

FCC Test Report

Report No.: RFBDYS-WTW-P20110362

FCC ID: TVE-3617T01066

Test Model: FAP-234F

Series Model: FortiAP 234Fxxxxxx, FAP-234Fxxxxxx, FORTIAP-234Fxxxxxx (Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)

Received Date: Nov. 11, 2020

Test Date: Nov. 16 ~ Dec. 30, 2020

Issued Date: Jan. 27, 2021

Applicant: Fortinet Inc.

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

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FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
RFBDYS-WTW-P20110362	Original release	Jan. 27, 2021

1 Certificate of Conformity

Product: Secured Wireless Access Point

Brand: Fortinet

Test Model: FAP-234F

Series Model: FortiAP 234Fxxxxxx, FAP-234Fxxxxxx, FORTIAP-234Fxxxxxx (Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)

Sample Status: Engineering sample

Applicant: Fortinet Inc.

Test Date: Nov. 16 ~ Dec. 30, 2020

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10:2013

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.

Prepared by : Celine Chou , **Date:** Jan. 27, 2021
Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** Jan. 27, 2021
Bruce Chen / Senior Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -3.49dB at 0.48190MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.2dB at 62.51MHz.
15.247(d)	Antenna Port Emission	Pass	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	Pass	Meet the requirement of limit.
15.247(b)	Conducted power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is IPEX not a standard connector.

Note:

- For 2.4G band compliance with rule 15.247(d) of the band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
- 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	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.86 dB
	200MHz ~ 1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Secured Wireless Access Point
Brand	Fortinet
Test Model	FAP-234F
Series Model	FortiAP 234Fxxxxxx, FAP-234Fxxxxxx, FORTIAP-234Fxxxxxx (Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)
Model Difference	Refer to note
Sample Status	Engineering sample
Power Supply Rating	54Vdc from POE
Modulation Type	CCK, DQPSK, DBPSK for DSSS 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDMA
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n (HT20/40): up to MCS7 802.11ac (VHT20/40): up to MCS9 802.11ax: up to MCS11
Operating Frequency	2412 ~ 2462MHz
Number of Channel	2G traffic radio (Radio 1): 802.11b, 802.11g, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 11 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 7 Scanning radio (Radio 3): 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7
Output Power	2G traffic radio (Radio 1): CDD Mode: 372.078mW Beamforming Mode: 171.409mW Scanning radio (Radio 3): CDD Mode: 128.529mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	POE
Cable Supplied	NA

Note:

1. The following models are provided to this EUT. The model FAP-234F was chosen for final test.

Brand	Model	Description
Fortinet	FAP-234F	Series model for marketing purpose
	FortiAP 234Fxxxxxx, FAP-234Fxxxxxx, FORTIAP-234Fxxxxxx (Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)	

2. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Radio	Modulation Mode	Beamforming Mode	TX Function
2G traffic radio (Radio 1)	802.11b	Not Support	2TX
	802.11g	Not Support	2TX
	802.11n (HT20)	Not Support	2TX
	802.11n (HT40)	Not Support	2TX
	802.11ac (VHT20)	Support	2TX
	802.11ac (VHT40)	Support	2TX
	802.11ax (HE20)	Support	2TX
	802.11ax (HE40)	Support	2TX
Scanning radio (Radio 3)	802.11b	Not Support	1TX
	802.11g	Not Support	1TX
	802.11n (HT20)	Not Support	1TX
	802.11n (HT40)	Not Support	1TX

* The bandwidth and modulation are similar for HT20/HT40 on 802.11n mode and VHT20/VHT40 on 802.11ac mode and HE20/HE40 on 802.11ax mode. Therefore the investigated worst case is the representative mode in test report. (Final test mode refer section 3.2.1)

* For 802.11n, CDD mode and Beamforming mode are presented in power output test item. For other test items, CDD mode is the worst case for final tests after pretesting.

3. The EUT consumes power from the following POEs.

POE 1	
Brand	SENAO
Model	EPA5006GPR
Input Power	100-240Vac, 50-60Hz, 0.8A
Output Power	54Vdc, 0.6A

POE 2 (Optional)	
Brand	SENAO
Model	EPA5006GP
Input Power	100-240Vac, 50-60Hz, 0.8A
Output Power	54Vdc, 0.6A

4. The following antennas were provided to the EUT.

No.	Type	Connector	Gain (dBi)						Remark
			2400MHz	2450MHz	2500MHz	5150MHz	5500MHz	5850MHz	
1	Patch Array	IPEX	9.47	10.20	10.16	-	-	-	2G traffic radio (Radio 1)
2	Patch Array	IPEX	9.24	10.25	9.73	-	-	-	
3	Patch Array	IPEX	-	-	-	9.75	9.94	10.02	5G traffic radio (Radio 2)
4	Patch Array	IPEX	-	-	-	9.81	10.17	10.02	
5	Dipole	IPEX	4.25	4.99	4.15	-	-	-	BT LE / Zigbee
6	Dipole	IPEX	3.38	3.38	3.84	4.92	4.54	4.80	Scanning radio (Radio 3)

* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

5. The simultaneous operation mode was determined by client.

No	Mode
1	2G traffic radio (Radio 1) + 5GHz traffic radio (Radio 2) + 5G Scanning radio (Radio 3) + BLE
2	2G traffic radio (Radio 1) + 5GHz traffic radio (Radio 2) + 5G Scanning radio (Radio 3) + Zigbee
3	5GHz traffic radio (Radio 2) + 2G Scanning radio (Radio 3) + BLE
4	5GHz traffic radio (Radio 2) + 2G Scanning radio (Radio 3) + Zigbee

* 5GHz traffic radio (Radio 2) and 5G Scanning radio (Radio 3) cannot transmit in the same band at same time. 2G traffic radio (Radio 1) and 2G Scanning radio (Radio 3) cannot transmit at same time.

* Zigbee and BT technologies cannot transmit at same time.

* Spurious emission of the simultaneous operation has been evaluated and no non-compliance was found.

3.2 Description of Test Modes

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

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

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

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where RE $\geq$ 1G: Radiated Emission above 1GHz & Bandedge Measurement

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
2. Radiated emission test (below 1GHz) and power line conducted emission test items chosen the worst maximum power.

Radiated Emission Test (Above 1GHz):

- ☒ 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).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)	Remark
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Radio 1
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	
-	802.11ax (HE20)	1 to 11	1, 6, 11	OFDMA	MCS0	6.5	
-	802.11ax (HE40)	3 to 9	3, 6, 9	OFDMA	MCS0	13.5	
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Radio 3
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	
-	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	
-	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	

Radiated Emission Test (Below 1GHz):

- ☒ 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).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)	Remark
-	802.11b	1 to 11	6	DSSS	DBPSK	1.0	Radio 1
-	802.11g	1 to 11	6	OFDM	BPSK	6.0	Radio 3

Power Line Conducted Emission Test:

- ☒ 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).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)	Remark
-	802.11b	1 to 11	6	DSSS	DBPSK	1.0	Radio 1
-	802.11g	1 to 11	6	OFDM	BPSK	6.0	Radio 3

Antenna Port Conducted Measurement:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ 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).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)	Remark
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Radio 1
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	
-	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	
-	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	
-	802.11ac (VHT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	
-	802.11ac (VHT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	
-	802.11ax (HE20)	1 to 11	1, 6, 11	OFDMA	MCS0	6.5	
-	802.11ax (HE40)	3 to 9	3, 6, 9	OFDMA	MCS0	13.5	
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Radio 3
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	
-	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	
-	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	23 deg. C, 67% RH	54Vdc	Adair Peng Titan Hsu
RE<1G	23 deg. C, 67% RH	54Vdc	Titan Hsu
PLC	23 deg. C, 67% RH	54Vdc	Adair Peng
APCM	25 deg. C, 60% RH	54Vdc	Chris Lin

3.3 Duty Cycle of Test Signal

2G traffic radio (Radio 1)

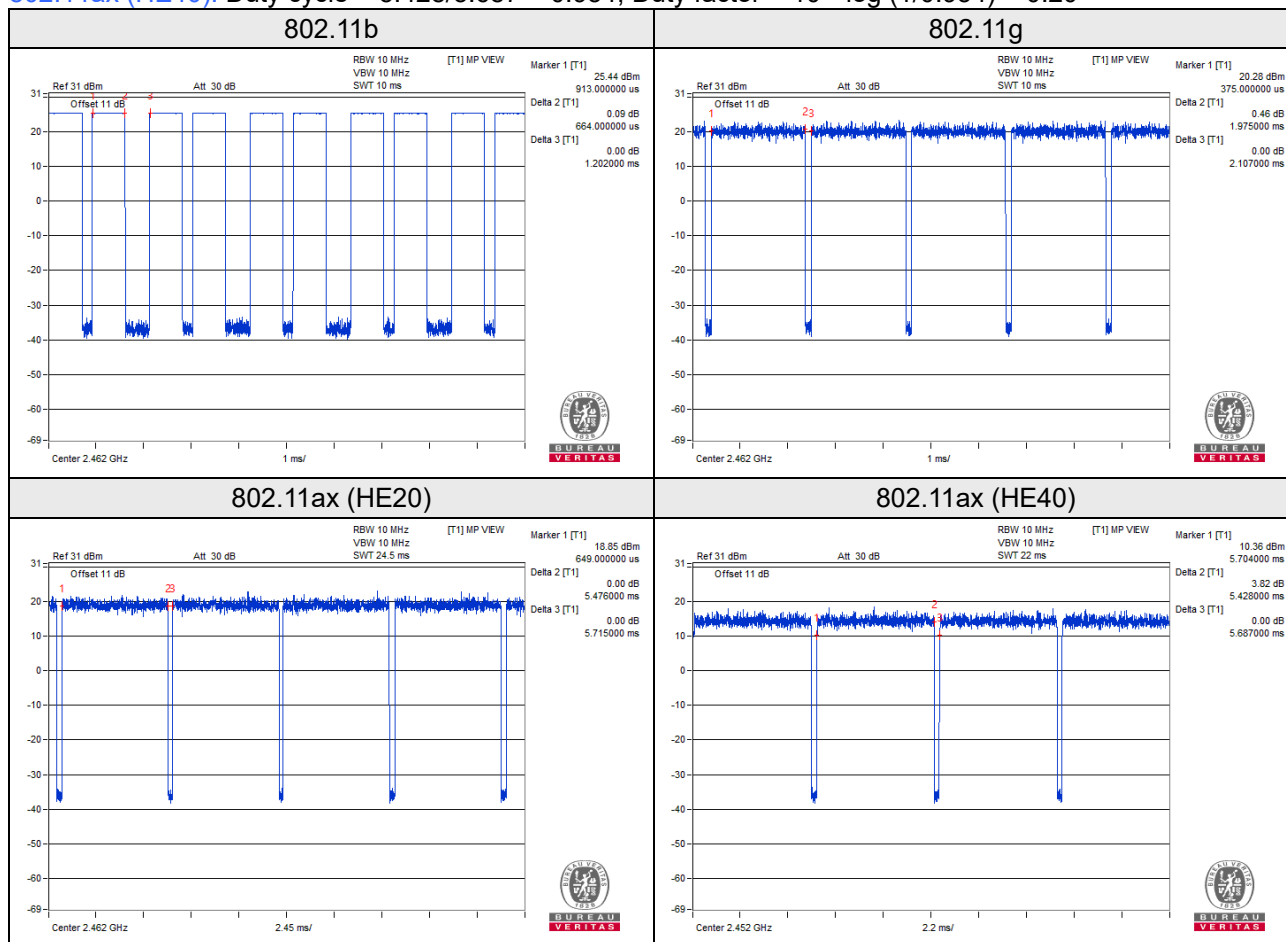
Duty cycle of test signal is < 98%, duty factor is required.

802.11b: Duty cycle = $0.664 / 1.202 = 0.552$, Duty factor = $10 * \log (1/0.552) = 2.58$

802.11g: Duty cycle = $1.975 / 2.107 = 0.937$, Duty factor = $10 * \log (1/0.937) = 0.28$

802.11ax (HE20): Duty cycle = $5.476 / 5.715 = 0.958$, Duty factor = $10 * \log (1/0.958) = 0.19$

802.11ax (HE40): Duty cycle = $5.428 / 5.687 = 0.954$, Duty factor = $10 * \log (1/0.954) = 0.20$



Scanning radio (Radio 3)

802.11b: Duty cycle of test signal is $\geq 98\%$, duty factor is not required.

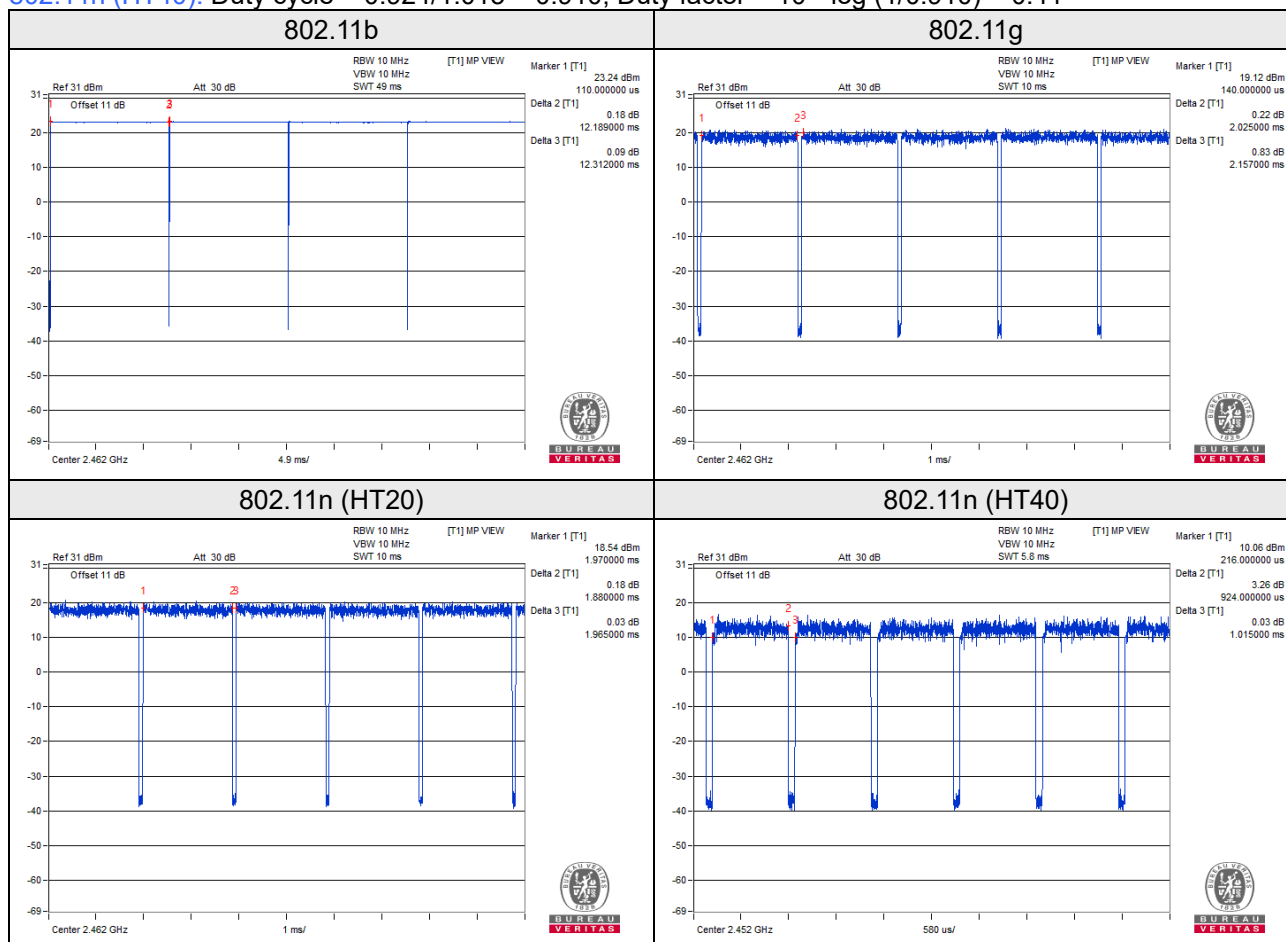
802.11g, 802.11n (HT20), 802.11n (HT40): Duty cycle of test signal is $< 98\%$, duty factor is required.

802.11b: Duty cycle = $12.189/12.312 = 0.990$

802.11g: Duty cycle = $2.025/2.157 = 0.939$, Duty factor = $10 * \log(1/0.939) = 0.27$

802.11n (HT20): Duty cycle = $1.880/1.965 = 0.957$, Duty factor = $10 * \log(1/0.957) = 0.19$

802.11n (HT40): Duty cycle = $0.924/1.015 = 0.910$, Duty factor = $10 * \log(1/0.910) = 0.41$



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

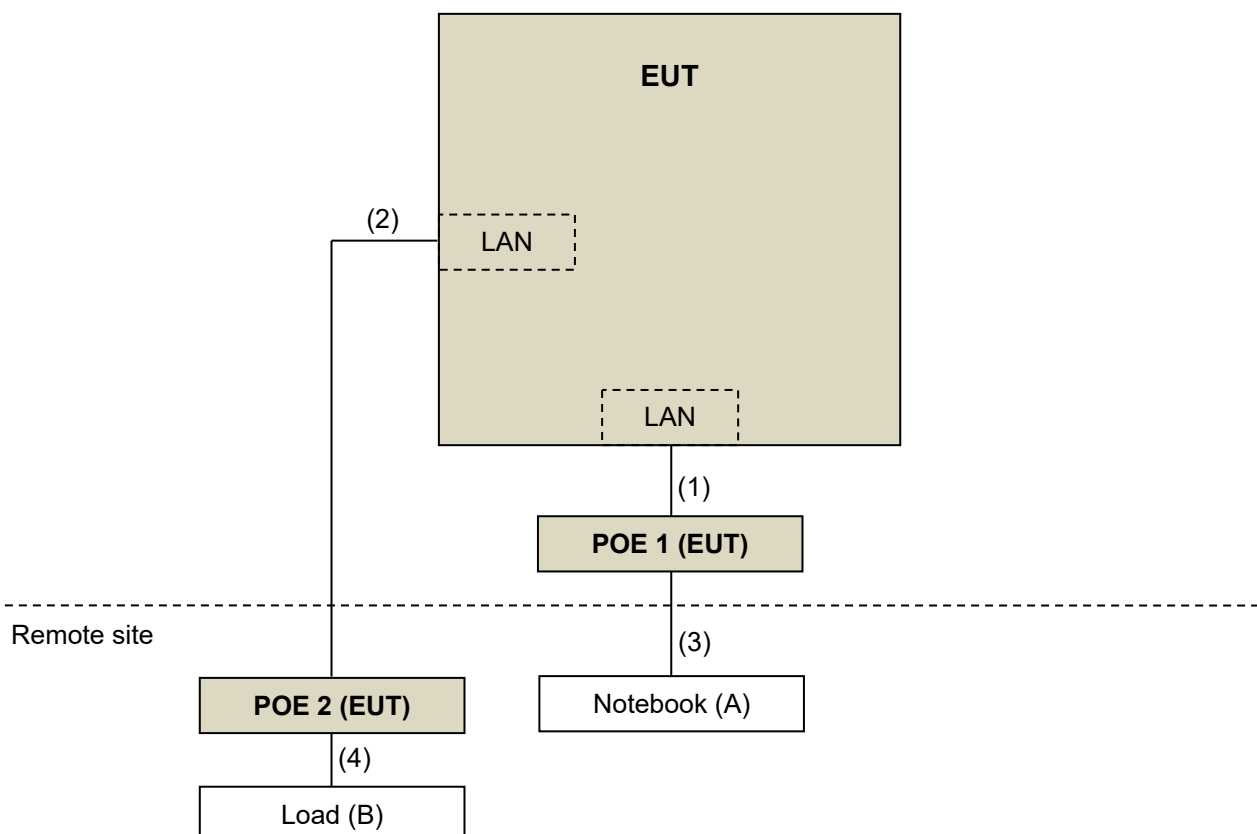
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	1HC2XM1	FCC DoC Approved	-
B.	Load	NA	NA	NA	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	LAN	1	1.5	N	0	RJ45, Cat5e
2.	LAN	1	1.5	N	0	RJ45, Cat5e
3.	LAN	1	7	N	0	RJ45, Cat5e
4.	LAN	1	1.5	N	0	RJ45, Cat5e

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

Test standard:

FCC Part 15, Subpart C (15.247)

ANSI C63.10:2013

All test items have been performed and recorded as per the above standards.

References Test Guidance:

KDB 558074 D01 15.247 Meas Guidance v05r02

KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 30dB 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

Note:

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 1000MHz, 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 20dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102579	Jul. 07, 2020	Jul. 06, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jun. 09, 2020	Jun. 08, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Nov. 04, 2020	Nov. 03, 2021
HORN Antenna SCHWARZBECK	9120D	209	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
Loop Antenna TESEQ	HLA 6121	45745	Jul. 06, 2020	Jul. 05, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Aug. 16, 2020	Aug. 15, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Mar. 23, 2020	Mar. 22, 2021
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH3-01	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 104&EMC104-SM-S M-8000	Cable-CH3-03 (309224+170907)	Aug. 16, 2020	Aug. 15, 2021
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY5519 0004/MY55190007/MY 55210005	Jul. 13, 2020	Jul. 12, 2021

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) 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.
- f. The test-receiver system was set to peak and average detect 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.

Note:

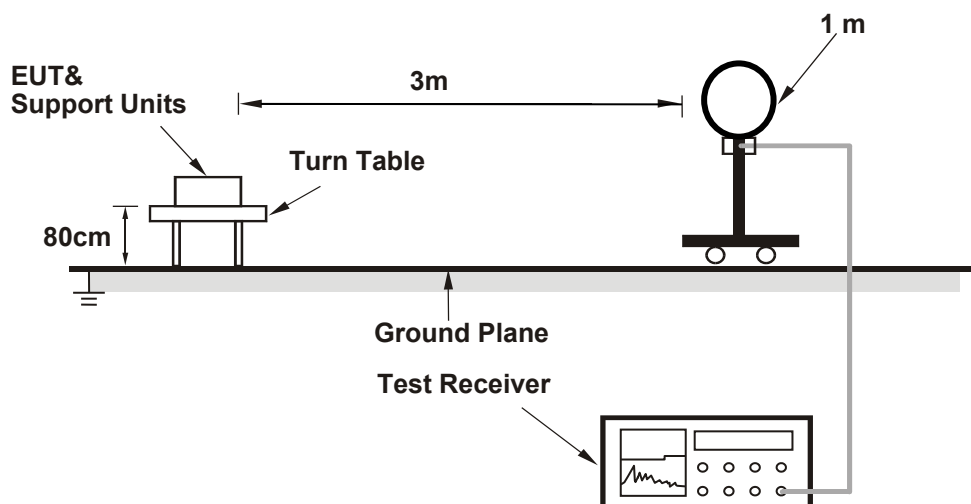
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
2G traffic radio (Radio 1)
 (802.11b: RBW = 1MHz, VBW = 3kHz; 802.11g: RBW = 1MHz, VBW = 1kHz; 802.11ax (HE20): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE40): RBW = 1MHz, VBW = 1kHz)
Scanning radio (Radio 3)
 (802.11b: RBW = 1MHz, VBW = 10Hz; 802.11g: RBW = 1MHz, VBW = 1kHz; 802.11n (HT20): RBW = 1MHz, VBW = 1kHz; 802.11n (HT40): RBW = 1MHz, VBW = 3kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

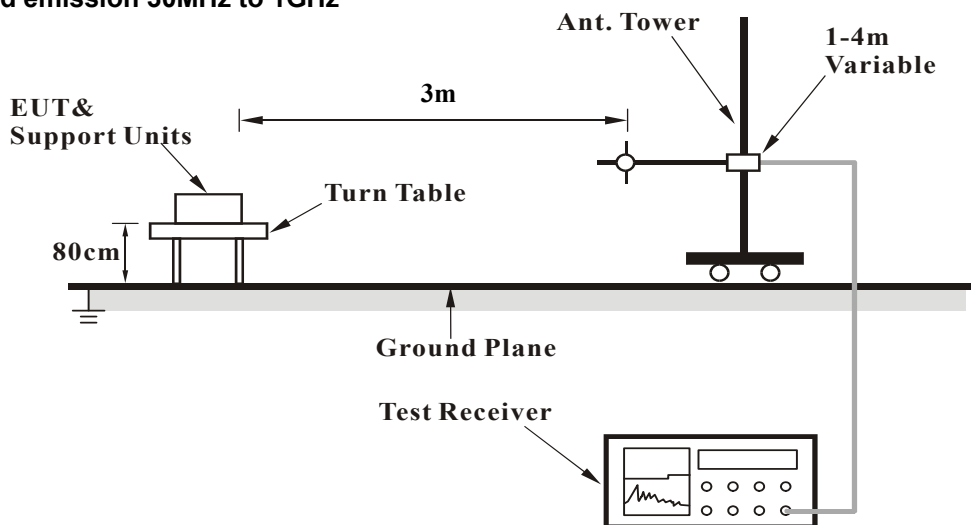
No deviation.

4.1.5 Test Setup

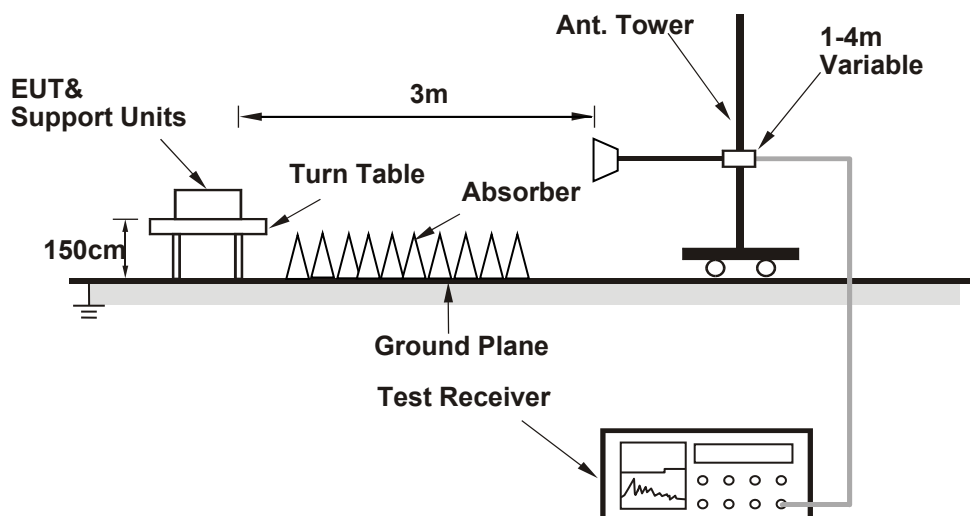
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

- Placed the EUT on the testing table.
- Prepared a notebook to act as a communication partner and placed it outside of testing area.
- The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The communication partner sent data to EUT by command "PING".

4.1.7 Test Results

Above 1GHz Data:

2G traffic radio (Radio 1)

RF Mode	TX 802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	61.1 PK	74.0	-12.9	1.72 H	332	26.8	34.3
2	2390.00	49.7 AV	54.0	-4.3	1.72 H	332	15.4	34.3
3	*2412.00	124.0 PK			1.70 H	335	89.7	34.3
4	*2412.00	120.1 AV			1.70 H	335	85.8	34.3
5	4824.00	49.5 PK	74.0	-24.5	1.60 H	20	43.3	6.2
6	4824.00	42.5 AV	54.0	-11.5	1.60 H	20	36.3	6.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.7 PK	74.0	-14.3	1.65 V	334	25.4	34.3
2	2390.00	48.6 AV	54.0	-5.4	1.65 V	334	14.3	34.3
3	*2412.00	119.6 PK			1.70 V	343	85.3	34.3
4	*2412.00	115.7 AV			1.70 V	343	81.4	34.3
5	4824.00	49.8 PK	74.0	-24.2	1.58 V	300	43.6	6.2
6	4824.00	40.4 AV	54.0	-13.6	1.58 V	300	34.2	6.2

Remarks:

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

RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	121.7 PK			1.63 H	335	87.4	34.3
2	*2437.00	117.8 AV			1.63 H	335	83.5	34.3
3	4874.00	49.3 PK	74.0	-24.7	1.71 H	16	43.2	6.1
4	4874.00	42.5 AV	54.0	-11.5	1.71 H	16	36.4	6.1
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	*2437.00	116.6 PK			1.57 V	341	82.3	34.3
2	*2437.00	112.8 AV			1.57 V	341	78.5	34.3
3	4874.00	50.8 PK	74.0	-23.2	1.69 V	314	44.7	6.1
4	4874.00	44.3 AV	54.0	-9.7	1.69 V	314	38.2	6.1

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.

RF Mode	TX 802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	115.9 PK			1.69 H	332	81.5	34.4
2	*2462.00	112.3 AV			1.69 H	332	77.9	34.4
3	2483.50	61.7 PK	74.0	-12.3	1.43 H	335	27.3	34.4
4	2483.50	51.2 AV	54.0	-2.8	1.43 H	335	16.8	34.4
5	4924.00	48.3 PK	74.0	-25.7	1.66 H	20	42.2	6.1
6	4924.00	38.9 AV	54.0	-15.1	1.66 H	20	32.8	6.1
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	*2462.00	119.8 PK			1.68 V	344	85.4	34.4
2	*2462.00	116.0 AV			1.68 V	344	81.6	34.4
3	2483.50	60.6 PK	74.0	-13.4	1.69 V	343	26.2	34.4
4	2483.50	52.3 AV	54.0	-1.7	1.69 V	343	17.9	34.4
5	4924.00	49.1 PK	74.0	-24.9	1.71 V	322	43.0	6.1
6	4924.00	38.6 AV	54.0	-15.4	1.71 V	322	32.5	6.1

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.

RF Mode	TX 802.11g	Channel	CH 1 : 2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	65.2 PK	74.0	-8.8	1.50 H	334	30.9	34.3
2	2390.00	52.0 AV	54.0	-2.0	1.50 H	334	17.7	34.3
3	*2412.00	125.0 PK			1.66 H	336	90.7	34.3
4	*2412.00	115.0 AV			1.66 H	336	80.7	34.3
5	4824.00	48.3 PK	74.0	-25.7	1.55 H	22	42.1	6.2
6	4824.00	35.2 AV	54.0	-18.8	1.55 H	22	29.0	6.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	65.3 PK	74.0	-8.7	1.69 V	340	31.0	34.3
2	2390.00	52.6 AV	54.0	-1.4	1.69 V	340	18.3	34.3
3	*2412.00	123.8 PK			1.66 V	333	89.5	34.3
4	*2412.00	113.9 AV			1.66 V	333	79.6	34.3
5	4824.00	48.2 PK	74.0	-25.8	1.66 V	291	42.0	6.2
6	4824.00	35.0 AV	54.0	-19.0	1.66 V	291	28.8	6.2

Remarks:

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

RF Mode	TX 802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	123.3 PK			1.65 H	338	89.0	34.3
2	*2437.00	113.3 AV			1.65 H	338	79.0	34.3
3	4874.00	48.1 PK	74.0	-25.9	1.61 H	19	42.0	6.1
4	4874.00	35.1 AV	54.0	-18.9	1.61 H	19	29.0	6.1
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	*2437.00	123.4 PK			1.51 V	338	89.1	34.3
2	*2437.00	113.3 AV			1.51 V	338	79.0	34.3
3	4874.00	48.3 PK	74.0	-25.7	1.70 V	300	42.2	6.1
4	4874.00	35.2 AV	54.0	-18.8	1.70 V	300	29.1	6.1

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.

RF Mode	TX 802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	121.3 PK			1.64 H	346	86.9	34.4
2	*2462.00	110.6 AV			1.64 H	346	76.2	34.4
3	2483.50	65.4 PK	74.0	-8.6	1.60 H	339	31.0	34.4
4	2483.50	51.8 AV	54.0	-2.2	1.60 H	339	17.4	34.4
5	4924.00	47.9 PK	74.0	-26.1	1.70 H	23	41.8	6.1
6	4924.00	35.1 AV	54.0	-18.9	1.70 H	23	29.0	6.1
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	*2462.00	120.6 PK			1.72 V	337	86.2	34.4
2	*2462.00	110.2 AV			1.72 V	337	75.8	34.4
3	2483.50	63.6 PK	74.0	-10.4	1.72 V	341	29.2	34.4
4	2483.50	52.4 AV	54.0	-1.6	1.72 V	341	18.0	34.4
5	4924.00	48.0 PK	74.0	-26.0	1.63 V	292	41.9	6.1
6	4924.00	34.9 AV	54.0	-19.1	1.63 V	292	28.8	6.1

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.

RF Mode	TX 802.11ax (HE20)	Channel	CH 1 : 2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	61.8 PK	74.0	-12.2	1.64 H	325	27.5	34.3
2	2390.00	50.6 AV	54.0	-3.4	1.64 H	325	16.3	34.3
3	*2412.00	124.0 PK			1.53 H	335	89.7	34.3
4	*2412.00	111.3 AV			1.53 H	335	77.0	34.3
5	4824.00	47.7 PK	74.0	-26.3	1.59 H	23	41.5	6.2
6	4824.00	34.7 AV	54.0	-19.3	1.59 H	23	28.5	6.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	66.5 PK	74.0	-7.5	1.56 V	335	32.2	34.3
2	2390.00	52.5 AV	54.0	-1.5	1.56 V	335	18.2	34.3
3	*2412.00	124.2 PK			1.69 V	334	89.9	34.3
4	*2412.00	111.3 AV			1.69 V	334	77.0	34.3
5	4824.00	47.9 PK	74.0	-26.1	1.70 V	299	41.7	6.2
6	4824.00	34.8 AV	54.0	-19.2	1.70 V	299	28.6	6.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. Margin value = Emission Level – Limit value.
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ax (HE20)	Channel	CH 6 : 2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	125.0 PK			1.68 H	337	90.7	34.3
2	*2437.00	112.2 AV			1.68 H	337	77.9	34.3
3	4874.00	48.8 PK	74.0	-25.2	1.65 H	18	42.7	6.1
4	4874.00	34.9 AV	54.0	-19.1	1.65 H	18	28.8	6.1
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	*2437.00	125.2 PK			1.59 V	332	90.9	34.3
2	*2437.00	112.5 AV			1.59 V	332	78.2	34.3
3	4874.00	49.1 PK	74.0	-24.9	1.70 V	309	43.0	6.1
4	4874.00	35.2 AV	54.0	-18.8	1.70 V	309	29.1	6.1

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.

RF Mode	TX 802.11ax (HE20)	Channel	CH 11 : 2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	121.0 PK			1.61 H	338	86.6	34.4
2	*2462.00	107.4 AV			1.61 H	338	73.0	34.4
3	2483.50	64.9 PK	74.0	-9.1	1.51 H	346	30.5	34.4
4	2483.50	52.4 AV	54.0	-1.6	1.51 H	346	18.0	34.4
5	4924.00	48.1 PK	74.0	-25.9	1.70 H	20	42.0	6.1
6	4924.00	34.8 AV	54.0	-19.2	1.70 H	20	28.7	6.1
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	*2462.00	121.5 PK			1.66 V	339	87.1	34.4
2	*2462.00	108.0 AV			1.66 V	339	73.6	34.4
3	2483.50	64.9 PK	74.0	-9.1	1.74 V	343	30.5	34.4
4	2483.50	51.5 AV	54.0	-2.5	1.74 V	343	17.1	34.4
5	4924.00	48.7 PK	74.0	-25.3	1.65 V	297	42.6	6.1
6	4924.00	35.1 AV	54.0	-18.9	1.65 V	297	29.0	6.1

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.

RF Mode	TX 802.11ax (HE40)	Channel	CH 3 : 2422 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	63.0 PK	74.0	-11.0	1.77 H	331	28.7	34.3
2	2390.00	50.3 AV	54.0	-3.7	1.77 H	331	16.0	34.3
3	*2422.00	121.0 PK			1.71 H	339	86.7	34.3
4	*2422.00	109.0 AV			1.71 H	339	74.7	34.3
5	4844.00	48.4 PK	74.0	-25.6	1.63 H	17	42.3	6.1
6	4844.00	34.9 AV	54.0	-19.1	1.63 H	17	28.8	6.1
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	65.6 PK	74.0	-8.4	1.55 V	332	31.3	34.3
2	2390.00	52.7 AV	54.0	-1.3	1.55 V	332	18.4	34.3
3	*2422.00	122.3 PK			1.64 V	337	88.0	34.3
4	*2422.00	109.3 AV			1.64 V	337	75.0	34.3
5	4844.00	48.8 PK	74.0	-25.2	1.70 V	292	42.7	6.1
6	4844.00	35.1 AV	54.0	-18.9	1.70 V	292	29.0	6.1

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.

RF Mode	TX 802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	115.3 PK			1.71 H	335	81.0	34.3
2	*2437.00	103.5 AV			1.71 H	335	69.2	34.3
3	2483.50	62.7 PK	74.0	-11.3	1.65 H	339	28.3	34.4
4	2483.50	50.9 AV	54.0	-3.1	1.65 H	339	16.5	34.4
5	4874.00	48.1 PK	74.0	-25.9	1.70 H	14	42.0	6.1
6	4874.00	34.6 AV	54.0	-19.4	1.70 H	14	28.5	6.1
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	*2437.00	116.2 PK			1.62 V	337	81.9	34.3
2	*2437.00	103.1 AV			1.62 V	337	68.8	34.3
3	2483.50	64.7 PK	74.0	-9.3	1.79 V	340	30.3	34.4
4	2483.50	52.6 AV	54.0	-1.4	1.79 V	340	18.2	34.4
5	4874.00	48.3 PK	74.0	-25.7	1.63 V	288	42.2	6.1
6	4874.00	35.0 AV	54.0	-19.0	1.63 V	288	28.9	6.1

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.

RF Mode	TX 802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2452.00	117.1 PK			1.64 H	345	82.8	34.3
2	*2452.00	104.1 AV			1.64 H	345	69.8	34.3
3	2483.50	65.4 PK	74.0	-8.6	1.64 H	342	31.0	34.4
4	2483.50	52.7 AV	54.0	-1.3	1.64 H	342	18.3	34.4
5	4904.00	48.0 PK	74.0	-26.0	1.75 H	22	42.0	6.0
6	4904.00	34.8 AV	54.0	-19.2	1.75 H	22	28.8	6.0
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	*2452.00	116.8 PK			1.74 V	343	82.5	34.3
2	*2452.00	103.7 AV			1.74 V	343	69.4	34.3
3	2483.50	65.1 PK	74.0	-8.9	1.73 V	341	30.7	34.4
4	2483.50	51.9 AV	54.0	-2.1	1.73 V	341	17.5	34.4
5	4904.00	48.2 PK	74.0	-25.8	1.66 V	293	42.2	6.0
6	4904.00	35.0 AV	54.0	-19.0	1.66 V	293	29.0	6.0

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.

Scanning radio (Radio 3)

RF Mode	TX 802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	60.6 PK	74.0	-13.4	1.52 H	316	26.3	34.3
2	2390.00	48.6 AV	54.0	-5.4	1.52 H	316	14.3	34.3
3	*2412.00	106.7 PK			1.51 H	312	72.4	34.3
4	*2412.00	102.7 AV			1.51 H	312	68.4	34.3
5	4824.00	51.9 PK	74.0	-22.1	1.39 H	31	45.7	6.2
6	4824.00	45.2 AV	54.0	-8.8	1.39 H	31	39.0	6.2
7	12060.00	60.4 PK	74.0	-13.6	1.48 H	331	43.2	17.2
8	12060.00	48.4 AV	54.0	-5.6	1.48 H	331	31.2	17.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	60.6 PK	74.0	-13.4	1.51 V	10	26.3	34.3
2	2390.00	48.5 AV	54.0	-5.5	1.51 V	10	14.2	34.3
3	*2412.00	110.3 PK			1.48 V	7	76.0	34.3
4	*2412.00	106.5 AV			1.48 V	7	72.2	34.3
5	4824.00	52.5 PK	74.0	-21.5	1.47 V	6	46.3	6.2
6	4824.00	45.6 AV	54.0	-8.4	1.47 V	6	39.4	6.2
7	12060.00	62.6 PK	74.0	-11.4	1.08 V	29	45.4	17.2
8	12060.00	53.0 AV	54.0	-1.0	1.08 V	29	35.8	17.2

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.

RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	104.7 PK			1.66 H	303	70.4	34.3
2	*2437.00	100.8 AV			1.66 H	303	66.5	34.3
3	4874.00	52.7 PK	74.0	-21.3	1.38 H	31	46.6	6.1
4	4874.00	46.4 AV	54.0	-7.6	1.38 H	31	40.3	6.1
5	12185.00	61.9 PK	74.0	-12.1	1.56 H	332	44.7	17.2
6	12185.00	50.0 AV	54.0	-4.0	1.56 H	332	32.8	17.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	110.0 PK			2.41 V	309	75.7	34.3
2	*2437.00	105.9 AV			2.41 V	309	71.6	34.3
3	4874.00	53.2 PK	74.0	-20.8	1.59 V	2	47.1	6.1
4	4874.00	48.0 AV	54.0	-6.0	1.59 V	2	41.9	6.1
5	12185.00	62.5 PK	74.0	-11.5	1.31 V	29	45.3	17.2
6	12185.00	53.0 AV	54.0	-1.0	1.31 V	29	35.8	17.2

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.

RF Mode	TX 802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	106.9 PK			1.46 H	318	72.5	34.4
2	*2462.00	103.1 AV			1.46 H	318	68.7	34.4
3	2483.50	62.0 PK	74.0	-12.0	1.59 H	322	27.6	34.4
4	2483.50	49.7 AV	54.0	-4.3	1.59 H	322	15.3	34.4
5	4924.00	50.9 PK	74.0	-23.1	1.56 H	34	44.8	6.1
6	4924.00	42.1 AV	54.0	-11.9	1.56 H	34	36.0	6.1
7	12310.00	59.9 PK	74.0	-14.1	1.46 H	300	43.0	16.9
8	12310.00	48.6 AV	54.0	-5.4	1.46 H	300	31.7	16.9
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	109.2 PK			1.25 V	354	74.8	34.4
2	*2462.00	105.5 AV			1.25 V	354	71.1	34.4
3	2483.50	61.6 PK	74.0	-12.4	1.27 V	356	27.2	34.4
4	2483.50	50.2 AV	54.0	-3.8	1.27 V	356	15.8	34.4
5	4924.00	52.8 PK	74.0	-21.2	1.72 V	358	46.7	6.1
6	4924.00	48.2 AV	54.0	-5.8	1.72 V	358	42.1	6.1
7	12310.00	61.8 PK	74.0	-12.2	1.70 V	25	44.9	16.9
8	12310.00	52.4 AV	54.0	-1.6	1.70 V	25	35.5	16.9

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.

RF Mode	TX 802.11g	Channel	CH 1 : 2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	61.8 PK	74.0	-12.2	1.58 H	322	27.5	34.3
2	2390.00	49.6 AV	54.0	-4.4	1.58 H	322	15.3	34.3
3	*2412.00	107.5 PK			1.74 H	307	73.2	34.3
4	*2412.00	97.1 AV			1.74 H	307	62.8	34.3
5	4824.00	49.5 PK	74.0	-24.5	1.49 H	35	43.3	6.2
6	4824.00	36.2 AV	54.0	-17.8	1.49 H	35	30.0	6.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	66.7 PK	74.0	-7.3	1.31 V	5	32.4	34.3
2	2390.00	52.6 AV	54.0	-1.4	1.31 V	5	18.3	34.3
3	*2412.00	111.8 PK			1.46 V	8	77.5	34.3
4	*2412.00	101.3 AV			1.46 V	8	67.0	34.3
5	4824.00	50.8 PK	74.0	-23.2	1.53 V	4	44.6	6.2
6	4824.00	37.1 AV	54.0	-16.9	1.53 V	4	30.9	6.2

Remarks:

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

RF Mode	TX 802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	109.0 PK			1.68 H	303	74.7	34.3
2	*2437.00	98.3 AV			1.68 H	303	64.0	34.3
3	2483.50	64.0 PK	74.0	-10.0	1.55 H	315	29.6	34.4
4	2483.50	50.7 AV	54.0	-3.3	1.55 H	315	16.3	34.4
5	4874.00	51.3 PK	74.0	-22.7	1.53 H	36	45.2	6.1
6	4874.00	37.6 AV	54.0	-16.4	1.53 H	36	31.5	6.1
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	*2437.00	113.3 PK			2.49 V	312	79.0	34.3
2	*2437.00	102.8 AV			2.49 V	312	68.5	34.3
3	2483.50	65.3 PK	74.0	-8.7	1.21 V	316	30.9	34.4
4	2483.50	52.9 AV	54.0	-1.1	1.21 V	316	18.5	34.4
5	4874.00	53.7 PK	74.0	-20.3	1.55 V	1	47.6	6.1
6	4874.00	39.8 AV	54.0	-14.2	1.55 V	1	33.7	6.1

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.

RF Mode	TX 802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	105.3 PK			1.51 H	311	70.9	34.4
2	*2462.00	95.0 AV			1.51 H	311	60.6	34.4
3	2483.50	63.3 PK	74.0	-10.7	1.49 H	320	28.9	34.4
4	2483.50	50.6 AV	54.0	-3.4	1.49 H	320	16.2	34.4
5	4924.00	49.1 PK	74.0	-24.9	1.43 H	40	43.0	6.1
6	4924.00	35.9 AV	54.0	-18.1	1.43 H	40	29.8	6.1
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	*2462.00	108.0 PK			1.11 V	311	73.6	34.4
2	*2462.00	97.9 AV			1.11 V	311	63.5	34.4
3	2483.50	65.4 PK	74.0	-8.6	1.04 V	311	31.0	34.4
4	2483.50	52.6 AV	54.0	-1.4	1.04 V	311	18.2	34.4
5	4924.00	49.3 PK	74.0	-24.7	1.62 V	10	43.2	6.1
6	4924.00	36.1 AV	54.0	-17.9	1.62 V	10	30.0	6.1

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.

RF Mode	TX 802.11n (HT20)	Channel	CH 1 : 2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	61.3 PK	74.0	-12.7	1.50 H	315	27.0	34.3
2	2390.00	49.3 AV	54.0	-4.7	1.50 H	315	15.0	34.3
3	*2412.00	106.5 PK			1.63 H	306	72.2	34.3
4	*2412.00	96.2 AV			1.63 H	306	61.9	34.3
5	4824.00	49.0 PK	74.0	-25.0	1.59 H	322	42.8	6.2
6	4824.00	35.4 AV	54.0	-18.6	1.59 H	322	29.2	6.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	65.2 PK	74.0	-8.8	1.50 V	355	30.9	34.3
2	2390.00	52.3 AV	54.0	-1.7	1.50 V	355	18.0	34.3
3	*2412.00	111.1 PK			1.42 V	5	76.8	34.3
4	*2412.00	101.0 AV			1.42 V	5	66.7	34.3
5	4824.00	49.2 PK	74.0	-24.8	1.53 V	2	43.0	6.2
6	4824.00	35.7 AV	54.0	-18.3	1.53 V	2	29.5	6.2

Remarks:

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

RF Mode	TX 802.11n (HT20)	Channel	CH 6 : 2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	108.3 PK			1.56 H	307	74.0	34.3
2	*2437.00	97.8 AV			1.56 H	307	63.5	34.3
3	2483.50	62.4 PK	74.0	-11.6	1.69 H	315	28.0	34.4
4	2483.50	50.3 AV	54.0	-3.7	1.69 H	315	15.9	34.4
5	4874.00	49.3 PK	74.0	-24.7	1.59 H	328	43.2	6.1
6	4874.00	35.2 AV	54.0	-18.8	1.59 H	328	29.1	6.1
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	*2437.00	111.9 PK			1.09 V	306	77.6	34.3
2	*2437.00	101.2 AV			1.09 V	306	66.9	34.3
3	2483.50	66.0 PK	74.0	-8.0	1.02 V	308	31.6	34.4
4	2483.50	52.9 AV	54.0	-1.1	1.02 V	308	18.5	34.4
5	4874.00	50.1 PK	74.0	-23.9	1.29 V	357	44.0	6.1
6	4874.00	35.8 AV	54.0	-18.2	1.29 V	357	29.7	6.1

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.

RF Mode	TX 802.11n (HT20)	Channel	CH 11 : 2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	103.9 PK			1.78 H	308	69.5	34.4
2	*2462.00	93.4 AV			1.78 H	308	59.0	34.4
3	2483.50	62.3 PK	74.0	-11.7	1.71 H	315	27.9	34.4
4	2483.50	49.9 AV	54.0	-4.1	1.71 H	315	15.5	34.4
5	4924.00	48.9 PK	74.0	-25.1	1.59 H	339	42.8	6.1
6	4924.00	35.1 AV	54.0	-18.9	1.59 H	339	29.0	6.1
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	*2462.00	109.0 PK			2.11 V	312	74.6	34.4
2	*2462.00	98.4 AV			2.11 V	312	64.0	34.4
3	2483.50	64.9 PK	74.0	-9.1	2.35 V	313	30.5	34.4
4	2483.50	52.4 AV	54.0	-1.6	2.35 V	313	18.0	34.4
5	4924.00	49.1 PK	74.0	-24.9	1.60 V	359	43.0	6.1
6	4924.00	35.2 AV	54.0	-18.8	1.60 V	359	29.1	6.1

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.

RF Mode	TX 802.11n (HT40)	Channel	CH 3 : 2422 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	62.9 PK	74.0	-11.1	1.59 H	311	28.6	34.3
2	2390.00	49.9 AV	54.0	-4.1	1.59 H	311	15.6	34.3
3	*2422.00	101.8 PK			1.62 H	300	67.5	34.3
4	*2422.00	91.9 AV			1.62 H	300	57.6	34.3
5	4844.00	49.1 PK	74.0	-24.9	1.61 H	337	43.0	6.1
6	4844.00	35.1 AV	54.0	-18.9	1.61 H	337	29.0	6.1
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	63.3 PK	74.0	-10.7	2.02 V	302	29.0	34.3
2	2390.00	52.3 AV	54.0	-1.7	2.02 V	302	18.0	34.3
3	*2422.00	106.7 PK			2.12 V	306	72.4	34.3
4	*2422.00	96.1 AV			2.12 V	306	61.8	34.3
5	4844.00	49.3 PK	74.0	-24.7	1.59 V	11	43.2	6.1
6	4844.00	35.4 AV	54.0	-18.6	1.59 V	11	29.3	6.1

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.

RF Mode	TX 802.11n (HT40)	Channel	CH 6 : 2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	101.5 PK			1.56 H	306	67.2	34.3
2	*2437.00	91.5 AV			1.56 H	306	57.2	34.3
3	2483.50	63.1 PK	74.0	-10.9	1.61 H	315	28.7	34.4
4	2483.50	49.8 AV	54.0	-4.2	1.61 H	315	15.4	34.4
5	4874.00	49.6 PK	74.0	-24.4	1.49 H	325	43.5	6.1
6	4874.00	35.5 AV	54.0	-18.5	1.49 H	325	29.4	6.1
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	*2437.00	106.3 PK			2.34 V	306	72.0	34.3
2	*2437.00	95.5 AV			2.34 V	306	61.2	34.3
3	2483.50	65.4 PK	74.0	-8.6	2.35 V	317	31.0	34.4
4	2483.50	52.4 AV	54.0	-1.6	2.35 V	317	18.0	34.4
5	4874.00	50.1 PK	74.0	-23.9	1.43 V	8	44.0	6.1
6	4874.00	36.0 AV	54.0	-18.0	1.43 V	8	29.9	6.1

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.

RF Mode	TX 802.11n (HT40)	Channel	CH 9 : 2452 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

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	99.4 PK			1.74 H	299	65.1	34.3
2	*2452.00	89.0 AV			1.74 H	299	54.7	34.3
3	2483.50	61.4 PK	74.0	-12.6	1.65 H	307	27.0	34.4
4	2483.50	49.4 AV	54.0	-4.6	1.65 H	307	15.0	34.4
5	4904.00	48.8 PK	74.0	-25.2	1.58 H	330	42.8	6.0
6	4904.00	35.0 AV	54.0	-19.0	1.58 H	330	29.0	6.0
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	*2452.00	102.9 PK			1.24 V	310	68.6	34.3
2	*2452.00	92.7 AV			1.24 V	310	58.4	34.3
3	2483.50	64.9 PK	74.0	-9.1	1.25 V	307	30.5	34.4
4	2483.50	52.4 AV	54.0	-1.6	1.25 V	307	18.0	34.4
5	4904.00	49.2 PK	74.0	-24.8	1.60 V	355	43.2	6.0
6	4904.00	35.3 AV	54.0	-18.7	1.60 V	355	29.3	6.0

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.

Below 1GHz worst-case data:

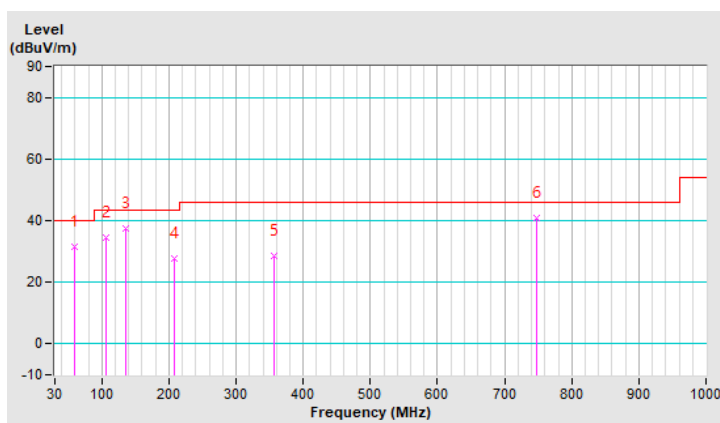
2G traffic radio (Radio 1)

RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	59.52	31.6 QP	40.0	-8.4	2.00 H	262	41.0	-9.4
2	105.91	34.7 QP	43.5	-8.8	2.00 H	291	47.1	-12.4
3	135.43	37.6 QP	43.5	-5.9	2.00 H	56	47.0	-9.4
4	208.54	27.8 QP	43.5	-15.7	1.50 H	71	38.8	-11.0
5	356.14	28.5 QP	46.0	-17.5	1.00 H	114	34.0	-5.5
6	746.96	40.7 QP	46.0	-5.3	2.00 H	8	37.5	3.2

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

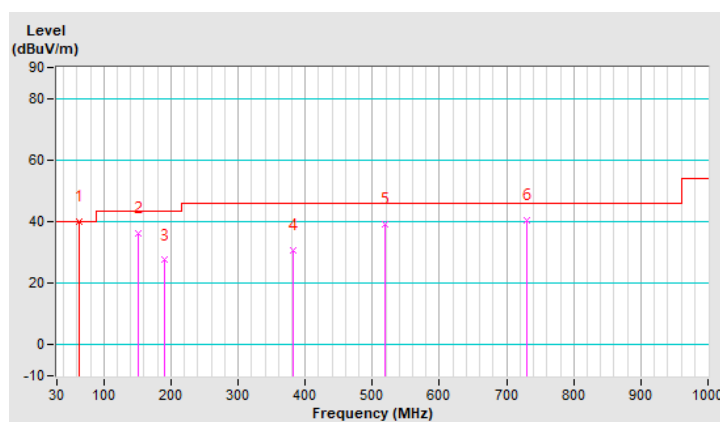


RF Mode	TX 802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	62.51	39.8 QP	40.0	-0.2	1.50 V	0	49.4	-9.6
2	150.90	36.3 QP	43.5	-7.2	1.00 V	91	44.9	-8.6
3	190.26	27.5 QP	43.5	-16.0	1.00 V	176	38.4	-10.9
4	381.45	30.7 QP	46.0	-15.3	1.50 V	352	35.7	-5.0
5	519.22	39.1 QP	46.0	-6.9	1.00 V	354	41.0	-1.9
6	730.09	40.3 QP	46.0	-5.7	1.99 V	223	37.7	2.6

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



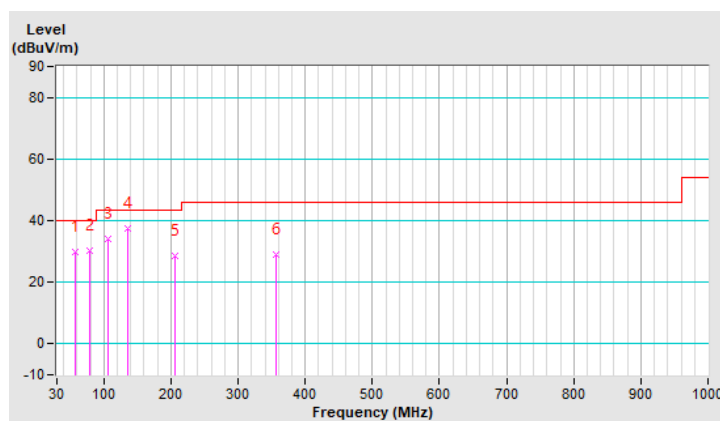
Scanning radio (Radio 3)

RF Mode	TX 802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	58.12	29.8 QP	40.0	-10.2	1.50 H	258	39.1	-9.3
2	79.20	30.1 QP	40.0	-9.9	1.50 H	264	43.2	-13.1
3	105.91	33.9 QP	43.5	-9.6	1.50 H	117	46.3	-12.4
4	135.43	37.5 QP	43.5	-6.0	1.50 H	84	46.9	-9.4
5	205.72	28.6 QP	43.5	-14.9	1.50 H	60	39.7	-11.1
6	356.14	28.8 QP	46.0	-17.2	1.01 H	237	34.3	-5.5

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

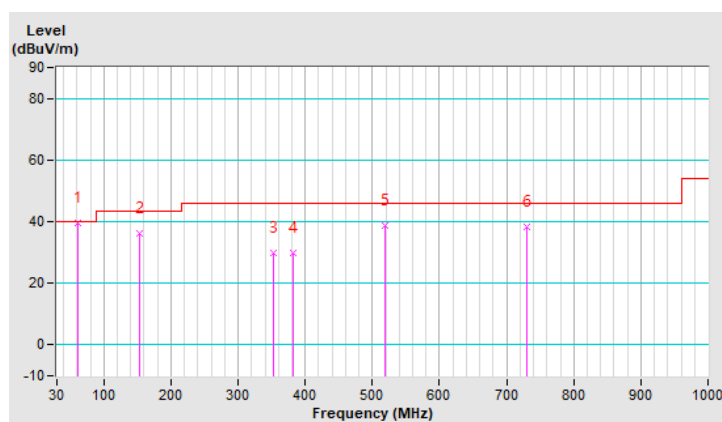


RF Mode	TX 802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	60.93	39.5 QP	40.0	-0.5	1.00 V	301	49.3	-9.8
2	152.30	36.1 QP	43.5	-7.4	1.00 V	134	44.7	-8.6
3	351.93	29.9 QP	46.0	-16.1	1.50 V	6	35.5	-5.6
4	381.45	29.7 QP	46.0	-16.3	1.50 V	334	34.7	-5.0
5	519.22	38.6 QP	46.0	-7.4	1.00 V	6	40.5	-1.9
6	730.09	38.4 QP	46.0	-7.6	1.00 V	141	35.8	2.6

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 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 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Dec. 31, 2019	Dec. 30, 2020
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 04, 2020	Sep. 03, 2021
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 20, 2020	Feb. 19, 2021
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 28, 2020	Aug. 27, 2021
Software ADT	BV ADT_Conc_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 1 (Conduction 1).

3. The VCCI Site Registration No. is C-12040.

4.2.3 Test Procedures

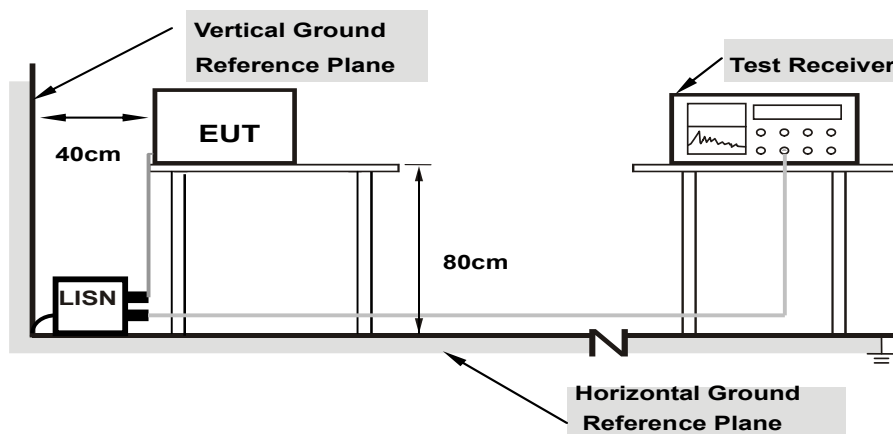
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 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).

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Worst-case data:

2G traffic radio (Radio 1)

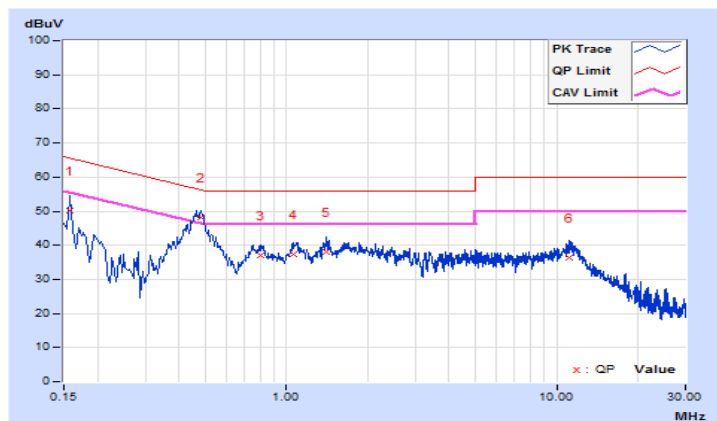
802.11b

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	9.82	40.47	28.07	50.29	37.89	65.57	55.57	-15.28	-17.68
2	0.48190	9.88	38.27	32.94	48.15	42.82	56.31	46.31	-8.16	-3.49
3	0.79800	9.90	27.19	22.62	37.09	32.52	56.00	46.00	-18.91	-13.48
4	1.06600	9.91	27.52	23.19	37.43	33.10	56.00	46.00	-18.57	-12.90
5	1.41000	9.92	28.13	23.45	38.05	33.37	56.00	46.00	-17.95	-12.63
6	11.16200	10.08	26.26	20.93	36.34	31.01	60.00	50.00	-23.66	-18.99

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.

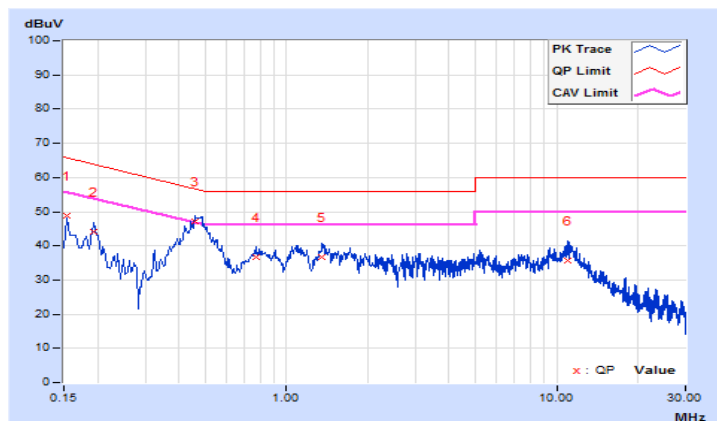


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15400	9.84	39.13	29.43	48.97	39.27	65.78	55.78	-16.81	-16.51
2	0.19400	9.85	34.28	22.88	44.13	32.73	63.86	53.86	-19.73	-21.13
3	0.45800	9.90	37.34	32.14	47.24	42.04	56.73	46.73	-9.49	-4.69
4	0.77000	9.92	26.94	22.03	36.86	31.95	56.00	46.00	-19.14	-14.05
5	1.35800	9.96	26.71	21.99	36.67	31.95	56.00	46.00	-19.33	-14.05
6	11.00600	10.15	25.48	20.13	35.63	30.28	60.00	50.00	-24.37	-19.72

Remarks:

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



Scanning radio (Radio 3)

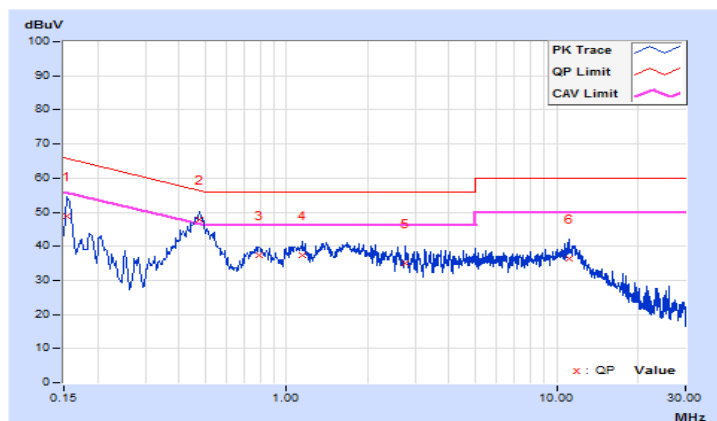
802.11g

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15400	9.82	39.14	28.99	48.96	38.81	65.78	55.78	-16.82	-16.97
2	0.47684	9.88	38.02	32.26	47.90	42.14	56.39	46.39	-8.49	-4.25
3	0.79000	9.90	27.58	23.03	37.48	32.93	56.00	46.00	-18.52	-13.07
4	1.14600	9.91	27.34	22.85	37.25	32.76	56.00	46.00	-18.75	-13.24
5	2.77000	9.96	25.20	20.08	35.16	30.04	56.00	46.00	-20.84	-15.96
6	11.15000	10.08	26.21	20.93	36.29	31.01	60.00	50.00	-23.71	-18.99

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.

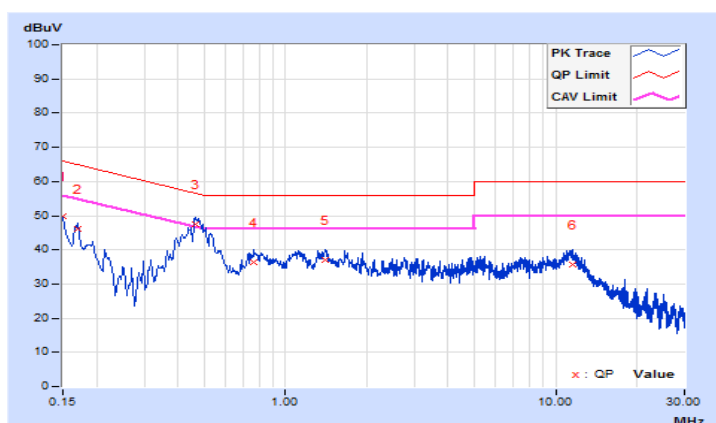


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.84	39.92	30.23	49.76	40.07	66.00	56.00	-16.24	-15.93
2	0.17000	9.84	36.29	27.45	46.13	37.29	64.96	54.96	-18.83	-17.67
3	0.46200	9.90	37.68	32.92	47.58	42.82	56.66	46.66	-9.08	-3.84
4	0.76600	9.92	26.46	21.90	36.38	31.82	56.00	46.00	-19.62	-14.18
5	1.40600	9.96	26.95	22.37	36.91	32.33	56.00	46.00	-19.09	-13.67
6	11.51400	10.16	25.41	20.07	35.57	30.23	60.00	50.00	-24.43	-19.77

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.

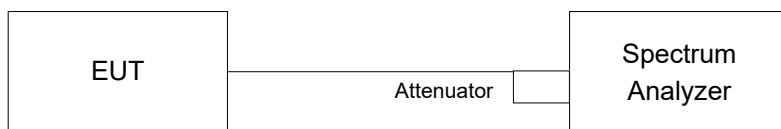


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

- Set resolution bandwidth (RBW) = 100kHz.
- 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.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Result

2G traffic radio (Radio 1)

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	7.58	7.61	0.50	Pass
6	2437	8.10	7.58	0.50	Pass
11	2462	7.60	8.11	0.50	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.76	15.74	0.50	Pass
6	2437	15.82	16.07	0.50	Pass
11	2462	15.74	16.06	0.50	Pass

802.11ax (HE20)

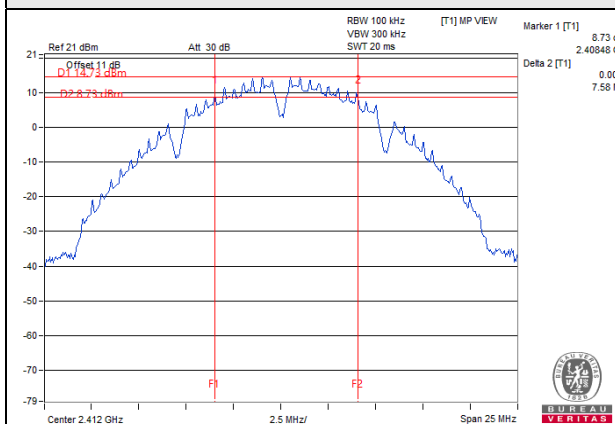
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	18.09	16.98	0.50	Pass
6	2437	18.52	18.46	0.50	Pass
11	2462	18.34	17.78	0.50	Pass

802.11ax (HE40)

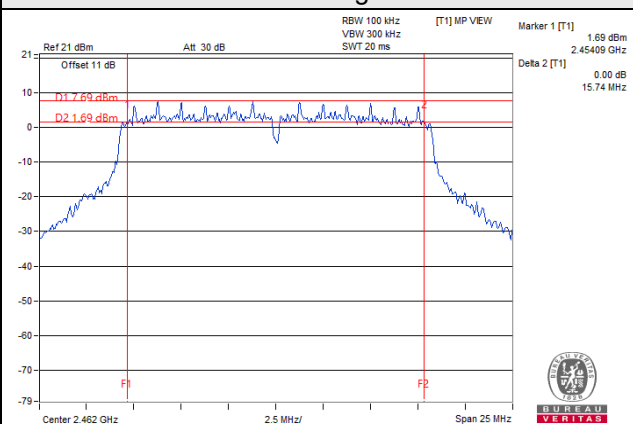
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	37.61	37.75	0.50	Pass
6	2437	37.99	37.90	0.50	Pass
9	2452	38.08	36.85	0.50	Pass

Spectrum Plot of Worst Value

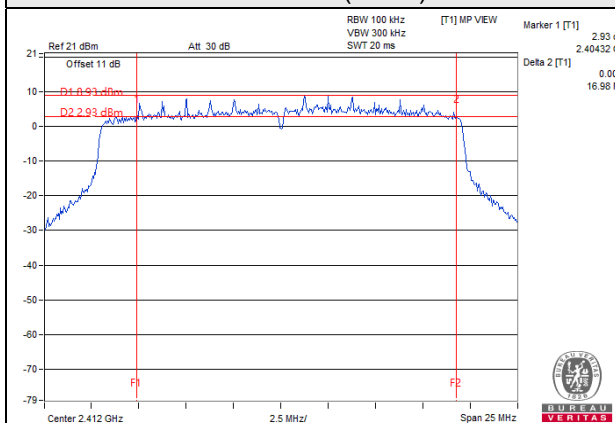
802.11b



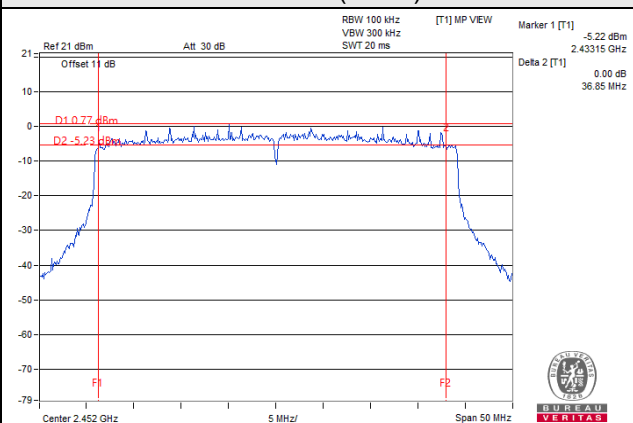
802.11g



802.11ax (HE20)



802.11ax (HE40)



Scanning radio (Radio 3)

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	7.10	0.50	Pass
6	2437	7.11	0.50	Pass
11	2462	7.10	0.50	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	16.09	0.50	Pass
6	2437	16.38	0.50	Pass
11	2462	16.36	0.50	Pass

802.11n (HT20)

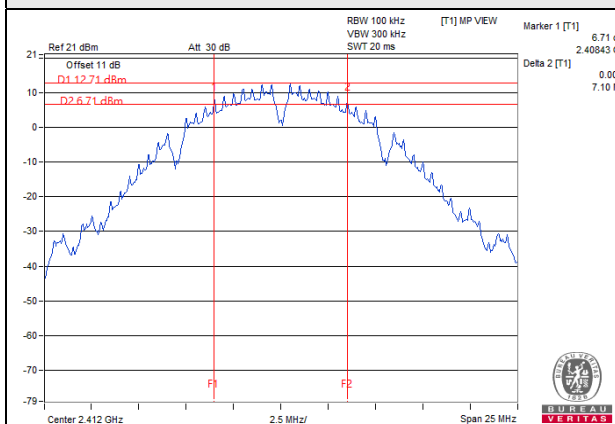
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	16.81	0.50	Pass
6	2437	17.31	0.50	Pass
11	2462	16.69	0.50	Pass

802.11n (HT40)

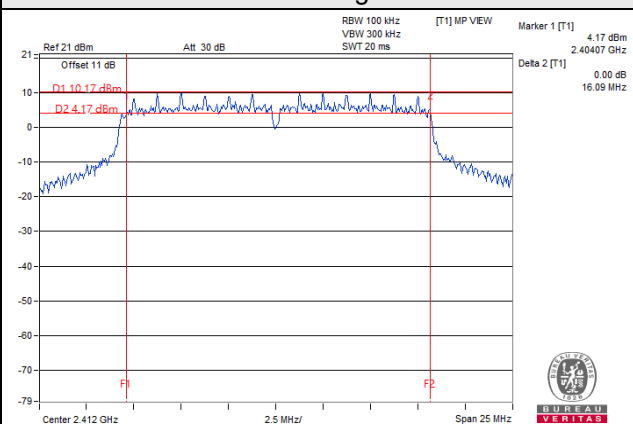
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3	2422	35.30	0.50	Pass
6	2437	35.60	0.50	Pass
9	2452	35.29	0.50	Pass

Spectrum Plot of Worst Value

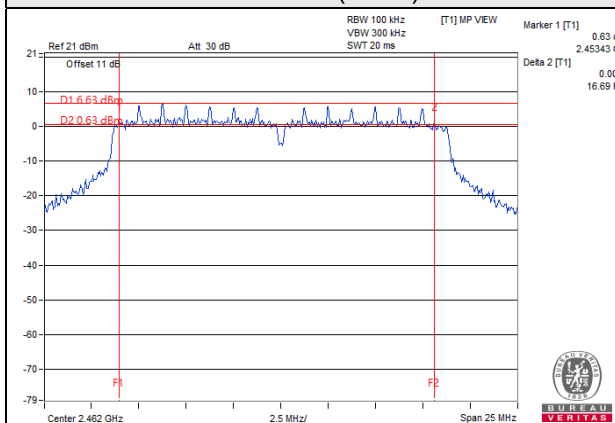
802.11b



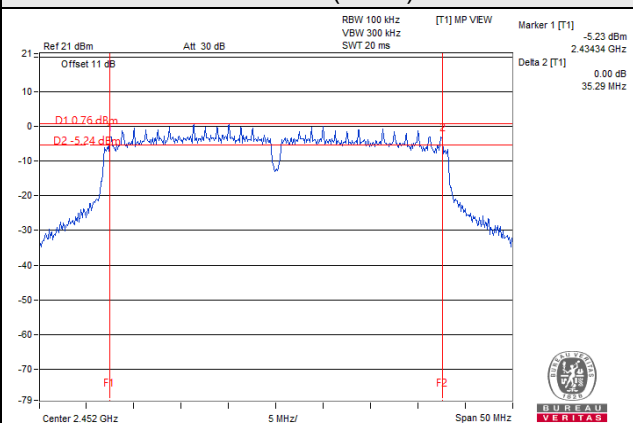
802.11g



802.11n (HT20)



802.11n (HT40)



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

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

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

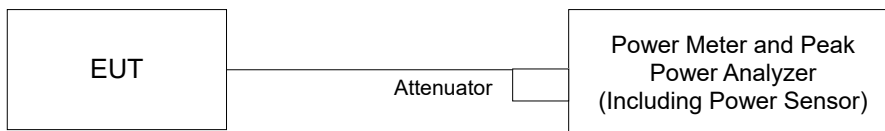
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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.

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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.

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as item 4.3.6.

4.4.7 Test Results

2G traffic radio (Radio 1)

CDD Mode

802.11b

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	22.53	22.61	361.450	25.58	25.75	Pass
6	2437	22.79	22.60	372.078	25.71	25.75	Pass
11	2462	22.37	22.24	340.078	25.32	25.75	Pass

Note: Gain = 10.25dBi > 6dBi, so the power limit shall be reduced to $30 - (10.25 - 6) = 25.75\text{dBi}$.

802.11g

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.11	21.16	259.739	24.15	25.75	Pass
6	2437	22.71	22.65	370.715	25.69	25.75	Pass
11	2462	17.84	17.96	123.331	20.91	25.75	Pass

Note: Gain = 10.25dBi > 6dBi, so the power limit shall be reduced to $30 - (10.25 - 6) = 25.75\text{dBi}$.

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	18.46	18.53	141.431	21.51	25.75	Pass
6	2437	22.13	22.21	329.646	25.18	25.75	Pass
11	2462	15.71	15.69	74.307	18.71	25.75	Pass

Note: Gain = 10.25dBi > 6dBi, so the power limit shall be reduced to $30 - (10.25 - 6) = 25.75\text{dBi}$.

802.11n (HT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	18.81	18.91	153.836	21.87	25.75	Pass
6	2437	14.25	14.24	53.153	17.26	25.75	Pass
9	2452	13.98	13.95	49.835	16.98	25.75	Pass

Note: Gain = 10.25dBi > 6dBi, so the power limit shall be reduced to $30 - (10.25 - 6) = 25.75\text{dBi}$.

802.11ac (VHT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	18.49	18.54	142.081	21.53	25.75	Pass
6	2437	22.15	22.25	331.939	25.21	25.75	Pass
11	2462	15.77	15.79	75.689	18.79	25.75	Pass

Note: Gain = 10.25dBi > 6dBi, so the power limit shall be reduced to $30 - (10.25 - 6) = 25.75\text{dBi}$.

802.11ac (VHT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	18.95	19.03	158.507	22.00	25.75	Pass
6	2437	14.29	14.42	54.523	17.37	25.75	Pass
9	2452	14.09	13.99	50.706	17.05	25.75	Pass

Note: Gain = 10.25dBi > 6dBi, so the power limit shall be reduced to $30 - (10.25 - 6) = 25.75\text{dBi}$.

802.11ax (HE20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	18.64	18.62	145.892	21.64	25.75	Pass
6	2437	22.32	22.36	342.795	25.35	25.75	Pass
11	2462	15.79	15.84	76.302	18.83	25.75	Pass

Note: Gain = 10.25dBi > 6dBi, so the power limit shall be reduced to $30 - (10.25 - 6) = 25.75\text{dBi}$.

802.11ax (HE40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	18.97	19.09	159.982	22.04	25.75	Pass
6	2437	14.37	14.43	55.086	17.41	25.75	Pass
9	2452	14.10	14.07	51.231	17.10	25.75	Pass

Note: Gain = 10.25dBi > 6dBi, so the power limit shall be reduced to $30 - (10.25 - 6) = 25.75\text{dBi}$.

Beamforming Mode

802.11ac (VHT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	15.48	15.53	71.046	18.52	22.76	Pass
6	2437	19.14	19.24	165.981	22.20	22.76	Pass
11	2462	12.76	12.78	37.847	15.78	22.76	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.24\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.24 - 6) = 22.76\text{dBm}$.

802.11ac (VHT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	15.94	16.02	79.259	18.99	22.76	Pass
6	2437	11.28	11.41	27.263	14.36	22.76	Pass
9	2452	11.08	10.98	25.355	14.04	22.76	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.24\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.24 - 6) = 22.76\text{dBm}$.

802.11ax (HE20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	15.63	15.61	72.951	18.63	22.76	Pass
6	2437	19.31	19.35	171.409	22.34	22.76	Pass
11	2462	12.78	12.83	38.154	15.82	22.76	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.24\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.24 - 6) = 22.76\text{dBm}$.

802.11ax (HE40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	15.96	16.08	79.997	19.03	22.76	Pass
6	2437	11.36	11.42	27.545	14.40	22.76	Pass
9	2452	11.09	11.06	25.617	14.09	22.76	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.24\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.24 - 6) = 22.76\text{dBm}$.

Scanning radio (Radio 3)

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	98.175	19.92	30.00	Pass
6	2437	84.140	19.25	30.00	Pass
11	2462	100.462	20.02	30.00	Pass

802.11g

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	103.276	20.14	30.00	Pass
6	2437	128.529	21.09	30.00	Pass
11	2462	46.881	16.71	30.00	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	84.723	19.28	30.00	Pass
6	2437	115.345	20.62	30.00	Pass
11	2462	41.591	16.19	30.00	Pass

802.11n (HT40)

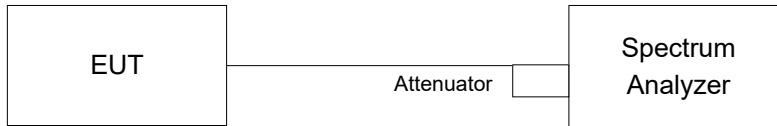
Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
3	2422	49.545	16.95	30.00	Pass
6	2437	50.350	17.02	30.00	Pass
9	2452	22.594	13.54	30.00	Pass

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For Average Power (Duty cycle $\geq 98\%$)

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

For Average Power (Duty cycle $< 98\%$)

- Measure the duty cycle (x).
- Set instrument center frequency to DTS channel center frequency.
- Set span to at least 1.5 times the OBW.
- Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set VBW $\geq 3 \times \text{RBW}$.
- Detector = power averaging (RMS) or sample detector (when RMS not available).
- Ensure that the number of measurement points in the sweep $\geq 2 \times \text{span}/\text{RBW}$.
- Sweep time = auto couple.
- Do not use sweep triggering. Allow sweep to "free run".
- Employ trace averaging (RMS) mode over a minimum of 100 traces.
- Use the peak marker function to determine the maximum amplitude level.
- Add $10 \log (1/x)$, where x is the duty cycle measured in step (a), to the measured PSD to compute the average PSD during the actual transmission time.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as item 4.3.6

4.5.7 Test Results

2G traffic radio (Radio 1)

802.11b

TX chain	Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-14.08	3.01	2.58	-8.49	0.76	Pass
	6	2437	-14.72	3.01	2.58	-9.13	0.76	Pass
	11	2462	-14.57	3.01	2.58	-8.98	0.76	Pass
1	1	2412	-15.11	3.01	2.58	-9.52	0.76	Pass
	6	2437	-14.63	3.01	2.58	-9.04	0.76	Pass
	11	2462	-14.94	3.01	2.58	-9.35	0.76	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add $10 \log (N_{ANT})$ dB.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.24\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (13.24 - 6) = 0.76\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11g

TX chain	Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-15.64	3.01	0.28	-12.35	0.76	Pass
	6	2437	-13.81	3.01	0.28	-10.52	0.76	Pass
	11	2462	-19.24	3.01	0.28	-15.95	0.76	Pass
1	1	2412	-15.35	3.01	0.28	-12.06	0.76	Pass
	6	2437	-14.35	3.01	0.28	-11.06	0.76	Pass
	11	2462	-18.73	3.01	0.28	-15.44	0.76	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add $10 \log (N_{ANT})$ dB.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.24\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (13.24 - 6) = 0.76\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

TX chain	Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-19.36	3.01	0.19	-16.16	0.76	Pass
	6	2437	-16.39	3.01	0.19	-13.19	0.76	Pass
	11	2462	-22.19	3.01	0.19	-18.99	0.76	Pass
1	1	2412	-19.72	3.01	0.19	-16.52	0.76	Pass
	6	2437	-16.27	3.01	0.19	-13.07	0.76	Pass
	11	2462	-22.55	3.01	0.19	-19.35	0.76	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add $10 \log (N_{ANT})$ dB.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.24\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (13.24 - 6) = 0.76\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

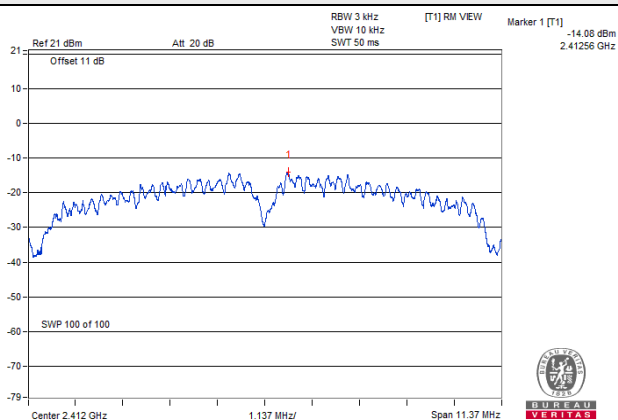
TX chain	Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	3	2422	-22.70	3.01	0.20	-19.49	0.76	Pass
	6	2437	-27.63	3.01	0.20	-24.42	0.76	Pass
	9	2452	-27.07	3.01	0.20	-23.86	0.76	Pass
1	3	2422	-22.24	3.01	0.20	-19.03	0.76	Pass
	6	2437	-27.49	3.01	0.20	-24.28	0.76	Pass
	9	2452	-27.54	3.01	0.20	-24.33	0.76	Pass

Note:

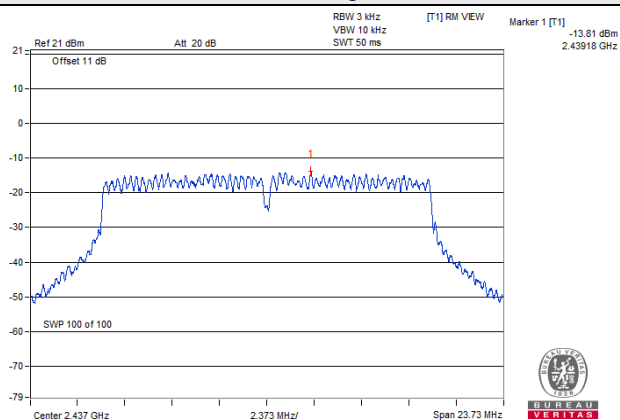
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add $10 \log (N_{ANT})$ dB.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.24\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (13.24 - 6) = 0.76\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

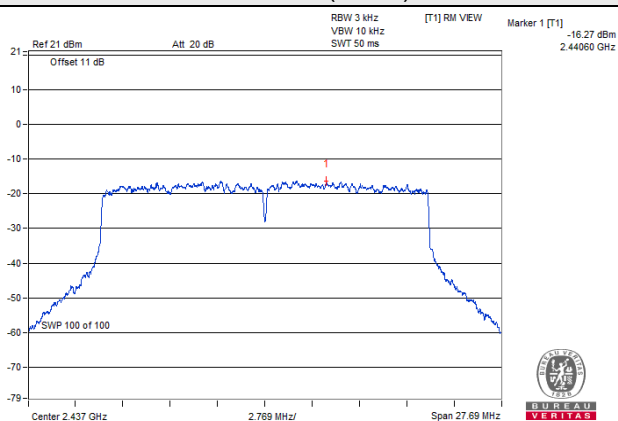
802.11b



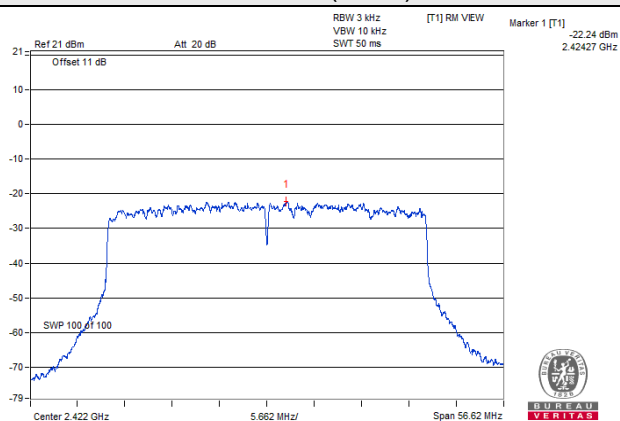
802.11g



802.11ax (HE20)



802.11ax (HE40)



Scanning radio (Radio 3)

802.11b

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
1	2412	-12.62	8.00	Pass
6	2437	-13.41	8.00	Pass
11	2462	-12.74	8.00	Pass

802.11g

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
1	2412	-17.02	0.27	-16.75	8.00	Pass
6	2437	-15.64	0.27	-15.37	8.00	Pass
11	2462	-20.24	0.27	-19.97	8.00	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
1	2412	-18.10	0.19	-17.91	8.00	Pass
6	2437	-16.69	0.19	-16.50	8.00	Pass
11	2462	-20.77	0.19	-20.58	8.00	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

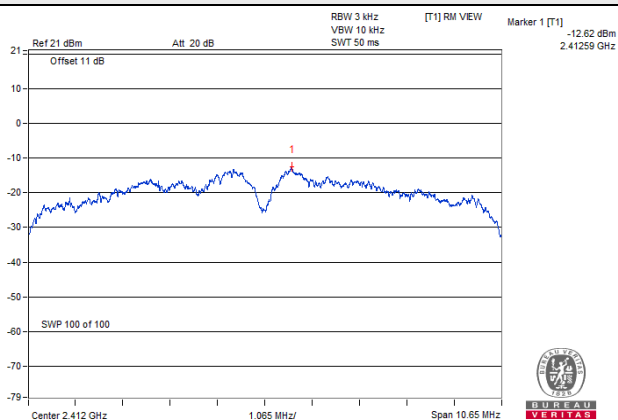
802.11n (HT40)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/3kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
3	2422	-23.92	0.41	-23.51	8.00	Pass
6	2437	-23.43	0.41	-23.02	8.00	Pass
9	2452	-26.91	0.41	-26.50	8.00	Pass

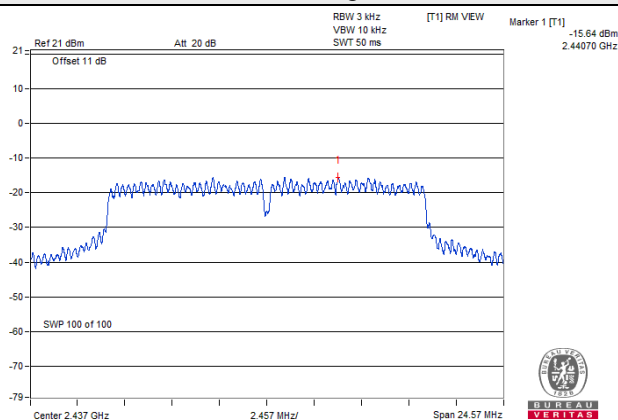
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

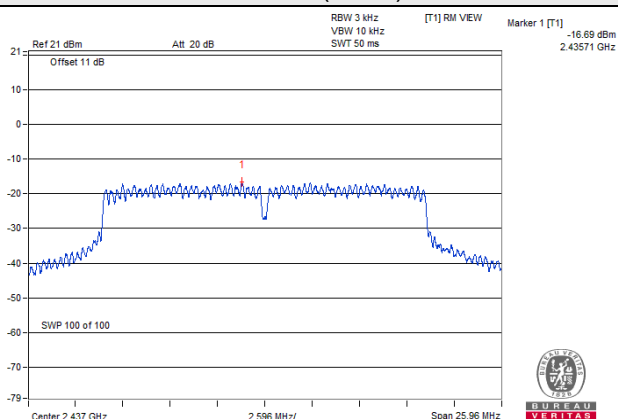
802.11b



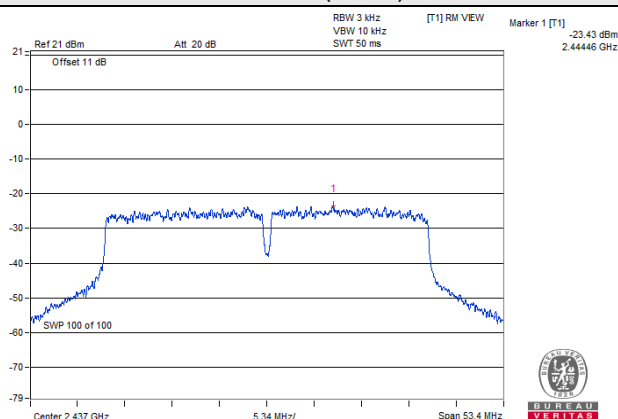
802.11g



802.11n (HT20)



802.11n (HT40)

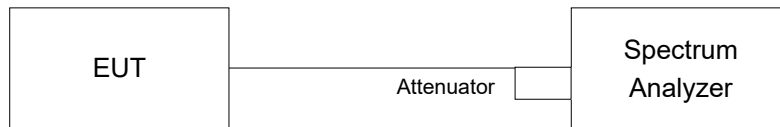


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

- Set the RBW = 100 kHz.
- Set the VBW $\geq$ 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 OOB

- Set RBW = 100 kHz.
- Set VBW $\geq$ 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.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Same as item 4.3.6

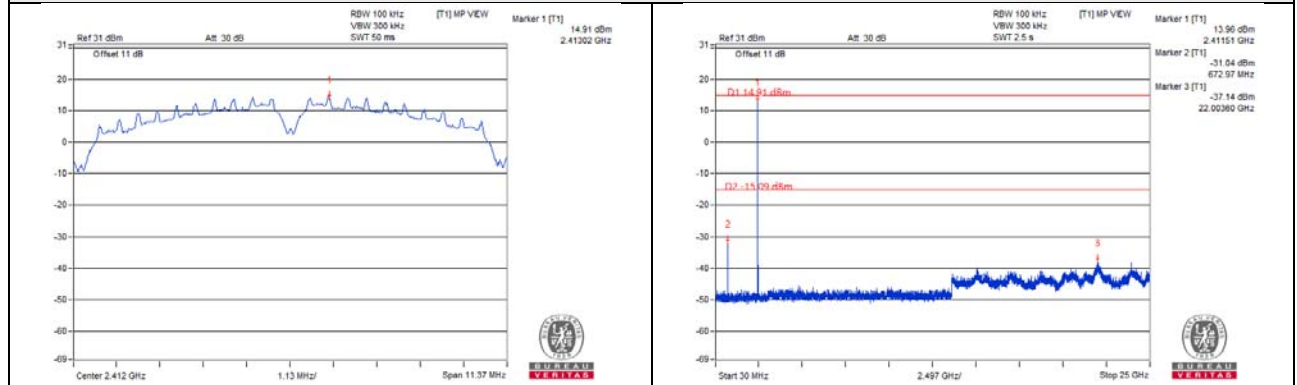
4.6.7 Test Results

The conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.

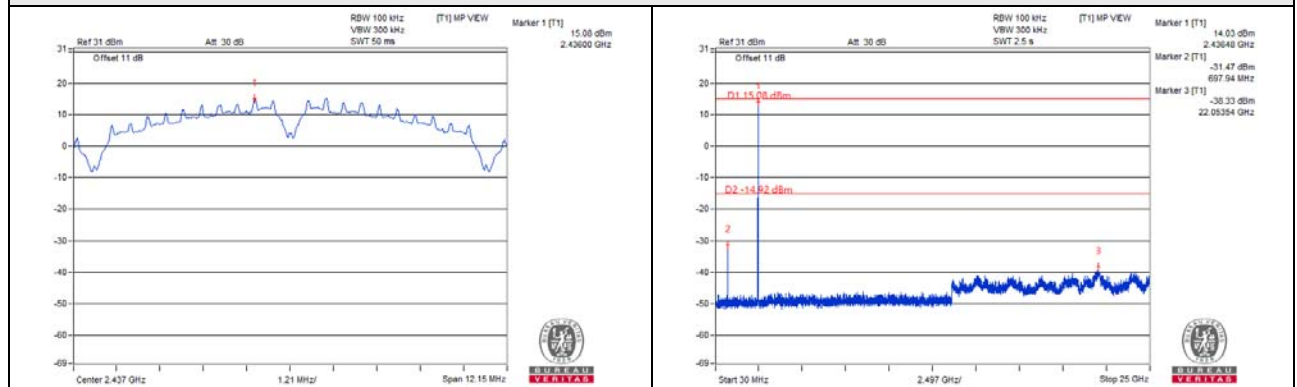
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

2G traffic radio (Radio 1)
802.11b_Chain 0

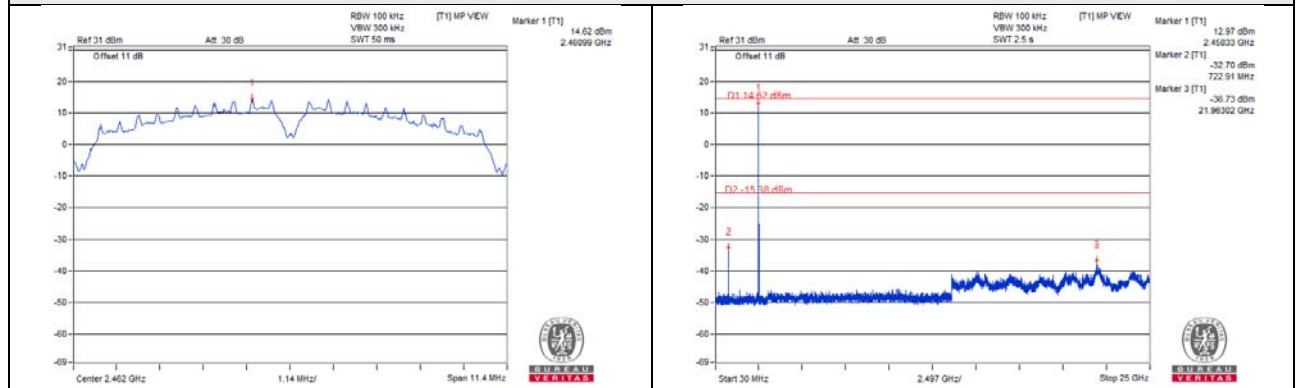
CH 1



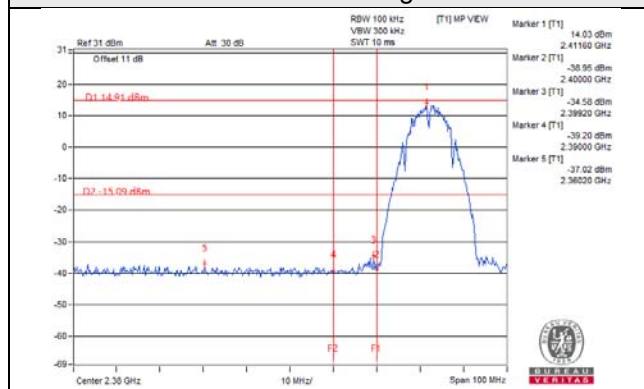
CH 6



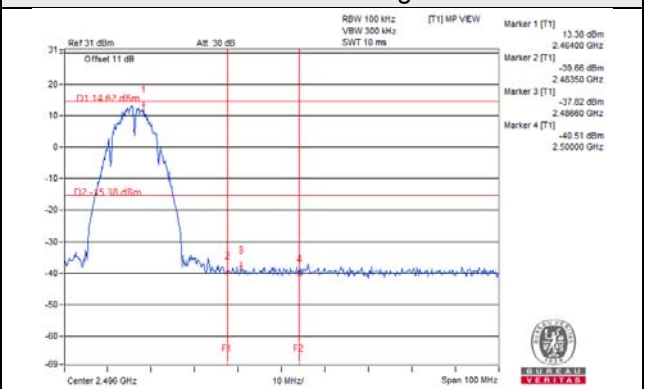
CH 11



CH 1 Band edge

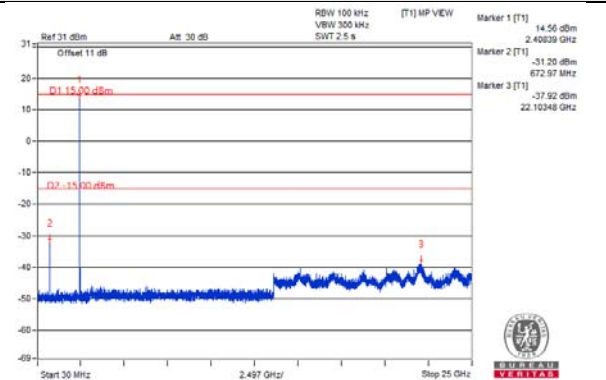
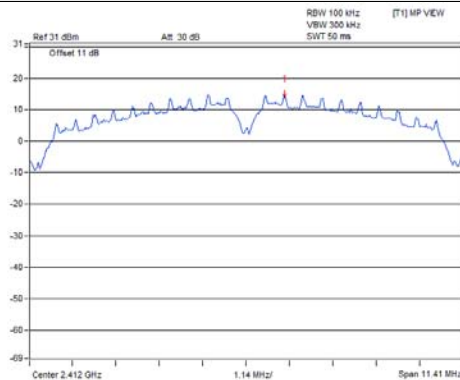


CH 11 Band edge

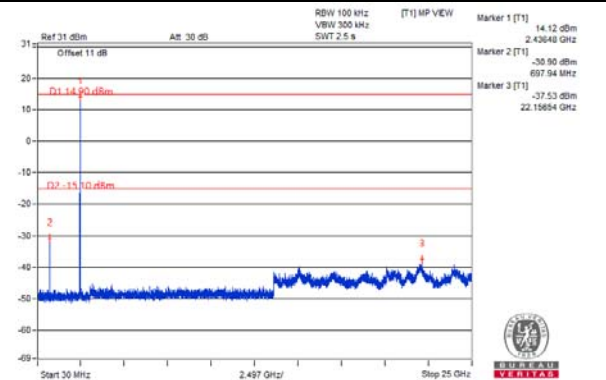
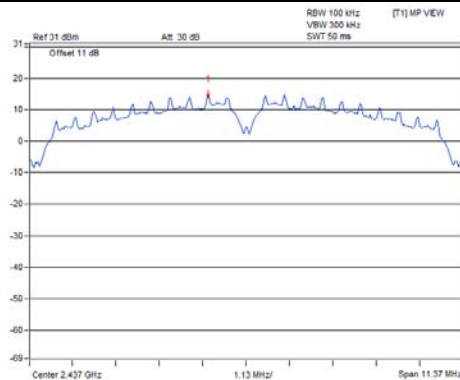


802.11b_Chain 1

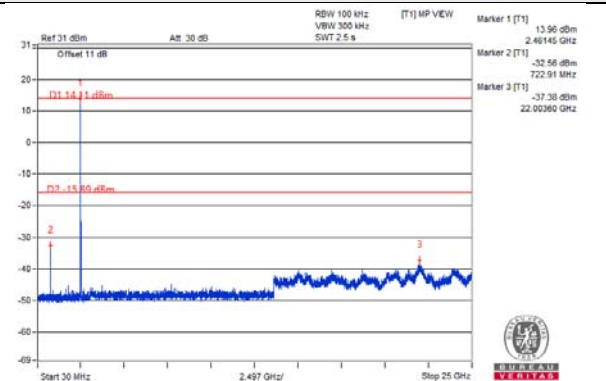
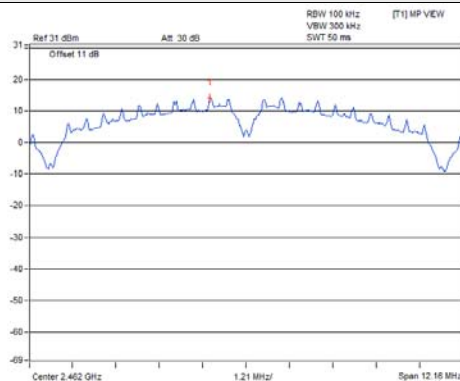
CH 1



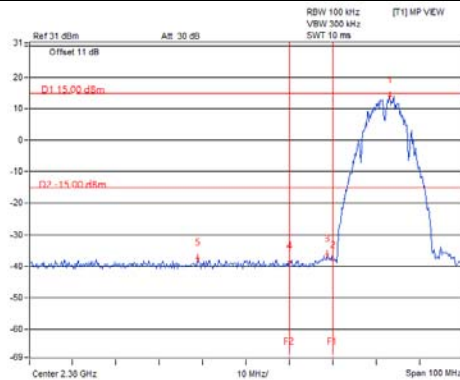
CH 6



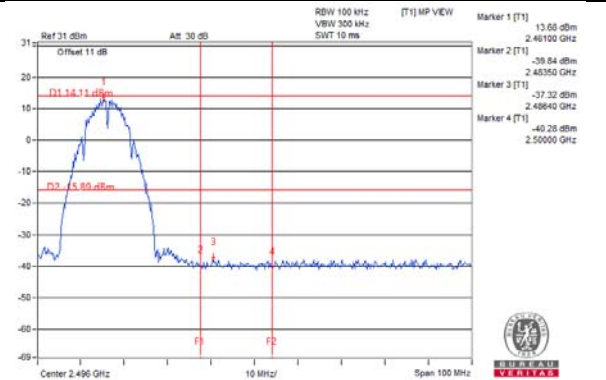
CH 11



CH 1 Band edge

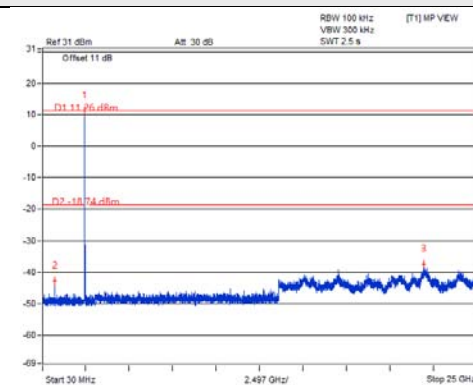
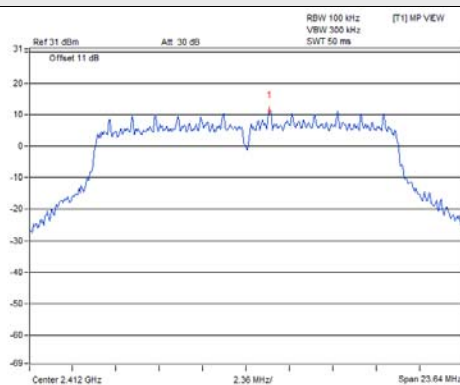


CH 11 Band edge

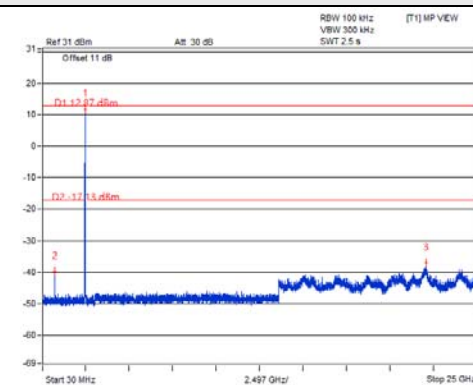
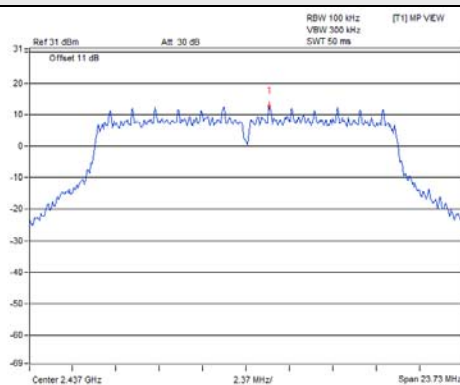


802.11g_Chain 0

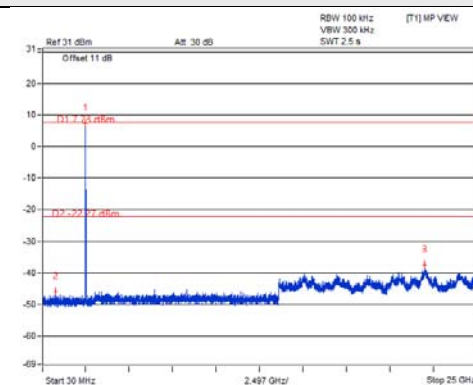
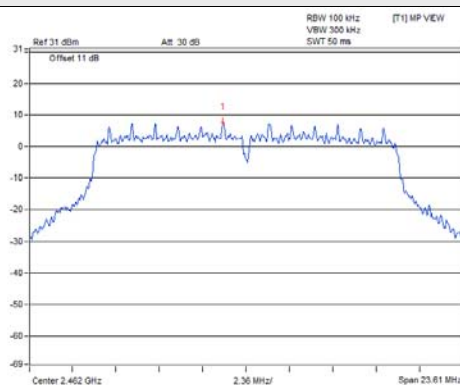
CH 1



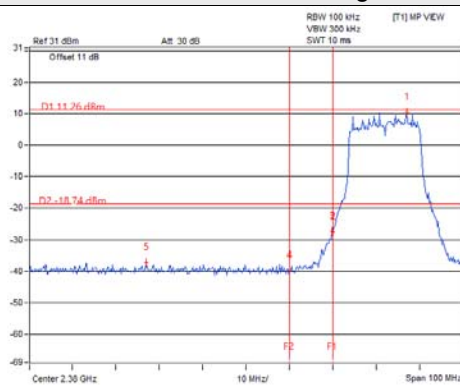
CH 6



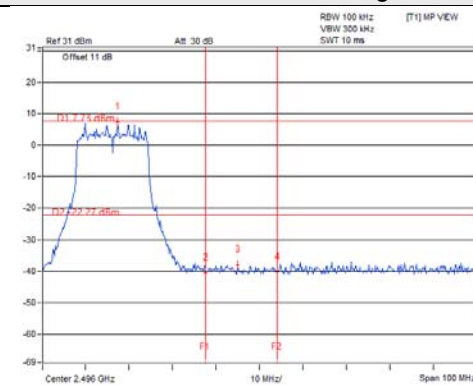
CH 11



CH 1 Band edge

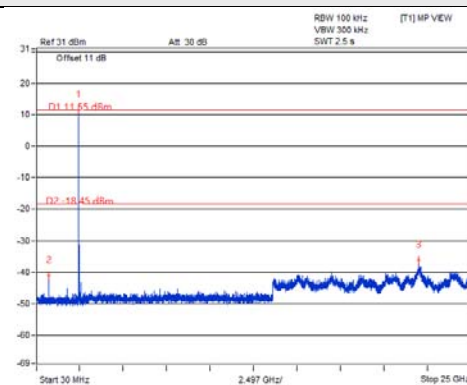
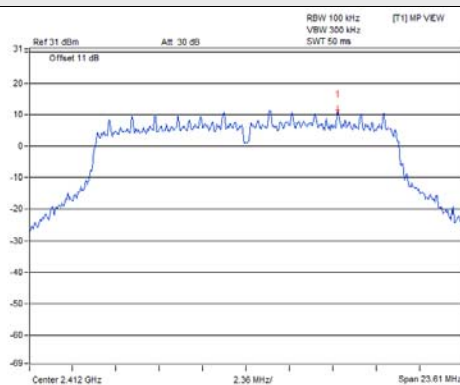


CH 11 Band edge

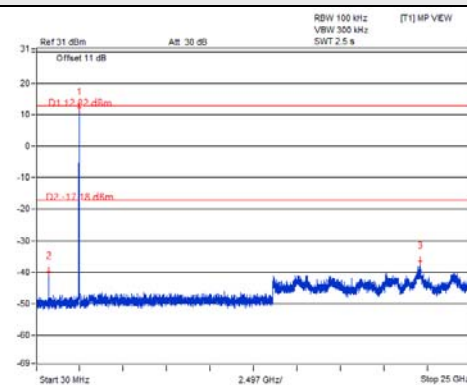
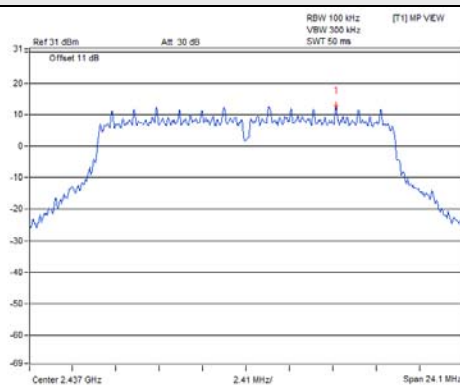


802.11g_Chain 1

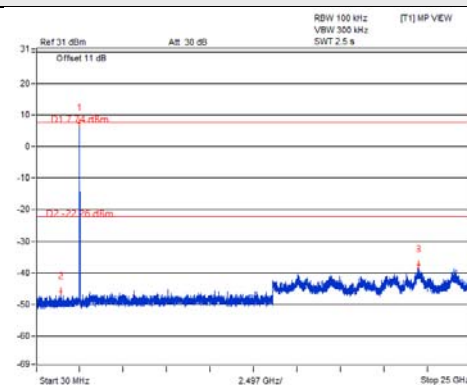
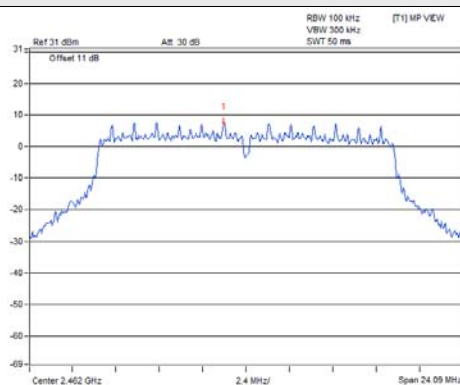
CH 1



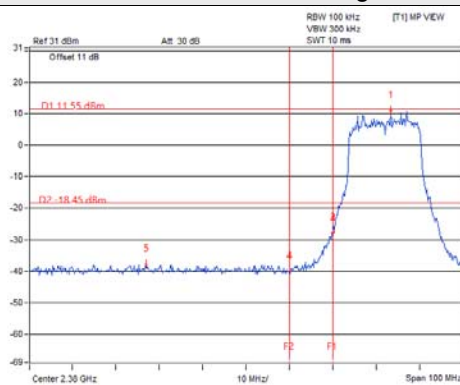
CH 6



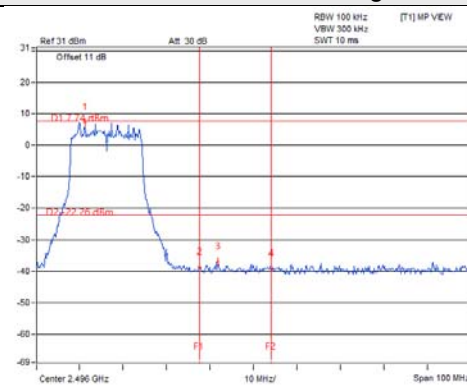
CH 11



CH 1 Band edge

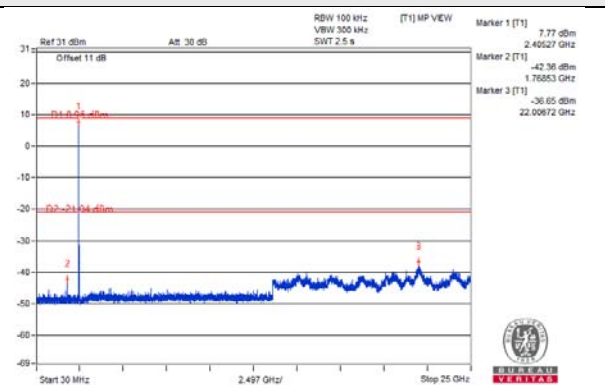
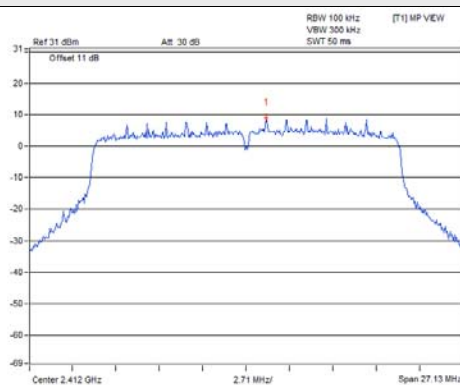


CH 11 Band edge

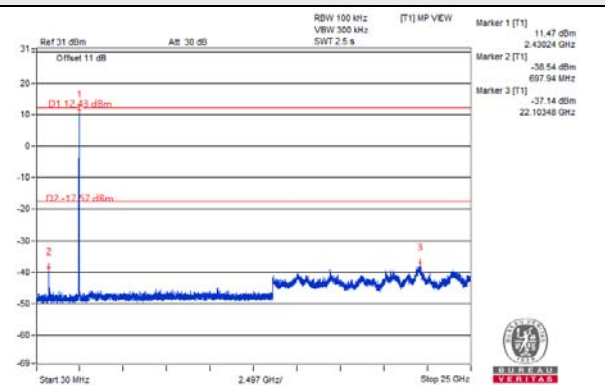
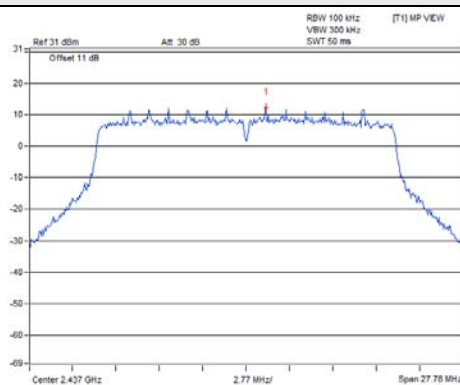


802.11ax (HE20)_Chain 0

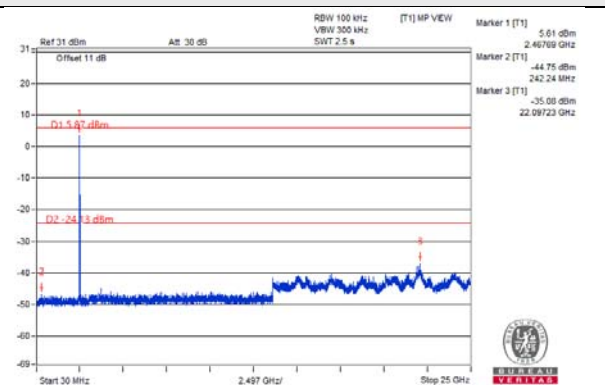
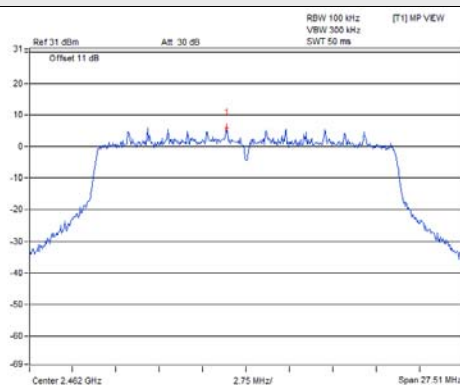
CH 1



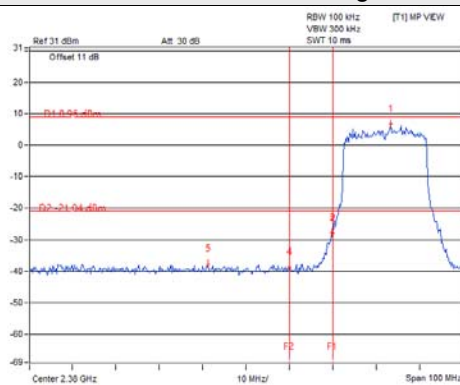
CH 6



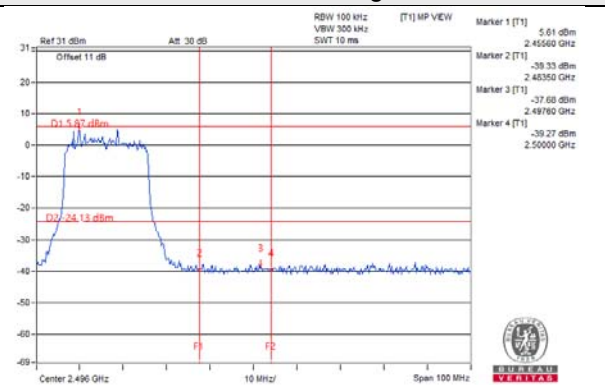
CH 11



CH 1 Band edge

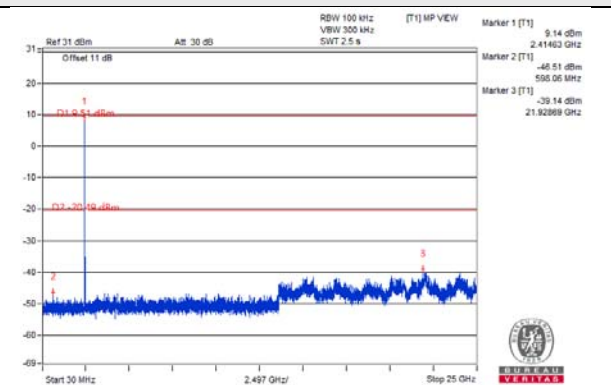
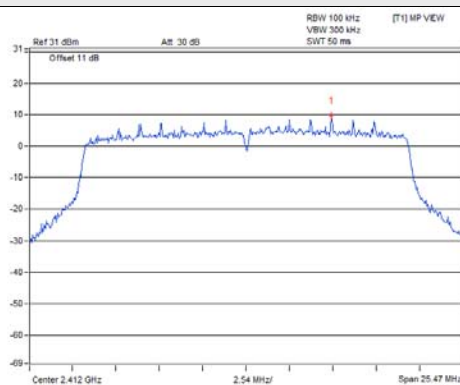


CH 11 Band edge

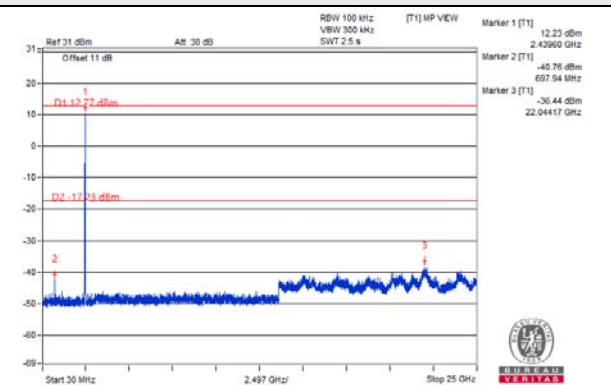
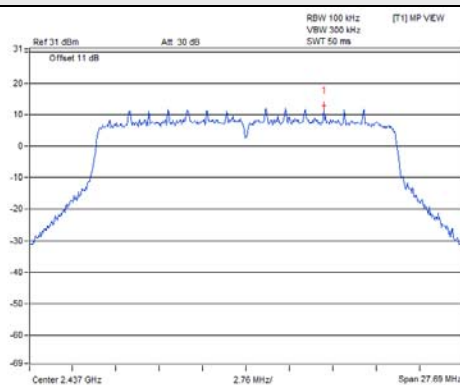


802.11ax (HE20)_Chain 1

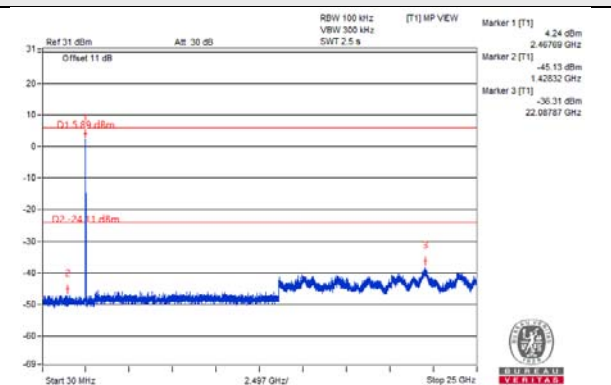
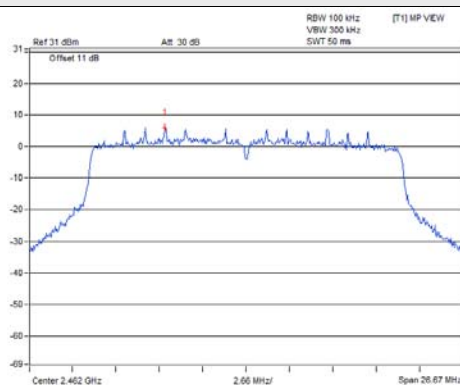
CH 1



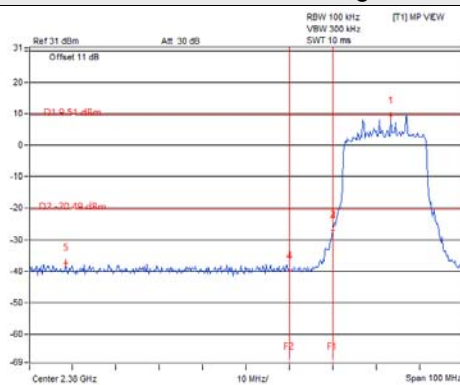
CH 6



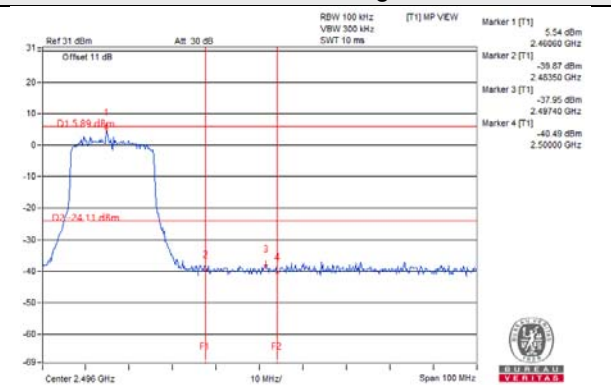
CH 11



CH 1 Band edge

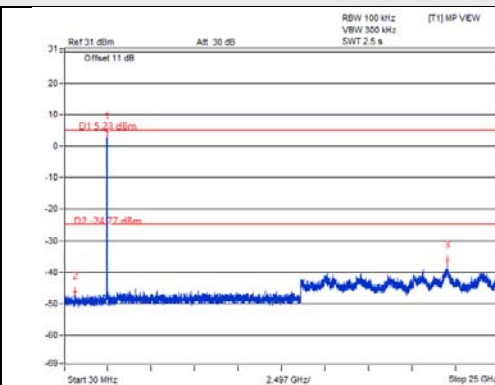
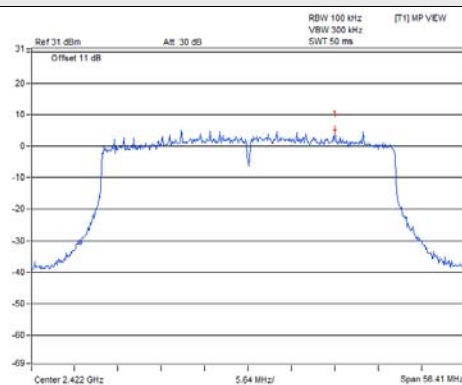


CH 11 Band edge

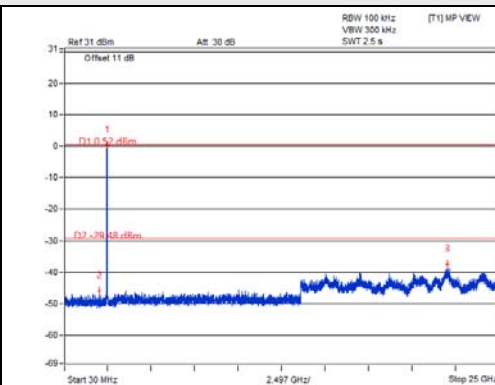
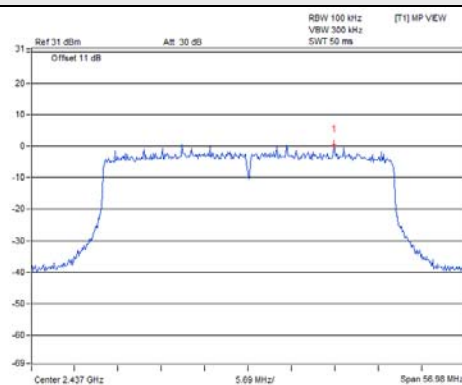


802.11ax (HE40)_Chain 0

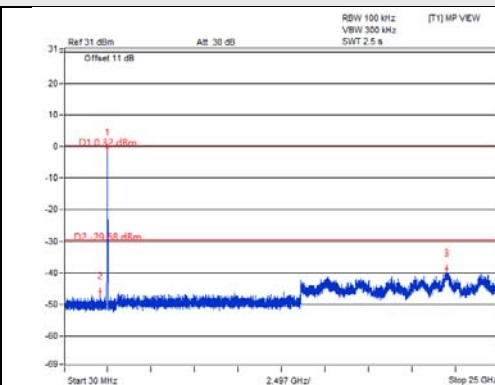
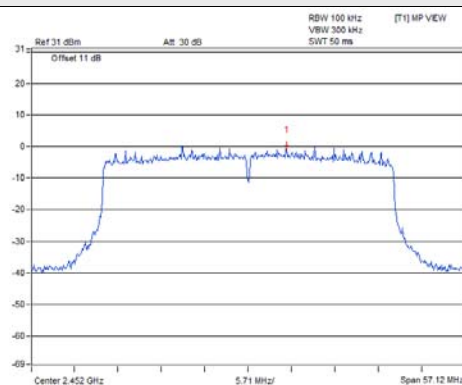
CH 3



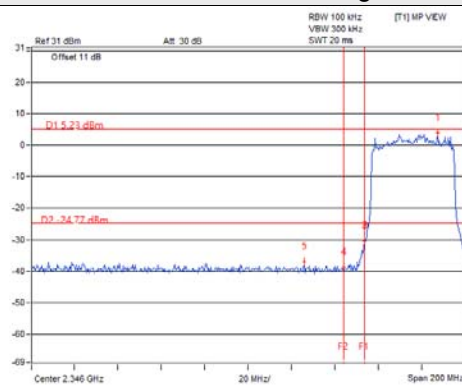
CH 6



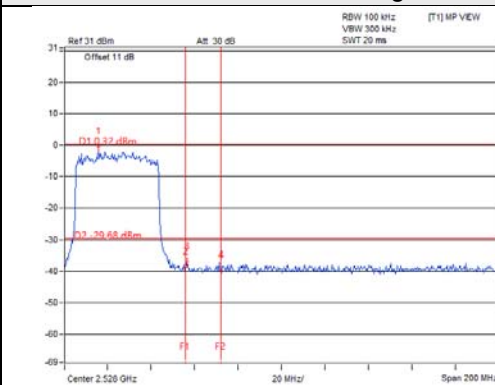
CH 9



CH 3 Band edge

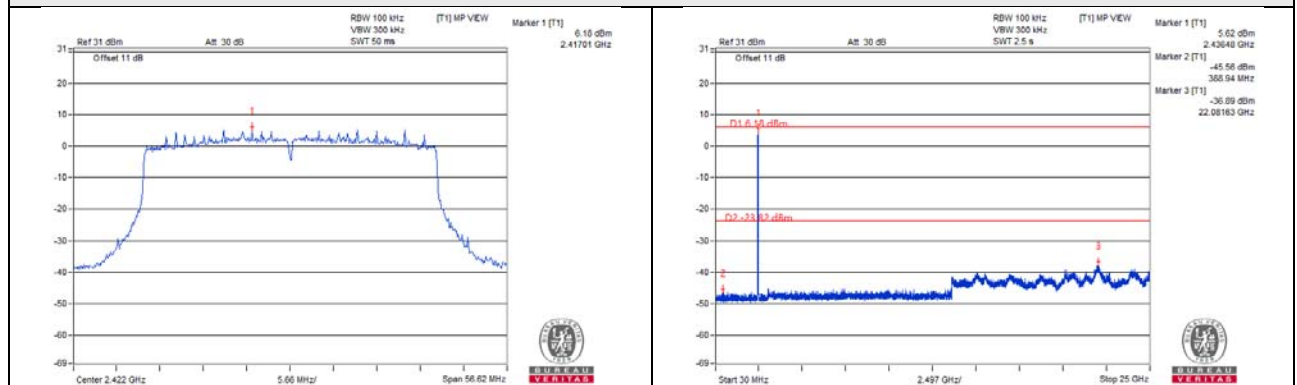


CH 9 Band edge

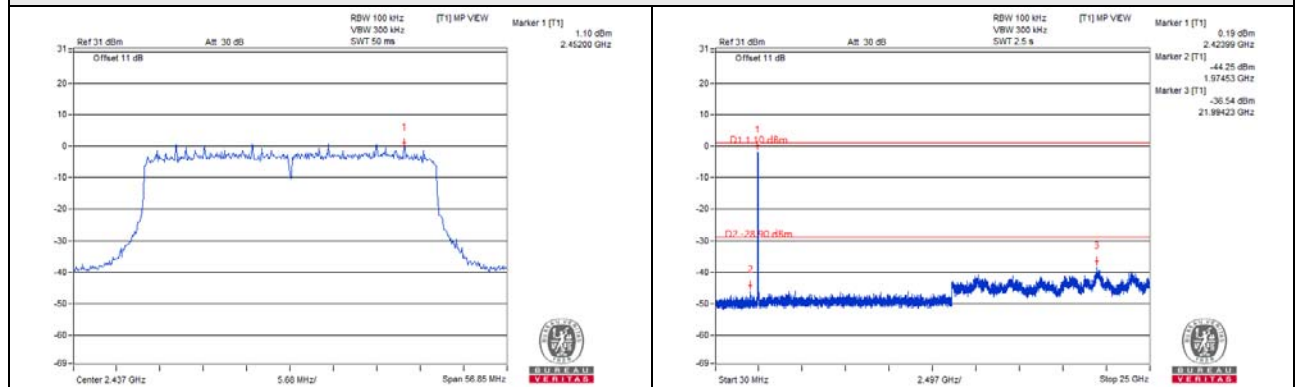


802.11ax (HE40)_Chain 1

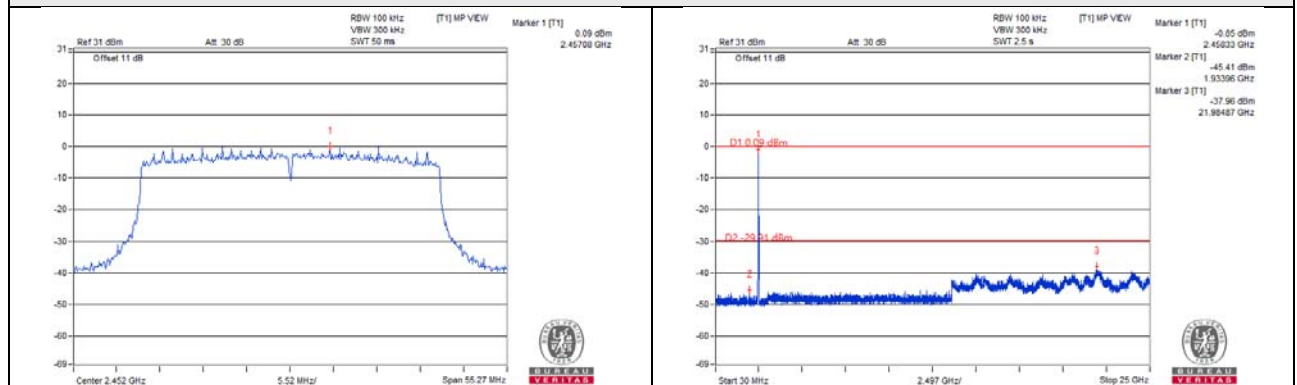
CH 3



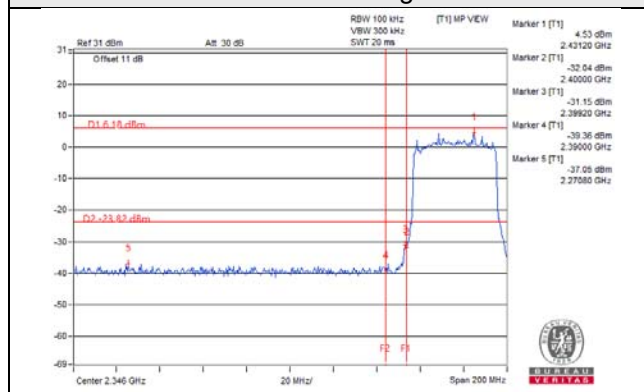
CH 6



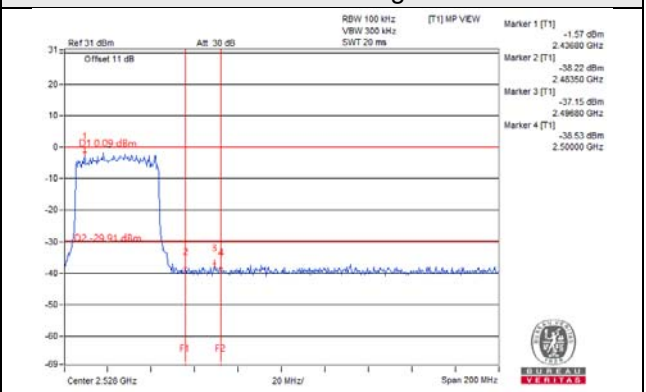
CH 9



CH 3 Band edge



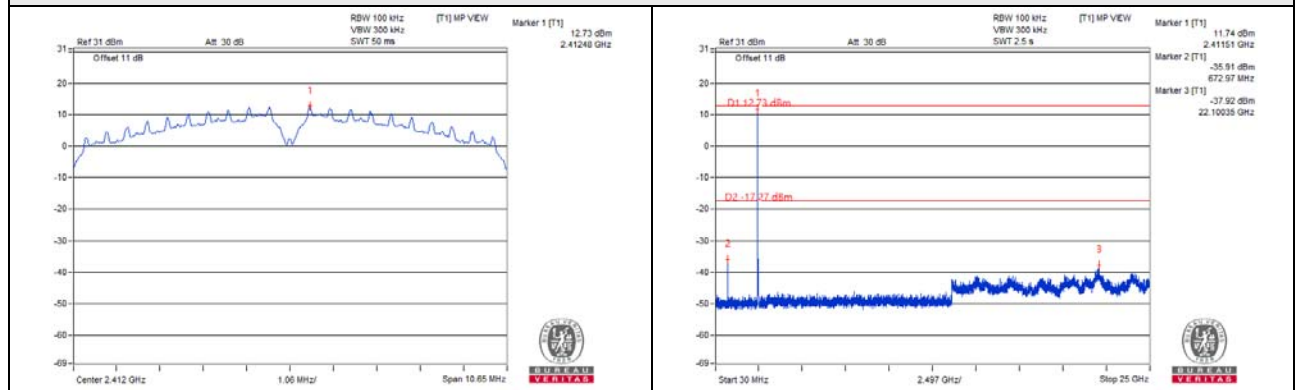
CH 9 Band edge



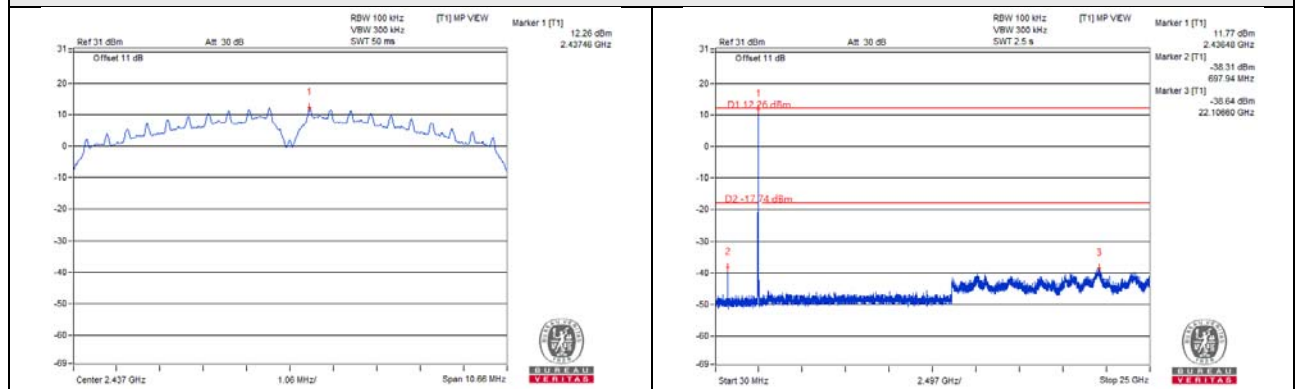
Scanning radio (Radio 3)

802.11b

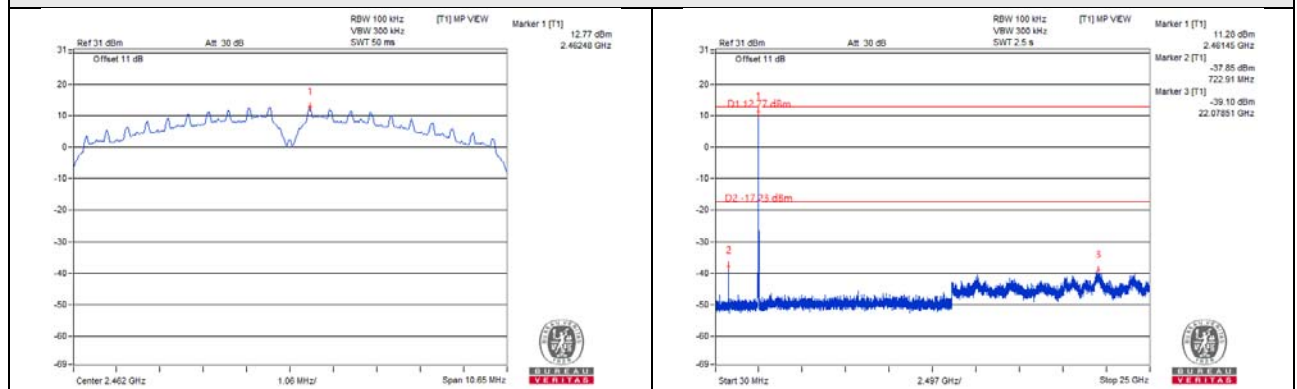
CH 1



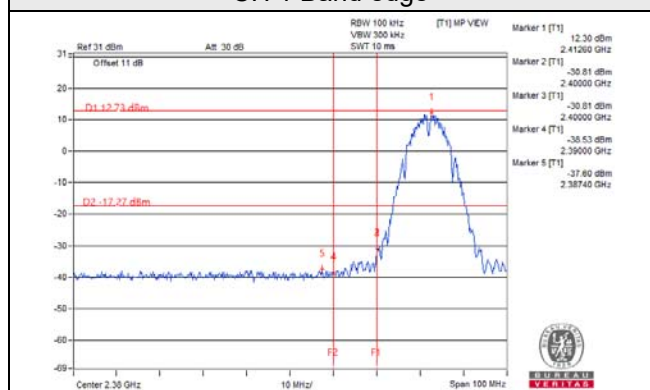
CH 6



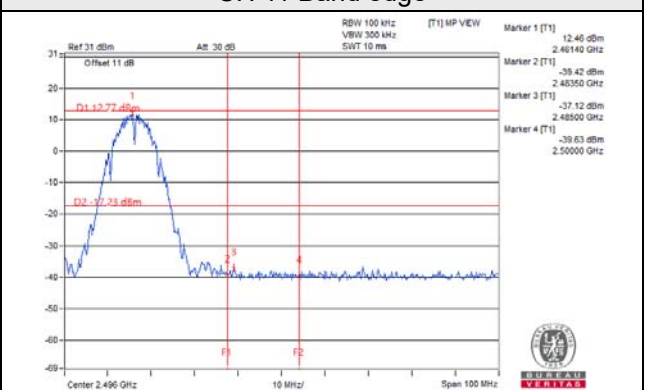
CH 11



CH 1 Band edge

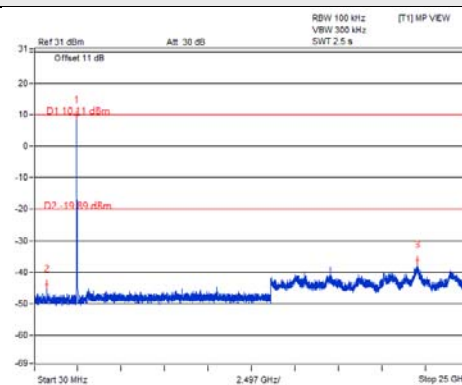
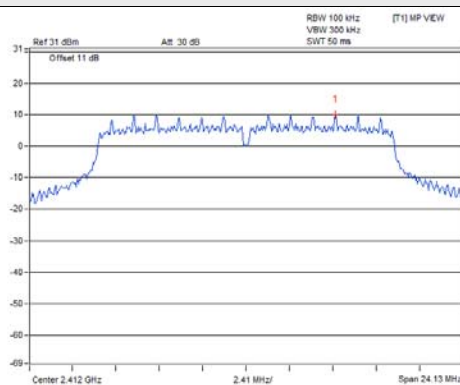


CH 11 Band edge

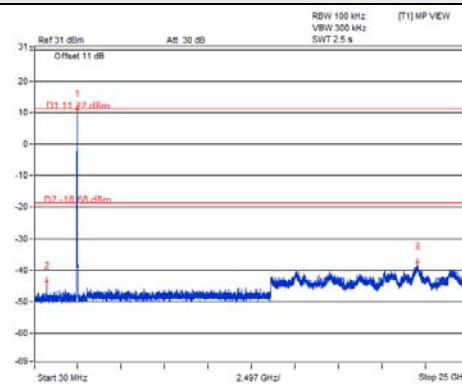
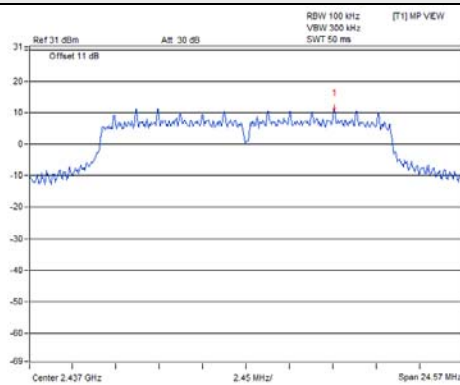


802.11g

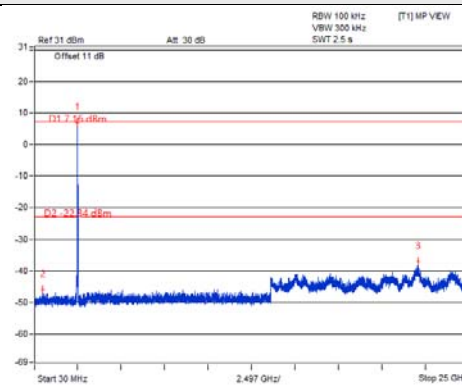
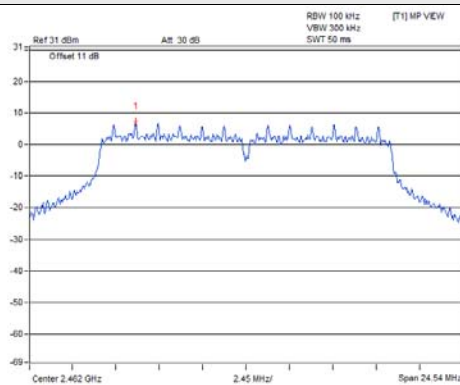
CH 1



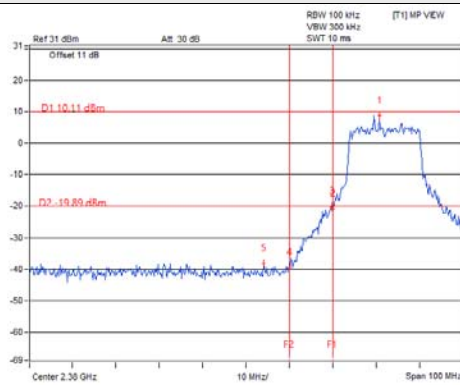
CH 6



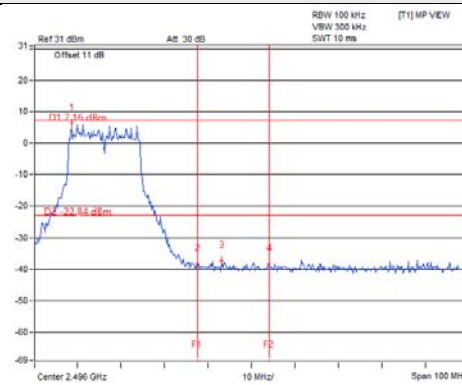
CH 11



CH 1 Band edge

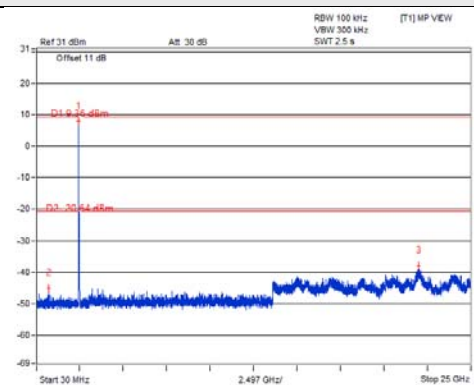
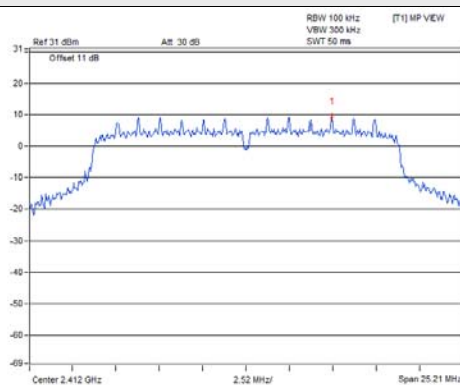


CH 11 Band edge

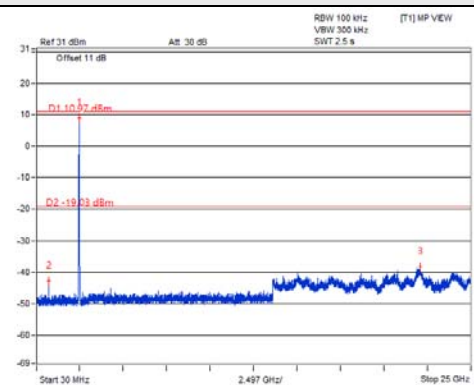
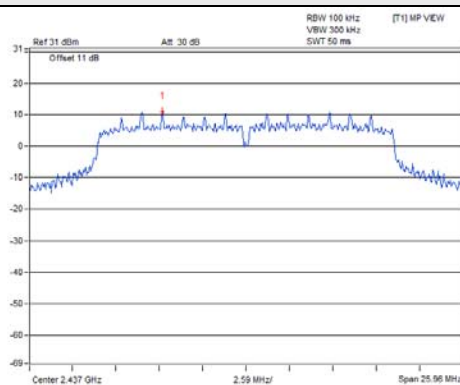


802.11n (HT20)

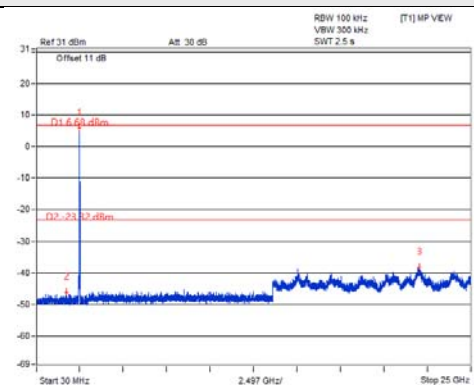
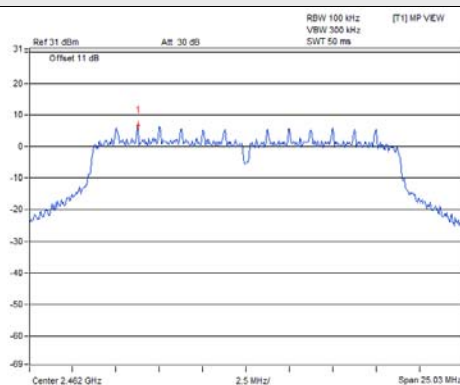
CH 1



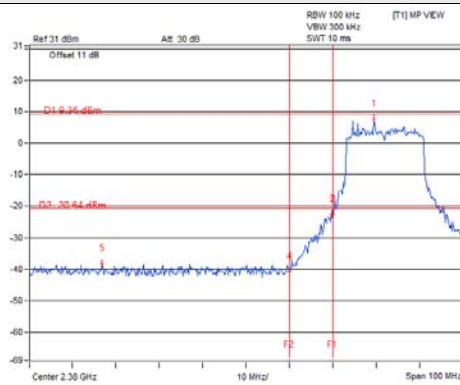
CH 6



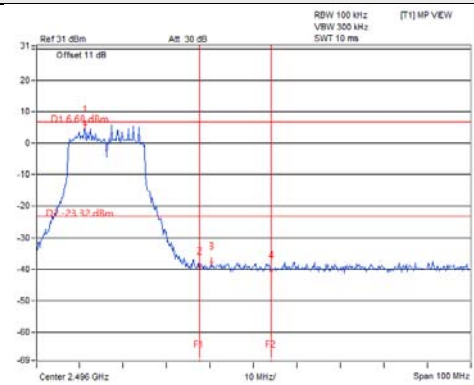
CH 11



CH 1 Band edge

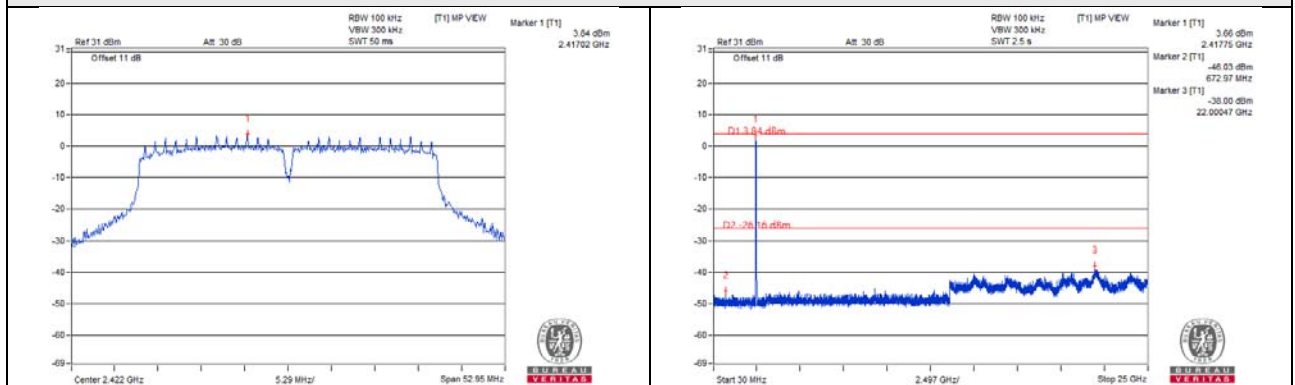


CH 11 Band edge

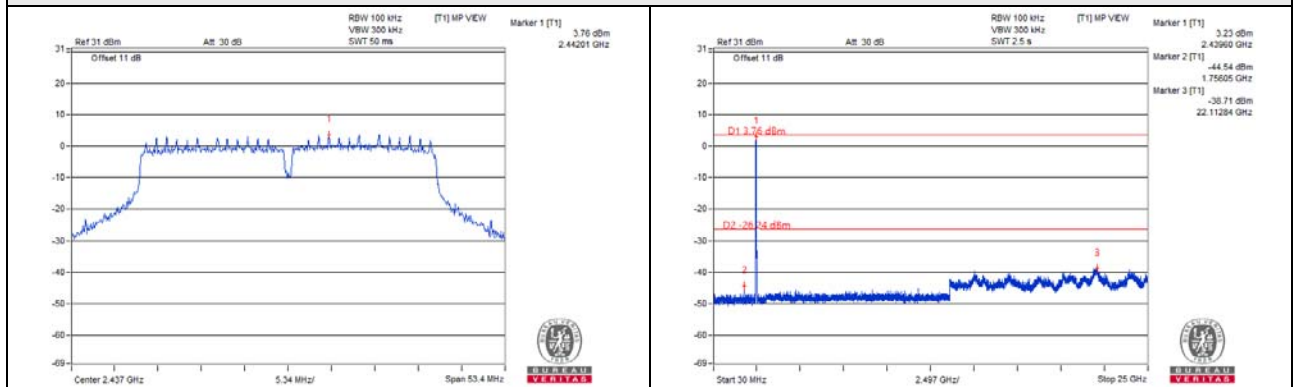


802.11n (HT40)

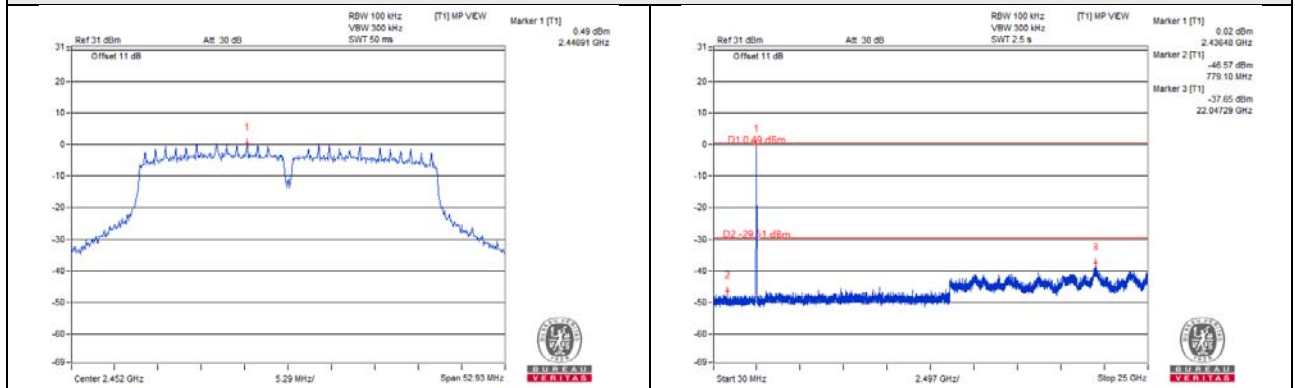
CH 3



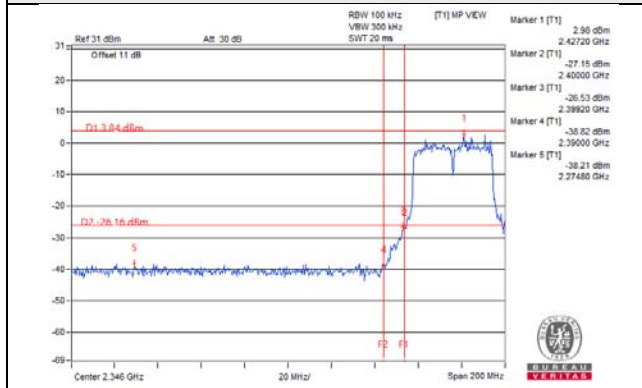
CH 6



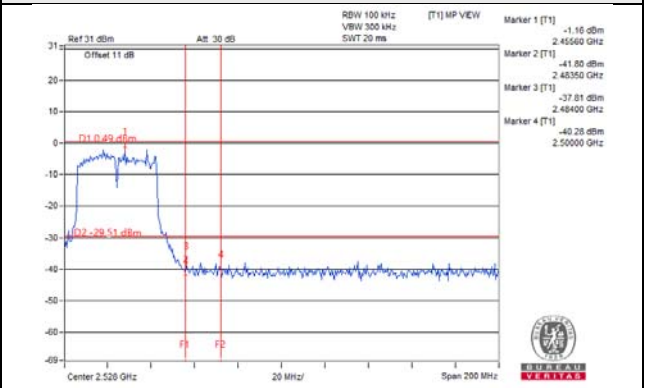
CH 9



CH 3 Band edge

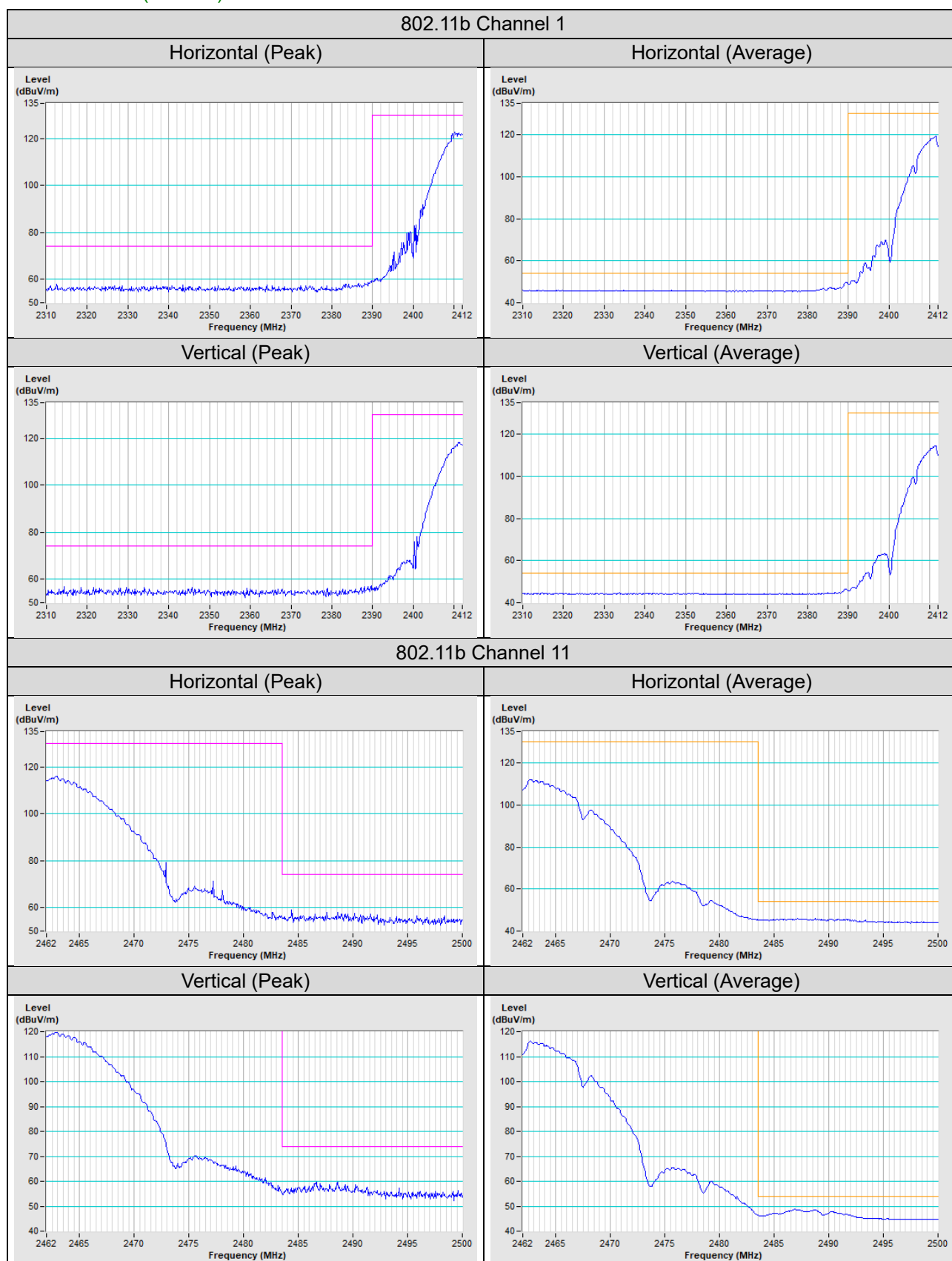


CH 9 Band edge



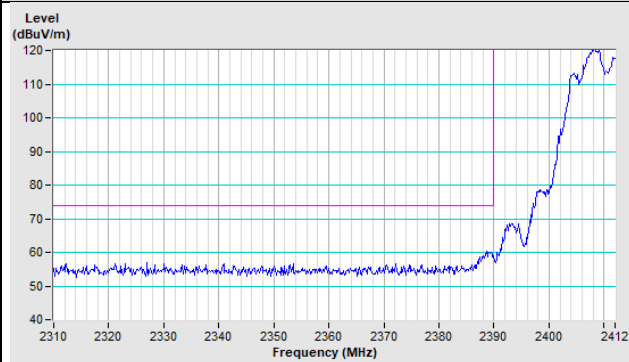
Annex A - Band Edge Measurement

2G traffic radio (Radio 1)

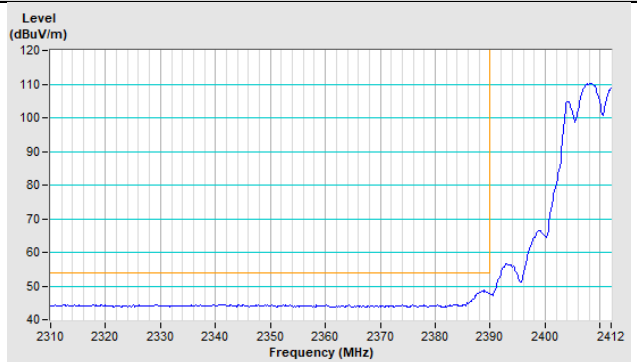


802.11g Channel 1

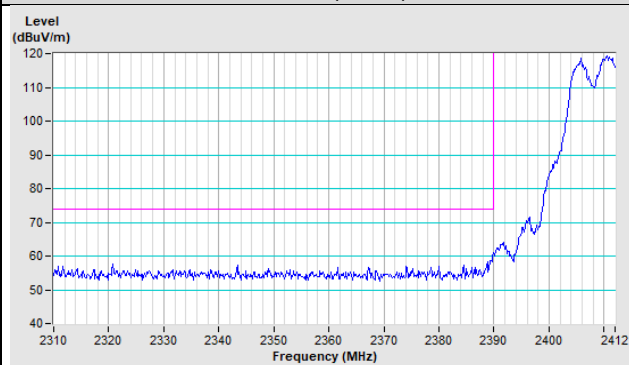
Horizontal (Peak)



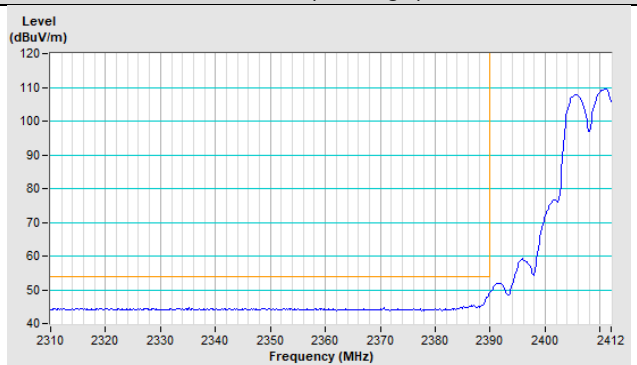
Horizontal (Average)



Vertical (Peak)

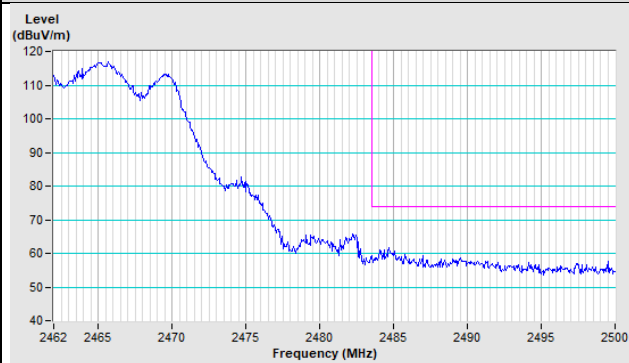


Vertical (Average)

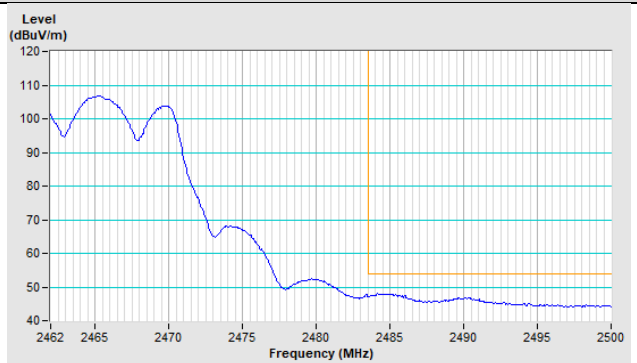


802.11g Channel 11

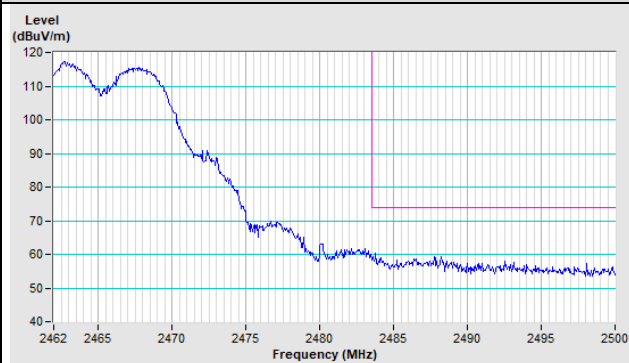
Horizontal (Peak)



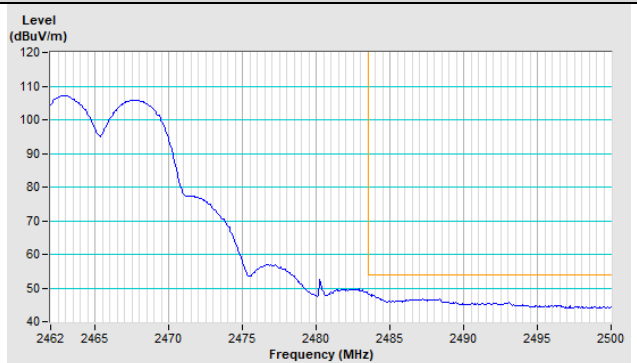
Horizontal (Average)



Vertical (Peak)

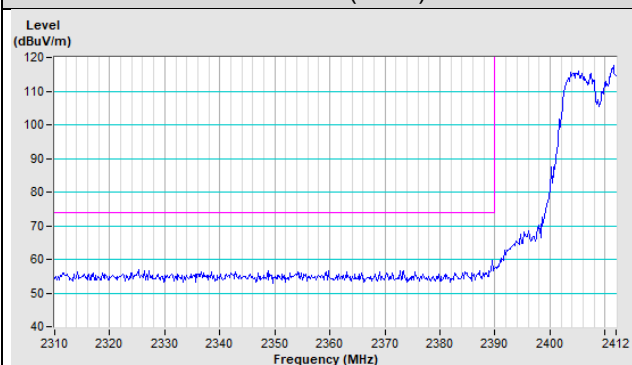


Vertical (Average)

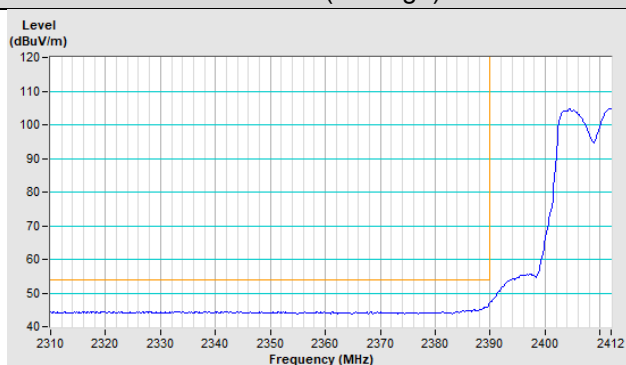


802.11ax (HE20) Channel 1

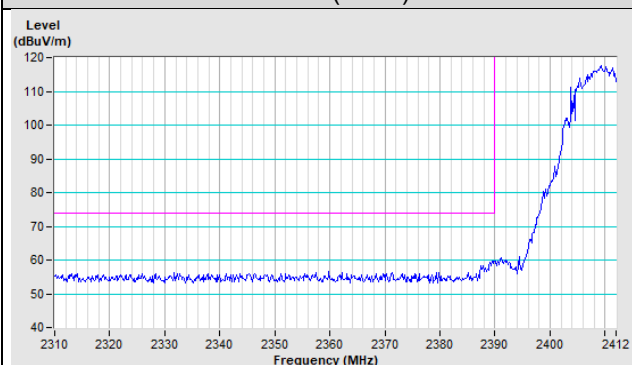
Horizontal (Peak)



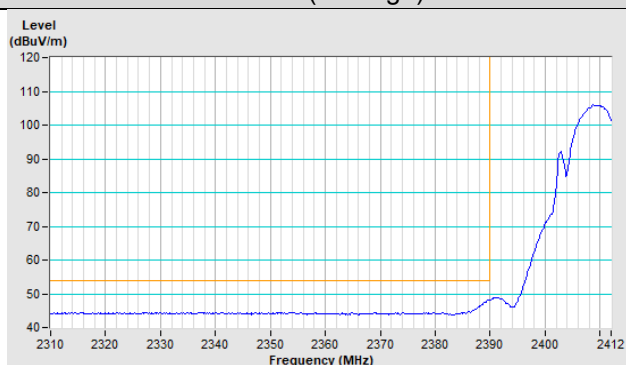
Horizontal (Average)



Vertical (Peak)

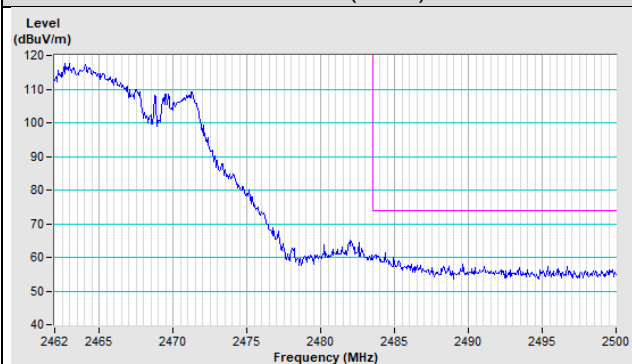


Vertical (Average)

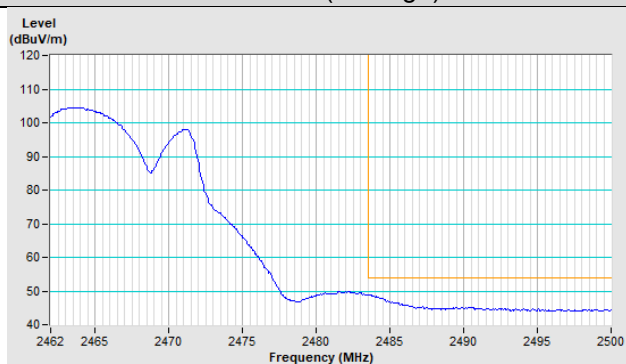


802.11ax (HE20) Channel 11

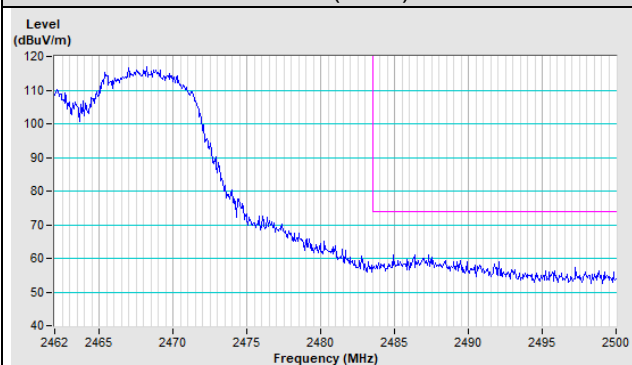
Horizontal (Peak)



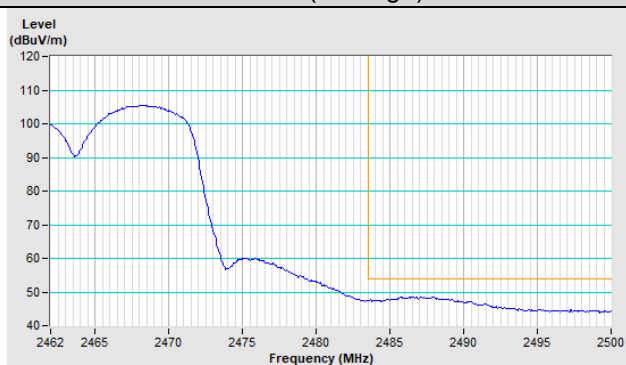
Horizontal (Average)



Vertical (Peak)

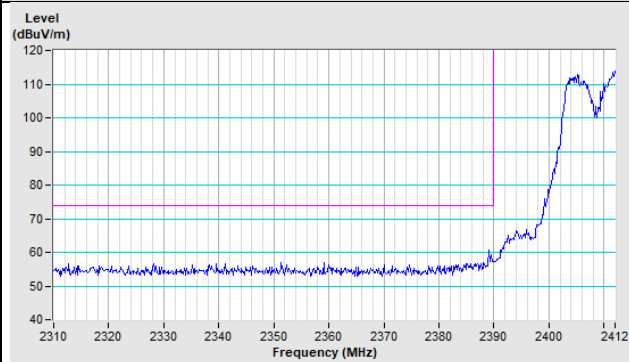


Vertical (Average)

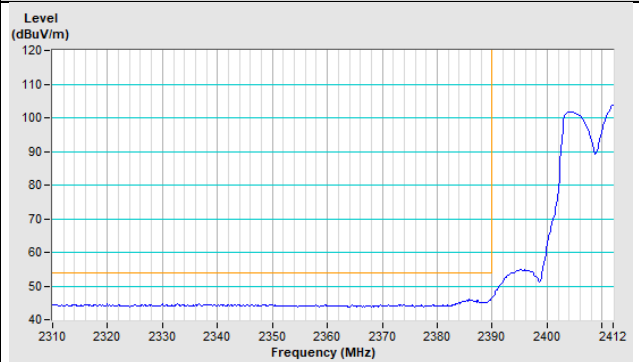


802.11ax (HE40) Channel 3

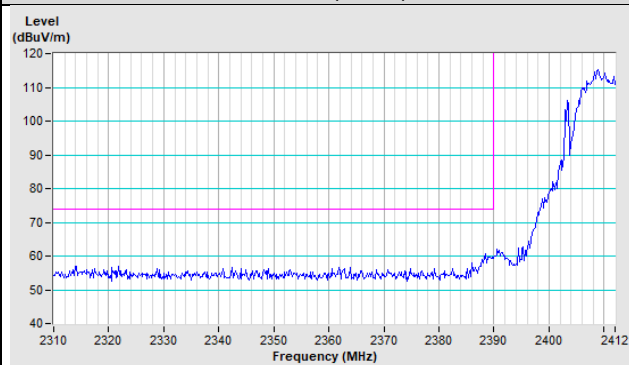
Horizontal (Peak)



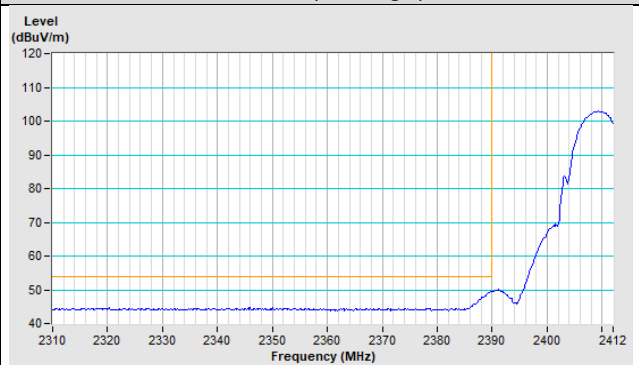
Horizontal (Average)



Vertical (Peak)

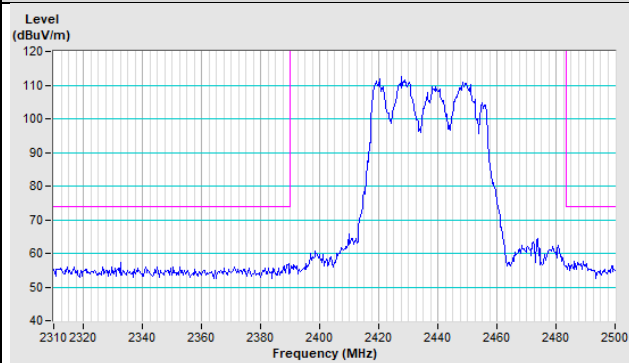


Vertical (Average)

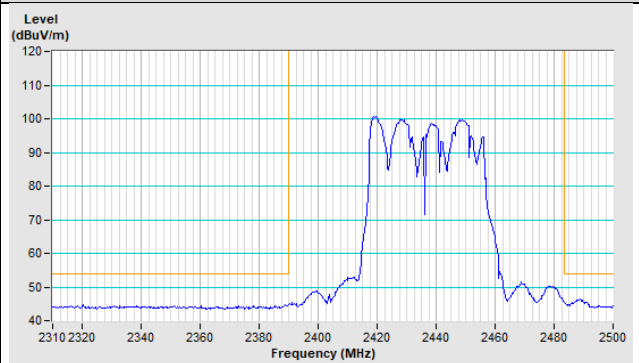


802.11ax (HE40) Channel 6

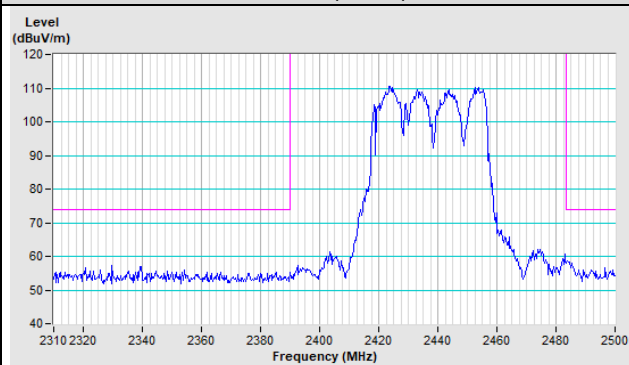
Horizontal (Peak)



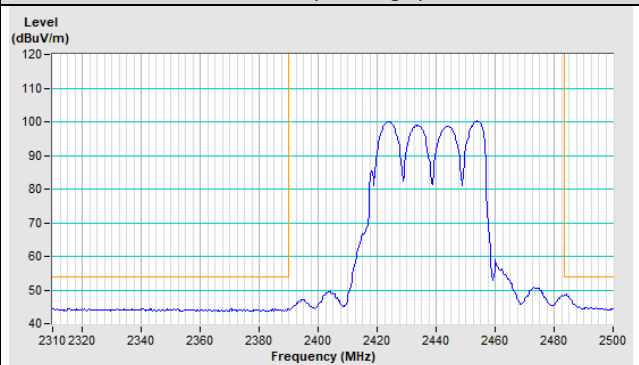
Horizontal (Average)



Vertical (Peak)

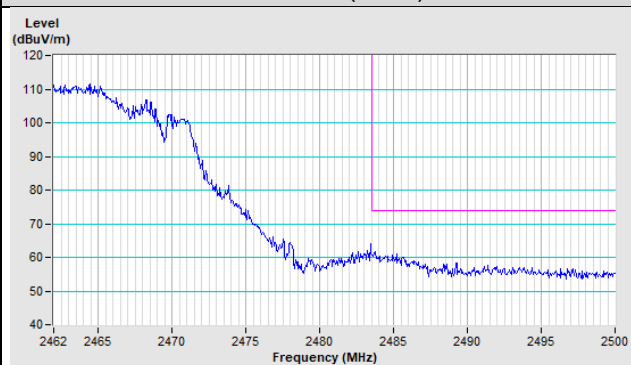


Vertical (Average)

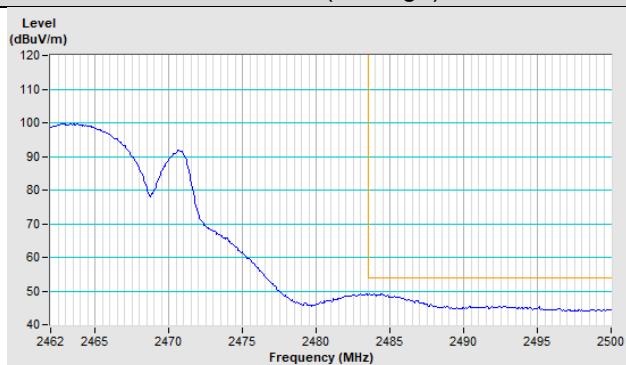


802.11ax (HE40) Channel 9

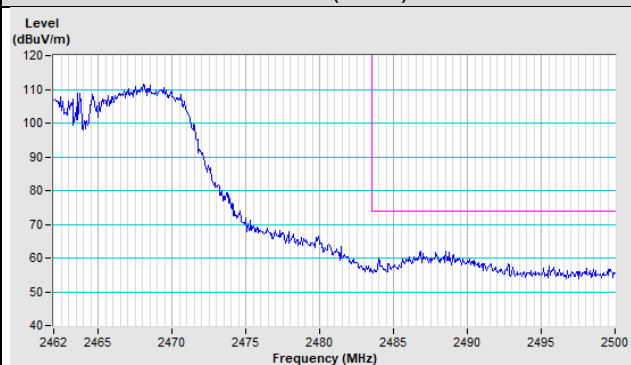
Horizontal (Peak)



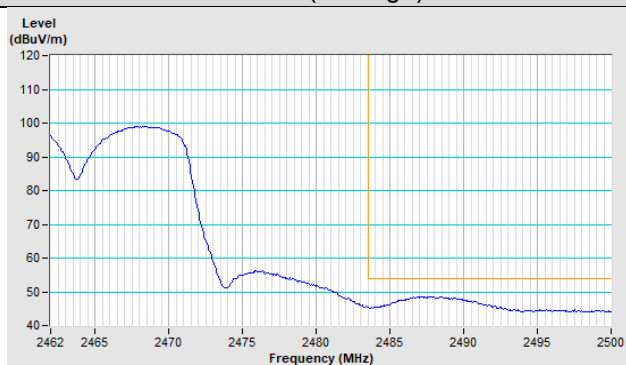
Horizontal (Average)



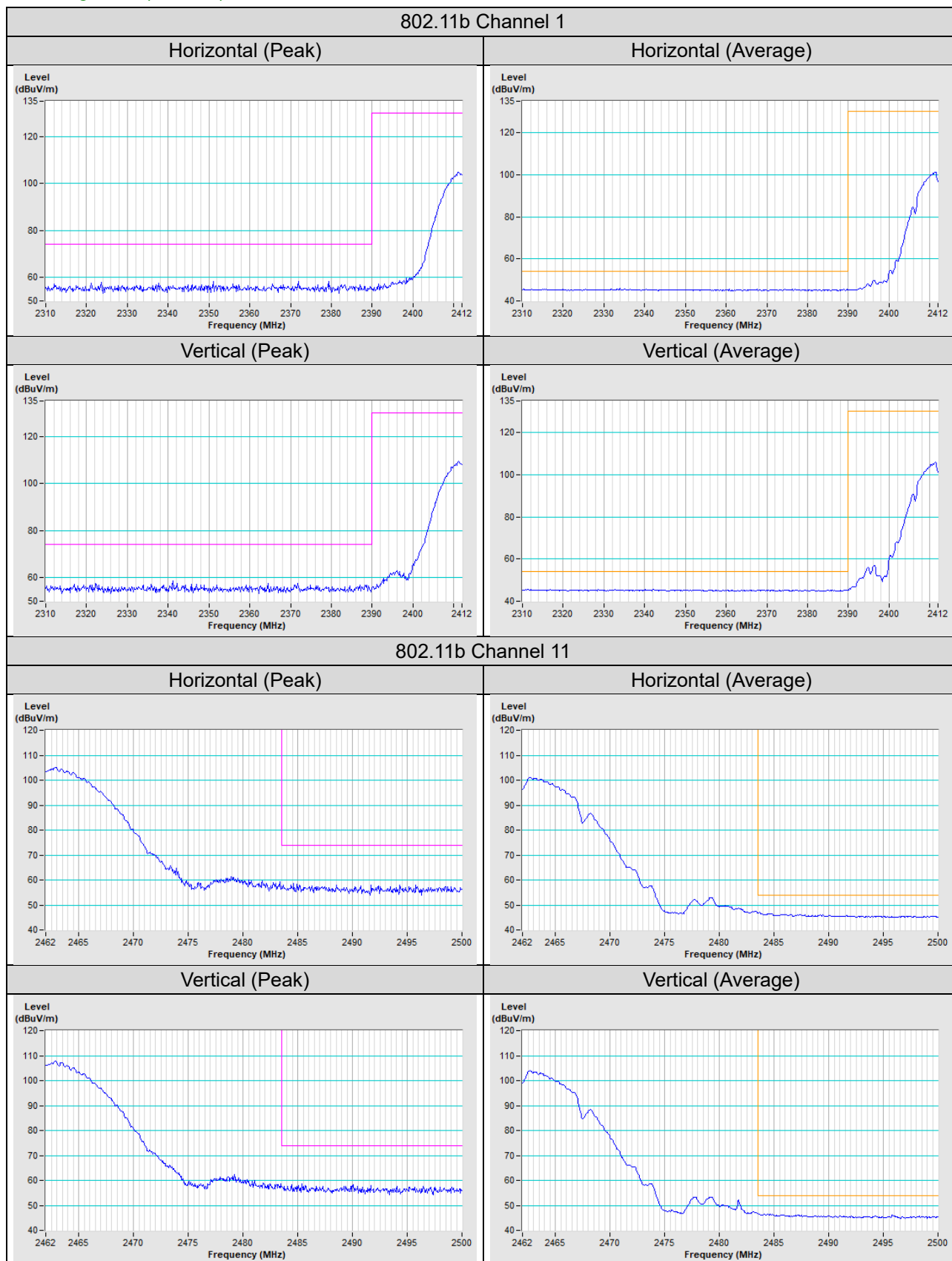
Vertical (Peak)



Vertical (Average)

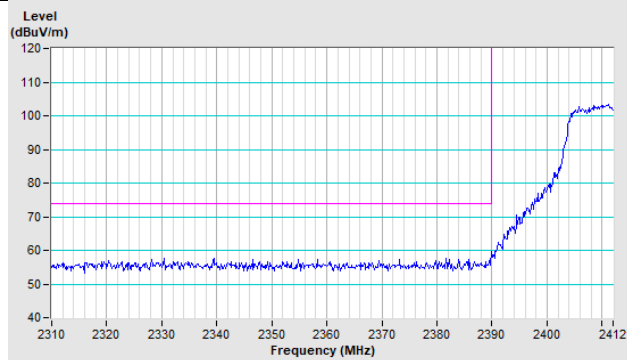


Scanning radio (Radio 3)

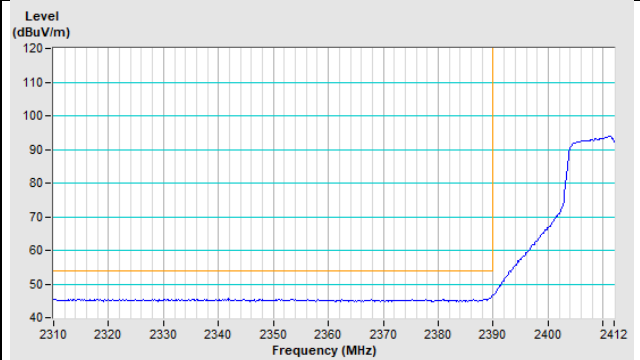


802.11g Channel 1

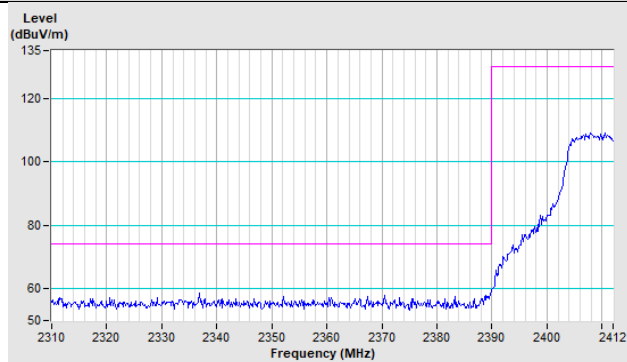
Horizontal (Peak)



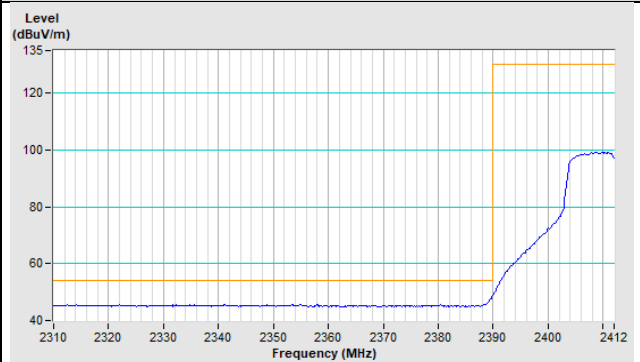
Horizontal (Average)



Vertical (Peak)

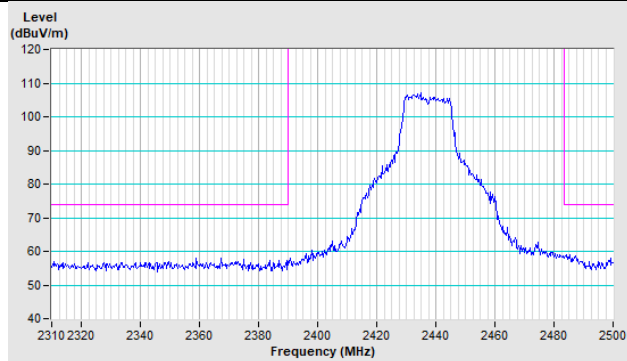


Vertical (Average)

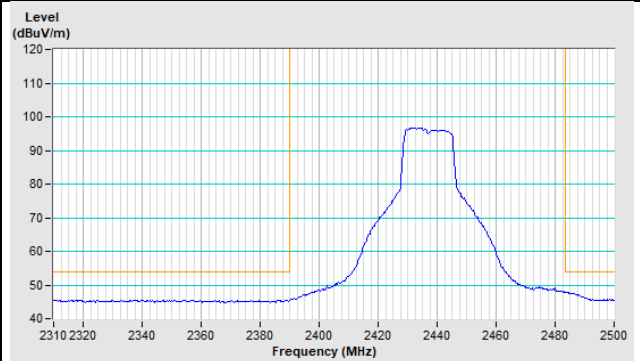


802.11g Channel 6

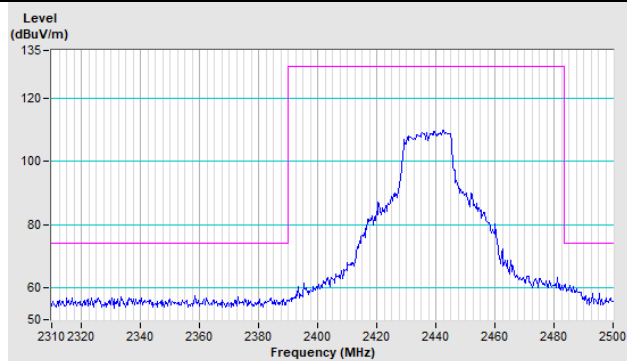
Horizontal (Peak)



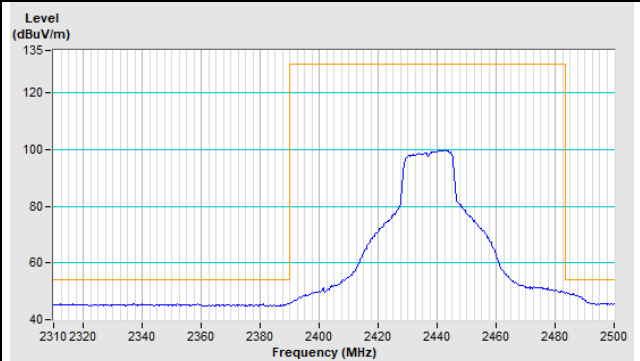
Horizontal (Average)



Vertical (Peak)

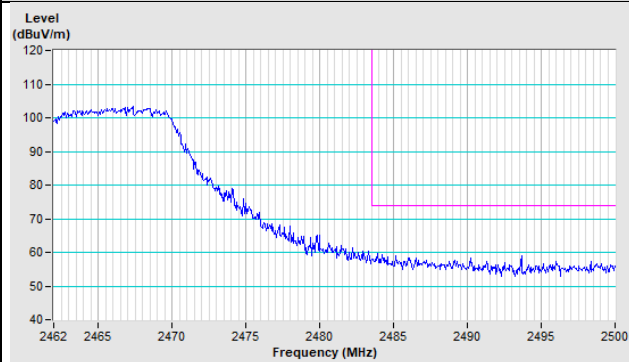


Vertical (Average)

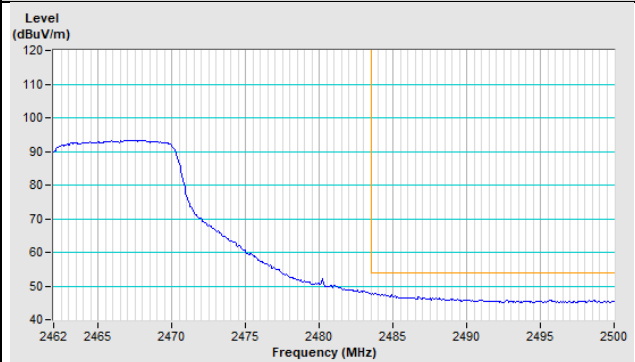


802.11g Channel 11

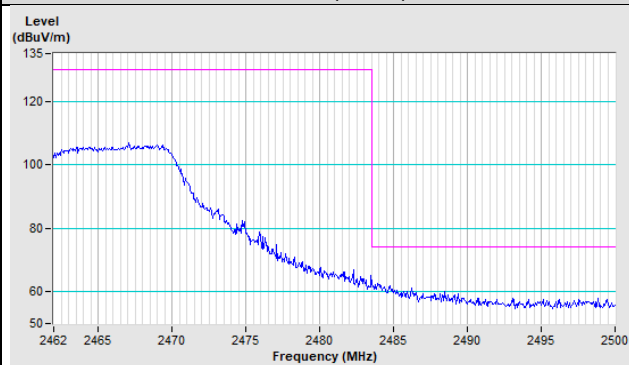
Horizontal (Peak)



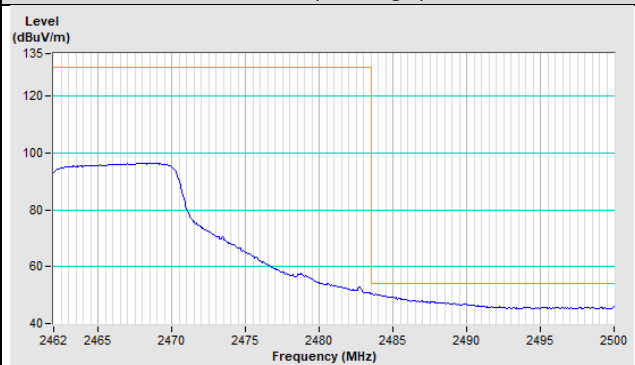
Horizontal (Average)



Vertical (Peak)

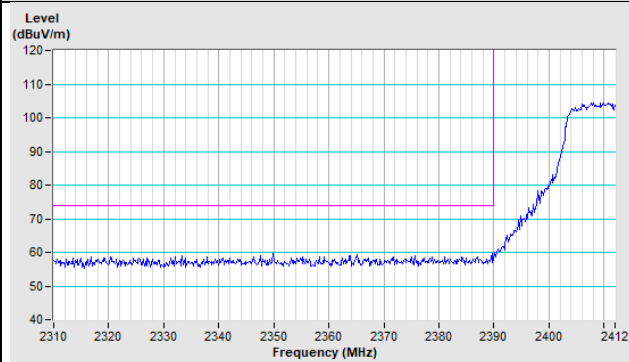


Vertical (Average)

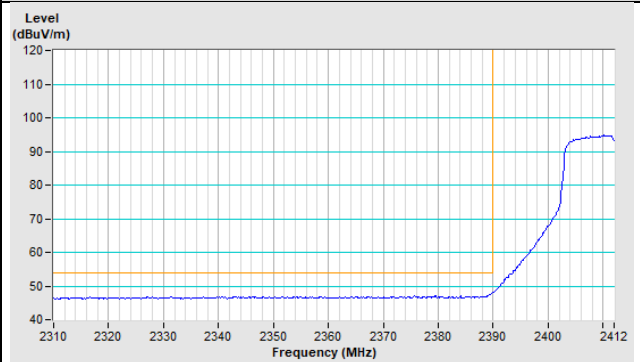


802.11n (HT20) Channel 1

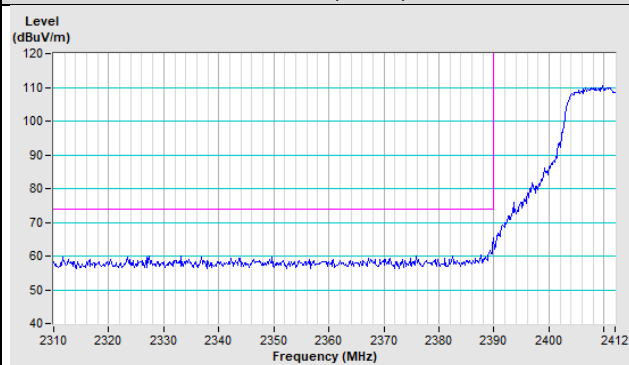
Horizontal (Peak)



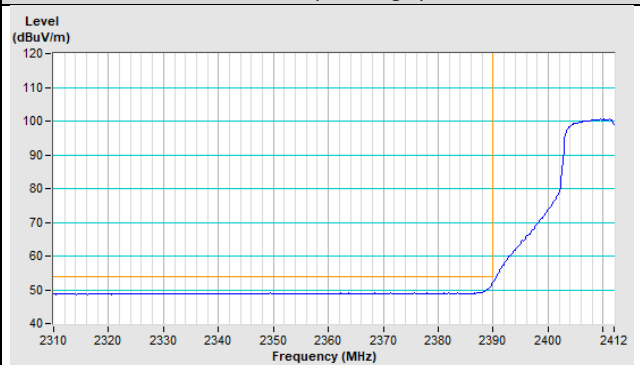
Horizontal (Average)



Vertical (Peak)

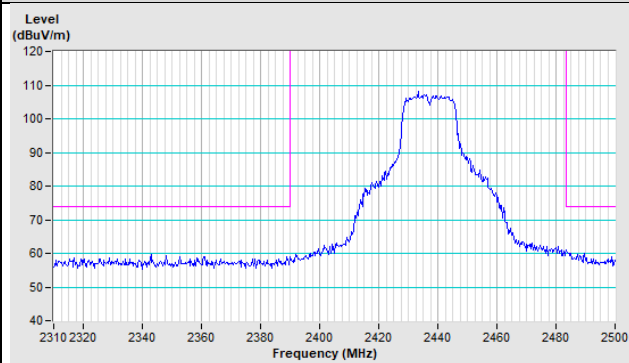


Vertical (Average)

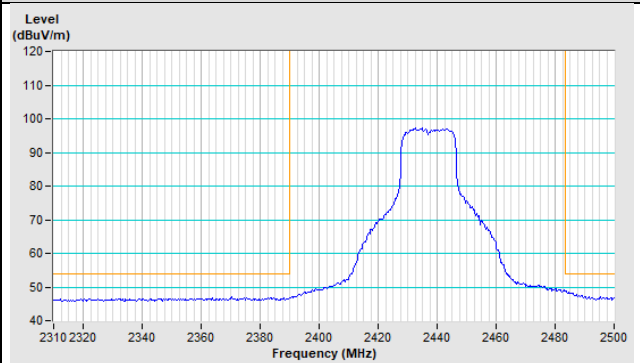


802.11n (HT20) Channel 6

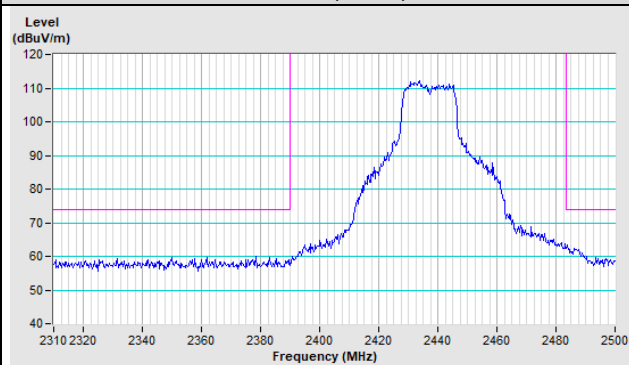
Horizontal (Peak)



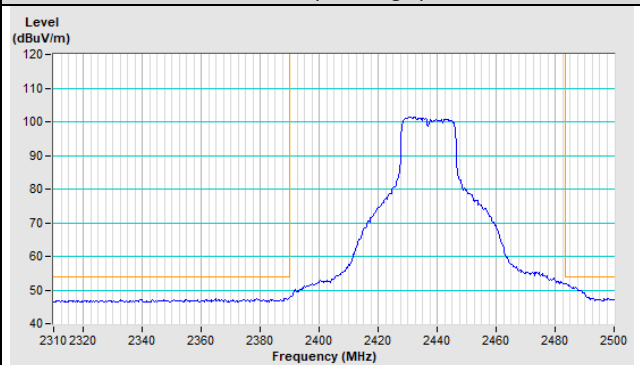
Horizontal (Average)



Vertical (Peak)

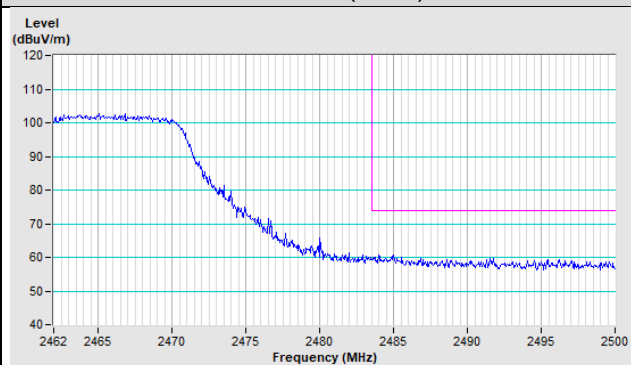


Vertical (Average)

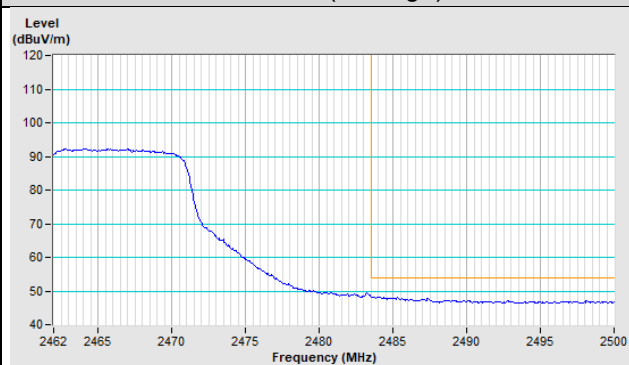


802.11n (HT20) Channel 11

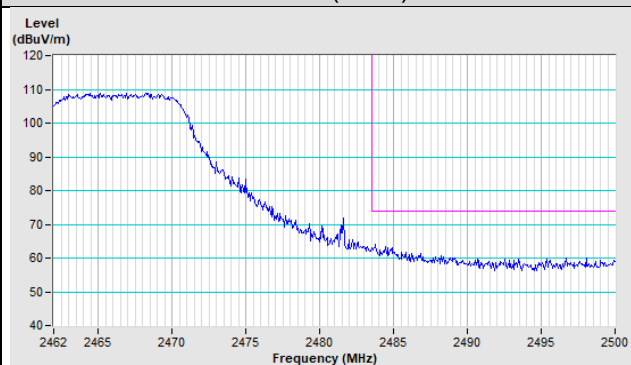
Horizontal (Peak)



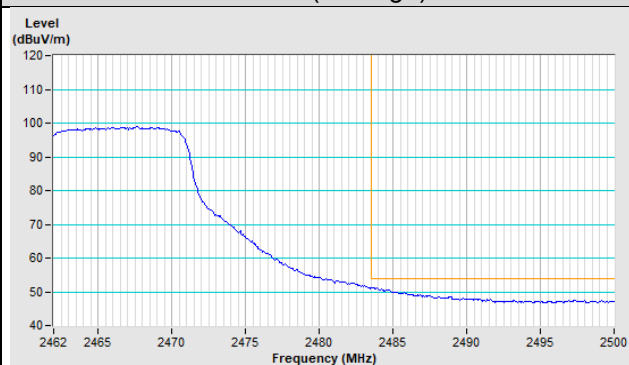
Horizontal (Average)



Vertical (Peak)

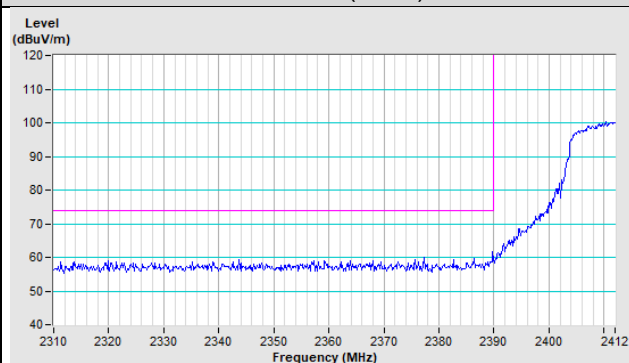


Vertical (Average)

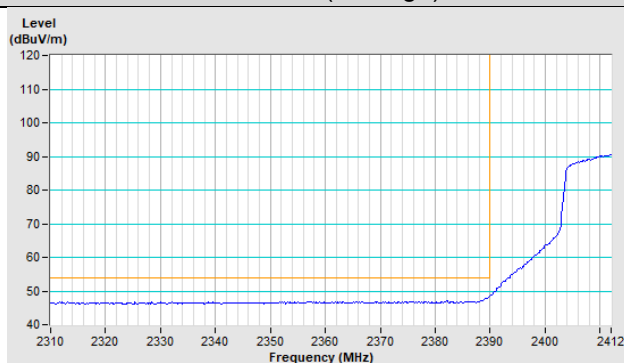


802.11n (HT40) Channel 3

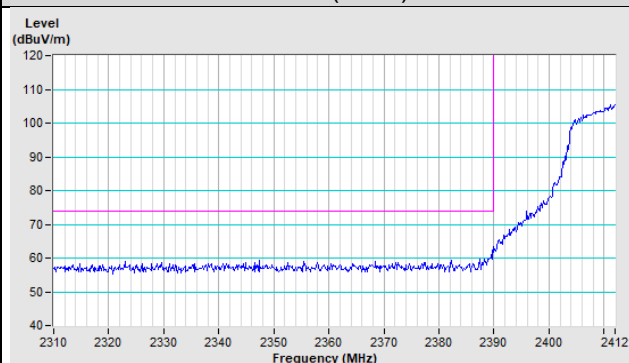
Horizontal (Peak)



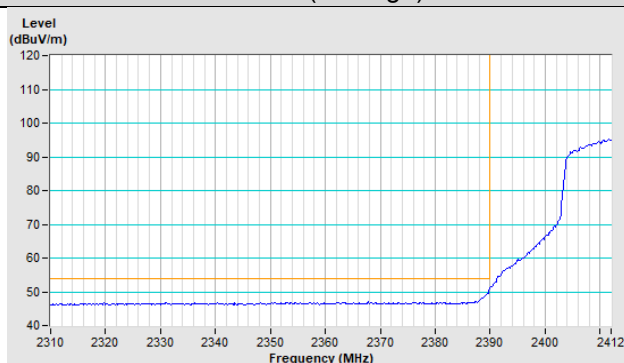
Horizontal (Average)



Vertical (Peak)

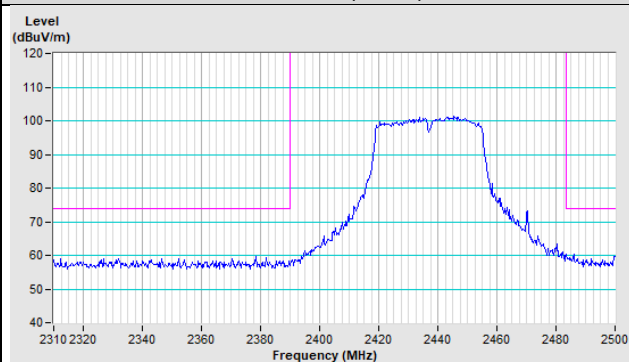


Vertical (Average)

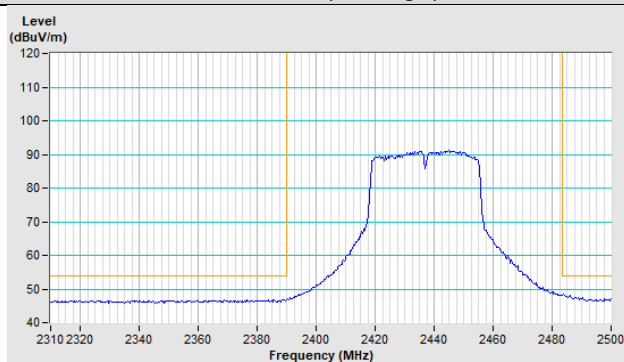


802.11n (HT40) Channel 6

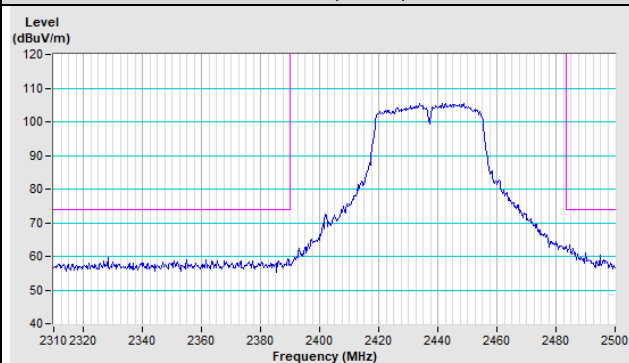
Horizontal (Peak)



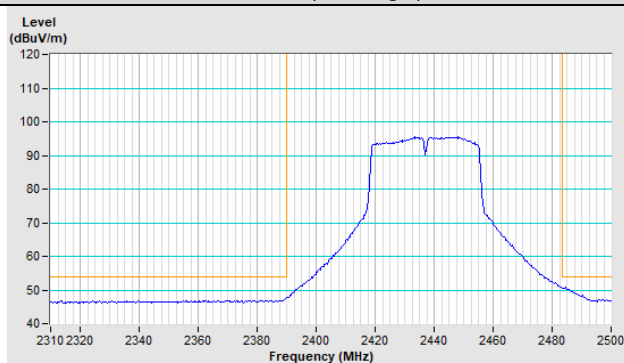
Horizontal (Average)



Vertical (Peak)

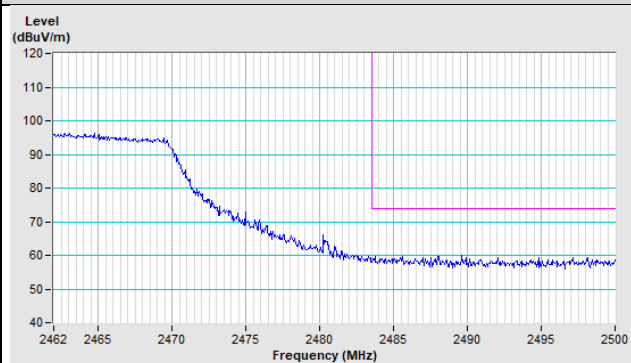


Vertical (Average)

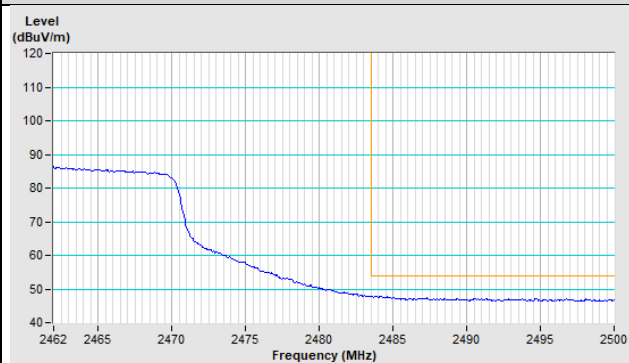


802.11n (HT40) Channel 9

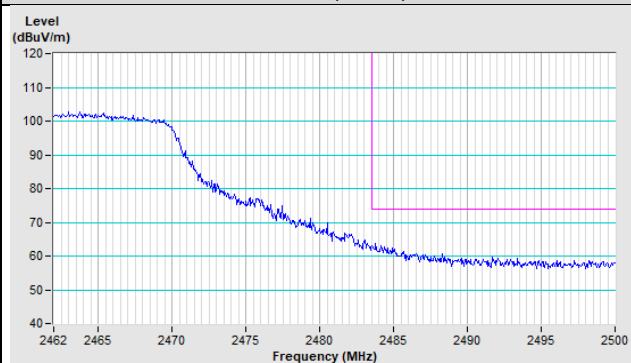
Horizontal (Peak)



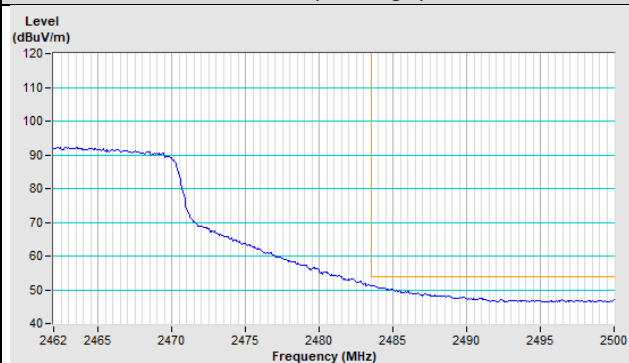
Horizontal (Average)



Vertical (Peak)



Vertical (Average)



5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – 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 and approved according to ISO/IEC 17025.

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

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Web Site: www.bureauveritas-adt.com

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

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