FCC Test Report

Report No.: RF180719D12-2

FCC ID: P27XW4

Test Model: XW4

Series Model: XW4xxx, SCHX4AEWxxx (the 1st x should be blank or "-"; the rest x could be 0 to 9, A to Z, a to z, blank or "-", for marking purpose)

Received Date: Jul. 19, 2018

Test Date: Jul. 27 ~ Sep. 4, 2018

Issued Date: Sep. 4, 2018

Applicant: Sercomm Corp.

Address: 8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C. (NanKang Software Park)

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.)

FCC Registration / Designation Number: 418586 / TW1078

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Release Control Record

Issue No.	Description	Date Issued
RF180719D12-2	Original release.	Sep. 4, 2018

1 Certificate of Conformity

Product:	WiFi Adapter
Brand:	Sercomm ; Xfinity
Test Model:	XW4
Series Model:	XW4xxx, SCHX4AEWxxx (the 1st x should be blank or "-"; the rest x could be 0 to 9, A to Z, a to z, blank or "-", for marking purpose)
Sample Status:	Engineering sample
Applicant:	Sercomm Corp.
Test Date:	Jul. 27 ~ Sep. 4, 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 : Annie Chang , **Date:** Sep. 4, 2018

Annie Chang / Senior Specialist

Approved by : Rex. Lai , **Date:** Sep. 4, 2018

Rex Lai / Associate Technical Manager

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 -4.58dB at 0.55865MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -1.01dB at 2483.50MHz.
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) (±)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	2.38 dB
	30MHz ~ 1000MHz	5.54 dB
Radiated Emissions above 1 GHz	Above 1GHz	5.48 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	WiFi Adapter
Brand	Sercomm ; Xfinity
Test Model	XW4
Series Model	XW4xxx, SCHX4AEWxxx (the 1st x should be blank or "-"; the rest x could be 0 to 9, A to Z, a to z, blank or "-", for marking purpose)
Model Difference	For marking purpose
Status of EUT	Engineering sample
Power Supply Rating	AC I/P: 120V, 50-60 Hz DC O/P: 12V, 1A
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS,OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n: up to 300Mbps
Operating Frequency	2.412 ~ 2.462GHz
Number of Channel	11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
Output Power	368.845mW
Antenna Type	Dipole antenna with 3.51dBi gain
Antenna Connector	N/A
Accessory Device	Refer to user's manual
Data Cable Supplied	N/A

Note:

1. The EUT is a WiFi Adapter.
2. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

Modulation Mode	TX Function
802.11b	2TX
802.11g	2TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

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

3.2 Description of Test Modes

11 channels are provided for 802.11b, 802.11g and 802.11n (20MHz):

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		

7 channels are provided for 802.11n (40MHz):

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where RE≥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 **X-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 11	1, 6, 11	DSSS	DBPSK	1
-	802.11g	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6
-	802.11n (20MHz)	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6.5
-	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Radiated Emission Test (Below 1GHz):

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11n (20MHz)	1 to 11	6	OFDM	BPSK	6.5

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11n (20MHz)	1 to 11	6	OFDM	BPSK	6.5

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
-	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
-	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
For Output Power Only						
EUT Configure Mode	**Mode**	**Available Channel**	**Tested Channel**	**Modulation Technology**	**Modulation Type**	**Data Rate (Mbps)**
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
-	802.11g	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6
-	802.11n (20MHz)	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6.5
-	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Test Condition:

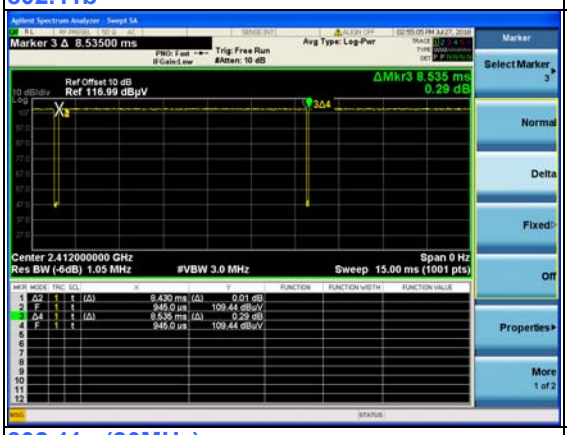
Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	24deg. C, 67%RH	120Vac, 60Hz	Jamea Wei
RE<1G	24deg. C, 67%RH	120Vac, 60Hz	Jamea Wei
PLC	25deg. C, 75%RH	120Vac, 60Hz	Starltaly Wu
APCM	25deg. C, 76%RH	120Vac, 60Hz	Sason Lee

3.3 Duty Cycle of Test Signal

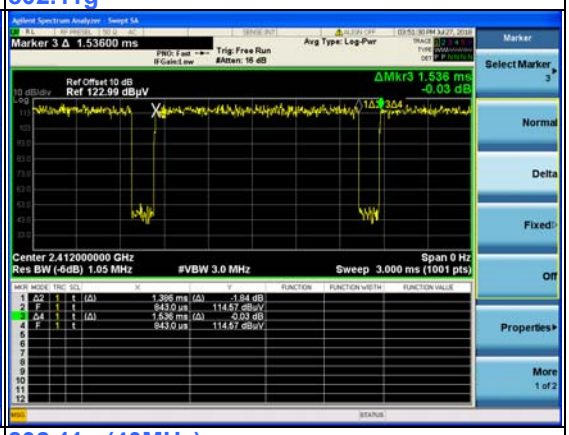
If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11b: Duty cycle = 8.43/8.53 = 0.988)
802.11g: Duty cycle = 1.386/1.536 = 0.902, Duty factor = 10 * log(1/0.902) = 0.45
802.11n (20MHz): Duty cycle = 1.296/1.485 = 0.889, Duty factor = 10 * log(1/0.889) = 0.51
802.11n (40MHz): Duty cycle = 0.613/0.815 = 0.752, Duty factor = 10 * log(1/0.752) = 1.24

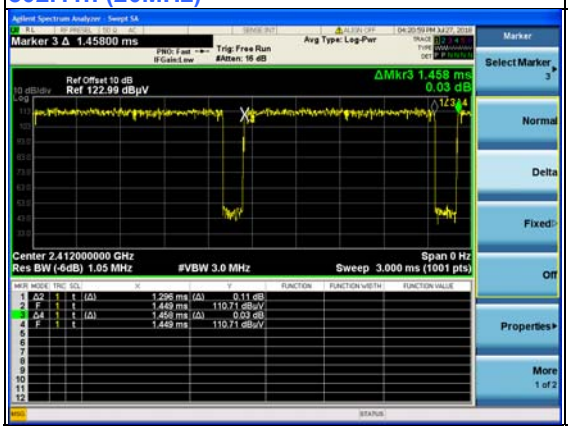
802.11b



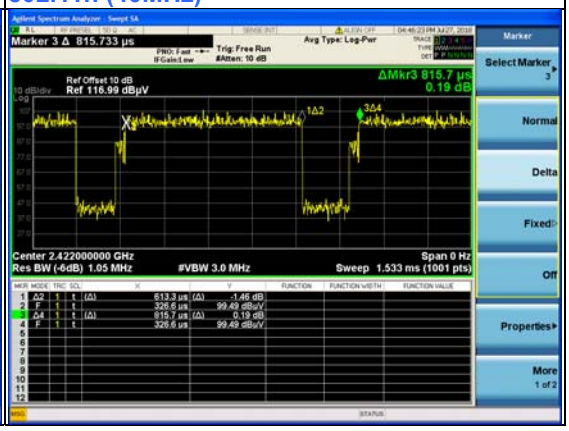
802.11g



802.11n (20MHz)



802.11n (40MHz)



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.

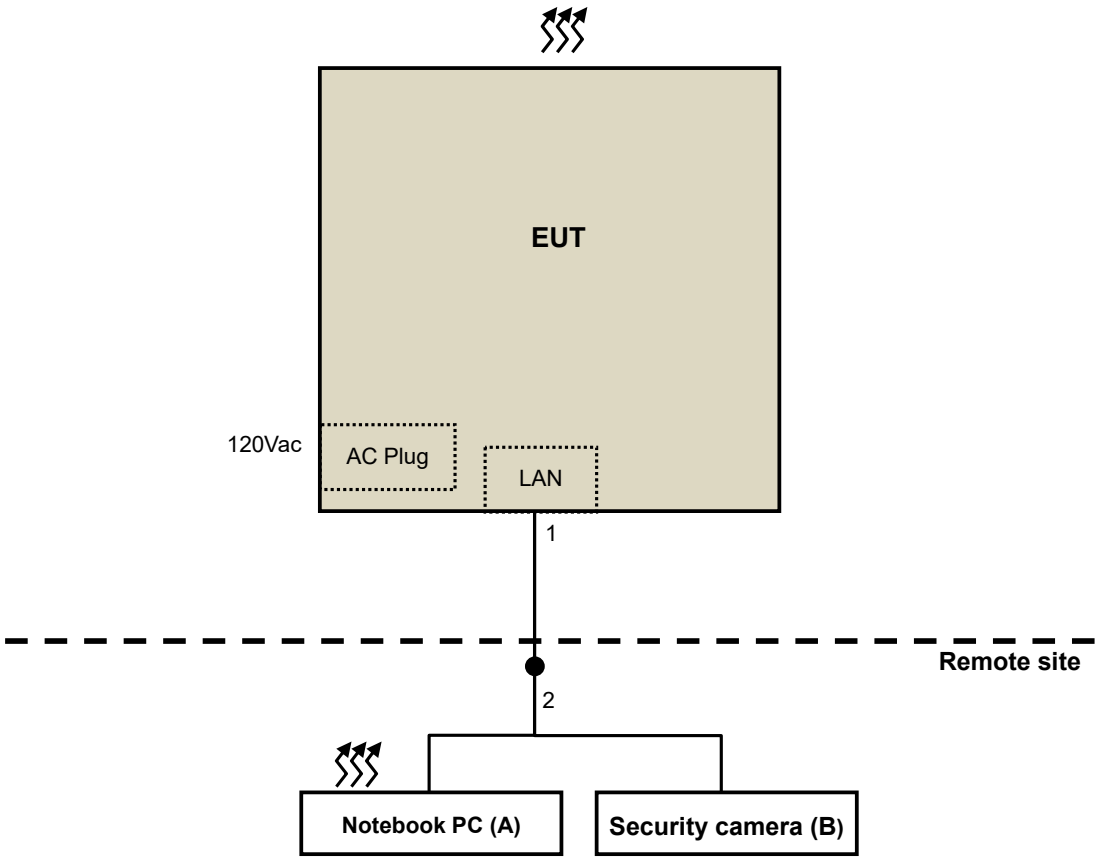
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook PC	DELL	E6530	9331GV1	FCC DoC Approved	Provided by Lab
B.	Security camera	Sercomm ; Xfinity	xCAM2	N/A	N/A	Supplied by client

Note:
1. All power cords of the above support units are non-shielded (1.8m).
2. Items A ~ B acted as communication partners to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	LAN cable	1	10	N	0	Provided by Lab
2.	Y cable	1	0.1	N	0	Supplied by client

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

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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 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.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 21, 2018	Feb. 20, 2019
HP Preamplifier	8449B	3008A01201	Feb. 22, 2018	Feb. 21, 2019
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Feb. 21, 2018	Feb. 20, 2019
Agilent TEST RECEIVER	N9038A	MY51210129	Feb. 6, 2018	Feb. 5, 2019
Schwarzbeck Antenna	VULB 9168	139	Nov. 29, 2017	Nov. 28, 2018
Schwarzbeck Antenna	VHBA 9123	480	May 19, 2017	May 18, 2019
Schwarzbeck Horn Antenna	BBHA-9170	212	Dec. 1, 2017	Nov. 30, 2018
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Dec. 1, 2017	Nov. 30, 2018
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	Radiated_V7.6.15.9.5	NA	NA	NA
SUHNER RF cable With 4dB PAD	SF102	Cable-CH6-01	Aug. 13, 2018	Aug. 12, 2019
SUHNER RF cable With 3/4dB PAD	SF102	Cable-CH8-3.6m	Aug. 13, 2018	Aug. 12, 2019
KEYSIGHT MIMO Powermeasurement Test set	U2021XA	U2021XA-001	Jun. 4, 2018	Jun. 3, 2019
KEYSIGHT Spectrum Analyzer	N9030A	MY54490260	Aug. 3, 2018	Aug. 2, 2019
Loop Antenna EMCI	LPA600	270	Aug. 11, 2017	Aug. 10, 2019
EMCO Horn Antenna	3115	00028257	Nov. 30, 2017	Nov. 29, 2018
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 29, 2017	Sep. 28, 2018
Anritsu Power Sensor	MA2411B	0738404	Apr. 26, 2018	Apr. 25, 2019
Anritsu Power Meter	ML2495A	0842014	Apr. 26, 2018	Apr. 25, 2019

NOTE:
1. The calibration interval of the above test instruments is 12/24 months. 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 Chamber No. 6.
4. The Industry Canada Reference No. IC 7450E-6.

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 detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

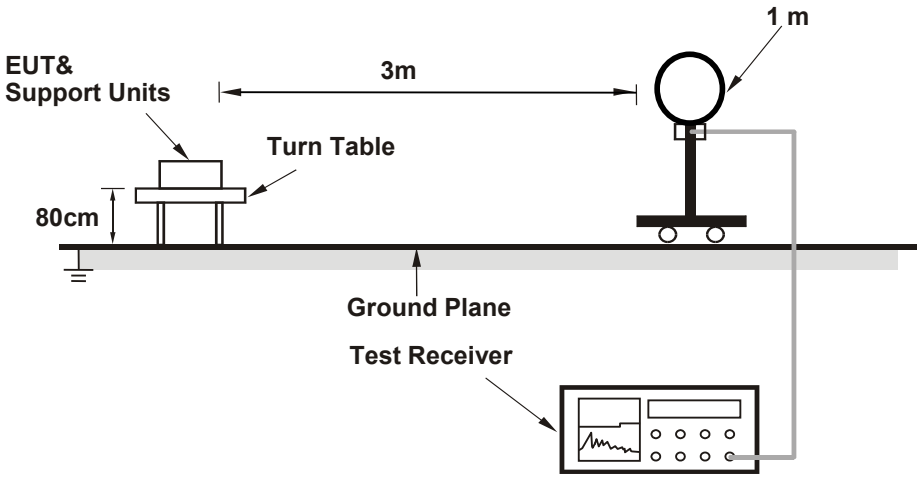
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 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

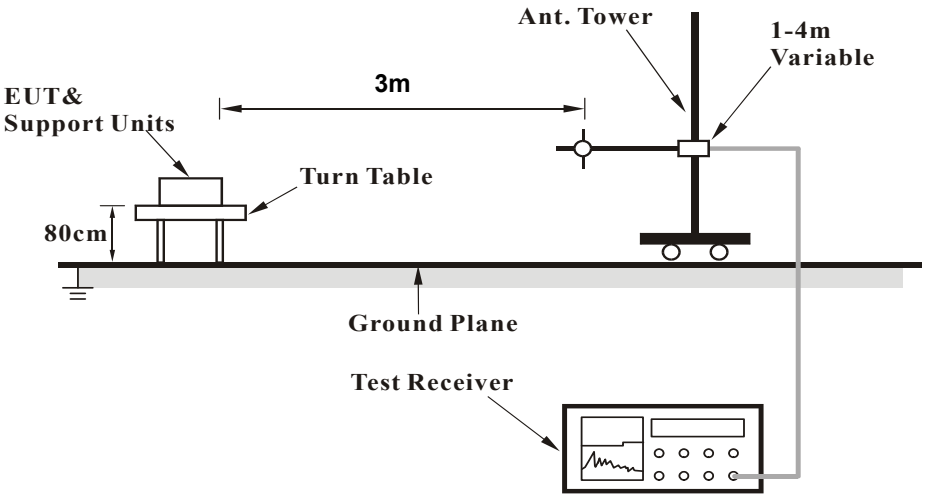
No deviation.

4.1.5 Test Setup

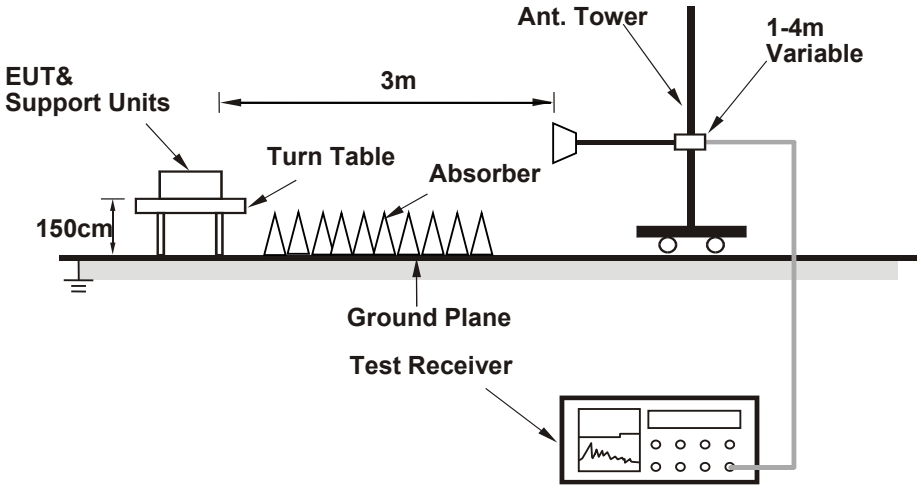
For Radiated emission below 30MHz



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).

4.1.6 EUT Operating Conditions

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

4.1.7 Test Results

Above 1GHz Data:

802.11b

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	2390.00	59.56 PK	74.00	-14.44	1.25 H	101	61.94	-2.38
2	2390.00	51.26 AV	54.00	-2.74	1.25 H	101	53.64	-2.38
3	*2412.00	112.31 PK			1.25 H	101	114.82	-2.51
4	*2412.00	106.83 AV			1.25 H	101	109.34	-2.51
5	4824.00	53.04 PK	74.00	-20.96	1.75 H	99	49.71	3.33
6	4824.00	50.74 AV	54.00	-3.26	1.75 H	99	47.41	3.33
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	55.82 PK	74.00	-18.18	2.66 V	332	58.20	-2.38
2	2390.00	45.44 AV	54.00	-8.56	2.66 V	332	47.82	-2.38
3	*2412.00	107.69 PK			2.66 V	332	110.20	-2.51
4	*2412.00	103.57 AV			2.66 V	332	106.08	-2.51
5	4824.00	52.37 PK	74.00	-21.63	1.00 V	74	49.04	3.33
6	4824.00	49.51 AV	54.00	-4.49	1.00 V	74	46.18	3.33

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	112.50 PK			1.26 H	95	115.14	-2.64
2	*2437.00	107.87 AV			1.26 H	95	110.51	-2.64
3	4874.00	53.47 PK	74.00	-20.53	1.89 H	103	50.12	3.35
4	4874.00	51.04 AV	54.00	-2.96	1.89 H	103	47.69	3.35
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	108.64 PK			2.71 V	327	111.28	-2.64
2	*2437.00	104.49 AV			2.71 V	327	107.13	-2.64
3	4874.00	52.82 PK	74.00	-21.18	1.00 V	88	49.47	3.35
4	4874.00	49.77 AV	54.00	-4.23	1.00 V	88	46.42	3.35

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: 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	111.97 PK			1.25 H	101	114.50	-2.53
2	*2462.00	106.74 AV			1.25 H	101	109.27	-2.53
3	2483.50	60.44 PK	74.00	-13.56	1.25 H	101	62.68	-2.24
4	**2483.50**	**52.99 AV**	**54.00**	**-1.01**	**1.25 H**	**101**	**55.23**	**-2.24**
5	4924.00	52.87 PK	74.00	-21.13	1.81 H	87	49.63	3.24
6	4924.00	50.59 AV	54.00	-3.41	1.81 H	87	47.35	3.24
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	107.60 PK			2.76 V	321	110.13	-2.53
2	*2462.00	103.45 AV			2.76 V	321	105.98	-2.53
3	2483.50	57.59 PK	74.00	-16.41	2.76 V	321	59.83	-2.24
4	2483.50	49.42 AV	54.00	-4.58	2.76 V	321	51.66	-2.24
5	4924.00	52.20 PK	74.00	-21.80	1.00 V	86	48.96	3.24
6	4924.00	49.31 AV	54.00	-4.69	1.00 V	86	46.07	3.24

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) 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	2390.00	71.87 PK	74.00	-2.13	1.27 H	91	74.25	-2.38
2	2390.00	52.92 AV	54.00	-1.08	1.27 H	91	55.30	-2.38
3	*2412.00	114.25 PK			1.27 H	91	116.76	-2.51
4	*2412.00	104.43 AV			1.27 H	91	106.94	-2.51
5	4824.00	47.34 PK	74.00	-26.66	1.00 H	123	44.01	3.33
6	4824.00	34.36 AV	54.00	-19.64	1.00 H	123	31.03	3.33
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	59.68 PK	74.00	-14.32	3.26 V	328	62.06	-2.38
2	2390.00	44.08 AV	54.00	-9.92	3.26 V	328	46.46	-2.38
3	*2412.00	106.15 PK			3.26 V	328	108.66	-2.51
4	*2412.00	96.45 AV			3.26 V	328	98.96	-2.51
5	4824.00	45.60 PK	74.00	-28.40	1.17 V	53	42.27	3.33
6	4824.00	33.35 AV	54.00	-20.65	1.17 V	53	30.02	3.33

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 2	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	2390.00	69.69 PK	74.00	-4.31	1.28 H	90	72.07	-2.38
2	2390.00	52.98 AV	54.00	-1.02	1.28 H	90	55.36	-2.38
3	*2417.00	117.15 PK			1.28 H	90	119.69	-2.54
4	*2417.00	107.46 AV			1.28 H	90	110.00	-2.54
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	57.91 PK	74.00	-16.09	3.31 V	351	60.29	-2.38
2	2390.00	44.08 AV	54.00	-9.92	3.31 V	351	46.46	-2.38
3	*2417.00	108.92 PK			3.31 V	351	111.46	-2.54
4	*2417.00	100.43 AV			3.31 V	351	102.97	-2.54

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	118.30 PK			1.28 H	95	120.94	-2.64
2	*2437.00	108.31 AV			1.28 H	95	110.95	-2.64
3	4874.00	49.98 PK	74.00	-24.02	1.00 H	139	46.63	3.35
4	4874.00	35.57 AV	54.00	-18.43	1.00 H	139	32.22	3.35
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	109.93 PK			3.22 V	329	112.57	-2.64
2	*2437.00	100.23 AV			3.22 V	329	102.87	-2.64
3	4874.00	47.33 PK	74.00	-26.67	1.43 V	61	43.98	3.35
4	4874.00	34.44 AV	54.00	-19.56	1.43 V	61	31.09	3.35

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 10	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	*2457.00	116.65 PK			1.26 H	103	119.25	-2.60
2	*2457.00	107.11 AV			1.26 H	103	109.71	-2.60
3	2483.50	72.22 PK	74.00	-1.78	1.26 H	103	74.46	-2.24
4	2483.50	52.98 AV	54.00	-1.02	1.26 H	103	55.22	-2.24
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	*2457.00	108.53 PK			3.27 V	347	111.13	-2.60
2	*2457.00	99.94 AV			3.27 V	347	102.54	-2.60
3	2483.50	61.58 PK	74.00	-12.42	3.27 V	347	63.82	-2.24
4	2483.50	44.64 AV	54.00	-9.36	3.27 V	347	46.88	-2.24

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: 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	114.64 PK			1.28 H	97	117.17	-2.53
2	*2462.00	105.16 AV			1.28 H	97	107.69	-2.53
3	2483.50	72.18 PK	74.00	-1.82	1.28 H	97	74.42	-2.24
4	2483.50	52.97 AV	54.00	-1.03	1.28 H	97	55.21	-2.24
5	4924.00	47.47 PK	74.00	-26.53	1.00 H	159	44.23	3.24
6	4924.00	34.41 AV	54.00	-19.59	1.00 H	159	31.17	3.24
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	106.34 PK			3.38 V	329	108.87	-2.53
2	*2462.00	96.59 AV			3.38 V	329	99.12	-2.53
3	2483.50	62.91 PK	74.00	-11.09	3.38 V	329	65.15	-2.24
4	2483.50	45.05 AV	54.00	-8.95	3.38 V	329	47.29	-2.24
5	4924.00	45.56 PK	74.00	-28.44	1.26 V	57	42.32	3.24
6	4924.00	33.36 AV	54.00	-20.64	1.26 V	57	30.12	3.24

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 (20MHz)

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	2390.00	72.17 PK	74.00	-1.83	1.27 H	97	74.55	-2.38
2	2390.00	52.94 AV	54.00	-1.06	1.27 H	97	55.32	-2.38
3	*2412.00	114.11 PK			1.27 H	97	116.62	-2.51
4	*2412.00	103.97 AV			1.27 H	97	106.48	-2.51
5	4824.00	47.60 PK	74.00	-26.40	1.00 H	133	44.27	3.33
6	4824.00	34.51 AV	54.00	-19.49	1.00 H	133	31.18	3.33
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	61.43 PK	74.00	-12.57	3.31 V	319	63.81	-2.38
2	2390.00	44.44 AV	54.00	-9.56	3.31 V	319	46.82	-2.38
3	*2412.00	106.00 PK			3.31 V	319	108.51	-2.51
4	*2412.00	96.31 AV			3.31 V	319	98.82	-2.51
5	4824.00	45.72 PK	74.00	-28.28	1.25 V	132	42.39	3.33
6	4824.00	33.44 AV	54.00	-20.56	1.25 V	132	30.11	3.33

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 2	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	2390.00	71.37 PK	74.00	-2.63	1.29 H	93	73.75	-2.38
2	2390.00	52.97 AV	54.00	-1.03	1.29 H	93	55.35	-2.38
3	*2417.00	117.99 PK			1.29 H	93	120.53	-2.54
4	*2417.00	107.53 AV			1.29 H	93	110.07	-2.54
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	60.41 PK	74.00	-13.59	3.25 V	322	62.79	-2.38
2	2390.00	43.53 AV	54.00	-10.47	3.25 V	322	45.91	-2.38
3	*2417.00	110.44 PK			3.25 V	322	112.98	-2.54
4	*2417.00	90.07 AV			3.25 V	322	92.61	-2.54

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	119.13 PK			1.29 H	98	121.77	-2.64
2	*2437.00	107.96 AV			1.29 H	98	110.60	-2.64
3	4874.00	50.38 PK	74.00	-23.62	1.00 H	152	47.03	3.35
4	4874.00	36.64 AV	54.00	-17.36	1.00 H	152	33.29	3.35
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	111.28 PK			3.27 V	321	113.92	-2.64
2	*2437.00	90.93 AV			3.27 V	321	93.57	-2.64
3	4874.00	48.52 PK	74.00	-25.48	1.52 V	148	45.17	3.35
4	4874.00	35.55 AV	54.00	-18.45	1.52 V	148	32.20	3.35

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 10	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	*2457.00	116.87 PK			1.27 H	87	119.47	-2.60
2	*2457.00	106.51 AV			1.27 H	87	109.11	-2.60
3	2483.50	72.74 PK	74.00	-1.26	1.27 H	87	74.98	-2.24
4	2483.50	52.10 AV	54.00	-1.90	1.27 H	87	54.34	-2.24
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	*2457.00	108.74 PK			3.28 V	301	111.34	-2.60
2	*2457.00	98.58 AV			3.28 V	301	101.18	-2.60
3	2483.50	62.57 PK	74.00	-11.43	3.28 V	301	64.81	-2.24
4	2483.50	52.94 AV	54.00	-1.06	3.28 V	301	55.18	-2.24

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: 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	113.28 PK			1.27 H	100	115.81	-2.53
2	*2462.00	103.08 AV			1.27 H	100	105.61	-2.53
3	2483.50	72.91 PK	74.00	-1.09	1.27 H	100	75.15	-2.24
4	2483.50	48.54 AV	54.00	-5.46	1.27 H	100	50.78	-2.24
5	4924.00	47.27 PK	74.00	-26.73	1.00 H	132	44.03	3.24
6	4924.00	34.29 AV	54.00	-19.71	1.00 H	132	31.05	3.24
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	105.15 PK			3.24 V	300	107.68	-2.53
2	*2462.00	95.32 AV			3.24 V	300	97.85	-2.53
3	2483.50	62.75 PK	74.00	-11.25	3.24 V	300	64.99	-2.24
4	2483.50	42.04 AV	54.00	-11.96	3.24 V	300	44.28	-2.24
5	4924.00	45.55 PK	74.00	-28.45	1.33 V	157	42.31	3.24
6	4924.00	33.28 AV	54.00	-20.72	1.33 V	157	30.04	3.24

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 (40MHz)

CHANNEL	TX Channel 3	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	2390.00	70.17 PK	74.00	-3.83	1.14 H	103	72.55	-2.38
2	2390.00	52.92 AV	54.00	-1.08	1.14 H	103	55.30	-2.38
3	*2422.00	108.45 PK			1.14 H	103	111.01	-2.56
4	*2422.00	97.97 AV			1.14 H	103	100.53	-2.56
5	4844.00	43.31 PK	74.00	-30.69	1.00 H	123	39.93	3.38
6	4844.00	30.07 AV	54.00	-23.93	1.00 H	123	26.69	3.38
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	59.43 PK	74.00	-14.57	4.00 V	2	61.81	-2.38
2	2390.00	43.82 AV	54.00	-10.18	4.00 V	2	46.20	-2.38
3	*2422.00	102.07 PK			4.00 V	2	104.63	-2.56
4	*2422.00	91.96 AV			4.00 V	2	94.52	-2.56
5	4844.00	41.65 PK	74.00	-32.35	2.71 V	27	38.27	3.38
6	4844.00	28.81 AV	54.00	-25.19	2.71 V	27	25.43	3.38

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	2390.00	68.54 PK	74.00	-5.46	1.28 H	97	70.92	-2.38
2	2390.00	52.94 AV	54.00	-1.06	1.28 H	97	55.32	-2.38
3	*2437.00	111.68 PK			1.28 H	97	114.32	-2.64
4	*2437.00	101.34 AV			1.28 H	97	103.98	-2.64
5	4874.00	43.56 PK	74.00	-30.44	1.00 H	137	40.21	3.35
6	4874.00	30.28 AV	54.00	-23.72	1.00 H	137	26.93	3.35
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	57.89 PK	74.00	-16.11	4.00 V	11	60.27	-2.38
2	2390.00	43.70 AV	54.00	-10.30	4.00 V	11	46.08	-2.38
3	*2437.00	105.25 PK			4.00 V	11	107.89	-2.64
4	*2437.00	95.24 AV			4.00 V	11	97.88	-2.64
5	4874.00	41.84 PK	74.00	-32.16	2.65 V	39	38.49	3.35
6	4874.00	29.02 AV	54.00	-24.98	2.65 V	39	25.67	3.35

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 9	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	*2452.00	110.78 PK			1.27 H	97	113.46	-2.68
2	*2452.00	100.16 AV			1.27 H	97	102.84	-2.68
3	2483.50	71.57 PK	74.00	-2.43	1.27 H	97	73.81	-2.24
4	**2483.50**	**52.99 AV**	**54.00**	**-1.01**	**1.27 H**	**97**	**55.23**	**-2.24**
5	4904.00	43.47 PK	74.00	-30.53	1.00 H	127	40.18	3.29
6	4904.00	30.19 AV	54.00	-23.81	1.00 H	127	26.90	3.29
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	*2452.00	104.45 PK			4.00 V	8	107.13	-2.68
2	*2452.00	94.42 AV			4.00 V	8	97.10	-2.68
3	2483.50	61.59 PK	74.00	-12.41	4.00 V	8	63.83	-2.24
4	2483.50	45.32 AV	54.00	-8.68	4.00 V	8	47.56	-2.24
5	4904.00	43.47 PK	74.00	-30.53	2.71 V	43	40.18	3.29
6	4904.00	30.19 AV	54.00	-23.81	2.71 V	43	26.90	3.29

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.

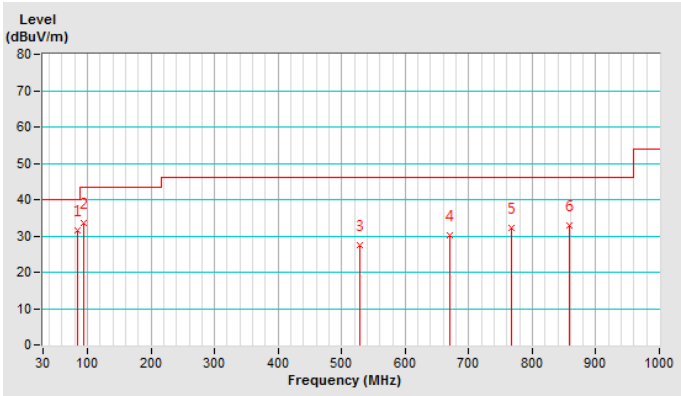
Below 1GHz Data:

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	84.66	31.64 QP	40.00	-8.36	2.27 H	252	43.93	-12.29
2	94.36	33.64 QP	43.50	-9.86	2.03 H	252	45.98	-12.34
3	528.97	27.62 QP	46.00	-18.38	1.03 H	92	28.43	-0.81
4	669.76	30.27 QP	46.00	-15.73	1.18 H	122	28.24	2.03
5	767.44	32.25 QP	46.00	-13.75	1.57 H	336	28.36	3.89
6	857.51	32.96 QP	46.00	-13.04	2.42 H	183	27.93	5.03

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

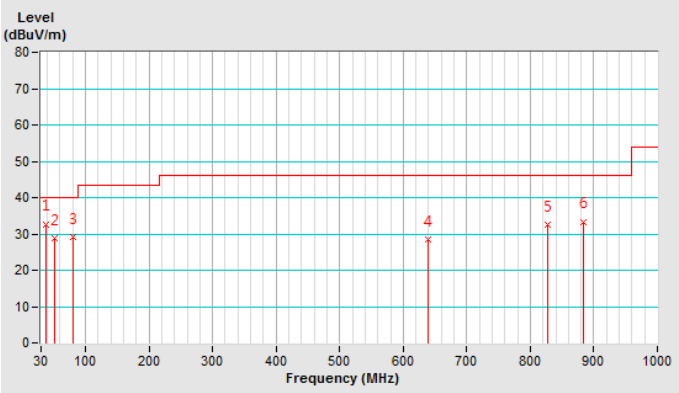


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	37.37	32.66 QP	40.00	-7.34	1.33 V	175	40.88	-8.22
2	50.42	28.67 QP	40.00	-11.33	1.13 V	228	35.62	-6.95
3	81.26	29.01 QP	40.00	-10.99	2.10 V	123	40.72	-11.71
4	639.50	28.38 QP	46.00	-17.62	2.71 V	66	26.74	1.64
5	826.86	32.40 QP	46.00	-13.60	2.03 V	315	27.64	4.76
6	882.97	33.22 QP	46.00	-12.78	2.46 V	166	27.99	5.23

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



4.2 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
ROHDE & SCHWARZ TEST RECEIVER	ESR3	102413	Feb. 8, 2018	Feb. 7, 2019
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	100104	Dec. 6, 2017	Dec. 5, 2018
LISN With Adapter (for EUT)	AD10	C09Ada-001	Dec. 6, 2017	Dec. 5, 2018
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	847265/023	Nov. 3, 2017	Nov. 2, 2018
SCHWARZBECK Artificial Mains Network (For EUT)	NNLK8129	8129229	May 3, 2018	May 2, 2019
Software	Cond_V7.3.7.4	NA	NA	NA
RF cable (JYEBAO) With 10dB PAD	5D-FB	Cable-C09.01	Feb. 21, 2018	Feb. 20, 2019
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010789	May 8, 2018	May 7, 2019

Notes: 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 Shielded Room No. 9.
3. The VCCI Site Registration No. C-1312.

4.2.3 Test Procedures

a. 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.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

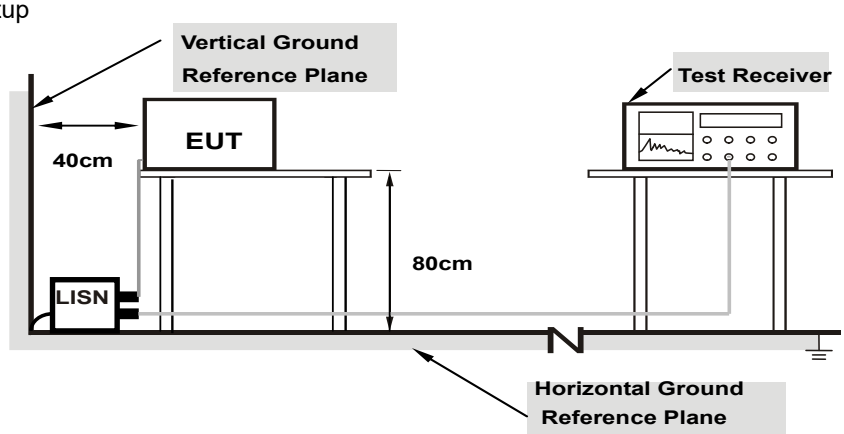
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

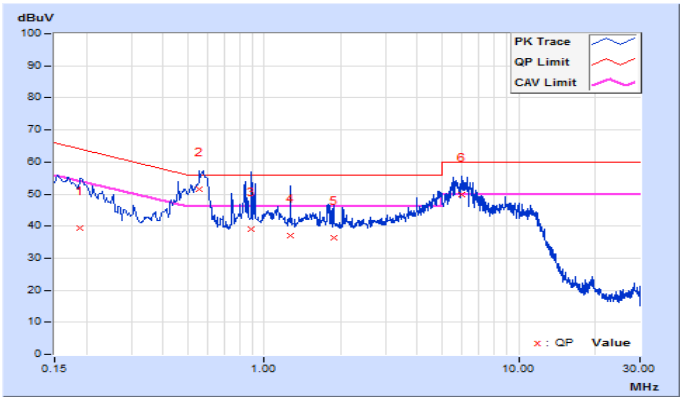
4.2.7 Test Results

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18903	10.17	29.30	13.52	39.47	23.69	64.08	54.08	-24.61	-30.39
2	**0.55865**	**10.25**	**41.17**	**30.60**	**51.42**	**40.85**	**56.00**	**46.00**	**-4.58**	**-5.15**
3	0.88709	10.33	28.78	18.74	39.11	29.07	56.00	46.00	-16.89	-16.93
4	1.26636	10.38	26.61	16.47	36.99	26.85	56.00	46.00	-19.01	-19.15
5	1.86850	10.44	25.99	17.00	36.43	27.44	56.00	46.00	-19.57	-18.56
6	5.98532	10.72	39.19	25.59	49.91	36.31	60.00	50.00	-10.09	-13.69

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.

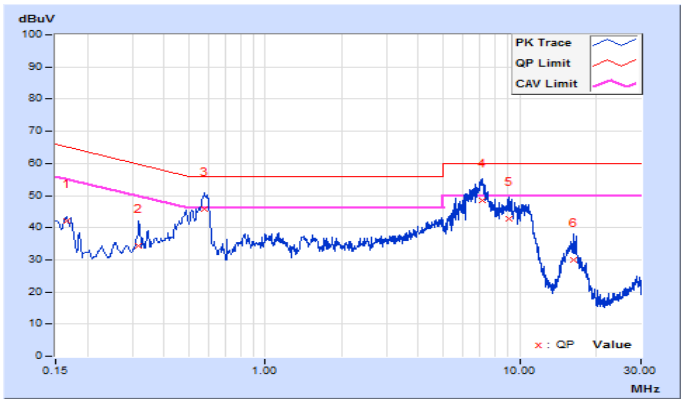


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16526	10.15	31.99	9.18	42.14	19.33	65.20	55.20	-23.06	-35.87
2	0.31813	10.20	24.26	8.42	34.46	18.62	59.76	49.76	-25.30	-31.14
3	0.57771	10.26	35.52	24.32	45.78	34.58	56.00	46.00	-10.22	-11.42
4	7.10749	10.79	37.82	24.01	48.61	34.80	60.00	50.00	-11.39	-15.20
5	9.05858	10.86	31.93	23.86	42.79	34.72	60.00	50.00	-17.21	-15.28
6	16.26862	11.09	18.98	11.39	30.07	22.48	60.00	50.00	-29.93	-27.52

REMARKS:

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



4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup

4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.5 Deviation fromTest 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	10.02	10.05	0.5	PASS
6	2437	10.07	10.07	0.5	PASS
11	2462	10.06	10.06	0.5	PASS

802.11g

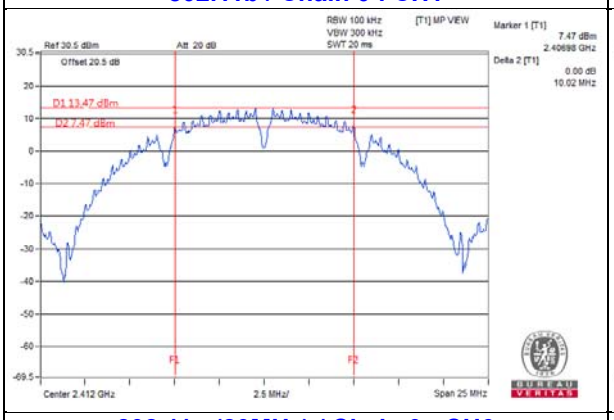
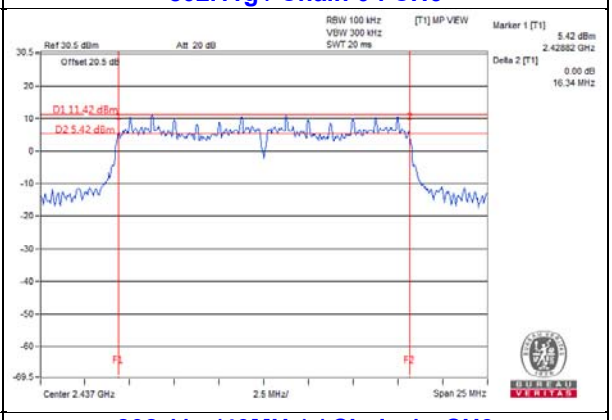
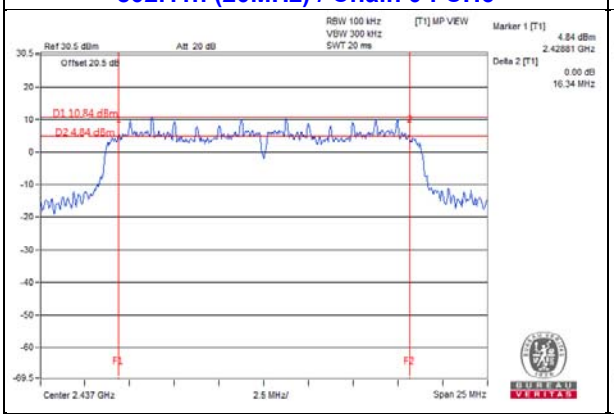
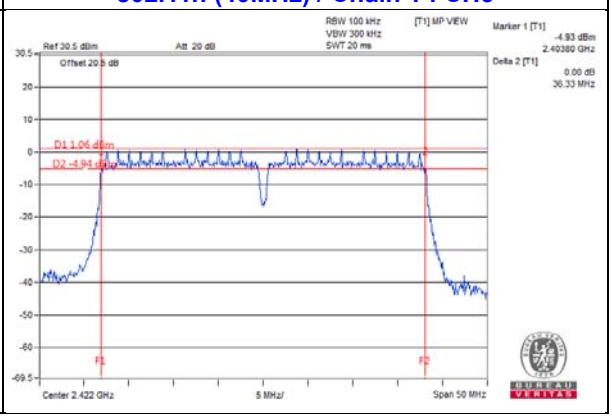
Channel	Frequency (MHz)	6db Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.35	16.35	0.5	PASS
6	2437	16.34	16.35	0.5	PASS
11	2462	16.34	16.35	0.5	PASS

802.11n (20MHz)

Channel	Frequency (MHz)	6db Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.56	16.94	0.5	PASS
6	2437	16.34	16.37	0.5	PASS
11	2462	16.70	16.59	0.5	PASS

802.11n (40MHz)

Channel	Frequency (MHz)	6db Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	36.35	36.33	0.5	PASS
6	2437	36.36	36.37	0.5	PASS
9	2452	36.36	36.37	0.5	PASS

Spectrum Plot of Worst Value	
802.11b / Chain 0 : CH1	**802.11g / Chain 0 : CH6**
	
802.11n (20MHz) / Chain 0 : CH6	**802.11n (40MHz) / Chain 1 : CH3**
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

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

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

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

4.4.2 Test Setup

4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	22.32	22.84	362.917	25.60	30	Pass
6	2437	22.49	22.82	**368.845**	25.67	30	Pass
11	2462	22.33	22.36	343.189	25.36	30	Pass

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	19.66	19.98	192.011	22.83	30	Pass
2	2417	21.34	21.58	280.024	24.47	30	Pass
6	2437	22.40	22.42	348.362	25.42	30	Pass
10	2457	21.54	21.56	285.780	24.56	30	Pass
11	2462	20.15	20.16	207.267	23.17	30	Pass

802.11n (20MHz)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	19.22	19.24	167.506	22.24	30	Pass
2	2417	21.59	21.96	301.248	24.79	30	Pass
6	2437	21.91	22.61	337.629	25.28	30	Pass
10	2457	21.00	21.03	252.658	24.03	30	Pass
11	2462	18.12	18.20	130.932	21.17	30	Pass

802.11n (40MHz)

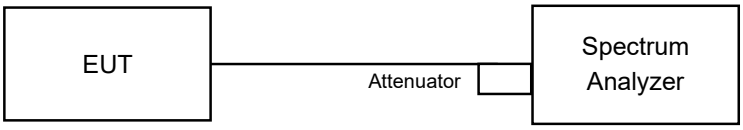
Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	16.26	16.38	85.718	19.33	30	Pass
6	2437	18.72	18.85	151.209	21.80	30	Pass
9	2452	17.66	17.82	118.879	20.75	30	Pass

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For AVG. power (duty cycle ≥ 98%)

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

For AVG. power (duty cycle < 98%)

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

4.5.5 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	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	TOTAL PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-1.72	3.01	1.29	7.48	Pass
	6	2437	-1.83	3.01	1.18	7.48	Pass
	11	2462	-2.66	3.01	0.35	7.48	Pass
1	1	2412	-1.80	3.01	1.21	7.48	Pass
	6	2437	-1.33	3.01	1.68	7.48	Pass
	11	2462	-2.47	3.01	0.54	7.48	Pass

Note: 1. Refer to section 3.3 for duty cycle spectrum plot.

2. Directional gain = 3.51dBi + 10log(2) = 6.52dBi > 6dBi , so the power density limit shall be reduced to 8-(6.52-6) = 7.48dBm.

802.11g

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-7.95	3.01	0.45	-4.49	7.48	Pass
	6	2437	-4.49	3.01	0.45	-1.03	7.48	Pass
	11	2462	-7.26	3.01	0.45	-3.80	7.48	Pass
1	1	2412	-7.43	3.01	0.45	-3.97	7.48	Pass
	6	2437	-4.87	3.01	0.45	-1.41	7.48	Pass
	11	2462	-7.17	3.01	0.45	-3.71	7.48	Pass

Note: 1. Refer to section 3.3 for duty cycle spectrum plot.

2. Directional gain = 3.51dBi + 10log(2) = 6.52dBi > 6dBi , so the power density limit shall be reduced to 8-(6.52-6) = 7.48dBm.

802.11n (20MHz)

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-8.74	3.01	0.51	-5.22	7.48	Pass
	6	2437	-5.26	3.01	0.51	-1.74	7.48	Pass
	11	2462	-9.89	3.01	0.51	-6.37	7.48	Pass
1	1	2412	-8.38	3.01	0.51	-4.86	7.48	Pass
	6	2437	-5.26	3.01	0.51	-1.74	7.48	Pass
	11	2462	-9.42	3.01	0.51	-5.90	7.48	Pass

Note: 1. Refer to section 3.3 for duty cycle spectrum plot.

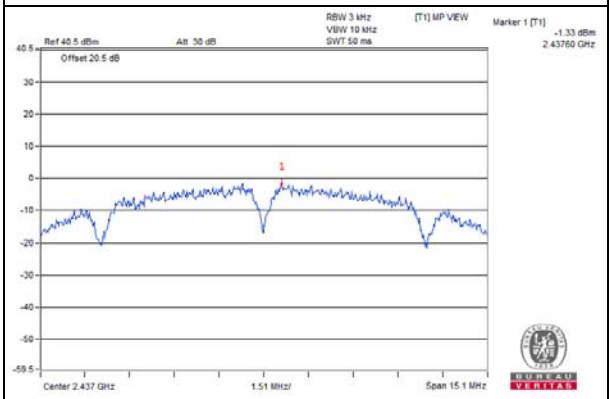
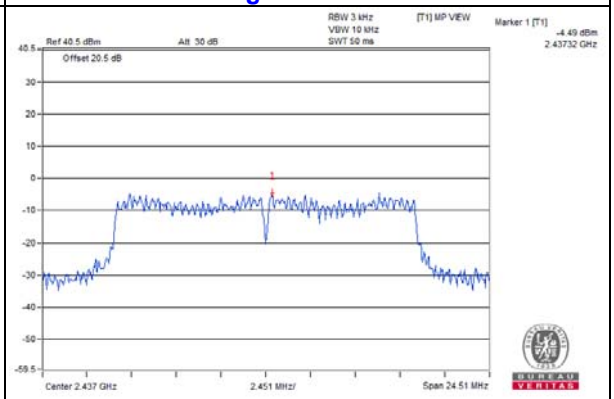
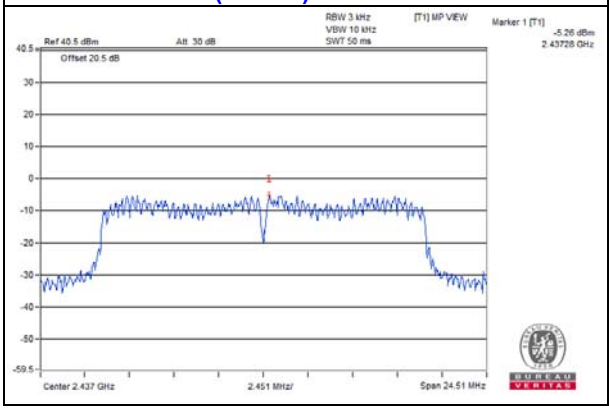
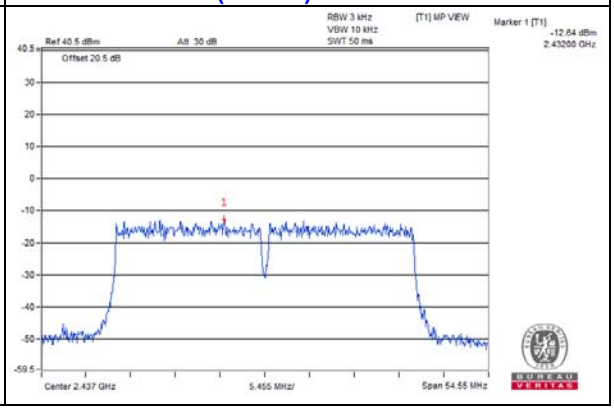
2. Directional gain = 3.51dBi + 10log(2) = 6.52dBi > 6dBi , so the power density limit shall be reduced to 8-(6.52-6) = 7.48dBm.

802.11n (40MHz)

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-15.42	3.01	1.24	-11.17	7.48	Pass
	6	2437	-12.81	3.01	1.24	-8.56	7.48	Pass
	9	2452	-13.32	3.01	1.24	-9.07	7.48	Pass
1	3	2422	-14.39	3.01	1.24	-10.14	7.48	Pass
	6	2437	-12.64	3.01	1.24	-8.39	7.48	Pass
	9	2452	-13.52	3.01	1.24	-9.27	7.48	Pass

Note: 1. Refer to section 3.3 for duty cycle spectrum plot.

2. Directional gain = 3.51dBi + 10log(2) = 6.52dBi > 6dBi , so the power density limit shall be reduced to 8-(6.52-6) = 7.48dBm.

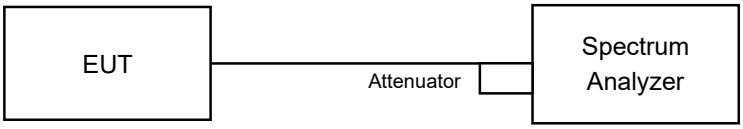
Spectrum Plot of Worst Value	
802.11b / Chain 1 : CH6	**802.11g / Chain 0 : CH6**
	
802.11n (20MHz) / Chain 0 : CH6	**802.11n (40MHz) / Chain 1 : CH6**
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOBE

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

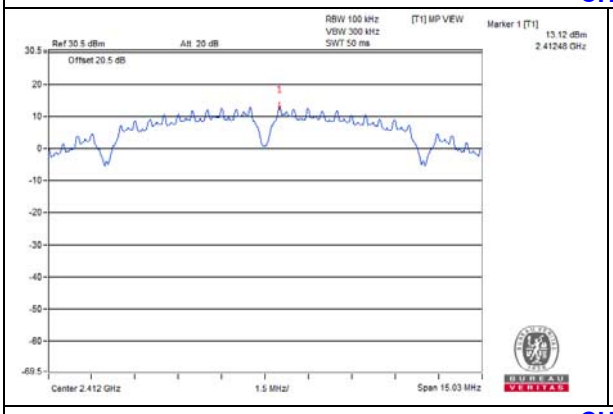
Same as Item 4.3.6

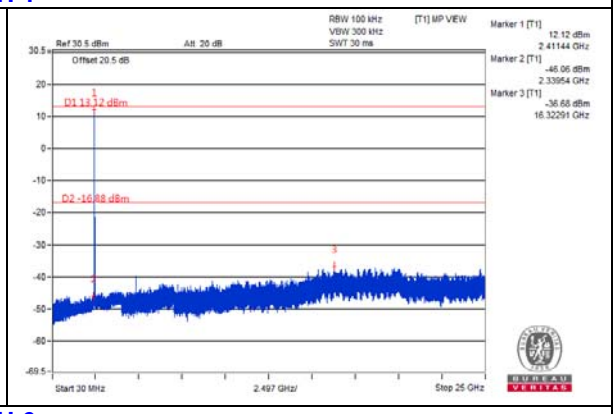
4.6.7 Test Results

The 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.

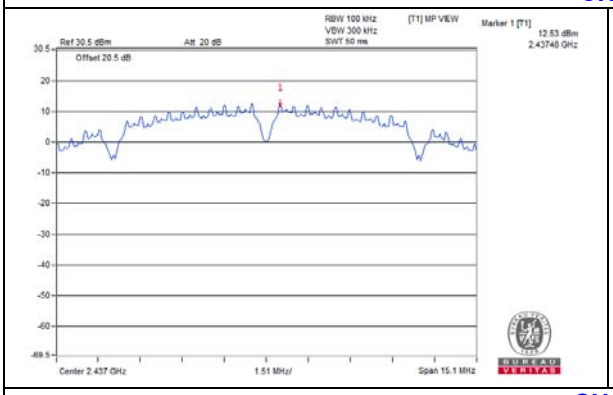
802.11b: Chain 0

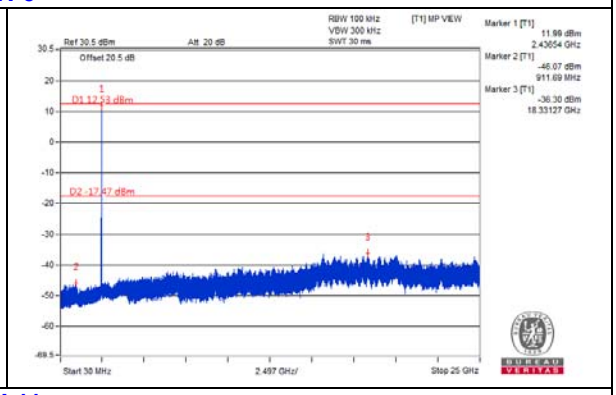
CH 1



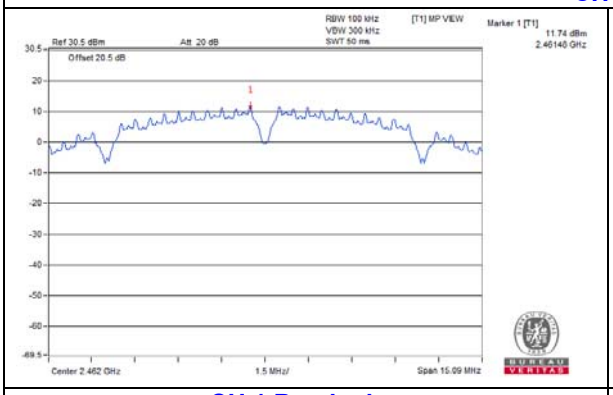


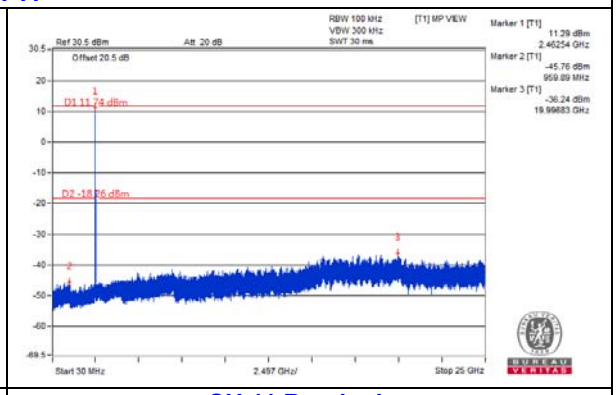
CH 6



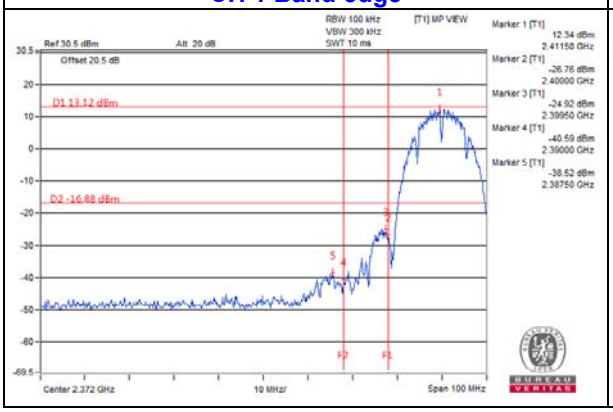


CH 11

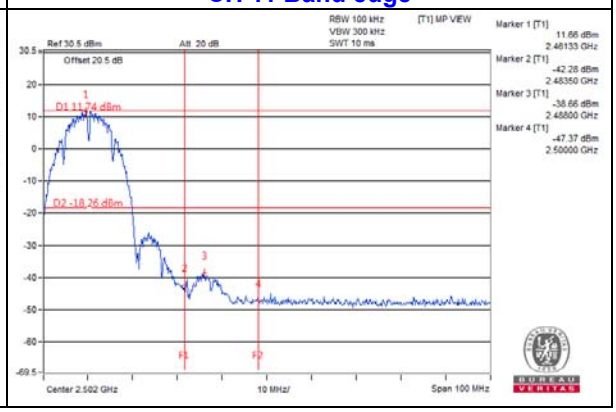




CH 1 Band edge

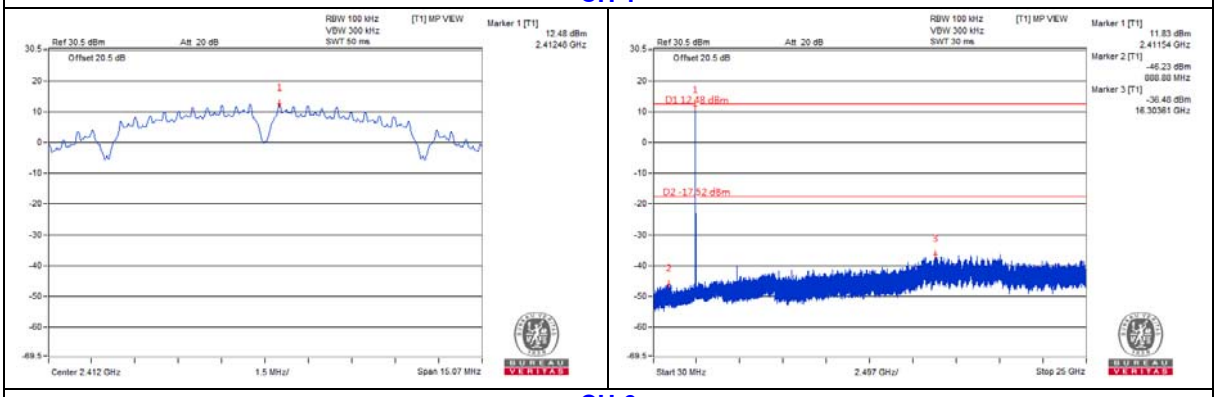


CH 11 Band edge

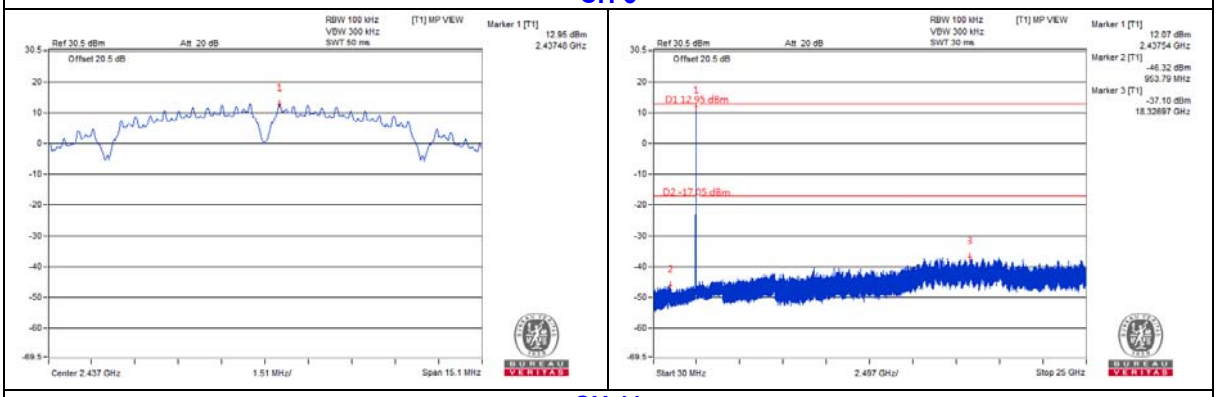


Chain 1

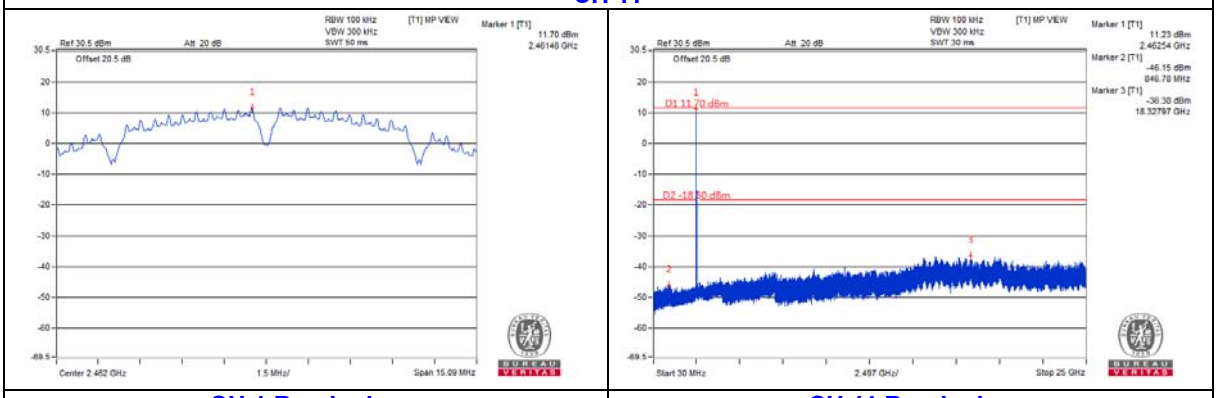
CH 1



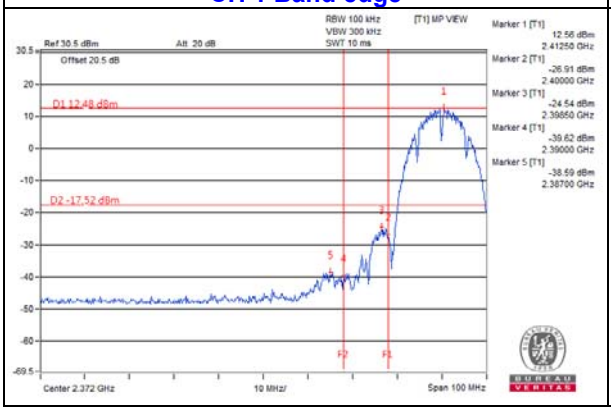
CH 6



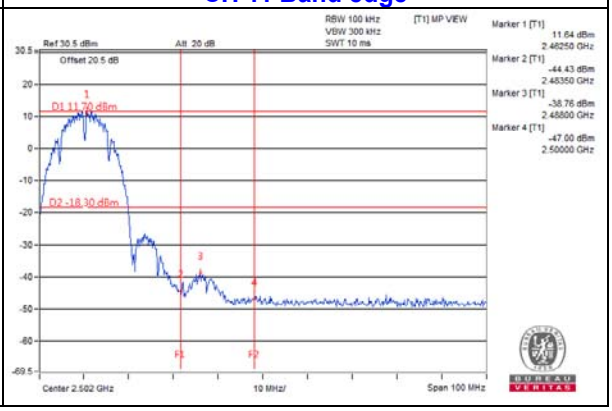
CH 11



CH 1 Band edge

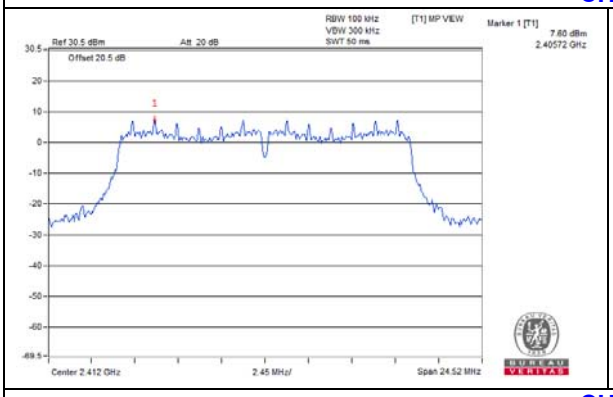


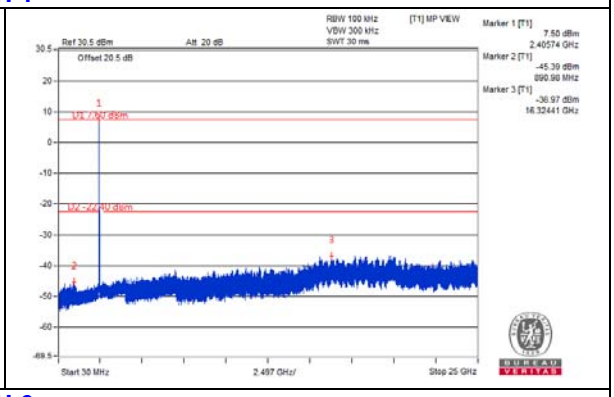
CH 11 Band edge



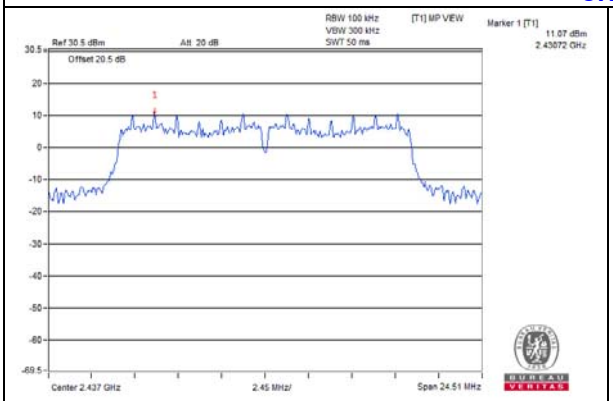
802.11g: Chain 0

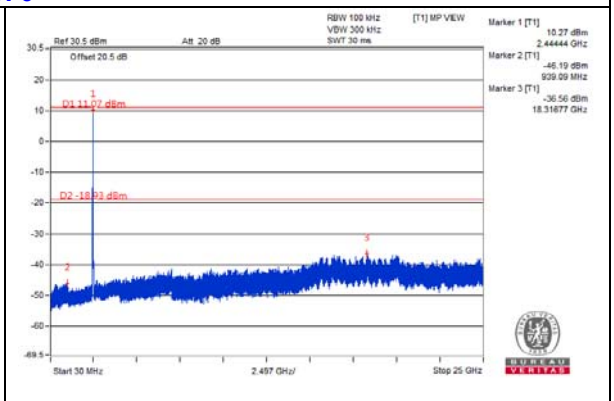
CH 1



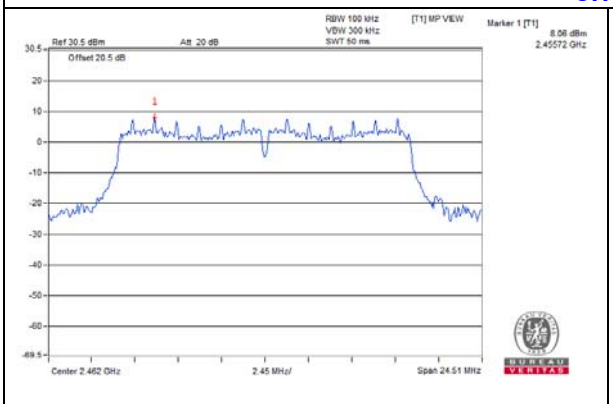


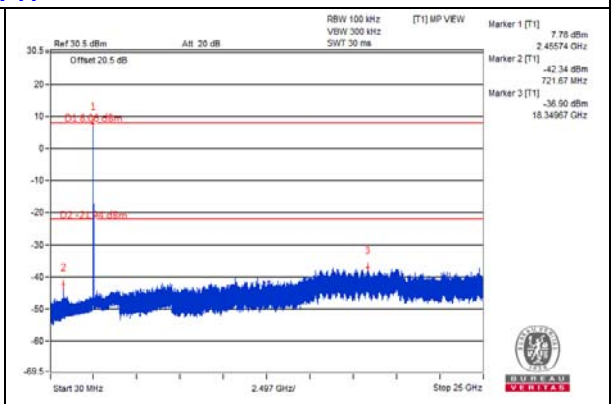
CH 6



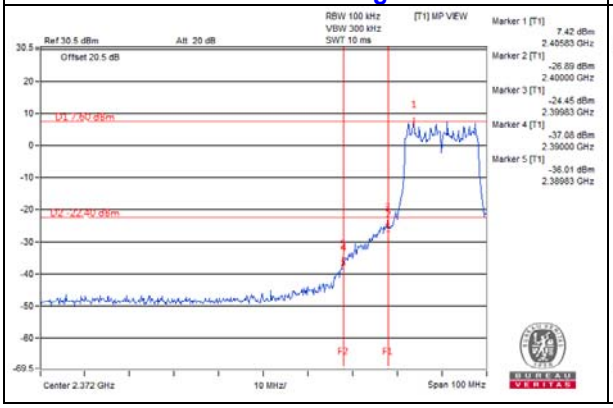


CH 11

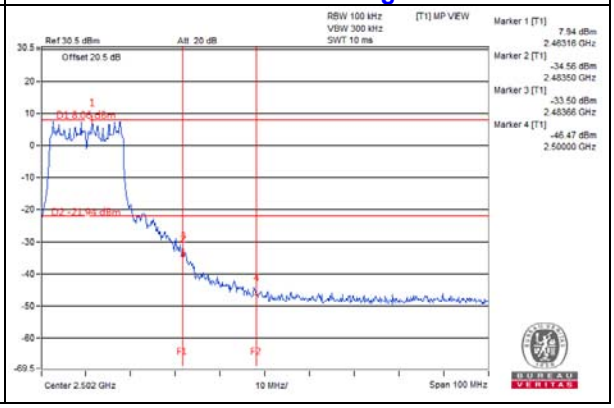




CH 1 Band edge

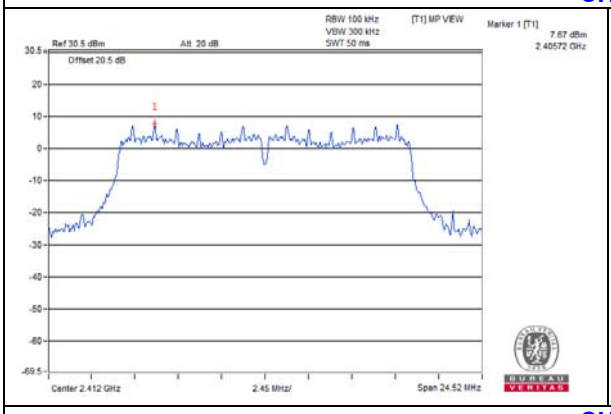


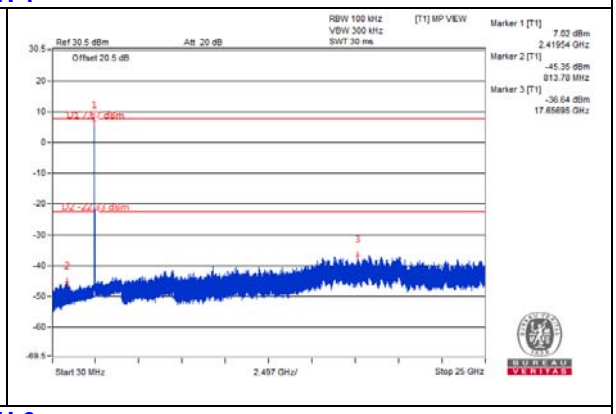
CH 11 Band edge



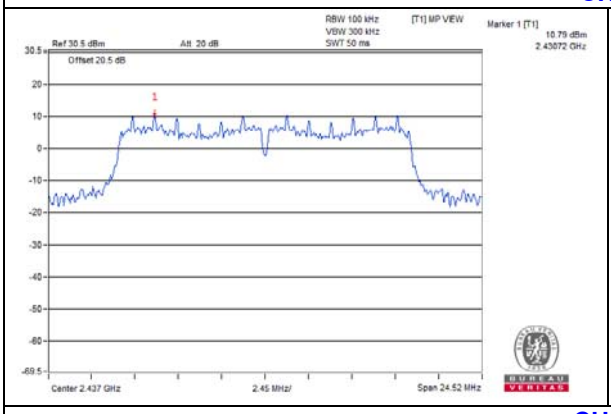
Chain 1

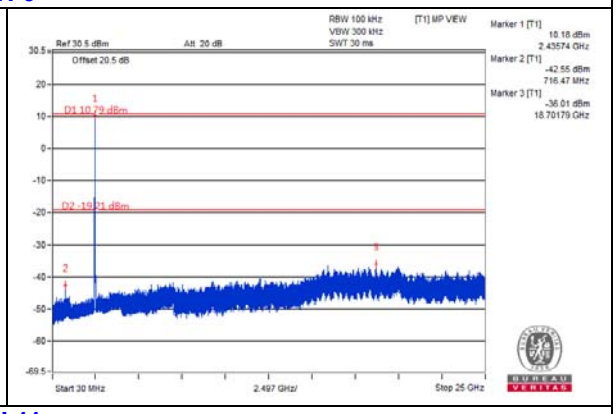
CH 1



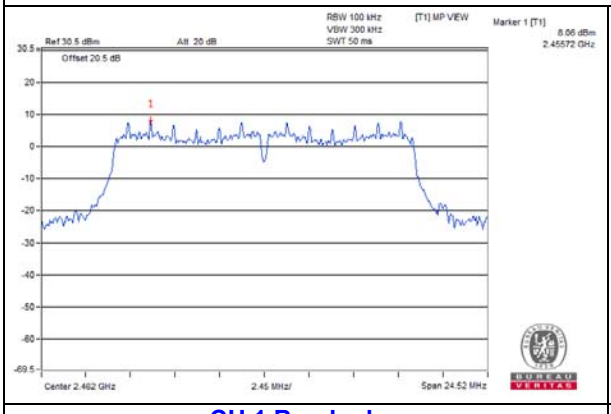


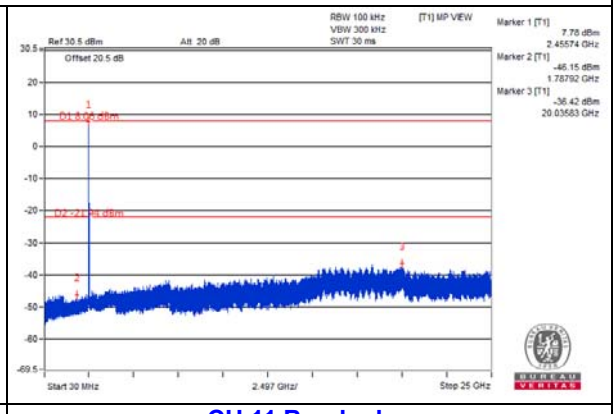
CH 6



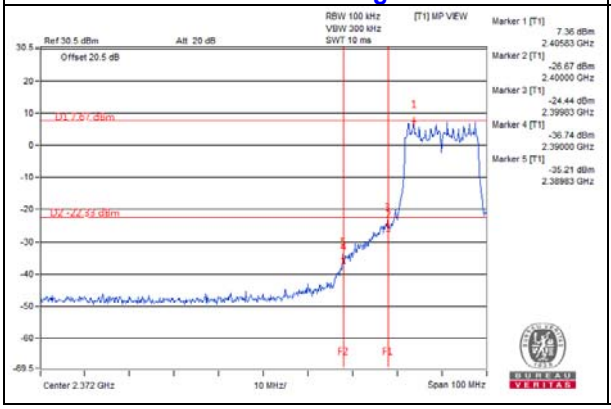


CH 11

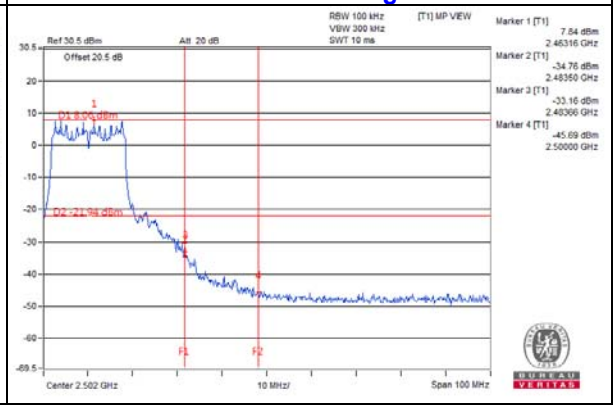




CH 1 Band edge

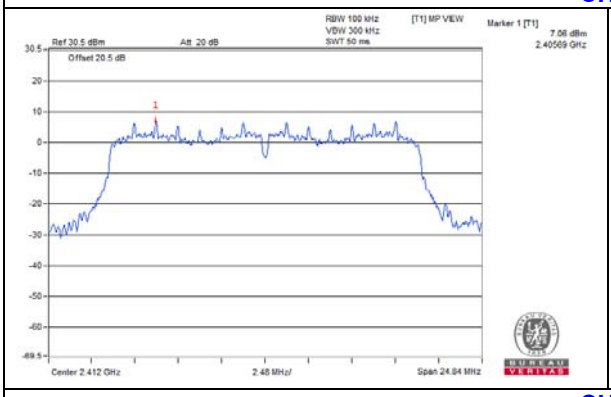


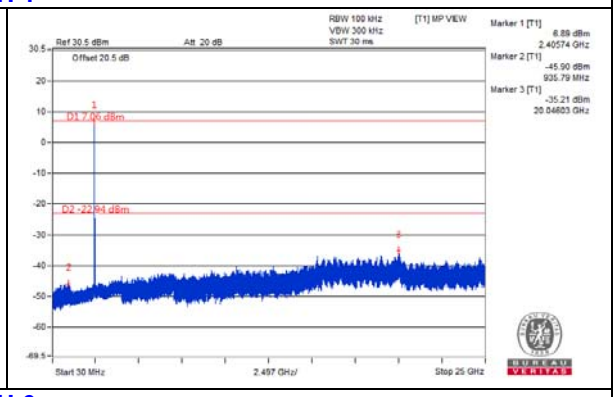
CH 11 Band edge



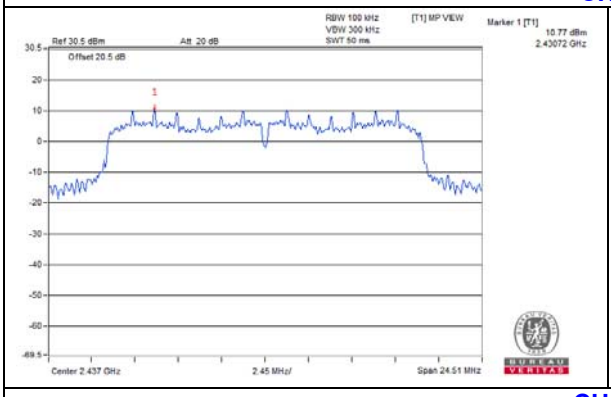
802.11n (20MHz): Chain 0

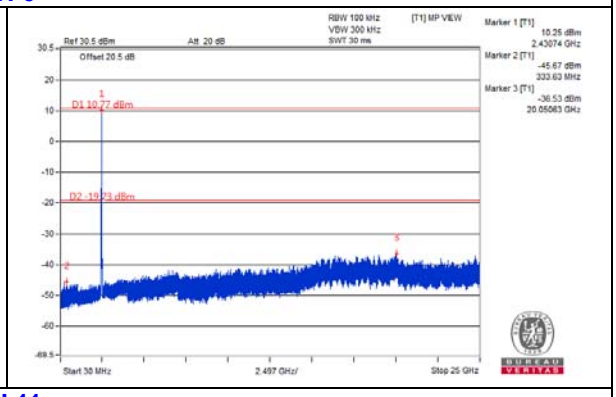
CH 1



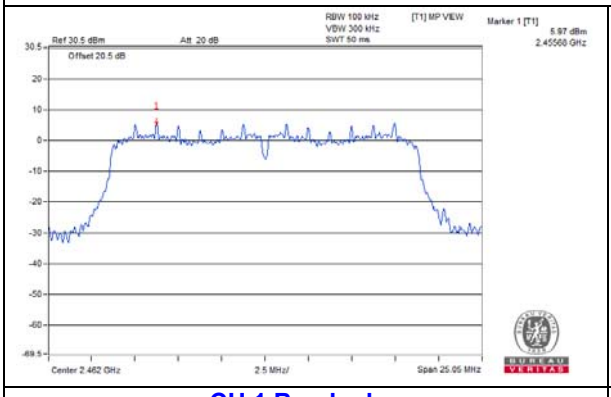


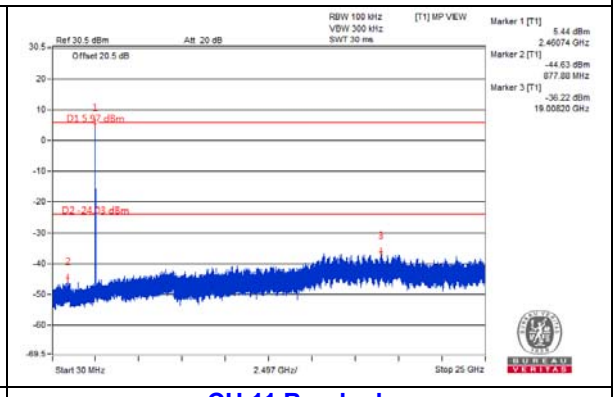
CH 6



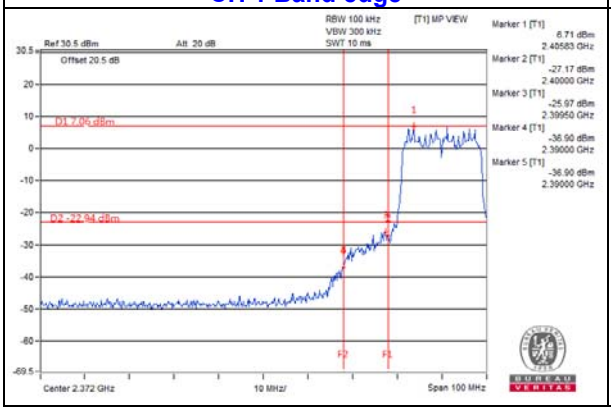


CH 11

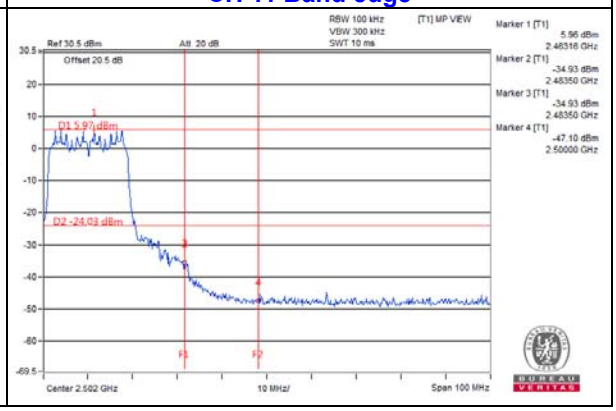




CH 1 Band edge

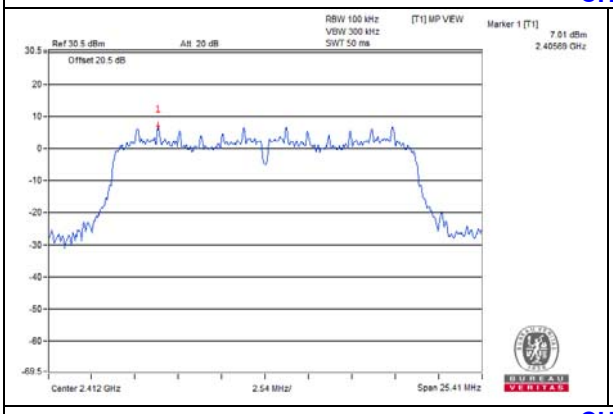


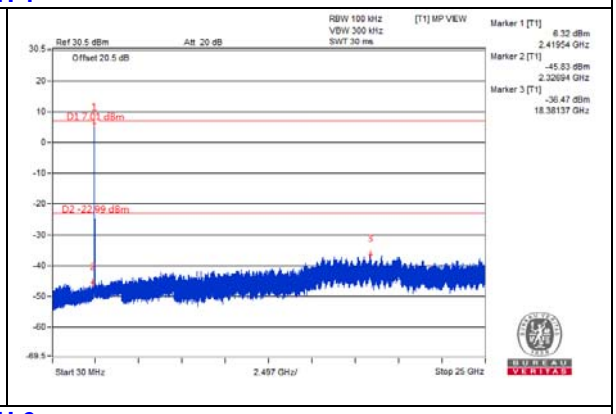
CH 11 Band edge



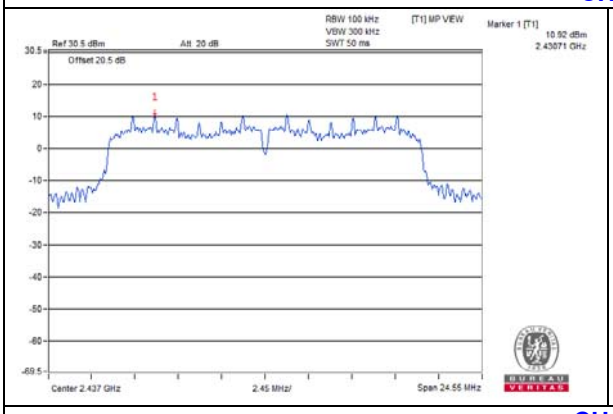
Chain 1

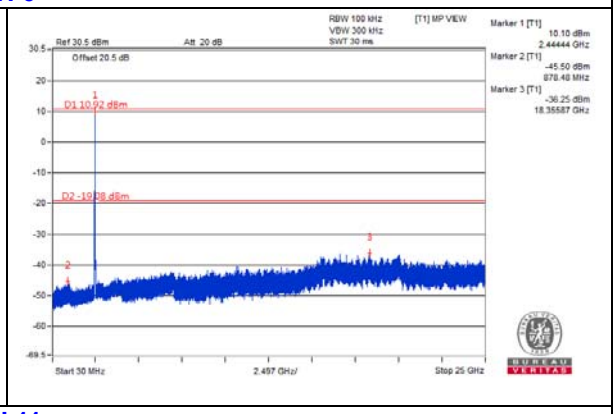
CH 1



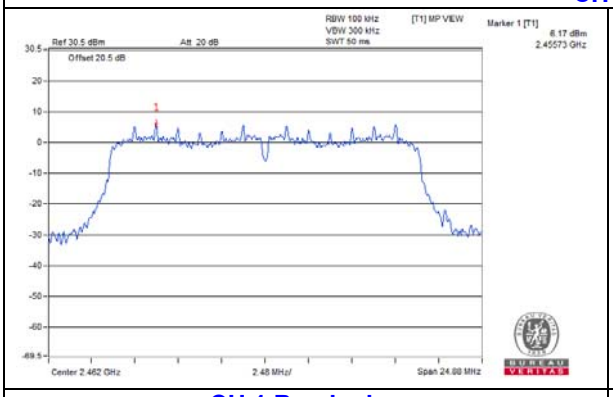


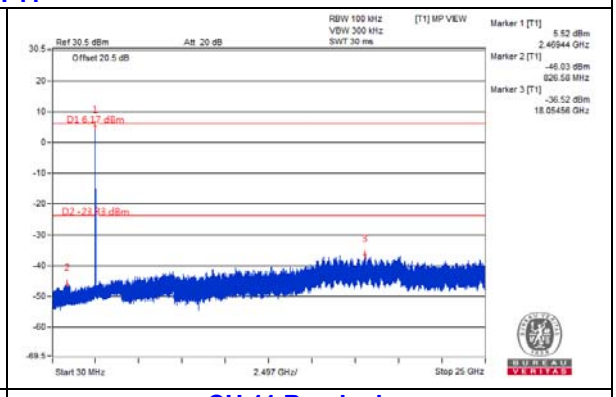
CH 6



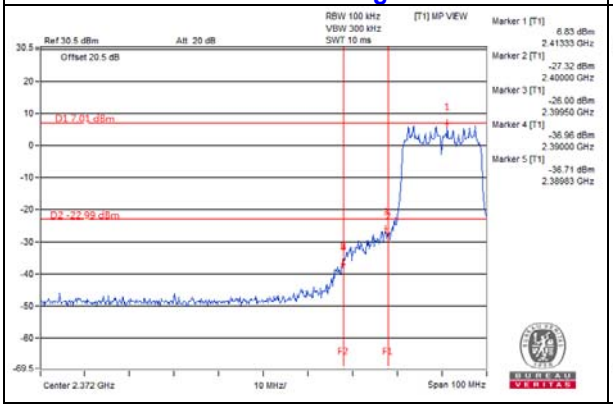


CH 11

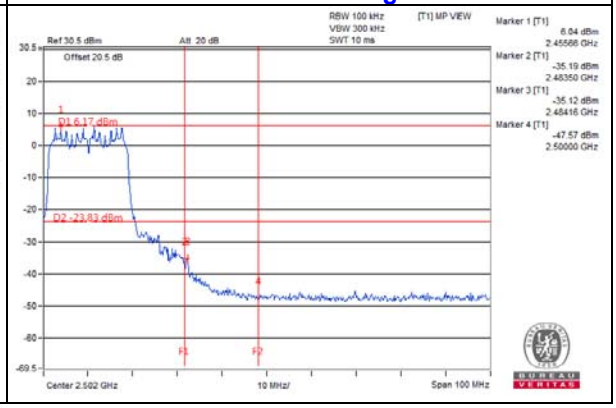




CH 1 Band edge

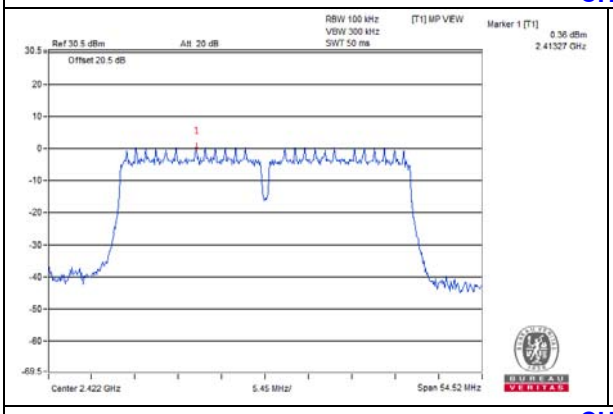


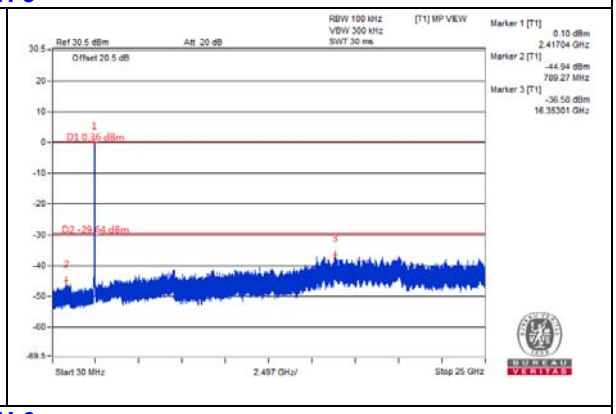
CH 11 Band edge



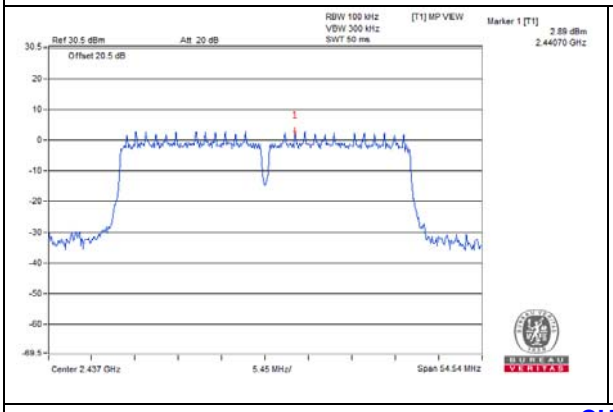
802.11n (40MHz): Chain 0

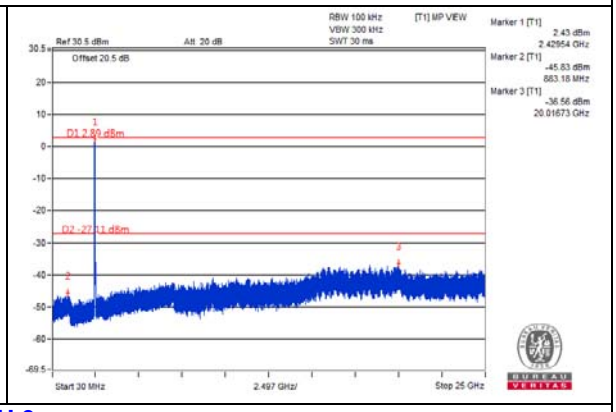
CH 3



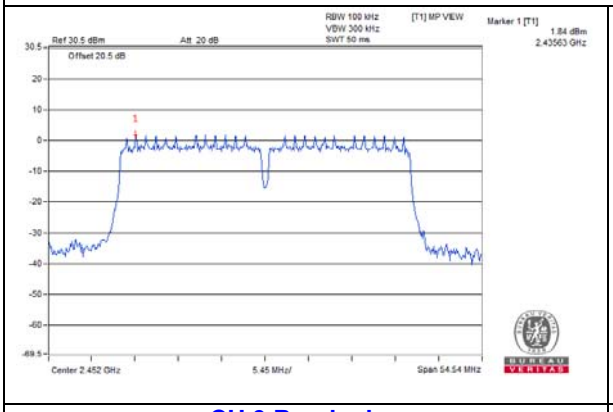


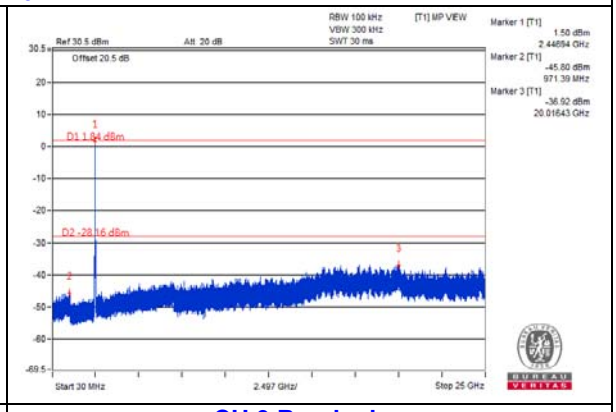
CH 6



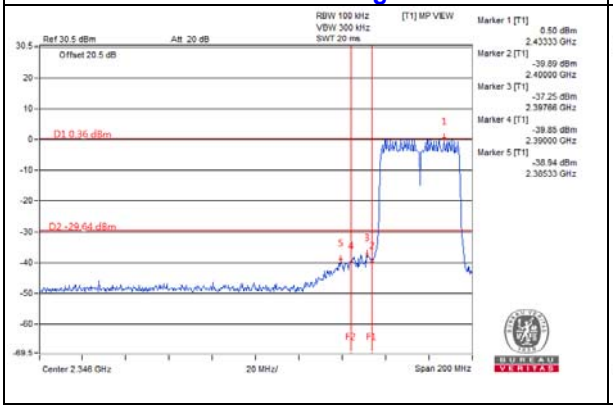


CH 9

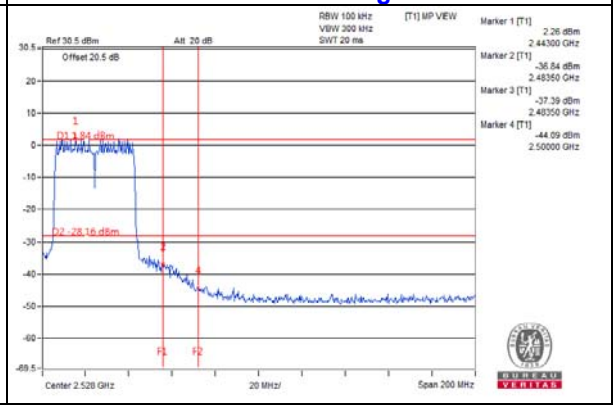




CH 3 Band edge

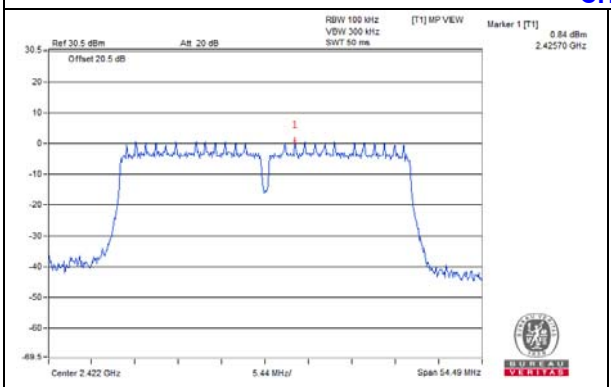


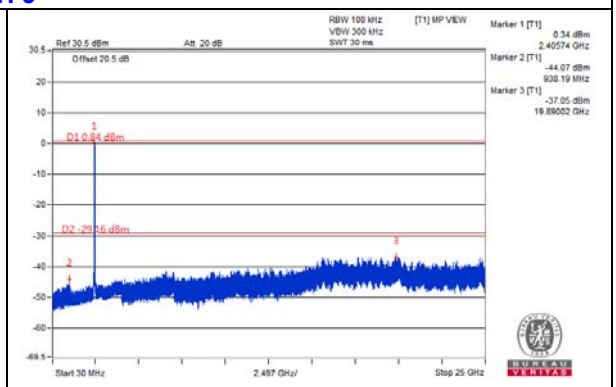
CH 9 Band edge



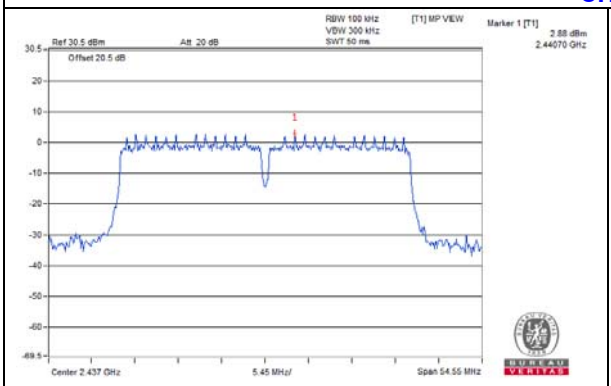
Chain 1

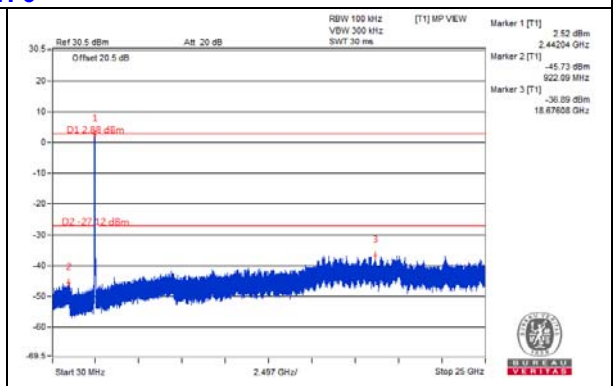
CH 3



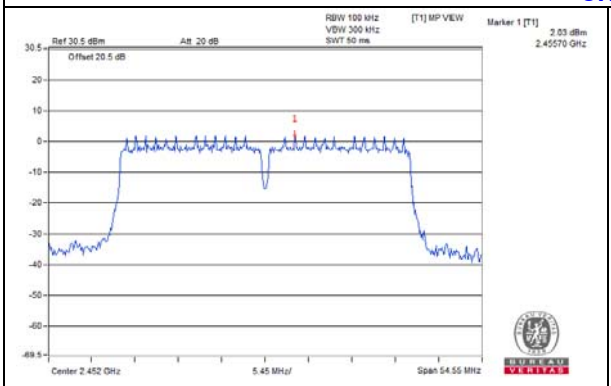


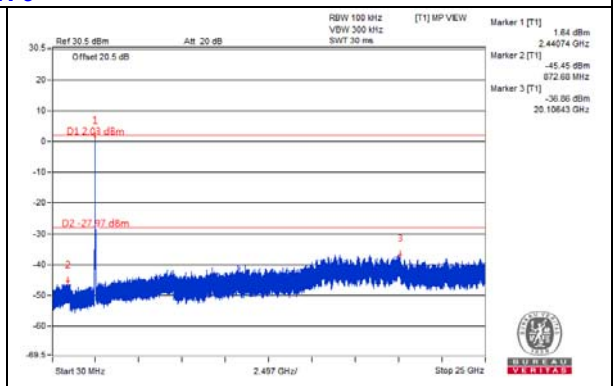
CH 6



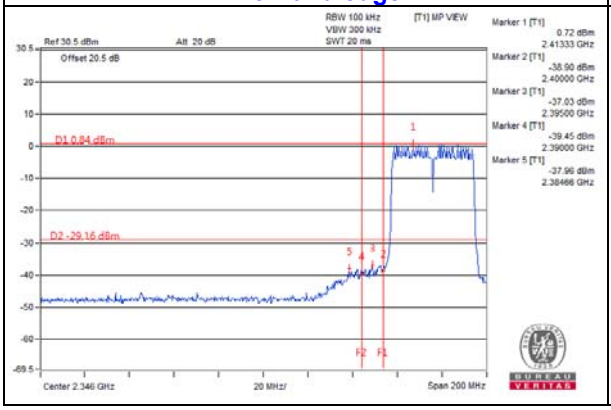


CH 9

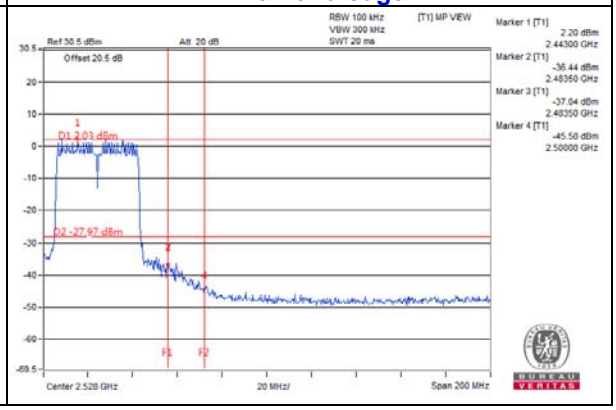




CH 3 Band edge



CH 9 Band edge



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 according to ISO/IEC 17025.

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

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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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