

FCC Test Report

Report No.: RF190530C17B

FCC ID: H8NCDR8011

Test Model: CDR8010-DBB1

Series Model: CDR8011-DBA1, CDR8011-DDA1, CDR8011-DDB1, CDR8011-SBA1, CDR8011-SBB1, CDR8011-SDA1, CDR8011-SDB1 (refer to item 3.1 for more details)

Received Date: Feb. 25, 2019

Test Date: Apr. 12 ~ Aug. 28, 2019

Issued Date: Sep. 02, 2019

Applicant: ASKEY COMPUTER CORP.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
RF190530C17B	Original release	Sep. 02, 2019

1 Certificate of Conformity

Product: iDVR800

Brand: ASKEY

Test Model: CDR8010-DBB1

Series Model: CDR8011-DBA1, CDR8011-DDA1, CDR8011-DDB1, CDR8011-SBA1, CDR8011-SBB1, CDR8011-SDA1, CDR8011-SDB1 (refer to item 3.1 for more details)

Sample Status: Engineering sample

Applicant: ASKEY COMPUTER CORP.

Test Date: Apr. 12 ~ Aug. 28, 2019

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 : Pettie Chen, **Date:** Sep. 02, 2019
Pettie Chen / Senior Specialist

Approved by : Bruce Chen, **Date:** Sep. 02, 2019
Bruce Chen / Senior Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	NA	EUT is powered from DC
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.9dB at 2390.00MHz.
15.247(d)	Antenna Port Emission	Pass	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	Pass	Meet the requirement of limit.
15.247(b)	Conducted power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is I-PEX not a standard connector.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	iDVR800
Brand	ASKEY
Test Model	CDR8010-DBB1
Series Model	CDR8011-DBA1, CDR8011-DDA1, CDR8011-DDB1, CDR8011-SBA1, CDR8011-SBB1, CDR8011-SDA1, CDR8011-SDB1
Model Difference	Refer to Note
Sample Status	Engineering Sample
Power Supply Rating	12Vdc / 24Vdc (Car Charger) 3.7Vdc (Battery)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 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: up to 72.2Mbps
Operating Frequency	2412 ~ 2462MHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20): 11
Output Power	148.936mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Car charger, SD Card
Cable Supplied	NA

Note:

1. All models are listed as below. Model CDR8010-DBB1 is the representative for final test.

Model	PCB	Camera	NFC	Fan	eSIM	RAM
CDR8010-DBB1	Same PCB	Dual	Yes	Yes	N/A	3GB
CDR8011-DBA1			Yes	Yes		N/A
CDR8011-DDA1			Yes	No		N/A
CDR8011-DDB1			Yes	No		3GB
CDR8011-SBA1		Single	Yes	Yes		N/A
CDR8011-SBB1			Yes	Yes		3GB
CDR8011-SDA1			Yes	No		N/A
CDR8011-SDB1			Yes	No		3GB

2. The EUT provides 1 completed transmitter and 1 receiver.

Modulation Mode	TX Function
802.11b	1TX
802.11g	1TX
802.11n (HT20)	1TX

3. The following antennas were provided to the EUT.

c. The following antennas were provided to the EOP:						
Antenna Type	PIFA					
Connector Type	I-PEX					
Brand	WHAYU					
Model	C407-510916-A					
Antenna gain (dBi)						
2400MHz	2450MHz	2500MHz	5150MHz	5350MHz	5725MHz	5825MHz
1.32	-0.68	-0.46	3.39	-0.04	3.44	2.40

4. The EUT is powered by the following car charger and battery.

Car charger	
Brand	Sunny
Model	SYD1202-1005
Input Power	12Vdc / 24Vdc, 1.5A
Output Power	5Vdc, 2.1A
Power Line	5.1m cable with USB Type C connector

Battery	
Brand	FUJI ELECTRONICS(SHENZHEN)CO., LTD
Model	ICP463048XS
Rating	3.7Vdc, 750mA

5. Spurious emission of the simultaneous operation (WWAN+WLAN 2.4GHz, WWAN+WLAN 5.0GHz, WWAN+BT) have been evaluated and no non-compliance was found.

3.2 Description of Test Modes

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

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	NOTE 2	√	-

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

PLC: Power Line Conducted Emission

RE<1G: Radiated Emission below 1GHz

APCM: Antenna Port Conducted Measurement

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on Z-plane.
2. No need to concern of PLC due to the EUT is powered from DC.

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	DSSS	DBPSK	1.0
-	802.11g	1 to 13	1, 6, 11	OFDM	BPSK	6.0
-	802.11n (HT20)	1 to 13	1, 6, 11	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)
-	802.11g	1 to 13	6	OFDM	BPSK	6.0

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	DSSS	DBPSK	1.0
-	802.11g	1 to 13	1, 6, 11	OFDM	BPSK	6.0
-	802.11n (HT20)	1 to 13	1, 6, 11	OFDM	BPSK	6.5

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	22 deg. C, 68% RH	3.7Vdc	Greg Lin
RE<1G	22 deg. C, 68% RH	3.7Vdc	Greg Lin
APCM	25 deg. C, 60% RH	3.7Vdc	Frank Liu

3.3 Duty Cycle of Test Signal

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

802.11b: Duty cycle = $8.21/8.425 = 0.974$, Duty factor = $10 * \log (1/0.974) = 0.11$

802.11g: Duty cycle = $1.36/1.572 = 0.865$, Duty factor = $10 * \log (1/0.865) = 0.63$

802.11n (HT20): Duty cycle = $1.272/1.485 = 0.857$, Duty factor = $10 * \log (1/0.857) = 0.67$



3.4 Description of Support Units

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

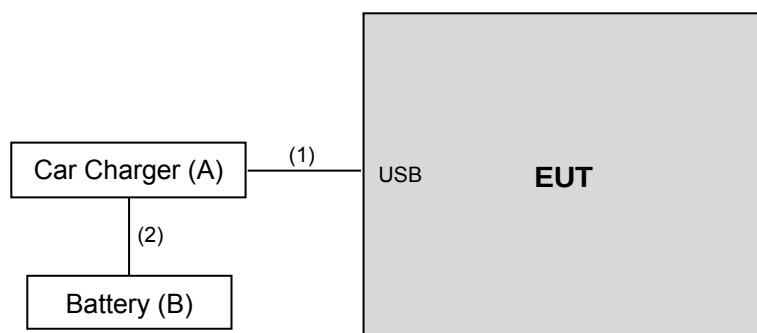
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Car Charger	Sunny	SYD1202-1005	NA	NA	Accessory of EUT
B.	Battery	YUASA	ST-CLN126-6S	NA	NA	-

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Type C to car charger	1	5.1	N	0	Accessory of EUT
2.	DC cable	1	1	N	0	-

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 v05r02

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 30dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Jan. 03, 2019	Jan. 02, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 25, 2018	Sep. 24, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Nov. 21, 2018	Nov. 20, 2019
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 25, 2018	Nov. 24, 2019
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 25, 2018	Nov. 24, 2019
Loop Antenna TESEQ	HLA 6121	45745	Jun. 14, 2018 Jul. 01, 2019	Jun. 13, 2019 Jun. 30, 2020
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Aug. 08, 2018 Jul. 11, 2019	Aug. 07, 2019 Jul. 10, 2020
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 19, 2019	Feb. 18, 2020
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 19, 2019	Jan. 18, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Aug. 08, 2018 Jul. 11, 2019	Aug. 07, 2019 Jul. 10, 2020
RF signal cable Woken	8D-FB	Cable-CH9-01	Jul. 31, 2018 Jul. 30, 2019	Jul. 30, 2019 Jul. 29, 2020
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY551900 04/MY55190007/MY5521 0005	Jul. 17, 2018 Jul. 15, 2019	Jul. 16, 2019 Jul. 14, 2020

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.

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:

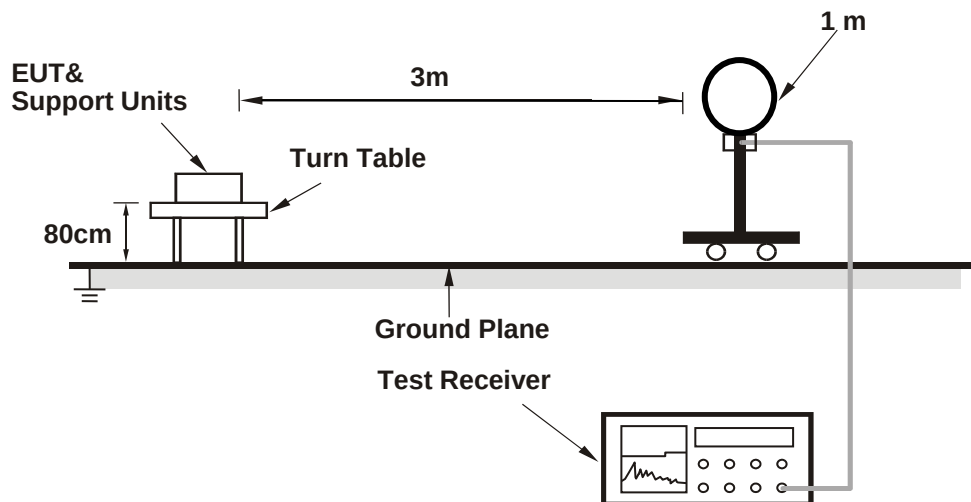
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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. (802.11b: RBW = 1MHz, VBW = 1kHz; 802.11g: RBW = 1MHz, VBW = 1kHz; 802.11n (HT20): RBW = 1MHz, VBW = 1kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

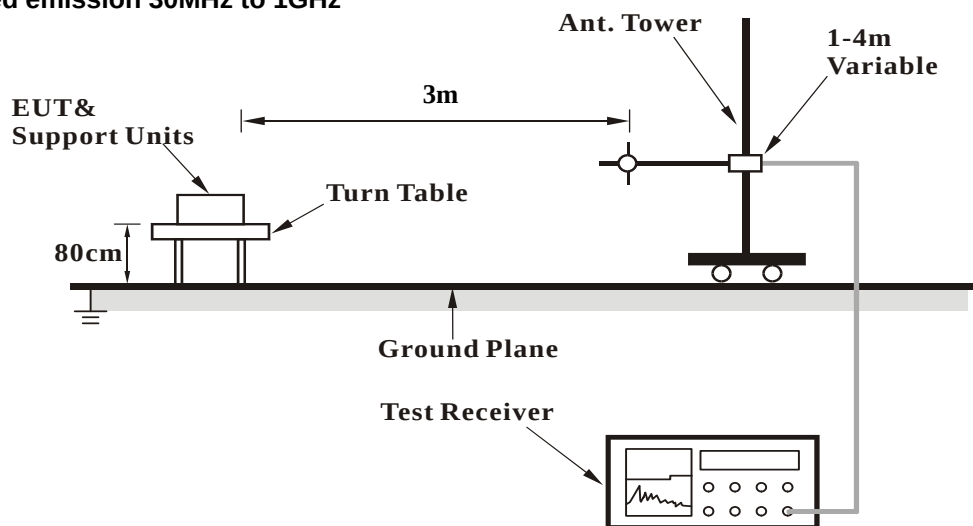
No deviation.

4.1.5 Test Setup

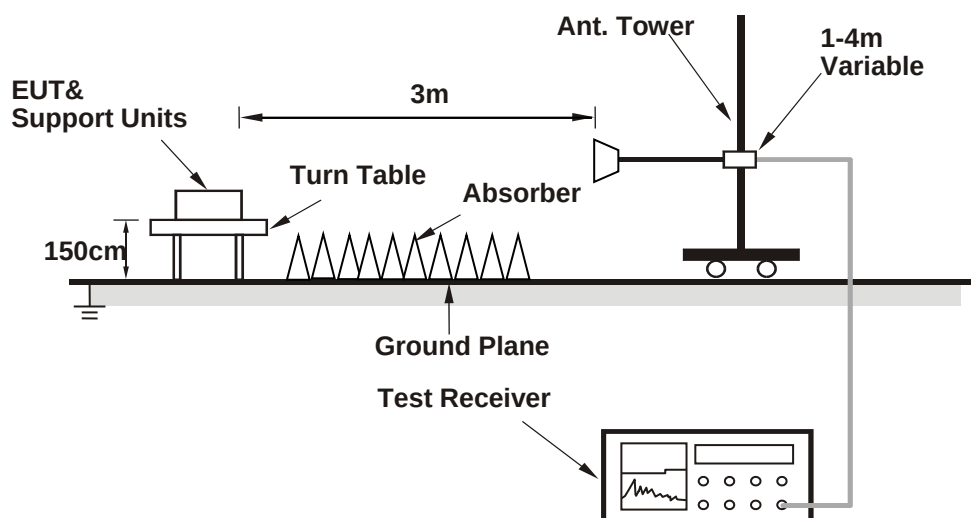
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

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

4.1.7 Test Results

Above 1GHz Data:

802.11b

CHANNEL	TX Channel 1	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	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	2390.00	60.6 PK	74.0	-13.4	2.98 H	221	28.8	31.8
2	2390.00	51.8 AV	54.0	-2.2	2.98 H	221	20.0	31.8
3	*2412.00	108.0 PK			2.87 H	223	76.1	31.9
4	*2412.00	104.0 AV			2.87 H	223	72.1	31.9
5	4824.00	46.7 PK	74.0	-27.3	1.36 H	176	43.1	3.6
6	4824.00	39.0 AV	54.0	-15.0	1.36 H	176	35.4	3.6
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	2390.00	57.7 PK	74.0	-16.3	1.21 V	137	25.9	31.8
2	2390.00	48.9 AV	54.0	-5.1	1.21 V	137	17.1	31.8
3	*2412.00	106.4 PK			1.16 V	132	74.5	31.9
4	*2412.00	102.7 AV			1.16 V	132	70.8	31.9
5	4824.00	45.8 PK	74.0	-28.2	3.08 V	192	42.2	3.6
6	4824.00	37.9 AV	54.0	-16.1	3.08 V	192	34.3	3.6

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 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	109.1 PK			2.85 H	219	77.3	31.8
2	*2437.00	105.3 AV			2.85 H	219	73.5	31.8
3	4874.00	44.7 PK	74.0	-29.3	1.43 H	177	41.2	3.5
4	4874.00	33.5 AV	54.0	-20.5	1.43 H	177	30.0	3.5
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	107.7 PK			1.14 V	143	75.9	31.8
2	*2437.00	104.1 AV			1.14 V	143	72.3	31.8
3	4874.00	44.3 PK	74.0	-29.7	3.02 V	186	40.8	3.5
4	4874.00	32.9 AV	54.0	-21.1	3.02 V	186	29.4	3.5

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: 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	106.2 PK			2.72 H	206	74.4	31.8
2	*2462.00	102.5 AV			2.72 H	206	70.7	31.8
3	2483.50	61.9 PK	74.0	-12.1	2.77 H	218	30.1	31.8
4	2483.50	52.6 AV	54.0	-1.4	2.77 H	218	20.8	31.8
5	4924.00	45.7 PK	74.0	-28.3	1.41 H	177	42.2	3.5
6	4924.00	37.8 AV	54.0	-16.2	1.41 H	177	34.3	3.5
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	105.2 PK			1.19 V	139	73.4	31.8
2	*2462.00	101.6 AV			1.19 V	139	69.8	31.8
3	2483.50	59.3 PK	74.0	-14.7	1.24 V	144	27.5	31.8
4	2483.50	49.1 AV	54.0	-4.9	1.24 V	144	17.3	31.8
5	4924.00	44.8 PK	74.0	-29.2	3.13 V	194	41.3	3.5
6	4924.00	36.7 AV	54.0	-17.3	3.13 V	194	33.2	3.5

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

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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	2390.00	70.2 PK	74.0	-3.8	2.40 H	220	38.4	31.8
2	2390.00	52.7 AV	54.0	-1.3	2.40 H	220	20.9	31.8
3	*2412.00	106.3 PK			2.55 H	222	74.4	31.9
4	*2412.00	97.0 AV			2.55 H	222	65.1	31.9
5	4824.00	44.0 PK	74.0	-30.0	1.49 H	171	40.4	3.6
6	4824.00	32.4 AV	54.0	-21.6	1.49 H	171	28.8	3.6
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	2390.00	31.9 PK	74.0	-42.1	1.13 V	147	34.7	-2.8
2	2390.00	16.4 AV	54.0	-37.6	1.13 V	147	19.2	-2.8
3	*2412.00	105.7 PK			1.20 V	138	73.8	31.9
4	*2412.00	95.8 AV			1.20 V	138	63.9	31.9
5	4824.00	43.8 PK	74.0	-30.2	3.12 V	195	40.2	3.6
6	4824.00	31.4 AV	54.0	-22.6	3.12 V	195	27.8	3.6

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 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	112.4 PK			2.25 H	222	80.6	31.8
2	*2437.00	102.2 AV			2.25 H	222	70.4	31.8
3	4874.00	44.6 PK	74.0	-29.4	1.34 H	180	41.1	3.5
4	4874.00	31.9 AV	54.0	-22.1	1.34 H	180	28.4	3.5
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	111.1 PK			1.17 V	142	79.3	31.8
2	*2437.00	100.9 AV			1.17 V	142	69.1	31.8
3	4874.00	37.7 PK	74.0	-36.3	3.03 V	191	34.2	3.5
4	4874.00	25.0 AV	54.0	-29.0	3.03 V	191	21.5	3.5

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: 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	106.9 PK			2.19 H	219	75.1	31.8
2	*2462.00	96.8 AV			2.19 H	219	65.0	31.8
3	2483.50	71.4 PK	74.0	-2.6	2.09 H	221	39.6	31.8
4	2483.50	52.9 AV	54.0	-1.1	2.09 H	221	21.1	31.8
5	4924.00	44.7 PK	74.0	-29.3	1.28 H	177	41.2	3.5
6	4924.00	31.9 AV	54.0	-22.1	1.28 H	177	28.4	3.5
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	105.5 PK			1.25 V	131	73.7	31.8
2	*2462.00	95.4 AV			1.25 V	131	63.6	31.8
3	2483.50	69.6 PK	74.0	-4.4	1.18 V	138	37.8	31.8
4	2483.50	51.5 AV	54.0	-2.5	1.18 V	138	19.7	31.8
5	4924.00	44.0 PK	74.0	-30.0	3.18 V	203	40.5	3.5
6	4924.00	31.1 AV	54.0	-22.9	3.18 V	203	27.6	3.5

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

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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	2390.00	70.7 PK	74.0	-3.3	2.08 H	227	38.9	31.8
2	2390.00	53.1 AV	54.0	-0.9	2.08 H	227	21.3	31.8
3	*2412.00	107.0 PK			2.31 H	224	75.1	31.9
4	*2412.00	97.2 AV			2.31 H	224	65.3	31.9
5	4824.00	44.9 PK	74.0	-29.1	1.53 H	178	41.3	3.6
6	4824.00	31.9 AV	54.0	-22.1	1.53 H	178	28.3	3.6
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	2390.00	69.4 PK	74.0	-4.6	1.21 V	147	37.6	31.8
2	2390.00	51.6 AV	54.0	-2.4	1.21 V	147	19.8	31.8
3	*2412.00	105.7 PK			1.14 V	139	73.8	31.9
4	*2412.00	95.8 AV			1.14 V	139	63.9	31.9
5	4824.00	44.0 PK	74.0	-30.0	3.03 V	208	40.4	3.6
6	4824.00	30.9 AV	54.0	-23.1	3.03 V	208	27.3	3.6

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 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	112.3 PK			2.23 H	225	80.5	31.8
2	*2437.00	102.4 AV			2.23 H	225	70.6	31.8
3	4874.00	45.1 PK	74.0	-28.9	1.56 H	184	41.6	3.5
4	4874.00	32.0 AV	54.0	-22.0	1.56 H	184	28.5	3.5
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	110.8 PK			1.18 V	146	79.0	31.8
2	*2437.00	100.9 AV			1.18 V	146	69.1	31.8
3	4874.00	44.1 PK	74.0	-29.9	3.07 V	196	40.6	3.5
4	4874.00	30.9 AV	54.0	-23.1	3.07 V	196	27.4	3.5

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: 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	106.1 PK			2.21 H	220	74.3	31.8
2	*2462.00	95.6 AV			2.21 H	220	63.8	31.8
3	2483.50	71.4 PK	74.0	-2.6	2.13 H	222	39.6	31.8
4	2483.50	52.7 AV	54.0	-1.3	2.13 H	222	20.9	31.8
5	4924.00	44.8 PK	74.0	-29.2	1.62 H	187	41.3	3.5
6	4924.00	31.7 AV	54.0	-22.3	1.62 H	187	28.2	3.5
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	104.6 PK			1.13 V	138	72.8	31.8
2	*2462.00	94.2 AV			1.13 V	138	62.4	31.8
3	2483.50	70.0 PK	74.0	-4.0	1.21 V	145	38.2	31.8
4	2483.50	51.2 AV	54.0	-2.8	1.21 V	145	19.4	31.8
5	4924.00	44.0 PK	74.0	-30.0	3.13 V	192	40.5	3.5
6	4924.00	30.9 AV	54.0	-23.1	3.13 V	192	27.4	3.5

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

Below 1GHz worst-case data:

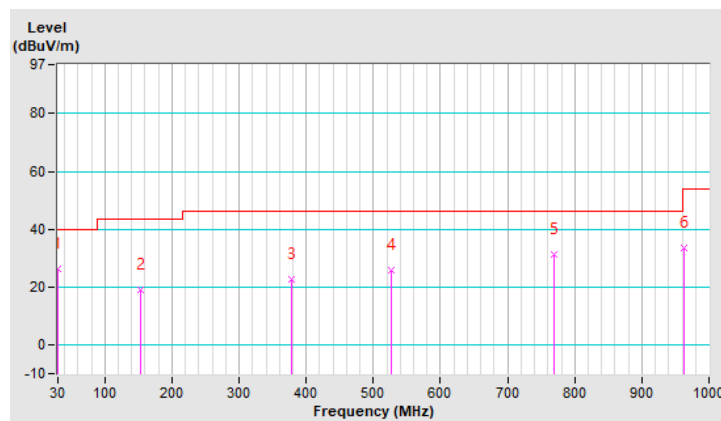
802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	26.2 QP	40.0	-13.8	1.25 H	15	37.6	-11.4
2	154.16	18.8 QP	43.5	-24.7	1.25 H	320	27.9	-9.1
3	377.26	22.8 QP	46.0	-23.2	1.00 H	6	29.0	-6.2
4	527.61	25.9 QP	46.0	-20.1	1.50 H	95	29.3	-3.4
5	770.11	31.2 QP	46.0	-14.8	1.50 H	271	29.9	1.3
6	962.17	33.4 QP	54.0	-20.6	1.00 H	221	28.9	4.5

Remarks:

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

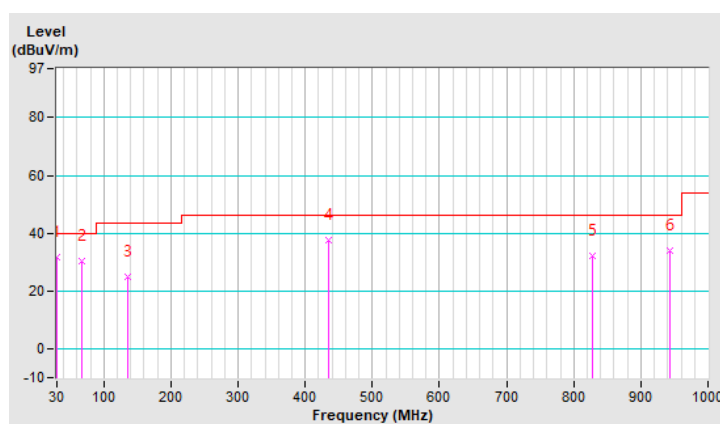


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	31.9 QP	40.0	-8.1	1.25 V	191	43.3	-11.4
2	66.86	30.2 QP	40.0	-9.8	1.00 V	6	41.3	-11.1
3	135.73	25.0 QP	43.5	-18.5	1.50 V	16	35.3	-10.3
4	434.49	37.7 QP	46.0	-8.3	1.25 V	182	42.5	-4.8
5	828.31	32.0 QP	46.0	-14.0	1.00 V	9	30.1	1.9
6	942.77	33.8 QP	46.0	-12.2	1.25 V	11	29.7	4.1

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

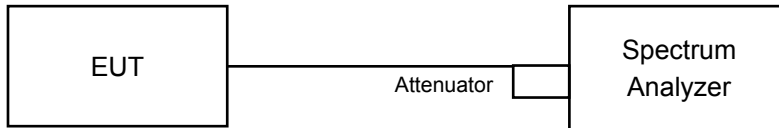


4.2 6dB Bandwidth Measurement

4.2.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.2.2 Test Setup



4.2.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.2.4 Test Procedure

- 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.

4.2.5 Deviation from Test Standard

No deviation.

4.2.6 EUT Operating Conditions

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

4.2.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	10.10	0.5	Pass
6	2437	10.06	0.5	Pass
11	2462	9.07	0.5	Pass

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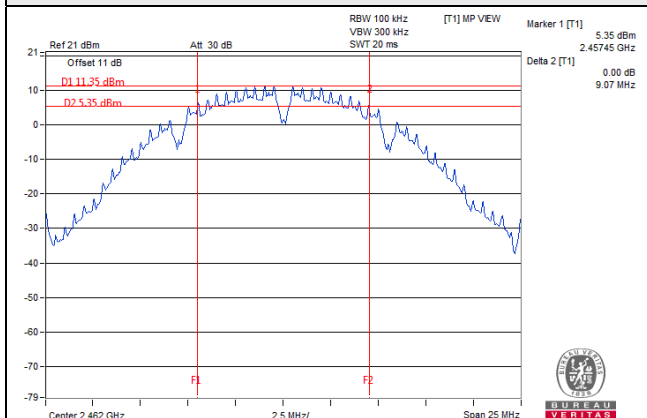
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	16.39	0.5	Pass
6	2437	16.38	0.5	Pass
11	2462	16.40	0.5	Pass

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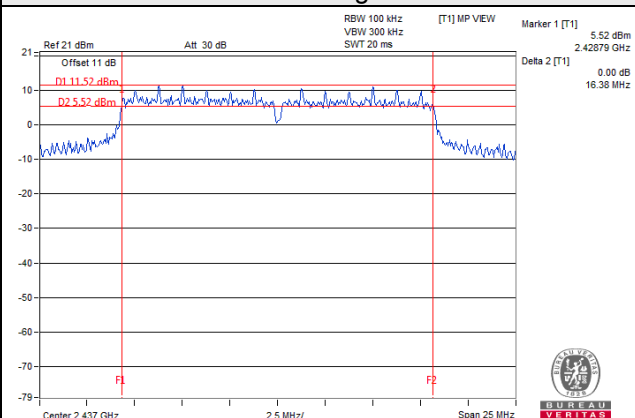
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	17.64	0.5	Pass
6	2437	17.57	0.5	Pass
11	2462	17.62	0.5	Pass

Spectrum Plot of Worst Value

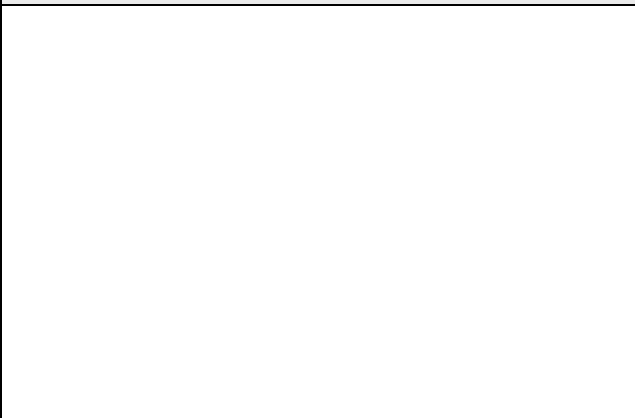
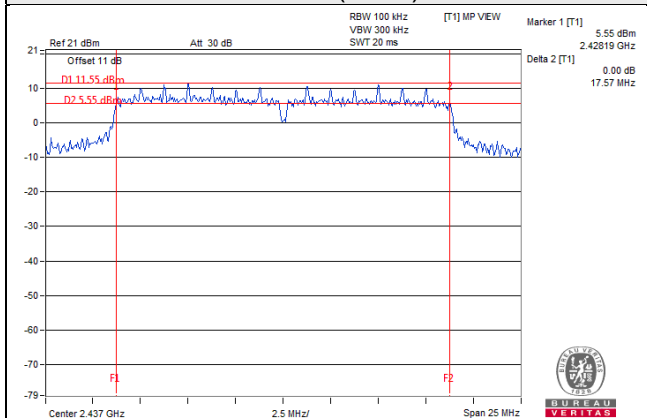
802.11b



802.11g



802.11n (HT20)



4.3 Conducted Output Power Measurement

4.3.1 Limits of Conducted Output Power Measurement

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

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

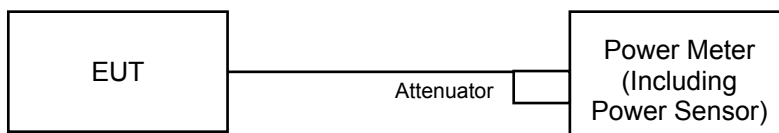
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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

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

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

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedures

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.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

Same as item 4.3.6.

4.3.7 Test Results

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	92.257	19.65	30.00	Pass
6	2437	127.057	21.04	30.00	Pass
11	2462	91.833	19.63	30.00	Pass

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Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	28.119	14.49	30.00	Pass
6	2437	148.936	21.73	30.00	Pass
11	2462	34.834	15.42	30.00	Pass

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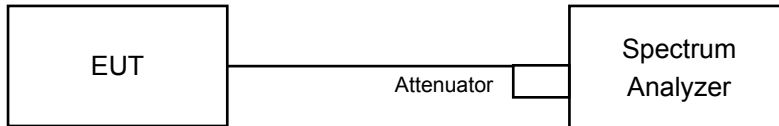
Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	26.546	14.24	30.00	Pass
6	2437	144.212	21.59	30.00	Pass
11	2462	23.878	13.78	30.00	Pass

4.4 Power Spectral Density Measurement

4.4.1 Limits of Power Spectral Density Measurement

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedure

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Condition

Same as item 4.3.6

4.4.7 Test Results

802.11b

Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/10kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass/Fail
1	2412	-7.87	0.11	-7.76	8	Pass
6	2437	-6.93	0.11	-6.82	8	Pass
11	2462	-7.82	0.11	-7.71	8	Pass

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

802.11g

Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/10kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass/Fail
1	2412	-16.25	0.63	-15.62	8	Pass
6	2437	-10.89	0.63	-10.26	8	Pass
11	2462	-16.74	0.63	-16.11	8	Pass

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

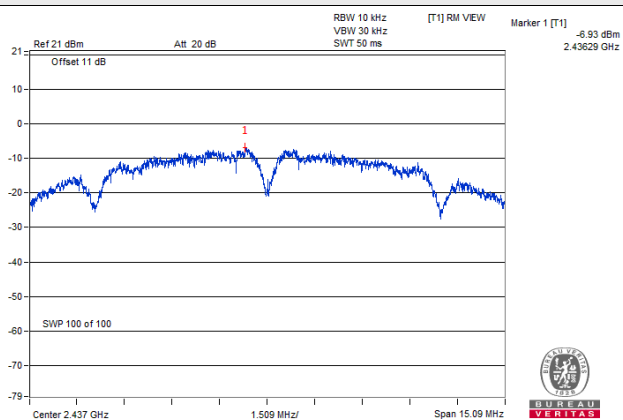
802.11n (HT20)

Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/10kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass/Fail
1	2412	-17.49	0.67	-16.82	8	Pass
6	2437	-10.36	0.67	-9.69	8	Pass
11	2462	-18.01	0.67	-17.34	8	Pass

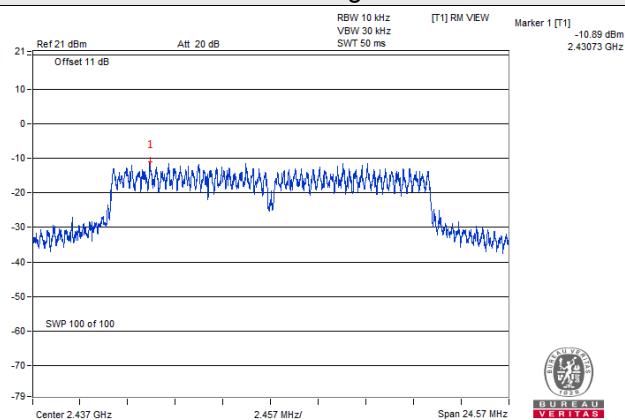
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

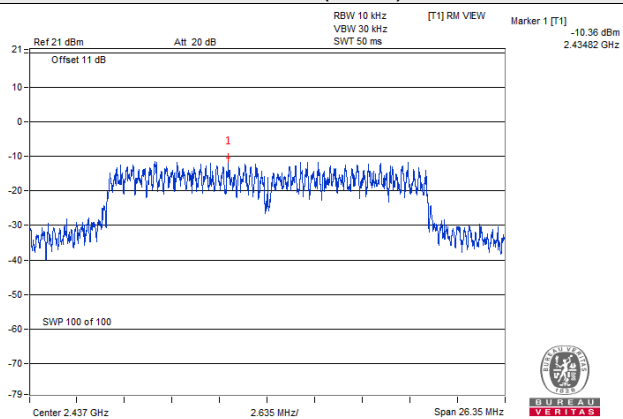
802.11b



802.11g



802.11n (HT20)



4.5 Conducted Out of Band Emission Measurement

4.5.1 Limits of Conducted Out of Band Emission Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOB

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

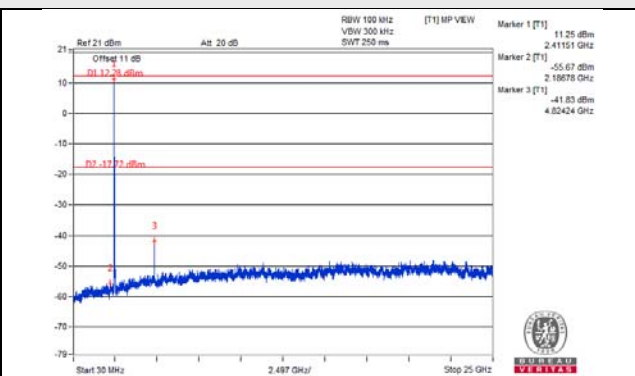
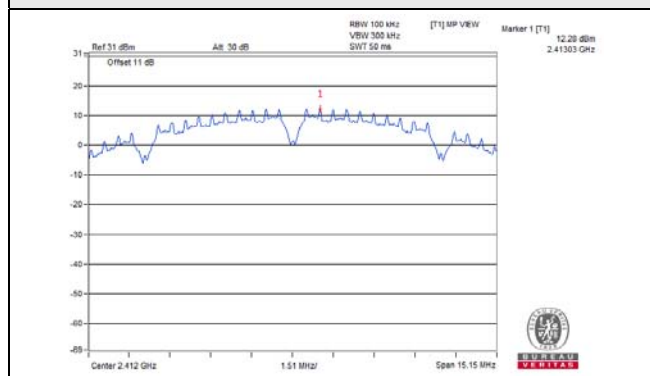
Same as item 4.3.6

4.5.7 Test Results

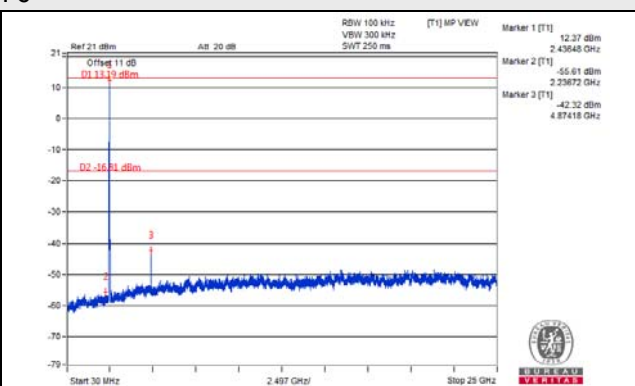
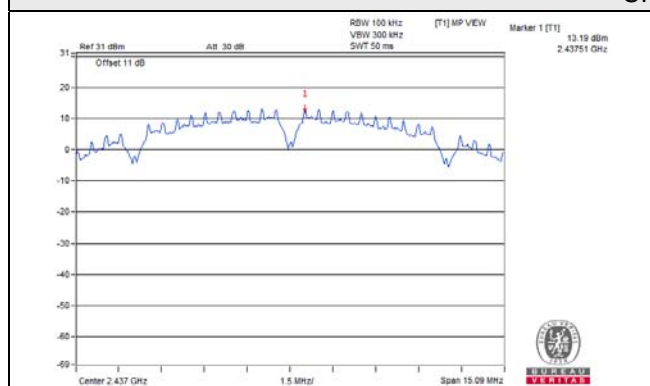
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

802.11b

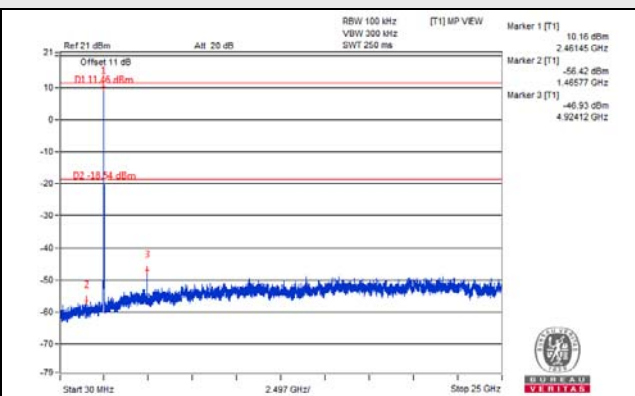
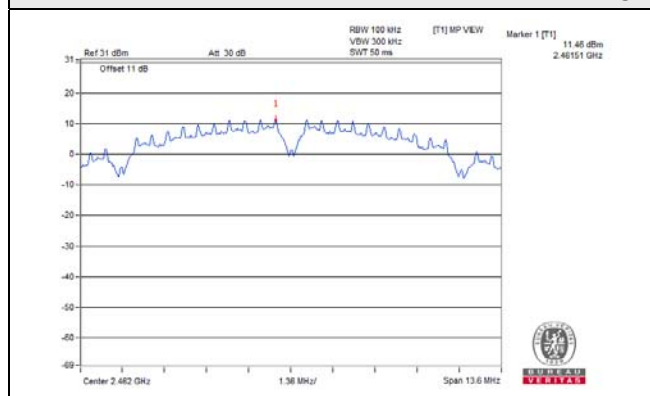
CH 1



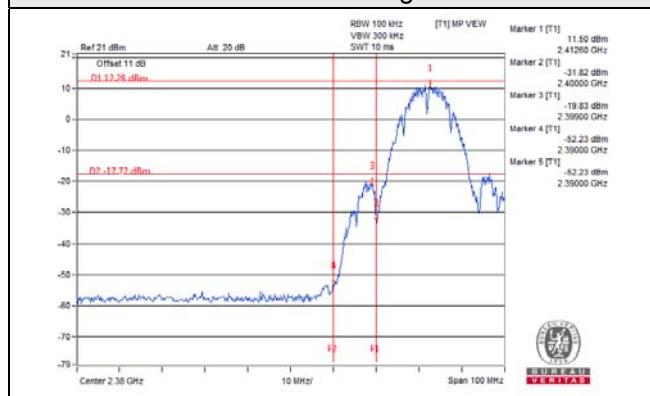
CH 6



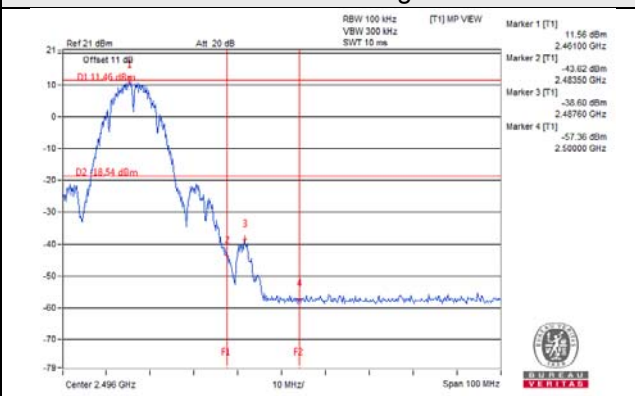
CH 11



CH 1 Band edge

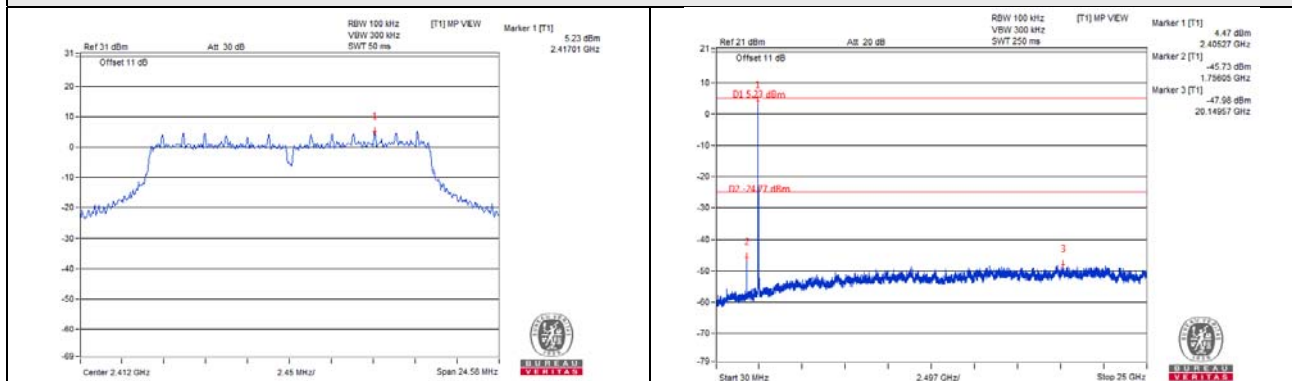


CH 11 Band edge

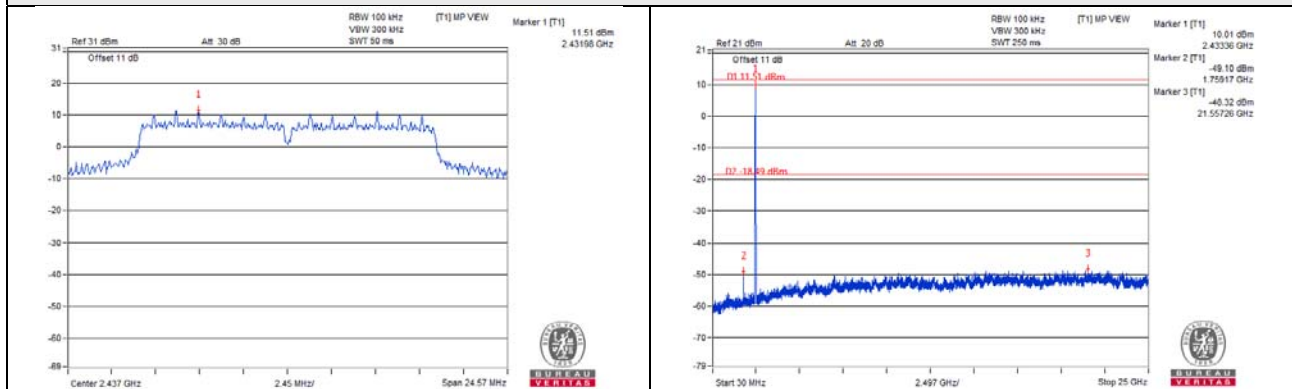


802.11g

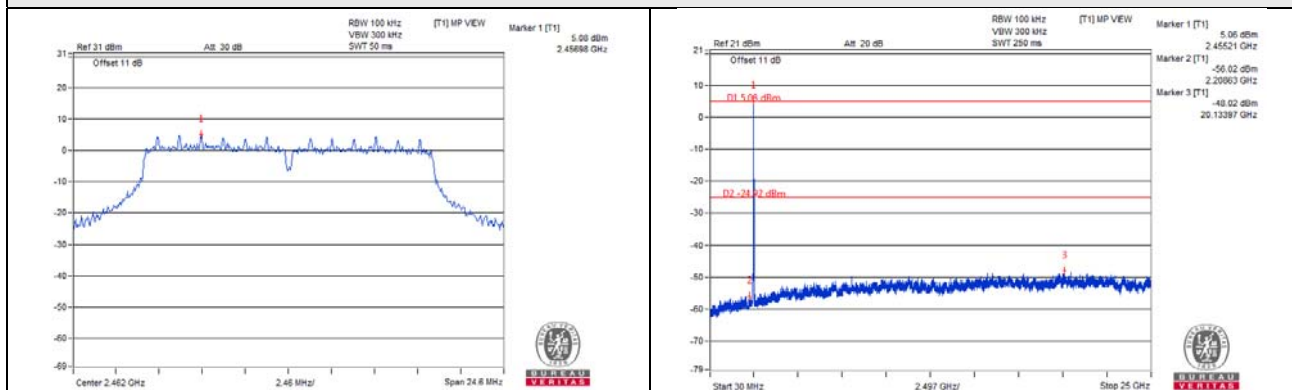
CH 1



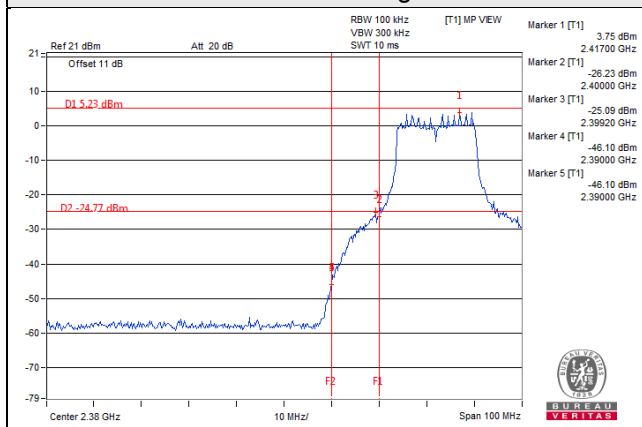
CH 6



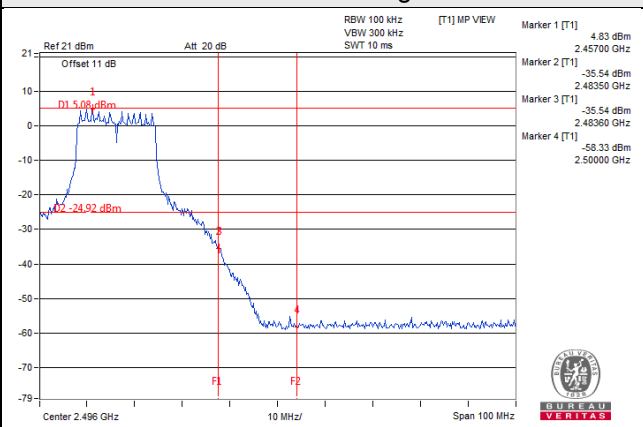
CH 11



CH 1 Band edge

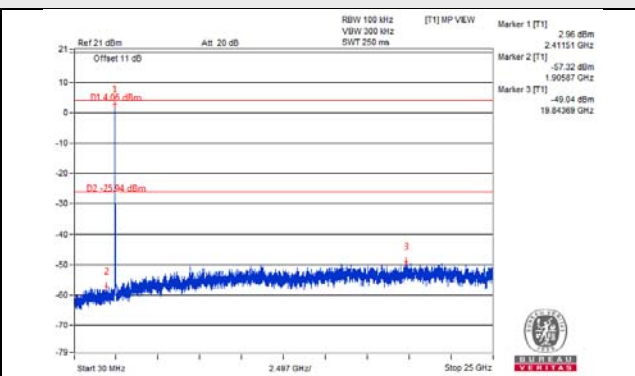
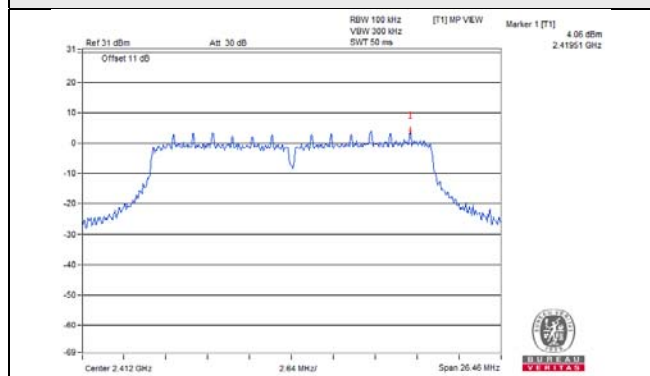


CH 11 Band edge

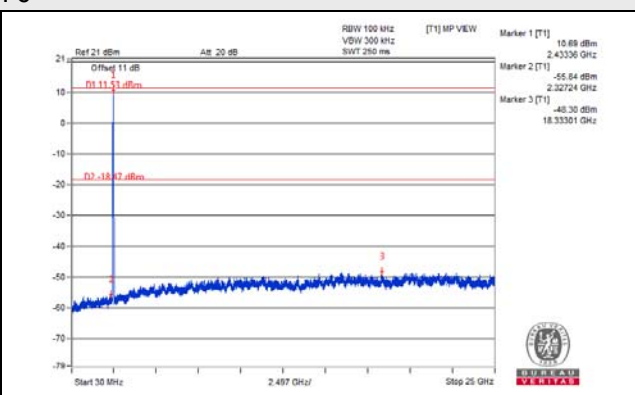
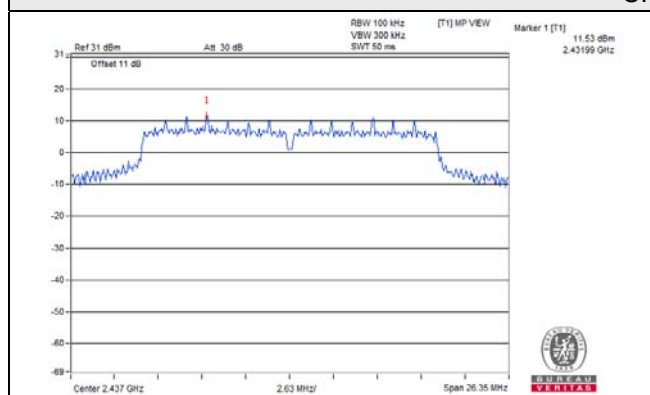


802.11n (HT20)

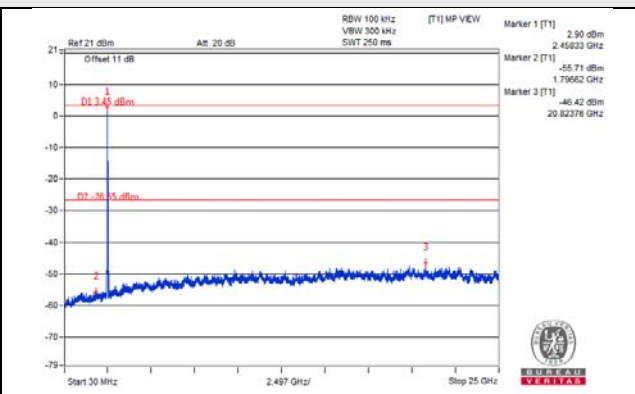
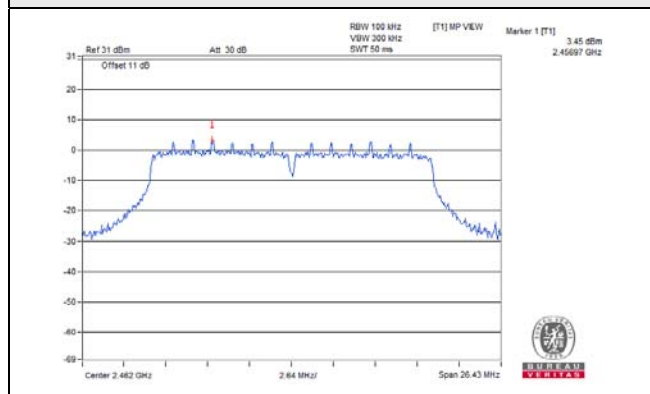
CH 1



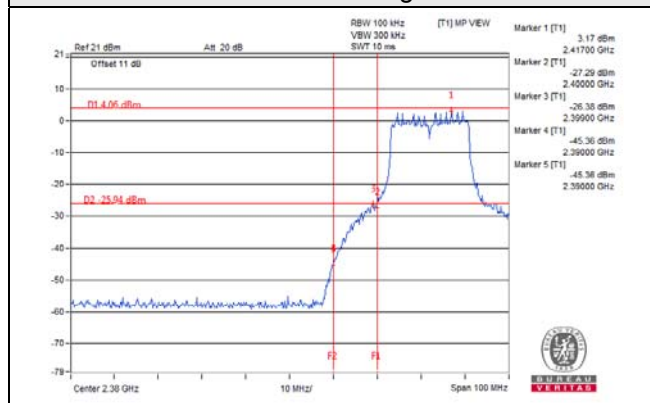
CH 6



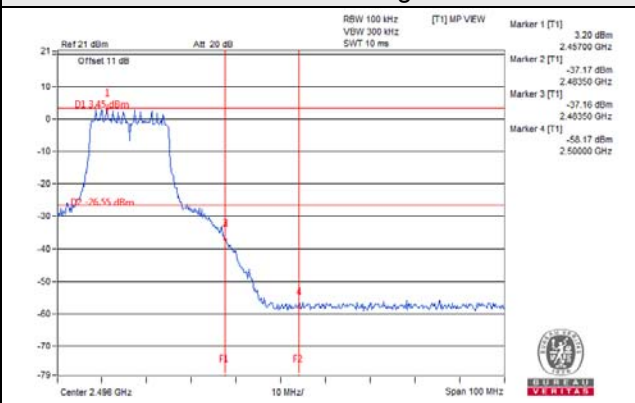
CH 11



CH 1 Band edge



CH 11 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information of the Testing Laboratories

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

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

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