

FCC Test Report

Report No.: RF180920C22

FCC ID: A4RG020C

Model Name: G020C

Received Date: Sep. 21, 2018

Test Date: Oct. 19 ~ Nov. 22, 2018

Issued Date: Dec. 17, 2018

Applicant: Google LLC

Address: 1600 Amphitheatre Parkway, Mountain View, CA 94043, USA

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

Test Location (1): No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

Test Location (2): E-2, No. 1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan (R.O.C.)

FCC Registration / Designation Number (1): 788550 / TW0003

FCC Registration / Designation Number (2): 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
RF180920C22	Original release	Dec. 17, 2018

1 Certificate of Conformity

Product: Smartphone
Model Name: G020C
Sample Status: Identical Prototype
Applicant: Google LLC
Test Date: Oct. 19 ~ Nov. 22, 2018
Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10:2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by :  , **Date:** Dec. 17, 2018
Polly Chien / Specialist

Approved by :  , **Date:** Dec. 17, 2018
Bruce Chen / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -4.69dB at 0.34159MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.6dB at 2483.50MHz, 2483.51MHz, 2483.55MHz
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.

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	2.94 dB
Radiated Emissions	30MHz ~ 1GHz	5.31 dB
	1 GHz ~ 6 GHz	3.40 dB
	6GHz ~ 18GHz	3.73 dB
	18GHz ~ 40GHz	4.11 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Smartphone
Model Name	G020C
Sample Status	Identical Prototype
Power Supply Rating	3.85Vdc (Battery) 5Vdc or 9Vdc (Adapter) 5Vdc (Host equipment)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n/ac: up to 300Mbps
Operating Frequency	2412 ~ 2472MHz
Number of Channel	13
Output Power	307.610mW
Antenna Type	Refer to Note as below
Antenna Connector	Refer to Note as below
Accessory Device	Refer to Note as below
Cable Supplied	Refer to Note as below

Note:

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

Modulation Mode	TX Function
802.11b	1TX(SISO)/2TX(MIMO)
802.11g	1TX(SISO)/2TX(MIMO)
802.11n (HT20)	1TX(SISO)/2TX(MIMO)
802.11ac (VHT20)	1TX(SISO)/2TX(MIMO)

* The modulation and bandwidth are similar for 802.11n mode for 20MHz and 802.11ac mode for 20MHz, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

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

- There're 2 configurations for the EUT listed as below.

- Main Sample: EUT + Battery 1
- 2nd Sample: EUT + Battery 2

After pre-tested with the EUT, only the worst configuration (main sample) was chosen for the final test.

- The EUT accessories list refers to EUT Photo.pdf.

- The following antennas were provided to the EUT.

No.	Type	Connector	Gain (dBi)
0	PIFA	NA	-0.6
1	PIFA	NA	0

5. The worst configuration power mode is presented in the report as below. Please refer to SAR test report for more detail test mode.

Maximum Tune-up Power Mode				
Band		TX Antenna	WWAN Function	Body-Worn/Hotspot
WLAN	2.4G	Ant 0+1	WWAN-Off	Body-Worn/Hotspot

3.2 Description of Test Modes

13 channels are provided for 802.11b, 802.11g, 802.11n (HT20) and 802.11ac (VHT20):

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

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

Note: 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.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1.0
-	802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.0
-	802.11n (HT20)	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.5

Radiated Emission Test (Below 1GHz):

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 13	6	DSSS	DBPSK	1.0

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 13	6	DSSS	DBPSK	1.0

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1.0
-	802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.0
-	802.11n (HT20)	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.5

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE \geq 1G	20 deg. C, 70% RH	120Vac, 60Hz	Rey Chen
RE $<$ 1G	24 deg. C, 71% RH	120Vac, 60Hz	Andy Ho
PLC	25 deg. C, 70% RH	120Vac, 60Hz	Jones Chang
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Chris Lin

3.3 Duty Cycle of Test Signal

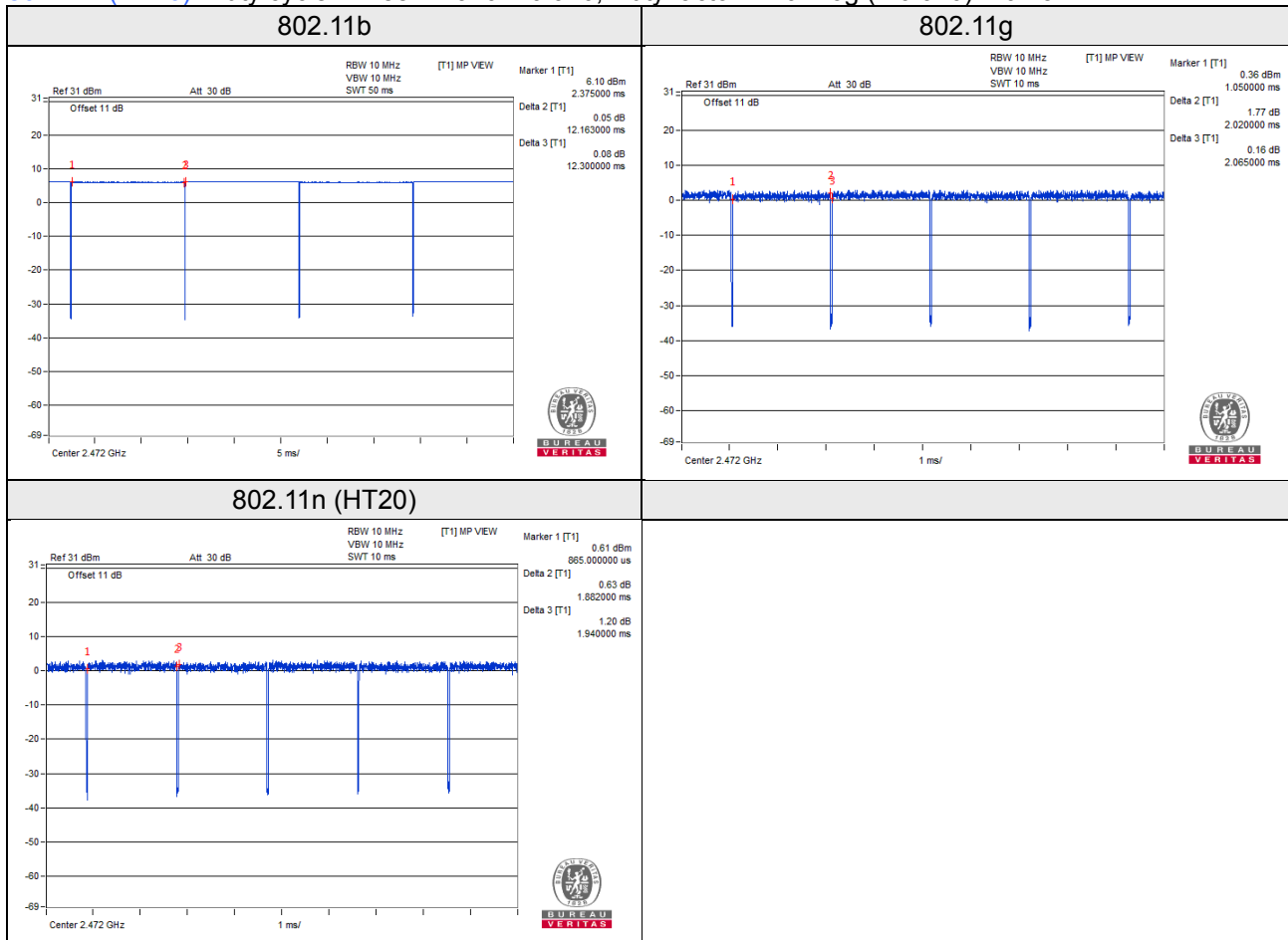
802.11b: Duty cycle of test signal is $\geq 98\%$.

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

802.11b: Duty cycle = $12.163/12.300 = 0.989$

802.11g: Duty cycle = $2.020/2.065 = 0.978$, Duty factor = $10 * \log(1/0.978) = 0.10$

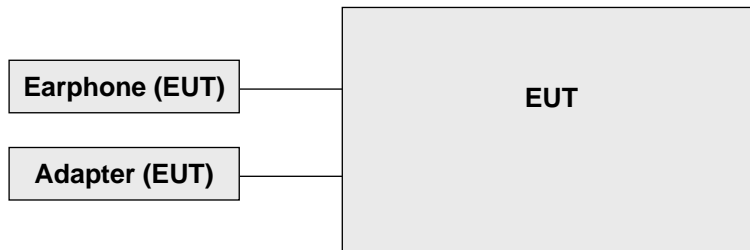
802.11n (HT20): Duty cycle = $1.882/1.940 = 0.970$, Duty factor = $10 * \log(1/0.970) = 0.13$



3.4 Description of Support Units

The EUT has been tested as an independent unit.

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.247)

KDB 558074 D01 15.247 Meas Guidance v05

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver Agilent	N9038A	MY50010156	July 12, 2018	July 11, 2019
Pre-Amplifier EMCI (Below 30MHz)	EMC001340	980142	Feb. 09, 2018	Feb. 08, 2019
Loop Antenna(*) Electro-Metrics (Below 30MHz)	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable (Below 30MHz)	NA	LOOPCAB-001	Jan. 15, 2018	Jan. 14, 2019
RF Cable (Below 30MHz)	NA	LOOPCAB-002	Jan. 15, 2018	Jan. 14, 2019
Pre-Amplifier Mini-Circuits (30MHz~1GHz)	ZFL-1000VH2B	AMP-ZFL-05	May 05, 2018	May 04, 2019
Trilog Broadband Antenna SCHWARZBECK (30MHz~1GHz)	VULB 9168	9168-361	Jan. 15, 2018	Jan. 14, 2019
RF Cable (30MHz~1GHz)	8D	966-3-1	Mar. 20, 2018	Mar. 19, 2019
RF Cable (30MHz~1GHz)	8D	966-3-2	Mar. 20, 2018	Mar. 19, 2019
RF Cable (30MHz~1GHz)	8D	966-3-3	Mar. 20, 2018	Mar. 19, 2019
Fixed attenuator Mini-Circuits (30MHz~1GHz)	UNAT-5+	PAD-3m-3-01	Sep. 27, 2018	Sep. 26, 2019
Horn_Antenna SCHWARZBECK (1GHz~18GHz)	BBHA9120-D	9120D-406	Jan. 15, 2018	Jan. 14, 2019
Pre-Amplifier EMCI (1GHz~18GHz)	EMC12630SE	980384	Jan. 29, 2018	Jan. 28, 2019
RF Cable (1GHz~18GHz)	EMC104-SM-SM-1200	160922	Jan. 29, 2018	Jan. 28, 2019
RF Cable (1GHz~18GHz)	EMC104-SM-SM-2000	150317	Jan. 29, 2018	Jan. 28, 2019
RF Cable (1GHz~18GHz)	EMC104-SM-SM-5000	150322	Jan. 29, 2018	Jan. 28, 2019
Spectrum Analyzer Keysight (18GHz~40GHz)	N9030A	MY54490679	July 23, 2018	July 22, 2019
Pre-Amplifier EMCI (18GHz~40GHz)	EMC184045SE	980386	Jan. 29, 2018	Jan. 28, 2019
Horn_Antenna SCHWARZBECK (18GHz~40GHz)	BBHA 9170	BBHA9170519	Jan. 15, 2018	Jan. 14, 2019
RF Cable (18GHz~40GHz)	EMC102-KM-KM-1200	160924	Jan. 29, 2018	Jan. 28, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture (1GHz~18GHz)	FBA-01	FBA-SIP01	NA	NA

- Note: 1. The calibration interval of the above test instruments is 12 months (24 months for Loop Antenna) and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Hsinchu 966 Chamber No. 3.
4. The Industry Canada Reference No. 20331-1.

4.1.3 Test Procedures

For Radiated emission below 30MHz

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

Note:

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

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

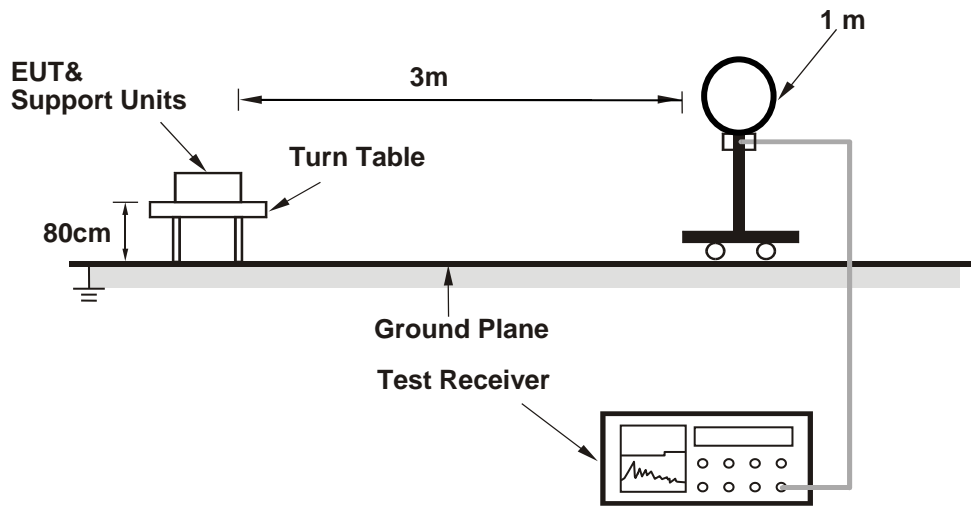
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

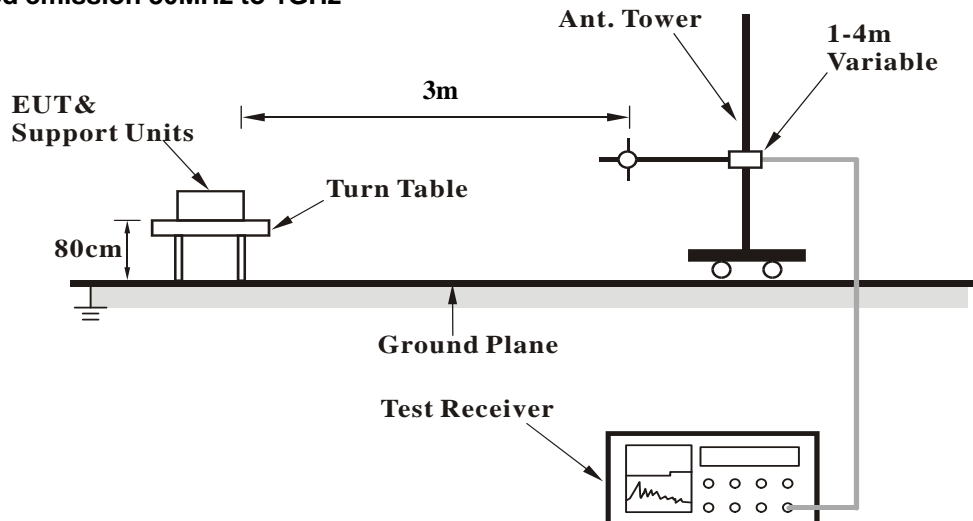
No deviation.

4.1.5 Test Setup

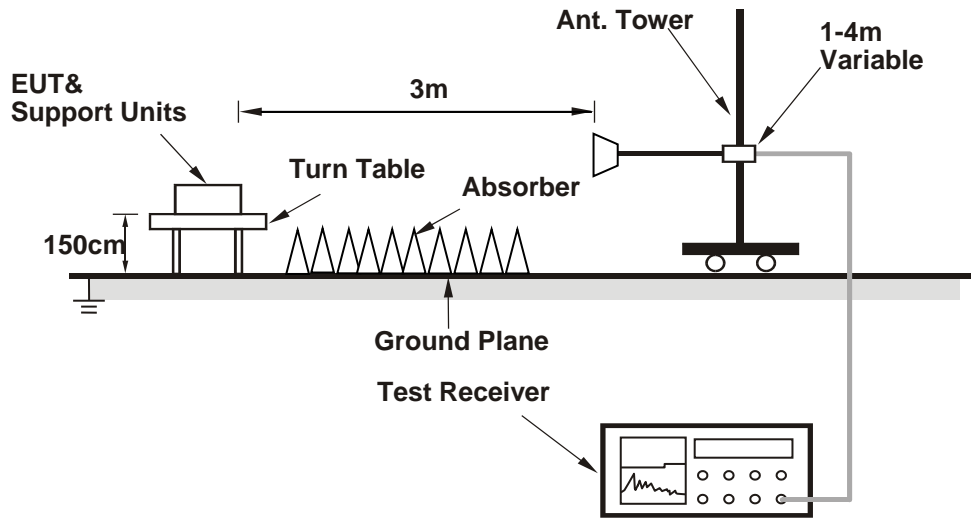
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

Test Mode	DutyCycle (%)	RBW (PK)	VBW (PK)	RBW (AV)	VBW (A)
802.11b	98.9	1MHz	3MHz	1MHz	10Hz
802.11g	97.8	1MHz	3MHz	1MHz	1kHz
802.11n (HT20)	97.0	1MHz	3MHz	1MHz	1kHz

4.1.6 EUT Operating Conditions

- a. Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results for Fundamental and Harmonic above 1GHz

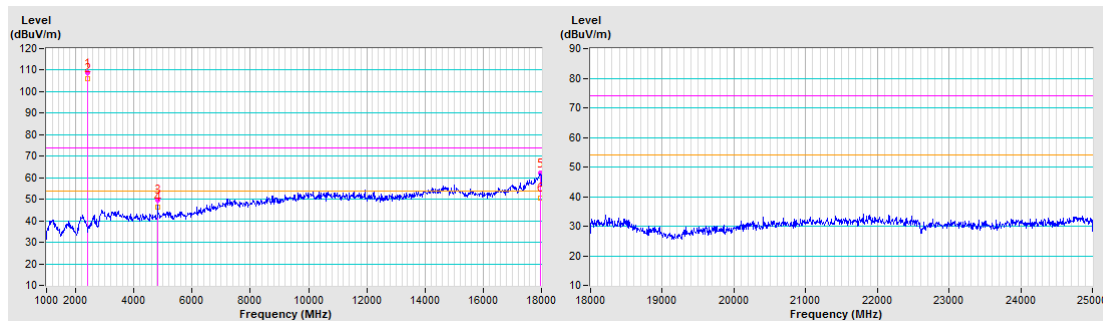
802.11b

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	*2412.00	108.6 PK			1.68 H	331	111.3	-2.7
2	*2412.00	106.0 AV			1.68 H	331	108.7	-2.7
3	4824.00	49.8 PK	74.0	-24.2	1.48 H	93	48.2	1.6
4	4824.00	46.4 AV	54.0	-7.6	1.48 H	93	44.8	1.6
5	17953.67	62.0 PK	74.0	-12.0	1.33 H	249	40.9	21.1
6	17953.67	50.6 AV	54.0	-3.4	1.33 H	249	29.5	21.1

Remarks:

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

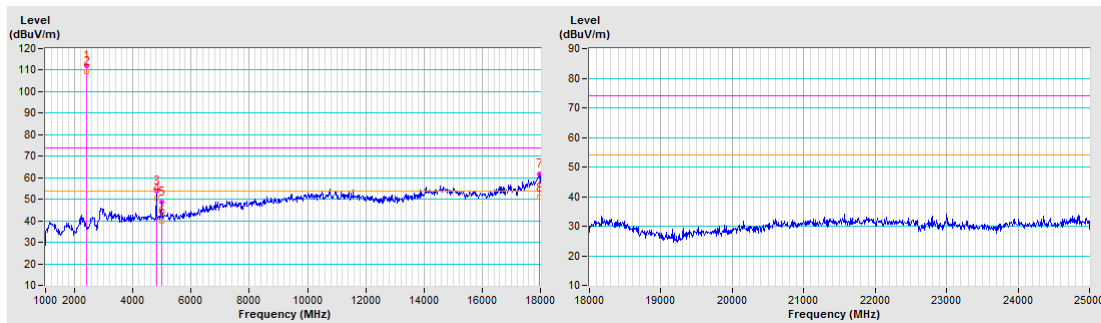


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2412.00	112.0 PK			2.38 V	127	114.7	-2.7
2	*2412.00	109.5 AV			2.38 V	127	112.2	-2.7
3	4824.00	53.8 PK	74.0	-20.2	1.59 V	204	52.2	1.6
4	4824.00	50.7 AV	54.0	-3.3	1.59 V	204	49.1	1.6
5	4990.32	48.9 PK	74.0	-25.1	1.67 V	302	47.1	1.8
6	4990.32	39.9 AV	54.0	-14.1	1.67 V	302	38.1	1.8
7	17977.05	61.9 PK	74.0	-12.1	2.74 V	154	40.4	21.5
8	17977.05	50.8 AV	54.0	-3.2	2.74 V	154	29.3	21.5

Remarks:

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

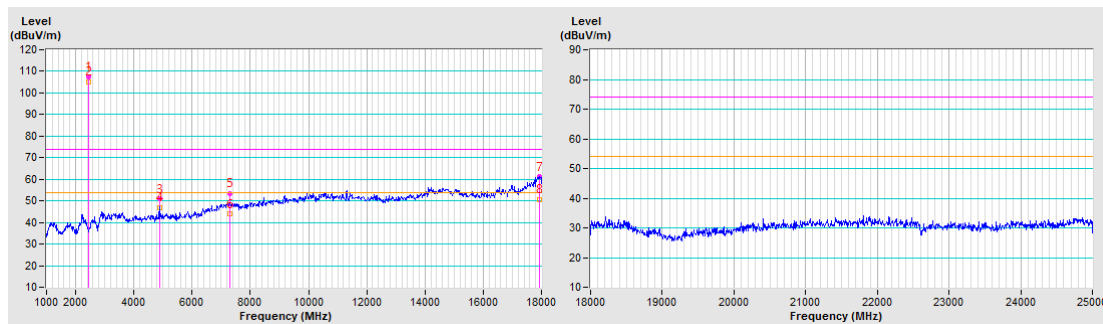


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	107.6 PK			1.48 H	327	110.6	-3.0
2	*2437.00	105.0 AV			1.48 H	327	108.0	-3.0
3	4874.00	50.8 PK	74.0	-23.2	1.59 H	67	49.2	1.6
4	4874.00	47.0 AV	54.0	-7.0	1.59 H	67	45.4	1.6
5	7311.00	53.5 PK	74.0	-20.5	1.34 H	259	45.8	7.7
6	7311.00	43.9 AV	54.0	-10.1	1.34 H	259	36.2	7.7
7	17917.97	61.1 PK	74.0	-12.9	1.07 H	119	40.7	20.4
8	17917.97	50.7 AV	54.0	-3.3	1.07 H	119	30.3	20.4

Remarks:

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

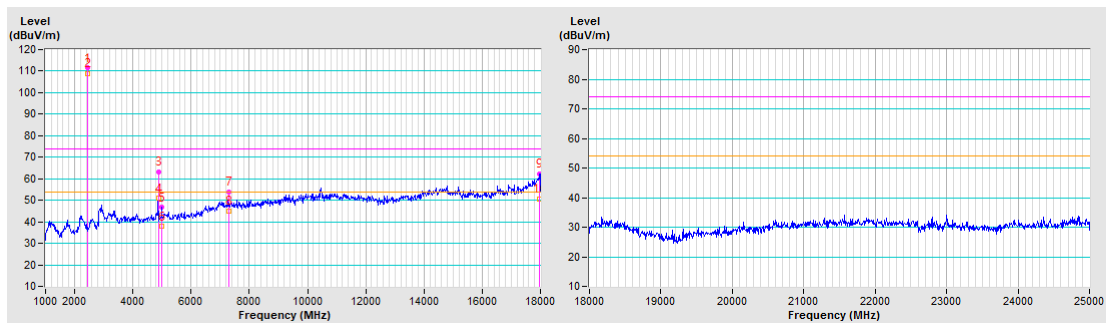


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	111.5 PK			2.36 V	128	114.5	-3.0
2	*2437.00	109.0 AV			2.36 V	128	112.0	-3.0
3	4874.00	63.1 PK	74.0	-10.9	1.63 V	202	61.5	1.6
4	4874.00	50.9 AV	54.0	-3.1	1.63 V	202	49.3	1.6
5	4987.35	46.7 PK	74.0	-27.3	1.55 V	360	44.9	1.8
6	4987.35	37.8 AV	54.0	-16.2	1.55 V	360	36.0	1.8
7	7311.00	54.0 PK	74.0	-20.0	2.25 V	276	46.3	7.7
8	7311.00	45.0 AV	54.0	-9.0	2.25 V	276	37.3	7.7
9	17970.67	62.2 PK	74.0	-11.8	1.33 V	179	40.8	21.4
10	17970.67	50.6 AV	54.0	-3.4	1.33 V	179	29.2	21.4

Remarks:

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

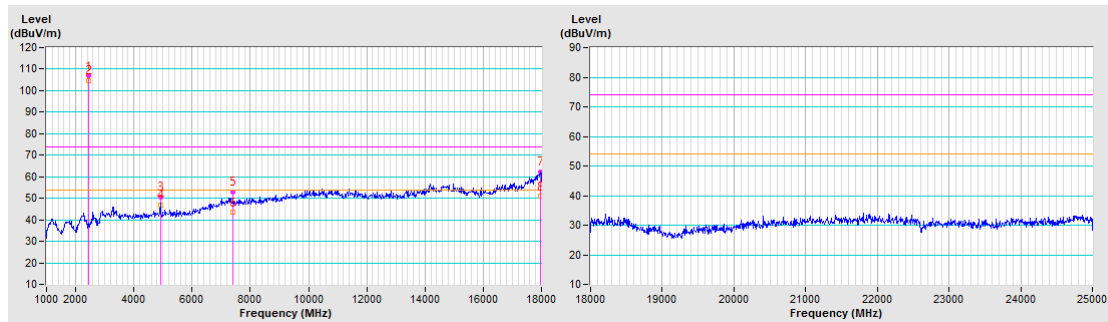


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	106.8 PK			1.68 H	340	109.8	-3.0
2	*2462.00	104.6 AV			1.68 H	340	107.6	-3.0
3	4924.00	50.6 PK	74.0	-23.4	1.53 H	78	48.9	1.7
4	4924.00	46.9 AV	54.0	-7.1	1.53 H	78	45.2	1.7
5	7386.00	53.1 PK	74.0	-20.9	1.38 H	248	45.2	7.9
6	7386.00	43.4 AV	54.0	-10.6	1.38 H	248	35.5	7.9
7	17954.10	62.2 PK	74.0	-11.8	2.21 H	179	41.1	21.1
8	17954.10	50.8 AV	54.0	-3.2	2.21 H	179	29.7	21.1

Remarks:

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

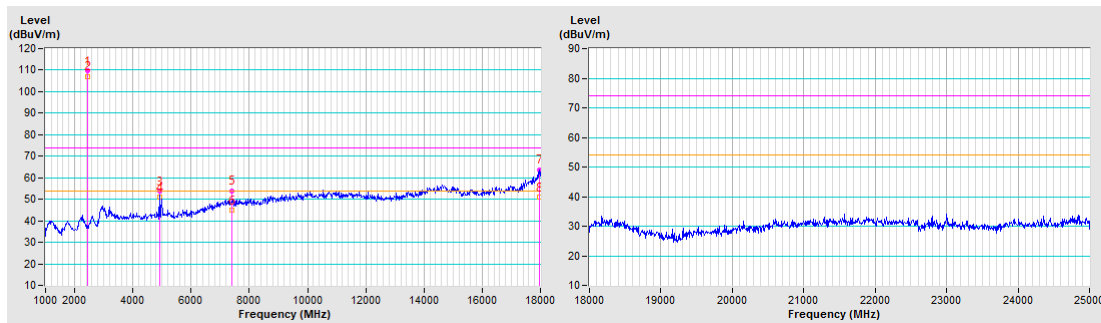


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	109.6 PK			2.00 V	104	112.6	-3.0
2	*2462.00	107.1 AV			2.00 V	104	110.1	-3.0
3	4924.00	53.6 PK	74.0	-20.4	1.73 V	206	51.9	1.7
4	4924.00	50.8 AV	54.0	-3.2	1.73 V	206	49.1	1.7
5	7386.00	53.9 PK	74.0	-20.1	2.29 V	279	46.0	7.9
6	7386.00	44.8 AV	54.0	-9.2	2.29 V	279	36.9	7.9
7	17962.17	63.7 PK	74.0	-10.3	1.33 V	255	42.4	21.3
8	17962.17	50.9 AV	54.0	-3.1	1.33 V	255	29.6	21.3

Remarks:

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

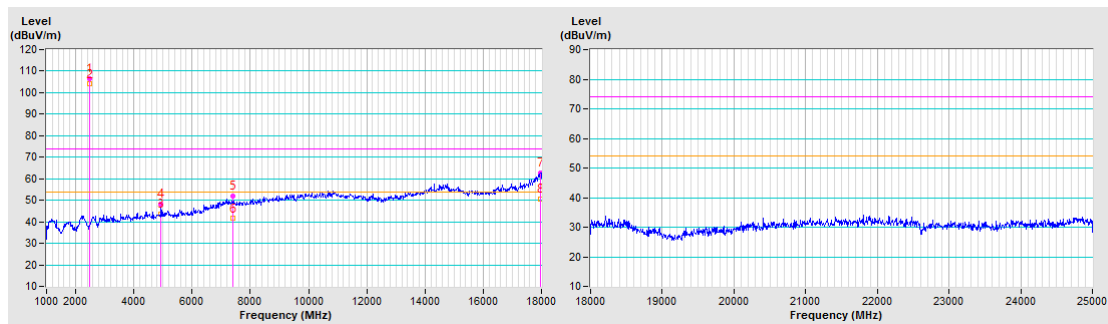


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2467.00	106.5 PK			2.32 H	113	109.4	-2.9
2	*2467.00	104.0 AV			2.32 H	113	106.9	-2.9
3	4934.00	43.5 AV	54.0	-10.5	1.50 H	0	41.7	1.8
4	4934.23	48.4 PK	74.0	-25.6	1.50 H	0	46.6	1.8
5	7401.00	51.9 PK	74.0	-22.1	1.50 H	82	44.0	7.9
6	7401.00	41.5 AV	54.0	-12.5	1.50 H	82	33.6	7.9
7	17966.00	62.9 PK	74.0	-11.1	1.52 H	243	41.6	21.3
8	17966.00	50.5 AV	54.0	-3.5	1.52 H	243	29.2	21.3

Remarks:

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

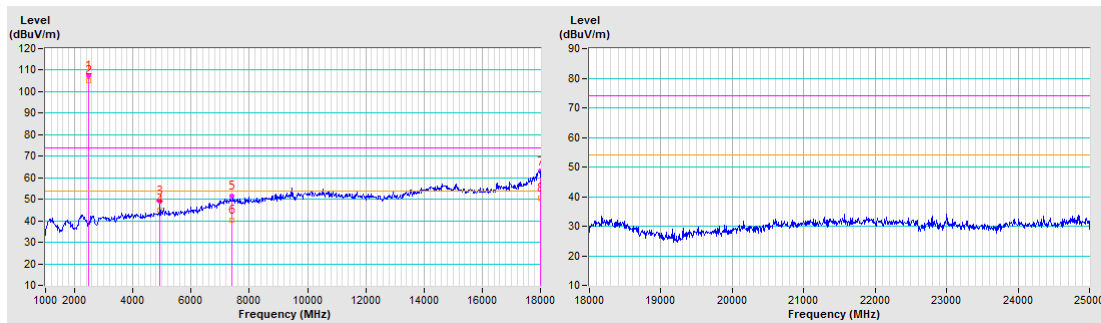


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2467.00	107.6 PK			1.21 V	117	110.5	-2.9
2	*2467.00	105.1 AV			1.21 V	117	108.0	-2.9
3	4934.00	49.2 PK	74.0	-24.8	1.78 V	33	47.4	1.8
4	4934.00	45.0 AV	54.0	-9.0	1.78 V	33	43.2	1.8
5	7401.00	51.7 PK	74.0	-22.3	1.50 V	178	43.8	7.9
6	7401.00	40.4 AV	54.0	-13.6	1.50 V	178	32.5	7.9
7	17998.72	63.0 PK	74.0	-11.0	1.54 V	263	41.1	21.9
8	17998.72	50.7 AV	54.0	-3.3	1.54 V	263	28.8	21.9

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency

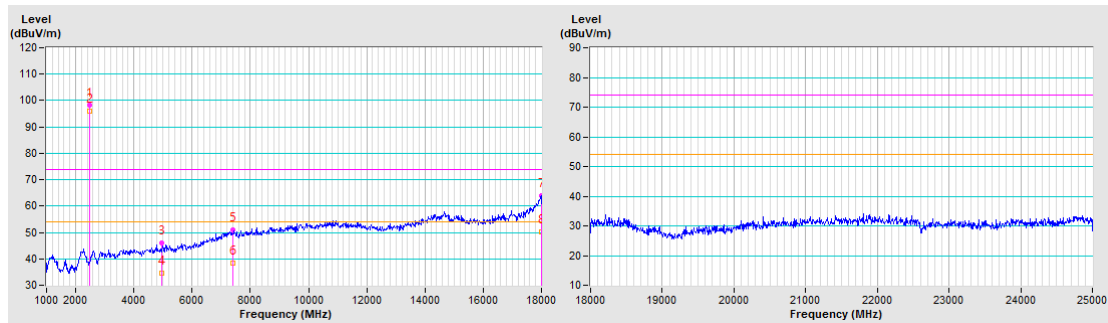


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2472.00	98.1 PK			1.30 H	202	101.0	-2.9
2	*2472.00	95.9 AV			1.30 H	202	98.8	-2.9
3	4944.00	46.1 PK	74.0	-27.9	2.51 H	360	44.2	1.9
4	4944.00	34.4 AV	54.0	-19.6	2.51 H	360	32.5	1.9
5	7416.00	51.0 PK	74.0	-23.0	1.20 H	74	43.0	8.0
6	7416.00	38.2 AV	54.0	-15.8	1.20 H	74	30.2	8.0
7	17998.72	63.9 PK	74.0	-10.1	1.78 H	254	42.0	21.9
8	17998.72	50.2 AV	54.0	-3.8	1.78 H	254	28.3	21.9

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency

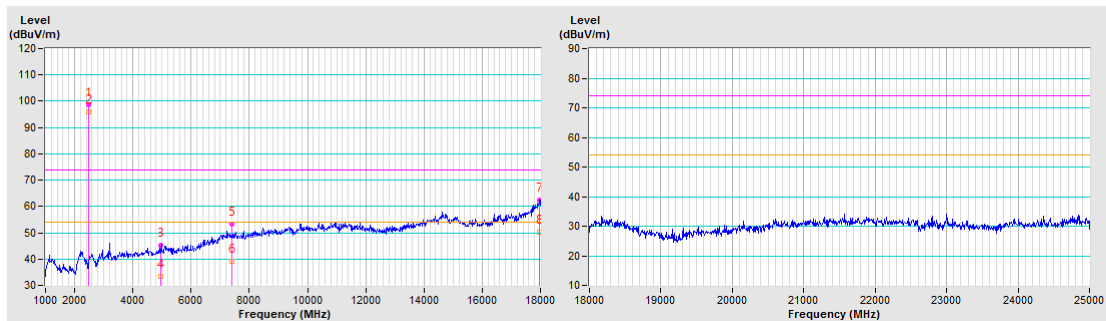


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2472.00	98.5 PK			1.87 V	224	101.4	-2.9
2	*2472.00	96.1 AV			1.87 V	224	99.0	-2.9
3	4944.00	45.2 PK	74.0	-28.8	1.55 V	217	43.3	1.9
4	4944.00	33.3 AV	54.0	-20.7	1.55 V	217	31.4	1.9
5	7416.00	53.1 PK	74.0	-20.9	2.35 V	244	45.1	8.0
6	7416.00	39.2 AV	54.0	-14.8	2.35 V	244	31.2	8.0
7	17980.03	62.4 PK	74.0	-11.6	1.42 V	236	40.9	21.5
8	17980.03	50.2 AV	54.0	-3.8	1.42 V	236	28.7	21.5

Remarks:

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



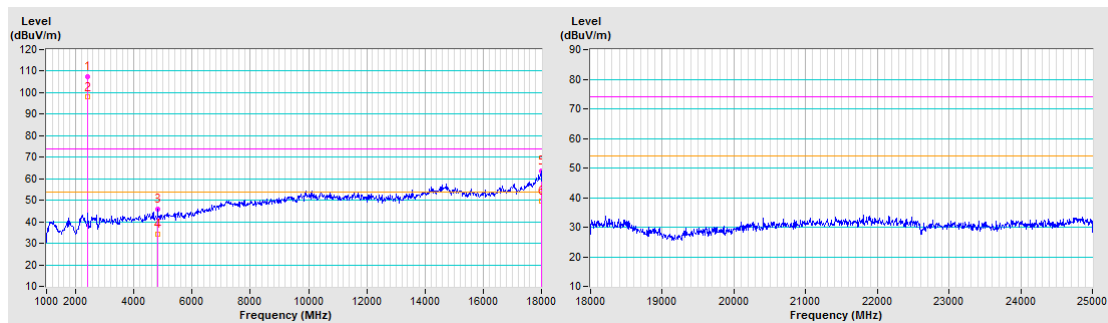
802.11g

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	*2412.00	107.4 PK			3.31 H	136	110.1	-2.7
2	*2412.00	97.9 AV			3.31 H	136	100.6	-2.7
3	4824.00	45.8 PK	74.0	-28.2	2.25 H	354	44.2	1.6
4	4824.00	34.3 AV	54.0	-19.7	2.25 H	354	32.7	1.6
5	17989.80	63.6 PK	74.0	-10.4	2.25 H	354	41.8	21.8
6	17989.80	49.8 AV	54.0	-4.2	2.25 H	354	28.0	21.8

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency

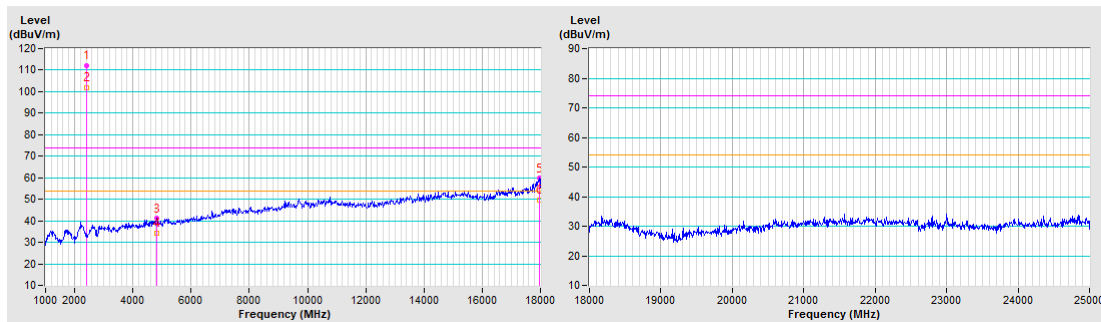


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2412.00	112.0 PK			1.50 V	105	114.7	-2.7
2	*2412.00	101.8 AV			1.50 V	105	104.5	-2.7
3	4824.00	41.1 PK	74.0	-32.9	2.31 V	76	39.5	1.6
4	4824.00	34.2 AV	54.0	-19.8	2.31 V	76	32.6	1.6
5	17965.15	59.7 PK	74.0	-14.3	2.00 V	125	38.4	21.3
6	17965.15	49.7 AV	54.0	-4.3	2.00 V	125	28.4	21.3

Remarks:

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

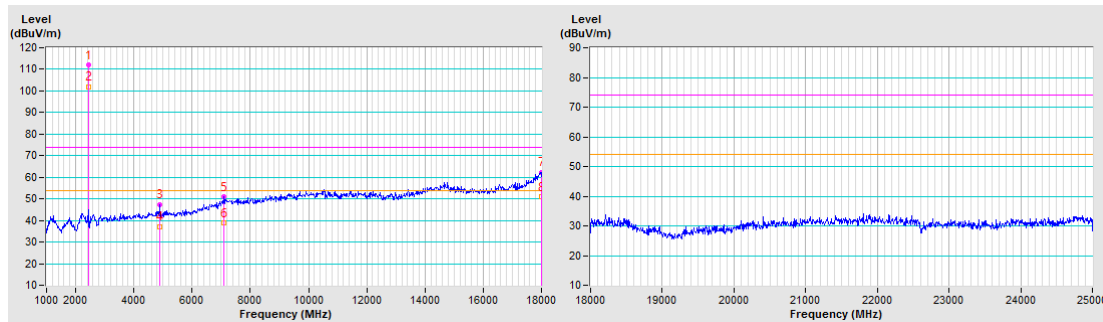


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	111.9 PK			1.75 H	142	114.9	-3.0
2	*2437.00	101.8 AV			1.75 H	142	104.8	-3.0
3	4874.00	47.3 PK	74.0	-26.7	2.20 H	360	45.7	1.6
4	4874.00	37.2 AV	54.0	-16.8	2.20 H	360	35.6	1.6
5	#7106.40	50.9 PK	74.0	-23.1	2.00 H	125	42.9	8.0
6	#7106.40	38.7 AV	54.0	-15.3	2.00 H	125	30.7	8.0
7	17997.45	62.4 PK	74.0	-11.6	2.25 H	312	40.5	21.9
8	17997.45	50.9 AV	54.0	-3.1	2.25 H	312	29.0	21.9

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency

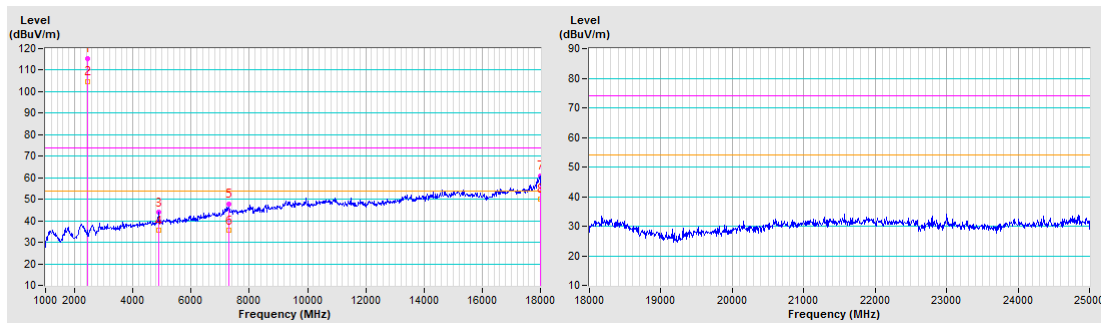


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	115.4 PK			1.33 V	113	118.4	-3.0
2	*2437.00	104.8 AV			1.33 V	113	107.8	-3.0
3	4874.00	43.9 PK	74.0	-30.1	2.26 V	96	42.3	1.6
4	4874.00	35.5 AV	54.0	-18.5	2.26 V	96	33.9	1.6
5	7311.00	47.8 PK	74.0	-26.2	2.03 V	125	40.1	7.7
6	7311.00	35.5 AV	54.0	-18.5	2.03 V	125	27.8	7.7
7	17989.80	60.7 PK	74.0	-13.3	2.00 V	333	38.9	21.8
8	17989.80	50.3 AV	54.0	-3.7	2.00 V	333	28.5	21.8

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency

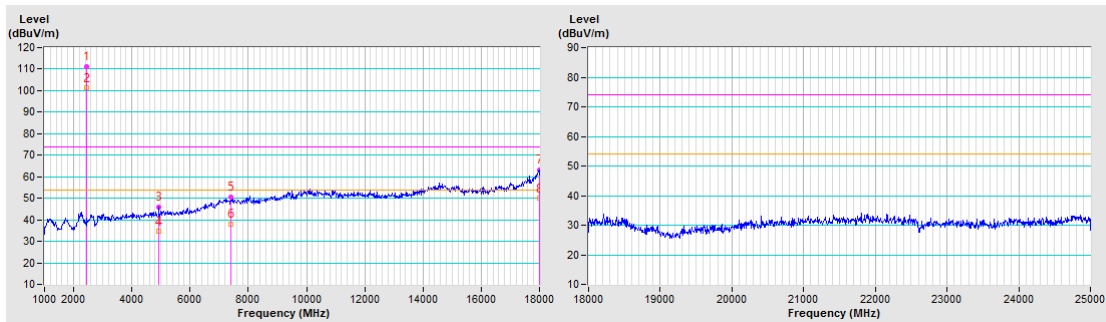


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	111.3 PK			2.76 H	140	114.3	-3.0
2	*2462.00	101.2 AV			2.76 H	140	104.2	-3.0
3	4924.00	45.8 PK	74.0	-28.2	2.19 H	360	44.1	1.7
4	4924.00	34.5 AV	54.0	-19.5	2.19 H	360	32.8	1.7
5	7386.00	50.5 PK	74.0	-23.5	2.00 H	350	42.6	7.9
6	7386.00	38.0 AV	54.0	-16.0	2.00 H	350	30.1	7.9
7	17991.08	63.1 PK	74.0	-10.9	2.15 H	125	41.3	21.8
8	17991.08	49.9 AV	54.0	-4.1	2.15 H	125	28.1	21.8

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency

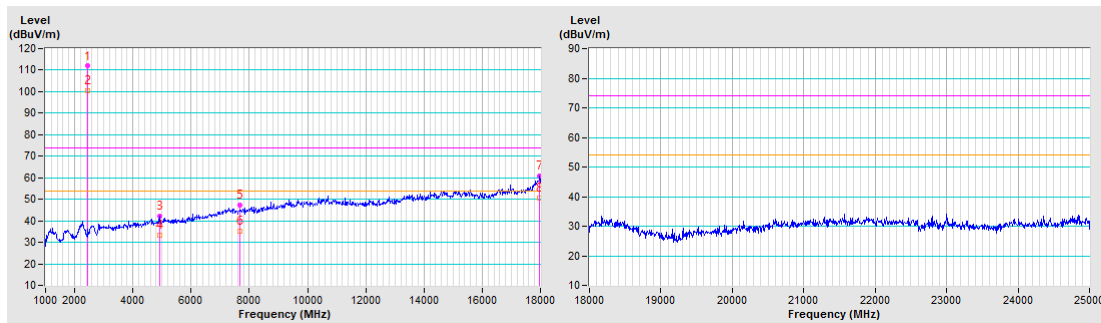


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2462.00	111.9 PK			1.21 V	117	114.9	-3.0
2	*2462.00	100.5 AV			1.21 V	117	103.5	-3.0
3	4924.00	42.1 PK	74.0	-31.9	2.18 V	96	40.4	1.7
4	4924.00	33.5 AV	54.0	-20.5	2.18 V	96	31.8	1.7
5	7686.00	47.4 PK	74.0	-26.6	2.15 V	222	39.7	7.7
6	7686.00	35.2 AV	54.0	-18.8	2.15 V	222	27.5	7.7
7	17981.72	61.0 PK	74.0	-13.0	2.00 V	211	39.4	21.6
8	17981.72	50.5 AV	54.0	-3.5	2.00 V	211	28.9	21.6

Remarks:

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

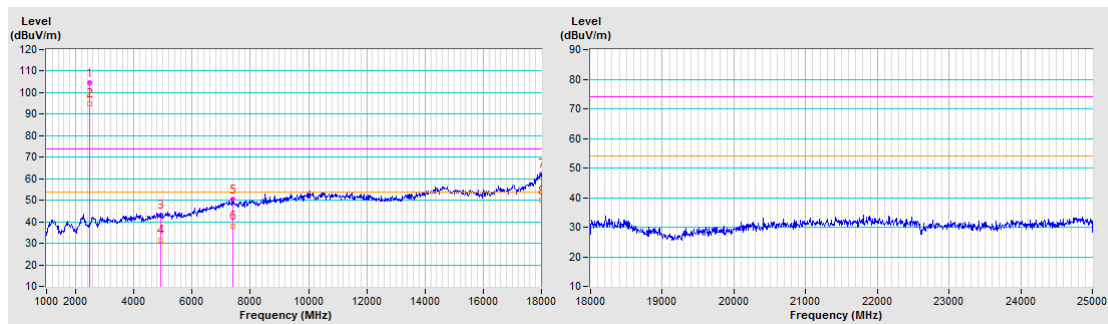


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2467.00	104.5 PK			2.46 H	122	107.4	-2.9
2	*2467.00	94.9 AV			2.46 H	122	97.8	-2.9
3	4934.00	43.2 PK	74.0	-30.8	2.15 H	359	41.4	1.8
4	4934.00	31.5 AV	54.0	-22.5	2.15 H	359	29.7	1.8
5	7401.00	50.4 PK	74.0	-23.6	2.54 H	360	42.5	7.9
6	7401.00	38.0 AV	54.0	-16.0	2.54 H	360	30.1	7.9
7	17992.78	62.3 PK	74.0	-11.7	2.19 H	360	40.5	21.8
8	17992.78	49.9 AV	54.0	-4.1	2.19 H	360	28.1	21.8

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency

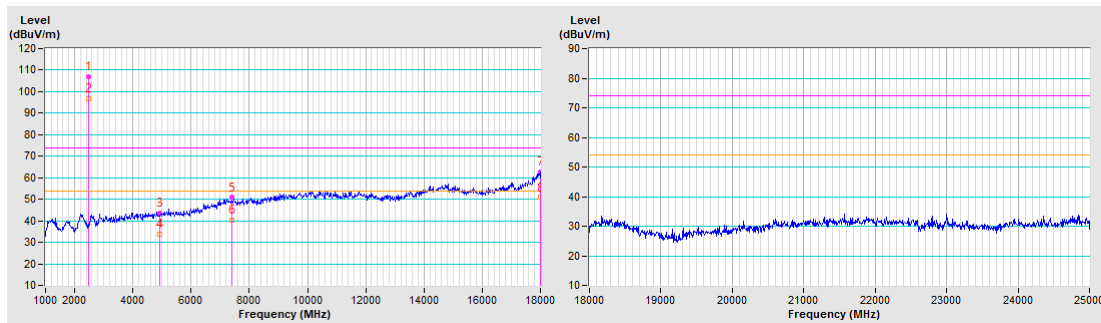


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2467.00	106.9 PK			1.48 V	105	109.8	-2.9
2	*2467.00	96.9 AV			1.48 V	105	99.8	-2.9
3	4934.00	43.6 PK	74.0	-30.4	2.18 V	111	41.8	1.8
4	4934.00	33.8 AV	54.0	-20.2	2.18 V	111	32.0	1.8
5	7401.00	50.9 PK	74.0	-23.1	2.00 V	100	43.0	7.9
6	7401.00	40.2 AV	54.0	-13.8	2.00 V	100	32.3	7.9
7	17991.08	62.7 PK	74.0	-11.3	2.33 V	125	40.9	21.8
8	17991.08	50.9 AV	54.0	-3.1	2.33 V	125	29.1	21.8

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency

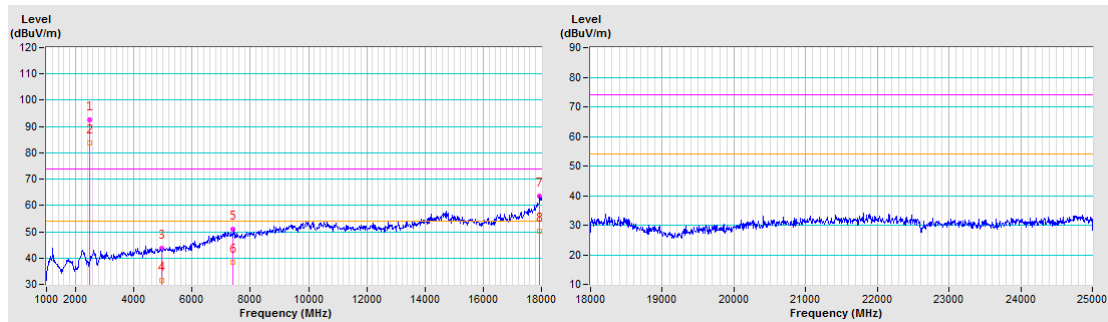


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2472.00	92.5 PK			1.00 H	0	95.4	-2.9
2	*2472.00	83.8 AV			1.00 H	0	86.7	-2.9
3	4944.00	43.6 PK	74.0	-30.4	2.10 H	356	41.7	1.9
4	4944.00	31.6 AV	54.0	-22.4	2.10 H	356	29.7	1.9
5	7416.00	51.0 PK	74.0	-23.0	2.59 H	345	43.0	8.0
6	7416.00	38.4 AV	54.0	-15.6	2.59 H	345	30.4	8.0
7	17937.97	63.6 PK	74.0	-10.4	1.45 H	207	42.8	20.8
8	17937.97	50.3 AV	54.0	-3.7	1.45 H	207	29.5	20.8

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency

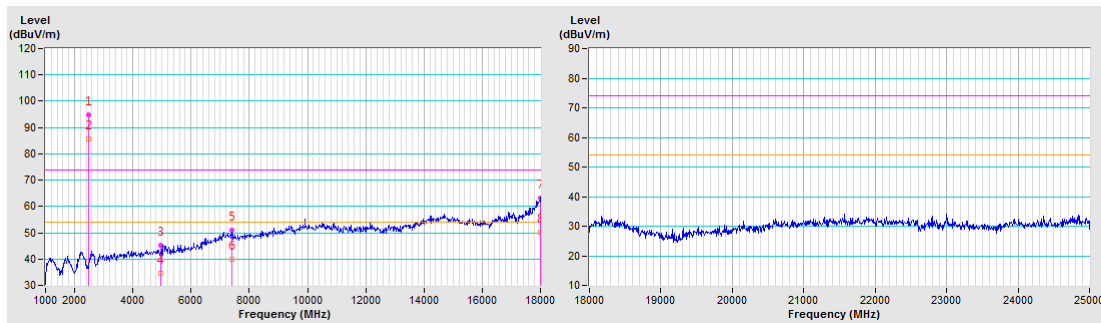


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2472.00	94.9 PK			1.43 V	81	97.8	-2.9
2	*2472.00	85.7 AV			1.43 V	81	88.6	-2.9
3	4944.00	45.1 PK	74.0	-28.9	2.15 V	125	43.2	1.9
4	4944.00	34.5 AV	54.0	-19.5	2.15 V	125	32.6	1.9
5	7416.00	50.8 PK	74.0	-23.2	2.00 V	103	42.8	8.0
6	7416.00	40.0 AV	54.0	-14.0	2.00 V	103	32.0	8.0
7	17990.00	63.2 PK	74.0	-10.8	1.39 V	195	41.4	21.8
8	17990.00	50.1 AV	54.0	-3.9	1.39 V	195	28.3	21.8

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency



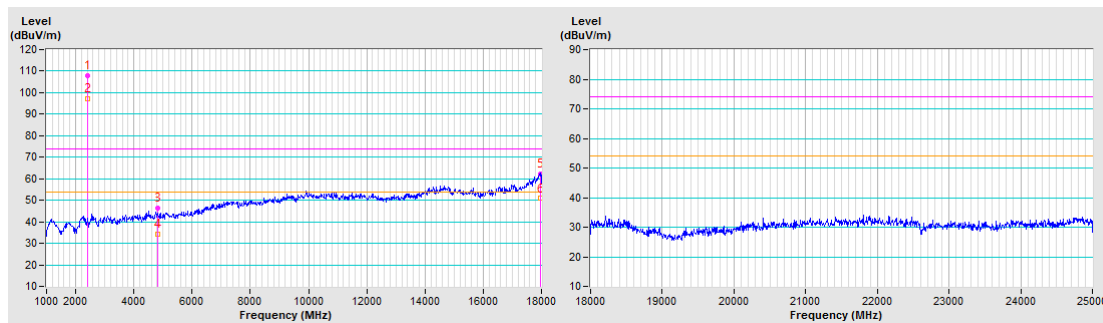
802.11n (HT20)

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

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	*2412.00	107.8 PK			1.50 H	182	110.5	-2.7
2	*2412.00	97.1 AV			1.50 H	182	99.8	-2.7
3	4824.00	46.3 PK	74.0	-27.7	1.75 H	338	44.7	1.6
4	4824.00	34.3 AV	54.0	-19.7	1.75 H	338	32.7	1.6
5	17968.12	62.4 PK	74.0	-11.6	2.11 H	125	41.0	21.4
6	17968.12	50.8 AV	54.0	-3.2	2.11 H	125	29.4	21.4

Remarks:

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

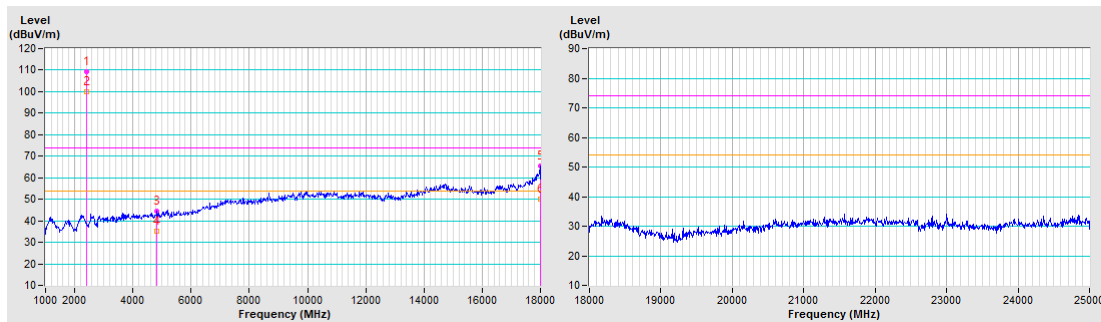


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2412.00	109.4 PK			1.16 V	107	112.1	-2.7
2	*2412.00	100.1 AV			1.16 V	107	102.8	-2.7
3	4824.00	44.7 PK	74.0	-29.3	2.39 V	220	43.1	1.6
4	4824.00	35.2 AV	54.0	-18.8	2.39 V	220	33.6	1.6
5	17992.78	65.4 PK	74.0	-8.6	2.65 V	215	43.6	21.8
6	17992.78	50.3 AV	54.0	-3.7	2.65 V	215	28.5	21.8

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency

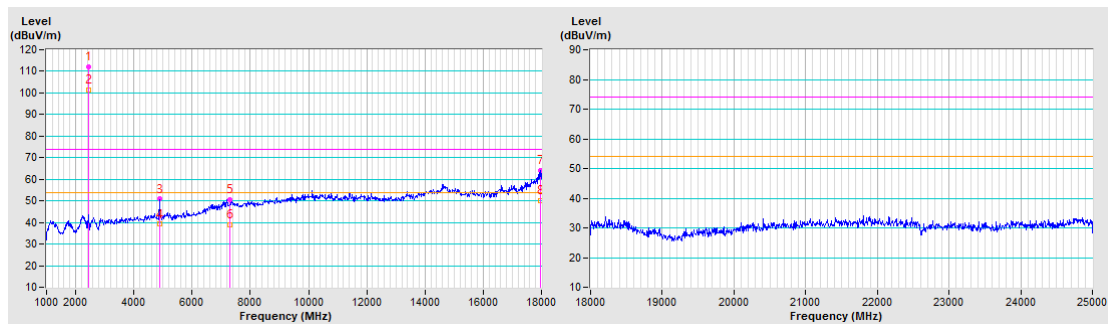


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2437.00	112.0 PK			1.73 H	142	115.0	-3.0
2	*2437.00	101.4 AV			1.73 H	142	104.4	-3.0
3	4874.00	50.8 PK	74.0	-23.2	1.82 H	339	49.2	1.6
4	4874.00	39.2 AV	54.0	-14.8	1.82 H	339	37.6	1.6
5	7311.00	50.6 PK	74.0	-23.4	1.68 H	255	42.9	7.7
6	7311.00	39.0 AV	54.0	-15.0	1.68 H	255	31.3	7.7
7	17965.58	64.0 PK	74.0	-10.0	1.82 H	339	42.7	21.3
8	17965.58	50.1 AV	54.0	-3.9	1.82 H	339	28.8	21.3

Remarks:

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

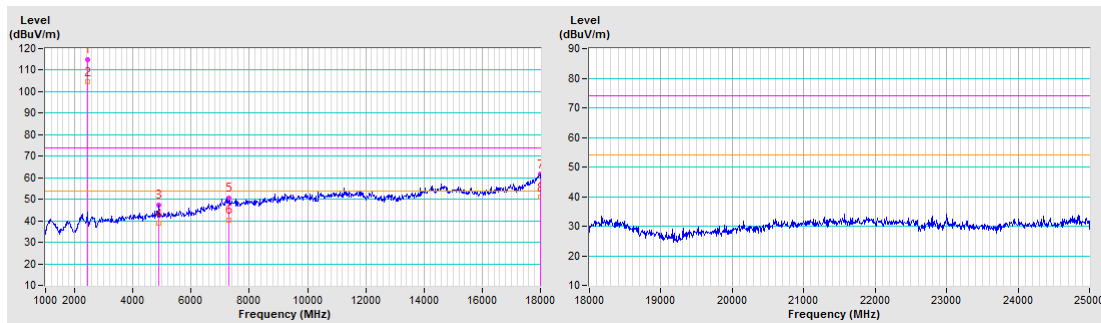


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2437.00	115.1 PK			1.32 V	104	118.1	-3.0
2	*2437.00	104.4 AV			1.32 V	104	107.4	-3.0
3	4874.00	47.3 PK	74.0	-26.7	2.38 V	252	45.7	1.6
4	4874.00	38.7 AV	54.0	-15.3	2.38 V	252	37.1	1.6
5	7311.00	50.5 PK	74.0	-23.5	2.56 V	211	42.8	7.7
6	7311.00	40.2 AV	54.0	-13.8	2.56 V	211	32.5	7.7
7	17995.33	61.6 PK	74.0	-12.4	2.56 V	122	39.7	21.9
8	17995.33	50.8 AV	54.0	-3.2	2.56 V	122	28.9	21.9

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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency

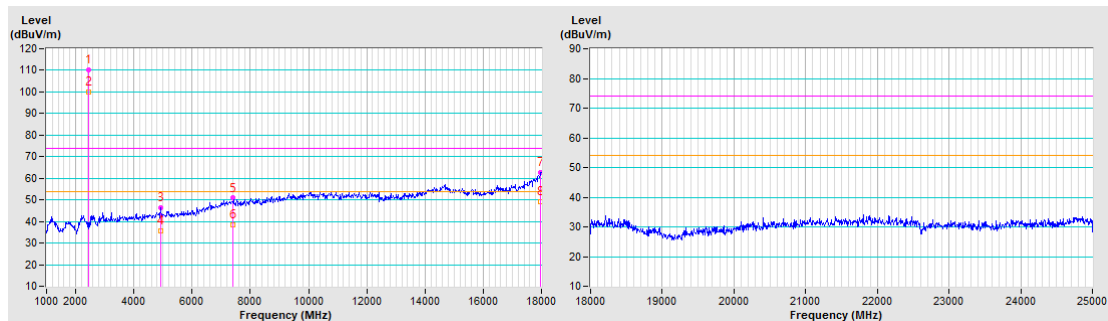


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	110.2 PK			2.13 H	118	113.2	-3.0
2	*2462.00	99.9 AV			2.13 H	118	102.9	-3.0
3	4924.00	46.5 PK	74.0	-27.5	1.72 H	360	44.8	1.7
4	4924.00	35.6 AV	54.0	-18.4	1.72 H	360	33.9	1.7
5	7386.00	50.8 PK	74.0	-23.2	1.72 H	355	42.9	7.9
6	7386.00	38.6 AV	54.0	-15.4	1.72 H	355	30.7	7.9
7	17977.47	62.7 PK	74.0	-11.3	1.70 H	211	41.2	21.5
8	17977.47	49.2 AV	54.0	-4.8	1.70 H	211	27.7	21.5
9	17977.47	49.2 AV	54.0	-4.8	1.70 H	211	27.7	21.5

Remarks:

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

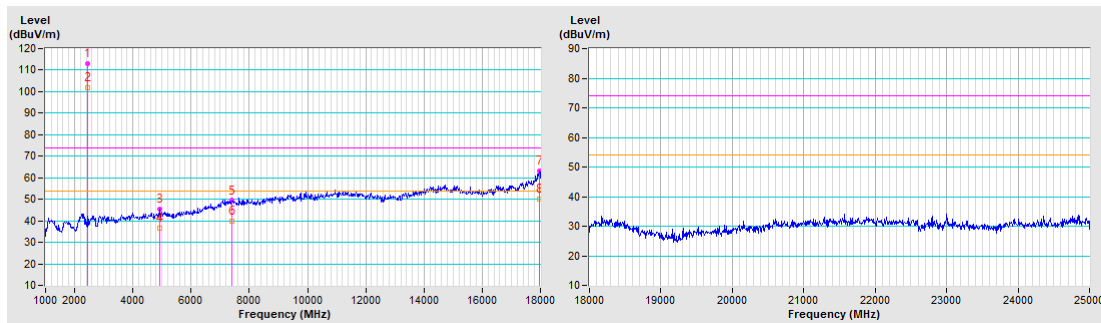


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2462.00	113.1 PK			1.20 V	110	116.1	-3.0
2	*2462.00	101.8 AV			1.20 V	110	104.8	-3.0
3	4924.00	45.6 PK	74.0	-28.4	2.32 V	251	43.9	1.7
4	4924.00	36.7 AV	54.0	-17.3	2.32 V	251	35.0	1.7
5	7386.00	49.5 PK	74.0	-24.5	2.55 V	250	41.6	7.9
6	7386.00	40.0 AV	54.0	-14.0	2.55 V	250	32.1	7.9
7	17977.90	63.2 PK	74.0	-10.8	2.00 V	256	41.7	21.5
8	17977.90	50.2 AV	54.0	-3.8	2.00 V	256	28.7	21.5

Remarks:

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

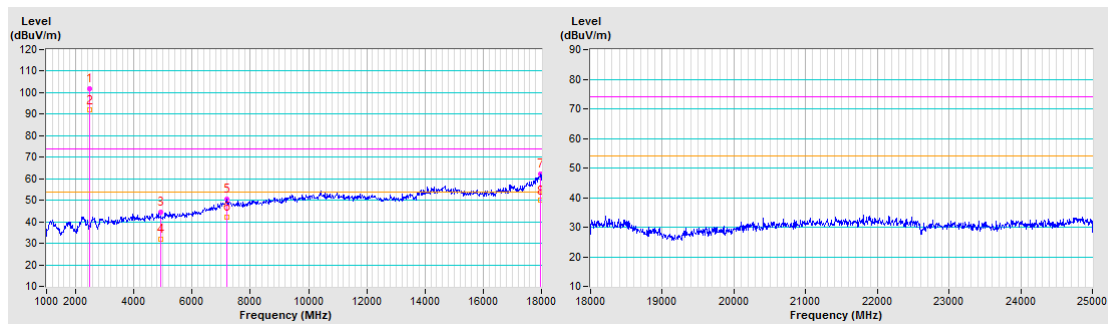


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2467.00	102.0 PK			3.52 H	131	104.9	-2.9
2	*2467.00	91.9 AV			3.52 H	131	94.8	-2.9
3	4934.00	44.6 PK	74.0	-29.4	1.55 H	151	42.8	1.8
4	4934.00	31.9 AV	54.0	-22.1	1.55 H	151	30.1	1.8
5	#7210.52	50.7 PK	74.0	-23.3	1.56 H	151	42.8	7.9
6	#7210.52	42.3 AV	54.0	-11.7	1.56 H	151	34.4	7.9
7	17971.10	62.1 PK	74.0	-11.9	2.11 H	123	40.7	21.4
8	17971.10	49.9 AV	54.0	-4.1	2.11 H	123	28.5	21.4

Remarks:

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

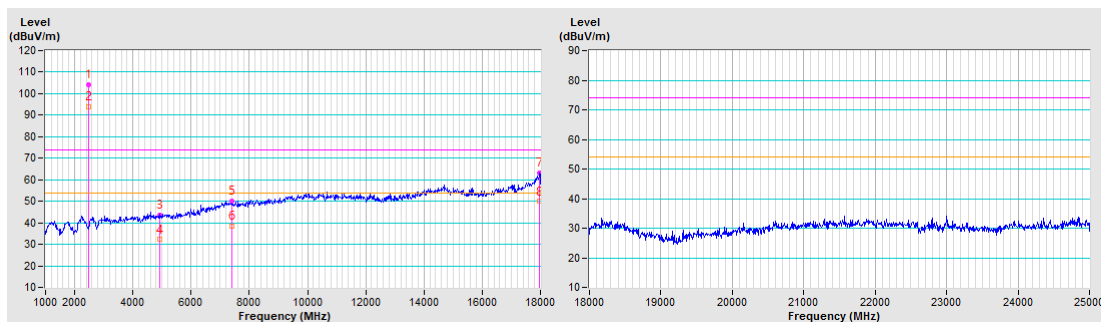


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2467.00	104.2 PK			1.01 V	103	107.1	-2.9
2	*2467.00	94.0 AV			1.01 V	103	96.9	-2.9
3	4934.00	43.6 PK	74.0	-30.4	2.33 V	225	41.8	1.8
4	4934.00	32.2 AV	54.0	-21.8	2.33 V	225	30.4	1.8
5	7401.00	50.1 PK	74.0	-23.9	2.54 V	265	42.2	7.9
6	7401.00	38.6 AV	54.0	-15.4	2.54 V	265	30.7	7.9
7	17967.28	63.2 PK	74.0	-10.8	2.33 V	269	41.8	21.4
8	17967.28	49.9 AV	54.0	-4.1	2.33 V	269	28.5	21.4

Remarks:

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

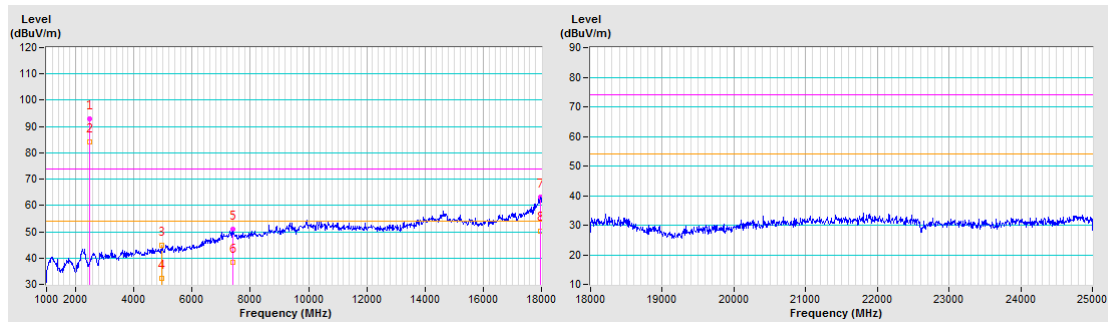


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2472.00	92.9 PK			1.23 H	44	95.8	-2.9
2	*2472.00	84.0 AV			1.23 H	44	86.9	-2.9
3	4944.00	45.0 AV	54.0	-9.0	1.54 H	154	43.1	1.9
4	4944.00	32.2 AV	54.0	-21.8	1.54 H	154	30.3	1.9
5	7416.00	51.1 PK	74.0	-22.9	1.60 H	109	43.1	8.0
6	7416.00	38.2 AV	54.0	-15.8	1.60 H	109	30.2	8.0
7	17978.76	63.0 PK	74.0	-11.0	2.67 H	146	41.5	21.5
8	17978.76	50.4 AV	54.0	-3.6	1.67 H	146	28.9	21.5

Remarks:

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

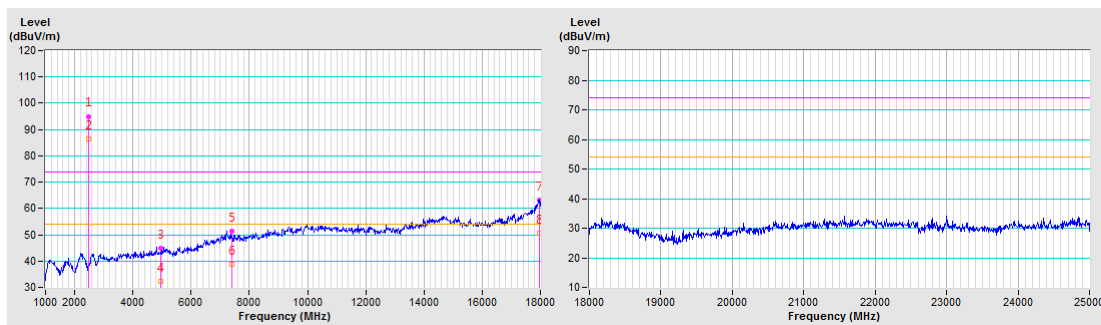


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2472.00	95.0 PK			1.46 V	80	97.9	-2.9
2	*2472.00	86.5 AV			1.46 V	80	89.4	-2.9
3	4944.00	44.9 PK	74.0	-29.1	2.34 V	240	43.0	1.9
4	4944.00	32.4 AV	54.0	-21.6	2.34 V	240	30.5	1.9
5	7416.00	51.2 PK	74.0	-22.8	2.60 V	274	43.2	8.0
6	7416.00	38.6 AV	54.0	-15.4	2.60 V	274	30.6	8.0
7	17957.10	63.0 PK	74.0	-11.0	1.58 V	214	41.8	21.2
8	17957.10	50.5 AV	54.0	-3.5	1.58 V	214	29.3	21.2

Remarks:

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



4.1.8 Test Results for Bandedge above 1GHz

802.11b

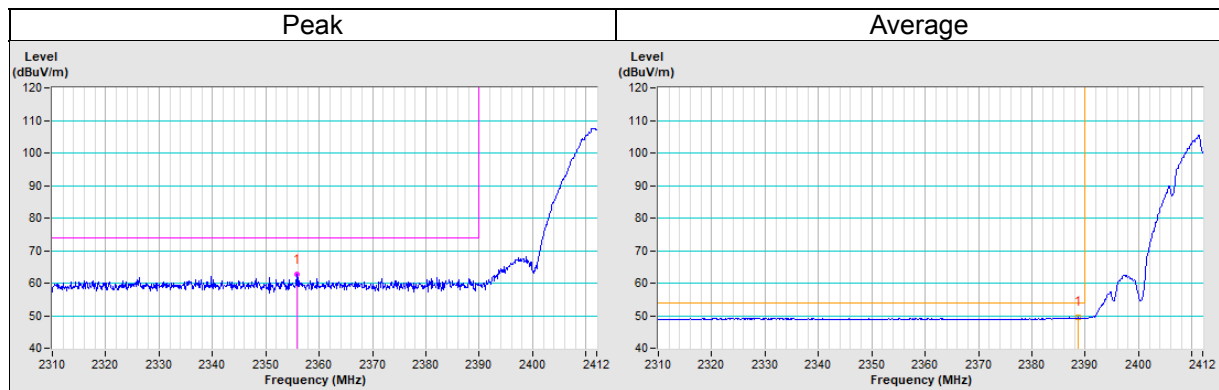
CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2310MHz ~ 2412MHz		Average (AV)

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)
PK.1	2355.75	62.6 PK	74.0	-11.4	1.68 H	331	65.1	-2.5
AV.1	2388.71	49.5 AV	54.0	-4.5	1.68 H	331	52.2	-2.7

Remarks:

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

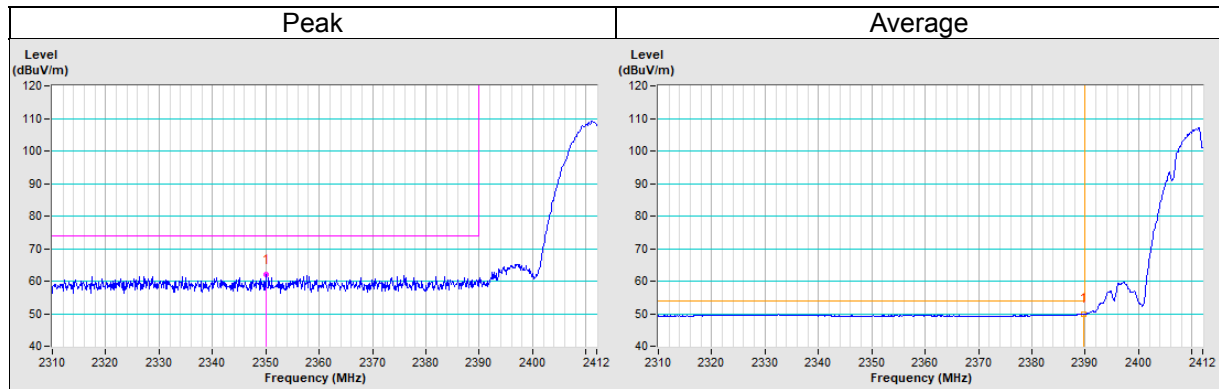


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2310MHz ~ 2412MHz		Average (AV)

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)
PK.1	2350.02	61.9 PK	74.0	-12.1	2.38 V	127	64.4	-2.5
AV.1	2389.66	49.9 AV	54.0	-4.1	2.38 V	127	52.6	-2.7

Remarks:

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

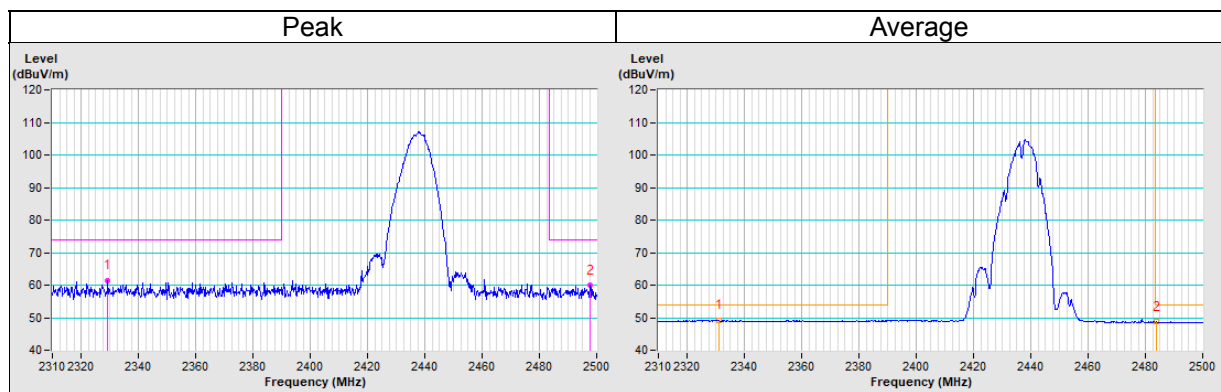


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	2310MHz ~ 2500MHz		

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)
PK.1	2329.38	61.5 PK	74.0	-12.5	1.48 H	327	64.0	-2.5
PK.2	2497.56	59.9 PK	74.0	-14.1	1.48 H	327	62.8	-2.9
AV.1	2331.34	49.2 AV	54.0	-4.8	1.48 H	327	51.7	-2.5
AV.2	2483.80	48.7 AV	54.0	-5.3	1.48 H	327	51.7	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

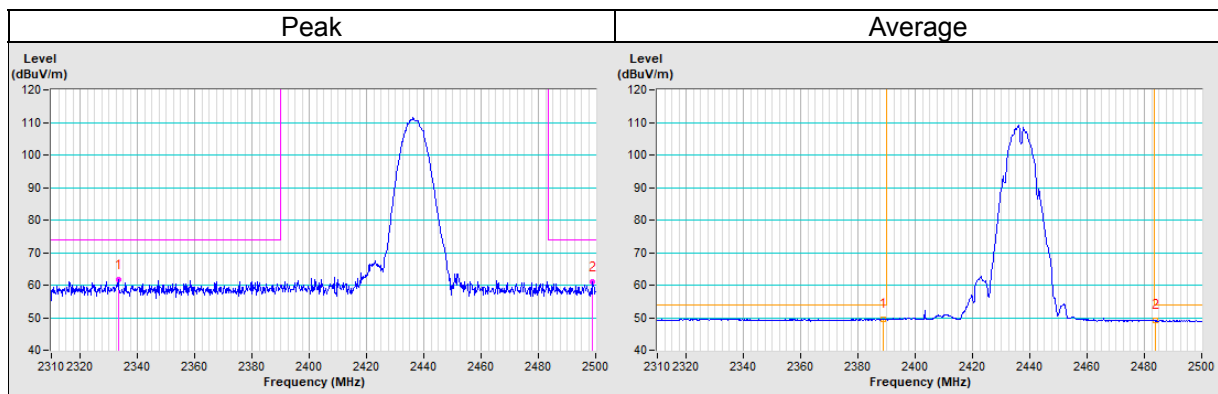


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2310MHz ~ 2500MHz		Average (AV)

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)
PK.1	2333.36	61.6 PK	74.0	-12.4	2.36 V	128	64.1	-2.5
PK.2	2498.95	60.9 PK	74.0	-13.1	2.36 V	128	63.8	-2.9
AV.1	2388.91	49.6 AV	54.0	-4.4	2.38 V	127	52.3	-2.7
AV.2	2483.74	49.1 AV	54.0	-4.9	2.38 V	127	52.1	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

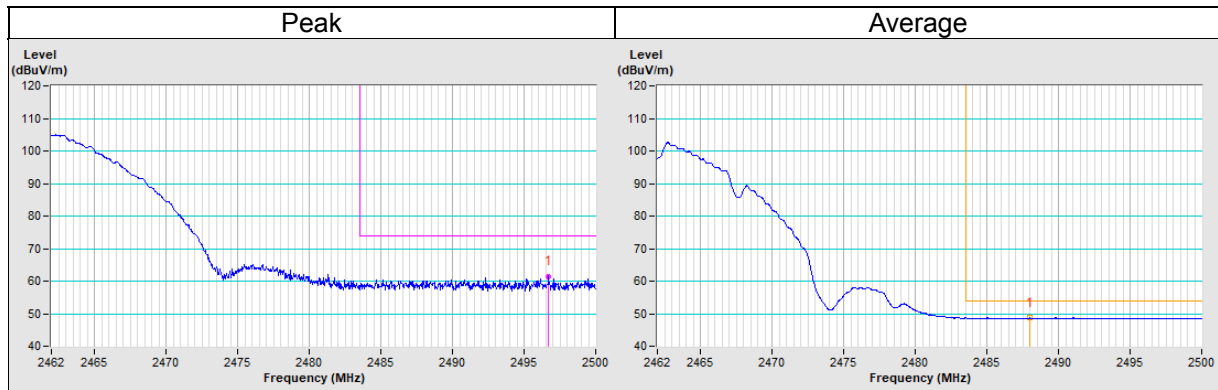


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2496.66	61.5 PK	74.0	-12.5	1.68 H	340	64.4	-2.9
AV.1	2487.99	48.7 AV	54.0	-5.3	1.68 H	340	51.6	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

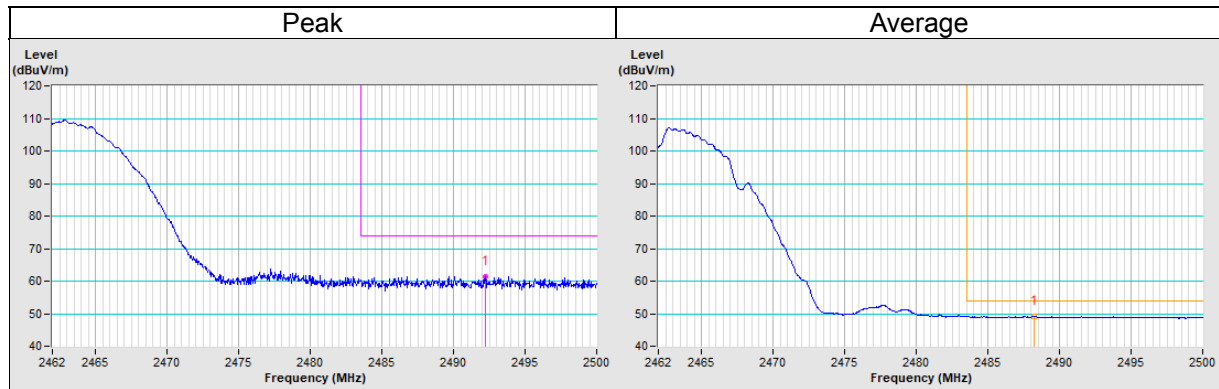


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2492.22	61.5 PK	74.0	-12.5	2.00 V	104	64.4	-2.9
AV.1	2488.21	49.1 AV	54.0	-4.9	2.00 V	104	52.0	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

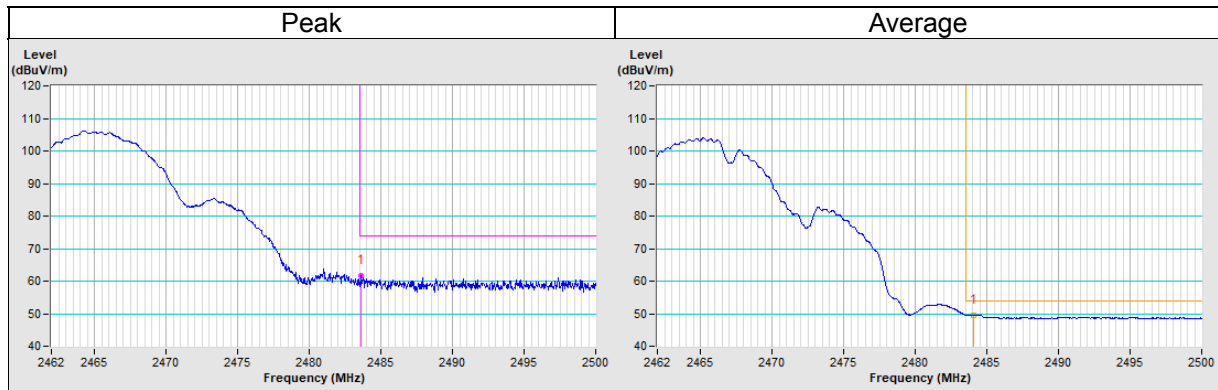


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2483.64	61.7 PK	74.0	-12.3	2.32 H	113	64.7	-3.0
AV.1	2484.04	49.6 AV	54.0	-4.4	2.32 H	113	52.6	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

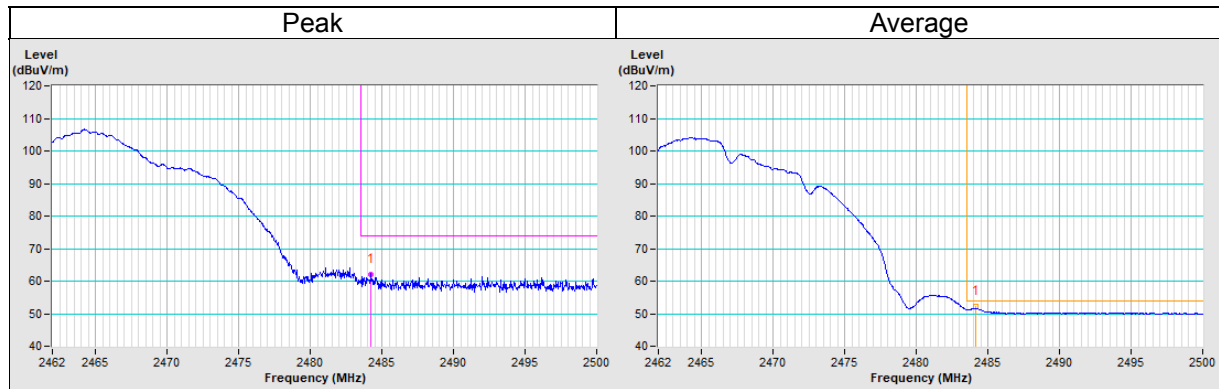


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2484.25	62.2 PK	74.0	-11.8	1.50 V	116	65.2	-3.0
AV.1	2484.13	52.3 AV	54.0	-1.7	1.50 V	116	55.3	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

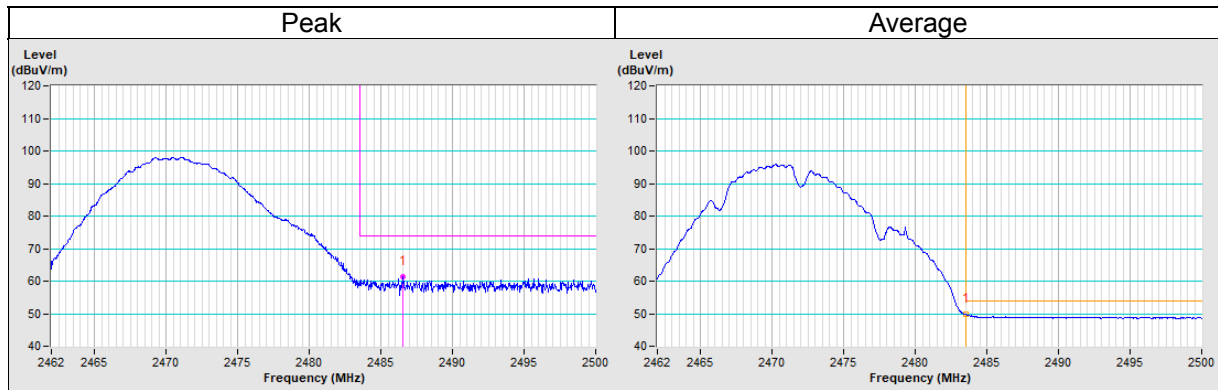


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2486.54	61.5 PK	74.0	-12.5	1.30 H	202	64.4	-2.9
AV.1	2483.50	49.8 AV	54.0	-4.2	1.30 H	202	52.8	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

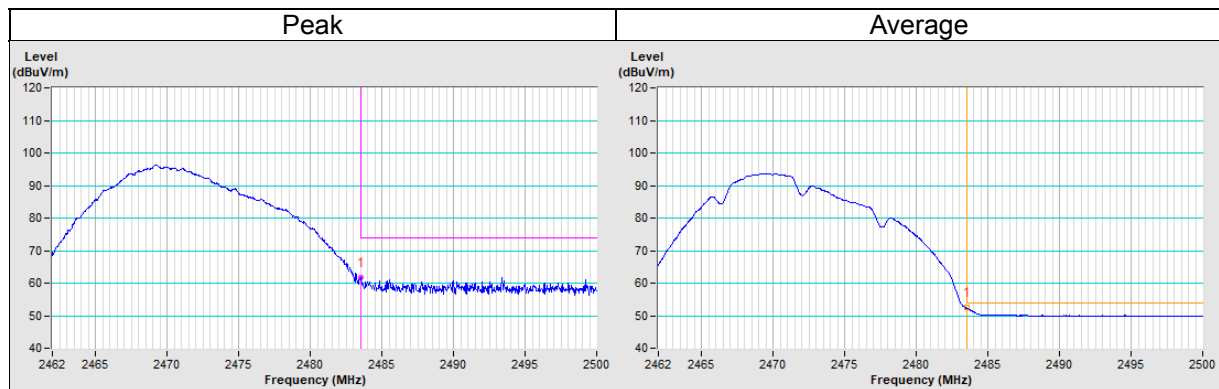


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2483.52	61.6 PK	74.0	-12.4	1.87 V	224	64.6	-3.0
AV.1	2483.50	52.4 AV	54.0	-1.6	1.87 V	224	55.4	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value



802.11g

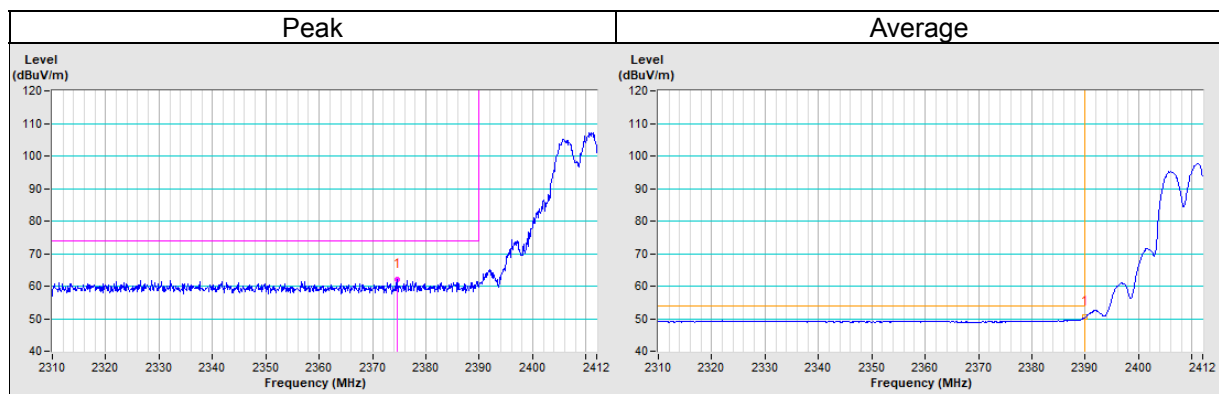
CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2310MHz ~ 2412MHz		Average (AV)

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)
PK.1	2374.71	62.0 PK	74.0	-12.0	3.30 H	135	64.6	-2.6
AV.1	2390.00	50.5 AV	54.0	-3.5	3.31 H	136	53.2	-2.7

Remarks:

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

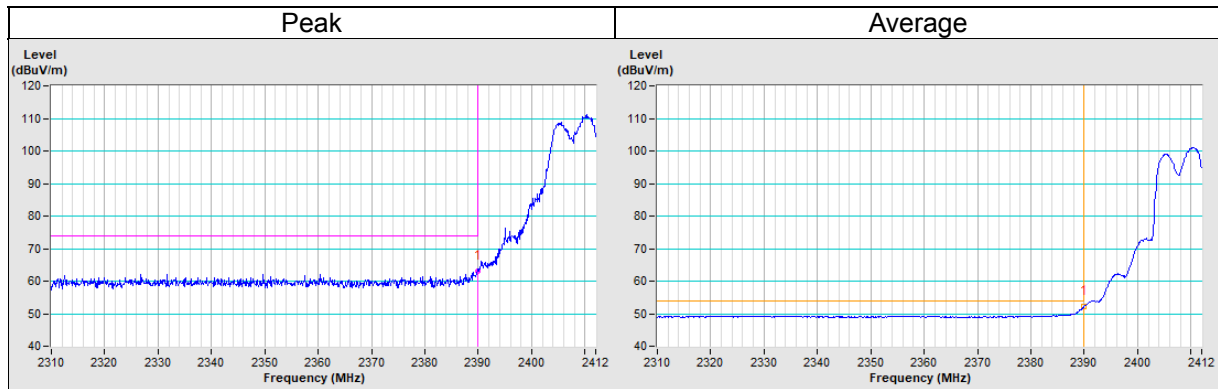


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2310MHz ~ 2412MHz		Average (AV)

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)
PK.1	2390.00	63.2 PK	74.0	-10.8	1.50 V	105	65.9	-2.7
AV.1	2390.00	52.3 AV	54.0	-1.7	1.50 V	105	55.0	-2.7

Remarks:

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

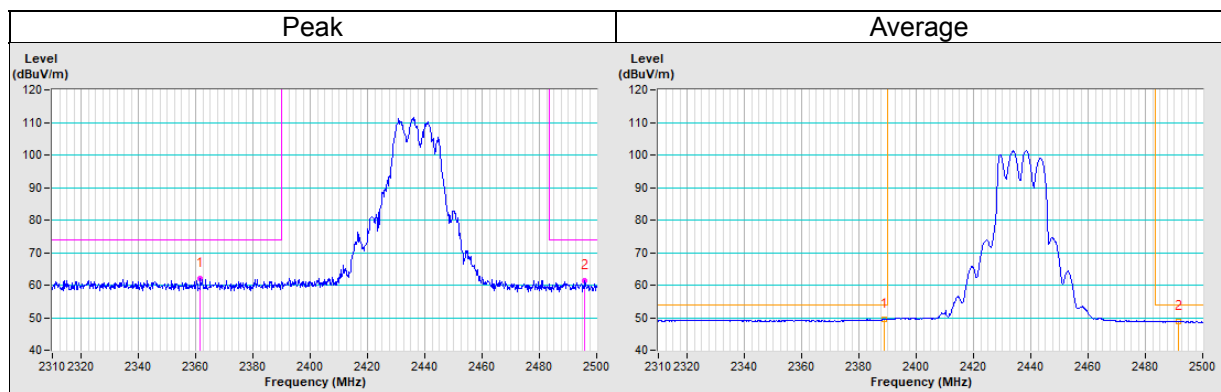


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	2310MHz ~ 2500MHz		

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)
PK.1	2361.68	62.2 PK	74.0	-11.8	1.75 H	142	64.8	-2.6
PK.2	2495.85	61.4 PK	74.0	-12.6	1.75 H	142	64.3	-2.9
AV.1	2388.95	49.5 AV	54.0	-4.5	1.75 H	142	52.2	-2.7
AV.2	2491.70	48.9 AV	54.0	-5.1	1.75 H	142	51.8	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

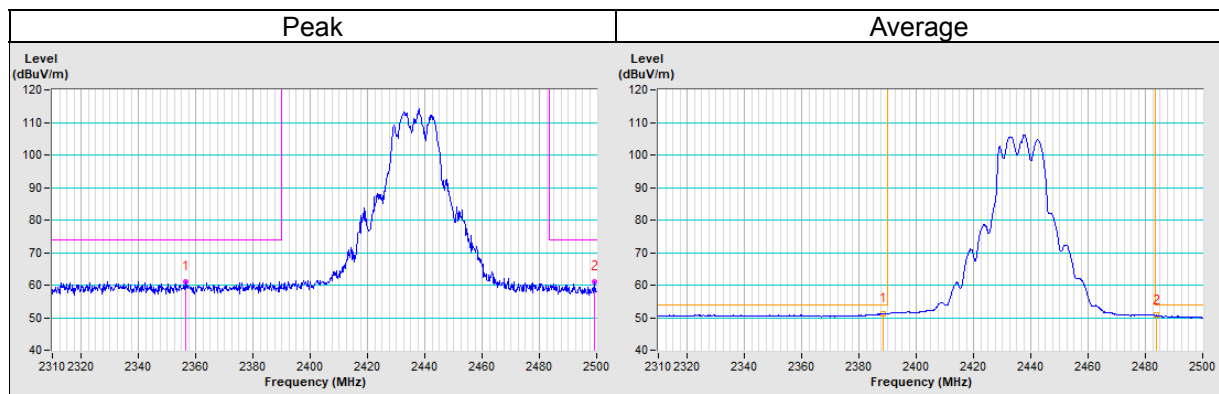


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2310MHz ~ 2500MHz		Average (AV)

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)
PK.1	2356.43	61.1 PK	74.0	-12.9	1.33 V	113	63.6	-2.5
PK.2	2499.22	61.0 PK	74.0	-13.0	1.33 V	113	63.9	-2.9
AV.1	2388.64	51.3 AV	54.0	-2.7	1.33 V	113	54.0	-2.7
AV.2	2483.87	50.7 AV	54.0	-3.3	1.13 V	113	53.7	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

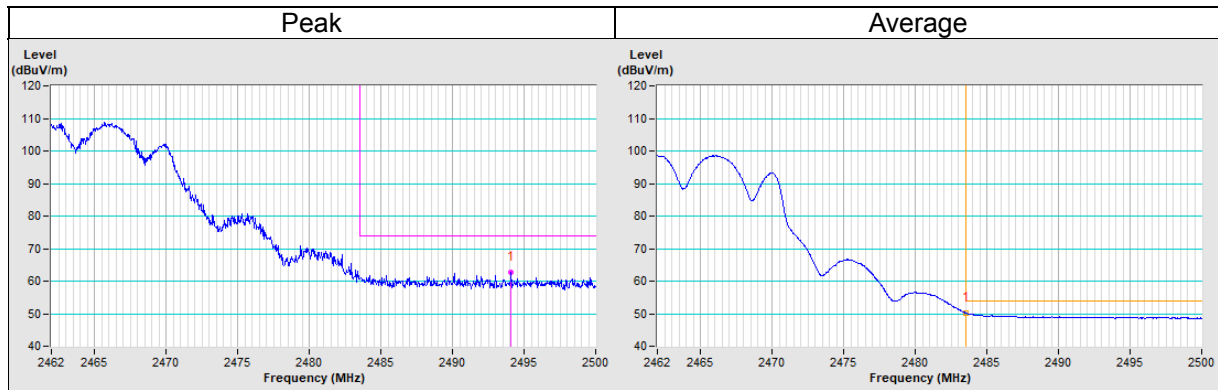


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2494.08	62.8 PK	74.0	-11.2	2.76 H	140	65.7	-2.9
AV.1	2483.56	50.1 AV	54.0	-3.9	2.76 H	140	53.1	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

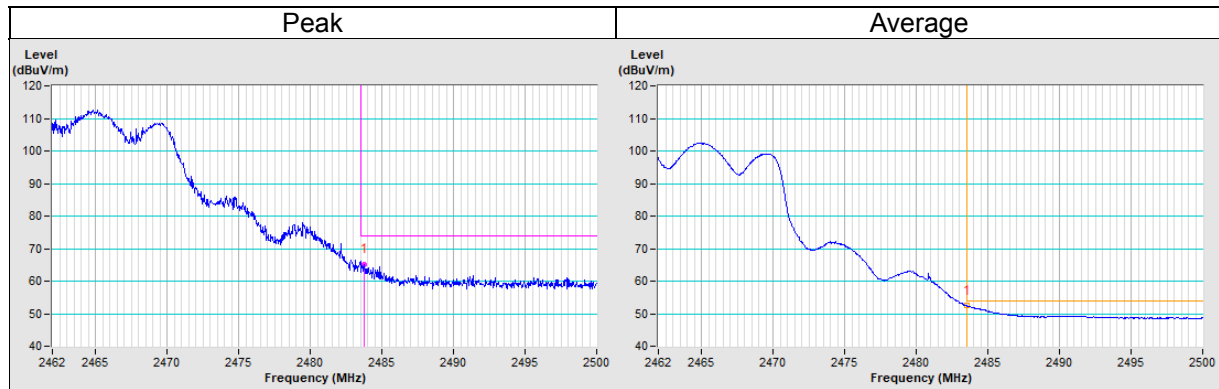


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2483.78	65.2 PK	74.0	-8.8	1.50 V	100	68.2	-3.0
AV.1	2483.51	52.4 AV	54.0	-1.6	1.50 V	100	55.4	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

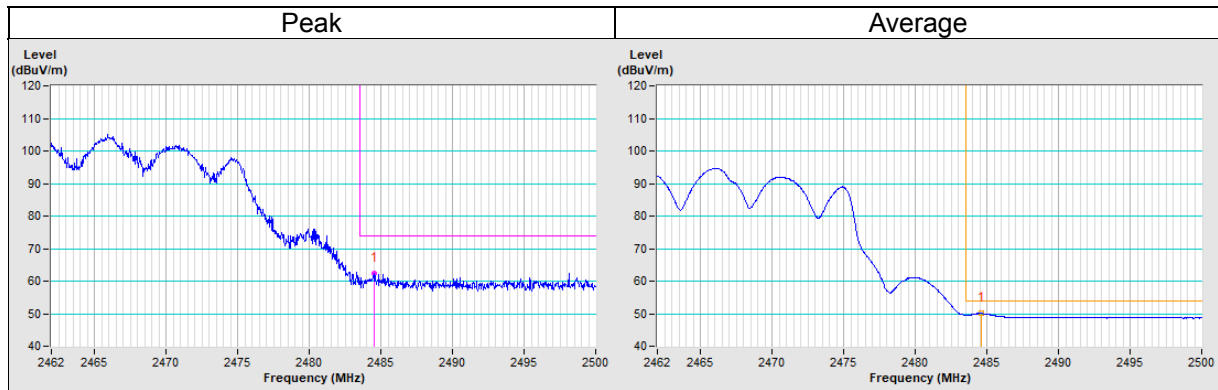


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2484.52	62.4 PK	74.0	-11.6	2.46 H	122	65.4	-3.0
AV.1	2484.60	50.1 AV	54.0	-3.9	2.46 H	122	53.1	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

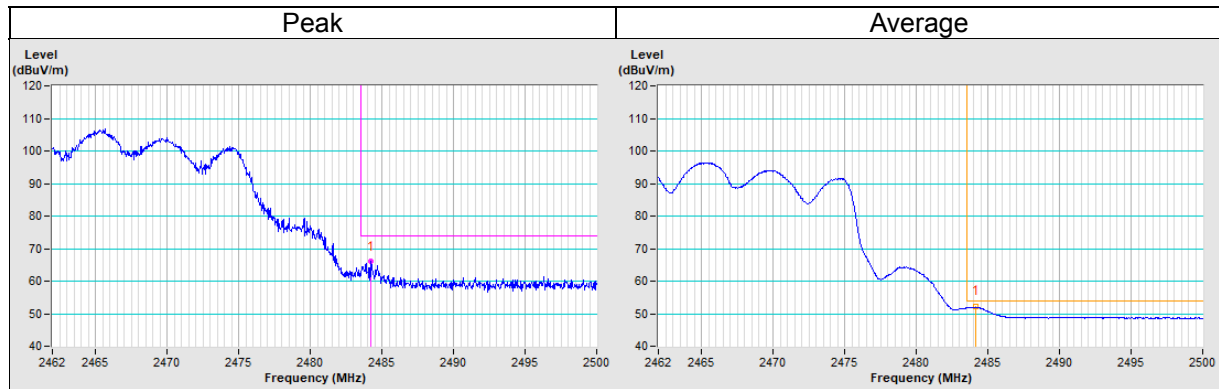


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2484.21	66.0 PK	74.0	-8.0	1.48 V	100	69.0	-3.0
AV.1	2484.17	52.3 AV	54.0	-1.7	1.48 V	105	55.3	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

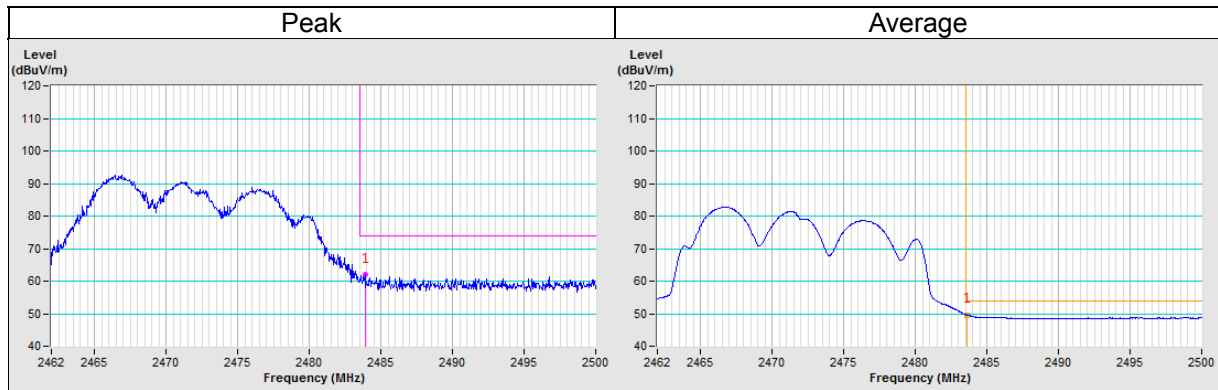


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2483.92	61.9 PK	74.0	-12.1	1.00 H	0	64.9	-3.0
AV.1	2483.59	49.6 AV	54.0	-4.4	1.00 H	0	52.6	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

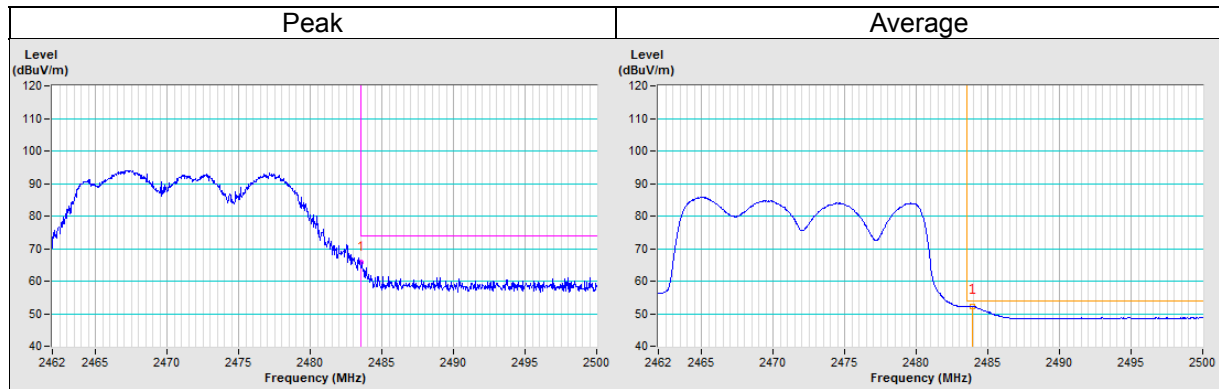


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2483.50	65.9 PK	74.0	-8.1	1.43 V	81	68.9	-3.0
AV.1	2483.93	52.3 AV	54.0	-1.7	1.43 V	81	21.2	31.1

Remarks:

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



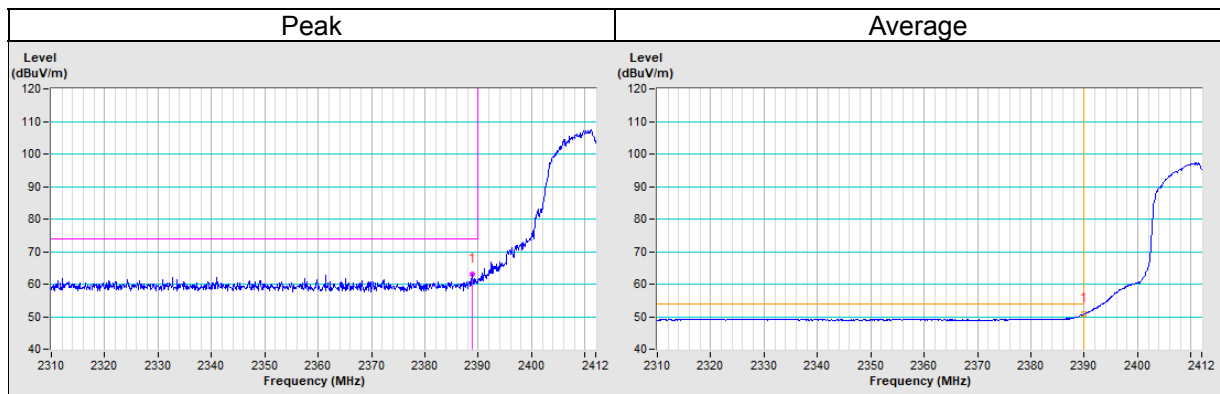
802.11n (HT20)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2310MHz ~ 2412MHz		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)
PK.1	2388.89	63.1 PK	74.0	-10.9	1.50 H	182	65.8	-2.7
AV.1	2389.98	50.9 AV	54.0	-3.1	1.50 H	182	53.6	-2.7

Remarks:

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

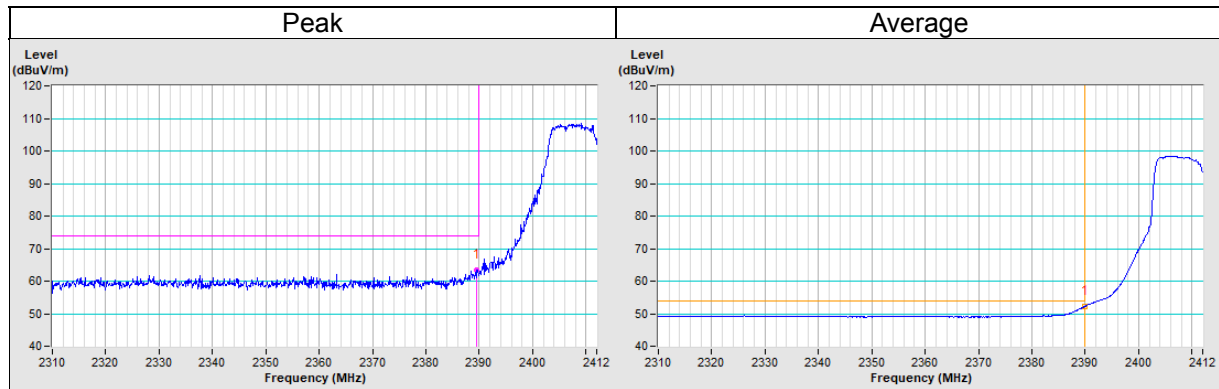


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2310MHz ~ 2412MHz		Average (AV)

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)
PK.1	2389.50	63.4 PK	74.0	-10.6	1.16 V	107	66.1	-2.7
AV.1	2389.89	52.3 AV	54.0	-1.7	1.16 V	107	55.0	-2.7

Remarks:

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

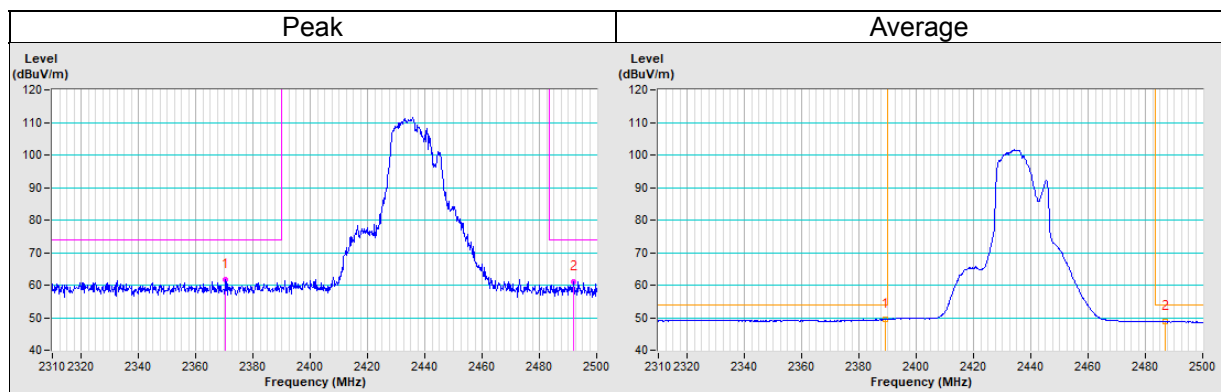


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2310MHz ~ 2500MHz		Average (AV)

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)
PK.1	2370.56	61.7 PK	74.0	-12.3	1.73 H	142	64.3	-2.6
PK.2	2491.83	61.0 PK	74.0	-13.0	1.73 H	142	63.9	-2.9
AV.1	2389.11	49.5 AV	54.0	-4.5	1.73 H	142	52.2	-2.7
AV.2	2486.99	48.8 AV	54.0	-5.2	1.73 H	142	51.7	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

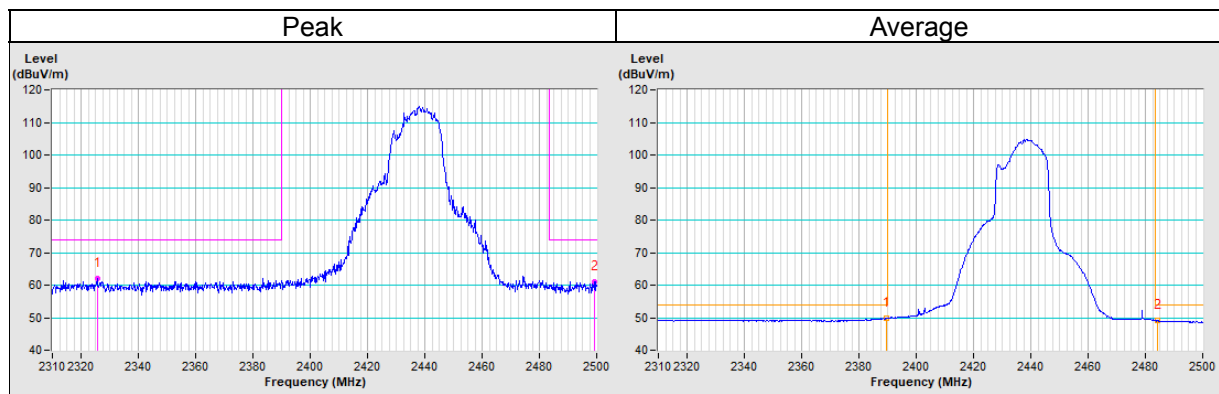


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2310MHz ~ 2500MHz		Average (AV)

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)
PK.1	2325.68	62.1 PK	74.0	-11.9	1.32 V	104	64.6	-2.5
PK.2	2499.04	61.0 PK	74.0	-13.0	1.32 V	104	63.9	-2.9
AV.1	2389.56	49.8 AV	54.0	-4.2	1.32 V	104	52.5	-2.7
AV.2	2484.14	49.1 AV	54.0	-4.9	1.32 V	104	52.1	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

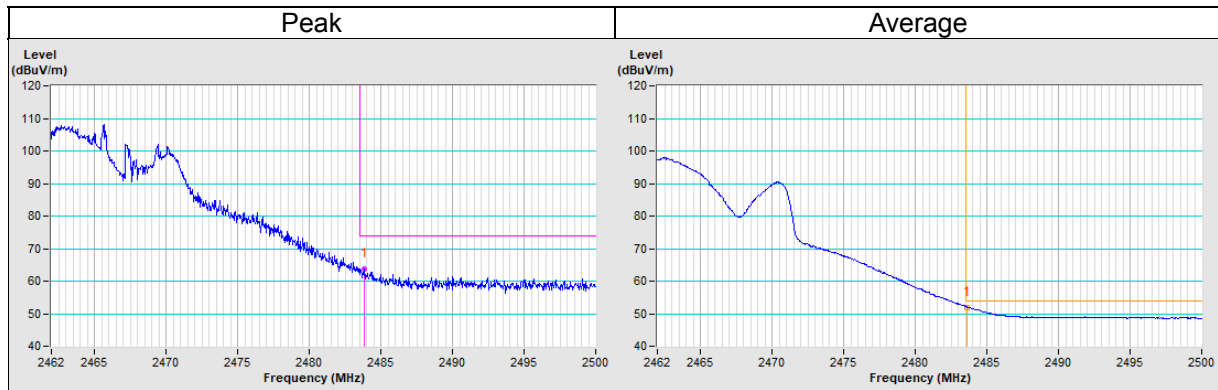


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2483.86	63.7 PK	74.0	-10.3	2.43 H	118	66.7	-3.0
AV.1	2483.64	52.0 AV	54.0	-2.0	2.43 H	118	55.0	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

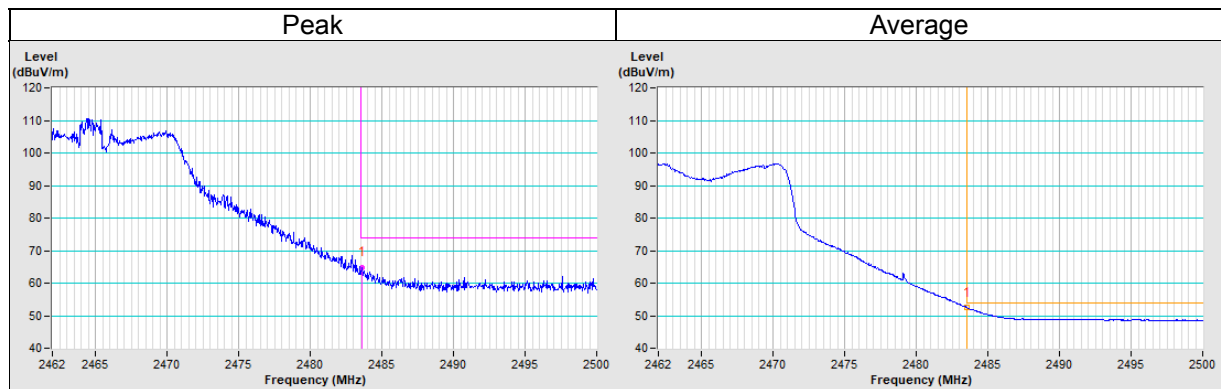


CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2483.65	64.9 PK	74.0	-9.1	1.20 V	110	67.9	-3.0
AV.1	2483.55	52.4 AV	54.0	-1.6	1.20 V	110	55.4	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

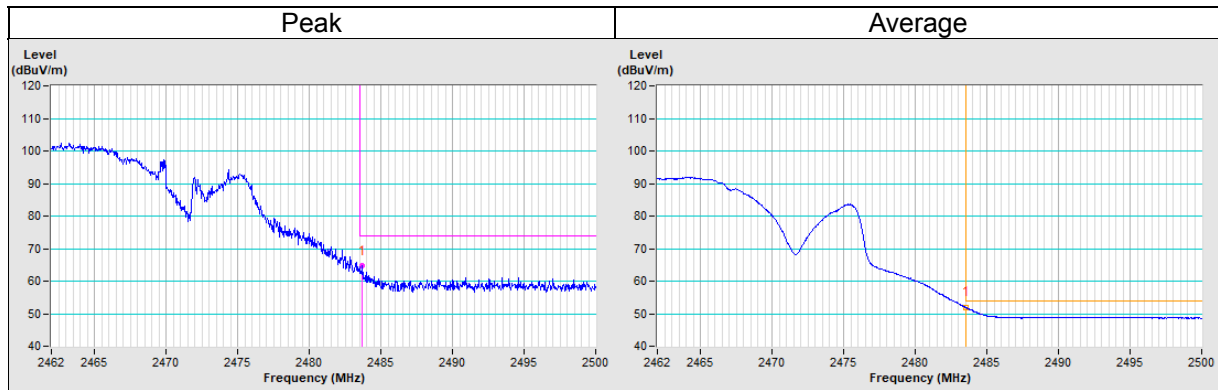


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2483.71	64.6 PK	74.0	-9.4	3.52 H	131	67.6	-3.0
AV.1	2483.57	51.8 AV	54.0	-2.2	3.52 H	131	54.8	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

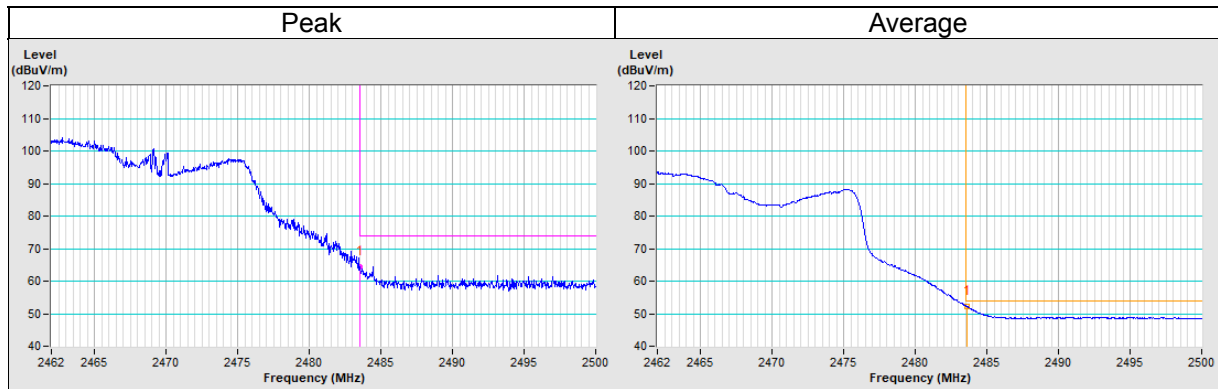


CHANNEL	TX Channel 12	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2483.52	64.4 PK	74.0	-9.6	1.00 V	103	67.4	-3.0
AV.1	2483.58	52.3 AV	54.0	-1.7	1.00 V	103	55.3	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value

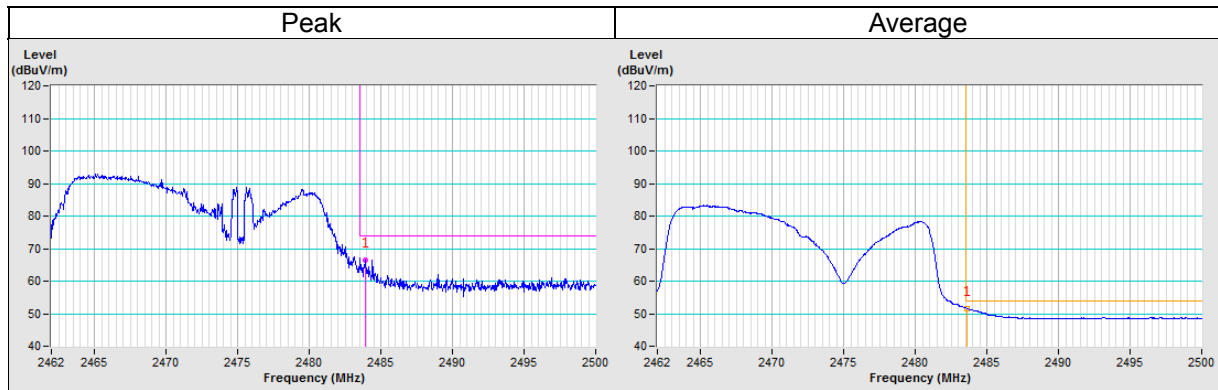


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2483.90	66.5 PK	74.0	-7.5	1.23 H	44	35.4	31.1
AV.1	2483.59	51.6 AV	54.0	-2.4	1.23 H	44	20.5	31.1

Remarks:

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

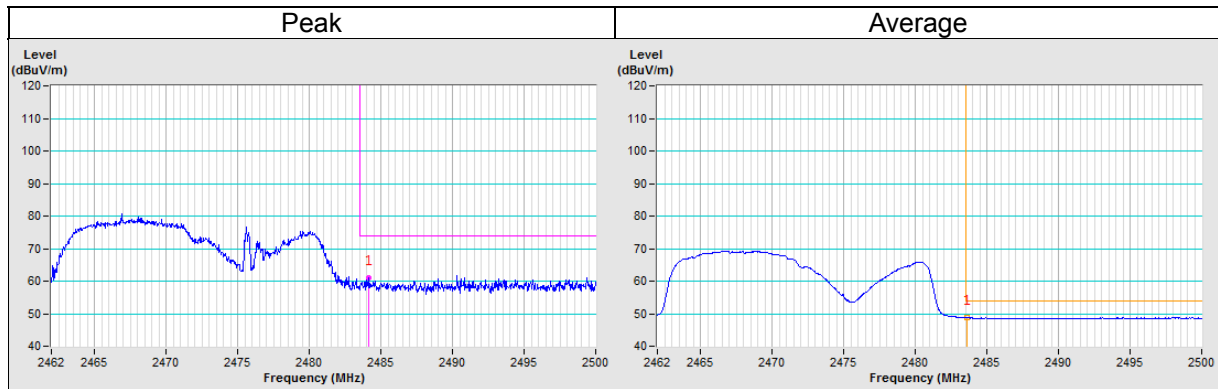


CHANNEL	TX Channel 13	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	2462MHz ~ 2500MHz		Average (AV)

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)
PK.1	2484.18	61.1 PK	74.0	-12.9	1.00 V	80	30.0	31.1
AV.1	2483.62	48.8 AV	54.0	-5.2	1.46 V	80	51.8	-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. The other emission levels were very low against the limit
4. Margin value = Emission Level – Limit value



4.1.9 Test Results for below 1GHz

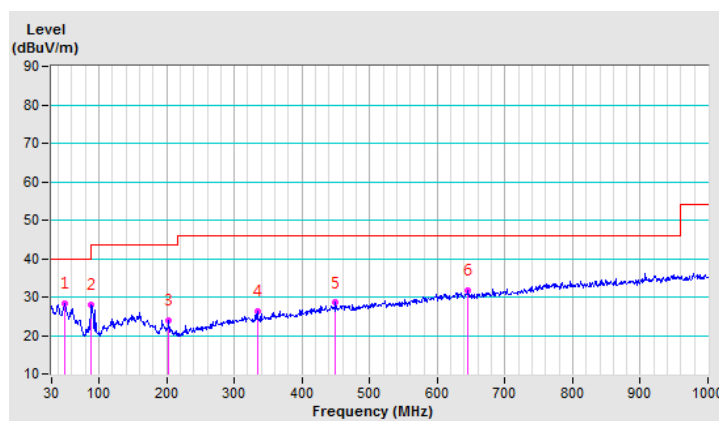
802.11b

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
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	49.64	28.3 PK	40.0	-11.7	2.50 H	113	36.2	-7.9
2	88.71	27.9 PK	43.5	-15.6	2.00 H	205	41.7	-13.8
3	203.41	23.9 PK	43.5	-19.6	2.00 H	104	34.8	-10.9
4	333.78	26.2 PK	46.0	-19.8	1.50 H	143	32.0	-5.8
5	449.09	28.5 PK	46.0	-17.5	1.50 H	206	31.5	-3.0
6	645.34	31.7 PK	46.0	-14.3	1.00 H	119	30.5	1.2

Remarks:

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

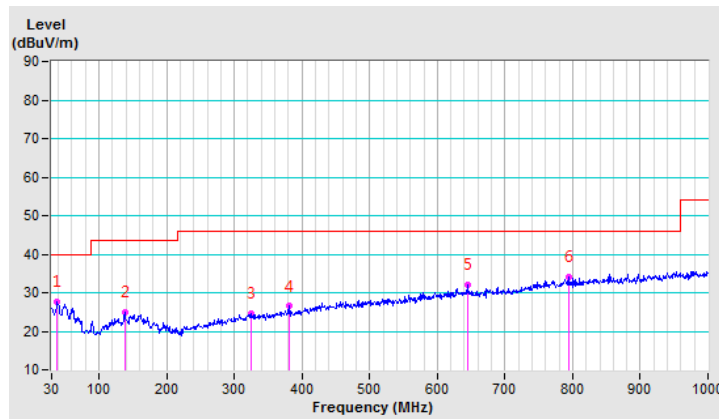


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	37.95	27.6 PK	40.0	-12.4	1.00 V	302	36.1	-8.5
2	138.20	24.9 PK	43.5	-18.6	1.00 V	87	33.1	-8.2
3	325.32	24.6 PK	46.0	-21.4	1.00 V	265	30.6	-6.0
4	380.82	26.5 PK	46.0	-19.5	1.50 V	225	31.3	-4.8
5	644.37	32.2 PK	46.0	-13.8	1.50 V	303	31.0	1.2
6	793.49	34.0 PK	46.0	-12.0	2.00 V	241	30.2	3.8

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report
6. The PK detector measurement value is much smaller than the limit QP value, so the pass is determined



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCS30	100291	Sep. 03, 2018	Sep. 02, 2019
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 05, 2018	Sep. 04, 2019
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 26, 2018	Feb. 25, 2019
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 19, 2018	Aug. 18, 2019
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1.
 3. The VCCI Site Registration No. is C-2040.

4.2.3 Test Procedures

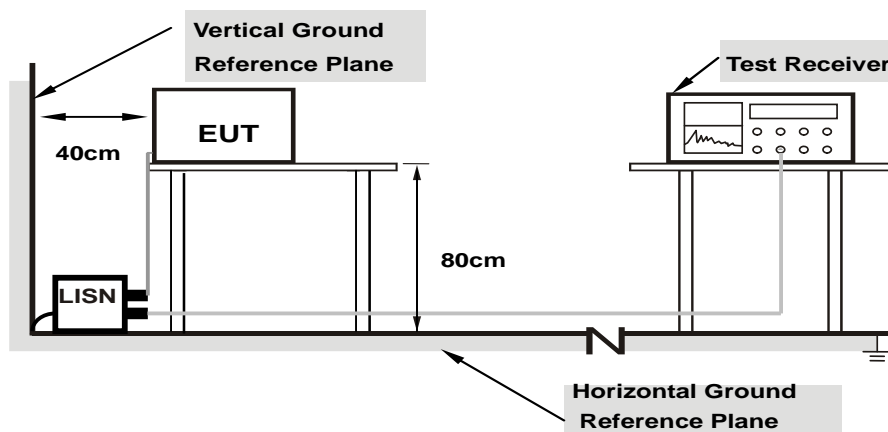
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Worst-case data:

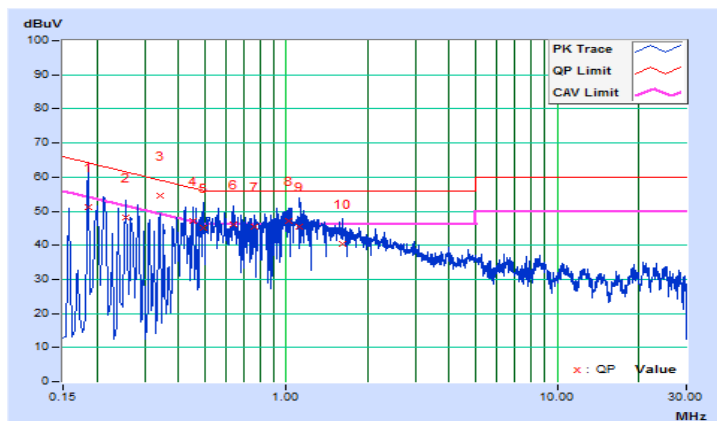
802.11b

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18519	9.72	41.41	16.27	51.13	25.99	64.25
2	0.25557	9.73	38.38	18.23	48.11	27.96	61.57	51.57	-13.46	-23.61
3	0.34159	9.74	44.73	20.08	54.47	29.82	59.16	49.16	-4.69	-19.34
4	0.45097	9.74	37.28	17.86	47.02	27.60	56.86	46.86	-9.84	-19.26
5	0.49408	9.74	35.52	18.86	45.26	28.60	56.10	46.10	-10.84	-17.50
6	0.63484	9.72	36.31	20.50	46.03	30.22	56.00	46.00	-9.97	-15.78
7	0.75996	9.71	35.82	18.61	45.53	28.32	56.00	46.00	-10.47	-17.68
8	1.02607	9.68	37.57	20.60	47.25	30.28	56.00	46.00	-8.75	-15.72
9	1.12359	9.69	35.79	19.50	45.48	29.19	56.00	46.00	-10.52	-16.81
10	1.61625	9.72	30.80	16.74	40.52	26.46	56.00	46.00	-15.48	-19.54

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.

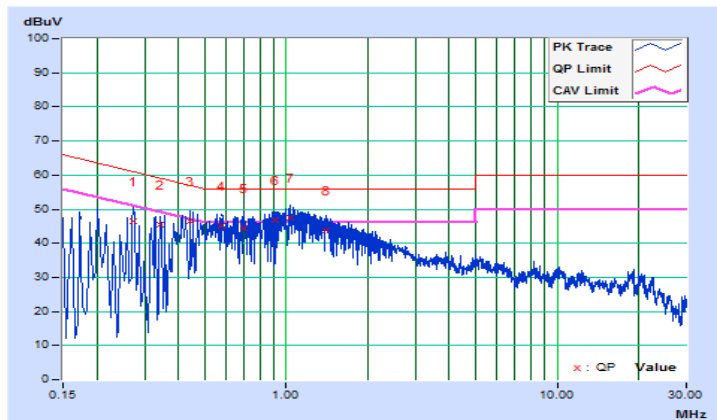


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.27120	9.74	36.65	18.63	46.39	28.37	61.08	51.08	-14.69	-22.71
2	0.34198	9.74	35.73	15.91	45.47	25.65	59.16	49.16	-13.69	-23.51
3	0.44325	9.75	36.68	15.45	46.43	25.20	57.00	47.00	-10.57	-21.80
4	0.58010	9.74	35.37	18.77	45.11	28.51	56.00	46.00	-10.89	-17.49
5	0.69349	9.74	34.75	17.39	44.49	27.13	56.00	46.00	-11.51	-18.87
6	0.91636	9.72	37.16	20.68	46.88	30.40	56.00	46.00	-9.12	-15.60
7	1.02975	9.72	37.86	21.82	47.58	31.54	56.00	46.00	-8.42	-14.46
8	1.40902	9.72	33.95	20.87	43.67	30.59	56.00	46.00	-12.33	-15.41

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.

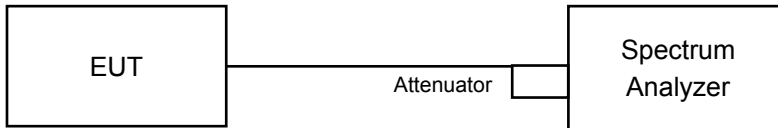


4.3 6dB Bandwidth Measurement

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

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
SPECTRUM ANALYZER R&S	FSP40	100041	Dec 12, 2017	Dec 11, 2018

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

4.3.4 Test Procedure

- Set resolution bandwidth (RBW) = 100kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	8.60	8.10	0.5	Pass
6	2437	8.58	9.05	0.5	Pass
11	2462	9.06	8.58	0.5	Pass
12	2467	8.54	9.06	0.5	Pass
13	2472	8.59	8.14	0.5	Pass

802.11g

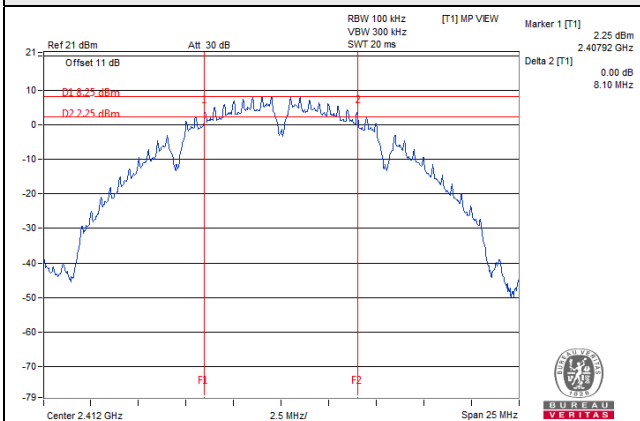
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.77	15.21	0.5	Pass
6	2437	15.77	15.69	0.5	Pass
11	2462	15.20	15.76	0.5	Pass
12	2467	15.37	15.80	0.5	Pass
13	2472	15.78	15.56	0.5	Pass

802.11n (HT20)

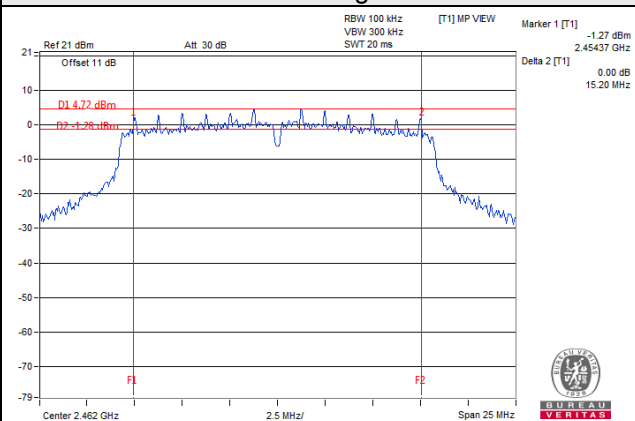
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.03	15.17	0.5	Pass
6	2437	16.15	16.85	0.5	Pass
11	2462	15.17	16.39	0.5	Pass
12	2467	16.00	16.96	0.5	Pass
13	2472	16.38	16.02	0.5	Pass

Spectrum Plot of Worst Value

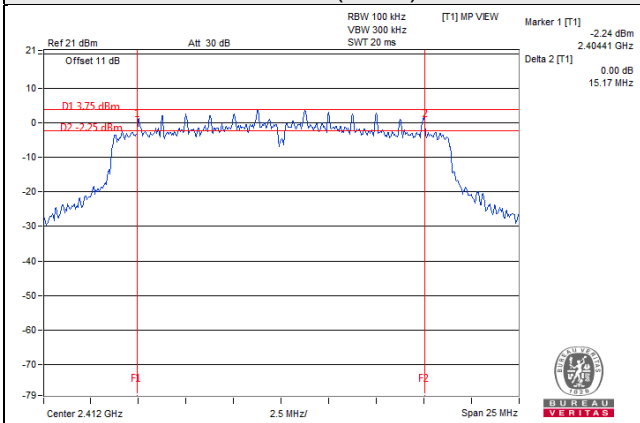
802.11b



802.11g



802.11n (HT20)



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

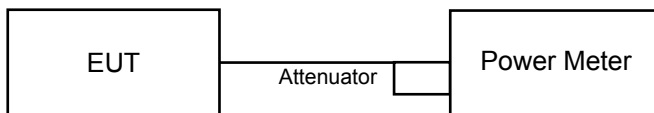
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
USB Wideband Power Meter KEYSIGHT	U2021XA	MY55050005/MY5519000 4/MY55190007/MY55210 005	Jul. 17, 2018	Jul. 16, 2019

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

4.4.4 Test Procedures

For Peak Power

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.

For Average Power

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

For Peak Power

Ant. 0 (SISO)

802.11b

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	90.991	19.59	30.00	Pass
6	2437	83.753	19.23	30.00	Pass
11	2462	66.834	18.25	30.00	Pass
12	2467	40.644	16.09	30.00	Pass
13	2472	5.358	7.29	30.00	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	71.121	18.52	30.00	Pass
6	2437	152.405	21.83	30.00	Pass
11	2462	82.794	19.18	30.00	Pass
12	2467	28.774	14.59	30.00	Pass
13	2472	2.518	4.01	30.00	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	66.681	18.24	30.00	Pass
6	2437	133.968	21.27	30.00	Pass
11	2462	82.985	19.19	30.00	Pass
12	2467	20.749	13.17	30.00	Pass
13	2472	2.495	3.97	30.00	Pass

Ant. 1 (SISO)

802.11b

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	88.920	19.49	30.00	Pass
6	2437	91.411	19.61	30.00	Pass
11	2462	72.611	18.61	30.00	Pass
12	2467	41.305	16.16	30.00	Pass
13	2472	5.105	7.08	30.00	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	76.384	18.83	30.00	Pass
6	2437	150.661	21.78	30.00	Pass
11	2462	85.114	19.30	30.00	Pass
12	2467	28.379	14.53	30.00	Pass
13	2472	2.871	4.58	30.00	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	70.632	18.49	30.00	Pass
6	2437	141.579	21.51	30.00	Pass
11	2462	86.099	19.35	30.00	Pass
12	2467	21.135	13.25	30.00	Pass
13	2472	2.594	4.14	30.00	Pass

Ant. 0 + 1 (MIMO)

802.11b

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	19.61	19.65	183.668	22.64	30.00	Pass
6	2437	19.25	19.74	178.329	22.51	30.00	Pass
11	2462	18.42	18.63	142.448	21.54	30.00	Pass
12	2467	16.25	16.29	84.730	19.28	30.00	Pass
13	2472	10.41	10.09	21.199	13.26	30.00	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	18.65	18.87	150.372	21.77	30.00	Pass
6	2437	21.88	21.85	307.610	24.88	30.00	Pass
11	2462	19.35	19.42	173.597	22.40	30.00	Pass
12	2467	14.78	14.65	59.235	17.73	30.00	Pass
13	2472	4.12	4.62	5.479	7.39	30.00	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	18.31	18.59	139.959	21.46	30.00	Pass
6	2437	21.46	21.67	287.078	24.58	30.00	Pass
11	2462	19.25	19.51	173.380	22.39	30.00	Pass
12	2467	13.30	13.45	43.551	16.39	30.00	Pass
13	2472	4.15	4.30	5.297	7.24	30.00	Pass

For Average Power

Ant. 0 (SISO)

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	60.256	17.80
6	2437	59.704	17.76
11	2462	43.954	16.43
12	2467	31.046	14.92
13	2472	6.039	7.81

802.11g

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	31.189	14.94
6	2437	55.335	17.43
11	2462	34.514	15.38
12	2467	9.528	9.79
13	2472	0.769	-1.14

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	30.339	14.82
6	2437	56.105	17.49
11	2462	33.574	15.26
12	2467	5.433	7.35
13	2472	0.767	-1.15

Ant. 1 (SISO)

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	57.544	17.60
6	2437	59.429	17.74
11	2462	43.752	16.41
12	2467	30.974	14.91
13	2472	5.998	7.78

802.11g

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	31.046	14.92
6	2437	53.580	17.29
11	2462	34.356	15.36
12	2467	9.441	9.75
13	2472	0.774	-1.11

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	29.923	14.76
6	2437	54.450	17.36
11	2462	33.343	15.23
12	2467	5.395	7.32
13	2472	0.774	-1.11

Ant. 0 + 1 (MIMO)

802.11b

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	17.81	17.62	118.205	20.73
6	2437	17.79	17.67	118.596	20.74
11	2462	16.46	16.48	88.722	19.48
12	2467	14.96	14.98	62.810	17.98
13	2472	7.82	7.86	12.162	10.85

802.11g

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	14.96	14.97	62.738	17.98
6	2437	17.49	17.35	110.408	20.43
11	2462	15.42	15.44	69.829	18.44
12	2467	9.82	9.85	19.255	12.85
13	2472	-1.13	-1.25	1.5208	1.82

802.11n (HT20)

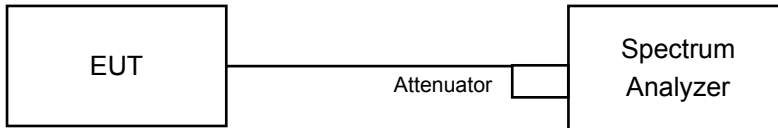
Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	14.93	14.91	62.087	17.93
6	2437	17.49	17.17	108.143	20.34
11	2462	15.38	15.35	68.865	18.38
12	2467	7.46	7.48	11.169	10.48
13	2472	-1.40	-1.21	1.483	1.71

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 Test Setup



4.5.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
SPECTRUM ANALYZER R&S	FSP40	100041	Dec 12, 2017	Dec 11, 2018

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

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.

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

802.11b

TX chain	Channel	Frequency (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-5.46	3.01	-2.45	8.00	Pass
	6	2437	-7.04	3.01	-4.03	8.00	Pass
	11	2462	-6.73	3.01	-3.72	8.00	Pass
	12	2467	-8.45	3.01	-5.44	8.00	Pass
	13	2472	-13.83	3.01	-10.82	8.00	Pass
1	1	2412	-5.99	3.01	-2.98	8.00	Pass
	6	2437	-6.20	3.01	-3.19	8.00	Pass
	11	2462	-8.49	3.01	-5.48	8.00	Pass
	12	2467	-11.17	3.01	-8.16	8.00	Pass
	13	2472	-14.72	3.01	-11.71	8.00	Pass

Note:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 2.72\text{dBi} < 6\text{dBi}$, so the power density limit no need to reduce.

802.11g

TX chain	Channel	Frequency (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-12.49	3.01	-9.48	8.00	Pass
	6	2437	-7.63	3.01	-4.62	8.00	Pass
	11	2462	-10.56	3.01	-7.55	8.00	Pass
	12	2467	-16.33	3.01	-13.32	8.00	Pass
	13	2472	-26.98	3.01	-23.97	8.00	Pass
1	1	2412	-11.75	3.01	-8.74	8.00	Pass
	6	2437	-8.08	3.01	-5.07	8.00	Pass
	11	2462	-12.33	3.01	-9.32	8.00	Pass
	12	2467	-17.83	3.01	-14.82	8.00	Pass
	13	2472	-27.63	3.01	-24.62	8.00	Pass

Note:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 2.72\text{dBi} < 6\text{dBi}$, so the power density limit no need to reduce.

802.11n (HT20)

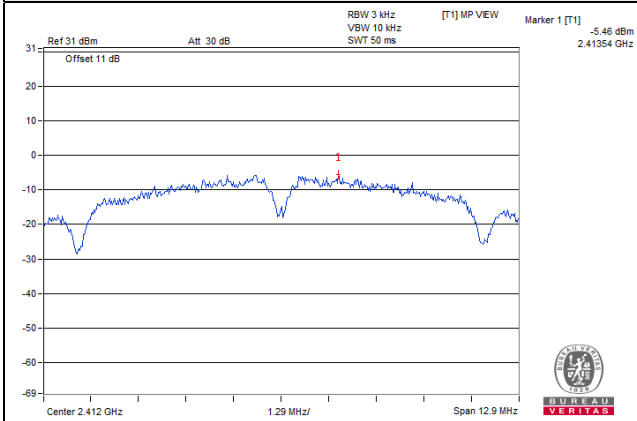
TX chain	Channel	Frequency (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	1	2412	-12.39	3.01	-9.38	8.00	Pass
	6	2437	-8.40	3.01	-5.39	8.00	Pass
	11	2462	-11.29	3.01	-8.28	8.00	Pass
	12	2467	-18.24	3.01	-15.23	8.00	Pass
	13	2472	-26.88	3.01	-23.87	8.00	Pass
1	1	2412	-11.42	3.01	-8.41	8.00	Pass
	6	2437	-8.67	3.01	-5.66	8.00	Pass
	11	2462	-13.00	3.01	-9.99	8.00	Pass
	12	2467	-21.92	3.01	-18.91	8.00	Pass
	13	2472	-28.06	3.01	-25.05	8.00	Pass

Note:

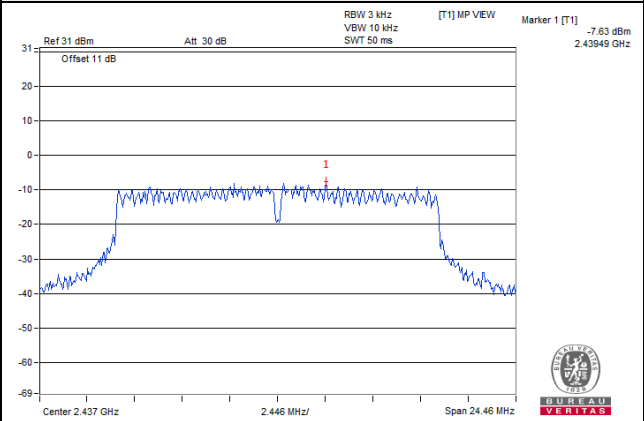
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 2.72\text{dBi} < 6\text{dBi}$, so the power density limit no need to reduce.

Spectrum Plot of Worst Value

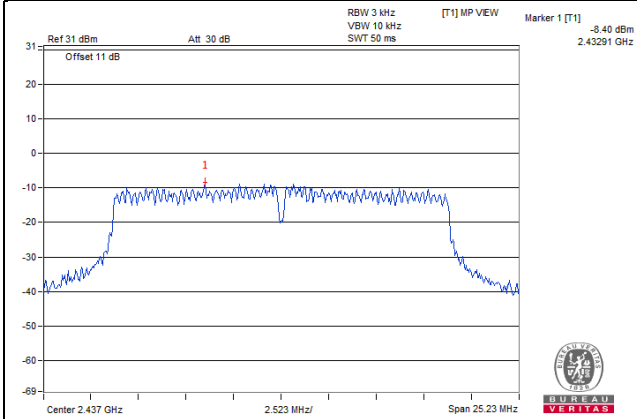
802.11b



802.11g



802.11n (HT20)

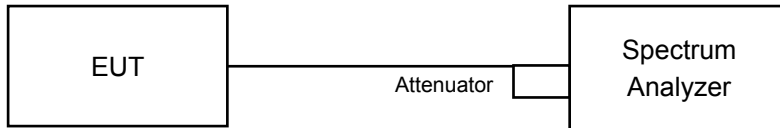


4.6 Conducted Out of Band Emission Measurement

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

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
SPECTRUM ANALYZER R&S	FSP40	100041	Dec 12, 2017	Dec 11, 2018

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

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOBE

- Set RBW = 100 kHz.
- Set VBW \geq 300 kHz.
- Detector = peak.
- Sweep = auto couple.
- Trace Mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Same as item 4.3.6

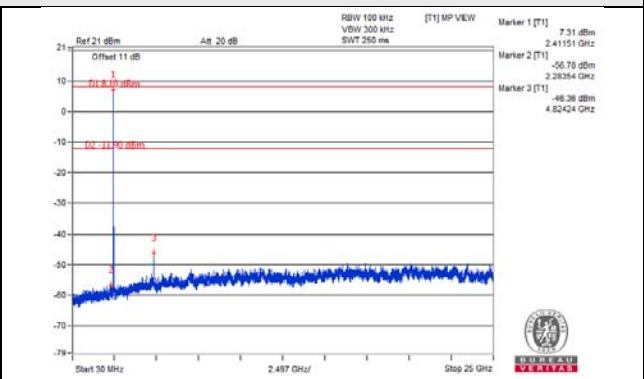
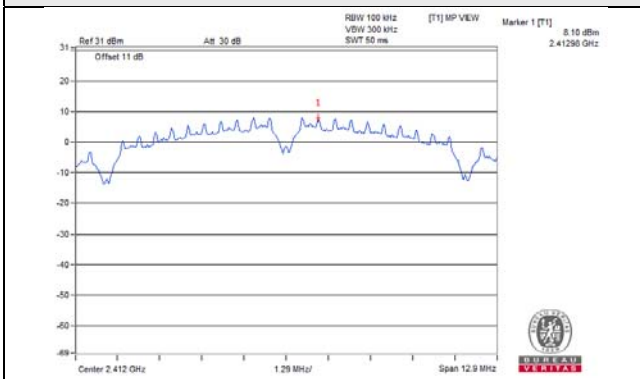
4.6.7 Test Results

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

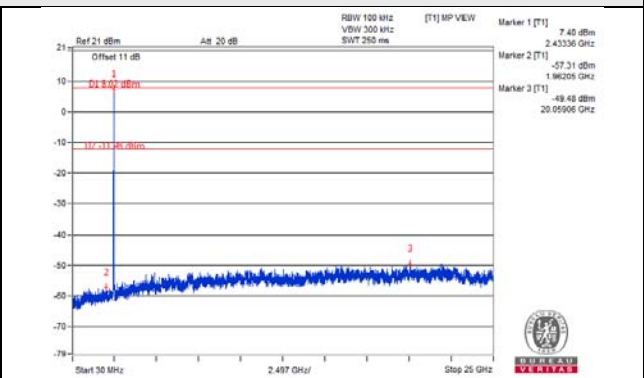
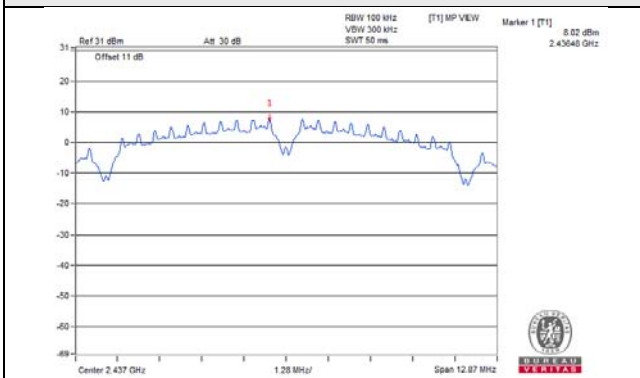
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11b_Chain 0

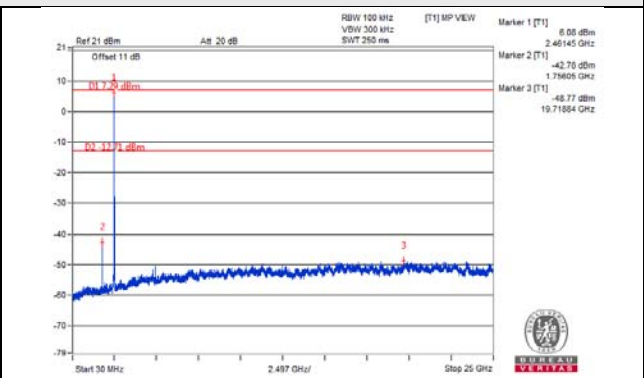
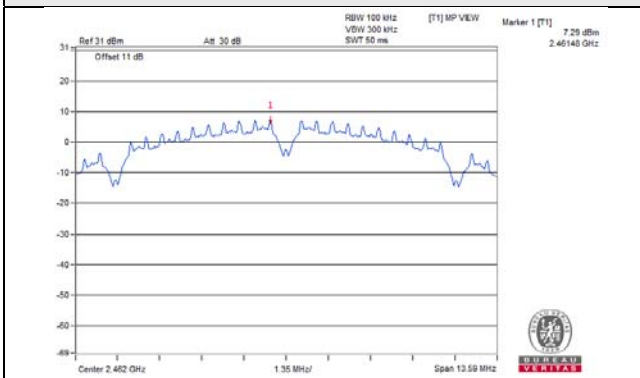
CH 1



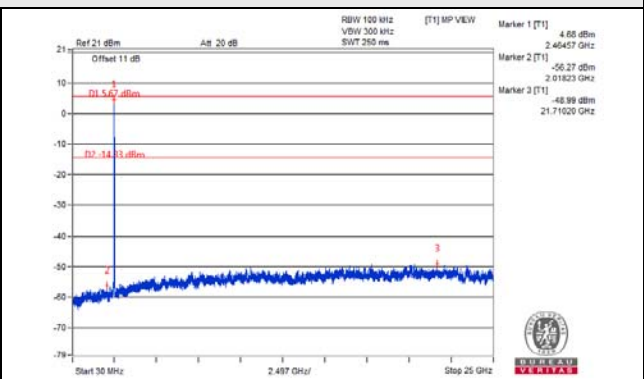
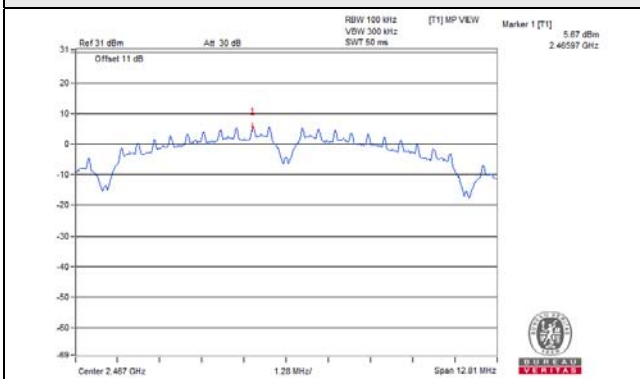
CH 6



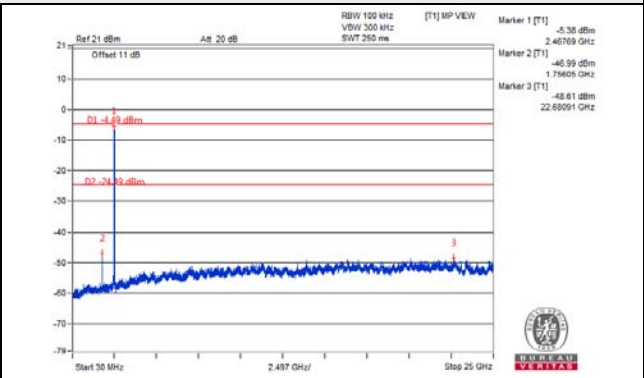
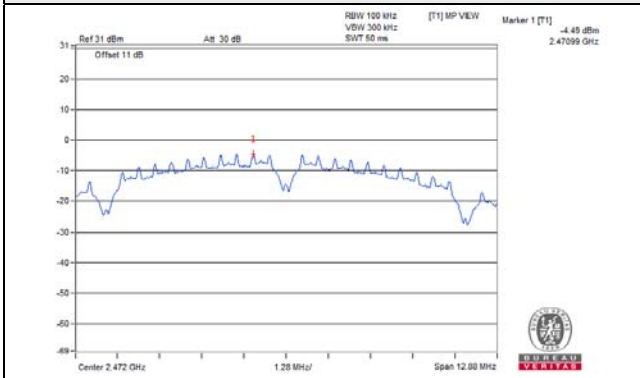
CH 11



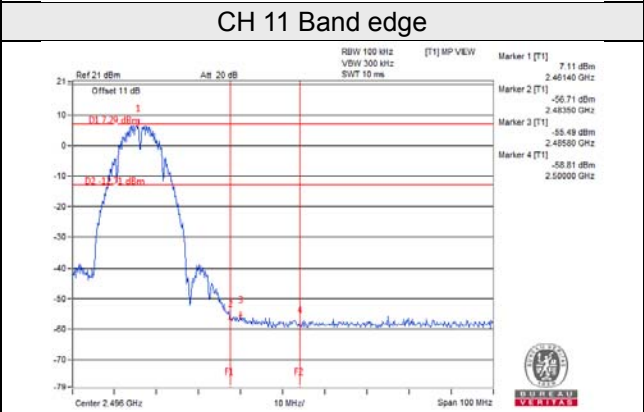
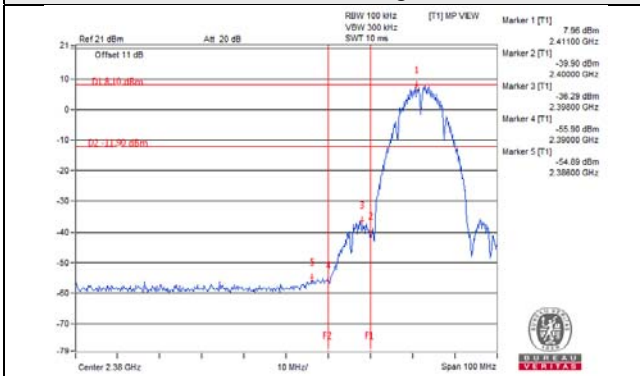
CH 12



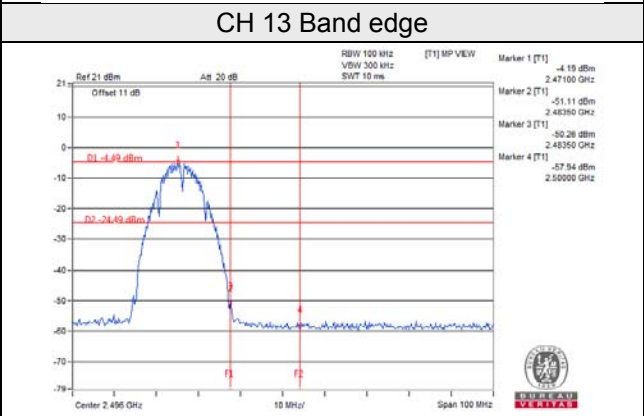
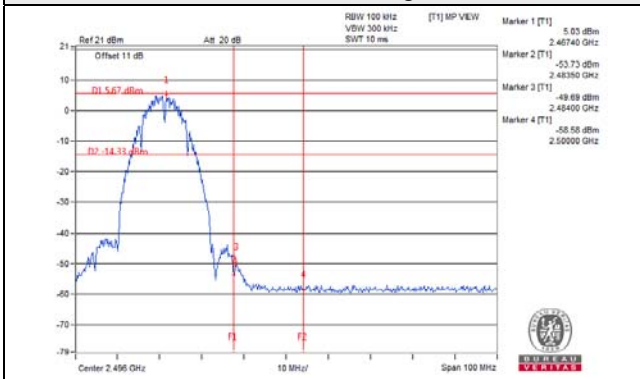
CH 13



CH 1 Band edge

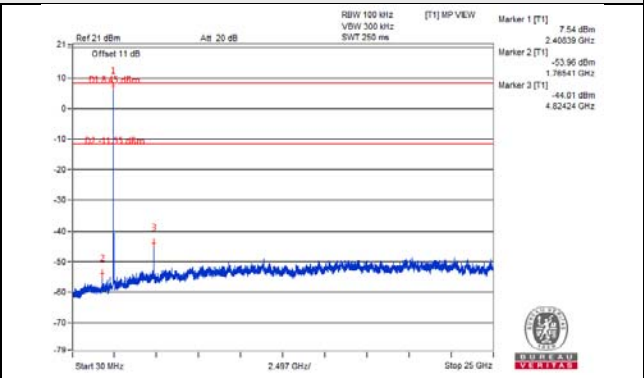
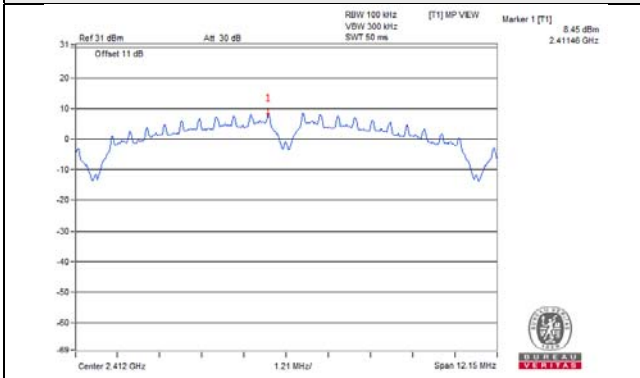


CH 12 Band edge

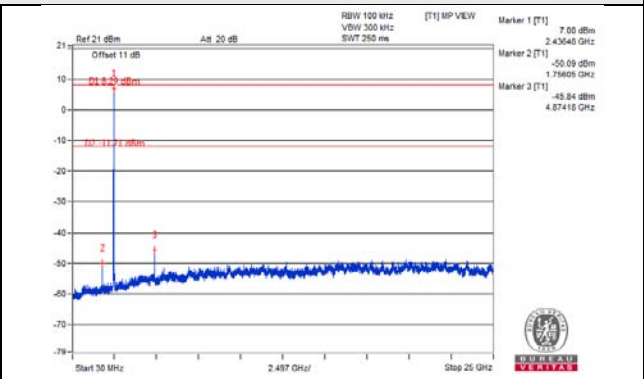
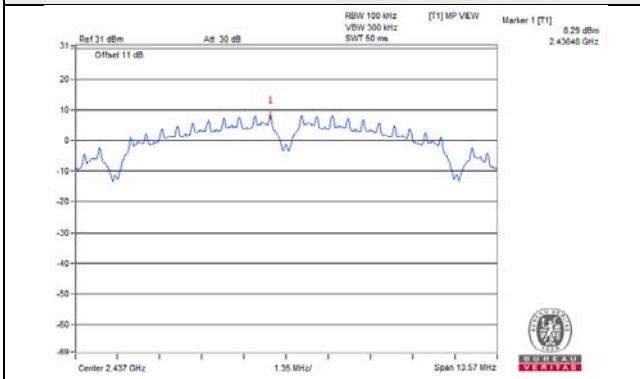


802.11b_Chain 1

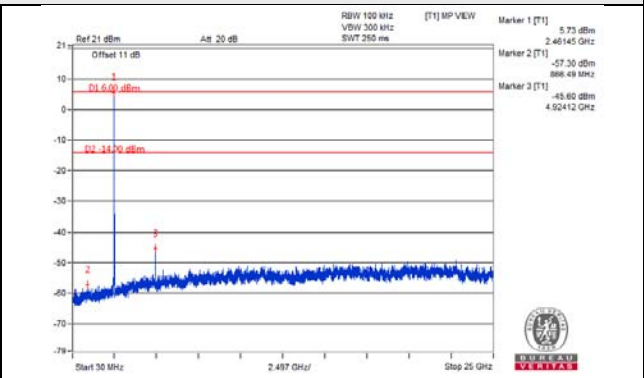
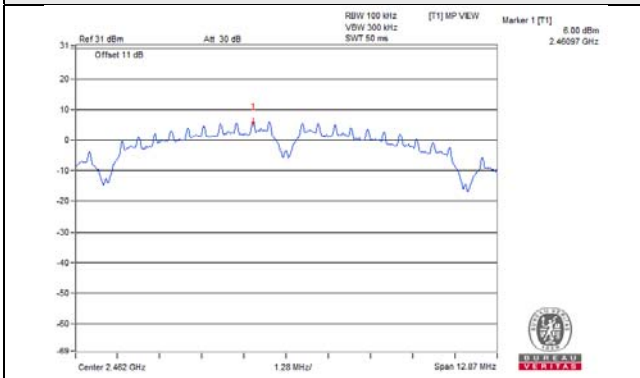
CH 1



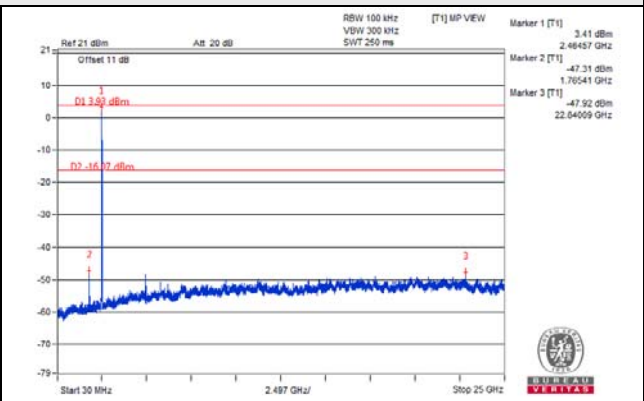
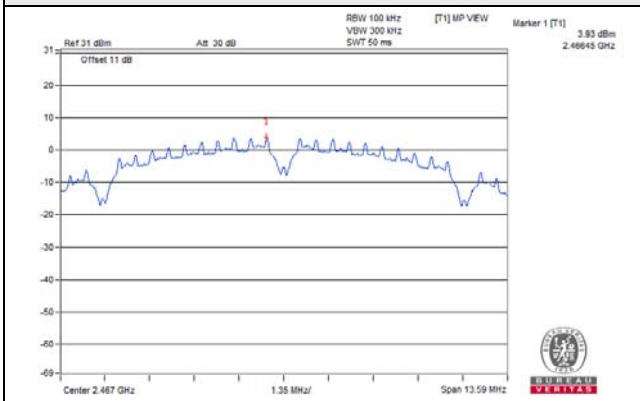
CH 6



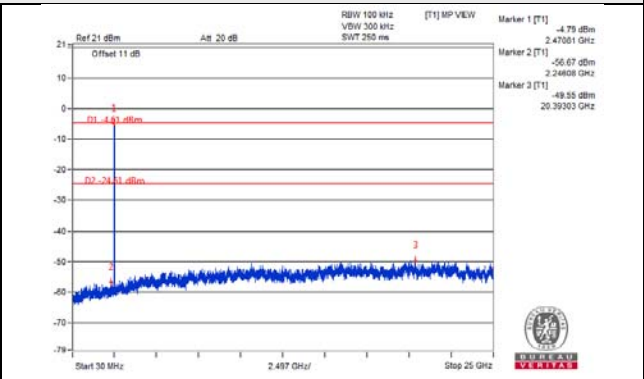
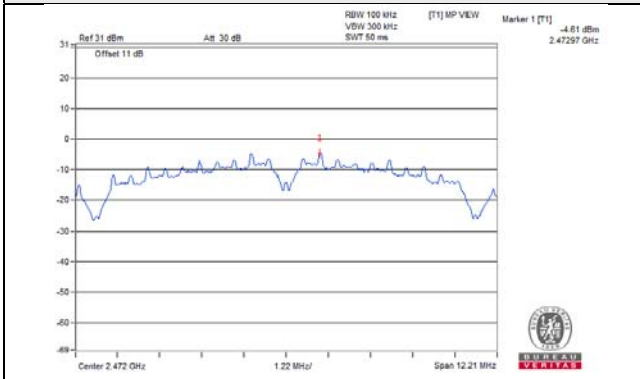
CH 11



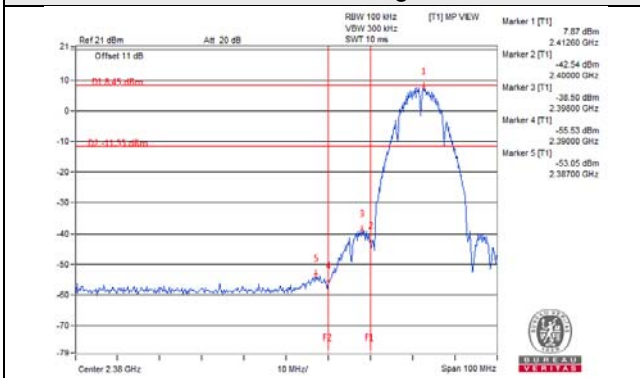
CH 12



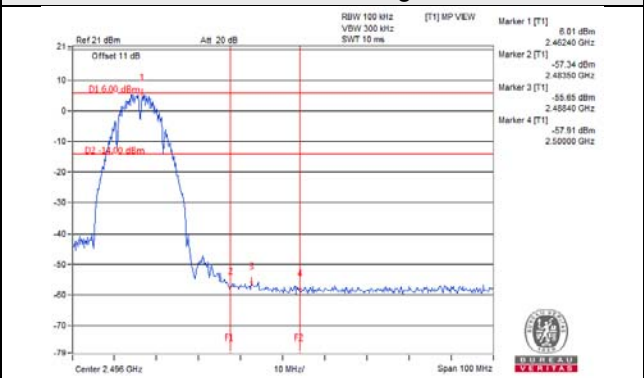
CH 13



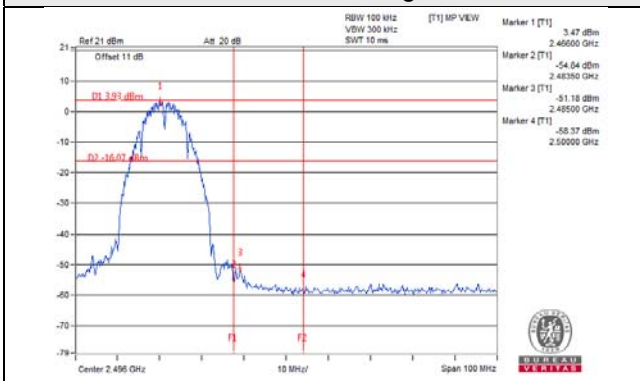
CH 1 Band edge



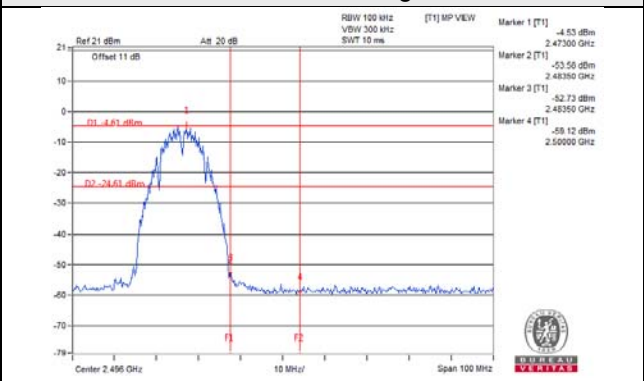
CH 11 Band edge



CH 12 Band edge

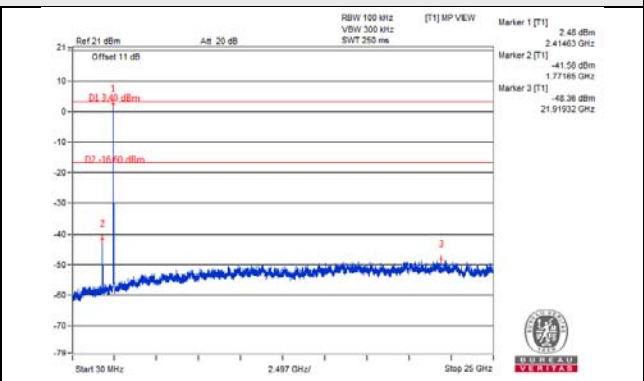
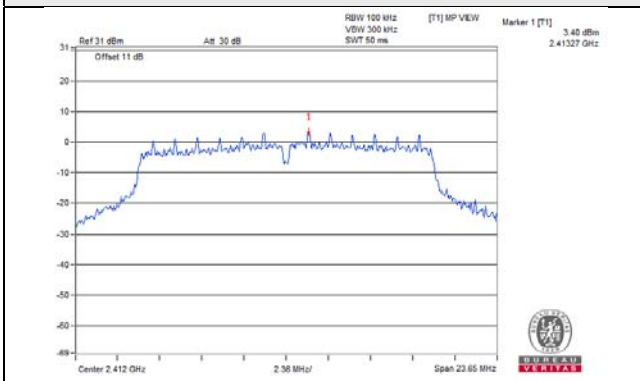


CH 13 Band edge

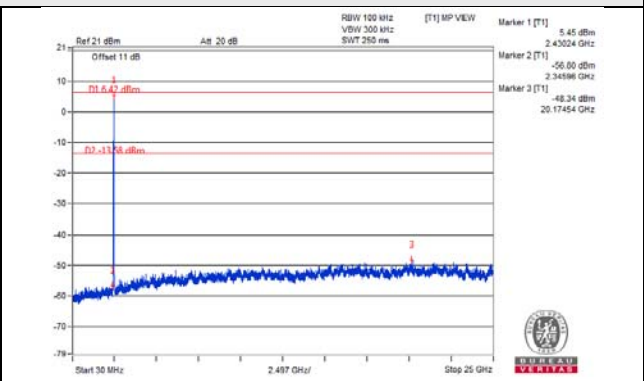
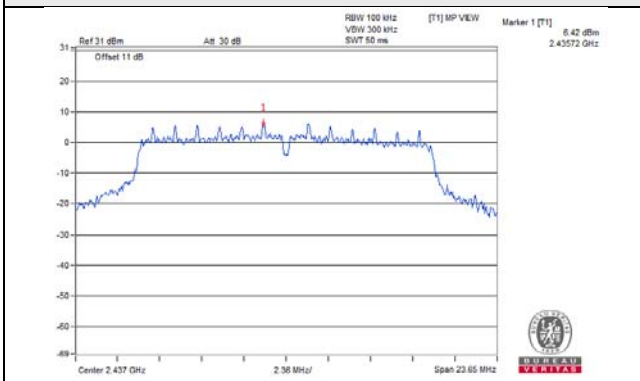


802.11g_Chain 0

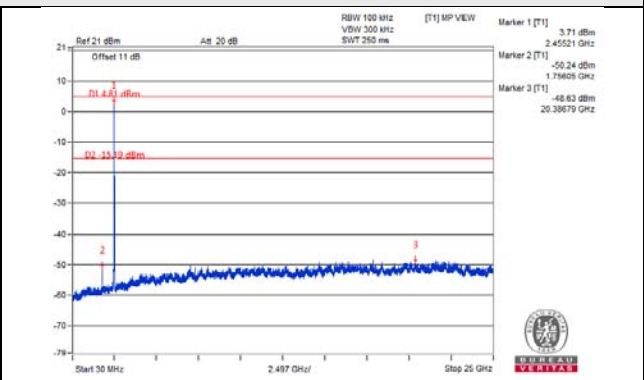
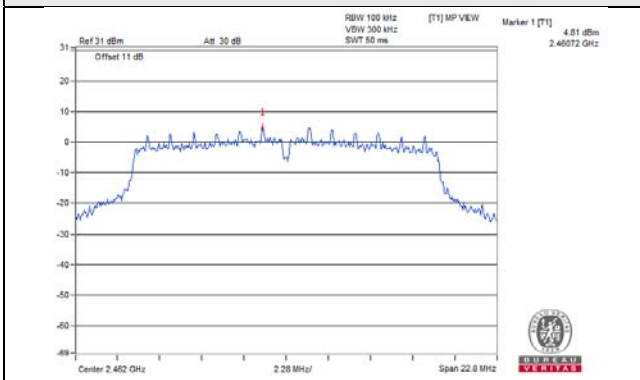
CH 1



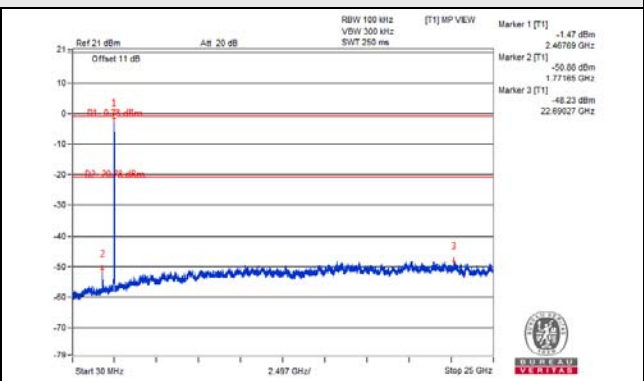
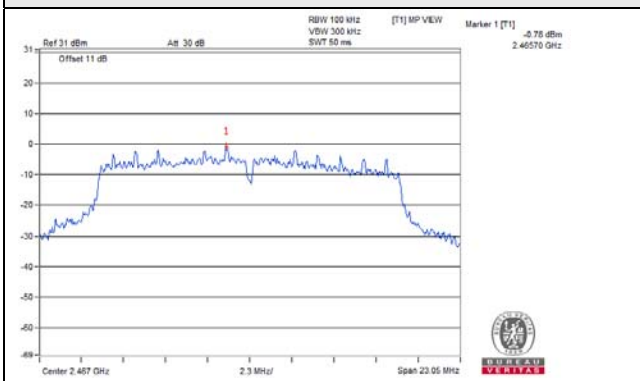
CH 6



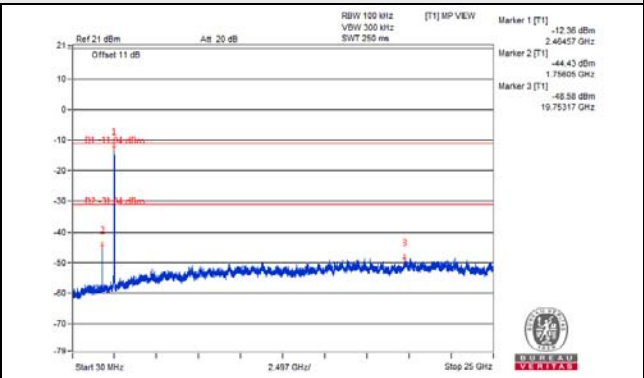
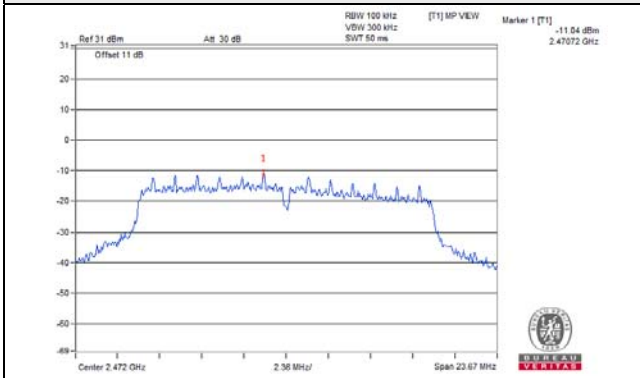
CH 11



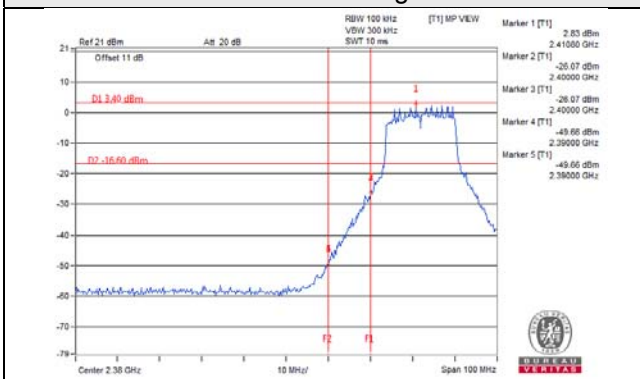
CH 12



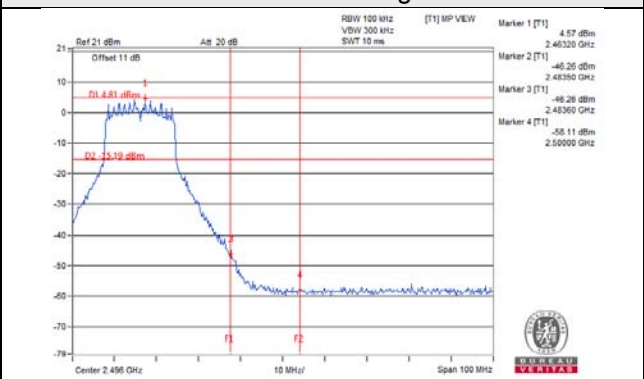
CH 13



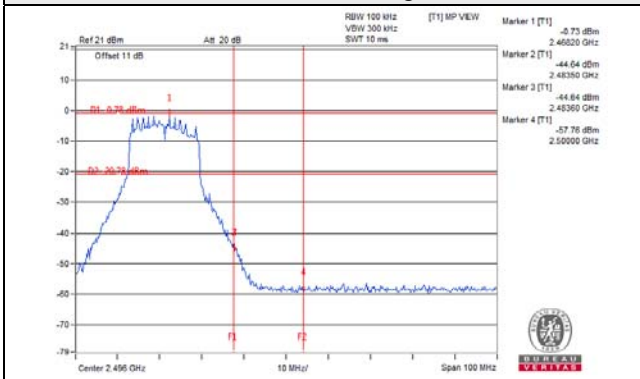
CH 1 Band edge



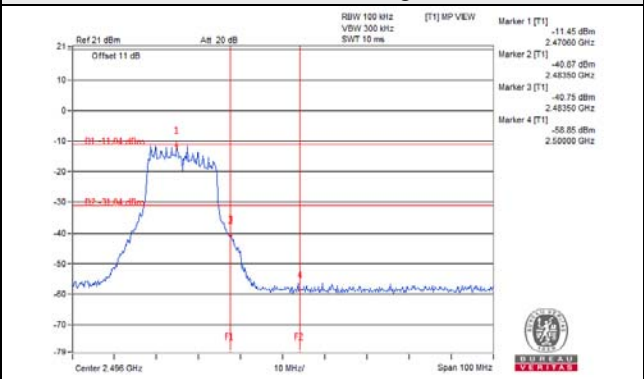
CH 11 Band edge



CH 12 Band edge

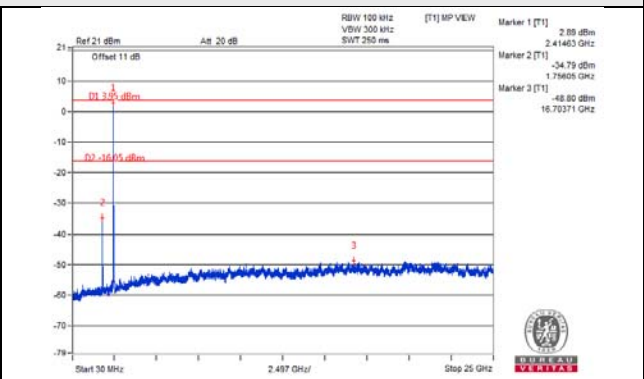
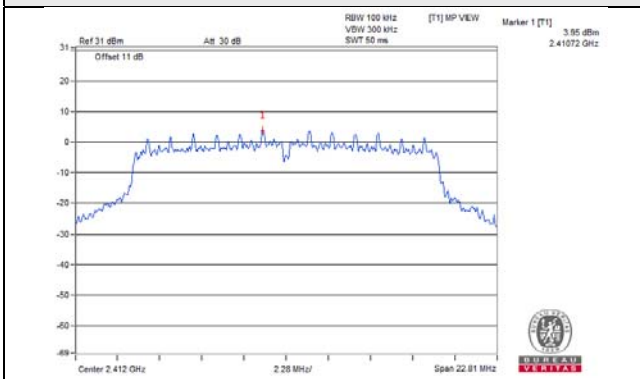


CH 13 Band edge

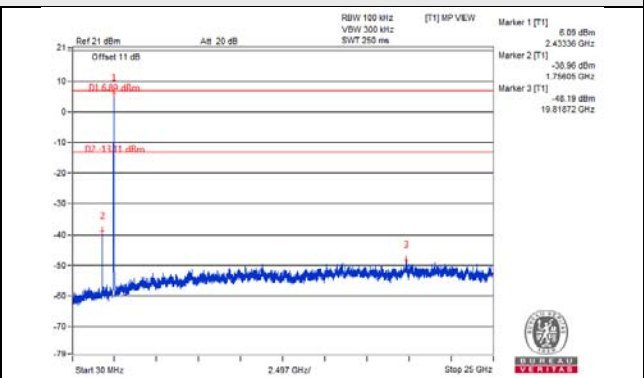
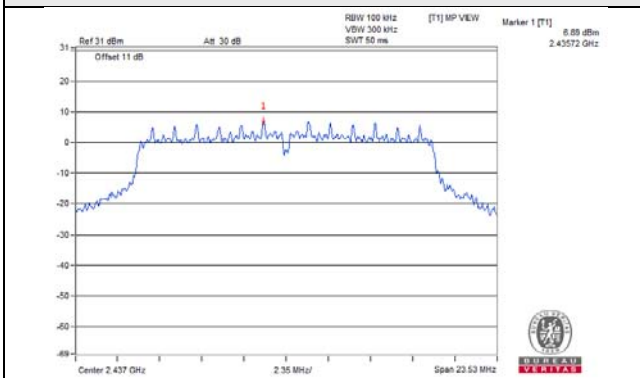


802.11g_Chain 1

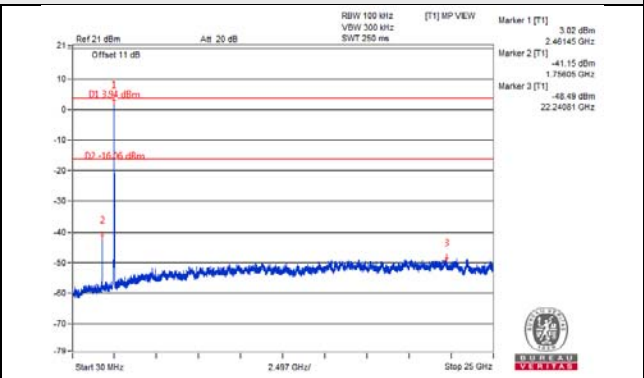
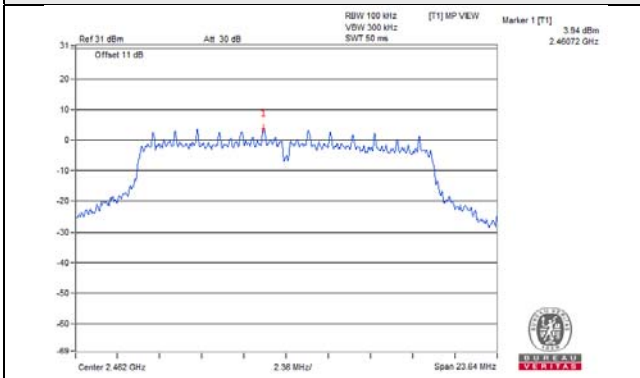
CH 1



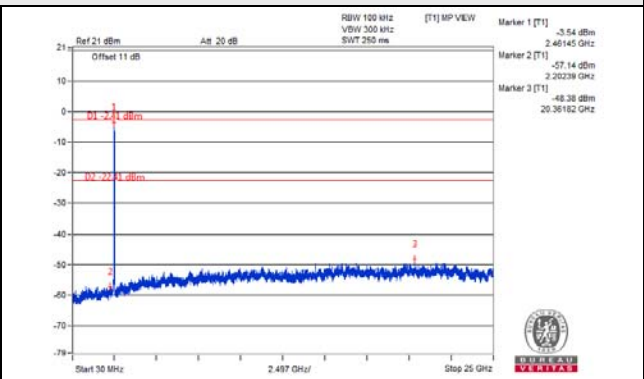
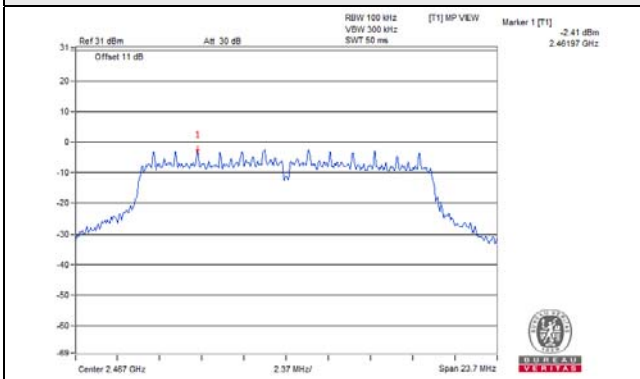
CH 6



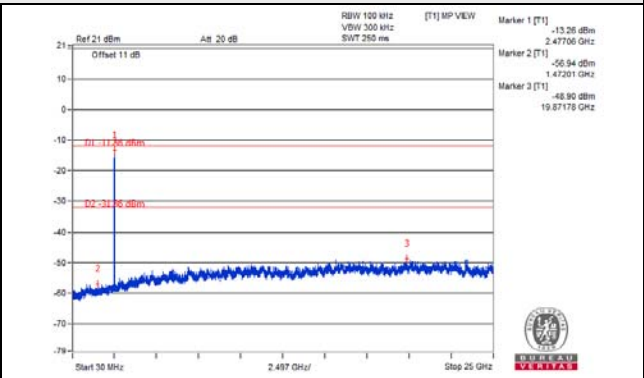
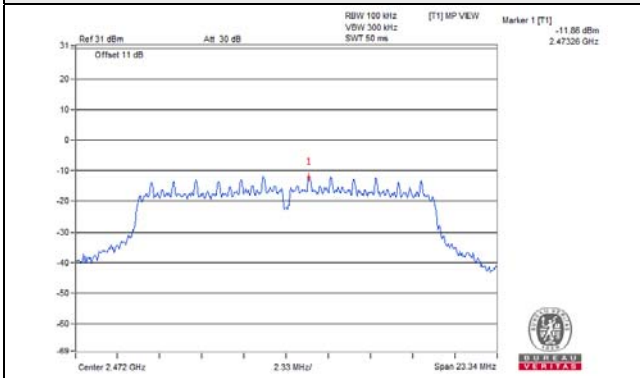
CH 11



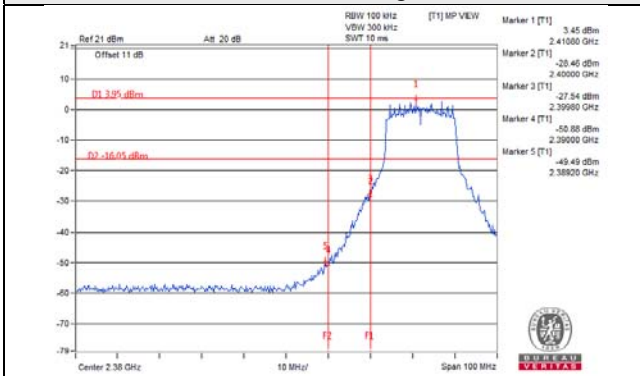
CH 12



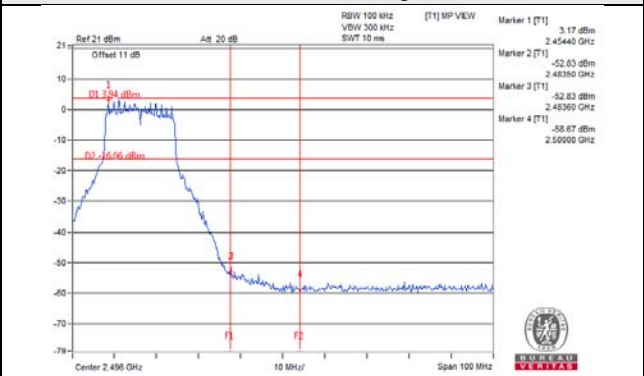
CH 13



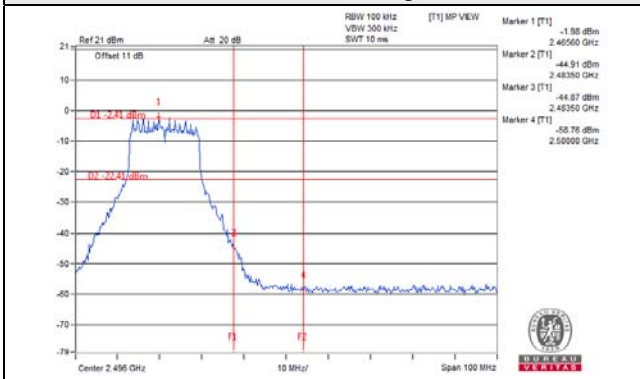
CH 1 Band edge



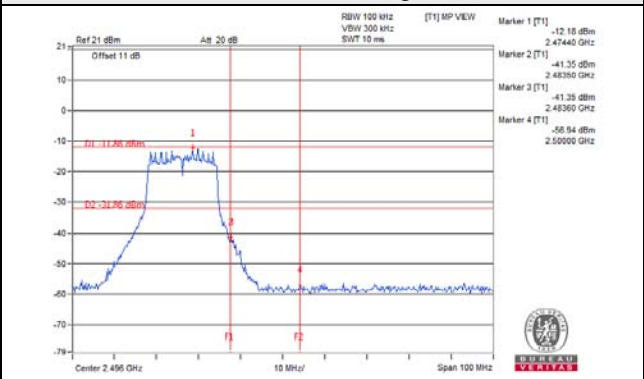
CH 11 Band edge



CH 12 Band edge

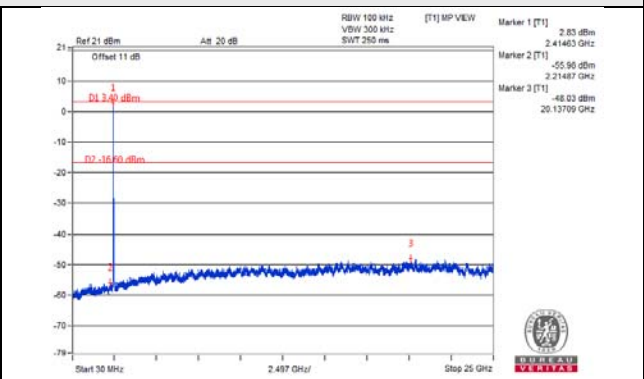
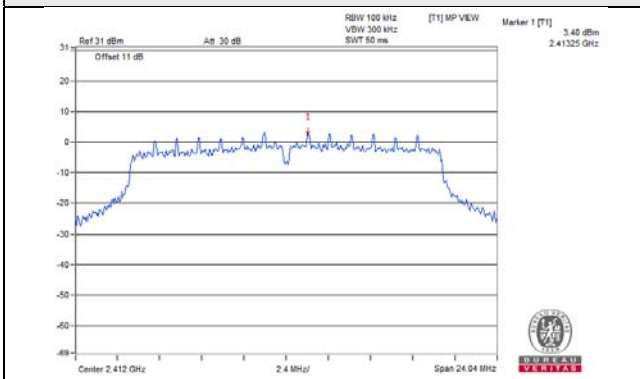


CH 13 Band edge

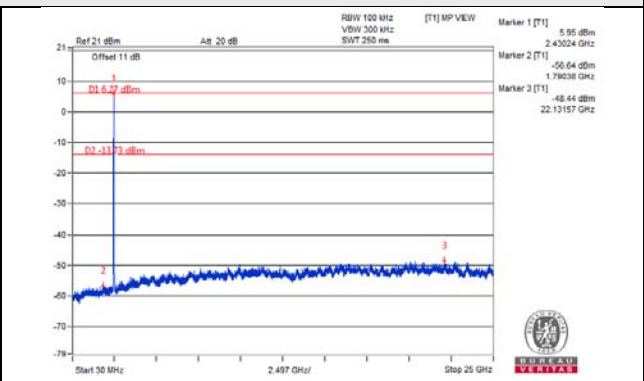
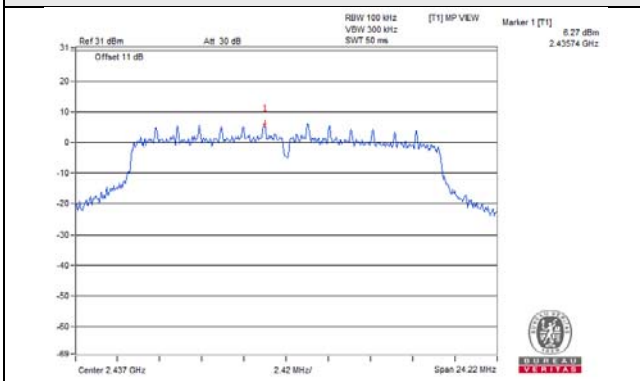


802.11n (HT20)_Chain 0

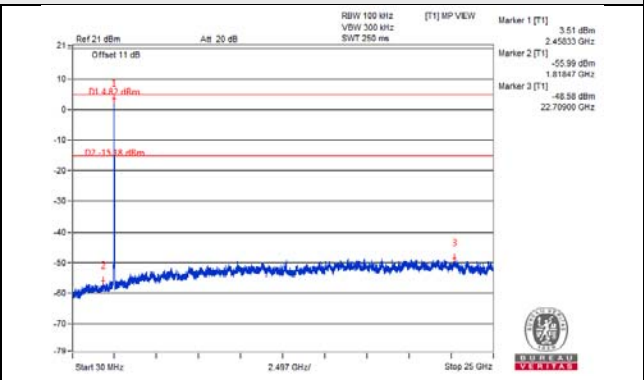
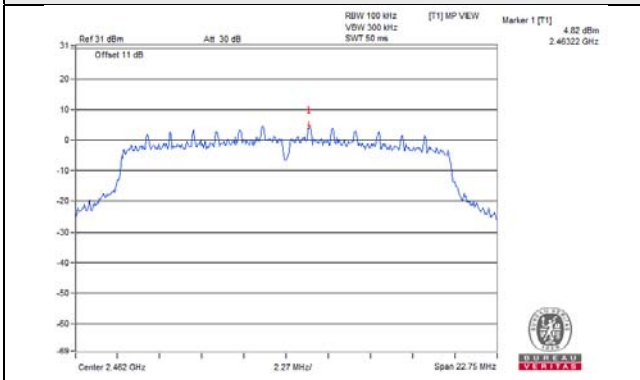
CH 1



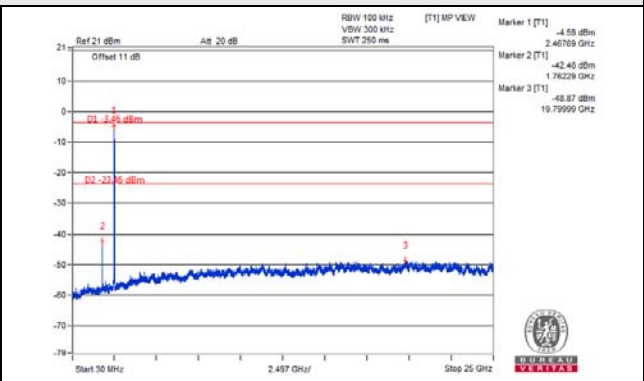
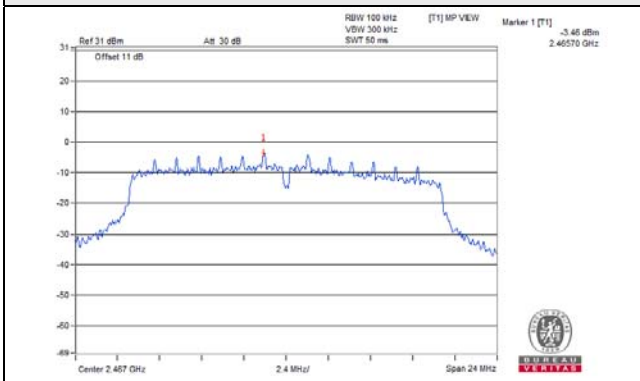
CH 6



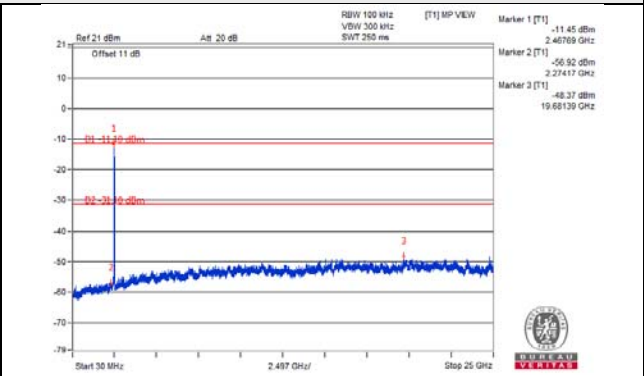
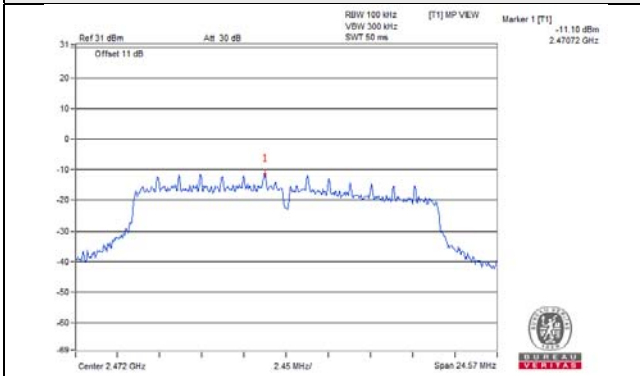
CH 11



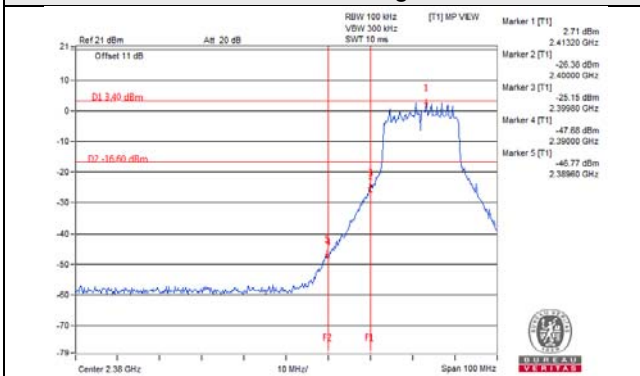
CH 12



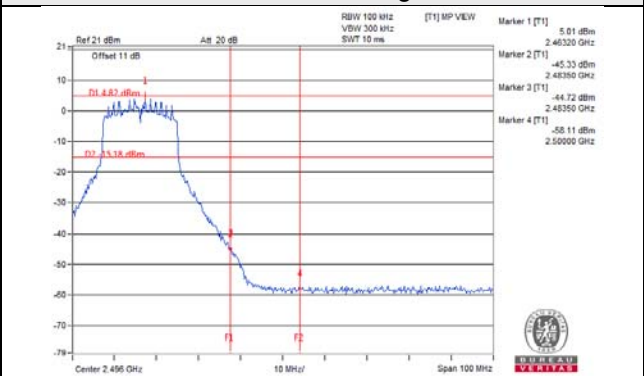
CH 13



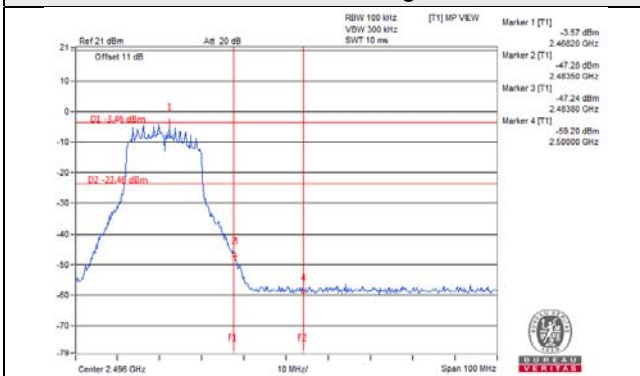
CH 1 Band edge



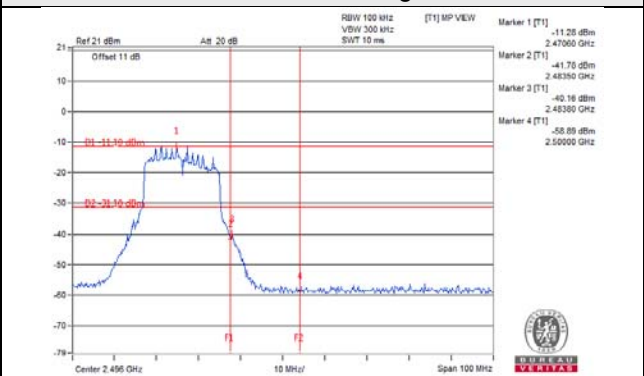
CH 11 Band edge



CH 12 Band edge

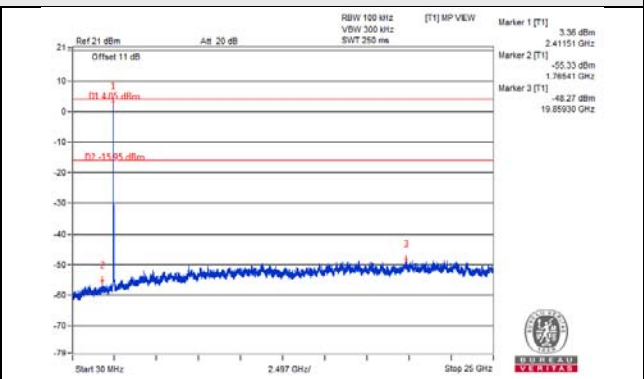
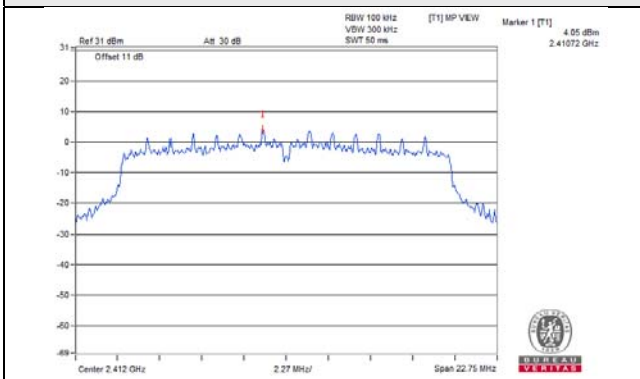


CH 13 Band edge

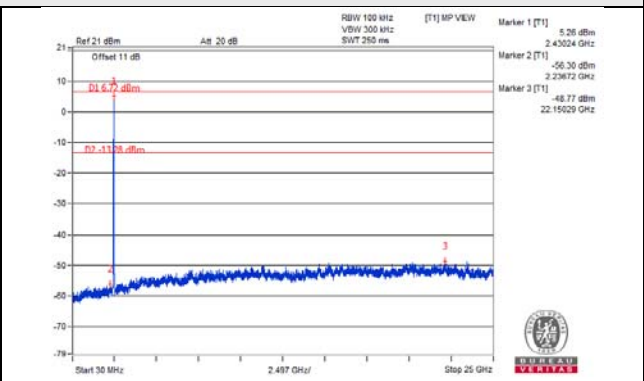
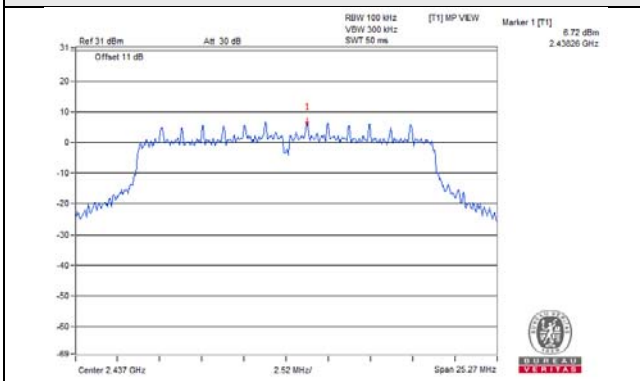


802.11n (HT20)_Chain 1

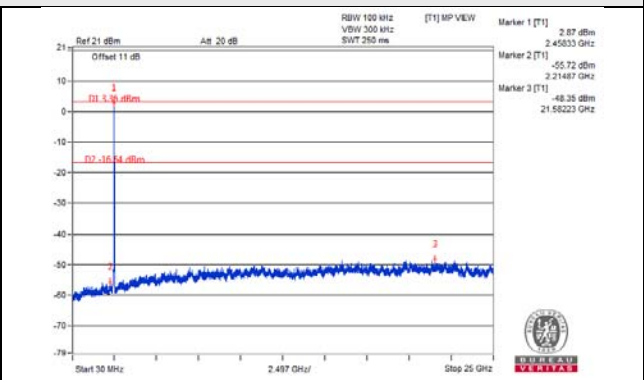
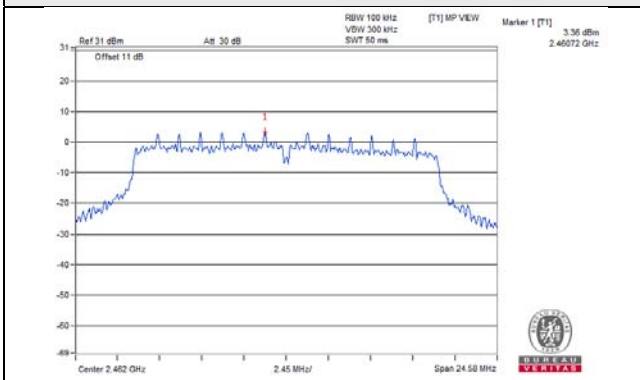
CH 1



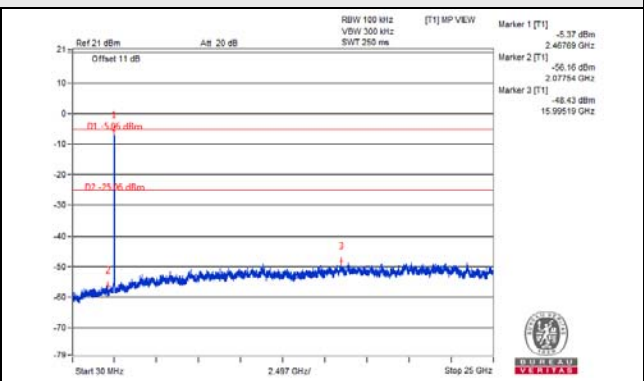
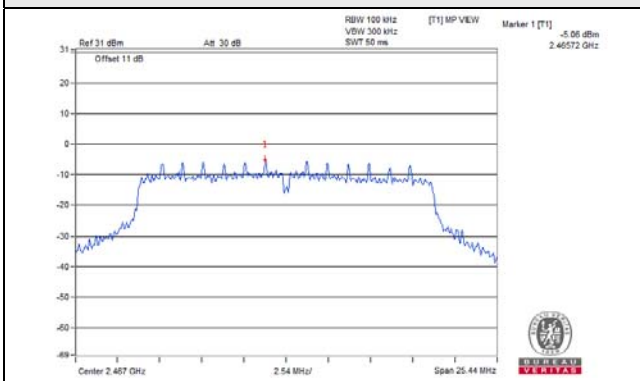
CH 6



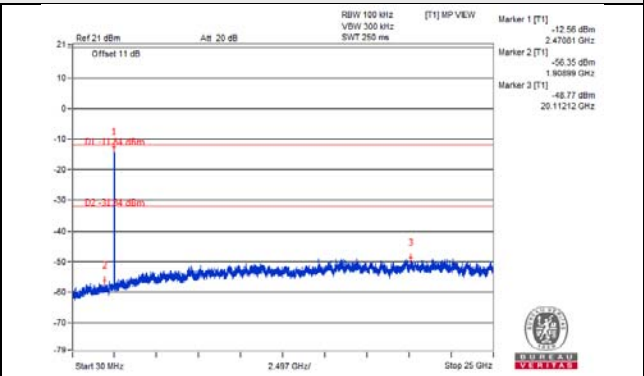
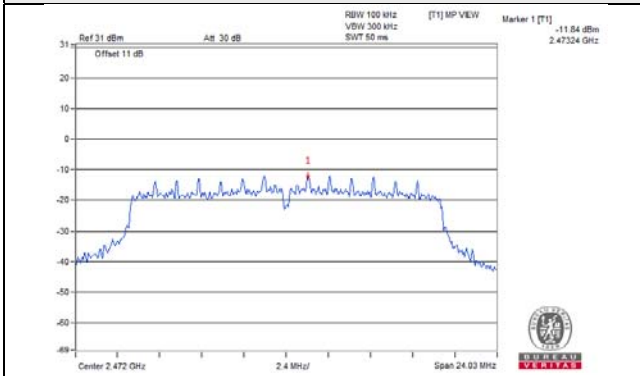
CH 11



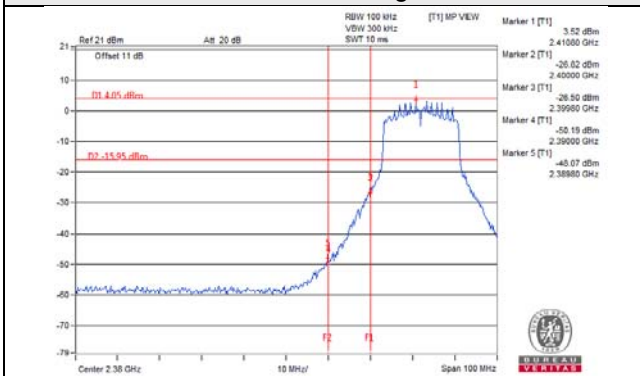
CH 12



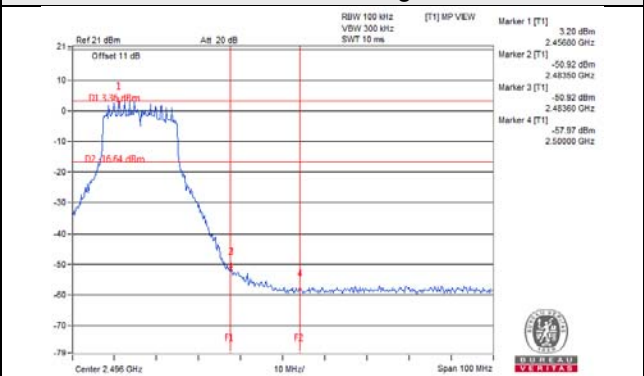
CH 13



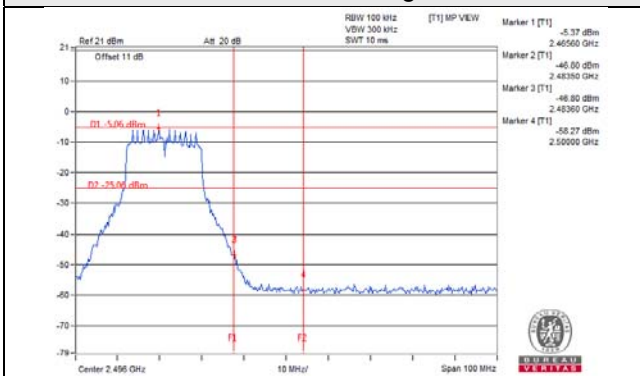
CH 1 Band edge



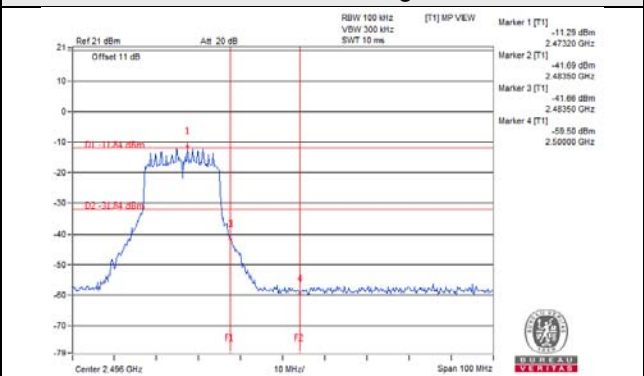
CH 11 Band edge



CH 12 Band edge



CH 13 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

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

Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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