

FCC Test Report

Report No.: RF191227E04

FCC ID: C3K1888

Test Model: 1888

Received Date: Dec. 27, 2019

Test Date: Mar. 24 to Apr. 21, 2020

Issued Date: June 24, 2020

Applicant: Microsoft Corporation

Address: One Microsoft Way, Redmond, Washington 98052-6399, United States

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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Table of Contents

Release Control Record	4
1 Certificate of Conformity.....	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Modification Record	6
3 General Information.....	7
3.1 General Description of EUT	7
3.2 Description of Test Modes	9
3.2.1 Test Mode Applicability and Tested Channel Detail.....	10
3.3 Duty Cycle of Test Signal	12
3.4 Description of Support Units	13
3.4.1 Configuration of System under Test	14
3.5 General Description of Applied Standards and References	15
4 Test Types and Results	16
4.1 Radiated Emission and Bandedge Measurement (Radiated Versus Conducted)	16
4.1.1 Limits of Radiated Emission and Bandedge Measurement	16
4.1.2 Test Instruments	17
4.1.3 Test Procedures.....	19
4.1.4 Deviation from Test Standard	20
4.1.5 Test Setup.....	21
4.1.6 EUT Operating Conditions.....	22
4.1.7 Test Results (Radiated Measurement)	23
4.1.7.1 Test Results (Mode 1)	24
4.1.7.2 Test Results (Mode 2)	38
4.1.8 Test Results (Conducted Measurement)	64
4.1.8.1 Test Results (Mode 1)	65
4.1.8.2 Test Results (Mode 2)	91
4.2 Conducted Emission Measurement	117
4.2.1 Limits of Conducted Emission Measurement	117
4.2.2 Test Instruments	117
4.2.3 Test Procedures.....	118
4.2.4 Deviation from Test Standard	118
4.2.5 Test Setup.....	118
4.2.6 EUT Operating Conditions.....	118
4.2.7 Test Results	119
4.3 6dB Bandwidth Measurement	121
4.3.1 Limits of 6dB Bandwidth Measurement.....	121
4.3.2 Test Setup.....	121
4.3.3 Test Instruments	121
4.3.4 Test Procedure	121
4.3.5 Deviation from Test Standard	121
4.3.6 EUT Operating Conditions.....	121
4.3.7 Test Result (Mode 1)	122
4.3.8 Test Result (Mode 2)	123
4.4 Conducted Output Power Measurement.....	125
4.4.1 Limits of Conducted Output Power Measurement	125
4.4.2 Test Setup.....	125
4.4.3 Test Instruments	125
4.4.4 Test Procedures.....	125
4.4.5 Deviation from Test Standard	125
4.4.6 EUT Operating Conditions.....	125
4.4.7 Test Results (Mode 1).....	126
4.4.8 Test Results (Mode 2).....	127

4.5	Power Spectral Density Measurement.....	129
4.5.1	Limits of Power Spectral Density Measurement	129
4.5.2	Test Setup.....	129
4.5.3	Test Instruments	129
4.5.4	Test Procedure	129
4.5.5	Deviation from Test Standard	129
4.5.6	EUT Operating Condition	129
4.5.7	Test Results (Mode 1).....	130
4.5.8	Test Results (Mode 2).....	131
4.6	Conducted Out of Band Emission Measurement.....	133
4.6.1	Limits of Conducted Out of Band Emission Measurement.....	133
4.6.2	Test Setup.....	133
4.6.3	Test Instruments	133
4.6.4	Test Procedure	133
4.6.5	Deviation from Test Standard	133
4.6.6	EUT Operating Condition	133
4.6.7	Test Results (Mode 1).....	133
4.6.8	Test Results (Mode 2).....	138
5	Pictures of Test Arrangements.....	142
	Appendix – Information of the Testing Laboratories	143

Release Control Record

Issue No.	Description	Date Issued
RF191227E04	Original release.	June 24, 2020

1 Certificate of Conformity

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

Brand: Microsoft

Test Model: 1888

Sample Status: ENGINEERING SAMPLE

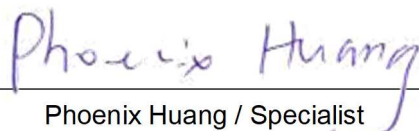
Applicant: Microsoft Corporation

Test Date: Mar. 24 to Apr. 21, 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:

June 24, 2020

Approved by :



Clark Lin / Technical Manager

Date:

June 24, 2020

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -10.71 dB at 0.72031 MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -3.79 dB at 2483.54 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.
15.203	Antenna Requirement	PASS	No antenna connector is used.

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 at mains ports	150kHz ~ 30MHz	1.9 dB
Conducted emissions	9kHz ~ 40GHz	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

Product	802.11a/b/g/n/ac 2T2R dual-band wireless LAN radio
Brand	Microsoft
Test Model	1888
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: 458.003 mW 5.18 ~ 5.24 GHz: 59.152 mW 5.26 ~ 5.32 GHz: 57.011 mW 5.5 ~ 5.72 GHz: 56.176 mW 5.745 ~ 5.825 GHz: 60.59 mW 1TX Mode: 2.4 GHz: 280.543 mW 5.18 ~ 5.24 GHz: 50.003 mW 5.26 ~ 5.32 GHz: 51.168 mW 5.5 ~ 5.72 GHz: 46.452 mW 5.745 ~ 5.825 GHz: 42.267 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. 2.4GHz and 5GHz technology cannot transmit at same time.
2. The antennas provided to the EUT, please refer to the following table:

Ant. No.	Transmitter Circuit	Ant.Gain (dBi)	Freq. Range (GHz)	Ant. Type	Connector Type
1	0	4.45	2.4~2.4835	PCB	None
		5.6	5.15~5.25		
		5.97	5.25~5.35		
		5.93	5.47~5.725		
		6.3	5.725~5.85		
2	1	4.02	2.4~2.4835	PCB	None
		4.47	5.15~5.25		
		5.4	5.25~5.35		
		7.22	5.47~5.725		
		7.15	5.725~5.85		

3. 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.

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

3.2 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	PLC	APCM	
1	√	√	√	√	2TX mode
2	√	√	-	√	1TX mode

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

RE $<$ 1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-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.

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)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

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

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.

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

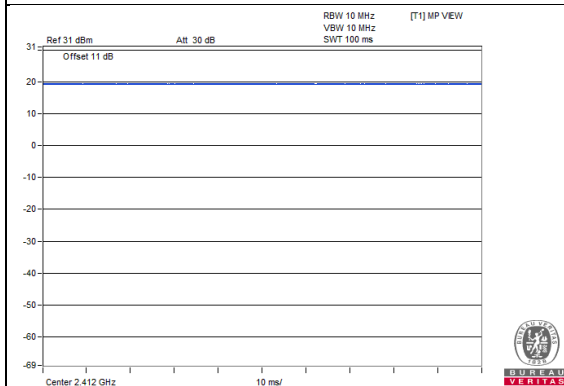
Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (System)	TESTED BY
RE $\geq$ 1G	25deg. C, 75%RH	120Vac, 60Hz	Nelson Teng
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
PLC	25deg. C, 62%RH	120Vac, 60Hz	Sampson Chen
APCM	25deg. C, 60%RH	120Vac, 60Hz	Jyunchun Lin

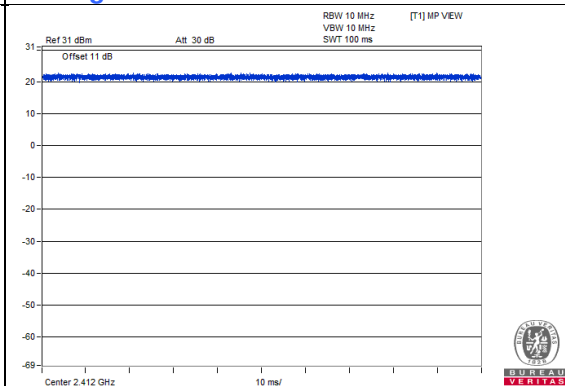
3.3 Duty Cycle of Test Signal

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

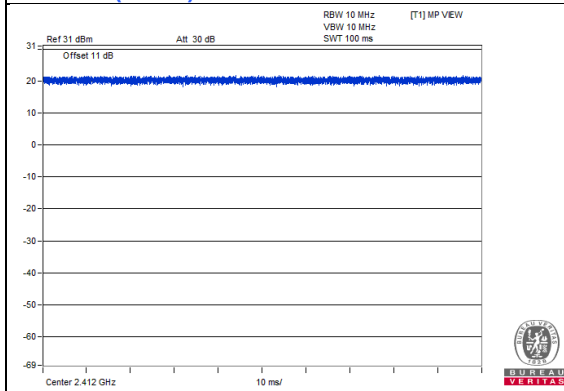
802.11b



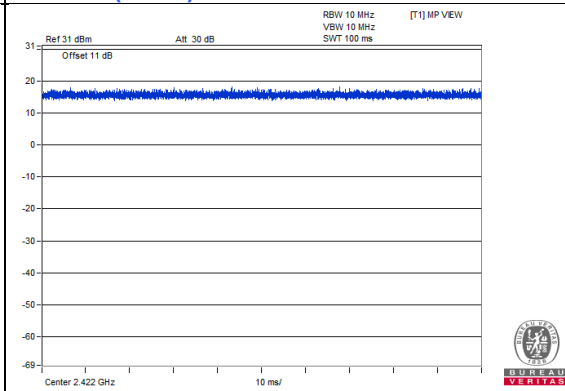
802.11g



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.	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	MediaTek Inc.	M1096761-001	NA	NA	Supplied by client

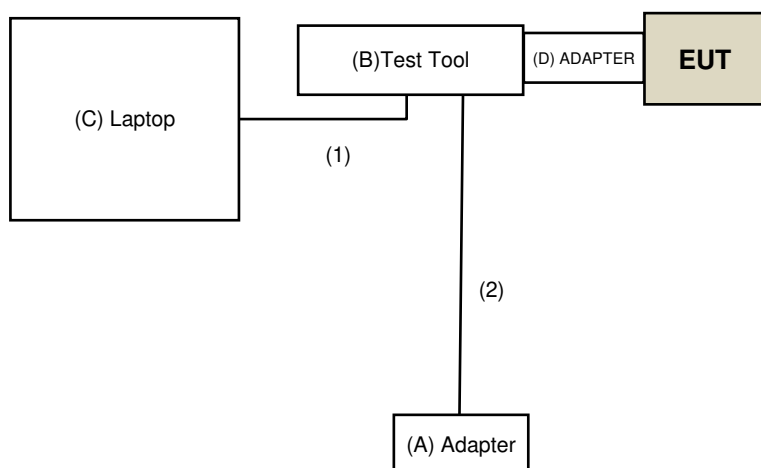
Note:

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

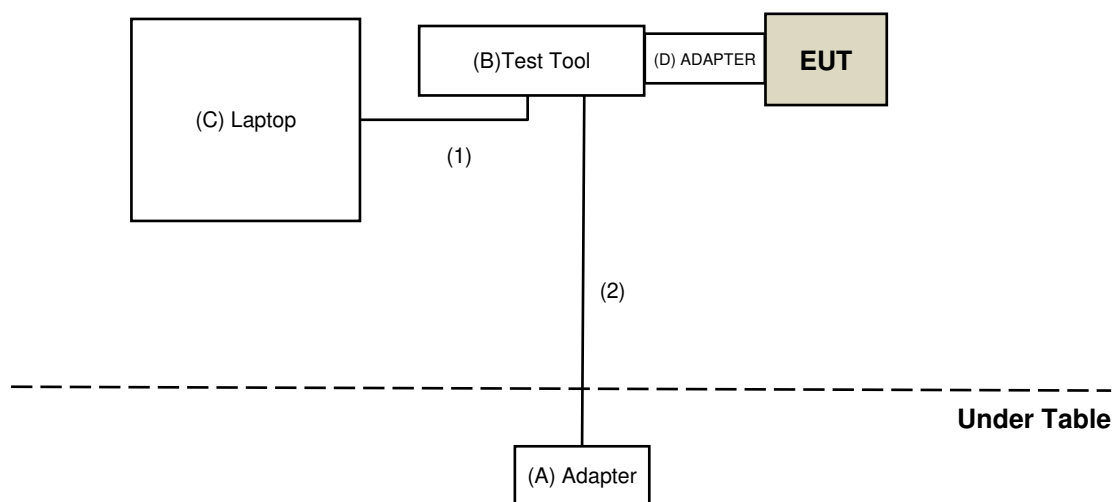
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB Type B Cable	1	1.8	Yes	0	Provided by Lab
2.	DC Cable	1	1.5	No	0	Supplied by client

3.4.1 Configuration of System under Test

For AC Power Conducted Emissions Test:



For Radiated Emissions 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 (Radiated Versus 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
Test Receiver Keysight	N9038A	MY54450088	July 03, 2019	July 02, 2020
Pre-Amplifier EMCI	EMC001340	980142	May 30, 2019	May 29, 2020
Loop Antenna Electro-Metrics	EM-6879	264	Feb. 18, 2020	Feb. 17, 2021
RF Cable	NA	LOOPCAB-001	Jan. 08, 2020	Jan. 07, 2021
RF Cable	NA	LOOPCAB-002	Jan. 08, 2020	Jan. 07, 2021
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	Apr. 30, 2019	Apr. 29, 2020
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 11, 2019	Nov. 10, 2020
RF Cable	8D	966-3-1	Mar. 17, 2020	Mar. 16, 2021
RF Cable	8D	966-3-2	Mar. 17, 2020	Mar. 16, 2021
RF Cable	8D	966-3-3	Mar. 17, 2020	Mar. 16, 2021
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Sep. 26, 2019	Sep. 25, 2020
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 10, 2019	June 09, 2020
RF Cable	EMC104-SM-SM-6000	180602	June 10, 2019	June 09, 2020
Spectrum Analyzer Keysight	N9030A	MY54490679	July 17, 2019	July 16, 2020
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
High pass filter Wainwright Instruments	WHK3.1/18G-10SS	SN5	Apr. 29, 2019	Apr. 28, 2020

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. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: Mar. 24 to 25, 2020

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 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: Apr. 21, 2020

4.1.3 Test Procedures

Following FCC KDB 558074 D01 DTS Meas Guidance:

Radiated versus 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)
- e. For all of Radiation emission test

For Radiated emission below 30MHz

- e-1.1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- e-1.2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- e-1.3. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- e-1.4. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e-1.5. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.
2. KDB 414788 OATS and Chamber Correlation Justification
 - Based on FCC 15.31(f)(2) : measurements may be performed at a distance closer than that specified in the regulations; however, an attempts should be made to avoid making measurements in the near field.
 - OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

For Radiated emission above 30MHz

- e-2.1. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- e-2.2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- e-2.3. 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.
- e-2.4. 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-2.5. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- e-2.6. 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:

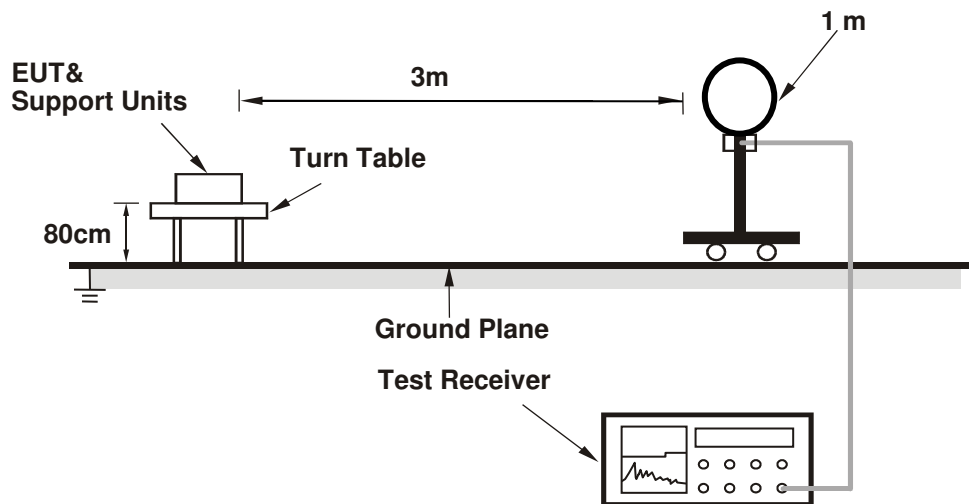
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

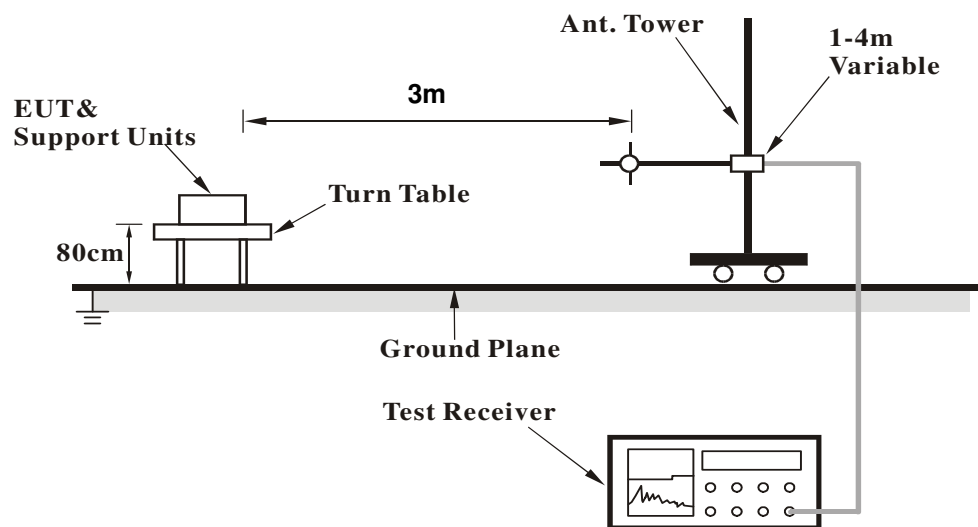
No deviation.

4.1.5 Test Setup

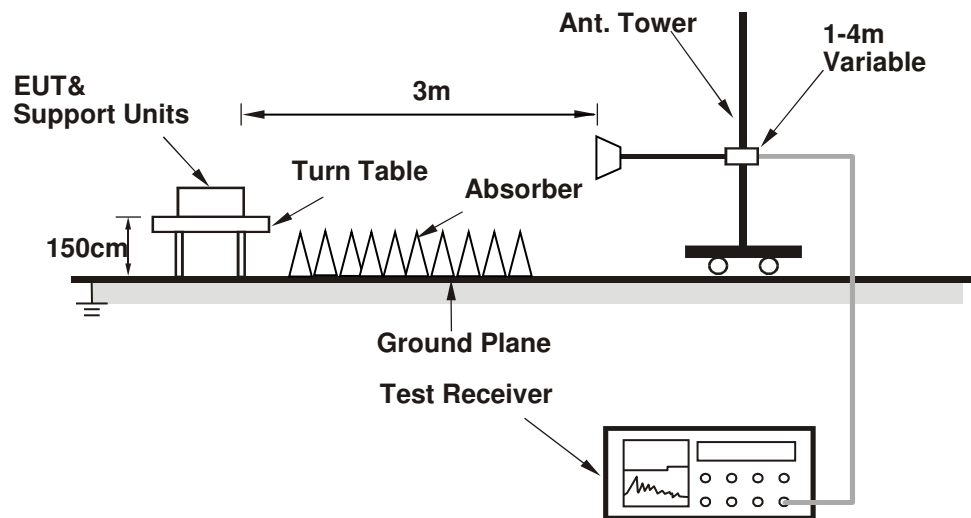
**For Radiated Configuration:
For Radiated emission below 30MHz**



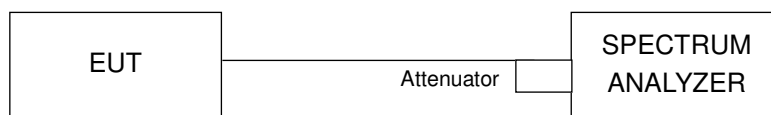
For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For Conducted Configuration:



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

4.1.6 EUT Operating Conditions

- Connected the EUT with the Laptop which is placed on the testing table.
- 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 (Radiated Measurement)

Radiated versus Conducted Measurement	
☐ Conducted measurement	☒ Radiated measurement
<u>For Radiated measurement:</u> 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) <u>For Conducted measurement:</u> The level of unwanted emissions was measured as their power in a specified load (conducted spurious emissions).	

4.1.7.1 Test Results (Mode 1)

Radiated test was done with 50ohm terminator on antenna port

Above 1GHz Data:

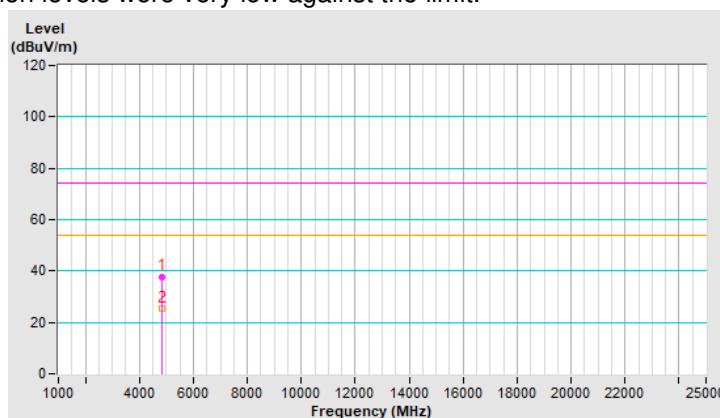
802.11n (HT20)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4824.00	37.6 PK	74.0	-36.4	1.12 H	309	34.7	2.9
2	4824.00	25.2 AV	54.0	-28.8	1.12 H	309	22.3	2.9

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.

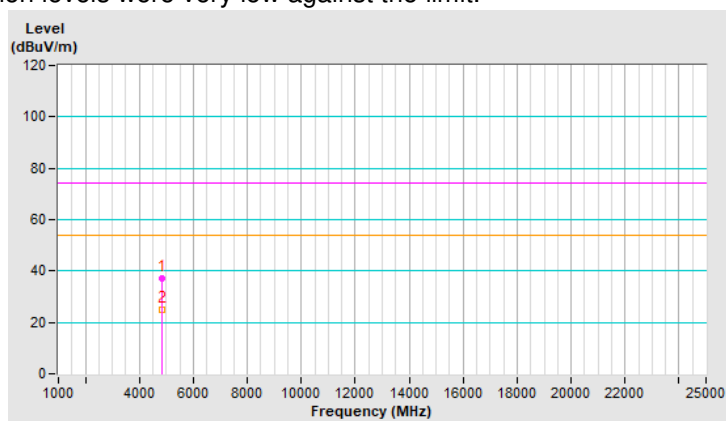


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4824.00	37.3 PK	74.0	-36.7	1.60 V	119	34.4	2.9
2	4824.00	25.0 AV	54.0	-29.0	1.60 V	119	22.1	2.9

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.

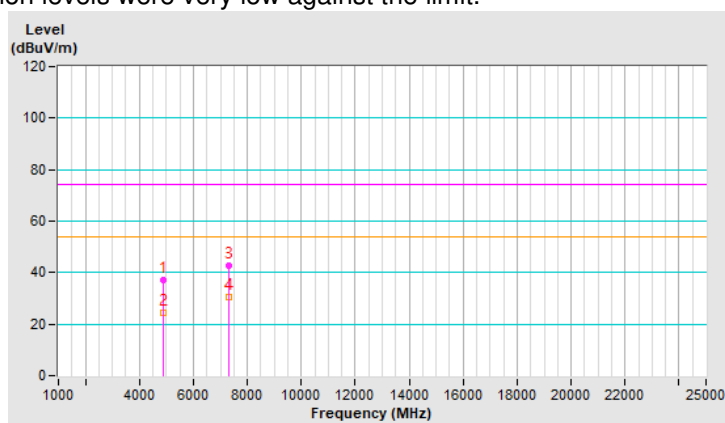


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	37.0 PK	74.0	-37.0	1.20 H	299	34.2	2.8
2	4874.00	24.5 AV	54.0	-29.5	1.20 H	299	21.7	2.8
3	7311.00	42.9 PK	74.0	-31.1	1.32 H	42	34.0	8.9
4	7311.00	30.7 AV	54.0	-23.3	1.32 H	42	21.8	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.

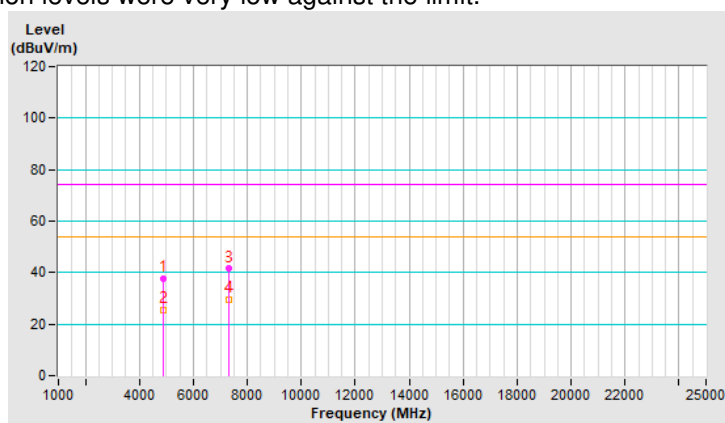


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	37.7 PK	74.0	-36.3	1.66 V	116	34.9	2.8
2	4874.00	25.4 AV	54.0	-28.6	1.66 V	116	22.6	2.8
3	7311.00	41.5 PK	74.0	-32.5	1.44 V	88	32.6	8.9
4	7311.00	29.5 AV	54.0	-24.5	1.44 V	88	20.6	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.

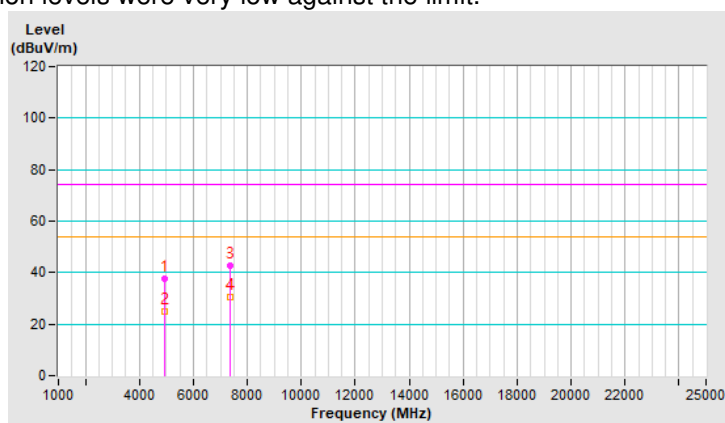


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4924.00	37.7 PK	74.0	-36.3	1.12 H	304	35.0	2.7
2	4924.00	24.8 AV	54.0	-29.2	1.12 H	304	22.1	2.7
3	7386.00	42.6 PK	74.0	-31.4	1.33 H	15	33.6	9.0
4	7386.00	30.4 AV	54.0	-23.6	1.33 H	15	21.4	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.

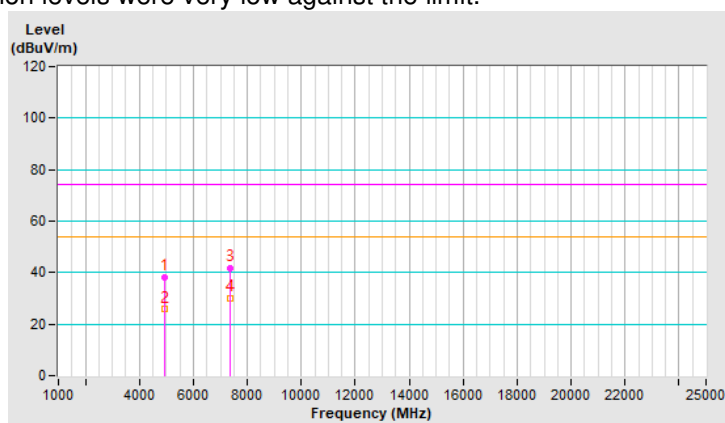


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4924.00	38.0 PK	74.0	-36.0	1.71 V	138	35.3	2.7
2	4924.00	25.7 AV	54.0	-28.3	1.71 V	138	23.0	2.7
3	7386.00	41.8 PK	74.0	-32.2	1.44 V	93	32.8	9.0
4	7386.00	30.0 AV	54.0	-24.0	1.44 V	93	21.0	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.



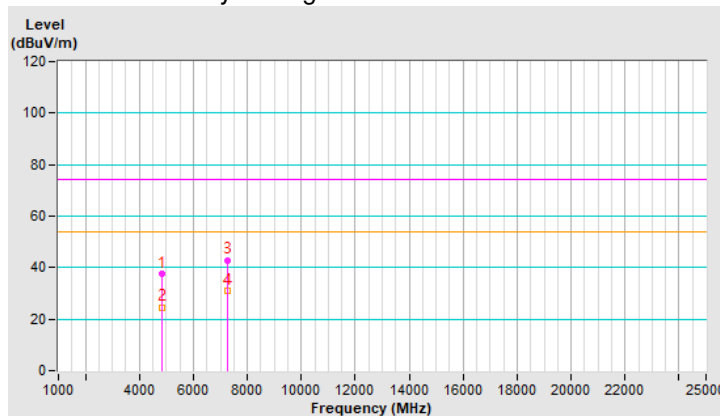
802.11n (HT40)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4844.00	37.4 PK	74.0	-36.6	1.17 H	299	34.5	2.9
2	4844.00	24.6 AV	54.0	-29.4	1.17 H	299	21.7	2.9
3	7266.00	42.7 PK	74.0	-31.3	1.24 H	33	33.9	8.8
4	7266.00	30.8 AV	54.0	-23.2	1.24 H	33	22.0	8.8

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.

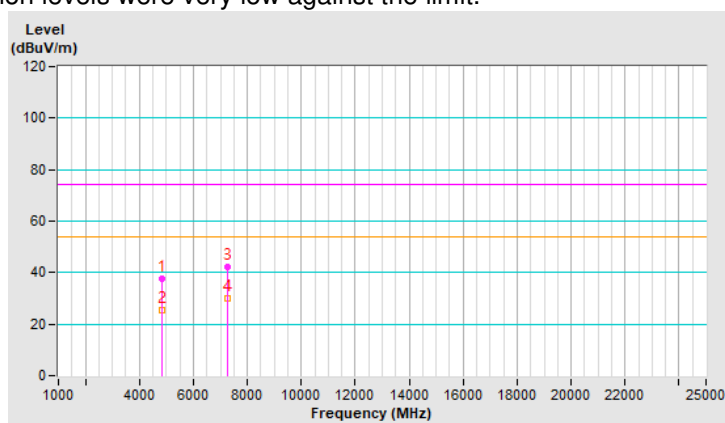


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4844.00	37.6 PK	74.0	-36.4	1.71 V	140	34.7	2.9
2	4844.00	25.5 AV	54.0	-28.5	1.71 V	140	22.6	2.9
3	7266.00	42.4 PK	74.0	-31.6	1.44 V	98	33.6	8.8
4	7266.00	30.2 AV	54.0	-23.8	1.44 V	98	21.4	8.8

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.

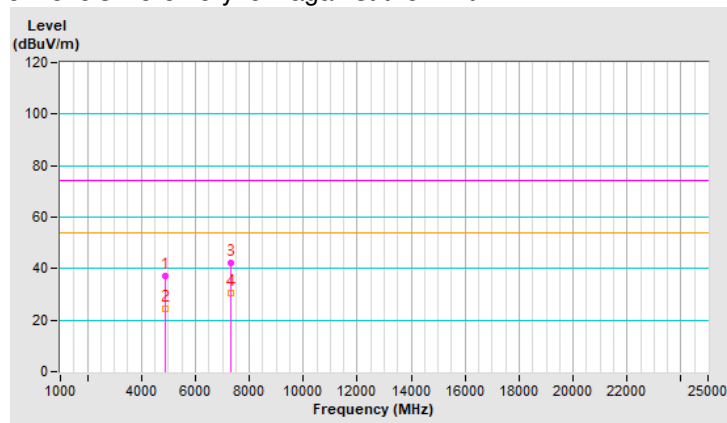


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	37.3 PK	74.0	-36.7	1.17 H	313	34.5	2.8
2	4874.00	24.6 AV	54.0	-29.4	1.17 H	313	21.8	2.8
3	7311.00	42.4 PK	74.0	-31.6	1.33 H	43	33.5	8.9
4	7311.00	30.7 AV	54.0	-23.3	1.33 H	43	21.8	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.

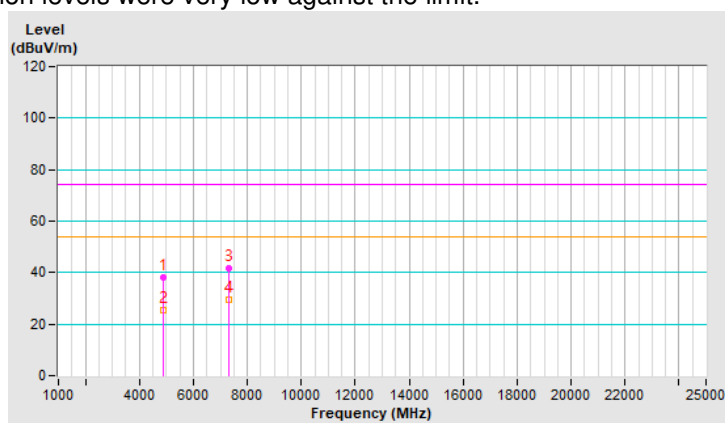


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	38.0 PK	74.0	-36.0	1.63 V	113	35.2	2.8
2	4874.00	25.6 AV	54.0	-28.4	1.63 V	113	22.8	2.8
3	7311.00	41.8 PK	74.0	-32.2	1.32 V	87	32.9	8.9
4	7311.00	29.7 AV	54.0	-24.3	1.32 V	87	20.8	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.

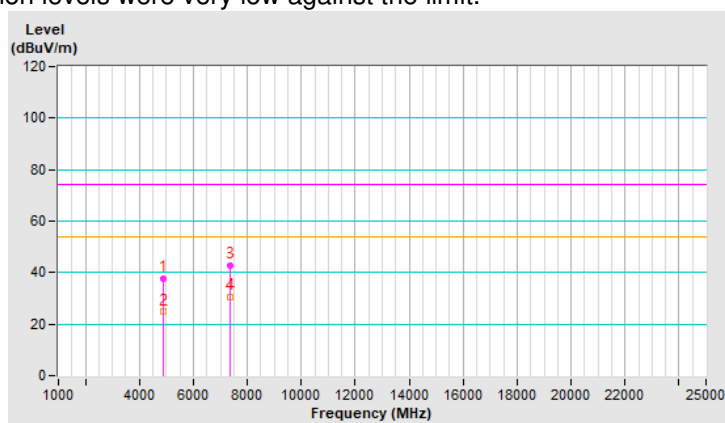


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4904.00	37.5 PK	74.0	-36.5	1.13 H	306	34.8	2.7
2	4904.00	24.7 AV	54.0	-29.3	1.13 H	306	22.0	2.7
3	7356.00	42.6 PK	74.0	-31.4	1.23 H	16	33.7	8.9
4	7356.00	30.4 AV	54.0	-23.6	1.23 H	16	21.5	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.

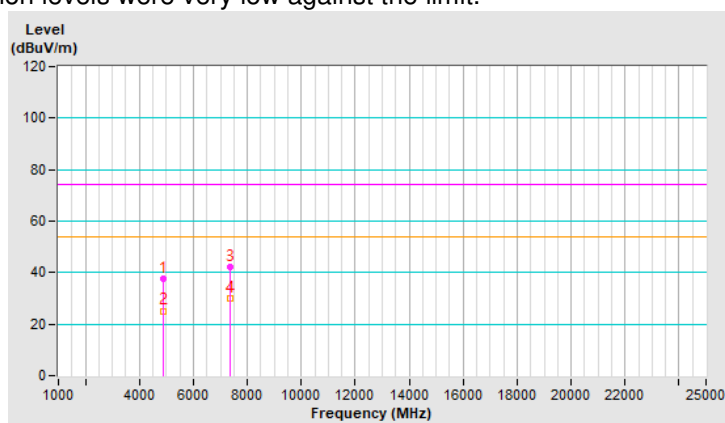


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4904.00	37.4 PK	74.0	-36.6	1.65 V	130	34.7	2.7
2	4904.00	24.9 AV	54.0	-29.1	1.65 V	130	22.2	2.7
3	7356.00	42.0 PK	74.0	-32.0	1.32 V	105	33.1	8.9
4	7356.00	29.8 AV	54.0	-24.2	1.32 V	105	20.9	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.



Below 1GHz Data:

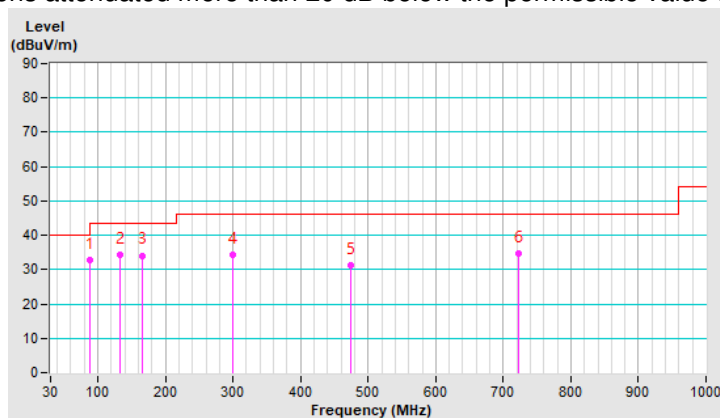
802.11n (HT20)

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	88.93	32.7 QP	43.5	-10.8	2.00 H	288	46.1	-13.4
2	133.31	34.3 QP	43.5	-9.2	2.00 H	274	42.3	-8.0
3	166.09	34.1 QP	43.5	-9.4	1.50 H	306	41.5	-7.4
4	298.76	34.2 QP	46.0	-11.8	1.00 H	250	40.6	-6.4
5	474.87	31.1 QP	46.0	-14.9	2.00 H	28	33.1	-2.0
6	722.97	34.6 QP	46.0	-11.4	1.50 H	360	31.6	3.0

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

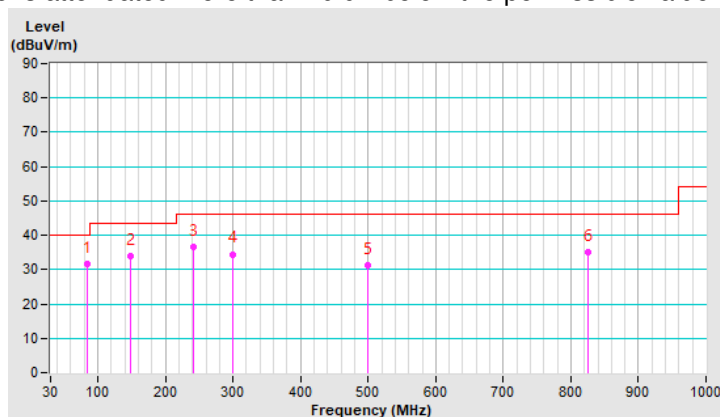


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	84.30	31.7 QP	40.0	-8.3	1.50 V	0	45.1	-13.4
2	149.04	34.0 QP	43.5	-9.5	1.00 V	296	41.1	-7.1
3	241.14	36.6 QP	46.0	-9.4	1.00 V	352	45.2	-8.6
4	299.30	34.5 QP	46.0	-11.5	2.00 V	293	40.9	-6.4
5	498.90	31.2 QP	46.0	-14.8	1.00 V	271	32.8	-1.6
6	826.18	35.1 QP	46.0	-10.9	2.50 V	170	30.1	5.0

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



4.1.7.2 Test Results (Mode 2)

Radiated test was done with 50ohm terminator on antenna port

Above 1GHz Data:

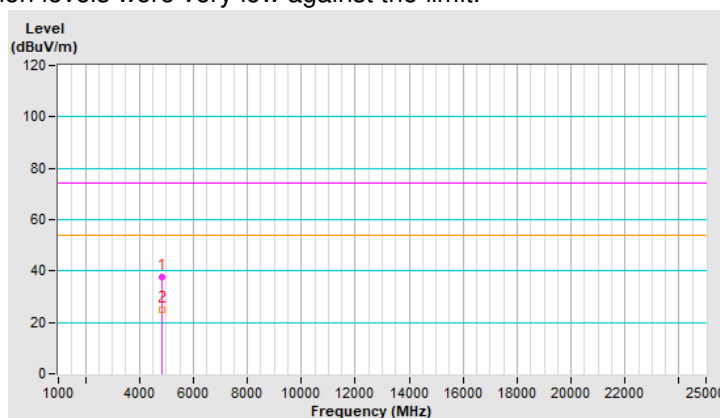
802.11b

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4824.00	37.5 PK	74.0	-36.5	1.15 H	306	34.6	2.9
2	4824.00	24.9 AV	54.0	-29.1	1.15 H	306	22.0	2.9

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.

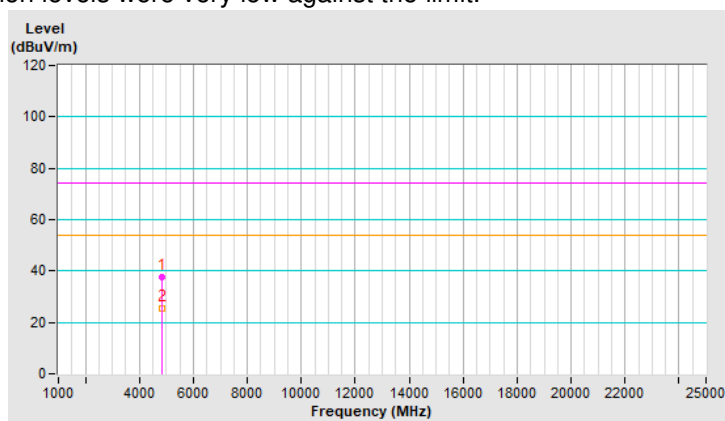


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4824.00	37.7 PK	74.0	-36.3	1.66 V	127	34.8	2.9
2	4824.00	25.4 AV	54.0	-28.6	1.66 V	127	22.5	2.9

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.

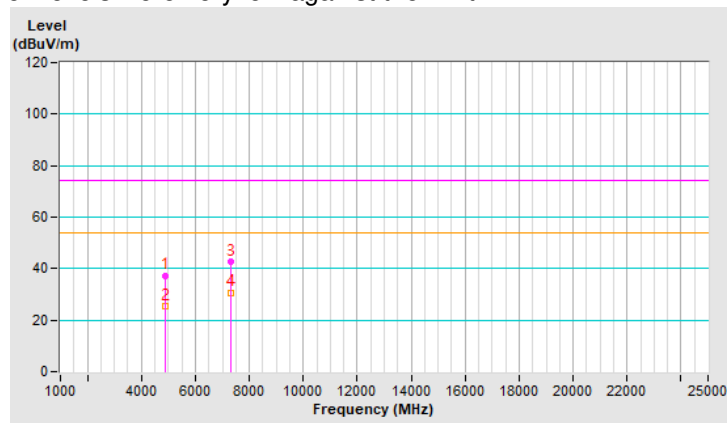


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	37.3 PK	74.0	-36.7	1.08 H	286	34.5	2.8
2	4874.00	25.2 AV	54.0	-28.8	1.08 H	286	22.4	2.8
3	7311.00	42.5 PK	74.0	-31.5	1.32 H	11	33.6	8.9
4	7311.00	30.6 AV	54.0	-23.4	1.32 H	11	21.7	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.

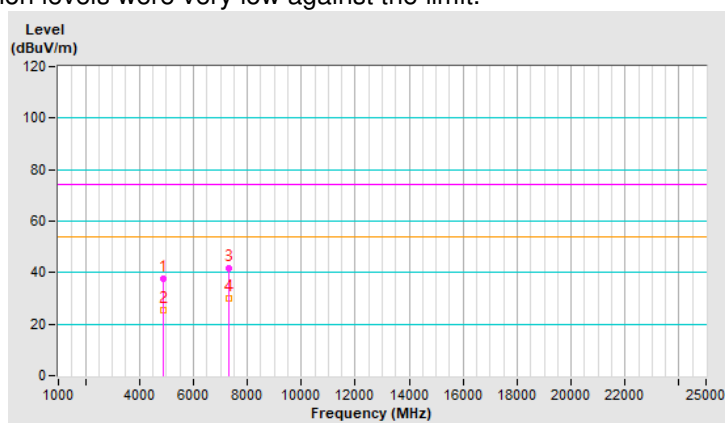


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	37.6 PK	74.0	-36.4	1.66 V	109	34.8	2.8
2	4874.00	25.5 AV	54.0	-28.5	1.66 V	109	22.7	2.8
3	7311.00	41.8 PK	74.0	-32.2	1.46 V	105	32.9	8.9
4	7311.00	30.1 AV	54.0	-23.9	1.46 V	105	21.2	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.

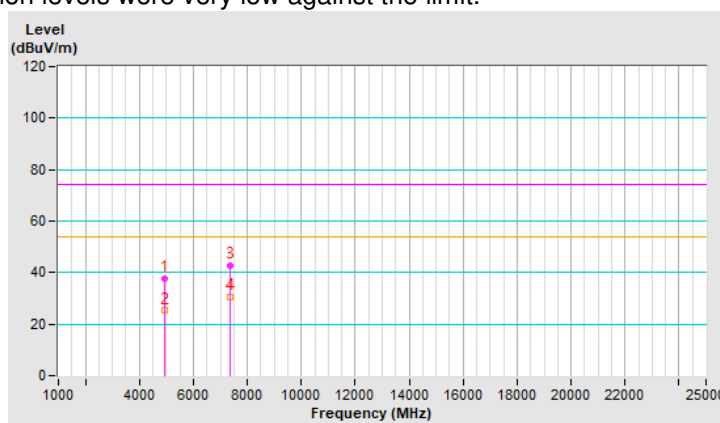


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4924.00	37.5 PK	74.0	-36.5	1.16 H	289	34.8	2.7
2	4924.00	25.2 AV	54.0	-28.8	1.16 H	289	22.5	2.7
3	7386.00	42.6 PK	74.0	-31.4	1.34 H	10	33.6	9.0
4	7386.00	30.5 AV	54.0	-23.5	1.34 H	10	21.5	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.

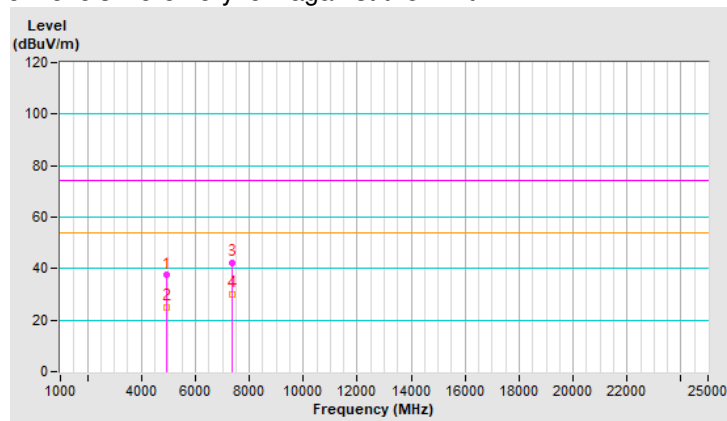


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4924.00	37.4 PK	74.0	-36.6	1.63 V	129	34.7	2.7
2	4924.00	25.1 AV	54.0	-28.9	1.63 V	129	22.4	2.7
3	7386.00	42.1 PK	74.0	-31.9	1.41 V	95	33.1	9.0
4	7386.00	29.9 AV	54.0	-24.1	1.41 V	95	20.9	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.



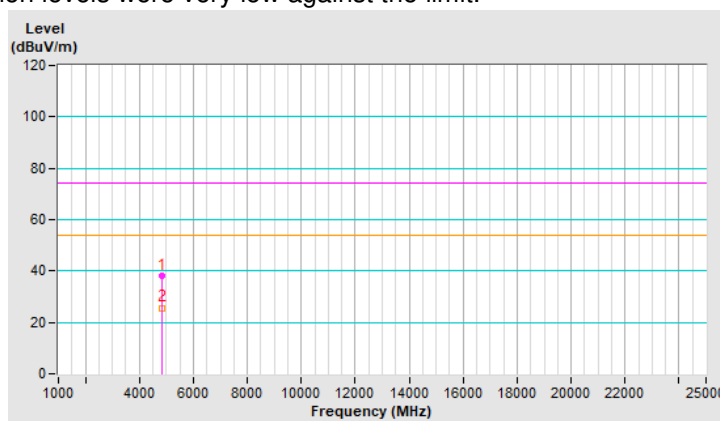
802.11g

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4824.00	37.9 PK	74.0	-36.1	1.07 H	297	35.0	2.9
2	4824.00	25.6 AV	54.0	-28.4	1.07 H	297	22.7	2.9

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.

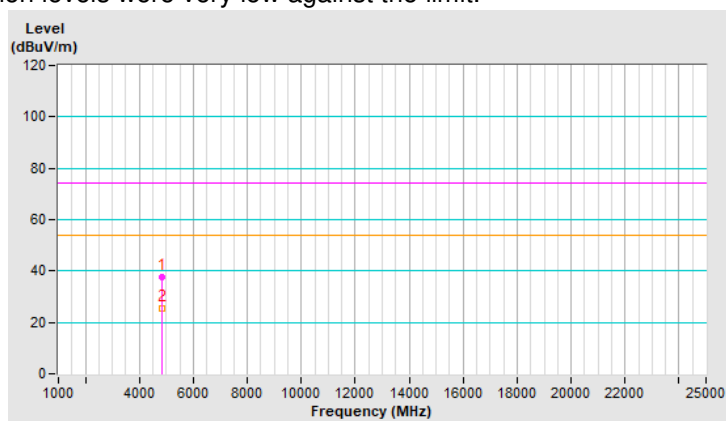


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4824.00	37.7 PK	74.0	-36.3	1.62 V	112	34.8	2.9
2	4824.00	25.6 AV	54.0	-28.4	1.62 V	112	22.7	2.9

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.

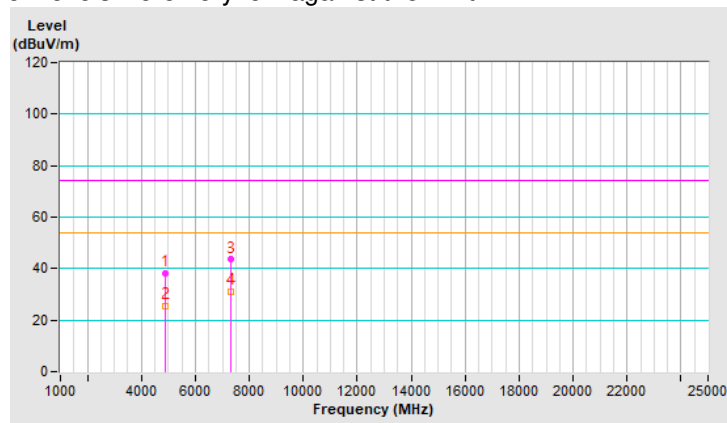


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	38.1 PK	74.0	-35.9	1.11 H	289	35.3	2.8
2	4874.00	25.5 AV	54.0	-28.5	1.11 H	289	22.7	2.8
3	7311.00	43.5 PK	74.0	-30.5	1.30 H	30	34.6	8.9
4	7311.00	31.1 AV	54.0	-22.9	1.30 H	30	22.2	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.

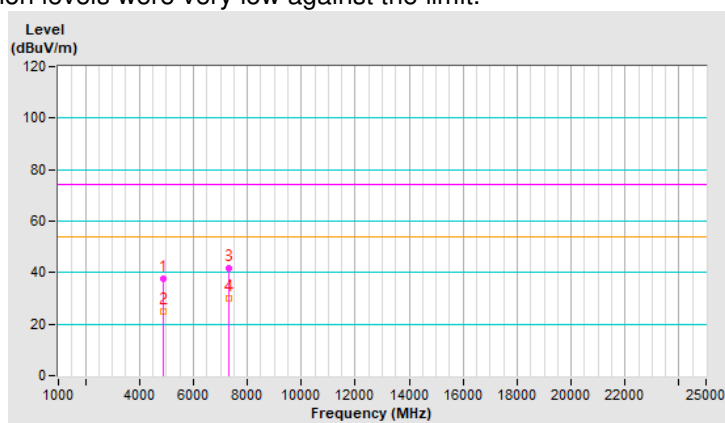


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	37.5 PK	74.0	-36.5	1.65 V	130	34.7	2.8
2	4874.00	24.9 AV	54.0	-29.1	1.65 V	130	22.1	2.8
3	7311.00	41.8 PK	74.0	-32.2	1.38 V	91	32.9	8.9
4	7311.00	29.9 AV	54.0	-24.1	1.38 V	91	21.0	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.

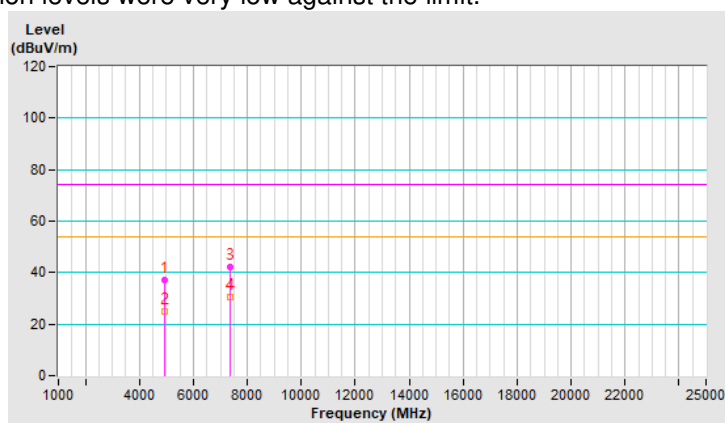


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4924.00	37.3 PK	74.0	-36.7	1.08 H	282	34.6	2.7
2	4924.00	24.8 AV	54.0	-29.2	1.08 H	282	22.1	2.7
3	7386.00	42.4 PK	74.0	-31.6	1.28 H	34	33.4	9.0
4	7386.00	30.5 AV	54.0	-23.5	1.28 H	34	21.5	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.

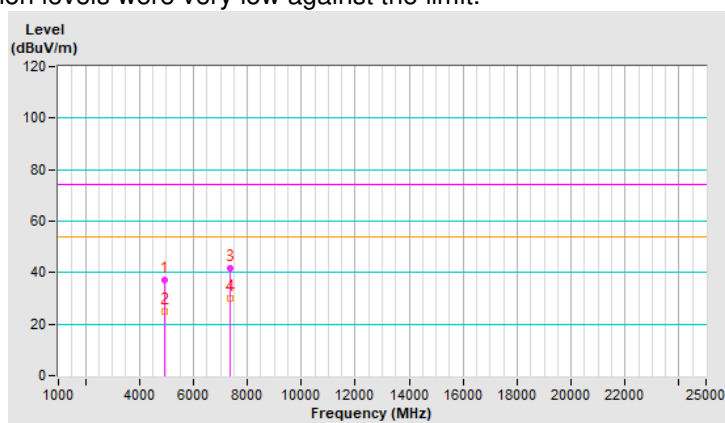


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4924.00	37.1 PK	74.0	-36.9	1.61 V	112	34.4	2.7
2	4924.00	24.9 AV	54.0	-29.1	1.61 V	112	22.2	2.7
3	7386.00	41.9 PK	74.0	-32.1	1.46 V	110	32.9	9.0
4	7386.00	30.2 AV	54.0	-23.8	1.46 V	110	21.2	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.



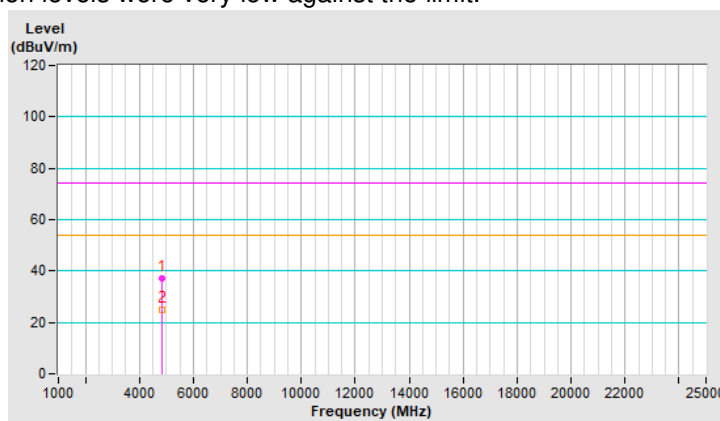
802.11n (HT20)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4824.00	37.1 PK	74.0	-36.9	1.14 H	287	34.2	2.9
2	4824.00	24.9 AV	54.0	-29.1	1.14 H	287	22.0	2.9

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.

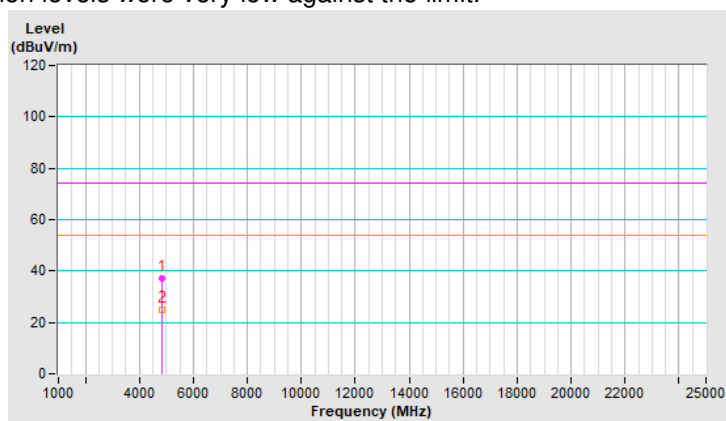


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4824.00	37.2 PK	74.0	-36.8	1.64 V	120	34.3	2.9
2	4824.00	25.0 AV	54.0	-29.0	1.64 V	120	22.1	2.9

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.

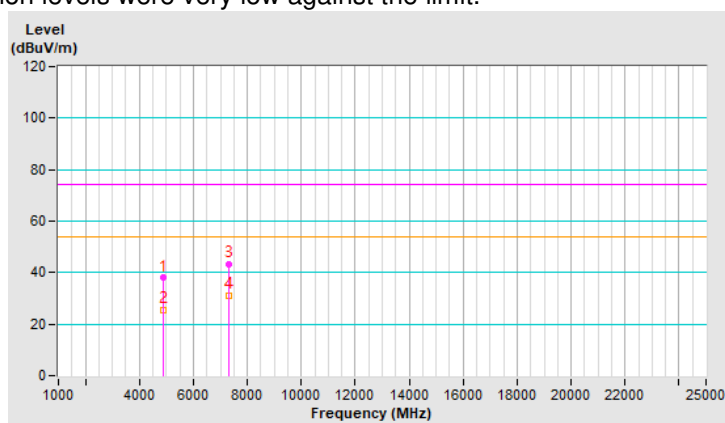


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	37.9 PK	74.0	-36.1	1.16 H	300	35.1	2.8
2	4874.00	25.5 AV	54.0	-28.5	1.16 H	300	22.7	2.8
3	7311.00	43.2 PK	74.0	-30.8	1.32 H	24	34.3	8.9
4	7311.00	31.1 AV	54.0	-22.9	1.32 H	24	22.2	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.

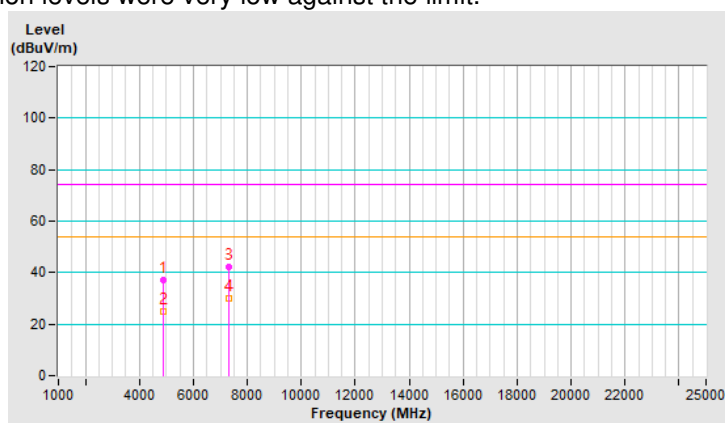


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	37.0 PK	74.0	-37.0	1.59 V	116	34.2	2.8
2	4874.00	24.8 AV	54.0	-29.2	1.59 V	116	22.0	2.8
3	7311.00	42.2 PK	74.0	-31.8	1.38 V	98	33.3	8.9
4	7311.00	30.2 AV	54.0	-23.8	1.38 V	98	21.3	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.

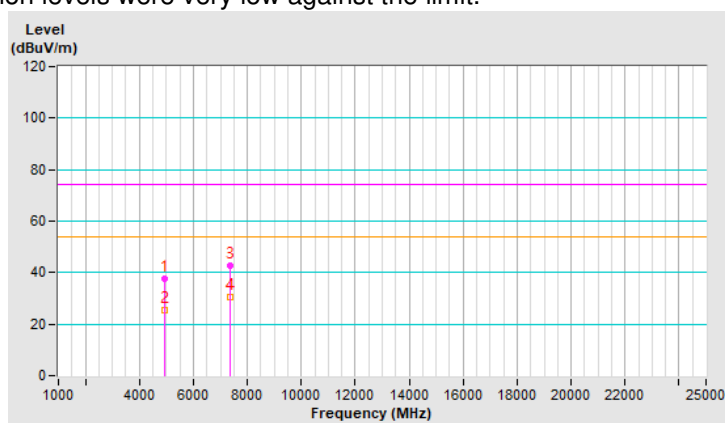


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4924.00	37.6 PK	74.0	-36.4	1.14 H	303	34.9	2.7
2	4924.00	25.4 AV	54.0	-28.6	1.14 H	303	22.7	2.7
3	7386.00	42.8 PK	74.0	-31.2	1.38 H	21	33.8	9.0
4	7386.00	30.4 AV	54.0	-23.6	1.38 H	21	21.4	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.

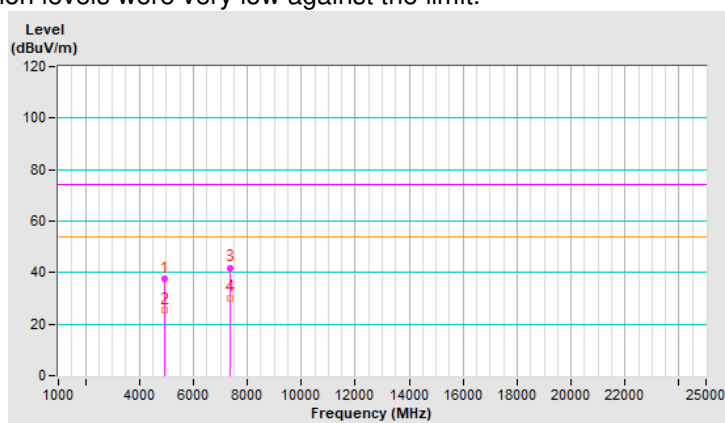


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4924.00	37.4 PK	74.0	-36.6	1.63 V	123	34.7	2.7
2	4924.00	25.2 AV	54.0	-28.8	1.63 V	123	22.5	2.7
3	7386.00	41.8 PK	74.0	-32.2	1.47 V	84	32.8	9.0
4	7386.00	30.0 AV	54.0	-24.0	1.47 V	84	21.0	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.



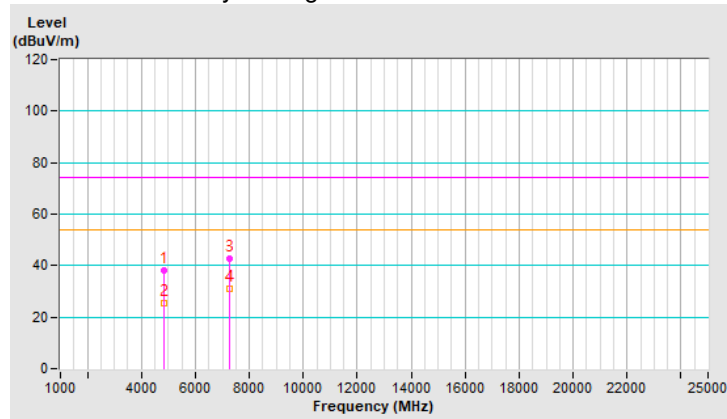
802.11n (HT40)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4844.00	38.0 PK	74.0	-36.0	1.11 H	300	35.1	2.9
2	4844.00	25.6 AV	54.0	-28.4	1.11 H	300	22.7	2.9
3	7266.00	42.9 PK	74.0	-31.1	1.32 H	39	34.1	8.8
4	7266.00	31.0 AV	54.0	-23.0	1.32 H	39	22.2	8.8

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.

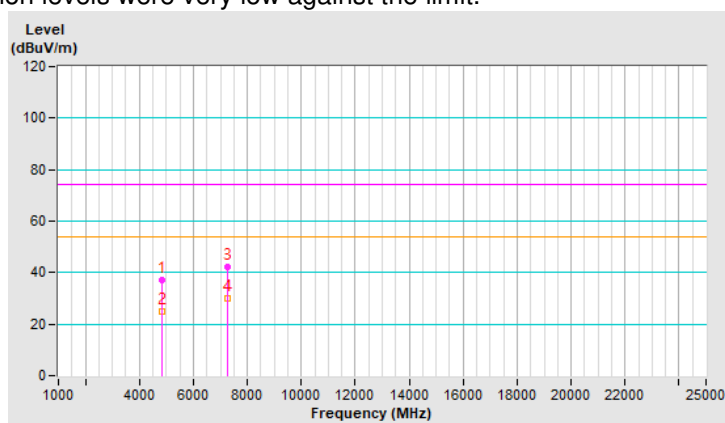


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4844.00	37.2 PK	74.0	-36.8	1.59 V	100	34.3	2.9
2	4844.00	25.1 AV	54.0	-28.9	1.59 V	100	22.2	2.9
3	7266.00	42.1 PK	74.0	-31.9	1.41 V	97	33.3	8.8
4	7266.00	30.0 AV	54.0	-24.0	1.41 V	97	21.2	8.8

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.

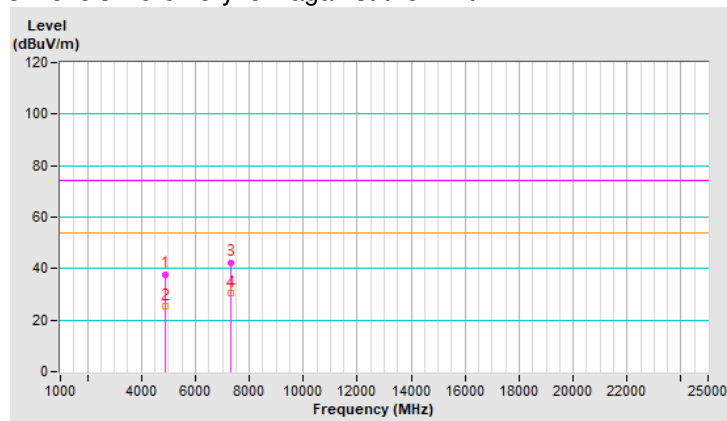


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	37.6 PK	74.0	-36.4	1.09 H	309	34.8	2.8
2	4874.00	25.2 AV	54.0	-28.8	1.09 H	309	22.4	2.8
3	7311.00	42.3 PK	74.0	-31.7	1.40 H	20	33.4	8.9
4	7311.00	30.3 AV	54.0	-23.7	1.40 H	20	21.4	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.

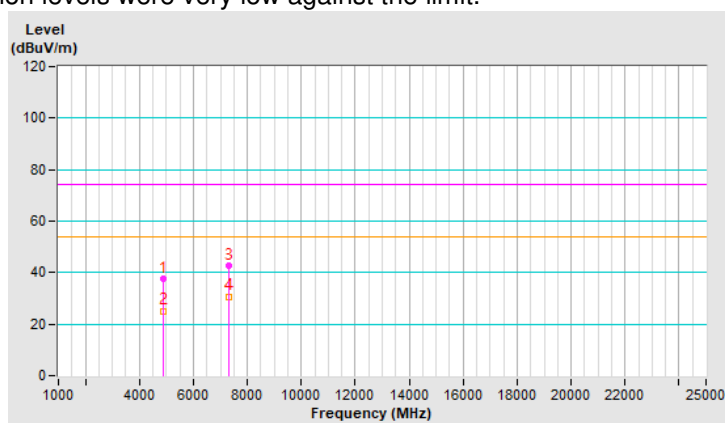


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4874.00	37.4 PK	74.0	-36.6	1.67 V	110	34.6	2.8
2	4874.00	25.1 AV	54.0	-28.9	1.67 V	110	22.3	2.8
3	7311.00	42.5 PK	74.0	-31.5	1.40 V	108	33.6	8.9
4	7311.00	30.5 AV	54.0	-23.5	1.40 V	108	21.6	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.

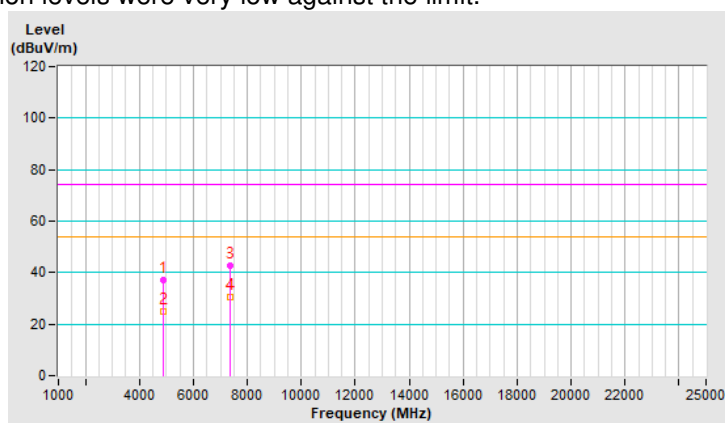


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4904.00	37.2 PK	74.0	-36.8	1.07 H	293	34.5	2.7
2	4904.00	24.8 AV	54.0	-29.2	1.07 H	293	22.1	2.7
3	7356.00	42.7 PK	74.0	-31.3	1.36 H	31	33.8	8.9
4	7356.00	30.7 AV	54.0	-23.3	1.36 H	31	21.8	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.

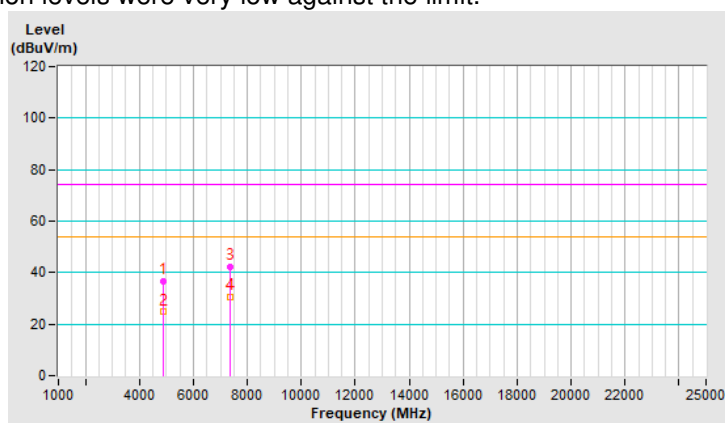


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4904.00	36.8 PK	74.0	-37.2	1.62 V	103	34.1	2.7
2	4904.00	24.7 AV	54.0	-29.3	1.62 V	103	22.0	2.7
3	7356.00	42.4 PK	74.0	-31.6	1.45 V	113	33.5	8.9
4	7356.00	30.4 AV	54.0	-23.6	1.45 V	113	21.5	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.



Below 1GHz Data:

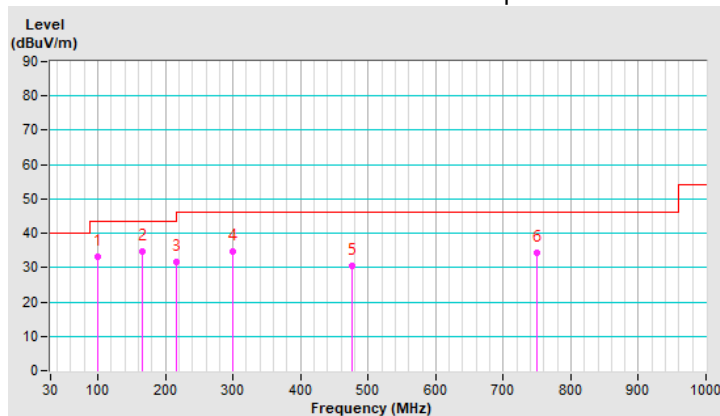
802.11n (HT20)

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	99.77	33.0 QP	43.5	-10.5	3.00 H	292	44.8	-11.8
2	165.99	34.5 QP	43.5	-9.0	1.50 H	355	41.9	-7.4
3	215.56	31.5 QP	43.5	-12.0	1.50 H	330	41.7	-10.2
4	299.30	34.7 QP	46.0	-11.3	1.00 H	186	41.1	-6.4
5	477.02	30.5 QP	46.0	-15.5	2.00 H	53	32.5	-2.0
6	749.91	34.2 QP	46.0	-11.8	3.00 H	147	30.3	3.9

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

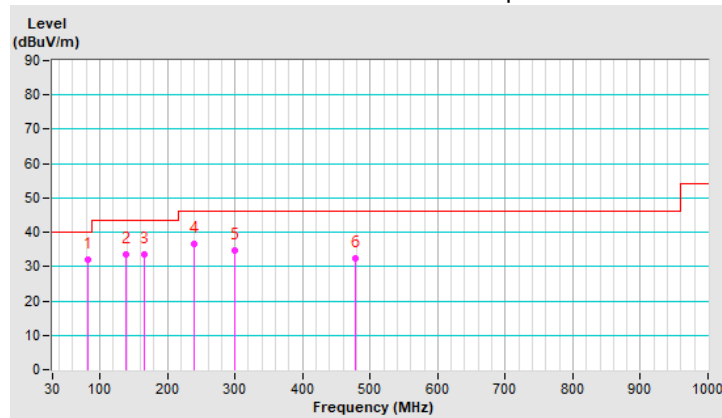


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	81.41	31.9 QP	40.0	-8.1	2.00 V	0	44.9	-13.0
2	137.99	33.7 QP	43.5	-9.8	1.00 V	314	41.4	-7.7
3	165.99	33.6 QP	43.5	-9.9	1.00 V	104	41.0	-7.4
4	239.30	36.7 QP	46.0	-9.3	1.00 V	347	45.3	-8.6
5	299.32	34.6 QP	46.0	-11.4	2.00 V	162	41.0	-6.4
6	478.92	32.2 QP	46.0	-13.8	1.00 V	175	34.2	-2.0

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



4.1.8 Test Results (Conducted Measurement)

Radiated versus Conducted Measurement	
☒ Conducted measurement	☐ Radiated measurement
<u>For Radiated measurement:</u> 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) <u>For Conducted measurement:</u> The level of unwanted emissions was measured as their power in a specified load (conducted spurious emissions). Note: In order to obtain results more easily, change max hold to view as following. It has no effect on the result.	

Conducted Measurement Factor
a. The composite gain will be used i. For Mode 1: Chain 0 Composite gain = $4.45 + 10 \log(2) = 7.46$ dBi Chain 1 Composite gain = $4.02 + 10 \log(2) = 7.03$ dBi ii. For Mode 2: Composite gain = 4.45 dBi 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. c. For the band edge the gain for the specific band may have been used. d. In restricted bands below 1000 MHz, add upper bound on ground plane reflection: For $f = 30 - 1000$ MHz, add 4.7 dB. Note: The conducted emission test was considered some factor to compute test result.

4.1.8.1 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	113.69	*		10.97	7.46	18.43
2	2346.87 PK	57.05	74	-16.95	-45.67	7.46	-38.21
3	6976.56 PK	59.26	#		-43.46	7.46	-36
4	19307.5 PK	52.24	74	-21.76	-50.48	7.46	-43.02
5	2410.93 AV	104.8	*		2.08	7.46	9.54
6	2350 AV	46.14	54	-7.86	-56.58	7.46	-49.12
7	6996.87 AV	47.6	#		-55.12	7.46	-47.66
8	19873.87 AV	40.79	54	-13.21	-61.93	7.46	-54.47

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.

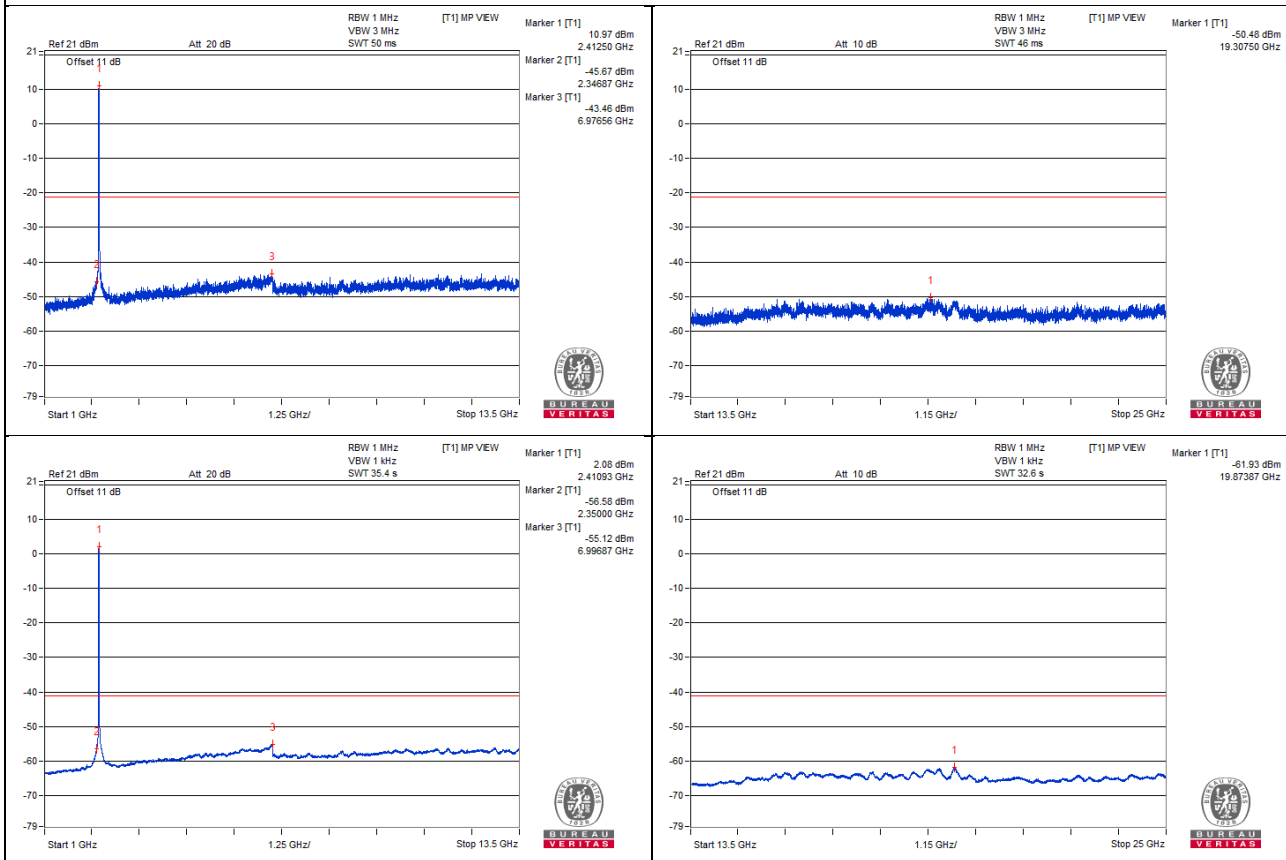
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2410.93 PK	112.94	*		10.65	7.03	17.68
2	2337.5 PK	56.6	74	-17.4	-45.69	7.03	-38.66
3	6981.25 PK	59.13	#		-43.16	7.03	-36.13
4	17875.75 PK	52.08	74	-21.92	-50.21	7.03	-43.18
5	2412.5 AV	104.22	*		1.93	7.03	8.96
6	2346.87 AV	45.48	54	-8.52	-56.81	7.03	-49.78
7	3215.62 AV	48.25	#		-54.04	7.03	-47.01
8	19872.43 AV	40.53	54	-13.47	-61.76	7.03	-54.73

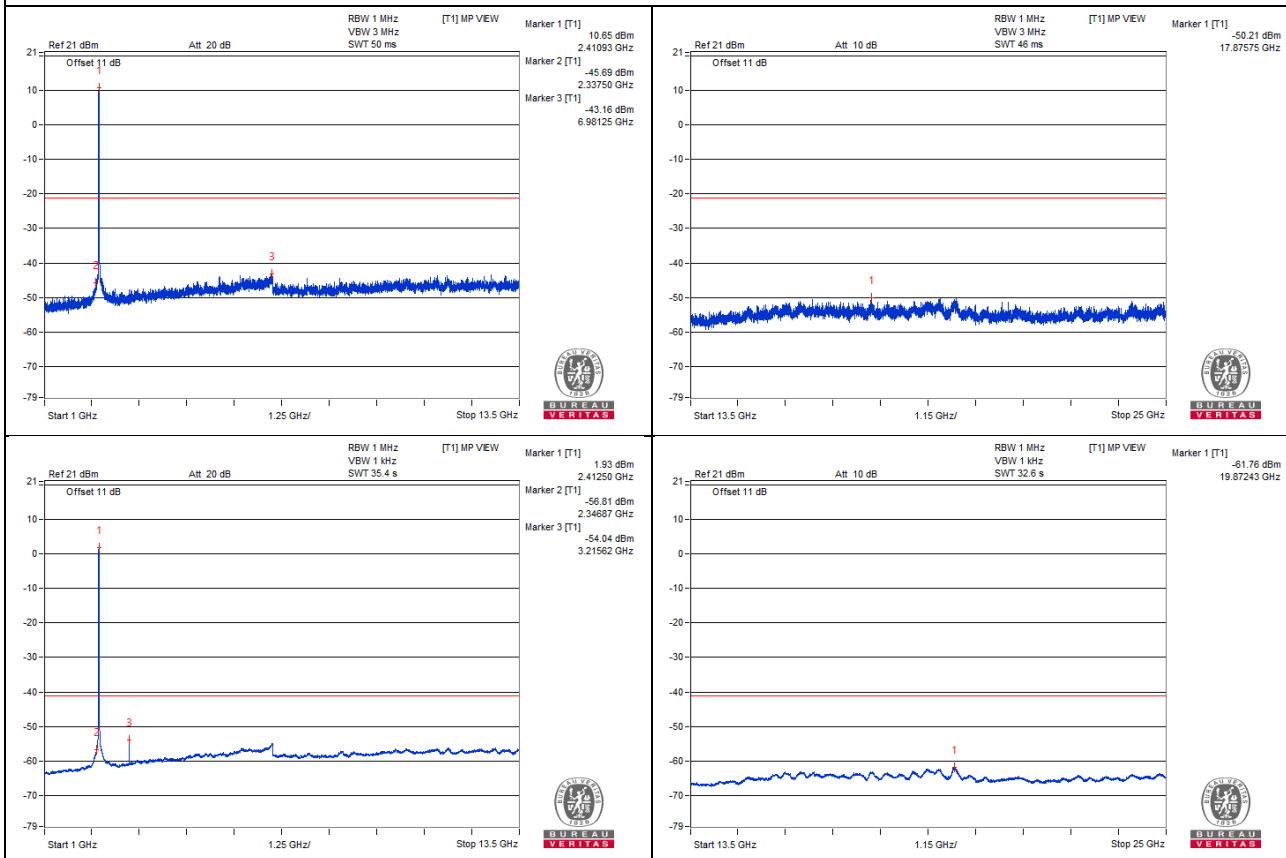
Note :

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 0



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	2409.18 PK	114.66	*		11.94	7.46	19.4
2	2390 PK	62.39	74	-11.61	-40.33	7.46	-32.87
3	2483.5 PK	56.39	74	-17.61	-46.33	7.46	-38.87
4	2389.56 PK	65.56	74	-8.44	-37.16	7.46	-29.7
5	2492.94 PK	58.32	74	-15.68	-44.4	7.46	-36.94
6	2411.34 AV	103.74	*		1.02	7.46	8.48
7	2390 AV	49.02	54	-4.98	-53.7	7.46	-46.24
8	2483.5 AV	44.03	54	-9.97	-58.69	7.46	-51.23
9	2390 AV	49.03	54	-4.97	-53.69	7.46	-46.23
10	2483.94 AV	44.07	54	-9.93	-58.65	7.46	-51.19

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.

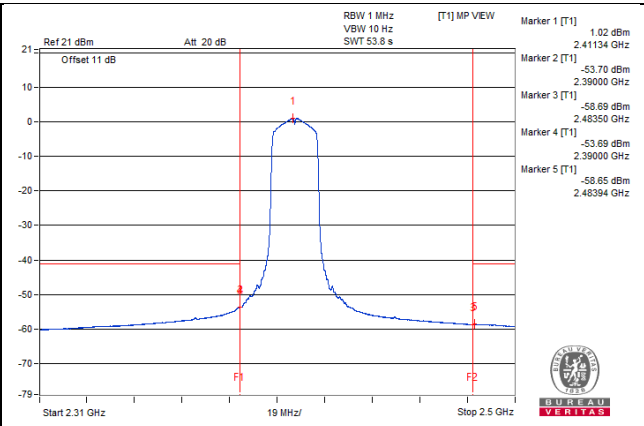
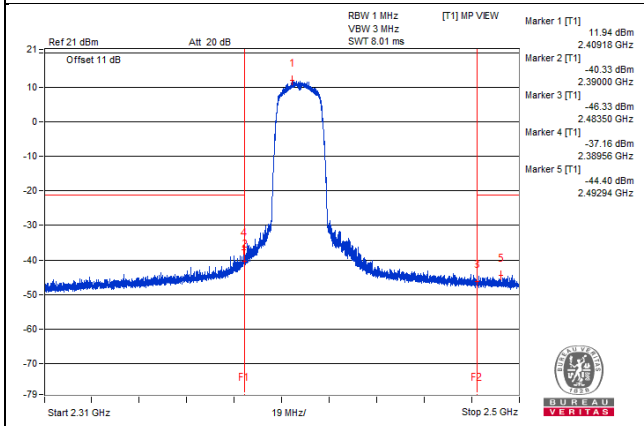
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2410.13 PK	114.64	*		12.35	7.03	19.38
2	2390 PK	62.57	74	-11.43	-39.72	7.03	-32.69
3	2483.5 PK	57.26	74	-16.74	-45.03	7.03	-38
4	2389.94 PK	62.91	74	-11.09	-39.38	7.03	-32.35
5	2489.14 PK	58.67	74	-15.33	-43.62	7.03	-36.59
6	2411.31 AV	103.16	*		0.87	7.03	7.9
7	2390 AV	48.74	54	-5.26	-53.55	7.03	-46.52
8	2483.5 AV	44.58	54	-9.42	-57.71	7.03	-50.68
9	2390 AV	48.74	54	-5.26	-53.55	7.03	-46.52
10	2484.08 AV	44.65	54	-9.35	-57.64	7.03	-50.61

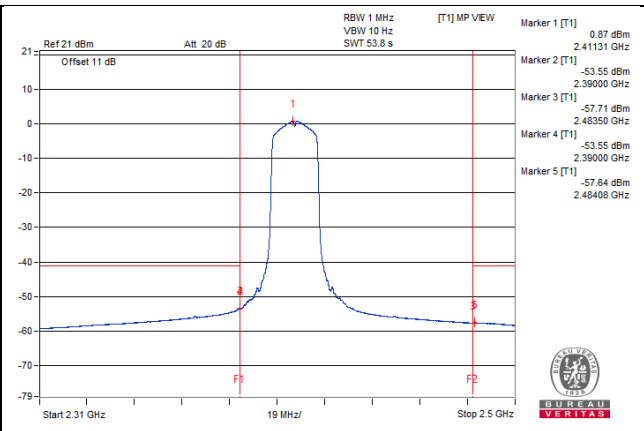
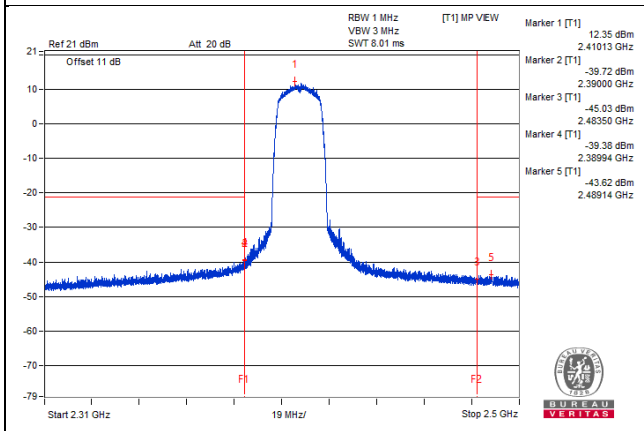
Note :

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



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	2437.5 PK	113.52	*		10.8	7.46	18.26
2	2340.62 PK	56.97	74	-17.03	-45.75	7.46	-38.29
3	6992.18 PK	60.1	#		-42.62	7.46	-35.16
4	19875.31 PK	53.86	74	-20.14	-48.86	7.46	-41.4
5	2435.93 AV	104.74	*		2.02	7.46	9.48
6	2350 AV	44.92	54	-9.08	-57.8	7.46	-50.34
7	6984.37 AV	47.8	#		-54.92	7.46	-47.46
8	19882.5 AV	40.88	54	-13.12	-61.84	7.46	-54.38

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.

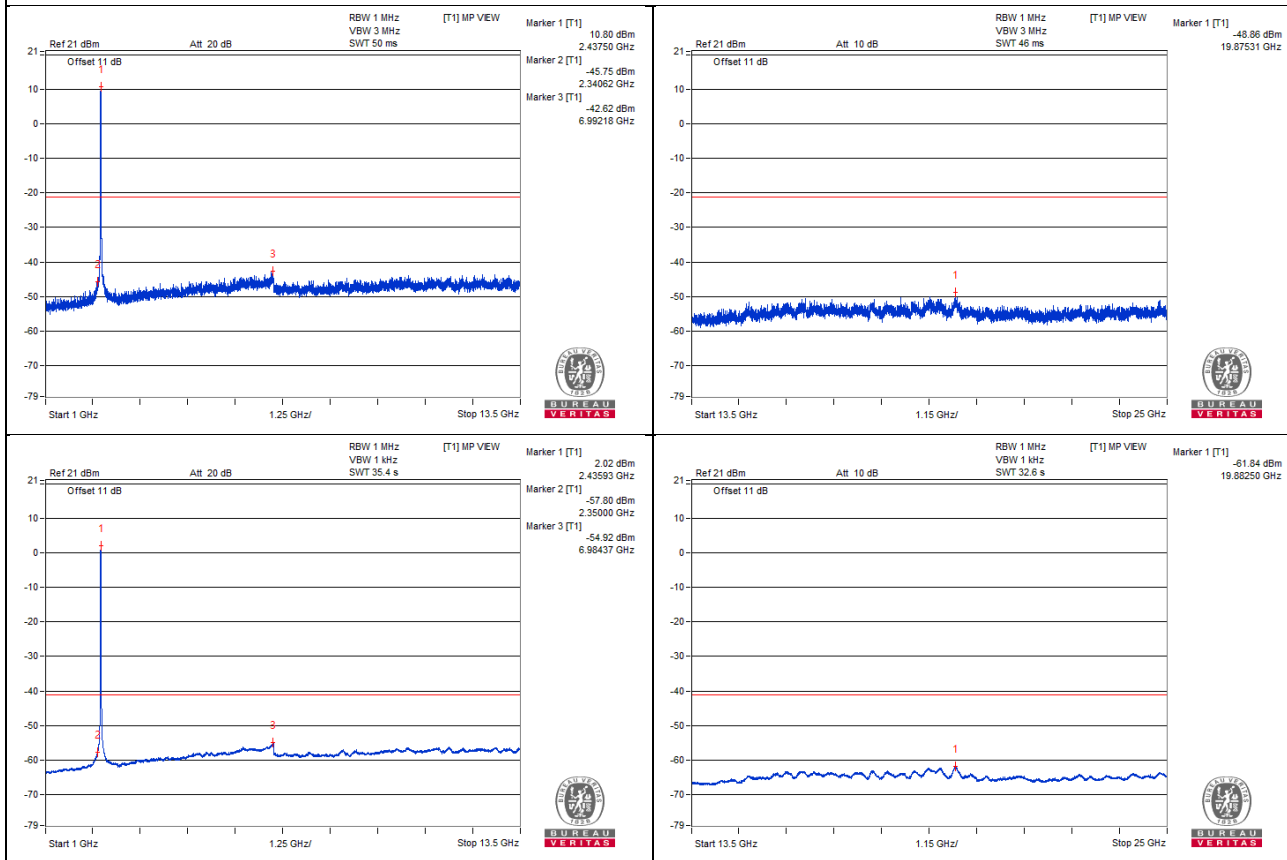
Chain 1

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	112.59	*		10.3	7.03	17.33
2	2317.18 PK	55.88	74	-18.12	-46.41	7.03	-39.38
3	6973.43 PK	59.28	#		-43.01	7.03	-35.98
4	19229.87 PK	52.9	74	-21.1	-49.39	7.03	-42.36
5	2435.93 AV	103.91	*		1.62	7.03	8.65
6	2350 AV	44.65	54	-9.35	-57.64	7.03	-50.61
7	6996.87 AV	47.41	#		-54.88	7.03	-47.85
8	19882.5 AV	40.42	54	-13.58	-61.87	7.03	-54.84

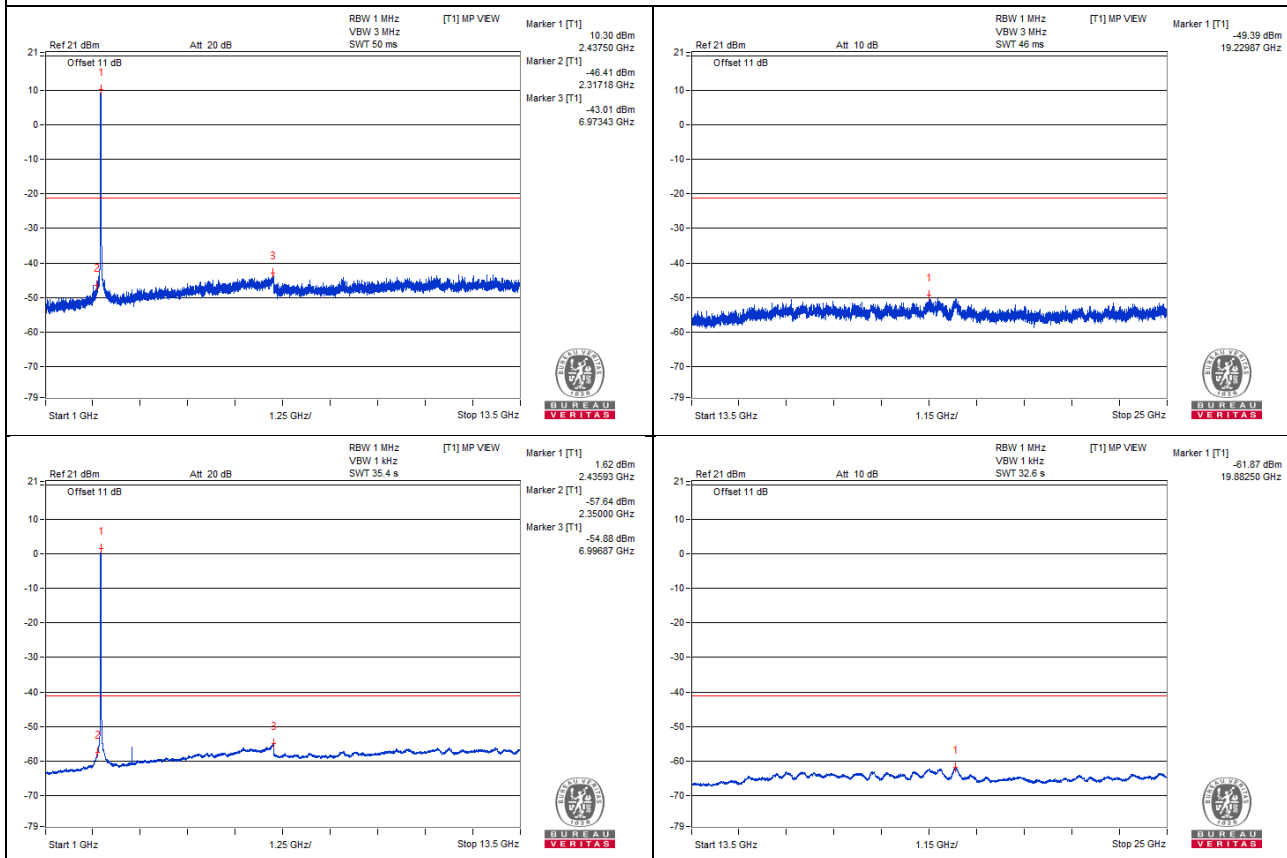
Note :

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 0



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	2435.23 PK	115.95	*		13.23	7.46	20.69
2	2390 PK	58.75	74	-15.25	-43.97	7.46	-36.51
3	2483.5 PK	58.9	74	-15.1	-43.82	7.46	-36.36
4	2388.89 PK	61.22	74	-12.78	-41.5	7.46	-34.04
5	2485.13 PK	60.97	74	-13.03	-41.75	7.46	-34.29
6	2437.65 AV	104.32	*		1.6	7.46	9.06
7	2390 AV	47.11	54	-6.89	-55.61	7.46	-48.15
8	2483.5 AV	47.14	54	-6.86	-55.58	7.46	-48.12
9	2389.87 AV	47.15	54	-6.85	-55.57	7.46	-48.11
10	2483.5 AV	47.13	54	-6.87	-55.59	7.46	-48.13

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.

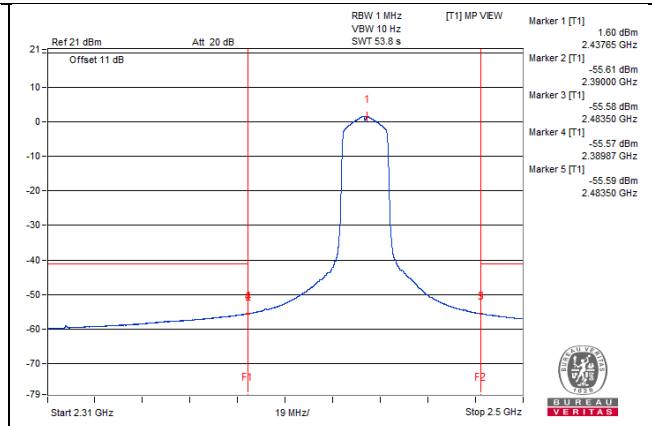
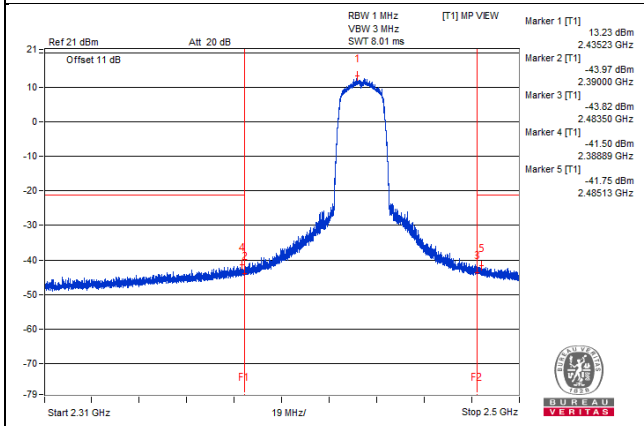
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2437.3 PK	114.55	*		12.26	7.03	19.29
2	2390 PK	58.4	74	-15.6	-43.89	7.03	-36.86
3	2483.5 PK	58.87	74	-15.13	-43.42	7.03	-36.39
4	2386.71 PK	59.99	74	-14.01	-42.3	7.03	-35.27
5	2484.96 PK	60.14	74	-13.86	-42.15	7.03	-35.12
6	2436.32 AV	103.43	*		1.14	7.03	8.17
7	2390 AV	46.04	54	-7.96	-56.25	7.03	-49.22
8	2483.5 AV	46.15	54	-7.85	-56.14	7.03	-49.11
9	2389.84 AV	46.07	54	-7.93	-56.22	7.03	-49.19
10	2483.96 AV	46.16	54	-7.84	-56.13	7.03	-49.1

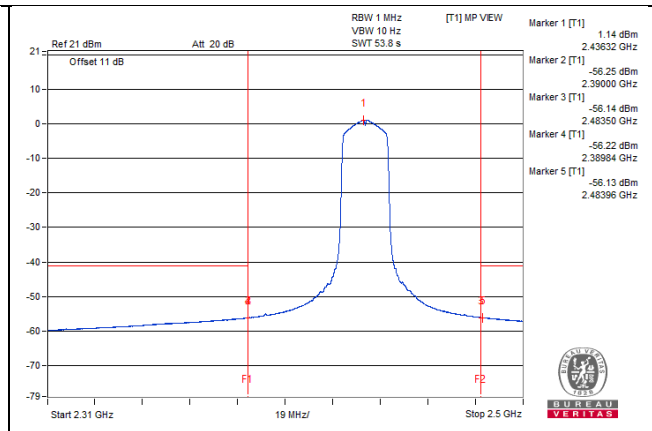
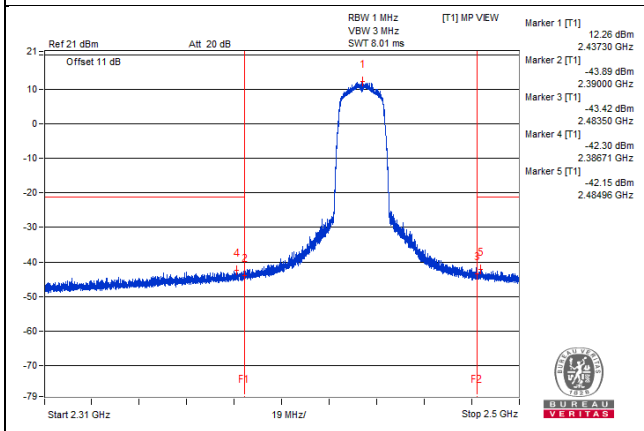
Note :

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



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	113.92	*		11.2	7.46	18.66
2	2321.87 PK	55.6	74	-18.4	-47.12	7.46	-39.66
3	6976.56 PK	60.36	#		-42.36	7.46	-34.9
4	19521.68 PK	53.22	74	-20.78	-49.5	7.46	-42.04
5	2462.5 AV	105.08	*		2.36	7.46	9.82
6	2348.43 AV	43.84	54	-10.16	-58.88	7.46	-51.42
7	6996.87 AV	47.7	#		-55.02	7.46	-47.56
8	19879.62 AV	40.81	54	-13.19	-61.91	7.46	-54.45

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.

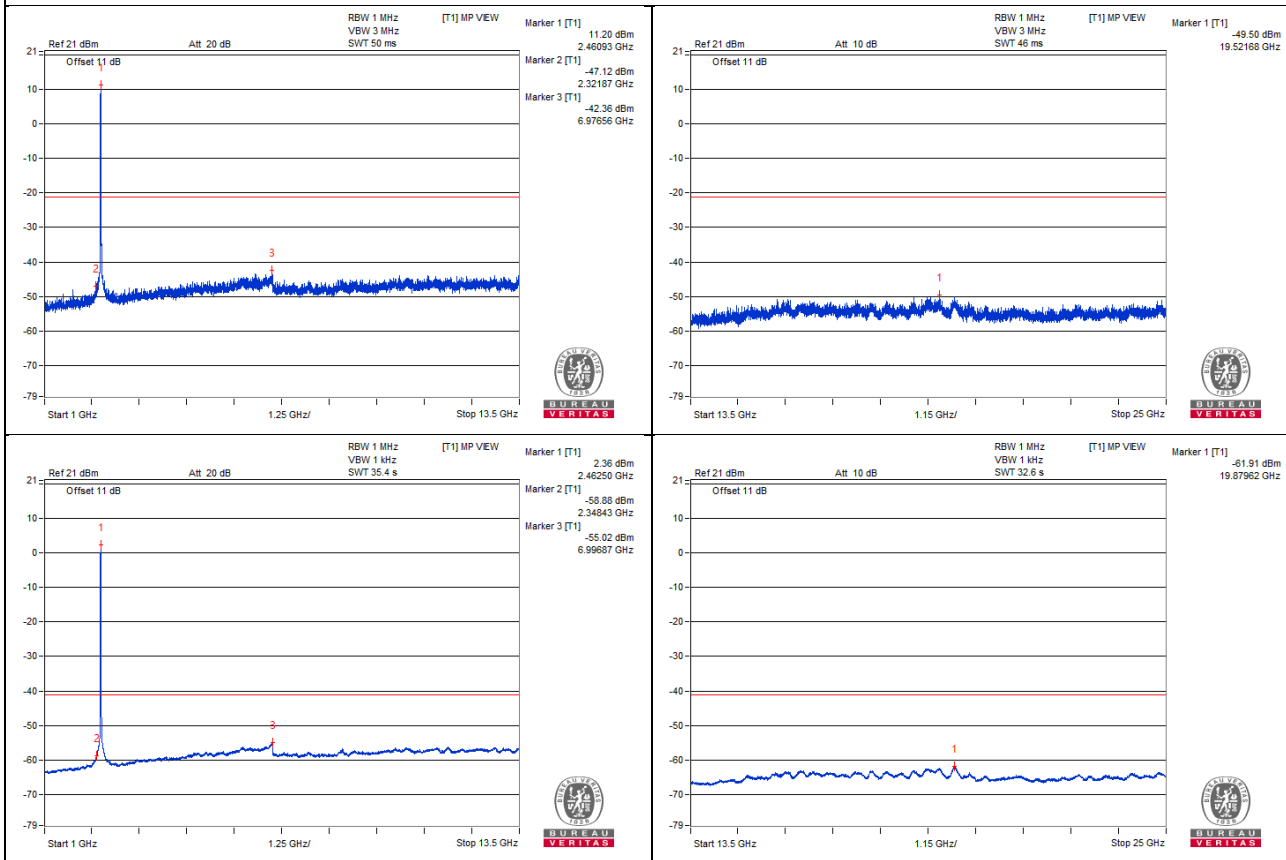
Chain 1

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	113.09	*		10.8	7.03	17.83
2	2342.18 PK	54.53	74	-19.47	-47.76	7.03	-40.73
3	10592.18 PK	59.63	#		-42.66	7.03	-35.63
4	19252.87 PK	52.1	74	-21.9	-50.19	7.03	-43.16
5	2460.93 AV	104.5	*		2.21	7.03	9.24
6	2350 AV	43.39	54	-10.61	-58.9	7.03	-51.87
7	6981.25 AV	47.2	#		-55.09	7.03	-48.06
8	19879.62 AV	40.6	54	-13.4	-61.69	7.03	-54.66

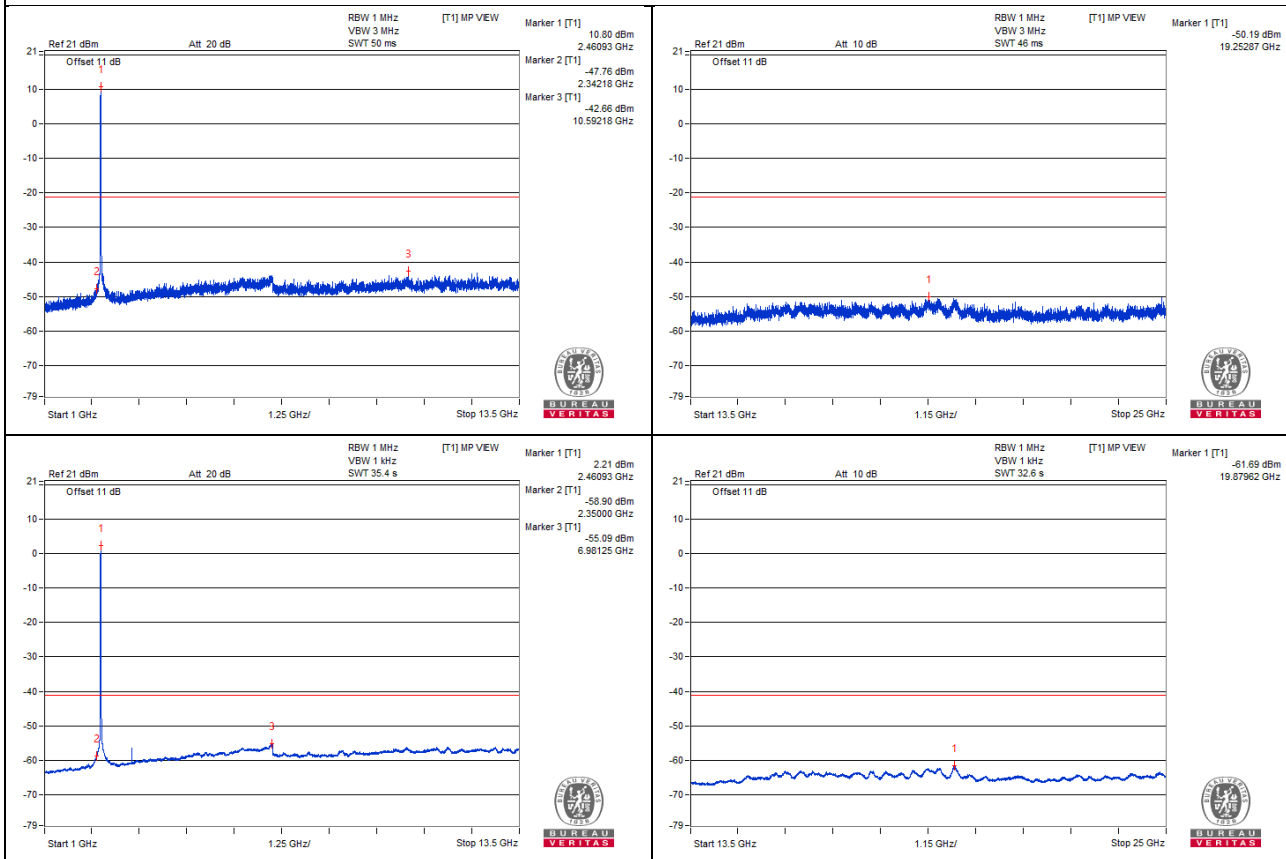
Note :

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 0



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	2462.99 PK	115.44	*		12.72	7.46	20.18
2	2390 PK	56.58	74	-17.42	-46.14	7.46	-38.68
3	2483.5 PK	63.99	74	-10.01	-38.73	7.46	-31.27
4	2383.24 PK	58.33	74	-15.67	-44.39	7.46	-36.93
5	2483.66 PK	67	74	-7	-35.72	7.46	-28.26
6	2461.33 AV	104.54	*		1.82	7.46	9.28
7	2390 AV	44.75	54	-9.25	-57.97	7.46	-50.51
8	2483.5 AV	50.19	54	-3.81	-52.53	7.46	-45.07
9	2389.15 AV	44.78	54	-9.22	-57.94	7.46	-50.48
10	2483.54 AV	50.21	54	-3.79	-52.51	7.46	-45.05

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.

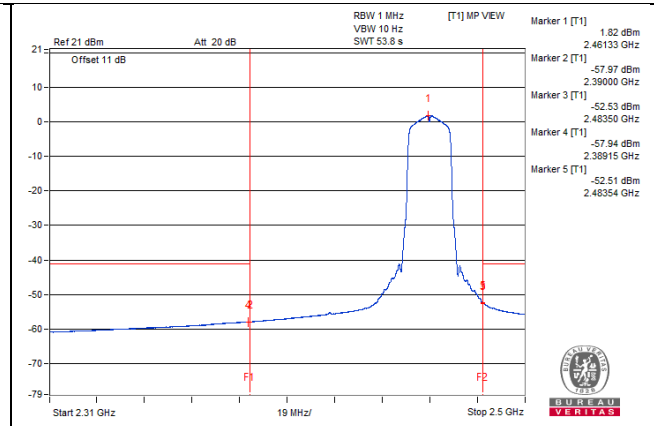
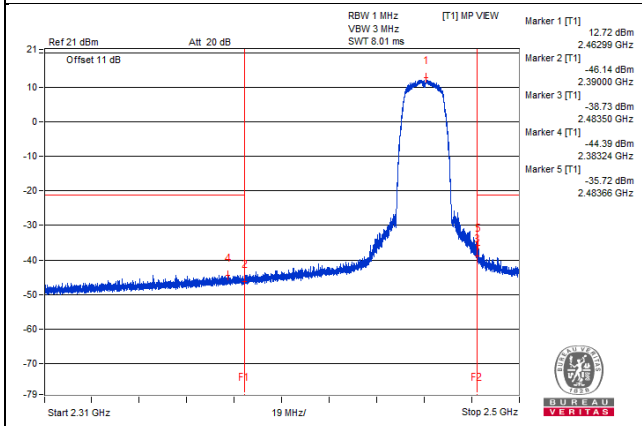
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2460.05 PK	114.61	*		12.32	7.03	19.35
2	2390 PK	55.55	74	-18.45	-46.74	7.03	-39.71
3	2483.5 PK	59.9	74	-14.1	-42.39	7.03	-35.36
4	2386.78 PK	58.99	74	-15.01	-43.3	7.03	-36.27
5	2483.61 PK	62.11	74	-11.89	-40.18	7.03	-33.15
6	2461.31 AV	103.47	*		1.18	7.03	8.21
7	2390 AV	44.32	54	-9.68	-57.97	7.03	-50.94
8	2483.5 AV	48.64	54	-5.36	-53.65	7.03	-46.62
9	2389.96 AV	44.34	54	-9.66	-57.95	7.03	-50.92
10	2483.85 AV	48.71	54	-5.29	-53.58	7.03	-46.55

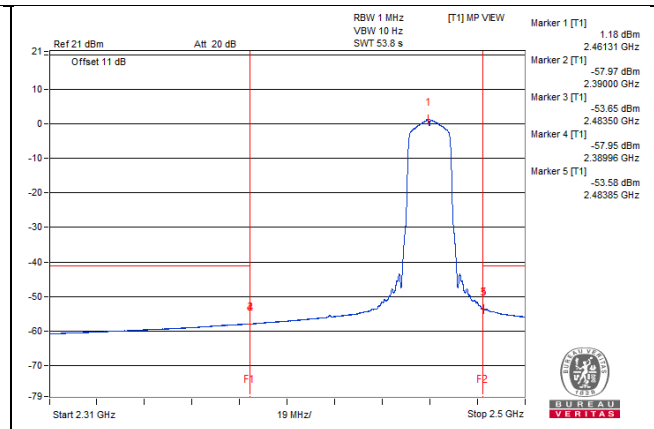
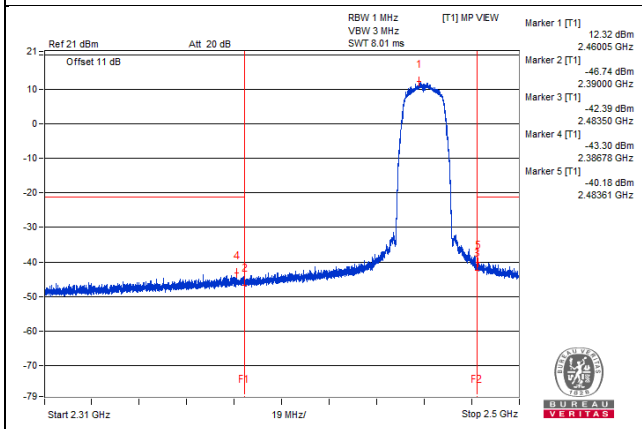
Note :

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



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	2426.56 PK	110.5	*		7.78	7.46	15.24
2	2339.06 PK	56.7	74	-17.3	-46.02	7.46	-38.56
3	12245.31 PK	59.47	74	-14.53	-43.25	7.46	-35.79
4	17456 PK	53.25	#		-49.47	7.46	-42.01
5	2423.43 AV	100.62	*		-2.1	7.46	5.36
6	2350 AV	44.59	54	-9.41	-58.13	7.46	-50.67
7	6998.43 AV	47.71	#		-55.01	7.46	-47.55
8	19881.06 AV	41.1	54	-12.9	-61.62	7.46	-54.16

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.

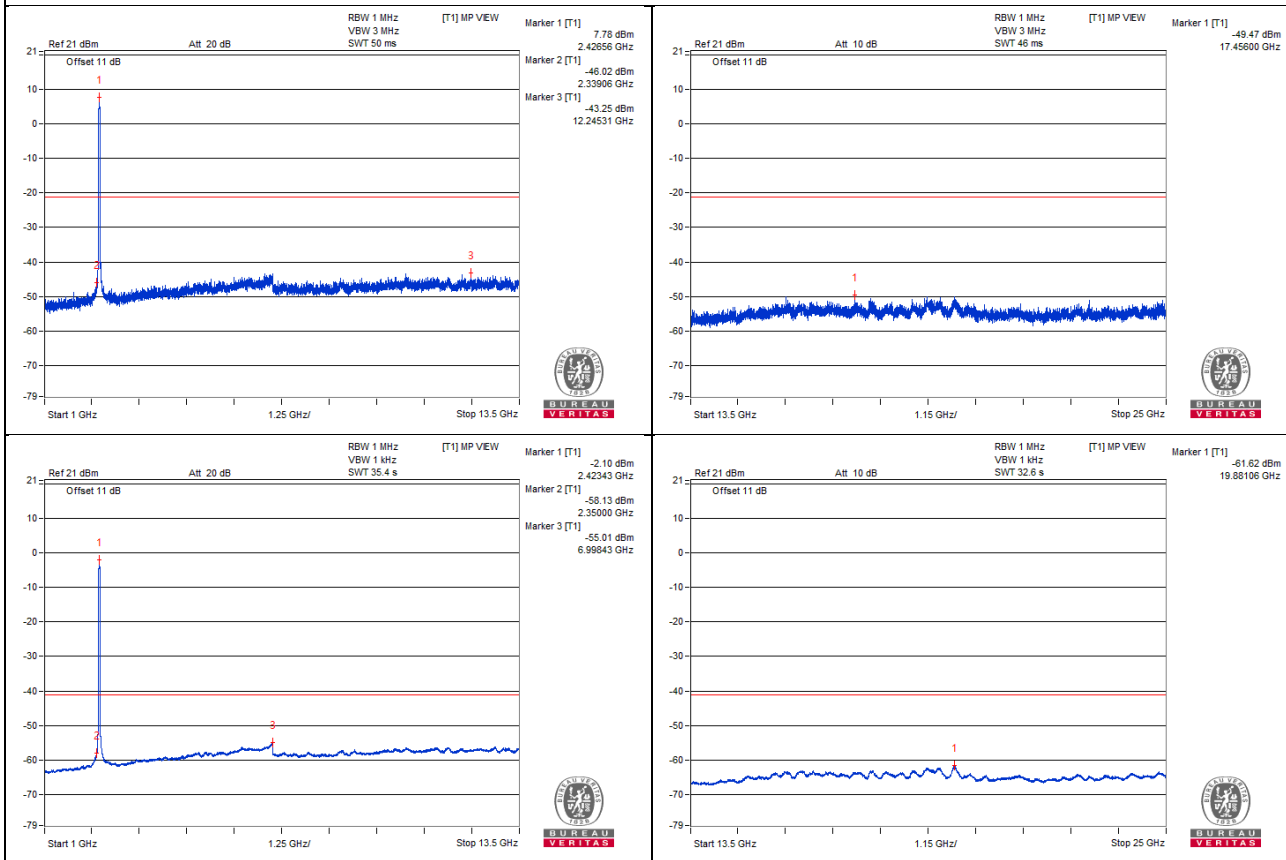
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2426.56 PK	109.13	*		6.84	7.03	13.87
2	2298.43 PK	56.14	74	-17.86	-46.15	7.03	-39.12
3	6953.12 PK	59.8	#		-42.49	7.03	-35.46
4	18890.62 PK	52.17	74	-21.83	-50.12	7.03	-43.09
5	2420.31 AV	99.82	*		-2.47	7.03	4.56
6	2342.18 AV	44.08	54	-9.92	-58.21	7.03	-51.18
7	6985.93 AV	47.34	#		-54.95	7.03	-47.92
8	19886.81 AV	40.52	54	-13.48	-61.77	7.03	-54.74

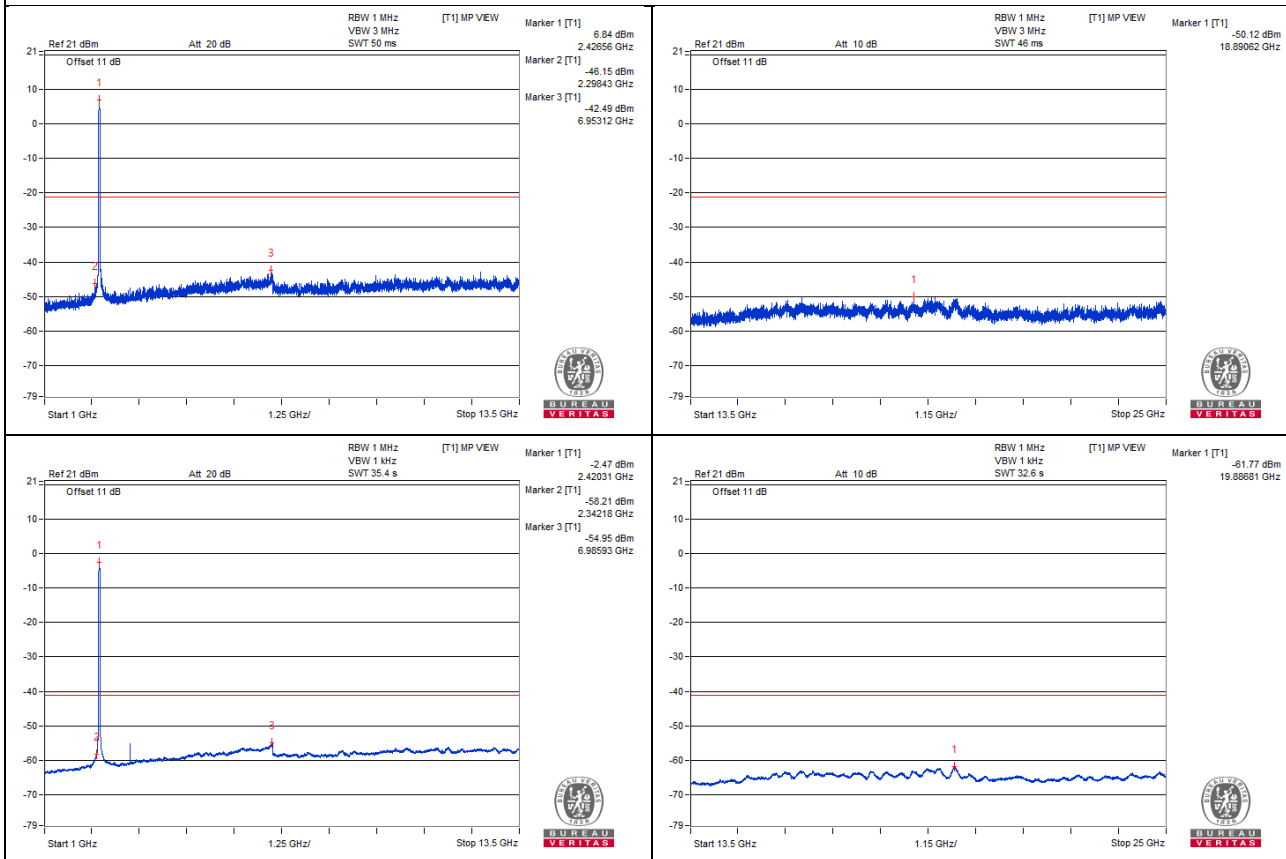
Note :

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 0



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	2419.25 PK	109.79	*		7.07	7.46	14.53
2	2390 PK	62.78	74	-11.22	-39.94	7.46	-32.48
3	2483.5 PK	57.1	74	-16.9	-45.62	7.46	-38.16
4	2389.63 PK	63.67	74	-10.33	-39.05	7.46	-31.59
5	2484.44 PK	59.04	74	-14.96	-43.68	7.46	-36.22
6	2423.57 AV	98.36	*		-4.36	7.46	3.1
7	2390 AV	49.75	54	-4.25	-52.97	7.46	-45.51
8	2483.5 AV	45.07	54	-8.93	-57.65	7.46	-50.19
9	2389.87 AV	49.8	54	-4.2	-52.92	7.46	-45.46
10	2483.5 AV	45.07	54	-8.93	-57.65	7.46	-50.19

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.

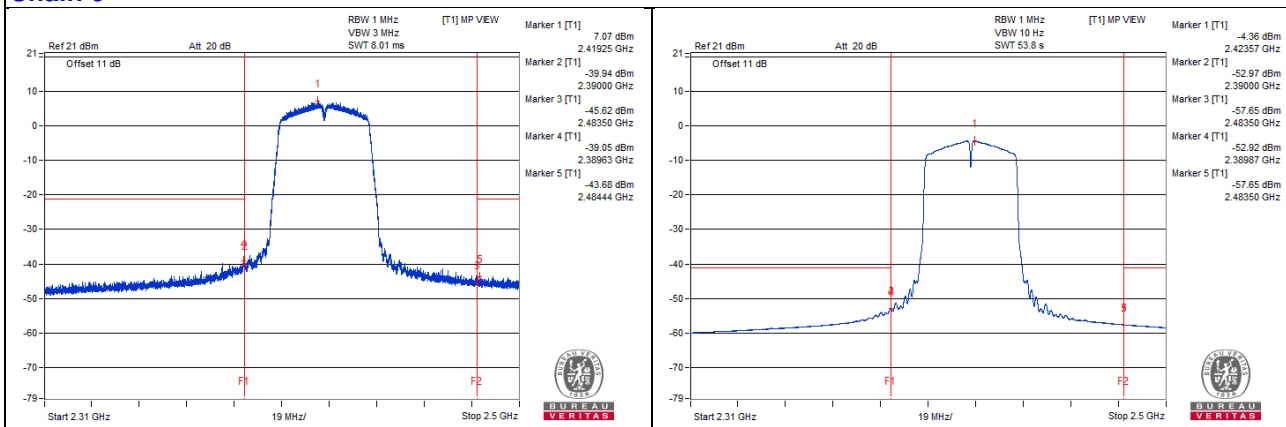
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2427.56 PK	109.31	*		7.02	7.03	14.05
2	2390 PK	60.11	74	-13.89	-42.18	7.03	-35.15
3	2483.5 PK	55.53	74	-18.47	-46.76	7.03	-39.73
4	2387.37 PK	61.16	74	-12.84	-41.13	7.03	-34.1
5	2499.62 PK	58.17	74	-15.83	-44.12	7.03	-37.09
6	2420.48 AV	97.75	*		-4.54	7.03	2.49
7	2390 AV	48.29	54	-5.71	-54	7.03	-46.97
8	2483.5 AV	44.24	54	-9.76	-58.05	7.03	-51.02
9	2389.87 AV	48.42	54	-5.58	-53.87	7.03	-46.84
10	2483.8 AV	44.34	54	-9.66	-57.95	7.03	-50.92

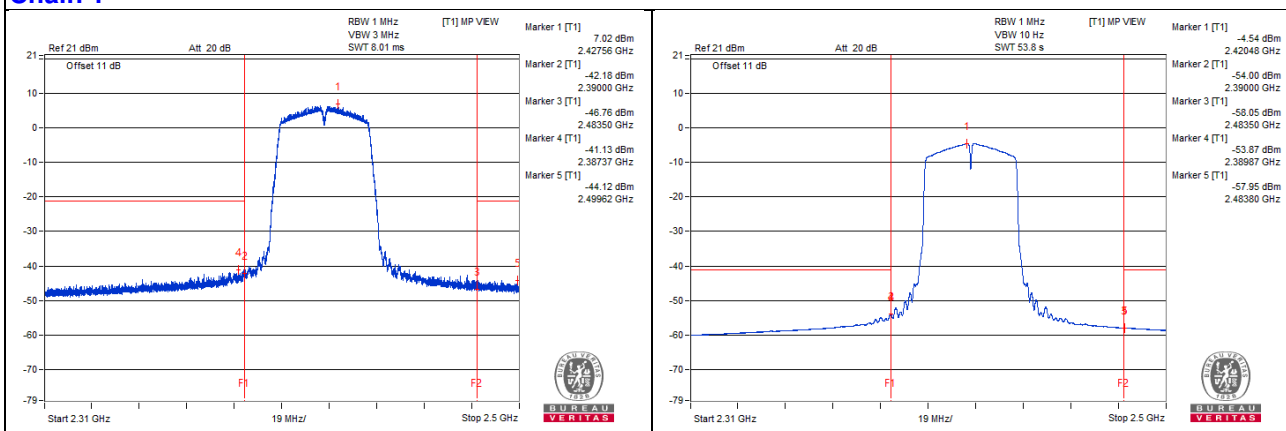
Note :

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.

Chain 0



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	2437.5 PK	111.02	*		8.3	7.46	15.76
2	2317.18 PK	55.8	74	-18.2	-46.92	7.46	-39.46
3	6985.93 PK	59.05	#		-43.67	7.46	-36.21
4	19505.87 PK	53.89	74	-20.11	-48.83	7.46	-41.37
5	2437.5 AV	102.58	*		-0.14	7.46	7.32
6	2350 AV	44.47	54	-9.53	-58.25	7.46	-50.79
7	6995.31 AV	47.71	#		-55.01	7.46	-47.55
8	19868.12 AV	40.9	54	-13.1	-61.82	7.46	-54.36

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.

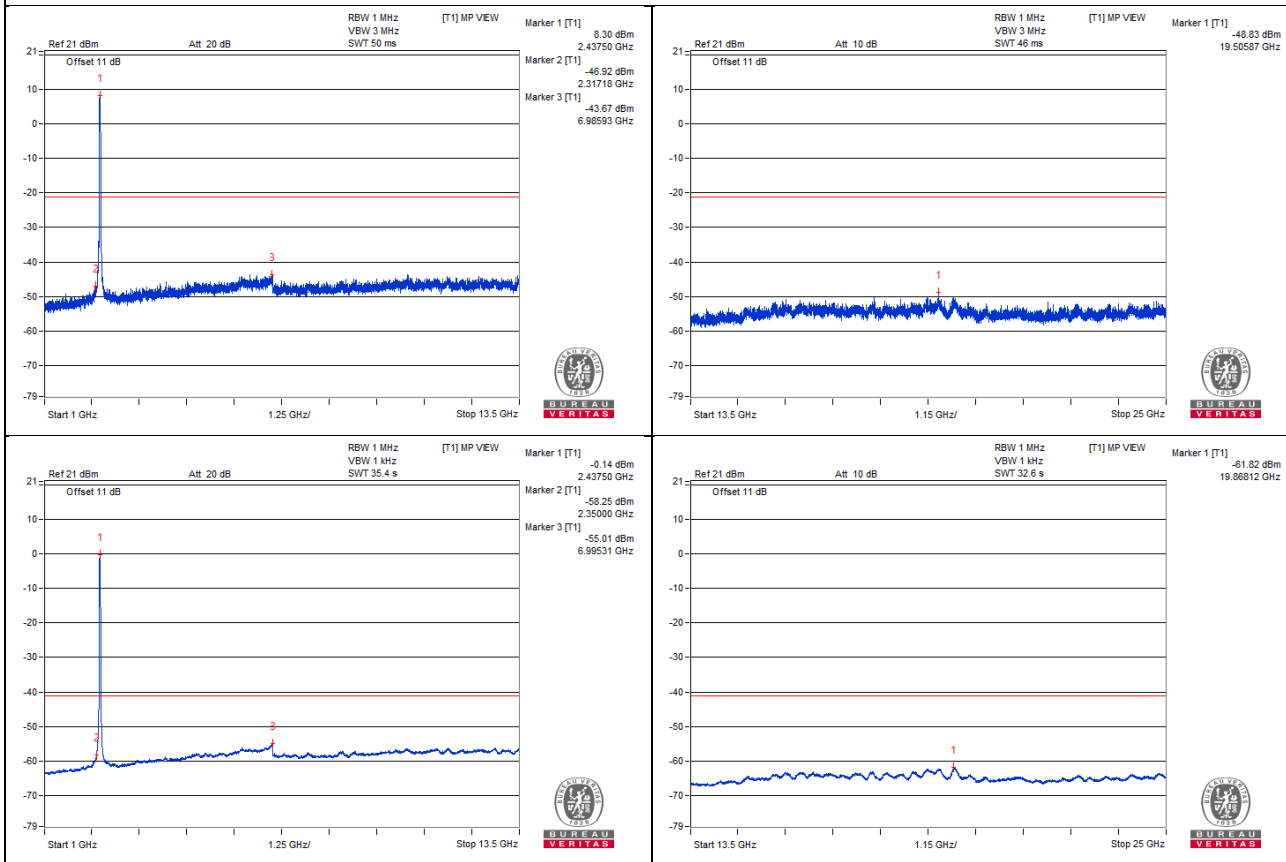
Chain 1

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	110.24	*		7.95	7.03	14.98
2	2342.18 PK	56.13	74	-17.87	-46.16	7.03	-39.13
3	6182.81 PK	59.11	#		-43.18	7.03	-36.15
4	19866.68 PK	52.55	74	-21.45	-49.74	7.03	-42.71
5	2434.37 AV	101.52	*		-0.77	7.03	6.26
6	2343.75 AV	45.14	54	-8.86	-57.15	7.03	-50.12
7	6993.75 AV	47.45	#		-54.84	7.03	-47.81
8	19894 AV	40.49	54	-13.51	-61.8	7.03	-54.77

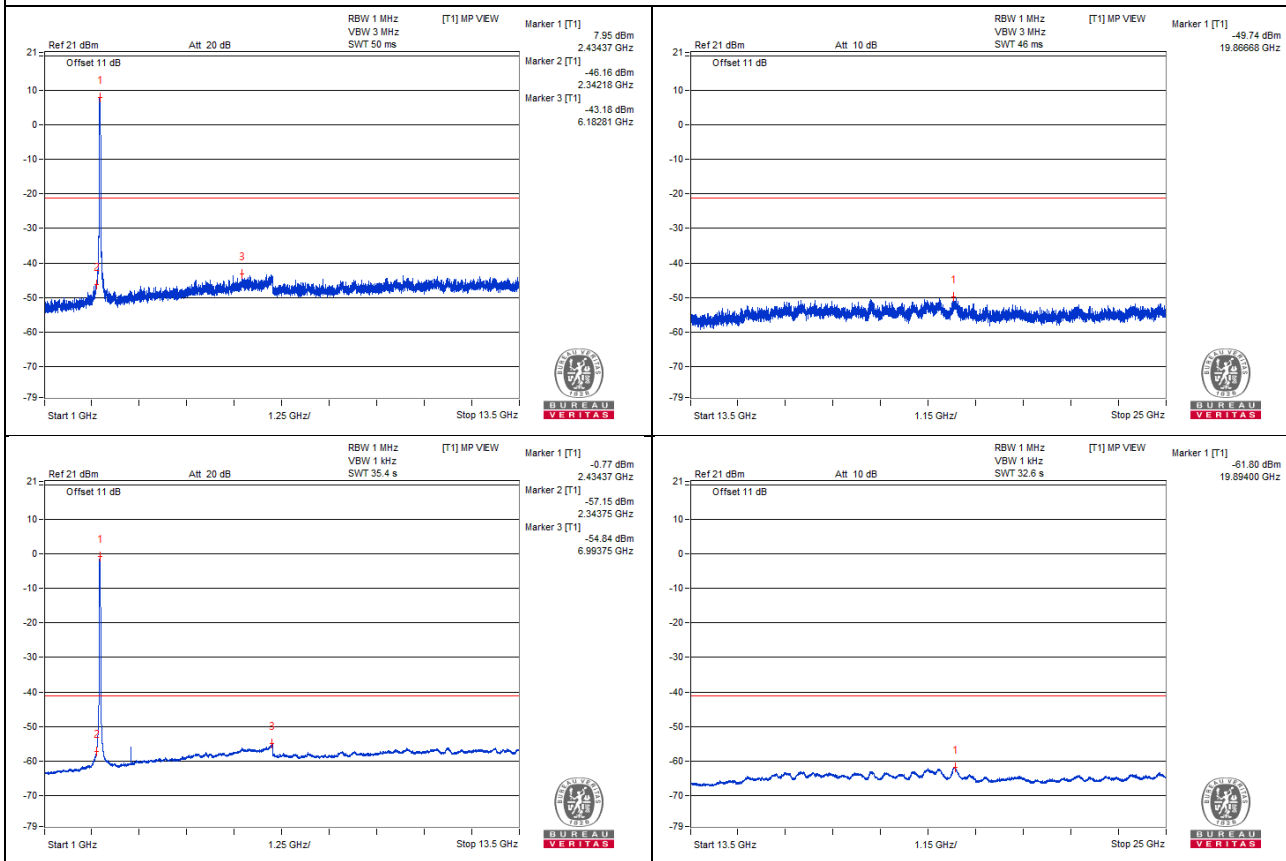
Note :

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 0



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	2432.64 PK	112.63	*		9.91	7.46	17.37
2	2390 PK	61.64	74	-12.36	-41.08	7.46	-33.62
3	2483.5 PK	62.23	74	-11.77	-40.49	7.46	-33.03
4	2387.21 PK	62.95	74	-11.05	-39.77	7.46	-32.31
5	2483.89 PK	64.18	74	-9.82	-38.54	7.46	-31.08
6	2435.51 AV	101.33	*		-1.39	7.46	6.07
7	2390 AV	49.03	54	-4.97	-53.69	7.46	-46.23
8	2483.5 AV	49.23	54	-4.77	-53.49	7.46	-46.03
9	2390 AV	49.04	54	-4.96	-53.68	7.46	-46.22
10	2483.5 AV	49.23	54	-4.77	-53.49	7.46	-46.03

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.

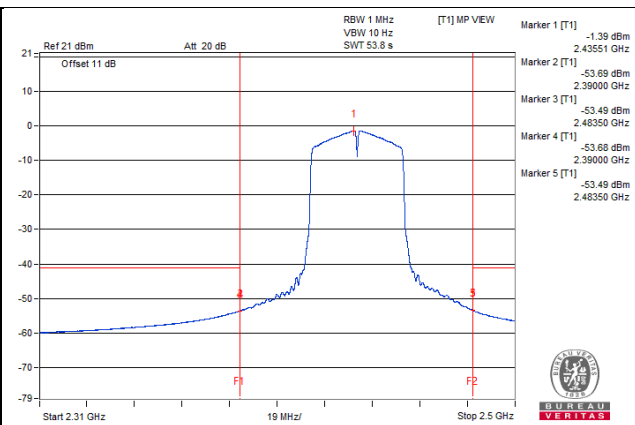
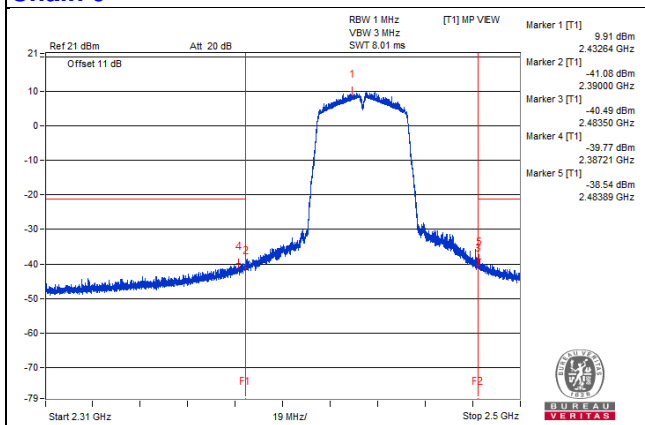
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2438.74 PK	111.93	*		9.64	7.03	16.67
2	2390 PK	61.73	74	-12.27	-40.56	7.03	-33.53
3	2483.5 PK	60.57	74	-13.43	-41.72	7.03	-34.69
4	2388.23 PK	62.45	74	-11.55	-39.84	7.03	-32.81
5	2483.58 PK	63.11	74	-10.89	-39.18	7.03	-32.15
6	2435.4 AV	100.57	*		-1.72	7.03	5.31
7	2390 AV	48.35	54	-5.65	-53.94	7.03	-46.91
8	2483.5 AV	48.59	54	-5.41	-53.7	7.03	-46.67
9	2390 AV	48.36	54	-5.64	-53.93	7.03	-46.9
10	2483.5 AV	48.58	54	-5.42	-53.71	7.03	-46.68

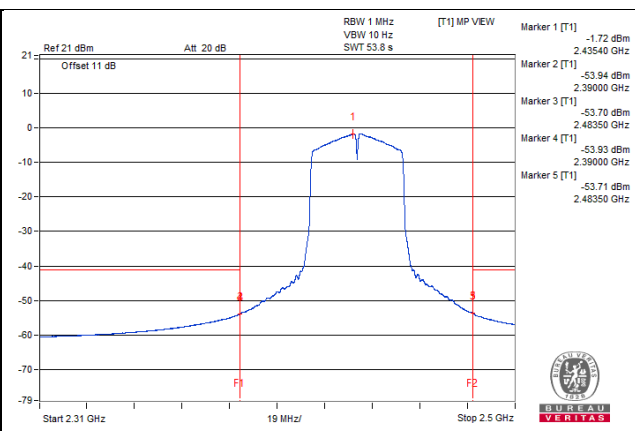
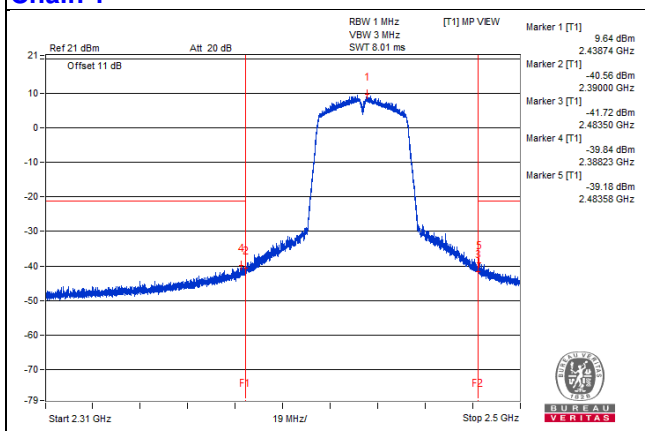
Note :

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



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	2448.43 PK	110.46	*		7.74	7.46	15.2
2	2343.75 PK	55.3	74	-18.7	-47.42	7.46	-39.96
3	6982.81 PK	60.2	#		-42.52	7.46	-35.06
4	19862.37 PK	53.25	74	-20.75	-49.47	7.46	-42.01
5	2453.12 AV	100.87	*		-1.85	7.46	5.61
6	2340.62 AV	43.22	54	-10.78	-59.5	7.46	-52.04
7	6998.43 AV	47.64	#		-55.08	7.46	-47.62
8	19882.5 AV	40.96	54	-13.04	-61.76	7.46	-54.3

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.

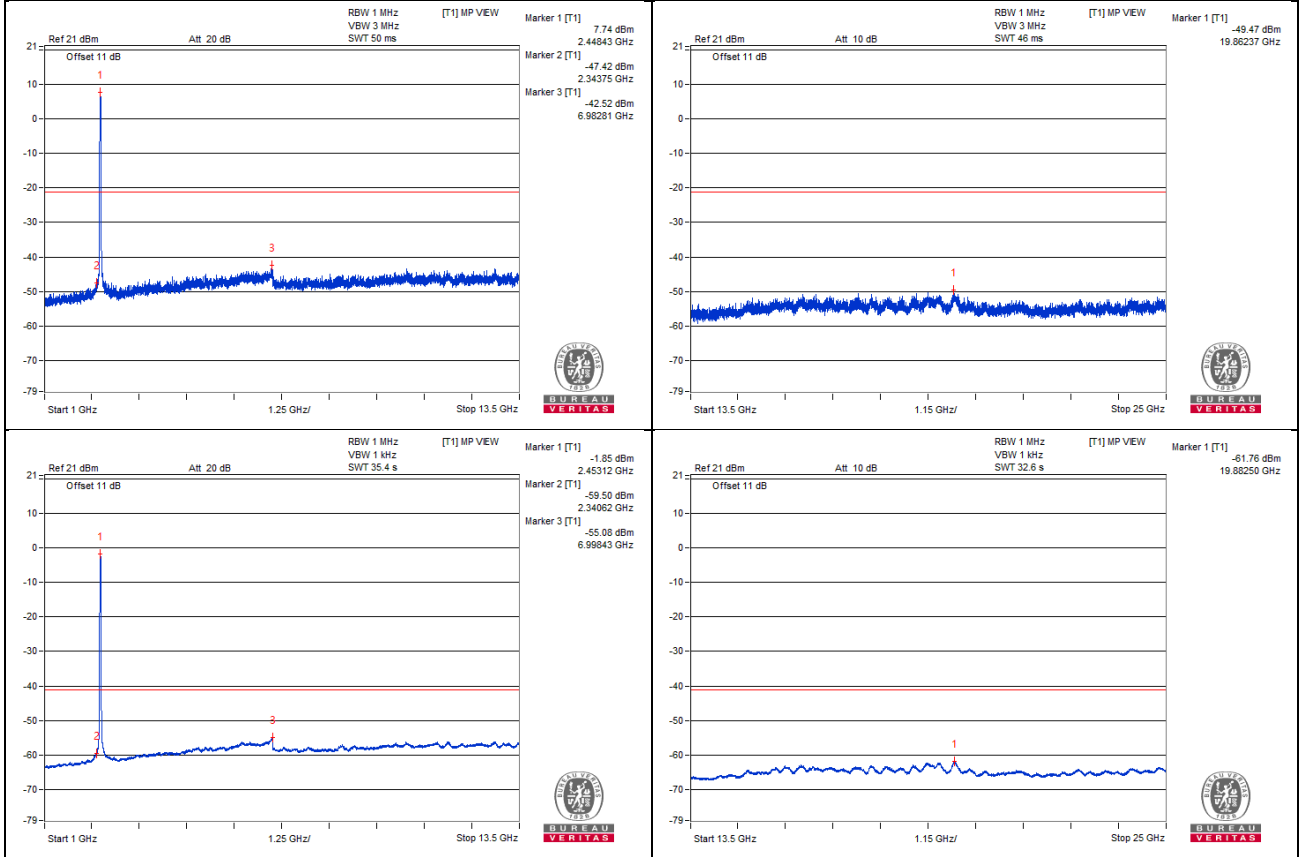
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2446.87 PK	108.68	*		6.39	7.03	13.42
2	2343.75 PK	54.46	74	-19.54	-47.83	7.03	-40.8
3	6976.56 PK	60.12	#		-42.17	7.03	-35.14
4	19894 PK	52.02	74	-21.98	-50.27	7.03	-43.24
5	2450 AV	99.92	*		-2.37	7.03	4.66
6	2350 AV	42.87	54	-11.13	-59.42	7.03	-52.39
7	6998.43 AV	47.3	#		-54.99	7.03	-47.96
8	19892.56 AV	40.5	54	-13.5	-61.79	7.03	-54.76

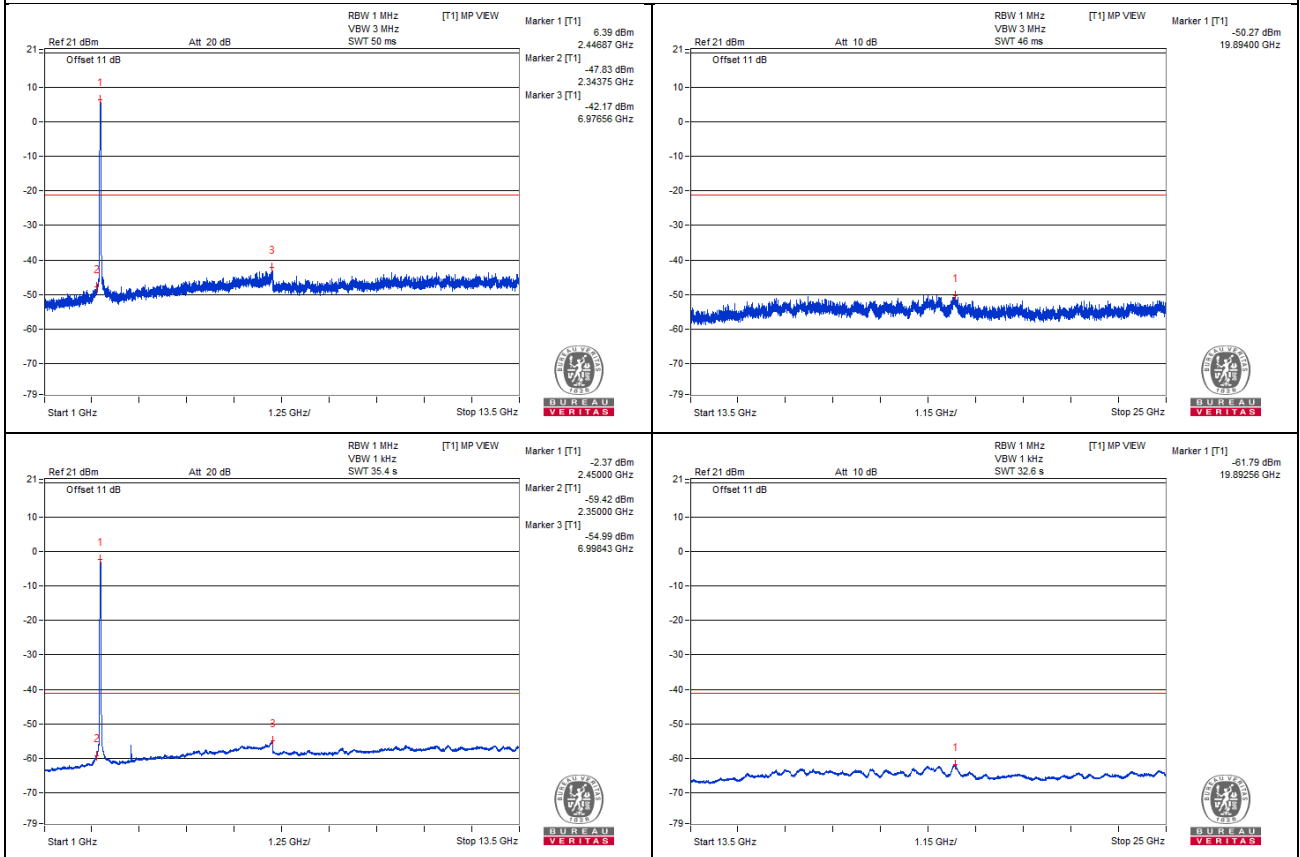
Note :

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 0



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	2454.16 PK	109.79	*		7.07	7.46	14.53
2	2390 PK	56.49	74	-17.51	-46.23	7.46	-38.77
3	2483.5 PK	63.15	74	-10.85	-39.57	7.46	-32.11
4	2384.5 PK	59.01	74	-14.99	-43.71	7.46	-36.25
5	2483.5 PK	62.43	74	-11.57	-40.29	7.46	-32.83
6	2450.5 AV	98.97	*		-3.75	7.46	3.71
7	2390 AV	44.64	54	-9.36	-58.08	7.46	-50.62
8	2483.5 AV	48.51	54	-5.49	-54.21	7.46	-46.75
9	2389.8 AV	44.68	54	-9.32	-58.04	7.46	-50.58
10	2484.15 AV	49.49	54	-4.51	-53.23	7.46	-45.77

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.

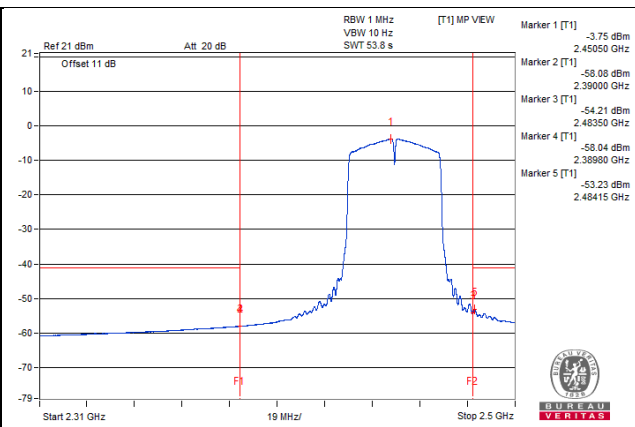
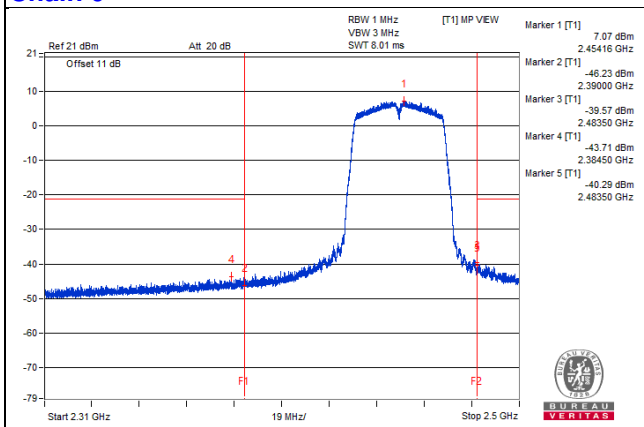
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2454.04 PK	109.23	*		6.94	7.03	13.97
2	2390 PK	57	74	-17	-45.29	7.03	-38.26
3	2483.5 PK	59.86	74	-14.14	-42.43	7.03	-35.4
4	2387.75 PK	58.33	74	-15.67	-43.96	7.03	-36.93
5	2484.3 PK	61.51	74	-12.49	-40.78	7.03	-33.75
6	2450.14 AV	97.75	*		-4.54	7.03	2.49
7	2390 AV	44.14	54	-9.86	-58.15	7.03	-51.12
8	2483.5 AV	47.49	54	-6.51	-54.8	7.03	-47.77
9	2389.91 AV	44.16	54	-9.84	-58.13	7.03	-51.1
10	2484.13 AV	48.46	54	-5.54	-53.83	7.03	-46.8

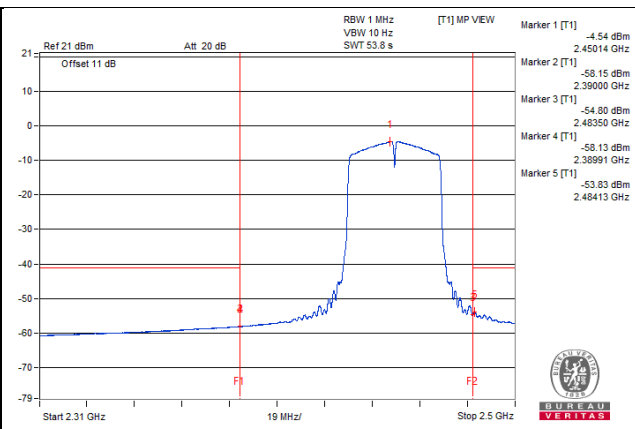
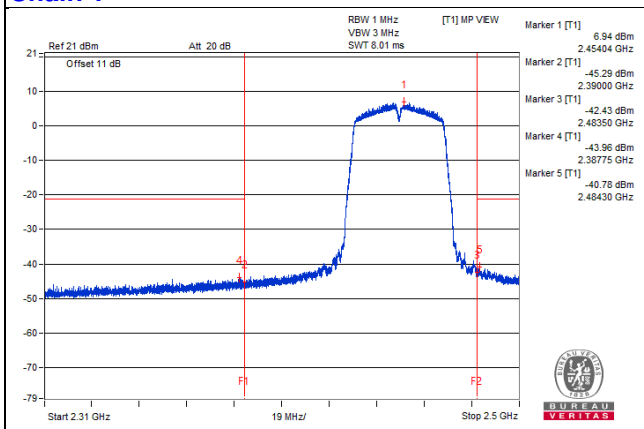
Note :

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



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	74.37	27.61	40	-12.39	-75.11	7.46	-67.65
2	209.57	28.31	#		-74.41	7.46	-66.95
3	693.6	29.58	#		-73.14	7.46	-65.68
4	993.93	29.51	54	-24.49	-73.21	7.46	-65.75

Note :

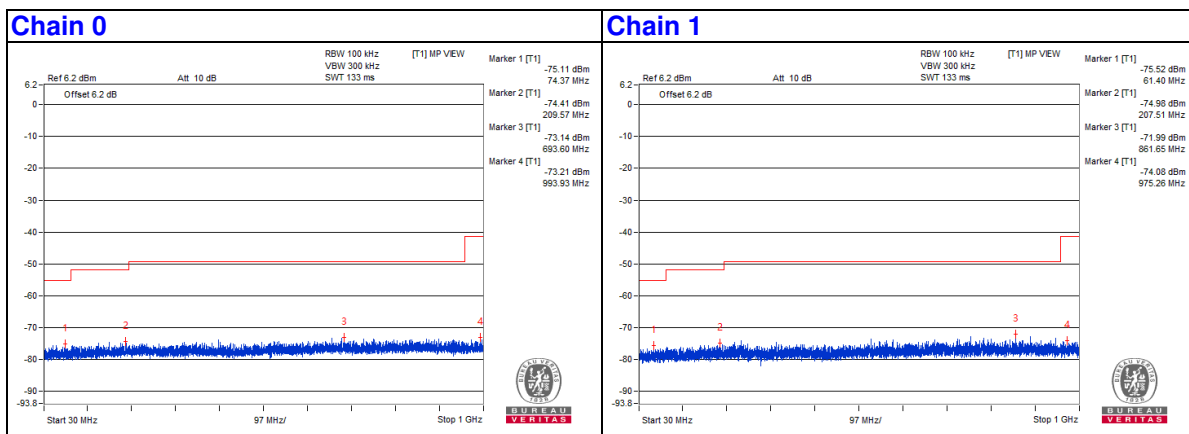
1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. Correction Factor(dB) = Antenna Gain (dBi) + 10 log (2 of TX antenna elements)
3. # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	61.4	26.77	#		-75.52	7.03	-68.49
2	207.51	27.31	#		-74.98	7.03	-67.95
3	861.65	30.3	46	-15.7	-71.99	7.03	-64.96
4	975.26	28.21	54	-25.79	-74.08	7.03	-67.05

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.



Note: Choose worse case from above and set RBW/VBW=120kHz/1MHz to verification.

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	84.68	36.96	#		-65.76	7.46	-58.3
2	188.83	38.26	#		-64.46	7.46	-57
3	333.48	39.45	46	-6.55	-63.27	7.46	-55.81
4	978.9	39.39	54	-14.61	-63.33	7.46	-55.87

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)
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

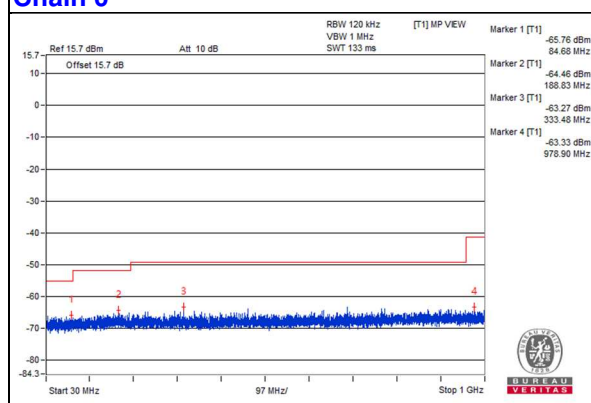
Chain 1

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	70.37	36.65	#		-65.64	7.03	-58.61
2	166.64	38.57	43.5	-4.93	-63.72	7.03	-56.69
3	774.35	39.04	#		-63.25	7.03	-56.22
4	995.02	38.04	54	-15.96	-64.25	7.03	-57.22

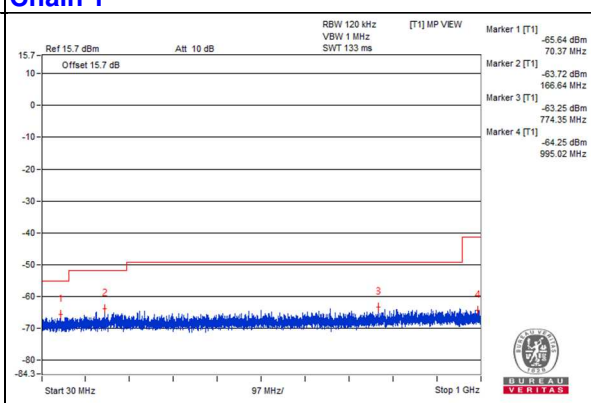
Note :

- 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)
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

Chain 0



Chain 1



4.1.8.2 Test Results (Mode 2)

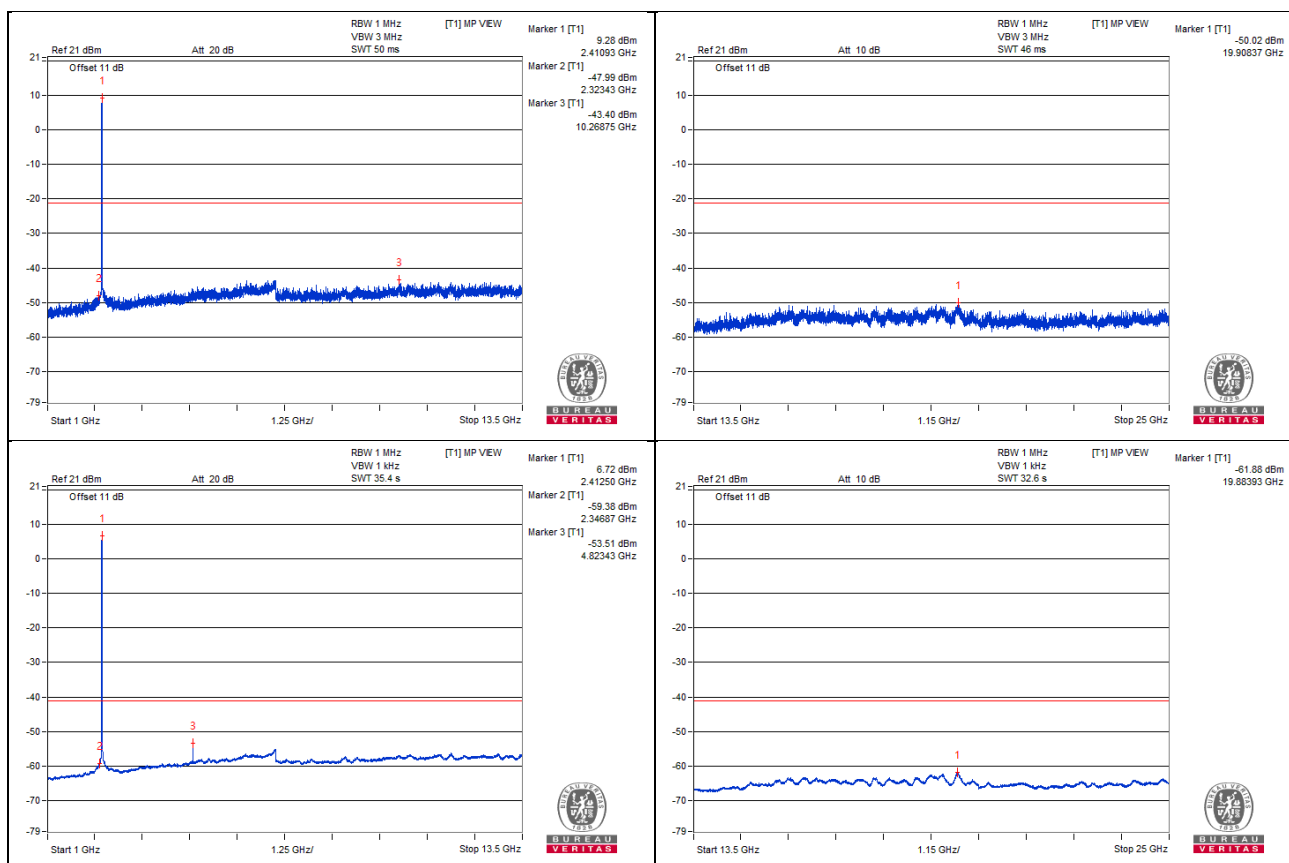
802.11b - Channel 1

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	2410.93 PK	108.99	*		9.28	4.45	13.73
2	2323.43 PK	51.72	74	-22.28	-47.99	4.45	-43.54
3	10268.75 PK	56.31	#		-43.4	4.45	-38.95
4	19908.37 PK	49.69	74	-24.31	-50.02	4.45	-45.57
5	2412.5 AV	106.43	*		6.72	4.45	11.17
6	2346.87 AV	40.33	54	-13.67	-59.38	4.45	-54.93
7	4823.43 AV	46.2	54	-7.8	-53.51	4.45	-49.06
8	19883.93 AV	37.83	54	-16.17	-61.88	4.45	-57.43

Note :

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



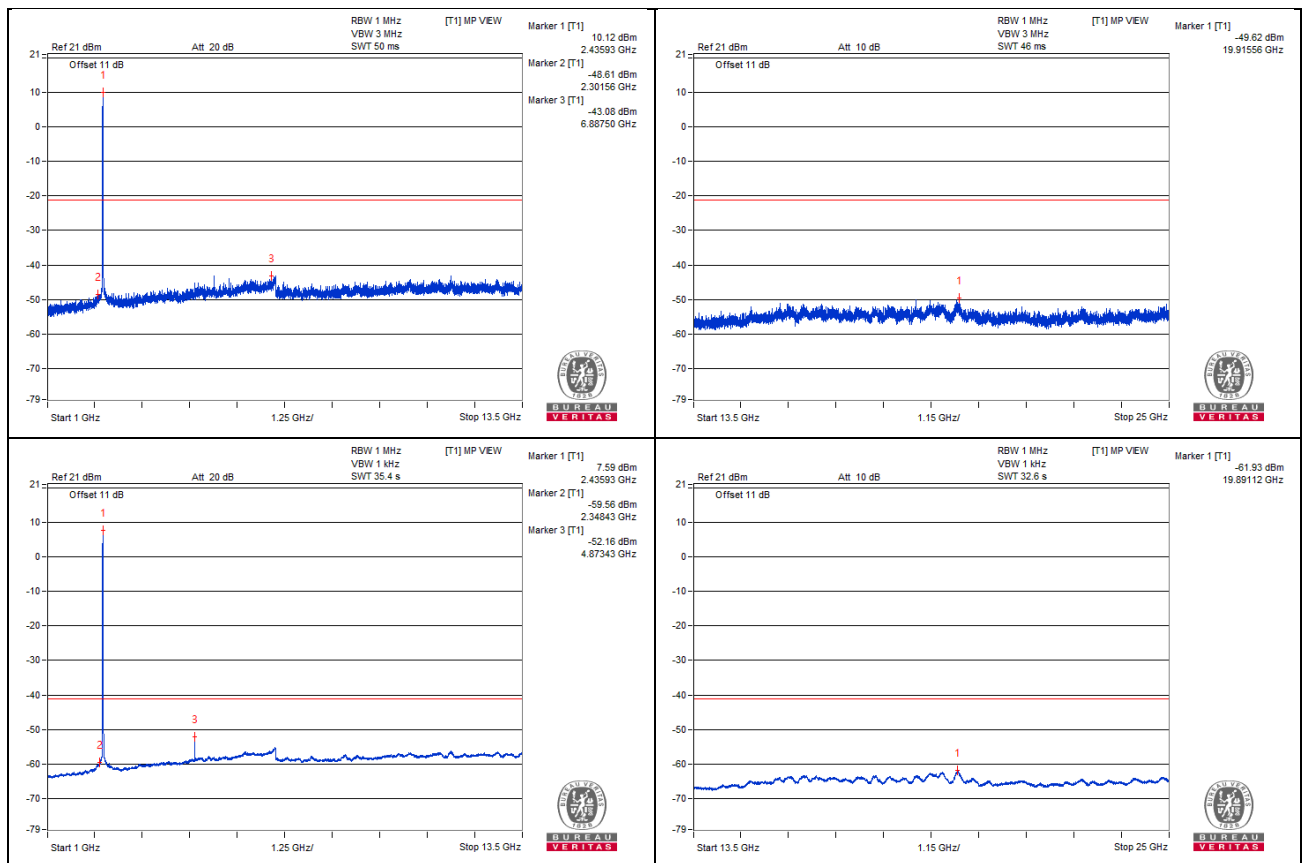
802.11b - Channel 6

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	2435.93 PK	109.83	*		10.12	4.45	14.57
2	2301.56 PK	51.1	#		-48.61	4.45	-44.16
3	6887.5 PK	56.63	#		-43.08	4.45	-38.63
4	19915.56 PK	50.09	74	-23.91	-49.62	4.45	-45.17
5	2435.93 AV	107.3	*		7.59	4.45	12.04
6	2348.43 AV	40.15	54	-13.85	-59.56	4.45	-55.11
7	4873.43 AV	47.55	54	-6.45	-52.16	4.45	-47.71
8	19891.12 AV	37.78	54	-16.22	-61.93	4.45	-57.48

Note :

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

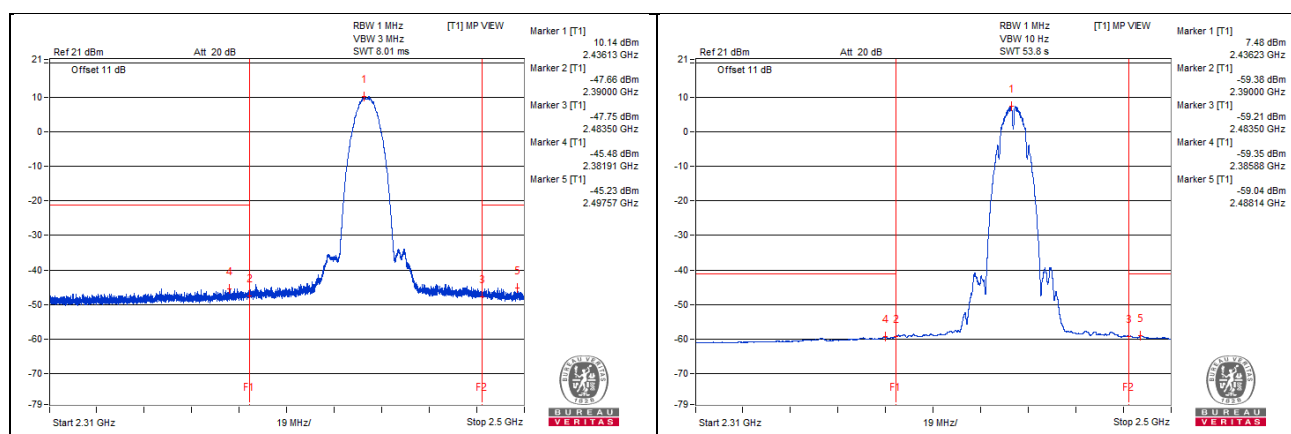


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2436.13 PK	109.85	*		10.14	4.45	14.59
2	2390 PK	52.05	74	-21.95	-47.66	4.45	-43.21
3	2483.5 PK	51.96	74	-22.04	-47.75	4.45	-43.3
4	2381.91 PK	54.23	74	-19.77	-45.48	4.45	-41.03
5	2497.57 PK	54.48	74	-19.52	-45.23	4.45	-40.78
6	2436.23 AV	107.19	*		7.48	4.45	11.93
7	2390 AV	40.33	54	-13.67	-59.38	4.45	-54.93
8	2483.5 AV	40.5	54	-13.5	-59.21	4.45	-54.76
9	2385.88 AV	40.36	54	-13.64	-59.35	4.45	-54.9
10	2488.14 AV	40.67	54	-13.33	-59.04	4.45	-54.59

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.



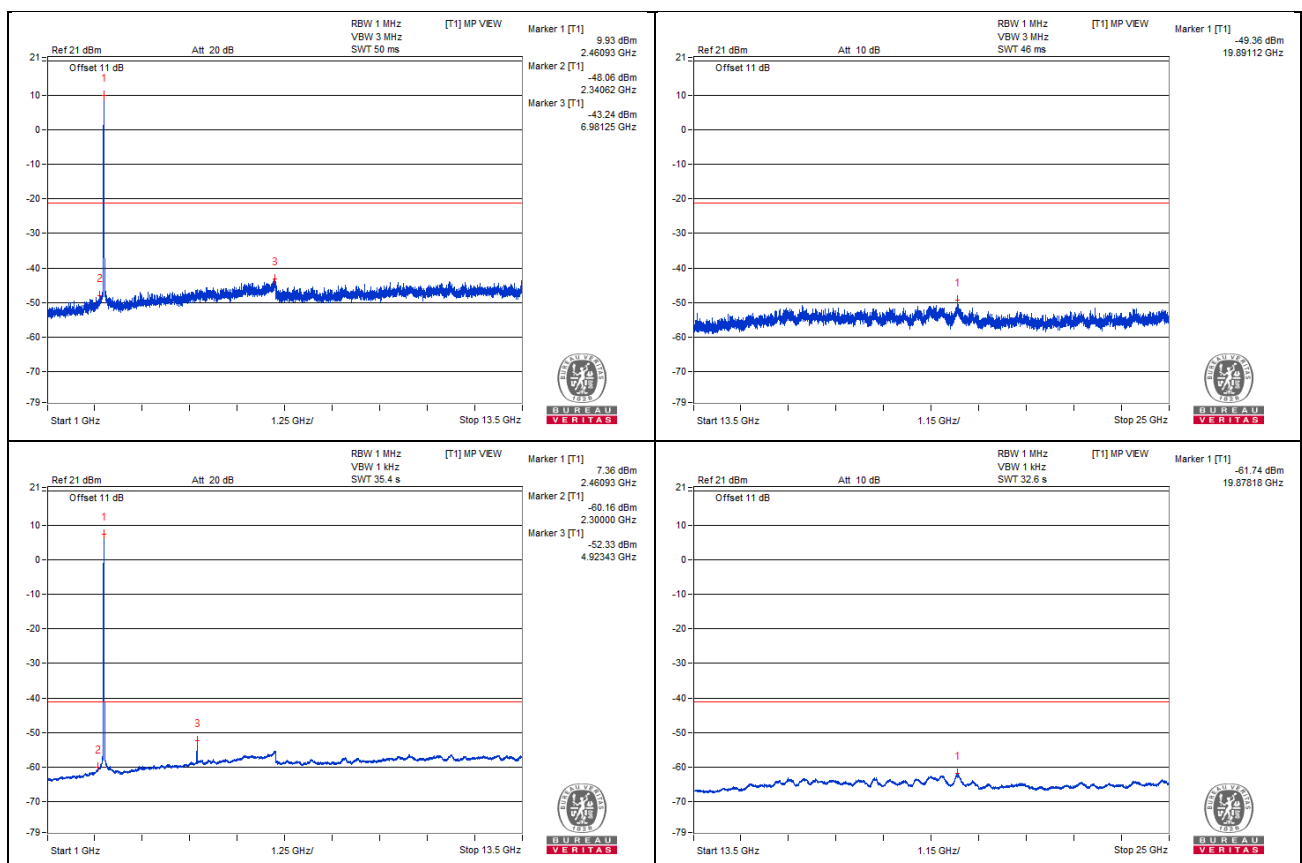
802.11b - Channel 11

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	2460.93 PK	109.64	*		9.93	4.45	14.38
2	2340.62 PK	51.65	74	-22.35	-48.06	4.45	-43.61
3	6981.25 PK	56.47	#		-43.24	4.45	-38.79
4	19891.12 PK	50.35	74	-23.65	-49.36	4.45	-44.91
5	2460.93 AV	107.07	*		7.36	4.45	11.81
6	2300 AV	39.55	54	-14.45	-60.16	4.45	-55.71
7	4923.43 AV	47.38	54	-6.62	-52.33	4.45	-47.88
8	19878.18 AV	37.97	54	-16.03	-61.74	4.45	-57.29

Note :

1. Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.
3. # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

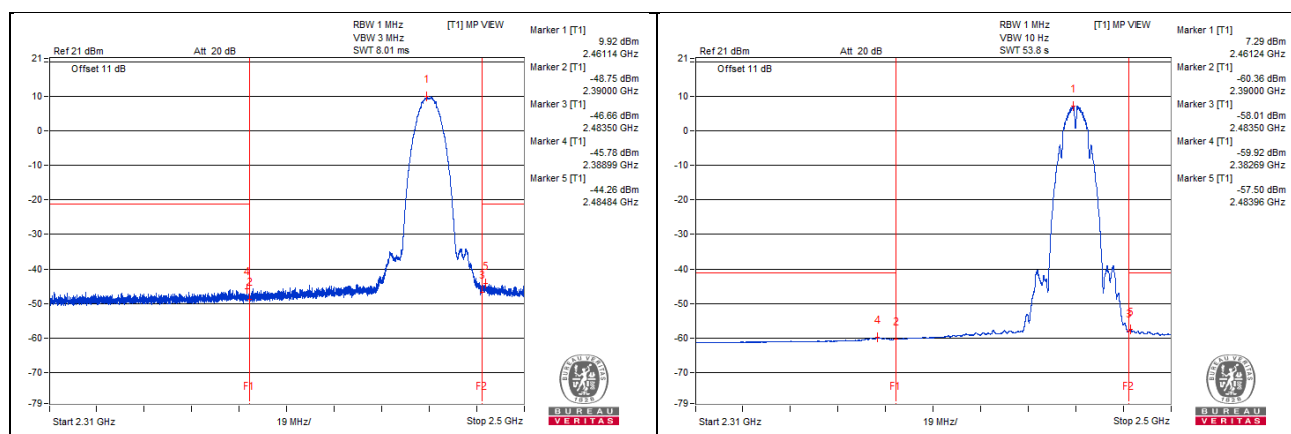


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2461.14 PK	109.63	*		9.92	4.45	14.37
2	2390 PK	50.96	74	-23.04	-48.75	4.45	-44.3
3	2483.5 PK	53.05	74	-20.95	-46.66	4.45	-42.21
4	2388.99 PK	53.93	74	-20.07	-45.78	4.45	-41.33
5	2484.84 PK	55.45	74	-18.55	-44.26	4.45	-39.81
6	2461.24 AV	107	*		7.29	4.45	11.74
7	2390 AV	39.35	54	-14.65	-60.36	4.45	-55.91
8	2483.5 AV	41.7	54	-12.3	-58.01	4.45	-53.56
9	2382.69 AV	39.79	54	-14.21	-59.92	4.45	-55.47
10	2483.96 AV	42.21	54	-11.79	-57.5	4.45	-53.05

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.



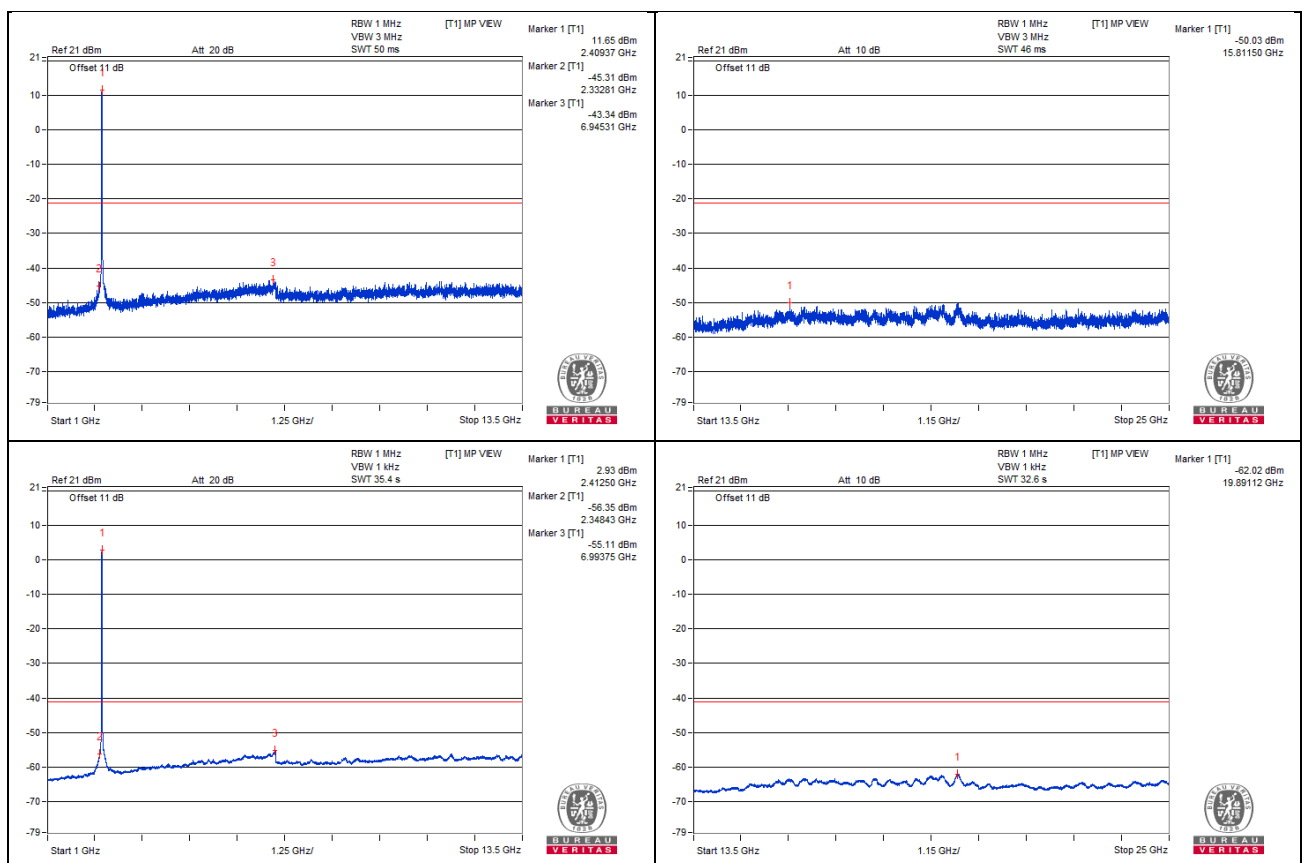
802.11g - Channel 1

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	2409.37 PK	111.36	*		11.65	4.45	16.1
2	2332.81 PK	54.4	74	-19.6	-45.31	4.45	-40.86
3	6945.31 PK	56.37	#		-43.34	4.45	-38.89
4	15811.5 PK	49.68	74	-24.32	-50.03	4.45	-45.58
5	2412.5 AV	102.64	*		2.93	4.45	7.38
6	2348.43 AV	43.36	54	-10.64	-56.35	4.45	-51.9
7	6993.75 AV	44.6	#		-55.11	4.45	-50.66
8	19891.12 AV	37.69	54	-16.31	-62.02	4.45	-57.57

Note :

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

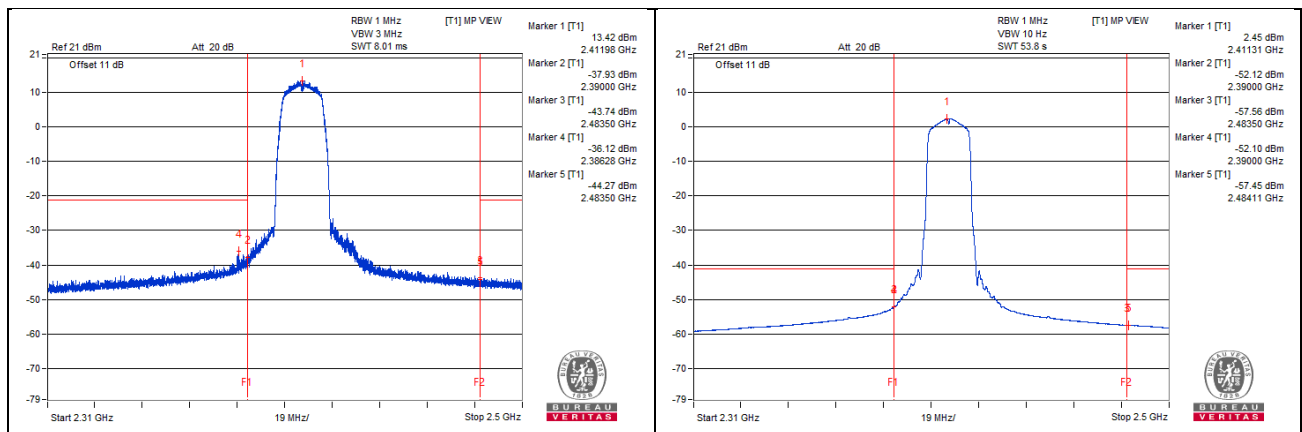


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2411.98 PK	113.13	*		13.42	4.45	17.87
2	2390 PK	61.78	74	-12.22	-37.93	4.45	-33.48
3	2483.5 PK	55.97	74	-18.03	-43.74	4.45	-39.29
4	2386.28 PK	63.59	74	-10.41	-36.12	4.45	-31.67
5	2483.5 PK	55.44	74	-18.56	-44.27	4.45	-39.82
6	2411.31 AV	102.16	*		2.45	4.45	6.9
7	2390 AV	47.59	54	-6.41	-52.12	4.45	-47.67
8	2483.5 AV	42.15	54	-11.85	-57.56	4.45	-53.11
9	2390 AV	47.61	54	-6.39	-52.1	4.45	-47.65
10	2484.11 AV	42.26	54	-11.74	-57.45	4.45	-53

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.



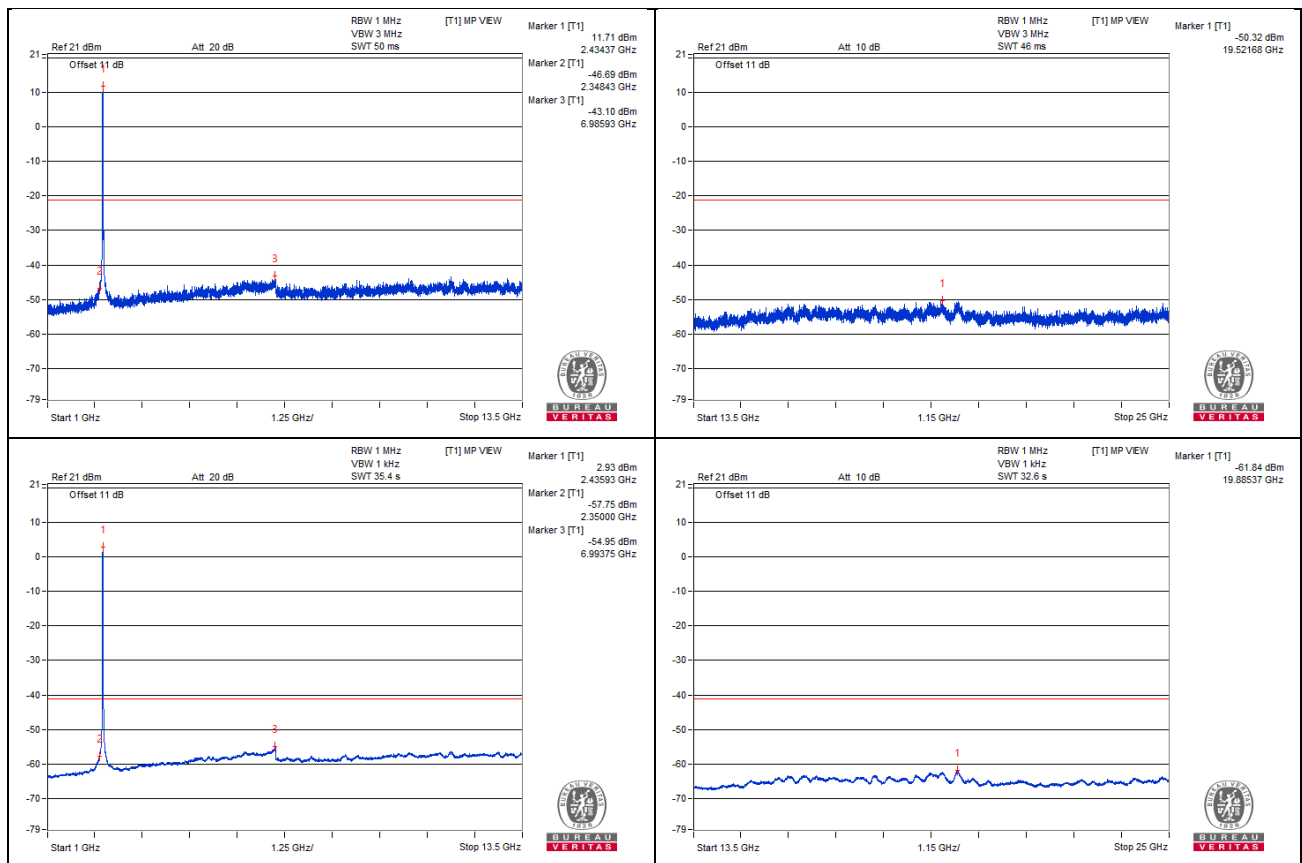
802.11g - Channel 6

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	2434.37 PK	111.42	*		11.71	4.45	16.16
2	2348.43 PK	53.02	74	-20.98	-46.69	4.45	-42.24
3	6985.93 PK	56.61	#		-43.1	4.45	-38.65
4	19521.68 PK	49.39	74	-24.61	-50.32	4.45	-45.87
5	2435.93 AV	102.64	*		2.93	4.45	7.38
6	2350 AV	41.96	54	-12.04	-57.75	4.45	-53.3
7	6993.75 AV	44.76	#		-54.95	4.45	-50.5
8	19885.37 AV	37.87	54	-16.13	-61.84	4.45	-57.39

Note :

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

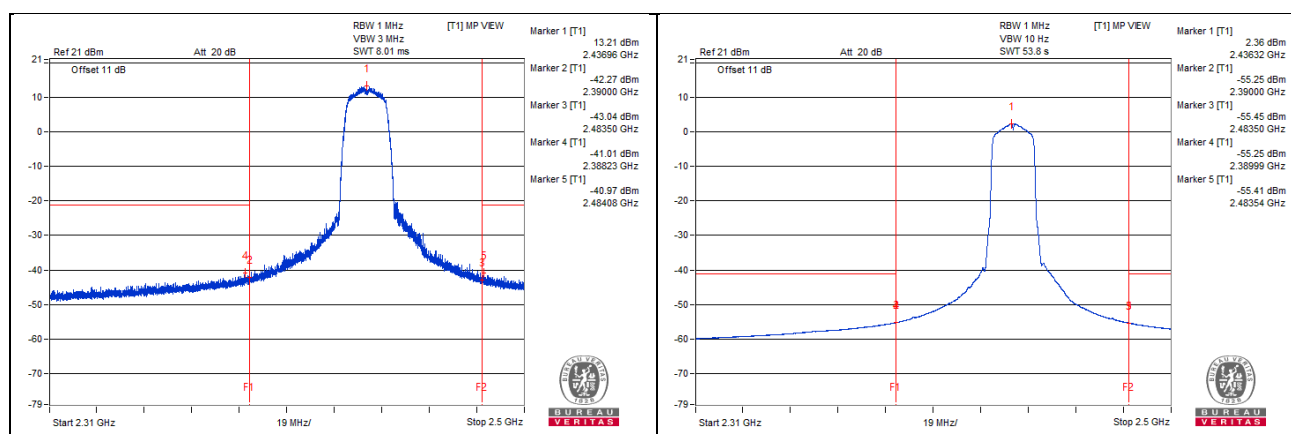


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2436.96 PK	112.92	*		13.21	4.45	17.66
2	2390 PK	57.44	74	-16.56	-42.27	4.45	-37.82
3	2483.5 PK	56.67	74	-17.33	-43.04	4.45	-38.59
4	2388.23 PK	58.7	74	-15.3	-41.01	4.45	-36.56
5	2484.08 PK	58.74	74	-15.26	-40.97	4.45	-36.52
6	2436.32 AV	102.07	*		2.36	4.45	6.81
7	2390 AV	44.46	54	-9.54	-55.25	4.45	-50.8
8	2483.5 AV	44.26	54	-9.74	-55.45	4.45	-51
9	2389.99 AV	44.46	54	-9.54	-55.25	4.45	-50.8
10	2483.54 AV	44.3	54	-9.7	-55.41	4.45	-50.96

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- * : Fundamental frequency, the limit was restricted at the output power.



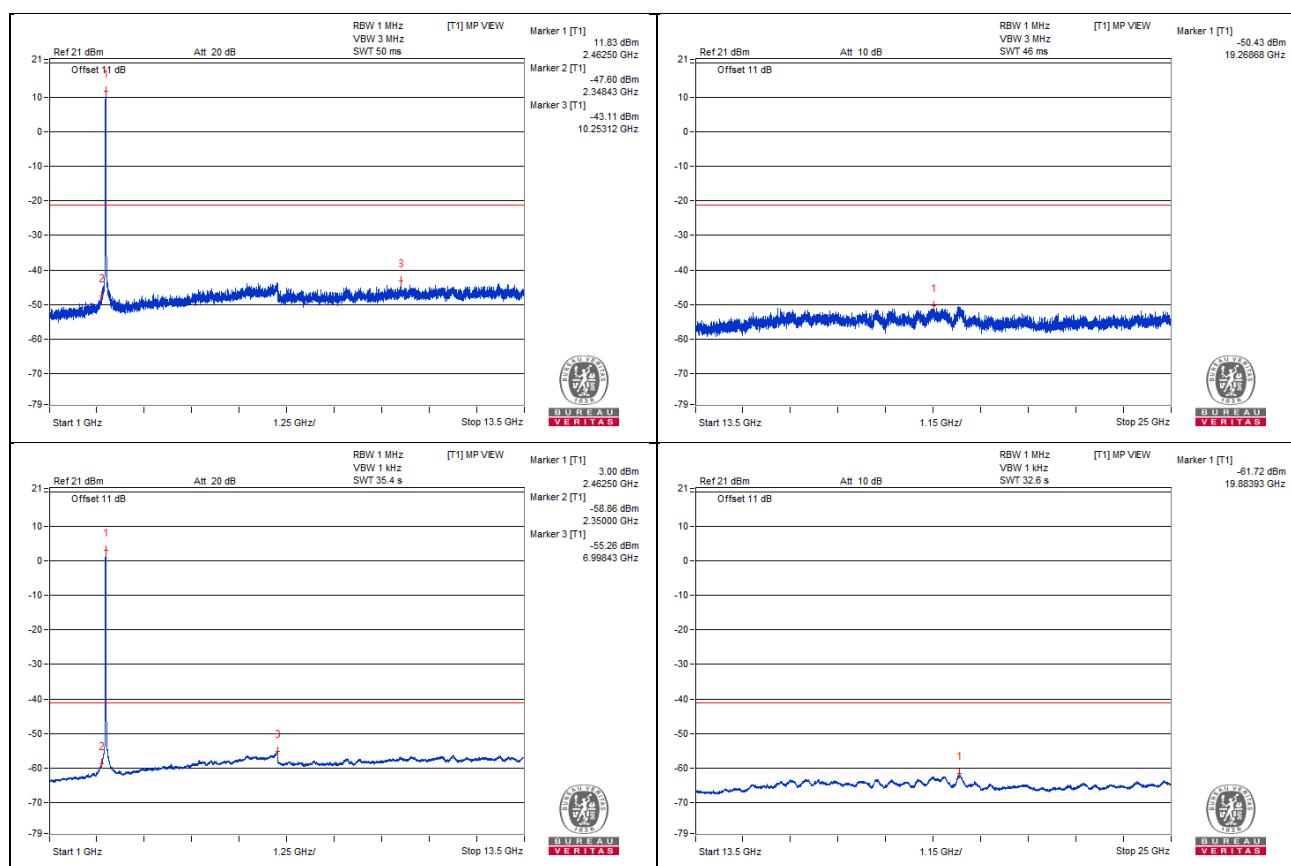
802.11g - Channel 11

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	2462.5 PK	111.54	*		11.83	4.45	16.28
2	2348.43 PK	52.11	74	-21.89	-47.6	4.45	-43.15
3	10253.12 PK	56.6	#		-43.11	4.45	-38.66
4	19268.68 PK	49.28	74	-24.72	-50.43	4.45	-45.98
5	2462.5 AV	102.71	*		3	4.45	7.45
6	2350 AV	40.85	54	-13.15	-58.86	4.45	-54.41
7	6998.43 AV	44.45	#		-55.26	4.45	-50.81
8	19883.93 AV	37.99	54	-16.01	-61.72	4.45	-57.27

Note :

1. Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.
3. # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

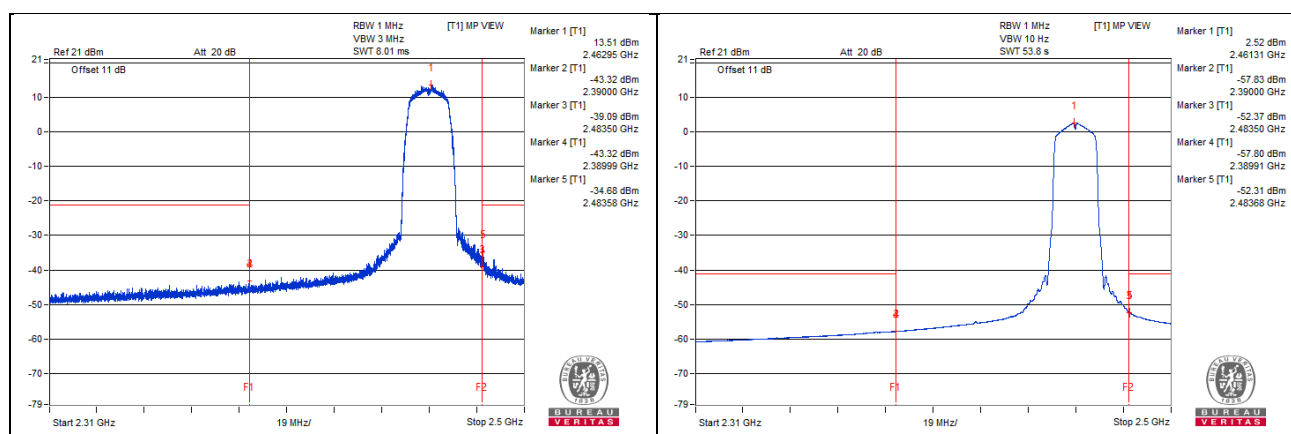


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2462.95 PK	113.22	*		13.51	4.45	17.96
2	2390 PK	56.39	74	-17.61	-43.32	4.45	-38.87
3	2483.5 PK	60.62	74	-13.38	-39.09	4.45	-34.64
4	2389.99 PK	56.39	74	-17.61	-43.32	4.45	-38.87
5	2483.58 PK	65.03	74	-8.97	-34.68	4.45	-30.23
6	2461.31 AV	102.23	*		2.52	4.45	6.97
7	2390 AV	41.88	54	-12.12	-57.83	4.45	-53.38
8	2483.5 AV	47.34	54	-6.66	-52.37	4.45	-47.92
9	2389.91 AV	41.91	54	-12.09	-57.8	4.45	-53.35
10	2483.68 AV	47.4	54	-6.6	-52.31	4.45	-47.86

Note :

- Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- * : Fundamental frequency, the limit was restricted at the output power.



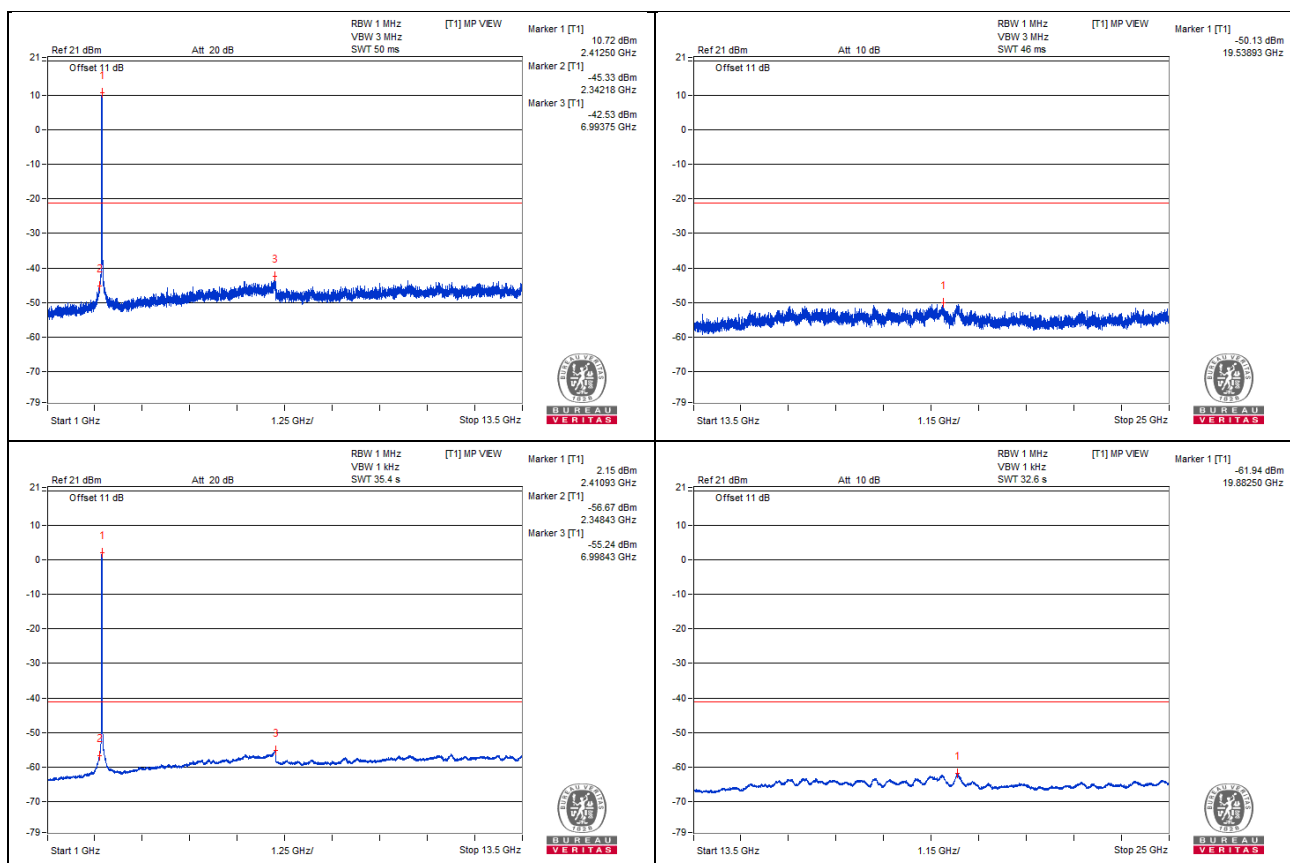
802.11n (HT20) - Channel 1

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	2412.5 PK	110.43	*		10.72	4.45	15.17
2	2342.18 PK	54.38	74	-19.62	-45.33	4.45	-40.88
3	6993.75 PK	57.18	#		-42.53	4.45	-38.08
4	19538.93 PK	49.58	74	-24.42	-50.13	4.45	-45.68
5	2410.93 AV	101.86	*		2.15	4.45	6.6
6	2348.43 AV	43.04	54	-10.96	-56.67	4.45	-52.22
7	6998.43 AV	44.47	#		-55.24	4.45	-50.79
8	19882.5 AV	37.77	54	-16.23	-61.94	4.45	-57.49

Note :

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

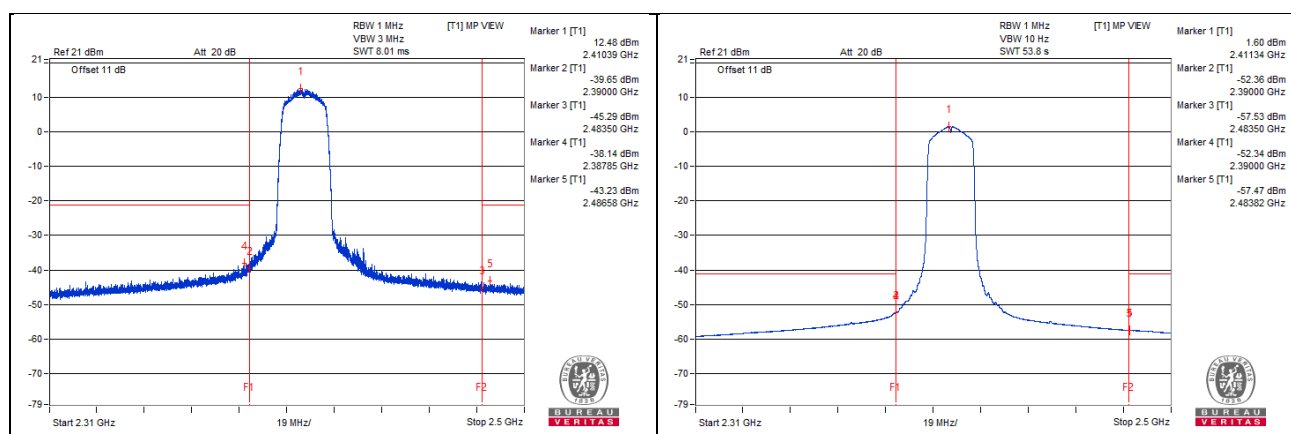


Bandedge table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2410.39 PK	112.19	*		12.48	4.45	16.93
2	2390 PK	60.06	74	-13.94	-39.65	4.45	-35.2
3	2483.5 PK	54.42	74	-19.58	-45.29	4.45	-40.84
4	2387.85 PK	61.57	74	-12.43	-38.14	4.45	-33.69
5	2486.58 PK	56.48	74	-17.52	-43.23	4.45	-38.78
6	2411.34 AV	101.31	*		1.6	4.45	6.05
7	2390 AV	47.35	54	-6.65	-52.36	4.45	-47.91
8	2483.5 AV	42.18	54	-11.82	-57.53	4.45	-53.08
9	2390 AV	47.37	54	-6.63	-52.34	4.45	-47.89
10	2483.82 AV	42.24	54	-11.76	-57.47	4.45	-53.02

Note :

1. Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.



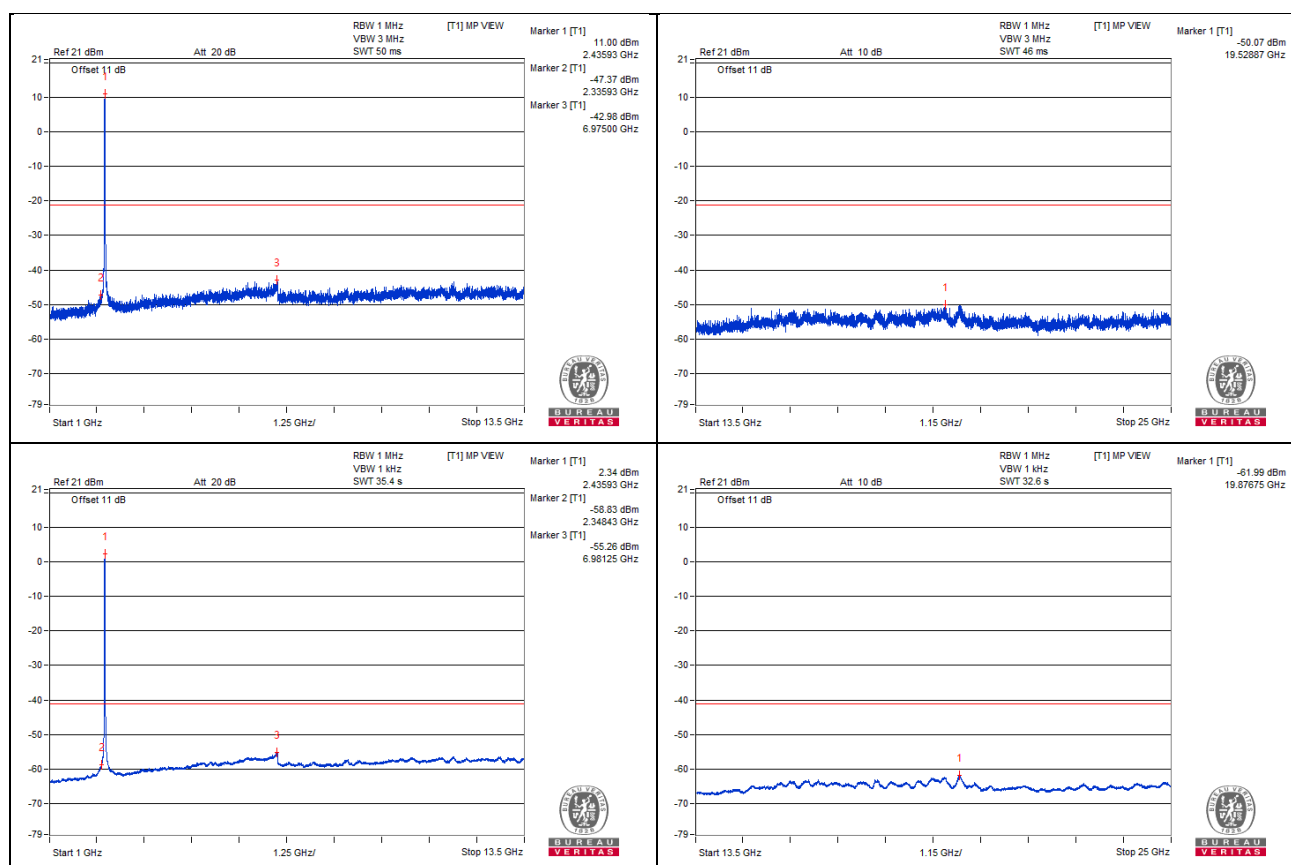
802.11n (HT20) - Channel 6

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	2435.93 PK	110.71	*		11	4.45	15.45
2	2335.93 PK	52.34	74	-21.66	-47.37	4.45	-42.92
3	6975 PK	56.73	#		-42.98	4.45	-38.53
4	19528.87 PK	49.64	74	-24.36	-50.07	4.45	-45.62
5	2435.93 AV	102.05	*		2.34	4.45	6.79
6	2348.43 AV	40.88	54	-13.12	-58.83	4.45	-54.38
7	6981.25 AV	44.45	#		-55.26	4.45	-50.81
8	19876.75 AV	37.72	54	-16.28	-61.99	4.45	-57.54

Note :

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

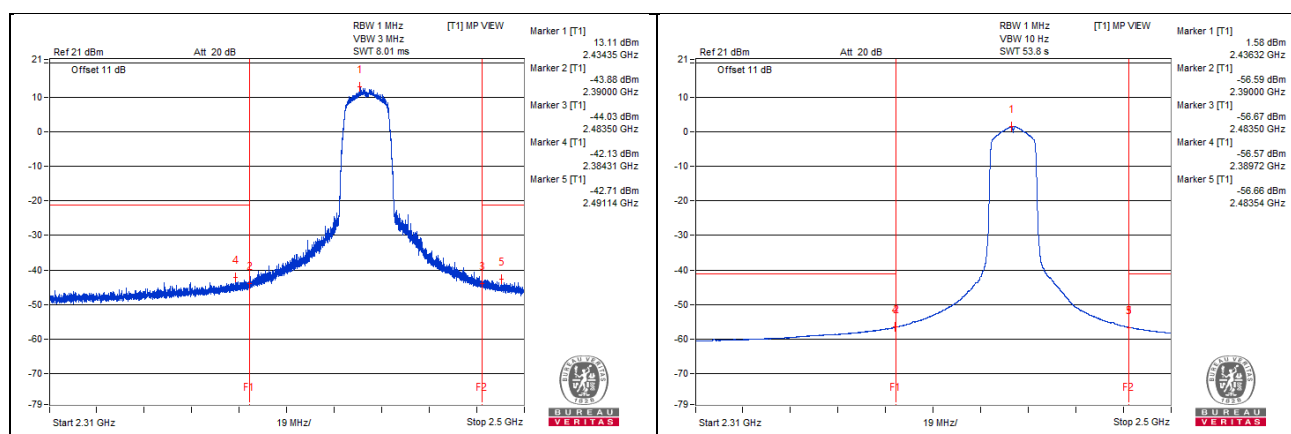


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2434.35 PK	112.82	*		13.11	4.45	17.56
2	2390 PK	55.83	74	-18.17	-43.88	4.45	-39.43
3	2483.5 PK	55.68	74	-18.32	-44.03	4.45	-39.58
4	2384.31 PK	57.58	74	-16.42	-42.13	4.45	-37.68
5	2491.14 PK	57	74	-17	-42.71	4.45	-38.26
6	2436.32 AV	101.29	*		1.58	4.45	6.03
7	2390 AV	43.12	54	-10.88	-56.59	4.45	-52.14
8	2483.5 AV	43.04	54	-10.96	-56.67	4.45	-52.22
9	2389.72 AV	43.14	54	-10.86	-56.57	4.45	-52.12
10	2483.54 AV	43.05	54	-10.95	-56.66	4.45	-52.21

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.



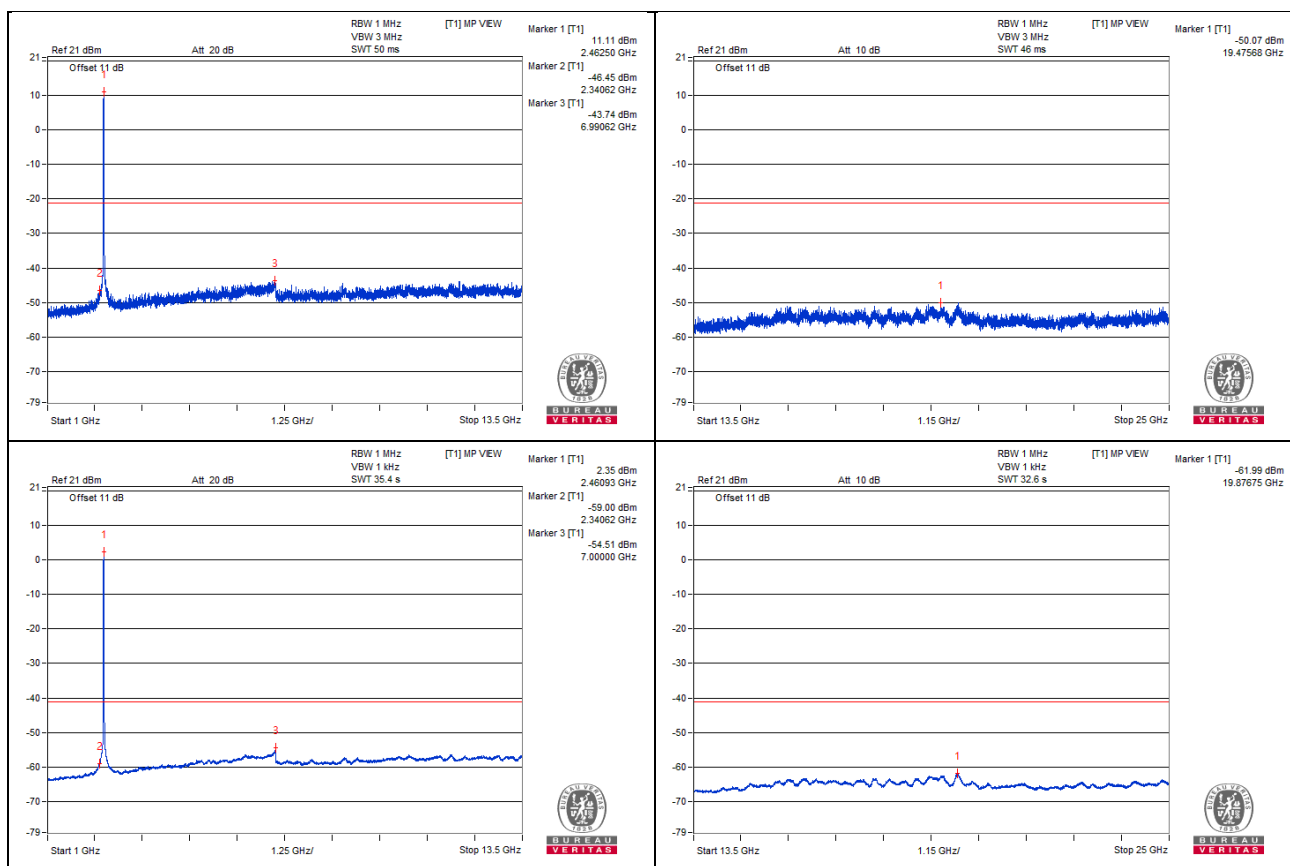
802.11n (HT20) - Channel 11

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	2462.5 PK	110.82	*		11.11	4.45	15.56
2	2340.62 PK	53.26	74	-20.74	-46.45	4.45	-42
3	6990.62 PK	55.97	#		-43.74	4.45	-39.29
4	19475.68 PK	49.64	74	-24.36	-50.07	4.45	-45.62
5	2460.93 AV	102.06	*		2.35	4.45	6.8
6	2340.62 AV	40.71	54	-13.29	-59	4.45	-54.55
7	7000 AV	45.2	#		-54.51	4.45	-50.06
8	19876.75 AV	37.72	54	-16.28	-61.99	4.45	-57.54

Note :

1. Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.
3. # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.

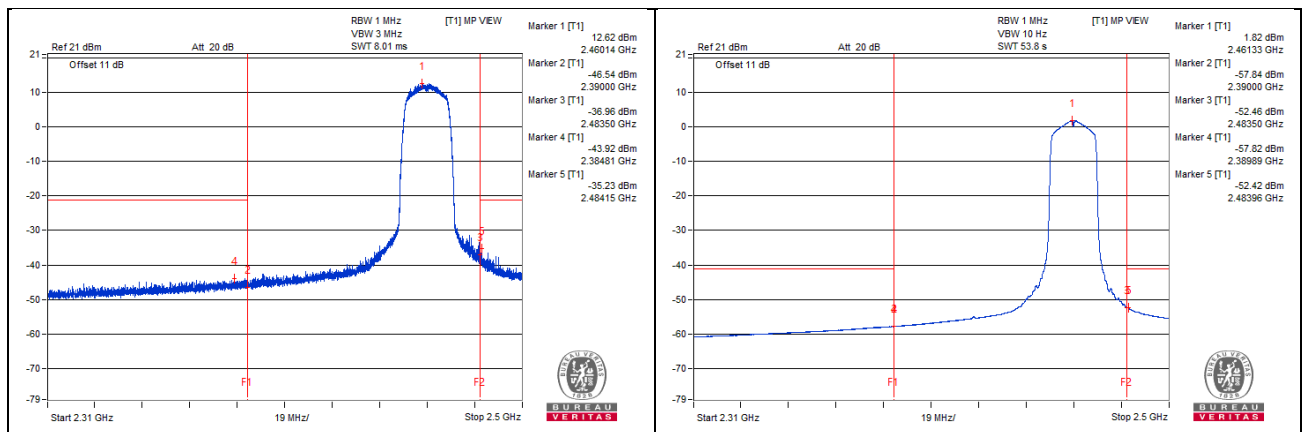


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2460.14 PK	112.33	*		12.62	4.45	17.07
2	2390 PK	53.17	74	-20.83	-46.54	4.45	-42.09
3	2483.5 PK	62.75	74	-11.25	-36.96	4.45	-32.51
4	2384.81 PK	55.79	74	-18.21	-43.92	4.45	-39.47
5	2484.15 PK	64.48	74	-9.52	-35.23	4.45	-30.78
6	2461.33 AV	101.53	*		1.82	4.45	6.27
7	2390 AV	41.87	54	-12.13	-57.84	4.45	-53.39
8	2483.5 AV	47.25	54	-6.75	-52.46	4.45	-48.01
9	2389.89 AV	41.89	54	-12.11	-57.82	4.45	-53.37
10	2483.96 AV	47.29	54	-6.71	-52.42	4.45	-47.97

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.



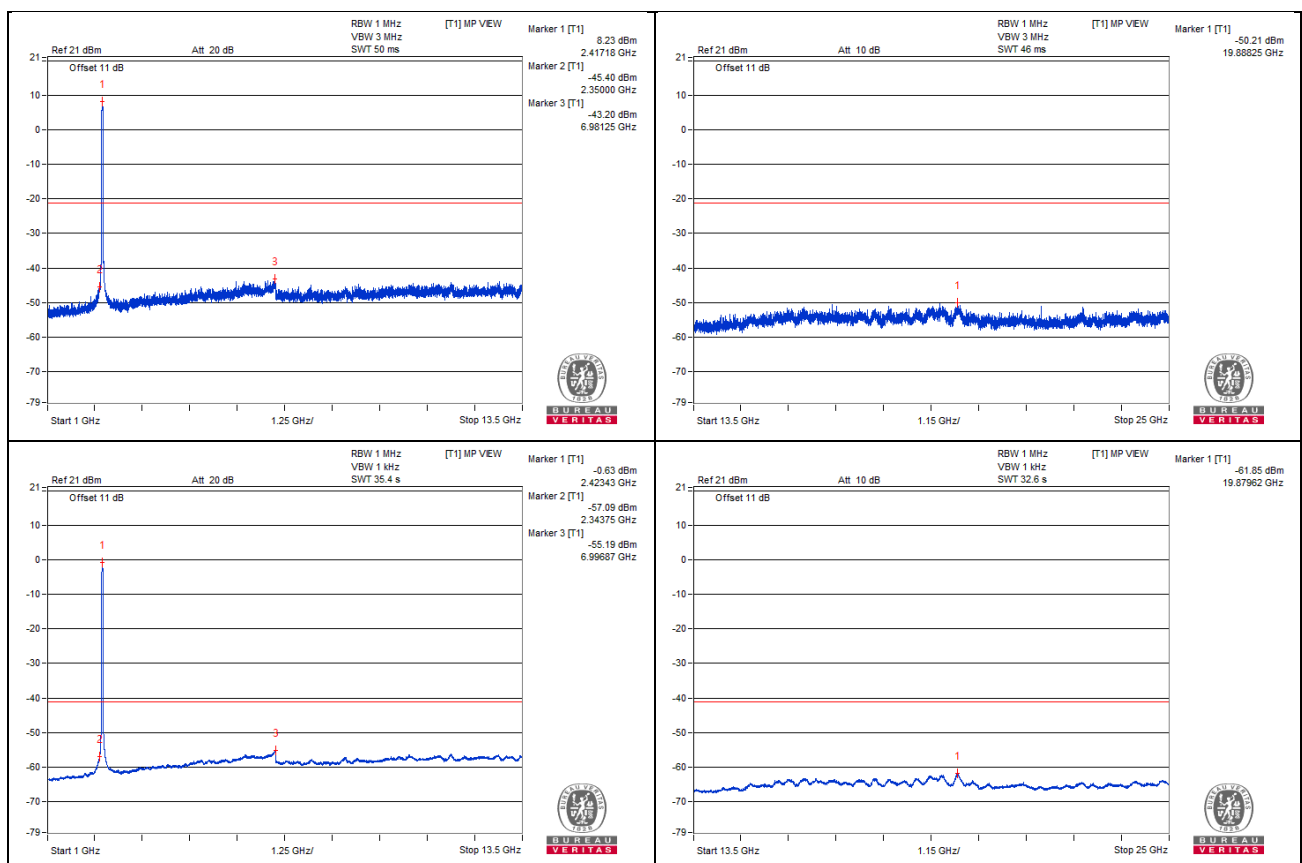
802.11n (HT40) - Channel 3

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	2417.18 PK	107.94	*		8.23	4.45	12.68
2	2350 PK	54.31	74	-19.69	-45.4	4.45	-40.95
3	6981.25 PK	56.51	#		-43.2	4.45	-38.75
4	19888.25 PK	49.5	74	-24.5	-50.21	4.45	-45.76
5	2423.43 AV	99.08	*		-0.63	4.45	3.82
6	2343.75 AV	42.62	54	-11.38	-57.09	4.45	-52.64
7	6996.87 AV	44.52	#		-55.19	4.45	-50.74
8	19879.62 AV	37.86	54	-16.14	-61.85	4.45	-57.4

Note :

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

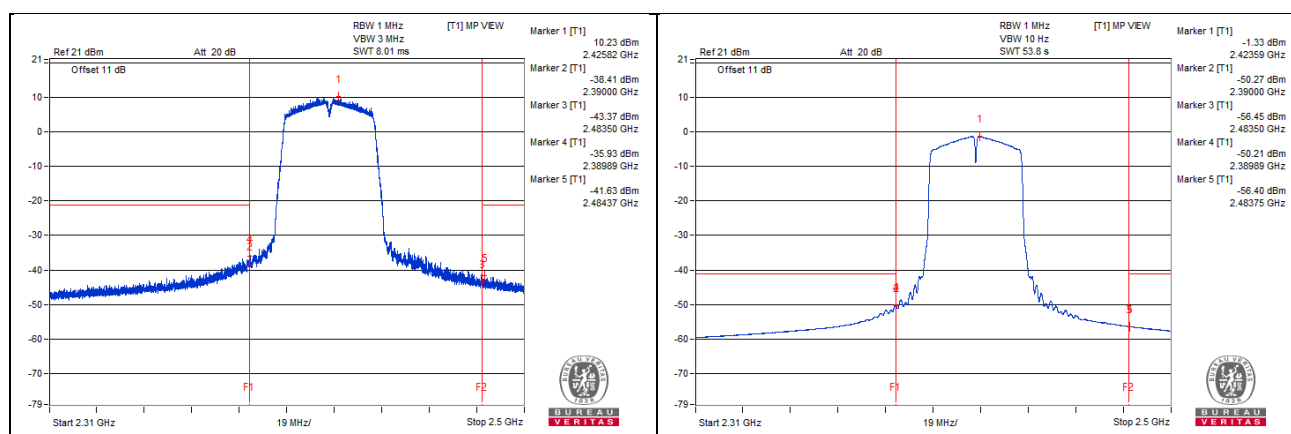


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2425.82 PK	109.94	*		10.23	4.45	14.68
2	2390 PK	61.3	74	-12.7	-38.41	4.45	-33.96
3	2483.5 PK	56.34	74	-17.66	-43.37	4.45	-38.92
4	2389.89 PK	63.78	74	-10.22	-35.93	4.45	-31.48
5	2484.37 PK	58.08	74	-15.92	-41.63	4.45	-37.18
6	2423.59 AV	98.38	*		-1.33	4.45	3.12
7	2390 AV	49.44	54	-4.56	-50.27	4.45	-45.82
8	2483.5 AV	43.26	54	-10.74	-56.45	4.45	-52
9	2389.89 AV	49.5	54	-4.5	-50.21	4.45	-45.76
10	2483.75 AV	43.31	54	-10.69	-56.4	4.45	-51.95

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.



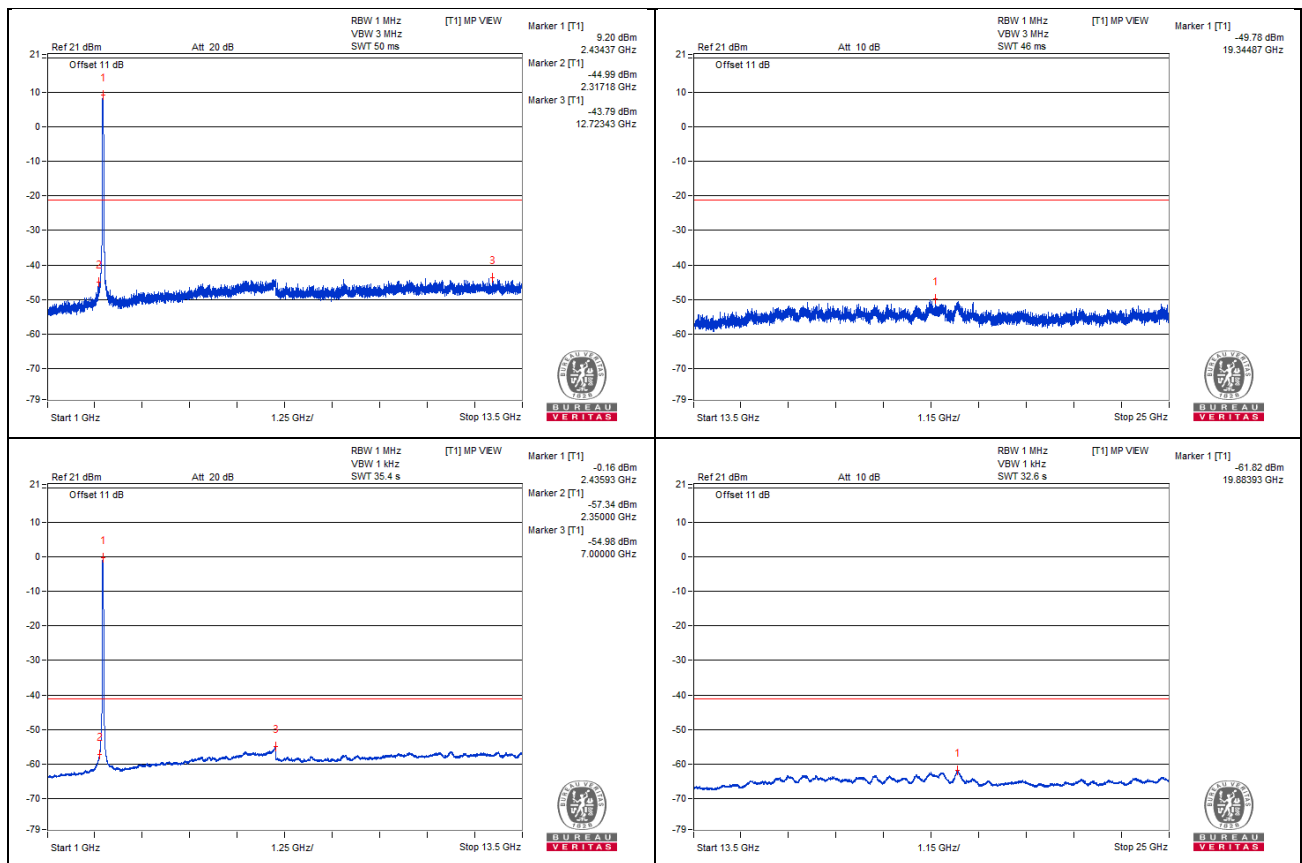
802.11n (HT40) - Channel 6

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	2434.37 PK	108.91	*		9.2	4.45	13.65
2	2317.18 PK	54.72	74	-19.28	-44.99	4.45	-40.54
3	12723.43 PK	55.92	#		-43.79	4.45	-39.34
4	19344.87 PK	49.93	74	-24.07	-49.78	4.45	-45.33
5	2435.93 AV	99.55	*		-0.16	4.45	4.29
6	2350 AV	42.37	54	-11.63	-57.34	4.45	-52.89
7	7000 AV	44.73	#		-54.98	4.45	-50.53
8	19883.93 AV	37.89	54	-16.11	-61.82	4.45	-57.37

Note :

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

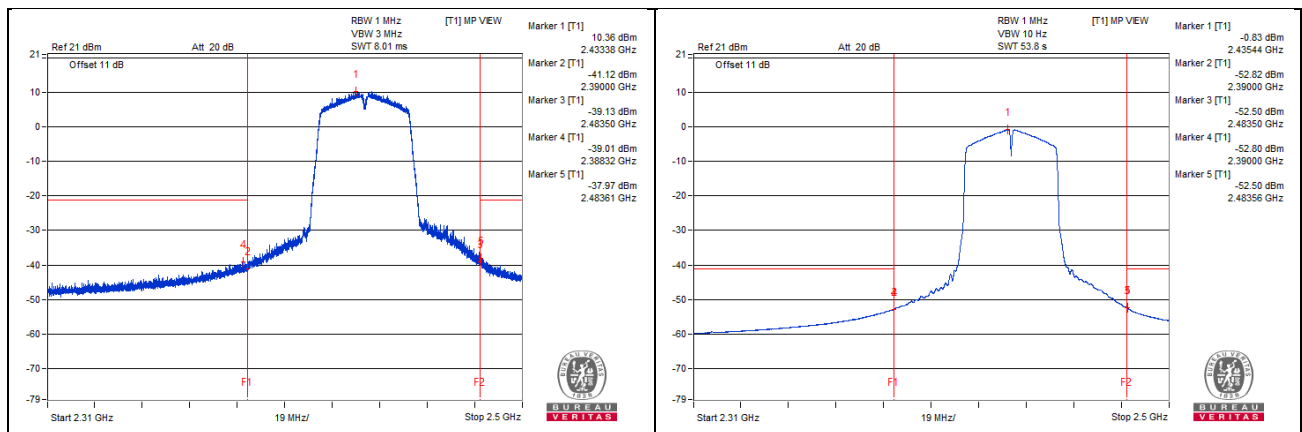


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2433.38 PK	110.07	*		10.36	4.45	14.81
2	2390 PK	58.59	74	-15.41	-41.12	4.45	-36.67
3	2483.5 PK	60.58	74	-13.42	-39.13	4.45	-34.68
4	2388.32 PK	60.7	74	-13.3	-39.01	4.45	-34.56
5	2483.61 PK	61.74	74	-12.26	-37.97	4.45	-33.52
6	2435.44 AV	98.88	*		-0.83	4.45	3.62
7	2390 AV	46.89	54	-7.11	-52.82	4.45	-48.37
8	2483.5 AV	47.21	54	-6.79	-52.5	4.45	-48.05
9	2390 AV	46.91	54	-7.09	-52.8	4.45	-48.35
10	2483.56 AV	47.21	54	-6.79	-52.5	4.45	-48.05

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.



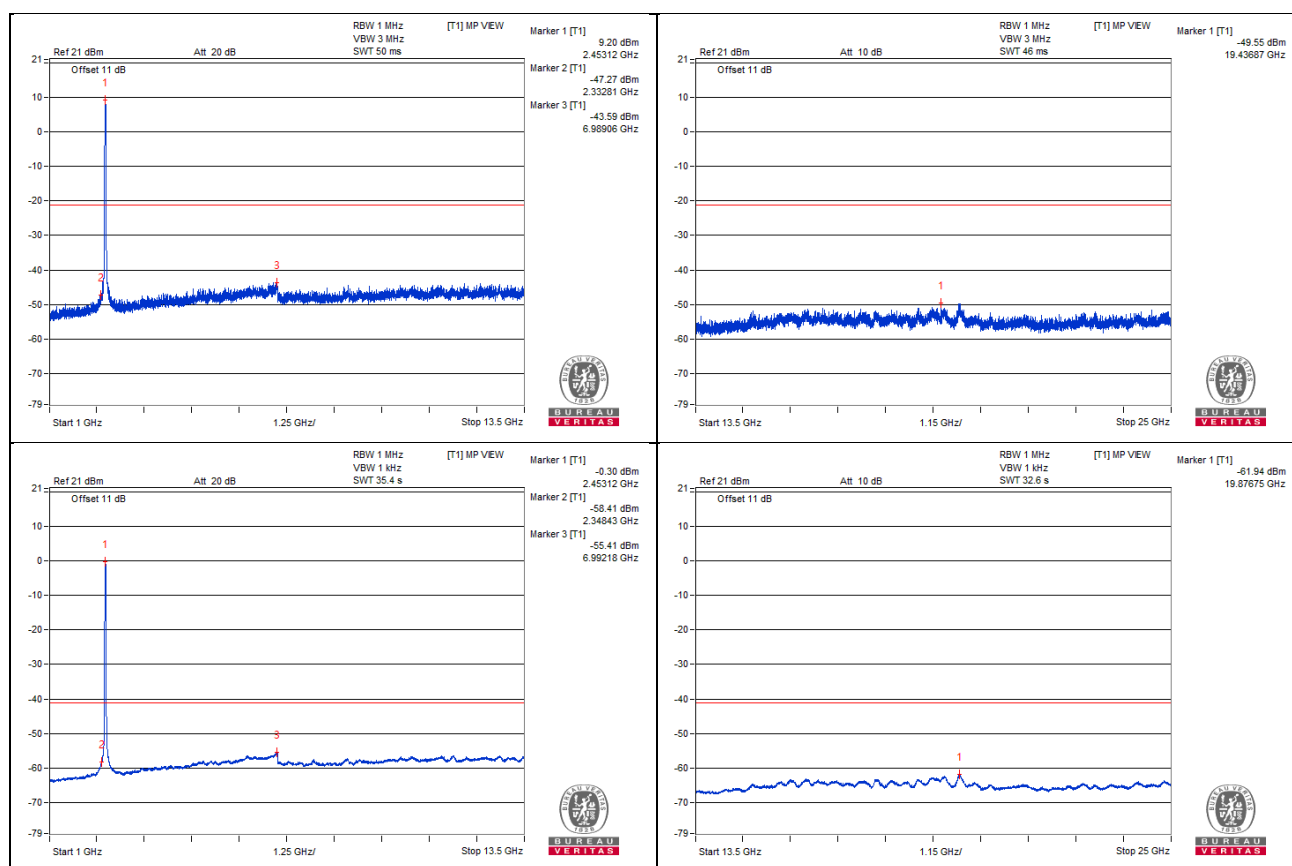
802.11n (HT40) - Channel 9

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	2453.12 PK	108.91	*		9.2	4.45	13.65
2	2332.81 PK	52.44	74	-21.56	-47.27	4.45	-42.82
3	6989.06 PK	56.12	#		-43.59	4.45	-39.14
4	19436.87 PK	50.16	74	-23.84	-49.55	4.45	-45.1
5	2453.12 AV	99.41	*		-0.3	4.45	4.15
6	2348.43 AV	41.3	54	-12.7	-58.41	4.45	-53.96
7	6992.18 AV	44.3	#		-55.41	4.45	-50.96
8	19876.75 AV	37.77	54	-16.23	-61.94	4.45	-57.49

Note :

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

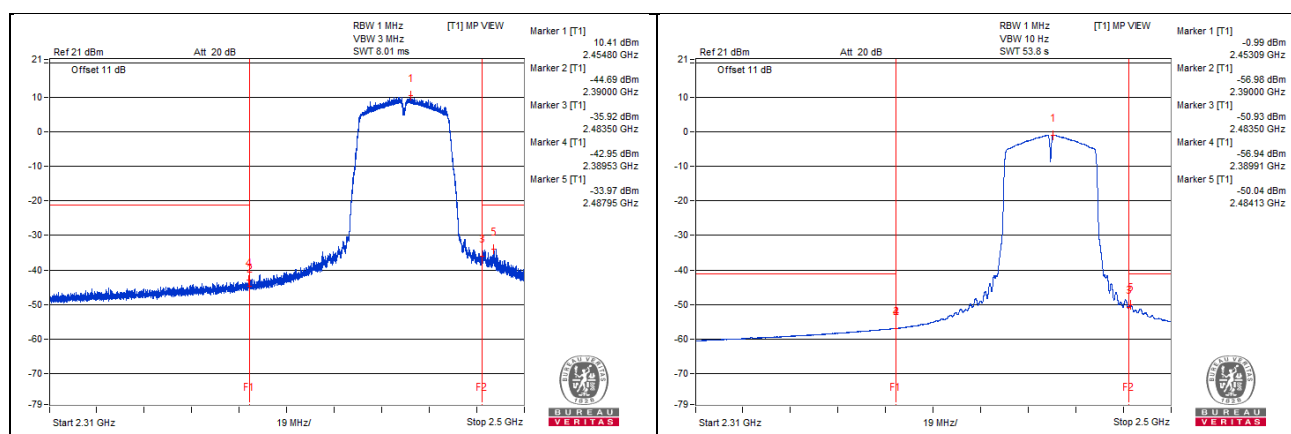


Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2454.8 PK	110.12	*		10.41	4.45	14.86
2	2390 PK	55.02	74	-18.98	-44.69	4.45	-40.24
3	2483.5 PK	63.79	74	-10.21	-35.92	4.45	-31.47
4	2389.53 PK	56.76	74	-17.24	-42.95	4.45	-38.5
5	2487.95 PK	65.74	74	-8.26	-33.97	4.45	-29.52
6	2453.09 AV	98.72	*		-0.99	4.45	3.46
7	2390 AV	42.73	54	-11.27	-56.98	4.45	-52.53
8	2483.5 AV	48.78	54	-5.22	-50.93	4.45	-46.48
9	2389.91 AV	42.77	54	-11.23	-56.94	4.45	-52.49
10	2484.13 AV	49.67	54	-4.33	-50.04	4.45	-45.59

Note :

1. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
2. * : Fundamental frequency, the limit was restricted at the output power.



Below 1GHz Data

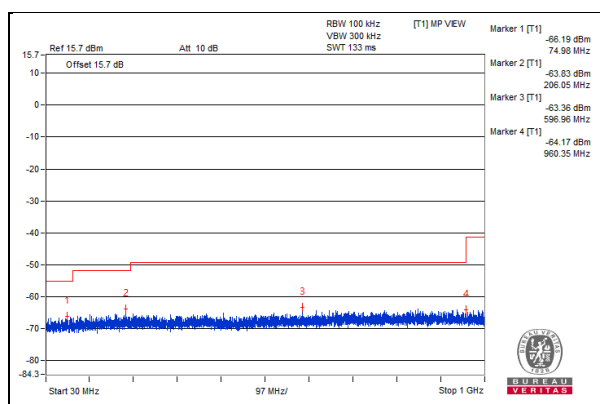
802.11b - Channel 6

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	74.98	33.52	40	-6.48	-66.19	4.45	-61.74
2	206.05	35.88	#		-63.83	4.45	-59.38
3	596.96	36.35	#		-63.36	4.45	-58.91
4	960.35	35.54	54	-18.46	-64.17	4.45	-59.72

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.



Note: Choose worse case from above and set RBW/VBW=120kHz/1MHz to verification.

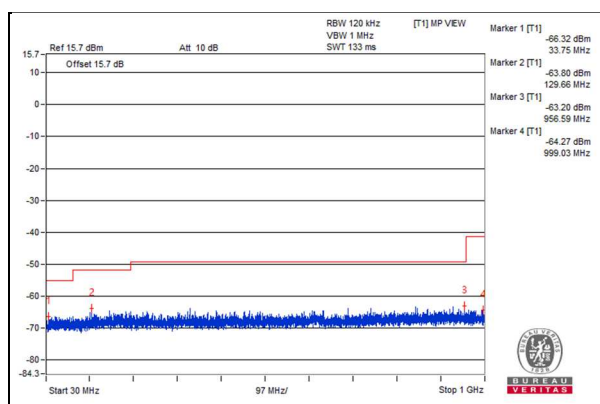
802.11b - Channel 6

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	33.75	33.39	#		-66.32	4.45	-61.87
2	129.66	35.91	43.5	-7.59	-63.8	4.45	-59.35
3	956.59	36.51	46	-9.49	-63.2	4.45	-58.75
4	999.03	35.44	54	-18.56	-64.27	4.45	-59.82

Note :

- Emission Level (dBUV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- # : Non-restricted frequency, the limit was restricted at the conducted out of band emission.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 19, 2020	Mar. 18, 2021
50 ohms Terminator	50	3	Oct. 23, 2019	Oct. 22, 2020
RF Cable	5D-FB	COCCAB-001	Sep. 27, 2019	Sep. 26, 2020
Fixed attenuator EMCI	STI02-2200-10	005	Aug. 30, 2019	Aug. 29, 2020
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
- 3 Tested Date: Apr. 17, 2020

4.2.3 Test Procedures

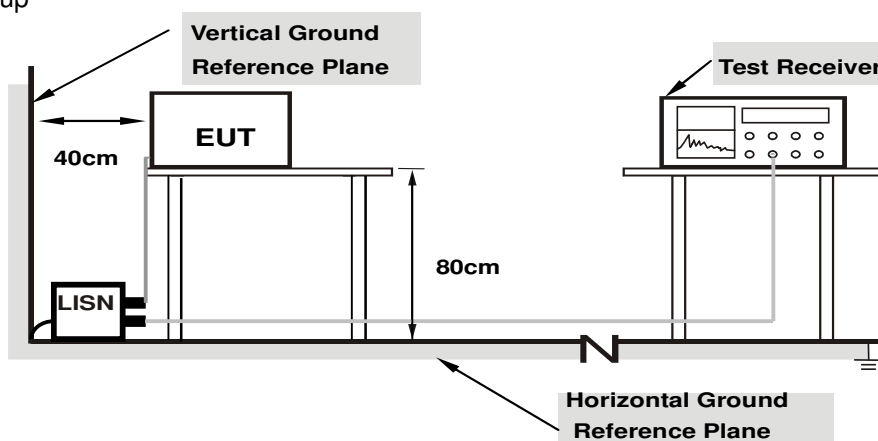
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

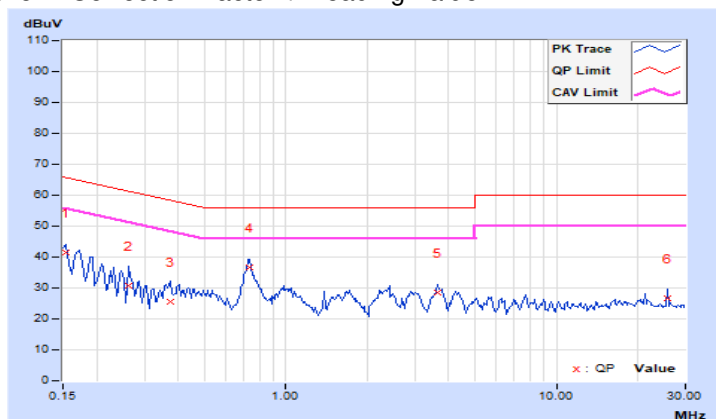
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	----------	-------------------	--------------------------------

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.99	31.53	23.06	41.52	33.05	65.79	55.79	-24.27	-22.74
2	0.26328	9.99	20.57	16.16	30.56	26.15	61.33	51.33	-30.77	-25.18
3	0.37266	10.00	15.57	11.03	25.57	21.03	58.44	48.44	-32.87	-27.41
4	0.73594	10.03	26.65	22.50	36.68	32.53	56.00	46.00	-19.32	-13.47
5	3.62500	10.23	18.40	14.41	28.63	24.64	56.00	46.00	-27.37	-21.36
6	25.87109	11.58	14.96	14.05	26.54	25.63	60.00	50.00	-33.46	-24.37

Remarks:

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

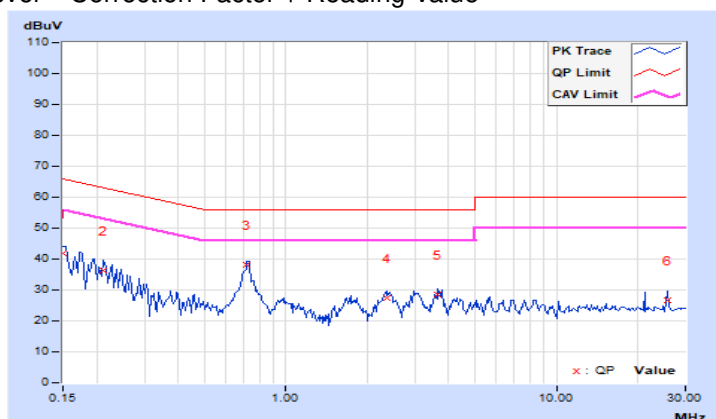


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.99	31.71	23.36	41.70	33.35	66.00	56.00	-24.30	-22.65
2	0.21250	9.99	26.20	19.71	36.19	29.70	63.11	53.11	-26.92	-23.41
3	0.72031	10.03	27.96	25.26	37.99	35.29	56.00	46.00	-18.01	-10.71
4	2.35547	10.14	17.36	12.80	27.50	22.94	56.00	46.00	-28.50	-23.06
5	3.66016	10.20	18.34	14.53	28.54	24.73	56.00	46.00	-27.46	-21.27
6	25.87500	11.25	15.34	14.84	26.59	26.09	60.00	50.00	-33.41	-23.91

Remarks:

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

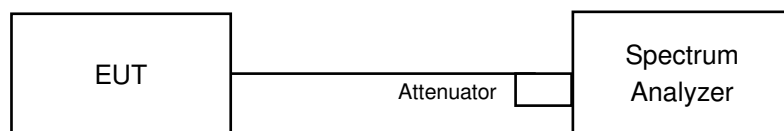


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

- 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.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result (Mode 1)

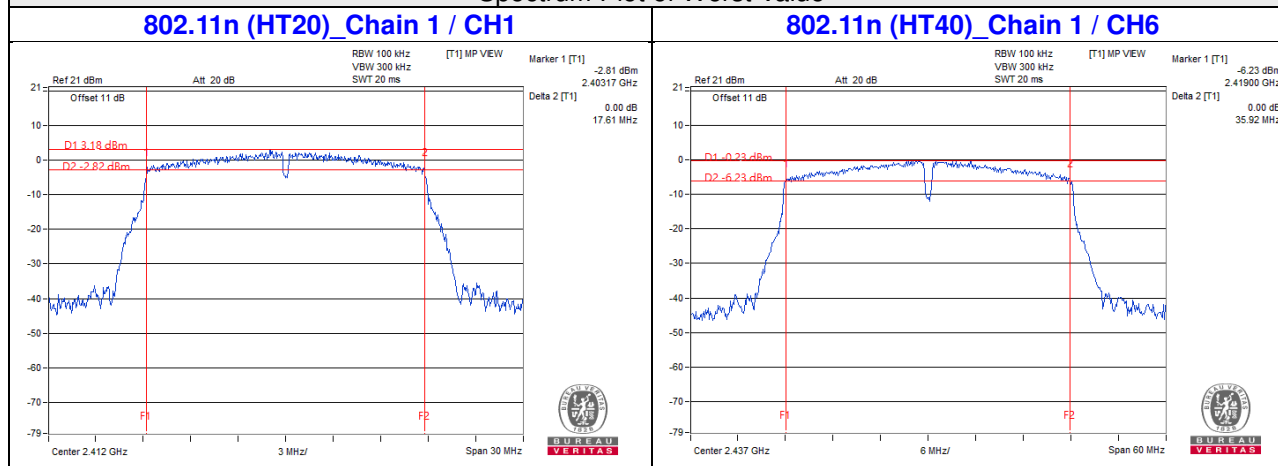
802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.64	17.61	0.5	Pass
6	2437	17.64	17.66	0.5	Pass
11	2462	17.64	17.65	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	36.42	36.47	0.5	Pass
6	2437	36.24	35.92	0.5	Pass
9	2452	36.44	36.43	0.5	Pass

Spectrum Plot of Worst Value



4.3.8 Test Result (Mode 2)

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	9.05	0.5	Pass
6	2437	9.07	0.5	Pass
11	2462	8.61	0.5	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	16.39	0.5	Pass
6	2437	16.42	0.5	Pass
11	2462	16.40	0.5	Pass

802.11n (HT20)

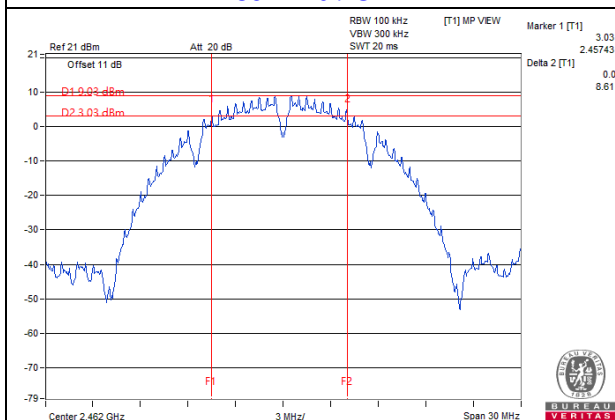
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	17.66	0.5	Pass
6	2437	17.64	0.5	Pass
11	2462	17.66	0.5	Pass

802.11n (HT40)

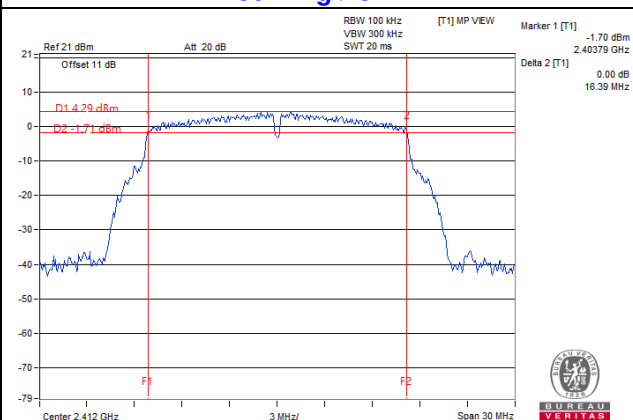
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3	2422	35.75	0.5	Pass
6	2437	35.83	0.5	Pass
9	2452	36.01	0.5	Pass

Spectrum Plot of Worst Value

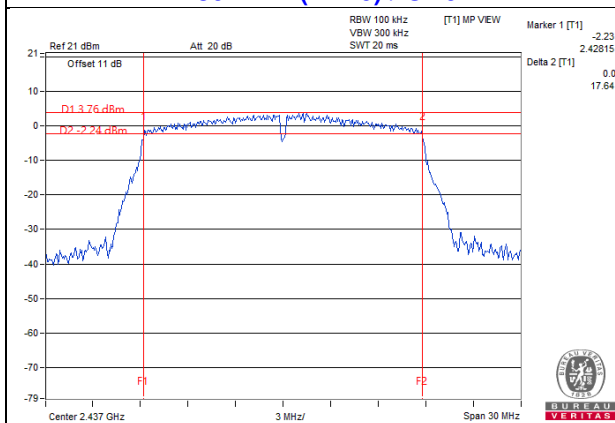
802.11b / CH11



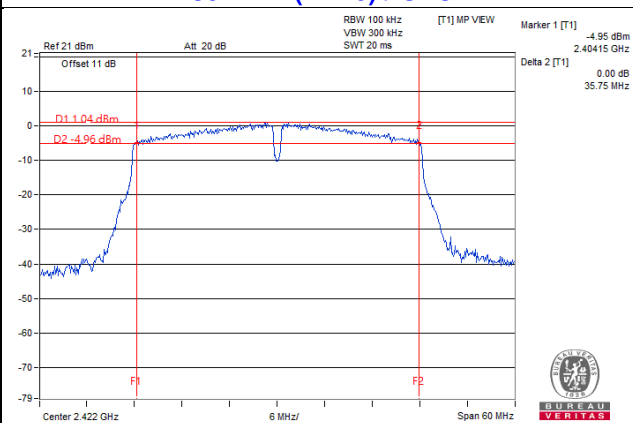
802.11g / CH1



802.11n (HT20) / CH6



802.11n (HT40) / CH3



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

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

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

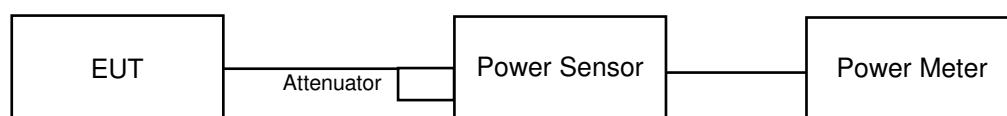
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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

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

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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.

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results (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	23.60	23.15	435.625	26.39	30.00	Pass
6	2437	23.86	23.32	458.003	26.61	30.00	Pass
11	2462	22.54	22.35	351.264	25.46	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	20.98	19.83	221.475	23.45	30.00	Pass
6	2437	23.36	22.49	394.189	25.96	30.00	Pass
9	2452	20.74	20.05	219.735	23.42	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	16.28	15.75	80.046	19.03
6	2437	16.60	16.11	86.541	19.37
11	2462	15.21	14.84	63.668	18.04

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
3	2422	13.68	13.05	43.518	16.39
6	2437	16.27	15.76	80.035	19.03
9	2452	13.73	13.32	45.083	16.54

4.4.8 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	89.743	19.53	30.00	Pass
6	2437	92.257	19.65	30.00	Pass
11	2462	91.411	19.61	30.00	Pass

802.11g

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	280.543	24.48	30.00	Pass
6	2437	267.301	24.27	30.00	Pass
11	2462	272.898	24.36	30.00	Pass

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	257.04	24.10	30.00	Pass
6	2437	243.22	23.86	30.00	Pass
11	2462	253.513	24.04	30.00	Pass

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
3	2422	250.035	23.98	30.00	Pass
6	2437	243.22	23.86	30.00	Pass
9	2452	236.592	23.74	30.00	Pass

FOR AVERAGE POWER

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	55.463	17.44
6	2437	56.494	17.52
11	2462	55.847	17.47

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	54.828	17.39
6	2437	53.211	17.26
11	2462	53.827	17.31

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	47.643	16.78
6	2437	45.709	16.60
11	2462	46.881	16.71

802.11n (HT40)

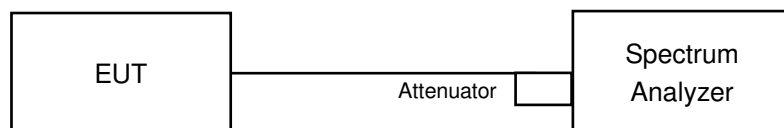
Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
3	2422	46.559	16.68
6	2437	47.534	16.77
9	2452	47.098	16.73

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

- 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.

4.5.5 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)

802.11n (HT20)

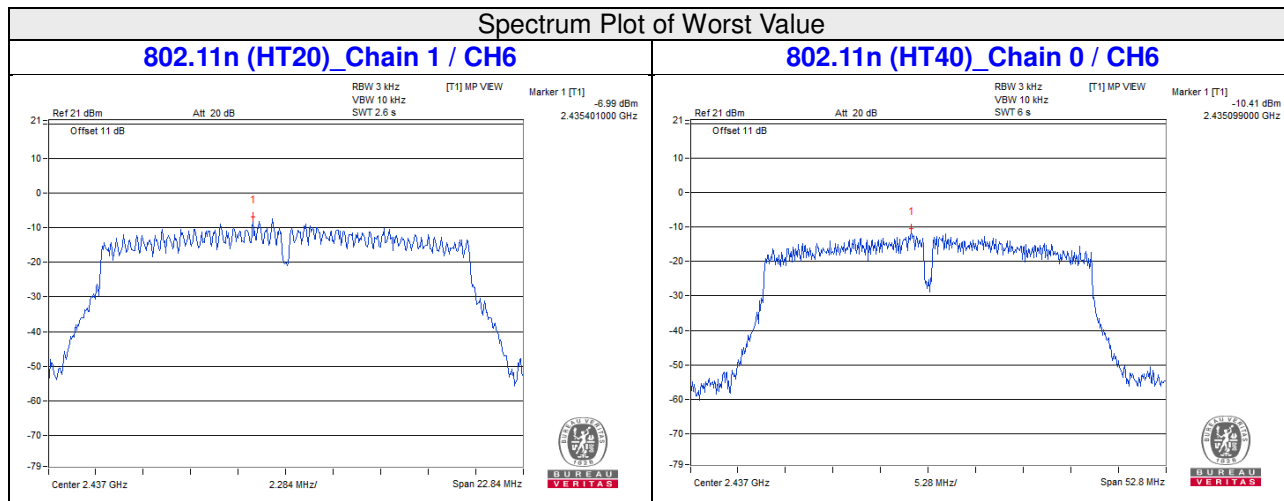
Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
		Chain 0	Chain 1			
1	2412	-8.44	-8.86	-5.63	8.00	Pass
6	2437	-7.12	-6.99	-4.04	8.00	Pass
11	2462	-9.58	-9.49	-6.52	8.00	Pass

Note: The directional gain = $10 \log[(10^{G0/10} + 10^{G1/10}) / 2] = 4.24 \text{ dBi} < 6 \text{ dBi}$, 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	-13.45	-14.81	-11.07	8.00	Pass
6	2437	-10.41	-11.32	-7.83	8.00	Pass
9	2452	-14.01	-13.13	-10.54	8.00	Pass

Note: The directional gain = $10 \log[(10^{G0/10} + 10^{G1/10}) / 2] = 4.24 \text{ dBi} < 6 \text{ dBi}$, so the power density limit shall not be reduced.



4.5.8 Test Results (Mode 2)

802.11b

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
1	2412	-4.77	8.00	Pass
6	2437	-4.89	8.00	Pass
11	2462	-5.52	8.00	Pass

802.11g

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
1	2412	-6.69	8.00	Pass
6	2437	-7.91	8.00	Pass
11	2462	-7.68	8.00	Pass

802.11n (HT20)

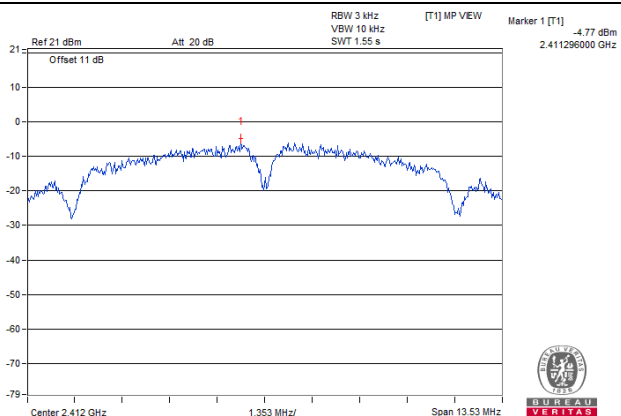
Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
1	2412	-8.71	8.00	Pass
6	2437	-8.22	8.00	Pass
11	2462	-7.74	8.00	Pass

802.11n (HT40)

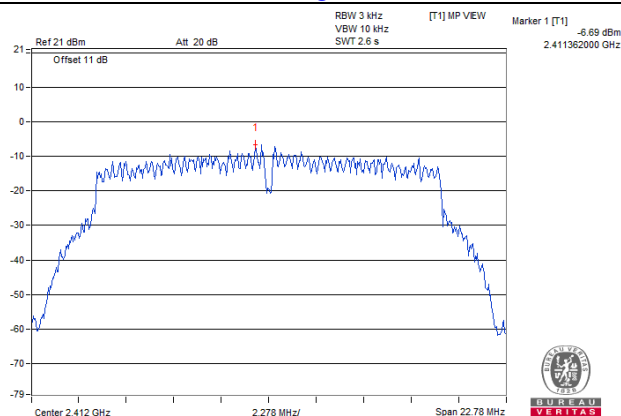
Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
3	2422	-12.02	8.00	Pass
6	2437	-11.87	8.00	Pass
9	2452	-10.24	8.00	Pass

Spectrum Plot of Worst Value

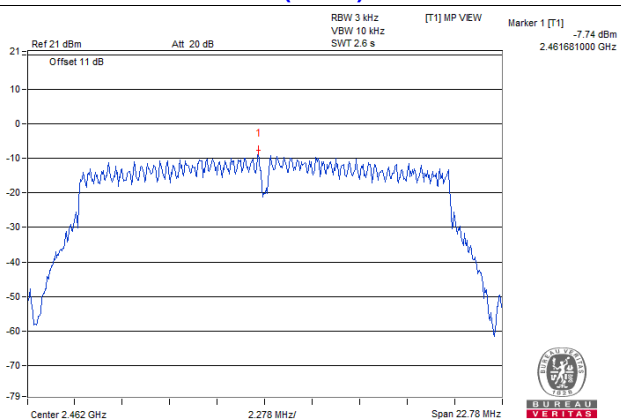
802.11b / CH1



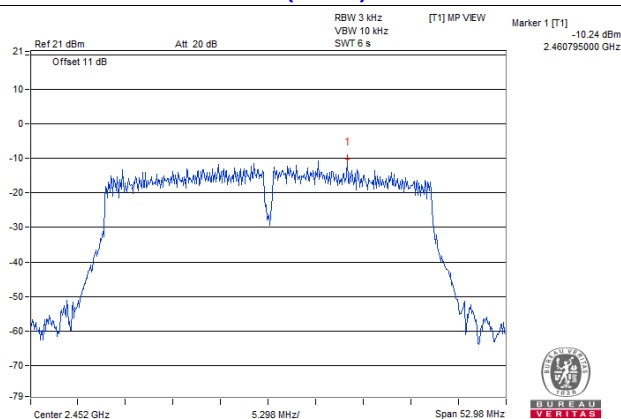
802.11g CH1



802.11n (HT20) CH11



802.11n (HT40) / CH9

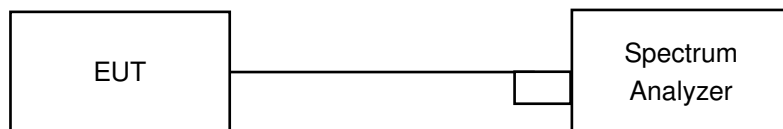


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

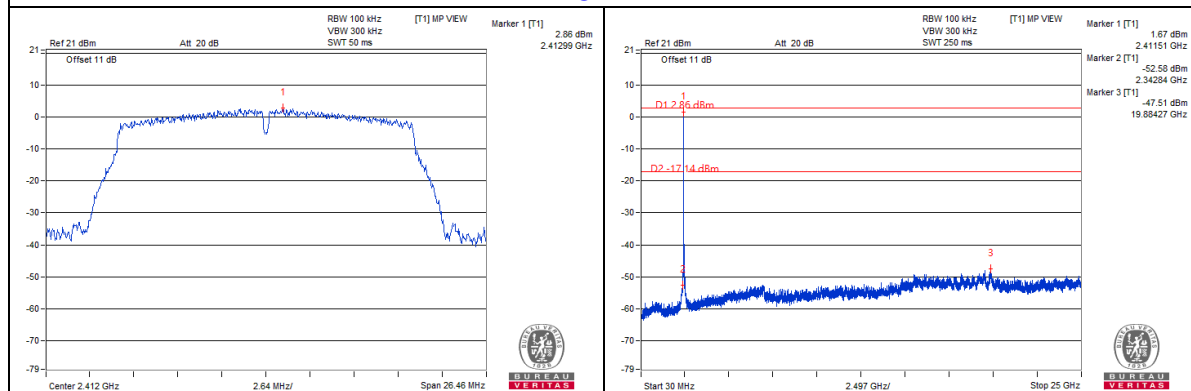
Same as Item 4.3.6

4.6.7 Test Results (Mode 1)

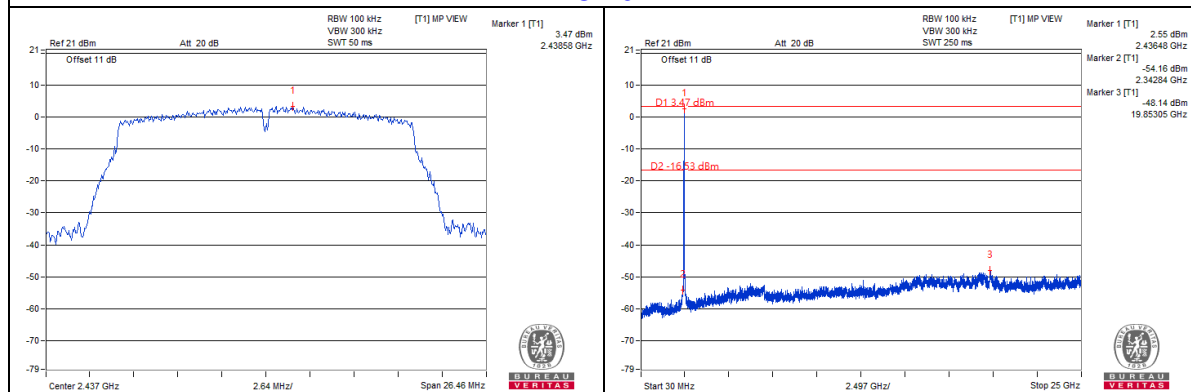
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11n (HT20) Chain 0

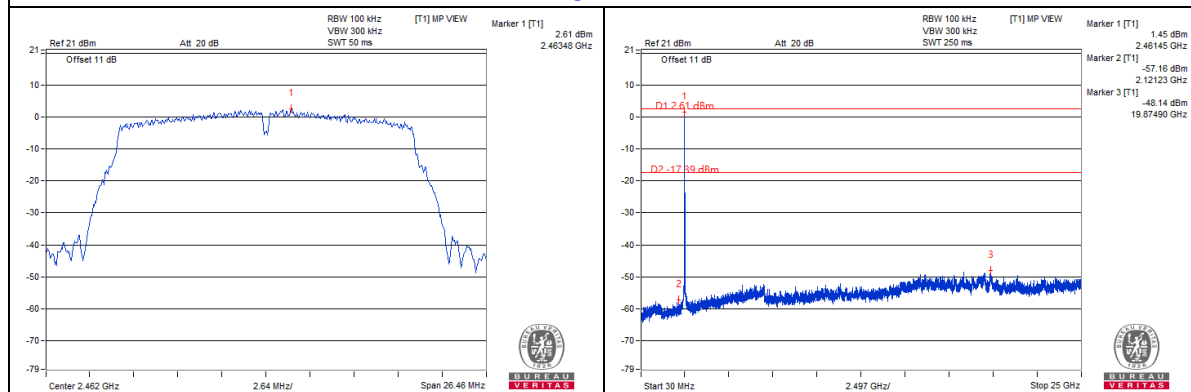
CH 1



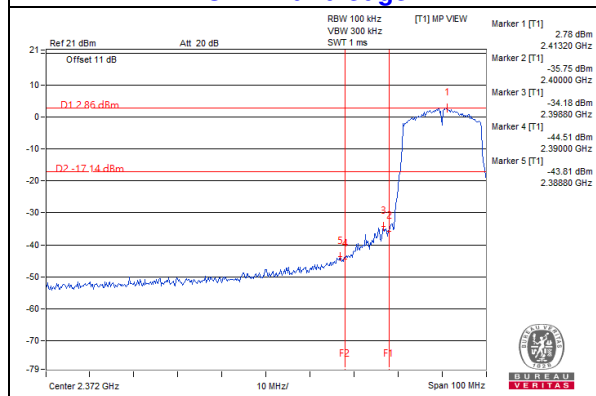
CH 6



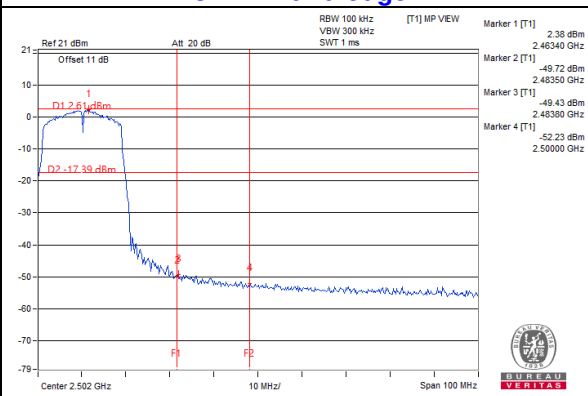
CH 11



CH 11 Band edge

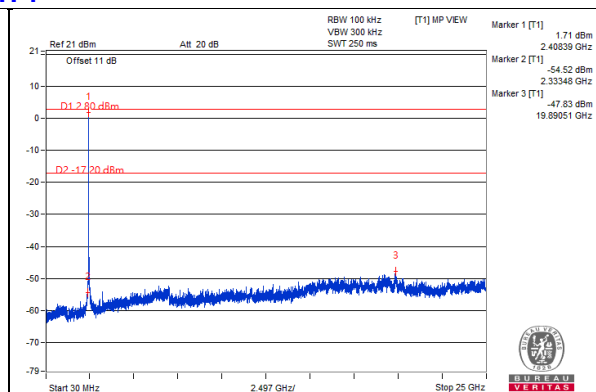
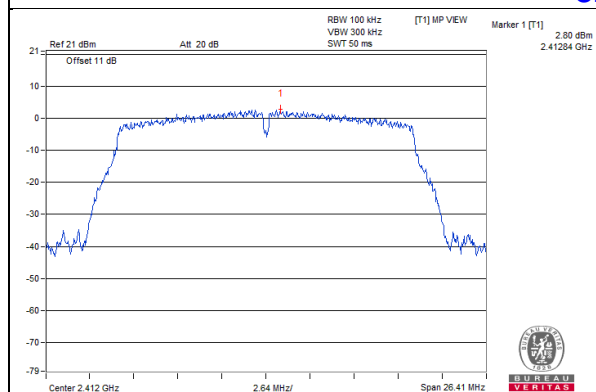


CH 11 Band edge

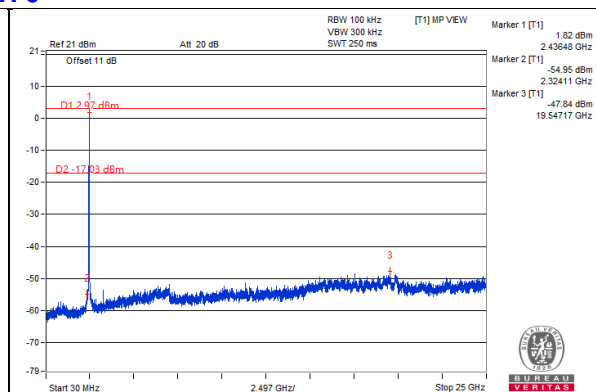
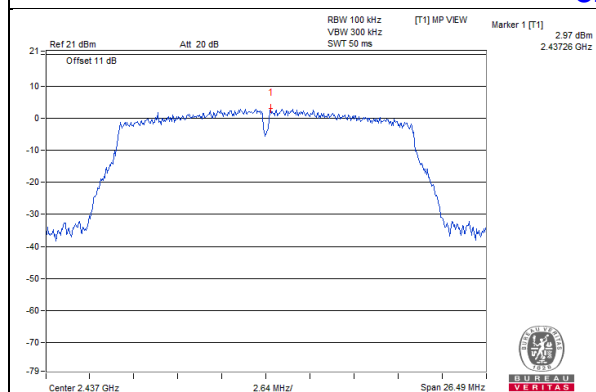


Chain 1

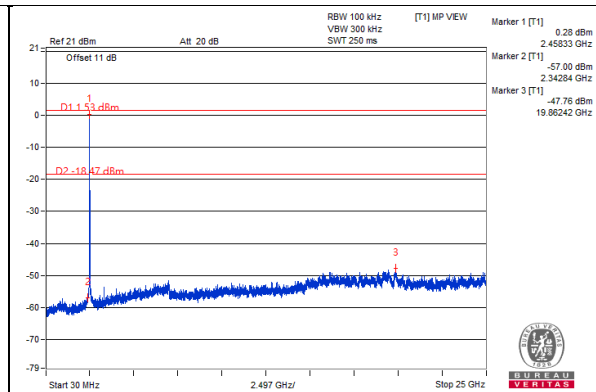
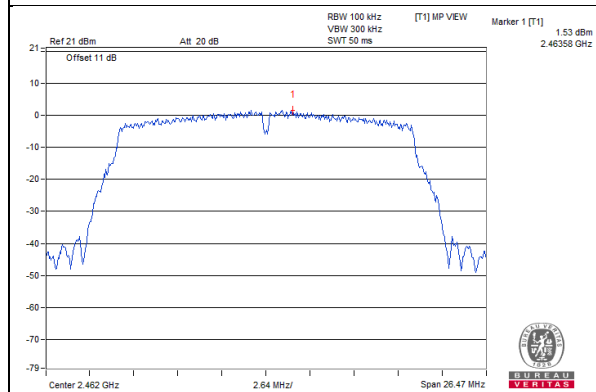
CH 1



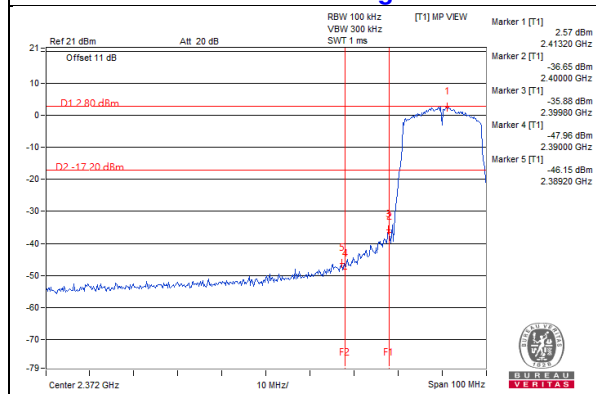
CH 6



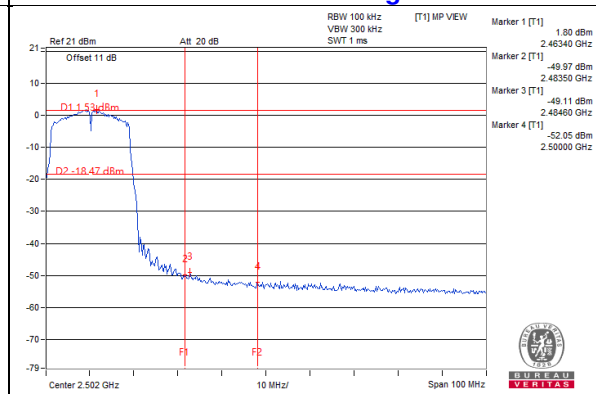
CH 11



CH 1 Band edge

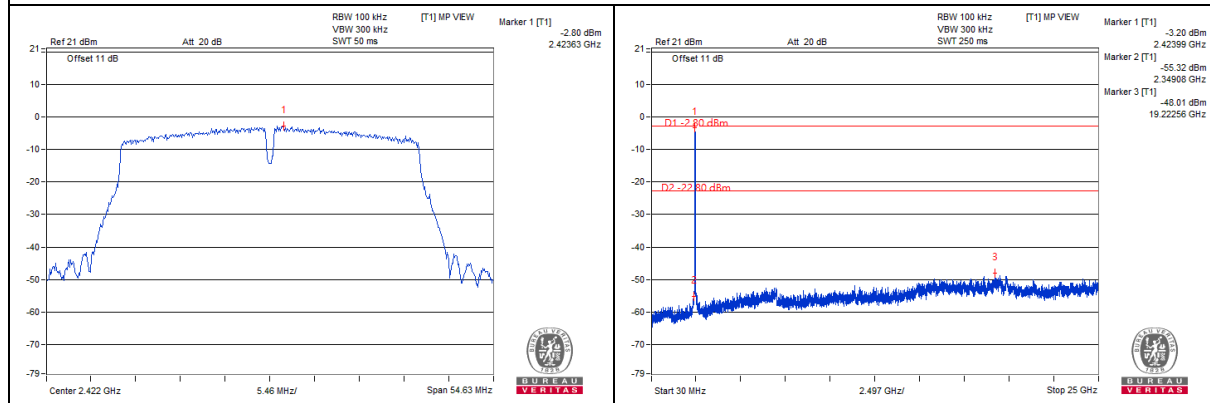


CH 11 Band edge

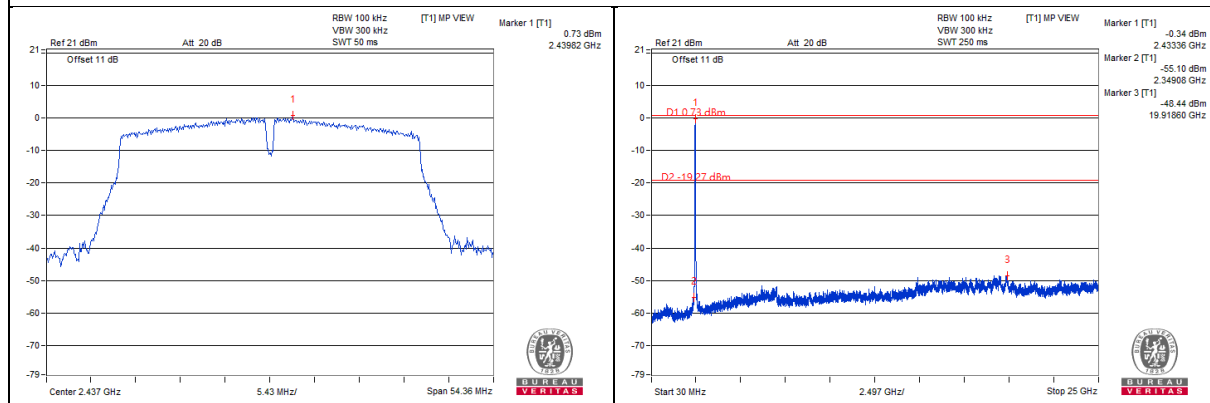


802.11n (HT40) Chain 0

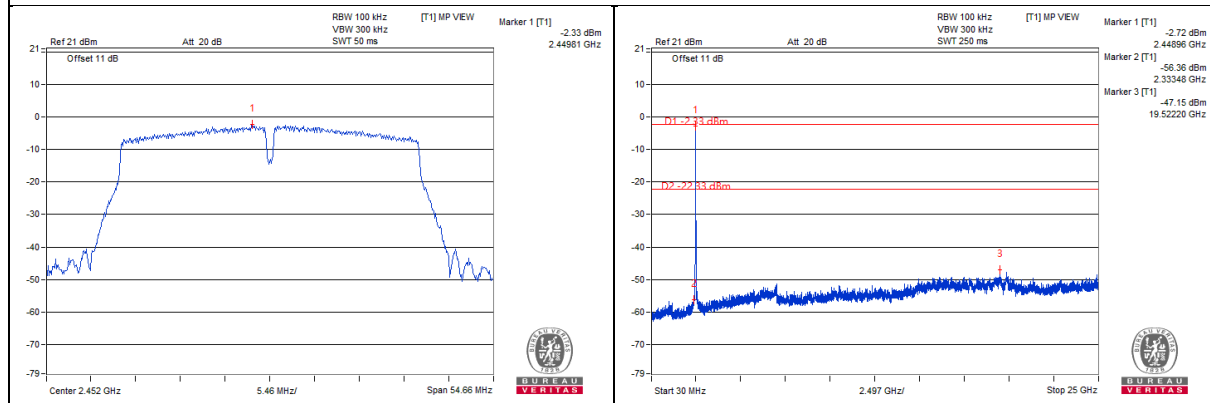
CH 3



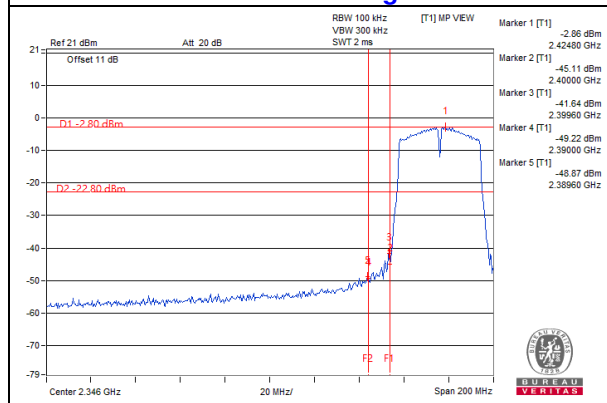
CH 6



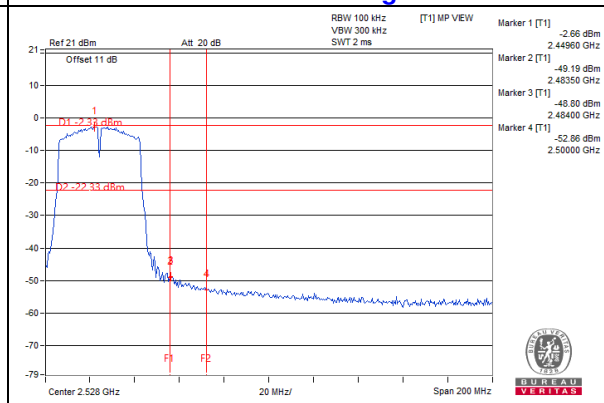
CH 9



CH 3 Band edge

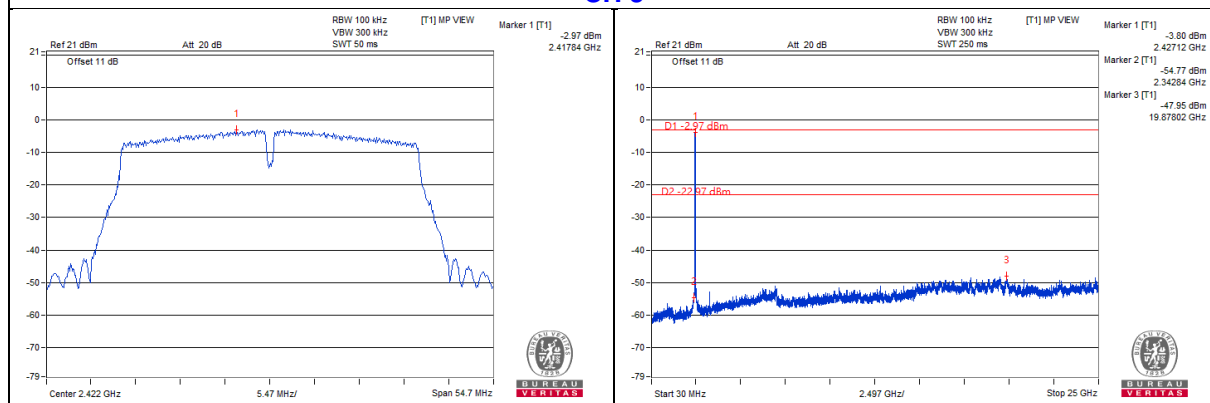


CH 9 Band edge

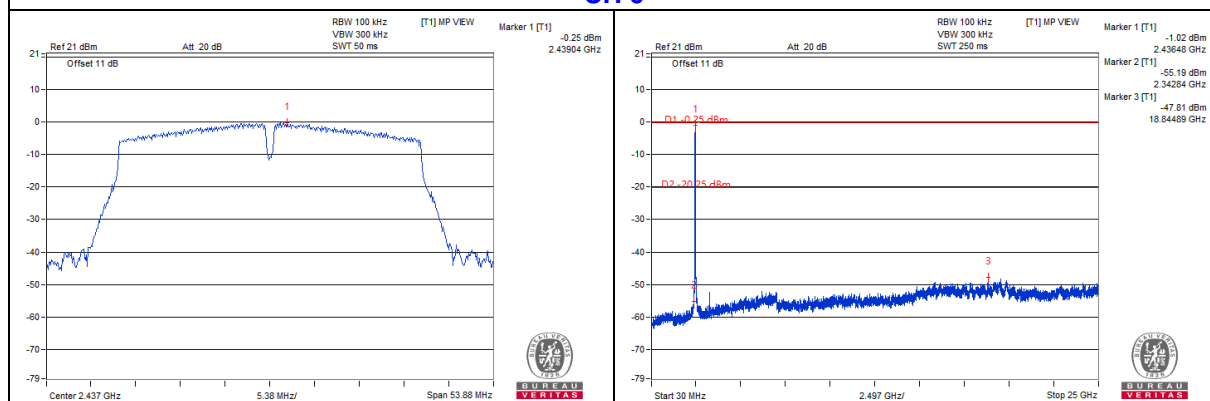


Chain 1

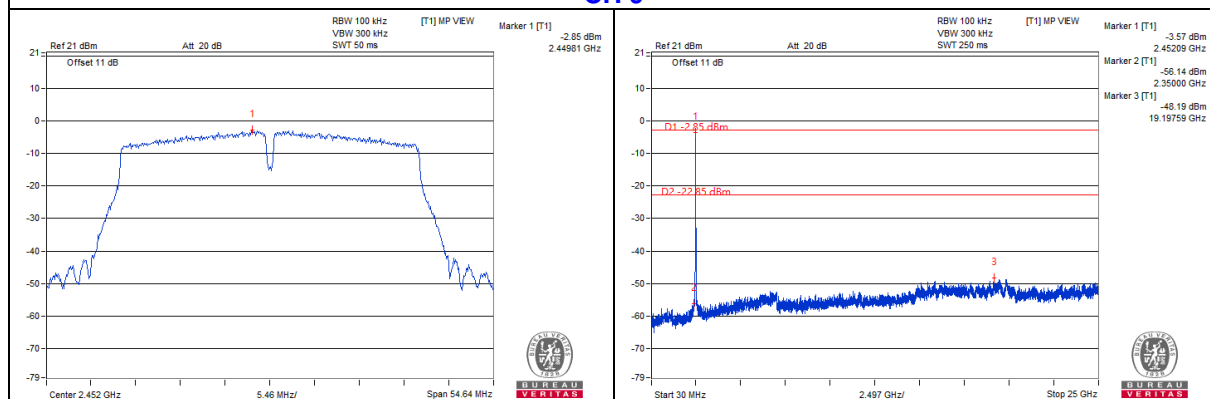
CH 3



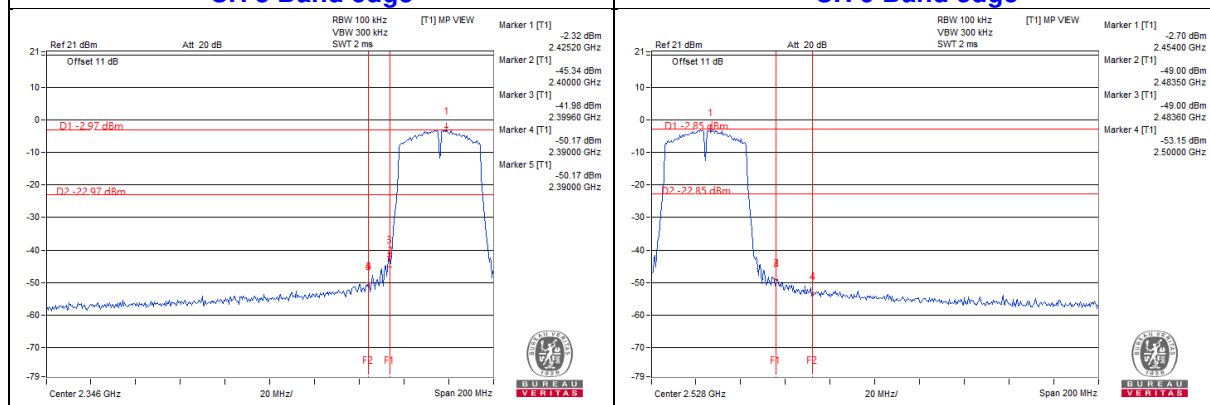
CH 6



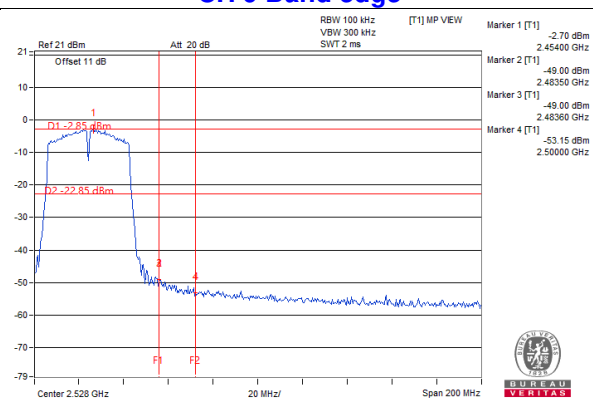
CH 9



CH 3 Band edge



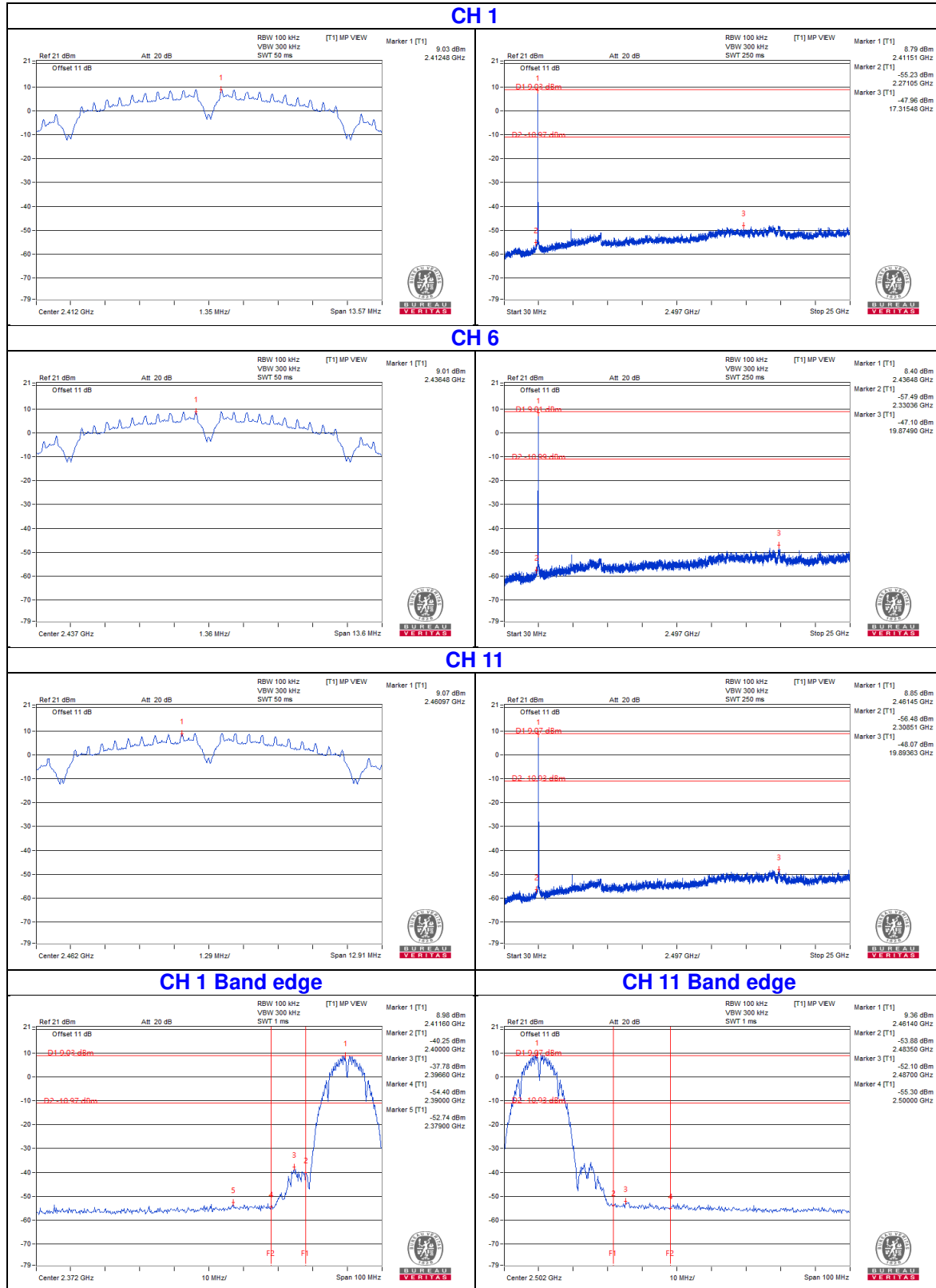
CH 9 Band edge



4.6.8 Test Results (Mode 2)

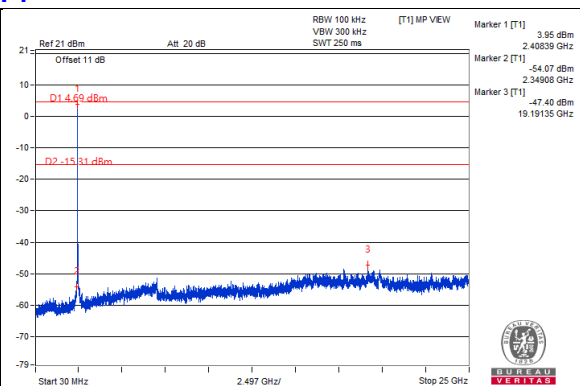
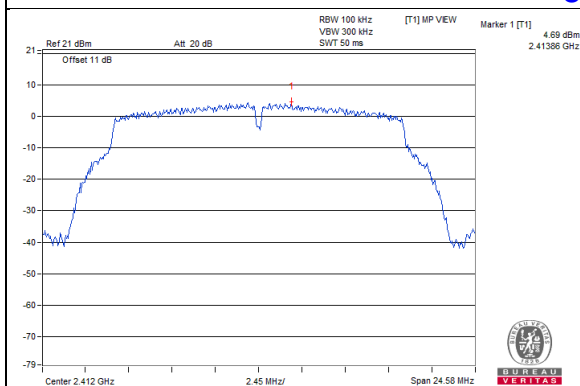
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11b

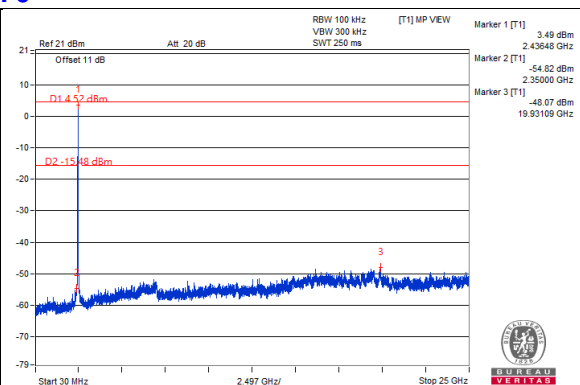
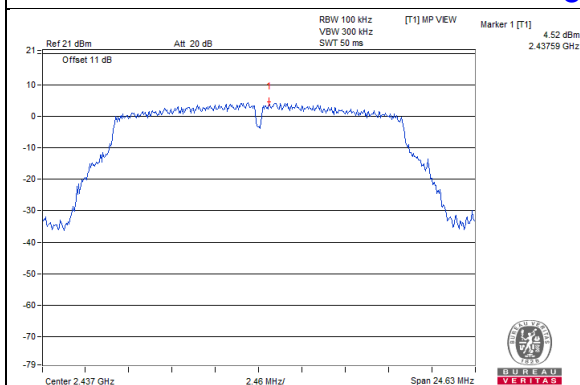


802.11g

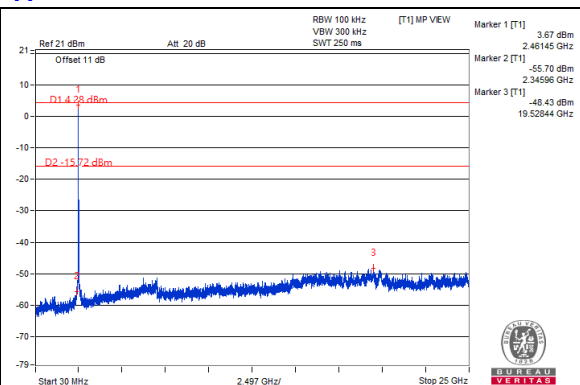
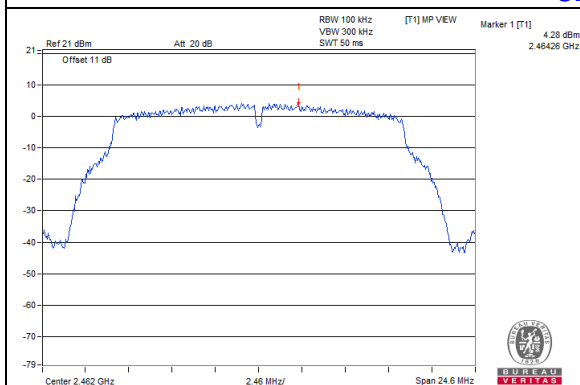
CH 1



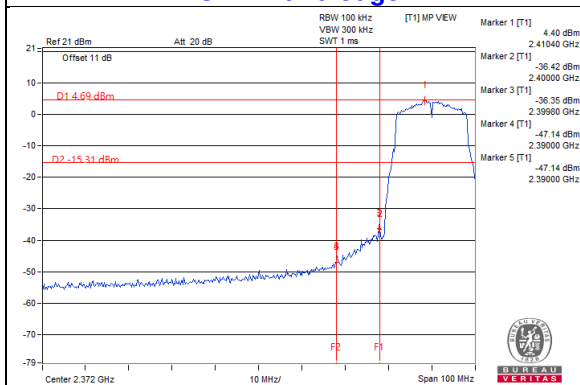
CH 6



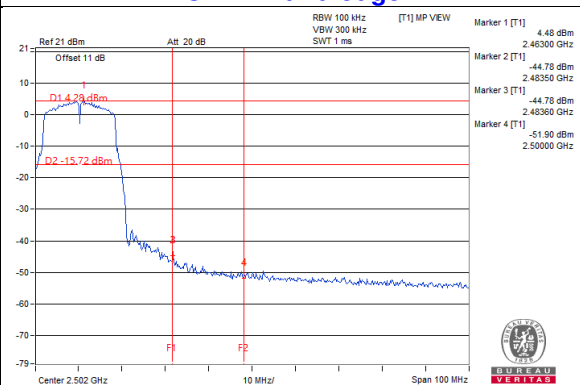
CH 11



CH 1 Band edge

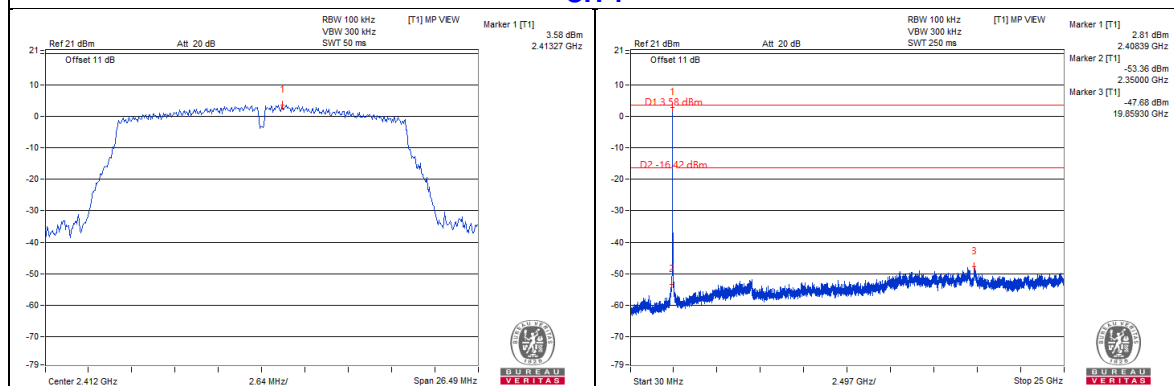


CH 11 Band edge

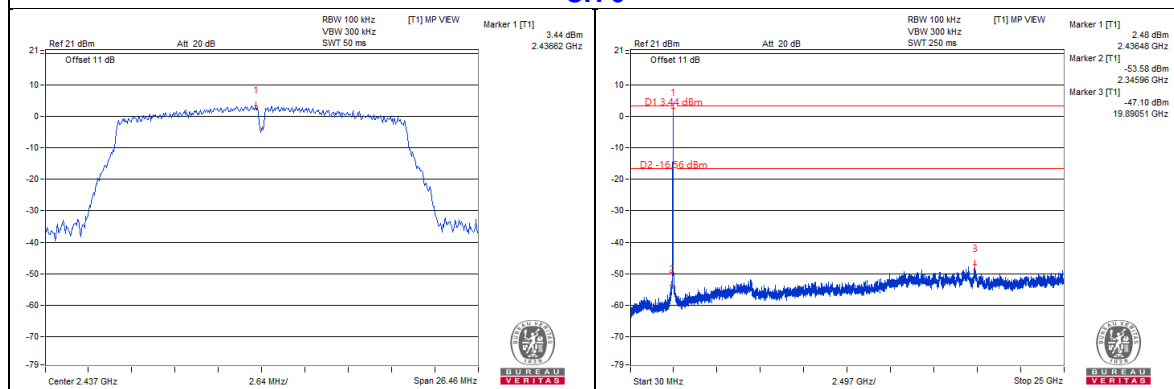


802.11n (HT20)

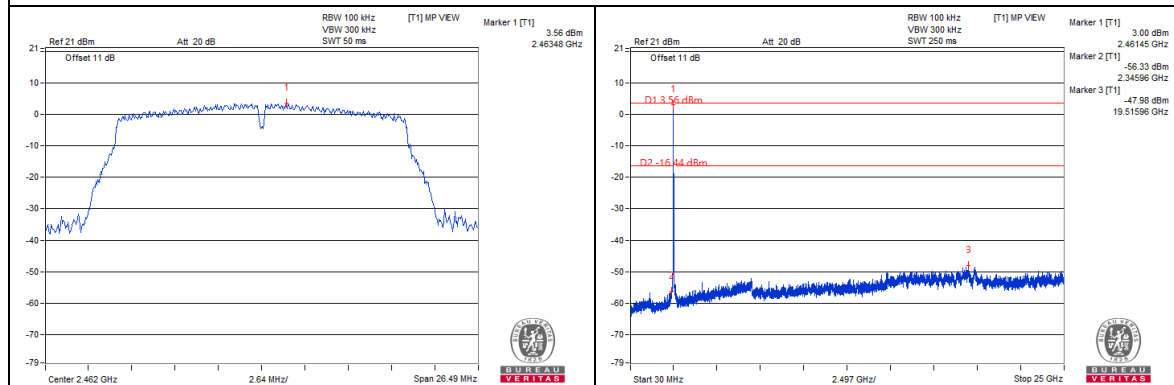
CH 1



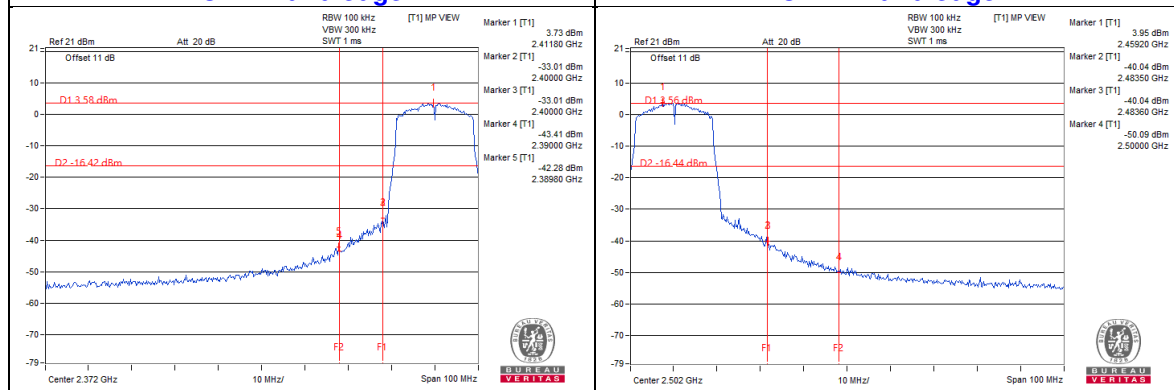
CH 6



CH 11

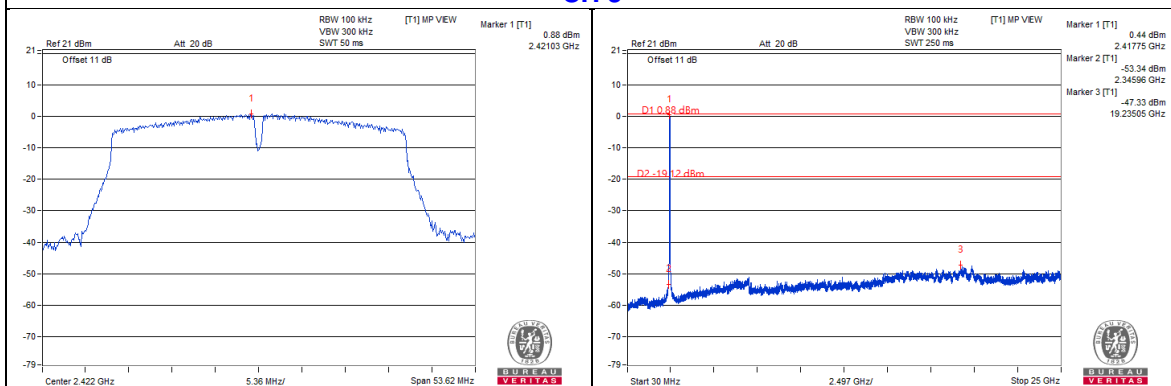


CH 1 Band edge

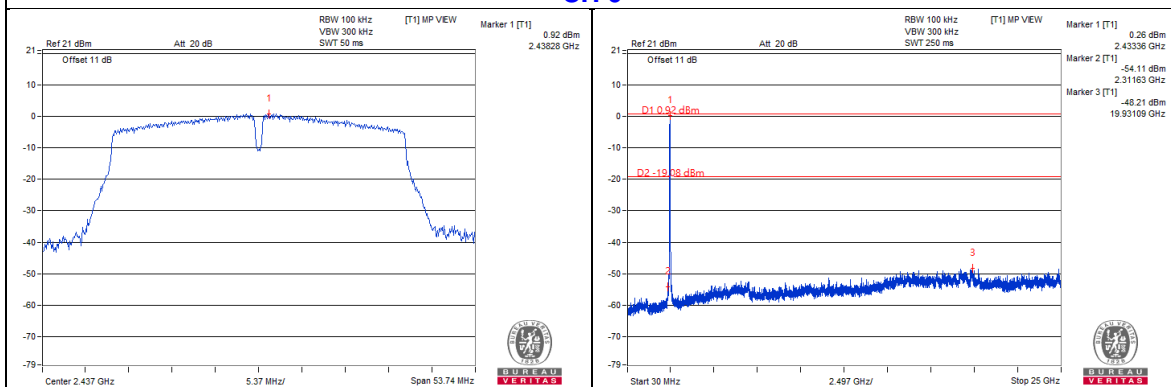


802.11n (HT40)

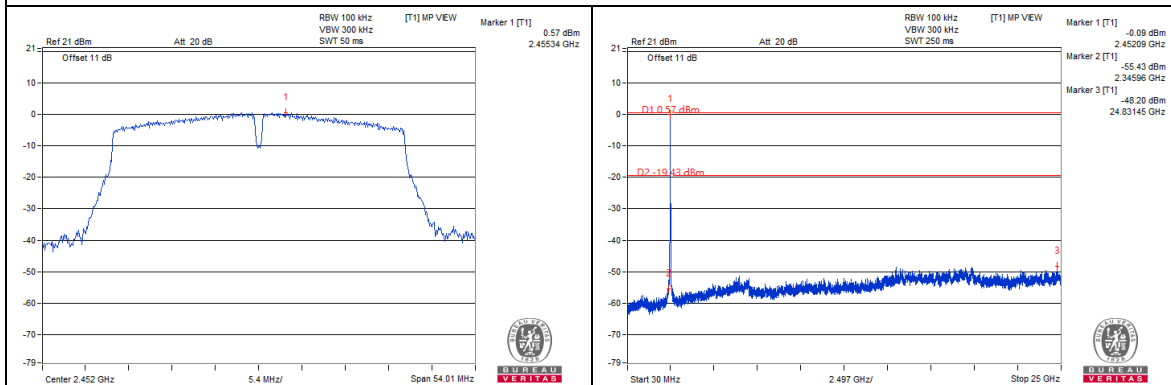
CH 3



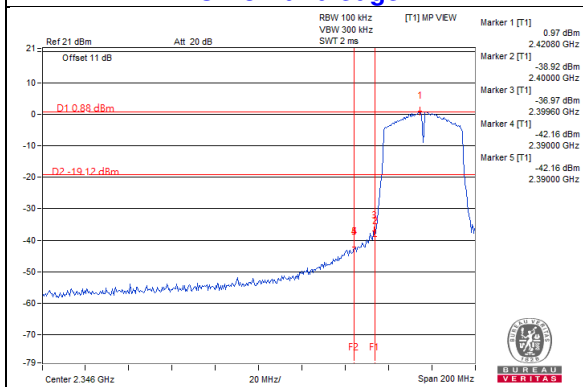
CH 6



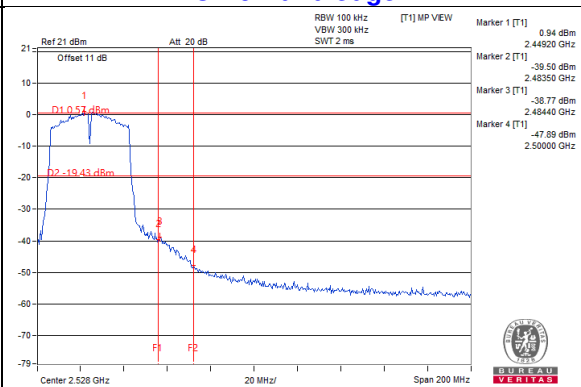
CH 9



CH 3 Band edge



CH 9 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited 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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