

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBEFM-WTW-P24110678-3

FCC ID: ARS-CRD29

Product: Wi-Fi module

Brand: Philips

Model No.: CRD29

Received Date: 2024/11/28

Test Date: 2024/12/18 ~ 2025/1/10

Issued Date: 2025/1/22

Applicant: TOP VICTORY ELECTRONICS (TAIWAN) CO., LTD.

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FCC Registration / Test Location:198487 / TW2021 for Test Location(1)

Designation Number: 281270 / TW0032 for Test Location(2)

Approved by: Jeremy Lin, **Date:** 2025/1/22
Jeremy Lin / Project Engineer

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Prepared by : Annie Chang / Senior Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBEFM-WTW-P24110678-3	Original release.	2025/1/22

1 Certificate

Product: Wi-Fi module

Brand: Philips

Test Model: CRD29

Sample Status: Engineering sample

Applicant: TOP VICTORY ELECTRONICS (TAIWAN) CO., LTD.

Test Date: 2024/12/18 ~ 2025/1/10

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

Measurement ANSI C63.10-2013

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 -9.03 dB at 0.54234 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -7.8 dB at 239.80 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -5.9 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:

Parameter	Specification	Expanded Uncertainty (k=2) (±)
RF Output Power	-	1.1 dB
Power Spectral Density	-	1.3 dB
6 dB Bandwidth	-	960 Hz
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.7 dB
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3 dB
	30 MHz ~ 1 GHz	2.93 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	1.76 dB
	18 GHz ~ 40 GHz	1.77 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	Wi-Fi module
Brand	Philips
Test Model	CRD29
Status of EUT	Engineering sample
Power Supply Rating	DC 3.3V from host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 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), 802.11ax (HE20):11 802.11n (HT40), 802.11ax (HE40):7
Output Power	75.184 mW (18.76 dBm)

Note:

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

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

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

3. The EUT does not support Partial RU technology.
4. 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.	RF Chain NO.	Brand	Model	Gain (dBi)	Frequency range (GHz)	Antenna Type	Connector Type	Cable Length
1(WIFI)	0/1	TPV	368GAAWA1950YL	2.99	2.4~2.5	Dipole	ipex(MHF)	70mm
				3.73	5.15~5.85	Dipole	ipex(MHF)	70mm
2(WIFI)	0/1	TPV	SLK-GJ-P2808A-L-200I-B	2.01	2.4~2.5	PIFA	ipex(MHF)	200mm
				2.74	5.15~5.85	PIFA	ipex(MHF)	200mm
3(WIFI)	0/1	TPV	SLK-GJ-P2808B-R-550I-G	2.9	2.4~2.5	PIFA	ipex(MHF)	550mm
				2.79	5.15~5.85	PIFA	ipex(MHF)	550mm
4(WIFI)	0/1	TPV	SLK-GJ-T3018-R-507I-G	1.99	2.4~2.5	PIFA	ipex(MHF)	507mm
				1.72	5.15~5.85	PIFA	ipex(MHF)	507mm
5(BT)	2	TPV	368GAAWA1920YL	2.22	2.4~2.5	PIFA	ipex(MHF)	35mm

* 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
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX

Note: The modulation and bandwidth are similar for 802.11n 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), 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), 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 PIFA(SLK-GJ-P2808A-L-200I-B)/ PIFA(SLK-GJ-P2808B-R-550I-G)/ PIFA(SLK-GJ-T3018-R-507I-G) antenna can be used in the following ways: X / Y / Z axis. Pre-scan in these ways and find the worst case as a representative test condition. 2. The Dipole(368GAAWA1950YL) antenna can be used in the following ways: X / Z axis. Pre-scan in these ways and find the worst case as a representative test condition.
Worst Case:	1. The PIFA antenna the worst condition: PIFA(SLK-GJ-P2808B-R-550I-G) on Z axis. 2. The Dipole antenna the worst condition: Dipole(368GAAWA1950YL) on Z axis.

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
		802.11n (HT20)	CDD	1, 6, 11	BPSK	MCS0
		802.11n (HT40)	CDD	3, 6, 9	BPSK	MCS0
		802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD	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	802.11ax (HE40)	CDD	6	BPSK	MCS0
	B	802.11ax (HE40)	CDD	6	BPSK	MCS0
Unwanted Emissions below 1 GHz	A	802.11ax (HE40)	CDD	6	BPSK	MCS0
	B	802.11ax (HE40)	CDD	6	BPSK	MCS0
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
	B	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	EUT with Dipole Antenna				
	B	EUT with PIFA Antenna				

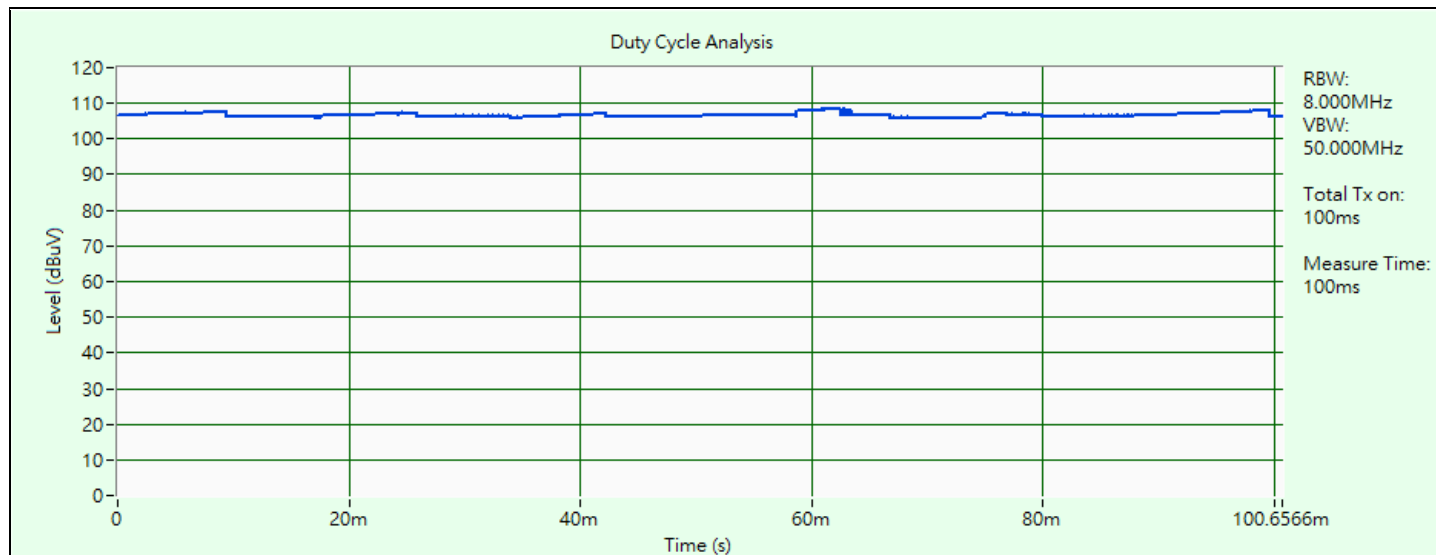
3.5 Duty Cycle of Test Signal

802.11b: Duty cycle = 100 ms / 100 ms x 100% = 100.0%

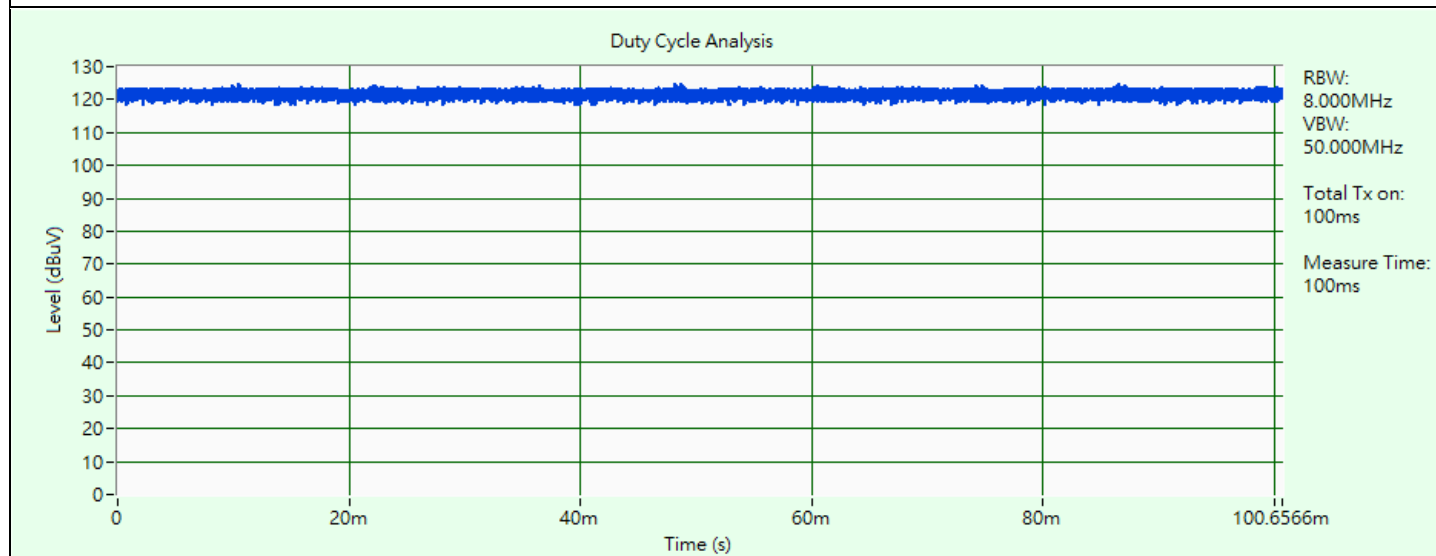
802.11g: Duty cycle = 100 ms / 100 ms x 100% = 100.0%

802.11ax (HE20): Duty cycle = 100 ms / 100 ms x 100% = 100.0%

802.11ax (HE40): Duty cycle = 100 ms / 100 ms x 100% = 100.0%

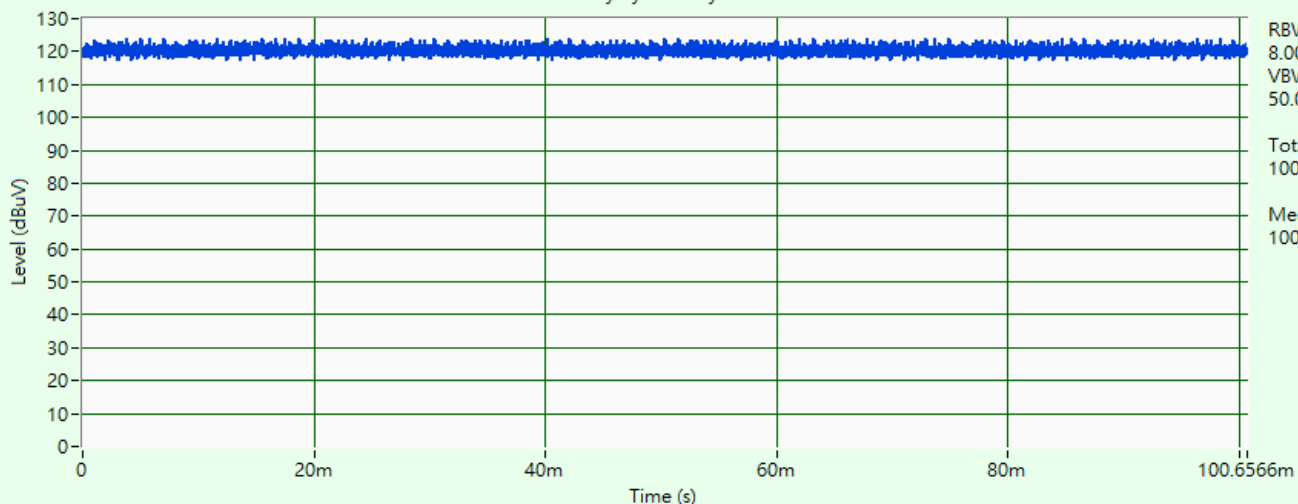


802.11b



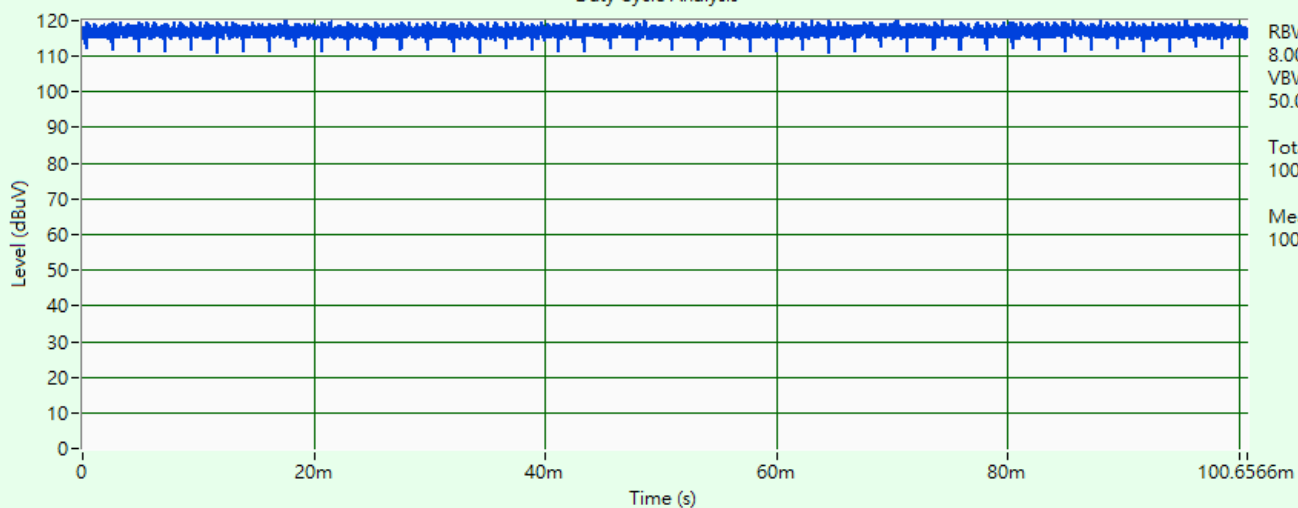
802.11g

Duty Cycle Analysis



802.11ax (HE20)

Duty Cycle Analysis



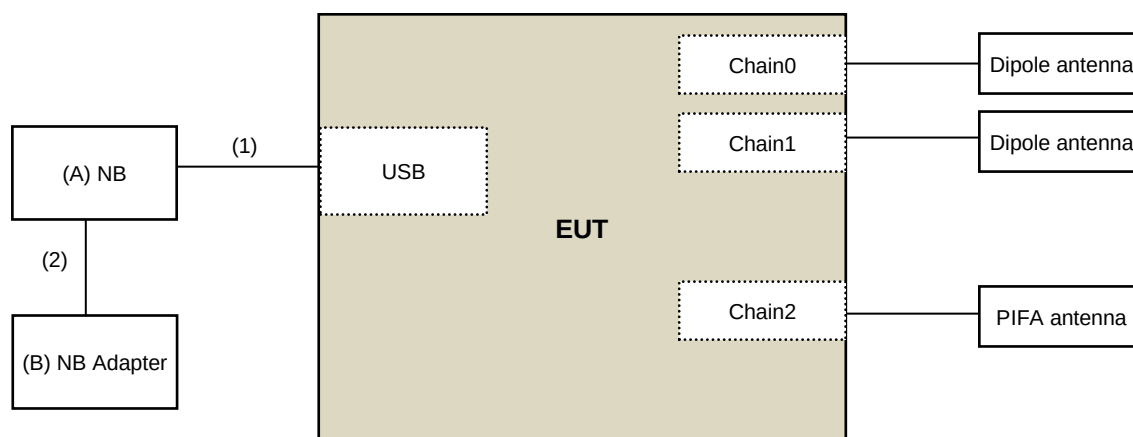
802.11ax (HE40)

3.6 Test Program Used and Operation Descriptions

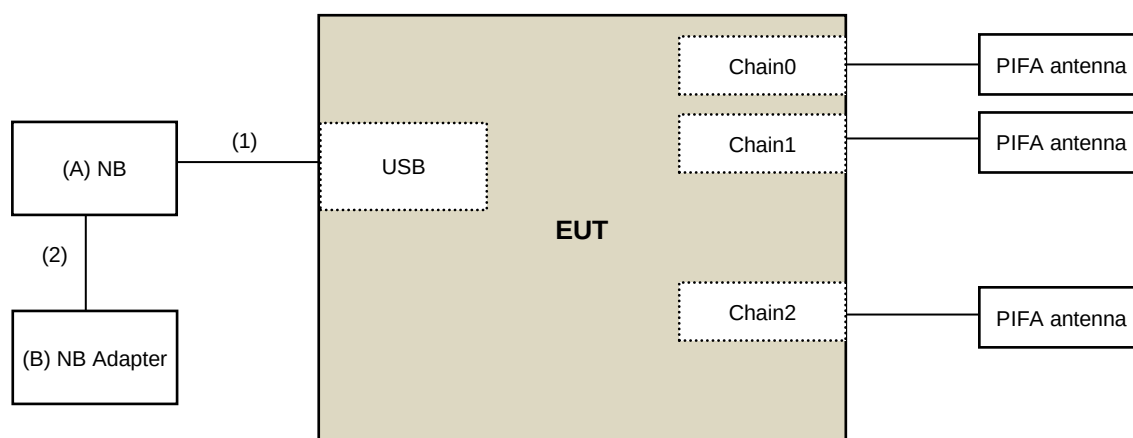
Controlling software (RTL8852B_USB_MP_Package_ALPHA_v1.0.52) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

Mode A



Mode B



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	NB	Lenovo	IdeaPad 5 15ITL05	N/A	N/A	Provided by Lab
B	NB Adapter	Lenovo	ADLX65CLGC2A	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	USB Cable	1	1	Y	0	Provided by Lab
2	DC cable	1	1.9	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
Pulse Power Sensor Anritsu	MA2411B	0738404	2024/5/13	2025/5/12
RF Power Meter Anritsu	ML2495A	0842014	2024/5/13	2025/5/12
USB Wideband Power Sensor Keysight	U2021XA	U2021XA_001	2024/6/7	2025/6/6

Notes:

1. The test was performed in LK - Oven
2. Tested Date: 2025/1/7

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
PXA Signal Analyzer Keysight	N9030A	MY54490260	2024/7/17	2025/7/16
Signal Analyzer R&S	FSV40	101042	2024/9/12	2025/9/11
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in LK - Oven
2. Tested Date: 2025/1/7

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 LYNICS	0900510	E1-01-305	2024/2/6	2025/2/5
		E1-01-306	2024/3/13	2025/3/12
EMI Test Receiver R&S	ESR3	102412	2024/12/26	2025/12/25
		102414	2024/12/11	2025/12/10
Fixed Attenuator STI	STI02-2200-10	NO.4	2024/8/30	2025/8/29
High Voltage Probe Schwarzbeck	TK9420	00982	2024/12/6	2025/12/5
Isolation Transformer Erika Fiedler	D-65396	017	2024/9/18	2025/9/17
LISN R&S	ENV216	101196	2024/5/22	2025/5/21
LISN Schwarzbeck	NNLK 8121	8121-731	2024/6/12	2025/6/11
		8121-808	2024/4/26	2025/4/25
	NNLK 8129	8129229	2024/10/14	2025/10/13
	NSLK 8128	8128-244	2024/11/11	2025/11/10
Passive Voltage Probe R&S	ESH2-Z3	100073	2024/5/16	2025/5/15
RF Coaxial Cable PEWC	5D-FB	Cable-CO5-01	2024/1/18	2025/1/17
Software BVADT	Cond_V7.4.1.0	N/A	N/A	N/A

Notes:

1. The test was performed in Linkou Conduction 5.
2. Tested Date: 2025/1/9

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFA-515BSN	N/A	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-1214	2024/10/15	2025/10/14
EXA Signal Analyzer Agilent	N9010A	MY52220207	2024/12/30	2025/12/29
Loop Antenna TESEQ	HLA 6121	45745	2024/8/21	2025/8/20
MXE EMI Receiver Agilent	N9038A	MY52260177	2024/9/19	2025/9/18
Preamplifier EMCI	EMC330N	980798	2024/1/15	2025/1/14
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-500	201248	2024/1/15	2025/1/14
	EMCCFD400-NM-NM-3000	201249	2024/1/15	2025/1/14
	EMCCFD400-NM-NM-9000	201251(with PAD)	2024/1/15	2025/1/14
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208676	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 9.
2. Tested Date: 2025/1/10

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFA-515BSN	N/A	N/A	N/A
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/12/28	2024/12/27
Horn Antenna RFSPIN	DRH18-E	210104A18E	2024/11/10	2025/11/9
Horn Antenna Schwarzbeck	BBHA 9170	9170-1049	2024/11/10	2025/11/9
MXE EMI Receiver Agilent	N9038A	MY52260177	2024/9/19	2025/9/18
Preamplifier Agilent	83017A	MY39501357	2024/6/12	2025/6/11
Preamplifier EMCI	EMC184045SE	980788	2024/1/15	2025/1/14
RF Coaxial Cable EMCI	EMC101G-KM-KM-2000	201254	2024/1/15	2025/1/14
	EMC101G-KM-KM-3000	201258	2024/1/15	2025/1/14
	EMC101G-KM-KM-5000	201261	2024/1/15	2025/1/14
	EMC104-SM-SM-1000	210103	2024/1/15	2025/1/14
	EMC104-SM-SM-3000	201241	2024/1/15	2025/1/14
	EMC104-SM-SM-9000	201244	2024/1/15	2025/1/14
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208676	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 9.
2. Tested Date: 2024/12/18 ~ 2024/12/20

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

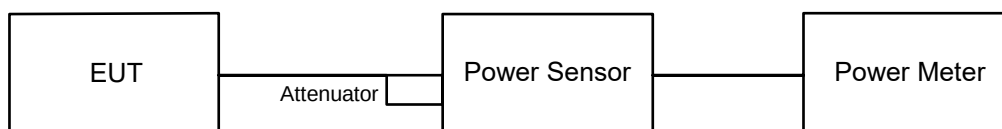
Notes:

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:

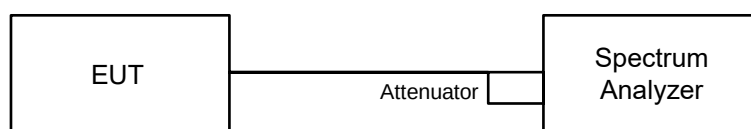
A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

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

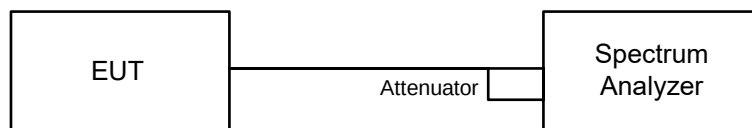


6.2.2 Test Procedure

- 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

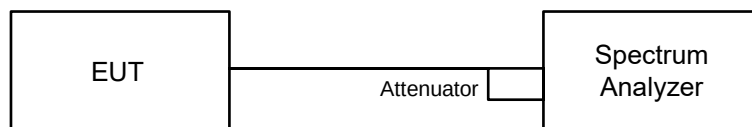


6.3.2 Test Procedure

- 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

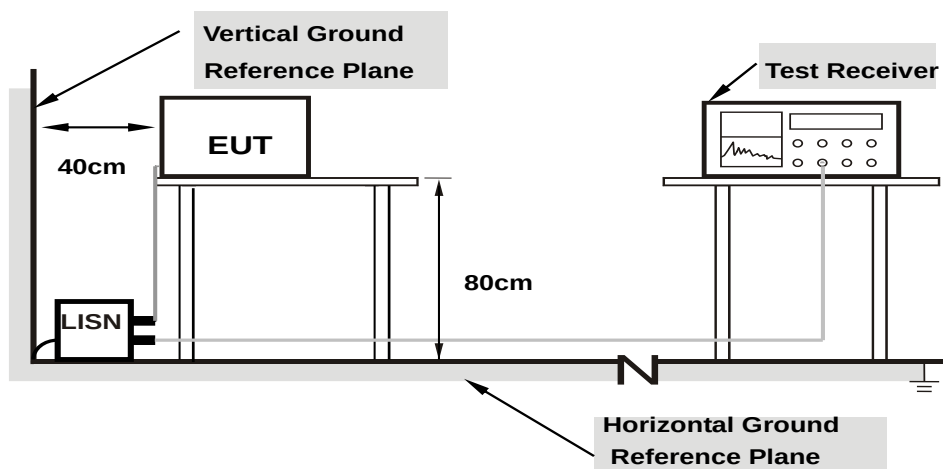
- Set the RBW = 100 kHz.
- Set the VBW ≥ 300 kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

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

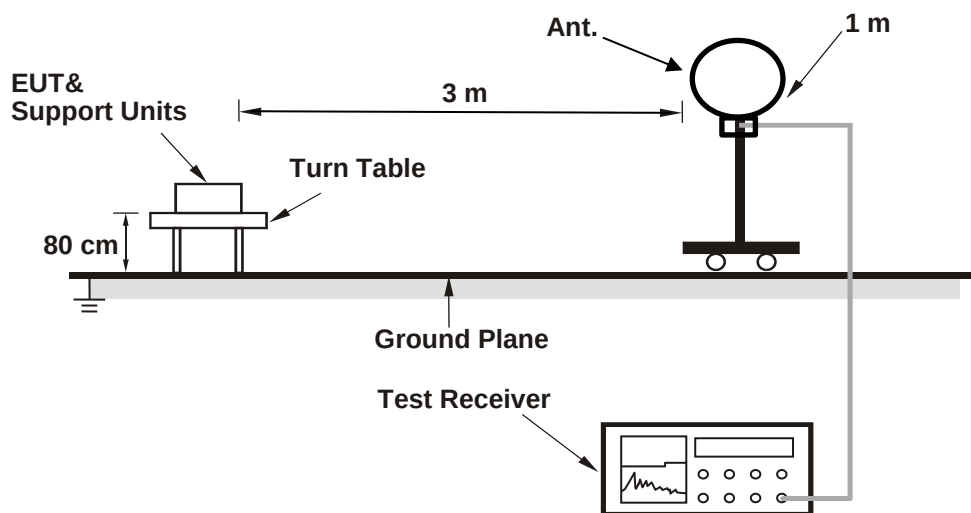
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

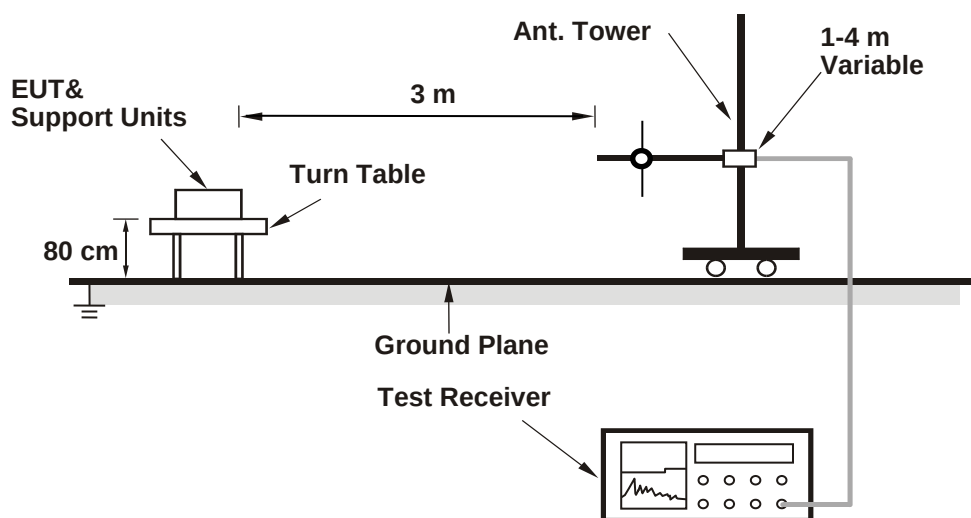
6.6 Unwanted Emissions below 1 GHz

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

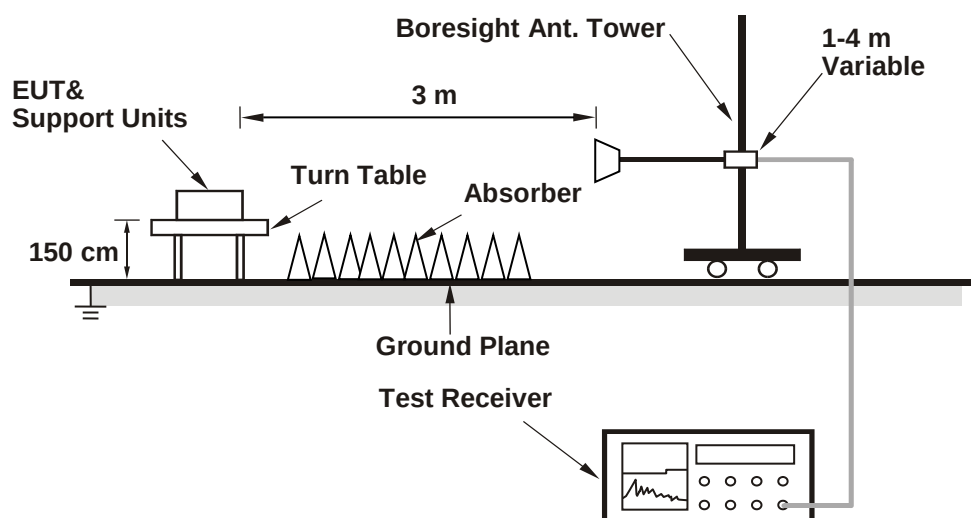
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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	Environmental Conditions:	25°C, 76% RH	Tested By:	Waydi Tuan
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For Peak Power

802.11b

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	12.93	12.77	38.557	15.86	30	Pass
6	2437	12.91	12.61	37.782	15.77	30	Pass
11	2462	12.97	12.79	38.826	15.89	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.99 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	11.27	11.05	26.132	14.17	30	Pass
6	2437	11.37	11.10	26.591	14.25	30	Pass
11	2462	11.30	11.08	26.313	14.20	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.99 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	15.57	15.27	69.709	18.43	30	Pass
6	2437	15.26	15.16	66.383	18.22	30	Pass
11	2462	15.65	15.44	71.723	18.56	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.99 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	15.54	15.21	68.999	18.39	30	Pass
6	2437	15.68	15.56	72.958	18.63	30	Pass
9	2452	15.68	15.49	72.383	18.60	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.99 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	15.67	15.45	71.973	18.57	30	Pass
6	2437	15.42	15.27	68.485	18.36	30	Pass
11	2462	15.80	15.61	74.41	18.72	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.99 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	15.66	15.41	71.567	18.55	30	Pass
6	2437	15.84	15.66	75.184	18.76	30	Pass
9	2452	15.80	15.65	74.747	18.74	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.99 dBi < 6 dBi, so the output power limit shall not be reduced.

For Average Power

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	10.91	10.65	23.946	13.79
6	2437	10.82	10.62	23.613	13.73
11	2462	10.94	10.73	24.247	13.85

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	2.60	2.40	3.558	5.51
6	2437	2.48	2.29	3.464	5.40
11	2462	2.49	2.27	3.461	5.39

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	6.77	6.47	9.189	9.63
6	2437	7.04	6.71	9.746	9.89
11	2462	7.11	6.87	10.005	10.00

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
3	2422	6.74	6.47	9.157	9.62
6	2437	6.45	6.16	8.546	9.32
9	2452	6.43	6.21	8.574	9.33

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	6.96	6.66	9.6	9.82
6	2437	7.14	6.87	10.04	10.02
11	2462	7.25	6.98	10.298	10.13

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
3	2422	6.89	6.61	9.468	9.76
6	2437	6.61	6.36	8.907	9.50
9	2452	6.62	6.36	8.917	9.50

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Waydi Tuan
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802.11b

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-15.47	3.01	-12.46	8	Pass
	6	2437	-15.16	3.01	-12.15	8	Pass
	11	2462	-14.9	3.01	-11.89	8	Pass
Chain 1	1	2412	-15.3	3.01	-12.29	8	Pass
	6	2437	-15.21	3.01	-12.2	8	Pass
	11	2462	-15.15	3.01	-12.14	8	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB 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 dBi $\leq$ 6 dBi, so the power density limit shall not be reduced.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-25.58	3.01	-22.57	8	Pass
	6	2437	-25.67	3.01	-22.66	8	Pass
	11	2462	-25.32	3.01	-22.31	8	Pass
Chain 1	1	2412	-25.13	3.01	-22.12	8	Pass
	6	2437	-25.21	3.01	-22.2	8	Pass
	11	2462	-25.26	3.01	-22.25	8	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB 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 dBi $\leq$ 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-20.28	3.01	-17.27	8	Pass
	6	2437	-20.3	3.01	-17.29	8	Pass
	11	2462	-19.85	3.01	-16.84	8	Pass
Chain 1	1	2412	-20.23	3.01	-17.22	8	Pass
	6	2437	-20.08	3.01	-17.07	8	Pass
	11	2462	-20.63	3.01	-17.62	8	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB 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 dBi $\leq$ 6 dBi, so the power density limit shall not be reduced.

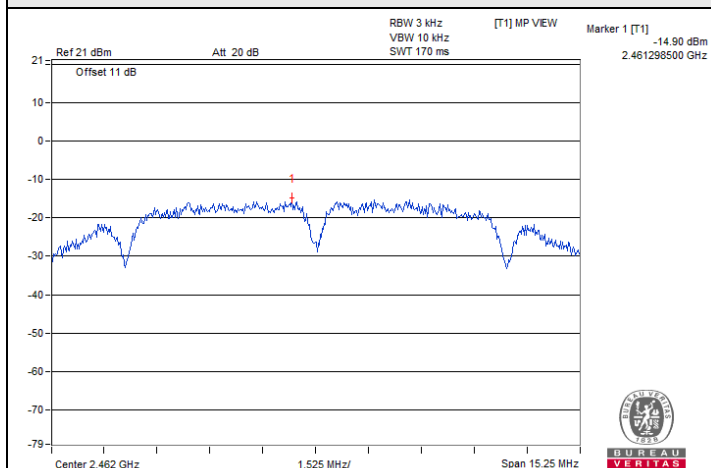
802.11ax (HE40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	3	2422	-22.51	3.01	-19.5	8	Pass
	6	2437	-22.42	3.01	-19.41	8	Pass
	9	2452	-22.06	3.01	-19.05	8	Pass
Chain 1	3	2422	-22.83	3.01	-19.82	8	Pass
	6	2437	-22.25	3.01	-19.24	8	Pass
	9	2452	-22.38	3.01	-19.37	8	Pass

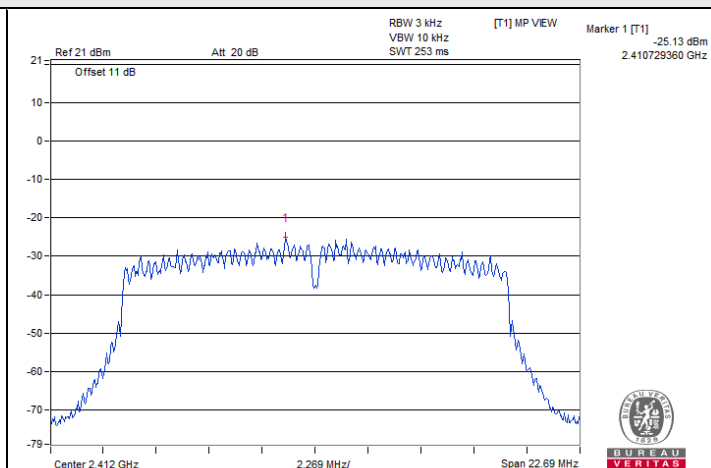
Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB 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 dBi $\leq$ 6 dBi, so the power density limit shall not be reduced.

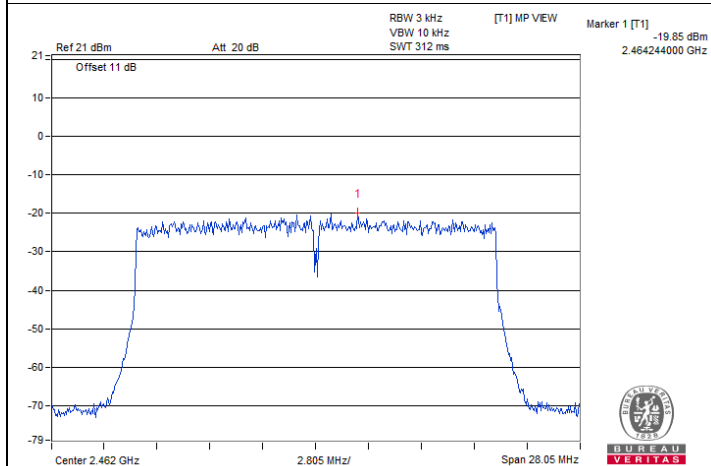
Spectrum Plot of Maximum Value



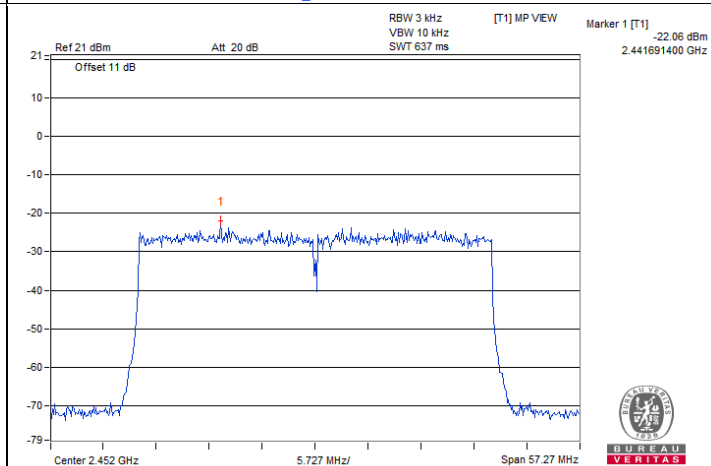
802.11b / Chain 0 : CH 11



802.11g / Chain 1 : CH 1



802.11ax (HE20) / Chain 0 : CH 11



802.11ax (HE40) / Chain 0 : CH 9

7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Waydi Tuan
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802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	10.18	10.18	0.5	Pass
6	2437	11.10	10.19	0.5	Pass
11	2462	10.17	10.18	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	15.11	15.13	0.5	Pass
6	2437	16.37	16.35	0.5	Pass
11	2462	16.36	16.36	0.5	Pass

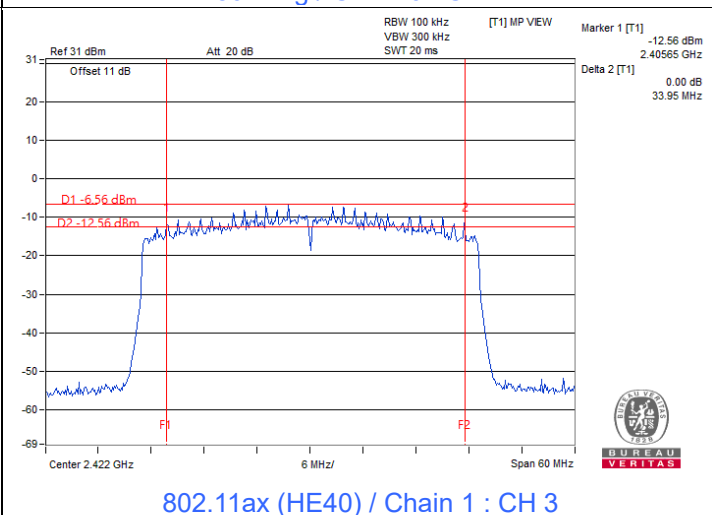
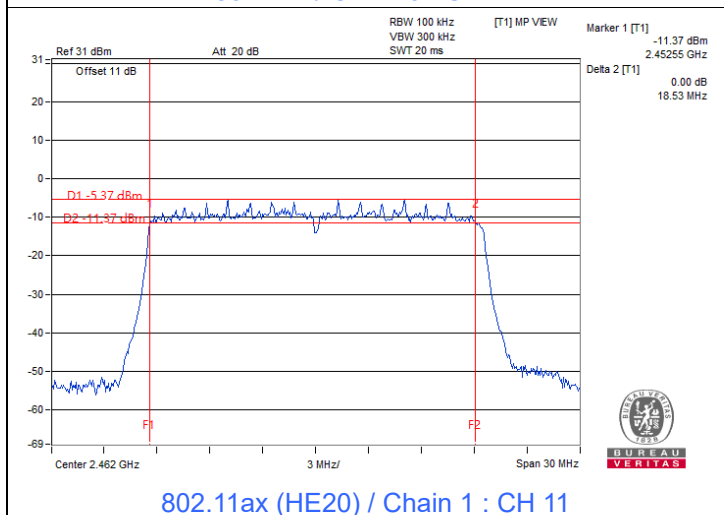
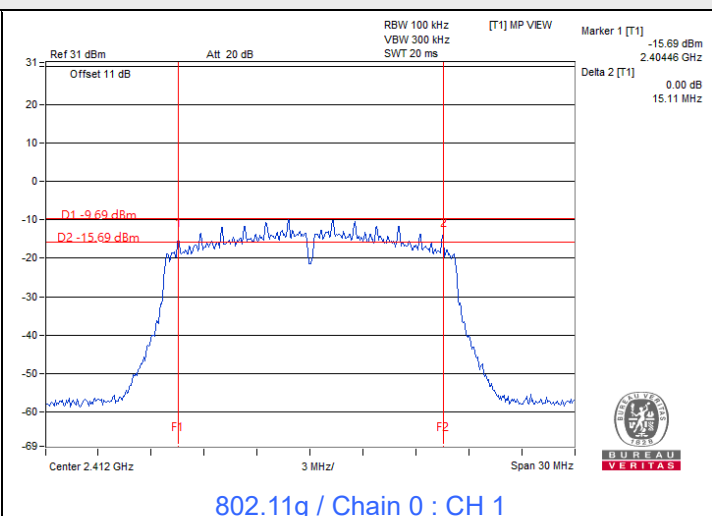
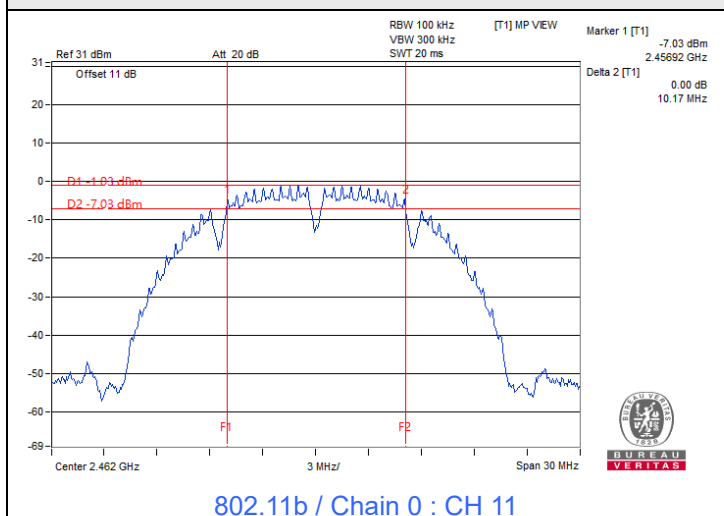
802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	18.74	18.75	0.5	Pass
6	2437	18.69	18.76	0.5	Pass
11	2462	18.70	18.53	0.5	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
3	2422	35.15	33.95	0.5	Pass
6	2437	38.20	38.16	0.5	Pass
9	2452	38.18	38.18	0.5	Pass

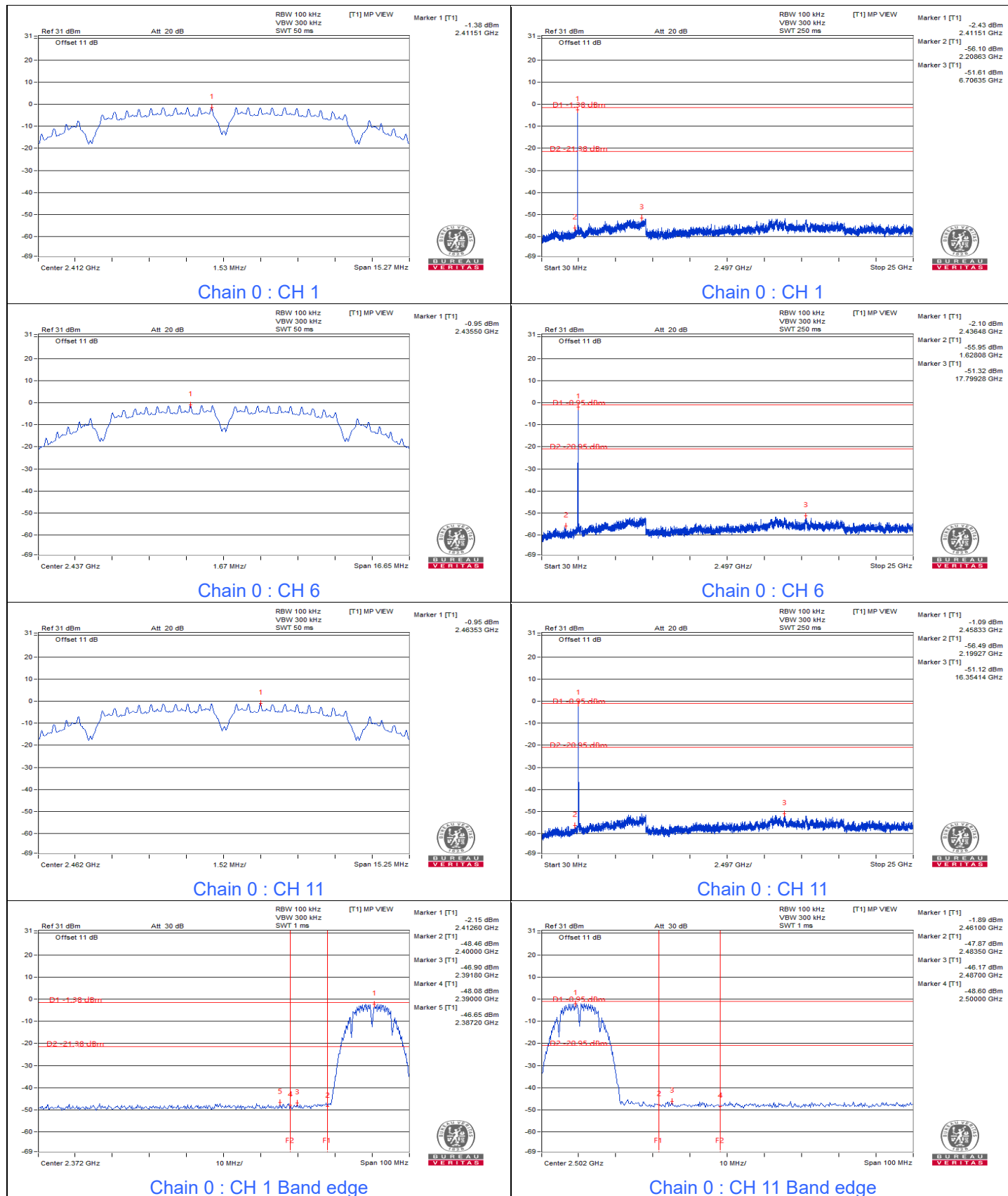
Spectrum Plot of Minimum Value

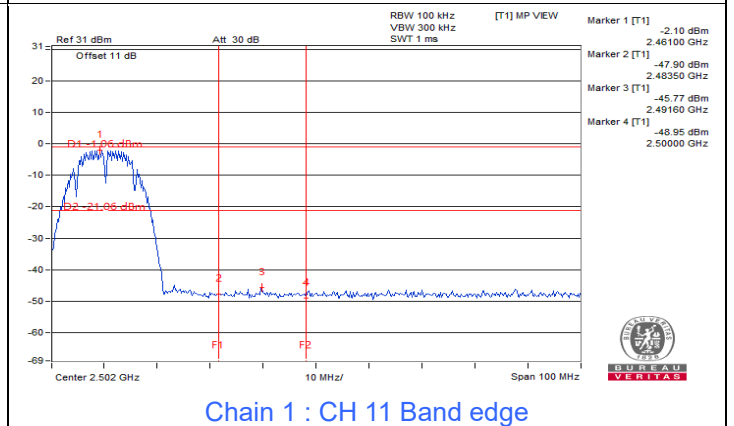
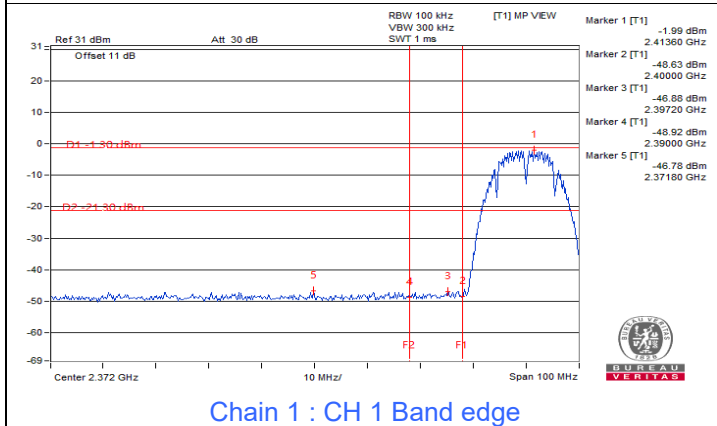
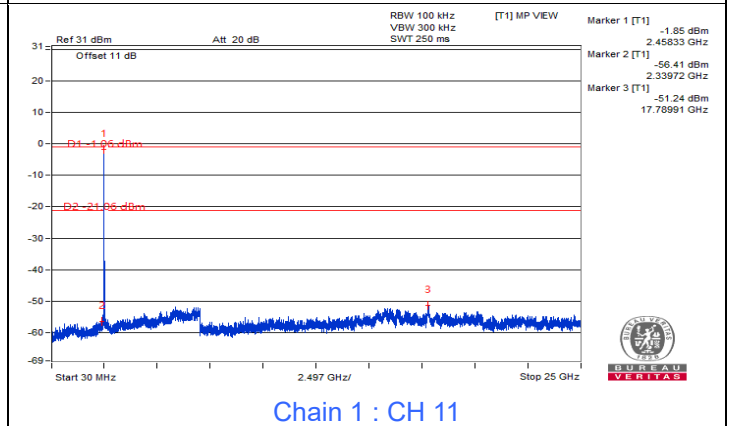
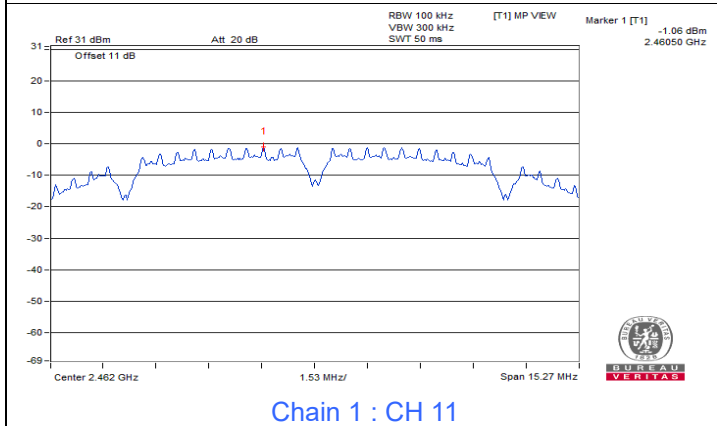
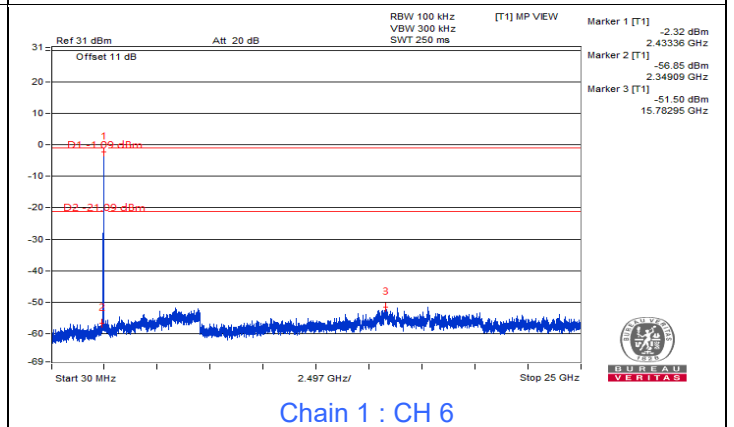
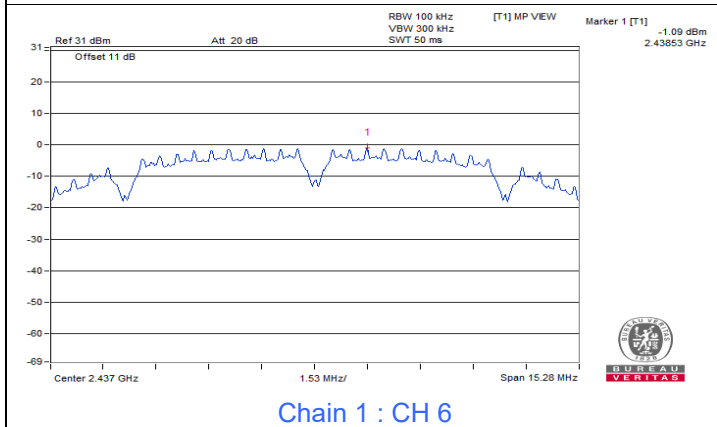
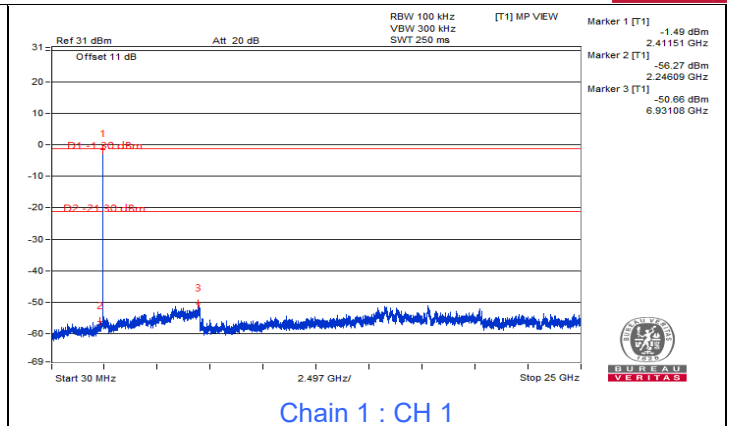
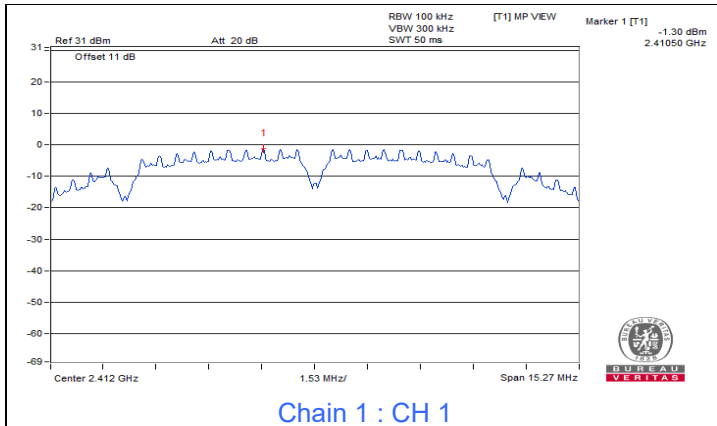


7.4 Conducted Out of Band Emissions

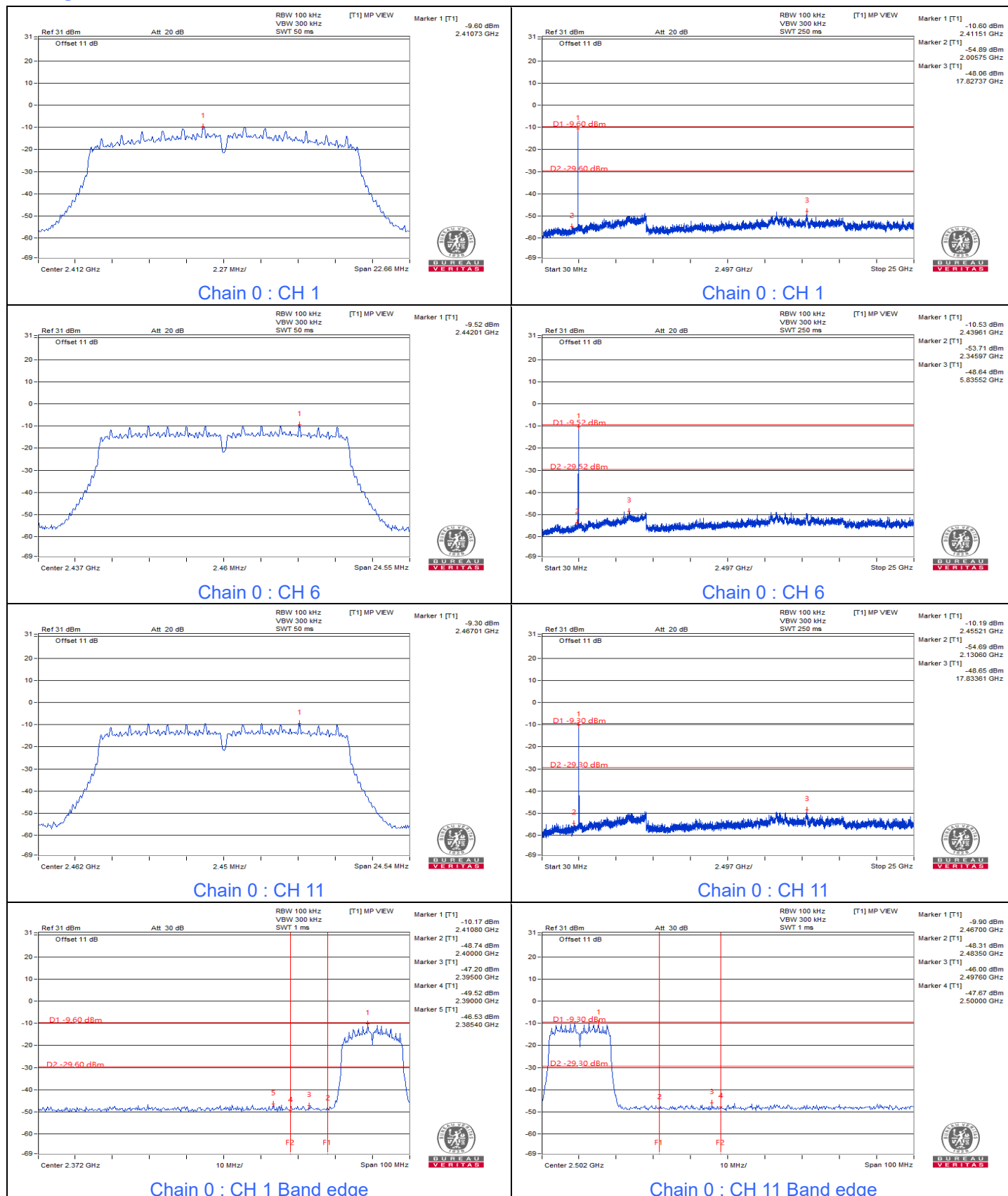
Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Waydi Tuan
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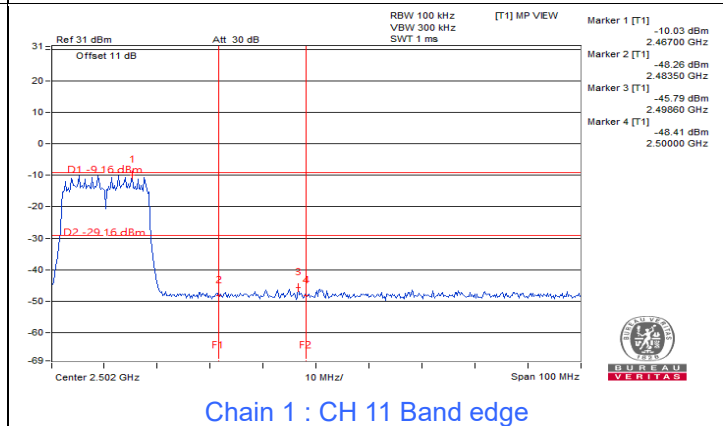
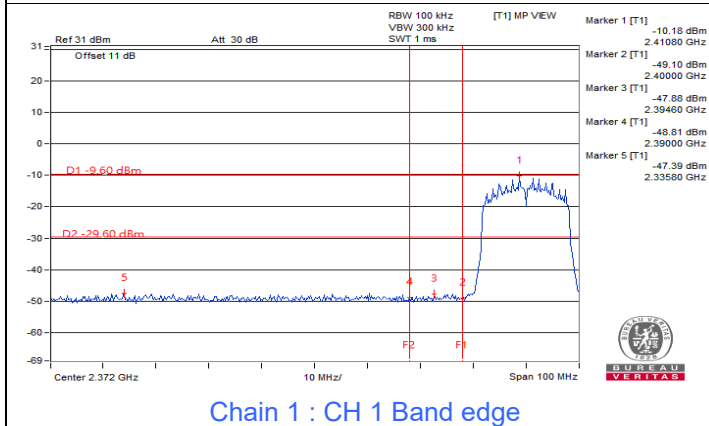
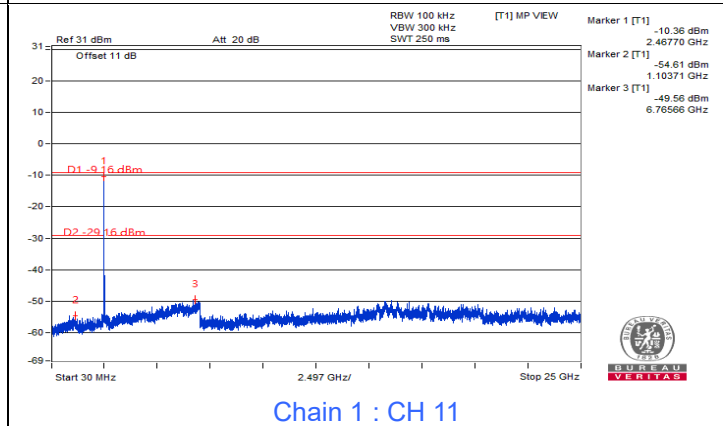
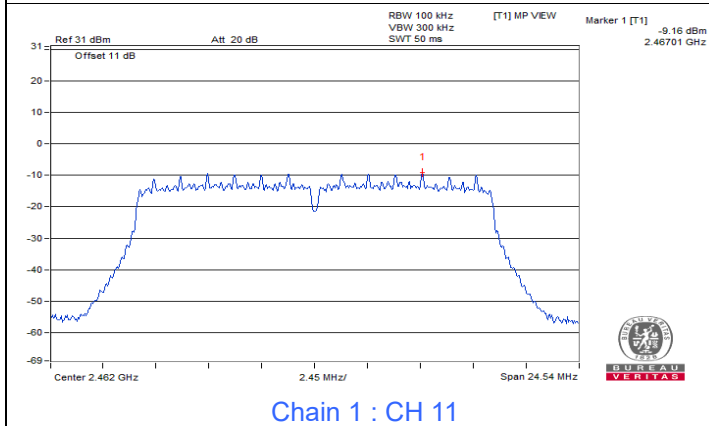
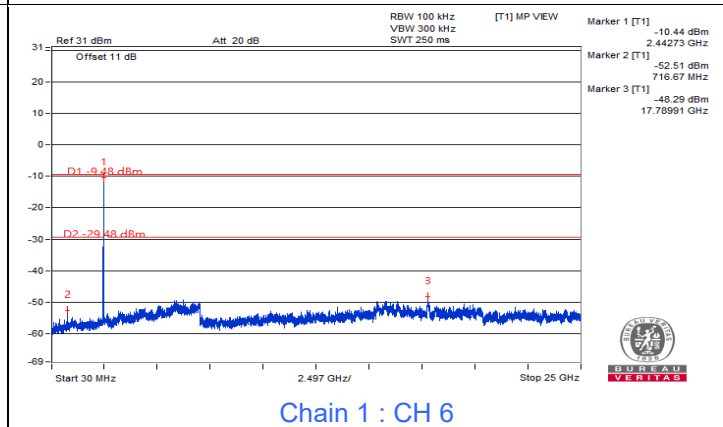
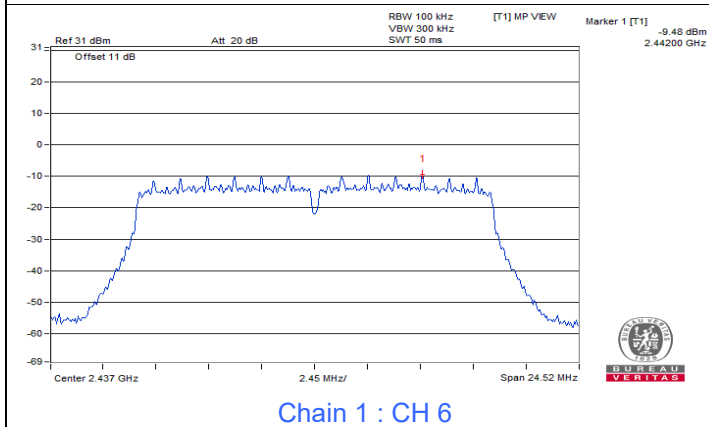
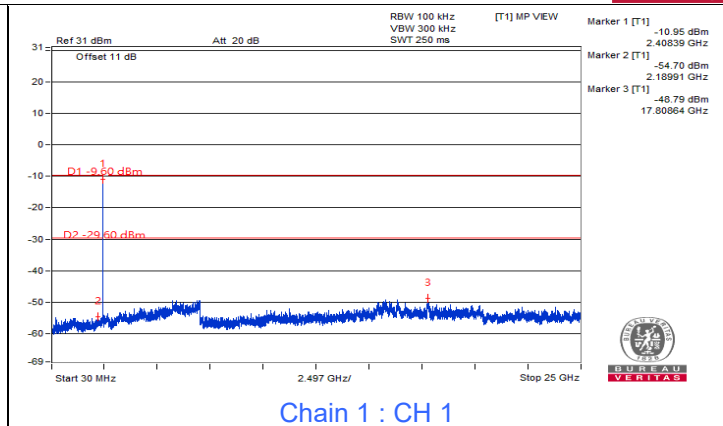
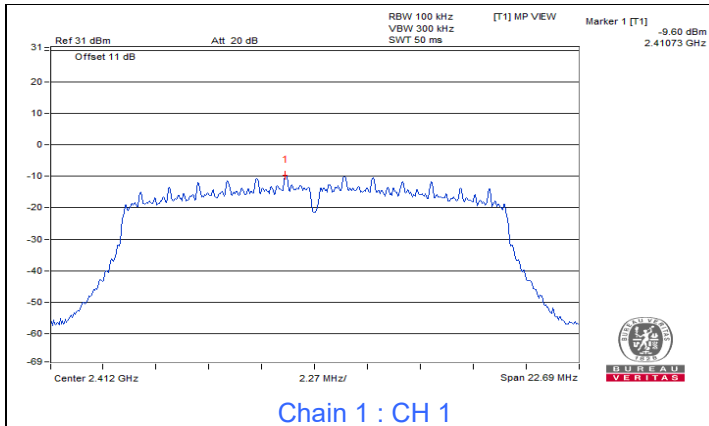
802.11b





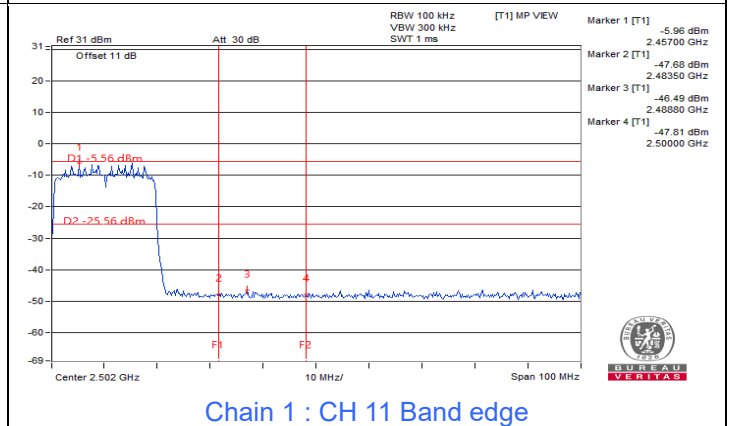
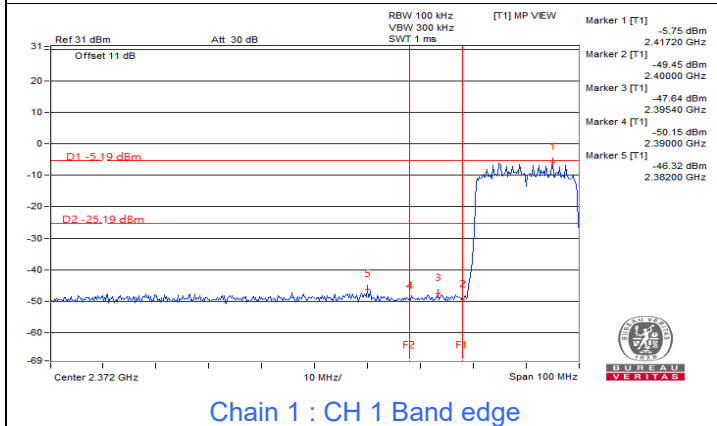
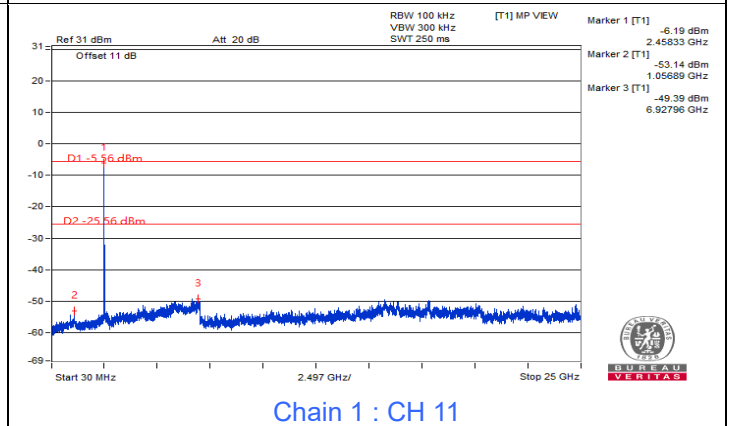
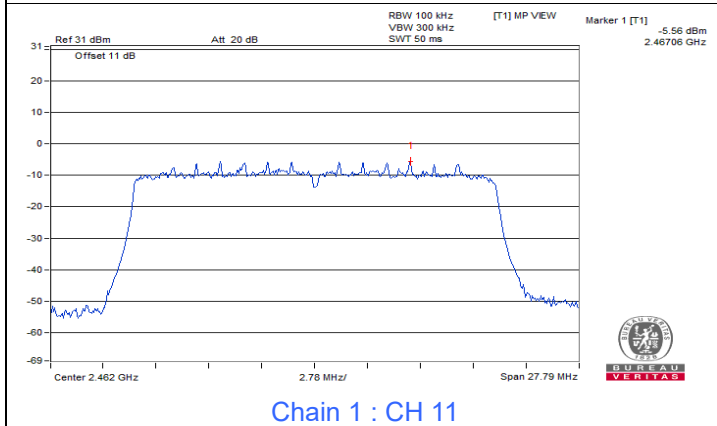
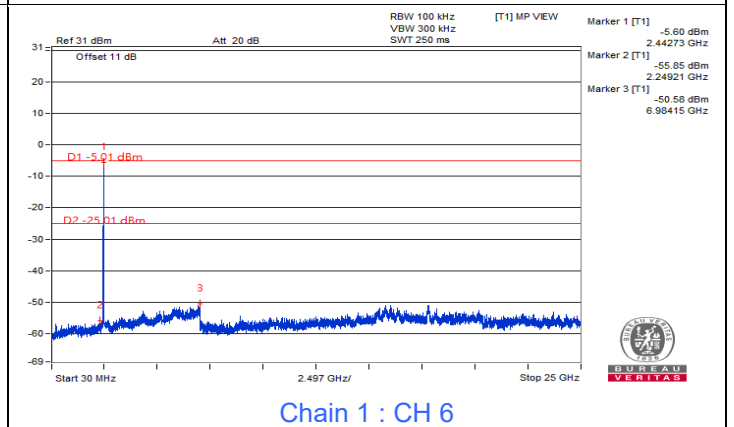
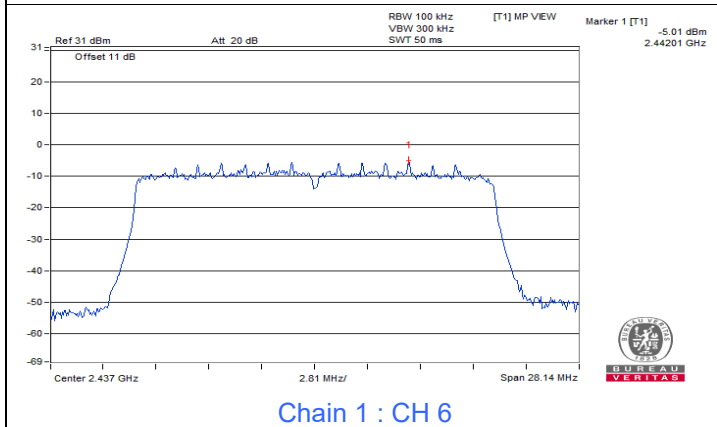
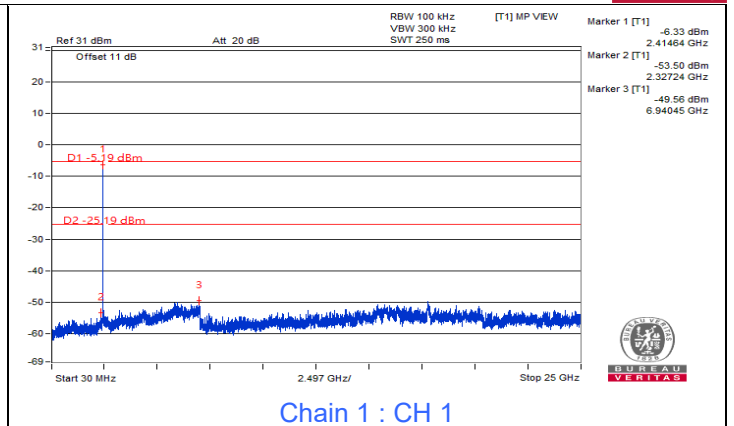
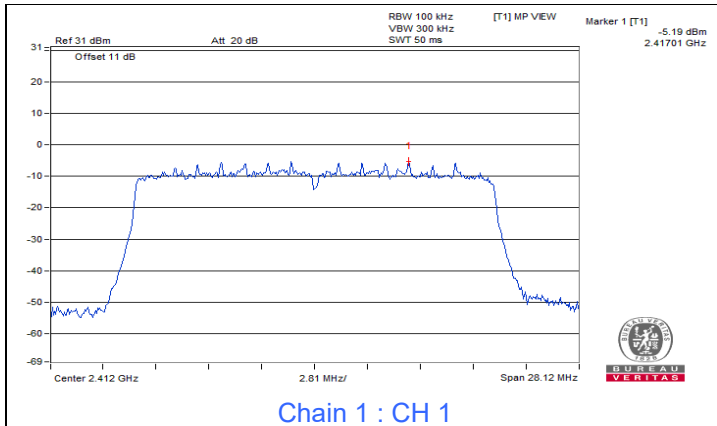
802.11g



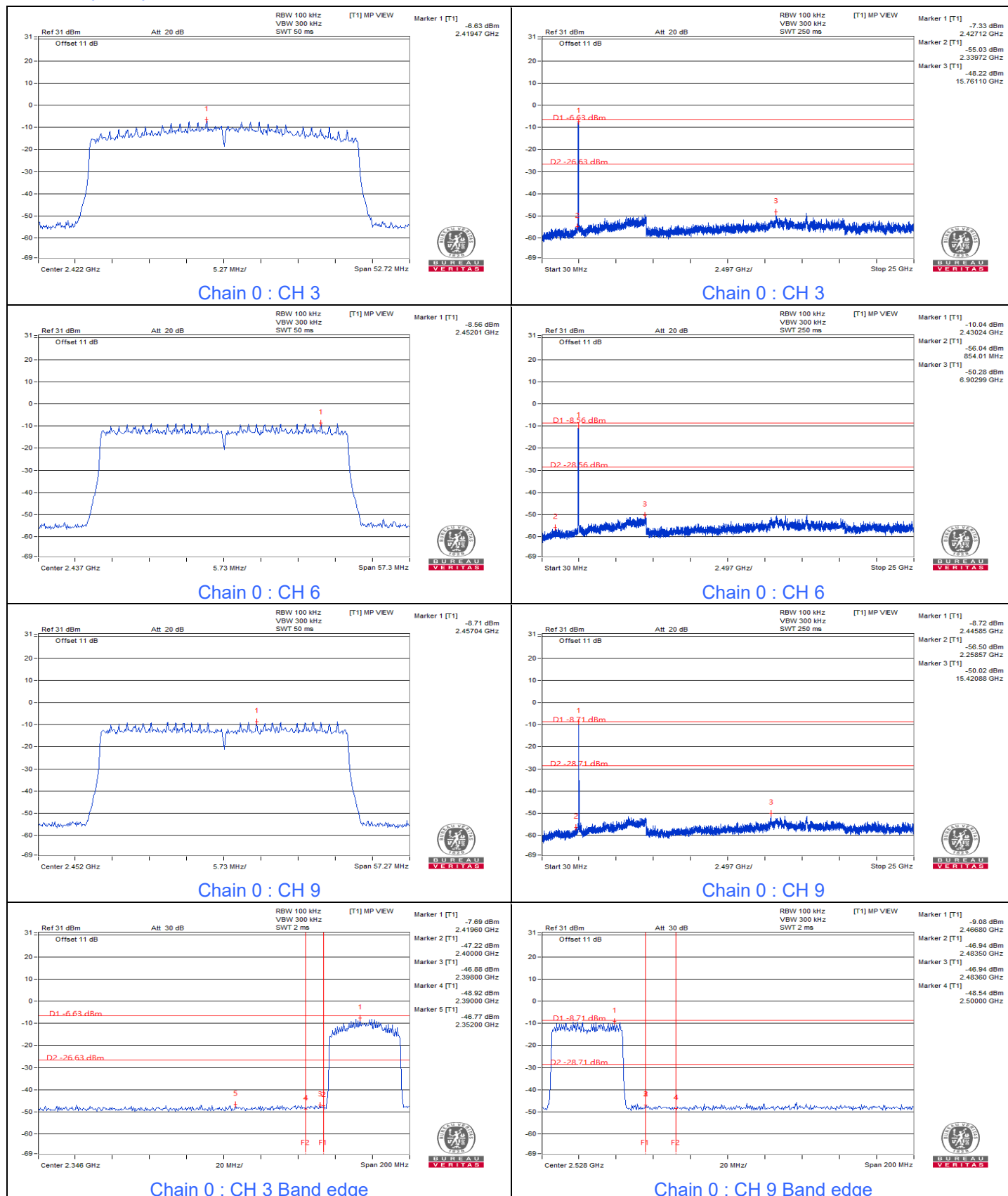


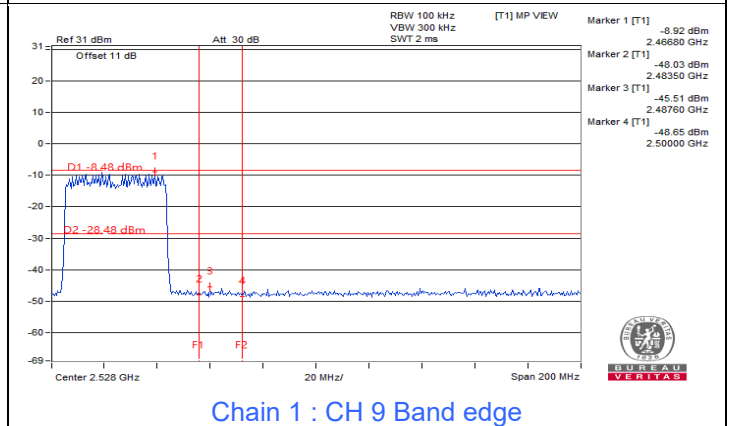
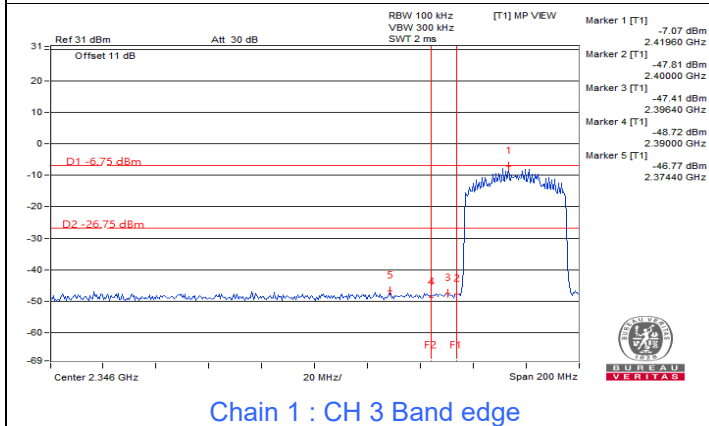
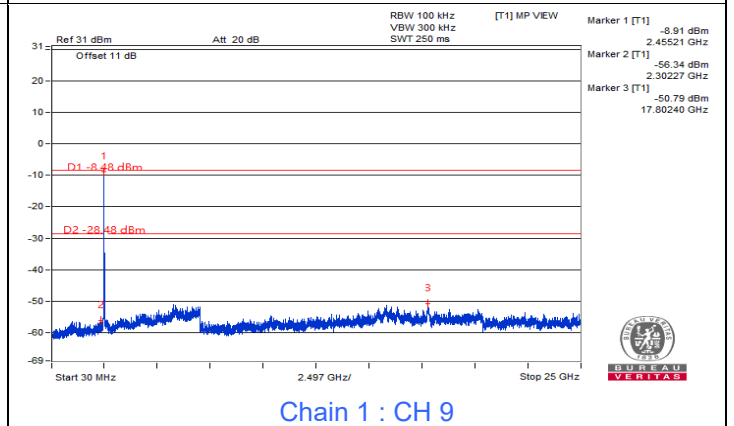
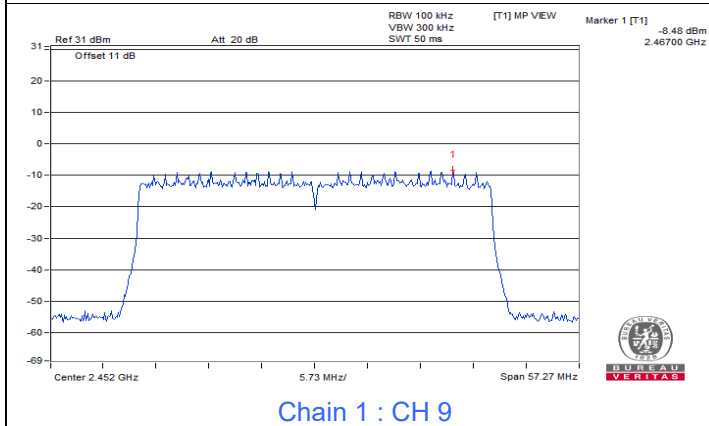
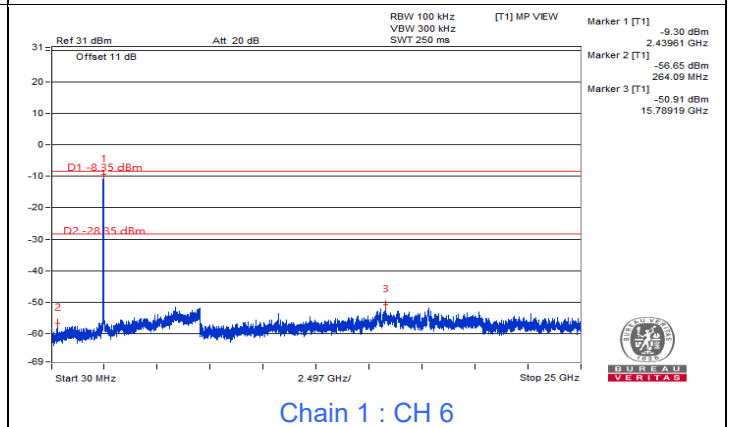
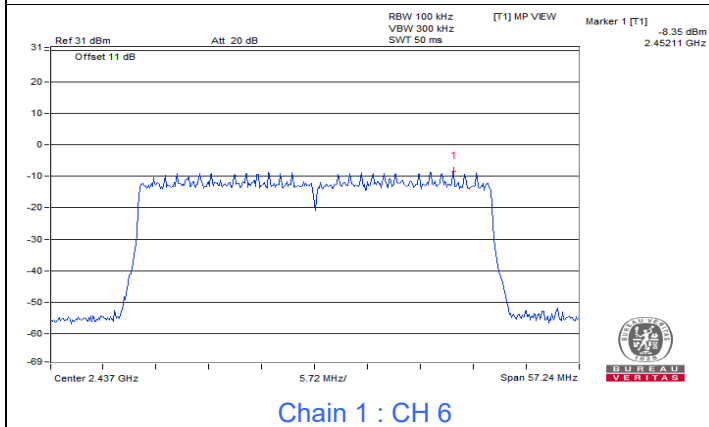
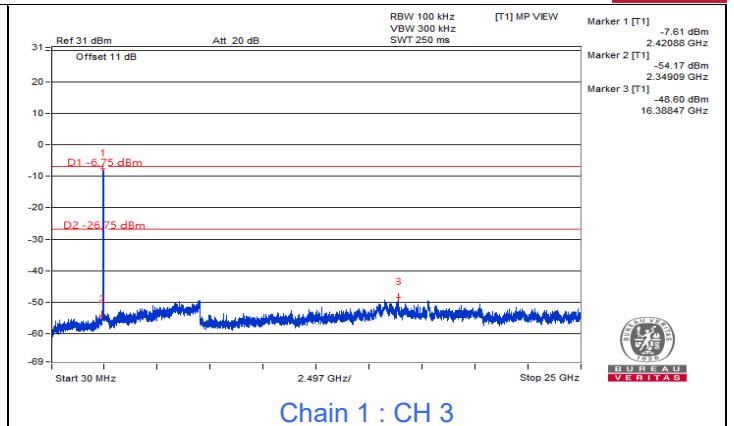
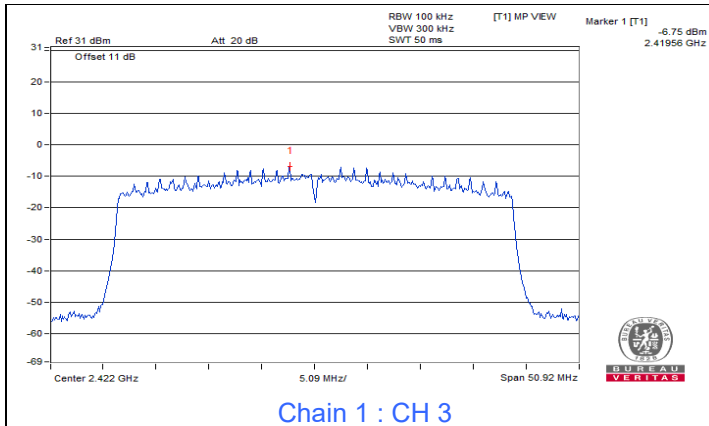
802.11ax (HE20)





802.11ax (HE40)





7.5 AC Power Conducted Emissions

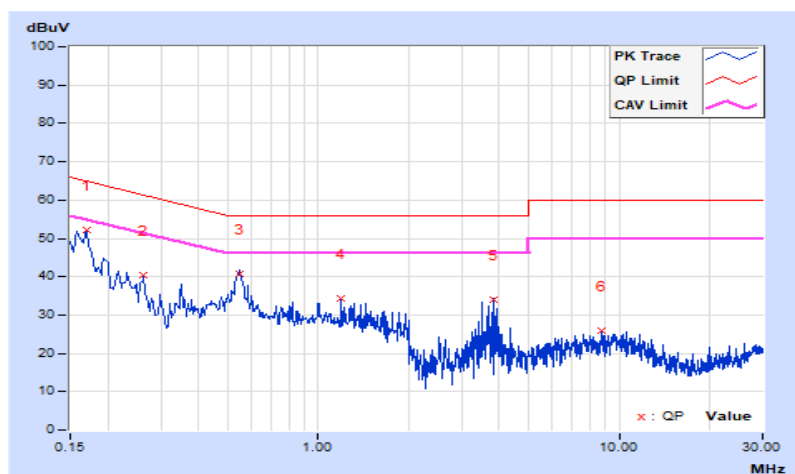
Mode A

RF Mode	802.11ax (HE40)	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, 75 % RH
Tested By	Jed Wu		

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	0.16956	10.10	42.02	22.41	52.12	32.51	64.98	54.98	-12.86	-22.47
2	0.26342	10.12	30.38	19.58	40.50	29.70	61.32	51.32	-20.82	-21.62
3	0.54693	10.16	30.45	20.29	40.61	30.45	56.00	46.00	-15.39	-15.55
4	1.19225	10.22	24.29	14.23	34.51	24.45	56.00	46.00	-21.49	-21.55
5	3.84599	10.51	23.40	14.84	33.91	25.35	56.00	46.00	-22.09	-20.65
6	8.71936	11.17	14.74	7.96	25.91	19.13	60.00	50.00	-34.09	-30.87

Remarks:

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

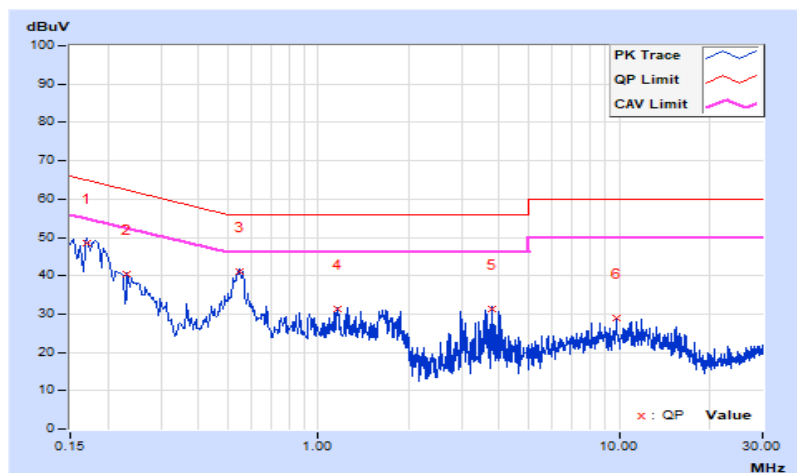


RF Mode	802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Jed Wu		

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	0.16956	10.35	38.20	15.38	48.55	25.73	64.98	54.98	-16.43	-29.25
2	0.23213	10.36	30.16	12.23	40.52	22.59	62.37	52.37	-21.85	-29.78
3	0.54693	10.40	30.84	21.12	41.24	31.52	56.00	46.00	-14.76	-14.48
4	1.16487	10.45	20.90	10.58	31.35	21.03	56.00	46.00	-24.65	-24.97
5	3.76386	10.74	20.67	8.56	31.41	19.30	56.00	46.00	-24.59	-26.70
6	9.78706	11.59	17.40	10.81	28.99	22.40	60.00	50.00	-31.01	-27.60

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



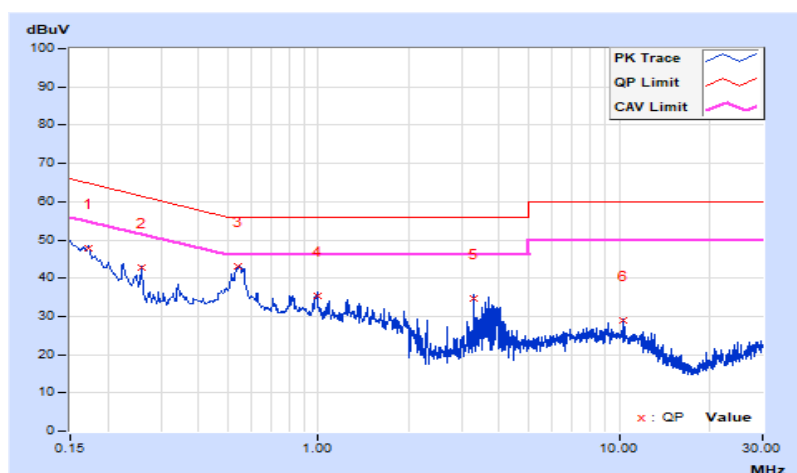
Mode B

RF Mode	802.11ax (HE40)	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, 75 % RH
Tested By	Jed Wu		

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	0.17283	10.10	37.62	23.19	47.72	33.29	64.82	54.82	-17.10	-21.53
2	0.25951	10.12	32.69	24.13	42.81	34.25	61.45	51.45	-18.64	-17.20
3	0.54234	10.16	32.77	26.81	42.93	36.97	56.00	46.00	-13.07	-9.03
4	0.99670	10.20	25.16	18.60	35.36	28.80	56.00	46.00	-20.64	-17.20
5	3.28672	10.46	24.10	14.32	34.56	24.78	56.00	46.00	-21.44	-21.22
6	10.38154	11.41	17.59	12.67	29.00	24.08	60.00	50.00	-31.00	-25.92

Remarks:

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

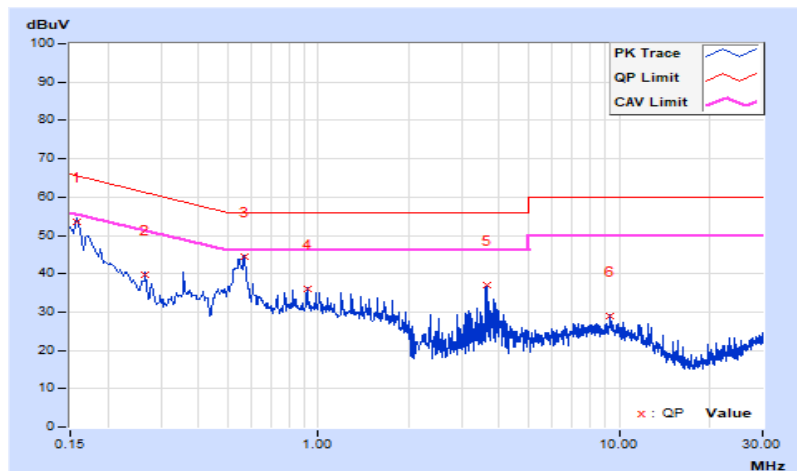


RF Mode	802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Jed Wu		

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	0.15760	10.35	43.33	26.98	53.68	37.33	65.59	55.59	-11.91	-18.26
2	0.26733	10.37	29.25	19.35	39.62	29.72	61.20	51.20	-21.58	-21.48
3	0.56649	10.40	34.15	26.46	44.55	36.86	56.00	46.00	-11.45	-9.14
4	0.91848	10.42	25.46	20.79	35.88	31.21	56.00	46.00	-20.12	-14.79
5	3.64653	10.72	26.22	16.57	36.94	27.29	56.00	46.00	-19.06	-18.71
6	9.35294	11.53	17.49	12.11	29.02	23.64	60.00	50.00	-30.98	-26.36

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

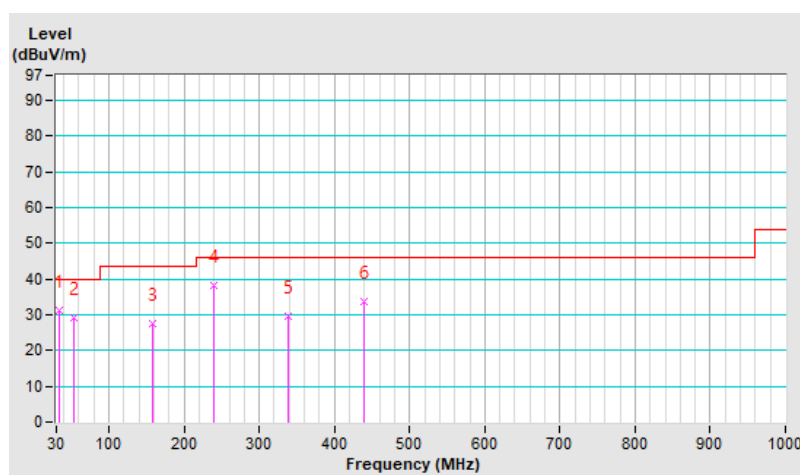
Mode A

RF Mode	802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.39	31.2 QP	40.0	-8.8	1.01 H	344	45.4	-14.2
2	53.74	29.2 QP	40.0	-10.8	1.00 H	5	42.4	-13.2
3	158.40	27.6 QP	43.5	-15.9	1.34 H	330	40.5	-12.9
4	239.80	38.2 QP	46.0	-7.8	2.52 H	160	52.7	-14.5
5	338.64	29.4 QP	46.0	-16.6	1.52 H	279	40.7	-11.3
6	438.45	33.7 QP	46.0	-12.3	1.86 H	239	42.3	-8.6

Remarks:

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

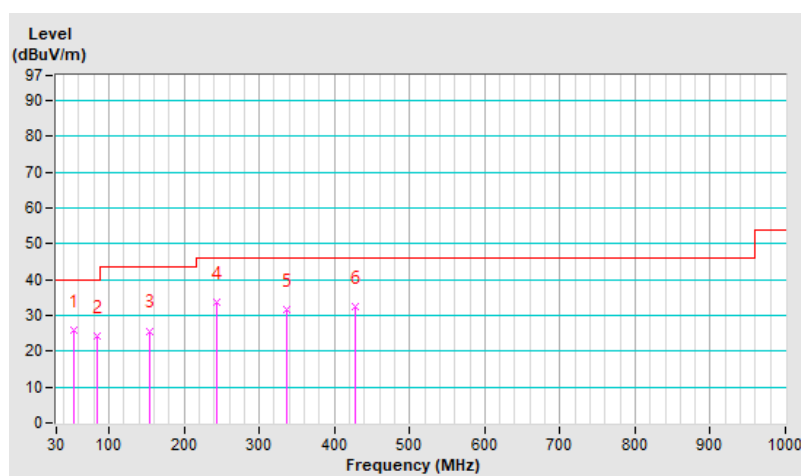


RF Mode	802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	53.74	25.9 QP	40.0	-14.1	3.74 V	49	39.1	-13.2
2	83.78	24.3 QP	40.0	-15.7	4.00 V	7	42.9	-18.6
3	153.55	25.7 QP	43.5	-17.8	3.29 V	100	38.6	-12.9
4	242.70	33.8 QP	46.0	-12.2	1.38 V	324	48.1	-14.3
5	336.70	31.5 QP	46.0	-14.5	2.09 V	239	42.8	-11.3
6	426.82	32.3 QP	46.0	-13.7	2.72 V	164	41.4	-9.1

Remarks:

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



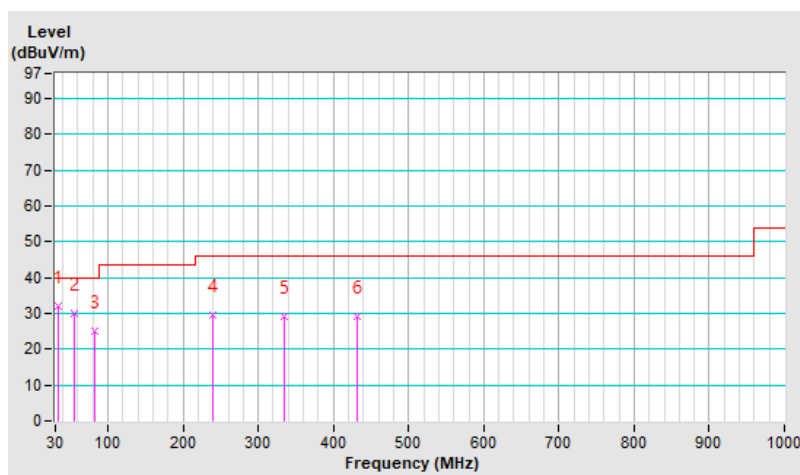
Mode B

RF Mode	802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	34.36	32.1 QP	40.0	-7.9	1.72 H	80	46.2	-14.1
2	54.71	30.1 QP	40.0	-9.9	2.01 H	115	43.4	-13.3
3	82.81	25.2 QP	40.0	-14.8	2.39 H	160	43.7	-18.5
4	239.80	29.5 QP	46.0	-16.5	2.96 H	227	44.0	-14.5
5	334.76	29.1 QP	46.0	-16.9	3.34 H	270	40.4	-11.3
6	431.66	29.1 QP	46.0	-16.9	3.73 H	313	38.0	-8.9

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.

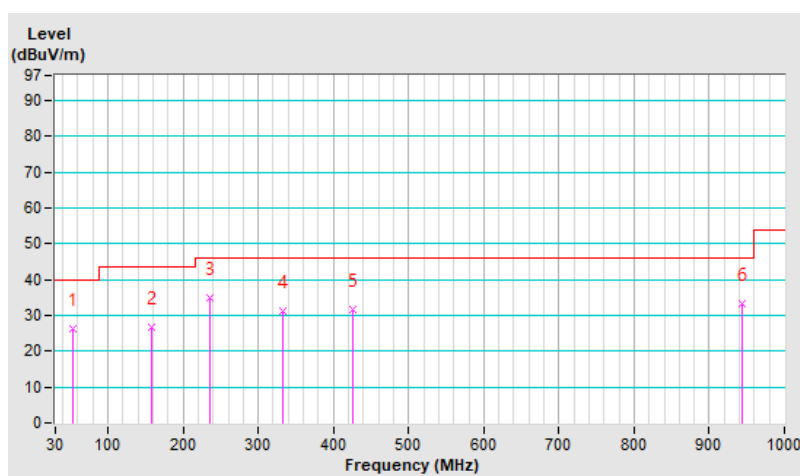


RF Mode	802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	53.74	26.3 QP	40.0	-13.7	1.00 V	0	39.5	-13.2
2	158.40	26.9 QP	43.5	-16.6	1.01 V	21	39.8	-12.9
3	235.92	34.9 QP	46.0	-11.1	1.45 V	77	49.6	-14.7
4	332.82	31.2 QP	46.0	-14.8	1.87 V	128	42.5	-11.3
5	424.88	31.8 QP	46.0	-14.2	2.27 V	176	41.0	-9.2
6	943.31	33.1 QP	46.0	-12.9	3.12 V	275	33.0	0.1

Remarks:

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



7.7 Unwanted Emissions above 1 GHz

Mode A

RF Mode	802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	58.6 PK	74.0	-15.4	1.23 H	32	26.5	32.1
2	2390.00	44.3 AV	54.0	-9.7	1.23 H	32	12.2	32.1
3	*2412.00	89.3 PK			1.23 H	32	57.2	32.1
4	*2412.00	85.5 AV			1.23 H	32	53.4	32.1
5	4824.00	48.5 PK	74.0	-25.5	2.23 H	43	45.5	3.0
6	4824.00	34.6 AV	54.0	-19.4	2.23 H	43	31.6	3.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.3 PK	74.0	-14.7	1.74 V	6	27.2	32.1
2	2390.00	47.3 AV	54.0	-6.7	1.74 V	6	15.2	32.1
3	*2412.00	102.9 PK			1.74 V	6	70.8	32.1
4	*2412.00	99.0 AV			1.74 V	6	66.9	32.1
5	4824.00	49.4 PK	74.0	-24.6	4.00 V	311	46.4	3.0
6	4824.00	39.6 AV	54.0	-14.4	4.00 V	311	36.6	3.0

Remarks:

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

RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	89.2 PK			1.21 H	36	57.1	32.1
2	*2437.00	85.7 AV			1.21 H	36	53.6	32.1
3	4874.00	48.5 PK	74.0	-25.5	1.58 H	224	45.2	3.3
4	4874.00	34.9 AV	54.0	-19.1	1.58 H	224	31.6	3.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	102.5 PK			1.73 V	3	70.4	32.1
2	*2437.00	98.9 AV			1.73 V	3	66.8	32.1
3	4874.00	49.6 PK	74.0	-24.4	1.36 V	23	46.3	3.3
4	4874.00	39.6 AV	54.0	-14.4	1.36 V	23	36.3	3.3

Remarks:

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

RF Mode	802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	88.6 PK			1.21 H	41	56.3	32.3
2	*2462.00	84.7 AV			1.21 H	41	52.4	32.3
3	2483.50	57.6 PK	74.0	-16.4	1.21 H	41	25.1	32.5
4	2483.50	45.2 AV	54.0	-8.8	1.21 H	41	12.7	32.5
5	4924.00	48.6 PK	74.0	-25.4	1.39 H	152	45.2	3.4
6	4924.00	35.0 AV	54.0	-19.0	1.39 H	152	31.6	3.4
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	102.1 PK			1.62 V	4	69.8	32.3
2	*2462.00	98.8 AV			1.62 V	4	66.5	32.3
3	2483.50	58.7 PK	74.0	-15.3	1.62 V	4	26.2	32.5
4	2483.50	45.8 AV	54.0	-8.2	1.62 V	4	13.3	32.5
5	4924.00	49.7 PK	74.0	-24.3	1.84 V	178	46.3	3.4
6	4924.00	39.9 AV	54.0	-14.1	1.84 V	178	36.5	3.4

Remarks:

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

RF Mode	802.11g	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.1 PK	74.0	-16.9	1.23 H	33	25.0	32.1
2	2390.00	43.4 AV	54.0	-10.6	1.23 H	33	11.3	32.1
3	*2412.00	80.4 PK			1.23 H	33	48.3	32.1
4	*2412.00	68.3 AV			1.23 H	33	36.2	32.1
5	4824.00	46.5 PK	74.0	-27.5	1.64 H	214	43.5	3.0
6	4824.00	32.6 AV	54.0	-21.4	1.64 H	214	29.6	3.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	58.0 PK	74.0	-16.0	1.54 V	3	25.9	32.1
2	2390.00	44.2 AV	54.0	-9.8	1.54 V	3	12.1	32.1
3	*2412.00	95.8 PK			1.54 V	3	63.7	32.1
4	*2412.00	83.3 AV			1.54 V	3	51.2	32.1
5	4824.00	47.7 PK	74.0	-26.3	1.69 V	254	44.7	3.0
6	4824.00	33.7 AV	54.0	-20.3	1.69 V	254	30.7	3.0

Remarks:

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

RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	82.6 PK			1.21 H	42	50.5	32.1
2	*2437.00	71.0 AV			1.21 H	42	38.9	32.1
3	4874.00	46.5 PK	74.0	-27.5	1.84 H	124	43.2	3.3
4	4874.00	32.9 AV	54.0	-21.1	1.84 H	124	29.6	3.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	98.4 PK			1.69 V	4	66.3	32.1
2	*2437.00	86.0 AV			1.69 V	4	53.9	32.1
3	4874.00	48.1 PK	74.0	-25.9	1.96 V	254	44.8	3.3
4	4874.00	33.9 AV	54.0	-20.1	1.96 V	254	30.6	3.3

Remarks:

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

RF Mode	802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	83.6 PK			1.19 H	46	51.3	32.3
2	*2462.00	71.6 AV			1.19 H	46	39.3	32.3
3	2483.50	57.9 PK	74.0	-16.1	1.19 H	46	25.4	32.5
4	2483.50	44.3 AV	54.0	-9.7	1.19 H	46	11.8	32.5
5	4924.00	47.0 PK	74.0	-27.0	1.96 H	333	43.6	3.4
6	4924.00	33.2 AV	54.0	-20.8	1.96 H	333	29.8	3.4
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	99.0 PK			1.45 V	2	66.7	32.3
2	*2462.00	86.5 AV			1.45 V	2	54.2	32.3
3	2483.50	58.6 PK	74.0	-15.4	1.45 V	2	26.1	32.5
4	2483.50	45.1 AV	54.0	-8.9	1.45 V	2	12.6	32.5
5	4924.00	48.2 PK	74.0	-25.8	1.84 V	163	44.8	3.4
6	4924.00	33.9 AV	54.0	-20.1	1.84 V	163	30.5	3.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.2 PK	74.0	-16.8	1.61 H	36	25.1	32.1
2	2390.00	44.4 AV	54.0	-9.6	1.61 H	36	12.3	32.1
3	*2412.00	88.9 PK			1.61 H	36	56.8	32.1
4	*2412.00	72.3 AV			1.61 H	36	40.2	32.1
5	4824.00	46.8 PK	74.0	-27.2	1.58 H	221	43.8	3.0
6	4824.00	32.6 AV	54.0	-21.4	1.58 H	221	29.6	3.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.7 PK	74.0	-16.3	1.31 V	17	25.6	32.1
2	2390.00	44.4 AV	54.0	-9.6	1.31 V	17	12.3	32.1
3	*2412.00	102.7 PK			1.31 V	17	70.6	32.1
4	*2412.00	87.1 AV			1.31 V	17	55.0	32.1
5	4824.00	47.6 PK	74.0	-26.4	1.19 V	258	44.6	3.0
6	4824.00	33.8 AV	54.0	-20.2	1.19 V	258	30.8	3.0

Remarks:

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

RF Mode	802.11ax (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	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	92.6 PK			1.59 H	43	60.5	32.1
2	*2437.00	75.8 AV			1.59 H	43	43.7	32.1
3	4874.00	47.8 PK	74.0	-26.2	1.63 H	222	44.5	3.3
4	4874.00	34.4 AV	54.0	-19.6	1.63 H	222	31.1	3.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	105.4 PK			1.00 V	17	73.3	32.1
2	*2437.00	88.6 AV			1.00 V	17	56.5	32.1
3	4874.00	49.3 PK	74.0	-24.7	1.63 V	236	46.0	3.3
4	4874.00	35.6 AV	54.0	-18.4	1.63 V	236	32.3	3.3

Remarks:

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

RF Mode	802.11ax (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	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	94.7 PK			1.57 H	39	62.4	32.3
2	*2462.00	76.4 AV			1.57 H	39	44.1	32.3
3	2483.50	60.1 PK	74.0	-13.9	1.57 H	39	27.6	32.5
4	2483.50	44.9 AV	54.0	-9.1	1.57 H	39	12.4	32.5
5	4924.00	49.2 PK	74.0	-24.8	1.45 H	226	45.8	3.4
6	4924.00	35.3 AV	54.0	-18.7	1.45 H	226	31.9	3.4
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	107.5 PK			1.44 V	2	75.2	32.3
2	*2462.00	89.2 AV			1.44 V	2	56.9	32.3
3	2483.50	61.3 PK	74.0	-12.7	1.44 V	2	28.8	32.5
4	2483.50	45.5 AV	54.0	-8.5	1.44 V	2	13.0	32.5
5	4924.00	49.7 PK	74.0	-24.3	1.87 V	44	46.3	3.4
6	4924.00	35.9 AV	54.0	-18.1	1.87 V	44	32.5	3.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	56.9 PK	74.0	-17.1	1.62 H	31	24.8	32.1
2	2390.00	44.7 AV	54.0	-9.3	1.62 H	31	12.6	32.1
3	*2422.00	89.2 PK			1.62 H	31	57.1	32.1
4	*2422.00	72.2 AV			1.62 H	31	40.1	32.1
5	4844.00	48.9 PK	74.0	-25.1	1.64 H	225	45.8	3.1
6	4844.00	35.5 AV	54.0	-18.5	1.64 H	225	32.4	3.1
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	57.8 PK	74.0	-16.2	1.05 V	17	25.7	32.1
2	2390.00	45.1 AV	54.0	-8.9	1.05 V	17	13.0	32.1
3	*2422.00	103.2 PK			1.05 V	17	71.1	32.1
4	*2422.00	86.9 AV			1.05 V	17	54.8	32.1
5	4844.00	49.3 PK	74.0	-24.7	1.63 V	269	46.2	3.1
6	4844.00	36.1 AV	54.0	-17.9	1.63 V	269	33.0	3.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	88.3 PK			1.58 H	29	56.2	32.1
2	*2437.00	72.4 AV			1.58 H	29	40.3	32.1
3	4874.00	46.8 PK	74.0	-27.2	1.89 H	225	43.5	3.3
4	4874.00	34.9 AV	54.0	-19.1	1.89 H	225	31.6	3.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	102.8 PK			1.00 V	16	70.7	32.1
2	*2437.00	86.5 AV			1.00 V	16	54.4	32.1
3	4874.00	49.5 PK	74.0	-24.5	1.69 V	325	46.2	3.3
4	4874.00	35.9 AV	54.0	-18.1	1.69 V	325	32.6	3.3

Remarks:

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

RF Mode	802.11ax (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	120 Vac, 60 Hz	Environmental Conditions	25.9 °C, 74.3 % RH
Tested By	Ian Chang		

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	89.6 PK			1.59 H	28	57.4	32.2
2	*2452.00	73.4 AV			1.59 H	28	41.2	32.2
3	2483.50	58.8 PK	74.0	-15.2	1.59 H	28	26.3	32.5
4	2483.50	45.4 AV	54.0	-8.6	1.59 H	28	12.9	32.5
5	4904.00	47.3 PK	74.0	-26.7	1.18 H	241	43.8	3.5
6	4904.00	35.6 AV	54.0	-18.4	1.18 H	241	32.1	3.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2452.00	104.5 PK			1.70 V	0	72.3	32.2
2	*2452.00	85.6 AV			1.70 V	0	53.4	32.2
3	2483.50	59.6 PK	74.0	-14.4	1.70 V	0	27.1	32.5
4	2483.50	45.7 AV	54.0	-8.3	1.70 V	0	13.2	32.5
5	4904.00	48.3 PK	74.0	-25.7	1.55 V	258	44.8	3.5
6	4904.00	36.7 AV	54.0	-17.3	1.55 V	258	33.2	3.5

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.

Mode B

RF Mode	802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.8 PK	74.0	-16.2	1.19 H	272	25.7	32.1
2	2390.00	44.5 AV	54.0	-9.5	1.19 H	272	12.4	32.1
3	*2412.00	96.8 PK			1.19 H	272	64.7	32.1
4	*2412.00	93.1 AV			1.19 H	272	61.0	32.1
5	4824.00	48.5 PK	74.0	-25.5	1.41 H	187	45.5	3.0
6	4824.00	36.9 AV	54.0	-17.1	1.41 H	187	33.9	3.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	58.5 PK	74.0	-15.5	3.22 V	184	26.4	32.1
2	2390.00	45.9 AV	54.0	-8.1	3.22 V	184	13.8	32.1
3	*2412.00	97.4 PK			3.22 V	184	65.3	32.1
4	*2412.00	94.3 AV			3.22 V	184	62.2	32.1
5	4824.00	49.2 PK	74.0	-24.8	1.37 V	146	46.2	3.0
6	4824.00	37.1 AV	54.0	-16.9	1.37 V	146	34.1	3.0

Remarks:

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

RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

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	95.6 PK			1.23 H	268	63.5	32.1
2	*2437.00	92.2 AV			1.23 H	268	60.1	32.1
3	4874.00	48.6 PK	74.0	-25.4	1.23 H	263	45.3	3.3
4	4874.00	37.1 AV	54.0	-16.9	1.23 H	263	33.8	3.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	96.5 PK			3.45 V	187	64.4	32.1
2	*2437.00	93.2 AV			3.45 V	187	61.1	32.1
3	4874.00	49.8 PK	74.0	-24.2	1.52 V	139	46.5	3.3
4	4874.00	37.6 AV	54.0	-16.4	1.52 V	139	34.3	3.3

Remarks:

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

RF Mode	802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

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	95.3 PK			1.18 H	271	63.0	32.3
2	*2462.00	92.4 AV			1.18 H	271	60.1	32.3
3	2483.50	56.8 PK	74.0	-17.2	1.18 H	271	24.3	32.5
4	2483.50	44.1 AV	54.0	-9.9	1.18 H	271	11.6	32.5
5	4924.00	48.7 PK	74.0	-25.3	1.47 H	222	45.3	3.4
6	4924.00	37.2 AV	54.0	-16.8	1.47 H	222	33.8	3.4
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	96.3 PK			3.32 V	192	64.0	32.3
2	*2462.00	93.0 AV			3.32 V	192	60.7	32.3
3	2483.50	58.7 PK	74.0	-15.3	3.32 V	192	26.2	32.5
4	2483.50	45.2 AV	54.0	-8.8	3.32 V	192	12.7	32.5
5	4924.00	49.9 PK	74.0	-24.1	1.85 V	254	46.5	3.4
6	4924.00	37.7 AV	54.0	-16.3	1.85 V	254	34.3	3.4

Remarks:

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

RF Mode	802.11g	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

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	56.7 PK	74.0	-17.3	1.18 H	271	24.6	32.1
2	2390.00	43.5 AV	54.0	-10.5	1.18 H	271	11.4	32.1
3	*2412.00	88.6 PK			1.18 H	271	56.5	32.1
4	*2412.00	76.7 AV			1.18 H	271	44.6	32.1
5	4824.00	48.2 PK	74.0	-25.8	1.52 H	123	45.2	3.0
6	4824.00	36.3 AV	54.0	-17.7	1.52 H	123	33.3	3.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.9 PK	74.0	-16.1	3.56 V	186	25.8	32.1
2	2390.00	44.2 AV	54.0	-9.8	3.56 V	186	12.1	32.1
3	*2412.00	89.9 PK			3.56 V	186	57.8	32.1
4	*2412.00	77.8 AV			3.56 V	186	45.7	32.1
5	4824.00	49.6 PK	74.0	-24.4	1.64 V	251	46.6	3.0
6	4824.00	37.6 AV	54.0	-16.4	1.64 V	251	34.6	3.0

Remarks:

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

RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

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	88.5 PK			1.23 H	269	56.4	32.1
2	*2437.00	76.3 AV			1.23 H	269	44.2	32.1
3	4874.00	48.5 PK	74.0	-25.5	1.14 H	152	45.2	3.3
4	4874.00	36.5 AV	54.0	-17.5	1.14 H	152	33.2	3.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	90.4 PK			3.38 V	185	58.3	32.1
2	*2437.00	78.5 AV			3.38 V	185	46.4	32.1
3	4874.00	49.8 PK	74.0	-24.2	1.62 V	235	46.5	3.3
4	4874.00	37.8 AV	54.0	-16.2	1.62 V	235	34.5	3.3

Remarks:

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

RF Mode	802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

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	89.4 PK			1.18 H	272	57.1	32.3
2	*2462.00	76.5 AV			1.18 H	272	44.2	32.3
3	2483.50	57.3 PK	74.0	-16.7	1.18 H	272	24.8	32.5
4	2483.50	44.1 AV	54.0	-9.9	1.18 H	272	11.6	32.5
5	4924.00	49.2 PK	74.0	-24.8	1.69 H	287	45.8	3.4
6	4924.00	36.7 AV	54.0	-17.3	1.69 H	287	33.3	3.4
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	90.5 PK			3.09 V	186	58.2	32.3
2	*2462.00	79.1 AV			3.09 V	186	46.8	32.3
3	2483.50	58.4 PK	74.0	-15.6	3.09 V	189	25.9	32.5
4	2483.50	45.0 AV	54.0	-9.0	3.09 V	189	12.5	32.5
5	4924.00	50.2 PK	74.0	-23.8	1.85 V	241	46.8	3.4
6	4924.00	38.0 AV	54.0	-16.0	1.85 V	241	34.6	3.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.3 PK	74.0	-16.7	1.23 H	266	25.2	32.1
2	2390.00	43.4 AV	54.0	-10.6	1.23 H	266	11.3	32.1
3	*2412.00	97.9 PK			1.23 H	266	65.8	32.1
4	*2412.00	79.4 AV			1.23 H	266	47.3	32.1
5	4824.00	48.2 PK	74.0	-25.8	1.36 H	269	45.2	3.0
6	4824.00	36.6 AV	54.0	-17.4	1.36 H	269	33.6	3.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	58.2 PK	74.0	-15.8	3.25 V	182	26.1	32.1
2	2390.00	44.2 AV	54.0	-9.8	3.25 V	182	12.1	32.1
3	*2412.00	99.0 PK			3.25 V	182	66.9	32.1
4	*2412.00	80.8 AV			3.25 V	182	48.7	32.1
5	4824.00	49.3 PK	74.0	-24.7	1.87 V	145	46.3	3.0
6	4824.00	37.8 AV	54.0	-16.2	1.87 V	145	34.8	3.0

Remarks:

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

RF Mode	802.11ax (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	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

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	100.2 PK			1.17 H	269	68.1	32.1
2	*2437.00	83.3 AV			1.17 H	269	51.2	32.1
3	4874.00	48.6 PK	74.0	-25.4	2.85 H	146	45.3	3.3
4	4874.00	36.5 AV	54.0	-17.5	2.85 H	146	33.2	3.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	101.5 PK			3.18 V	184	69.4	32.1
2	*2437.00	84.8 AV			3.18 V	184	52.7	32.1
3	4874.00	49.6 PK	74.0	-24.4	1.84 V	152	46.3	3.3
4	4874.00	38.1 AV	54.0	-15.9	1.84 V	152	34.8	3.3

Remarks:

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

RF Mode	802.11ax (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	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

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	100.4 PK			1.25 H	266	68.1	32.3
2	*2462.00	83.7 AV			1.25 H	266	51.4	32.3
3	2483.50	59.9 PK	74.0	-14.1	1.25 H	266	27.4	32.5
4	2483.50	47.2 AV	54.0	-6.8	1.25 H	266	14.7	32.5
5	4924.00	48.6 PK	74.0	-25.4	2.68 H	251	45.2	3.4
6	4924.00	36.6 AV	54.0	-17.4	2.68 H	251	33.2	3.4
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	101.6 PK			3.07 V	187	69.3	32.3
2	*2462.00	85.1 AV			3.07 V	187	52.8	32.3
3	2483.50	60.7 PK	74.0	-13.3	3.07 V	187	28.2	32.5
4	2483.50	48.1 AV	54.0	-5.9	3.07 V	187	15.6	32.5
5	4924.00	50.1 PK	74.0	-23.9	1.88 V	263	46.7	3.4
6	4924.00	38.0 AV	54.0	-16.0	1.88 V	263	34.6	3.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

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	58.2 PK	74.0	-15.8	1.18 H	266	26.1	32.1
2	2390.00	45.4 AV	54.0	-8.6	1.18 H	266	13.3	32.1
3	*2422.00	93.0 PK			1.18 H	266	60.9	32.1
4	*2422.00	80.2 AV			1.18 H	266	48.1	32.1
5	4844.00	48.3 PK	74.0	-25.7	2.36 H	284	45.2	3.1
6	4844.00	36.7 AV	54.0	-17.3	2.36 H	284	33.6	3.1
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	1.24 V	218	27.3	32.1
2	2390.00	46.2 AV	54.0	-7.8	1.24 V	218	14.1	32.1
3	*2422.00	94.2 PK			1.24 V	218	62.1	32.1
4	*2422.00	81.0 AV			1.24 V	218	48.9	32.1
5	4844.00	49.4 PK	74.0	-24.6	1.36 V	296	46.3	3.1
6	4844.00	37.6 AV	54.0	-16.4	1.36 V	296	34.5	3.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

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	92.9 PK			1.16 H	275	60.8	32.1
2	*2437.00	77.4 AV			1.16 H	275	45.3	32.1
3	4874.00	48.5 PK	74.0	-25.5	2.25 H	187	45.2	3.3
4	4874.00	37.2 AV	54.0	-16.8	2.25 H	187	33.9	3.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	94.0 PK			1.26 V	220	61.9	32.1
2	*2437.00	78.2 AV			1.26 V	220	46.1	32.1
3	4874.00	49.8 PK	74.0	-24.2	1.96 V	246	46.5	3.3
4	4874.00	38.1 AV	54.0	-15.9	1.96 V	246	34.8	3.3

Remarks:

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

RF Mode	802.11ax (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	120 Vac, 60 Hz	Environmental Conditions	23 °C, 71.3 % RH
Tested By	Ian Chang		

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	99.7 PK			1.19 H	268	67.5	32.2
2	*2452.00	82.5 AV			1.19 H	268	50.3	32.2
3	2483.50	60.0 PK	74.0	-14.0	1.19 H	268	27.5	32.5
4	2483.50	45.9 AV	54.0	-8.1	1.19 H	268	13.4	32.5
5	4904.00	48.8 PK	74.0	-25.2	2.29 H	63	45.3	3.5
6	4904.00	36.7 AV	54.0	-17.3	2.29 H	63	33.2	3.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2452.00	100.8 PK			3.00 V	188	68.6	32.2
2	*2452.00	84.0 AV			3.00 V	188	51.8	32.2
3	2483.50	60.7 PK	74.0	-13.3	3.00 V	188	28.2	32.5
4	2483.50	47.3 AV	54.0	-6.7	3.00 V	188	14.8	32.5
5	4904.00	50.2 PK	74.0	-23.8	1.84 V	177	46.7	3.5
6	4904.00	38.1 AV	54.0	-15.9	1.84 V	177	34.6	3.5

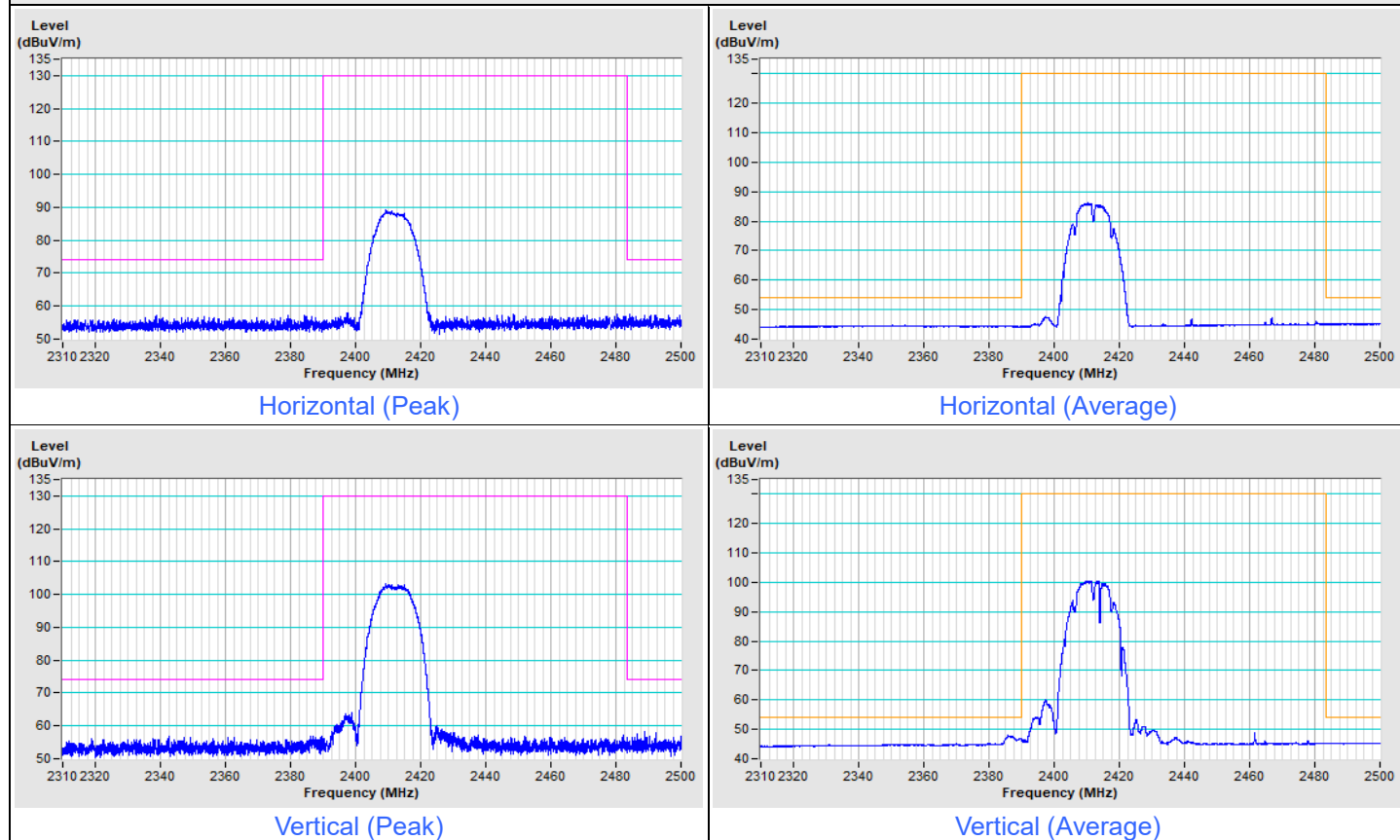
Remarks:

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

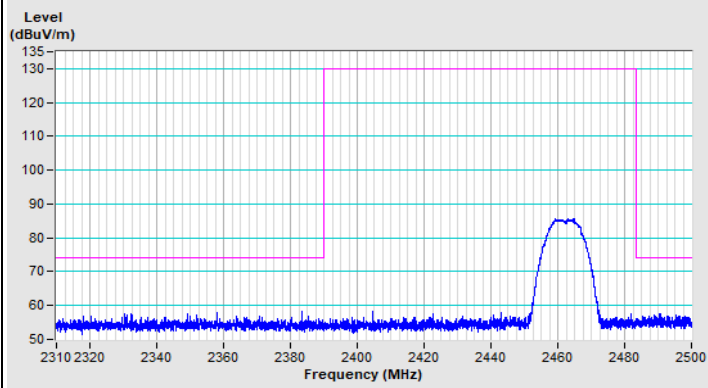
Plot of Band Edge_ Mode A

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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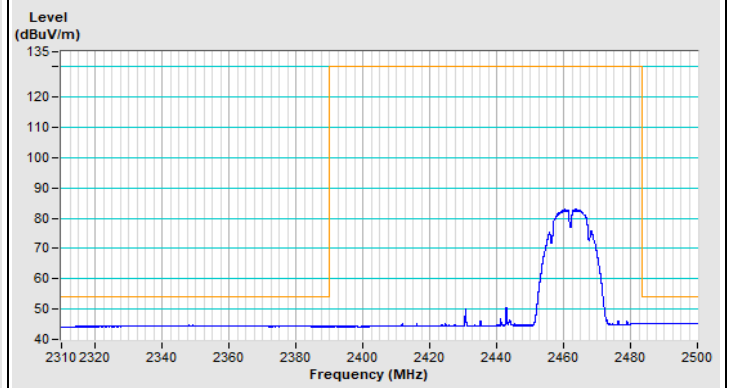
802.11b Channel 1



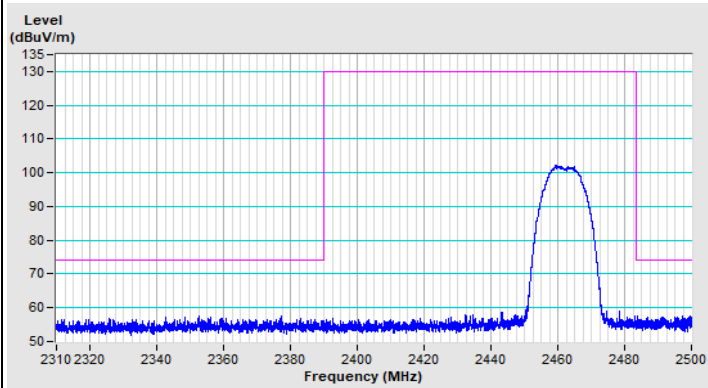
802.11b Channel 11



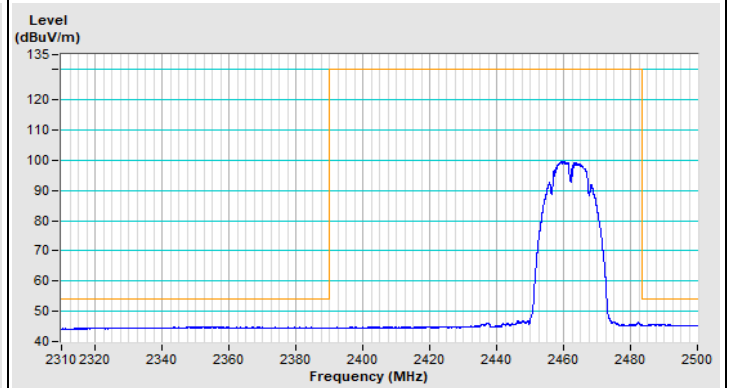
Horizontal (Peak)



Horizontal (Average)



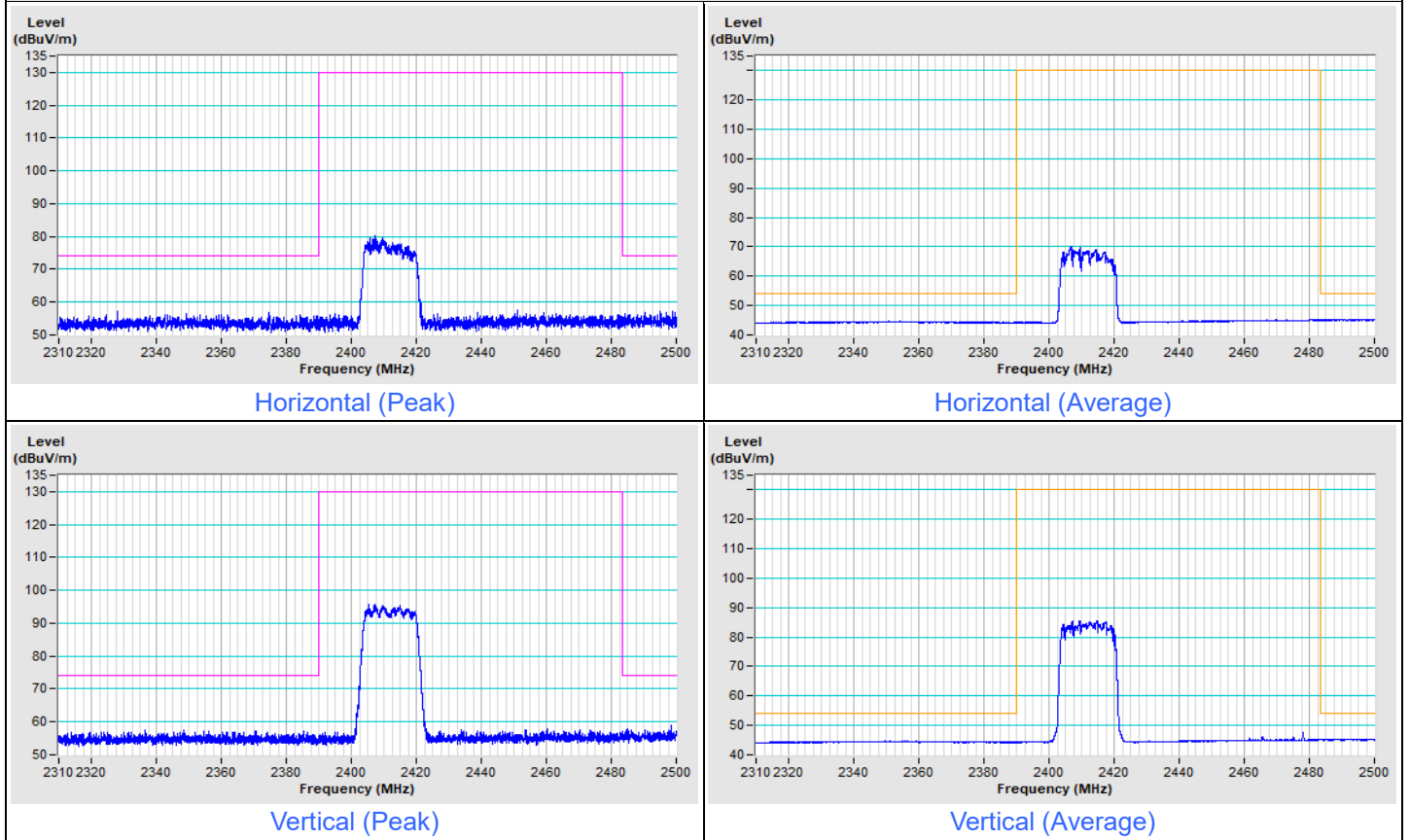
Vertical (Peak)



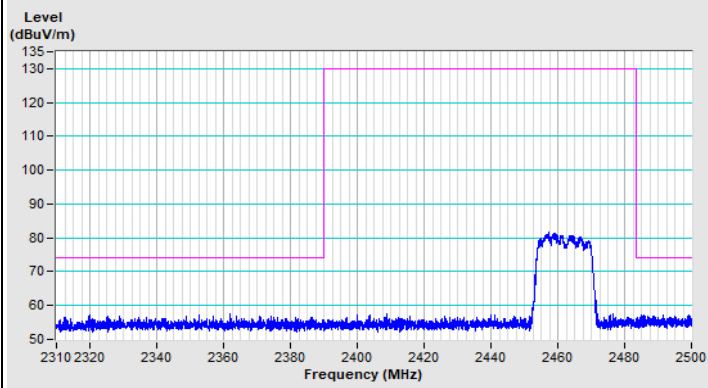
Vertical (Average)

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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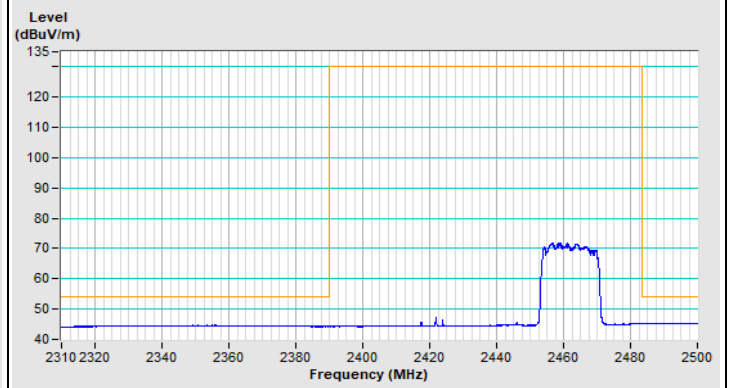
802.11g Channel 1



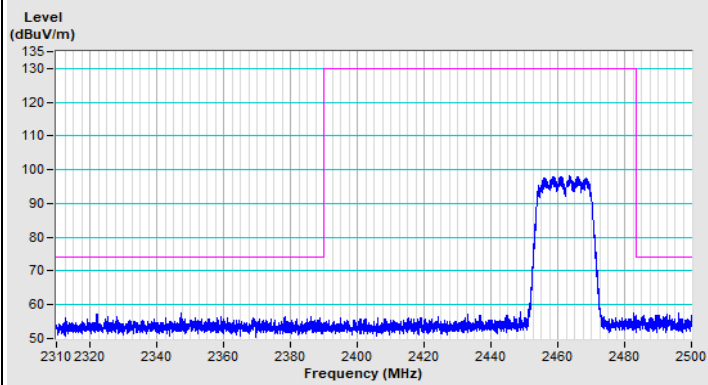
802.11g Channel 11



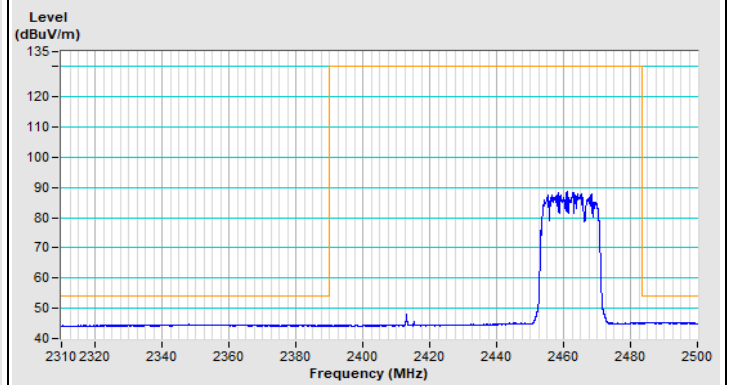
Horizontal (Peak)



Horizontal (Average)



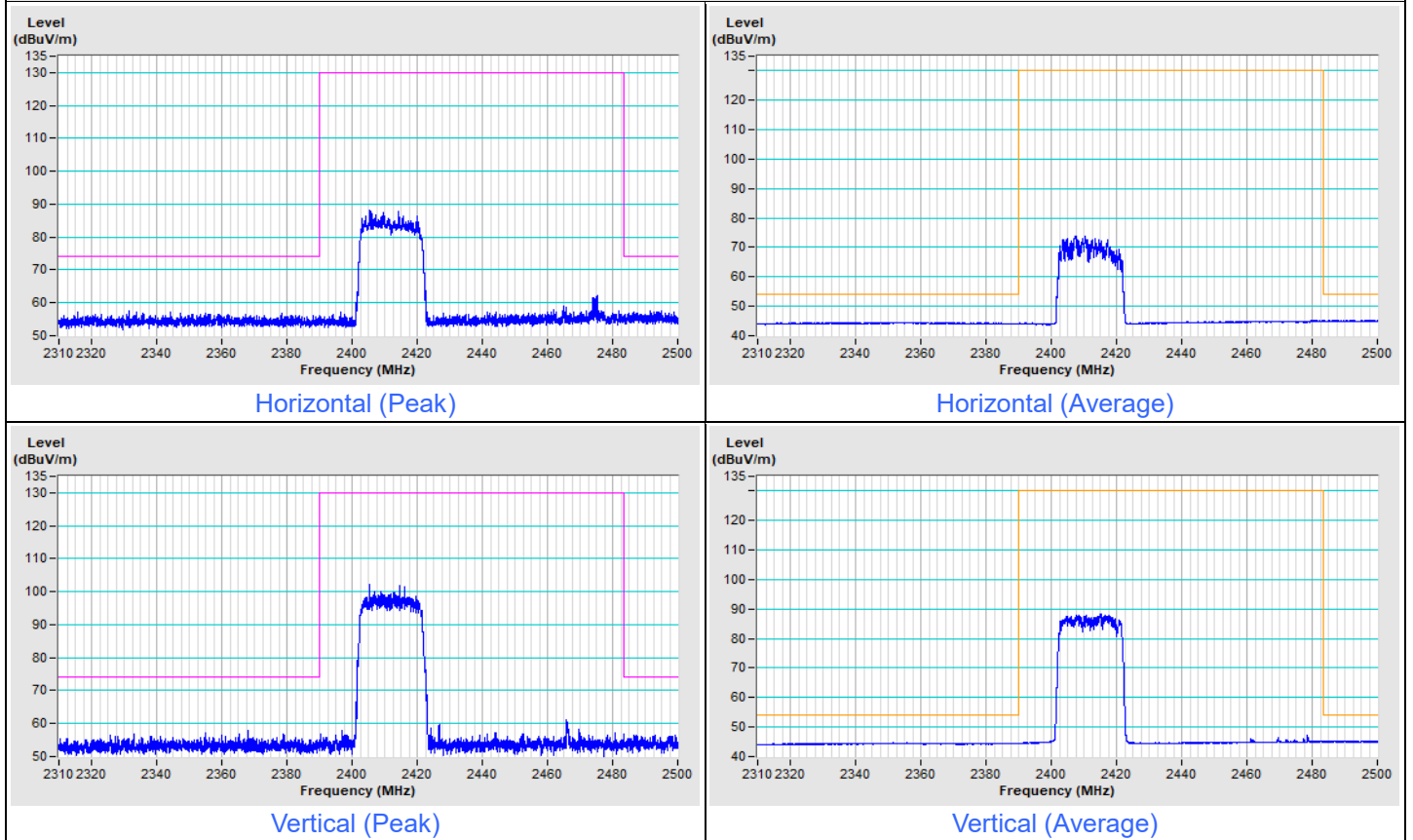
Vertical (Peak)



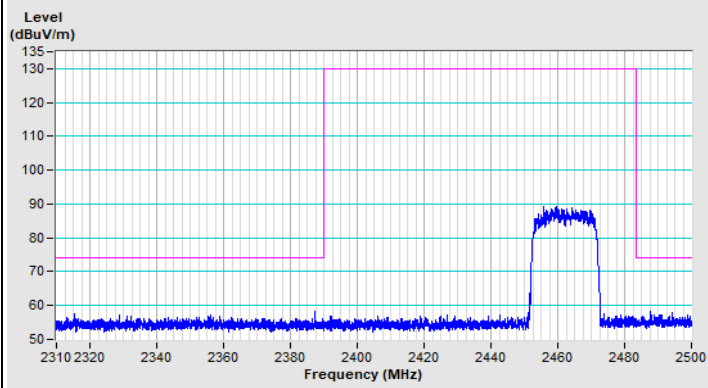
Vertical (Average)

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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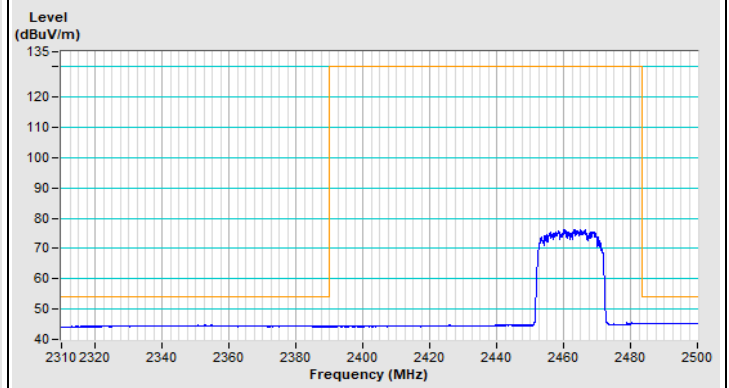
802.11ax (HE20) Channel 1



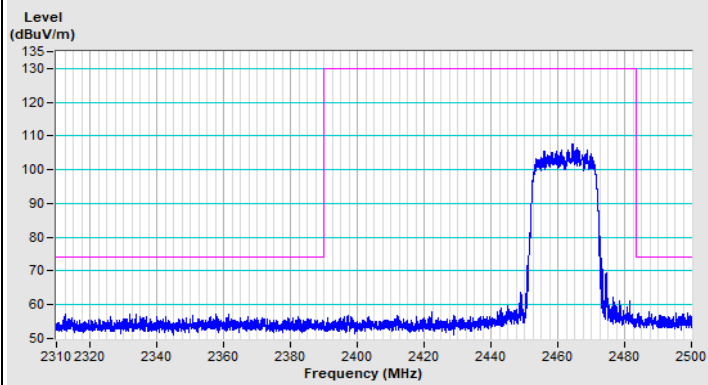
802.11ax (HE20) Channel 11



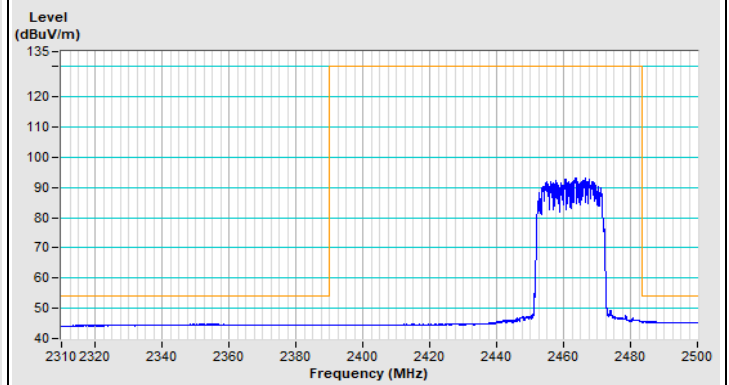
Horizontal (Peak)



Horizontal (Average)

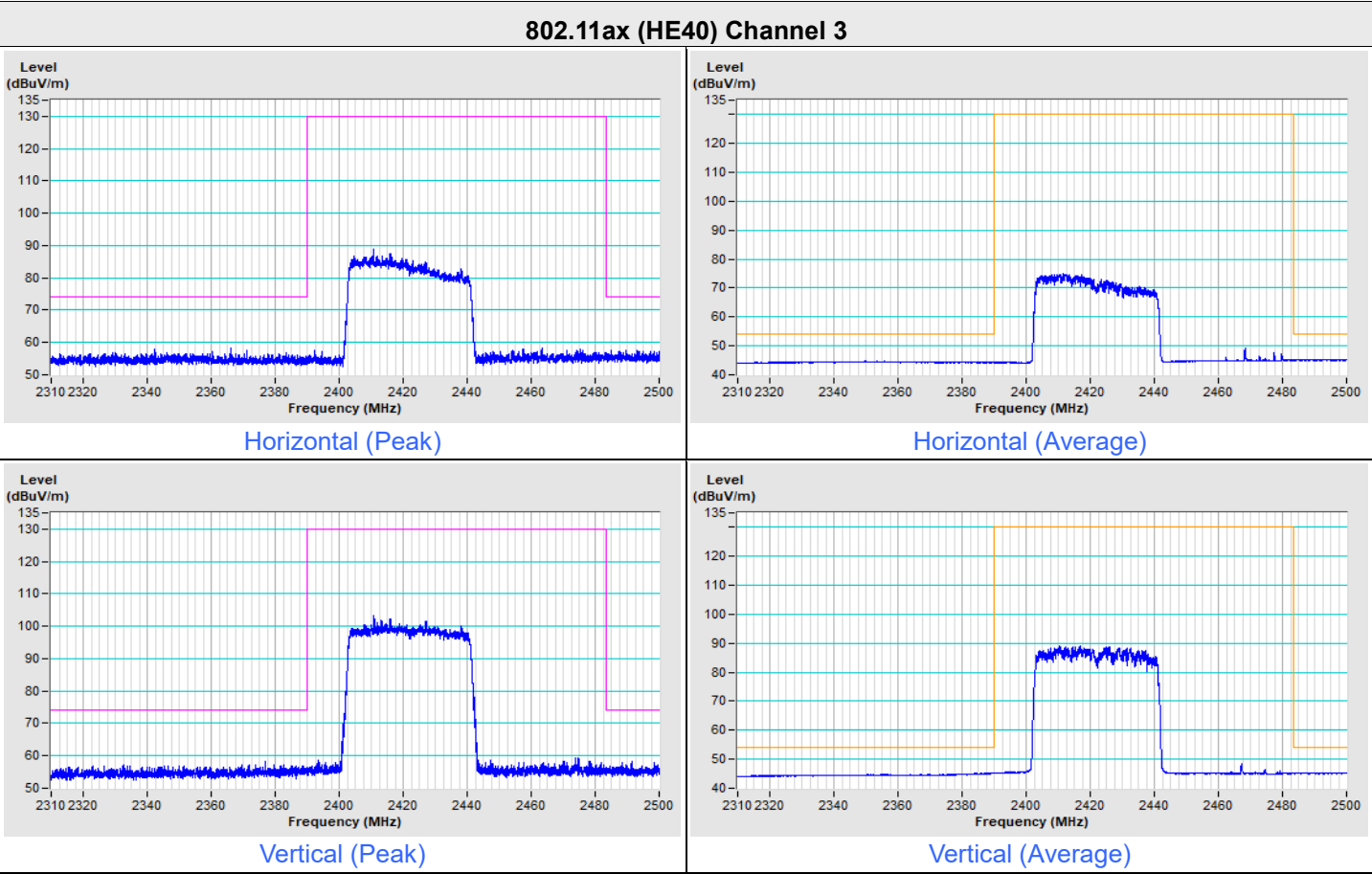


Vertical (Peak)

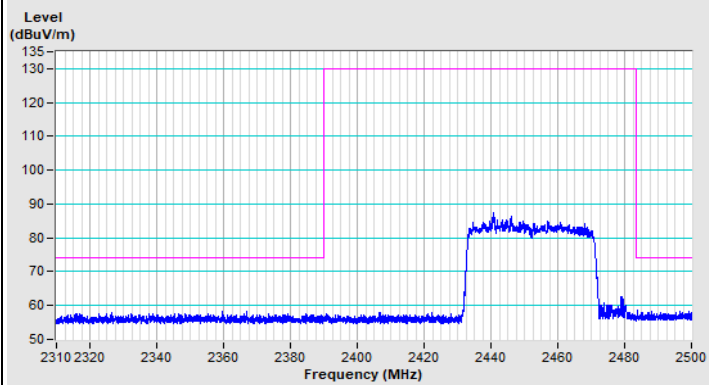


Vertical (Average)

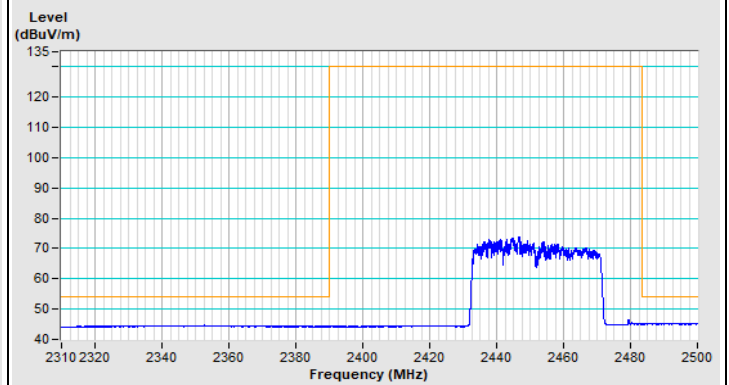
Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
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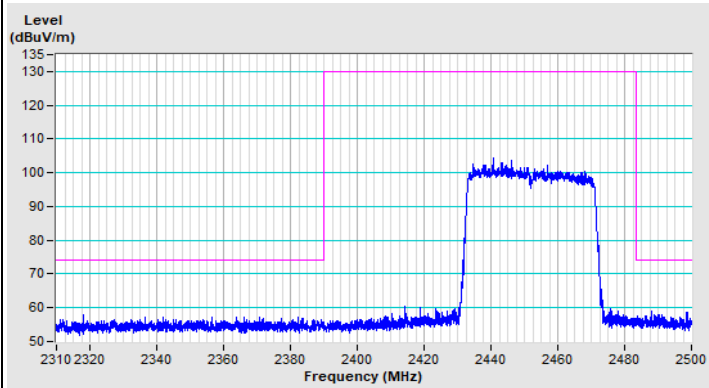
802.11ax (HE40) Channel 9



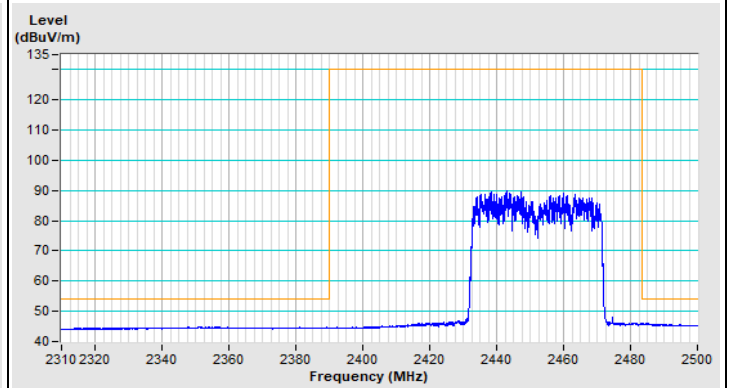
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)

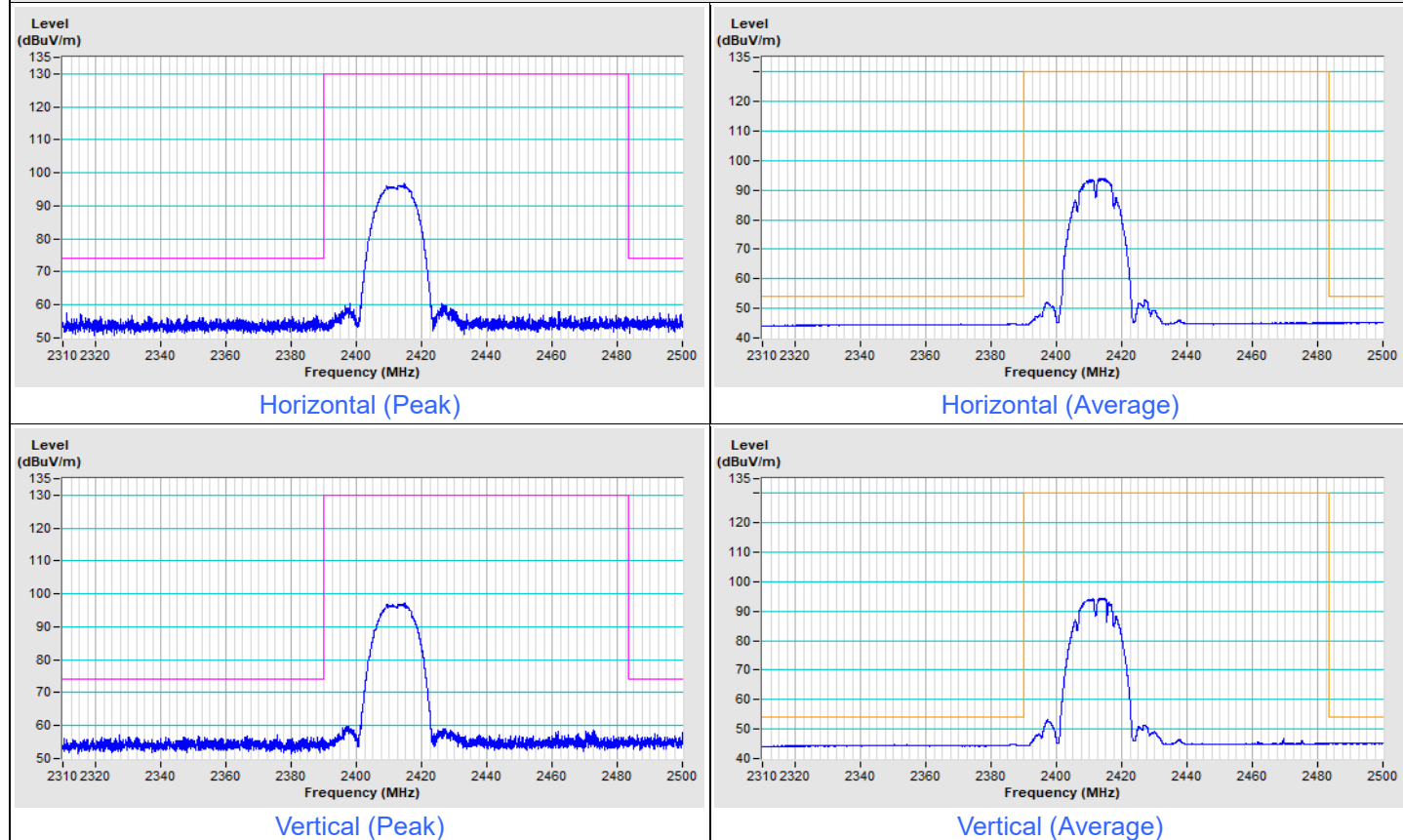


Vertical (Average)

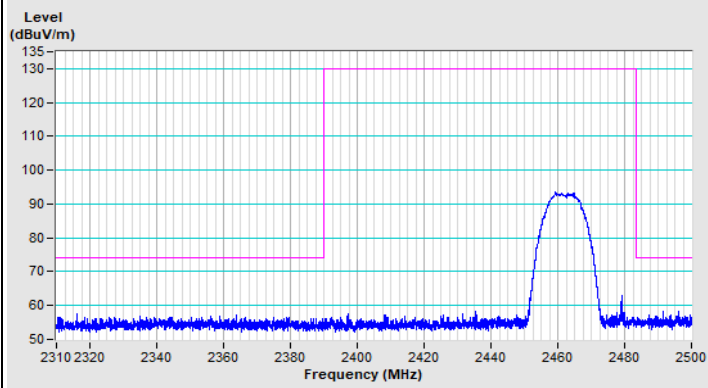
Plot of Band Edge_ Mode B

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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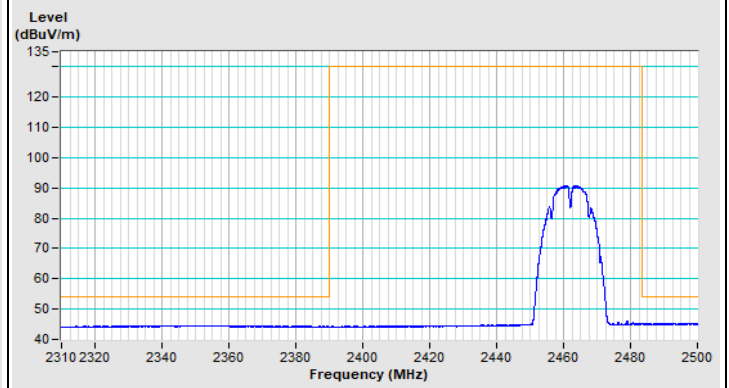
802.11b Channel 1



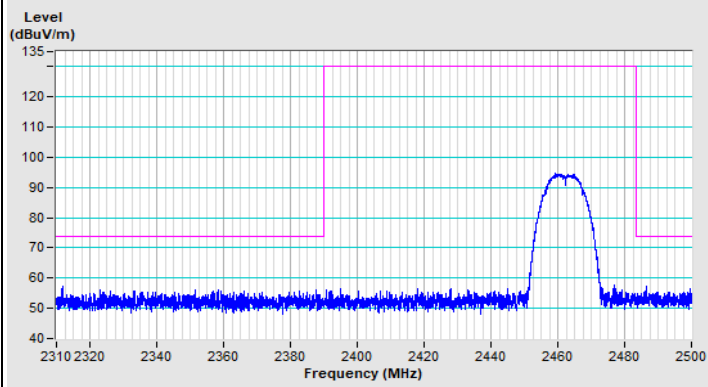
802.11b Channel 11



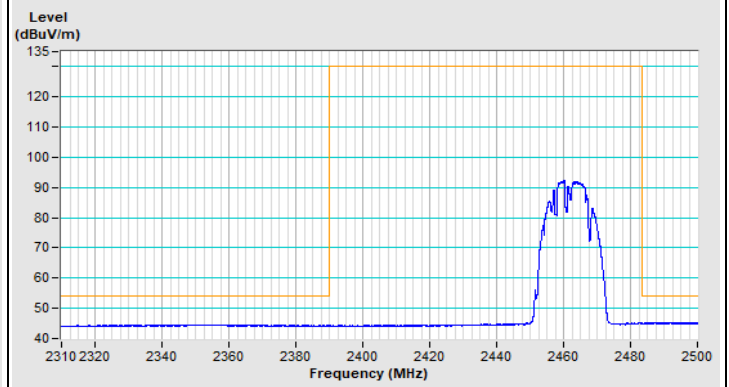
Horizontal (Peak)



Horizontal (Average)



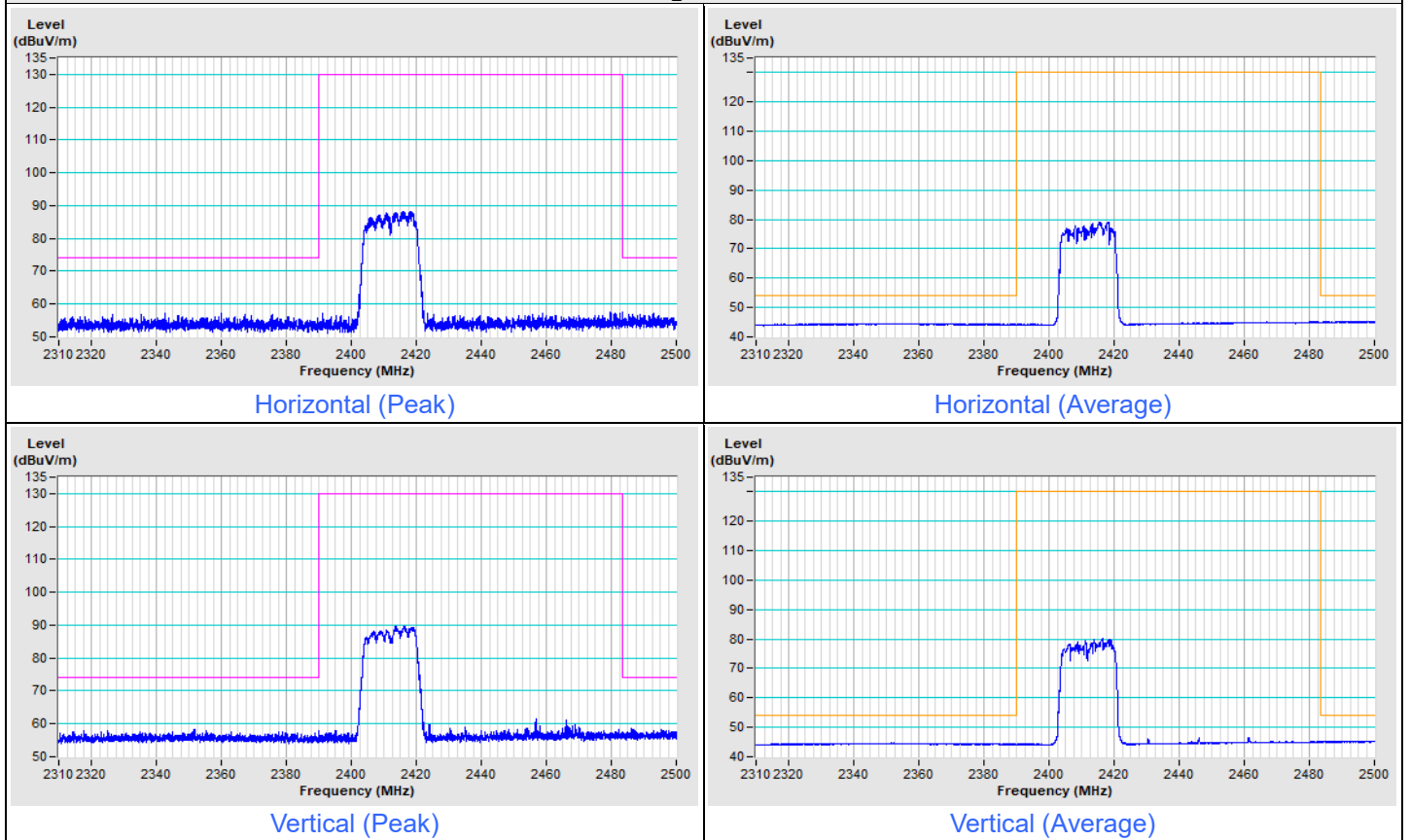
Vertical (Peak)



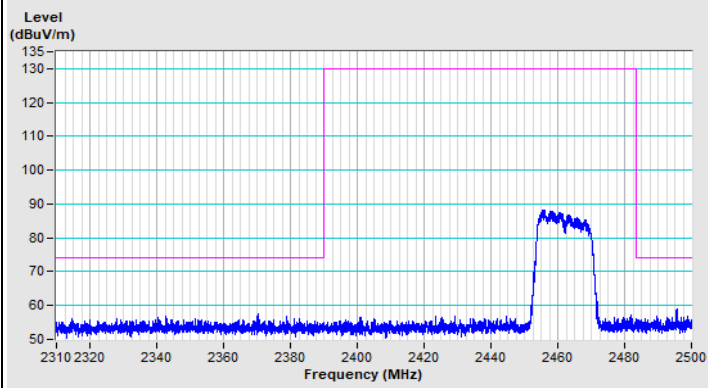
Vertical (Average)

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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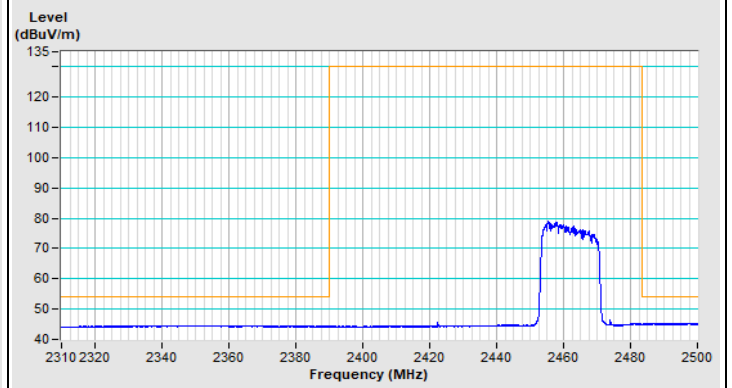
802.11g Channel 1



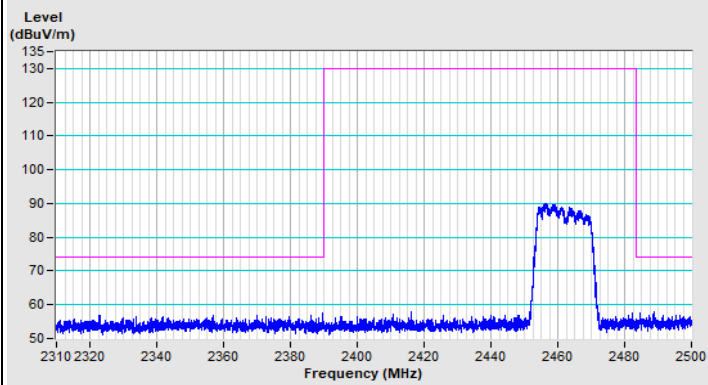
802.11g Channel 11



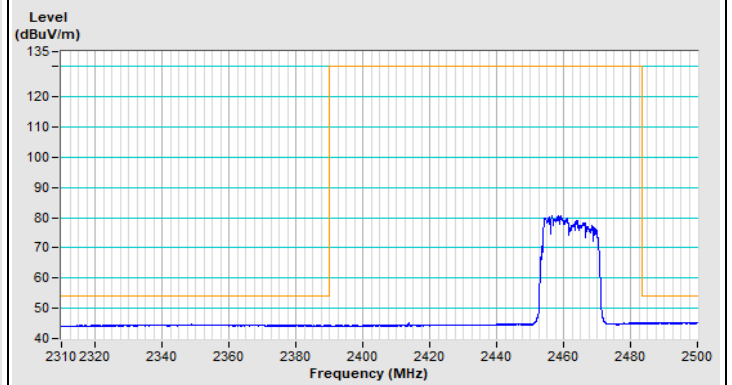
Horizontal (Peak)



Horizontal (Average)



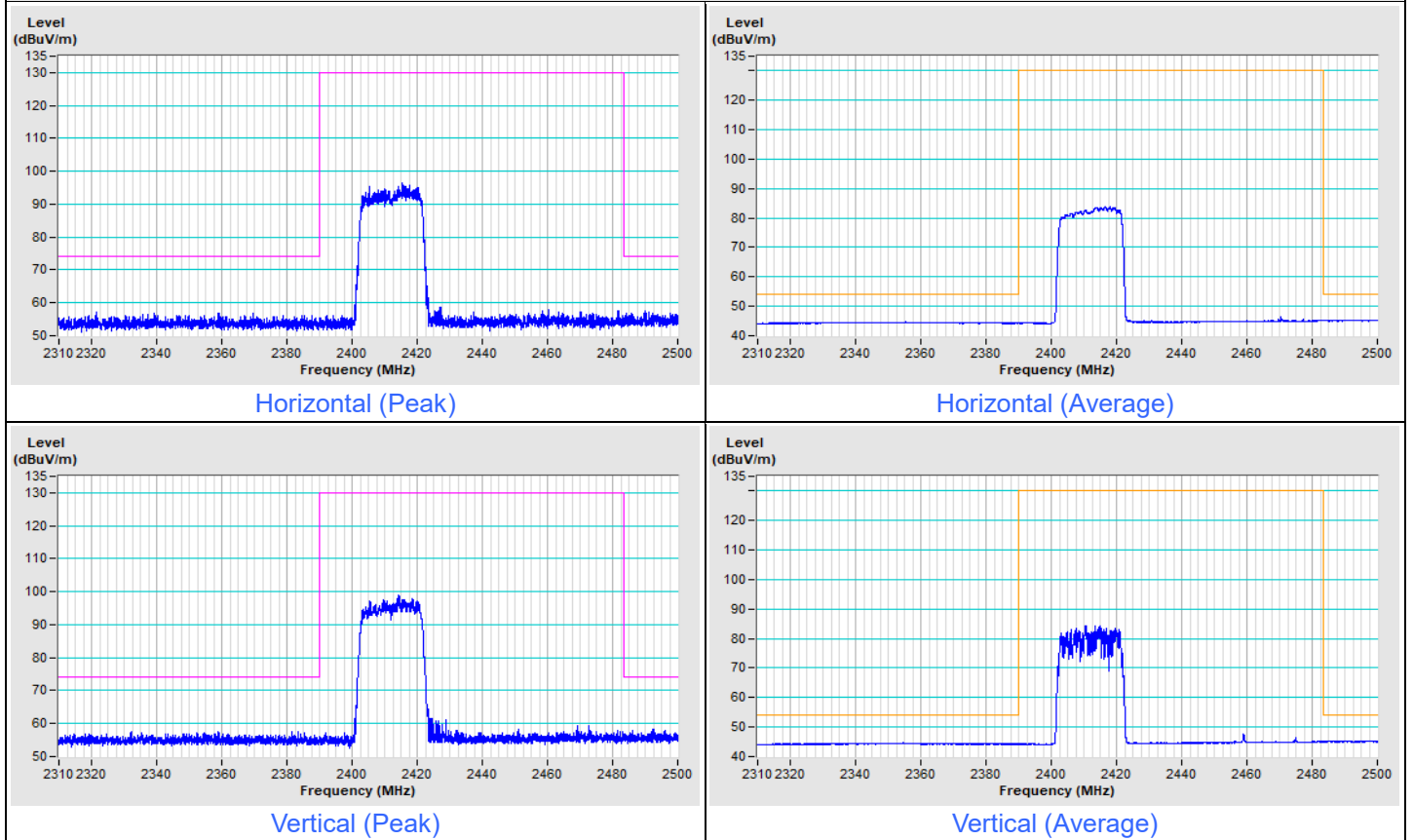
Vertical (Peak)



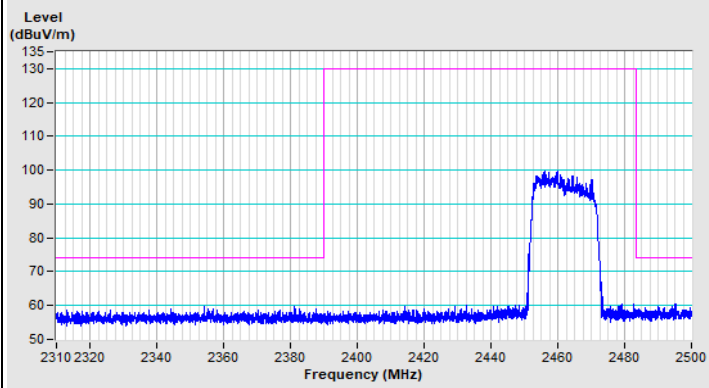
Vertical (Average)

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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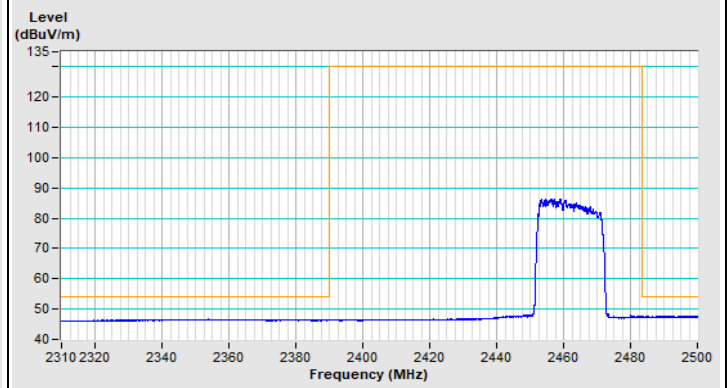
802.11ax (HE20) Channel 1



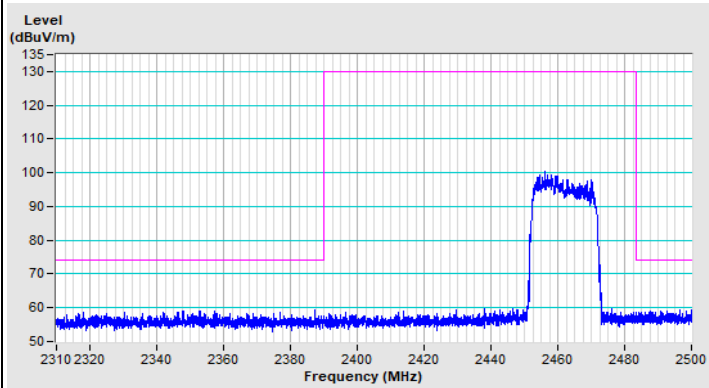
802.11ax (HE20) Channel 11



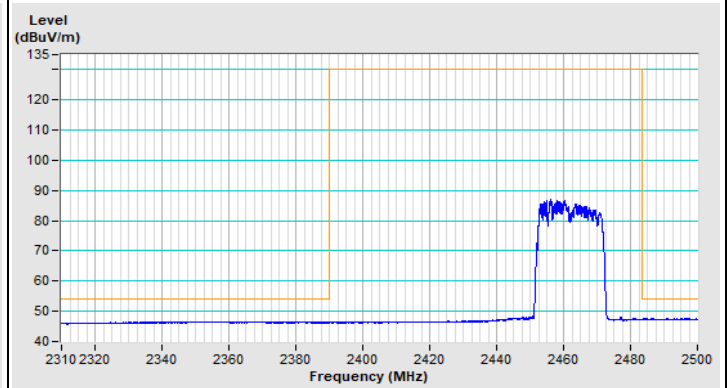
Horizontal (Peak)



Horizontal (Average)



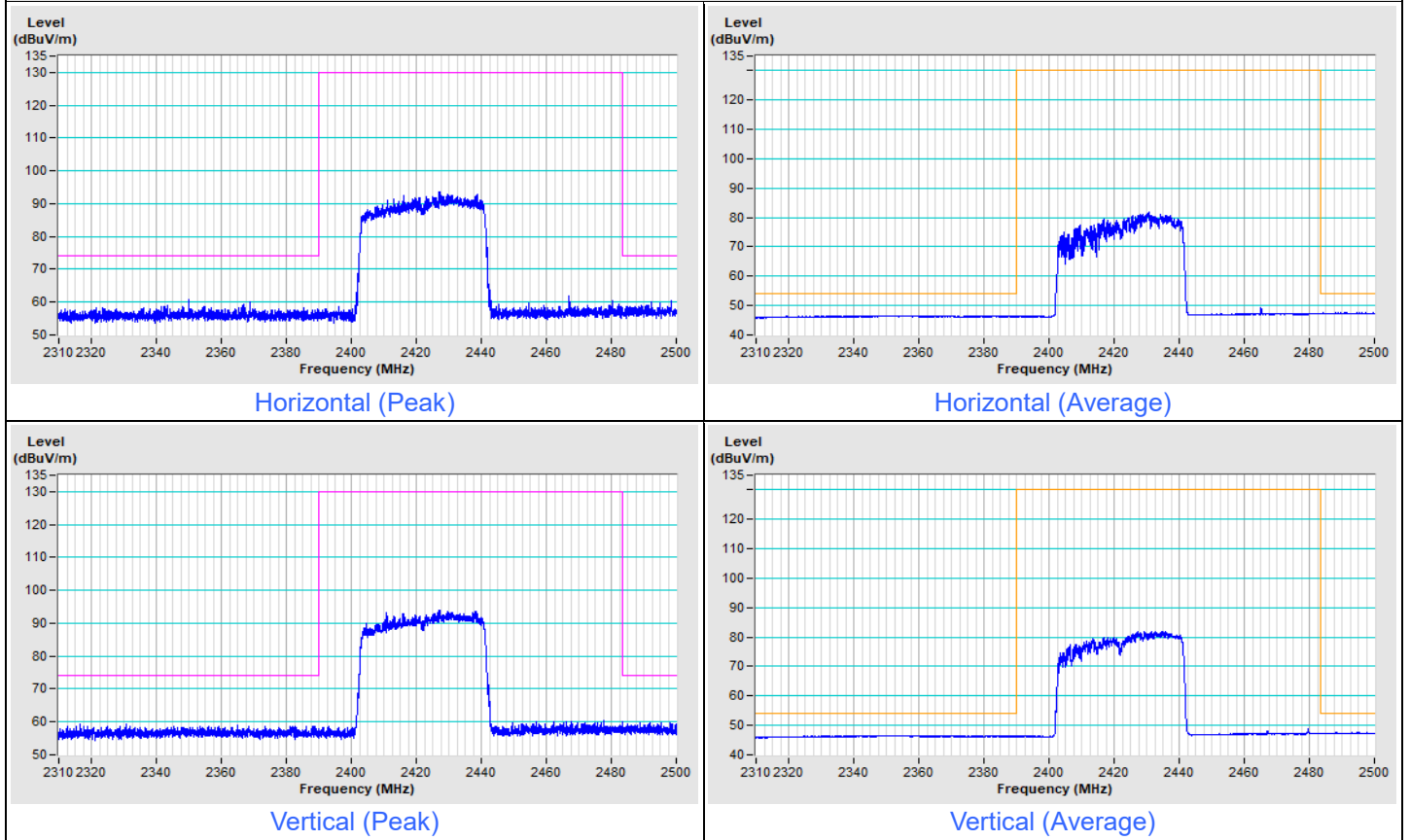
Vertical (Peak)



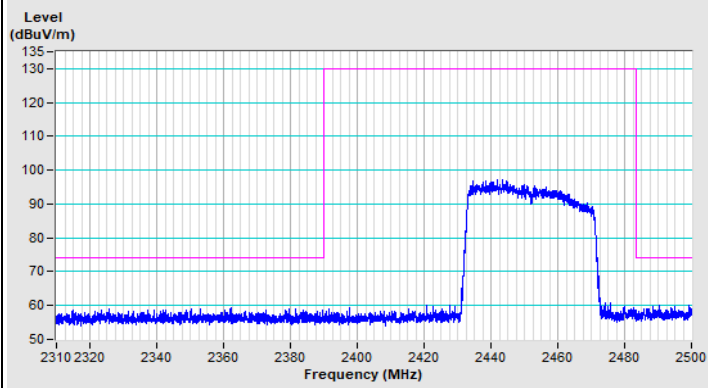
Vertical (Average)

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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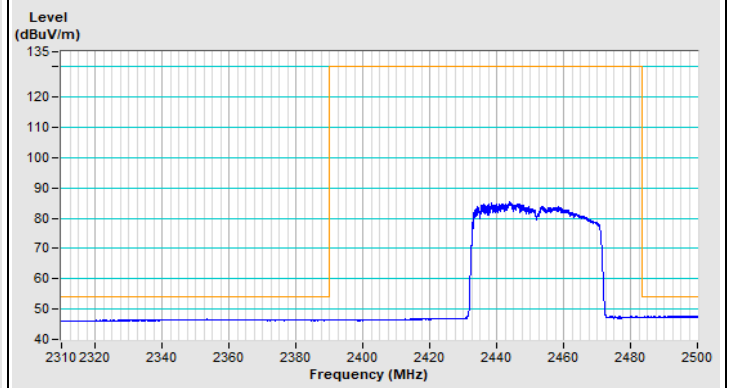
802.11ax (HE40) Channel 3



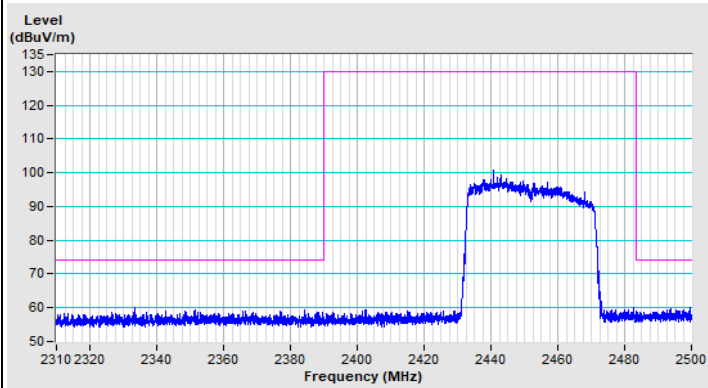
802.11ax (HE40) Channel 9



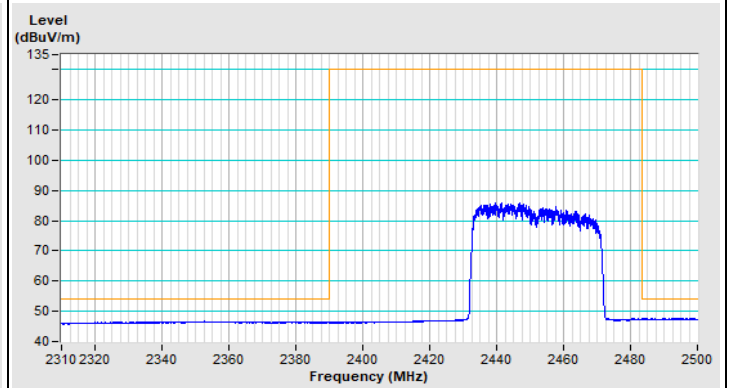
Horizontal (Peak)



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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