

FCC Test Report

Report No.: RF200206E05B R1

FCC ID: C3K1884

Test Model: 1884

Received Date: June 05, 2020

Test Date: July 01 to Nov. 23, 2020

Issued Date: Dec. 17, 2020

Applicant: Microsoft Corporation

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
RF200206E05B	Original release.	Oct. 16, 2020
RF200206E05B R1	1. Modify the note 1 description of section 3.1. 2. Update the below 1GHz test result of Radiated Emission.	Dec. 17, 2020

1 Certificate of Conformity

Product: 802.11a/b/g/n/ac 2T2R dual-band wireless LAN radio

Brand: Microsoft

Test Model: 1884

Sample Status: ENGINEERING SAMPLE

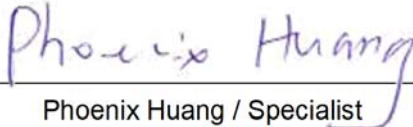
Applicant: Microsoft Corporation

Test Date: July 01 to Nov. 23, 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 / Specialist

Date:

Dec. 17, 2020

Approved by :


Clark Lin / Technical Manager

Date:

Dec. 17, 2020

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 -1.77 dB at 2483.5 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: 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) (\pm)
Conducted emissions	9kHz ~ 40GHz	2.5 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	802.11a/b/g/n/ac 2T2R dual-band wireless LAN radio
Brand	Microsoft
Test Model	1884
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	3.3Vdc from host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11 Mbps 802.11a/g: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 866.7 Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.18 ~ 5.24 GHz, 5.26 ~ 5.32 GHz, 5.50 ~ 5.72 GHz, 5.745 ~ 5.825 GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 25 802.11n (HT40), 802.11ac (VHT40): 12 802.11ac (VHT80): 6
Output Power	2TX mode: 2.4 GHz: 450.068 mW 5.18 ~ 5.24 GHz: 60.215 mW 5.26 ~ 5.32 GHz: 64.795 mW 5.5 ~ 5.72 GHz: 56.858 mW 5.745 ~ 5.825 GHz: 60.211 mW 1TX mode: 2.4 GHz: 273.527 mW 5.18 ~ 5.24 GHz: 42.462 mW 5.26 ~ 5.32 GHz: 42.954 mW 5.5 ~ 5.72 GHz: 43.853 mW 5.745 ~ 5.825 GHz: 42.56 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.: RF200206E05 as the following:

◆ Add antennas as following table:

Freq. Range (GHz)	Original		Newly		Ant. Type	Connector Type
	Ant. No. 1 Gain (dBi)	Ant. No. 2. Gain (dBi)	Ant. No. 1 Gain (dBi)	Ant. No. 2. Gain (dBi)		
	Chian 0	Chain 1	Chian 0	Chain 1		
2.4~2.4835	2.88	3.62	2.77	5.26	PCB	None
5.15~5.25	3.43	3.41	3.06	3.78		
5.25~5.35	3.65	3.56	3.44	3.14		
5.47~5.725	3.22	3.74	3.83	2.79		
5.725~5.85	3.52	3.2	3.19	2.05		

2. According to above conditions, the below test item need to be performed. And all data was verified to meet the requirements.

- ◆ For 2TX mode: All test items. (except for AC Power Conducted Emission and Radiated Emissions and Band Edge (Radiated Measurement) test items)
- ◆ For 1TX mode: Radiated Emissions and Band Edge (Conducted Measurement) and Conducted power test items.

3. 2.4GHz and 5GHz technology cannot transmit at same time.

4. The EUT incorporates a MIMO function.

2.4GHz Band

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	1TX (Fixed Chain 0)	2RX
802.11g	6 ~ 54Mbps	1TX (Fixed Chain 0)	2RX
802.11n (HT20)	MCS 0~7	1TX (Fixed Chain 0)	2RX
	MCS 8~15*	2TX	
802.11n (HT40)	MCS 0~7	1TX (Fixed Chain 0)	2RX
	MCS 8~15*	2TX	

5GHz Band

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11a	6 ~ 54Mbps	1TX (Fixed Chain 0)	2RX
802.11n (HT20)	MCS 0~7	1TX (Fixed Chain 0)	2RX
	MCS 8~15*	2TX	
802.11n (HT40)	MCS 0~7	1TX (Fixed Chain 0)	2RX
	MCS 8~15*	2TX	
802.11ac (VHT20)	MCS0~8 (256QAM) Nss=1	1TX (Fixed Chain 0)	2RX
	MCS0~8 (256QAM) Nss=2*	2TX	
802.11ac (VHT40)	MCS0~9 (256QAM) Nss=1	1TX (Fixed Chain 0)	2RX
	MCS0~9 (256QAM) Nss=2*	2TX	
802.11ac (VHT80)	MCS0~9 (256QAM) Nss=1	1TX (Fixed Chain 0)	2RX
	MCS0~9 (256QAM) Nss=2*	2TX	

Note: "*" means the device operate with two spatial stream (Nss = 2) with different data, and two signals are not correlated.

5. 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.
6. 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

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

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

7 channels are provided for 802.11n (HT40):

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO			DESCRIPTION
	RE \geq 1G	RE<1G	APCM	
1	√	√	√	2TX mode
2	√	√	√	1TX mode

Where **RE \geq 1G**: Radiated Emission above 1GHz & Bandedge Measurement
RE<1G: Radiated Emission below 1GHz
APCM: Antenna Port Conducted Measurement

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.

2TX Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	13
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	27
1TX Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
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.

2TX Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	13
1TX Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	6	DSSS	DBPSK	1

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.

Conducted Output Power test					
2TX Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	13
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	27
1TX Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
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
Other test items					
2TX Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	1	OFDM	BPSK	13
802.11n (HT40)	3 to 9	3	OFDM	BPSK	27

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (System)	TESTED BY
RE \geq 1G	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen
RE<1G	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is 100 %, duty factor is not required.



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.

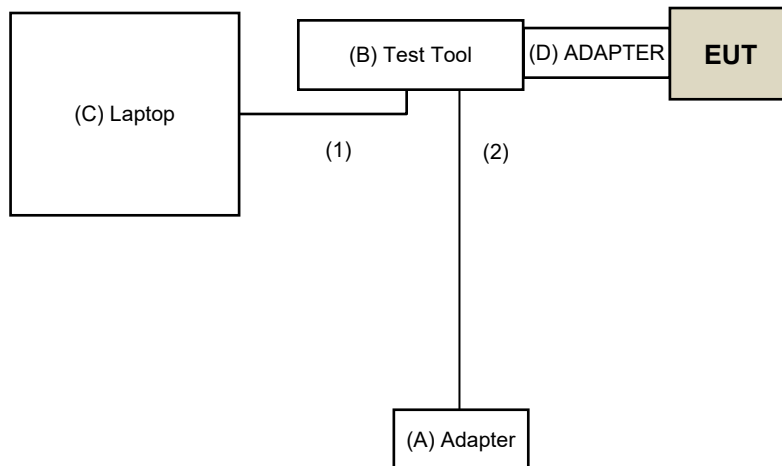
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Adapter	PHIHONG	PSC15A-050	NA	NA	Supplied by client
B.	Test Tool	MediaTek Inc.	NA	NA	NA	Supplied by client
C.	Laptop	DELL	E5430	GM1SKV1	FCC DoC	Supplied by Lab
D.	ADAPTER	MICROSOFT	M1096761-001	NA	NA	Supplied by client

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.	USB Type B Cable	1	1.8	Yes	0	Provided by Lab
2.	DC Cable	1	1.5	No	0	Supplied by client

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 (Conducted)

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 20dB 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 test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 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 01 to Nov. 23, 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 26, 2019	July 25, 2020
Power sensor Anritsu	MA2411B	1339443	July 26, 2019	July 25, 2020
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 01, 2020

4.1.3 Test Procedures

Following FCC KDB 558074 D01 DTS Meas Guidance:
 Conducted Measurements.

The unwanted emission limits in both the restricted and non-restricted bands are based on antenna-port conducted measurements in conjunction with cabinet emissions tests are permitted to demonstrate compliance.

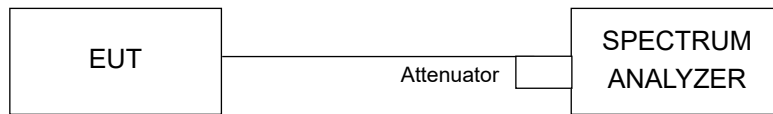
The following steps was performed:

- a. Cabinet emissions measurements. Radiated measurement was performed to ensure that cabinet emissions are below the emission limits. For the cabinet-emission measurements the antenna was replaced by a termination matching the nominal impedance of the antenna.
- b. Conducted tests was performed using equipment that matches the nominal impedance of the antenna assembly used with the EUT
- c. EIRP calculation. A value representative of an upper bound on out-of-band antenna gain (in dBi) shall be added to the measured antenna-port conducted emission power to compute EIRP within the specified measurement bandwidth. (For emissions in the restricted bands, additional calculations are required to convert EIRP to field strength at the specified distance.) The upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands or 2 dBi, whichever is greater
- d. EIRP adjustments for multiple outputs. (Follow the procedures specified in FCC KDB Publication 662911)

4.1.4 Deviation from Test Standard

No deviation.

4.1.5 Test Setup



4.1.6 EUT Operating Conditions

- a. Connected the EUT with the Laptop which is placed on the testing table.
- b. Controlling software (MT7663 QA 0.0.2.6) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results (Conducted Measurement)

Radiated versus Conducted Measurement	
<input checked="" type="checkbox"/> Conducted measurement	<input type="checkbox"/> Radiated measurement
<p><u>For Radiated measurement:</u></p> <p>The level of unwanted emissions was measured when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation)</p> <p><u>For Conducted measurement:</u></p> <p>The level of unwanted emissions was measured as their power in a specified load (conducted spurious emissions).</p> <p>Note: In order to obtain results more easily, change max hold to view. It has no effect on the result</p>	

Conducted Measurement Factor
<p>a. The composite gain will be used</p> <p>i. For Mode 1:</p> <p style="padding-left: 20px;">Chain 0 Composite gain = $3.83 + 10 \log(2) = 6.84$ dBi</p> <p style="padding-left: 20px;">Chain 1 Composite gain = $5.26 + 10 \log(2) = 8.27$ dBi</p> <p>ii. For Mode 2: Composite gain = 3.83 dBi</p> <p>b. For the out of band spurious the gain for the specific band may have been used rather than the highest gain across all bands.</p> <p>c. For the band edge the gain for the specific band may have been used.</p> <p>d. In restricted bands below 1000 MHz, add upper bound on ground plane reflection:</p> <p style="padding-left: 20px;">For $f = 30 - 1000$ MHz, add 4.7 dB.</p> <p>Note: The conducted emission test was considered some factor to compute test result.</p>

4.1.7.1 Test Results (Mode 1)

802.11n (HT20) - Channel 1
Conducted spurious emission table

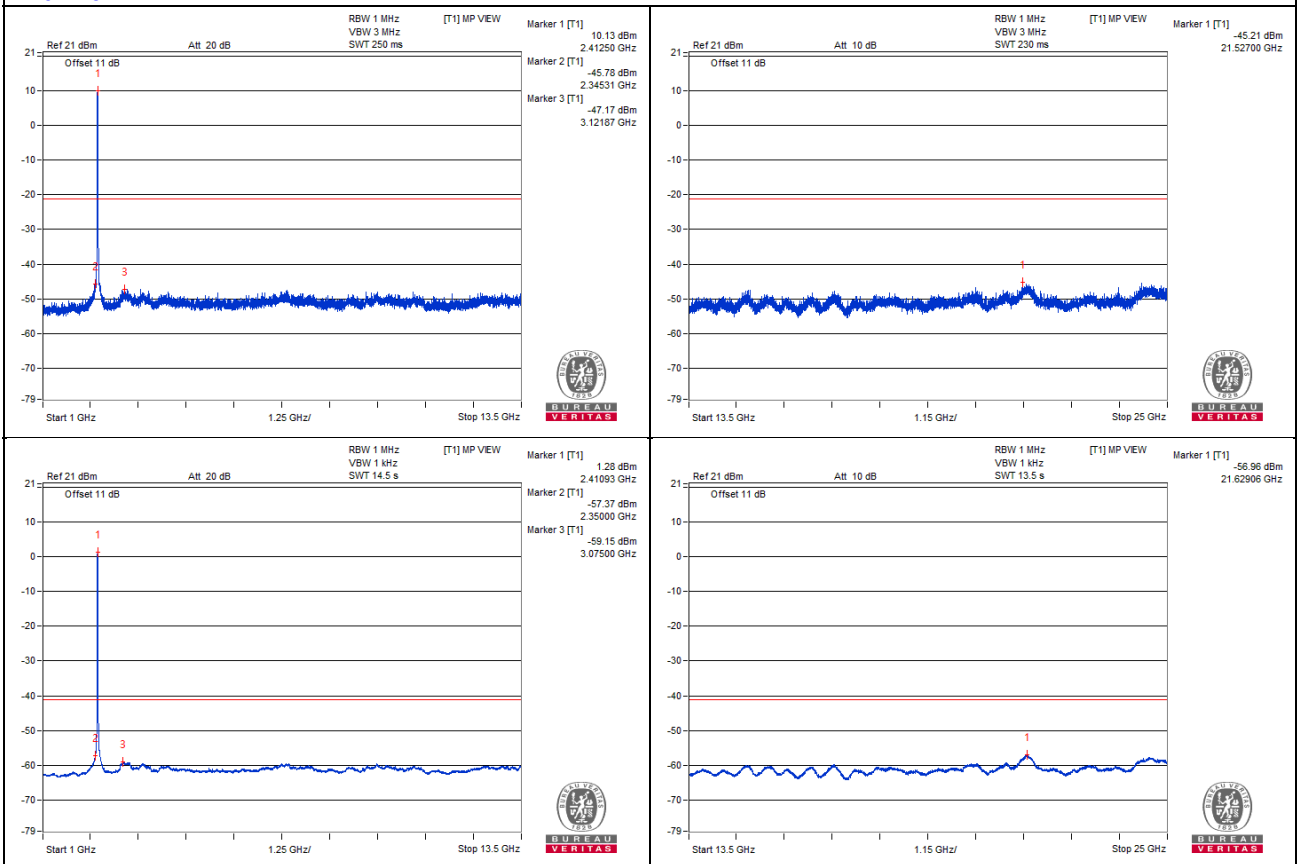
Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2412.5 PK	111.17	*		10.13	5.78	15.91
2	2345.31 PK	55.26	74	-18.74	-45.78	5.78	-40
3	3121.87 PK	53.87	#		-47.17	5.78	-41.39
4	21527 PK	55.83	#		-45.21	5.78	-39.43
5	2410.93 AV	102.32	*		1.28	5.78	7.06
6	2350 AV	43.67	54	-10.33	-57.37	5.78	-51.59
7	3075 AV	41.89	#		-59.15	5.78	-53.37
8	21629.06 AV	44.08	#		-56.96	5.78	-51.18

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 0



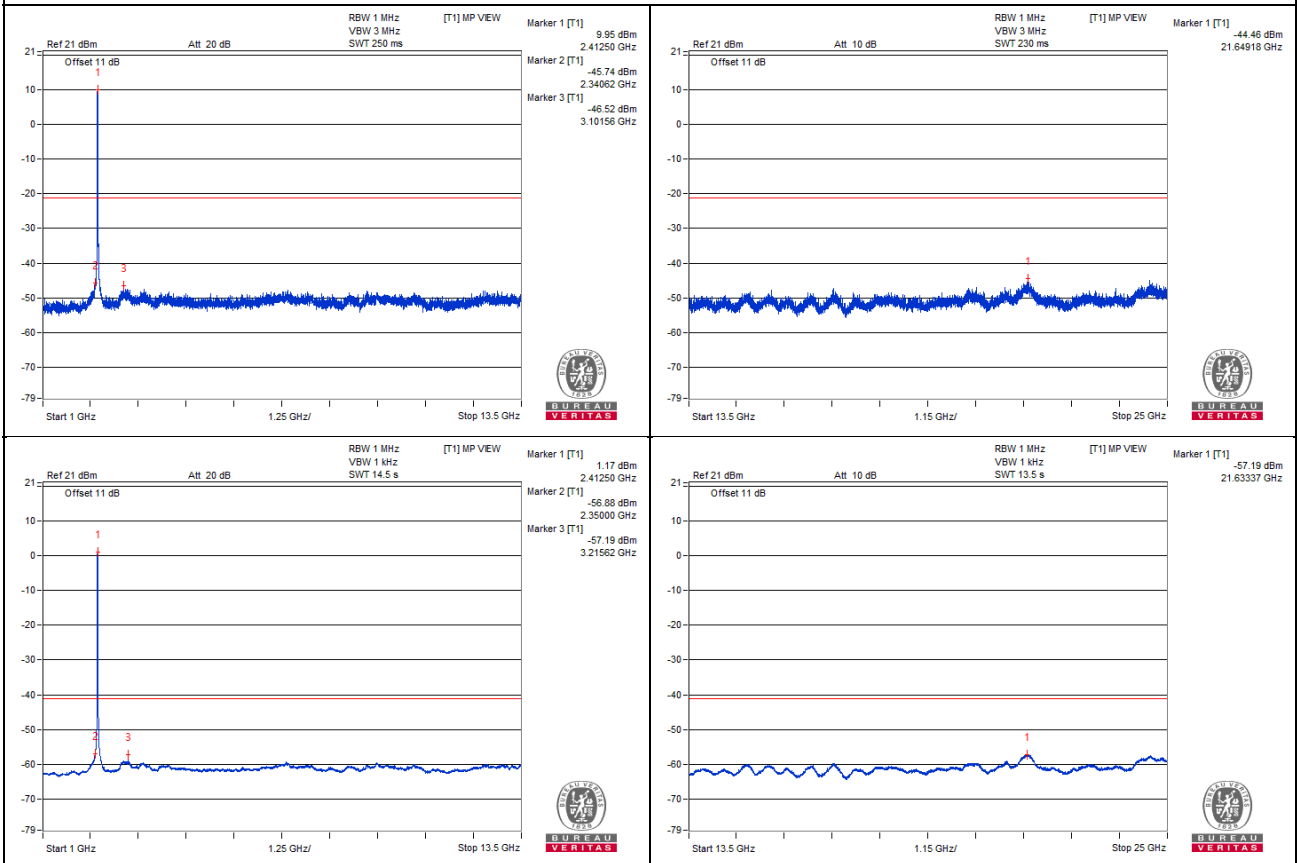
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2412.5 PK	113.48	*		9.95	8.27	18.22
2	2340.62 PK	57.79	74	-16.21	-45.74	8.27	-37.47
3	3101.56 PK	57.01	#		-46.52	8.27	-38.25
4	21649.18 PK	59.07	#		-44.46	8.27	-36.19
5	2412.5 AV	104.7	*		1.17	8.27	9.44
6	2350 AV	46.65	54	-7.35	-56.88	8.27	-48.61
7	3215.62 AV	46.34	#		-57.19	8.27	-48.92
8	21633.37 AV	46.34	#		-57.19	8.27	-48.92

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
3. * : Fundamental frequency, the limit was restricted at the output power.
4. # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 1



Bandedge table

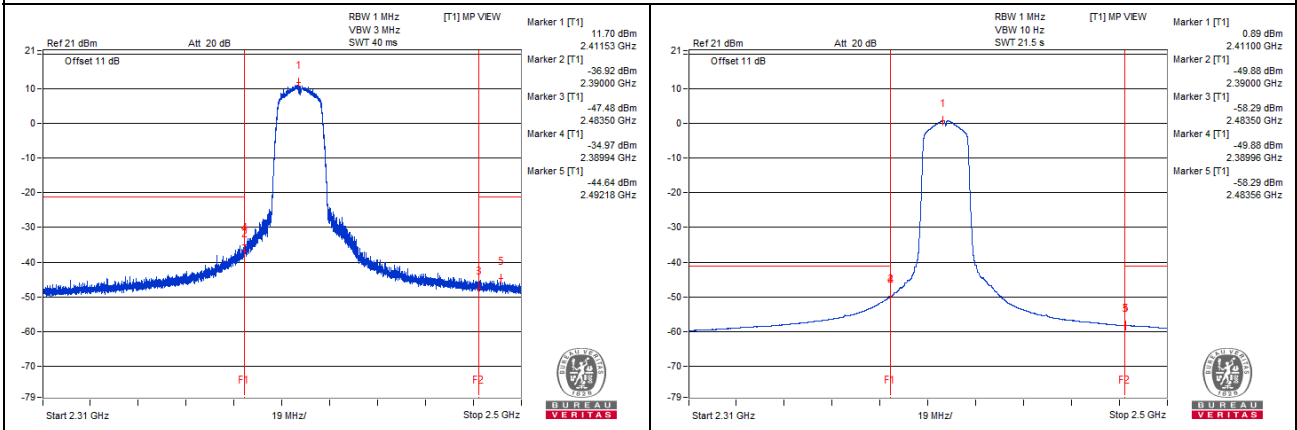
Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2411.53 PK	112.74	*		11.7	5.78	17.48
2	2390 PK	64.12	74	-9.88	-36.92	5.78	-31.14
3	2483.5 PK	53.56	74	-20.44	-47.48	5.78	-41.7
4	2389.94 PK	66.07	74	-7.93	-34.97	5.78	-29.19
5	2492.18 PK	56.4	74	-17.6	-44.64	5.78	-38.86
6	2411 AV	101.93	*		0.89	5.78	6.67
7	2390 AV	51.16	54	-2.84	-49.88	5.78	-44.1
8	2483.5 AV	42.75	54	-11.25	-58.29	5.78	-52.51
9	2389.96 AV	51.16	54	-2.84	-49.88	5.78	-44.1
10	2483.56 AV	42.75	54	-11.25	-58.29	5.78	-52.51

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.

Chain 0



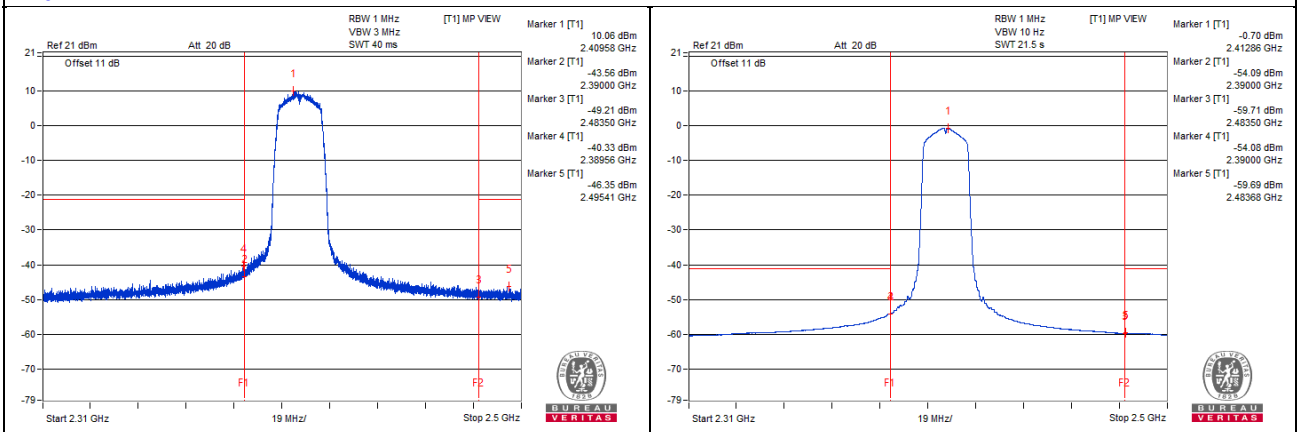
Chain 1

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2409.58 PK	113.59	*		10.06	8.27	18.33
2	2390 PK	59.97	74	-14.03	-43.56	8.27	-35.29
3	2483.5 PK	54.32	74	-19.68	-49.21	8.27	-40.94
4	2389.56 PK	63.2	74	-10.8	-40.33	8.27	-32.06
5	2495.41 PK	57.18	74	-16.82	-46.35	8.27	-38.08
6	2412.86 AV	102.83	*		-0.7	8.27	7.57
7	2390 AV	49.44	54	-4.56	-54.09	8.27	-45.82
8	2483.5 AV	43.82	54	-10.18	-59.71	8.27	-51.44
9	2390 AV	49.45	54	-4.55	-54.08	8.27	-45.81
10	2483.68 AV	43.84	54	-10.16	-59.69	8.27	-51.42

Note :

1. Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
3. * : Fundamental frequency, the limit was restricted at the output power.

Chain 1



802.11n (HT20) - Channel 6
Conducted spurious emission table

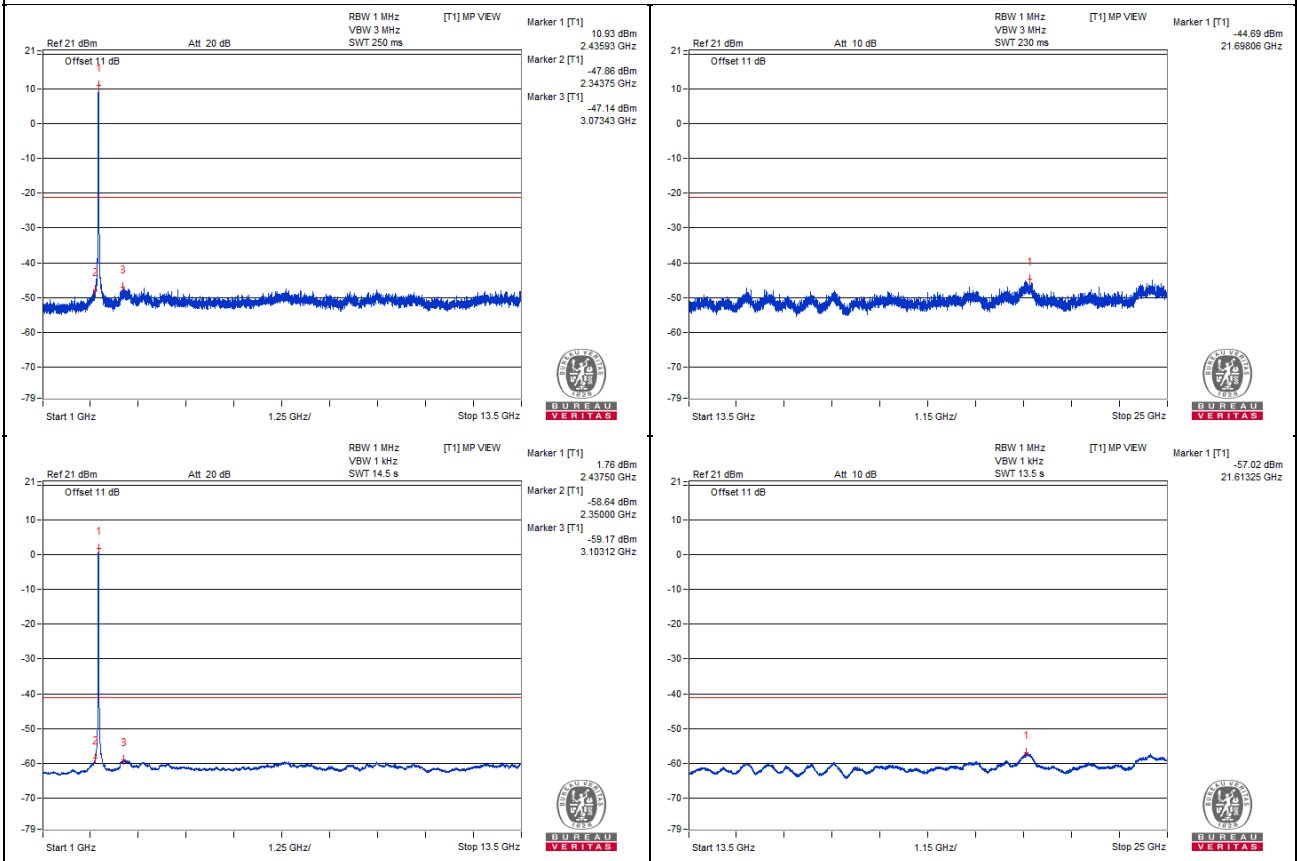
Chain 0

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2435.93 PK	111.97	*		10.93	5.78	16.71
2	2343.75 PK	53.18	74	-20.82	-47.86	5.78	-42.08
3	3073.43 PK	53.9	#		-47.14	5.78	-41.36
4	21698.06 PK	56.35	#		-44.69	5.78	-38.91
5	2437.5 AV	102.8	*		1.76	5.78	7.54
6	2350 AV	42.4	54	-11.6	-58.64	5.78	-52.86
7	3103.12 AV	41.87	#		-59.17	5.78	-53.39
8	21613.25 AV	44.02	#		-57.02	5.78	-51.24

Note :

- Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 0



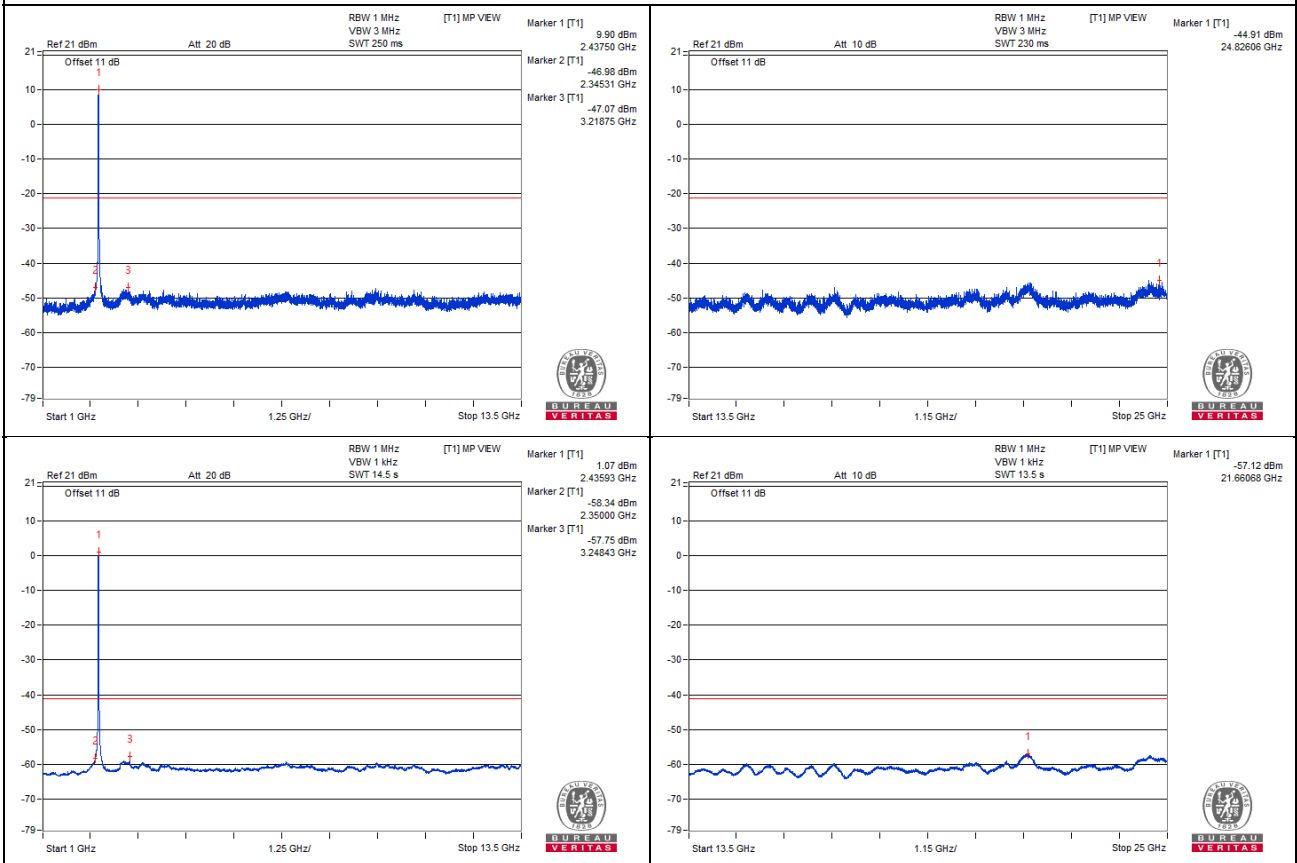
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2437.5 PK	113.43	*		9.9	8.27	18.17
2	2345.31 PK	56.55	74	-17.45	-46.98	8.27	-38.71
3	3218.75 PK	56.46	#		-47.07	8.27	-38.8
4	24826.06 PK	58.62	#		-44.91	8.27	-36.64
5	2435.93 AV	104.6	*		1.07	8.27	9.34
6	2350 AV	45.19	54	-8.81	-58.34	8.27	-50.07
7	3248.43 AV	45.78	#		-57.75	8.27	-49.48
8	21660.68 AV	46.41	#		-57.12	8.27	-48.85

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
3. * : Fundamental frequency, the limit was restricted at the output power.
4. # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 1



Bandedge table

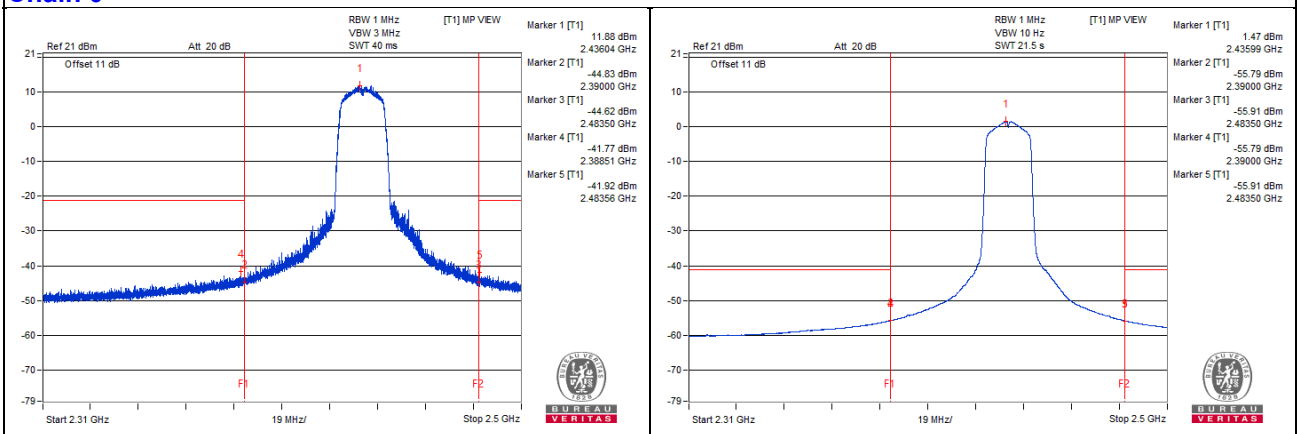
Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2436.04 PK	112.92	*		11.88	5.78	17.66
2	2390 PK	56.21	74	-17.79	-44.83	5.78	-39.05
3	2483.5 PK	56.42	74	-17.58	-44.62	5.78	-38.84
4	2388.51 PK	59.27	74	-14.73	-41.77	5.78	-35.99
5	2483.56 PK	59.12	74	-14.88	-41.92	5.78	-36.14
6	2435.99 AV	102.51	*		1.47	5.78	7.25
7	2390 AV	45.25	54	-8.75	-55.79	5.78	-50.01
8	2483.5 AV	45.13	54	-8.87	-55.91	5.78	-50.13
9	2390 AV	45.25	54	-8.75	-55.79	5.78	-50.01
10	2483.5 AV	45.13	54	-8.87	-55.91	5.78	-50.13

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
3. * : Fundamental frequency, the limit was restricted at the output power.

Chain 0



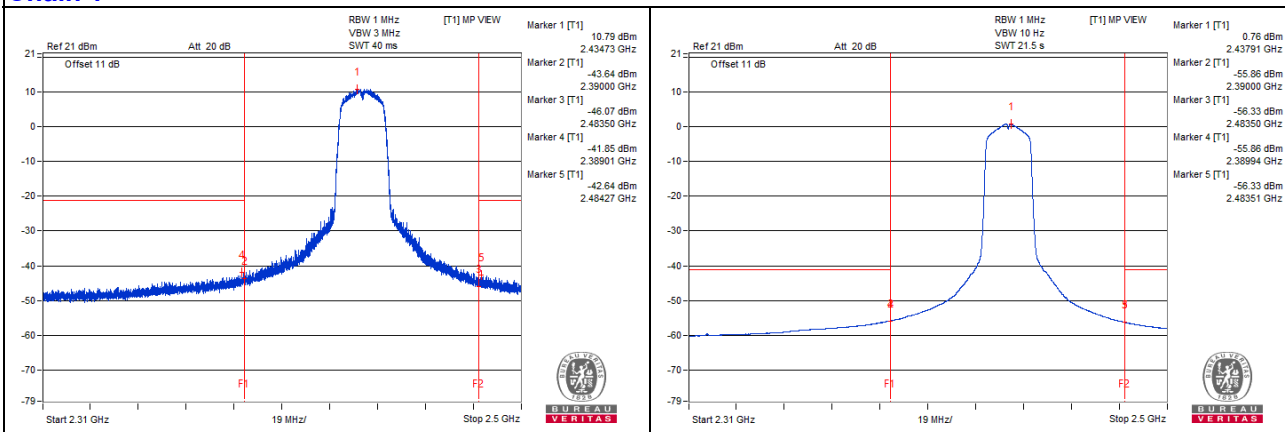
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2434.73 PK	114.32	*		10.79	8.27	19.06
2	2390 PK	59.89	74	-14.11	-43.64	8.27	-35.37
3	2483.5 PK	57.46	74	-16.54	-46.07	8.27	-37.8
4	2389.01 PK	61.68	74	-12.32	-41.85	8.27	-33.58
5	2484.27 PK	60.89	74	-13.11	-42.64	8.27	-34.37
6	2437.91 AV	104.29	*		0.76	8.27	9.03
7	2390 AV	47.67	54	-6.33	-55.86	8.27	-47.59
8	2483.5 AV	47.2	54	-6.8	-56.33	8.27	-48.06
9	2389.94 AV	47.67	54	-6.33	-55.86	8.27	-47.59
10	2483.51 AV	47.2	54	-6.8	-56.33	8.27	-48.06

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.

Chain 1



802.11n (HT20) - Channel 11
Conducted spurious emission table

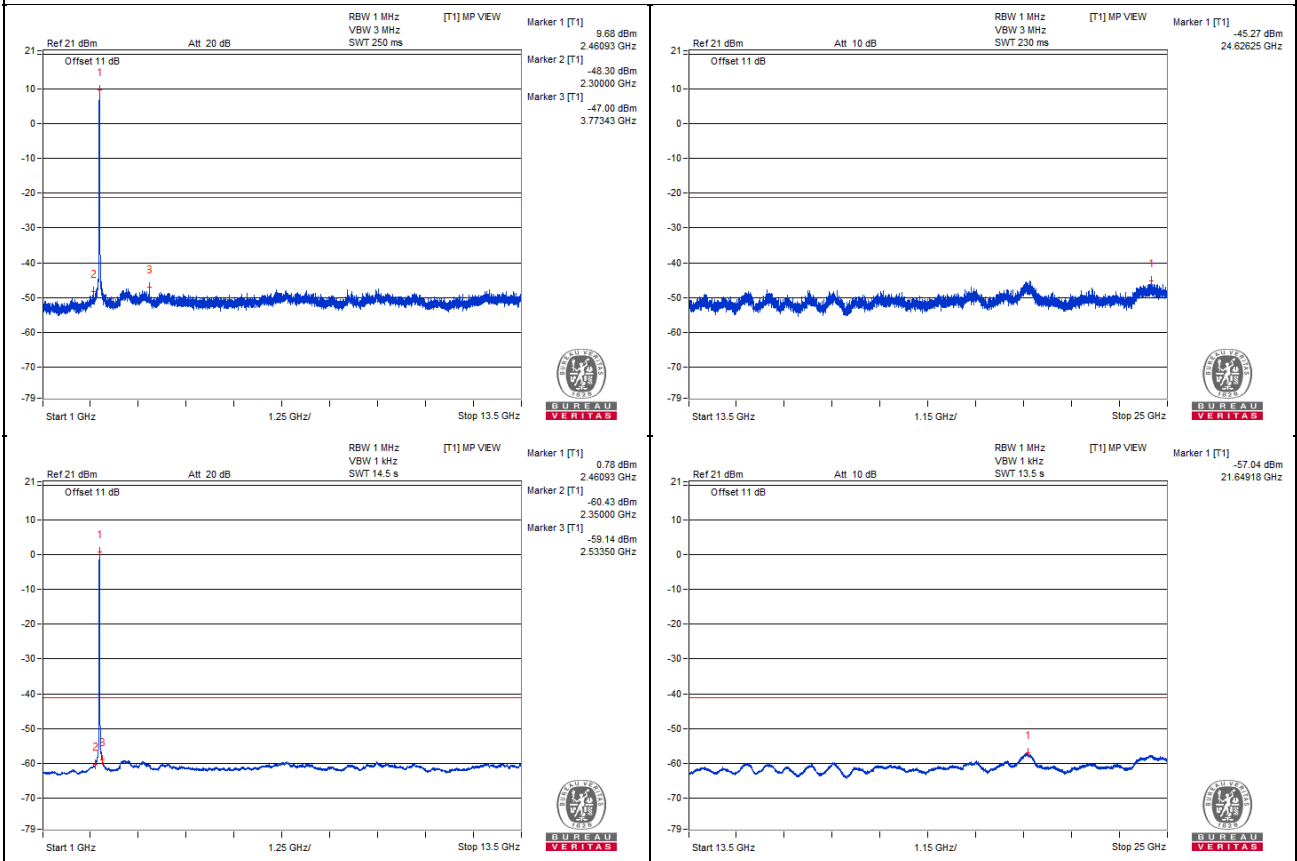
Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2460.93 PK	110.72	*		9.68	5.78	15.46
2	2300 PK	52.74	74	-21.26	-48.3	5.78	-42.52
3	3773.43 PK	54.04	74	-19.96	-47	5.78	-41.22
4	24626.25 PK	55.77	#		-45.27	5.78	-39.49
5	2460.93 AV	101.82	*		0.78	5.78	6.56
6	2350 AV	40.61	54	-13.39	-60.43	5.78	-54.65
7	2533.5 AV	41.9	#		-59.14	5.78	-53.36
8	21649.18 AV	44	#		-57.04	5.78	-51.26

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 0



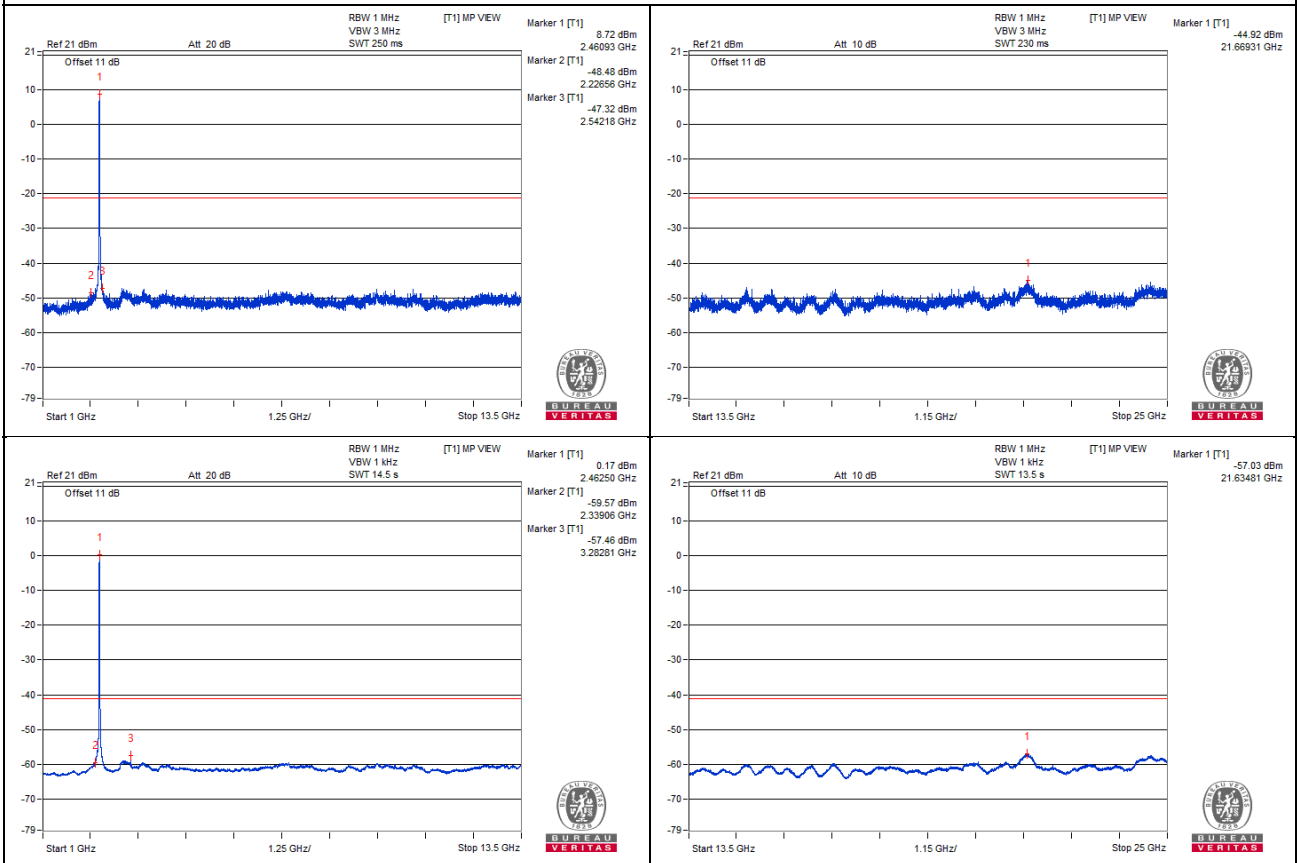
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2460.93 PK	112.25	*		8.72	8.27	16.99
2	2226.56 PK	55.05	74	-18.95	-48.48	8.27	-40.21
3	2542.18 PK	56.21	#		-47.32	8.27	-39.05
4	21669.31 PK	58.61	#		-44.92	8.27	-36.65
5	2462.5 AV	103.7	*		0.17	8.27	8.44
6	2339.06 AV	43.96	54	-10.04	-59.57	8.27	-51.3
7	3282.81 AV	46.07	#		-57.46	8.27	-49.19
8	21634.81 AV	46.5	#		-57.03	8.27	-48.76

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 1



Bandedge table

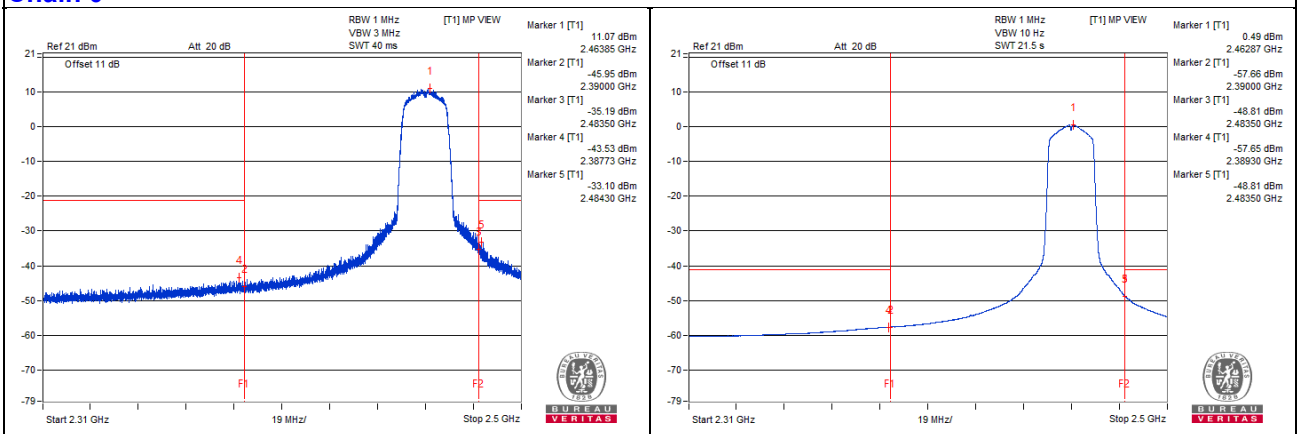
Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2463.85 PK	112.11	*		11.07	5.78	16.85
2	2390 PK	55.09	74	-18.91	-45.95	5.78	-40.17
3	2483.5 PK	65.85	74	-8.15	-35.19	5.78	-29.41
4	2387.73 PK	57.51	74	-16.49	-43.53	5.78	-37.75
5	2484.3 PK	67.94	74	-6.06	-33.1	5.78	-27.32
6	2462.87 AV	101.53	*		0.49	5.78	6.27
7	2390 AV	43.38	54	-10.62	-57.66	5.78	-51.88
8	2483.5 AV	52.23	54	-1.77	-48.81	5.78	-43.03
9	2389.3 AV	43.39	54	-10.61	-57.65	5.78	-51.87
10	2483.5 AV	52.23	54	-1.77	-48.81	5.78	-43.03

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.

Chain 0



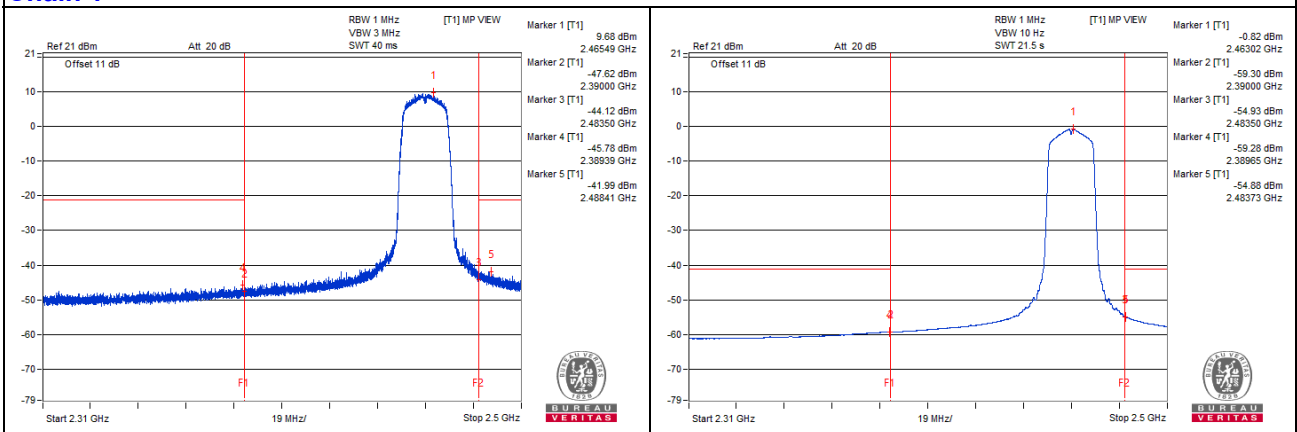
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2465.49 PK	113.21	*		9.68	8.27	17.95
2	2390 PK	55.91	74	-18.09	-47.62	8.27	-39.35
3	2483.5 PK	59.41	74	-14.59	-44.12	8.27	-35.85
4	2389.39 PK	57.75	74	-16.25	-45.78	8.27	-37.51
5	2488.41 PK	61.54	74	-12.46	-41.99	8.27	-33.72
6	2463.02 AV	102.71	*		-0.82	8.27	7.45
7	2390 AV	44.23	54	-9.77	-59.3	8.27	-51.03
8	2483.5 AV	48.6	54	-5.4	-54.93	8.27	-46.66
9	2389.65 AV	44.25	54	-9.75	-59.28	8.27	-51.01
10	2483.73 AV	48.65	54	-5.35	-54.88	8.27	-46.61

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.

Chain 1



802.11n (HT40) - Channel 3
Conducted spurious emission table

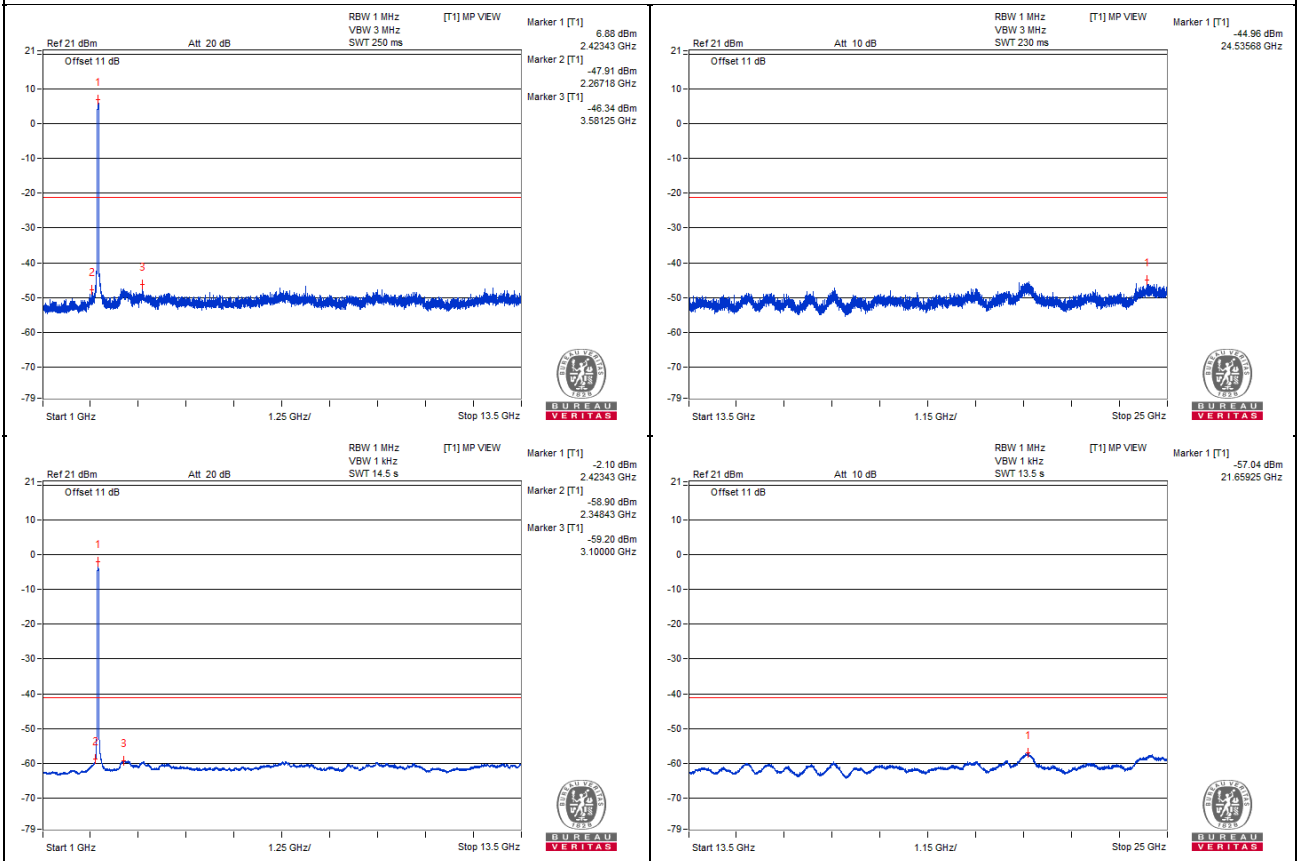
Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2423.43 PK	107.92	*		6.88	5.78	12.66
2	2267.18 PK	53.13	74	-20.87	-47.91	5.78	-42.13
3	3581.25 PK	54.7	74	-19.3	-46.34	5.78	-40.56
4	24535.68 PK	56.08	#		-44.96	5.78	-39.18
5	2423.43 AV	98.94	*		-2.1	5.78	3.68
6	2348.43 AV	42.14	54	-11.86	-58.9	5.78	-53.12
7	3100 AV	41.84	#		-59.2	5.78	-53.42
8	21659.25 AV	44	#		-57.04	5.78	-51.26

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 0



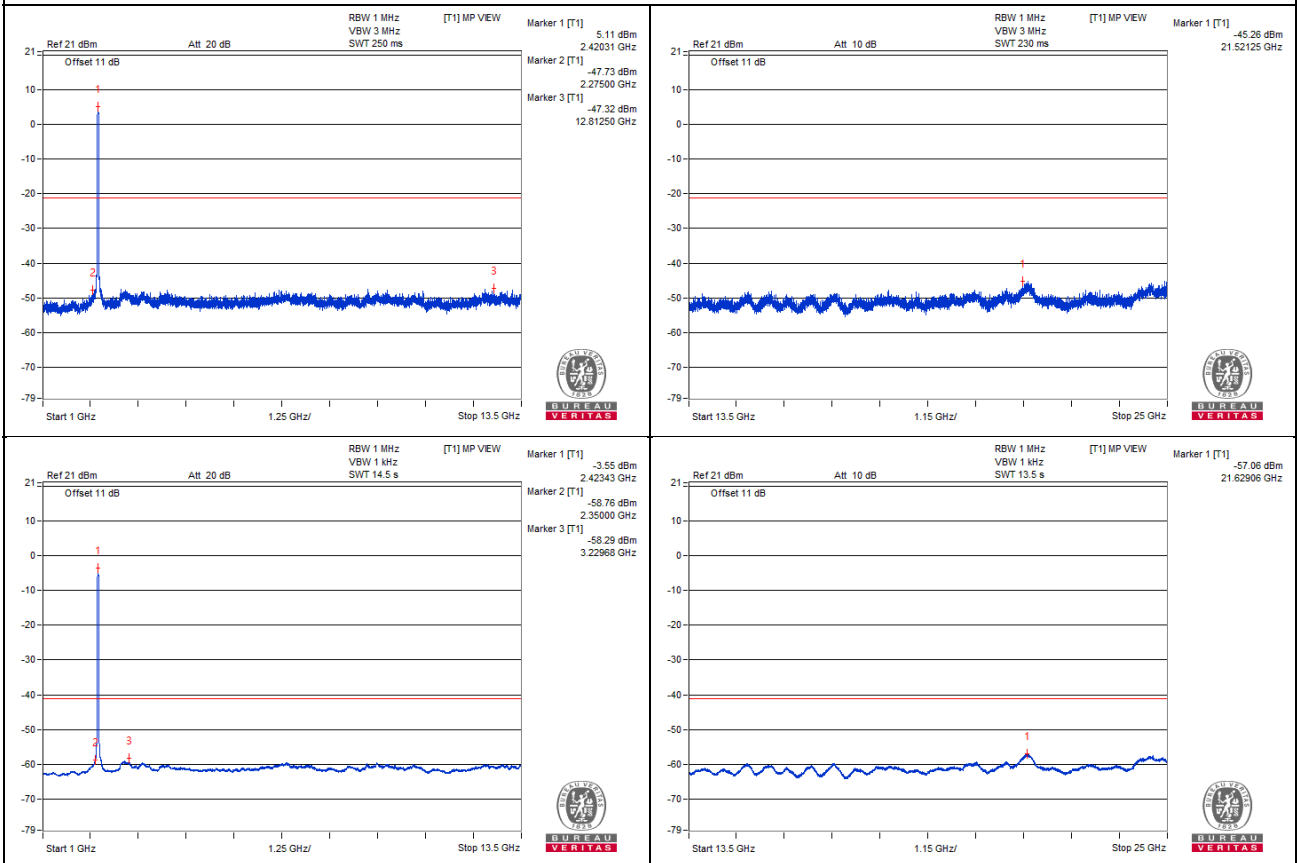
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2420.31 PK	108.64	*		5.11	8.27	13.38
2	2275 PK	55.8	74	-18.2	-47.73	8.27	-39.46
3	12812.5 PK	56.21	#		-47.32	8.27	-39.05
4	21521.25 PK	58.27	#		-45.26	8.27	-36.99
5	2423.43 AV	99.98	*		-3.55	8.27	4.72
6	2350 AV	44.77	54	-9.23	-58.76	8.27	-50.49
7	3229.68 AV	45.24	#		-58.29	8.27	-50.02
8	21629.06 AV	46.47	#		-57.06	8.27	-48.79

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
3. * : Fundamental frequency, the limit was restricted at the output power.
4. # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 1



Bandedge table

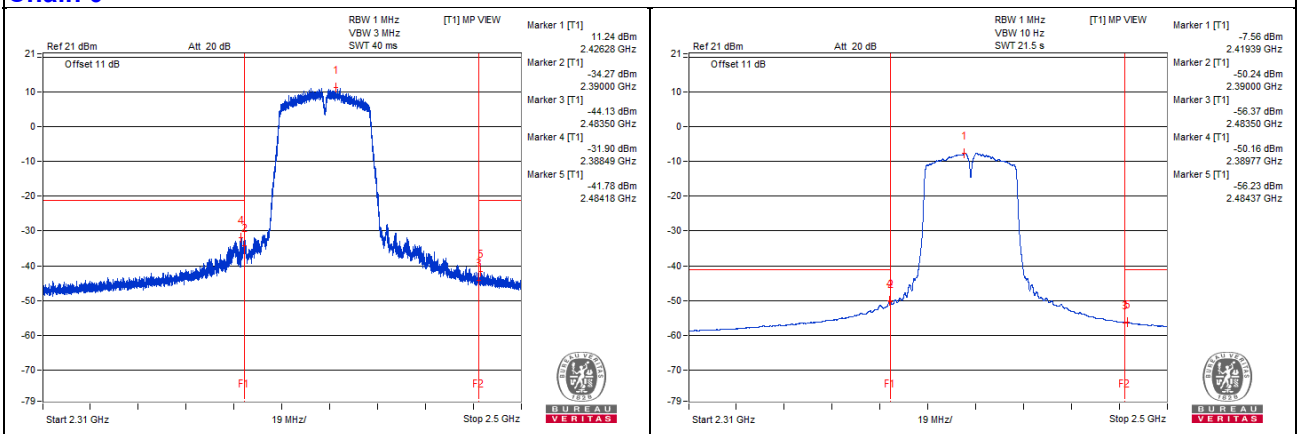
Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2426.28 PK	112.28	*		11.24	5.78	17.02
2	2390 PK	66.77	74	-7.23	-34.27	5.78	-28.49
3	2483.5 PK	56.91	74	-17.09	-44.13	5.78	-38.35
4	2388.49 PK	69.14	74	-4.86	-31.9	5.78	-26.12
5	2484.18 PK	59.26	74	-14.74	-41.78	5.78	-36
6	2419.39 AV	93.48	*		-7.56	5.78	-1.78
7	2390 AV	50.8	54	-3.2	-50.24	5.78	-44.46
8	2483.5 AV	44.67	54	-9.33	-56.37	5.78	-50.59
9	2389.77 AV	50.88	54	-3.12	-50.16	5.78	-44.38
10	2484.37 AV	44.81	54	-9.19	-56.23	5.78	-50.45

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.

Chain 0



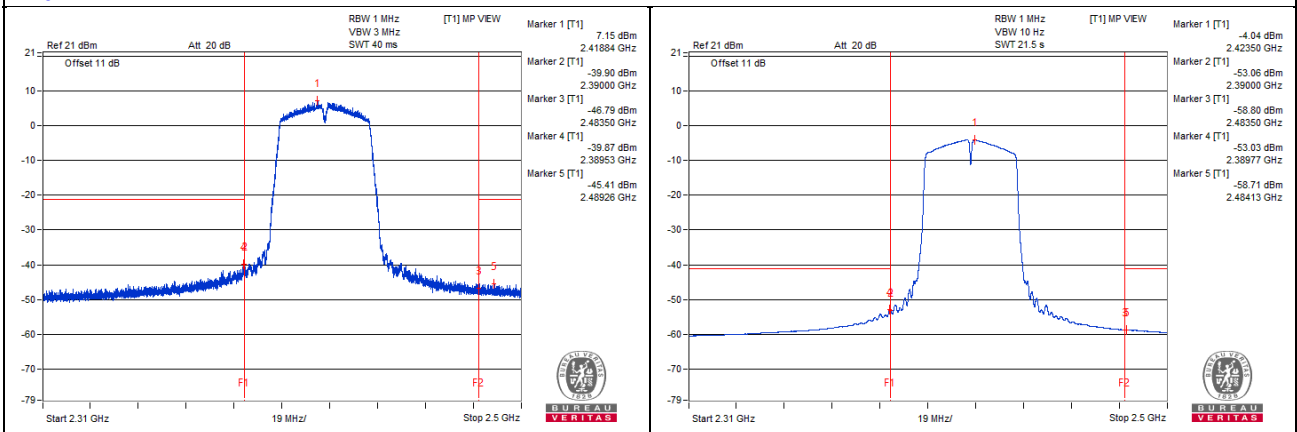
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2418.84 PK	110.68	*		7.15	8.27	15.42
2	2390 PK	63.63	74	-10.37	-39.9	8.27	-31.63
3	2483.5 PK	56.74	74	-17.26	-46.79	8.27	-38.52
4	2389.53 PK	63.66	74	-10.34	-39.87	8.27	-31.6
5	2489.26 PK	58.12	74	-15.88	-45.41	8.27	-37.14
6	2423.5 AV	99.49	*		-4.04	8.27	4.23
7	2390 AV	50.47	54	-3.53	-53.06	8.27	-44.79
8	2483.5 AV	44.73	54	-9.27	-58.8	8.27	-50.53
9	2389.77 AV	50.5	54	-3.5	-53.03	8.27	-44.76
10	2484.13 AV	44.82	54	-9.18	-58.71	8.27	-50.44

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
3. * : Fundamental frequency, the limit was restricted at the output power.

Chain 1



802.11n (HT40) - Channel 6
Conducted spurious emission table

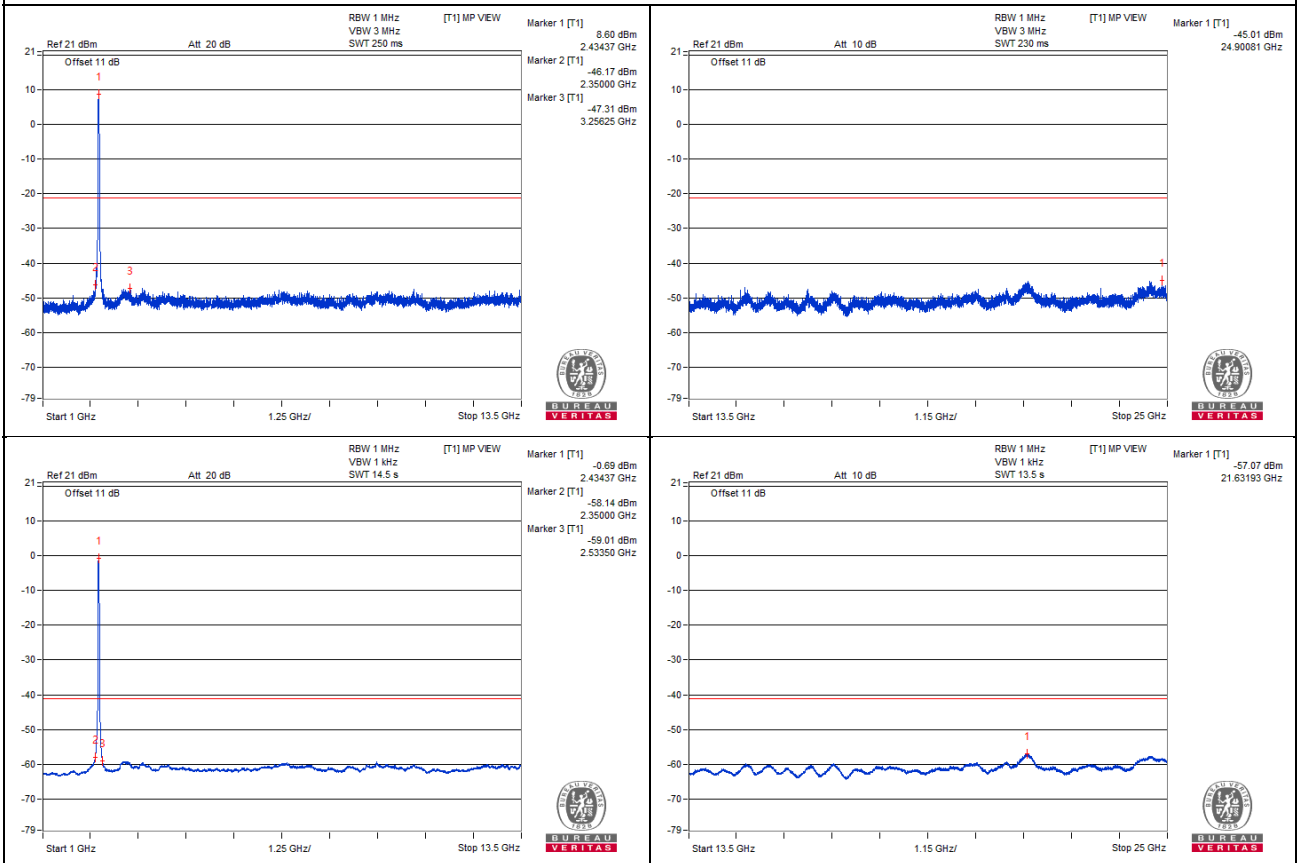
Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2434.37 PK	109.64	*		8.6	5.78	14.38
2	2350 PK	54.87	74	-19.13	-46.17	5.78	-40.39
3	3256.25 PK	53.73	#		-47.31	5.78	-41.53
4	24900.81 PK	56.03	#		-45.01	5.78	-39.23
5	2434.37 AV	100.35	*		-0.69	5.78	5.09
6	2350 AV	42.9	54	-11.1	-58.14	5.78	-52.36
7	2533.5 AV	42.03	#		-59.01	5.78	-53.23
8	21631.93 AV	43.97	#		-57.07	5.78	-51.29

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 0



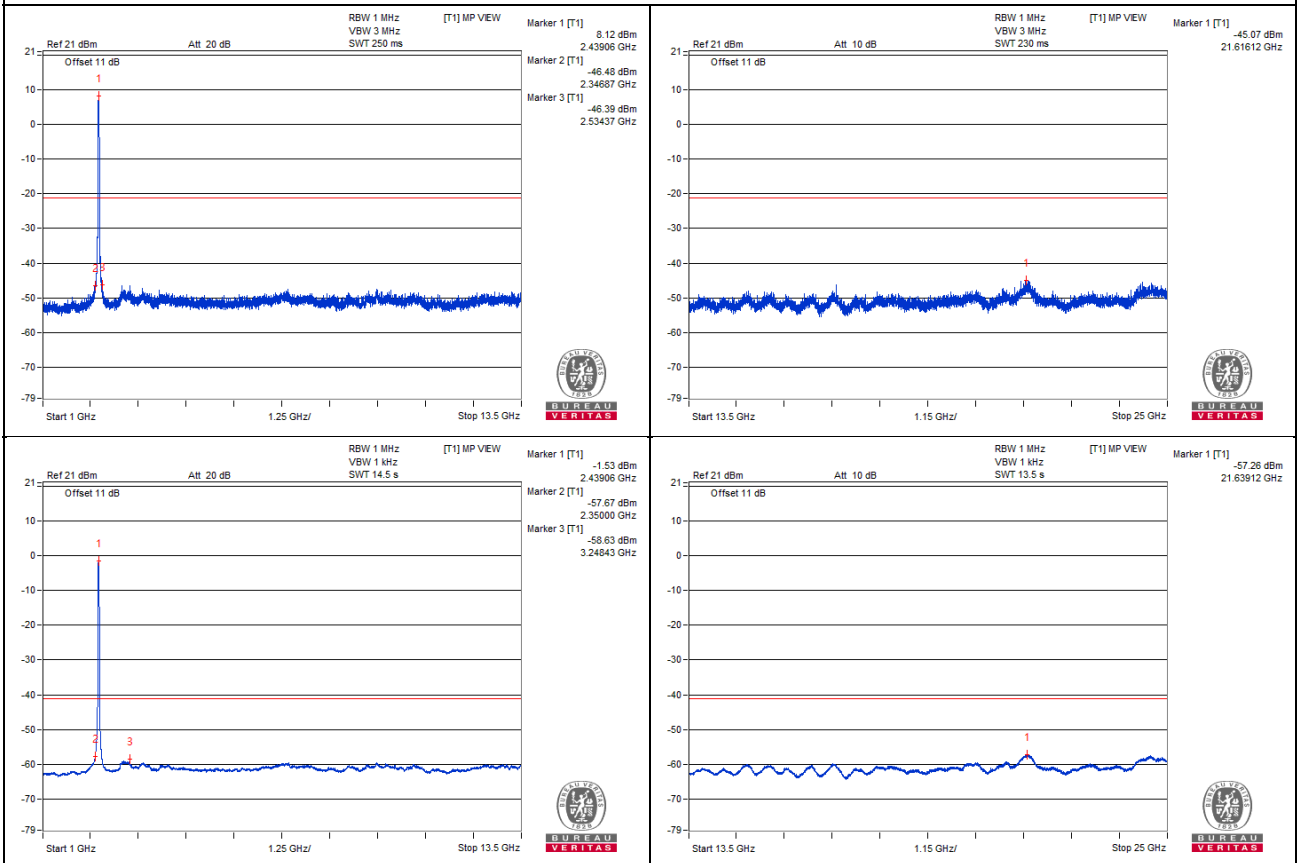
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2439.06 PK	111.65	*		8.12	8.27	16.39
2	2346.87 PK	57.05	74	-16.95	-46.48	8.27	-38.21
3	2534.37 PK	57.14	#		-46.39	8.27	-38.12
4	21616.12 PK	58.46	#		-45.07	8.27	-36.8
5	2439.06 AV	102	*		-1.53	8.27	6.74
6	2350 AV	45.86	54	-8.14	-57.67	8.27	-49.4
7	3248.43 AV	44.9	#		-58.63	8.27	-50.36
8	21639.12 AV	46.27	#		-57.26	8.27	-48.99

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 1



Bandedge table

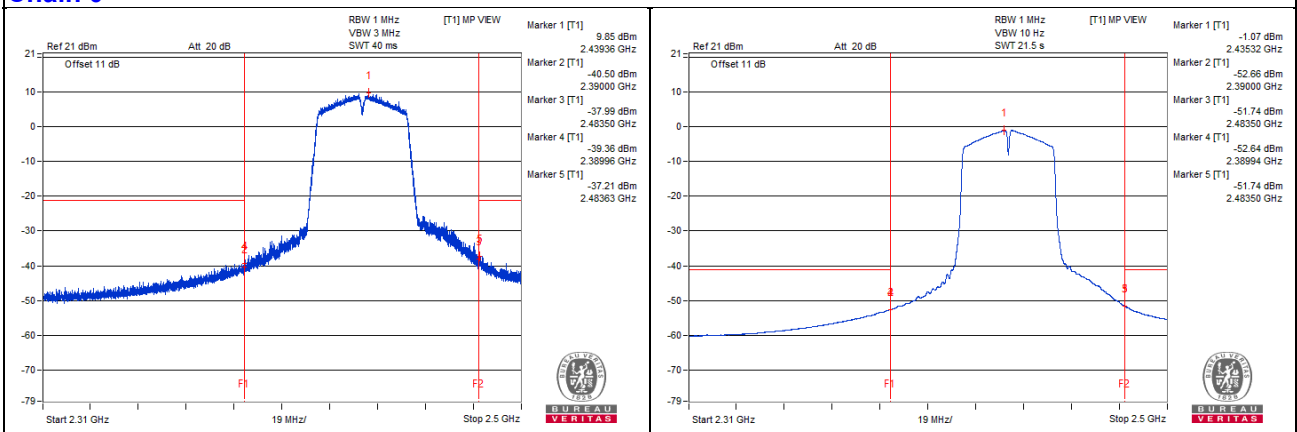
Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2439.36 PK	110.89	*		9.85	5.78	15.63
2	2390 PK	60.54	74	-13.46	-40.5	5.78	-34.72
3	2483.5 PK	63.05	74	-10.95	-37.99	5.78	-32.21
4	2389.96 PK	61.68	74	-12.32	-39.36	5.78	-33.58
5	2483.63 PK	63.83	74	-10.17	-37.21	5.78	-31.43
6	2435.32 AV	99.97	*		-1.07	5.78	4.71
7	2390 AV	48.38	54	-5.62	-52.66	5.78	-46.88
8	2483.5 AV	49.3	54	-4.7	-51.74	5.78	-45.96
9	2389.94 AV	48.4	54	-5.6	-52.64	5.78	-46.86
10	2483.5 AV	49.3	54	-4.7	-51.74	5.78	-45.96

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.

Chain 0



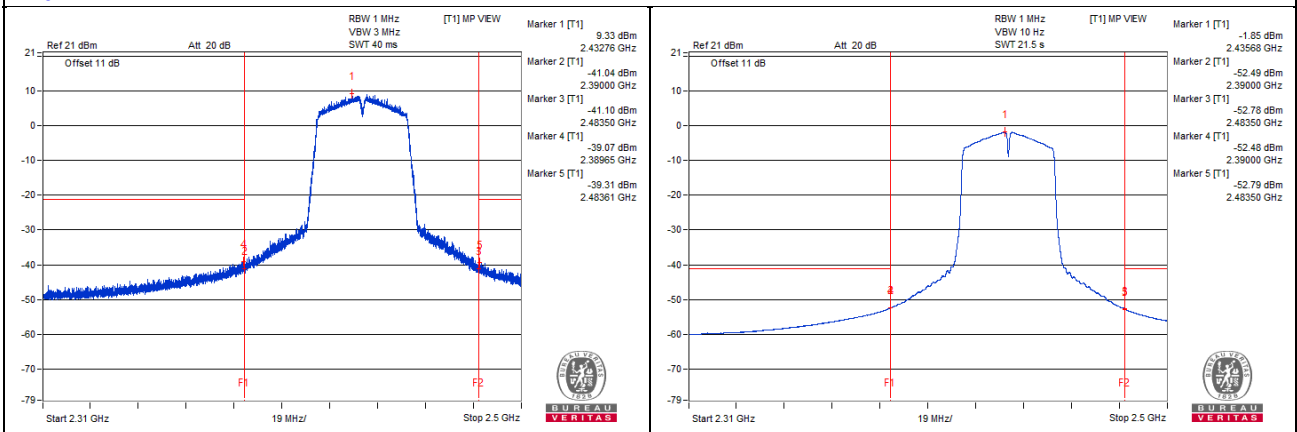
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2432.76 PK	112.86	*		9.33	8.27	17.6
2	2390 PK	62.49	74	-11.51	-41.04	8.27	-32.77
3	2483.5 PK	62.43	74	-11.57	-41.1	8.27	-32.83
4	2389.65 PK	64.46	74	-9.54	-39.07	8.27	-30.8
5	2483.61 PK	64.22	74	-9.78	-39.31	8.27	-31.04
6	2435.68 AV	101.68	*		-1.85	8.27	6.42
7	2390 AV	51.04	54	-2.96	-52.49	8.27	-44.22
8	2483.5 AV	50.75	54	-3.25	-52.78	8.27	-44.51
9	2390 AV	51.05	54	-2.95	-52.48	8.27	-44.21
10	2483.5 AV	50.74	54	-3.26	-52.79	8.27	-44.52

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
3. * : Fundamental frequency, the limit was restricted at the output power.

Chain 1



802.11n (HT40) - Channel 9
Conducted spurious emission table

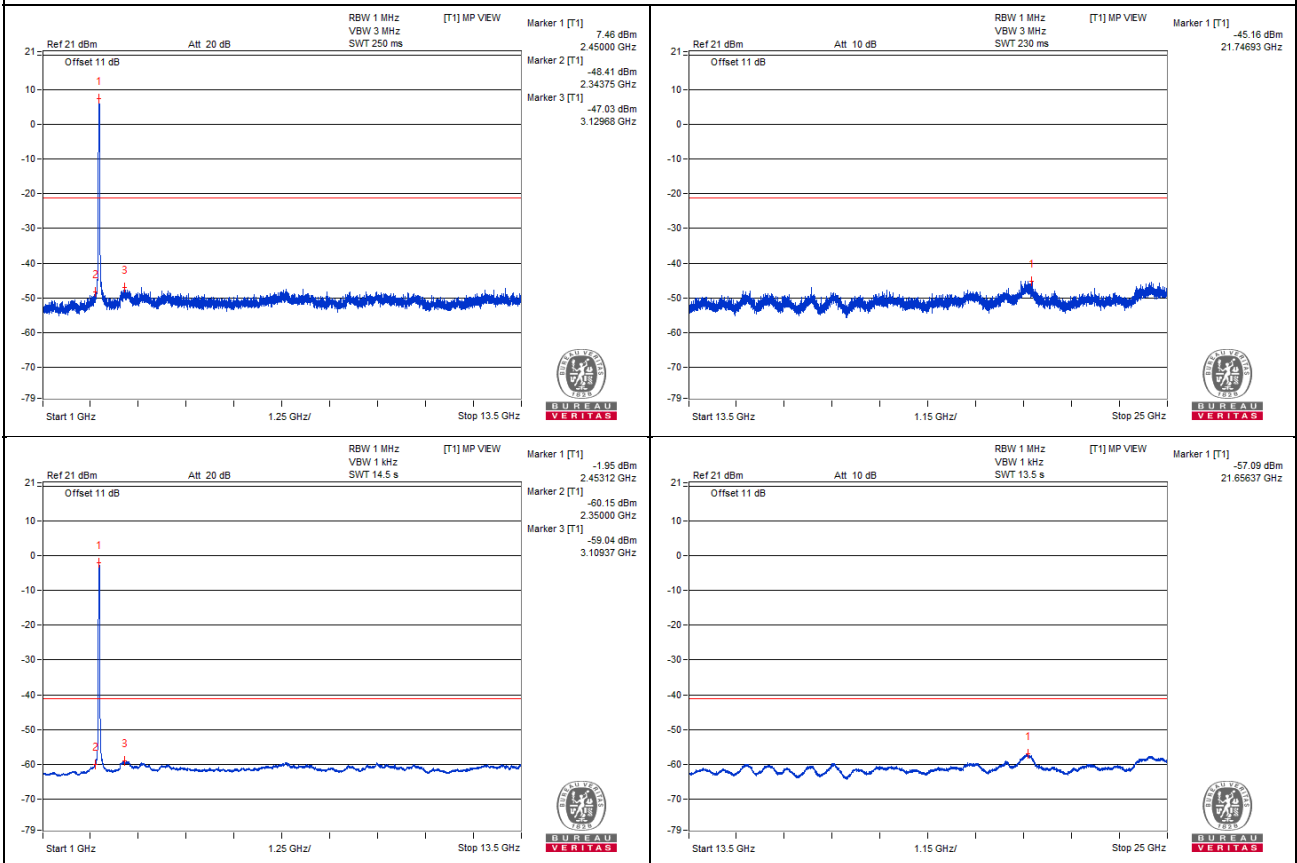
Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2450 PK	108.5	*		7.46	5.78	13.24
2	2343.75 PK	52.63	74	-21.37	-48.41	5.78	-42.63
3	3129.68 PK	54.01	#		-47.03	5.78	-41.25
4	21746.93 PK	55.88	#		-45.16	5.78	-39.38
5	2453.12 AV	99.09	*		-1.95	5.78	3.83
6	2350 AV	40.89	54	-13.11	-60.15	5.78	-54.37
7	3109.37 AV	42	#		-59.04	5.78	-53.26
8	21656.37 AV	43.95	#		-57.09	5.78	-51.31

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 0



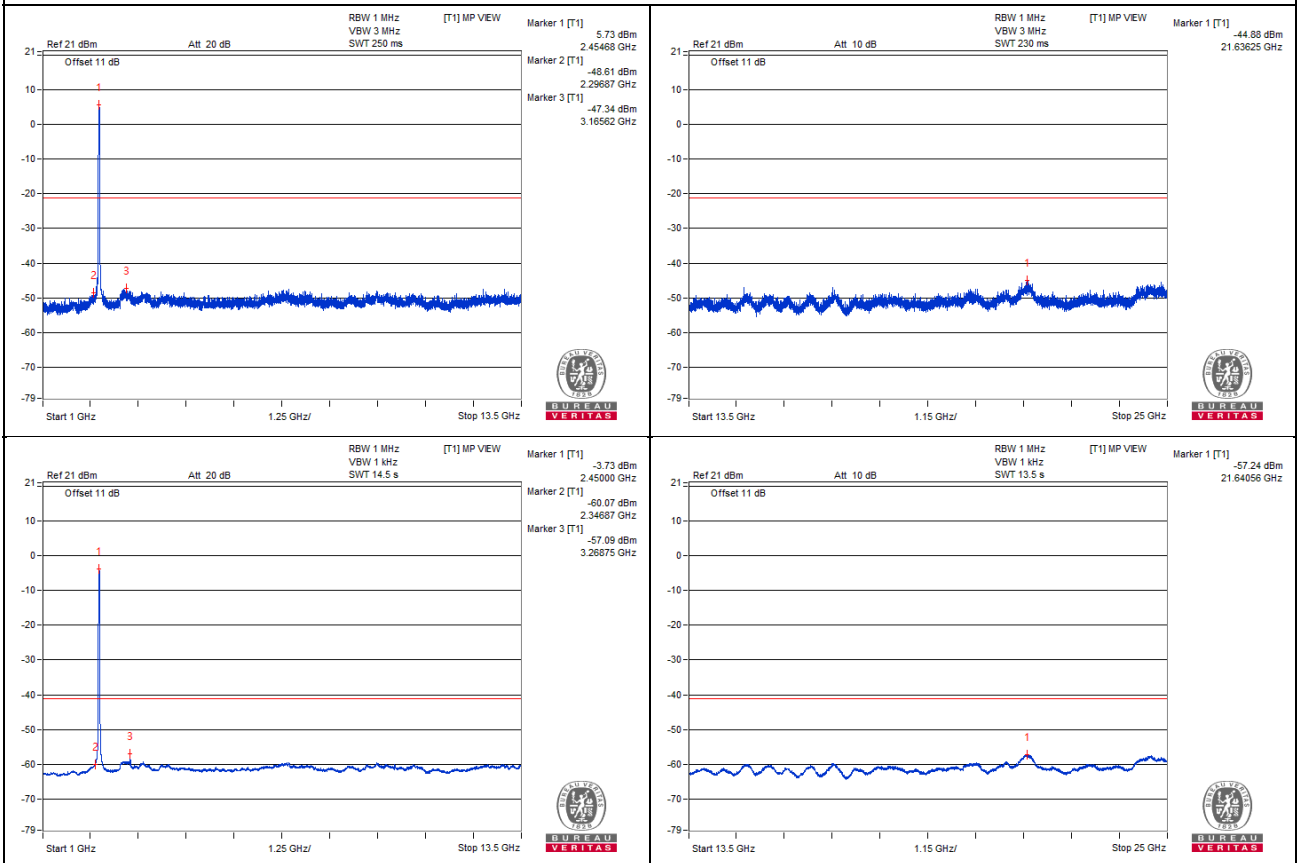
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2454.68 PK	109.26	*		5.73	8.27	14
2	2296.87 PK	54.92	74	-19.08	-48.61	8.27	-40.34
3	3165.62 PK	56.19	#		-47.34	8.27	-39.07
4	21636.25 PK	58.65	#		-44.88	8.27	-36.61
5	2450 AV	99.8	*		-3.73	8.27	4.54
6	2346.87 AV	43.46	54	-10.54	-60.07	8.27	-51.8
7	3268.75 AV	46.44	#		-57.09	8.27	-48.82
8	21640.56 AV	46.29	#		-57.24	8.27	-48.97

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 1



Bandedge table

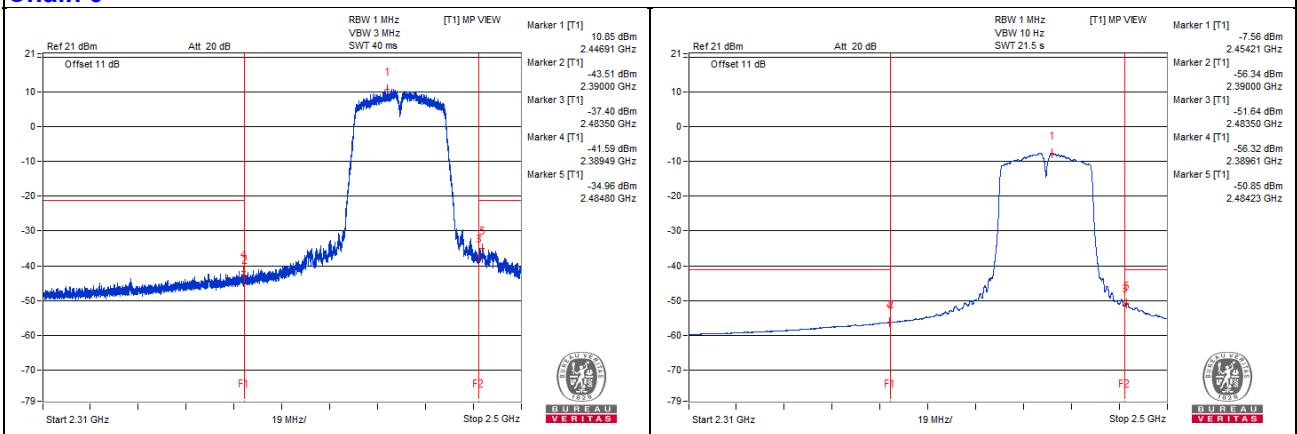
Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2446.91 PK	111.89	*		10.85	5.78	16.63
2	2390 PK	57.53	74	-16.47	-43.51	5.78	-37.73
3	2483.5 PK	63.64	74	-10.36	-37.4	5.78	-31.62
4	2389.49 PK	59.45	74	-14.55	-41.59	5.78	-35.81
5	2484.8 PK	66.08	74	-7.92	-34.96	5.78	-29.18
6	2454.21 AV	93.48	*		-7.56	5.78	-1.78
7	2390 AV	44.7	54	-9.3	-56.34	5.78	-50.56
8	2483.5 AV	49.4	54	-4.6	-51.64	5.78	-45.86
9	2389.61 AV	44.72	54	-9.28	-56.32	5.78	-50.54
10	2484.23 AV	50.19	54	-3.81	-50.85	5.78	-45.07

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.

Chain 0



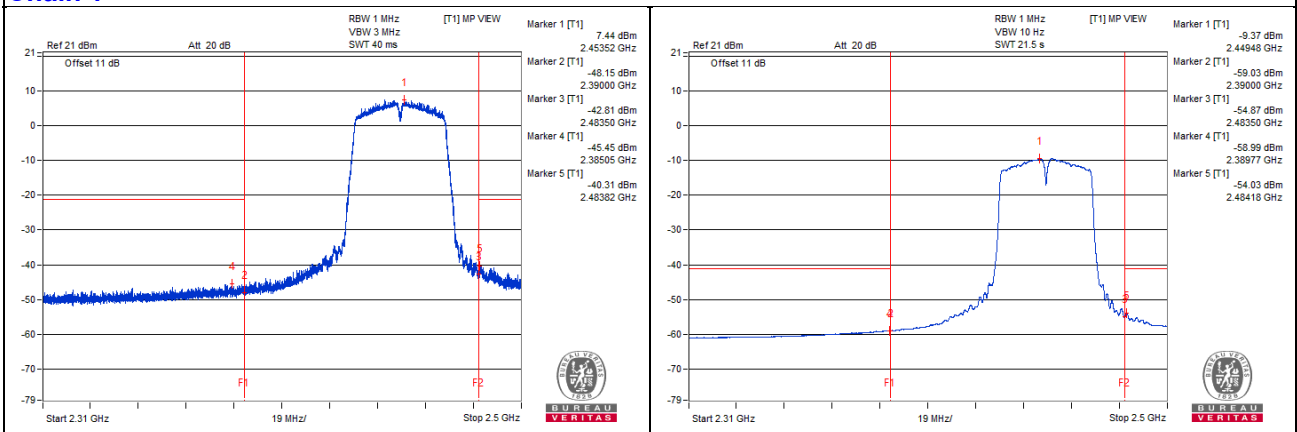
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2453.52 PK	110.97	*		7.44	8.27	15.71
2	2390 PK	55.38	74	-18.62	-48.15	8.27	-39.88
3	2483.5 PK	60.72	74	-13.28	-42.81	8.27	-34.54
4	2385.05 PK	58.08	74	-15.92	-45.45	8.27	-37.18
5	2483.82 PK	63.22	74	-10.78	-40.31	8.27	-32.04
6	2449.48 AV	94.16	*		-9.37	8.27	-1.1
7	2390 AV	44.5	54	-9.5	-59.03	8.27	-50.76
8	2483.5 AV	48.66	54	-5.34	-54.87	8.27	-46.6
9	2389.77 AV	44.54	54	-9.46	-58.99	8.27	-50.72
10	2484.18 AV	49.5	54	-4.5	-54.03	8.27	-45.76

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
- * : Fundamental frequency, the limit was restricted at the output power.

Chain 1



Below 1GHz Data
802.11n (HT20) - Channel 6
Conducted spurious emission table

Chain 0

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	30.12	38.29	#		-63.81	6.84	-56.97
2	166.04	38.85	43.5	-4.65	-63.25	6.84	-56.41
3	837.76	38.76	46	-7.24	-63.34	6.84	-56.5
4	976.96	38.24	54	-15.76	-63.86	6.84	-57.02

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
3. # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.
4. The emission level was including the the appropriate maximum ground reflection factor 4.7 dB.

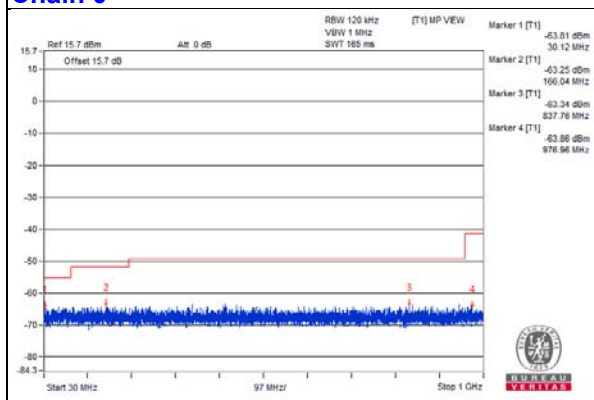
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	40.42	39.48	#		-64.05	8.27	-55.78
2	88.07	40.26	#		-63.27	8.27	-55
3	630.79	40.4	#		-63.13	8.27	-54.86
4	975.5	39.69	54	-14.31	-63.84	8.27	-55.57

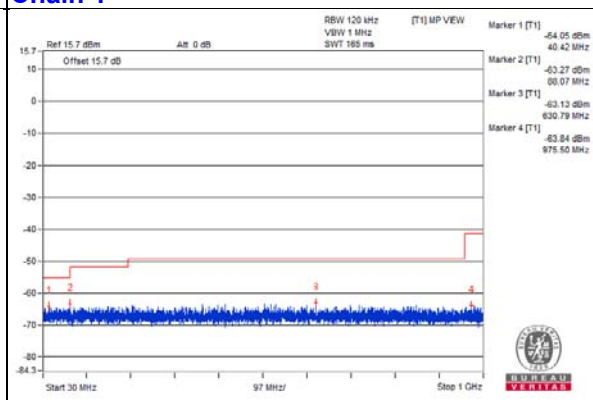
Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
3. # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.
4. The emission level was including the the appropriate maximum ground reflection factor 4.7 dB.

Chain 0



Chain 1



4.1.7.2 Test Results (Mode 2)

802.11b - Channel 1

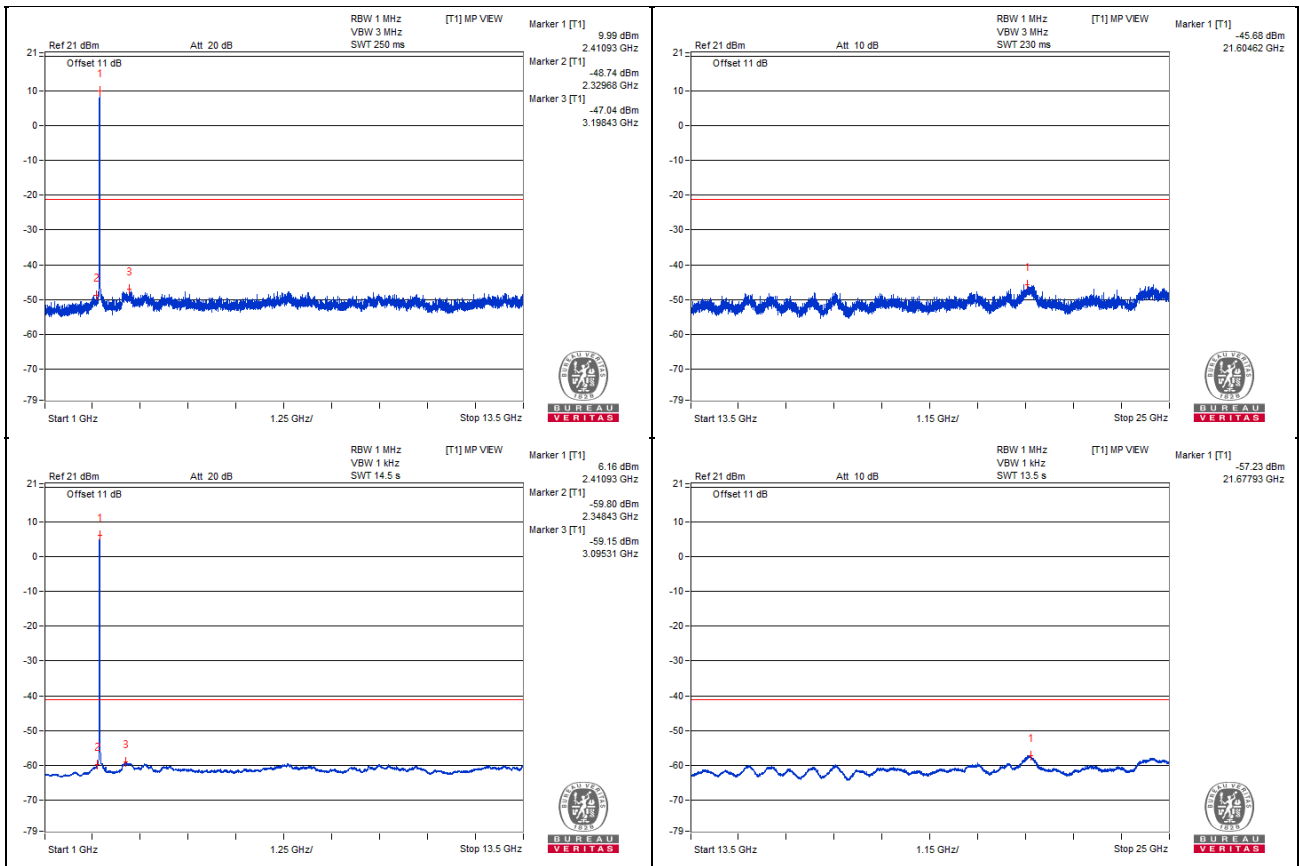
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2329.68 PK	49.29	74	-24.71	-48.74	2.77	-45.97
2	2348.43 AV	38.23	54	-15.77	-59.8	2.77	-57.03

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



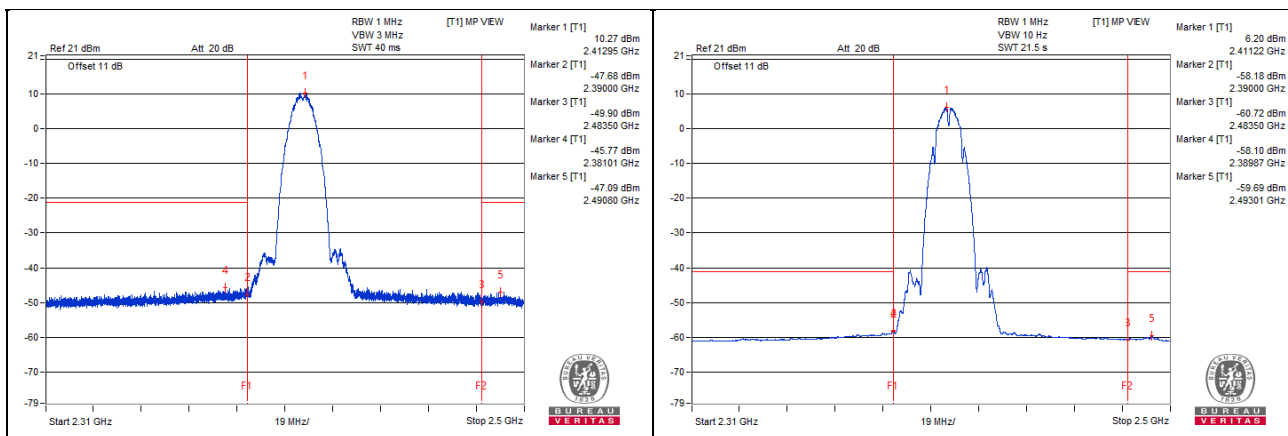
Bandedge table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2381.01 PK	52.26	74	-21.74	-45.77	2.77	-43
2	2389.87 AV	39.93	54	-14.07	-58.1	2.77	-55.33
3	2490.8 PK	50.94	74	-23.06	-47.09	2.77	-44.32
4	2493.01 AV	38.34	54	-15.66	-59.69	2.77	-56.92

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



802.11b - Channel 6

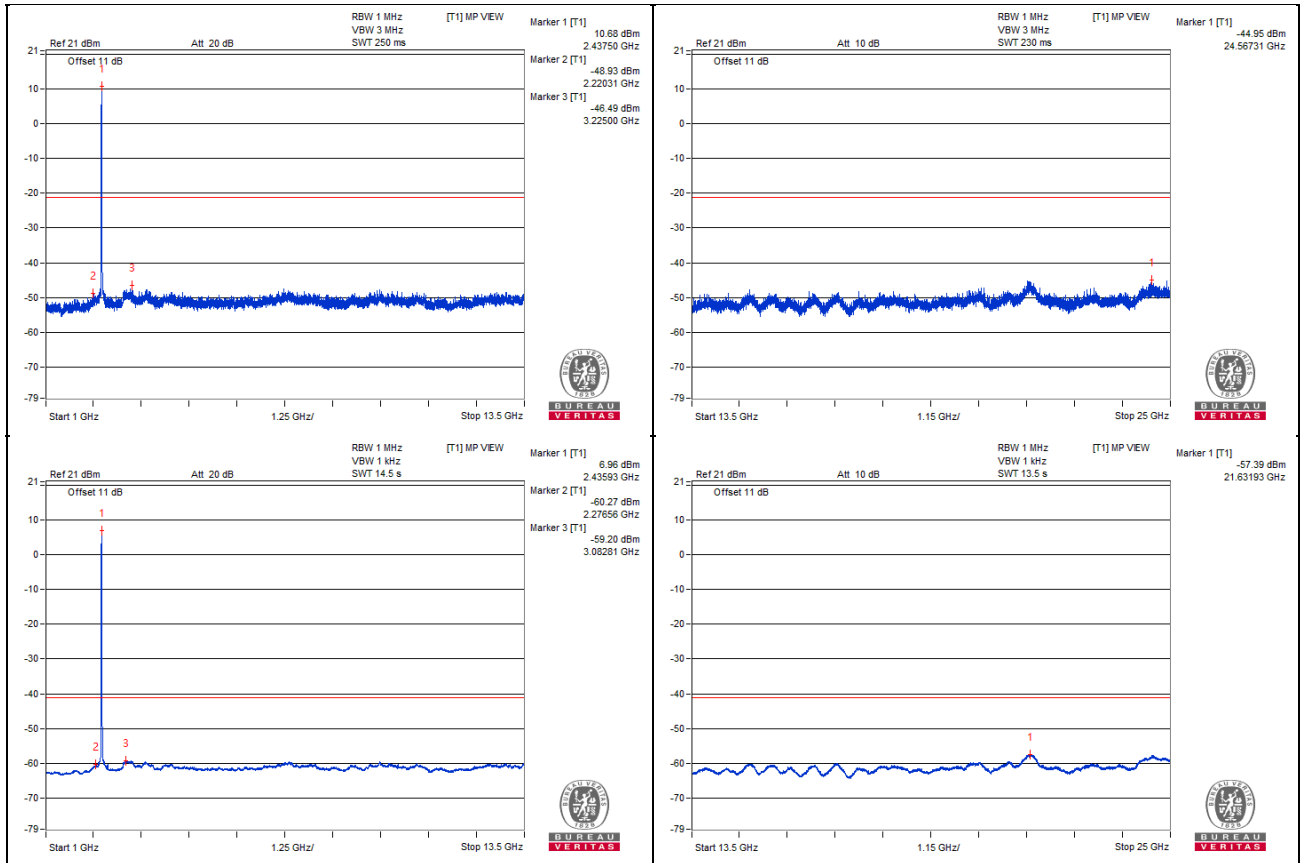
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2220.31 PK	49.1	74	-24.9	-48.93	2.77	-46.16
2	2276.56 AV	37.76	54	-16.24	-60.27	2.77	-57.5

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



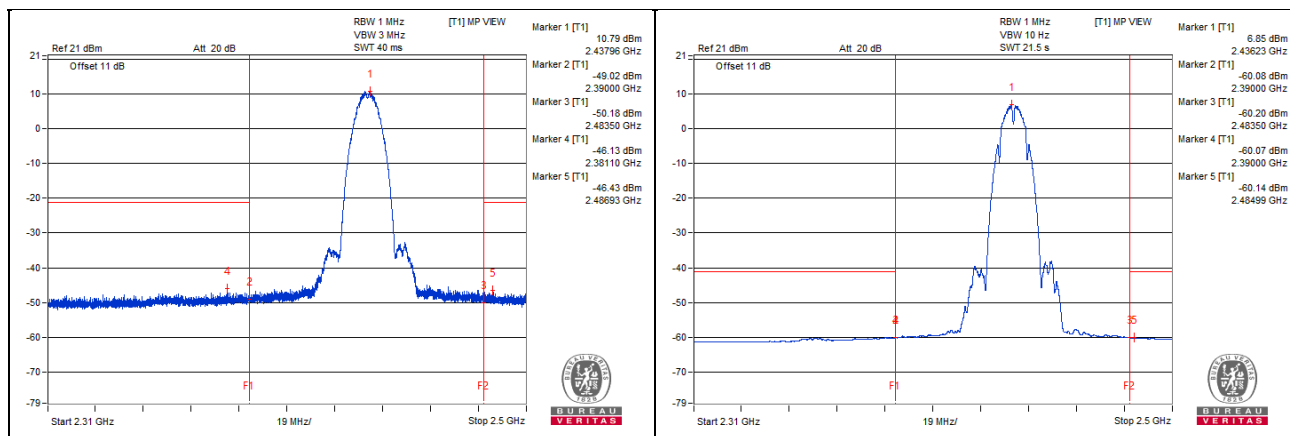
Bandedge table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2381.1 PK	51.9	74	-22.1	-46.13	2.77	-43.36
2	2390 AV	37.96	54	-16.04	-60.07	2.77	-57.3
3	2486.93 PK	51.6	74	-22.4	-46.43	2.77	-43.66
4	2484.99 AV	37.89	54	-16.11	-60.14	2.77	-57.37

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



802.11b - Channel 11

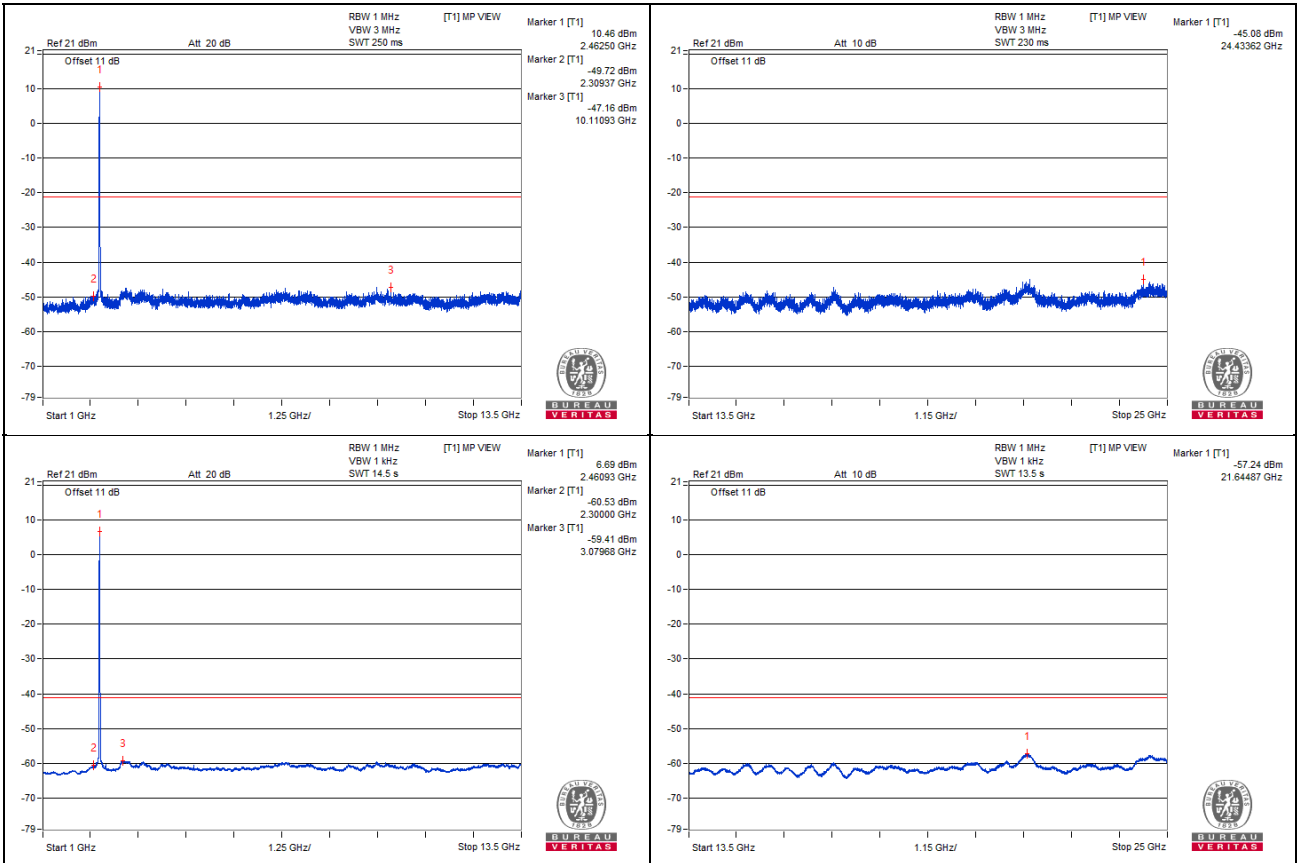
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2300 AV	37.5	54	-16.5	-60.53	2.77	-57.76

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



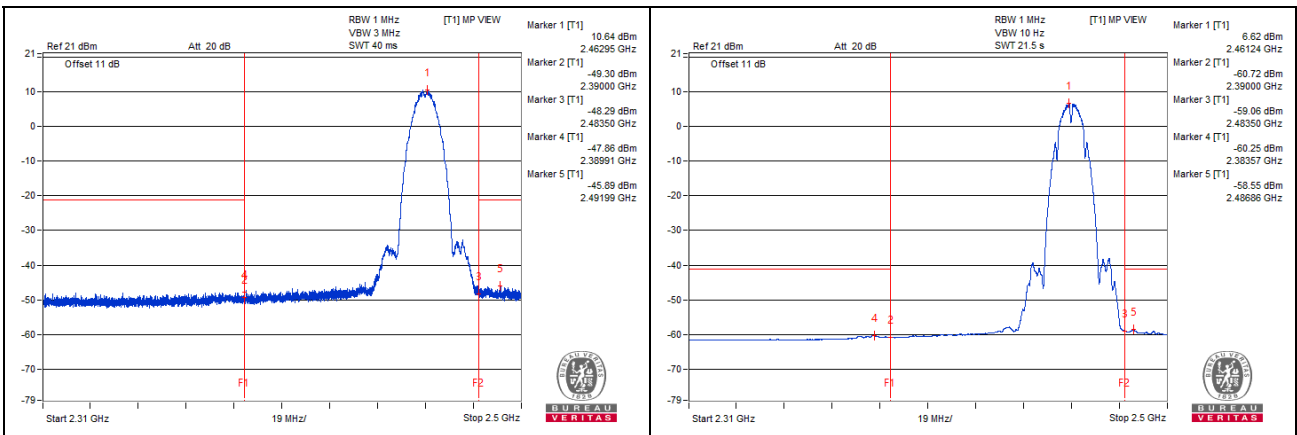
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2389.91 PK	50.17	74	-23.83	-47.86	2.77	-45.09
2	2383.57 AV	37.78	54	-16.22	-60.25	2.77	-57.48
3	2491.99 PK	52.14	74	-21.86	-45.89	2.77	-43.12
4	2486.86 AV	39.48	54	-14.52	-58.55	2.77	-55.78

Note :

$$\text{Emission Level (dBuV/m)} = \text{EIRP Level (dBm)} - 20\log(d) + 104.8$$

d = measurement distance in 3 meters.



802.11g - Channel 1

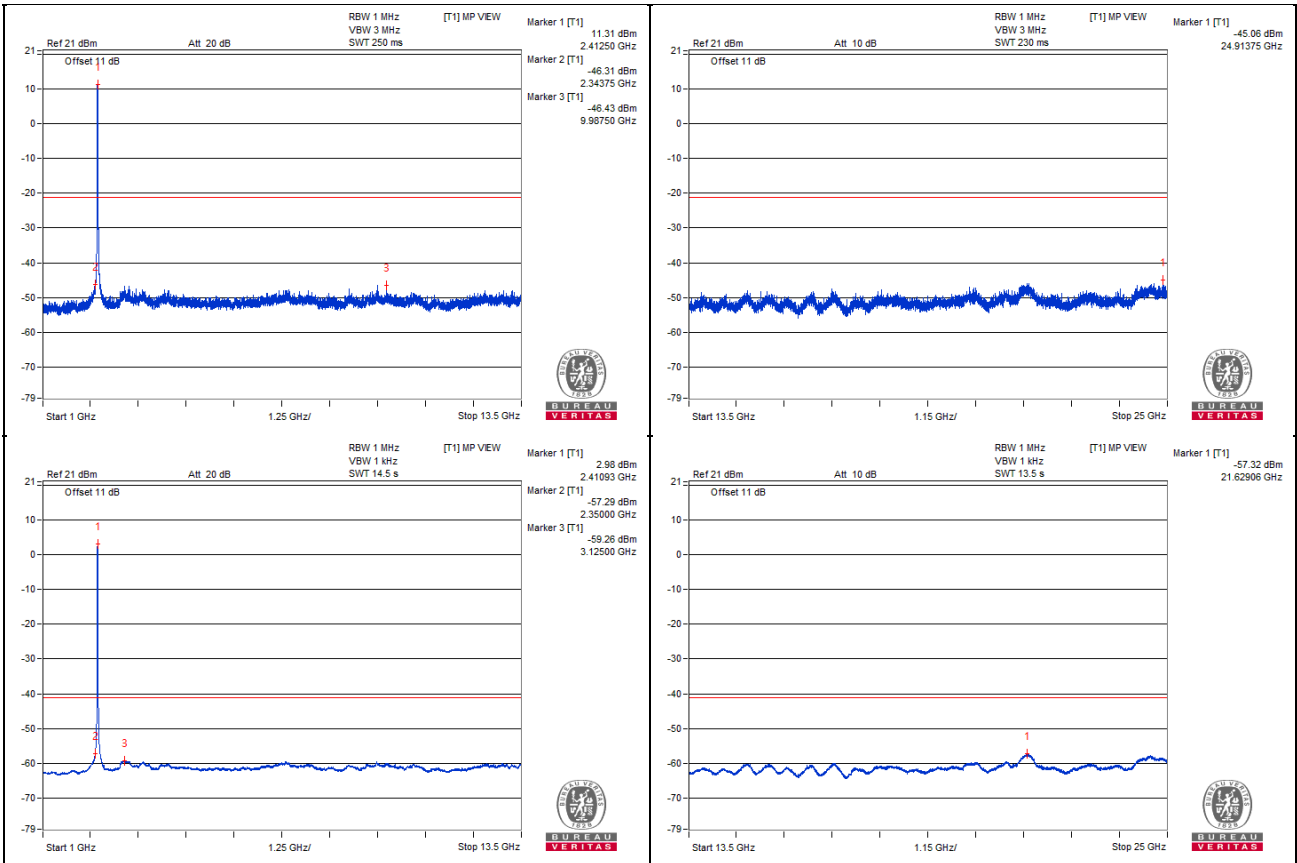
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2343.75 PK	51.72	74	-22.28	-46.31	2.77	-43.54
2	2350 AV	40.74	54	-13.26	-57.29	2.77	-54.52

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



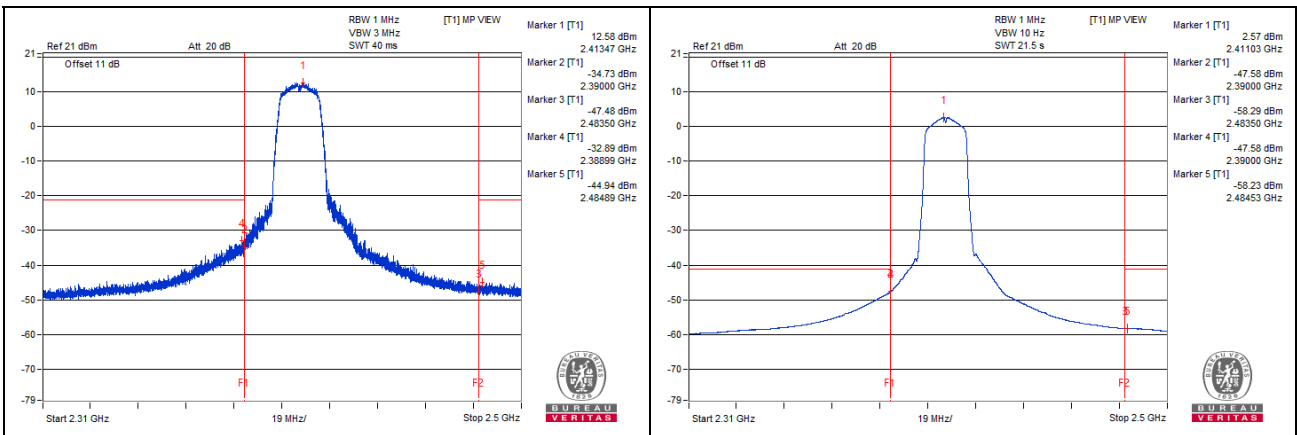
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2388.99 PK	65.14	74	-8.86	-32.89	2.77	-30.12
2	2390 AV	50.45	54	-3.55	-47.58	2.77	-44.81
3	2484.89 PK	53.09	74	-20.91	-44.94	2.77	-42.17
4	2484.53 AV	39.8	54	-14.2	-58.23	2.77	-55.46

Note :

$$\text{Emission Level (dBuV/m)} = \text{EIRP Level (dBm)} - 20\log(d) + 104.8$$

d = measurement distance in 3 meters.



802.11g - Channel 6

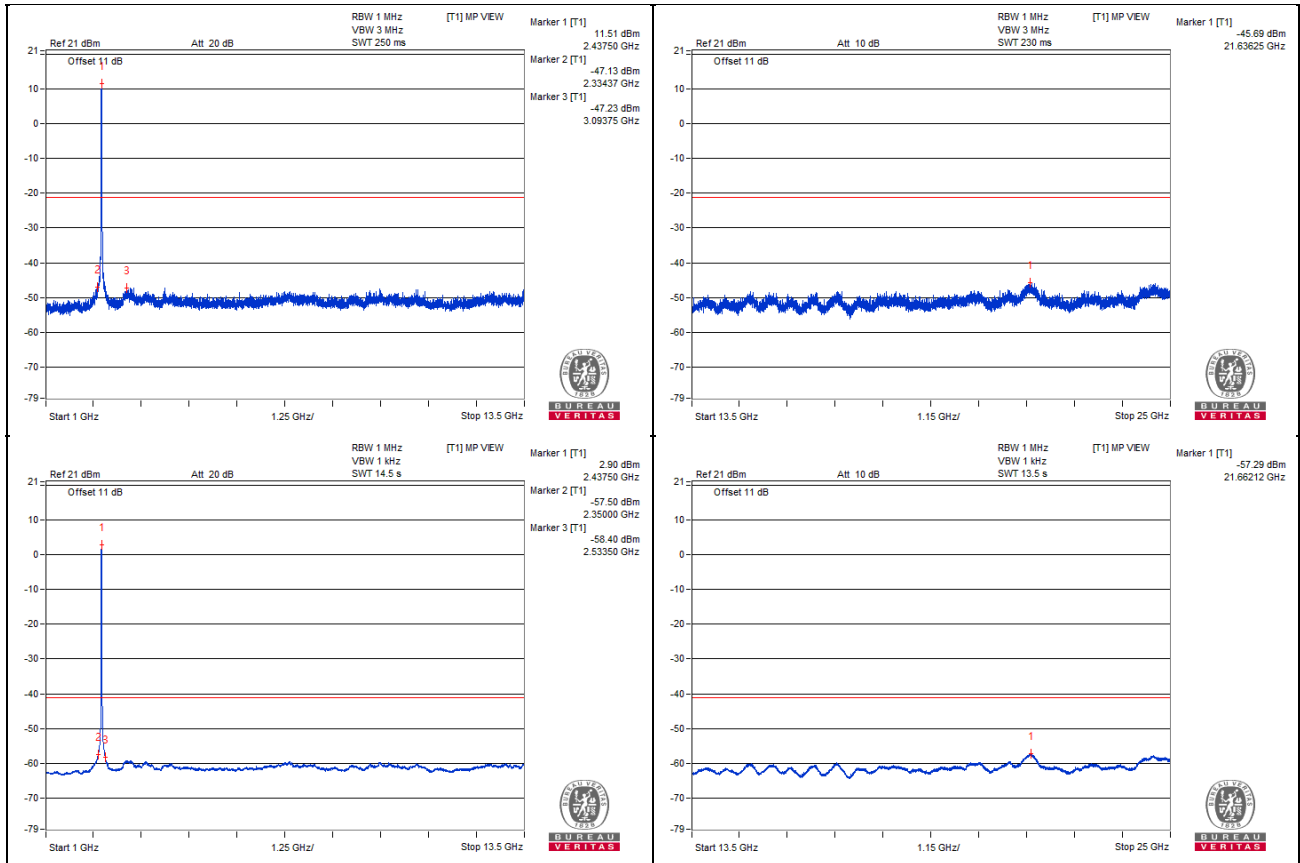
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2334.37 PK	50.9	74	-23.1	-47.13	2.77	-44.36
2	2350 AV	40.53	54	-13.47	-57.5	2.77	-54.73

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.

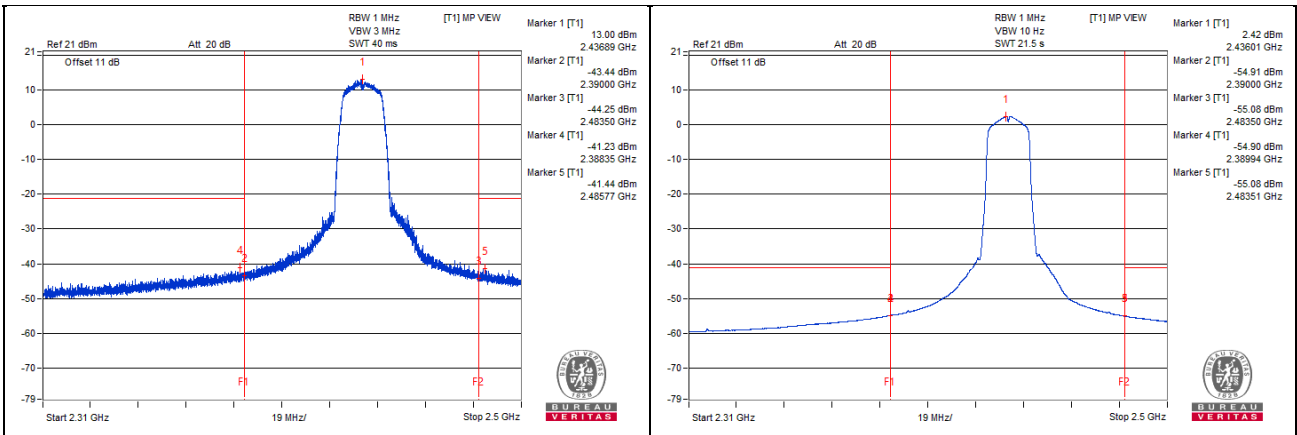


Bandedge table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2388.35 PK	56.8	74	-17.2	-41.23	2.77	-38.46
2	2389.94 AV	43.13	54	-10.87	-54.9	2.77	-52.13
3	2485.77 PK	56.59	74	-17.41	-41.44	2.77	-38.67
4	2483.51 AV	42.95	54	-11.05	-55.08	2.77	-52.31

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.



802.11g - Channel 11

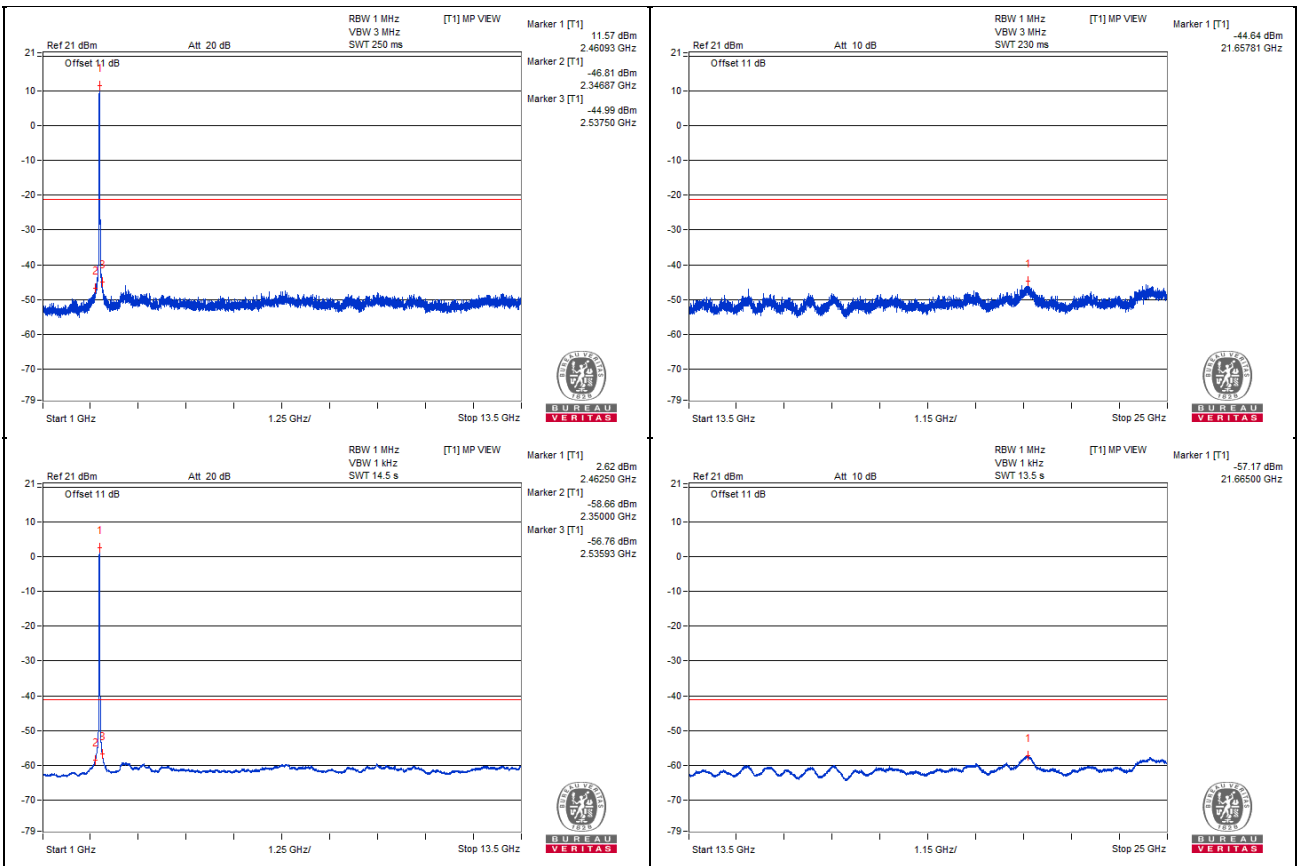
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2346.87 PK	51.22	74	-22.78	-46.81	2.77	-44.04
2	2350 AV	39.37	54	-14.63	-58.66	2.77	-55.89

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.

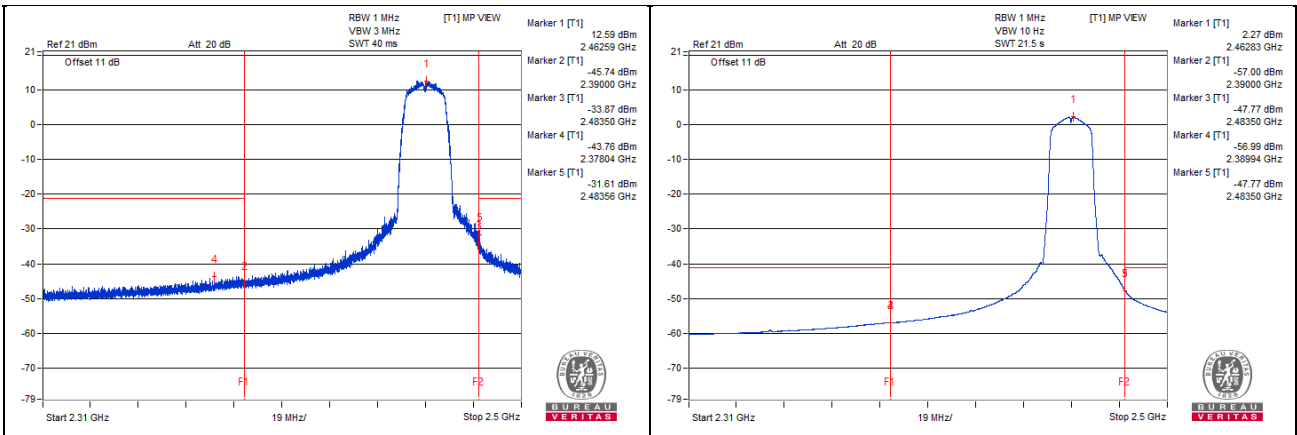


Bandedge table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2378.04 PK	54.27	74	-19.73	-43.76	2.77	-40.99
2	2389.94 AV	41.04	54	-12.96	-56.99	2.77	-54.22
3	2483.56 PK	66.42	74	-7.58	-31.61	2.77	-28.84
4	2483.5 AV	50.26	54	-3.74	-47.77	2.77	-45

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.



802.11n (HT20) - Channel 1

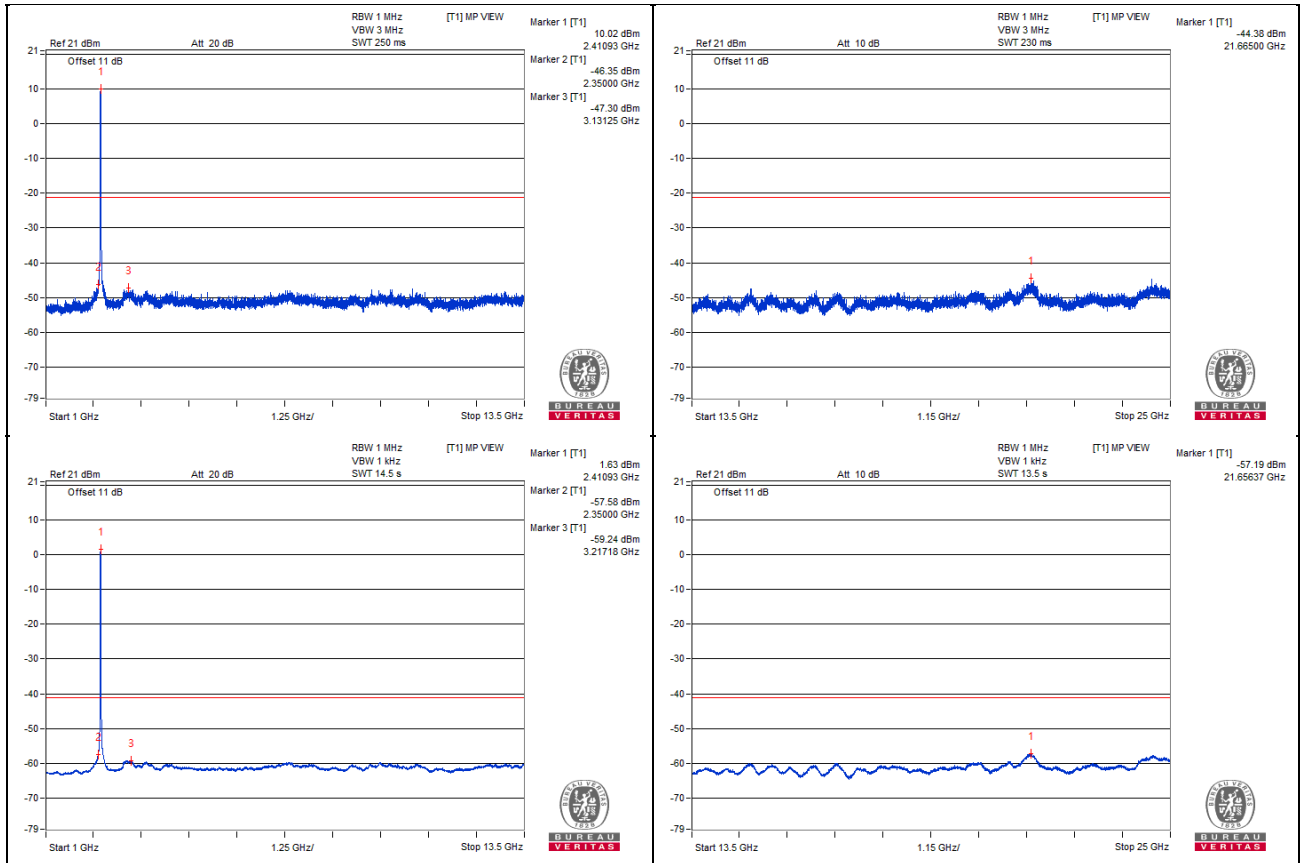
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2350 PK	51.68	74	-22.32	-46.35	2.77	-43.58
2	2350 AV	40.45	54	-13.55	-57.58	2.77	-54.81

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



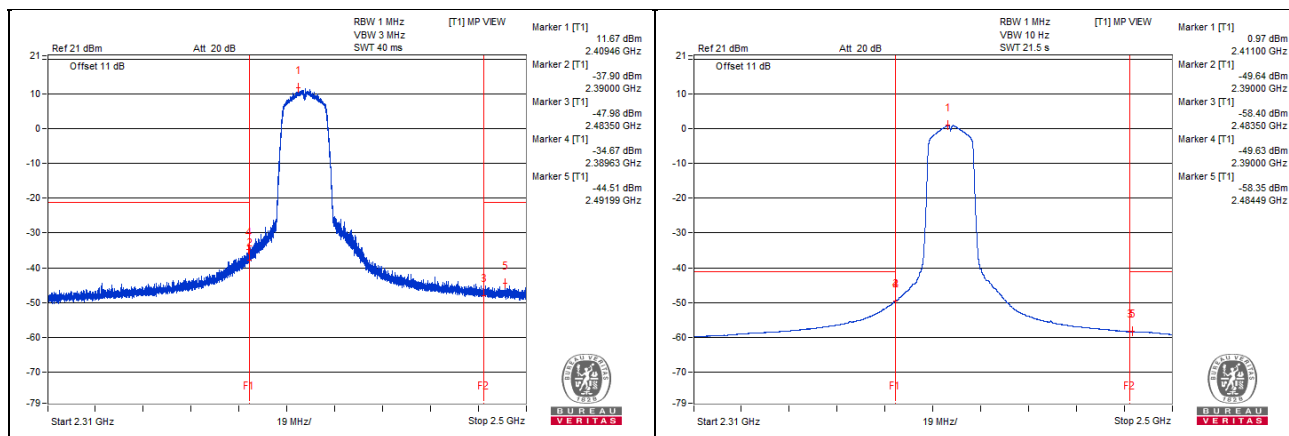
Bandedge table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2389.63 PK	63.36	74	-10.64	-34.67	2.77	-31.9
2	2390 AV	48.4	54	-5.6	-49.63	2.77	-46.86
3	2491.99 PK	53.52	74	-20.48	-44.51	2.77	-41.74
4	2484.49 AV	39.68	54	-14.32	-58.35	2.77	-55.58

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



802.11n (HT20) - Channel 6

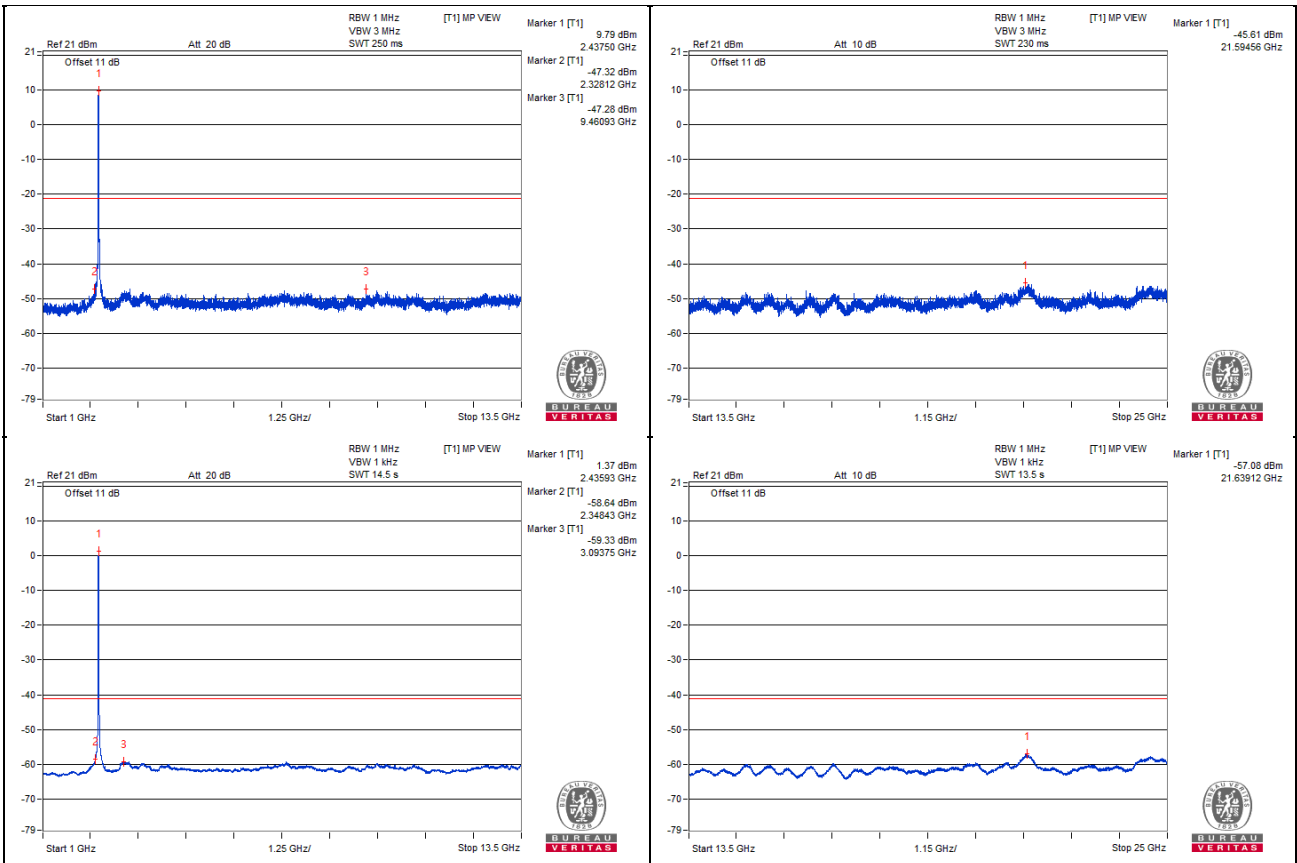
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2328.12 PK	50.71	74	-23.29	-47.32	2.77	-44.55
2	9460.93 PK	50.75	74	-23.25	-47.28	2.77	-44.51
3	2348.43 AV	39.39	54	-14.61	-58.64	2.77	-55.87

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



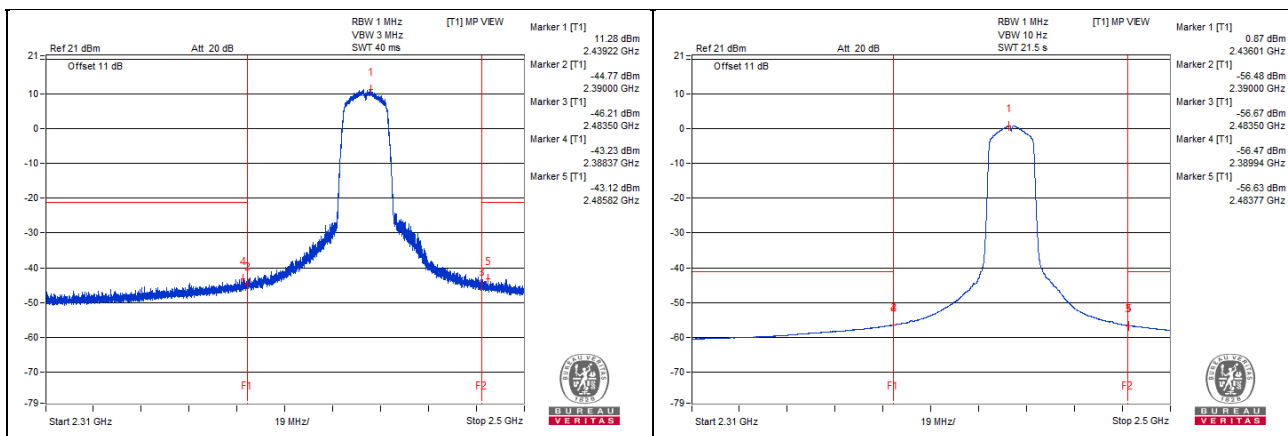
Bandedge table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2388.37 PK	54.8	74	-19.2	-43.23	2.77	-40.46
2	2389.94 AV	41.56	54	-12.44	-56.47	2.77	-53.7
3	2485.82 PK	54.91	74	-19.09	-43.12	2.77	-40.35
4	2483.77 AV	41.4	54	-12.6	-56.63	2.77	-53.86

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



802.11n (HT20) - Channel 11

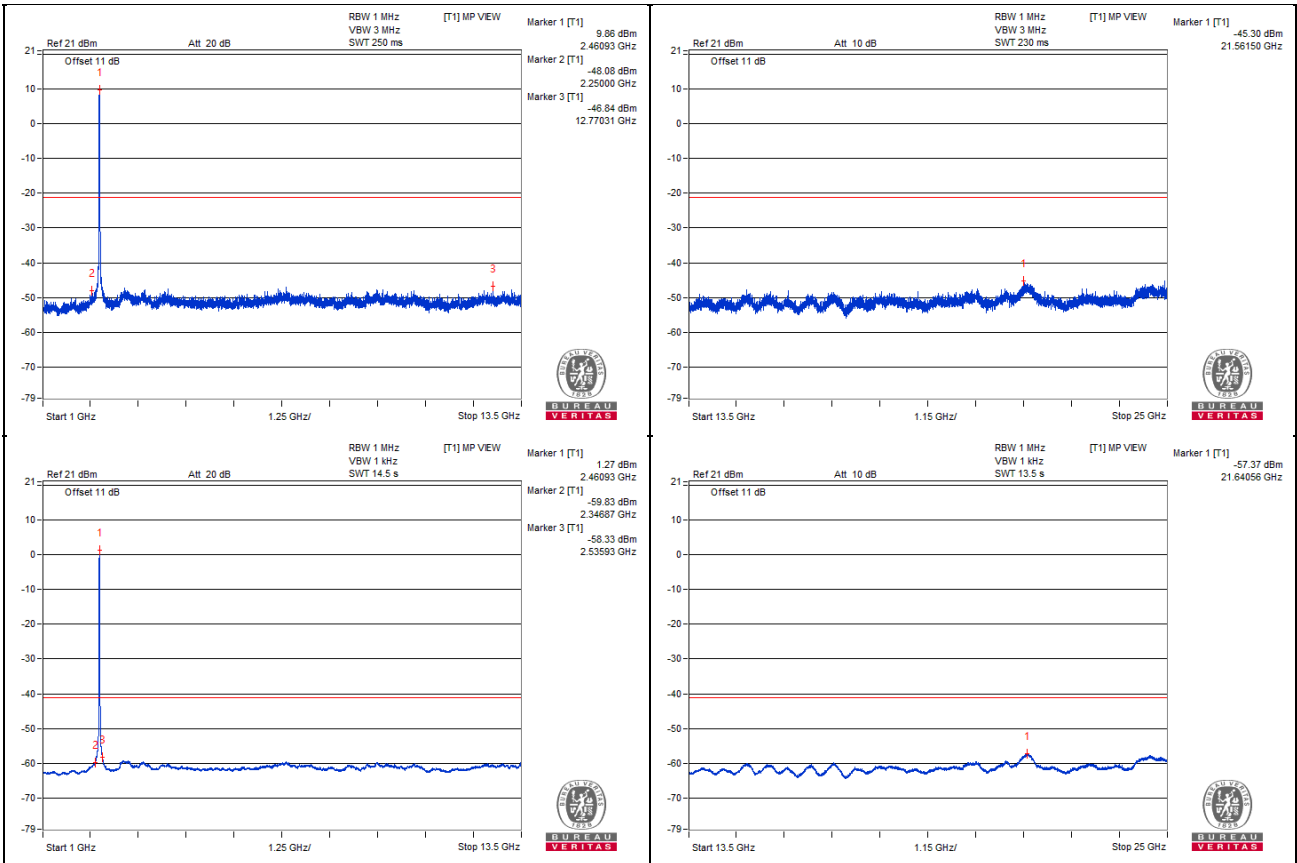
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2250 PK	49.95	74	-24.05	-48.08	2.77	-45.31
2	2346.87 AV	38.2	54	-15.8	-59.83	2.77	-57.06

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



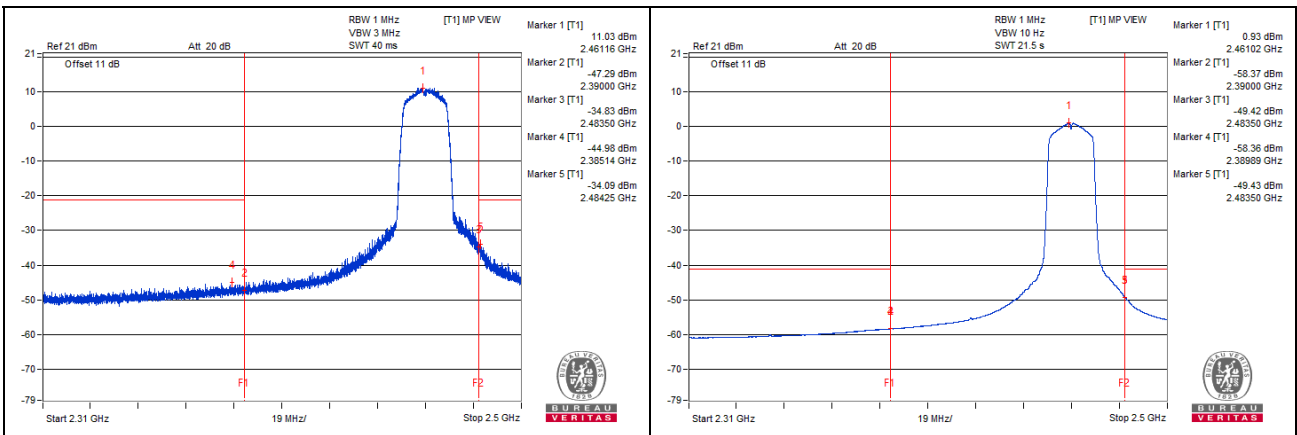
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2385.14 PK	53.05	74	-20.95	-44.98	2.77	-42.21
2	2389.89 AV	39.67	54	-14.33	-58.36	2.77	-55.59
3	2484.25 PK	63.94	74	-10.06	-34.09	2.77	-31.32
4	2483.5 AV	48.6	54	-5.4	-49.43	2.77	-46.66

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



802.11n (HT40) - Channel 3

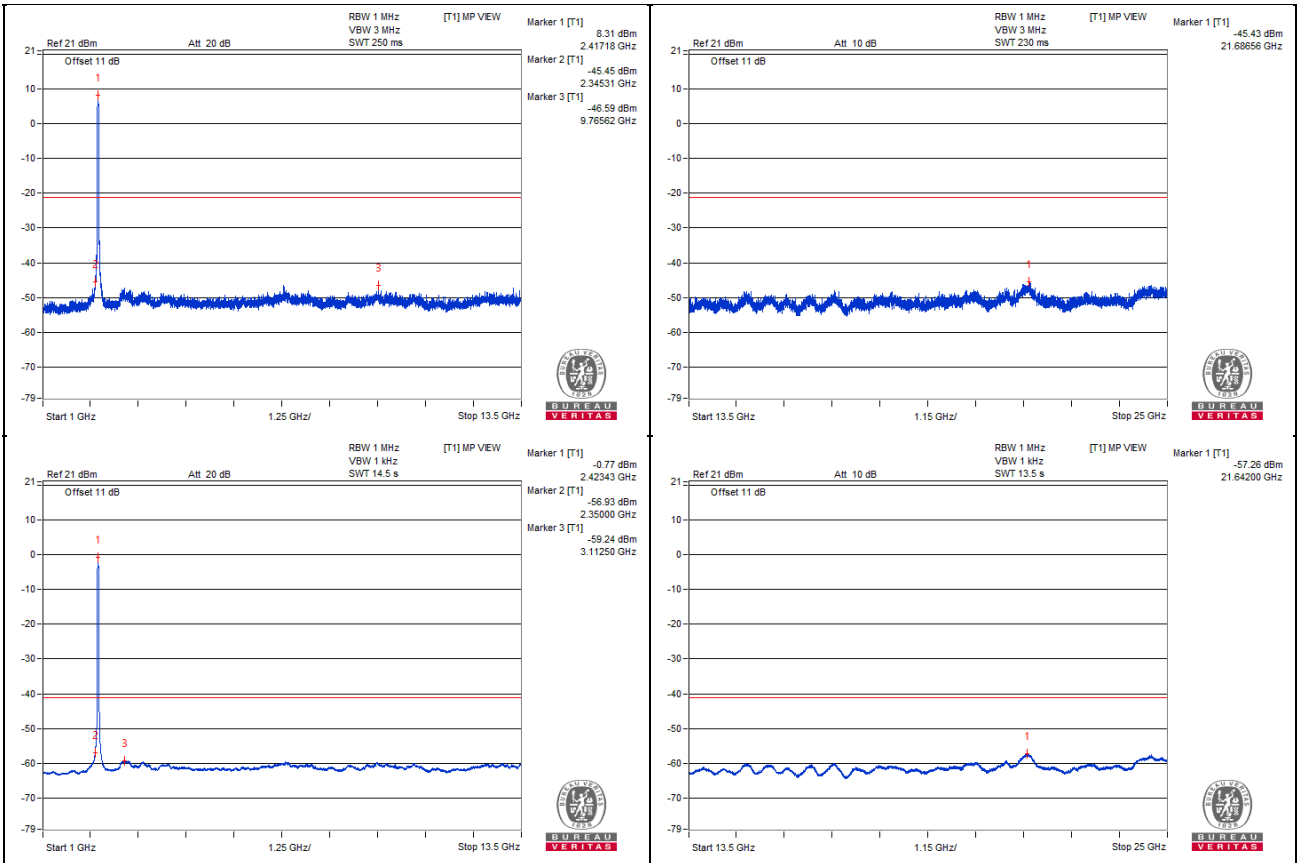
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2345.31 PK	52.58	74	-21.42	-45.45	2.77	-42.68
2	2350 AV	41.1	54	-12.9	-56.93	2.77	-54.16

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



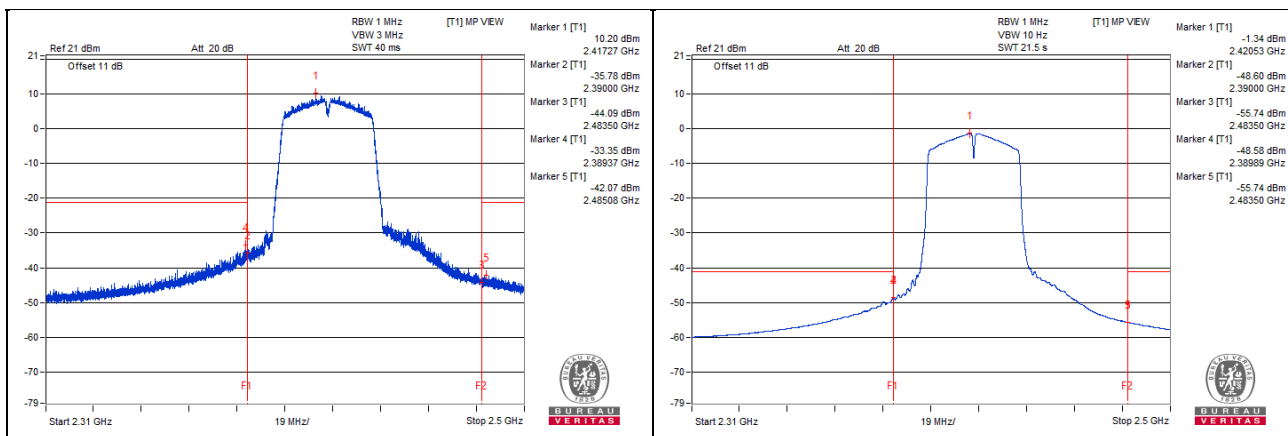
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2389.37 PK	64.68	74	-9.32	-33.35	2.77	-30.58
2	2389.89 AV	49.45	54	-4.55	-48.58	2.77	-45.81
3	2485.08 PK	55.96	74	-18.04	-42.07	2.77	-39.3
4	2483.5 AV	42.29	54	-11.71	-55.74	2.77	-52.97

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



802.11n (HT40) - Channel 6

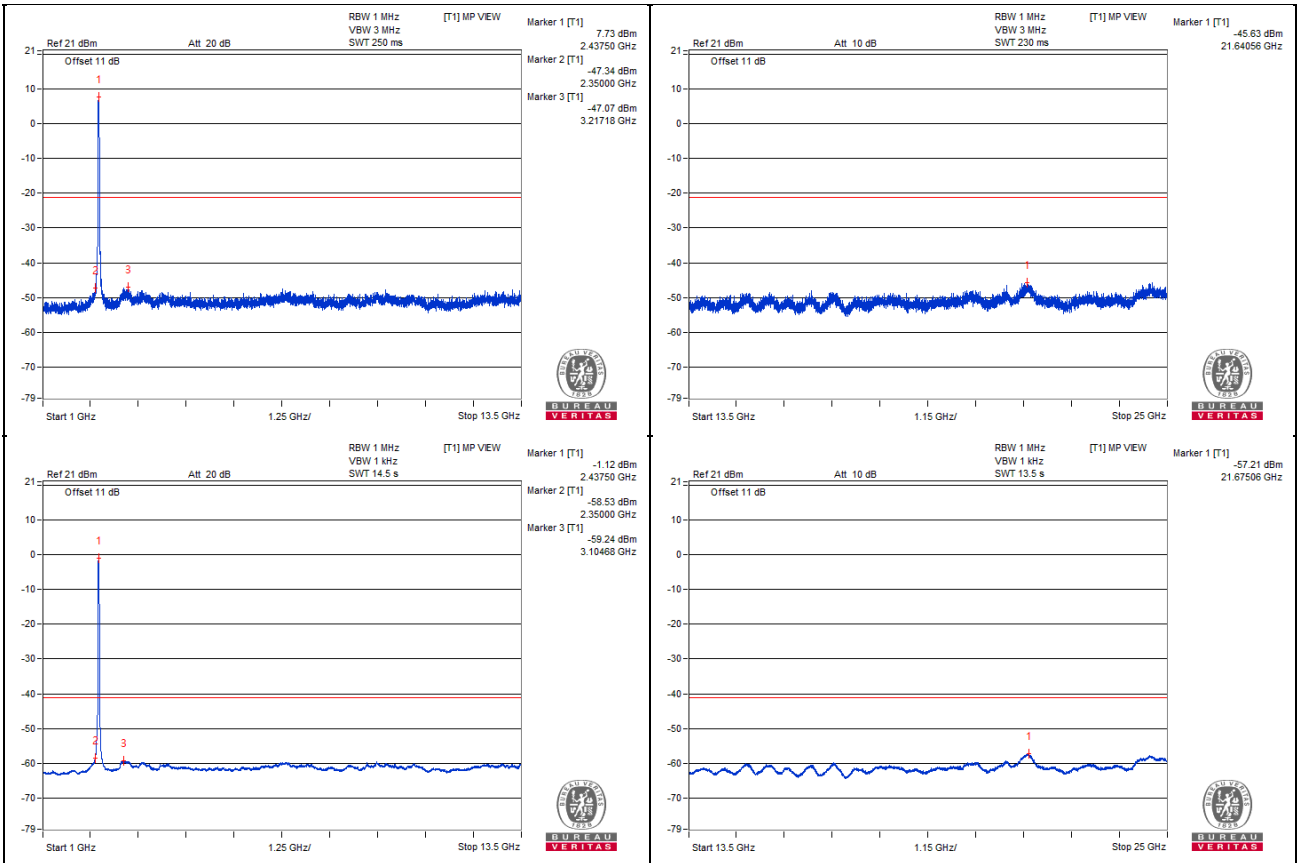
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2350 PK	50.69	74	-23.31	-47.34	2.77	-44.57
2	2350 AV	39.5	54	-14.5	-58.53	2.77	-55.76

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.

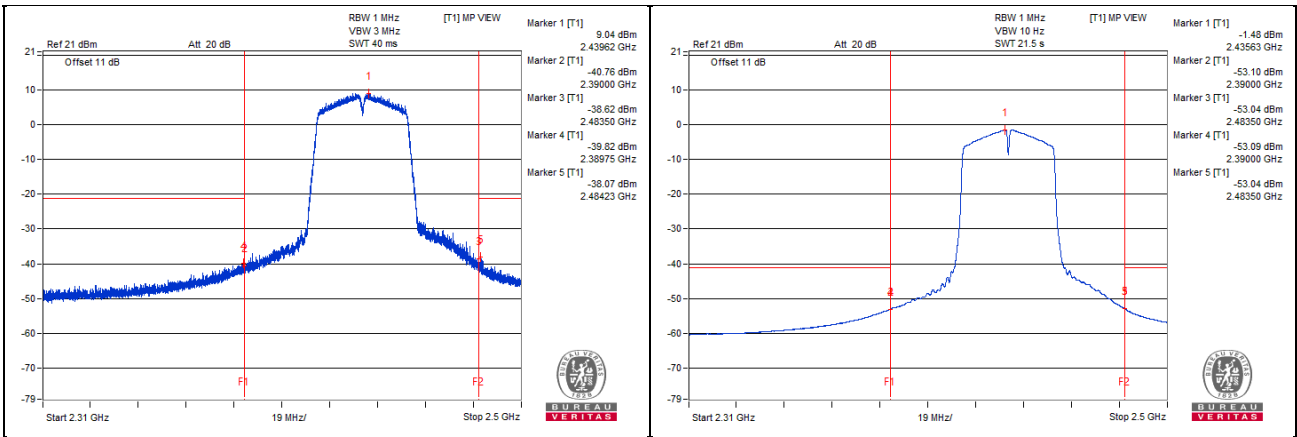


Bandedge table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2389.75 PK	58.21	74	-15.79	-39.82	2.77	-37.05
2	2390 AV	44.94	54	-9.06	-53.09	2.77	-50.32
3	2484.23 PK	59.96	74	-14.04	-38.07	2.77	-35.3
4	2483.5 AV	44.99	54	-9.01	-53.04	2.77	-50.27

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.



802.11n (HT40) - Channel 9

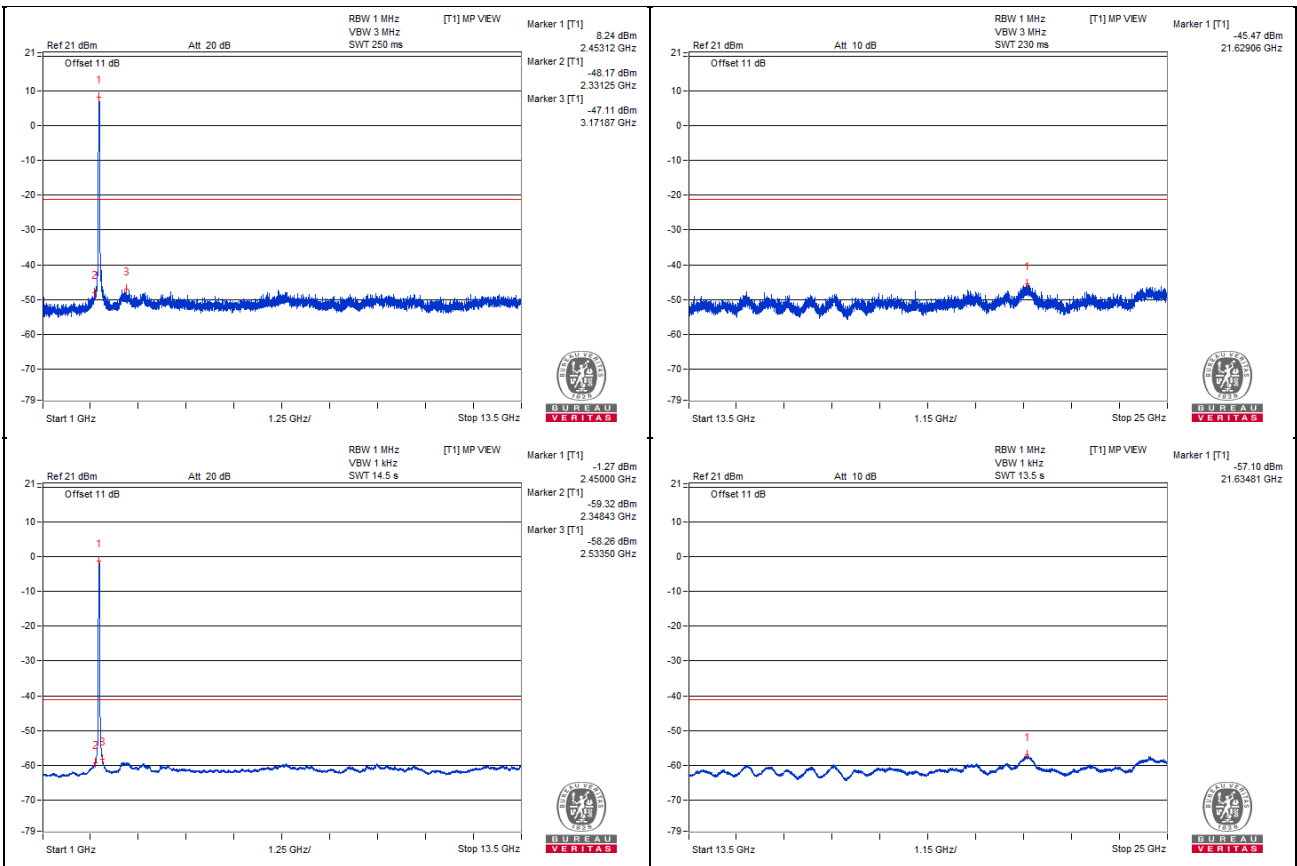
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2331.25 PK	49.86	74	-24.14	-48.17	2.77	-45.4
2	2348.43 AV	38.71	54	-15.29	-59.32	2.77	-56.55

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



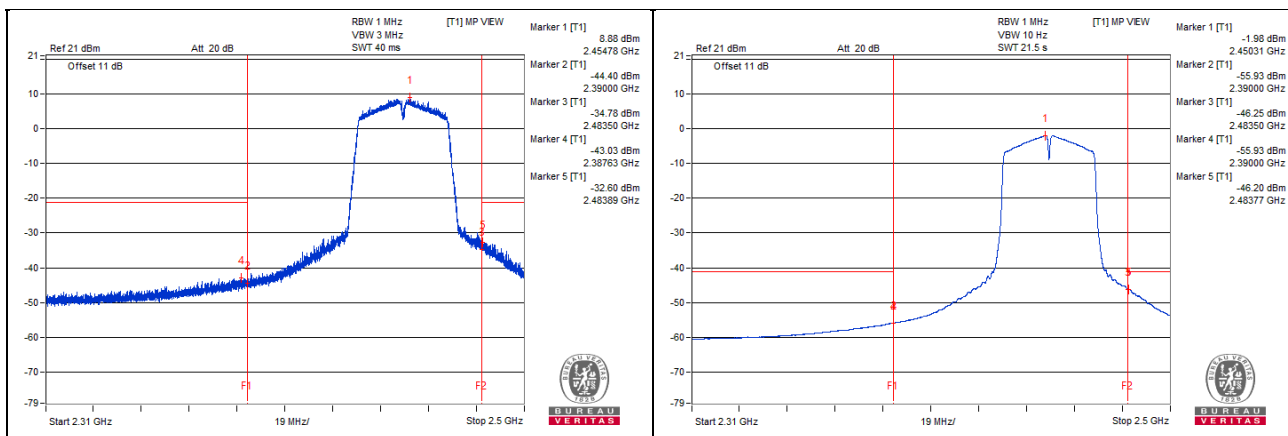
Bandedge table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2387.63 PK	55	74	-19	-43.03	2.77	-40.26
2	2390 AV	42.1	54	-11.9	-55.93	2.77	-53.16
3	2483.89 PK	65.43	74	-8.57	-32.6	2.77	-29.83
4	2483.77 AV	51.83	54	-2.17	-46.2	2.77	-43.43

Note :

Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



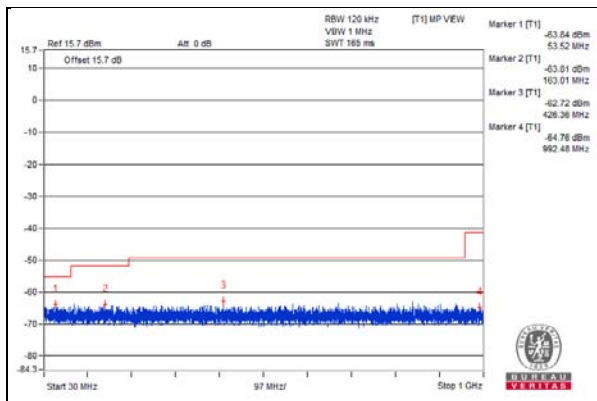
Below 1GHz Data
802.11b - Channel 6

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	53.52	35.25	#		-63.84	3.83	-60.01
2	163.01	35.28	43.5	-8.22	-63.81	3.83	-59.98
3	426.36	36.37	#		-62.72	3.83	-58.89
4	992.48	34.33	54	-19.67	-64.76	3.83	-60.93

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.
3. The emission level was including the the appropriate maximum ground reflection factor 4.7 dB.

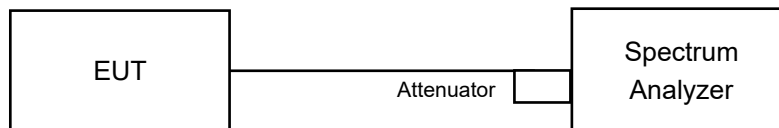


4.2 6dB Bandwidth Measurement

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) $\geq 3 \times$ 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. In order to obtain results more easily, change max hold to view. It has no effect on the result

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 lowest, middle and highest channel frequencies individually.

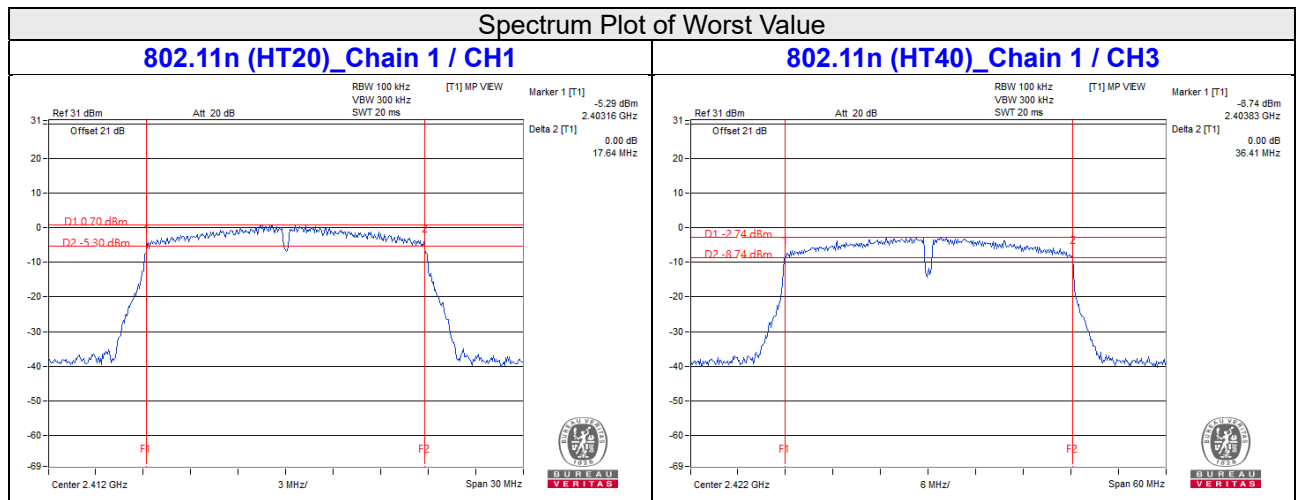
4.2.7 Test Result (Mode 1)

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.66	17.64	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	36.45	36.41	0.5	Pass



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,

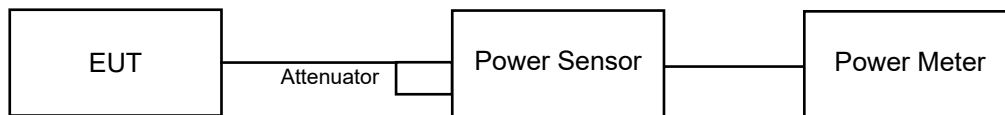
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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

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

Average power 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 4.3.6.

4.3.7 Test Results (Mode 1)

FOR PEAK POWER

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.61	22.67	414.542	26.18	30.00	Pass
6	2437	23.77	23.26	450.068	26.53	30.00	Pass
11	2462	23.67	22.87	426.451	26.30	30.00	Pass

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	23.27	22.26	380.592	25.80	30.00	Pass
6	2437	23.71	23.02	435.41	26.39	30.00	Pass
9	2452	23.75	22.22	403.862	26.06	30.00	Pass

FOR AVERAGE POWER

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	15.98	14.44	67.425	18.29
6	2437	16.59	16.11	86.436	19.37
11	2462	15.95	14.66	68.597	18.36

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
3	2422	15.43	14.34	62.078	17.93
6	2437	16.39	15.96	82.997	19.19
9	2452	15.93	14.53	67.553	18.30

4.3.8 Test Results (Mode 2)

FOR PEAK POWER

802.11b

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	83.56	19.22	30.00	Pass
6	2437	88.512	19.47	30.00	Pass
11	2462	84.333	19.26	30.00	Pass

802.11g

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	272.898	24.36	30.00	Pass
6	2437	273.527	24.37	30.00	Pass
11	2462	271.644	24.34	30.00	Pass

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	223.357	23.49	30.00	Pass
6	2437	207.97	23.18	30.00	Pass
11	2462	204.174	23.10	30.00	Pass

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
3	2422	234.423	23.70	30.00	Pass
6	2437	204.174	23.10	30.00	Pass
9	2452	200.447	23.02	30.00	Pass

FOR AVERAGE POWER

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	50.35	17.02
6	2437	54.576	17.37
11	2462	51.05	17.08

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	51.05	17.08
6	2437	53.211	17.26
11	2462	52.24	17.18

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	41.115	16.14
6	2437	40.365	16.06
11	2462	39.994	16.02

802.11n (HT40)

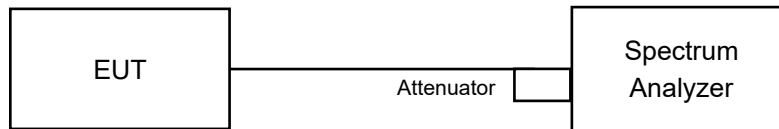
Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
3	2422	43.152	16.35
6	2437	40.272	16.05
9	2452	39.994	16.02

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

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set the VBW $\geq 3 \times \text{RBW}$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.
In order to obtain results more easily, change max hold to view. It has no effect on the result

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Condition

Same as Item 4.3.6

4.4.7 Test Results (Mode 1)

802.11n (HT20)

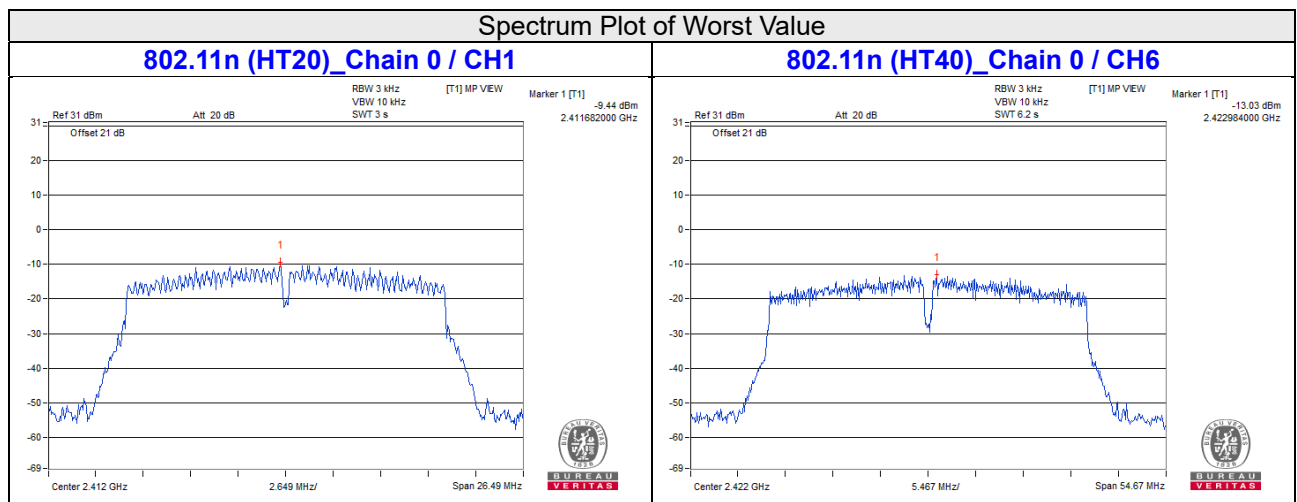
Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1			
1	2412	-9.44	-10.98	-7.13	8.00	Pass

Note: The directional gain = $10 \log[(10^{G0/10} + 10^{G1/10}) / 2] = 4.19 \text{ dBi} < 6 \text{ dBi}$, so the power density limit shall not be reduced.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1			
3	2422	-13.03	-13.99	-10.47	8.00	Pass

Note: The directional gain = $10 \log[(10^{G0/10} + 10^{G1/10}) / 2] = 4.19 \text{ dBi} < 6 \text{ dBi}$, so the power density limit shall not be reduced.

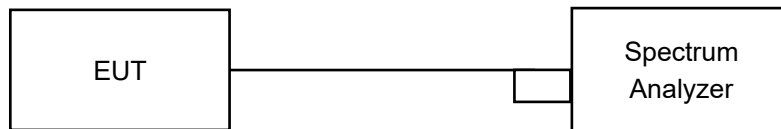


4.5 Conducted Out of Band Emission Measurement

4.5.1 Limits of Conducted Out of Band Emission Measurement

Below 20dB 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 \geq 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.. In order to obtain results more easily, change max hold to view. It has no effect on the result.

MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW \geq 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.
In order to obtain results more easily, change max hold to view. It has no effect on the result.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

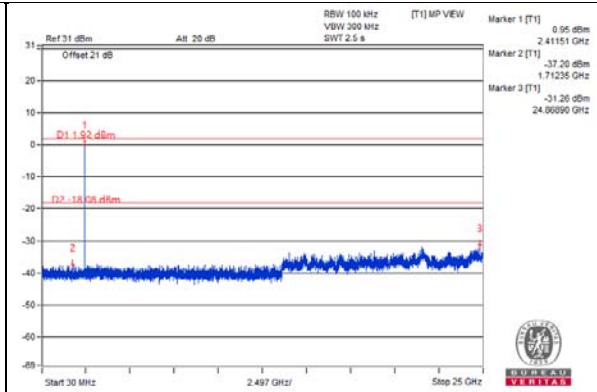
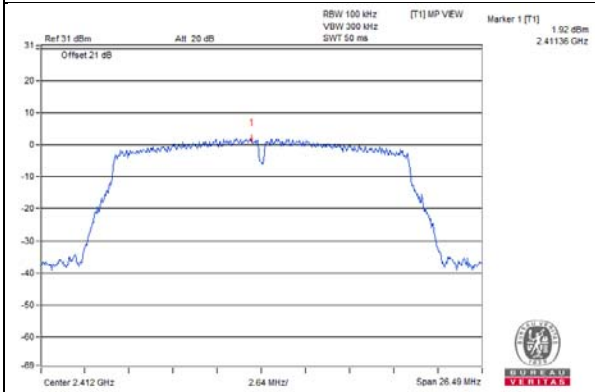
Same as Item 4.3.6

4.5.7 Test Results (Mode 1)

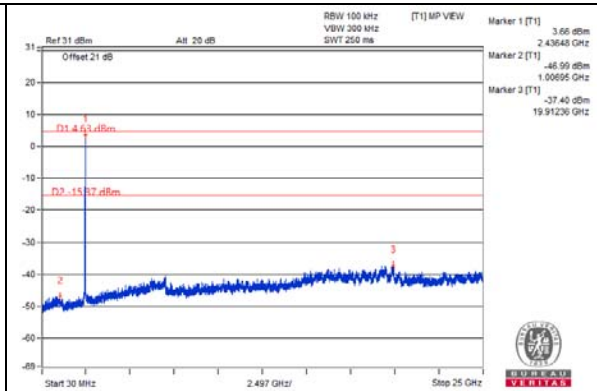
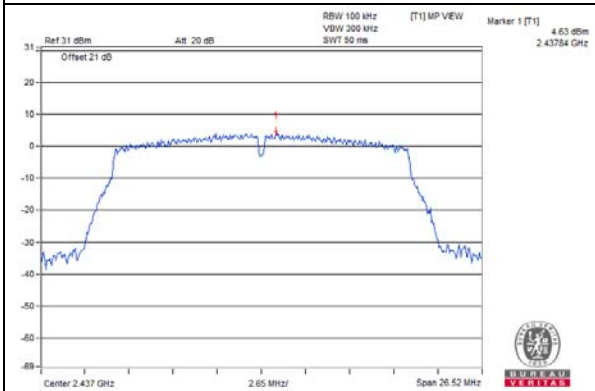
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11n (HT20)
Chain 0

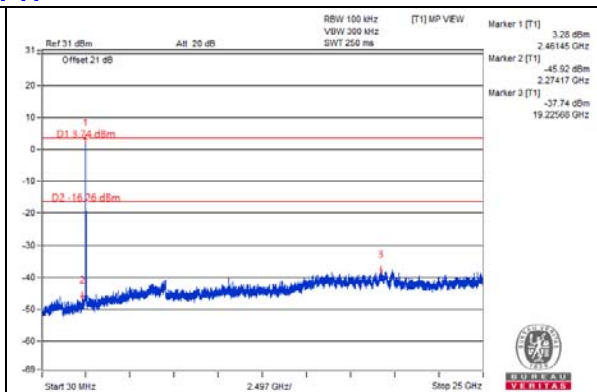
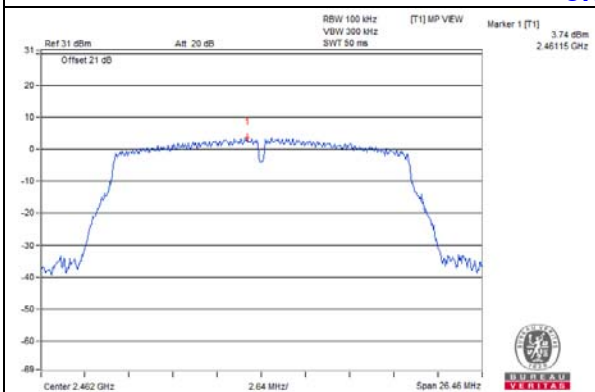
CH 1



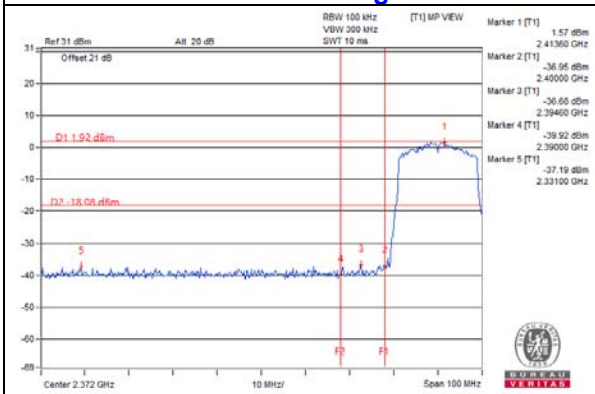
CH 6



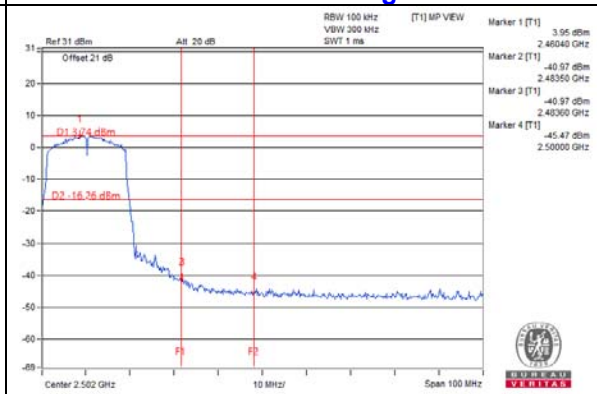
CH 11



CH 1 Band edge

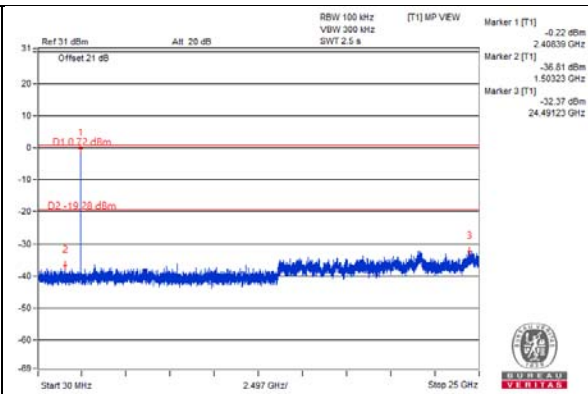
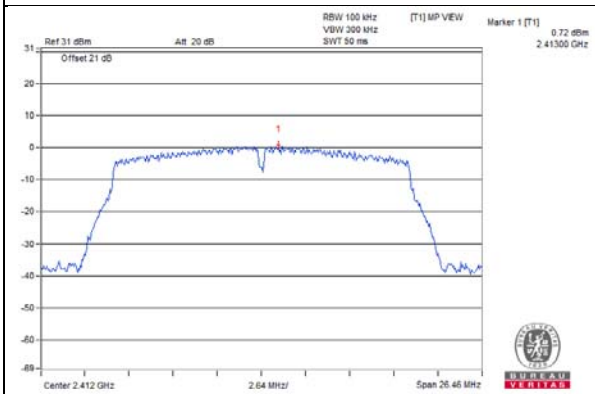


CH 11 Band edge

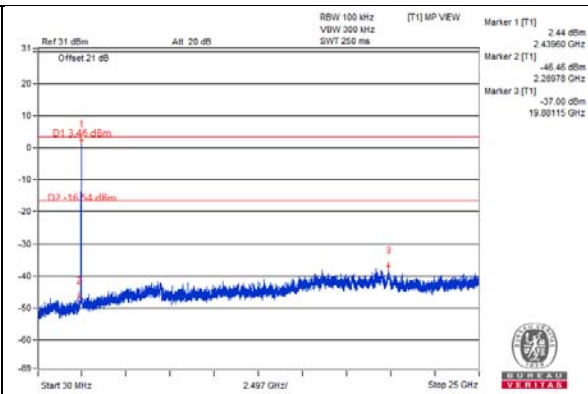
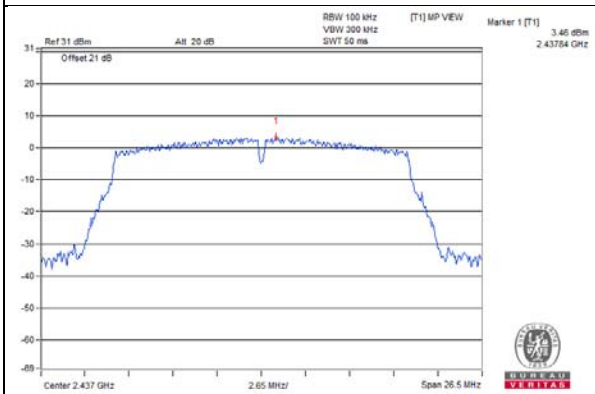


Chain 1

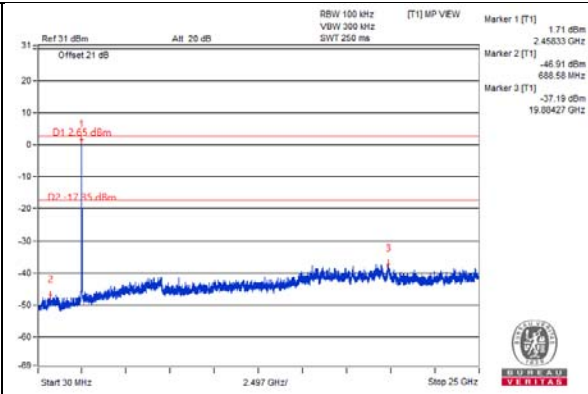
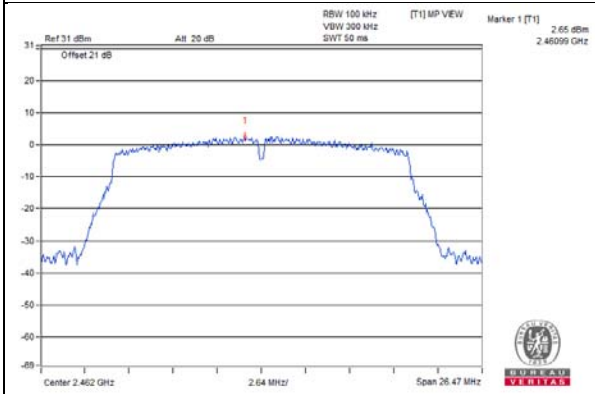
CH 1



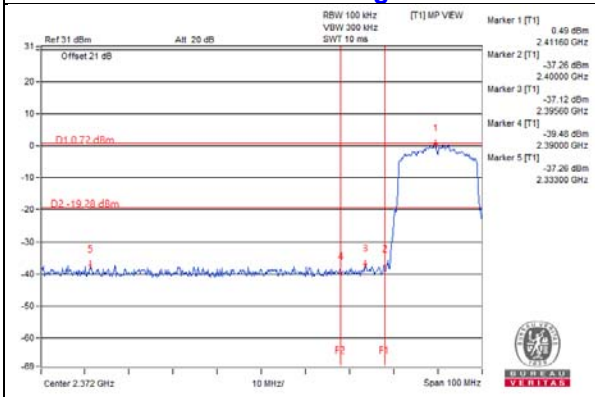
CH 6



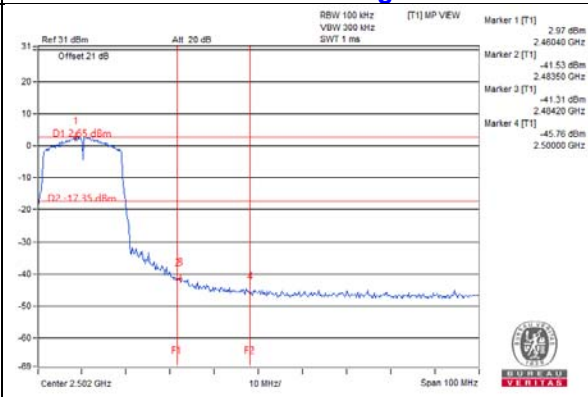
CH 11



CH 1 Band edge

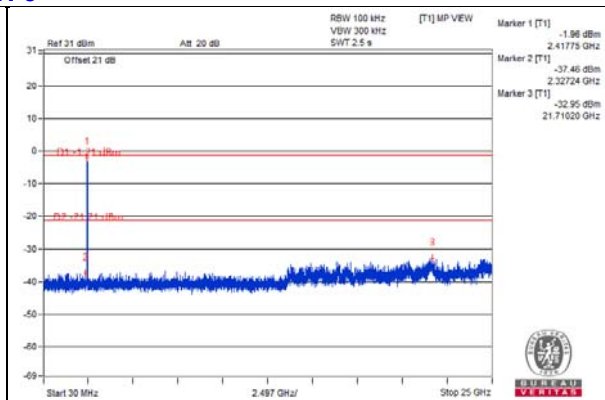
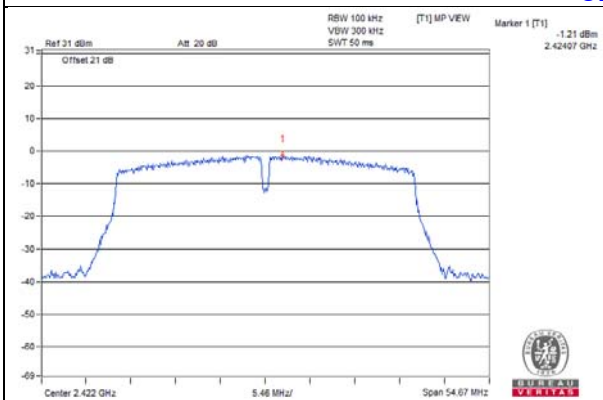


CH 11 Band edge

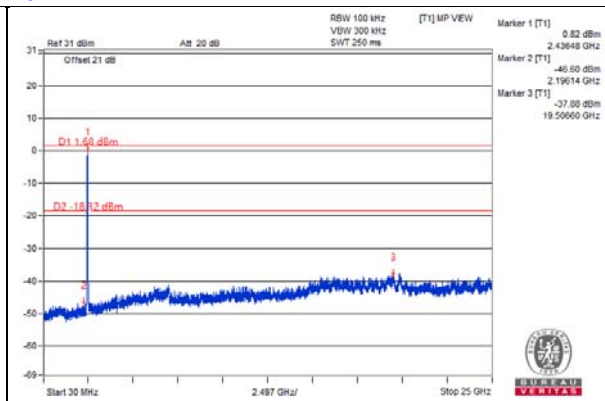
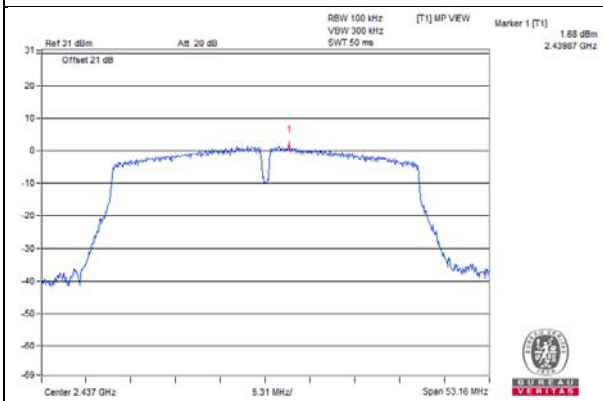


802.11n (HT40)
Chain 0

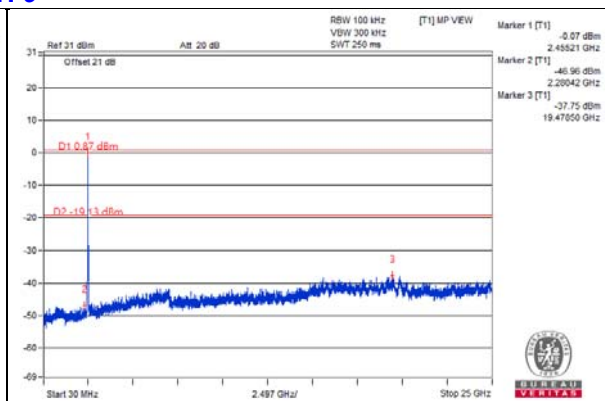
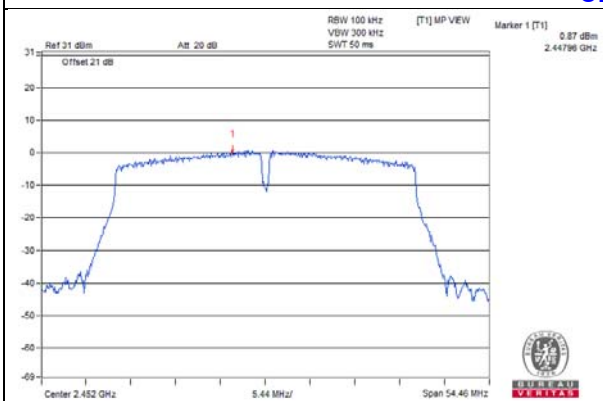
CH 3



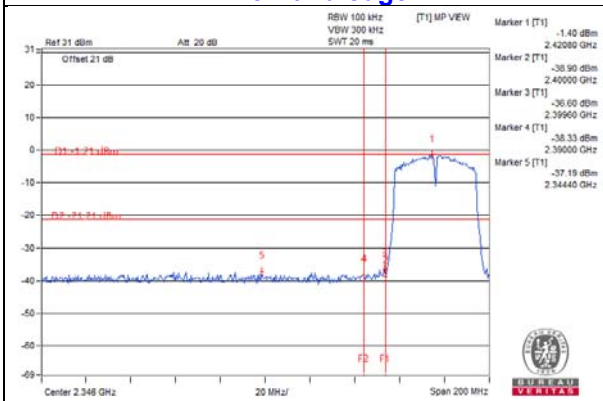
CH 6



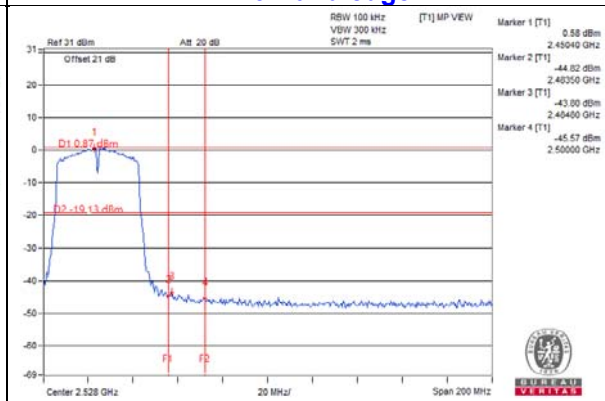
CH 9



CH 3 Band edge

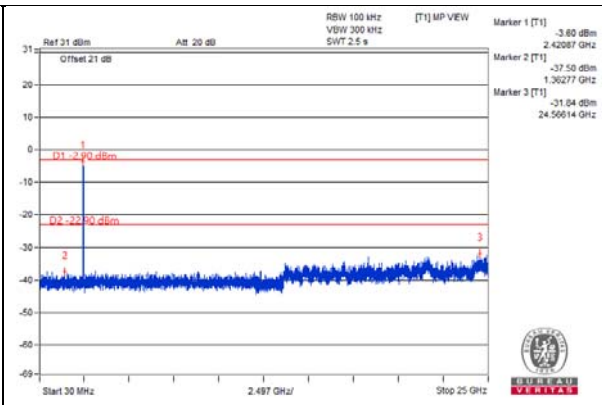
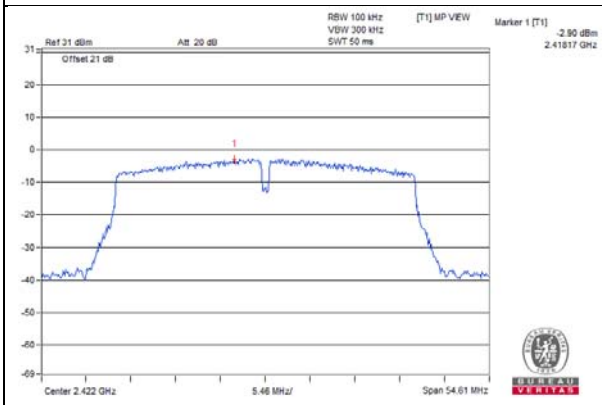


CH 9 Band edge

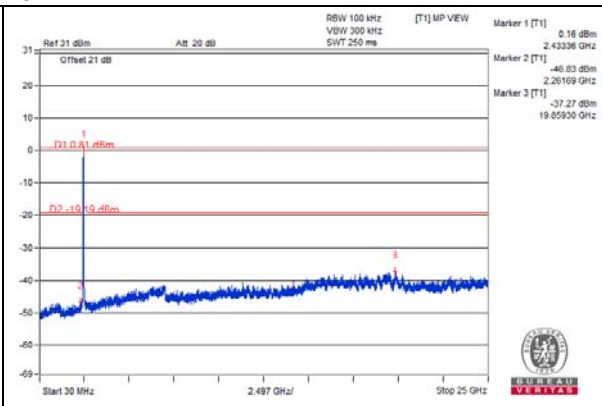
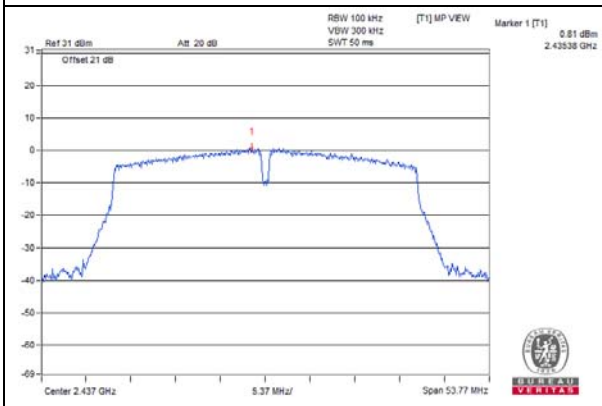


Chain 1

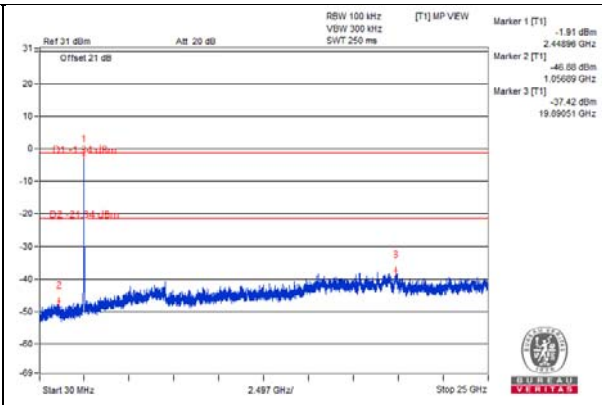
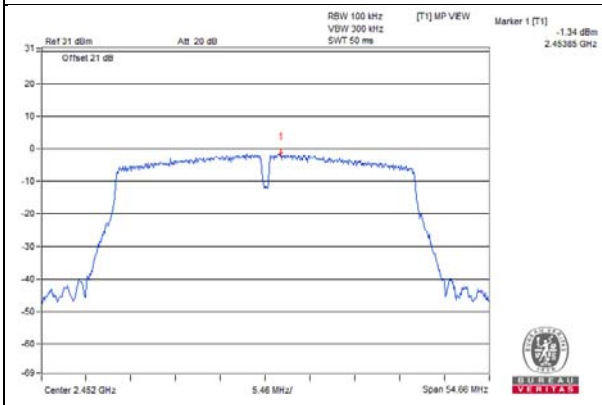
CH 3



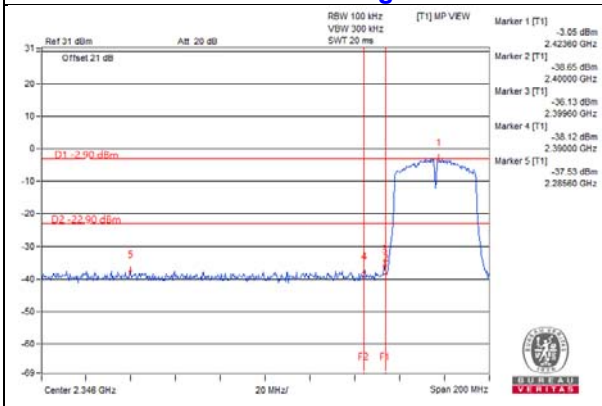
CH 6



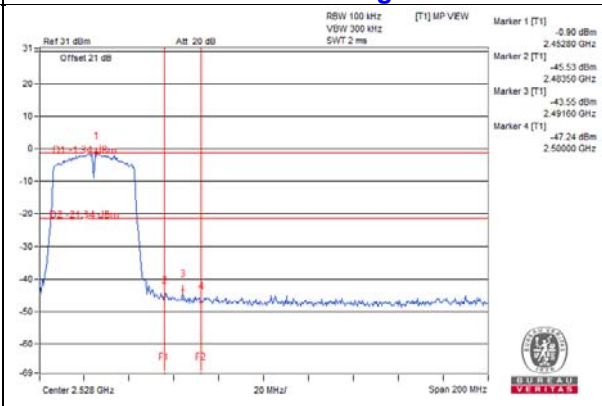
CH 9



CH 3 Band edge



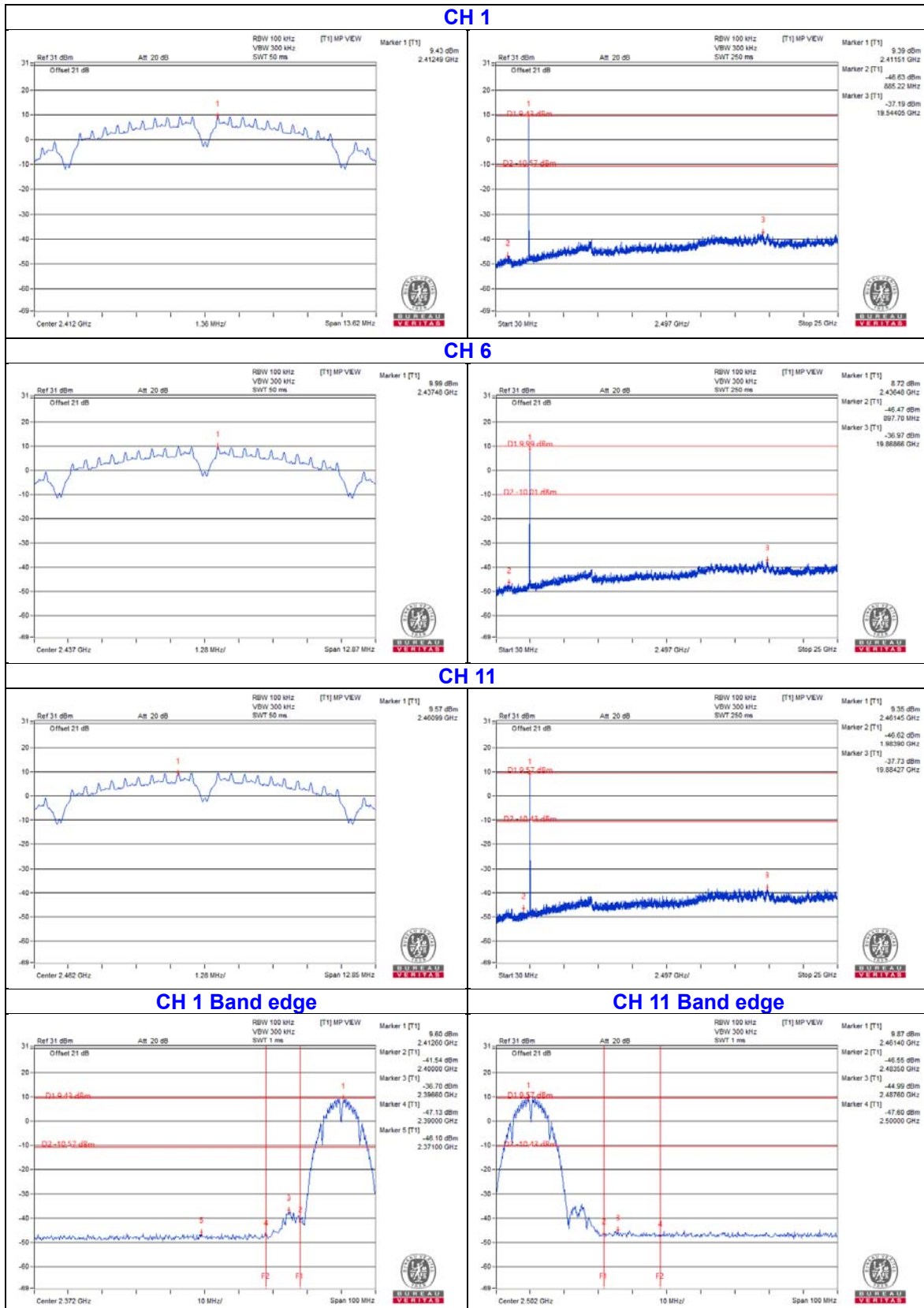
CH 9 Band edge



4.5.8 Test Results (Mode 2)

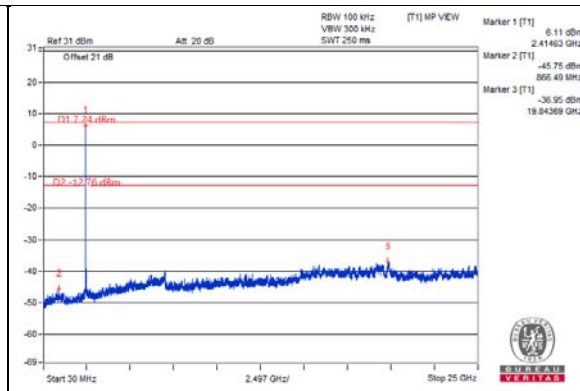
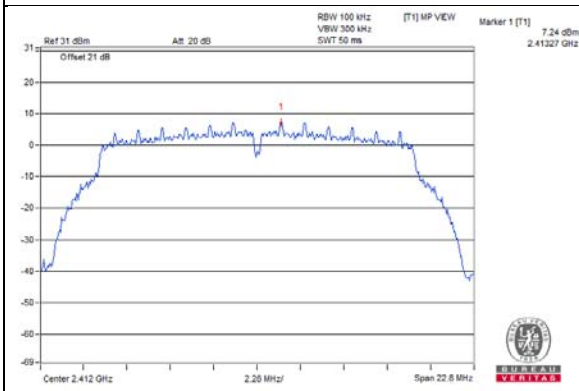
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11b

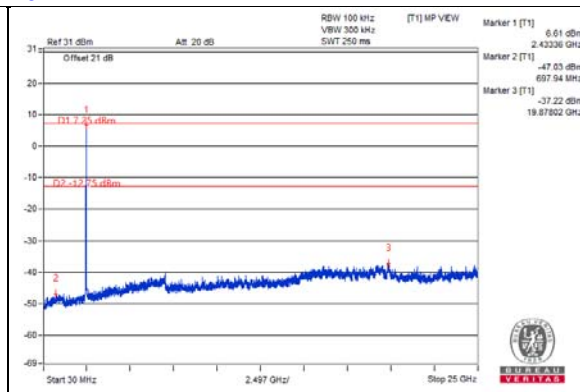
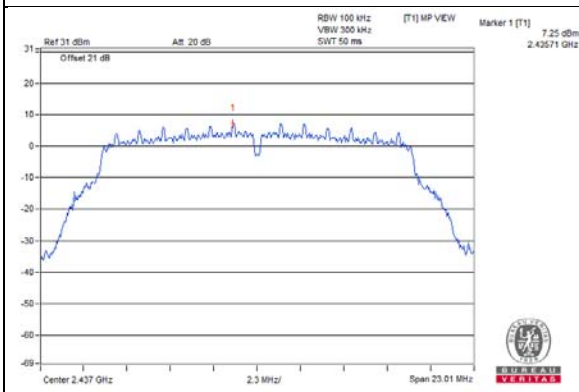


802.11g

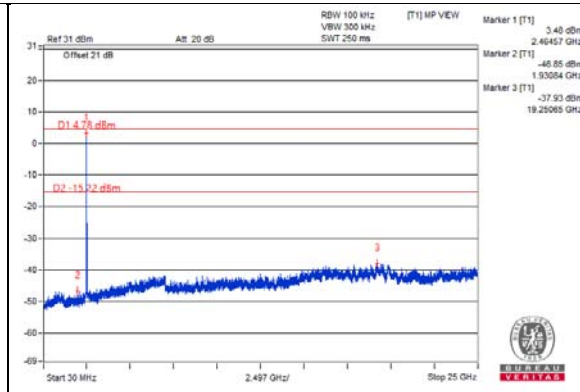
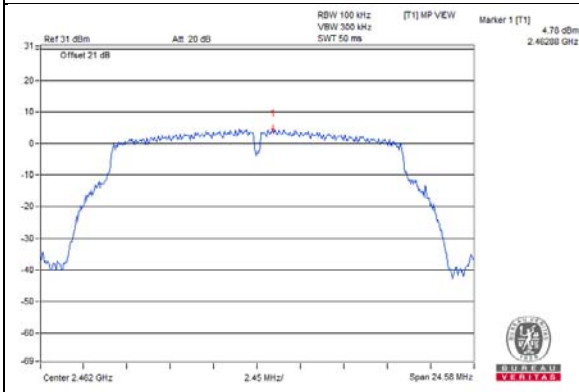
CH 1



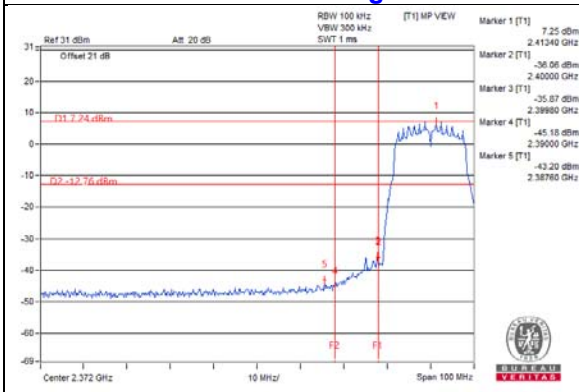
CH 6



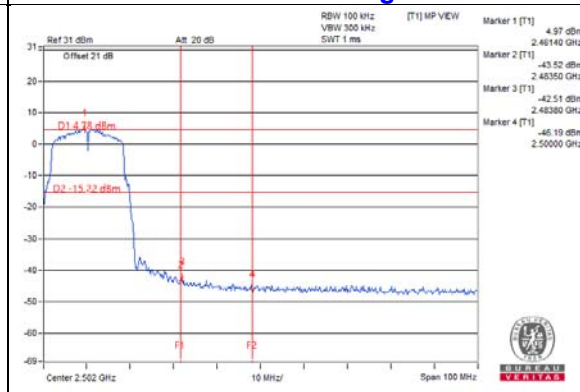
CH 11



CH 1 Band edge

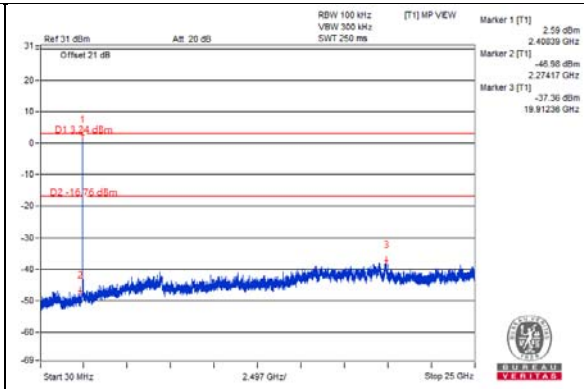
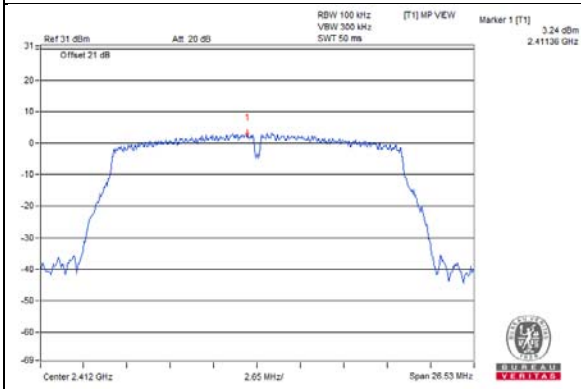


CH 11 Band edge

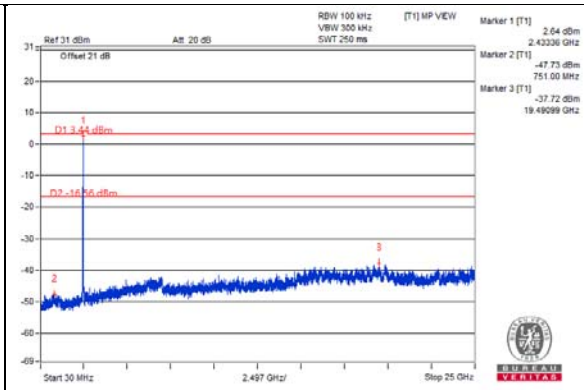
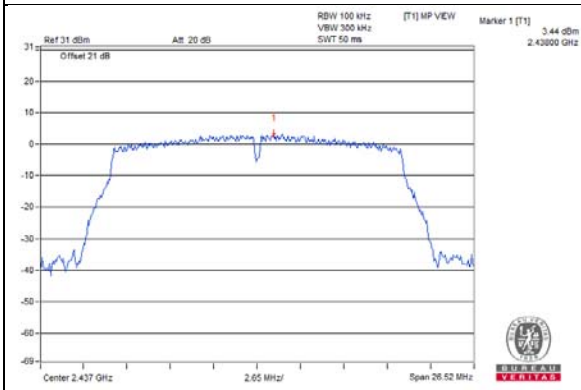


802.11n (HT20)

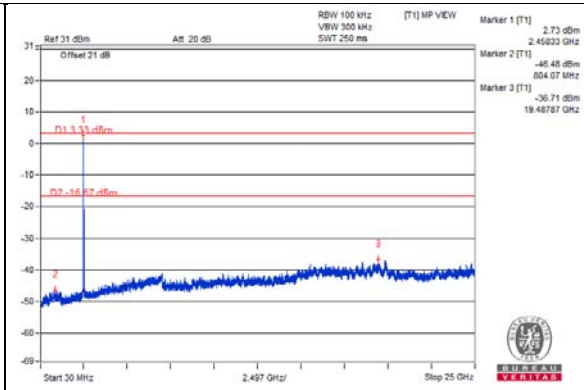
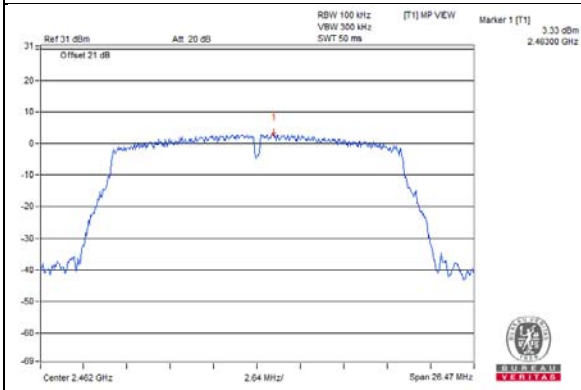
CH 1



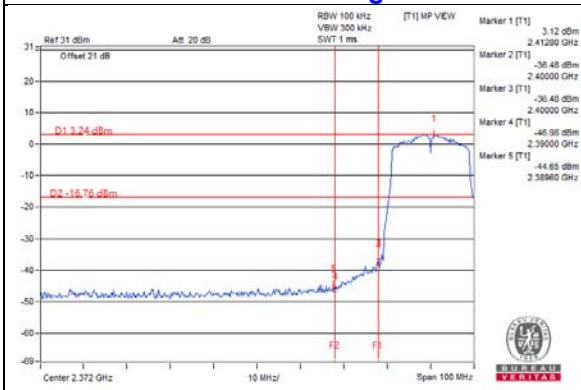
CH 6



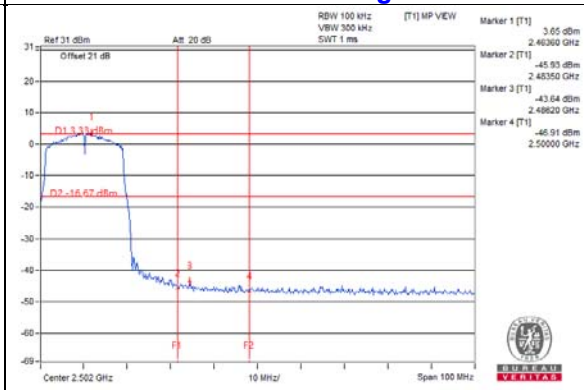
CH 11



CH 1 Band edge

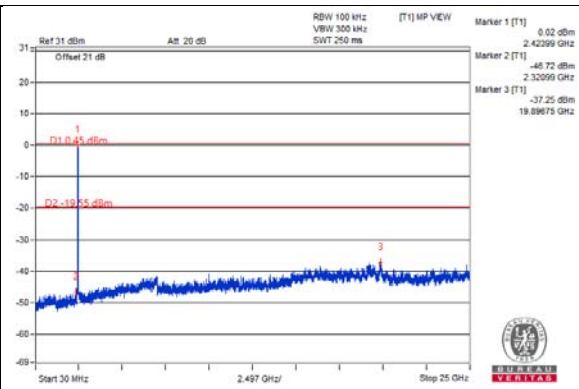
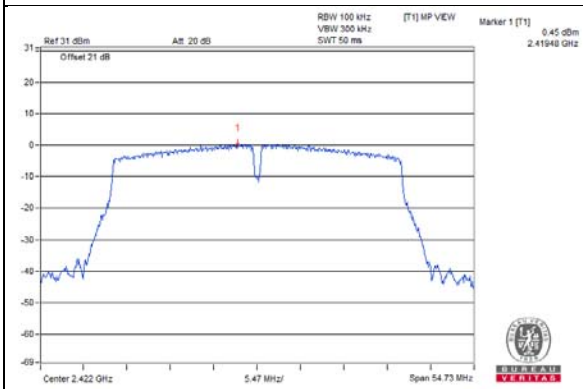


CH 11 Band edge

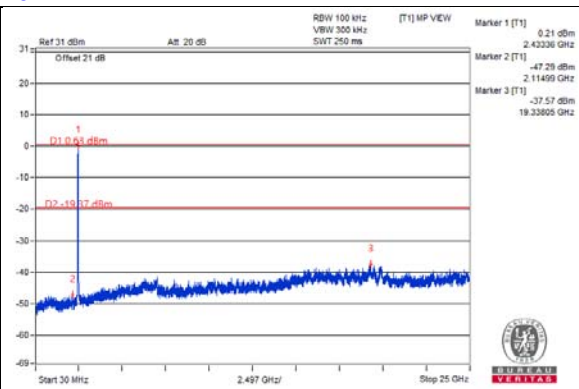
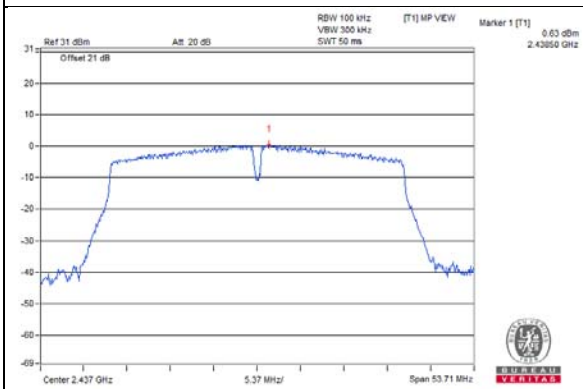


802.11n (HT40)

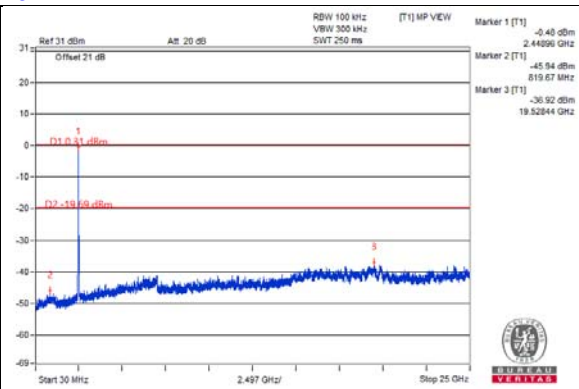
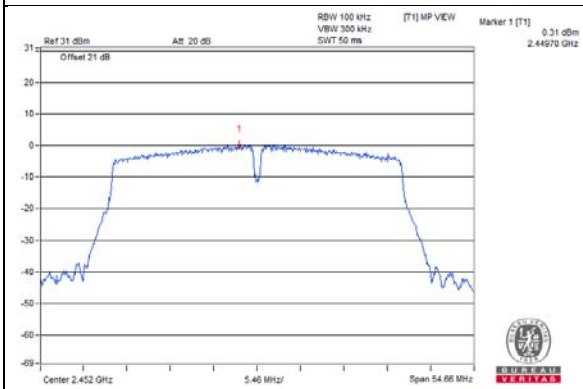
CH 3



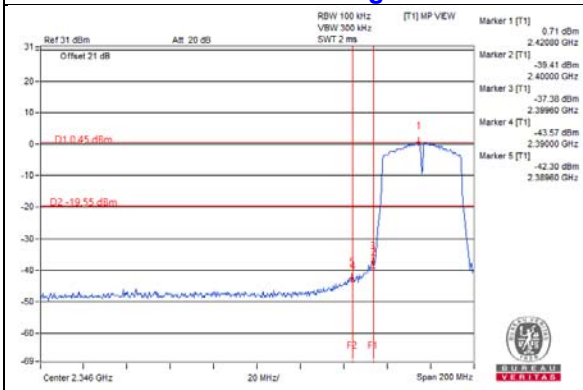
CH 6



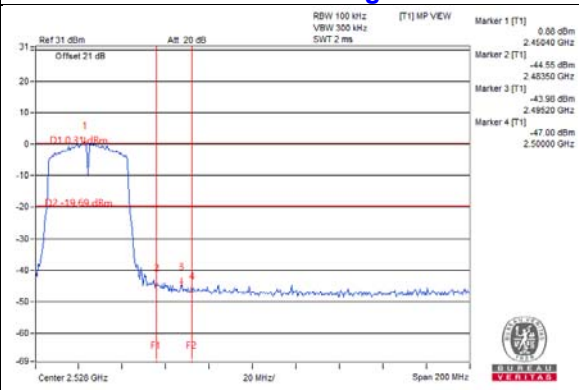
CH 9



CH 3 Band edge



CH 9 Band edge



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:

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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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