FCC Test Report (2.4GHz WLAN)

Report No.:	RF190628E01J
FCC ID:	RAS-MT7663
Test Model:	MT7663
Received Date:	July 06, 2020
Test Date:	July 13 to 28, 2020
Issued Date:	Aug. 21, 2020
Applicant:	MediaTek Inc.
Address:	No. 1, Dusing Rd. 1 Hsinchu Science Park, Hsinchu, Taiwan 300, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
RF190628E01J	Original release.	Aug. 21, 2020

1 Certificate of Conformity

Product:	2TX 11ac + BLE Combo Card
Brand:	MTK
Test Model:	MT7663
Sample Status:	ENGINEERING SAMPLE
Applicant:	MediaTek Inc.
Test Date:	July 13 to 28, 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 EMC characteristics under the conditions specified in this report.

Prepared by : Phoenix Huang , **Date:** Aug. 21, 2020

Phoenix Huang / Specialist

Approved by : , **Date:** Aug. 21, 2020

Clark Lin / Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.2 dB at 2483.50 MHz.
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.

Note:
1. For 2.4 GHz band compliance with rule 15.247(d) of the band-edge items, the test plots were recorded in Annex A.
2. 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	-	2.5 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.4 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (2.4GHz WLAN)

Product	2TX 11ac + BLE Combo Card
Brand	MTK
Test Model	MT7663
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	3.3 Vdc from host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n: up to 300Mbps
Operating Frequency	2.412 ~ 2.472 GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20): 13 802.11n (HT40): 9
Output Power	32.664 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. This report is prepared for FCC class II change. The difference compared with the Report No.: RF190628E01 as the following:
   - ◆ CH12-13 is added for b/g/n (HT20) mode and CH10-11 is being added for HT40 mode.
2. According to above conditions, all of test items need to be performed (except for AC Power Conducted Emission & Radiated Emission <Below 1GHz> test items) and all data was verified to meet the requirements.
3. There are WLAN, BT technology used for the EUT.
4. The EUT has two interfaces. The main difference is interface, but RF is the same. Please refer to the following table:

Interface	Difference
PCIe	PCIe and SDIO interface signal switch by IC bonding on the same pin, Most of the layout including RF, PMU, and the control signal is the same.
SDIO	
Note: In original report, from the above Interface, the worst case was found in PCIe interface. Therefore only the test data of the modes were recorded in this report.	

5. Simultaneously transmission condition.

Condition	Technology	
1	WLAN 2.4GHz	Bluetooth
2	WLAN 5GHz	Bluetooth

6. The antennas provided to the EUT, please refer to the following table:

Ant. Set	RF Chain No.	Brand	Model	Ant. Net Gain (dBi)	Freq. Range (GHz)	Ant. Type	Connector Type	Cable Length (mm)
1	Chain 0	LYNwave	ALA110-222050-300011	3.5	2.4~2.4835	PIFA	i-pex(MHF)	55
				5	5.15~5.85			
	Chain 1	LYNwave	ALA110-222050-300011	3.5	2.4~2.4835	PIFA	i-pex(MHF)	55
				5	5.15~5.85			
2	Chain 0	Cortec	AN2450-4902BRS	2.42	2.4~2.4835	Dipole	R-SMA	150
				3.87	5.15~5.85			
	Chain 1	Cortec	AN2450-4902BRS	2.42	2.4~2.4835	Dipole	R-SMA	150
				3.87	5.15~5.85			
3	Chain 0	PSA	RFMTA340718EMLB301	2.92	2.4~2.4835	PIFA	i-pex(MHF)	199.4
				4.94	5.15~5.85			
	Chain 1	PSA	RFMTA340718EMLB301	2.92	2.4~2.4835	PIFA	i-pex(MHF)	199.4
				4.94	5.15~5.85			

Note: For radiated emission test, PIFA antenna (Ant. Set 1) and Dipole (Ant. Set 2) was selected as representative adapter for the test and its data was recorded in this report.

7. The EUT incorporates a MIMO function.

2.4GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
5GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX

8. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
9. 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.

3.2 Description of Test Modes

13 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	12	2467
6	2437	13	2472
7	2442		

9 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	8	2447
4	2427	9	2452
5	2432	10	2457
6	2437	11	2462
7	2442		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO		DESCRIPTION
	RE≥1G	APCM	
1	√	√	PIFA antenna
2	√	-	Dipole antenna

Where **RE≥1G:** Radiated Emission above 1GHz & Bandedge Measurement **APCM:** Antenna Port Conducted Measurement

Note: In original report, the EUT's PIFA antenna had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane**.

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 13	12, 13	DSSS	DBPSK	1
802.11g	1 to 13	12, 13	OFDM	BPSK	6
802.11n (HT20)	1 to 13	12, 13	OFDM	BPSK	6.5
802.11n (HT40)	3 to 11	10, 11	OFDM	BPSK	13.5

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 13	12, 13	DSSS	DBPSK	1
802.11g	1 to 13	12, 13	OFDM	BPSK	6
802.11n (HT20)	1 to 13	12, 13	OFDM	BPSK	6.5
802.11n (HT40)	3 to 11	10, 11	OFDM	BPSK	13.5

Test Condition:

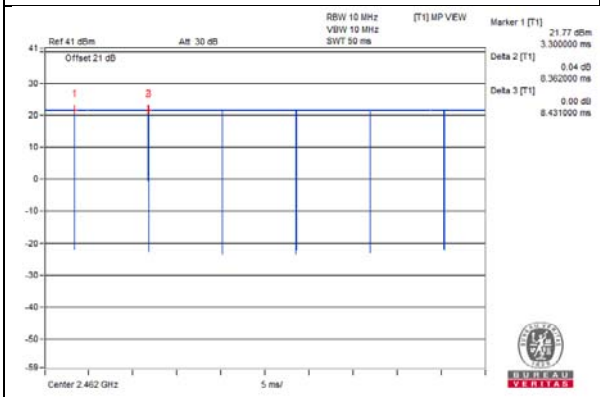
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	23deg. C, 68%RH	120Vac, 60Hz	Ryan Du
APCM	25deg. C, 60%RH	120Vac, 60Hz	Jyunchun Lin

3.3 Duty Cycle of Test Signal

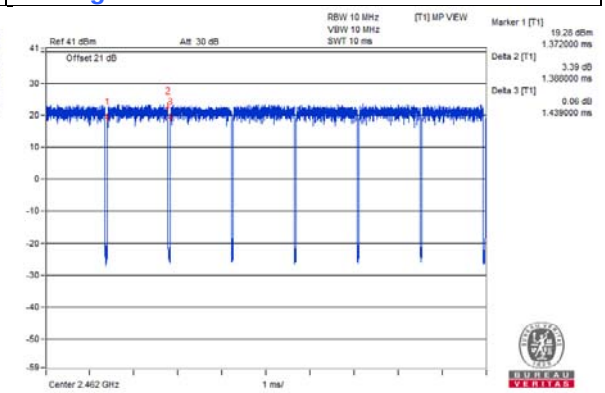
If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11b: Duty cycle = 8.362/8.431 = 0.992.
802.11g: Duty cycle = 1.388/1.439 = 0.965, Duty factor = 10 * log(1/Duty factor) = 0.16 dB
802.11n (HT20): Duty cycle = 1.299/1.348 = 0.964, Duty factor = 10 * log(1/Duty factor) = 0.16 dB
802.11n (HT40): Duty cycle = 0.646/0.693 = 0.932, Duty factor = 10 * log(1/Duty factor) = 0.31 dB

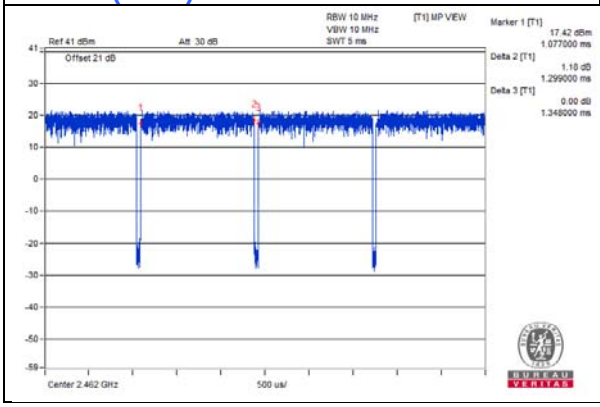
802.11b



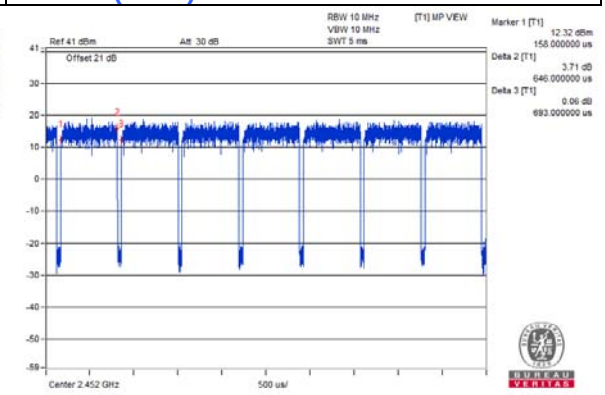
802.11g



802.11n (HT20)



802.11n (HT40)



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.	Laptop	DELL	E5430	GM1SKV1	FCC DoC	Provided by Lab
B.	Test Tool	MTK	NA	NA	NA	Supplied by client
C.	Adapter	DELL	DA90PM111	NA	NA	Provided by Lab

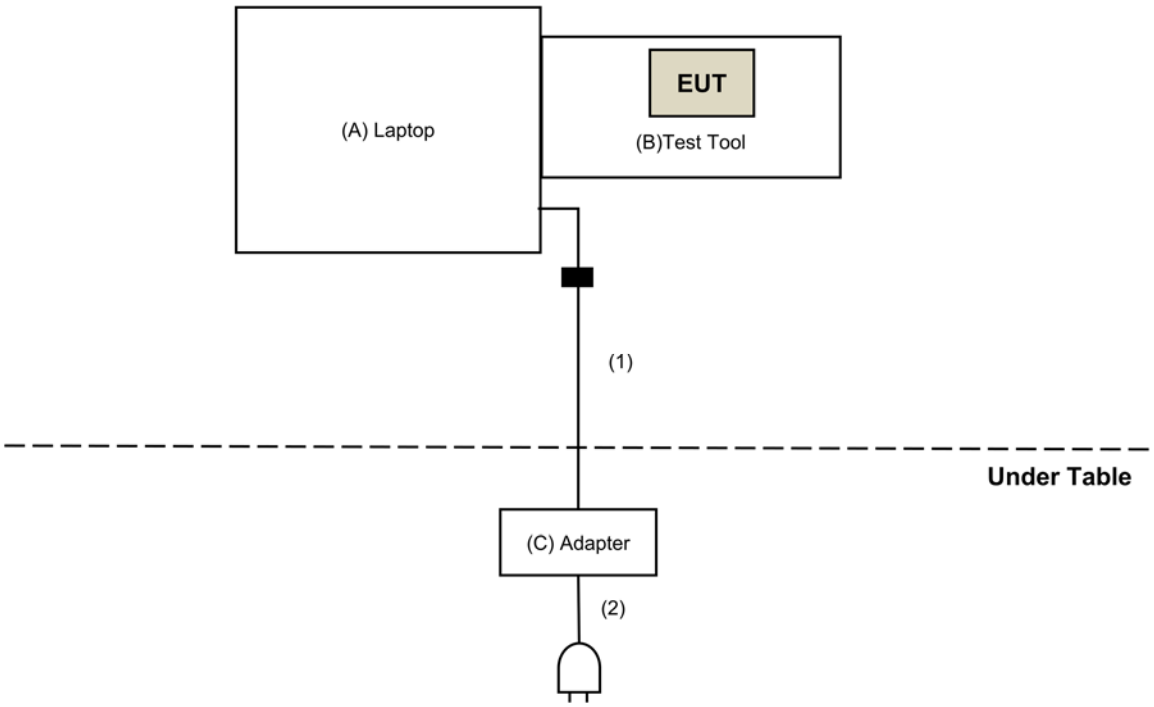
Note:

1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.8	No	1	Provided by Lab
2.	AC Cable	1	0.9	No	0	Provided by Lab

Note: The core(s) is(are) originally attached to the cable(s).

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

For Radiated Emission & Bandedge test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 06, 2020	July 05, 2021
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-1200	160922	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-2000	180601	June 09, 2020	June 08, 2021
RF Cable	EMC104-SM-SM-6000	180602	June 09, 2020	June 08, 2021
Spectrum Analyzer Keysight	N9030A	MY54490679	July 13, 2020	July 12, 2021
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC-KM-KM-4000	200214	Mar. 11, 2020	Mar. 10, 2021
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	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 966 Chamber No. 3.
3. Tested Date: July 13 to 28, 2020

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Power meter Anritsu	ML2495A	1529002	July 22, 2020	July 21, 2021
Power sensor Anritsu	MA2411B	1339443	July 22, 2020	July 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

NOTE: 1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: July 28, 2020

4.1.3 Test Procedures

a. The EUT was placed on the top of a rotating table1.5 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 peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

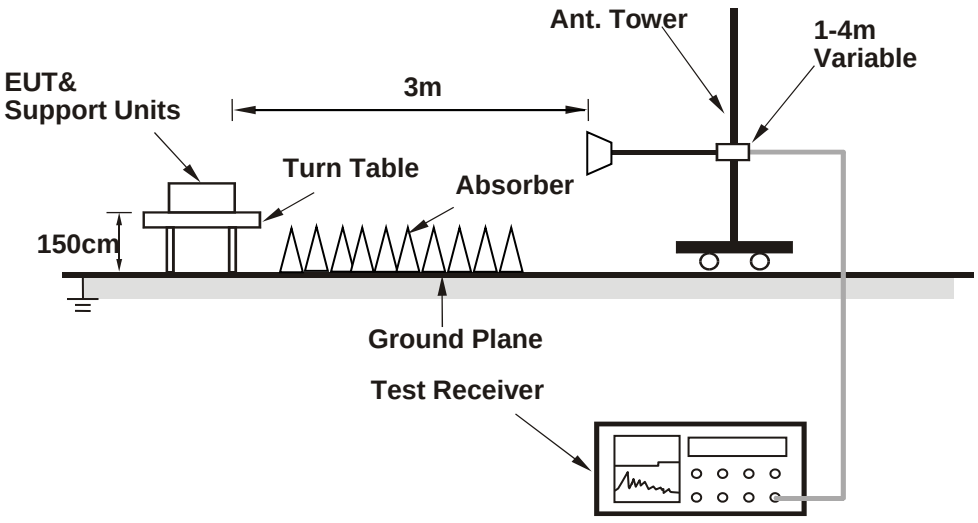
Note:

1. 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.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
3. 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 the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

a. Connected the EUT with the Laptop Computer which is placed on the testing table.
b. Controlling software (QA tool (0.0.2.6)) has been activated to set the EUT under transmission condition continuously at specific channel frenquency.

4.1.7 Test Results (Mode 1)

802.11b

Channel	TX Channel 12	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2467.00	101.3 PK			2.70 H	166	103.2	-1.9
2	*2467.00	99.2 AV			2.70 H	166	101.1	-1.9
3	2483.50	57.7 PK	74.0	-16.3	2.70 H	166	59.6	-1.9
4	2483.50	48.6 AV	54.0	-5.4	2.70 H	166	50.5	-1.9
5	4934.00	45.4 PK	74.0	-28.6	1.67 H	167	42.7	2.7
6	4934.00	40.3 AV	54.0	-13.7	1.67 H	167	37.6	2.7
7	7401.00	56.0 PK	74.0	-18.0	2.48 H	188	47.1	8.9
8	7401.00	53.1 AV	54.0	-0.9	2.48 H	188	44.2	8.9
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	*2467.00	105.8 PK			1.04 V	332	107.7	-1.9
2	*2467.00	103.8 AV			1.04 V	332	105.7	-1.9
3	2483.50	59.5 PK	74.0	-14.5	1.04 V	332	61.4	-1.9
4	2483.50	53.1 AV	54.0	-0.9	1.04 V	332	55.0	-1.9
5	4934.00	45.4 PK	74.0	-28.6	1.54 V	210	42.7	2.7
6	4934.00	42.0 AV	54.0	-12.0	1.54 V	210	39.3	2.7
7	7401.00	49.2 PK	74.0	-24.8	1.30 V	33	40.3	8.9
8	7401.00	45.0 AV	54.0	-9.0	1.30 V	33	36.1	8.9

Remarks:

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

Channel	TX Channel 13	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2472.00	99.6 PK			2.66 H	171	101.5	-1.9
2	*2472.00	97.6 AV			2.66 H	171	99.5	-1.9
3	2487.80	57.5 PK	74.0	-16.5	2.66 H	171	59.4	-1.9
4	2487.80	49.7 AV	54.0	-4.3	2.66 H	171	51.6	-1.9
5	4944.00	45.7 PK	74.0	-28.3	1.65 H	165	42.9	2.8
6	4944.00	40.6 AV	54.0	-13.4	1.65 H	165	37.8	2.8
7	7416.00	55.8 PK	74.0	-18.2	2.48 H	178	46.8	9.0
8	7416.00	52.8 AV	54.0	-1.2	2.48 H	178	43.8	9.0
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	*2472.00	103.4 PK			1.01 V	321	105.3	-1.9
2	*2472.00	101.5 AV			1.01 V	321	103.4	-1.9
3	2487.60	59.1 PK	74.0	-14.9	1.01 V	321	61.0	-1.9
4	2487.60	53.2 AV	54.0	-0.8	1.01 V	321	55.1	-1.9
5	4944.00	45.9 PK	74.0	-28.1	1.49 V	202	43.1	2.8
6	4944.00	42.3 AV	54.0	-11.7	1.49 V	202	39.5	2.8
7	7416.00	49.6 PK	74.0	-24.4	1.30 V	32	40.6	9.0
8	7416.00	45.4 AV	54.0	-8.6	1.30 V	32	36.4	9.0

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.

802.11g

Channel	TX Channel 12	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2467.00	103.7 PK			2.69 H	181	105.6	-1.9
2	*2467.00	95.2 AV			2.69 H	181	97.1	-1.9
3	2483.50	65.1 PK	74.0	-8.9	2.69 H	181	67.0	-1.9
4	2483.50	50.8 AV	54.0	-3.2	2.69 H	181	52.7	-1.9
5	4934.00	41.5 PK	74.0	-32.5	1.65 H	178	38.8	2.7
6	4934.00	31.2 AV	54.0	-22.8	1.65 H	178	28.5	2.7
7	7401.00	60.0 PK	74.0	-14.0	2.43 H	159	51.1	8.9
8	7401.00	48.0 AV	54.0	-6.0	2.43 H	159	39.1	8.9
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	*2467.00	107.2 PK			1.02 V	333	109.1	-1.9
2	*2467.00	99.4 AV			1.02 V	333	101.3	-1.9
3	2483.50	67.5 PK	74.0	-6.5	1.02 V	333	69.4	-1.9
4	2483.50	53.5 AV	54.0	-0.5	1.02 V	333	55.4	-1.9
5	4934.00	40.4 PK	74.0	-33.6	1.47 V	198	37.7	2.7
6	4934.00	30.9 AV	54.0	-23.1	1.47 V	198	28.2	2.7
7	7401.00	50.1 PK	74.0	-23.9	1.52 V	197	41.2	8.9
8	7401.00	37.8 AV	54.0	-16.2	1.52 V	197	28.9	8.9

Remarks:

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

Channel	TX Channel 13	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2472.00	100.5 PK			2.67 H	169	102.4	-1.9
2	*2472.00	91.5 AV			2.67 H	169	93.4	-1.9
3	2484.30	63.5 PK	74.0	-10.5	2.67 H	169	65.4	-1.9
4	2484.30	50.3 AV	54.0	-3.7	2.67 H	169	52.2	-1.9
5	4944.00	41.3 PK	74.0	-32.7	1.66 H	167	38.5	2.8
6	4944.00	31.1 AV	54.0	-22.9	1.66 H	167	28.3	2.8
7	7416.00	60.4 PK	74.0	-13.6	2.42 H	160	51.4	9.0
8	7416.00	48.3 AV	54.0	-5.7	2.42 H	160	39.3	9.0
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	*2472.00	103.8 PK			1.08 V	330	105.7	-1.9
2	*2472.00	95.7 AV			1.08 V	330	97.6	-1.9
3	2484.32	66.2 PK	74.0	-7.8	1.08 V	330	68.1	-1.9
4	2484.32	53.1 AV	54.0	-0.9	1.08 V	330	55.0	-1.9
5	4944.00	40.7 PK	74.0	-33.3	1.46 V	185	37.9	2.8
6	4944.00	31.1 AV	54.0	-22.9	1.46 V	185	28.3	2.8
7	7416.00	50.1 PK	74.0	-23.9	1.47 V	185	41.1	9.0
8	7416.00	38.1 AV	54.0	-15.9	1.47 V	185	29.1	9.0

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.

802.11n (HT20)

Channel	TX Channel 12	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2467.00	103.3 PK			2.64 H	169	105.2	-1.9
2	*2467.00	94.5 AV			2.64 H	169	96.4	-1.9
3	2483.50	64.5 PK	74.0	-9.5	2.64 H	169	66.4	-1.9
4	2483.50	51.2 AV	54.0	-2.8	2.64 H	169	53.1	-1.9
5	4934.00	41.8 PK	74.0	-32.2	1.69 H	155	39.1	2.7
6	4934.00	31.1 AV	54.0	-22.9	1.69 H	155	28.4	2.7
7	7401.00	60.5 PK	74.0	-13.5	2.40 H	162	51.6	8.9
8	7401.00	48.5 AV	54.0	-5.5	2.40 H	162	39.6	8.9
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	*2467.00	106.7 PK			1.12 V	336	108.6	-1.9
2	*2467.00	99.3 AV			1.12 V	336	101.2	-1.9
3	2483.50	67.1 PK	74.0	-6.9	1.12 V	336	69.0	-1.9
4	2483.50	53.7 AV	54.0	-0.3	1.12 V	336	55.6	-1.9
5	4934.00	41.3 PK	74.0	-32.7	1.58 V	206	38.6	2.7
6	4934.00	30.9 AV	54.0	-23.1	1.58 V	206	28.2	2.7
7	7401.00	49.6 PK	74.0	-24.4	1.49 V	177	40.7	8.9
8	7401.00	37.0 AV	54.0	-17.0	1.49 V	177	28.1	8.9

Remarks:

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

Channel	TX Channel 13	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2472.00	99.7 PK			2.65 H	168	101.6	-1.9
2	*2472.00	90.7 AV			2.65 H	168	92.6	-1.9
3	2483.50	62.5 PK	74.0	-11.5	2.65 H	168	64.4	-1.9
4	2483.50	49.8 AV	54.0	-4.2	2.65 H	168	51.7	-1.9
5	4944.00	40.8 PK	74.0	-33.2	1.67 H	154	38.0	2.8
6	4944.00	30.3 AV	54.0	-23.7	1.67 H	154	27.5	2.8
7	7416.00	60.1 PK	74.0	-13.9	2.42 H	152	51.1	9.0
8	7416.00	47.9 AV	54.0	-6.1	2.42 H	152	38.9	9.0
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	*2472.00	104.3 PK			1.06 V	332	106.2	-1.9
2	*2472.00	95.3 AV			1.06 V	332	97.2	-1.9
3	2483.50	66.5 PK	74.0	-7.5	1.06 V	332	68.4	-1.9
4	2483.50	53.5 AV	54.0	-0.5	1.06 V	332	55.4	-1.9
5	4944.00	41.5 PK	74.0	-32.5	1.57 V	202	38.7	2.8
6	4944.00	31.4 AV	54.0	-22.6	1.57 V	202	28.6	2.8
7	7416.00	50.1 PK	74.0	-23.9	1.56 V	175	41.1	9.0
8	7416.00	37.5 AV	54.0	-16.5	1.56 V	175	28.5	9.0

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.

802.11n (HT40)

Channel	TX Channel 10	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2457.00	98.8 PK			2.70 H	172	100.7	-1.9
2	*2457.00	89.7 AV			2.70 H	172	91.6	-1.9
3	2483.50	60.7 PK	74.0	-13.3	2.70 H	172	62.6	-1.9
4	2483.50	48.6 AV	54.0	-5.4	2.70 H	172	50.5	-1.9
5	4914.00	40.0 PK	74.0	-34.0	1.60 H	162	37.3	2.7
6	4914.00	29.3 AV	54.0	-24.7	1.60 H	162	26.6	2.7
7	7371.00	59.6 PK	74.0	-14.4	2.42 H	148	50.7	8.9
8	7371.00	46.7 AV	54.0	-7.3	2.42 H	148	37.8	8.9
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	*2457.00	103.2 PK			1.21 V	329	105.1	-1.9
2	*2457.00	95.0 AV			1.21 V	329	96.9	-1.9
3	2483.50	63.5 PK	74.0	-10.5	1.21 V	332	65.4	-1.9
4	2483.50	53.0 AV	54.0	-1.0	1.21 V	332	54.9	-1.9
5	4914.00	40.2 PK	74.0	-33.8	1.54 V	215	37.5	2.7
6	4914.00	30.5 AV	54.0	-23.5	1.54 V	215	27.8	2.7
7	7371.00	50.1 PK	74.0	-23.9	1.58 V	174	41.2	8.9
8	7371.00	37.1 AV	54.0	-16.9	1.58 V	174	28.2	8.9

Remarks:

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

Channel	TX Channel 11	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	92.7 PK			2.61 H	156	94.6	-1.9
2	*2462.00	83.4 AV			2.61 H	156	85.3	-1.9
3	2483.50	60.4 PK	74.0	-13.6	2.61 H	156	62.3	-1.9
4	2483.50	46.2 AV	54.0	-7.8	2.61 H	156	48.1	-1.9
5	4924.00	39.6 PK	74.0	-34.4	1.64 H	164	36.9	2.7
6	4924.00	29.3 AV	54.0	-24.7	1.64 H	164	26.6	2.7
7	7386.00	59.7 PK	74.0	-14.3	2.31 H	131	50.7	9.0
8	7386.00	46.9 AV	54.0	-7.1	2.31 H	131	37.9	9.0
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	*2462.00	104.1 PK			1.21 V	329	106.0	-1.9
2	*2462.00	95.2 AV			1.21 V	329	97.1	-1.9
3	2483.50	64.6 PK	74.0	-9.4	1.21 V	329	66.5	-1.9
4	2483.50	53.0 AV	54.0	-1.0	1.21 V	329	54.9	-1.9
5	4924.00	50.1 PK	74.0	-23.9	1.50 V	187	47.4	2.7
6	4924.00	36.9 AV	54.0	-17.1	1.50 V	187	34.2	2.7
7	7386.00	59.4 PK	74.0	-14.6	2.38 V	141	50.4	9.0
8	7386.00	46.5 AV	54.0	-7.5	2.38 V	141	37.5	9.0

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.

4.1.8 Test Results (Mode 2)

802.11b

Channel	TX Channel 12	**Detector Function**	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2467.00	97.7 PK			2.42 H	217	99.6	-1.9
2	*2467.00	95.7 AV			2.42 H	217	97.6	-1.9
3	2483.50	56.3 PK	74.0	-17.7	2.42 H	217	58.2	-1.9
4	2483.50	44.2 AV	54.0	-9.8	2.42 H	217	46.1	-1.9
5	4934.00	41.6 PK	74.0	-32.4	2.34 H	227	38.9	2.7
6	4934.00	32.3 AV	54.0	-21.7	2.34 H	227	29.6	2.7
7	7401.00	47.0 PK	74.0	-27.0	1.47 H	40	38.1	8.9
8	7401.00	39.8 AV	54.0	-14.2	1.47 H	40	30.9	8.9
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	*2467.00	109.2 PK			1.71 V	214	111.1	-1.9
2	*2467.00	107.5 AV			1.71 V	214	109.4	-1.9
3	2483.50	61.1 PK	74.0	-12.9	1.71 V	214	63.0	-1.9
4	**2483.50**	**53.8 AV**	**54.0**	**-0.2**	**1.71 V**	**214**	**55.7**	**-1.9**
5	4934.00	44.9 PK	74.0	-29.1	2.60 V	185	42.2	2.7
6	4934.00	40.5 AV	54.0	-13.5	2.60 V	185	37.8	2.7
7	7401.00	53.2 PK	74.0	-20.8	2.68 V	44	44.3	8.9
8	7401.00	48.9 AV	54.0	-5.1	2.68 V	44	40.0	8.9

Remarks:

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

Channel	TX Channel 13	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2472.00	93.6 PK			2.48 H	222	95.5	-1.9
2	*2472.00	91.3 AV			2.48 H	222	93.2	-1.9
3	2483.50	56.3 PK	74.0	-17.7	2.48 H	222	58.2	-1.9
4	2483.50	45.1 AV	54.0	-8.9	2.48 H	222	47.0	-1.9
5	4944.00	41.9 PK	74.0	-32.1	2.40 H	214	39.1	2.8
6	4944.00	32.4 AV	54.0	-21.6	2.40 H	214	29.6	2.8
7	7416.00	46.8 PK	74.0	-27.2	1.46 H	52	37.8	9.0
8	7416.00	39.7 AV	54.0	-14.3	1.46 H	52	30.7	9.0
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	*2472.00	106.2 PK			1.64 V	215	108.1	-1.9
2	*2472.00	103.8 AV			1.64 V	215	105.7	-1.9
3	2487.26	60.7 PK	74.0	-13.3	1.64 V	215	62.6	-1.9
4	2487.26	53.4 AV	54.0	-0.6	1.64 V	215	55.3	-1.9
5	4944.00	45.1 PK	74.0	-28.9	2.62 V	186	42.3	2.8
6	4944.00	40.7 AV	54.0	-13.3	2.62 V	186	37.9	2.8
7	7416.00	53.4 PK	74.0	-20.6	2.70 V	56	44.4	9.0
8	7416.00	49.3 AV	54.0	-4.7	2.70 V	56	40.3	9.0

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.

802.11g

Channel	TX Channel 12	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2467.00	102.1 PK			2.45 H	220	104.0	-1.9
2	*2467.00	92.7 AV			2.45 H	220	94.6	-1.9
3	2483.50	55.9 PK	74.0	-18.1	2.45 H	220	57.8	-1.9
4	2483.50	45.1 AV	54.0	-8.9	2.45 H	220	47.0	-1.9
5	4934.00	41.7 PK	74.0	-32.3	2.38 H	212	39.0	2.7
6	4934.00	31.3 AV	54.0	-22.7	2.38 H	212	28.6	2.7
7	7401.00	47.0 PK	74.0	-27.0	1.48 H	44	38.1	8.9
8	7401.00	39.8 AV	54.0	-14.2	1.48 H	44	30.9	8.9
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	*2467.00	113.1 PK			1.90 V	216	115.0	-1.9
2	*2467.00	104.4 AV			1.90 V	216	106.3	-1.9
3	2483.50	67.2 PK	74.0	-6.8	1.90 V	216	69.1	-1.9
4	2483.50	53.2 AV	54.0	-0.8	1.90 V	216	55.1	-1.9
5	4934.00	40.1 PK	74.0	-33.9	2.66 V	183	37.4	2.7
6	4934.00	30.3 AV	54.0	-23.7	2.66 V	183	27.6	2.7
7	7401.00	53.4 PK	74.0	-20.6	2.61 V	39	44.5	8.9
8	7401.00	49.0 AV	54.0	-5.0	2.61 V	39	40.1	8.9

Remarks:

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

Channel	TX Channel 13	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2472.00	97.0 PK			2.49 H	217	98.9	-1.9
2	*2472.00	87.8 AV			2.49 H	217	89.7	-1.9
3	2483.50	55.2 PK	74.0	-18.8	2.49 H	217	57.1	-1.9
4	2483.50	44.8 AV	54.0	-9.2	2.49 H	217	46.7	-1.9
5	4944.00	42.2 PK	74.0	-31.8	2.34 H	202	39.4	2.8
6	4944.00	31.8 AV	54.0	-22.2	2.34 H	202	29.0	2.8
7	7416.00	47.5 PK	74.0	-26.5	1.44 H	45	38.5	9.0
8	7416.00	40.2 AV	54.0	-13.8	1.44 H	45	31.2	9.0
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	*2472.00	108.6 PK			2.00 V	216	110.5	-1.9
2	*2472.00	99.6 AV			2.00 V	216	101.5	-1.9
3	2485.30	65.2 PK	74.0	-8.8	2.00 V	216	67.1	-1.9
4	2485.30	53.7 AV	54.0	-0.3	2.00 V	216	55.6	-1.9
5	4944.00	40.6 PK	74.0	-33.4	2.64 V	193	37.8	2.8
6	4944.00	30.6 AV	54.0	-23.4	2.64 V	193	27.8	2.8
7	7416.00	53.7 PK	74.0	-20.3	2.56 V	39	44.7	9.0
8	7416.00	49.0 AV	54.0	-5.0	2.56 V	39	40.0	9.0

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.

802.11n (HT20)

Channel	TX Channel 12	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2467.00	101.7 PK			2.45 H	218	103.6	-1.9
2	*2467.00	93.4 AV			2.45 H	218	95.3	-1.9
3	2485.12	63.5 PK	74.0	-10.5	2.45 H	218	65.4	-1.9
4	2485.12	46.7 AV	54.0	-7.3	2.45 H	218	48.6	-1.9
5	4934.00	41.0 PK	74.0	-33.0	2.31 H	218	38.3	2.7
6	4934.00	30.4 AV	54.0	-23.6	2.31 H	218	27.7	2.7
7	7401.00	45.6 PK	74.0	-28.4	1.54 H	60	36.7	8.9
8	7401.00	38.8 AV	54.0	-15.2	1.54 H	60	29.9	8.9
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	*2467.00	111.8 PK			1.66 V	216	113.7	-1.9
2	*2467.00	102.7 AV			1.66 V	216	104.6	-1.9
3	2483.50	73.7 PK	74.0	-0.3	1.66 V	216	75.6	-1.9
4	2483.50	52.1 AV	54.0	-1.9	1.66 V	216	54.0	-1.9
5	2485.12	65.8 PK	74.0	-8.2	1.66 V	216	67.7	-1.9
6	2485.12	52.9 AV	54.0	-1.1	1.66 V	216	54.8	-1.9
7	4934.00	39.9 PK	74.0	-34.1	2.58 V	205	37.2	2.7
8	4934.00	30.3 AV	54.0	-23.7	2.58 V	205	27.6	2.7
9	7401.00	51.5 PK	74.0	-22.5	2.63 V	56	42.6	8.9
10	7401.00	47.1 AV	54.0	-6.9	2.63 V	56	38.2	8.9

Remarks:

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

Channel	TX Channel 13	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2472.00	97.6 PK			2.49 H	215	99.5	-1.9
2	*2472.00	88.6 AV			2.49 H	215	90.5	-1.9
3	2483.50	57.4 PK	74.0	-16.6	2.49 H	215	59.3	-1.9
4	2483.50	46.7 AV	54.0	-7.3	2.49 H	215	48.6	-1.9
5	4944.00	41.0 PK	74.0	-33.0	2.33 H	229	38.2	2.8
6	4944.00	30.2 AV	54.0	-23.8	2.33 H	229	27.4	2.8
7	7416.00	45.5 PK	74.0	-28.5	1.57 H	55	36.5	9.0
8	7416.00	38.8 AV	54.0	-15.2	1.57 H	55	29.8	9.0
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	*2472.00	106.5 PK			1.97 V	215	108.4	-1.9
2	*2472.00	98.0 AV			1.97 V	215	99.9	-1.9
3	2485.08	64.9 PK	74.0	-9.1	1.97 V	215	66.8	-1.9
4	2485.08	52.9 AV	54.0	-1.1	1.97 V	215	54.8	-1.9
5	4944.00	40.1 PK	74.0	-33.9	2.54 V	211	37.3	2.8
6	4944.00	30.7 AV	54.0	-23.3	2.54 V	211	27.9	2.8
7	7416.00	52.2 PK	74.0	-21.8	2.63 V	64	43.2	9.0
8	7416.00	47.6 AV	54.0	-6.4	2.63 V	64	38.6	9.0

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.

802.11n (HT40)

Channel	TX Channel 10	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	*2457.00	95.2 PK			2.50 H	217	97.1	-1.9
2	*2457.00	86.0 AV			2.50 H	217	87.9	-1.9
3	2483.50	56.4 PK	74.0	-17.6	2.50 H	217	58.3	-1.9
4	2483.50	44.8 AV	54.0	-9.2	2.50 H	217	46.7	-1.9
5	4914.00	41.3 PK	74.0	-32.7	2.42 H	212	38.6	2.7
6	4914.00	30.7 AV	54.0	-23.3	2.42 H	212	28.0	2.7
7	7371.00	47.1 PK	74.0	-26.9	1.47 H	32	38.2	8.9
8	7371.00	40.1 AV	54.0	-13.9	1.47 H	32	31.2	8.9
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	*2457.00	107.1 PK			1.72 V	217	109.0	-1.9
2	*2457.00	98.5 AV			1.72 V	217	100.4	-1.9
3	2483.50	64.2 PK	74.0	-9.8	1.72 V	217	66.1	-1.9
4	2483.50	53.3 AV	54.0	-0.7	1.72 V	217	55.2	-1.9
5	4914.00	40.2 PK	74.0	-33.8	2.59 V	189	37.5	2.7
6	4914.00	30.9 AV	54.0	-23.1	2.59 V	189	28.2	2.7
7	7371.00	50.9 PK	74.0	-23.1	2.69 V	38	42.0	8.9
8	7371.00	45.4 AV	54.0	-8.6	2.69 V	38	36.5	8.9

Remarks:

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

Channel	TX Channel 11	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 25GHz		

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	92.7 PK			2.54 H	220	94.6	-1.9
2	*2462.00	83.2 AV			2.54 H	220	85.1	-1.9
3	2483.50	58.3 PK	74.0	-15.7	2.54 H	220	60.2	-1.9
4	2483.50	45.9 AV	54.0	-8.1	2.54 H	220	47.8	-1.9
5	4924.00	41.3 PK	74.0	-32.7	2.43 H	201	38.6	2.7
6	4924.00	30.8 AV	54.0	-23.2	2.43 H	201	28.1	2.7
7	7386.00	46.9 PK	74.0	-27.1	1.47 H	32	37.9	9.0
8	7386.00	39.8 AV	54.0	-14.2	1.47 H	32	30.8	9.0
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	*2462.00	103.5 PK			1.75 V	219	105.4	-1.9
2	*2462.00	94.2 AV			1.75 V	219	96.1	-1.9
3	2483.50	66.6 PK	74.0	-7.4	1.75 V	219	68.5	-1.9
4	2483.50	53.4 AV	54.0	-0.6	1.75 V	219	55.3	-1.9
5	4924.00	40.0 PK	74.0	-34.0	2.55 V	174	37.3	2.7
6	4924.00	30.8 AV	54.0	-23.2	2.55 V	174	28.1	2.7
7	7386.00	51.5 PK	74.0	-22.5	2.73 V	45	42.5	9.0
8	7386.00	45.8 AV	54.0	-8.2	2.73 V	45	36.8	9.0

Remarks:

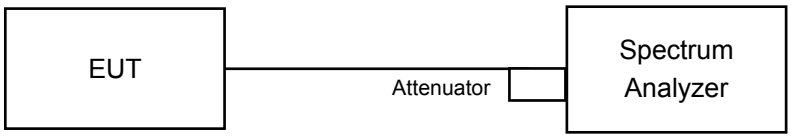
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

4.2 6dB Bandwidth Measurement

4.2.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.2.2 Test Setup



4.2.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.2.4 Test Procedure

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. 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

4.2.5 Deviation from Test Standard

No deviation.

4.2.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.2.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
12	2467	8.60	8.56	0.5	Pass
13	2472	9.04	8.56	0.5	Pass

802.11g

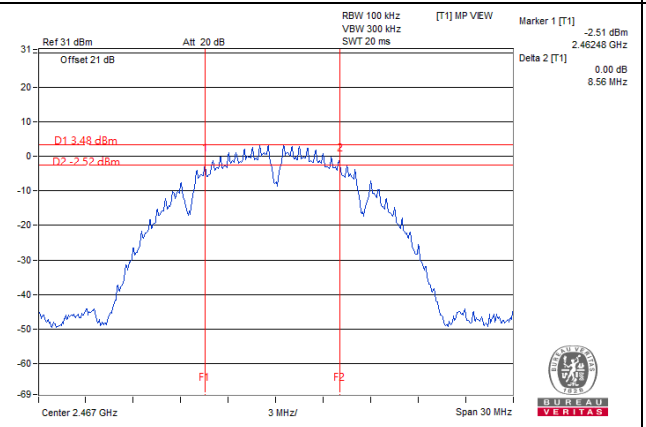
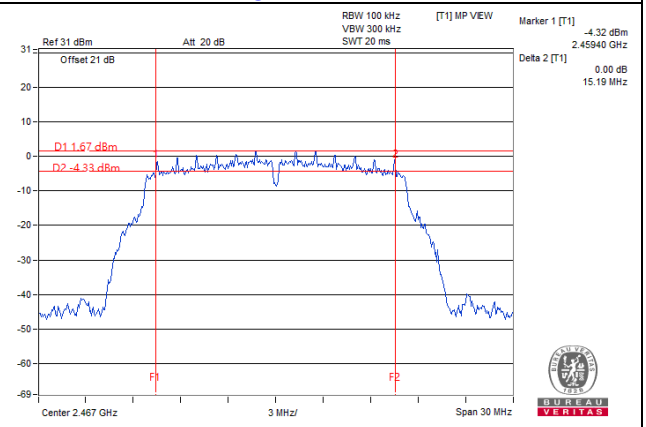
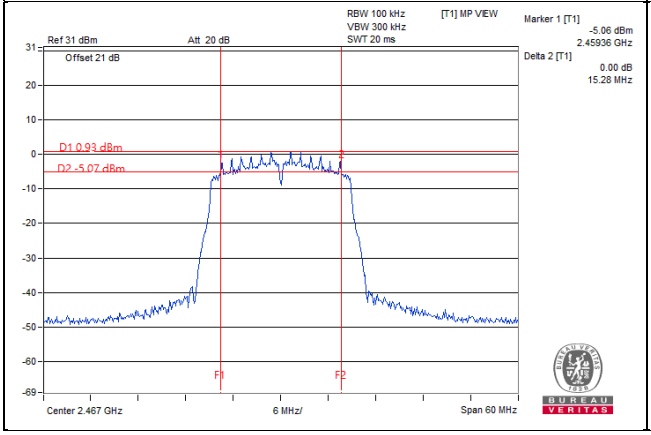
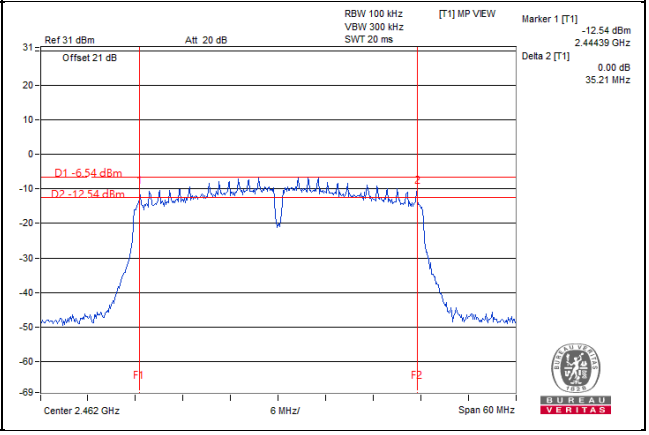
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
12	2467	15.20	15.19	0.5	Pass
13	2472	15.20	15.19	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
12	2467	15.28	15.29	0.5	Pass
13	2472	15.58	15.30	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
10	2457	35.22	35.22	0.5	Pass
11	2462	35.21	35.21	0.5	Pass

Spectrum Plot of Worst Value	
802.11b: Chain 1 / CH12	**802.11g: Chain 1 / CH12**
	
802.11n (HT20): Chain 0 / CH12	**802.11n (HT40): Chain 0 / CH11**
	

4.3 Conducted Output Power Measurement

4.3.1 Limits of Conducted Output Power Measurement

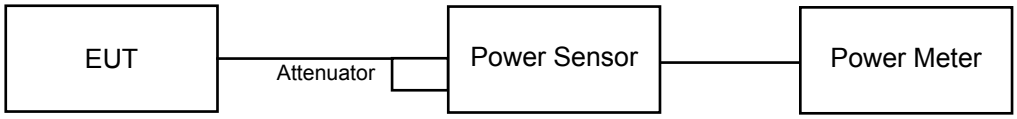
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test 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.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

Same as Item 4.2.6.

4.3.7 Test Results

802.11b

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
12	2467	11.98	11.76	30.773	14.88	30	Pass
13	2472	9.10	8.72	15.576	11.92	30	Pass

802.11g

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
12	2467	12.19	12.07	32.664	15.14	30	Pass
13	2472	7.49	7.27	10.944	10.39	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
12	2467	11.36	11.29	27.136	14.34	30	Pass
13	2472	6.83	6.68	9.475	9.77	30	Pass

802.11n (HT40)

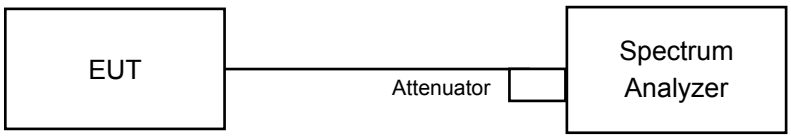
Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
10	2457	10.60	10.22	22.001	13.42	30	Pass
11	2462	6.50	6.27	8.703	9.40	30	Pass

4.4 Power Spectral Density Measurement

4.4.1 Limits of Power Spectral Density Measurement

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

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 Procedure

For 802.11b

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

For other modulation mode

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Condition

Same as Item 4.2.6

4.4.7 Test Results

802.11b

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1			
12	2467	-20.35	-20.71	-17.52	7.49	Pass
13	2472	-24.00	-23.85	-20.91	7.49	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 3.5 dBi + 10 log (2) = 6.51 dBi > 6dBi, so the power density limit shall be reduced to 8-(6.51-6) = 7.49 dBm.

802.11g

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/3kHz)		Duty Factor (dB)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1				
12	2467	-21.83	-22.63	0.16	-19.04	7.49	Pass
13	2472	-26.97	-27.24	0.16	-23.93	7.49	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 3.5 dBi + 10 log (2) = 6.51 dBi > 6dBi, so the power density limit shall be reduced to 8-(6.51-6) = 7.49 dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

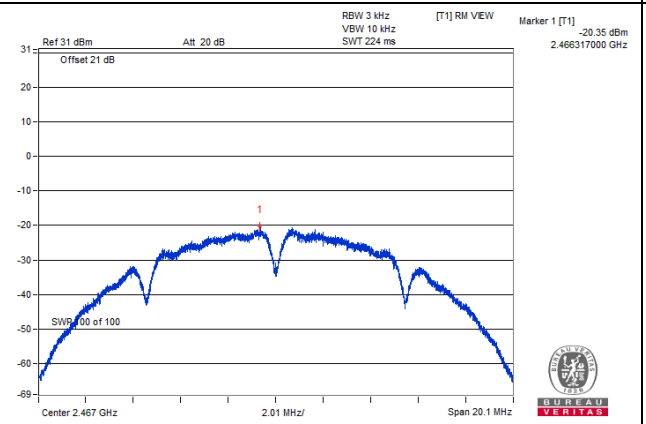
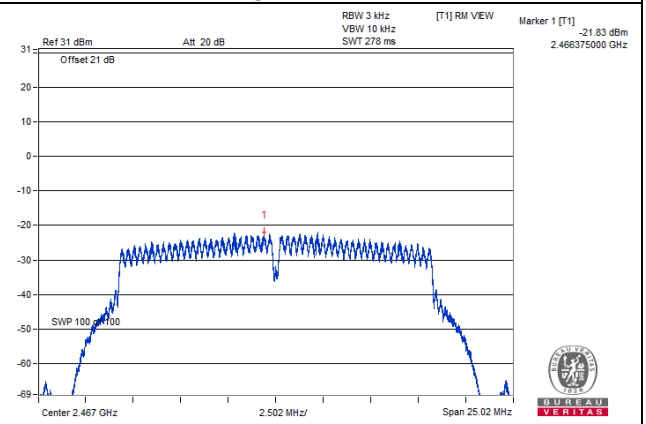
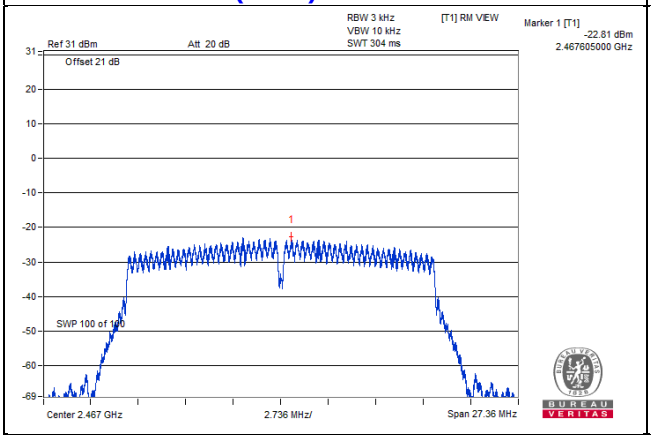
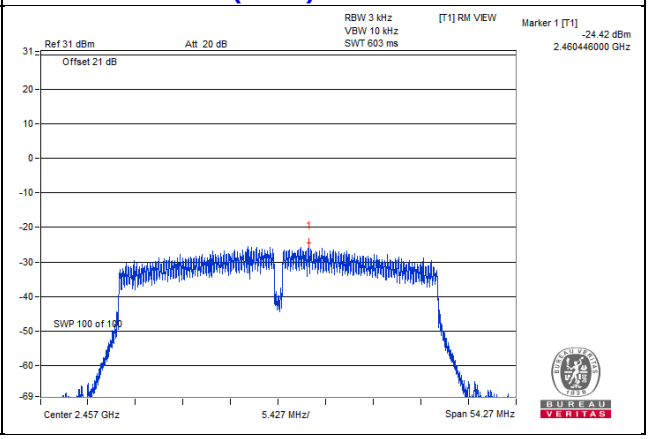
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/3kHz)		Duty Factor (dB)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1				
12	2467	-22.81	-23.22	0.16	-19.84	7.49	Pass
13	2472	-27.47	-27.80	0.16	-24.46	7.49	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 3.5 dBi + 10 log (2) = 6.51 dBi > 6dBi, so the power density limit shall be reduced to 8-(6.51-6) = 7.49 dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/3kHz)		Duty Factor (dB)	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1				
10	2457	-24.42	-25.41	0.31	-21.57	7.49	Pass
11	2462	-29.35	-29.39	0.31	-26.05	7.49	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 3.5 dBi + 10 log (2) = 6.51 dBi > 6dBi, so the power density limit shall be reduced to 8-(6.51-6) = 7.49 dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

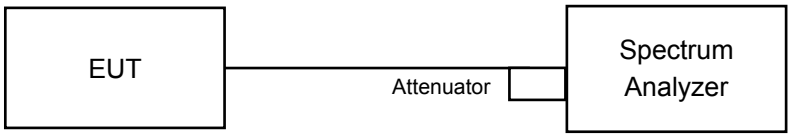
Spectrum Plot of Worst Value	
802.11b: Chain 0 / CH12	**802.11g: Chain 0 / CH12**
	
802.11n (HT20): Chain 0 / CH12	**802.11n (HT40): Chain 0 / CH10**
	

4.5 Conducted Out of Band Emission Measurement

4.5.1 Limits of Conducted Out of Band Emission Measurement

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

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

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

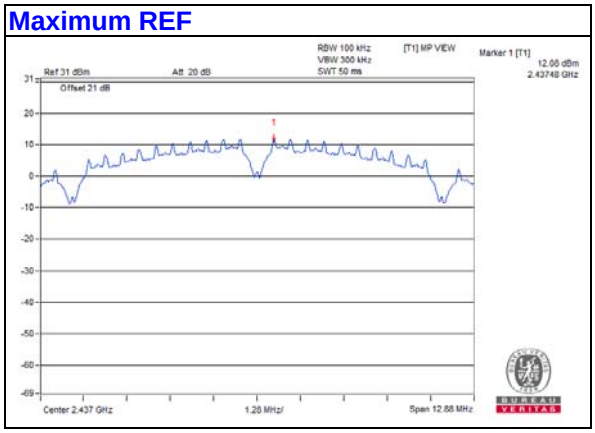
Same as Item 4.2.6

4.5.7 Test Results

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.

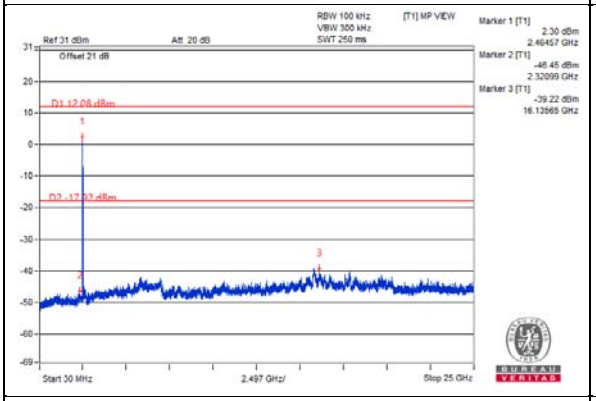
802.11b

Maximum REF

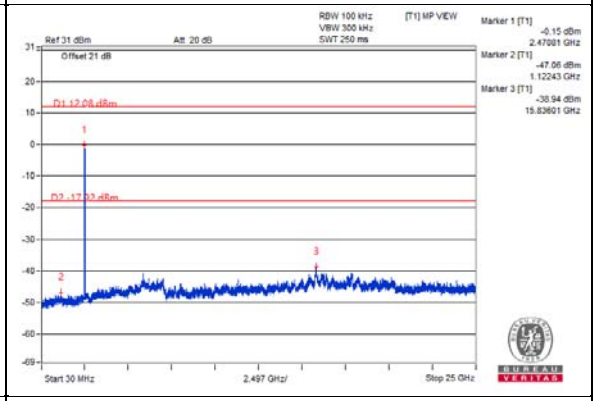


Chain 0

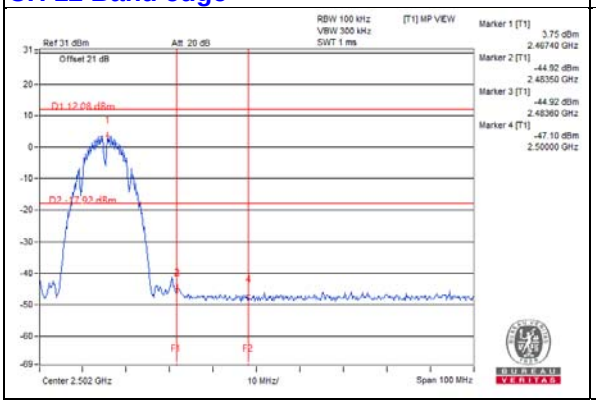
CH 12



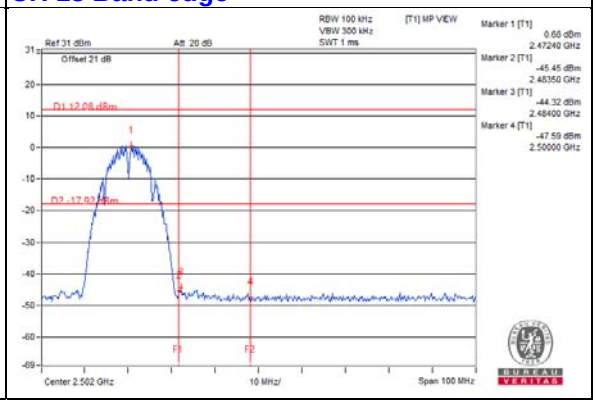
CH 13



CH 12 Band edge

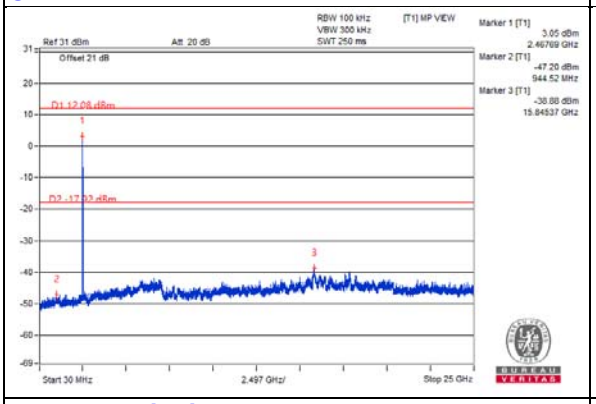


CH 13 Band edge

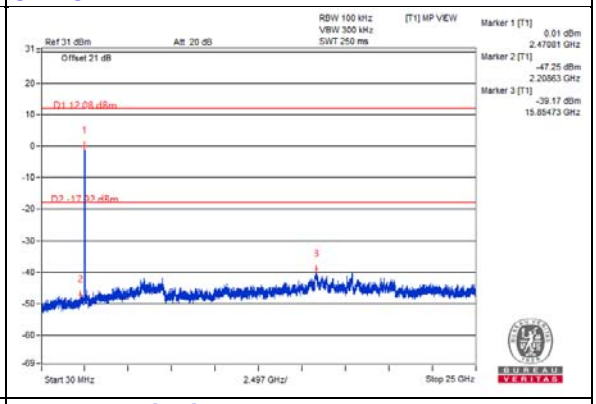


Chain 1

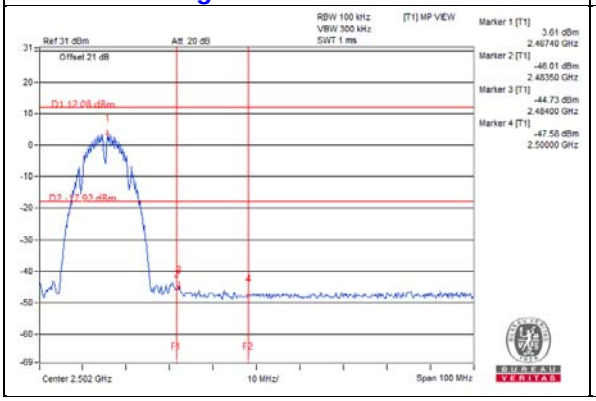
CH 12



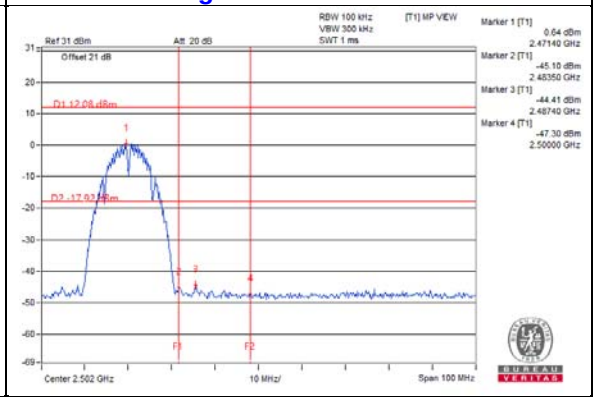
CH 13



CH 12 Band edge

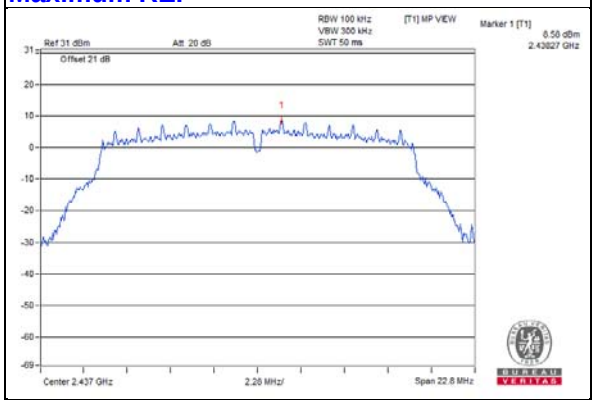


CH 13 Band edge



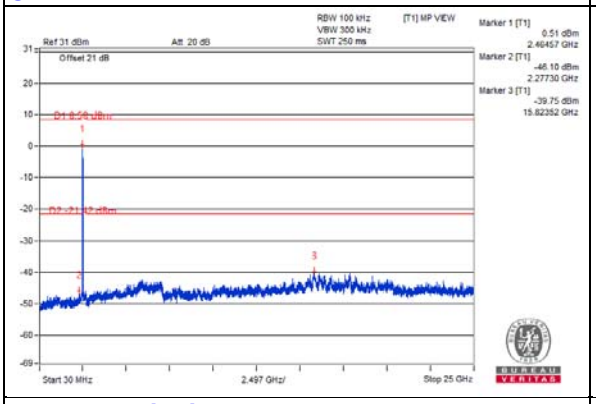
802.11g

Maximum REF

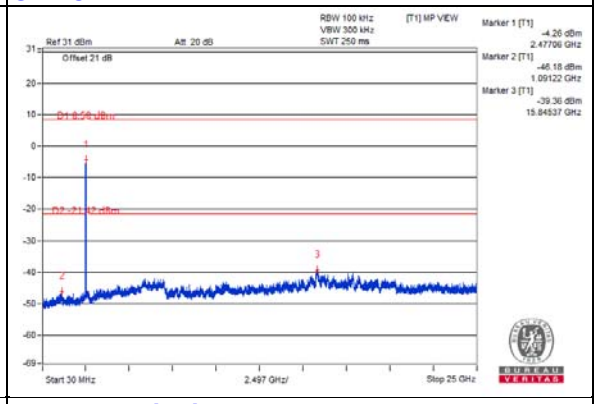


Chain 0

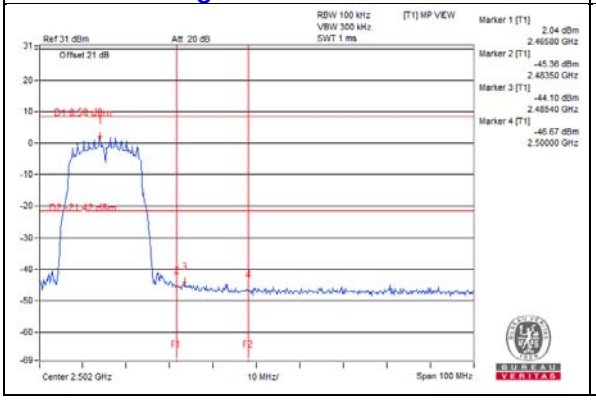
CH 12



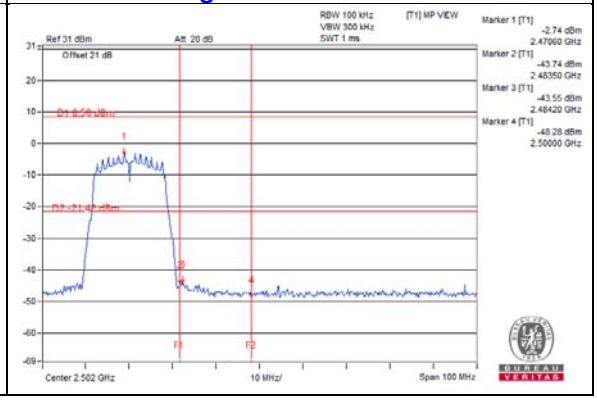
CH 13



CH 12 Band edge

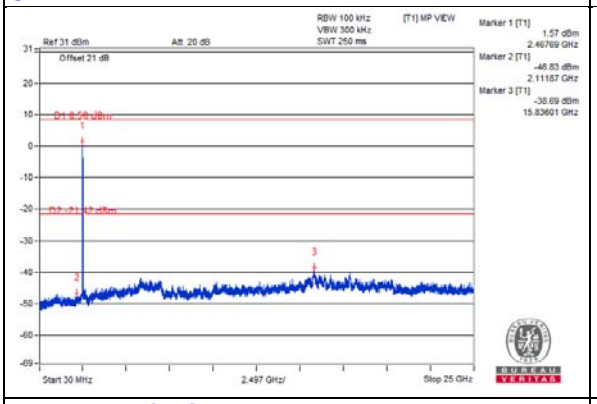


CH 13 Band edge

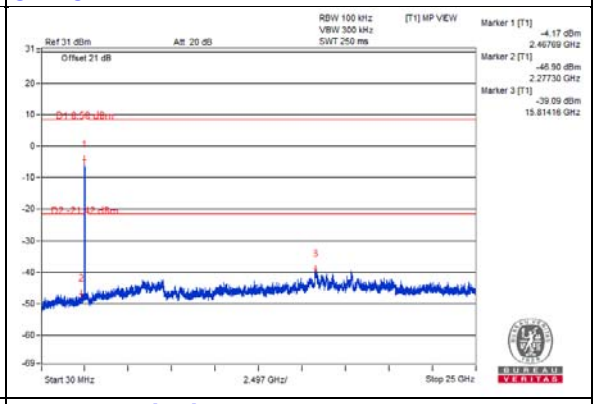


Chain 1

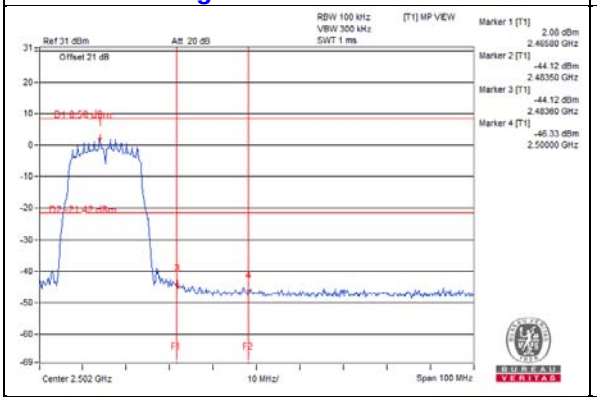
CH 12



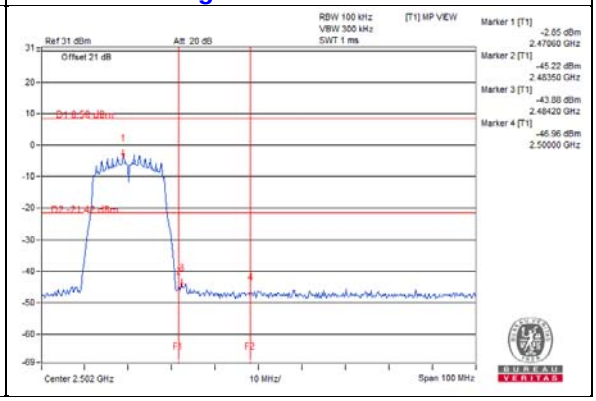
CH 13



CH 12 Band edge

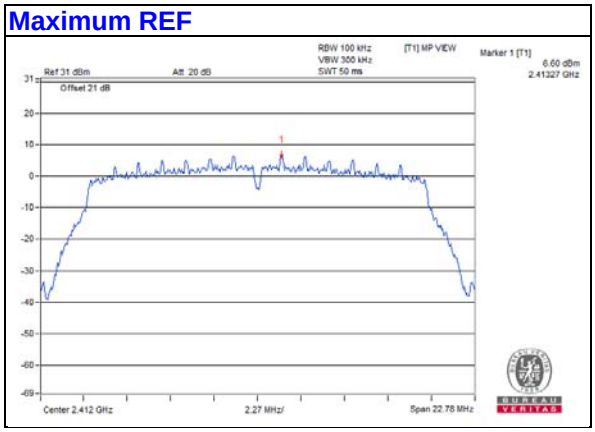


CH 13 Band edge



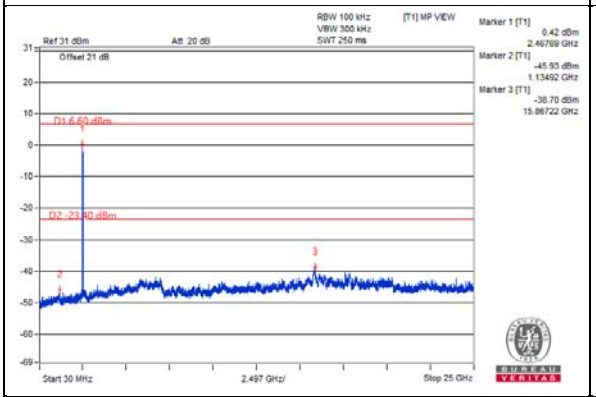
802.11n (HT20)

Maximum REF

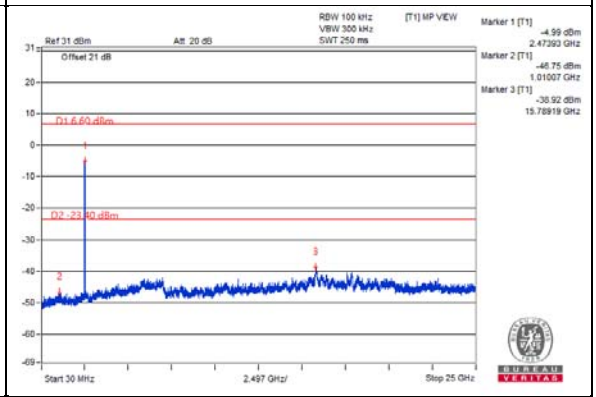


Chain 0

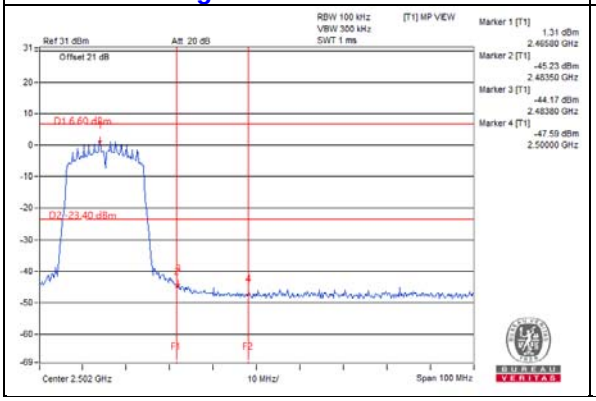
CH 12



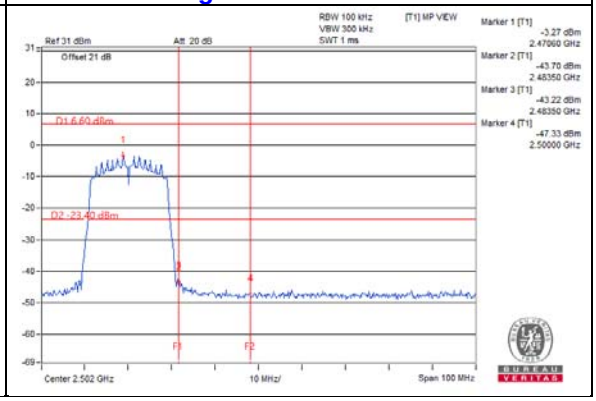
CH 13



CH 12 Band edge

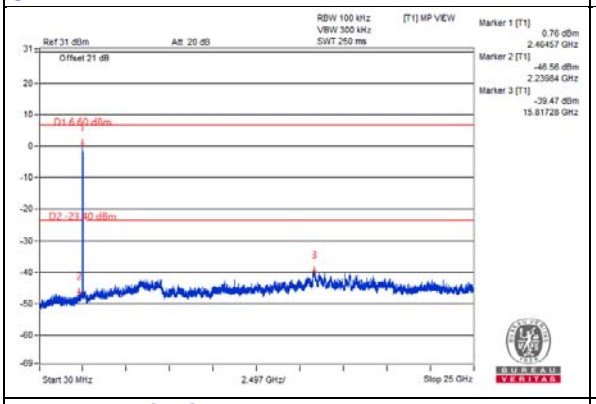


CH 13 Band edge

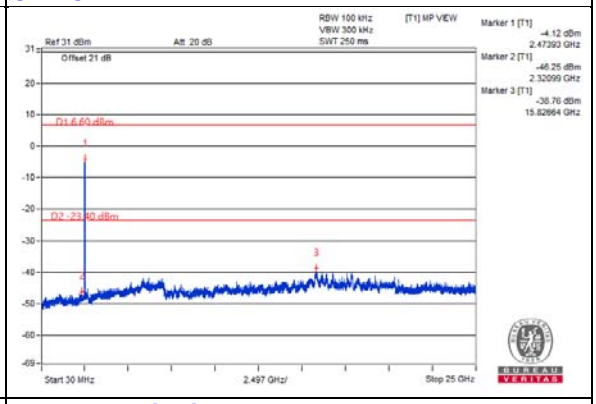


Chain 1

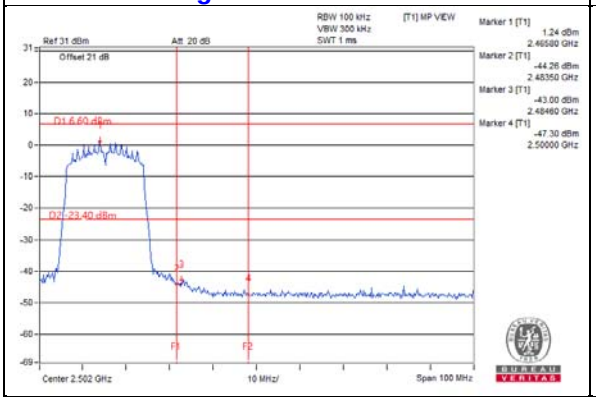
CH 12



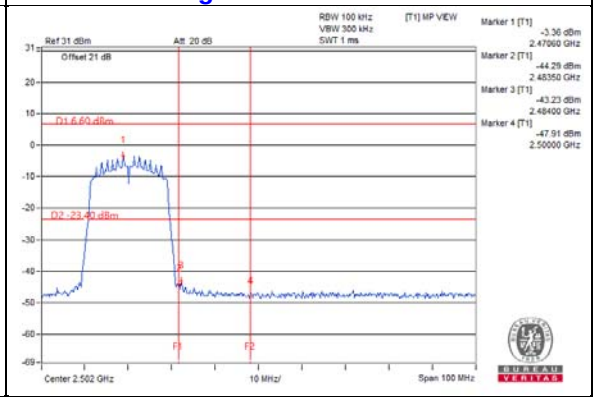
CH 13



CH 12 Band edge

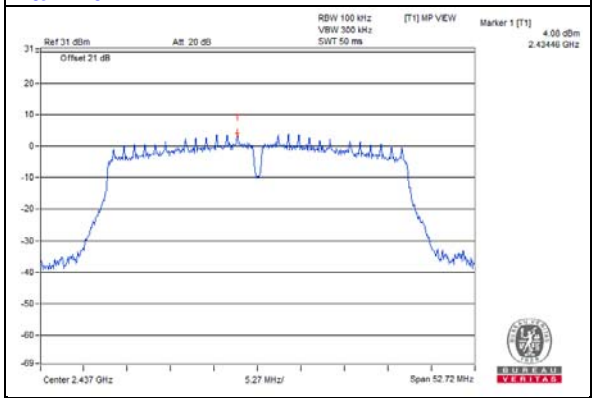


CH 13 Band edge



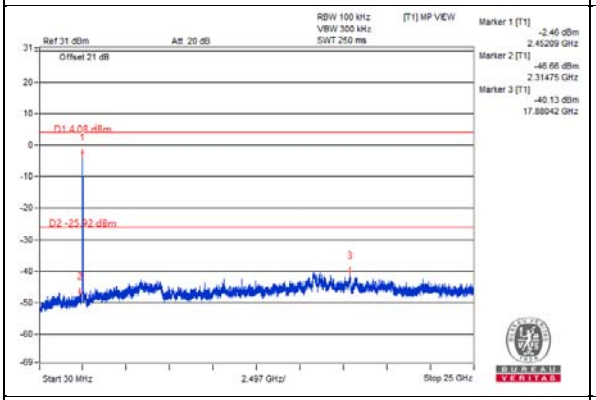
802.11n (HT40)

Maximum REF

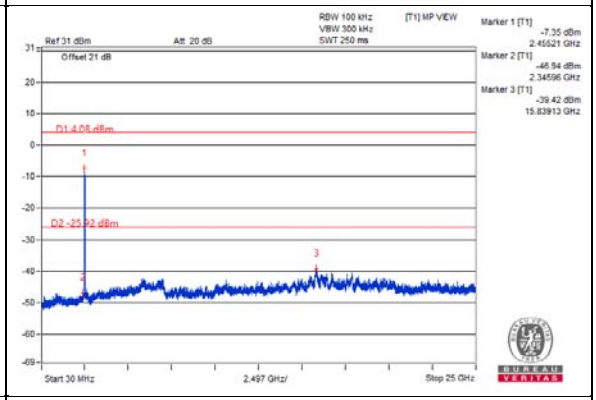


Chain 0

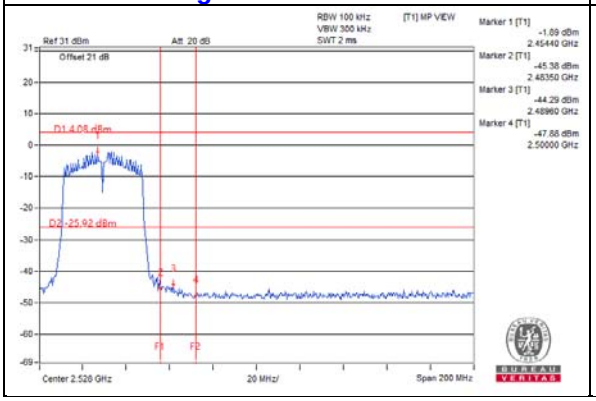
CH 10



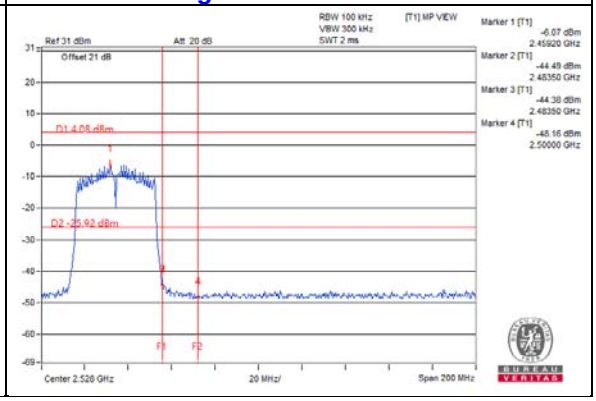
CH 11



CH 10 Band edge

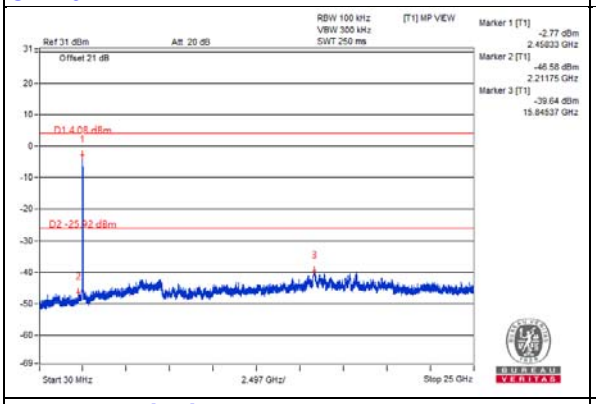


CH 11 Band edge

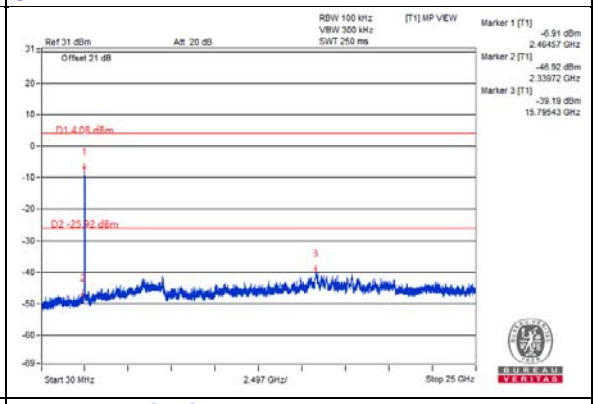


Chain 1

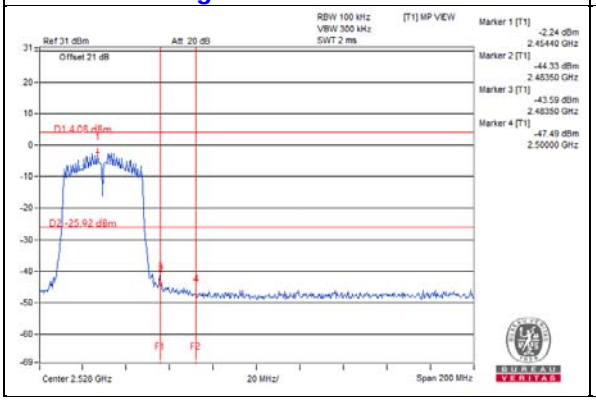
CH 10



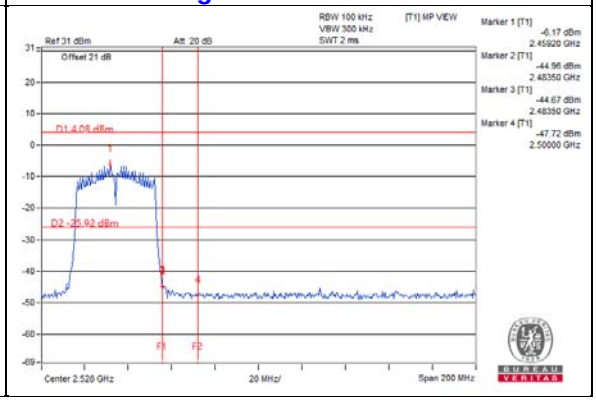
CH 11



CH 10 Band edge



CH 11 Band edge



5 Pictures of Test Arrangements

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

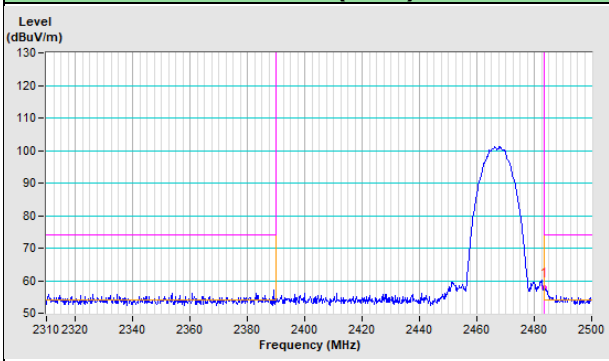
Annex A - Band-Edge Measurement

Test Results (Mode 1)

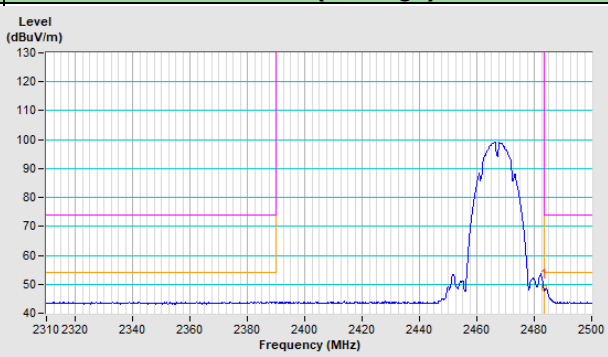
802.11b

Channel 12

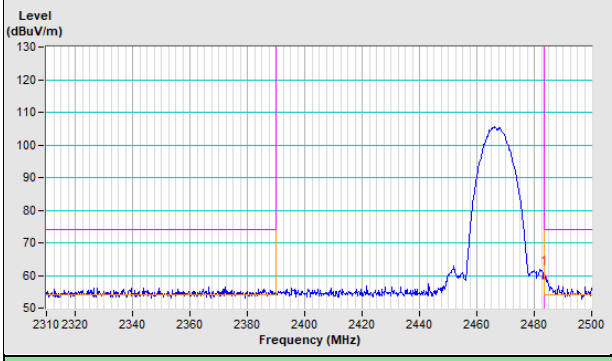
Horizontal (Peak)



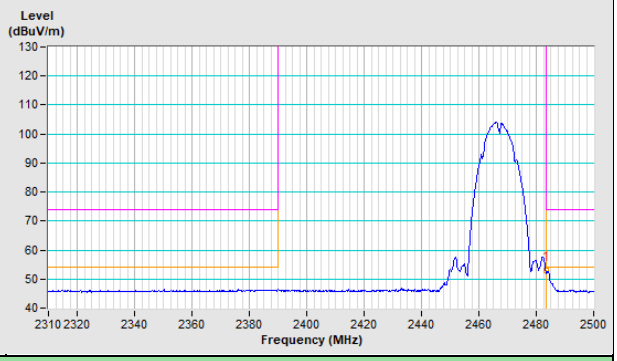
Horizontal (Average)



Vertical (Peak)

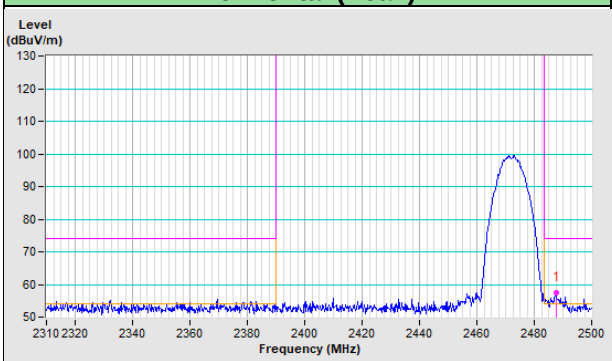


Vertical (Average)

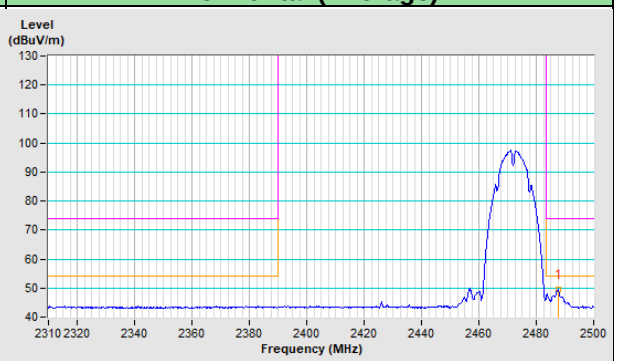


Channel 13

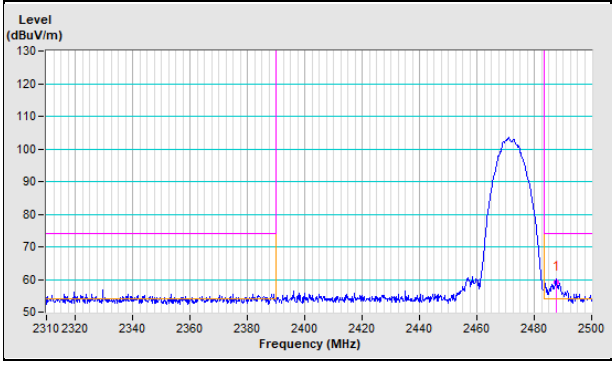
Horizontal (Peak)



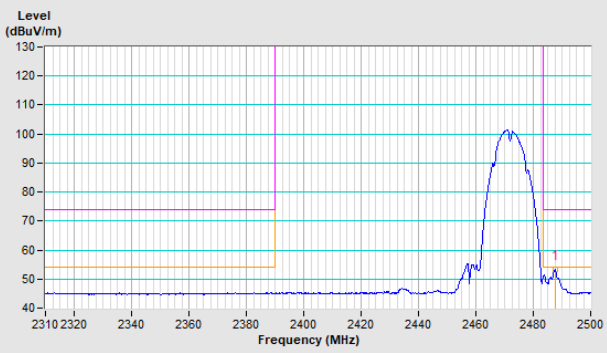
Horizontal (Average)



Vertical (Peak)



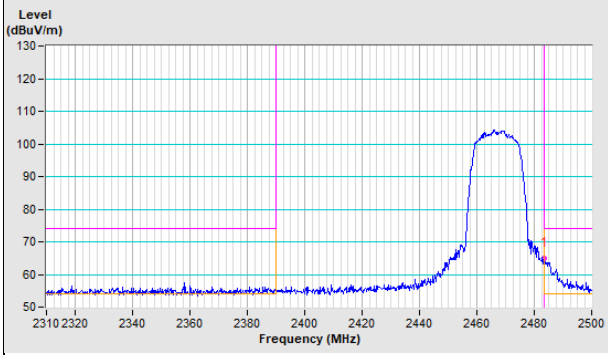
Vertical (Average)



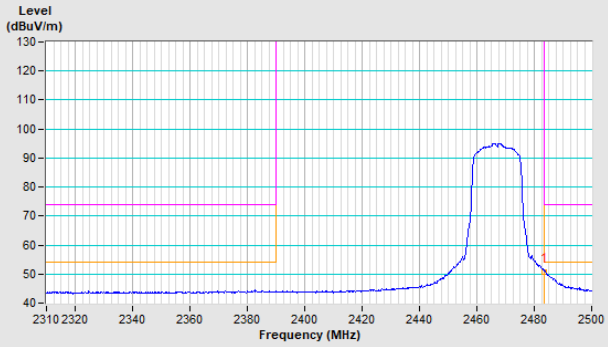
802.11g

Channel 12

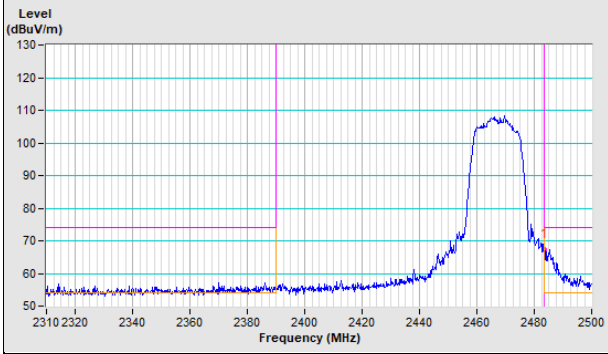
Horizontal (Peak)



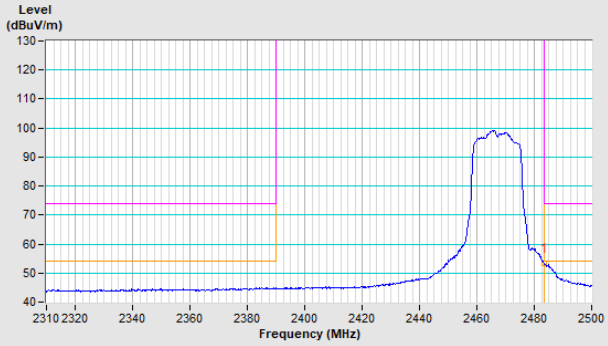
Horizontal (Average)



Vertical (Peak)

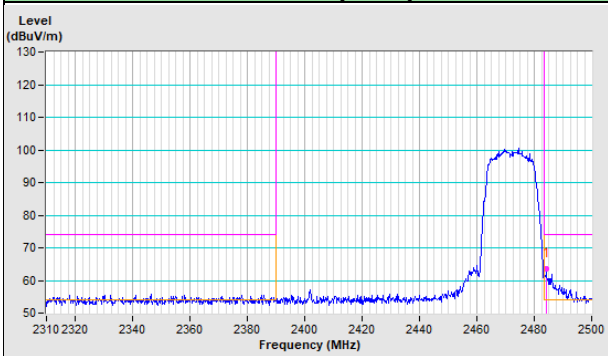


Vertical (Average)

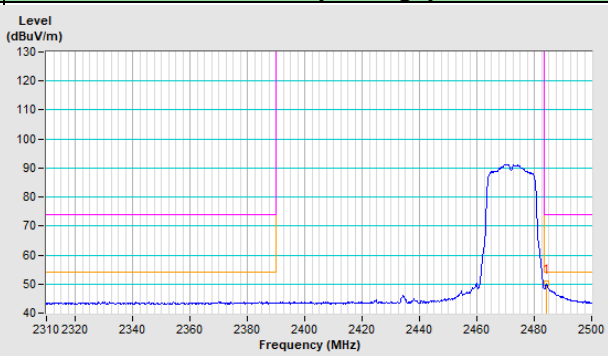


Channel 13

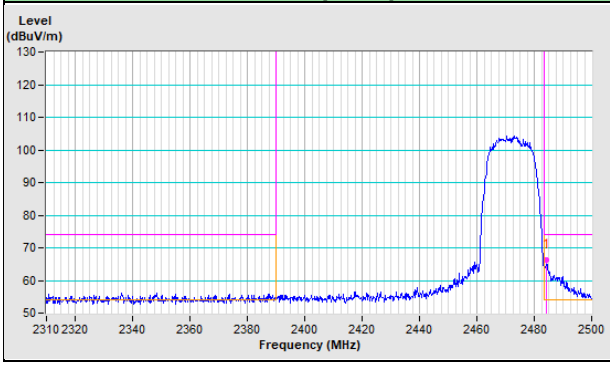
Horizontal (Peak)



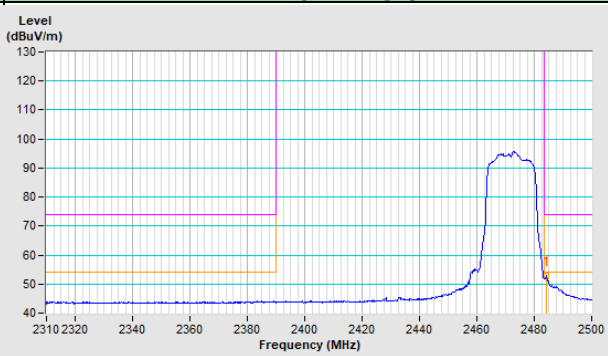
Horizontal (Average)



Vertical (Peak)



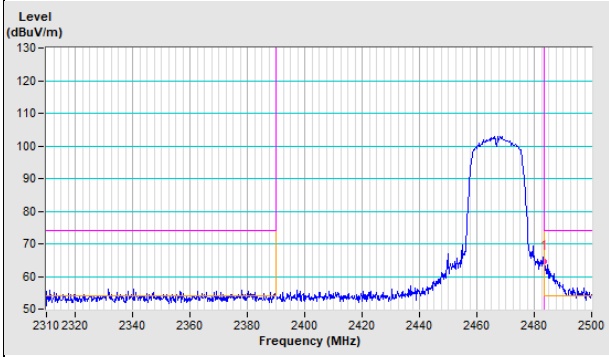
Vertical (Average)



802.11n (HT20)

Channel 12

Horizontal (Peak)



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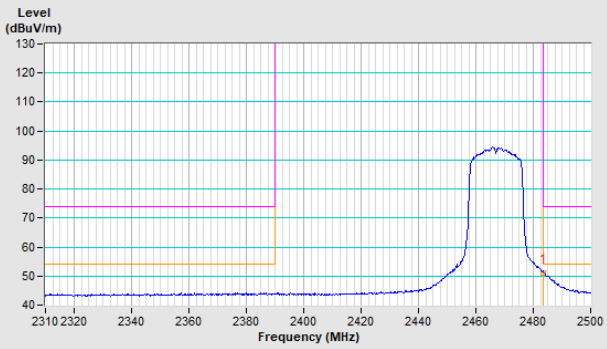
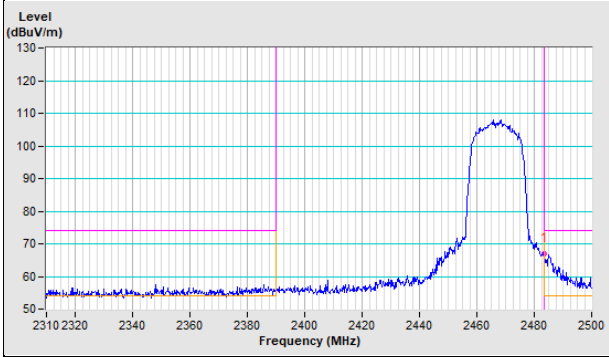
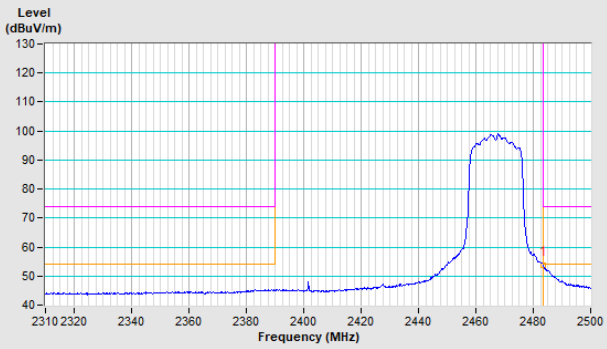


Vertical (Peak)

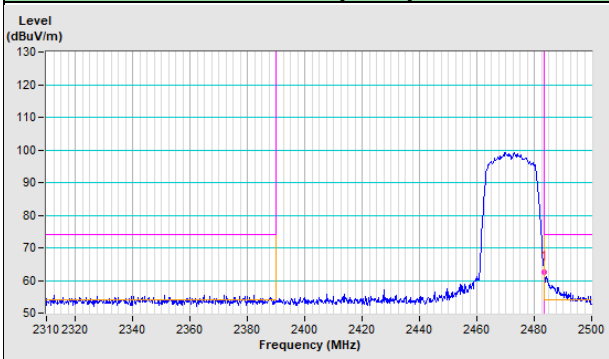


Vertical (Average)



Channel 13

Horizontal (Peak)



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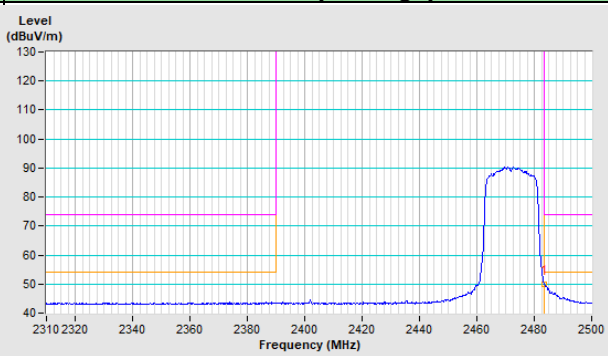
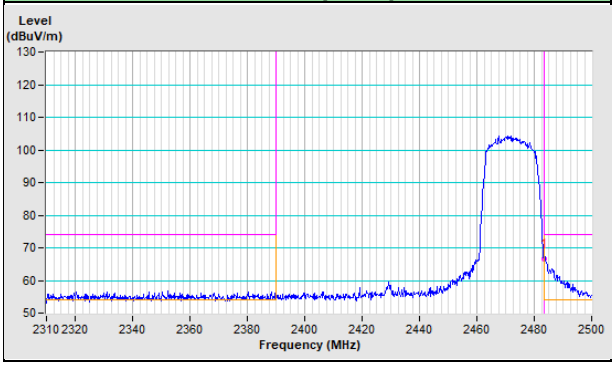
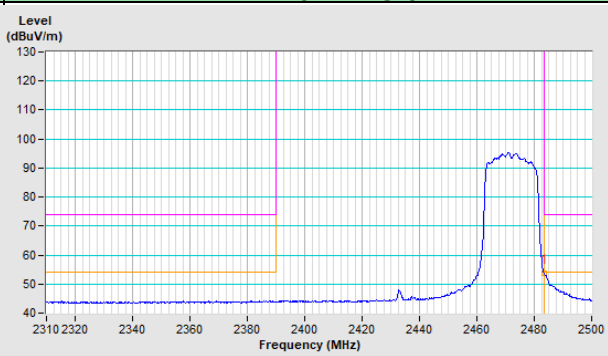


Vertical (Peak)



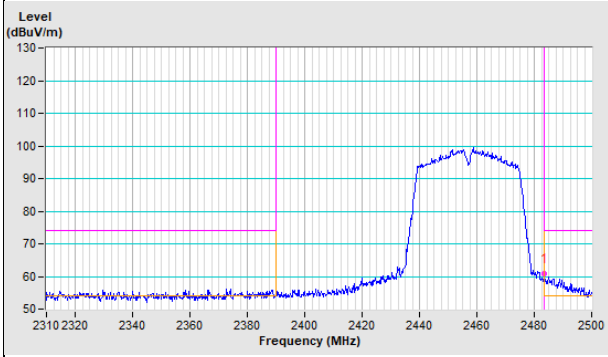
Vertical (Average)



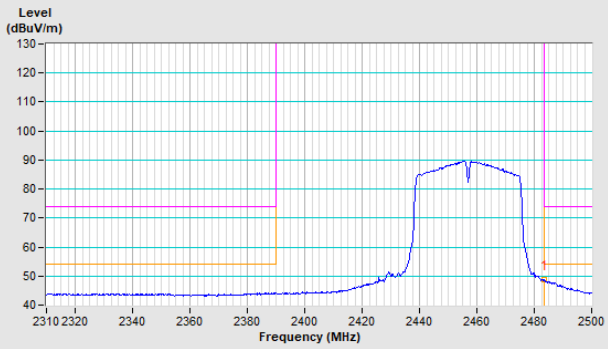
802.11n (HT40)

Channel 10

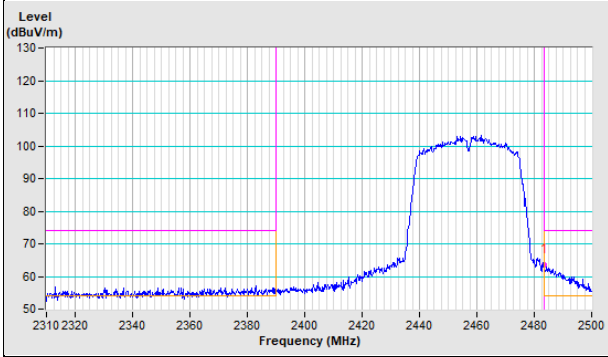
Horizontal (Peak)



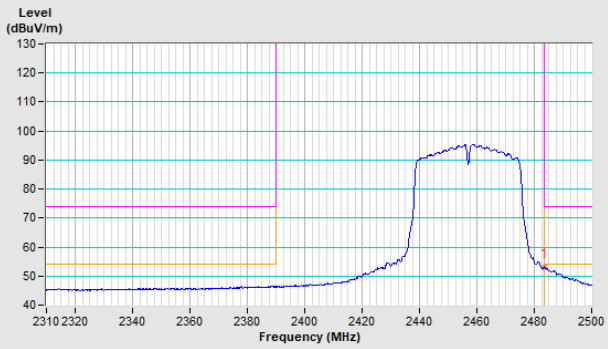
Horizontal (Average)



Vertical (Peak)

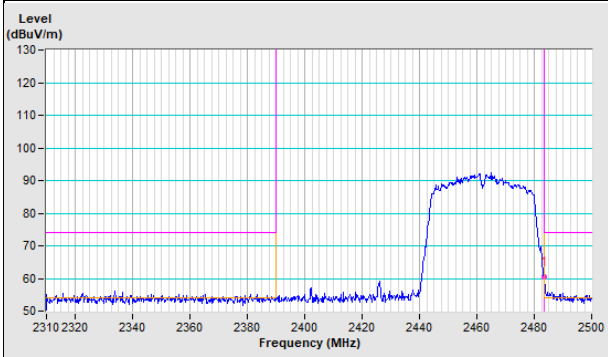


Vertical (Average)



Channel 11

Horizontal (Peak)



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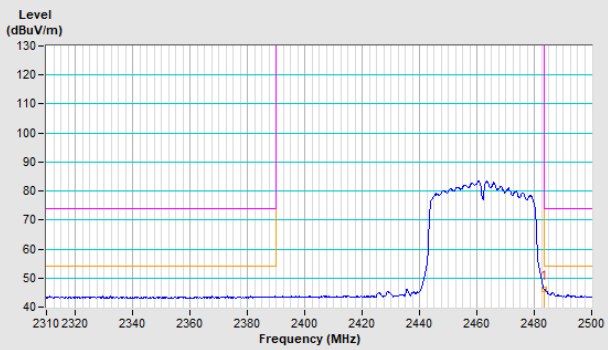
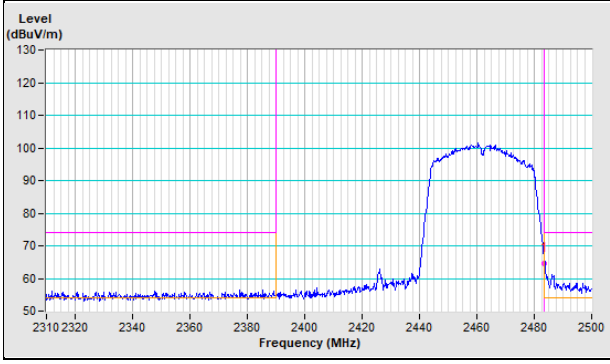
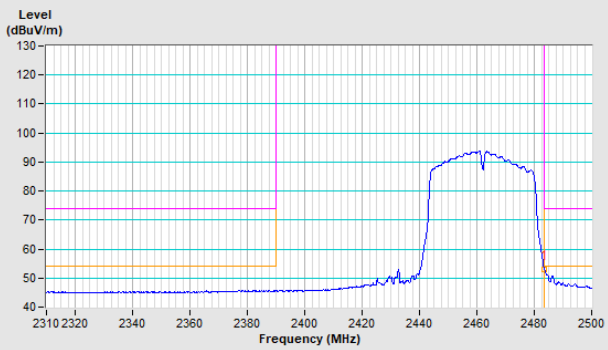


Vertical (Peak)

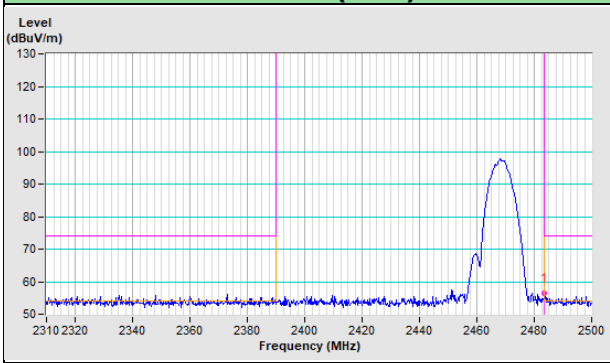
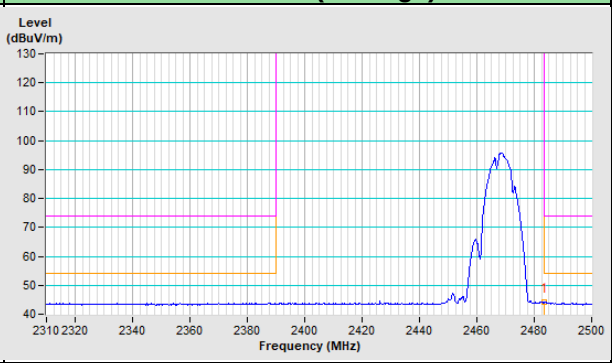
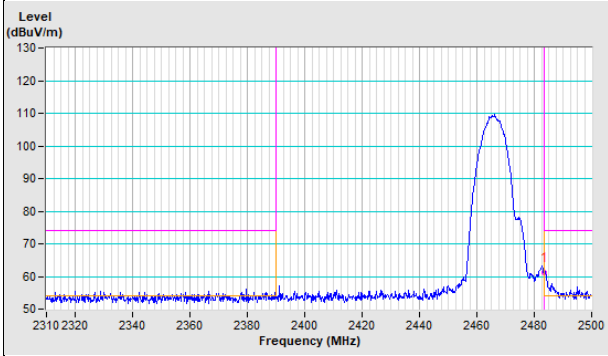
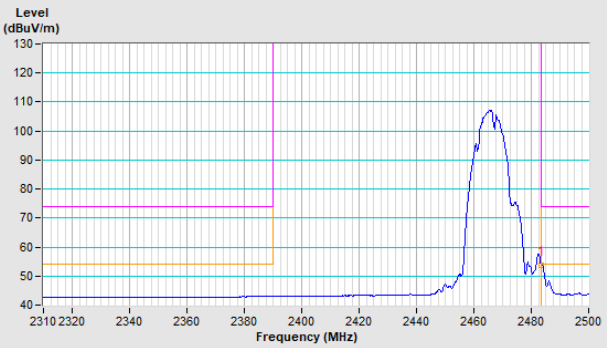
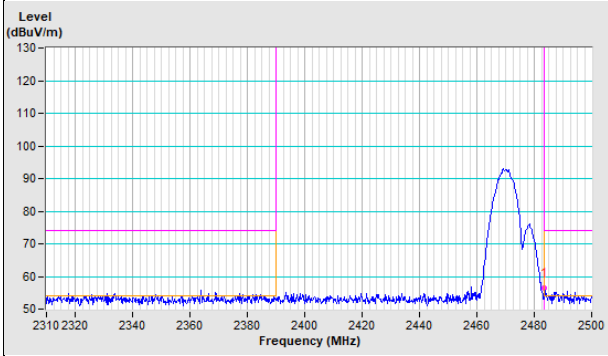
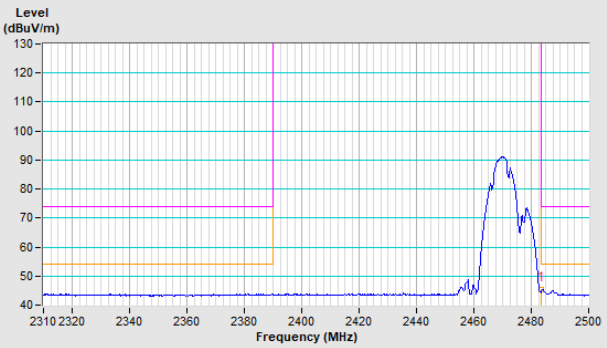
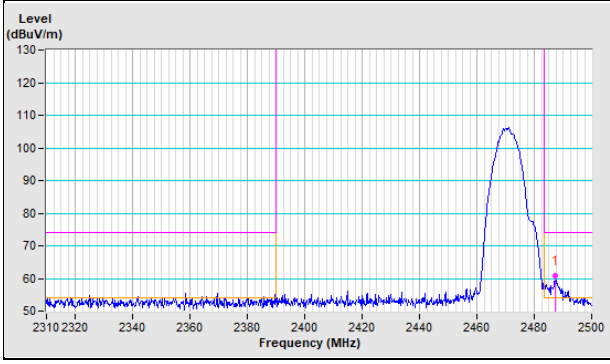
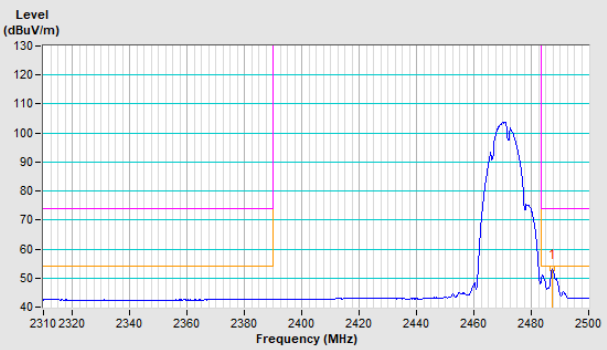


Vertical (Average)



Test Results (Mode 2)

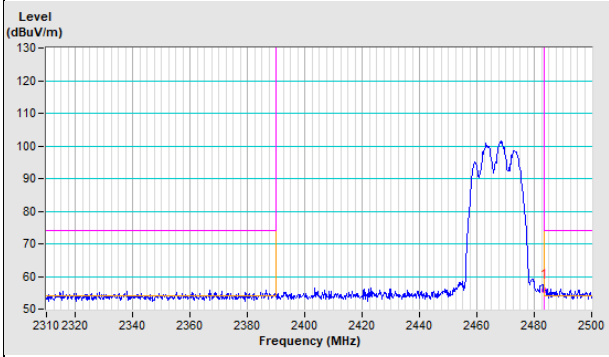
802.11b

Channel 12	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
Channel 13	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

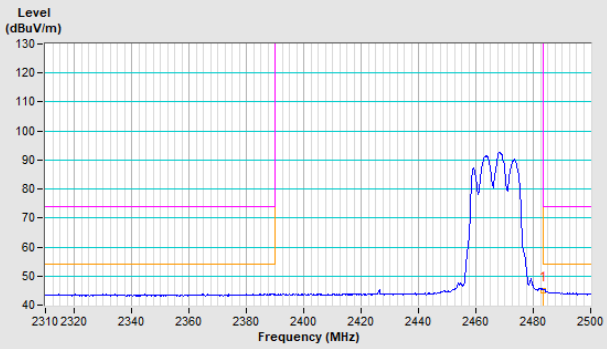
802.11g

Channel 12

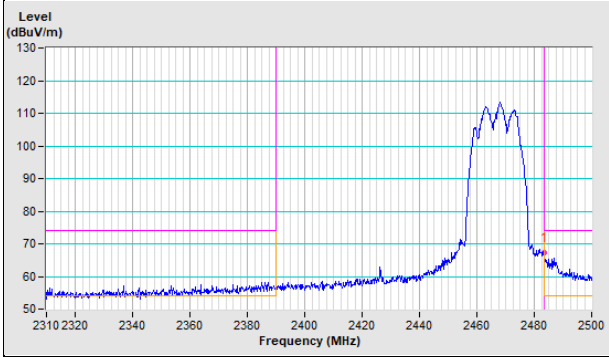
Horizontal (Peak)



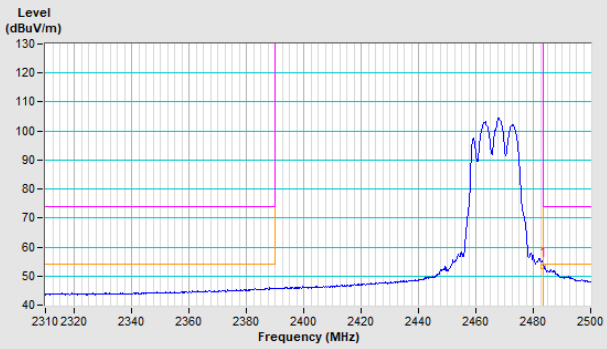
Horizontal (Average)



Vertical (Peak)

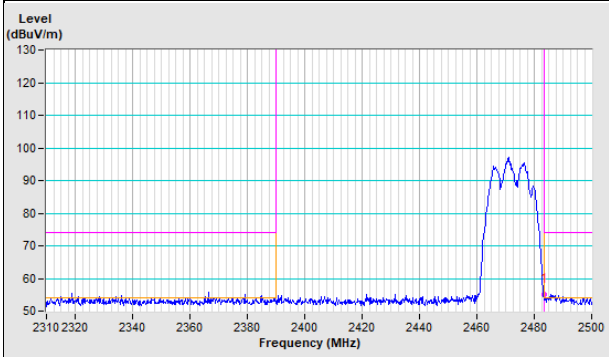


Vertical (Average)

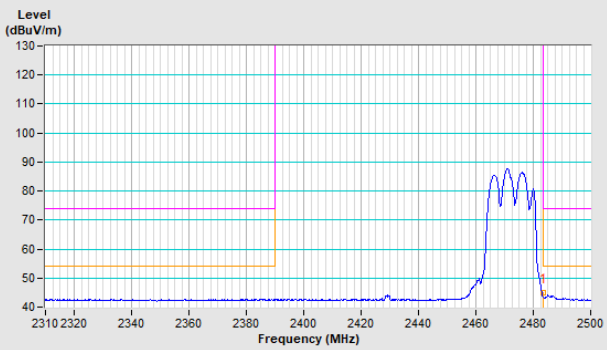


Channel 13

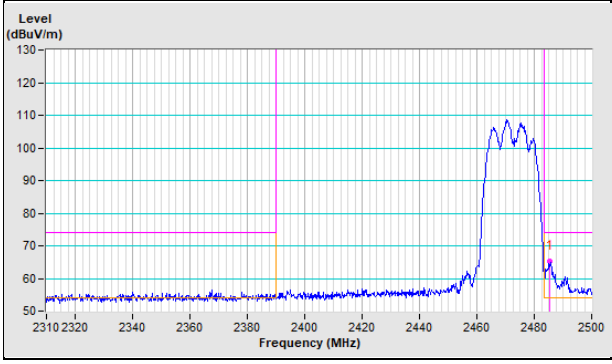
Horizontal (Peak)



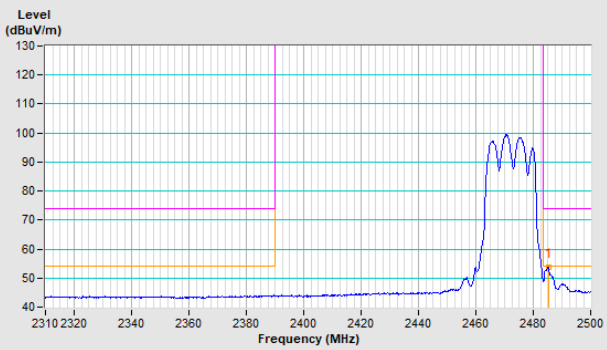
Horizontal (Average)



Vertical (Peak)



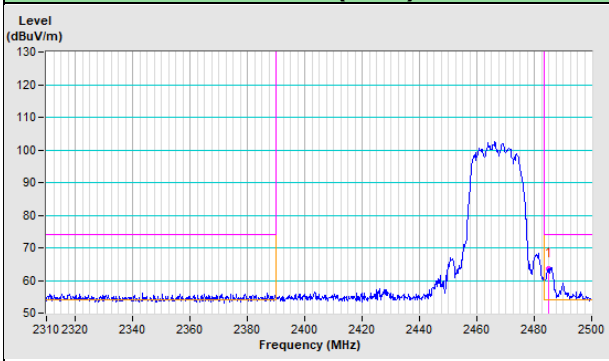
Vertical (Average)



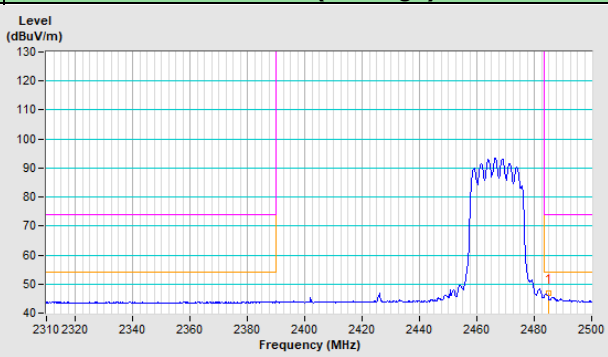
802.11n (HT20)

Channel 12

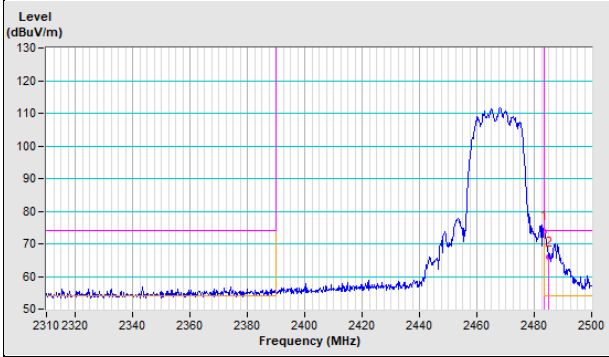
Horizontal (Peak)



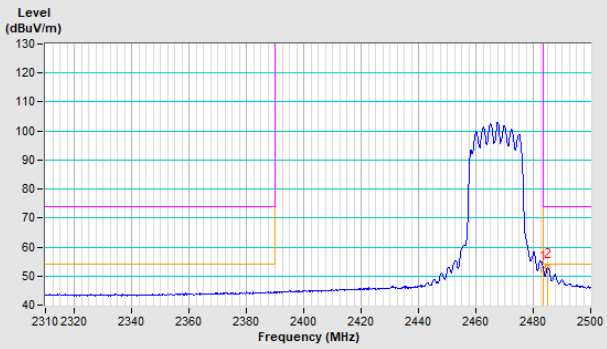
Horizontal (Average)



Vertical (Peak)

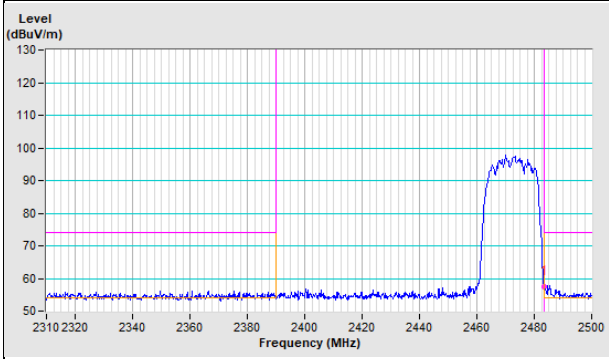


Vertical (Average)

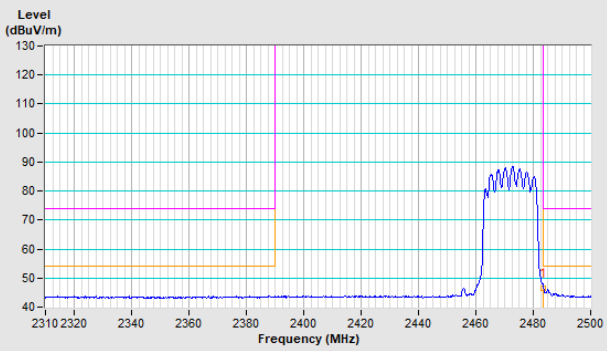


Channel 13

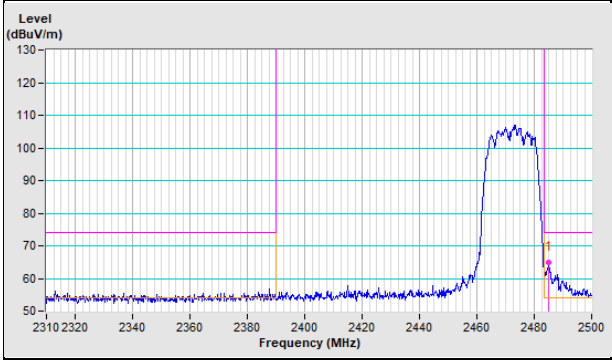
Horizontal (Peak)



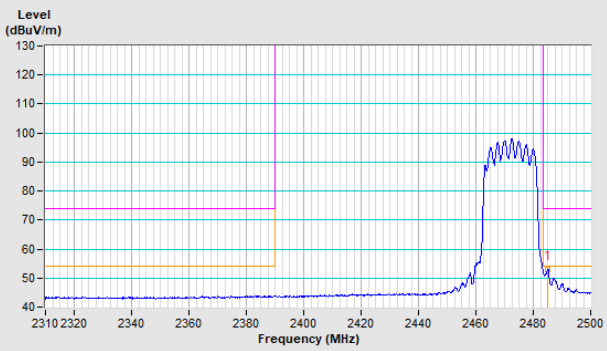
Horizontal (Average)



Vertical (Peak)



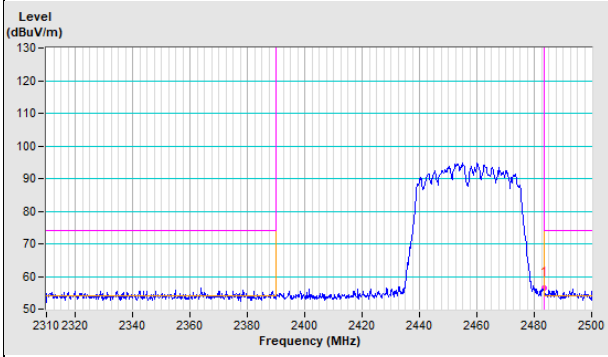
Vertical (Average)



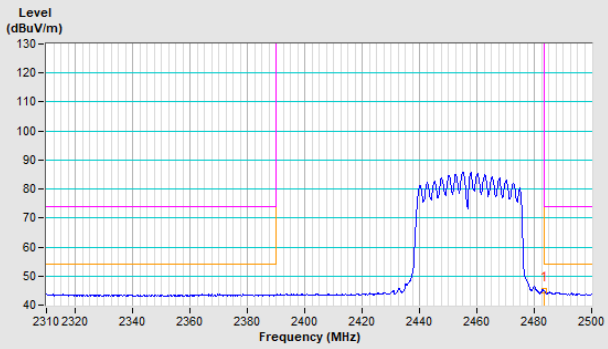
802.11n (HT40)

Channel 10

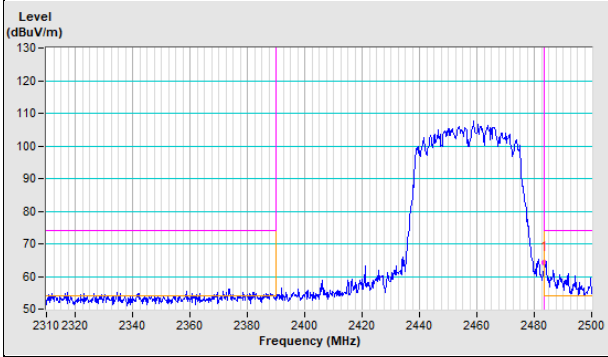
Horizontal (Peak)



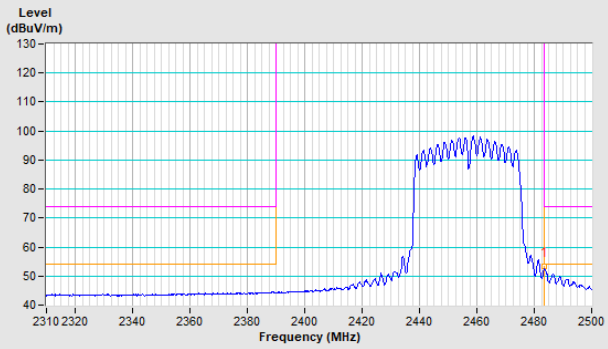
Horizontal (Average)



Vertical (Peak)

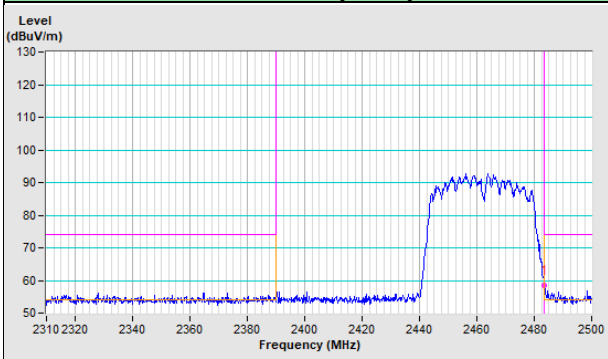


Vertical (Average)

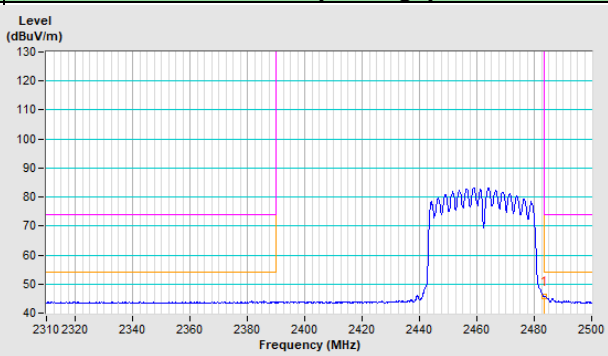


Channel 11

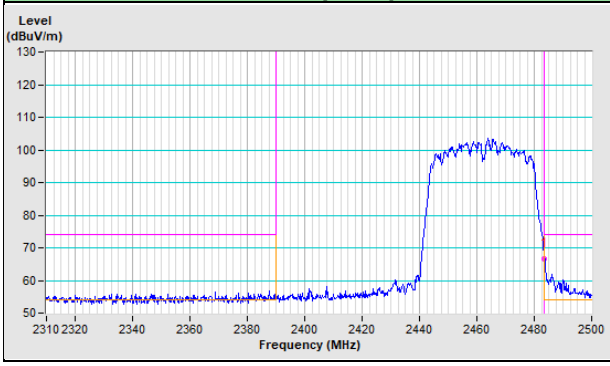
Horizontal (Peak)



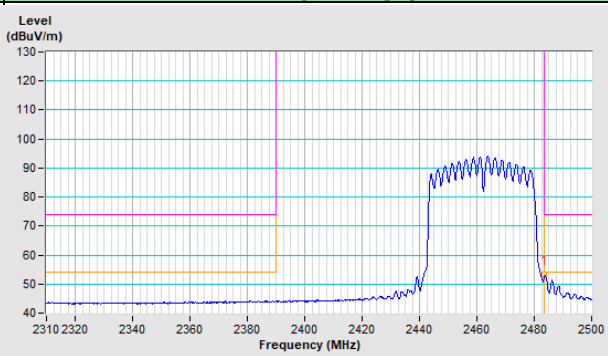
Horizontal (Average)



Vertical (Peak)



Vertical (Average)



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 according to ISO/IEC 17025.

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

Lin Kou EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
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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