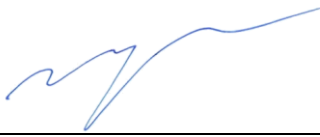


TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)
Report No.: RFBHQC-WTW-P22060178
FCC ID: 2AQ68W6RD2201
Model No.: W6R-D220-101
Received Date: 2022/6/6
Test Date: 2022/7/6 ~ 2022/7/20
Issued Date: 2022/7/28
Applicant: HON LIN Technology Co., Ltd.
Address: 11F, No.32, Jihu Rd., Neihu Dist., Taipei City 114, Taiwan R.O.C.
Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory
Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / 723255 / TW2022
Designation Number:

Approved by:  , **Date:** 2022/7/28
May Chen / Manager

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Prepared by : Vito Lung / Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBHQC-WTW-P22060178	Original release.	2022/7/28

1 Certificate

Product: Indoor Wireless Gateway

Brand: Hon Lin

Test Model: W6R-D220-101

Sample Status: Engineering sample

Applicant: HON LIN Technology Co., Ltd.

Test Date: 2022/7/6 ~ 2022/7/20

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 -3.96 dB at 3.71094 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -6.0 dB at 32.63 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.1 dB at 2388.95, 2485.72 MHz
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.5 dB
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.4 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.0 dB
	18 GHz ~ 40 GHz	5.3 dB

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

2.2 Supplementary Information

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

3 General Information

3.1 General Description

Product	Indoor Wireless Gateway
Brand	Hon Lin
Test Model	W6R-D220-101
Status of EUT	Engineering sample
Power Supply Rating	12Vdc from Adapter or 48Vdc From PoE
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in VHT mode 1024QAM for OFDMA in 11ax mode
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11 Mbps 802.11g: up to 54 Mbps 802.11n: up to 300 Mbps VHT: up to 400 Mbps 802.11ax: up to 573.5Mbps
Operating Frequency	2.412 GHz ~ 2.462 GHz
Number of Channel	802.11b, 802.11g, 11n (HT20), VHT20, 802.11ax (HE20): 11 VHT40, 802.11ax (HE40): 7
Output Power	990.534 mW (29.96 dBm)

Note:

1. Simultaneously transmission condition.

Condition	Technology	
1	WLAN 2.4 GHz_Ant 0	WLAN 5 GHz_Ant 1
2	WLAN 2.4 GHz_Ant 1	WLAN 5 GHz_Ant 0

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

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna No.	RF Chain NO.	Brand	Model	Antenna Net Gain(dBi)	Frequency Range (GHz)	Antenna Type	Connector Type
WA-P-LB-01-287	1	INPAQ	IDL755	3.41	2.4~2.4835	PCB	ipex(MHF)
				4.4	5.15~5.85		
WA-P-LB-02-883	0	INPAQ	IDL755	3.58	2.4~2.4835	PCB	ipex(MHF)
				4.55	5.15~5.85		

* 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/1Tx Diversity	2RX
802.11g	2Tx/1Tx Diversity	2RX
802.11n (HT20)	2Tx/1Tx Diversity	2RX
802.11n (HT40)	2Tx/1Tx Diversity	2RX
VHT20	2Tx/1Tx Diversity	2RX
VHT40	2Tx/1Tx Diversity	2RX
802.11ax (HE20)	2Tx/1Tx Diversity	2RX
802.11ax (HE40)	2Tx/1Tx Diversity	2RX

Note:

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

3.3 Channel List

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

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

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

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

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. EUT can be used in the following ways: Lying/ Wall Mount. Pre-scan in these ways and find the worst case as a representative test condition. 2. Adapter and PoE adapter prescan worse case
Worst Case:	1. Lying/ Wall Mount Worst Condition:Wall Mount 2. Adapter and PoE adapter prescan worse case: PoE adapter 3. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

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

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

Test Item	Mode	Tested Channel	Modulation	Data Rate Parameter
AC Power Conducted Emissions	802.11b	6	DBPSK	1Mb/s
Unwanted Emissions below 1 GHz	802.11b	6	DBPSK	1Mb/s
Unwanted Emissions above 1 GHz	802.11b	1, 6, 11	DBPSK	1Mb/s
	802.11g	1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)	3, 6, 9	BPSK	MCS0
RF Output Power	802.11b	1, 6, 11	DBPSK	1Mb/s
	802.11g	1, 6, 11	BPSK	6Mb/s
	VHT20	1, 6, 11	BPSK	MCS0
	VHT40	3, 6, 9	BPSK	MCS0
	802.11ax (HE20)	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)	3, 6, 9	BPSK	MCS0
Power Spectral Density	802.11b	1, 6, 11	DBPSK	1Mb/s
	802.11g	1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)	3, 6, 9	BPSK	MCS0
6 dB Bandwidth / Conducted Out of Band Emissions	802.11b	1, 6, 11	DBPSK	1Mb/s
	802.11g	1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)	3, 6, 9	BPSK	MCS0

3.5 Duty Cycle of Test Signal

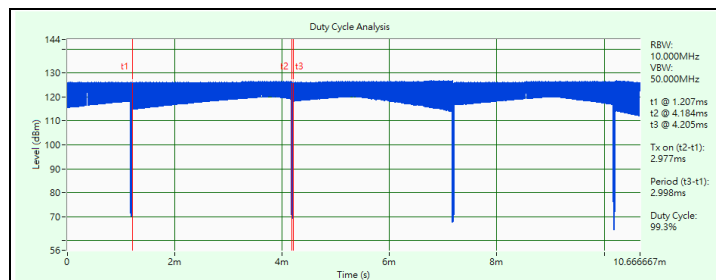
Duty cycle of test signal is $\geq 98\%$, duty factor is not required.
Duty cycle of test signal is $< 98\%$, duty factor shall be considered.

802.11b: Duty cycle = $2.977 \text{ ms} / 2.998 \text{ ms} \times 100\% = 99.3\%$

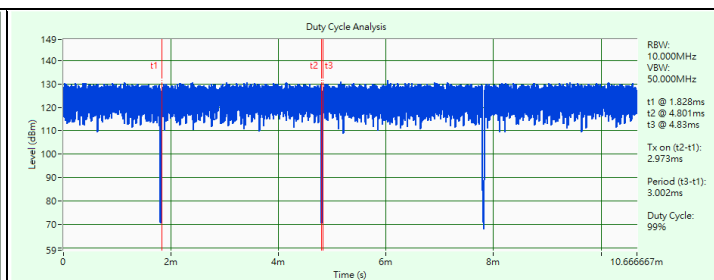
802.11g: Duty cycle = $2.973 \text{ ms} / 3.002 \text{ ms} \times 100\% = 99.0\%$

802.11ax (HE20): Duty cycle = $2.278 \text{ ms} / 2.309 \text{ ms} \times 100\% = 98.7\%$

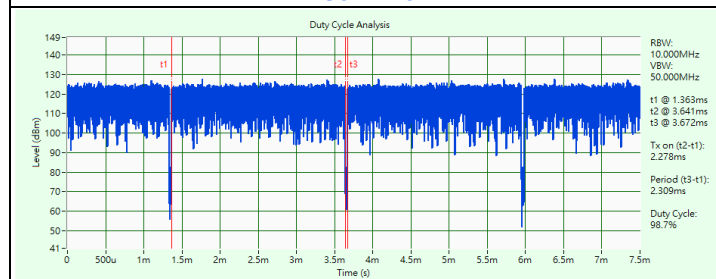
802.11ax (HE40): Duty cycle = $2.363 \text{ ms} / 2.393 \text{ ms} \times 100\% = 98.7\%$



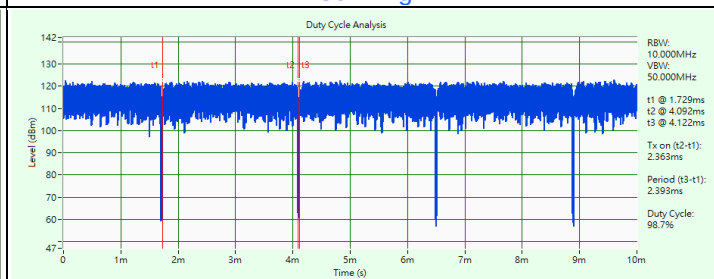
802.11b



802.11g



802.11ax (HE20)



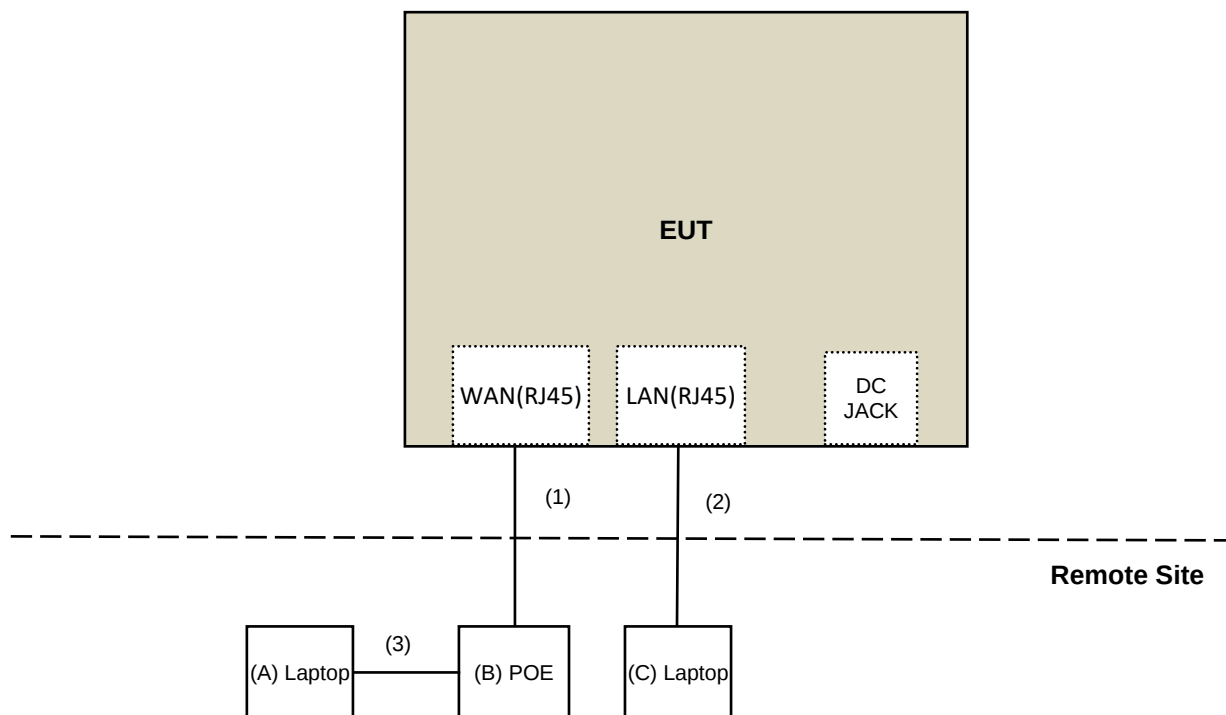
802.11ax (HE40)

3.6 Test Program Used and Operation Descriptions

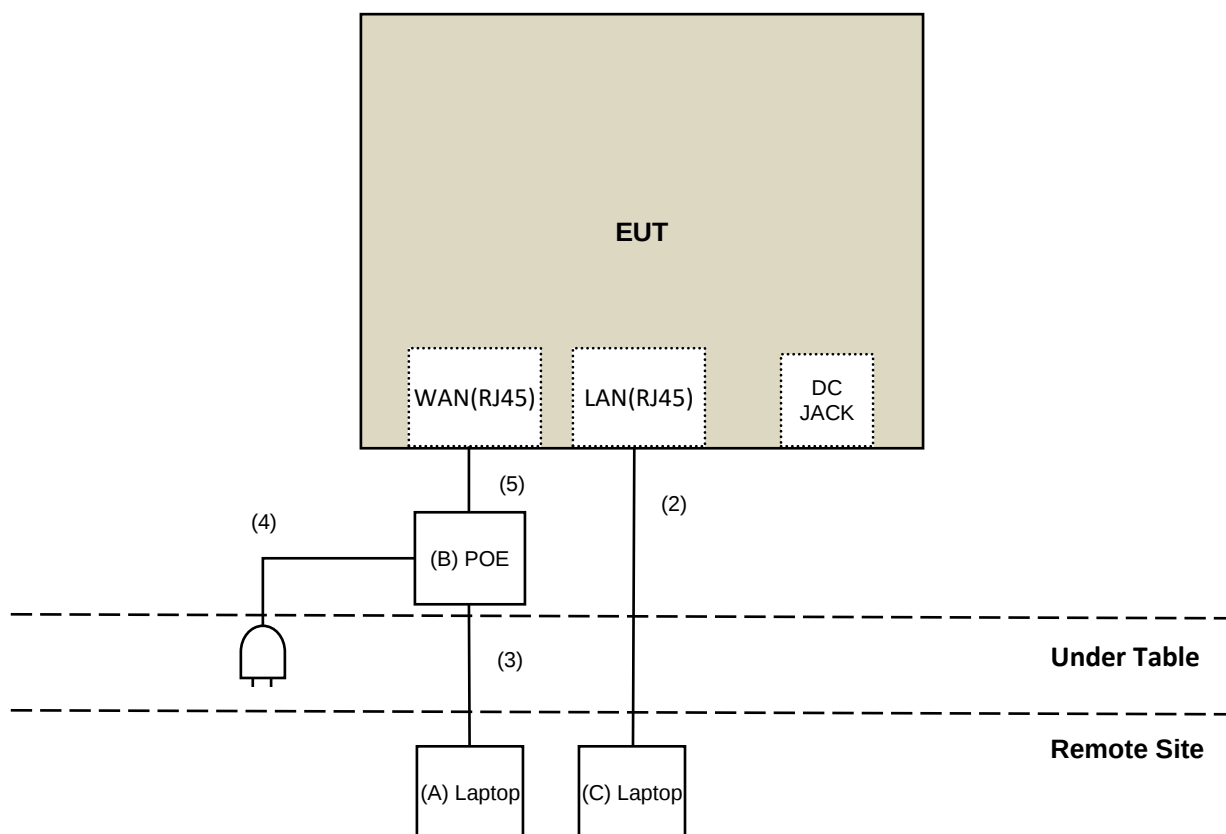
Controlling software (accessMTool_REL_3_1_0_1) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

For Unwanted Emission test



For AC Power Conducted Emission test



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	N/A	Provided by Lab
B	POE	MOTOROLA	ICES/NMB-003	N/A	N/A	Provided by Lab
C	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	10	No	0	Provided by Lab
2	RJ-45 Cable	1	10	No	0	Provided by Lab
3	RJ-45 Cable	1	3	No	0	Provided by Lab
4	AC Power Cable	1	1.5	No	0	Provided by Lab
5	RJ-45 Cable	1	3	No	0	Provided by Lab

4 Test Instruments

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

4.1 RF Output Power

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

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/7/20

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	101516	2022/3/7	2023/3/6

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/7/20

4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.4 Conducted Out of Band Emissions

Refer to section 4.2 to get information of the instruments.

4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohms Terminator	50	3	2021/10/27	2022/10/26
Fixed attenuator STI	STI02-2200-10	005	2021/8/27	2022/8/26
LISN R&S	ESH3-Z5	848773/004	2021/10/29	2022/10/28
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2021/9/25	2022/9/24
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A
TEST RECEIVER R&S	ESCS 30	847124/029	2021/10/13	2022/10/12

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2022/7/14

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	2021/9/23	2022/9/22
LOOP ANTENNA Electro-Metrics	EM-6879	264	2022/3/18	2023/3/17
Pre_Amplifier Agilent	8447D	2944A10636	2022/3/19	2023/3/18
Pre_Amplifier Mini-Circuits	ZFL-1000VH2	QA0838008	2021/10/19	2022/10/18
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/1/6	2023/1/5
		LOOPCAB-002	2022/1/6	2023/1/5
RF Coaxial Cable COMDATE/PEWC	8D	966-4-1	2022/3/8	2023/3/7
		966-3-2	2022/2/26	2023/2/25
		966-3-3	2022/2/26	2023/2/25
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2022/4/26	2023/4/25
Test Receiver KEYSIGHT	N9038A	MY59050100	2022/6/20	2023/6/19
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-361	2021/10/26	2022/10/25

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/7/14

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Horn Antenna Schwarzbeck	BBHA9120-D	9120D-406	2021/11/14	2022/11/13
	BBHA 9170	9170-739	2021/11/14	2022/11/13
Pre_Amplifier EMCI	EMC12630SE	980384	2022/1/10	2023/1/9
	EMC184045SE	980387	2022/1/10	2023/1/9
RF Cable EMCI	EMC104-SM-SM-6000	210201	2022/5/10	2023/5/9
RF Cable-Frequency range: 1- 40GHz EMCI	EMC102-KM-KM-1200	160924	2022/1/10	2023/1/9
RF Coaxial Cable EMCI	EMC104-SM-SM-1500	180504	2022/4/25	2023/4/24
	EMC104-SM-SM-2000	180601	2022/6/6	2023/6/5
	EMC-KM-KM-4000	200214	2022/3/8	2023/3/7
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2022/4/26	2023/4/25
Test Receiver KEYSIGHT	N9038A	MY59050100	2022/6/20	2023/6/19

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/7/6 ~ 2022/7/13

5 Limits of Test Items

5.1 RF Output Power

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30 dBm)

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

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

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

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

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

5.2 Power Spectral Density

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

5.3 6 dB Bandwidth

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

5.4 Conducted Out of Band Emissions

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

5.5 AC Power Conducted Emissions

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

Notes:

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

5.6 Unwanted Emissions below 1 GHz

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

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

Notes:

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

5.7 Unwanted Emissions above 1 GHz

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

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

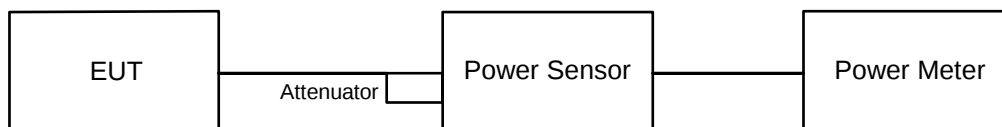
Notes:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

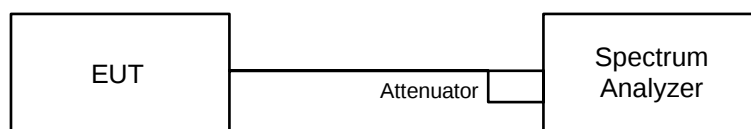


6.1.2 Test Procedure

Average power 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



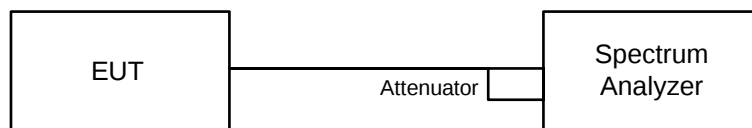
6.2.2 Test Procedure

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

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

6.3 6 dB Bandwidth

6.3.1 Test Setup

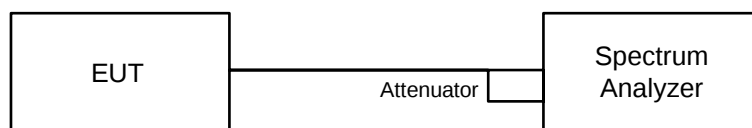


6.3.2 Test Procedure

- 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

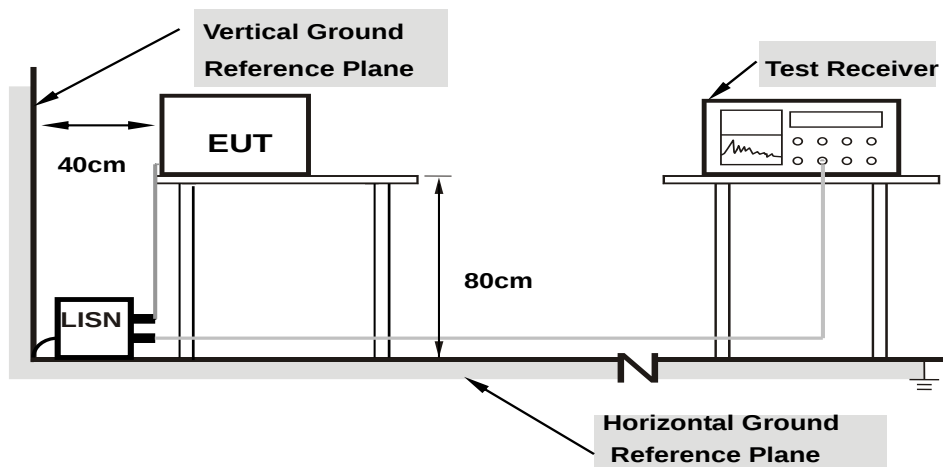
- Set the RBW = 100 kHz.
- Set the VBW ≥ 300 kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

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

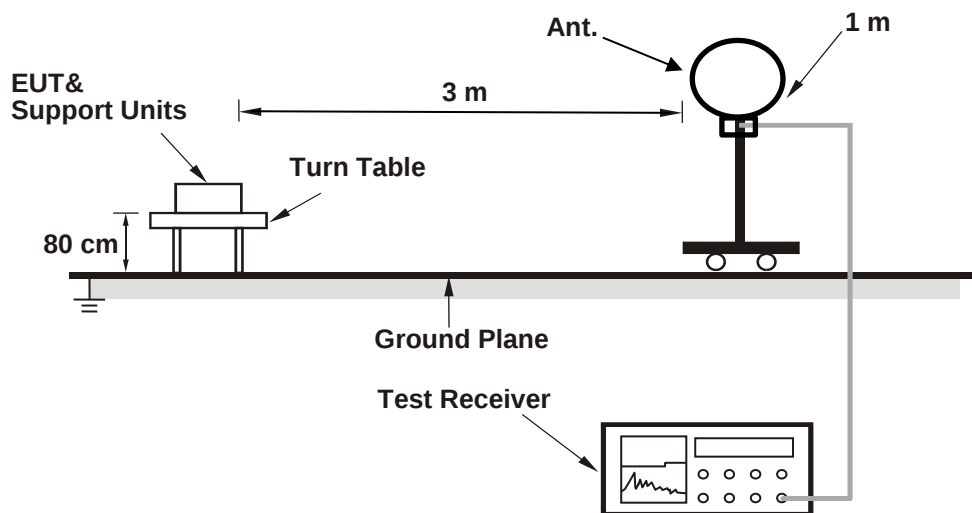
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

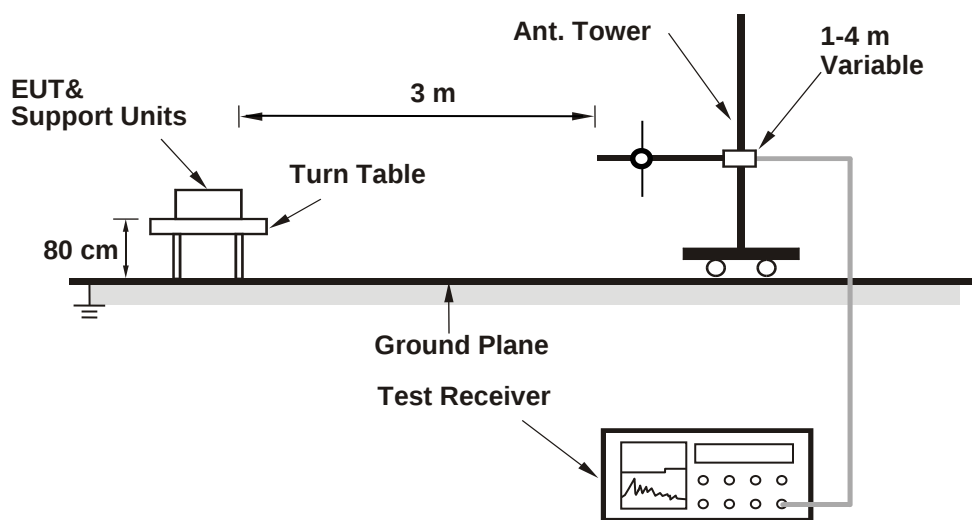
6.6 Unwanted Emissions below 1 GHz

6.6.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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.

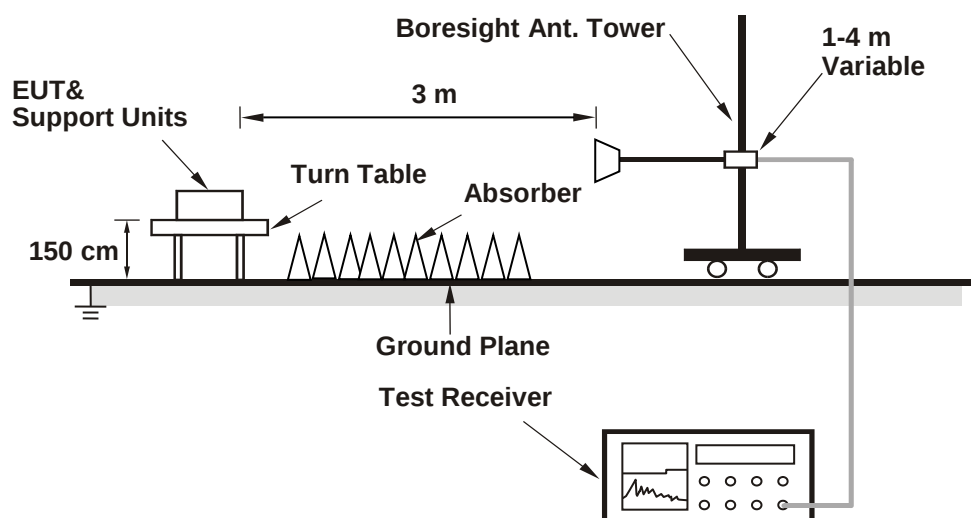
Notes:

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 Radiated emission above 1 GHz



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:	12 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Waydi Tuan
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802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	26.71	27.12	984.042	29.93	30	Pass
6	2437	26.53	27.33	990.534	29.96	30	Pass
11	2462	26.68	27.16	985.582	29.94	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.58 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	22.54	22.83	371.34	25.70	30	Pass
6	2437	26.39	26.92	927.551	29.67	30	Pass
11	2462	21.22	21.35	268.892	24.30	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.58 dBi < 6 dBi, so the output power limit shall not be reduced.

VHT20

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	22.12	22.35	334.72	25.25	30	Pass
6	2437	25.29	25.82	720.009	28.57	30	Pass
11	2462	20.18	20.38	213.376	23.29	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.58 dBi < 6 dBi, so the output power limit shall not be reduced.

VHT40

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	21.33	21.87	289.647	24.62	30	Pass
6	2437	21.61	21.88	299.047	24.76	30	Pass
9	2452	19.02	19.31	165.109	22.18	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.58 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	22.35	22.58	352.925	25.48	30	Pass
6	2437	25.53	26.04	759.064	28.80	30	Pass
11	2462	20.43	20.62	225.753	23.54	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.58 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	21.56	22.11	305.774	24.85	30	Pass
6	2437	21.84	22.13	316.062	25.00	30	Pass
9	2452	19.25	19.54	174.089	22.41	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.58 dBi < 6 dBi, so the output power limit shall not be reduced.

7.2 Power Spectral Density

Input Power:	12 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Waydi Tuan
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802.11b

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-5.52	-5.10	-2.29	7.49	Pass
6	2437	-5.55	-5.18	-2.35	7.49	Pass
11	2462	-5.10	-5.05	-2.06	7.49	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 6.51 dBi > 6 dBi, so the power density limit shall be reduced to $8 - (6.51 - 6) = 7.49$ dBm/3kHz.

802.11g

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-10.61	-10.37	-7.48	7.49	Pass
6	2437	-6.67	-5.83	-3.22	7.49	Pass
11	2462	-12.07	-11.54	-8.79	7.49	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 6.51 dBi > 6 dBi, so the power density limit shall be reduced to $8 - (6.51 - 6) = 7.49$ dBm/3kHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-11.47	-11.28	-8.36	7.49	Pass
6	2437	-8.36	-7.99	-5.16	7.49	Pass
11	2462	-13.84	-13.30	-10.55	7.49	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 6.51 dBi > 6 dBi, so the power density limit shall be reduced to $8 - (6.51 - 6) = 7.49$ dBm/3kHz.

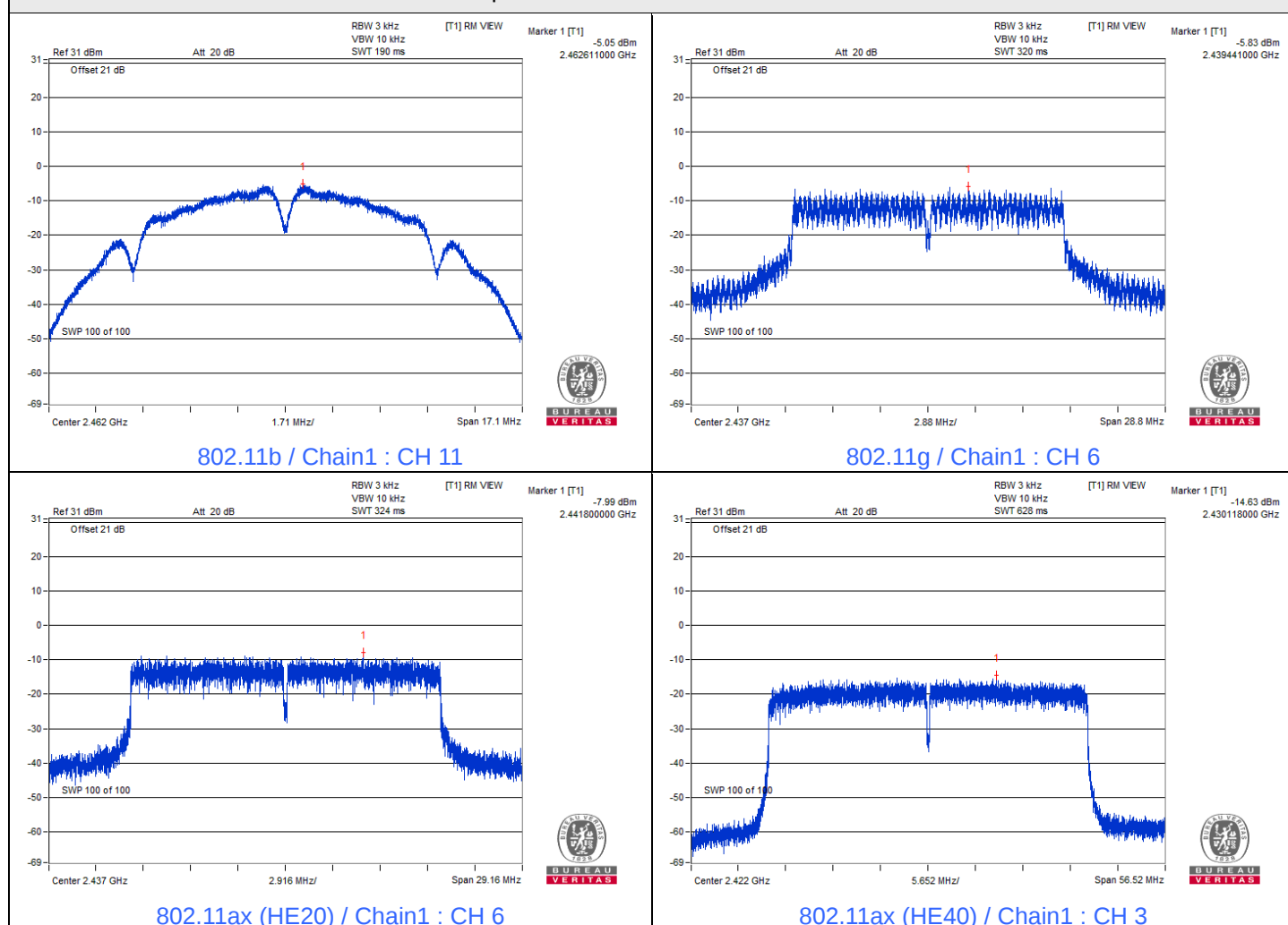
802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
3	2422	-15.16	-14.63	-11.88	7.49	Pass
6	2437	-15.81	-15.94	-12.86	7.49	Pass
9	2452	-17.83	-17.95	-14.88	7.49	Pass

Notes:

- Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- The directional gain is 6.51 dBi > 6 dBi, so the power density limit shall be reduced to $8 - (6.51 - 6) = 7.49$ dBm/3kHz.

Spectrum Plot of Maximum Value



7.3 6 dB Bandwidth

Input Power:	12 Vdc	Environmental Conditions:	25°C, 60% 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	7.58	7.08	0.5	Pass
6	2437	7.11	7.09	0.5	Pass
11	2462	7.11	7.10	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	16.38	16.40	0.5	Pass
6	2437	16.42	16.42	0.5	Pass
11	2462	16.43	16.44	0.5	Pass

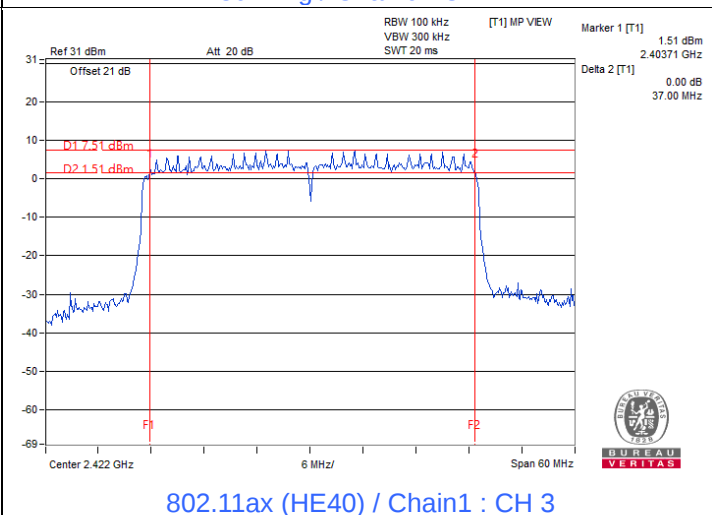
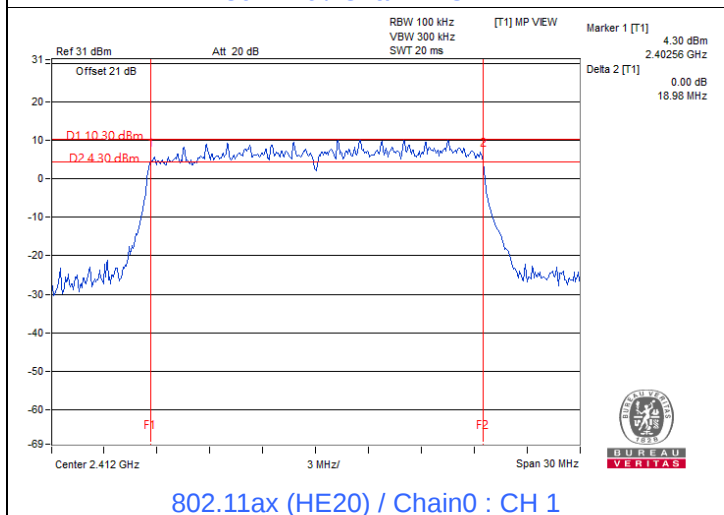
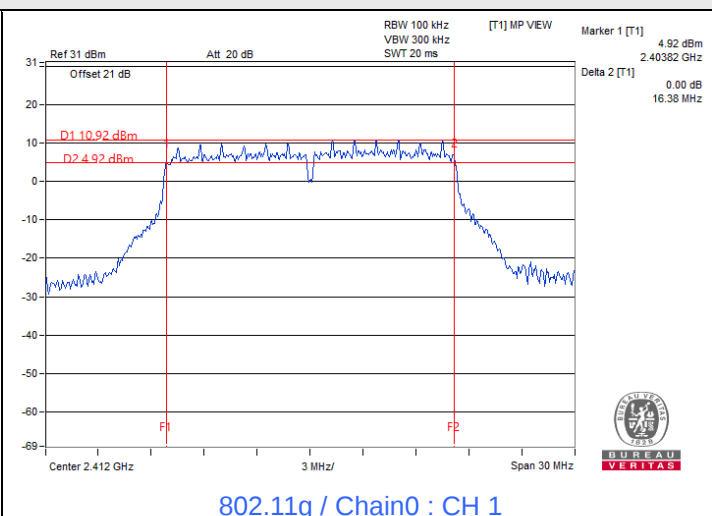
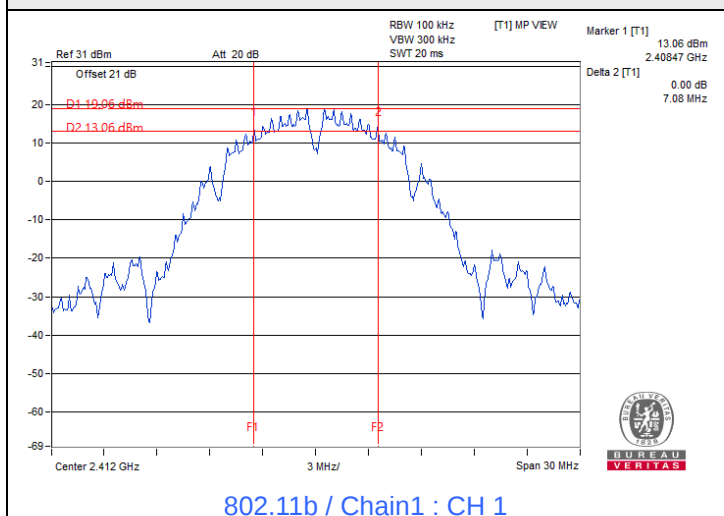
802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	18.98	18.98	0.5	Pass
6	2437	19.06	18.99	0.5	Pass
11	2462	19.04	19.07	0.5	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
3	2422	37.45	37.00	0.5	Pass
6	2437	37.84	37.53	0.5	Pass
9	2452	37.76	37.35	0.5	Pass

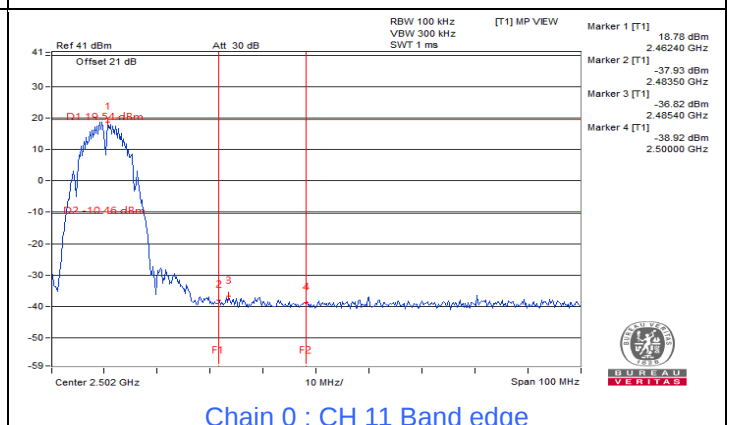
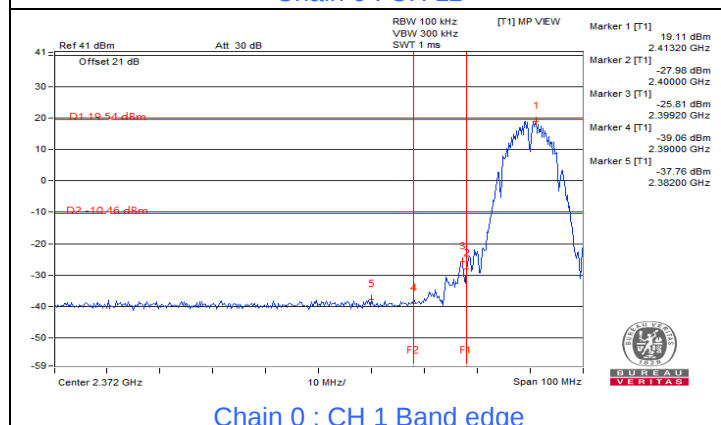
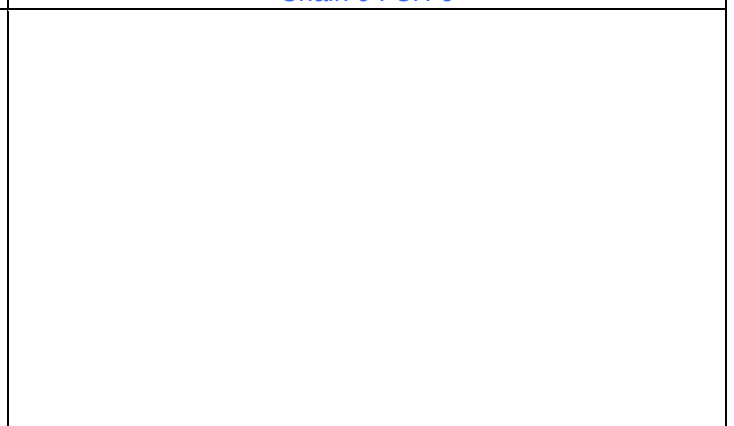
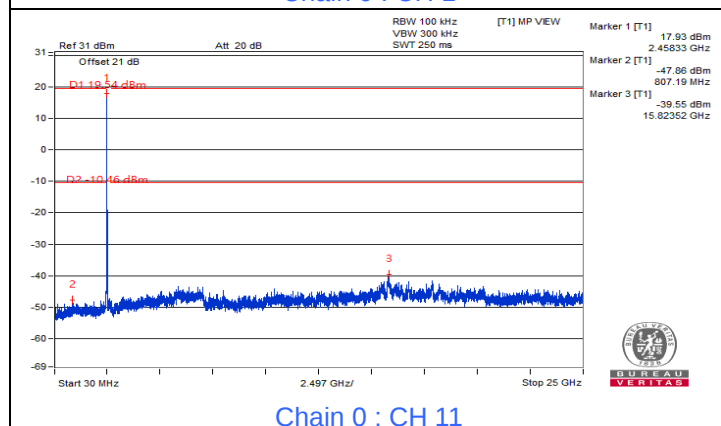
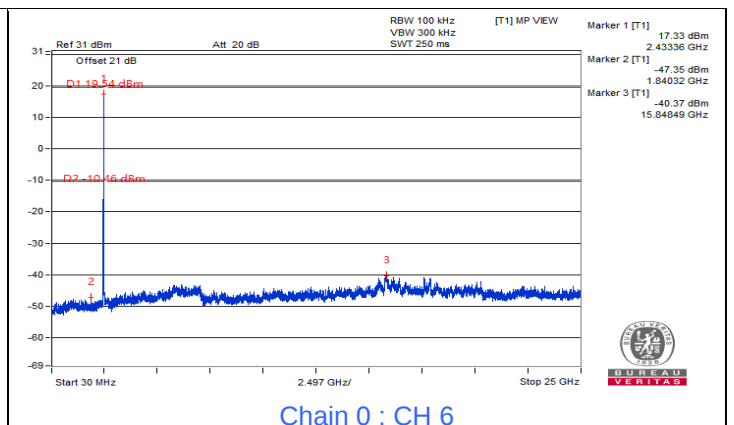
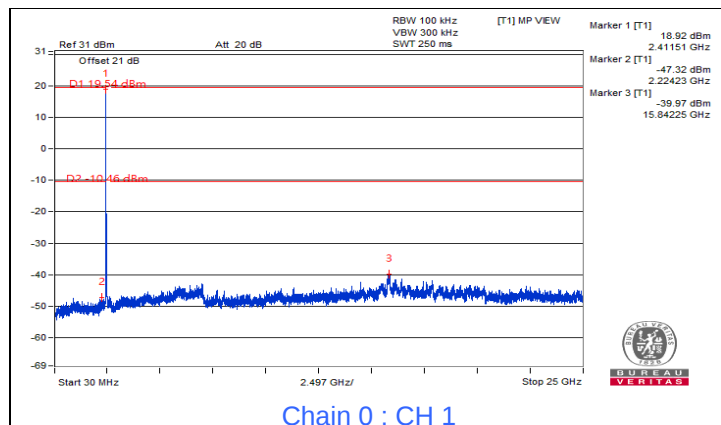
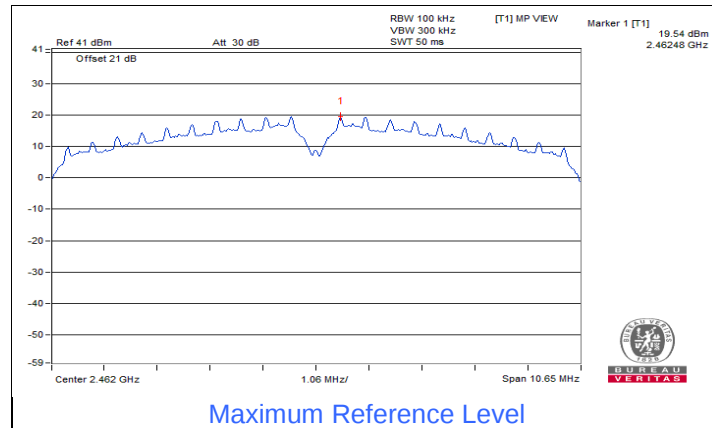
Spectrum Plot of Minimum Value

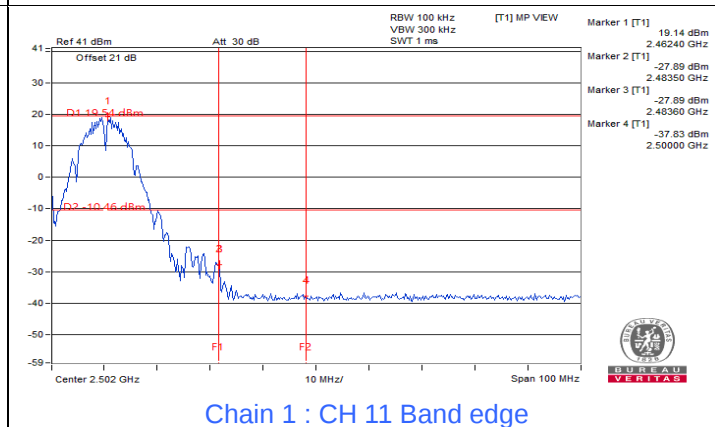
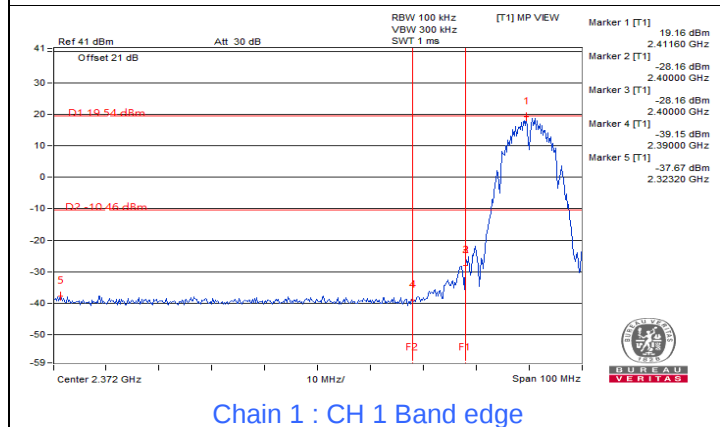
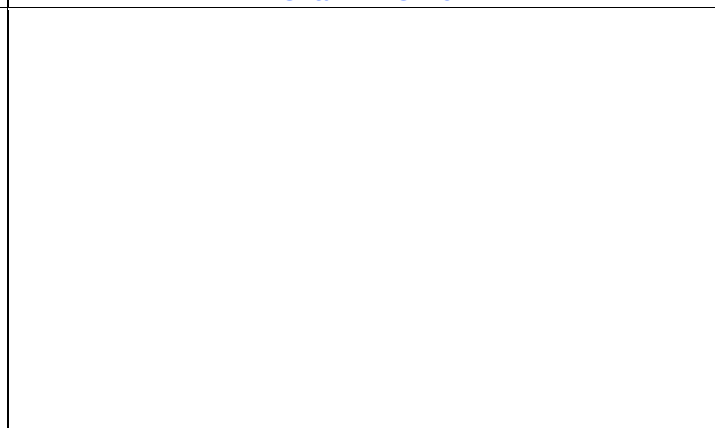
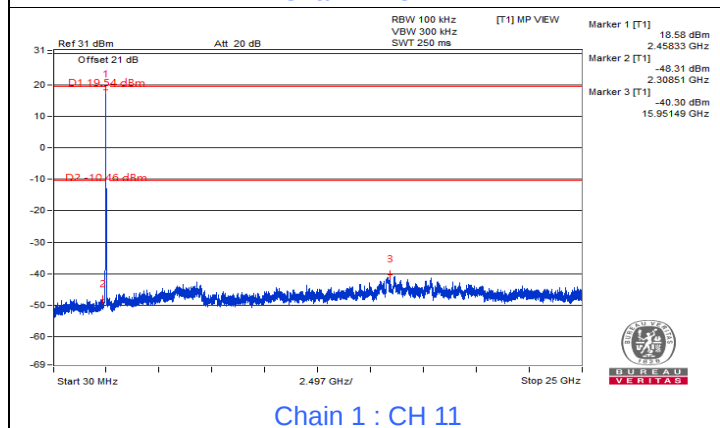
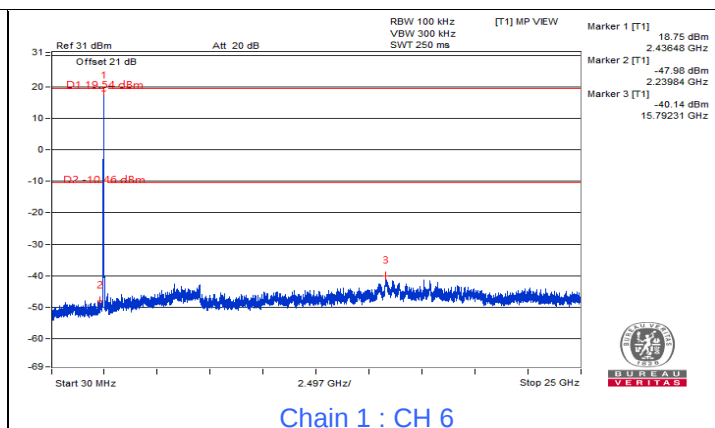
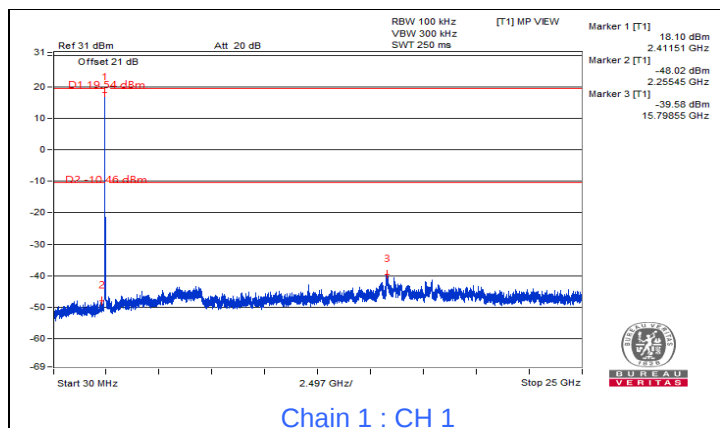


7.4 Conducted Out of Band Emissions

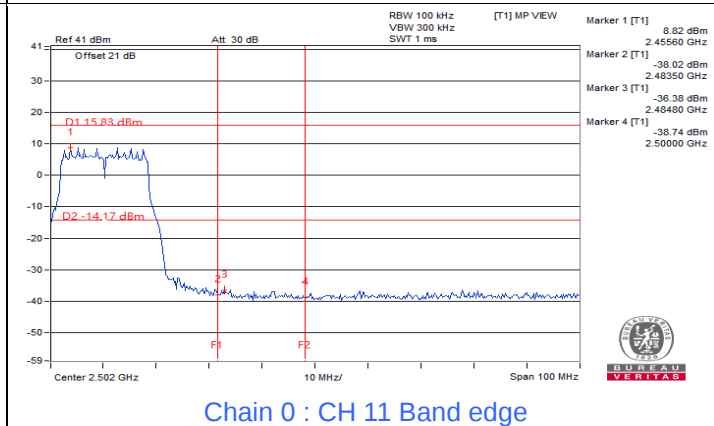
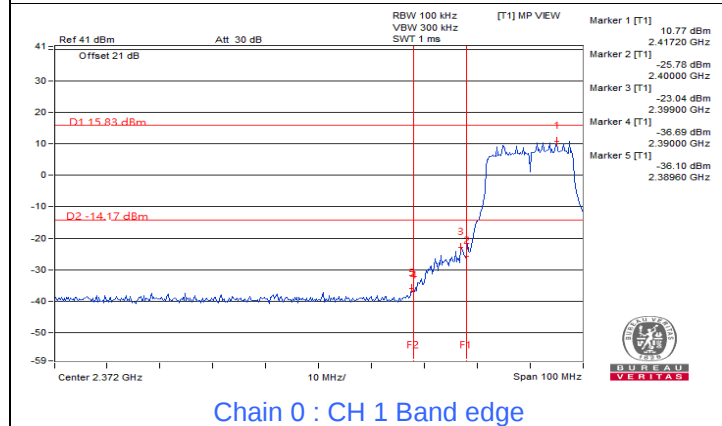
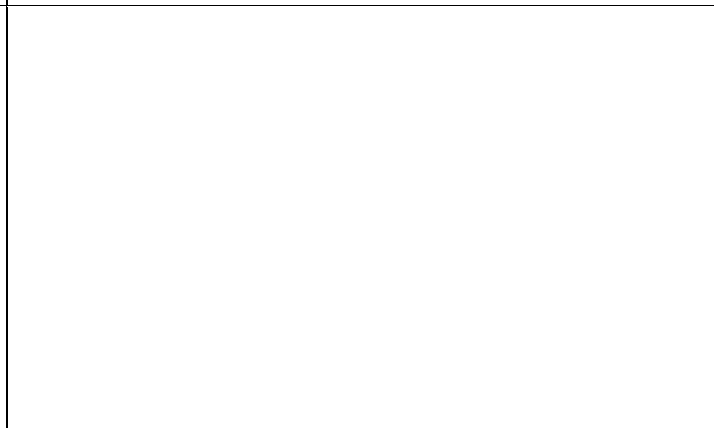
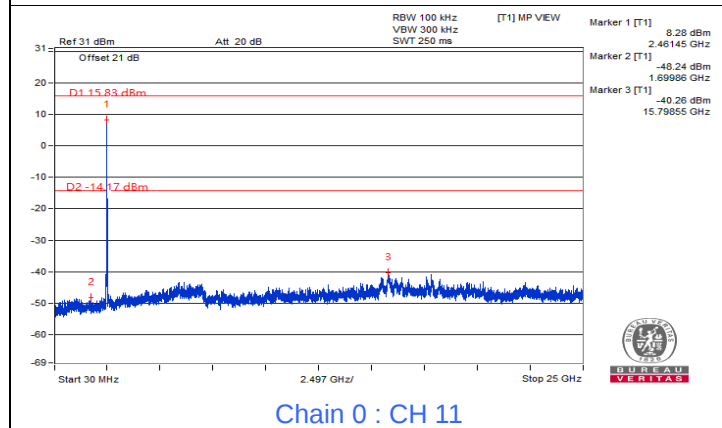
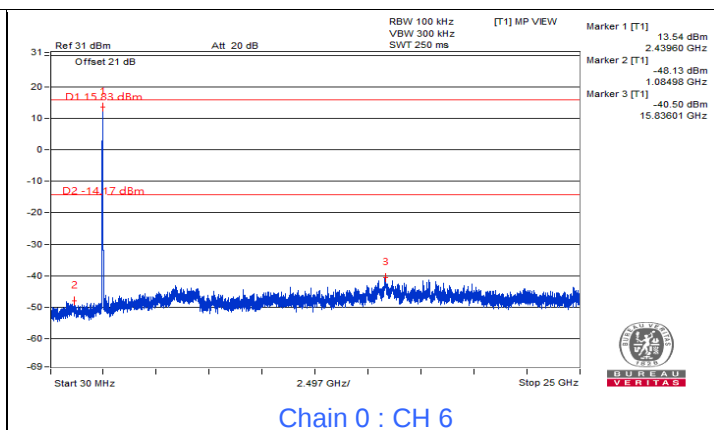
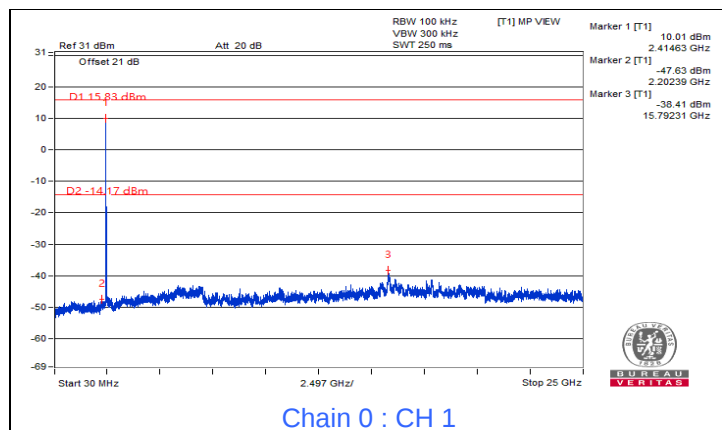
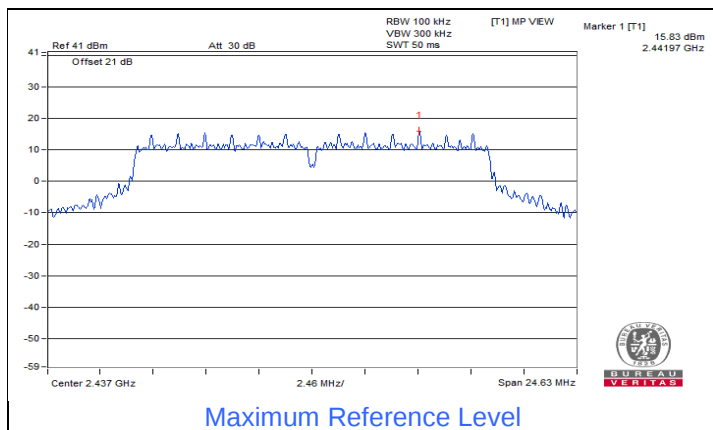
Input Power:	12 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Waydi Tuan
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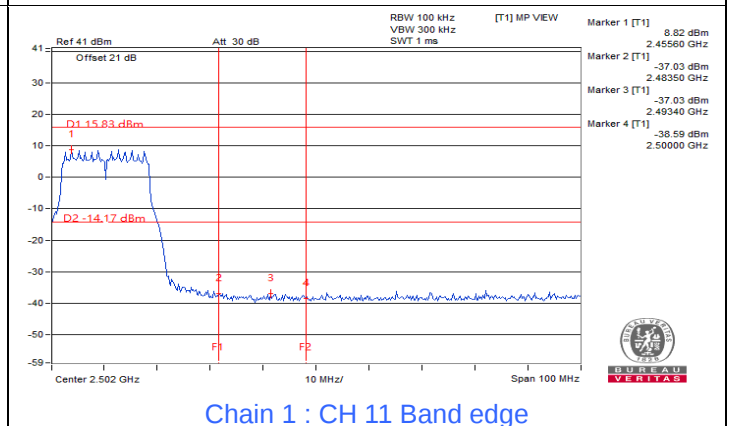
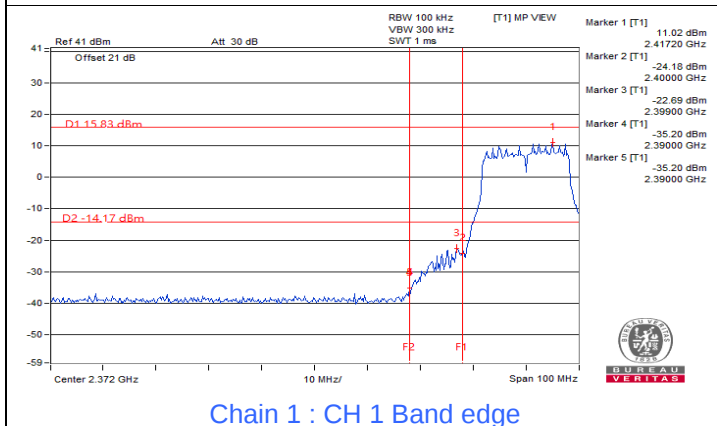
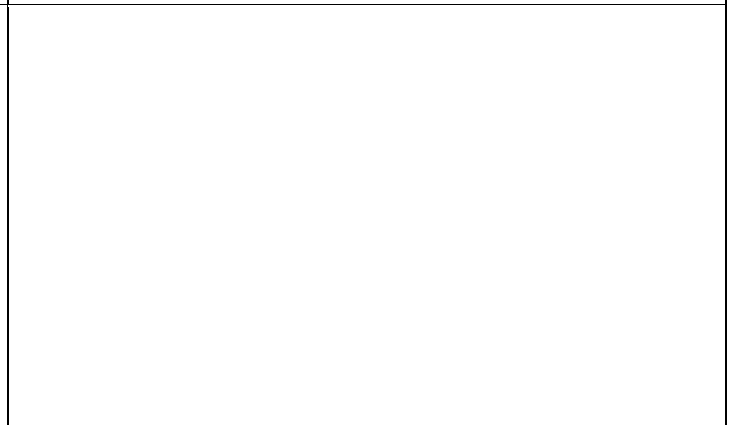
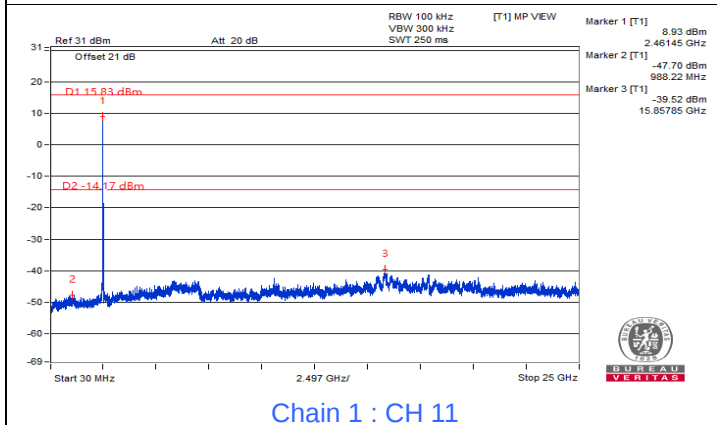
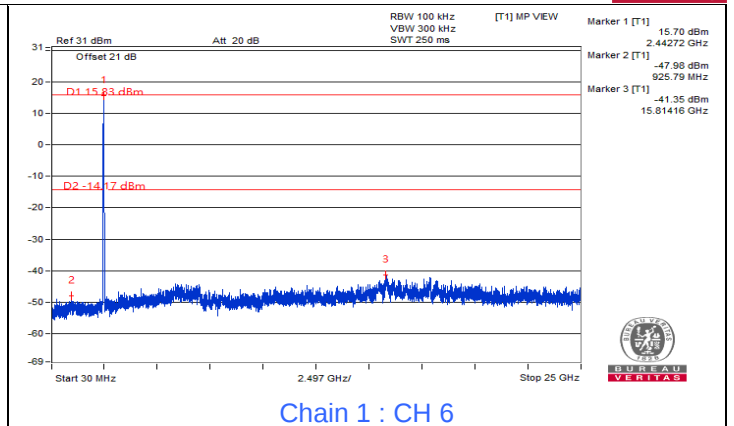
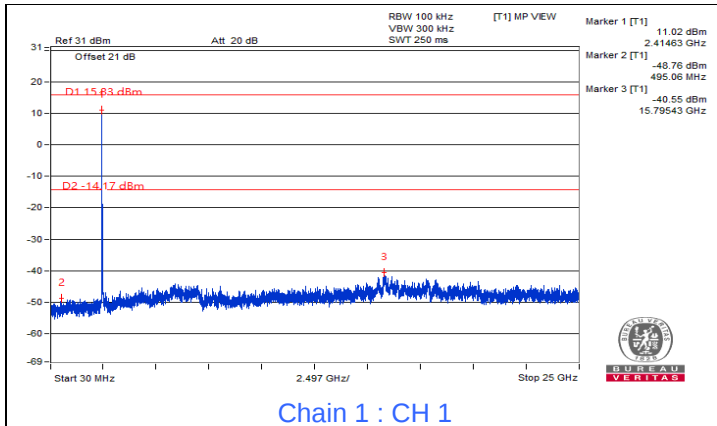
802.11b



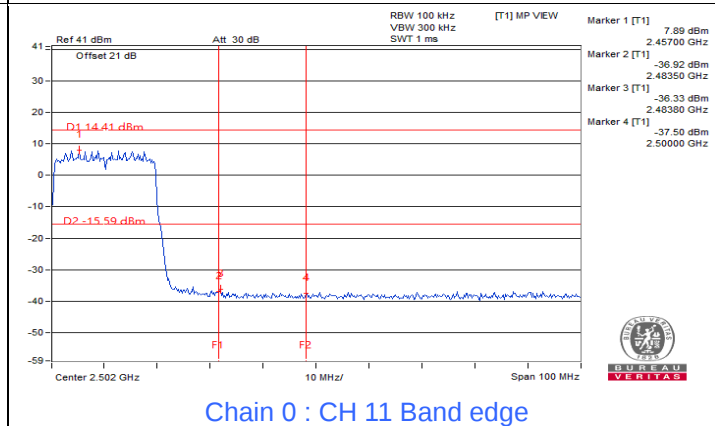
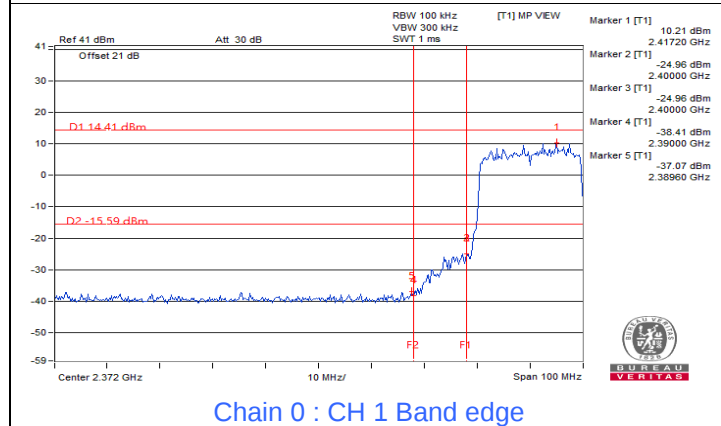
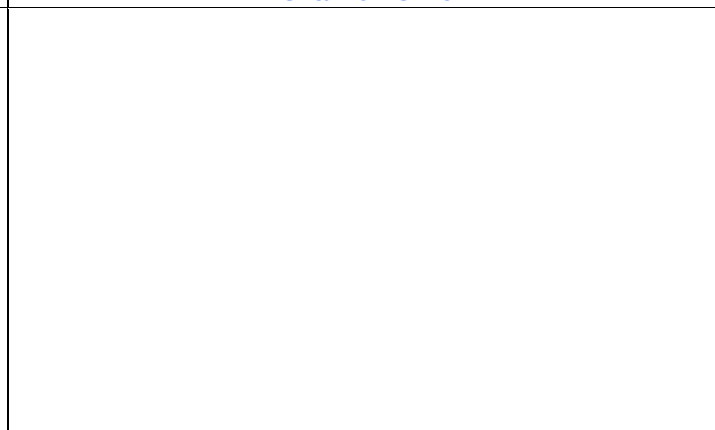
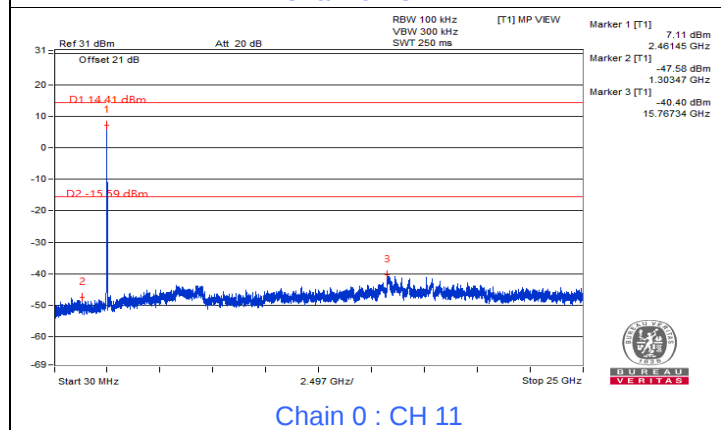
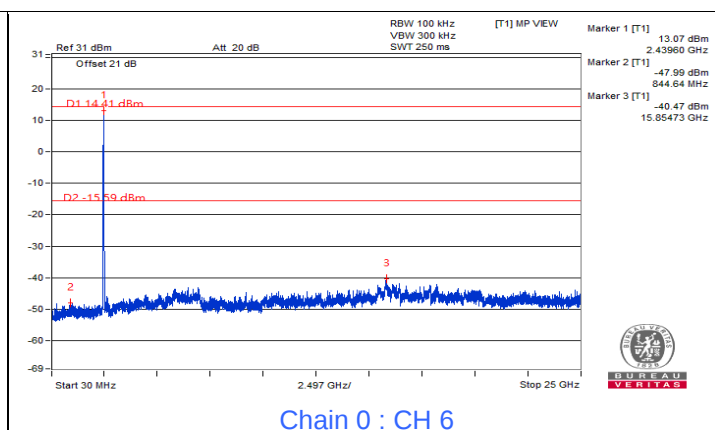
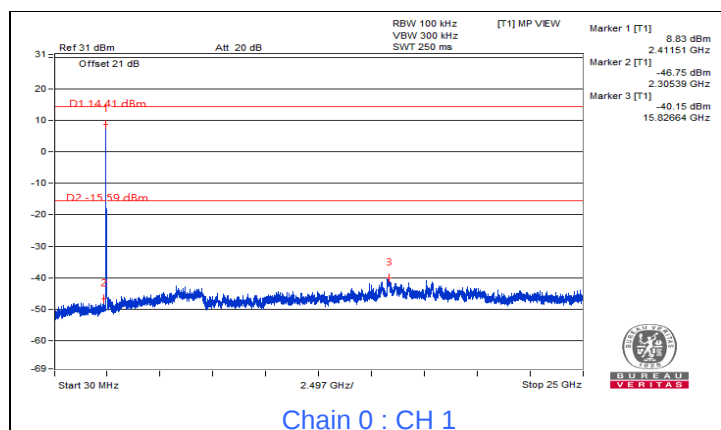
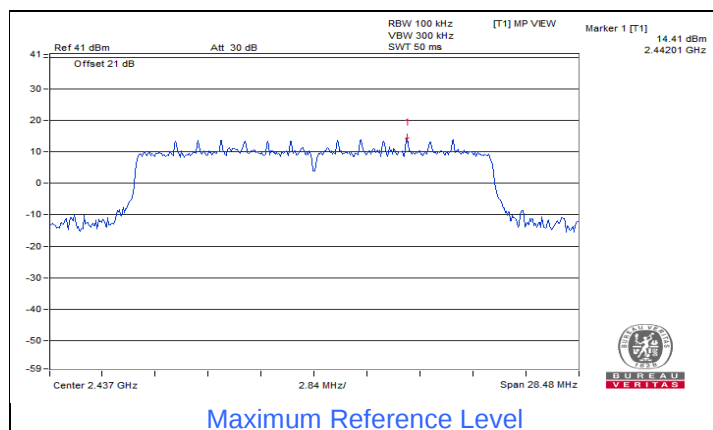


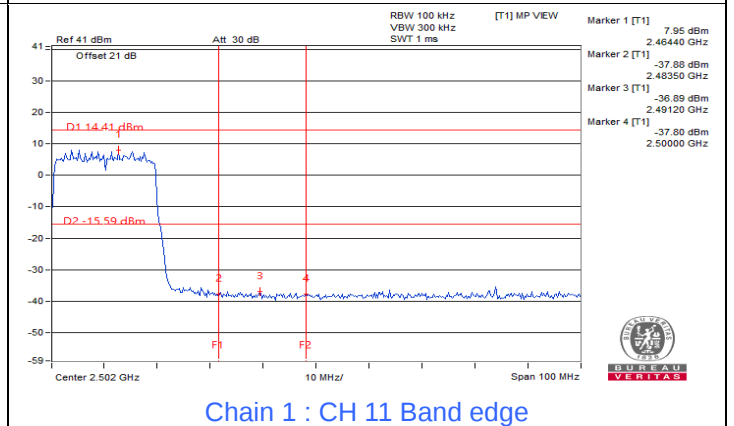
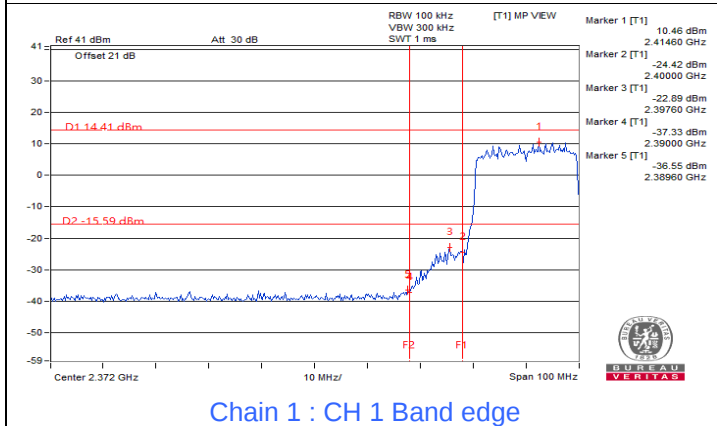
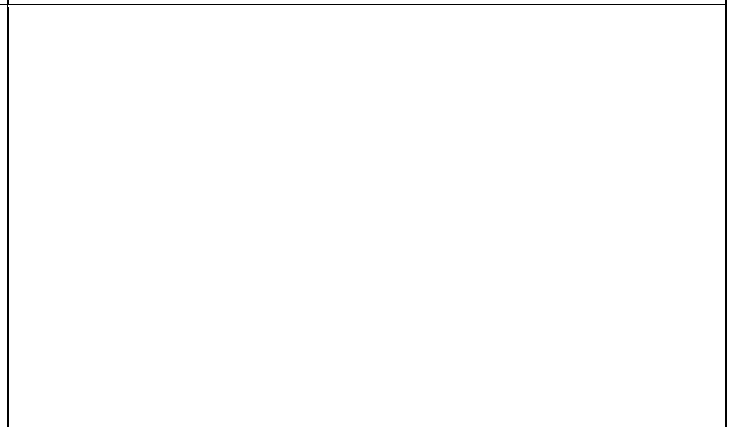
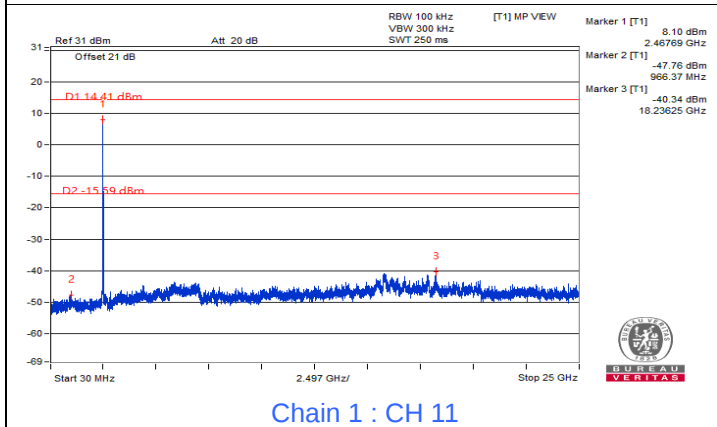
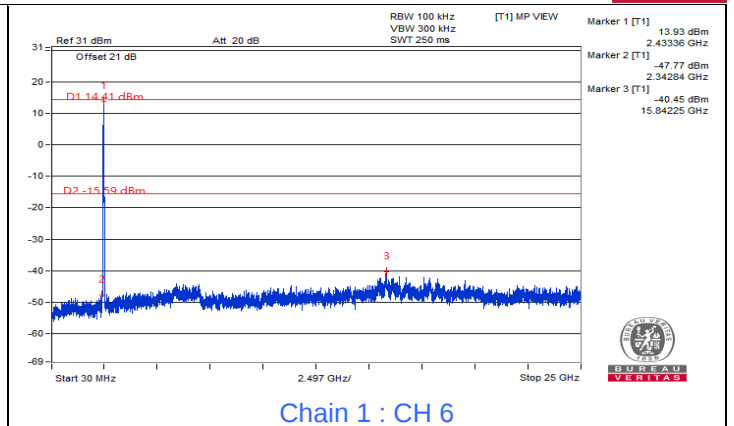
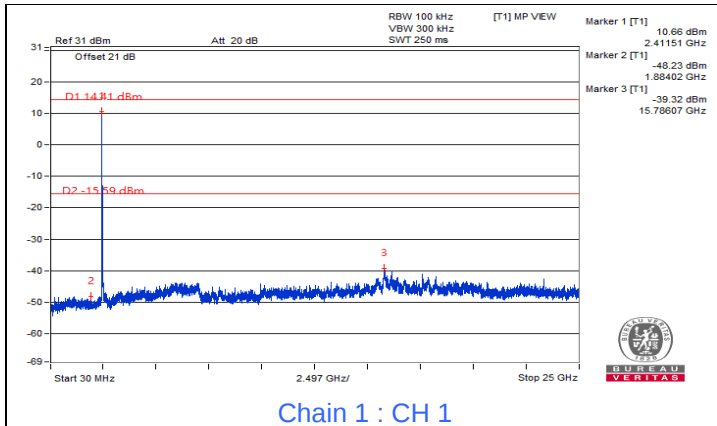
802.11g



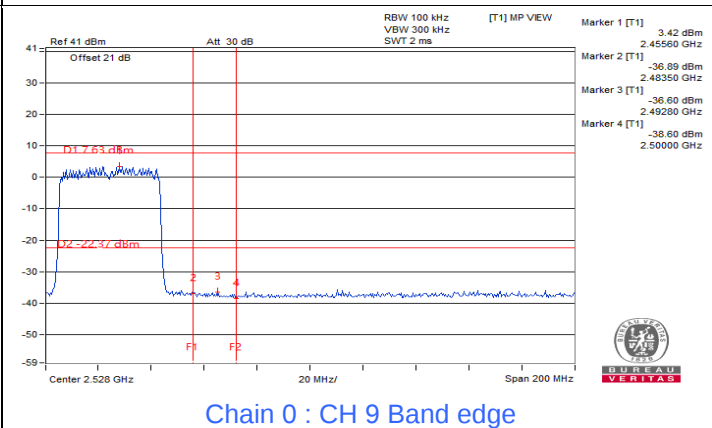
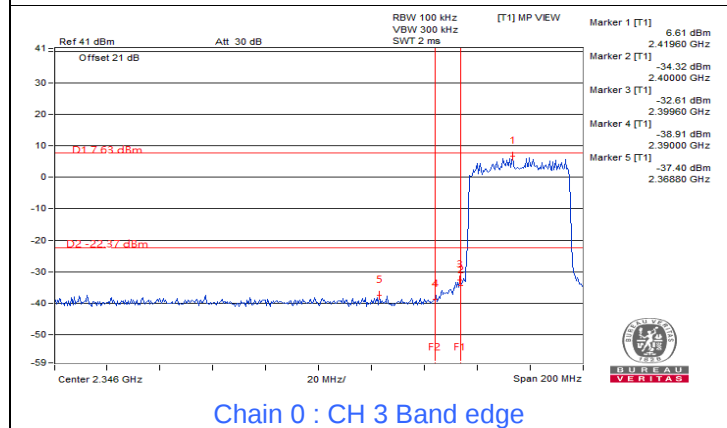
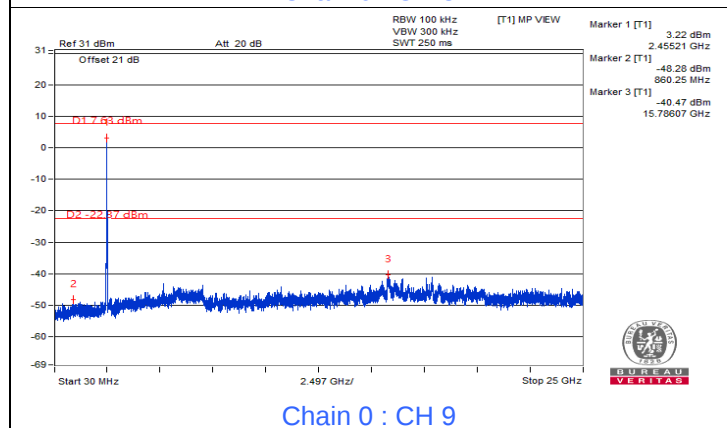
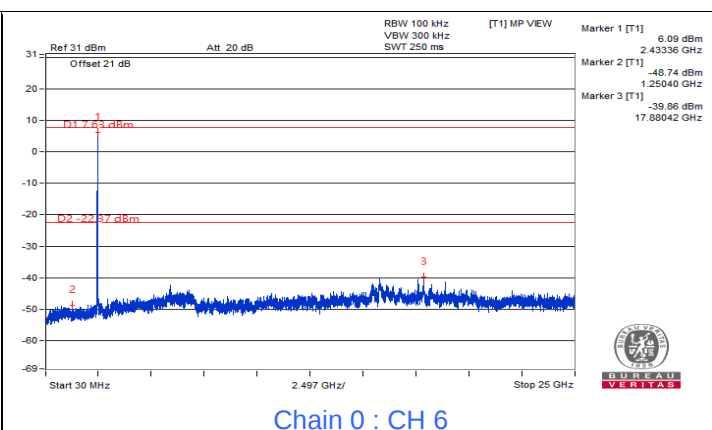
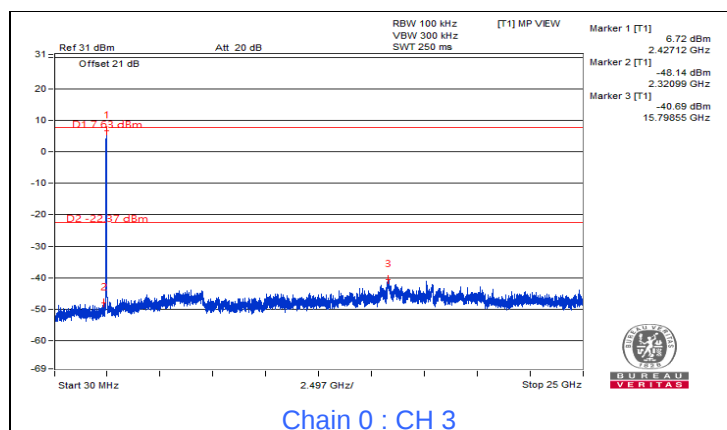
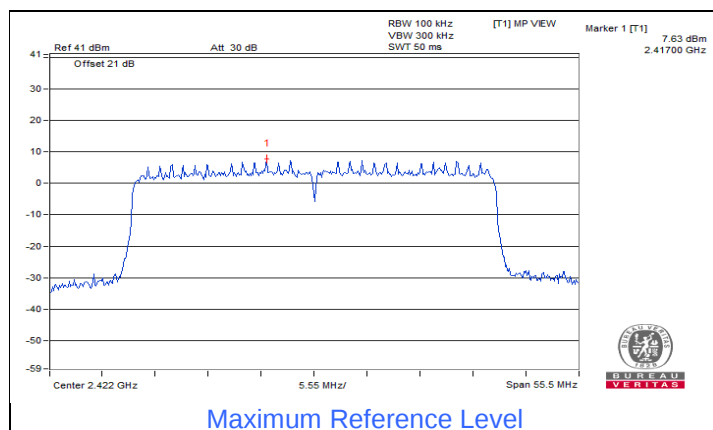


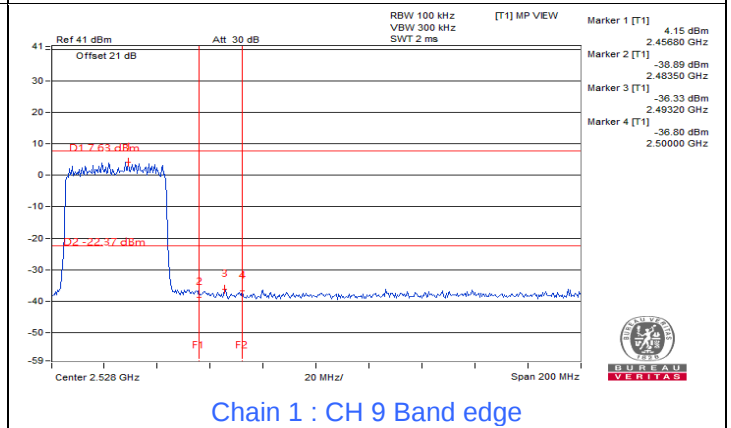
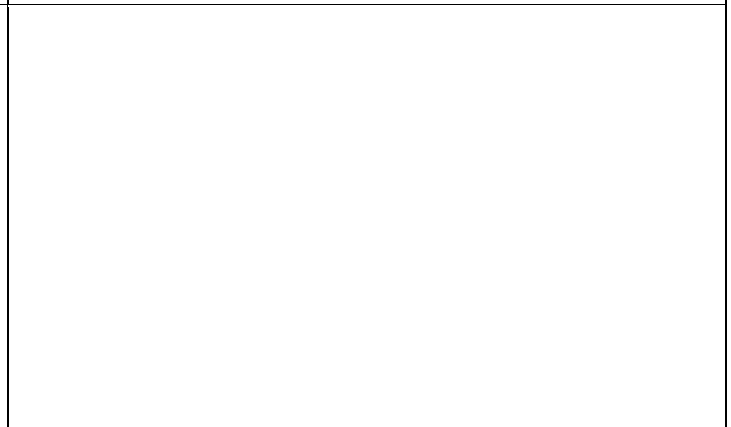
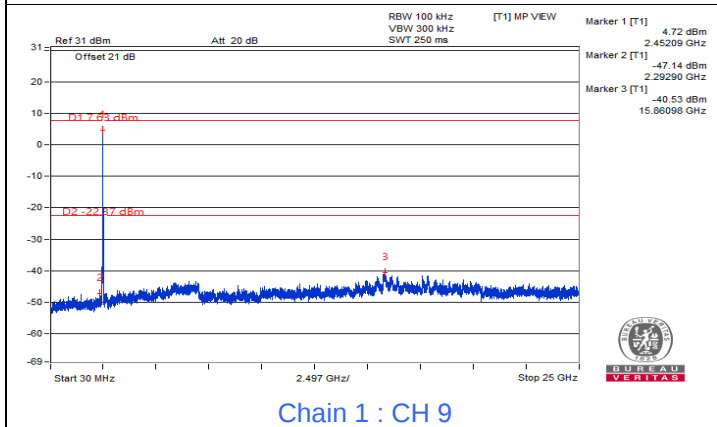
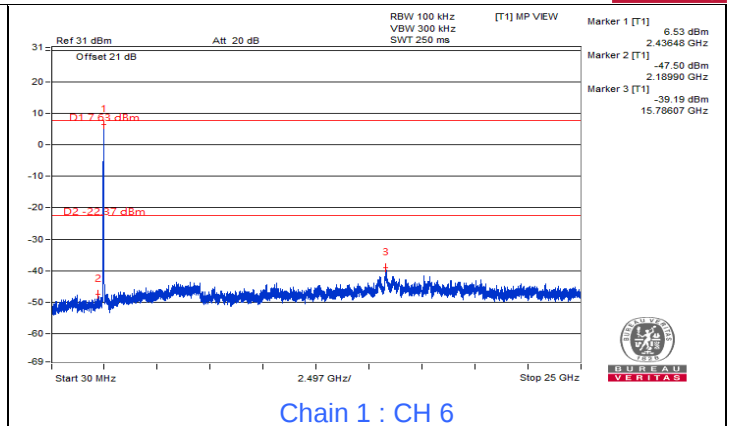
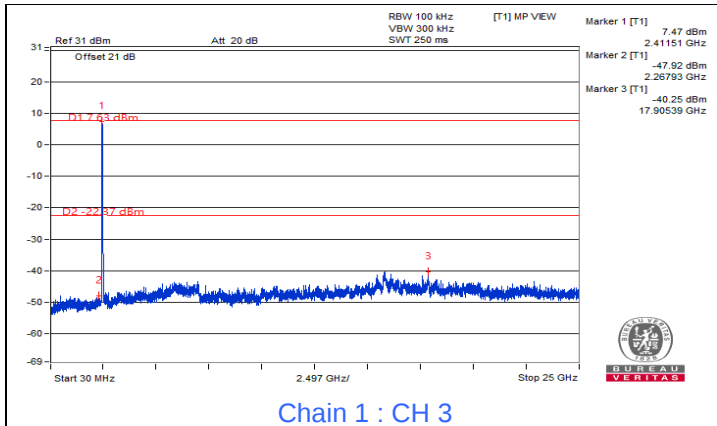
802.11ax (HE20)





802.11ax (HE40)





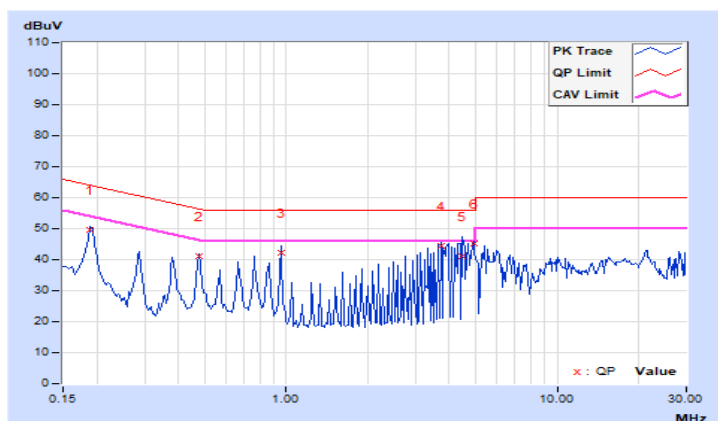
7.5 AC Power Conducted Emissions

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

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	0.18906	10.05	39.63	31.79	49.68	41.84	64.08	54.08	-14.40	-12.24
2	0.47422	10.07	30.96	25.92	41.03	35.99	56.44	46.44	-15.41	-10.45
3	0.95469	10.11	32.19	26.41	42.30	36.52	56.00	46.00	-13.70	-9.48
4	3.71094	10.25	34.34	31.79	44.59	42.04	56.00	46.00	-11.41	-3.96
5	4.48047	10.29	30.84	13.25	41.13	23.54	56.00	46.00	-14.87	-22.46
6	4.94922	10.31	34.85	30.08	45.16	40.39	56.00	46.00	-10.84	-5.61

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

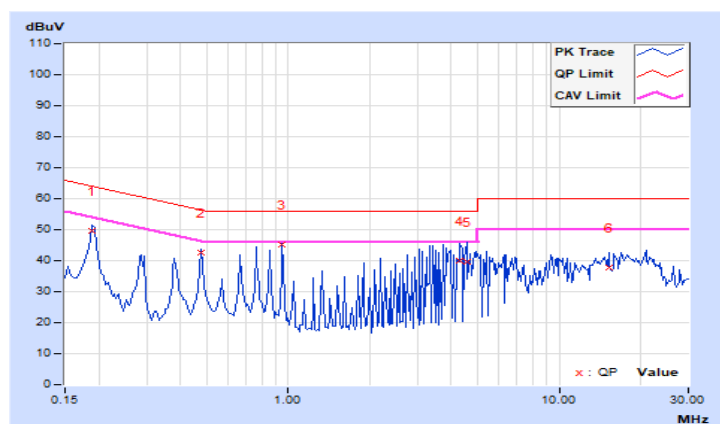


RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25°C, 75% RH
Tested By	Ryan Du		

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	0.18906	10.03	39.75	31.41	49.78	41.44	64.08	54.08	-14.30	-12.64
2	0.47422	10.04	32.44	27.32	42.48	37.36	56.44	46.44	-13.96	-9.08
3	0.95078	10.08	35.09	28.31	45.17	38.39	56.00	46.00	-10.83	-7.61
4	4.28125	10.22	29.75	25.16	39.97	35.38	56.00	46.00	-16.03	-10.62
5	4.56641	10.24	29.56	25.07	39.80	35.31	56.00	46.00	-16.20	-10.69
6	15.22656	10.74	26.95	20.69	37.69	31.43	60.00	50.00	-22.31	-18.57

Remarks:

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



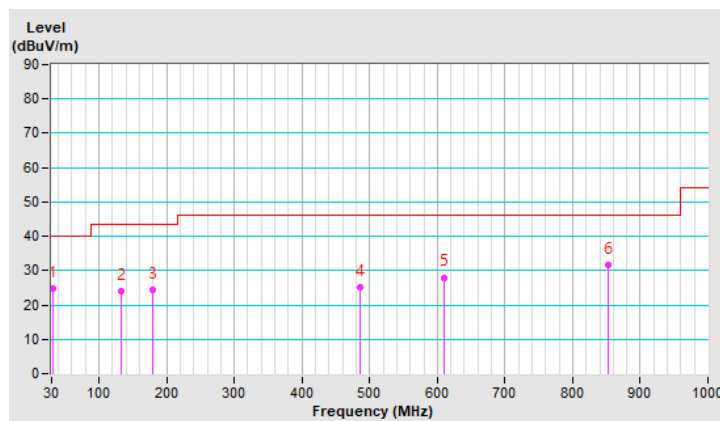
7.6 Unwanted Emissions below 1 GHz

RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25°C, 65% RH
Tested By	Ryan Du		

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	32.33	24.8 QP	40.0	-15.2	3.00 H	357	34.2	-9.4
2	132.13	24.1 QP	43.5	-19.4	2.00 H	286	33.2	-9.1
3	179.16	24.5 QP	43.5	-19.0	2.00 H	93	34.1	-9.6
4	485.28	25.3 QP	46.0	-20.7	2.00 H	306	28.4	-3.1
5	609.58	28.0 QP	46.0	-18.0	1.00 H	71	28.0	0.0
6	852.18	31.7 QP	46.0	-14.3	1.00 H	311	28.3	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 of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

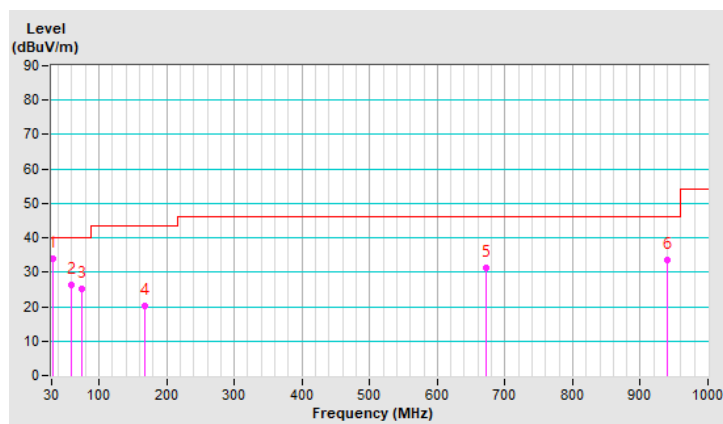


RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25°C, 65% RH
Tested By	Ryan Du		

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	32.63	34.0 QP	40.0	-6.0	1.00 V	257	43.2	-9.2
2	59.22	26.3 QP	40.0	-13.7	1.00 V	45	35.1	-8.8
3	74.74	25.1 QP	40.0	-14.9	1.00 V	337	36.5	-11.4
4	168.67	20.3 QP	43.5	-23.2	1.00 V	62	29.1	-8.8
5	672.79	31.2 QP	46.0	-14.8	2.00 V	285	31.0	0.2
6	940.54	33.6 QP	46.0	-12.4	1.00 V	303	28.3	5.3

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



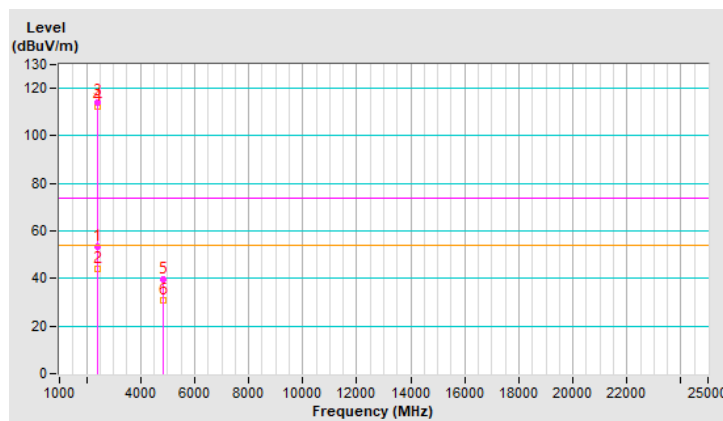
7.7 Unwanted Emissions above 1 GHz

RF Mode	TX 802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	2389.35	53.6 PK	74.0	-20.4	1.51 H	207	54.4	-0.8
2	2389.35	44.3 AV	54.0	-9.7	1.51 H	207	45.1	-0.8
3	*2412.00	114.3 PK			1.51 H	207	115.1	-0.8
4	*2412.00	112.4 AV			1.51 H	207	113.2	-0.8
5	4824.00	39.7 PK	74.0	-34.3	1.43 H	142	35.8	3.9
6	4824.00	30.6 AV	54.0	-23.4	1.43 H	142	26.7	3.9

Remarks:

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

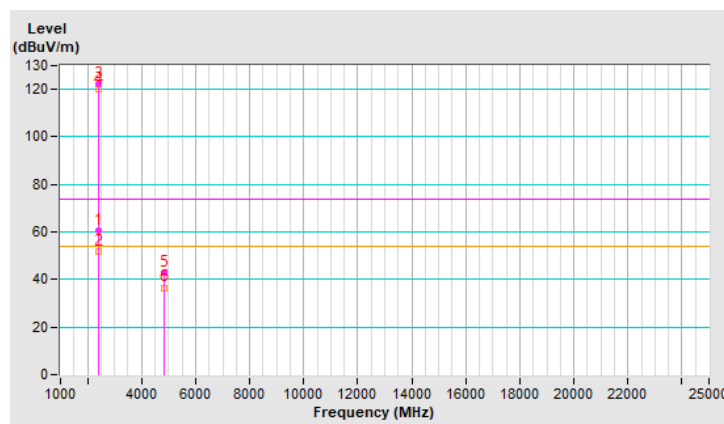


RF Mode	TX 802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	2389.10	60.5 PK	74.0	-13.5	2.21 V	322	61.3	-0.8
2	2389.10	51.9 AV	54.0	-2.1	2.21 V	322	52.7	-0.8
3	*2412.00	122.1 PK			2.21 V	322	122.9	-0.8
4	*2412.00	120.0 AV			2.21 V	322	120.8	-0.8
5	4824.00	43.0 PK	74.0	-31.0	1.76 V	33	39.1	3.9
6	4824.00	36.6 AV	54.0	-17.4	1.76 V	33	32.7	3.9

Remarks:

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

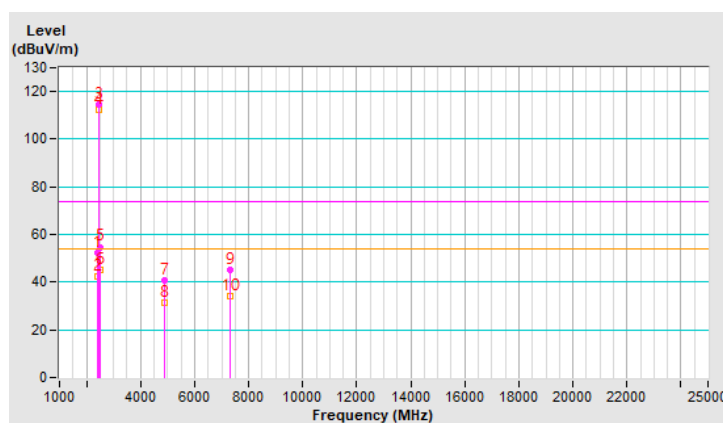


RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	52.3 PK	74.0	-21.7	1.53 H	193	53.1	-0.8
2	2390.00	42.2 AV	54.0	-11.8	1.53 H	193	43.0	-0.8
3	*2437.00	114.6 PK			1.53 H	193	115.4	-0.8
4	*2437.00	112.6 AV			1.53 H	193	113.4	-0.8
5	2483.50	54.8 PK	74.0	-19.2	1.53 H	193	55.8	-1.0
6	2483.50	45.3 AV	54.0	-8.7	1.53 H	193	46.3	-1.0
7	4874.00	40.9 PK	74.0	-33.1	1.42 H	131	36.9	4.0
8	4874.00	31.5 AV	54.0	-22.5	1.42 H	131	27.5	4.0
9	7311.00	45.1 PK	74.0	-28.9	1.87 H	239	35.0	10.1
10	7311.00	34.1 AV	54.0	-19.9	1.87 H	239	24.0	10.1

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.

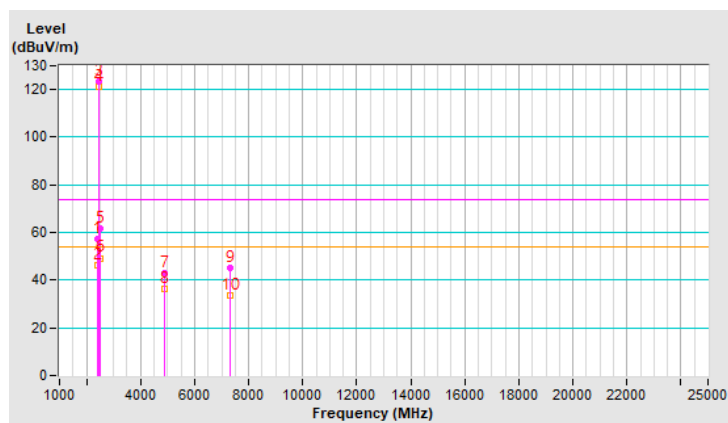


RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	57.1 PK	74.0	-16.9	2.03 V	337	57.9	-0.8
2	2390.00	46.1 AV	54.0	-7.9	2.03 V	337	46.9	-0.8
3	*2437.00	123.2 PK			2.03 V	337	124.0	-0.8
4	*2437.00	121.1 AV			2.03 V	337	121.9	-0.8
5	2483.50	61.5 PK	74.0	-12.5	2.03 V	337	62.5	-1.0
6	2483.50	49.3 AV	54.0	-4.7	2.03 V	337	50.3	-1.0
7	4874.00	42.9 PK	74.0	-31.1	1.80 V	13	38.9	4.0
8	4874.00	36.5 AV	54.0	-17.5	1.80 V	13	32.5	4.0
9	7311.00	44.9 PK	74.0	-29.1	1.89 V	137	34.8	10.1
10	7311.00	33.8 AV	54.0	-20.2	1.89 V	137	23.7	10.1

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.

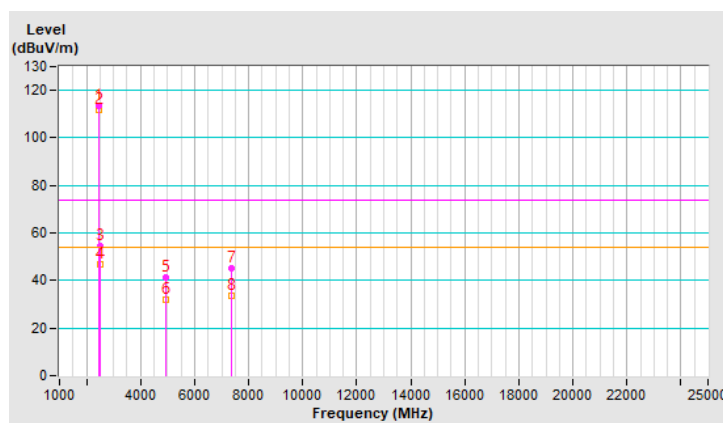


RF Mode	TX 802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	113.6 PK			1.55 H	219	114.5	-0.9
2	*2462.00	111.9 AV			1.55 H	219	112.8	-0.9
3	2486.21	54.5 PK	74.0	-19.5	1.55 H	219	55.5	-1.0
4	2486.21	46.8 AV	54.0	-7.2	1.55 H	219	47.8	-1.0
5	4924.00	41.4 PK	74.0	-32.6	1.41 H	122	37.4	4.0
6	4924.00	31.8 AV	54.0	-22.2	1.41 H	122	27.8	4.0
7	7386.00	45.0 PK	74.0	-29.0	1.82 H	230	34.8	10.2
8	7386.00	33.8 AV	54.0	-20.2	1.82 H	230	23.6	10.2

Remarks:

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

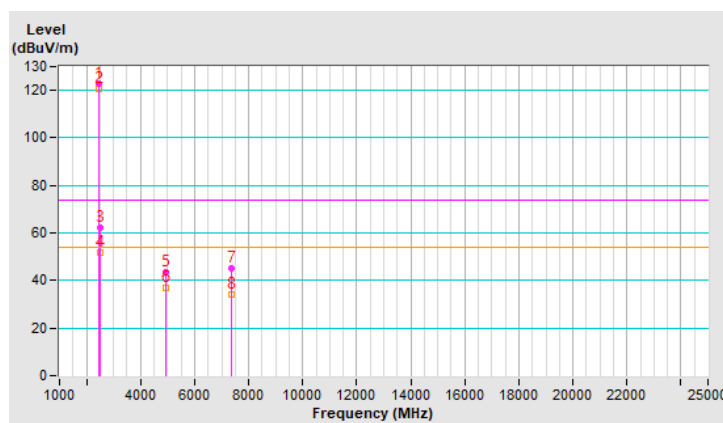


RF Mode	TX 802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	122.7 PK			1.17 V	356	123.6	-0.9
2	*2462.00	120.6 AV			1.17 V	356	121.5	-0.9
3	2483.50	62.3 PK	74.0	-11.7	1.17 V	356	63.3	-1.0
4	2483.50	51.8 AV	54.0	-2.2	1.17 V	356	52.8	-1.0
5	4924.00	43.3 PK	74.0	-30.7	1.77 V	14	39.3	4.0
6	4924.00	36.7 AV	54.0	-17.3	1.77 V	14	32.7	4.0
7	7386.00	44.9 PK	74.0	-29.1	1.86 V	144	34.7	10.2
8	7386.00	33.9 AV	54.0	-20.1	1.86 V	144	23.7	10.2

Remarks:

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

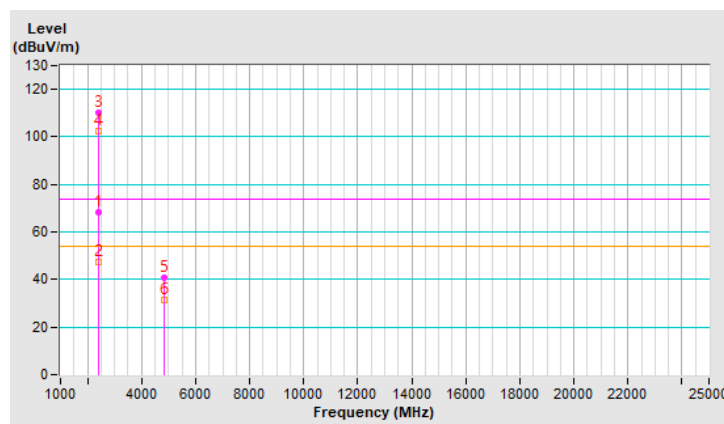


RF Mode	TX 802.11g	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	2389.58	68.2 PK	74.0	-5.8	1.47 H	194	69.0	-0.8
2	2389.58	47.4 AV	54.0	-6.6	1.47 H	194	48.2	-0.8
3	*2412.00	110.2 PK			1.47 H	194	111.0	-0.8
4	*2412.00	102.3 AV			1.47 H	194	103.1	-0.8
5	4824.00	40.8 PK	74.0	-33.2	1.37 H	145	36.9	3.9
6	4824.00	31.4 AV	54.0	-22.6	1.37 H	145	27.5	3.9

Remarks:

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

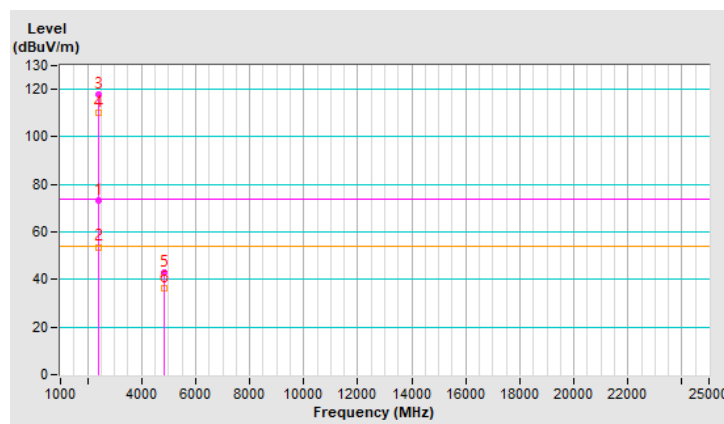


RF Mode	TX 802.11g	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	73.4 PK	74.0	-0.6	2.28 V	334	74.2	-0.8
2	2390.00	53.7 AV	54.0	-0.3	2.28 V	334	54.5	-0.8
3	*2412.00	118.0 PK			2.28 V	334	118.8	-0.8
4	*2412.00	110.1 AV			2.28 V	334	110.9	-0.8
5	4824.00	43.0 PK	74.0	-31.0	1.74 V	13	39.1	3.9
6	4824.00	36.3 AV	54.0	-17.7	1.74 V	13	32.4	3.9

Remarks:

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

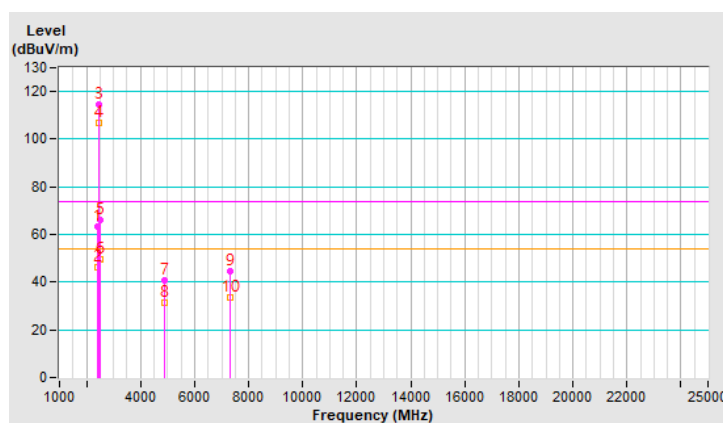


RF Mode	TX 802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	63.2 PK	74.0	-10.8	1.53 H	195	64.0	-0.8
2	2390.00	46.1 AV	54.0	-7.9	1.53 H	195	46.9	-0.8
3	*2437.00	114.5 PK			1.53 H	195	115.3	-0.8
4	*2437.00	106.7 AV			1.53 H	195	107.5	-0.8
5	2483.50	66.2 PK	74.0	-7.8	1.53 H	195	67.2	-1.0
6	2483.50	49.5 AV	54.0	-4.5	1.53 H	195	50.5	-1.0
7	4874.00	40.5 PK	74.0	-33.5	1.37 H	128	36.5	4.0
8	4874.00	31.3 AV	54.0	-22.7	1.37 H	128	27.3	4.0
9	7311.00	44.7 PK	74.0	-29.3	1.87 H	235	34.6	10.1
10	7311.00	33.8 AV	54.0	-20.2	1.87 H	235	23.7	10.1

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.

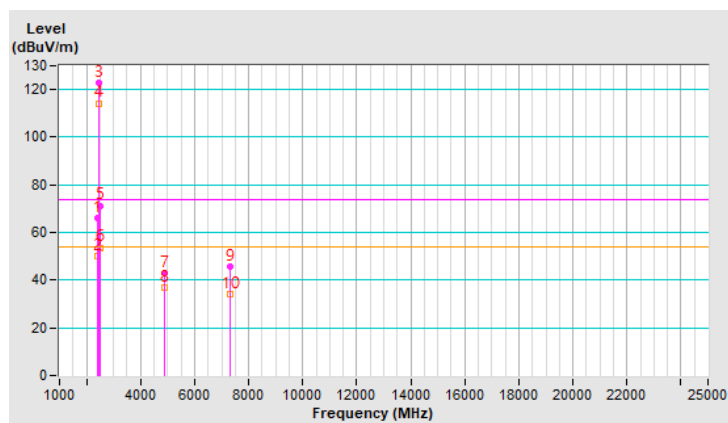


RF Mode	TX 802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	66.3 PK	74.0	-7.7	2.01 V	333	67.1	-0.8
2	2390.00	50.0 AV	54.0	-4.0	2.01 V	333	50.8	-0.8
3	*2437.00	122.9 PK			2.01 V	333	123.7	-0.8
4	*2437.00	114.3 AV			2.01 V	333	115.1	-0.8
5	2483.50	71.3 PK	74.0	-2.7	2.01 V	333	72.3	-1.0
6	2483.50	53.7 AV	54.0	-0.3	2.01 V	333	54.7	-1.0
7	4874.00	43.0 PK	74.0	-31.0	1.78 V	1	39.0	4.0
8	4874.00	36.7 AV	54.0	-17.3	1.78 V	1	32.7	4.0
9	7311.00	45.5 PK	74.0	-28.5	1.84 V	145	35.4	10.1
10	7311.00	34.2 AV	54.0	-19.8	1.84 V	145	24.1	10.1

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.

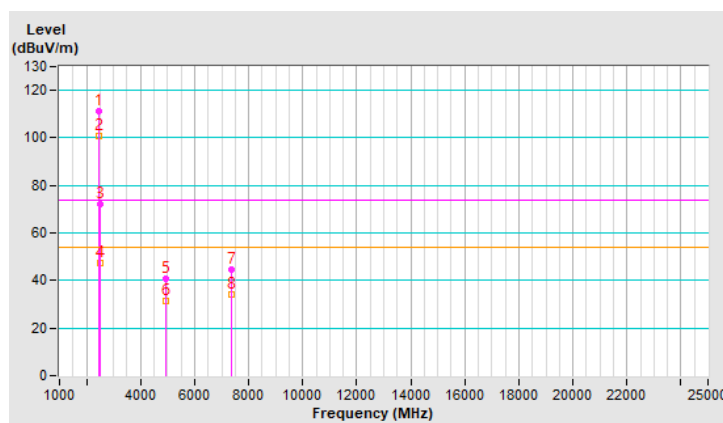


RF Mode	TX 802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	111.2 PK			1.52 H	218	112.1	-0.9
2	*2462.00	100.6 AV			1.52 H	218	101.5	-0.9
3	2483.50	72.0 PK	74.0	-2.0	1.52 H	218	73.0	-1.0
4	2483.50	47.2 AV	54.0	-6.8	1.52 H	218	48.2	-1.0
5	4924.00	40.6 PK	74.0	-33.4	1.46 H	146	36.6	4.0
6	4924.00	31.3 AV	54.0	-22.7	1.46 H	146	27.3	4.0
7	7386.00	44.6 PK	74.0	-29.4	1.90 H	247	34.4	10.2
8	7386.00	33.9 AV	54.0	-20.1	1.90 H	247	23.7	10.2

Remarks:

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

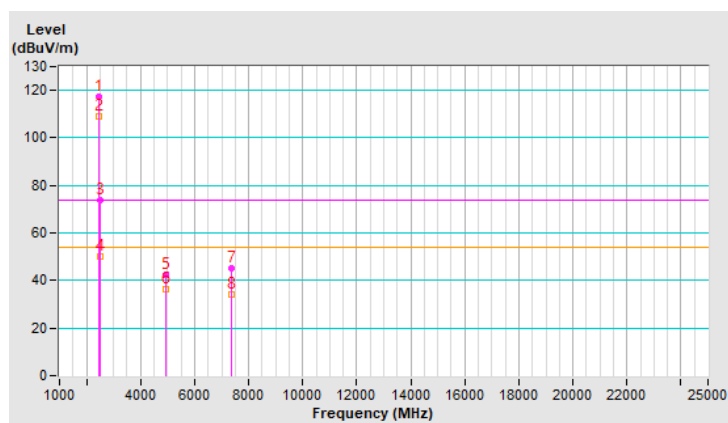


RF Mode	TX 802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	117.4 PK			1.58 V	332	118.3	-0.9
2	*2462.00	108.9 AV			1.58 V	332	109.8	-0.9
3	2485.72	73.9 PK	74.0	-0.1	1.58 V	332	74.9	-1.0
4	2485.72	50.0 AV	54.0	-4.0	1.58 V	332	51.0	-1.0
5	4924.00	42.2 PK	74.0	-31.8	1.76 V	0	38.2	4.0
6	4924.00	36.1 AV	54.0	-17.9	1.76 V	0	32.1	4.0
7	7386.00	45.2 PK	74.0	-28.8	1.93 V	128	35.0	10.2
8	7386.00	34.2 AV	54.0	-19.8	1.93 V	128	24.0	10.2

Remarks:

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

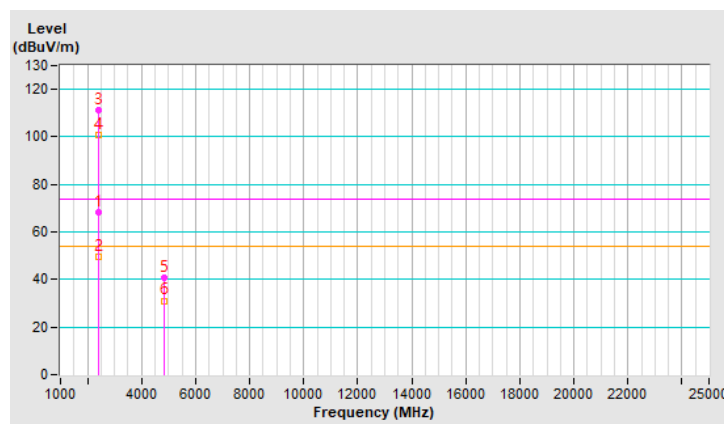


RF Mode	TX 802.11ax (HE20)	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	68.1 PK	74.0	-5.9	1.48 H	219	68.9	-0.8
2	2390.00	49.8 AV	54.0	-4.2	1.48 H	219	50.6	-0.8
3	*2412.00	111.4 PK			1.48 H	219	112.2	-0.8
4	*2412.00	100.7 AV			1.48 H	219	101.5	-0.8
5	4824.00	40.5 PK	74.0	-33.5	1.43 H	145	36.6	3.9
6	4824.00	31.1 AV	54.0	-22.9	1.43 H	145	27.2	3.9

Remarks:

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

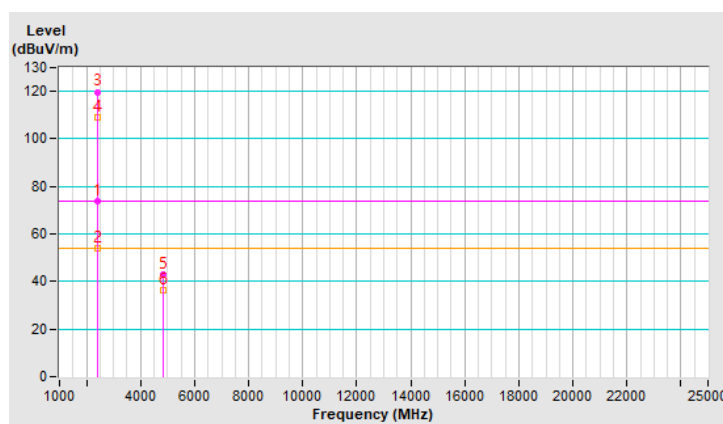


RF Mode	TX 802.11ax (HE20)	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	2388.95	73.6 PK	74.0	-0.4	1.64 V	327	74.4	-0.8
2	2388.95	53.9 AV	54.0	-0.1	1.64 V	327	54.7	-0.8
3	*2412.00	119.8 PK			1.64 V	327	120.6	-0.8
4	*2412.00	108.9 AV			1.64 V	327	109.7	-0.8
5	4824.00	42.9 PK	74.0	-31.1	1.77 V	36	39.0	3.9
6	4824.00	36.5 AV	54.0	-17.5	1.77 V	36	32.6	3.9

Remarks:

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

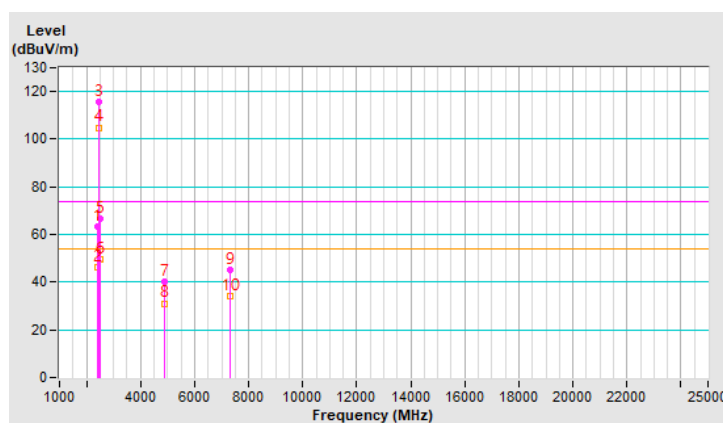


RF Mode	TX 802.11ax (HE20)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	63.3 PK	74.0	-10.7	1.54 H	213	64.1	-0.8
2	2390.00	46.0 AV	54.0	-8.0	1.54 H	213	46.8	-0.8
3	*2437.00	115.8 PK			1.54 H	213	116.6	-0.8
4	*2437.00	104.9 AV			1.54 H	213	105.7	-0.8
5	2483.50	66.4 PK	74.0	-7.6	1.54 H	213	67.4	-1.0
6	2483.50	49.6 AV	54.0	-4.4	1.54 H	213	50.6	-1.0
7	4874.00	40.3 PK	74.0	-33.7	1.43 H	117	36.3	4.0
8	4874.00	31.1 AV	54.0	-22.9	1.43 H	117	27.1	4.0
9	7311.00	45.2 PK	74.0	-28.8	1.82 H	253	35.1	10.1
10	7311.00	34.2 AV	54.0	-19.8	1.82 H	253	24.1	10.1

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.

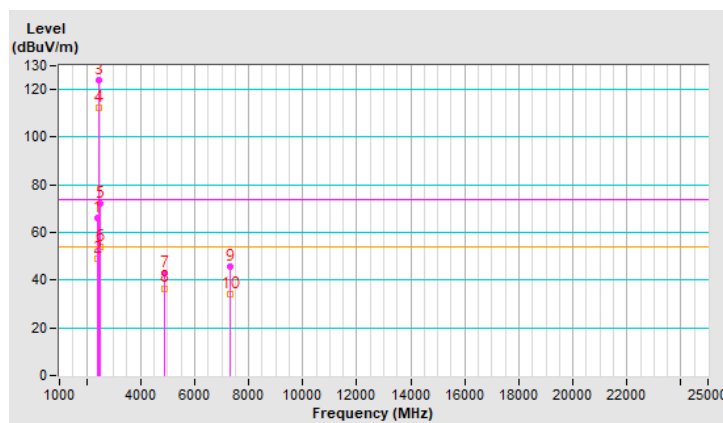


RF Mode	TX 802.11ax (HE20)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	66.2 PK	74.0	-7.8	1.98 V	339	67.0	-0.8
2	2390.00	49.1 AV	54.0	-4.9	1.98 V	339	49.9	-0.8
3	*2437.00	124.1 PK			1.98 V	339	124.9	-0.8
4	*2437.00	112.4 AV			1.98 V	339	113.2	-0.8
5	2483.50	72.0 PK	74.0	-2.0	1.98 V	339	73.0	-1.0
6	2483.50	53.8 AV	54.0	-0.2	1.98 V	339	54.8	-1.0
7	4874.00	43.1 PK	74.0	-30.9	1.77 V	23	39.1	4.0
8	4874.00	36.6 AV	54.0	-17.4	1.77 V	23	32.6	4.0
9	7311.00	45.5 PK	74.0	-28.5	1.94 V	137	35.4	10.1
10	7311.00	34.2 AV	54.0	-19.8	1.94 V	137	24.1	10.1

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.

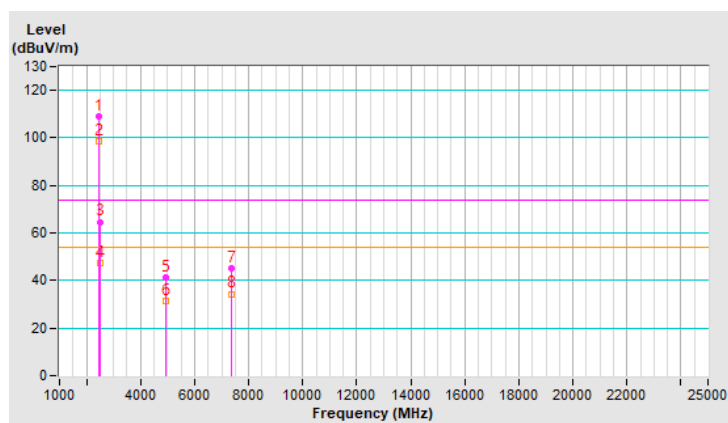


RF Mode	TX 802.11ax (HE20)	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	109.2 PK			1.54 H	203	110.1	-0.9
2	*2462.00	98.6 AV			1.54 H	203	99.5	-0.9
3	2485.28	64.7 PK	74.0	-9.3	1.54 H	203	65.7	-1.0
4	2485.28	47.1 AV	54.0	-6.9	1.54 H	203	48.1	-1.0
5	4924.00	41.2 PK	74.0	-32.8	1.41 H	128	37.2	4.0
6	4924.00	31.6 AV	54.0	-22.4	1.41 H	128	27.6	4.0
7	7386.00	45.4 PK	74.0	-28.6	1.89 H	225	35.2	10.2
8	7386.00	34.4 AV	54.0	-19.6	1.89 H	225	24.2	10.2

Remarks:

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

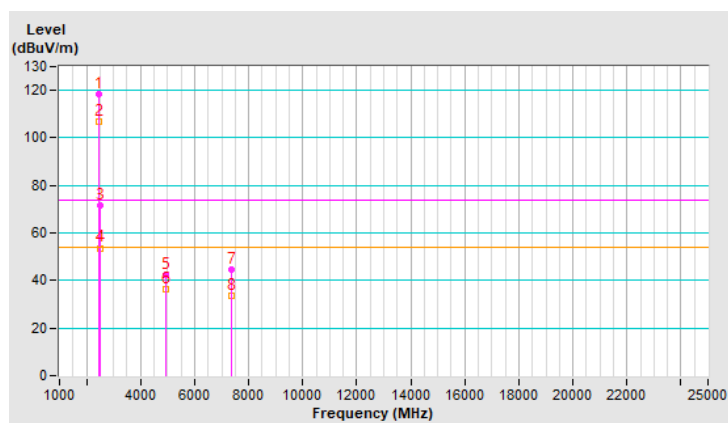


RF Mode	TX 802.11ax (HE20)	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	118.5 PK			1.53 V	340	119.4	-0.9
2	*2462.00	106.8 AV			1.53 V	340	107.7	-0.9
3	2483.50	71.4 PK	74.0	-2.6	1.53 V	340	72.4	-1.0
4	2483.50	53.7 AV	54.0	-0.3	1.53 V	340	54.7	-1.0
5	4924.00	42.5 PK	74.0	-31.5	1.77 V	24	38.5	4.0
6	4924.00	36.2 AV	54.0	-17.8	1.77 V	24	32.2	4.0
7	7386.00	44.7 PK	74.0	-29.3	1.84 V	136	34.5	10.2
8	7386.00	33.4 AV	54.0	-20.6	1.84 V	136	23.2	10.2

Remarks:

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

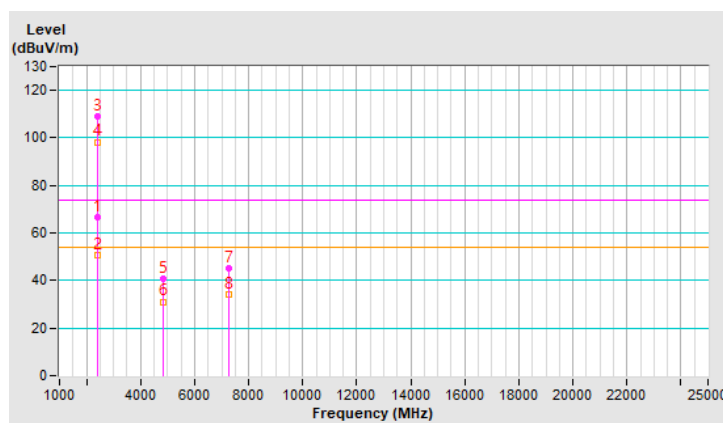


RF Mode	TX 802.11ax (HE40)	Channel	CH 3 : 2422 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	66.5 PK	74.0	-7.5	1.49 H	196	67.3	-0.8
2	2390.00	50.5 AV	54.0	-3.5	1.49 H	196	51.3	-0.8
3	*2422.00	109.1 PK			1.49 H	196	109.9	-0.8
4	*2422.00	98.3 AV			1.49 H	196	99.1	-0.8
5	4844.00	40.5 PK	74.0	-33.5	1.43 H	134	36.6	3.9
6	4844.00	31.1 AV	54.0	-22.9	1.43 H	134	27.2	3.9
7	7266.00	45.3 PK	74.0	-28.7	1.88 H	231	35.3	10.0
8	7266.00	34.3 AV	54.0	-19.7	1.88 H	231	24.3	10.0

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.

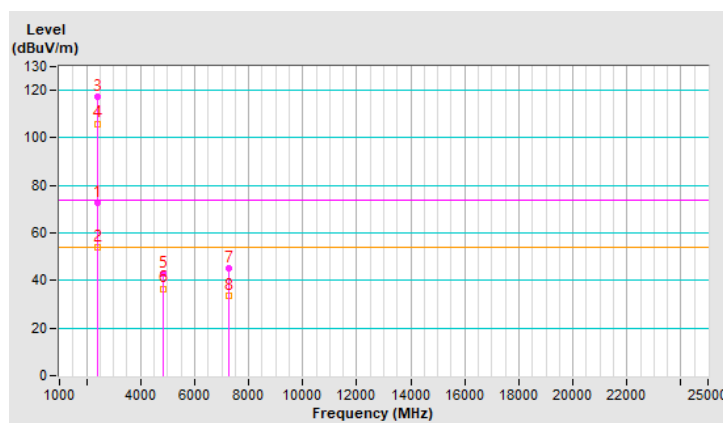


RF Mode	TX 802.11ax (HE40)	Channel	CH 3 : 2422 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	72.7 PK	74.0	-1.3	1.38 V	356	73.5	-0.8
2	2390.00	53.8 AV	54.0	-0.2	1.38 V	356	54.6	-0.8
3	*2422.00	117.3 PK			1.38 V	356	118.1	-0.8
4	*2422.00	106.0 AV			1.38 V	356	106.8	-0.8
5	4844.00	42.8 PK	74.0	-31.2	1.78 V	23	38.9	3.9
6	4844.00	36.6 AV	54.0	-17.4	1.78 V	23	32.7	3.9
7	7266.00	44.9 PK	74.0	-29.1	1.86 V	141	34.9	10.0
8	7266.00	33.6 AV	54.0	-20.4	1.86 V	141	23.6	10.0

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.

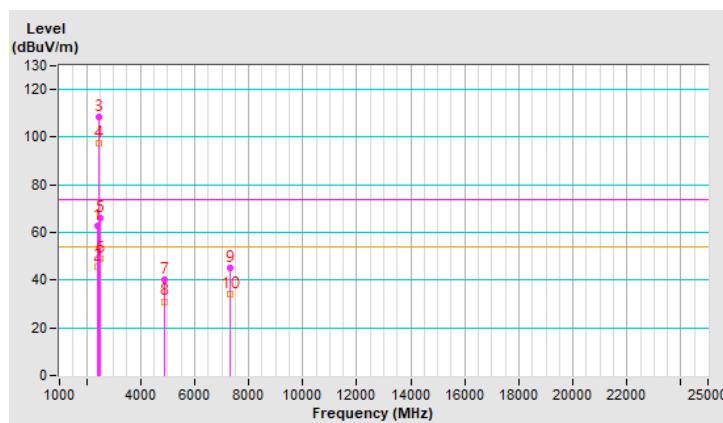


RF Mode	TX 802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	62.7 PK	74.0	-11.3	1.55 H	209	63.5	-0.8
2	2390.00	45.5 AV	54.0	-8.5	1.55 H	209	46.3	-0.8
3	*2437.00	108.6 PK			1.55 H	209	109.4	-0.8
4	*2437.00	97.5 AV			1.55 H	209	98.3	-0.8
5	2483.50	66.2 PK	74.0	-7.8	1.55 H	209	67.2	-1.0
6	2483.50	49.2 AV	54.0	-4.8	1.55 H	209	50.2	-1.0
7	4874.00	40.3 PK	74.0	-33.7	1.43 H	133	36.3	4.0
8	4874.00	31.1 AV	54.0	-22.9	1.43 H	133	27.1	4.0
9	7311.00	45.2 PK	74.0	-28.8	1.85 H	246	35.1	10.1
10	7311.00	34.3 AV	54.0	-19.7	1.85 H	246	24.2	10.1

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.

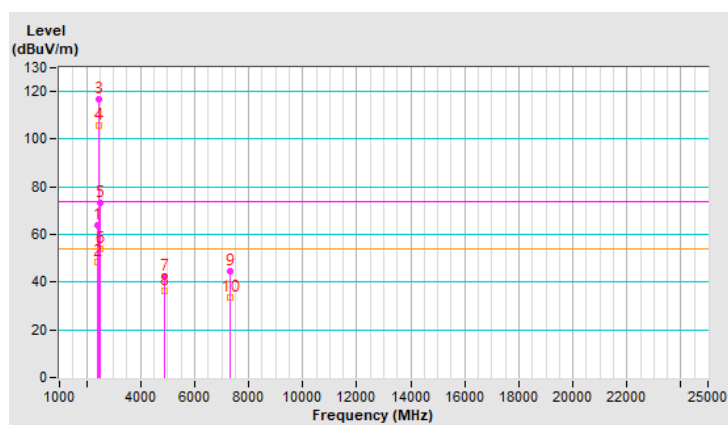


RF Mode	TX 802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	64.1 PK	74.0	-9.9	1.44 V	353	64.9	-0.8
2	2390.00	48.7 AV	54.0	-5.3	1.44 V	353	49.5	-0.8
3	*2437.00	116.9 PK			1.44 V	353	117.7	-0.8
4	*2437.00	105.7 AV			1.44 V	353	106.5	-0.8
5	2483.50	73.2 PK	74.0	-0.8	1.44 V	353	74.2	-1.0
6	2483.50	53.8 AV	54.0	-0.2	1.44 V	353	54.8	-1.0
7	4874.00	42.2 PK	74.0	-31.8	1.78 V	6	38.2	4.0
8	4874.00	36.1 AV	54.0	-17.9	1.78 V	6	32.1	4.0
9	7311.00	44.4 PK	74.0	-29.6	1.94 V	138	34.3	10.1
10	7311.00	33.6 AV	54.0	-20.4	1.94 V	138	23.5	10.1

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.

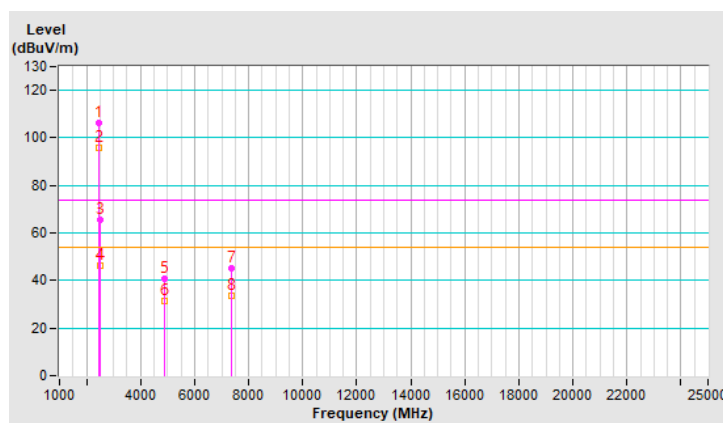


RF Mode	TX 802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

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	106.4 PK			1.57 H	219	107.3	-0.9
2	*2452.00	95.9 AV			1.57 H	219	96.8	-0.9
3	2484.06	65.3 PK	74.0	-8.7	1.57 H	219	66.3	-1.0
4	2484.06	46.4 AV	54.0	-7.6	1.57 H	219	47.4	-1.0
5	4904.00	40.9 PK	74.0	-33.1	1.41 H	118	37.0	3.9
6	4904.00	31.3 AV	54.0	-22.7	1.41 H	118	27.4	3.9
7	7356.00	44.9 PK	74.0	-29.1	1.84 H	232	34.8	10.1
8	7356.00	33.7 AV	54.0	-20.3	1.84 H	232	23.6	10.1

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.

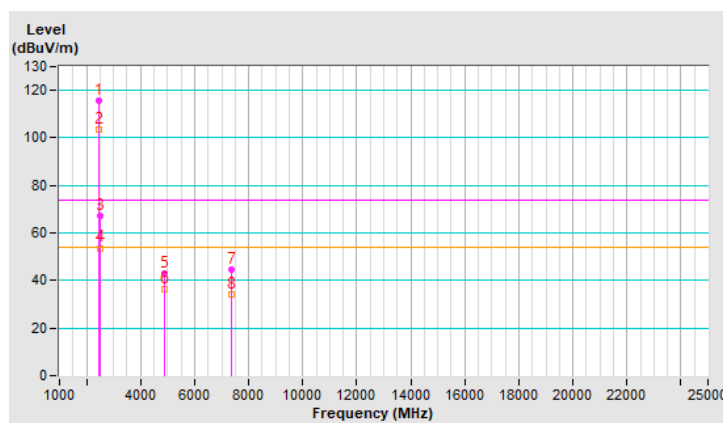


RF Mode	TX 802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	20°C, 70% RH
Tested By	Ryan Du		

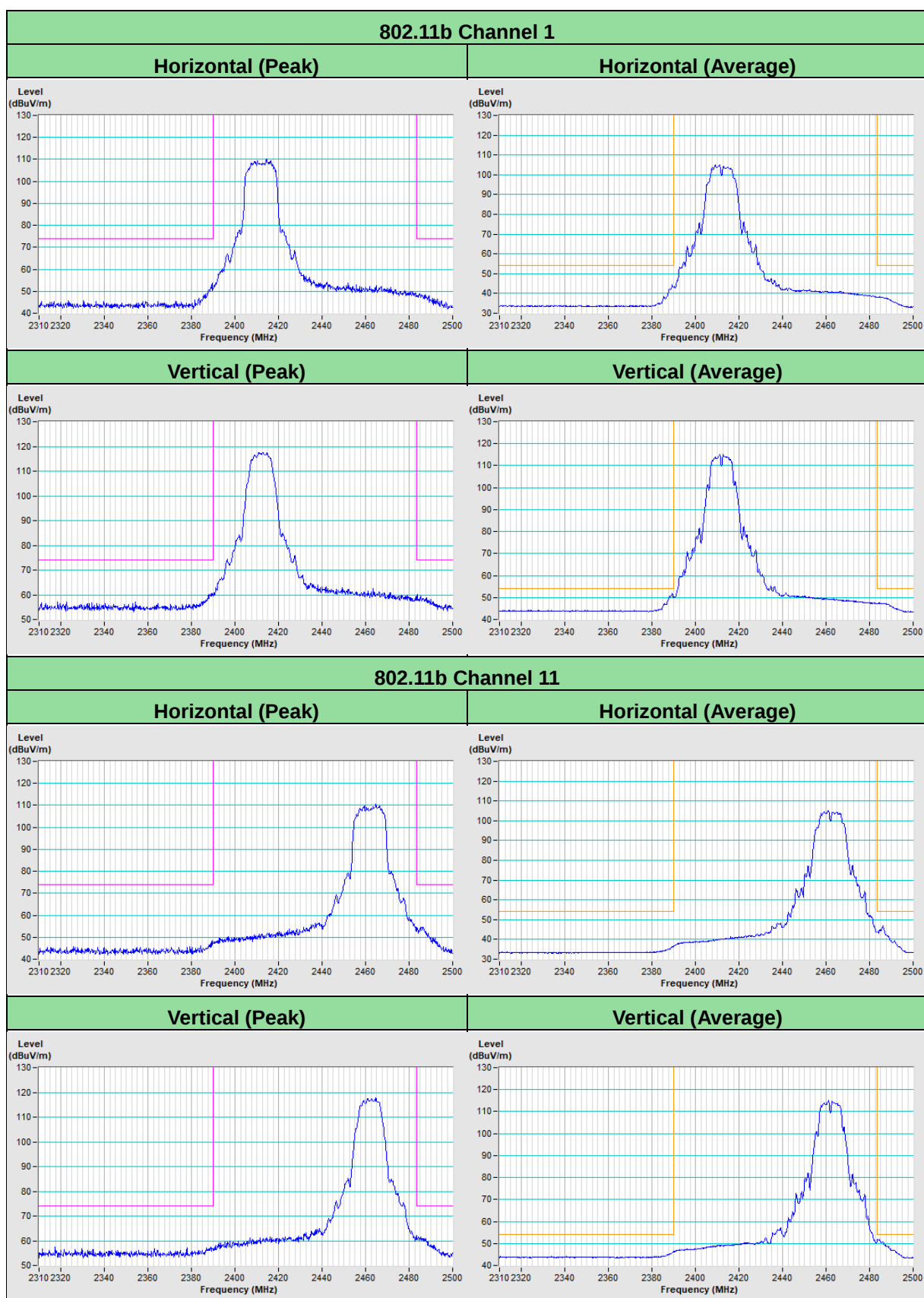
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2452.00	115.7 PK			1.34 V	355	116.6	-0.9
2	*2452.00	103.7 AV			1.34 V	355	104.6	-0.9
3	2485.70	67.2 PK	74.0	-6.8	1.34 V	355	68.2	-1.0
4	2485.70	53.7 AV	54.0	-0.3	1.34 V	355	54.7	-1.0
5	4904.00	42.7 PK	74.0	-31.3	1.77 V	24	38.8	3.9
6	4904.00	36.2 AV	54.0	-17.8	1.77 V	24	32.3	3.9
7	7356.00	44.8 PK	74.0	-29.2	1.84 V	136	34.7	10.1
8	7356.00	33.9 AV	54.0	-20.1	1.84 V	136	23.8	10.1

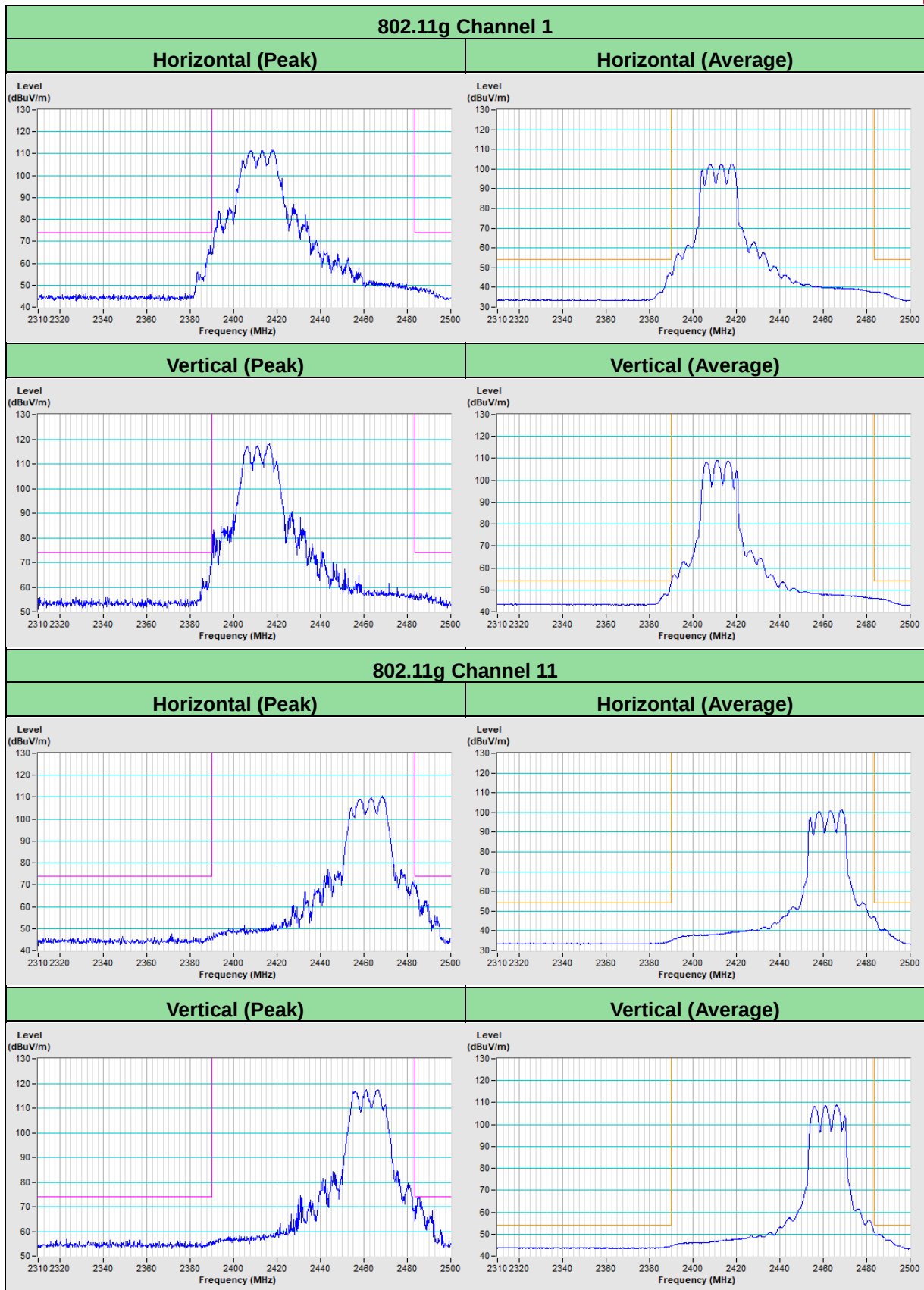
Remarks:

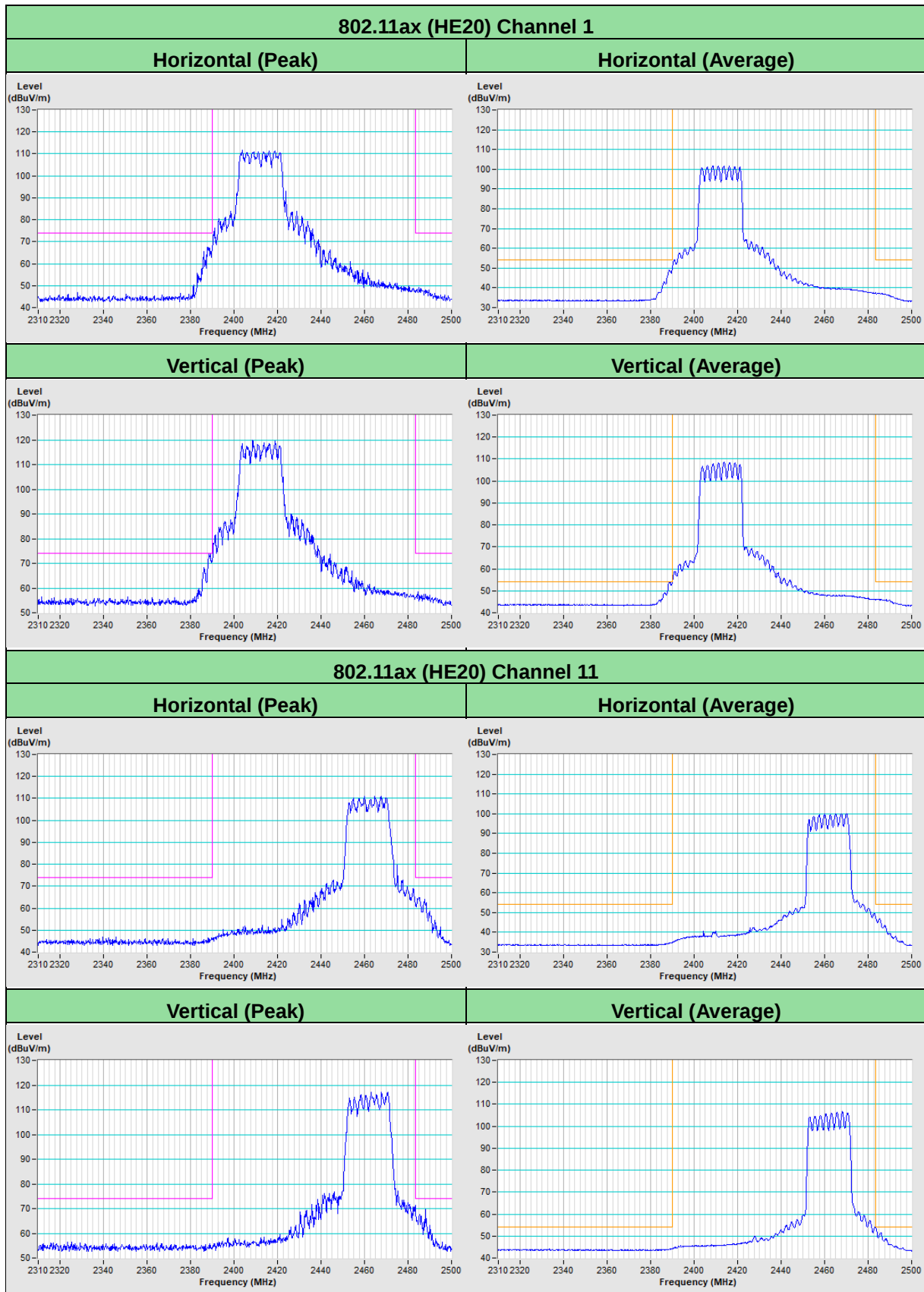
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency,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

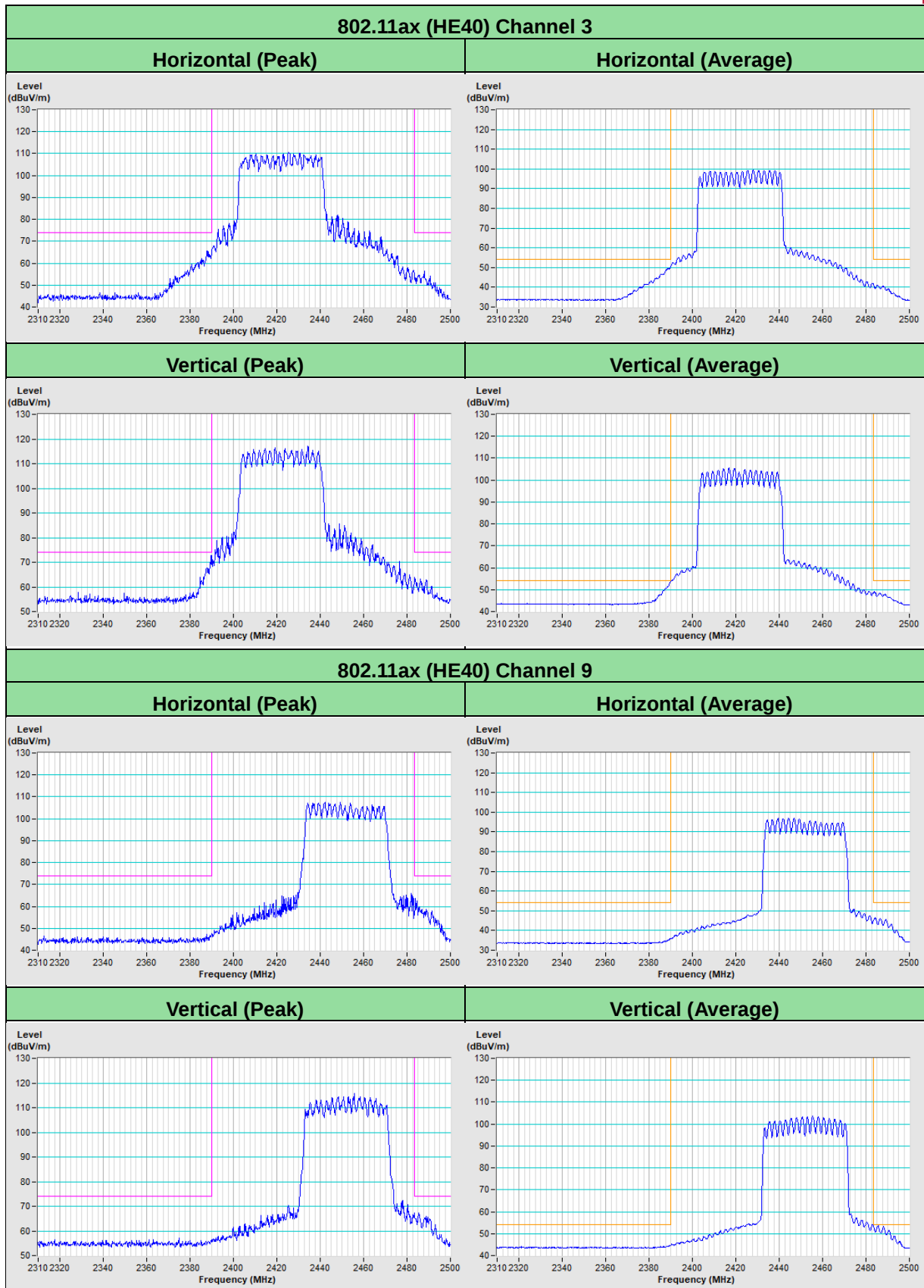


Plot of Band Edge









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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