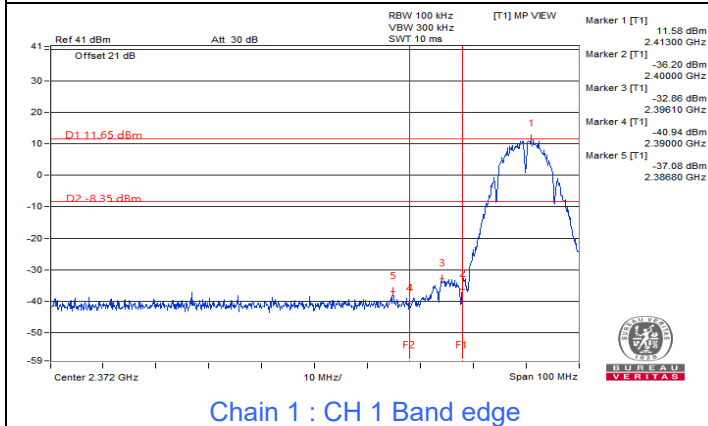
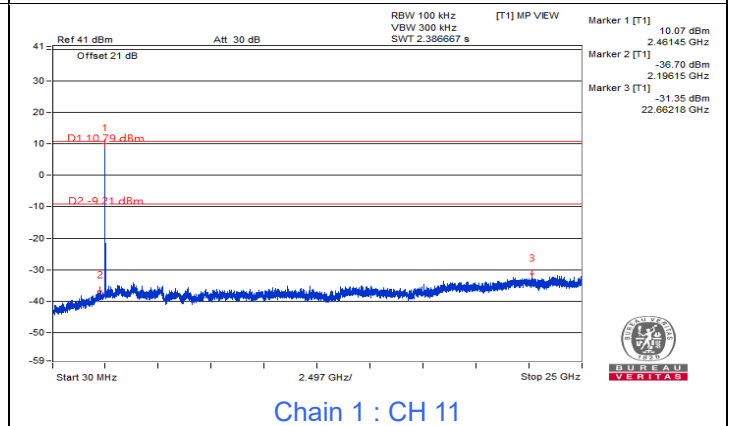
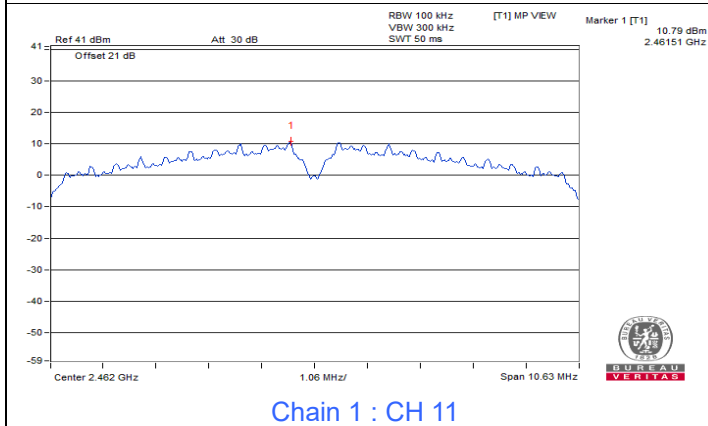
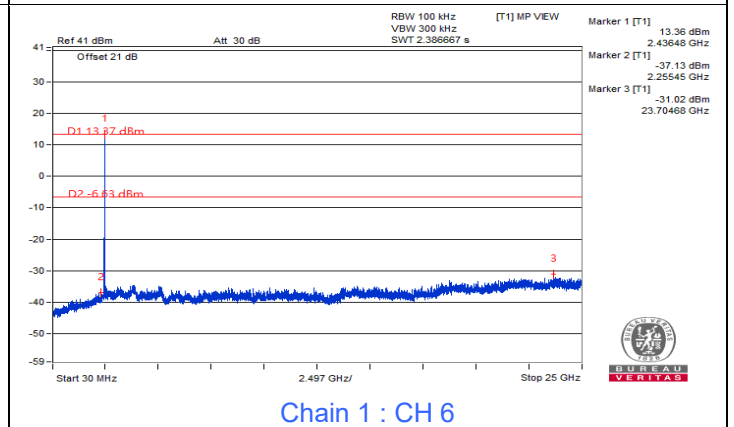
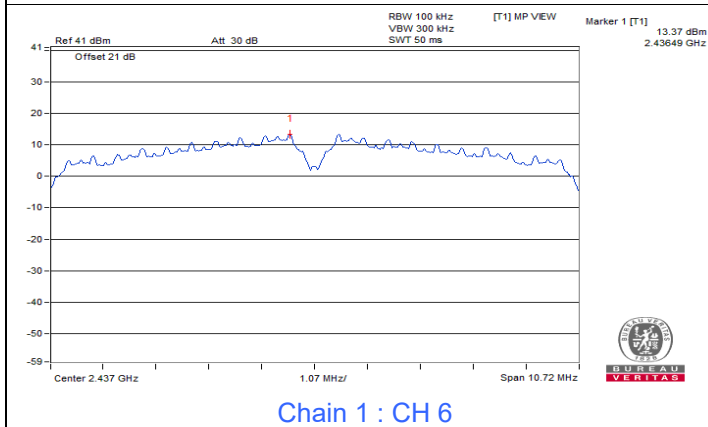
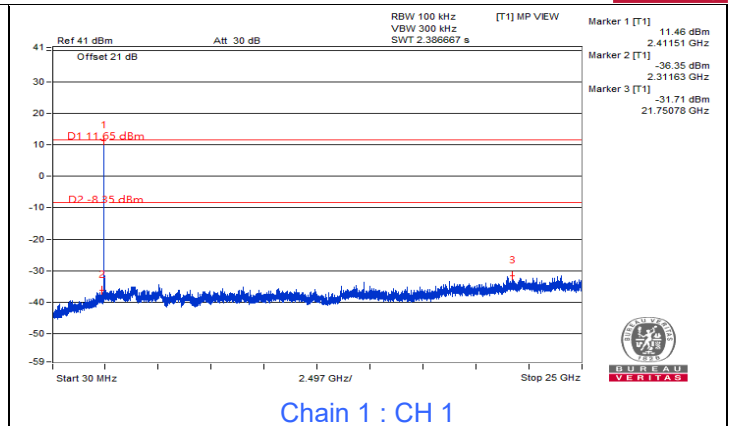
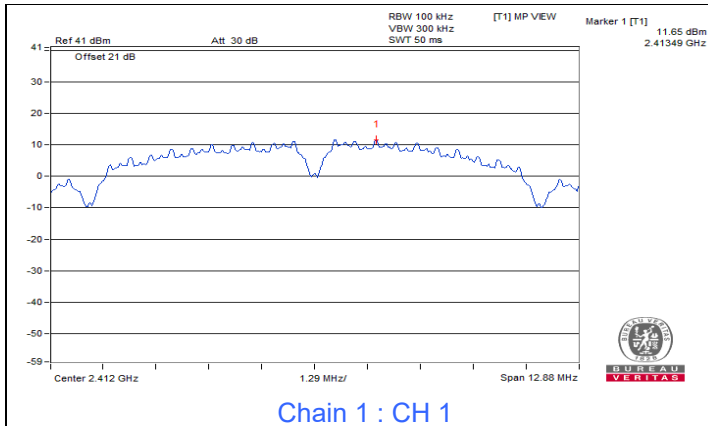


7.4 Conducted Out of Band Emissions

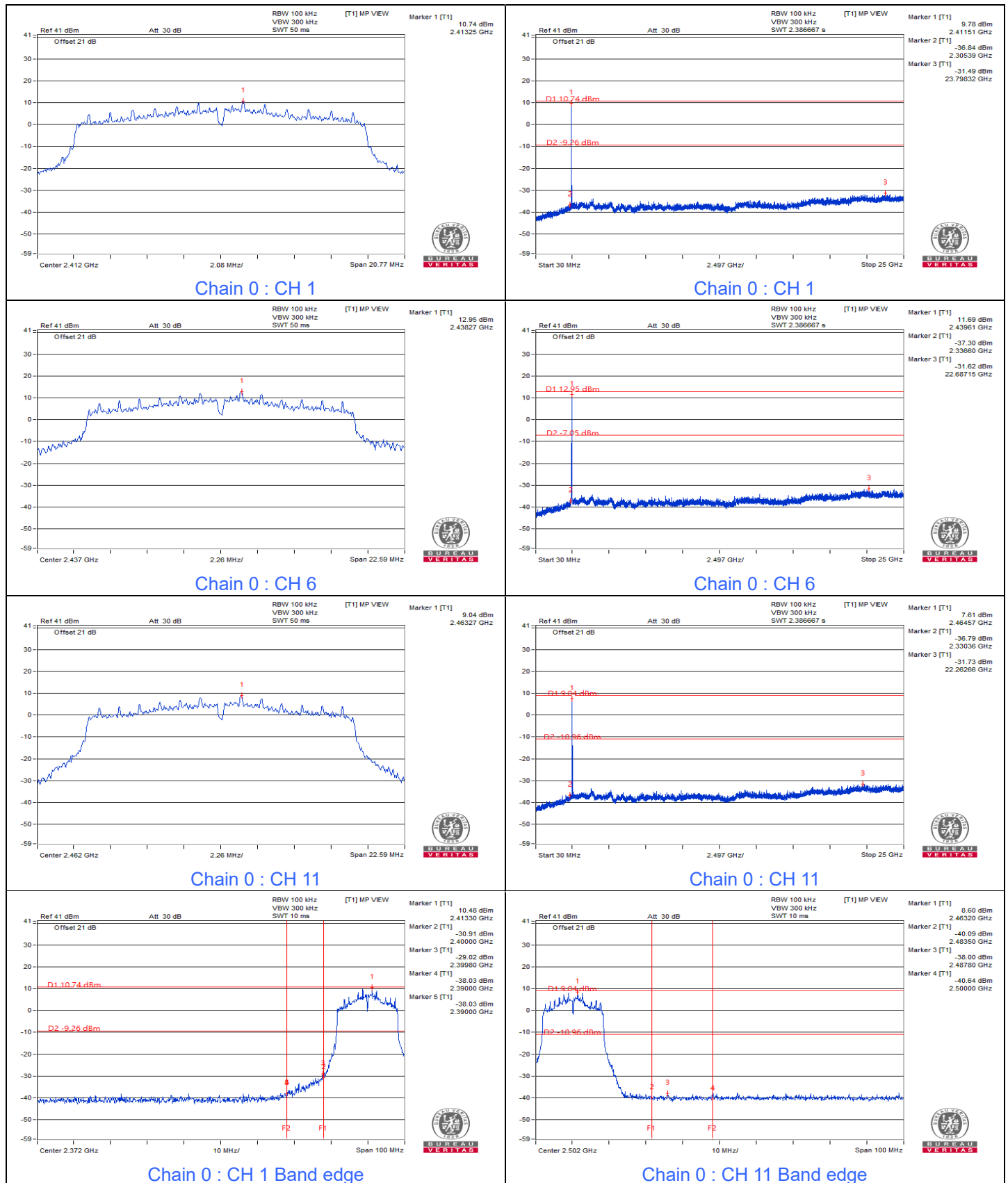
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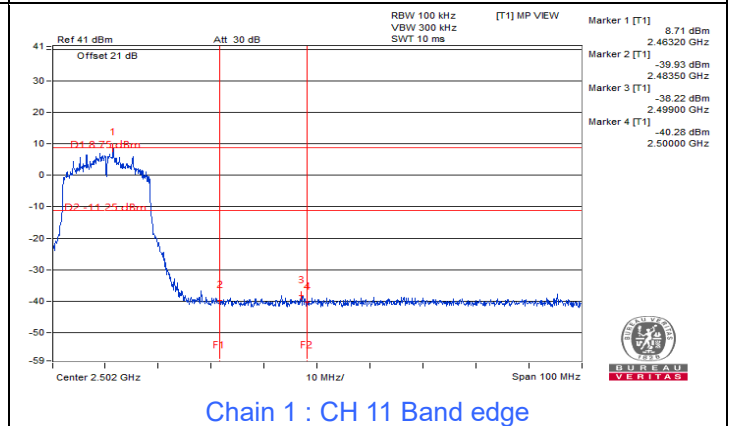
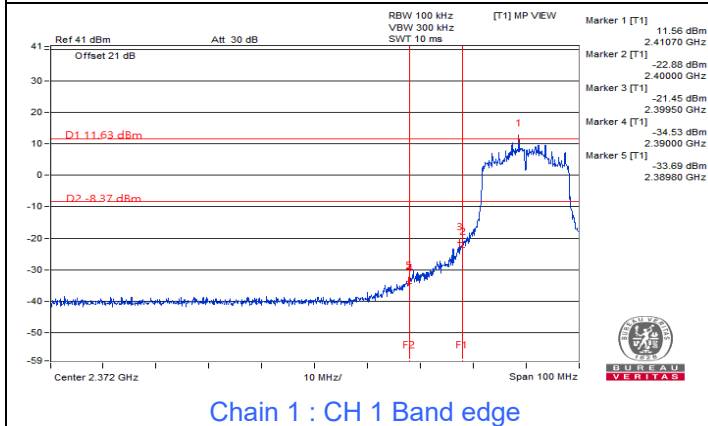
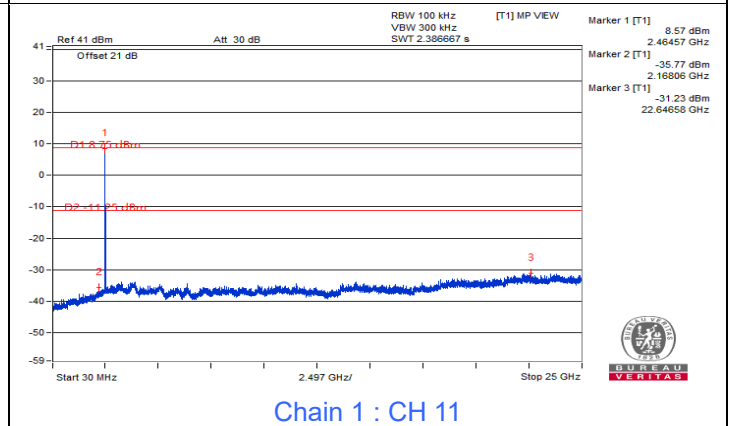
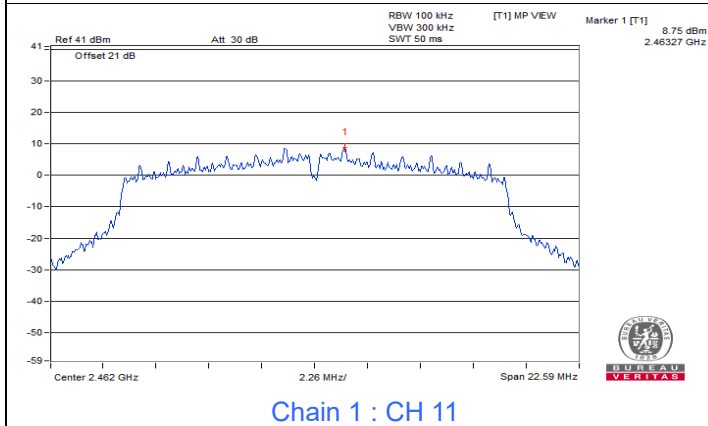
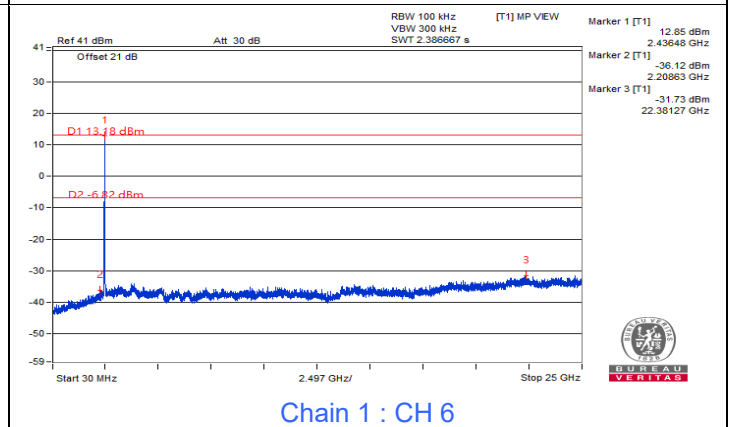
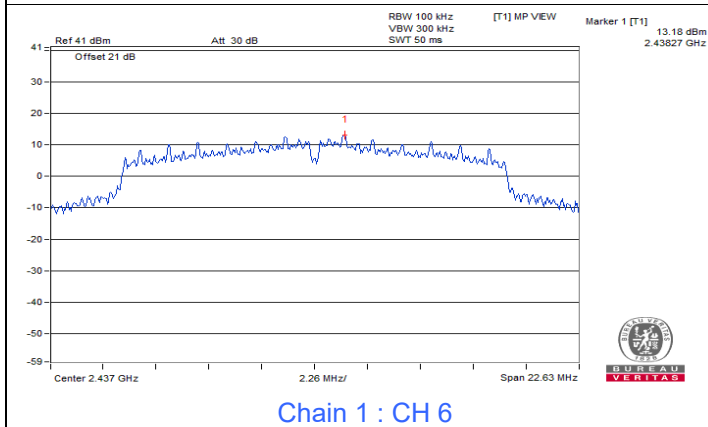
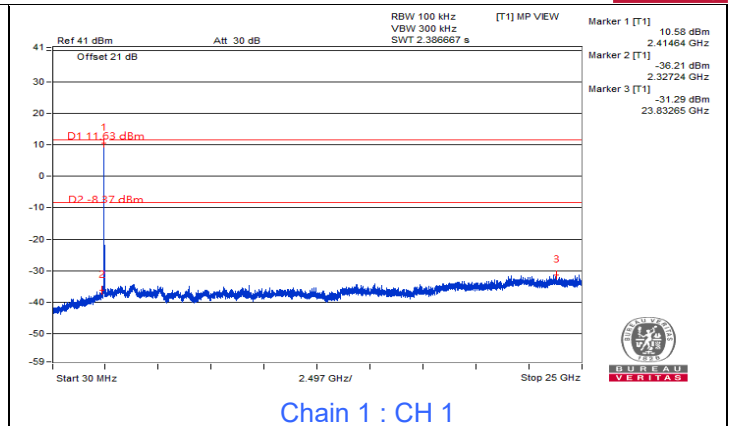
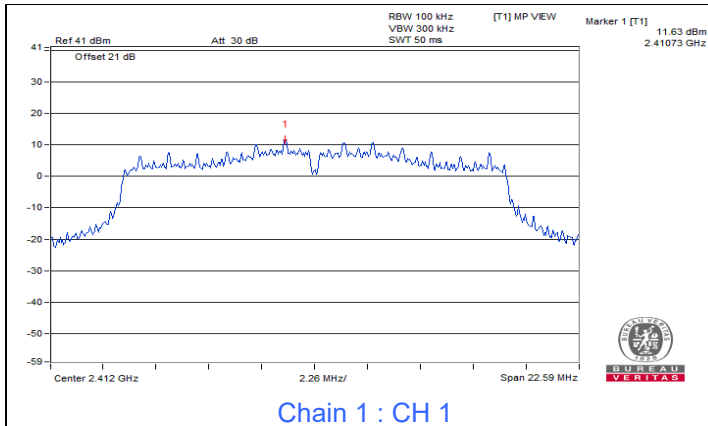
802.11b



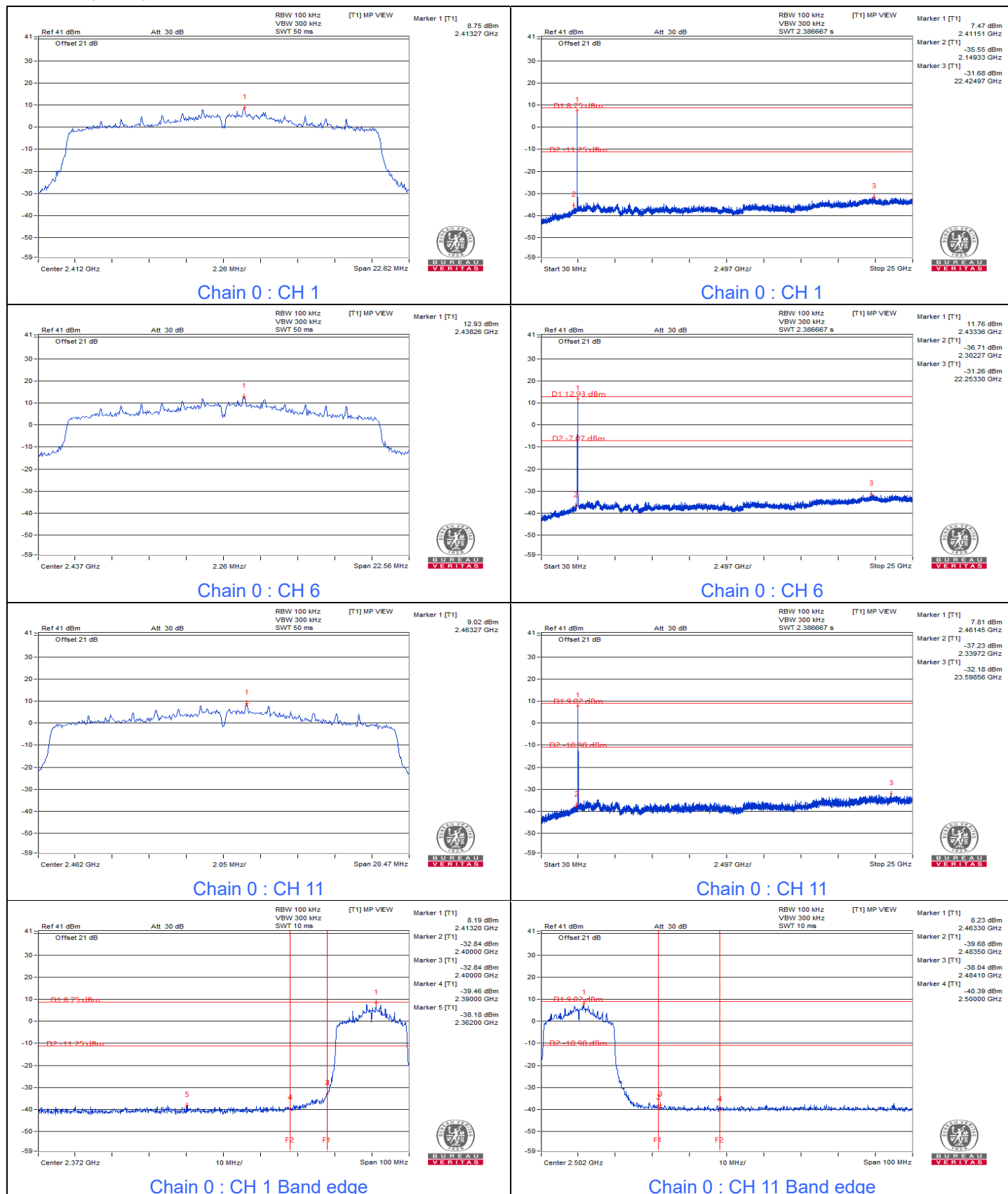


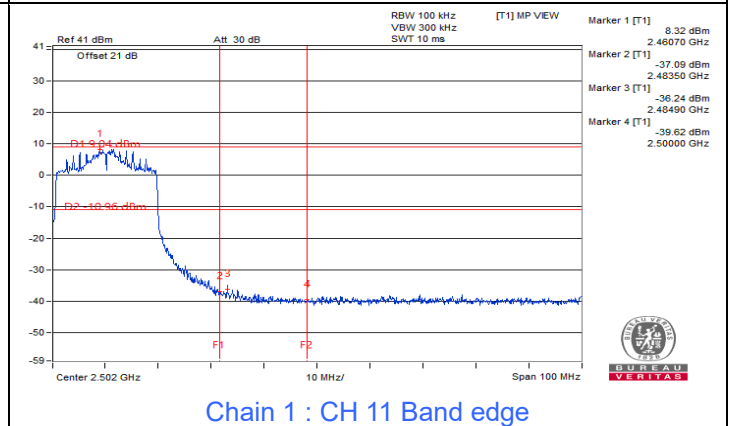
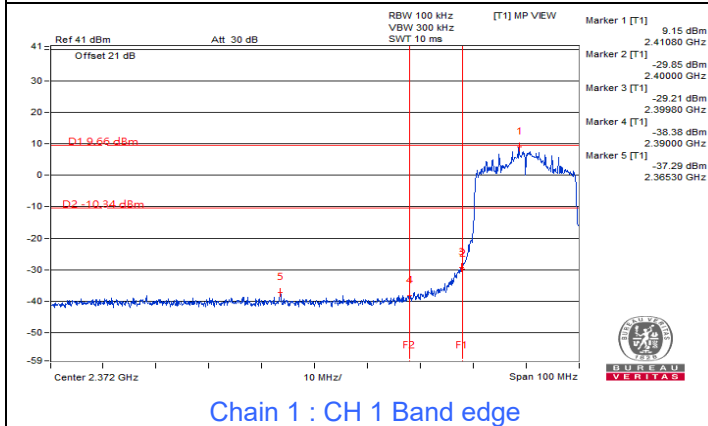
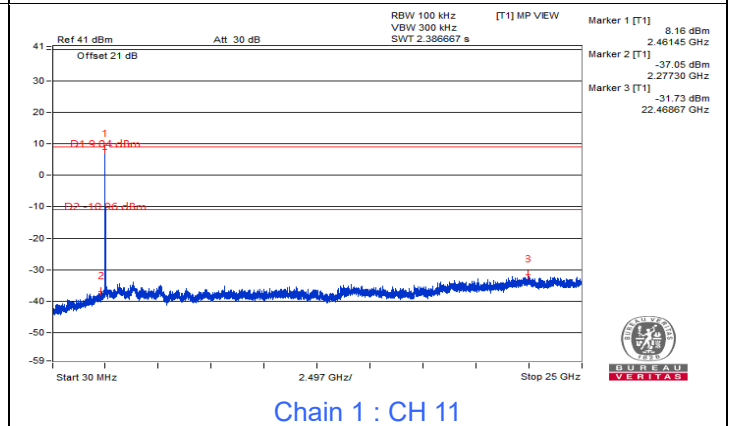
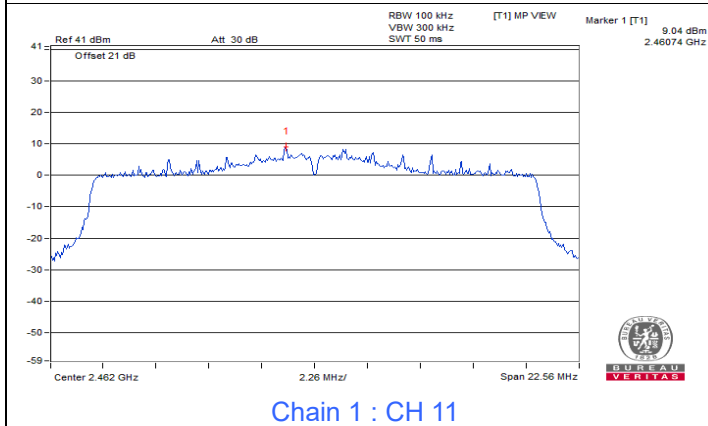
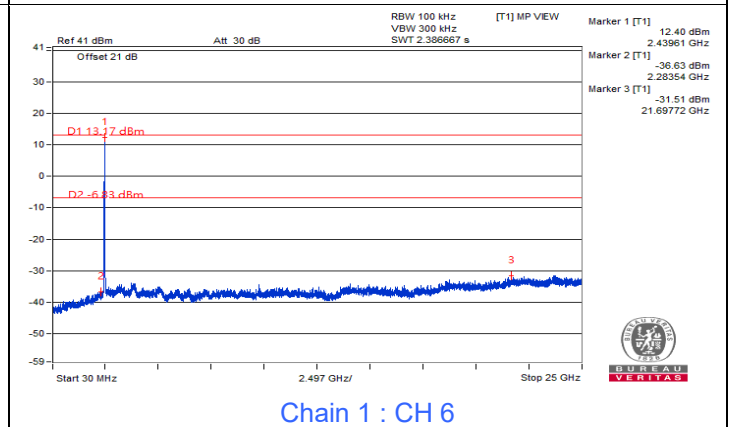
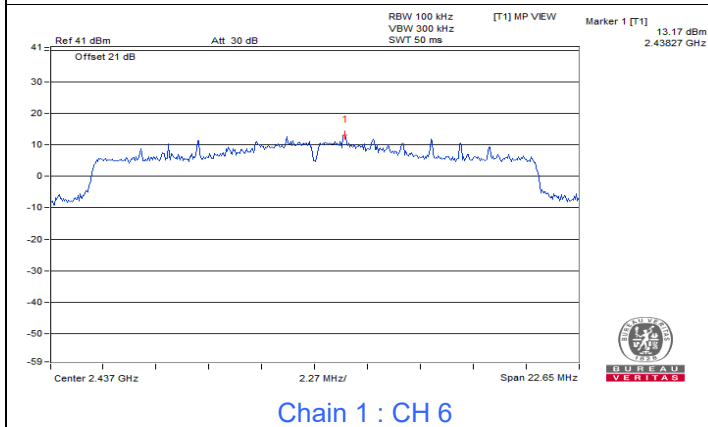
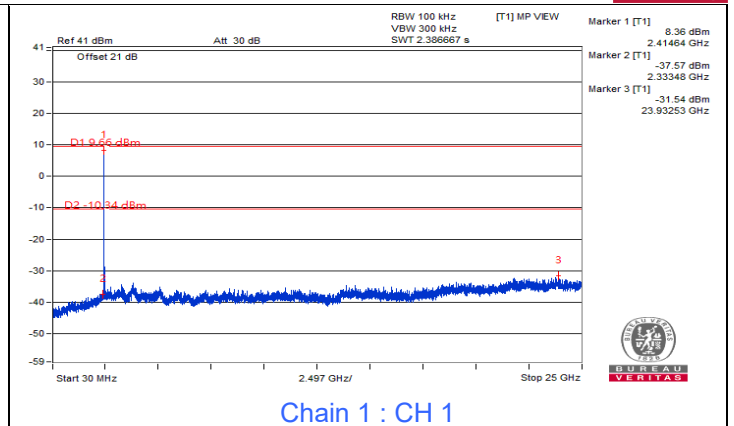
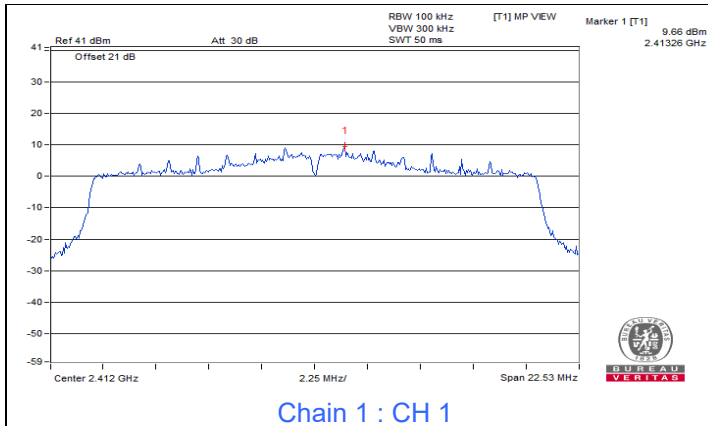
802.11g



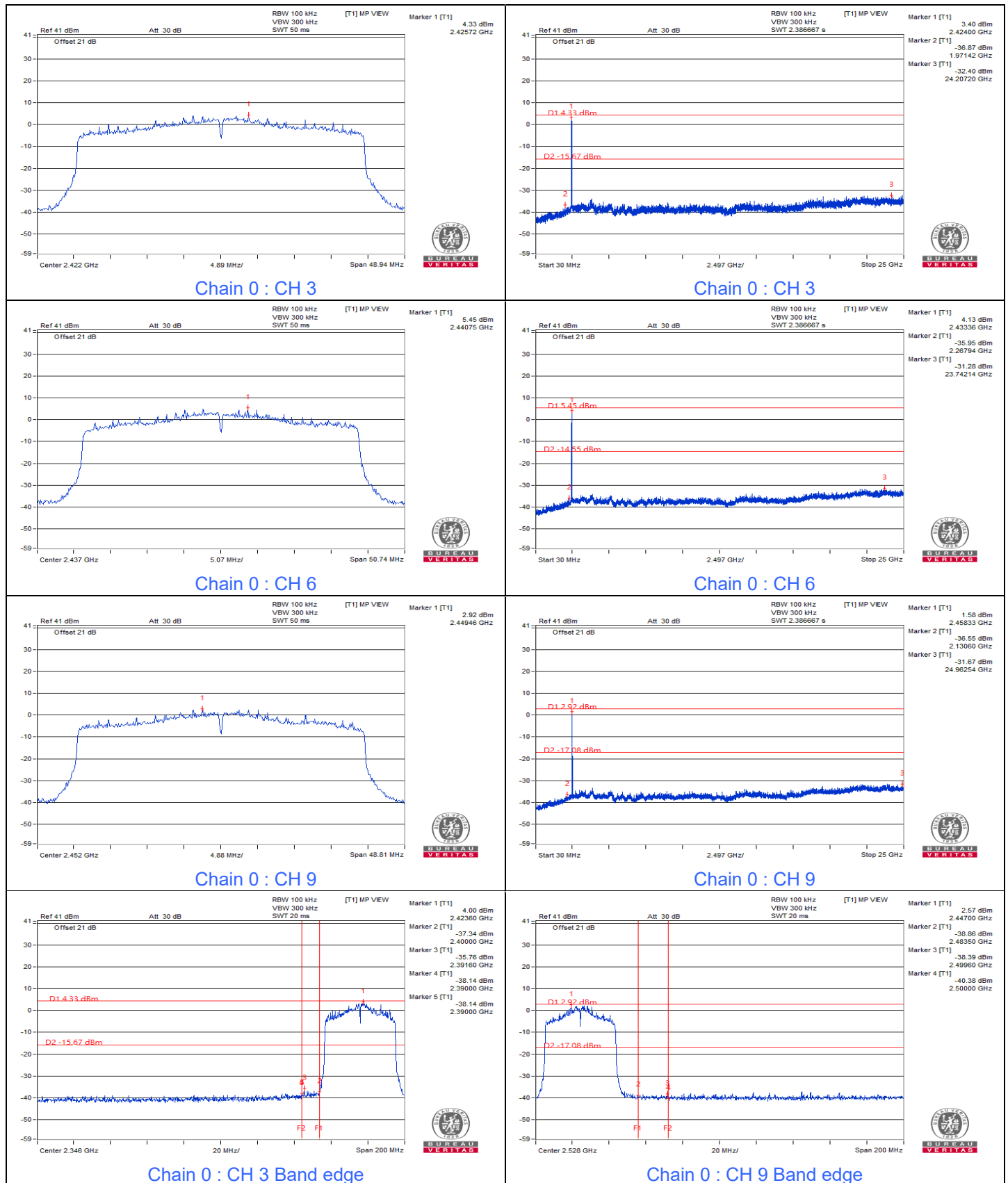


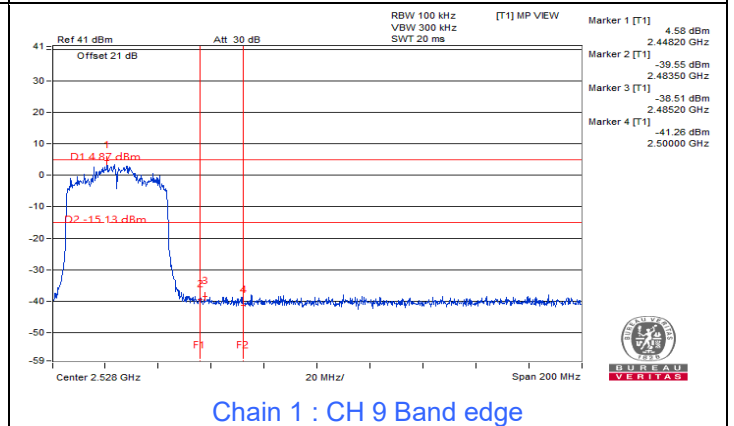
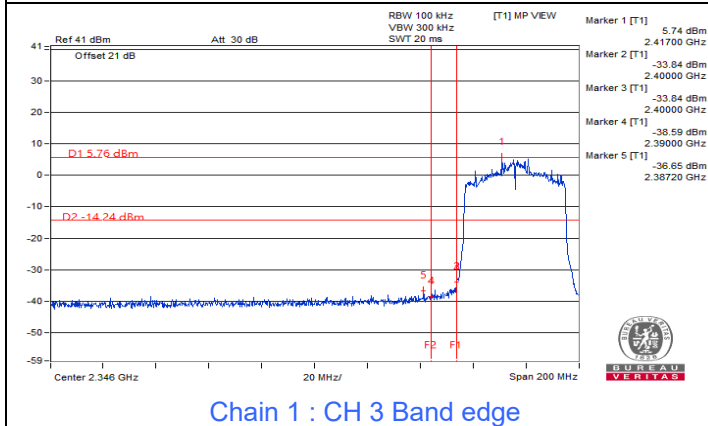
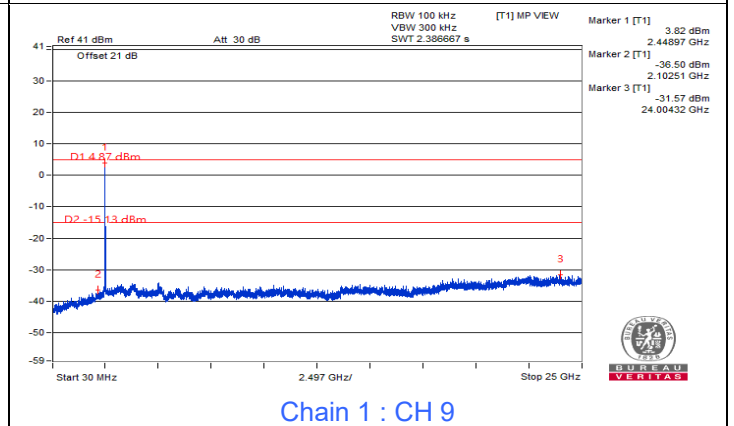
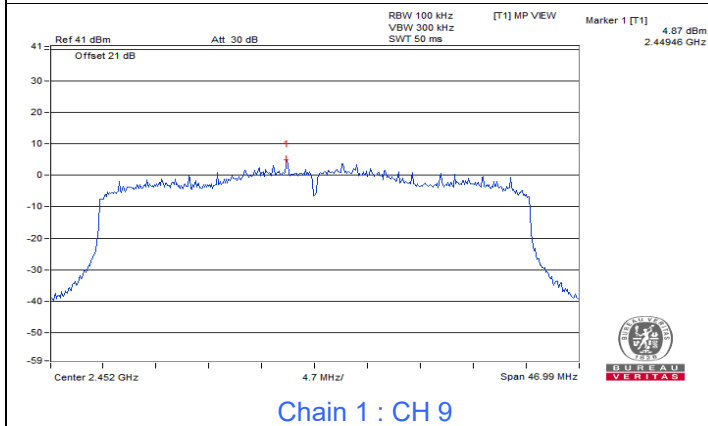
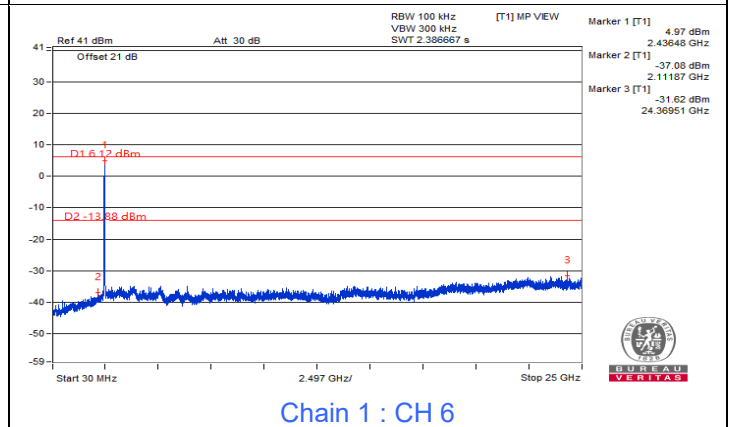
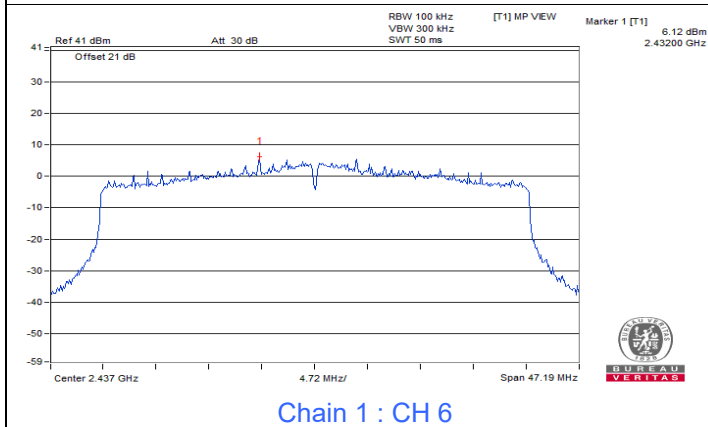
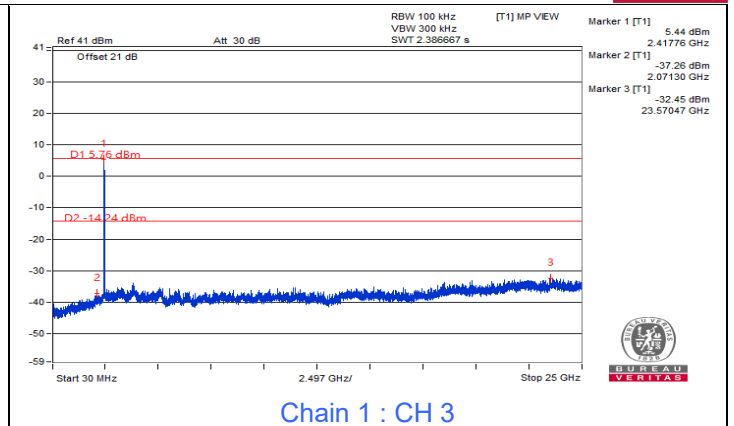
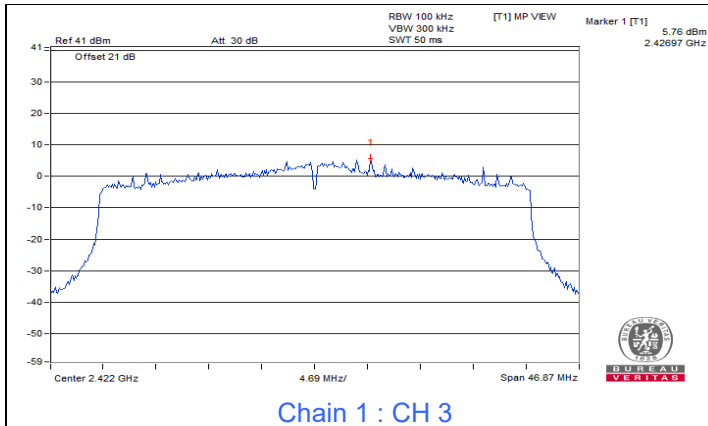
802.11ax (HE20)





802.11ax (HE40)





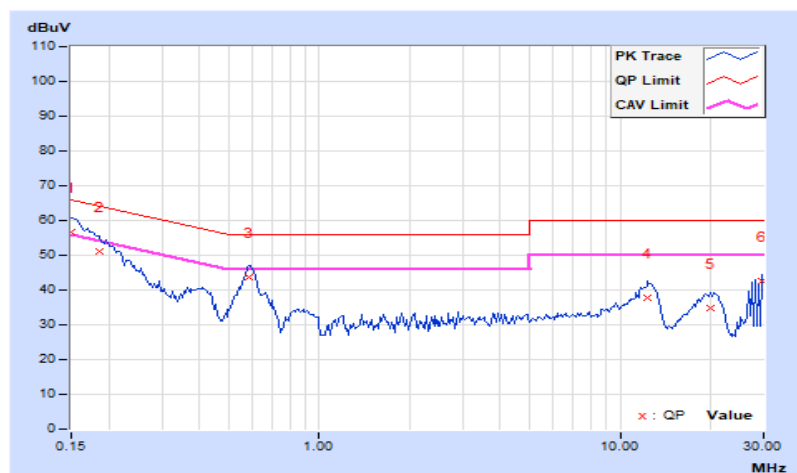
7.5 AC Power Conducted Emissions

RF Mode	802.11ax (HE20)	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	23 °C, 76 % RH
Tested By	Andy Ho		

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	0.15000	10.01	46.68	33.22	56.69	43.23	66.00	56.00	-9.31	-12.77
2	0.18516	10.02	41.20	28.01	51.22	38.03	64.25	54.25	-13.03	-16.22
3	0.58359	10.03	33.75	29.01	43.78	39.04	56.00	46.00	-12.22	-6.96
4	12.39063	10.65	27.30	23.05	37.95	33.70	60.00	50.00	-22.05	-16.30
5	19.94141	11.05	23.68	19.41	34.73	30.46	60.00	50.00	-25.27	-19.54
6	29.76172	11.59	31.03	23.28	42.62	34.87	60.00	50.00	-17.38	-15.13

Remarks:

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

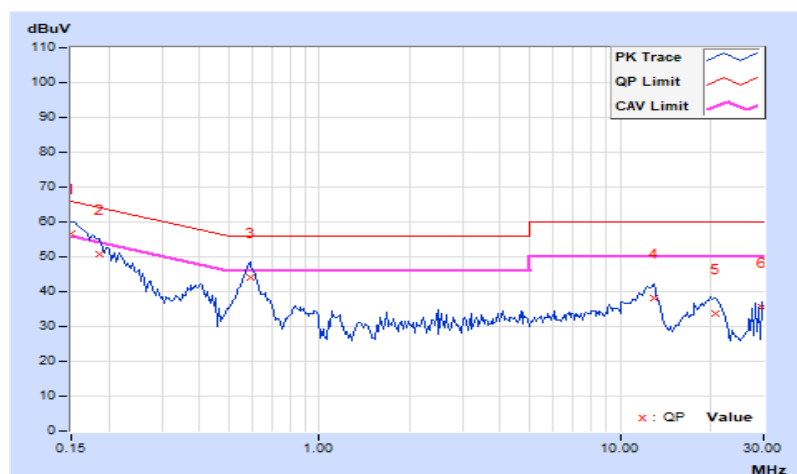


RF Mode	802.11ax (HE20)	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	23 °C, 76 % RH
Tested By	Andy Ho		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.00	46.72	33.50	56.72	43.50	66.00	56.00	-9.28	-12.50
2	0.18516	10.01	40.90	28.41	50.91	38.42	64.25	54.25	-13.34	-15.83
3	0.59141	10.02	34.11	29.13	44.13	39.15	56.00	46.00	-11.87	-6.85
4	12.90234	10.52	27.66	23.13	38.18	33.65	60.00	50.00	-21.82	-16.35
5	20.75781	10.80	23.07	18.75	33.87	29.55	60.00	50.00	-26.13	-20.45
6	29.76563	11.12	24.50	15.50	35.62	26.62	60.00	50.00	-24.38	-23.38

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



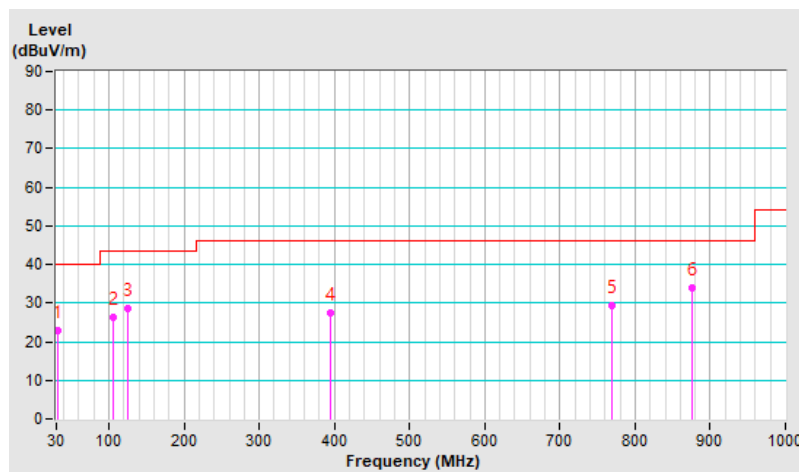
7.6 Unwanted Emissions below 1 GHz

RF Mode	802.11ax (HE20)	Channel	CH 6 : 2437 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 72 % RH
Tested By	Andy Ho		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.02	23.0 QP	40.0	-17.0	4.00 H	354	36.9	-13.9
2	104.69	26.4 QP	43.5	-17.1	2.00 H	242	42.5	-16.1
3	125.01	28.6 QP	43.5	-14.9	3.00 H	244	42.6	-14.0
4	394.21	27.4 QP	46.0	-18.6	1.00 H	289	37.0	-9.6
5	770.06	29.2 QP	46.0	-16.8	2.00 H	121	30.3	-1.1
6	875.04	33.8 QP	46.0	-12.2	1.00 H	231	34.3	-0.5

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.

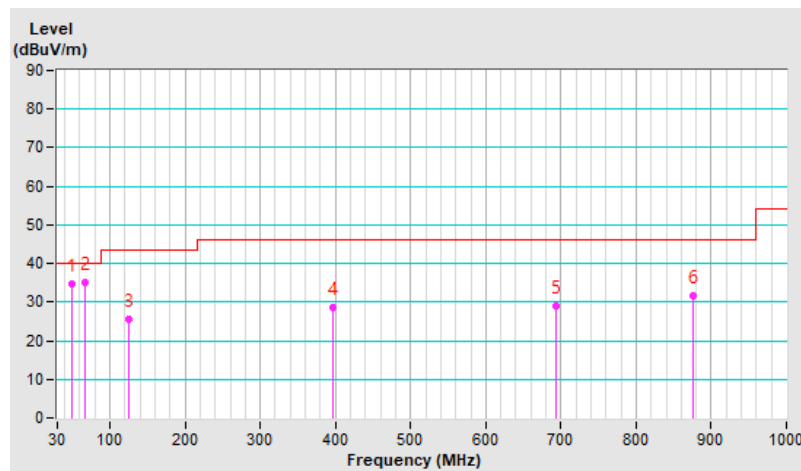


RF Mode	802.11ax (HE20)	Channel	CH 6 : 2437 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 72 % RH
Tested By	Andy Ho		

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	49.50	34.8 QP	40.0	-5.2	2.00 V	2	47.5	-12.7
2	66.62	35.1 QP	40.0	-4.9	1.00 V	16	49.5	-14.4
3	125.01	25.4 QP	43.5	-18.1	1.00 V	96	39.4	-14.0
4	395.86	28.6 QP	46.0	-17.4	2.00 V	2	38.1	-9.5
5	693.75	29.0 QP	46.0	-17.0	1.00 V	298	32.0	-3.0
6	875.04	31.5 QP	46.0	-14.5	2.00 V	335	32.0	-0.5

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.



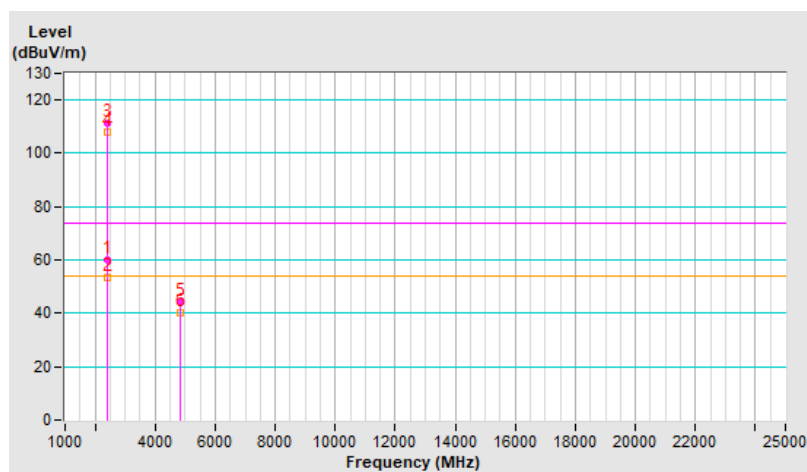
7.7 Unwanted Emissions above 1 GHz

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 (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	60.0 PK	74.0	-14.0	1.02 H	191	62.3	-2.3
2	2390.00	53.4 AV	54.0	-0.6	1.02 H	191	55.7	-2.3
3	*2412.00	111.2 PK			1.02 H	191	113.5	-2.3
4	*2412.00	108.1 AV			1.02 H	191	110.4	-2.3
5	4824.00	44.3 PK	74.0	-29.7	1.02 H	222	42.6	1.7
6	4824.00	40.3 AV	54.0	-13.7	1.02 H	222	38.6	1.7

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.

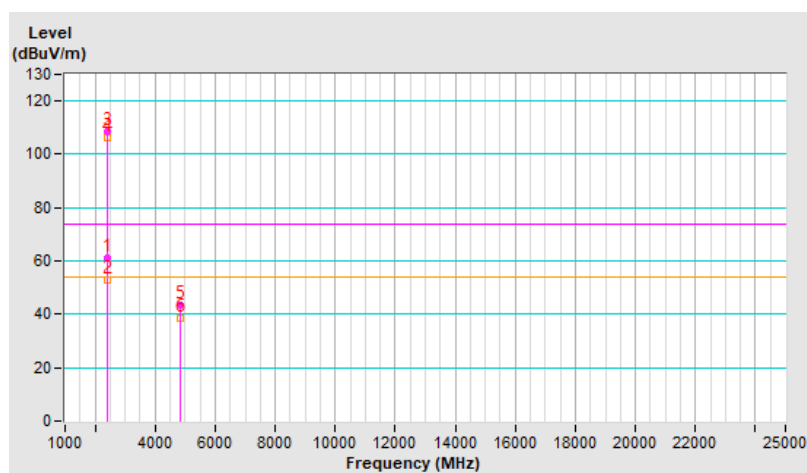


RF Mode	802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	61.3 PK	74.0	-12.7	3.85 V	211	63.6	-2.3
2	2390.00	53.1 AV	54.0	-0.9	3.85 V	211	55.4	-2.3
3	*2412.00	108.6 PK			3.85 V	211	110.9	-2.3
4	*2412.00	106.2 AV			3.85 V	211	108.5	-2.3
5	4824.00	43.3 PK	74.0	-30.7	1.55 V	182	41.6	1.7
6	4824.00	38.4 AV	54.0	-15.6	1.55 V	182	36.7	1.7

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.

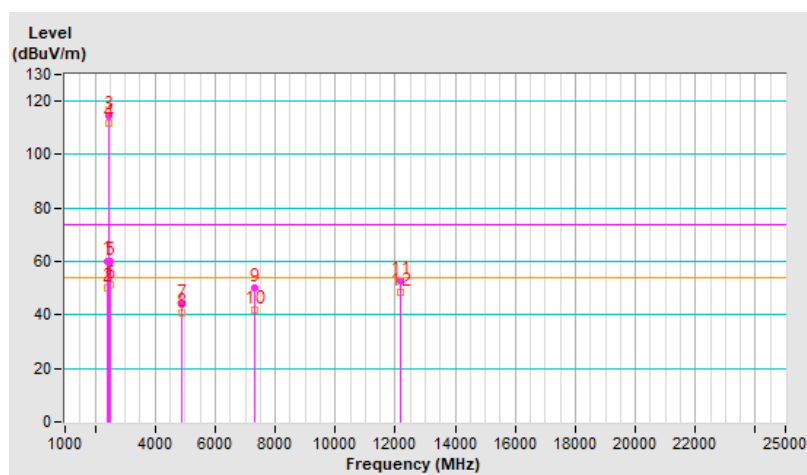


RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	60.3 PK	74.0	-13.7	1.50 H	347	62.6	-2.3
2	2390.00	50.1 AV	54.0	-3.9	1.50 H	347	52.4	-2.3
3	*2437.00	114.7 PK			1.50 H	347	117.0	-2.3
4	*2437.00	111.7 AV			1.50 H	347	114.0	-2.3
5	2483.50	60.2 PK	74.0	-13.8	1.50 H	347	62.7	-2.5
6	2483.50	51.4 AV	54.0	-2.6	1.50 H	347	53.9	-2.5
7	4874.00	44.2 PK	74.0	-29.8	1.00 H	234	42.4	1.8
8	4874.00	40.5 AV	54.0	-13.5	1.00 H	234	38.7	1.8
9	7311.00	50.0 PK	74.0	-24.0	1.10 H	248	42.4	7.6
10	7311.00	41.9 AV	54.0	-12.1	1.10 H	248	34.3	7.6
11	12185.00	52.9 PK	74.0	-21.1	1.34 H	245	41.4	11.5
12	12185.00	48.7 AV	54.0	-5.3	1.34 H	245	37.2	11.5

Remarks:

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

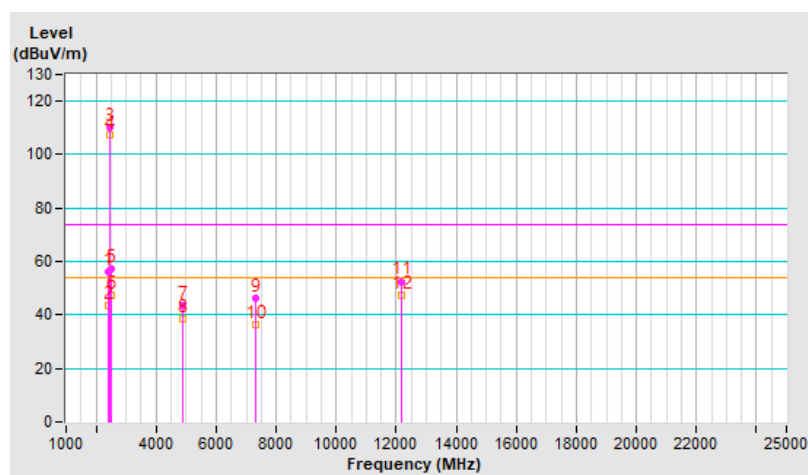


RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	56.0 PK	74.0	-18.0	3.72 V	225	58.3	-2.3
2	2390.00	43.6 AV	54.0	-10.4	3.72 V	225	45.9	-2.3
3	*2437.00	110.3 PK			3.72 V	225	112.6	-2.3
4	*2437.00	107.3 AV			3.72 V	225	109.6	-2.3
5	2483.50	57.2 PK	74.0	-16.8	3.72 V	225	59.7	-2.5
6	2483.50	47.6 AV	54.0	-6.4	3.72 V	225	50.1	-2.5
7	4874.00	43.5 PK	74.0	-30.5	1.50 V	186	41.7	1.8
8	4874.00	38.3 AV	54.0	-15.7	1.50 V	186	36.5	1.8
9	7311.00	46.1 PK	74.0	-27.9	1.50 V	79	38.5	7.6
10	7311.00	36.4 AV	54.0	-17.6	1.50 V	79	28.8	7.6
11	12185.00	52.6 PK	74.0	-21.4	1.24 V	244	41.1	11.5
12	12185.00	47.1 AV	54.0	-6.9	1.24 V	244	35.6	11.5

Remarks:

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

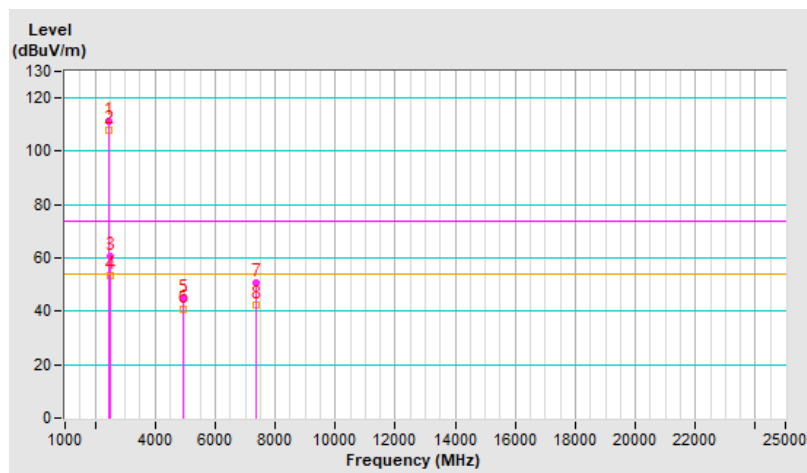


RF Mode	802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	111.0 PK			1.24 H	132	113.4	-2.4
2	*2462.00	107.9 AV			1.24 H	132	110.3	-2.4
3	2483.50	60.8 PK	74.0	-13.2	1.24 H	132	63.3	-2.5
4	2483.50	53.2 AV	54.0	-0.8	1.24 H	132	55.7	-2.5
5	4924.00	44.6 PK	74.0	-29.4	1.03 H	245	42.5	2.1
6	4924.00	40.9 AV	54.0	-13.1	1.03 H	245	38.8	2.1
7	7386.00	50.6 PK	74.0	-23.4	1.04 H	262	42.7	7.9
8	7386.00	42.4 AV	54.0	-11.6	1.04 H	262	34.5	7.9

Remarks:

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

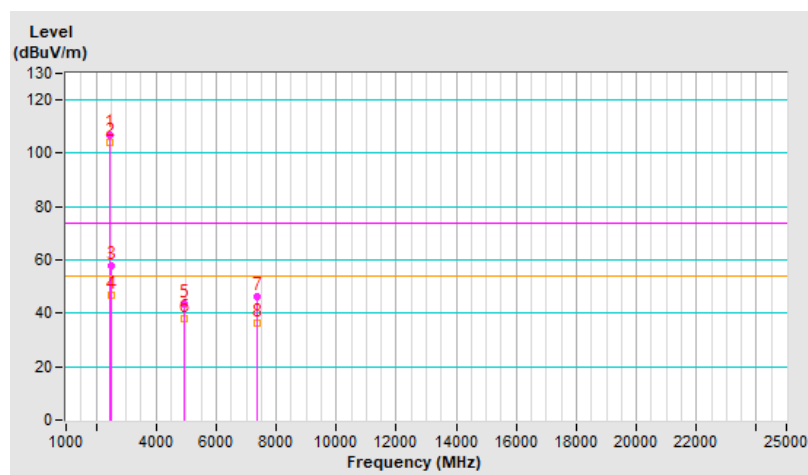


RF Mode	802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	107.1 PK			3.22 V	225	109.5	-2.4
2	*2462.00	104.3 AV			3.22 V	225	106.7	-2.4
3	2483.50	57.8 PK	74.0	-16.2	3.22 V	225	60.3	-2.5
4	2483.50	46.8 AV	54.0	-7.2	3.22 V	225	49.3	-2.5
5	4924.00	43.4 PK	74.0	-30.6	1.46 V	199	41.3	2.1
6	4924.00	38.0 AV	54.0	-16.0	1.46 V	199	35.9	2.1
7	7386.00	46.2 PK	74.0	-27.8	1.46 V	90	38.3	7.9
8	7386.00	36.4 AV	54.0	-17.6	1.46 V	90	28.5	7.9

Remarks:

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

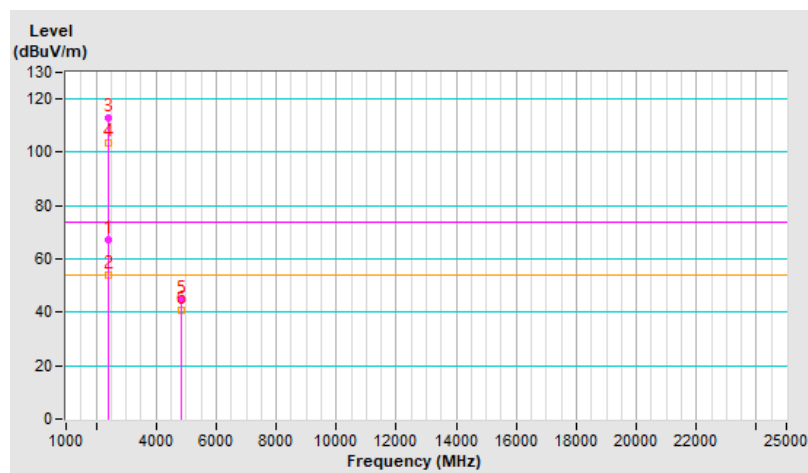


RF Mode	802.11g	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	67.1 PK	74.0	-6.9	1.04 H	319	69.4	-2.3
2	2390.00	53.9 AV	54.0	-0.1	1.04 H	319	56.2	-2.3
3	*2412.00	113.1 PK			1.04 H	319	115.4	-2.3
4	*2412.00	103.6 AV			1.04 H	319	105.9	-2.3
5	4824.00	44.6 PK	74.0	-29.4	1.02 H	256	42.9	1.7
6	4824.00	40.9 AV	54.0	-13.1	1.02 H	256	39.2	1.7

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.

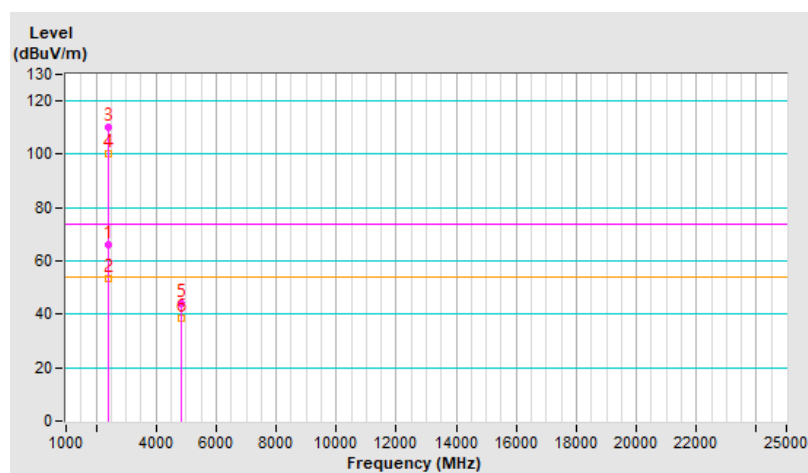


RF Mode	802.11g	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	66.3 PK	74.0	-7.7	3.81 V	235	68.6	-2.3
2	2390.00	53.6 AV	54.0	-0.4	3.81 V	235	55.9	-2.3
3	*2412.00	110.3 PK			3.81 V	235	112.6	-2.3
4	*2412.00	100.2 AV			3.81 V	235	102.5	-2.3
5	4824.00	43.8 PK	74.0	-30.2	1.44 V	201	42.1	1.7
6	4824.00	38.5 AV	54.0	-15.5	1.44 V	201	36.8	1.7

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.

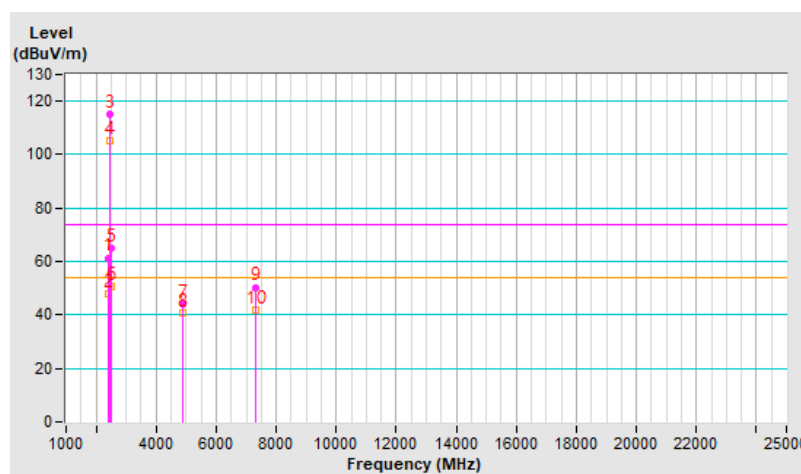


RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	61.4 PK	74.0	-12.6	1.00 H	189	63.7	-2.3
2	2390.00	48.1 AV	54.0	-5.9	1.00 H	189	50.4	-2.3
3	*2437.00	115.2 PK			1.00 H	189	117.5	-2.3
4	*2437.00	105.3 AV			1.00 H	189	107.6	-2.3
5	2483.50	65.1 PK	74.0	-8.9	1.00 H	189	67.6	-2.5
6	2483.50	50.8 AV	54.0	-3.2	1.00 H	189	53.3	-2.5
7	4874.00	44.3 PK	74.0	-29.7	1.01 H	242	42.5	1.8
8	4874.00	40.7 AV	54.0	-13.3	1.01 H	242	38.9	1.8
9	7311.00	50.4 PK	74.0	-23.6	1.08 H	237	42.8	7.6
10	7311.00	42.0 AV	54.0	-12.0	1.08 H	237	34.4	7.6

Remarks:

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

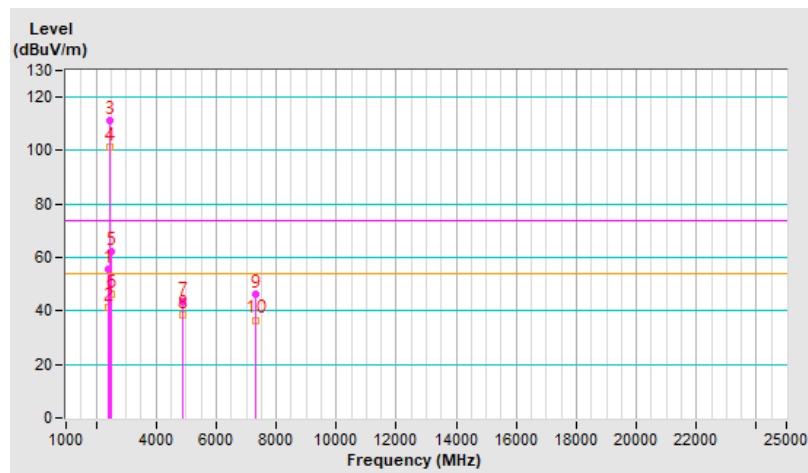


RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	55.7 PK	74.0	-18.3	3.81 V	244	58.0	-2.3
2	2390.00	41.5 AV	54.0	-12.5	3.81 V	244	43.8	-2.3
3	*2437.00	111.1 PK			3.81 V	244	113.4	-2.3
4	*2437.00	101.2 AV			3.81 V	244	103.5	-2.3
5	2483.50	62.3 PK	74.0	-11.7	3.81 V	244	64.8	-2.5
6	2483.50	46.2 AV	54.0	-7.8	3.81 V	244	48.7	-2.5
7	4874.00	43.5 PK	74.0	-30.5	1.47 V	201	41.7	1.8
8	4874.00	38.5 AV	54.0	-15.5	1.47 V	201	36.7	1.8
9	7311.00	46.3 PK	74.0	-27.7	1.54 V	77	38.7	7.6
10	7311.00	36.6 AV	54.0	-17.4	1.54 V	77	29.0	7.6

Remarks:

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

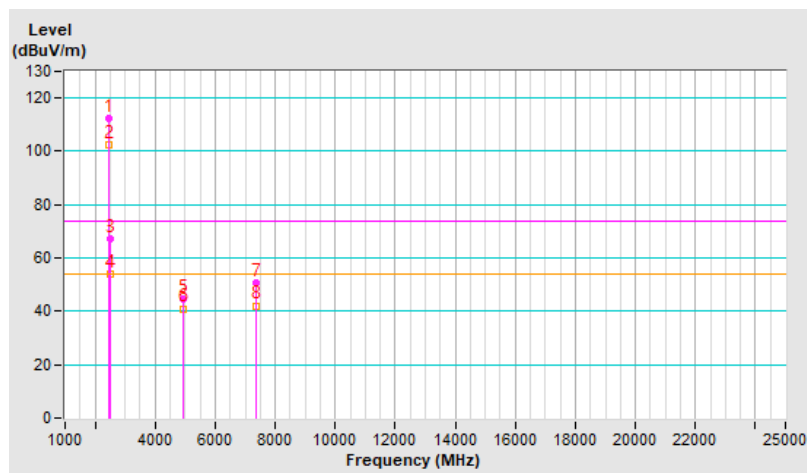


RF Mode	802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	112.4 PK			1.23 H	194	114.8	-2.4
2	*2462.00	102.3 AV			1.23 H	194	104.7	-2.4
3	2483.50	67.4 PK	74.0	-6.6	1.23 H	194	69.9	-2.5
4	2483.50	53.9 AV	54.0	-0.1	1.23 H	194	56.4	-2.5
5	4924.00	44.6 PK	74.0	-29.4	1.02 H	238	42.5	2.1
6	4924.00	41.0 AV	54.0	-13.0	1.02 H	238	38.9	2.1
7	7386.00	50.5 PK	74.0	-23.5	1.11 H	237	42.6	7.9
8	7386.00	42.1 AV	54.0	-11.9	1.11 H	237	34.2	7.9

Remarks:

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

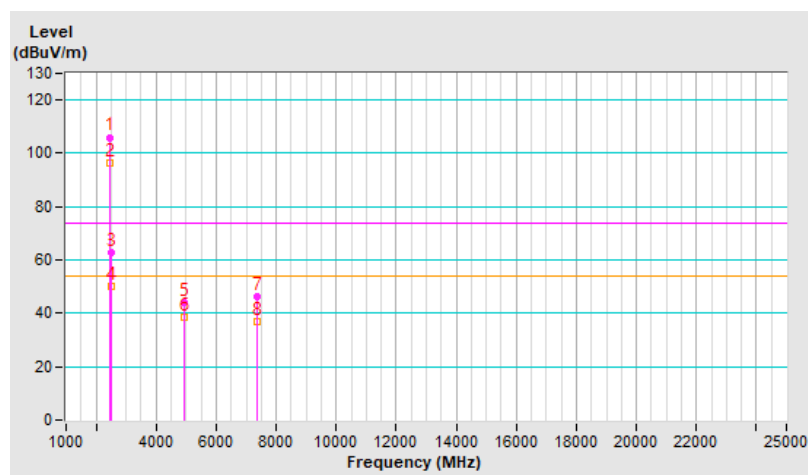


RF Mode	802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	106.0 PK			2.86 V	236	108.4	-2.4
2	*2462.00	96.3 AV			2.86 V	236	98.7	-2.4
3	2483.50	63.0 PK	74.0	-11.0	2.86 V	236	65.5	-2.5
4	2483.50	49.9 AV	54.0	-4.1	2.86 V	236	52.4	-2.5
5	4924.00	43.9 PK	74.0	-30.1	1.42 V	208	41.8	2.1
6	4924.00	38.7 AV	54.0	-15.3	1.42 V	208	36.6	2.1
7	7386.00	46.4 PK	74.0	-27.6	1.54 V	67	38.5	7.9
8	7386.00	36.9 AV	54.0	-17.1	1.54 V	67	29.0	7.9

Remarks:

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

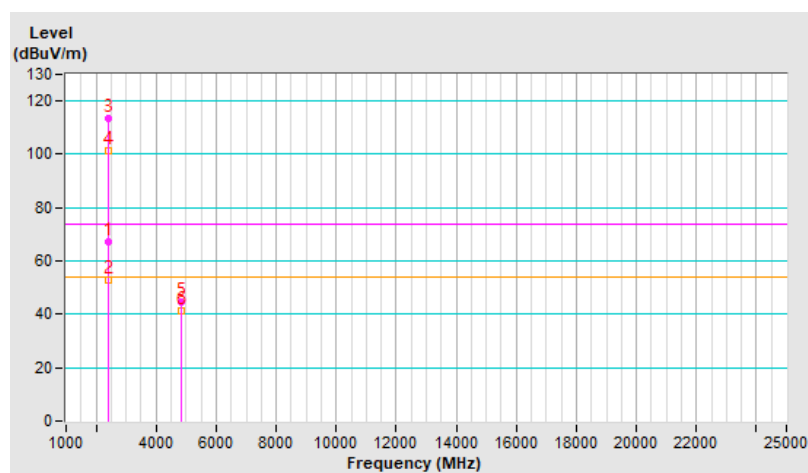


RF Mode	802.11ax (HE20)	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	67.2 PK	74.0	-6.8	1.55 H	337	69.5	-2.3
2	2390.00	53.1 AV	54.0	-0.9	1.55 H	337	55.4	-2.3
3	*2412.00	113.2 PK			1.55 H	337	115.5	-2.3
4	*2412.00	101.2 AV			1.55 H	337	103.5	-2.3
5	4824.00	44.7 PK	74.0	-29.3	1.00 H	242	43.0	1.7
6	4824.00	41.1 AV	54.0	-12.9	1.00 H	242	39.4	1.7

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.

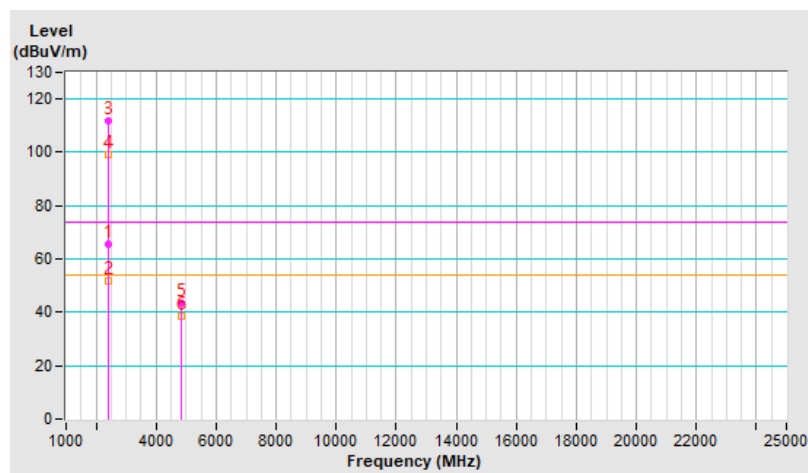


RF Mode	802.11ax (HE20)	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	65.7 PK	74.0	-8.3	3.82 V	247	68.0	-2.3
2	2390.00	51.7 AV	54.0	-2.3	3.82 V	247	54.0	-2.3
3	*2412.00	111.6 PK			3.82 V	247	113.9	-2.3
4	*2412.00	99.1 AV			3.82 V	247	101.4	-2.3
5	4824.00	43.7 PK	74.0	-30.3	1.58 V	224	42.0	1.7
6	4824.00	38.4 AV	54.0	-15.6	1.58 V	224	36.7	1.7

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.

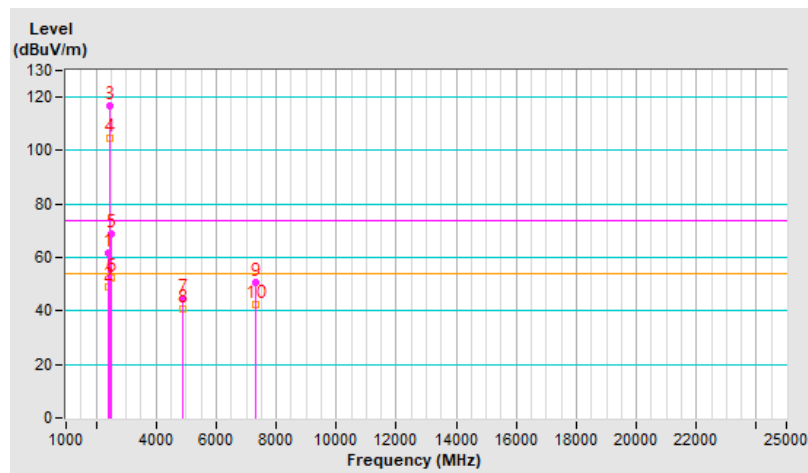


RF Mode	802.11ax (HE20)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	61.6 PK	74.0	-12.4	1.50 H	190	63.9	-2.3
2	2390.00	49.1 AV	54.0	-4.9	1.50 H	190	51.4	-2.3
3	*2437.00	116.9 PK			1.50 H	190	119.2	-2.3
4	*2437.00	104.6 AV			1.50 H	190	106.9	-2.3
5	2483.50	68.7 PK	74.0	-5.3	1.50 H	190	71.2	-2.5
6	2483.50	52.1 AV	54.0	-1.9	1.50 H	190	54.6	-2.5
7	4874.00	44.4 PK	74.0	-29.6	1.00 H	248	42.6	1.8
8	4874.00	40.7 AV	54.0	-13.3	1.00 H	248	38.9	1.8
9	7311.00	50.7 PK	74.0	-23.3	1.05 H	232	43.1	7.6
10	7311.00	42.5 AV	54.0	-11.5	1.05 H	232	34.9	7.6

Remarks:

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

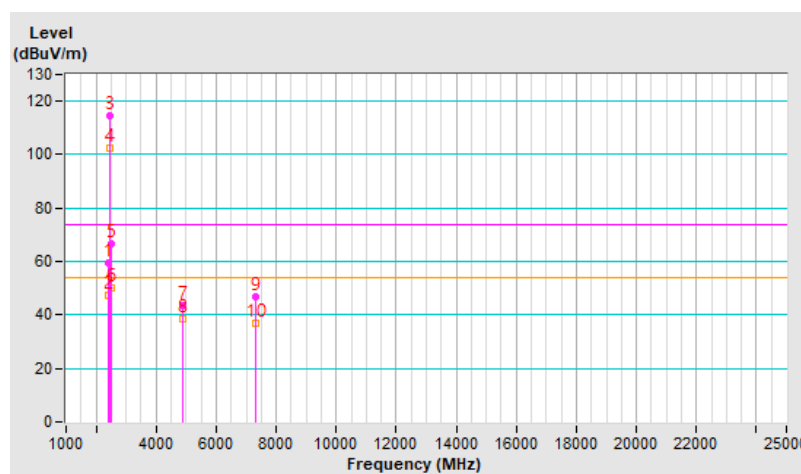


RF Mode	802.11ax (HE20)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	59.6 PK	74.0	-14.4	3.67 V	220	61.9	-2.3
2	2390.00	47.4 AV	54.0	-6.6	3.67 V	220	49.7	-2.3
3	*2437.00	114.5 PK			3.67 V	220	116.8	-2.3
4	*2437.00	102.5 AV			3.67 V	220	104.8	-2.3
5	2483.50	66.5 PK	74.0	-7.5	3.67 V	220	69.0	-2.5
6	2483.50	50.2 AV	54.0	-3.8	3.67 V	220	52.7	-2.5
7	4874.00	43.4 PK	74.0	-30.6	1.53 V	212	41.6	1.8
8	4874.00	38.4 AV	54.0	-15.6	1.53 V	212	36.6	1.8
9	7311.00	46.7 PK	74.0	-27.3	1.53 V	79	39.1	7.6
10	7311.00	36.9 AV	54.0	-17.1	1.53 V	79	29.3	7.6

Remarks:

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

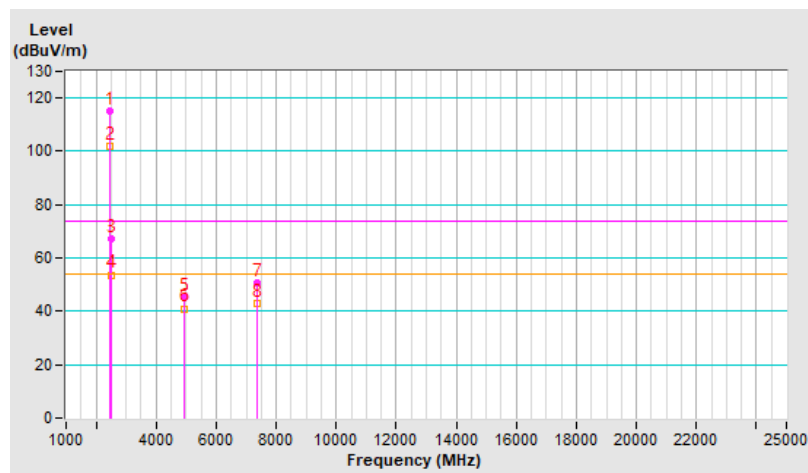


RF Mode	802.11ax (HE20)	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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			1.48 H	192	117.5	-2.4
2	*2462.00	101.7 AV			1.48 H	192	104.1	-2.4
3	2483.50	67.2 PK	74.0	-6.8	1.48 H	192	69.7	-2.5
4	2483.50	53.7 AV	54.0	-0.3	1.48 H	192	56.2	-2.5
5	4924.00	44.9 PK	74.0	-29.1	1.02 H	245	42.8	2.1
6	4924.00	41.0 AV	54.0	-13.0	1.02 H	245	38.9	2.1
7	7386.00	50.7 PK	74.0	-23.3	1.05 H	233	42.8	7.9
8	7386.00	42.7 AV	54.0	-11.3	1.05 H	233	34.8	7.9

Remarks:

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

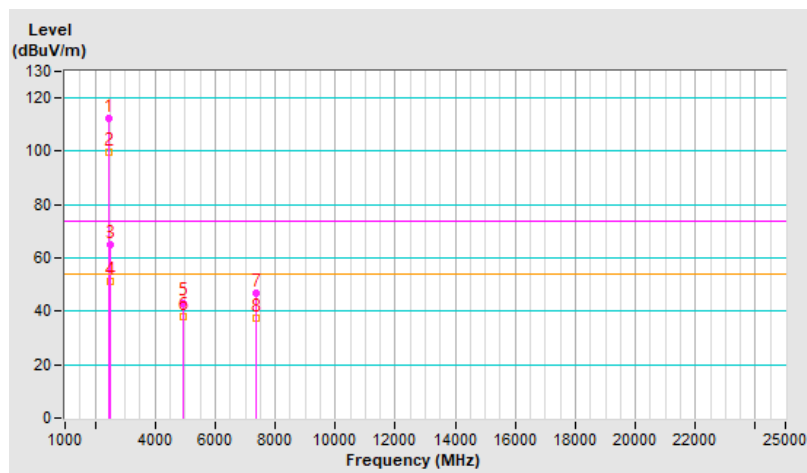


RF Mode	802.11ax (HE20)	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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			3.66 V	229	115.0	-2.4
2	*2462.00	99.9 AV			3.66 V	229	102.3	-2.4
3	2483.50	65.0 PK	74.0	-9.0	3.66 V	229	67.5	-2.5
4	2483.50	51.2 AV	54.0	-2.8	3.66 V	229	53.7	-2.5
5	4924.00	43.2 PK	74.0	-30.8	1.48 V	202	41.1	2.1
6	4924.00	38.2 AV	54.0	-15.8	1.48 V	202	36.1	2.1
7	7386.00	47.0 PK	74.0	-27.0	1.52 V	93	39.1	7.9
8	7386.00	37.4 AV	54.0	-16.6	1.52 V	93	29.5	7.9

Remarks:

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

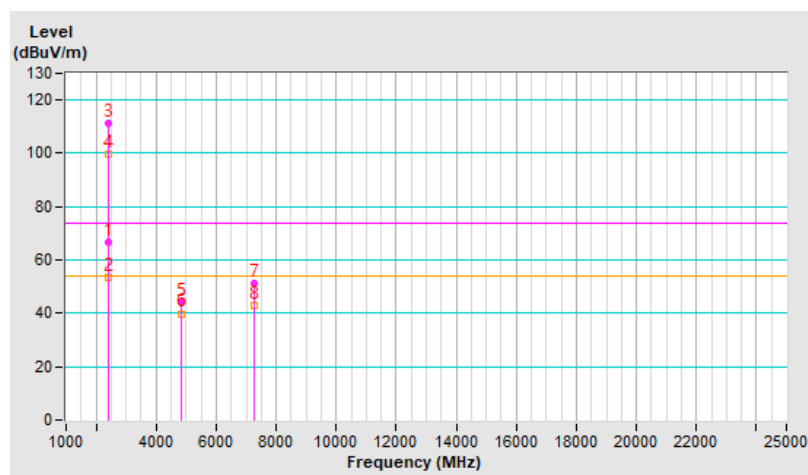


RF Mode	802.11ax (HE40)	Channel	CH 3 : 2422 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	66.8 PK	74.0	-7.2	1.20 H	173	69.1	-2.3
2	2390.00	53.3 AV	54.0	-0.7	1.20 H	173	55.6	-2.3
3	*2422.00	111.4 PK			1.20 H	173	113.6	-2.2
4	*2422.00	99.5 AV			1.20 H	173	101.7	-2.2
5	4844.00	44.2 PK	74.0	-29.8	1.03 H	246	42.4	1.8
6	4844.00	39.9 AV	54.0	-14.1	1.03 H	246	38.1	1.8
7	7266.00	51.0 PK	74.0	-23.0	1.01 H	228	43.2	7.8
8	7266.00	42.8 AV	54.0	-11.2	1.01 H	228	35.0	7.8

Remarks:

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

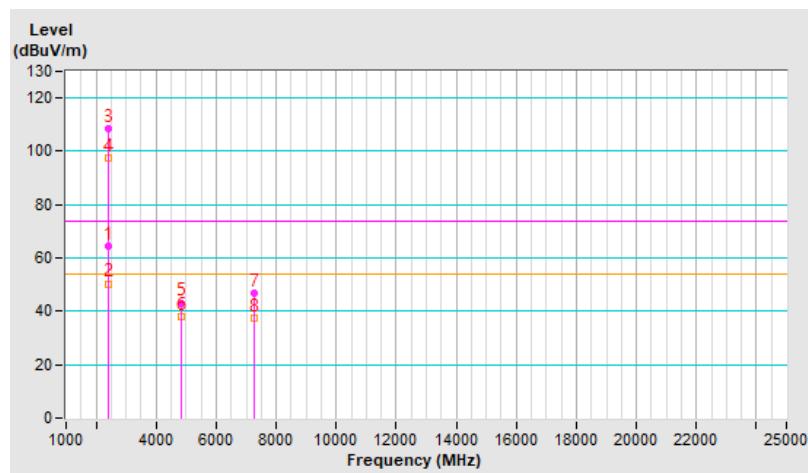


RF Mode	802.11ax (HE40)	Channel	CH 3 : 2422 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	64.6 PK	74.0	-9.4	3.74 V	226	66.9	-2.3
2	2390.00	50.4 AV	54.0	-3.6	3.74 V	226	52.7	-2.3
3	*2422.00	108.7 PK			3.74 V	226	110.9	-2.2
4	*2422.00	97.3 AV			3.74 V	226	99.5	-2.2
5	4844.00	43.2 PK	74.0	-30.8	1.45 V	195	41.4	1.8
6	4844.00	37.8 AV	54.0	-16.2	1.45 V	195	36.0	1.8
7	7266.00	47.0 PK	74.0	-27.0	1.54 V	76	39.2	7.8
8	7266.00	37.2 AV	54.0	-16.8	1.54 V	76	29.4	7.8

Remarks:

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

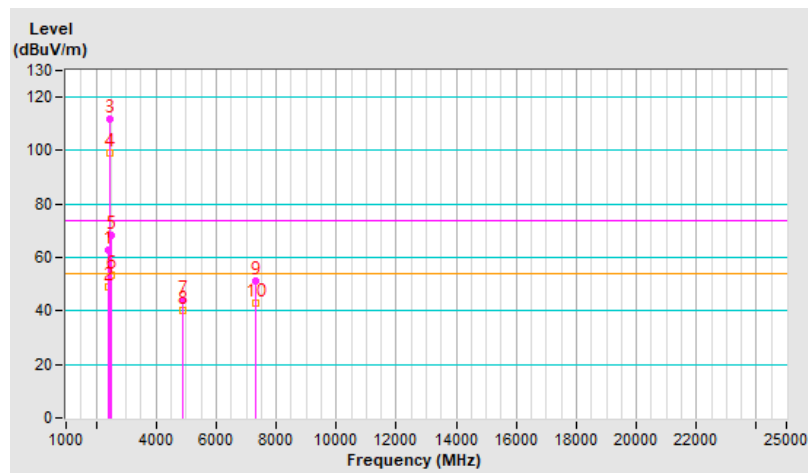


RF Mode	802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	62.6 PK	74.0	-11.4	1.50 H	189	64.9	-2.3
2	2390.00	49.1 AV	54.0	-4.9	1.50 H	189	51.4	-2.3
3	*2437.00	111.6 PK			1.50 H	189	113.9	-2.3
4	*2437.00	99.1 AV			1.50 H	189	101.4	-2.3
5	2483.50	68.2 PK	74.0	-5.8	1.50 H	189	70.7	-2.5
6	2483.50	53.4 AV	54.0	-0.6	1.50 H	189	55.9	-2.5
7	4874.00	44.2 PK	74.0	-29.8	1.04 H	254	42.4	1.8
8	4874.00	40.2 AV	54.0	-13.8	1.04 H	254	38.4	1.8
9	7311.00	51.0 PK	74.0	-23.0	1.07 H	232	43.4	7.6
10	7311.00	43.0 AV	54.0	-11.0	1.07 H	232	35.4	7.6

Remarks:

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

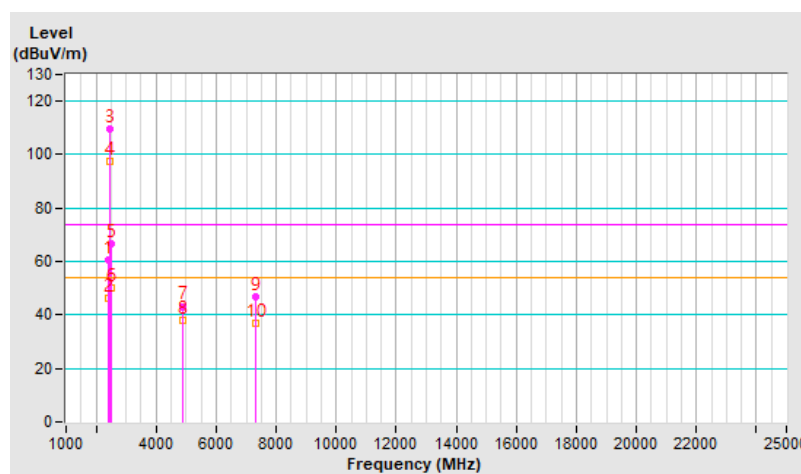


RF Mode	802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	60.4 PK	74.0	-13.6	3.72 V	237	62.7	-2.3
2	2390.00	46.5 AV	54.0	-7.5	3.72 V	237	48.8	-2.3
3	*2437.00	109.5 PK			3.72 V	237	111.8	-2.3
4	*2437.00	97.3 AV			3.72 V	237	99.6	-2.3
5	2483.50	66.4 PK	74.0	-7.6	3.72 V	237	68.9	-2.5
6	2483.50	50.2 AV	54.0	-3.8	3.72 V	237	52.7	-2.5
7	4874.00	43.2 PK	74.0	-30.8	1.50 V	209	41.4	1.8
8	4874.00	38.1 AV	54.0	-15.9	1.50 V	209	36.3	1.8
9	7311.00	46.8 PK	74.0	-27.2	1.51 V	70	39.2	7.6
10	7311.00	36.9 AV	54.0	-17.1	1.51 V	70	29.3	7.6

Remarks:

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

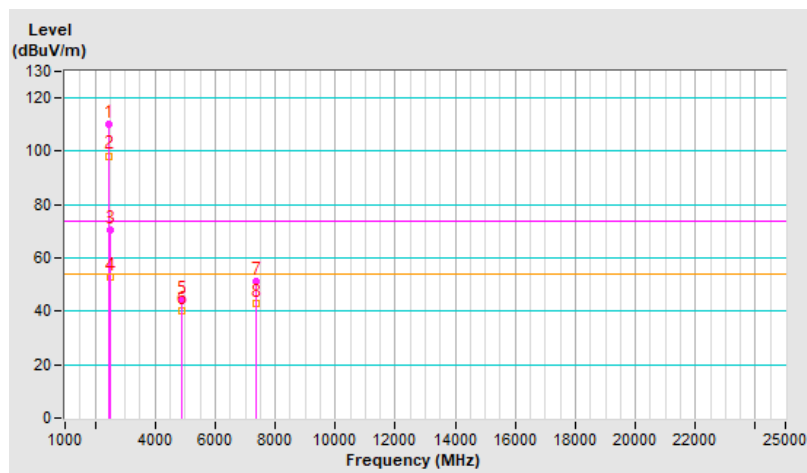


RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	110.4 PK			1.21 H	192	112.8	-2.4
2	*2452.00	98.3 AV			1.21 H	192	100.7	-2.4
3	2483.50	70.4 PK	74.0	-3.6	1.21 H	192	72.9	-2.5
4	2483.50	53.1 AV	54.0	-0.9	1.21 H	192	55.6	-2.5
5	4904.00	44.2 PK	74.0	-29.8	1.05 H	239	42.2	2.0
6	4904.00	40.0 AV	54.0	-14.0	1.05 H	239	38.0	2.0
7	7356.00	51.2 PK	74.0	-22.8	1.02 H	242	43.5	7.7
8	7356.00	43.0 AV	54.0	-11.0	1.02 H	242	35.3	7.7

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.

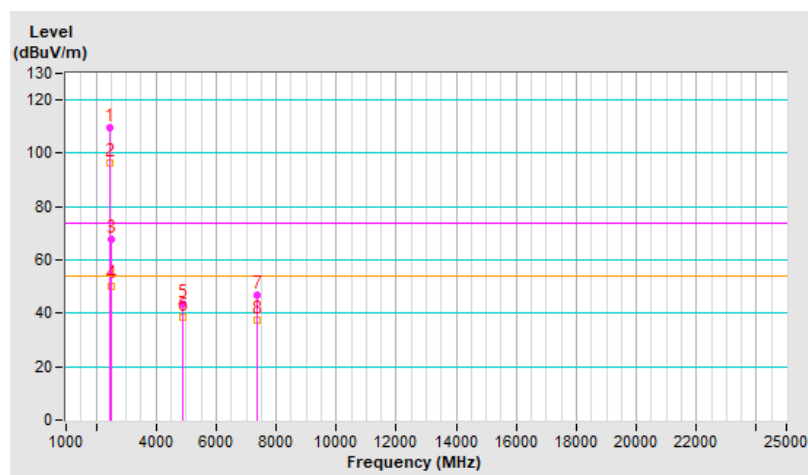


RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 76 % RH
Tested By	Andy Ho		

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	109.4 PK			3.67 V	228	111.8	-2.4
2	*2452.00	96.6 AV			3.67 V	228	99.0	-2.4
3	2483.50	67.8 PK	74.0	-6.2	3.67 V	228	70.3	-2.5
4	2483.50	50.4 AV	54.0	-3.6	3.67 V	228	52.9	-2.5
5	4904.00	43.5 PK	74.0	-30.5	1.53 V	219	41.5	2.0
6	4904.00	38.3 AV	54.0	-15.7	1.53 V	219	36.3	2.0
7	7356.00	47.0 PK	74.0	-27.0	1.56 V	73	39.3	7.7
8	7356.00	37.3 AV	54.0	-16.7	1.56 V	73	29.6	7.7

Remarks:

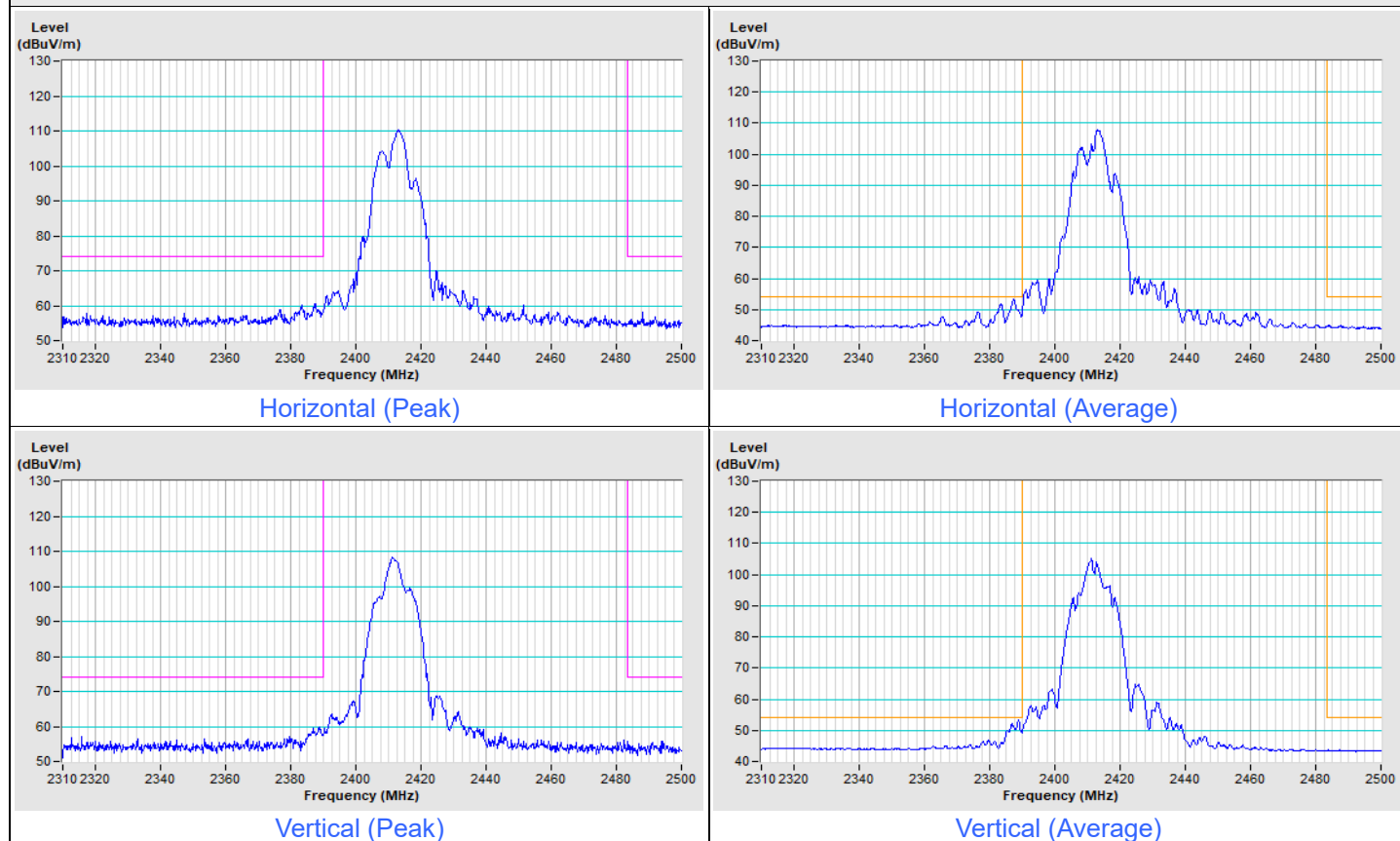
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency,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

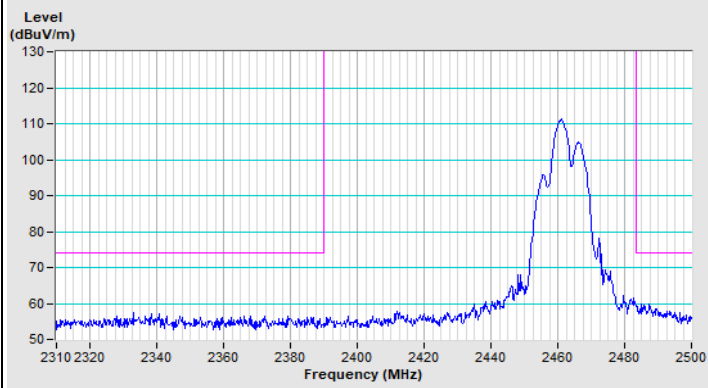


Plot of Band Edge

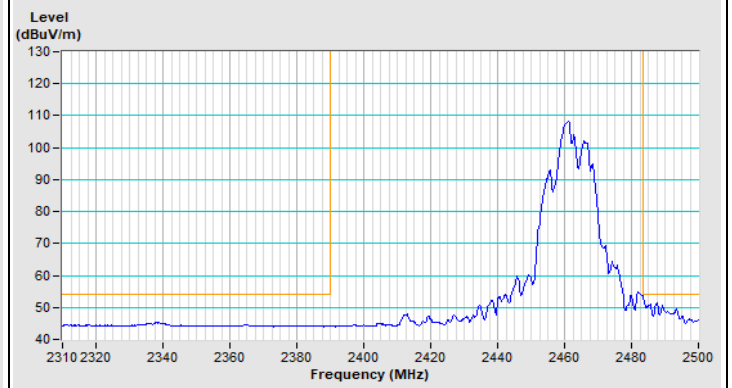
Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
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802.11b Channel 1

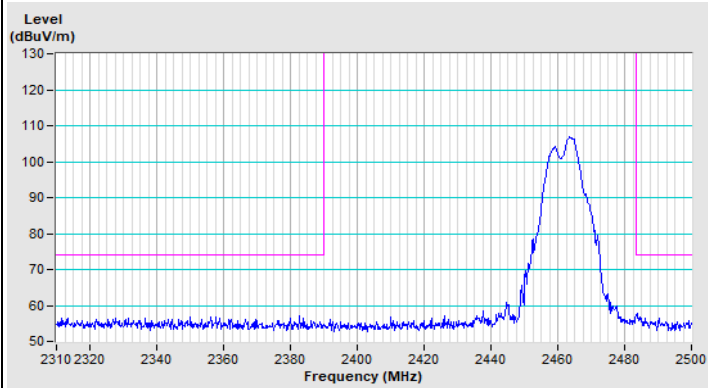


802.11b Channel 11

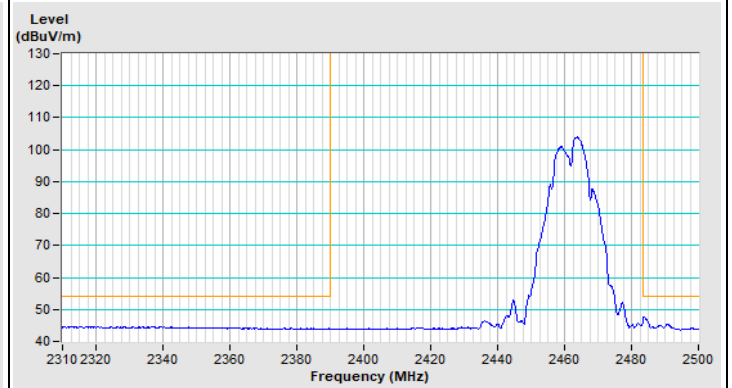
Horizontal (Peak)



Horizontal (Average)



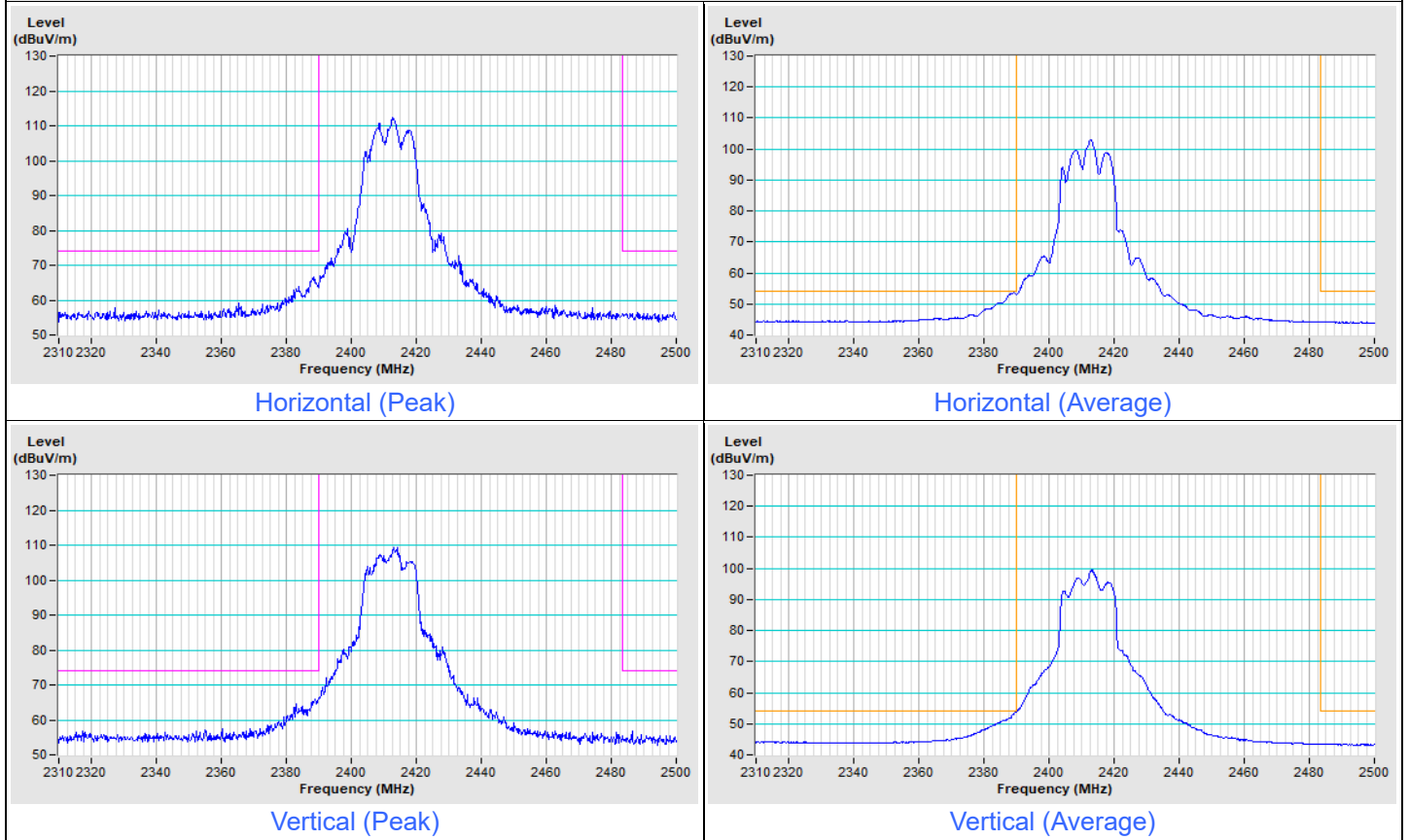
Vertical (Peak)



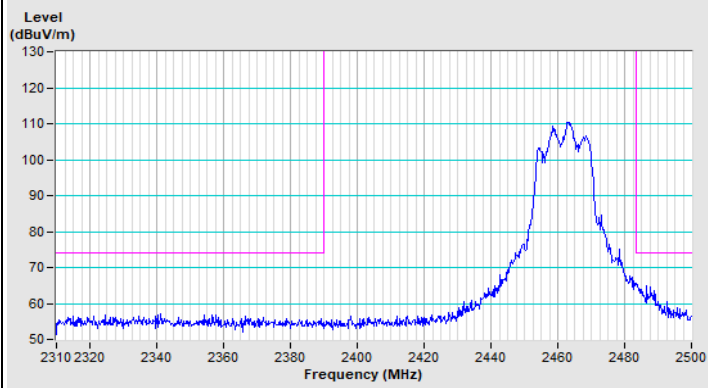
Vertical (Average)

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=10 Hz, DET=Peak
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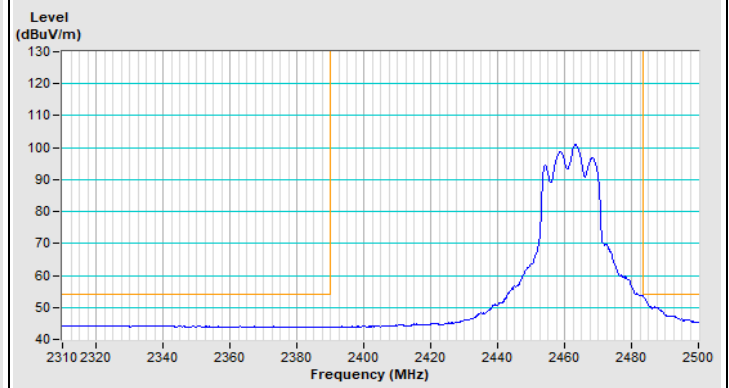
802.11g Channel 1



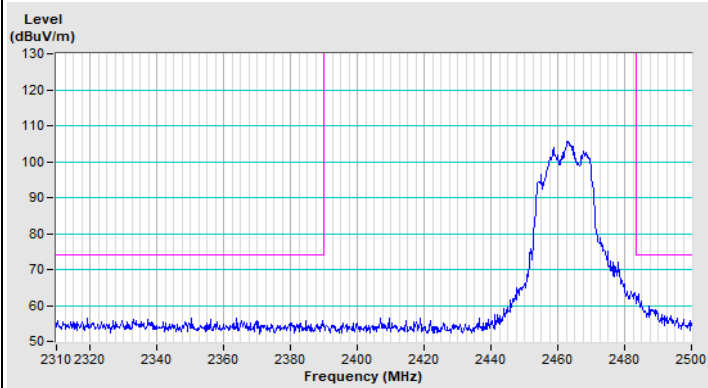
802.11g Channel 11



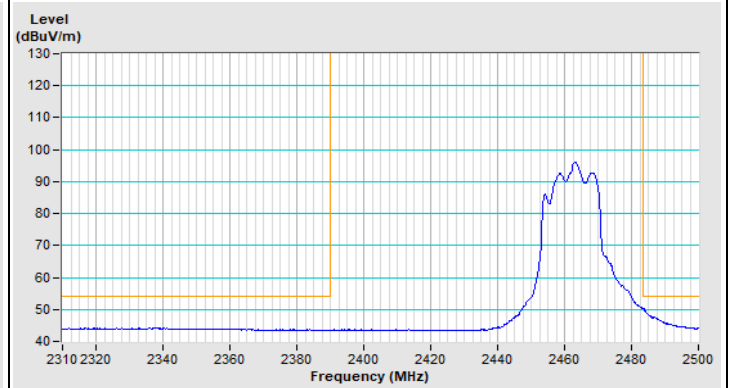
Horizontal (Peak)



Horizontal (Average)



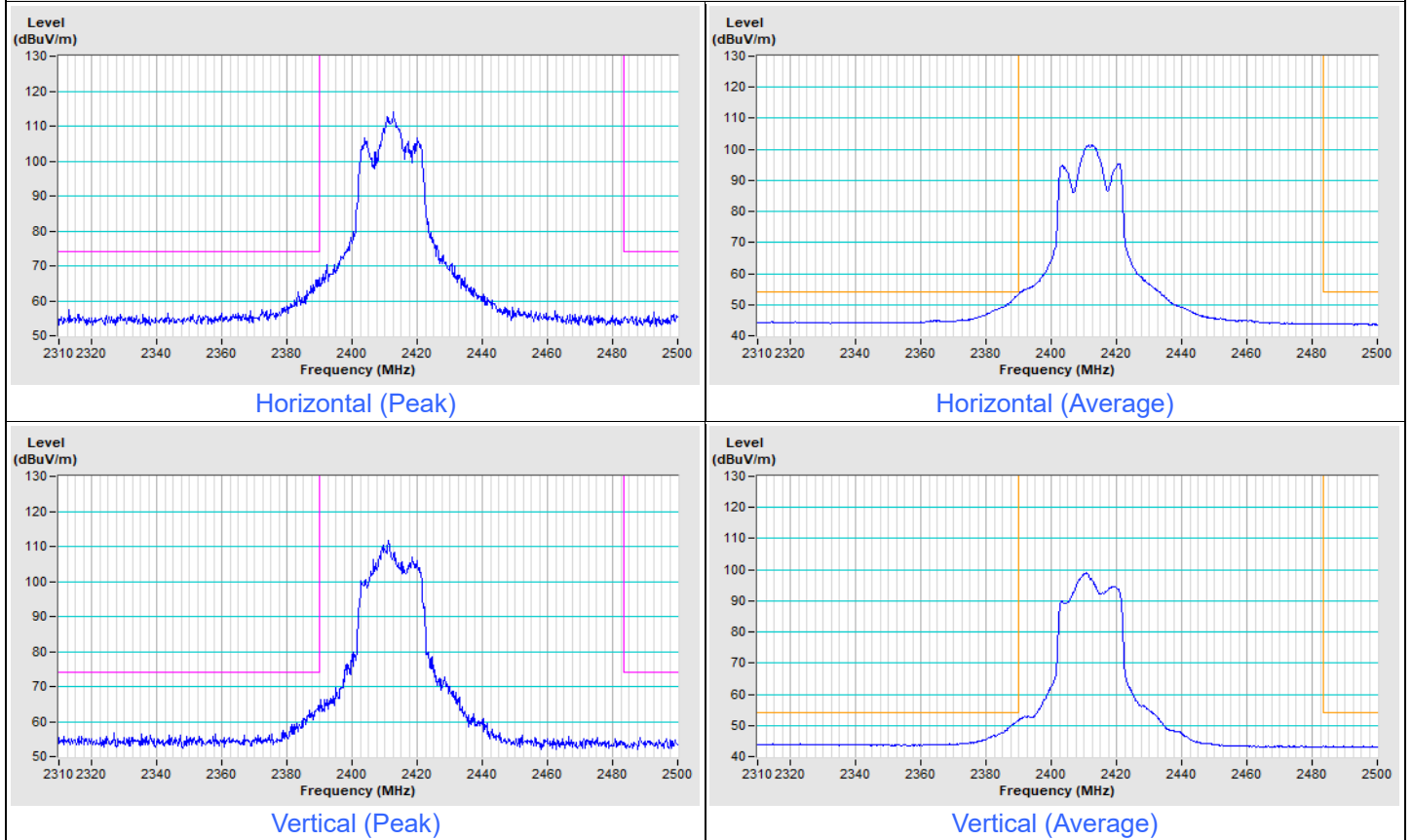
Vertical (Peak)



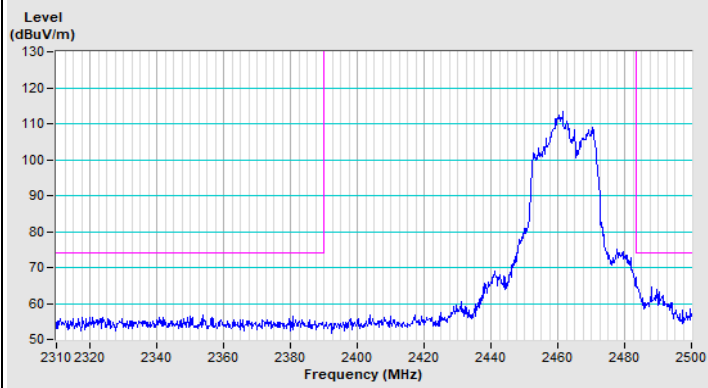
Vertical (Average)

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=10 Hz, DET=Peak
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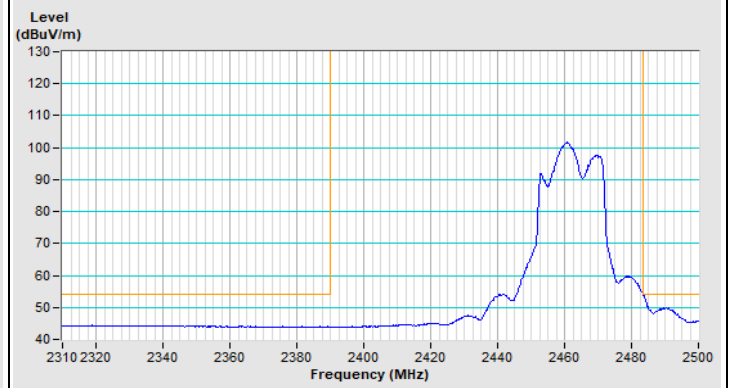
802.11ax (HE20) Channel 1



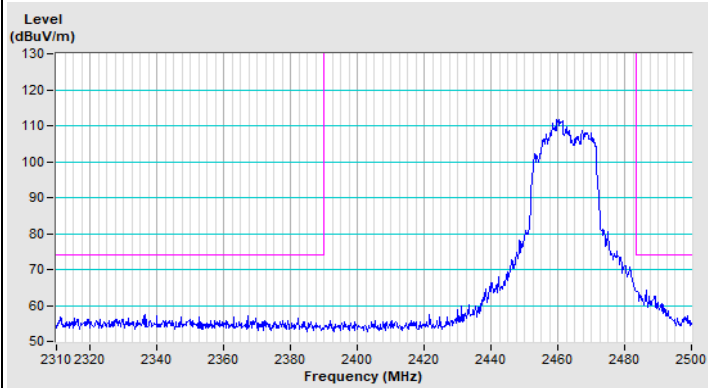
802.11ax (HE20) Channel 11



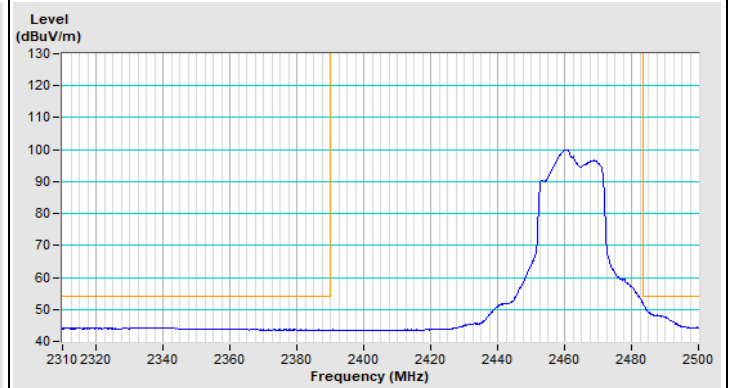
Horizontal (Peak)



Horizontal (Average)



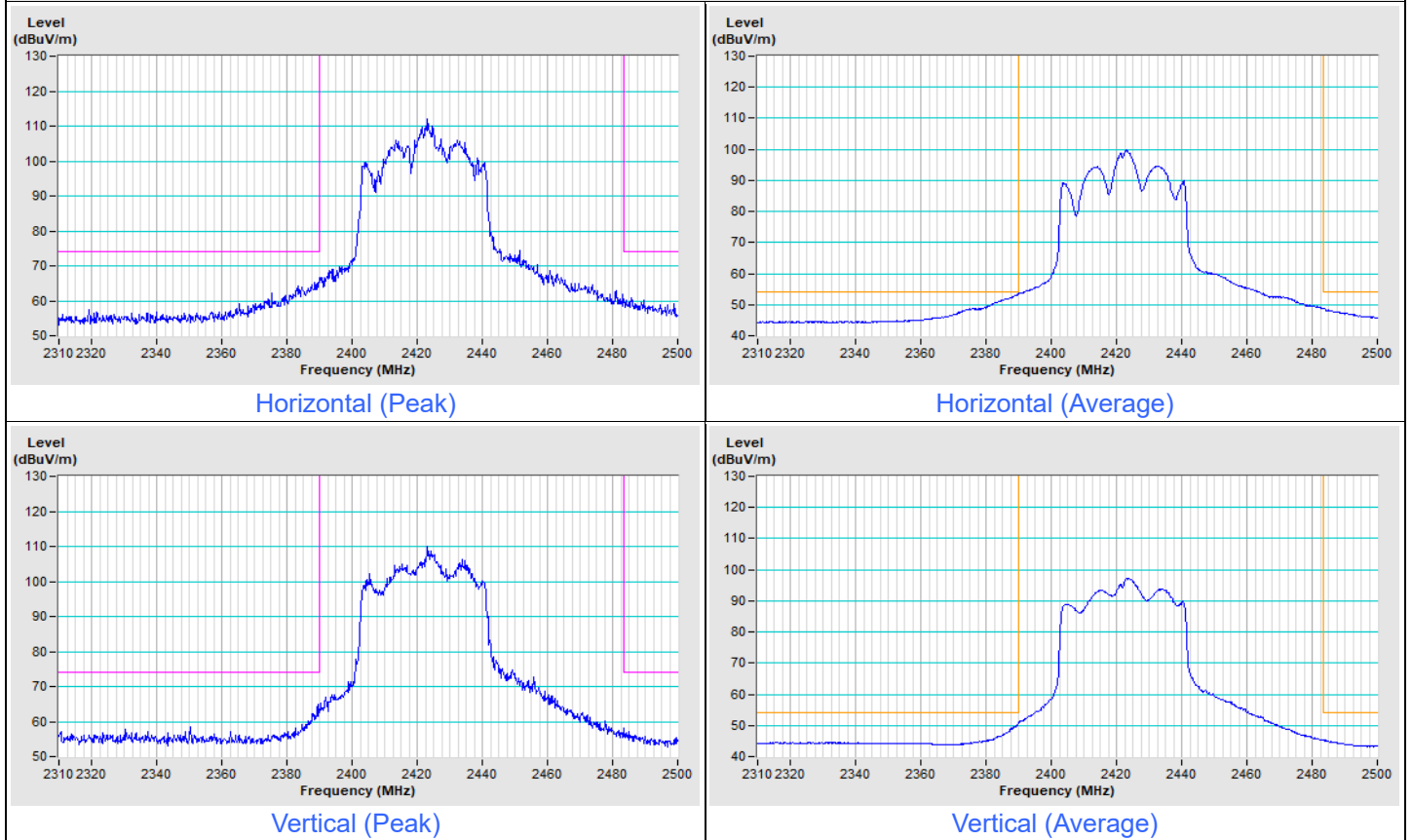
Vertical (Peak)

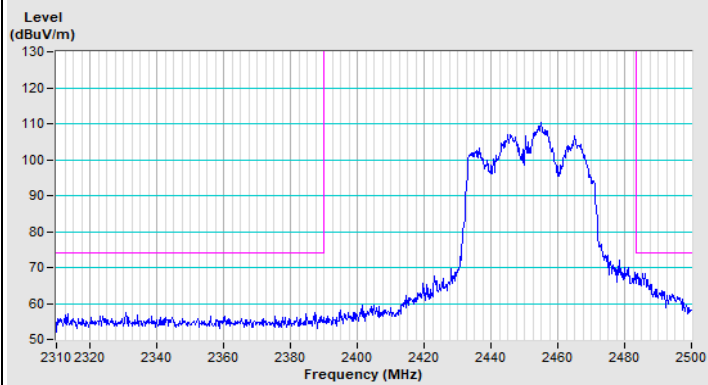


Vertical (Average)

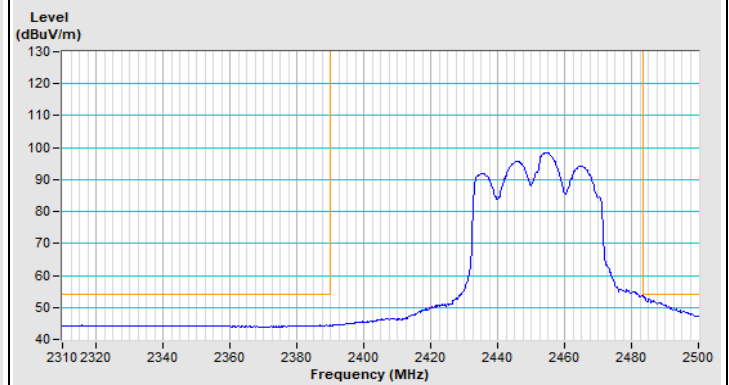
Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
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802.11ax (HE40) Channel 3

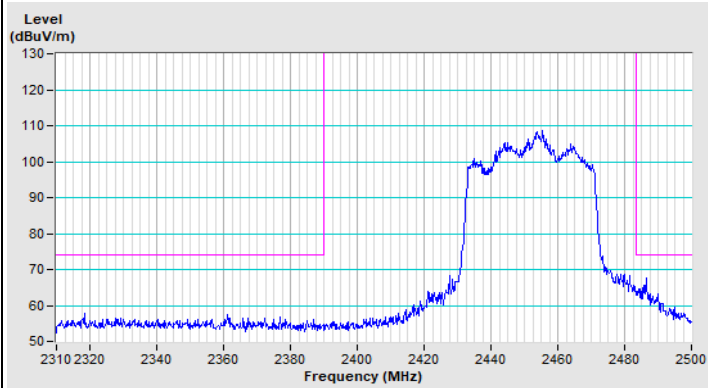


802.11ax (HE40) Channel 9

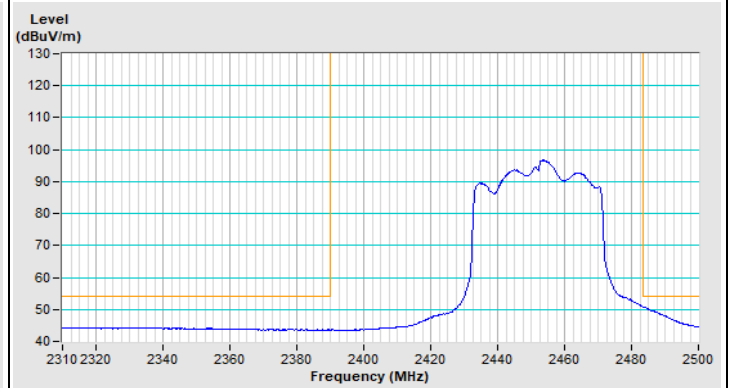
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)



Vertical (Average)

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Email: service.adt@bureauveritas.com

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

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

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