FCC Test Report

Report No.: RF170320C02

FCC ID: ACQ-DSR800

Test Model: DSR800

Received Date: Mar. 20, 2017

Test Date: Mar. 23 ~ Apr. 27, 2017

Issued Date: May 08, 2017

Applicant: ARRIS Group, Inc.

Address: 101 Tournament Drive, Horsham, Pennsylvania, United States, 19044

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

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

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

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This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

Table of Contents

Release Control Record **4**

1 Certificate of Conformity **5**

2 Summary of Test Results **6**

2.1 Measurement Uncertainty 6
2.2 Modification Record 6

3 General Information **7**

3.1 General Description of EUT 7
3.2 Description of Test Modes 9
3.2.1 Test Mode Applicability and Tested Channel Detail 10
3.3 Duty Cycle of Test Signal 12
3.4 Description of Support Units 14
3.4.1 Configuration of System under Test 14
3.5 General Description of Applied Standards 14

4 Test Types and Results **15**

4.1 Radiated Emission and Bandedge Measurement 15
4.1.1 Limits of Radiated Emission and Bandedge Measurement 15
4.1.2 Test Instruments 16
4.1.3 Test Procedures 17
4.1.4 Deviation from Test Standard 17
4.1.5 Test Setup 18
4.1.6 EUT Operating Conditions 19
4.1.7 Test Results 20
4.2 Conducted Emission Measurement 45
4.2.1 Limits of Conducted Emission Measurement 45
4.2.2 Test Instruments 45
4.2.3 Test Procedures 46
4.2.4 Deviation from Test Standard 46
4.2.5 Test Setup 46
4.2.6 EUT Operating Conditions 46
4.2.7 Test Results 47
4.3 6dB Bandwidth Measurement 49
4.3.1 Limits of 6dB Bandwidth Measurement 49
4.3.2 Test Setup 49
4.3.3 Test Instruments 49
4.3.4 Test Procedure 49
4.3.5 Deviation fromTest Standard 49
4.3.6 EUT Operating Conditions 49
4.3.7 Test Result 50
4.4 Conducted Output Power Measurement 54
4.4.1 Limits of Conducted Output Power Measurement 54
4.4.2 Test Setup 54
4.4.3 Test Instruments 54
4.4.4 Test Procedures 54
4.4.5 Deviation from Test Standard 54
4.4.6 EUT Operating Conditions 54
4.4.7 Test Results 55
4.5 Power Spectral Density Measurement 58
4.5.1 Limits of Power Spectral Density Measurement 58
4.5.2 Test Setup 58
4.5.3 Test Instruments 58
4.5.4 Test Procedure 58
4.5.5 Deviation from Test Standard 58
4.5.6 EUT Operating Condition 58

4.5.7 Test Results 59
4.6 Conducted Out of Band Emission Measurement 64
4.6.1 Limits of Conducted Out of Band Emission Measurement 64
4.6.2 Test Setup 64
4.6.3 Test Instruments 64
4.6.4 Test Procedure 64
4.6.5 Deviation from Test Standard 65
4.6.6 EUT Operating Condition 65
4.6.7 Test Results 65

5 Pictures of Test Arrangements 78

Appendix – Information on the Testing Laboratories 79

Release Control Record

Issue No.	Description	Date Issued
RF170320C02	Original release.	May 08, 2017

1 Certificate of Conformity

Product: Satellite Set-Top Box

Brand: ARRIS Group, Inc.

Test Model: DSR800

Sample Status: Engineering sample

Applicant: ARRIS Group, Inc.

Test Date: Mar. 23 ~ Apr. 27, 2017

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10:2013

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

Prepared by : _____ , **Date:** May 08, 2017
Suntee Liu / Specialist

Approved by : _____ , **Date:** May 08, 2017
Ken Liu / Senior 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 -6.61dB at 0.47844MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 2483.50, 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 UFL not a standard connector.

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) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.94 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.63 dB
	200MHz ~1000MHz	3.64 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	Satellite Set-Top Box
Brand	ARRIS Group, Inc.
Test Model	DSR800
Sample Status	Engineering sample
Power Supply Rating	12Vdc (adapter)
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 300Mbps
Operating Frequency	2412 ~ 2462MHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7
Output Power	CDD Mode, 1TX: 102.565mW CDD Mode, 2TX: 193.111mW Beamforming Mode: 158.394mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter, Remote controller
Cable Supplied	2m shielded HDMI cable without core

Note:

1. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers. The EUT supports diversity parameter. Antenna 1 is the 2.4GHz max. gain for final test and antenna 0 is the 5GHz max. gain for final test.

Modulation Mode	TX Function	Beamforming
802.11b	1TX, 2TX	Not Support
802.11g	1TX, 2TX	Not Support
802.11a	1TX, 2TX	Not Support
802.11n (HT20)	1TX, 2TX	Support
802.11n (HT40)	1TX, 2TX	Support
802.11ac (VHT20)	1TX, 2TX	Support
802.11ac (VHT40)	1TX, 2TX	Support
802.11ac (VHT80)	1TX, 2TX	Support

* The modulation and bandwidth are similar for 802.11n mode for HT20/HT40 and 802.11ac mode for VHT20/VHT40, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

* For 802.11n and 802.11ac, CDD mode and Beamforming mode are presented in power output test item. For other test items, CDD mode is the worst case for final tests after pretesting.

2. The EUT uses following antennas.

Ant. Type	Stamped Metal				
Connecter Type	UFL				
Single Antenna Gain (dBi)					
Item	2.4G	5G Band 1	5G Band 2	5G Band 3	5G Band 4
Ant. 0	1.92	4.17	4.77	5.36	5.58
Ant. 1	2.33	3.07	3.07	3.23	3.85

* The 2.4GHz max. gain (antenna 1) is chosen for final tests since it has the maximum gain among all antennas.

* The 5GHz max. gain (antenna 0) is chosen for final tests since it has the maximum gain among all antennas.

3. The EUT uses following adapter.

Brand	LITEON
Model	PB-1300-3AR3
Input Power	100-120Vac, 1.0A, 60Hz
Output Power	12Vdc, 2.5A
Power Line	1.75m non-shielded DC cable without core attached on adapter

4. 2.4GHz and 5GHz technologies can not transmit at same time.

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		

7 channels are provided for 802.11n (HT40):

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:
1. The antenna had been pre-tested on the positioned of each 3 axis. The worst cases were 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)	Remark
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	1TX / 2TX
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	1TX / 2TX
-	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5 / 7.2	1TX / 2TX
-	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5 / 15.0	1TX / 2TX

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)	Remark
-	802.11b	1 to 11	6	DSSS	DBPSK	1.0	2TX

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)	Remark
-	802.11b	1 to 11	6	DSSS	DBPSK	1.0	2TX

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)	Remark
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	1TX / 2TX
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	1TX / 2TX
-	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5 / 7.2	1TX / 2TX
-	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5 / 15.0	1TX / 2TX

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	20 deg. C, 69% RH 25 deg. C, 69% RH	120Vac, 60Hz	Bayu Chen Bond Tseng
RE<1G	25 deg. C, 69% RH	120Vac, 60Hz	Chris Lin
PLC	20 deg. C, 69% RH	120Vac, 60Hz	Bayu Chen
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Antony Lee

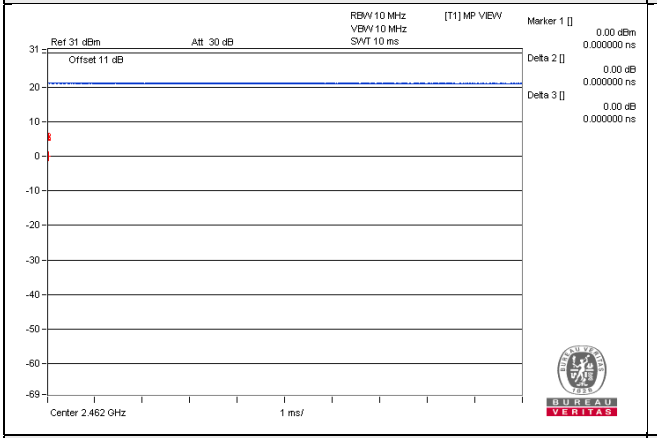
3.3 Duty Cycle of Test Signal

Duty cycle of test signal is ≥ 98%, duty factor is not required.
Duty cycle of test signal is < 98%, duty factor is required.

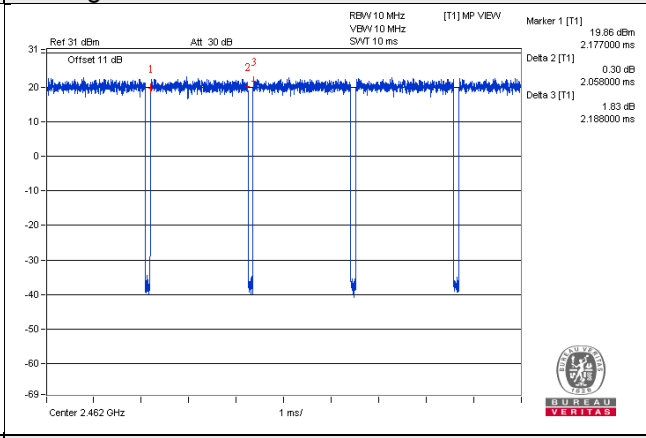
1TX

802.11b: Duty cycle = 100%
802.11g: Duty cycle = 2.058/2.188 = 0.941, Duty factor = 10 * log(1/0.941) = 0.27
802.11n (HT20): Duty cycle = 1.918/2.038 = 0.941, Duty factor = 10 * log(1/0.941) = 0.26
802.11n (HT40): Duty cycle = 0.942/1.057 = 0.891, Duty factor = 10 * log(1/0.891) = 0.50

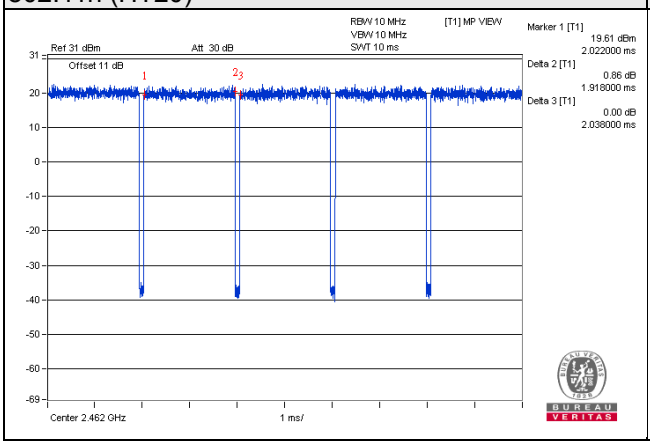
802.11b



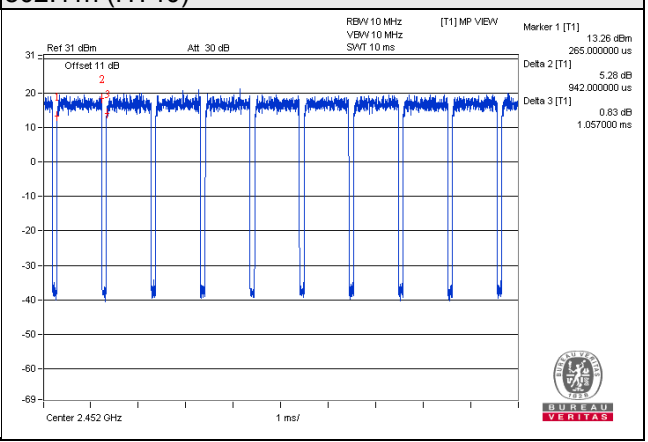
802.11g



802.11n (HT20)



802.11n (HT40)



2TX

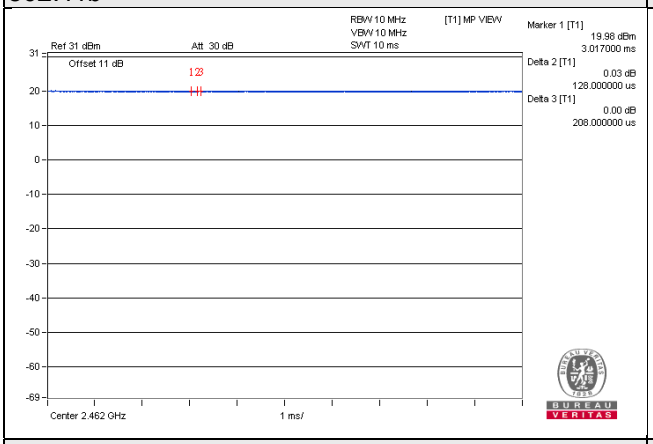
802.11b: Duty cycle = 0.128/0.208 > 98%

802.11g: Duty cycle = 2.060/2.190 = 0.941, Duty factor = 10 * log(1/0.941) = 0.27

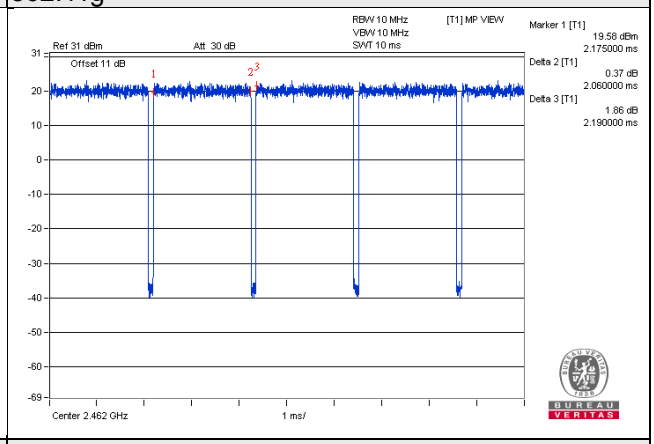
802.11n (HT20): Duty cycle = 1.913/2.023 = 0.946, Duty factor = 10 * log(1/0.946) = 0.24

802.11n (HT40): Duty cycle = 0.930/1.055 = 0.882, Duty factor = 10 * log(1/0.882) = 0.55

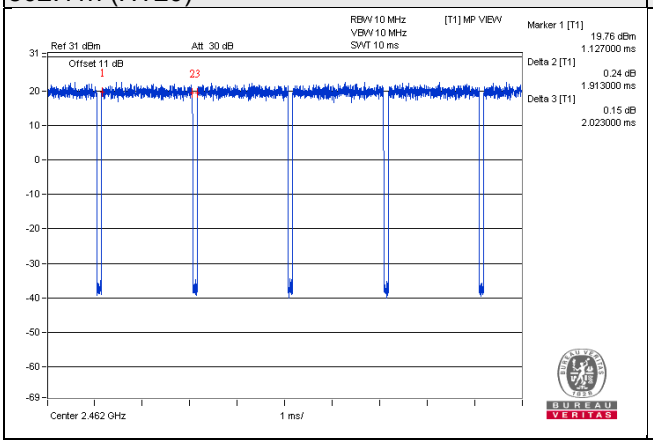
802.11b



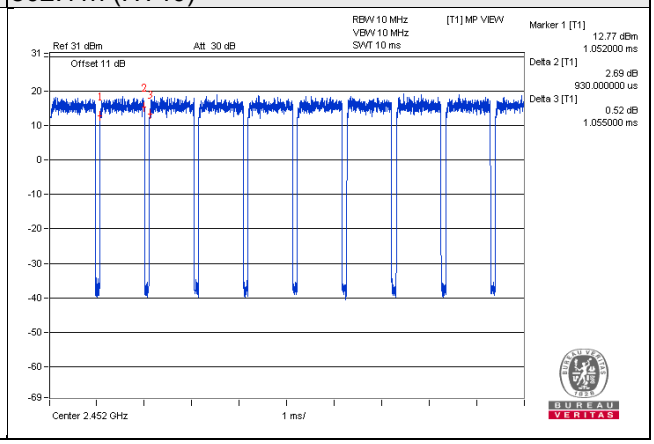
802.11g



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

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

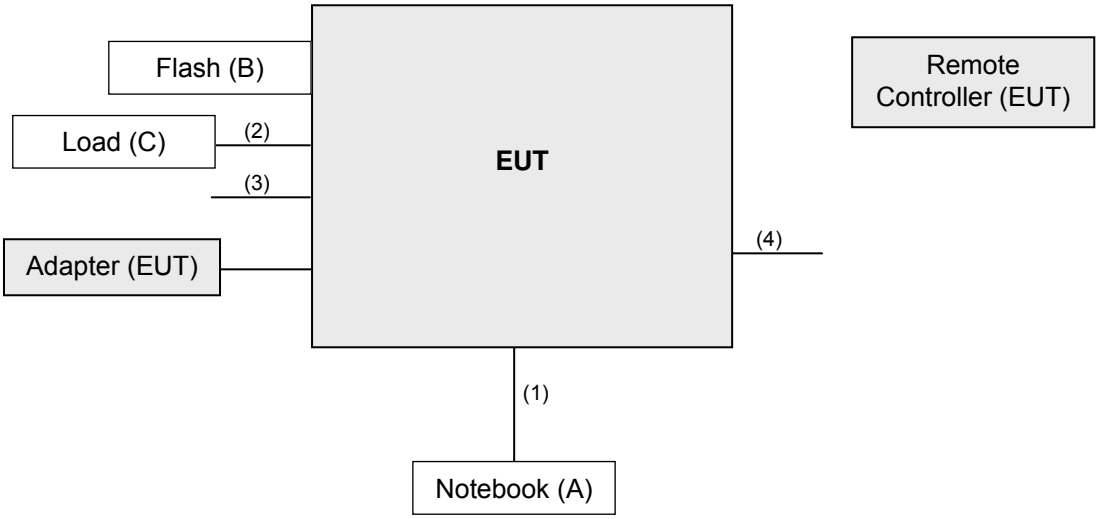
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	6RP2YM1	FCC DoC Approved	-
B.	FLASH	HP	v250W	09	NA	-
C.	Load	NA	NA	NA	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ45, Cat5e	1	3	N	0	-
2.	HDMI	1	2	Y	0	Accessory of EUT
3.	AV	1	1.8	Y	0	-
4.	Coaxial	1	3	Y	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 DTS Meas Guidance v04
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

Note: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

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 30dB 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	Oct. 24, 2016	Oct. 23, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 16, 2016	Aug. 15, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Dec. 28, 2016	Dec. 27, 2017
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Dec. 15, 2016	Dec. 14, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 14, 2016	Dec. 13, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Preamplifier Agilent	8449B	3008A01960	Aug. 09, 2016	Aug. 08, 2017
Preamplifier Agilent	8447D	2944A10631	Aug. 09, 2016	Aug. 08, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Aug. 09, 2016	Aug. 08, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Aug. 09, 2016	Aug. 08, 2017
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
High Speed Peak Power Meter	ML2495A	0824012	Aug. 11, 2016	Aug. 10, 2017
Power Sensor	MA2411B	0738171	Aug. 11, 2016	Aug. 10, 2017

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 4.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 460141.
5. The IC Site Registration No. is IC7450F-4.

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. Both X and Y axes 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:

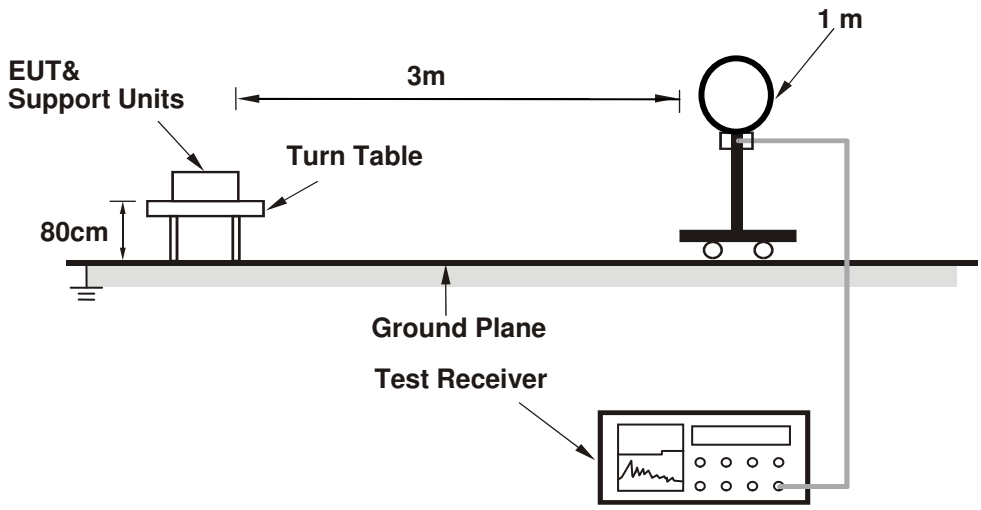
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

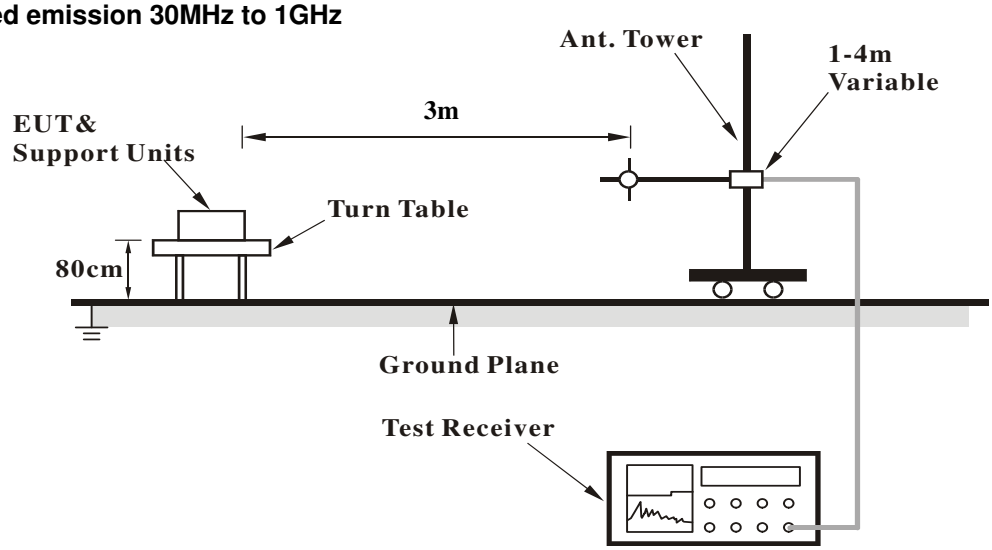
No deviation.

4.1.5 Test Setup

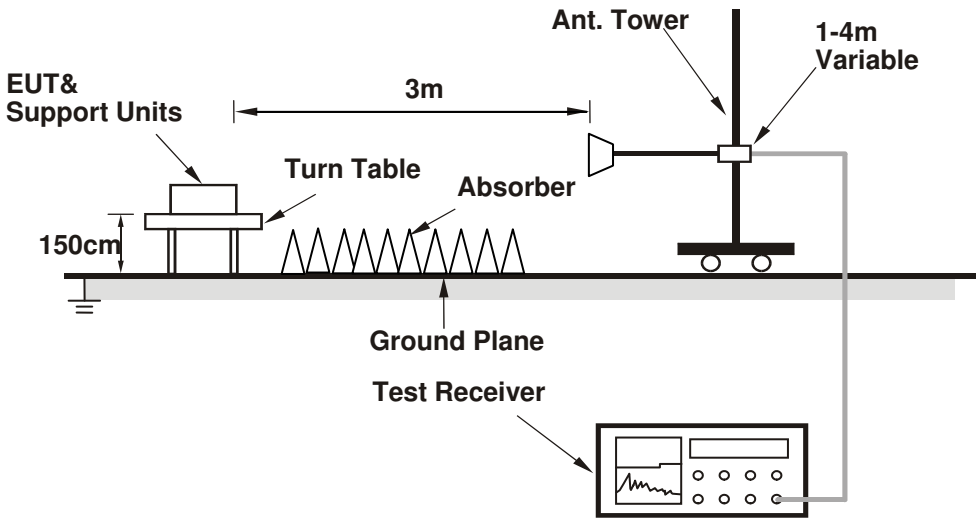
For Radiated emission below 30MHz



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

a. Placed the EUT on the testing table.
b. Prepared a notebook to act as a communication partner and placed it outside of testing area.
c. The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The communication partner sent data to EUT by command "PING".
e. The necessary accessories enable the system in full functions.

4.1.7 Test Results

Above 1GHz worst-Case data:

1TX

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	61.4 PK	74.0	-12.6	1.21 H	14	27.3	34.1
2	2390.00	53.5 AV	54.0	-0.5	1.21 H	14	19.4	34.1
3	*2412.00	110.8 PK			1.05 H	69	76.8	34.0
4	*2412.00	107.1 AV			1.05 H	69	73.1	34.0
5	4824.00	51.5 PK	74.0	-22.5	1.28 H	330	46.4	5.1
6	4824.00	46.1 AV	54.0	-7.9	1.28 H	330	41.0	5.1
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	2387.00	61.7 PK	74.0	-12.3	3.72 V	116	29.5	32.2
2	2387.00	52.3 AV	54.0	-1.7	3.72 V	116	20.1	32.2
3	*2412.00	109.7 PK			3.72 V	116	77.4	32.3
4	*2412.00	105.9 AV			3.72 V	116	73.6	32.3
5	4824.00	51.4 PK	74.0	-22.6	3.47 V	74	49.4	2.0
6	4824.00	46.3 AV	54.0	-7.7	3.47 V	74	44.3	2.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	110.3 PK			1.07 H	75	77.9	32.4
2	*2437.00	106.6 AV			1.07 H	75	74.2	32.4
3	4874.00	52.1 PK	74.0	-21.9	1.34 H	331	49.9	2.2
4	4874.00	47.3 AV	54.0	-6.7	1.34 H	331	45.1	2.2
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	108.8 PK			3.64 V	111	76.4	32.4
2	*2437.00	105.6 AV			3.64 V	111	73.2	32.4
3	4874.00	53.4 PK	74.0	-20.6	3.56 V	83	51.2	2.2
4	4874.00	48.2 AV	54.0	-5.8	3.56 V	83	46.0	2.2

Remarks:

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

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	108.4 PK			1.06 H	72	75.8	32.6
2	*2462.00	104.7 AV			1.06 H	72	72.1	32.6
3	2483.50	63.9 PK	74.0	-10.1	1.06 H	72	31.2	32.7
4	2483.50	51.9 AV	54.0	-2.1	1.06 H	72	19.2	32.7
5	4924.00	51.6 PK	74.0	-22.4	1.13 H	333	49.4	2.2
6	4924.00	46.4 AV	54.0	-7.6	1.13 H	333	44.2	2.2
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	106.9 PK			3.58 V	113	74.3	32.6
2	*2462.00	103.7 AV			3.58 V	113	71.1	32.6
3	2483.50	62.5 PK	74.0	-11.5	3.58 V	113	29.8	32.7
4	2483.50	51.2 AV	54.0	-2.8	3.58 V	113	18.5	32.7
5	4924.00	52.9 PK	74.0	-21.1	3.63 V	87	50.7	2.2
6	4924.00	47.2 AV	54.0	-6.8	3.63 V	87	45.0	2.2

Remarks:

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

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	66.2 PK	74.0	-7.8	1.03 H	70	34.0	32.2
2	2390.00	53.0 AV	54.0	-1.0	1.03 H	70	20.8	32.2
3	*2412.00	108.0 PK			1.03 H	70	75.7	32.3
4	*2412.00	97.9 AV			1.03 H	70	65.6	32.3
5	4824.00	50.3 PK	74.0	-23.7	1.06 H	326	48.3	2.0
6	4824.00	35.6 AV	54.0	-18.4	1.06 H	326	33.6	2.0
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	65.8 PK	74.0	-8.2	3.71 V	103	33.6	32.2
2	2390.00	51.2 AV	54.0	-2.8	3.71 V	103	19.0	32.2
3	*2412.00	106.6 PK			3.71 V	103	74.3	32.3
4	*2412.00	96.4 AV			3.71 V	103	64.1	32.3
5	4824.00	51.7 PK	74.0	-22.3	1.43 V	348	49.7	2.0
6	4824.00	38.8 AV	54.0	-15.2	1.43 V	348	36.8	2.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	110.5 PK			1.02 H	71	78.1	32.4
2	*2437.00	100.5 AV			1.02 H	71	68.1	32.4
3	4874.00	51.4 PK	74.0	-22.6	1.14 H	334	49.2	2.2
4	4874.00	36.4 AV	54.0	-17.6	1.14 H	334	34.2	2.2
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	109.2 PK			3.85 V	127	76.8	32.4
2	*2437.00	99.7 AV			3.85 V	127	67.3	32.4
3	4874.00	53.5 PK	74.0	-20.5	1.32 V	328	51.3	2.2
4	4874.00	37.8 AV	54.0	-16.2	1.32 V	328	35.6	2.2

Remarks:

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

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	109.1 PK			1.01 H	71	76.5	32.6
2	*2462.00	99.0 AV			1.01 H	71	66.4	32.6
3	2483.50	66.8 PK	74.0	-7.2	1.01 H	71	34.1	32.7
4	2483.50	51.5 AV	54.0	-2.5	1.01 H	71	18.8	32.7
5	4924.00	49.4 PK	74.0	-24.6	1.21 H	357	47.2	2.2
6	4924.00	35.3 AV	54.0	-18.7	1.21 H	357	33.1	2.2
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	107.4 PK			3.59 V	116	74.8	32.6
2	*2462.00	97.7 AV			3.59 V	116	65.1	32.6
3	2483.50	65.5 PK	74.0	-8.5	3.59 V	116	32.8	32.7
4	2483.50	50.5 AV	54.0	-3.5	3.59 V	116	17.8	32.7
5	4924.00	50.8 PK	74.0	-23.2	1.50 V	339	48.6	2.2
6	4924.00	35.9 AV	54.0	-18.1	1.50 V	339	33.7	2.2

Remarks:

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

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.2 PK	74.0	-7.8	1.02 H	71	34.0	32.2
2	2390.00	51.2 AV	54.0	-2.8	1.02 H	71	19.0	32.2
3	*2412.00	106.8 PK			1.02 H	71	74.5	32.3
4	*2412.00	96.9 AV			1.02 H	71	64.6	32.3
5	4824.00	47.0 PK	74.0	-27.0	1.38 H	341	45.0	2.0
6	4824.00	34.0 AV	54.0	-20.0	1.38 H	341	32.0	2.0
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	64.0 PK	74.0	-10.0	3.64 V	100	31.8	32.2
2	2390.00	49.8 AV	54.0	-4.2	3.64 V	100	17.6	32.2
3	*2412.00	137.6 PK			3.64 V	100	105.3	32.3
4	*2412.00	127.6 AV			3.64 V	100	95.3	32.3
5	4824.00	47.6 PK	74.0	-26.4	1.52 V	341	45.6	2.0
6	4824.00	34.3 AV	54.0	-19.7	1.52 V	341	32.3	2.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	110.9 PK			1.02 H	71	78.5	32.4
2	*2437.00	100.6 AV			1.02 H	71	68.2	32.4
3	4874.00	48.5 PK	74.0	-25.5	1.10 H	330	46.3	2.2
4	4874.00	35.3 AV	54.0	-18.7	1.10 H	330	33.1	2.2
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	108.7 PK			3.57 V	119	76.3	32.4
2	*2437.00	99.2 AV			3.57 V	119	66.8	32.4
3	4874.00	49.2 PK	74.0	-24.8	1.63 V	335	47.0	2.2
4	4874.00	36.0 AV	54.0	-18.0	1.63 V	335	33.8	2.2

Remarks:

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

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	108.4 PK			1.02 H	74	75.8	32.6
2	*2462.00	98.4 AV			1.02 H	74	65.8	32.6
3	2483.50	65.9 PK	74.0	-8.1	1.02 H	74	33.2	32.7
4	2483.50	50.8 AV	54.0	-3.2	1.02 H	74	18.1	32.7
5	4924.00	47.6 PK	74.0	-26.4	1.06 H	317	45.4	2.2
6	4924.00	34.8 AV	54.0	-19.2	1.06 H	317	32.6	2.2
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	106.2 PK			3.68 V	123	73.6	32.6
2	*2462.00	96.8 AV			3.68 V	123	64.2	32.6
3	2483.50	65.0 PK	74.0	-9.0	3.68 V	123	32.3	32.7
4	2483.50	50.1 AV	54.0	-3.9	3.68 V	123	17.4	32.7
5	4924.00	48.3 PK	74.0	-25.7	1.55 V	327	46.1	2.2
6	4924.00	35.5 AV	54.0	-18.5	1.55 V	327	33.3	2.2

Remarks:

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

802.11n (HT40)

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	65.0 PK	74.0	-9.0	1.18 H	58	32.8	32.2
2	2390.00	53.2 AV	54.0	-0.8	1.18 H	58	21.0	32.2
3	*2422.00	100.3 PK			1.18 H	58	67.9	32.4
4	*2422.00	89.9 AV			1.18 H	58	57.5	32.4
5	4844.00	46.3 PK	74.0	-27.7	1.13 H	354	44.2	2.1
6	4844.00	33.9 AV	54.0	-20.1	1.13 H	354	31.8	2.1
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	64.1 PK	74.0	-9.9	3.76 V	128	31.9	32.2
2	2390.00	51.7 AV	54.0	-2.3	3.76 V	128	19.5	32.2
3	*2422.00	98.0 PK			3.76 V	128	65.6	32.4
4	*2422.00	88.2 AV			3.76 V	128	55.8	32.4
5	4844.00	46.8 PK	74.0	-27.2	1.40 V	351	44.7	2.1
6	4844.00	34.2 AV	54.0	-19.8	1.40 V	351	32.1	2.1

Remarks:

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

CHANNEL	TX Channel 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	67.0 PK	74.0	-7.0	1.00 H	60	34.8	32.2
2	2390.00	51.4 AV	54.0	-2.6	1.00 H	60	19.2	32.2
3	*2437.00	104.0 PK			1.00 H	60	71.6	32.4
4	*2437.00	92.9 AV			1.00 H	60	60.5	32.4
5	4874.00	46.8 PK	74.0	-27.2	1.20 H	342	44.6	2.2
6	4874.00	34.2 AV	54.0	-19.8	1.20 H	342	32.0	2.2
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	67.0 PK	74.0	-7.0	3.81 V	134	34.8	32.2
2	2390.00	50.9 AV	54.0	-3.1	3.81 V	134	18.7	32.2
3	*2437.00	101.8 PK			3.81 V	134	69.4	32.4
4	*2437.00	91.2 AV			3.81 V	134	58.8	32.4
5	4874.00	47.4 PK	74.0	-26.6	1.36 V	344	45.2	2.2
6	4874.00	35.0 AV	54.0	-19.0	1.36 V	344	32.8	2.2

Remarks:

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

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	106.2 PK			1.01 H	72	73.6	32.6
2	*2452.00	95.3 AV			1.01 H	72	62.7	32.6
3	2483.50	68.7 PK	74.0	-5.3	1.01 H	72	36.0	32.7
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.01 H**	**72**	**21.2**	**32.7**
5	4904.00	47.4 PK	74.0	-26.6	1.05 H	336	45.2	2.2
6	4904.00	34.5 AV	54.0	-19.5	1.05 H	336	32.3	2.2
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	104.0 PK			3.78 V	127	71.4	32.6
2	*2452.00	93.1 AV			3.78 V	127	60.5	32.6
3	2483.50	67.8 PK	74.0	-6.2	3.78 V	127	35.1	32.7
4	2483.50	53.4 AV	54.0	-0.6	3.78 V	127	20.7	32.7
5	4904.00	48.6 PK	74.0	-25.4	1.41 V	356	46.4	2.2
6	4904.00	35.2 AV	54.0	-18.8	1.41 V	356	33.0	2.2

Remarks:

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

2TX

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	2387.00	60.2 PK	74.0	-13.8	3.83 H	11	28.0	32.2
2	2387.00	51.6 AV	54.0	-2.4	3.83 H	11	19.4	32.2
3	*2412.00	108.0 PK			2.61 H	337	75.7	32.3
4	*2412.00	103.9 AV			2.61 H	337	71.6	32.3
5	4824.00	50.3 PK	74.0	-23.7	1.62 H	314	48.3	2.0
6	4824.00	45.5 AV	54.0	-8.5	1.62 H	314	43.5	2.0
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	2387.00	59.9 PK	74.0	-14.1	3.24 V	152	27.7	32.2
2	2387.00	50.8 AV	54.0	-3.2	3.24 V	152	18.6	32.2
3	*2412.00	105.9 PK			3.70 V	118	73.6	32.3
4	*2412.00	101.7 AV			3.70 V	118	69.4	32.3
5	4824.00	51.8 PK	74.0	-22.2	3.45 V	104	49.8	2.0
6	4824.00	46.7 AV	54.0	-7.3	3.45 V	104	44.7	2.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	111.8 PK			2.57 H	328	79.4	32.4
2	*2437.00	107.9 AV			2.57 H	328	75.5	32.4
3	4874.00	52.2 PK	74.0	-21.8	1.53 H	330	50.0	2.2
4	4874.00	47.6 AV	54.0	-6.4	1.53 H	330	45.4	2.2
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	110.3 PK			3.64 V	124	77.9	32.4
2	*2437.00	106.4 AV			3.64 V	124	74.0	32.4
3	4874.00	53.7 PK	74.0	-20.3	3.58 V	110	51.5	2.2
4	4874.00	48.9 AV	54.0	-5.1	3.58 V	110	46.7	2.2

Remarks:

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

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	107.4 PK			2.53 H	341	74.8	32.6
2	*2462.00	103.5 AV			2.53 H	341	70.9	32.6
3	2483.50	61.4 PK	74.0	-12.6	3.91 H	1	28.7	32.7
4	2483.50	49.7 AV	54.0	-4.3	3.91 H	1	17.0	32.7
5	4824.00	51.0 PK	74.0	-23.0	1.54 H	322	49.0	2.0
6	4824.00	45.7 AV	54.0	-8.3	1.54 H	322	43.7	2.0
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	105.6 PK			3.64 V	125	73.0	32.6
2	*2462.00	102.3 AV			3.64 V	125	69.7	32.6
3	2483.50	61.1 PK	74.0	-12.9	3.18 V	143	28.4	32.7
4	2483.50	49.1 AV	54.0	-4.9	3.18 V	143	16.4	32.7
5	4824.00	52.0 PK	74.0	-22.0	3.48 V	100	50.0	2.0
6	4824.00	46.5 AV	54.0	-7.5	3.48 V	100	44.5	2.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	68.2 PK	74.0	-5.8	2.43 H	68	36.0	32.2
2	2390.00	51.6 AV	54.0	-2.4	2.43 H	68	19.4	32.2
3	*2412.00	104.2 PK			3.13 H	67	71.9	32.3
4	*2412.00	95.0 AV			3.13 H	67	62.7	32.3
5	4824.00	46.4 PK	74.0	-27.6	1.56 H	66	44.4	2.0
6	4824.00	34.9 AV	54.0	-19.1	1.56 H	66	32.9	2.0
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	60.4 PK	74.0	-13.6	1.09 V	247	28.2	32.2
2	2390.00	48.2 AV	54.0	-5.8	1.09 V	247	16.0	32.2
3	*2412.00	102.6 PK			1.04 V	240	70.3	32.3
4	*2412.00	93.1 AV			1.04 V	240	60.8	32.3
5	4824.00	45.4 PK	74.0	-28.6	1.81 V	223	43.4	2.0
6	4824.00	32.6 AV	54.0	-21.4	1.81 V	223	30.6	2.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	109.5 PK			2.39 H	72	77.1	32.4
2	*2437.00	99.5 AV			2.39 H	72	67.1	32.4
3	4874.00	46.6 PK	74.0	-27.4	1.74 H	112	44.4	2.2
4	4874.00	34.7 AV	54.0	-19.3	1.74 H	112	32.5	2.2
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	107.5 PK			1.68 V	256	75.1	32.4
2	*2437.00	97.7 AV			1.68 V	256	65.3	32.4
3	4874.00	46.1 PK	74.0	-27.9	1.78 V	331	43.9	2.2
4	4874.00	32.7 AV	54.0	-21.3	1.78 V	331	30.5	2.2

Remarks:

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

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	109.1 PK			4.00 H	12	76.5	32.6
2	*2462.00	99.4 AV			4.00 H	12	66.8	32.6
3	2483.50	66.6 PK	74.0	-7.4	3.94 H	20	33.9	32.7
4	2483.50	52.0 AV	54.0	-2.0	3.94 H	20	19.3	32.7
5	4924.00	46.4 PK	74.0	-27.6	1.27 H	334	44.2	2.2
6	4924.00	34.7 AV	54.0	-19.3	1.27 H	334	32.5	2.2
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	106.1 PK			2.05 V	157	73.5	32.6
2	*2462.00	96.5 AV			2.05 V	157	63.9	32.6
3	2483.50	61.5 PK	74.0	-12.5	1.73 V	257	28.8	32.7
4	2483.50	49.0 AV	54.0	-5.0	1.73 V	257	16.3	32.7
5	4924.00	45.8 PK	74.0	-28.2	3.32 V	193	43.6	2.2
6	4924.00	33.4 AV	54.0	-20.6	3.32 V	193	31.2	2.2

Remarks:

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

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.5 PK	74.0	-7.5	2.39 H	64	34.3	32.2
2	2390.00	52.2 AV	54.0	-1.8	2.39 H	64	20.0	32.2
3	*2412.00	105.9 PK			2.90 H	333	73.6	32.3
4	*2412.00	94.9 AV			2.90 H	333	62.6	32.3
5	4824.00	46.7 PK	74.0	-27.3	1.52 H	166	44.7	2.0
6	4824.00	33.5 AV	54.0	-20.5	1.52 H	166	31.5	2.0
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	59.5 PK	74.0	-14.5	1.82 V	216	27.3	32.2
2	2390.00	47.5 AV	54.0	-6.5	1.82 V	216	15.3	32.2
3	*2412.00	102.0 PK			1.00 V	237	69.7	32.3
4	*2412.00	92.1 AV			1.00 V	237	59.8	32.3
5	4824.00	45.6 PK	74.0	-28.4	1.62 V	174	43.6	2.0
6	4824.00	32.6 AV	54.0	-21.4	1.62 V	174	30.6	2.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	109.6 PK			3.35 H	59	77.2	32.4
2	*2437.00	99.1 AV			3.35 H	59	66.7	32.4
3	4874.00	46.8 PK	74.0	-27.2	1.82 H	193	44.6	2.2
4	4874.00	34.4 AV	54.0	-19.6	1.82 H	193	32.2	2.2
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	106.7 PK			2.89 V	132	74.3	32.4
2	*2437.00	96.3 AV			2.89 V	132	63.9	32.4
3	4874.00	45.9 PK	74.0	-28.1	1.88 V	296	43.7	2.2
4	4874.00	33.4 AV	54.0	-20.6	1.88 V	296	31.2	2.2

Remarks:

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

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	108.6 PK			3.88 H	318	76.0	32.6
2	*2462.00	99.0 AV			3.88 H	318	66.4	32.6
3	2483.50	66.4 PK	74.0	-7.6	3.90 H	13	33.7	32.7
4	2483.50	52.6 AV	54.0	-1.4	3.90 H	13	19.9	32.7
5	4924.00	47.1 PK	74.0	-26.9	1.41 H	139	44.9	2.2
6	4924.00	33.9 AV	54.0	-20.1	1.41 H	139	31.7	2.2
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	106.2 PK			3.42 V	50	73.6	32.6
2	*2462.00	94.8 AV			3.42 V	50	62.2	32.6
3	2483.50	61.6 PK	74.0	-12.4	3.72 V	186	28.9	32.7
4	2483.50	49.5 AV	54.0	-4.5	3.72 V	186	16.8	32.7
5	4924.00	46.0 PK	74.0	-28.0	1.77 V	356	43.8	2.2
6	4924.00	32.6 AV	54.0	-21.4	1.77 V	356	30.4	2.2

Remarks:

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

802.11n (HT40)

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	65.4 PK	74.0	-8.6	3.82 H	18	33.2	32.2
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**3.82 H**	**18**	**21.7**	**32.2**
3	*2422.00	101.6 PK			3.75 H	17	69.2	32.4
4	*2422.00	89.5 AV			3.75 H	17	57.1	32.4
5	4844.00	47.1 PK	74.0	-26.9	1.96 H	286	45.0	2.1
6	4844.00	33.4 AV	54.0	-20.6	1.96 H	286	31.3	2.1
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	60.5 PK	74.0	-13.5	1.81 V	239	28.3	32.2
2	2390.00	47.7 AV	54.0	-6.3	1.81 V	239	15.5	32.2
3	*2422.00	96.4 PK			1.02 V	240	64.0	32.4
4	*2422.00	87.7 AV			1.02 V	240	55.3	32.4
5	4844.00	45.7 PK	74.0	-28.3	1.95 V	218	43.6	2.1
6	4844.00	32.7 AV	54.0	-21.3	1.95 V	218	30.6	2.1

Remarks:

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

CHANNEL	TX Channel 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	69.1 PK	74.0	-4.9	1.87 H	18	35.0	34.1
2	2390.00	53.5 AV	54.0	-0.5	1.87 H	18	19.4	34.1
3	*2437.00	105.6 PK			2.54 H	332	71.4	34.2
4	*2437.00	95.3 AV			2.54 H	332	61.1	34.2
5	2483.50	62.4 PK	74.0	-11.6	1.81 H	13	28.0	34.4
6	2483.50	49.9 AV	54.0	-4.1	1.81 H	13	15.5	34.4
7	4874.00	46.9 PK	74.0	-27.1	1.90 H	198	41.7	5.2
8	4874.00	33.9 AV	54.0	-20.1	1.90 H	198	28.7	5.2
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	62.7 PK	74.0	-11.3	1.25 V	249	28.6	34.1
2	2390.00	52.0 AV	54.0	-2.0	1.25 V	249	17.9	34.1
3	*2437.00	103.7 PK			1.93 V	224	69.5	34.2
4	*2437.00	92.8 AV			1.93 V	224	58.6	34.2
5	2483.50	59.1 PK	74.0	-14.9	1.89 V	250	24.7	34.4
6	2483.50	48.3 AV	54.0	-5.7	1.89 V	250	13.9	34.4
7	4874.00	45.7 PK	74.0	-28.3	2.46 V	255	40.5	5.2
8	4874.00	33.1 AV	54.0	-20.9	2.46 V	255	27.9	5.2

Remarks:

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

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	104.4 PK			2.67 H	63	71.8	32.6
2	*2452.00	93.7 AV			2.67 H	63	61.1	32.6
3	2483.50	66.5 PK	74.0	-7.5	2.12 H	283	33.8	32.7
4	2483.50	52.7 AV	54.0	-1.3	2.12 H	283	20.0	32.7
5	4924.00	47.4 PK	74.0	-26.6	1.83 H	147	45.2	2.2
6	4924.00	34.8 AV	54.0	-19.2	1.83 H	147	32.6	2.2
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	101.5 PK			2.15 V	224	68.9	32.6
2	*2452.00	91.8 AV			2.15 V	224	59.2	32.6
3	2483.50	63.0 PK	74.0	-11.0	1.99 V	218	30.3	32.7
4	2483.50	50.6 AV	54.0	-3.4	1.99 V	218	17.9	32.7
5	4924.00	45.8 PK	74.0	-28.2	2.36 V	248	43.6	2.2
6	4924.00	33.5 AV	54.0	-20.5	2.36 V	248	31.3	2.2

Remarks:

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

Below 1GHz worst-case data: 802.11b

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	84.23	31.2 QP	40.0	-8.8	1.99 H	202	50.2	-19.0
2	233.64	27.7 QP	46.0	-18.3	1.25 H	233	43.1	-15.4
3	404.40	23.8 QP	46.0	-22.2	1.00 H	6	34.3	-10.5
4	526.64	27.9 QP	46.0	-18.1	1.50 H	189	35.9	-8.0
5	648.89	40.4 QP	46.0	-5.6	1.25 H	162	45.7	-5.3
6	938.01	37.2 QP	46.0	-8.8	1.50 H	7	37.4	-0.2
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	30.63	30.9 QP	40.0	-9.1	1.18 V	162	46.6	-15.7
2	84.23	35.4 QP	40.0	-4.6	1.00 V	297	54.6	-19.2
3	214.24	32.8 QP	43.5	-10.7	1.24 V	13	49.0	-16.2
4	526.64	29.7 QP	46.0	-16.3	1.24 V	138	37.7	-8.0
5	689.64	31.6 QP	46.0	-14.4	1.50 V	67	36.2	-4.6
6	938.01	31.3 QP	46.0	-14.7	1.50 V	6	31.5	-0.2

Remarks:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 21, 2016	Nov. 20, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 22, 2016	Dec. 21, 2017
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 10, 2017	Mar. 09, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 28, 2016	Jul. 27, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

4.2.3 Test Procedures

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.

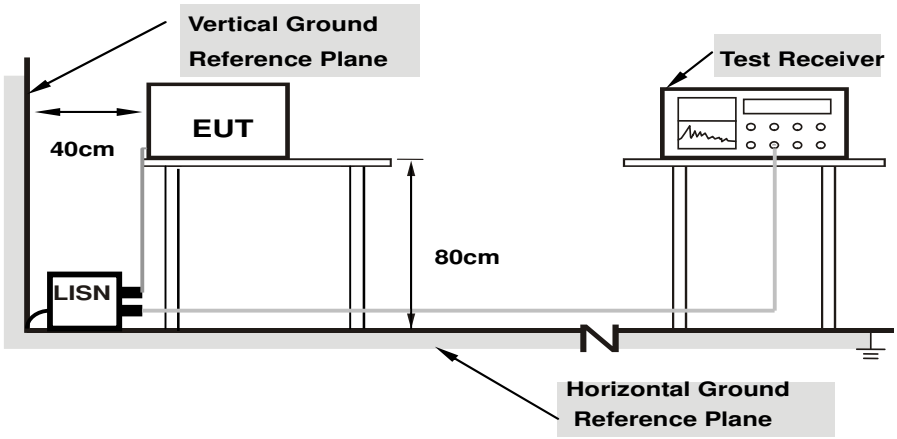
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

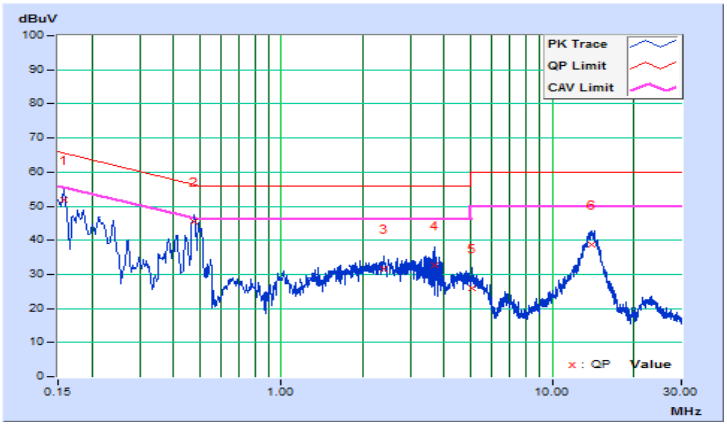
Worst-case data: 802.11b

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	0.15782	10.41	41.42	31.00	51.83	41.41	65.58	55.58	-13.75	-14.17
2	**0.47844**	**10.50**	**35.06**	**29.26**	**45.56**	**39.76**	**56.37**	**46.37**	**-10.81**	**-6.61**
3	2.40216	10.55	21.25	12.77	31.80	23.32	56.00	46.00	-24.20	-22.68
4	3.70419	10.64	22.15	11.77	32.79	22.41	56.00	46.00	-23.21	-23.59
5	5.05314	10.70	15.12	9.23	25.82	19.93	60.00	50.00	-34.18	-30.07
6	13.99922	11.10	27.53	22.59	38.63	33.69	60.00	50.00	-21.37	-16.31

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.

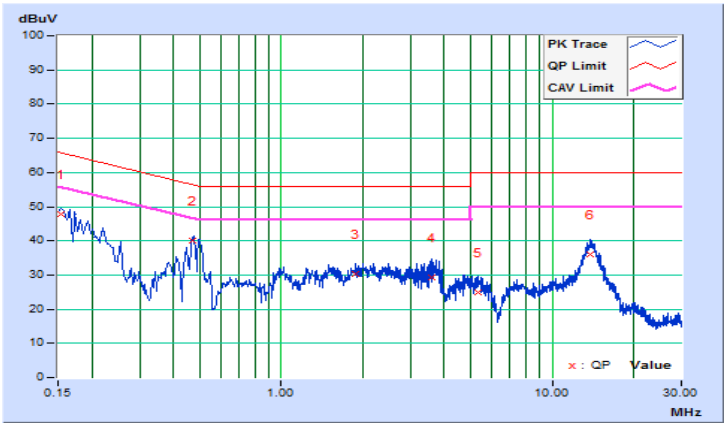


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.16	37.81	29.65	47.97	39.81	65.79	55.79	-17.82	-15.98
2	0.47163	10.23	29.80	26.22	40.03	36.45	56.49	46.49	-16.46	-10.04
3	1.87822	10.30	19.85	12.67	30.15	22.97	56.00	46.00	-25.85	-23.03
4	3.59080	10.40	18.77	7.95	29.17	18.35	56.00	46.00	-26.83	-27.65
5	5.32684	10.47	14.58	8.50	25.05	18.97	60.00	50.00	-34.95	-31.03
6	13.88583	10.80	25.36	20.23	36.16	31.03	60.00	50.00	-23.84	-18.97

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.

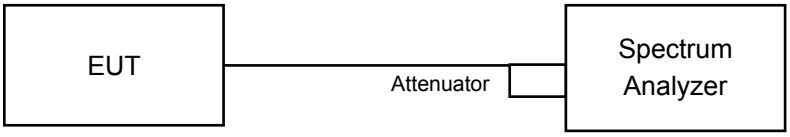


4.3 6dB Bandwidth Measurement

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 = average.
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

1TX

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	8.11	0.5	Pass
6	2437	8.11	0.5	Pass
11	2462	8.08	0.5	Pass

802.11g

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

802.11n (HT20)

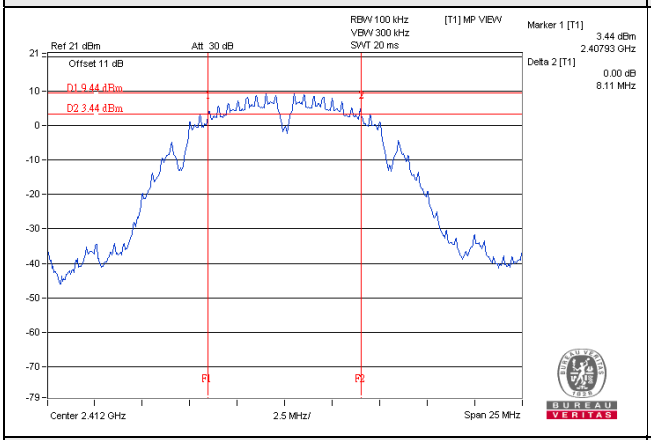
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	17.64	0.5	Pass
6	2437	17.63	0.5	Pass
11	2462	17.61	0.5	Pass

802.11n (HT40)

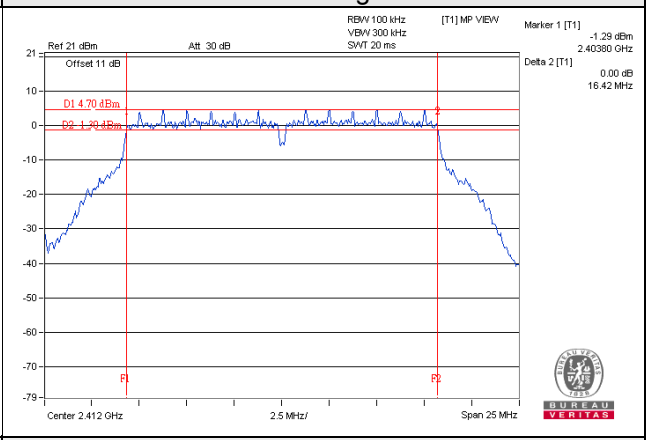
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3	2422	36.44	0.5	Pass
6	2437	36.39	0.5	Pass
9	2452	36.43	0.5	Pass

Spectrum Plot of Worst Value

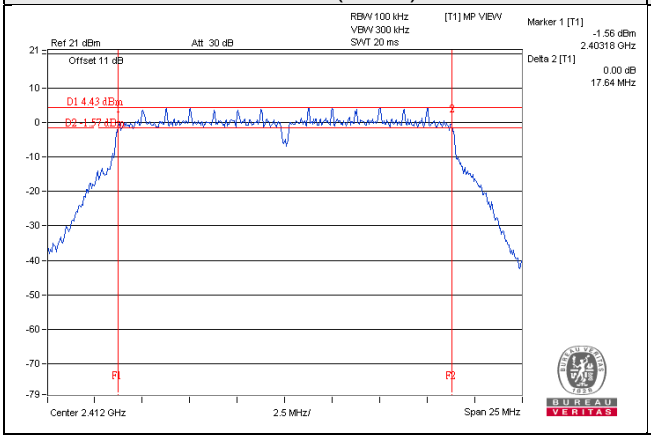
802.11b



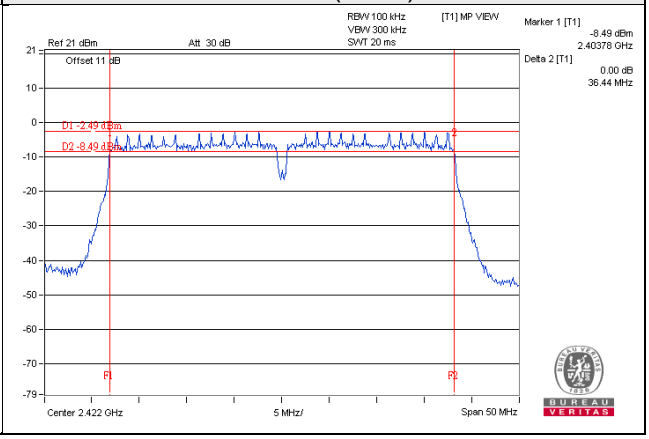
802.11g



802.11n (HT20)



802.11n (HT40)



2TX

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	8.09	8.12	0.5	Pass
6	2437	8.11	8.11	0.5	Pass
11	2462	8.10	8.10	0.5	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.42	16.44	0.5	Pass
6	2437	16.39	16.39	0.5	Pass
11	2462	16.40	16.41	0.5	Pass

802.11n (HT20)

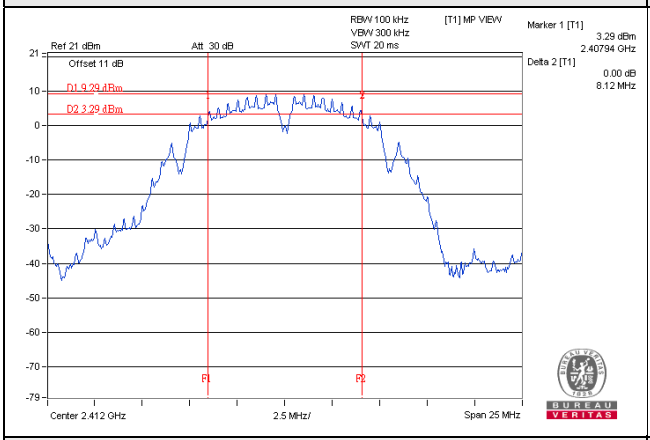
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.65	17.67	0.5	Pass
6	2437	17.63	17.66	0.5	Pass
11	2462	17.64	17.66	0.5	Pass

802.11n (HT40)

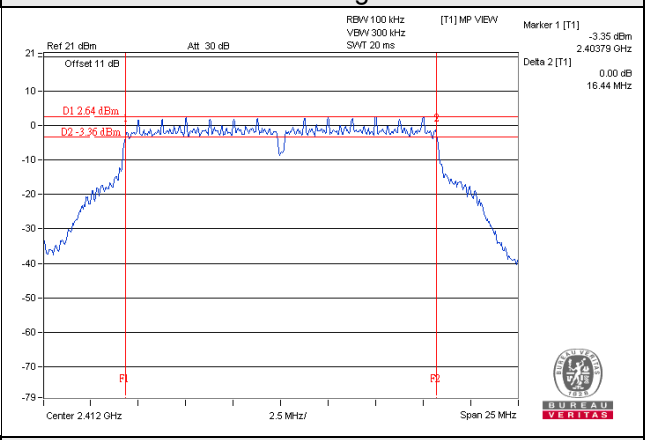
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	36.44	36.45	0.5	Pass
6	2437	36.38	36.41	0.5	Pass
9	2452	36.42	36.40	0.5	Pass

Spectrum Plot of Worst Value

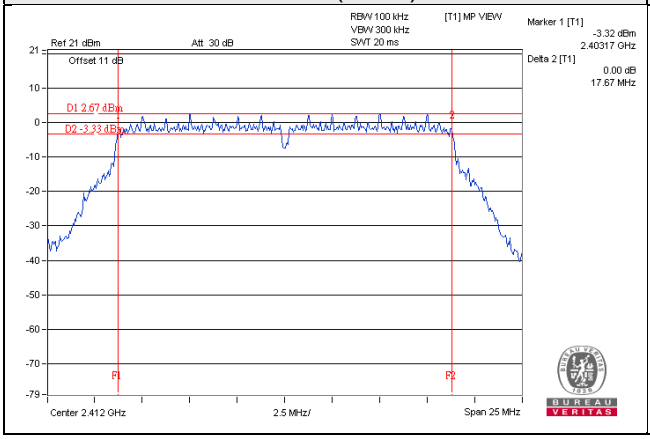
802.11b



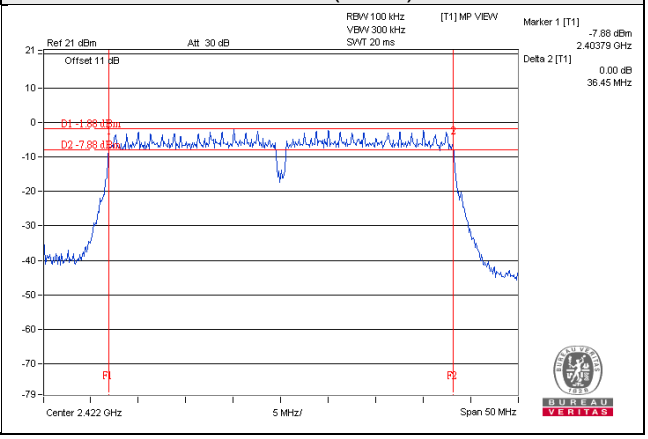
802.11g



802.11n (HT20)



802.11n (HT40)



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

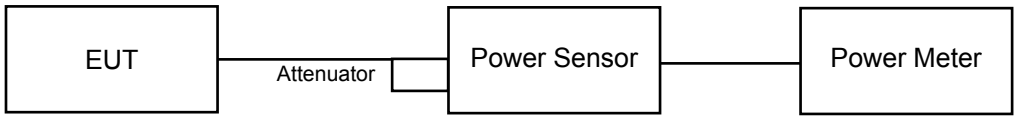
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

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

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

CDD Mode, 1TX

802.11b

Channel	Frequency (MHz)	Average Power (dBm)	Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	18.32	67.920	18.32	30	Pass
6	2437	20.11	**102.565**	20.11	30	Pass
11	2462	18.34	68.234	18.34	30	Pass

802.11g

Channel	Frequency (MHz)	Average Power (dBm)	Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	15.90	38.905	15.90	30	Pass
6	2437	18.62	72.778	18.62	30	Pass
11	2462	17.61	57.677	17.61	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (dBm)	Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	14.78	30.061	14.78	30	Pass
6	2437	18.91	77.804	18.91	30	Pass
11	2462	17.37	54.576	17.37	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Average Power (dBm)	Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
3	2422	11.65	14.622	11.65	30	Pass
6	2437	14.72	29.648	14.72	30	Pass
9	2452	17.31	53.827	17.31	30	Pass

CDD Mode, 2TX

802.11b

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	17.61	17.04	108.259	20.34	30	Pass
6	2437	20.00	19.69	**193.111**	22.86	30	Pass
11	2462	17.22	16.83	100.918	20.04	30	Pass

802.11g

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	14.55	14.62	57.483	17.60	30	Pass
6	2437	19.22	19.29	168.478	22.27	30	Pass
11	2462	17.34	17.61	111.877	20.49	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	14.31	13.98	51.980	17.16	30	Pass
6	2437	19.51	19.41	176.628	22.47	30	Pass
11	2462	17.54	17.11	108.158	20.34	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	12.48	12.71	36.365	15.61	30	Pass
6	2437	16.11	15.81	78.939	18.97	30	Pass
9	2452	16.59	15.98	85.232	19.31	30	Pass

Beamforming Mode

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	14.12	13.85	50.089	17.00	30	Pass
6	2437	18.85	19.12	**158.394**	22.00	30	Pass
11	2462	17.58	17.05	107.979	20.33	30	Pass

Note: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 5.14dBi < 6dBi, so the limit no need to be reduced.

802.11n (HT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	10.06	10.71	21.915	13.41	30	Pass
6	2437	15.26	15.13	66.158	18.21	30	Pass
9	2452	15.84	16.35	81.523	19.11	30	Pass

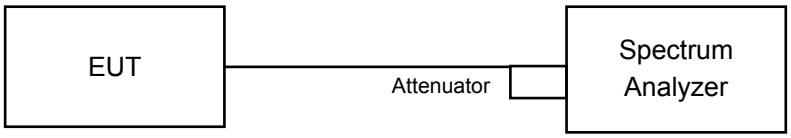
Note: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 5.14dBi < 6dBi, so the limit no need to be reduced.

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For Average 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 Average 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

1TX

802.11b

Channel	Freq. (MHz)	PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-12.08	8	Pass
6	2437	-9.77	8	Pass
11	2462	-11.76	8	Pass

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	-15.21	0.27	-14.94	8	Pass
6	2437	-12.73	0.27	-12.46	8	Pass
11	2462	-13.52	0.27	-13.25	8	Pass

802.11n (HT20)

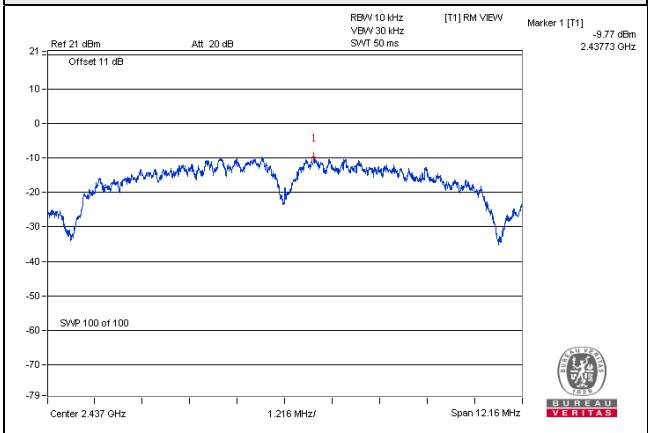
Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/10kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass/Fail
1	2412	-16.59	0.26	-16.33	8	Pass
6	2437	-12.62	0.26	-12.36	8	Pass
11	2462	-14.17	0.26	-13.91	8	Pass

802.11n (HT40)

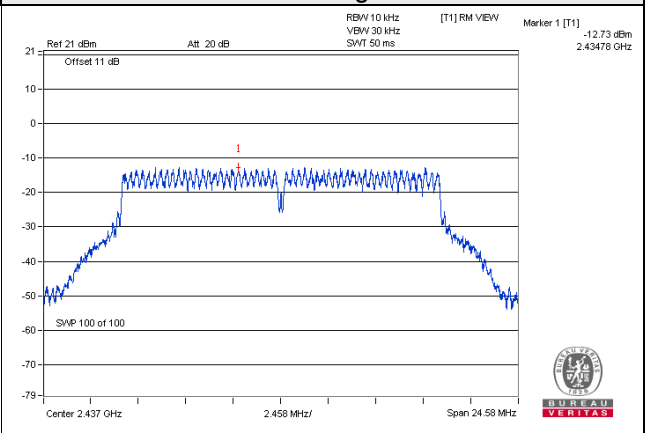
Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/10kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass/Fail
3	2422	-23.64	0.50	-23.14	8	Pass
6	2437	-20.60	0.50	-20.10	8	Pass
9	2452	-17.98	0.50	-17.48	8	Pass

Spectrum Plot of Worst Value

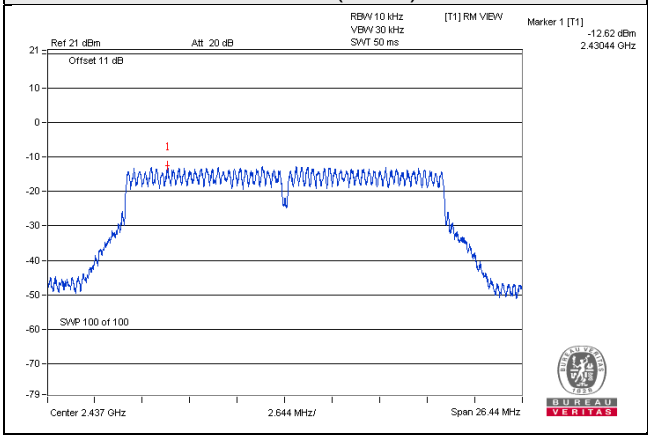
802.11b



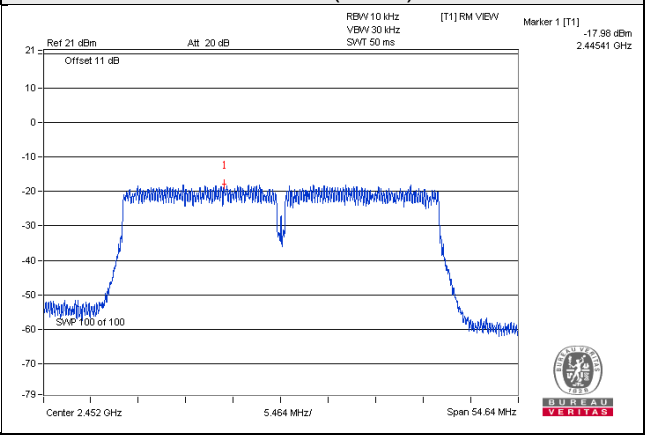
802.11g



802.11n (HT20)



802.11n (HT40)



2TX

802.11b

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=2) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-11.95	3.01	-6.83	8	Pass
	6	2437	-9.32	3.01	-4.20	8	Pass
	11	2462	-11.09	3.01	-5.97	8	Pass
1	1	2412	-12.05	3.01	-6.93	8	Pass
	6	2437	-9.84	3.01	-4.72	8	Pass
	11	2462	-11.59	3.01	-6.47	8	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 5.14dBi < 6dBi, so the limit no need to be reduced.

802.11g

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/10kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-16.37	3.01	0.27	-13.09	8	Pass
	6	2437	-12.22	3.01	0.27	-8.94	8	Pass
	11	2462	-13.35	3.01	0.27	-10.07	8	Pass
1	1	2412	-17.77	3.01	0.27	-14.49	8	Pass
	6	2437	-12.56	3.01	0.27	-9.28	8	Pass
	11	2462	-14.49	3.01	0.27	-11.21	8	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 5.14dBi < 6dBi, so the limit no need to be reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/10kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-17.75	3.01	0.24	-14.50	8	Pass
	6	2437	-11.97	3.01	0.24	-8.72	8	Pass
	11	2462	-14.22	3.01	0.24	-10.97	8	Pass
1	1	2412	-18.40	3.01	0.24	-15.15	8	Pass
	6	2437	-12.97	3.01	0.24	-9.72	8	Pass
	11	2462	-14.75	3.01	0.24	-11.50	8	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 5.14dBi < 6dBi, so the limit no need to be reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

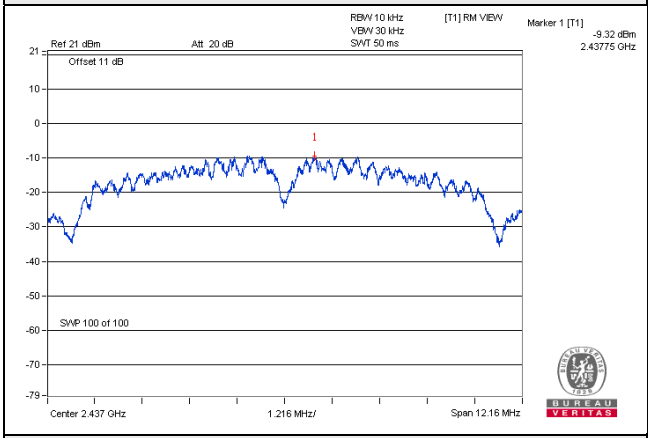
802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/10kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-22.99	3.01	0.55	-19.43	8	Pass
	6	2437	-19.09	3.01	0.55	-15.53	8	Pass
	9	2452	-18.70	3.01	0.55	-15.14	8	Pass
1	3	2422	-23.15	3.01	0.55	-19.59	8	Pass
	6	2437	-19.97	3.01	0.55	-16.41	8	Pass
	9	2452	-19.11	3.01	0.55	-15.55	8	Pass

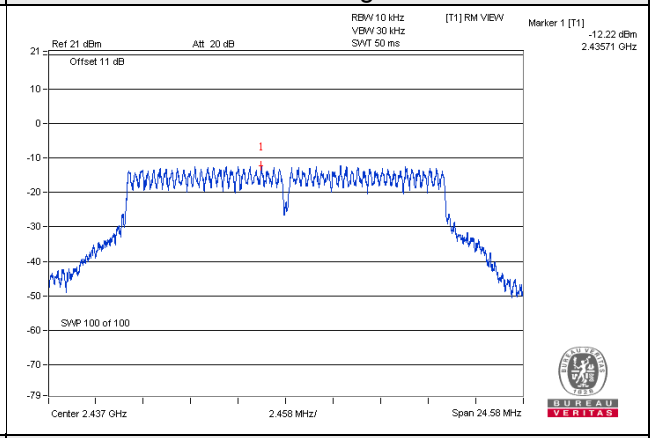
Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 5.14dBi < 6dBi, so the limit no need to be reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

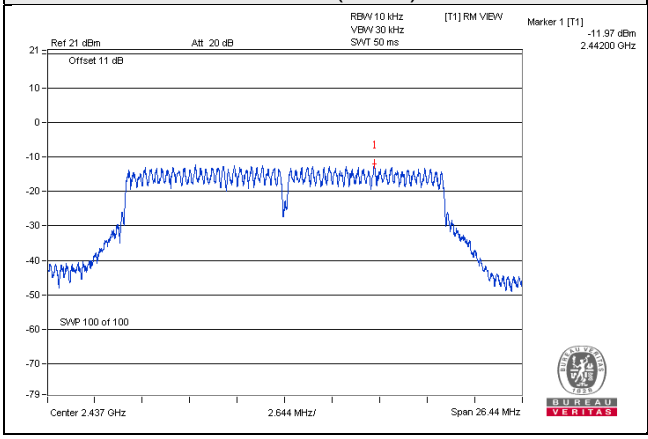
802.11b



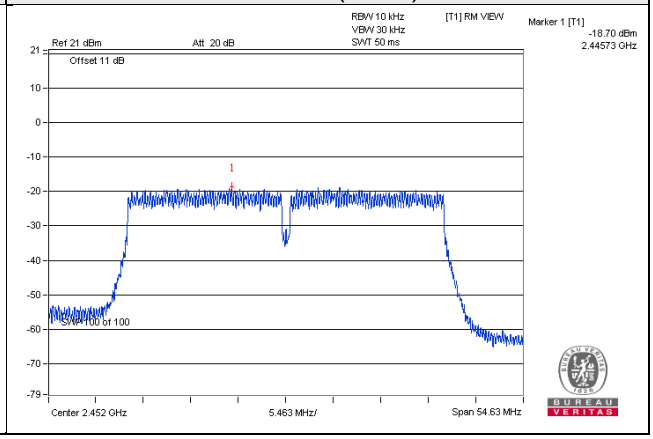
802.11g



802.11n (HT20)



802.11n (HT40)

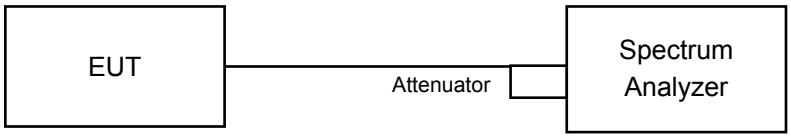


4.6 Conducted Out of Band Emission Measurement

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

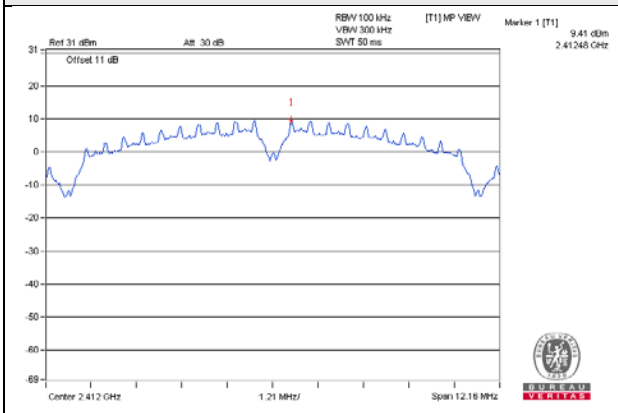
4.6.7 Test Results

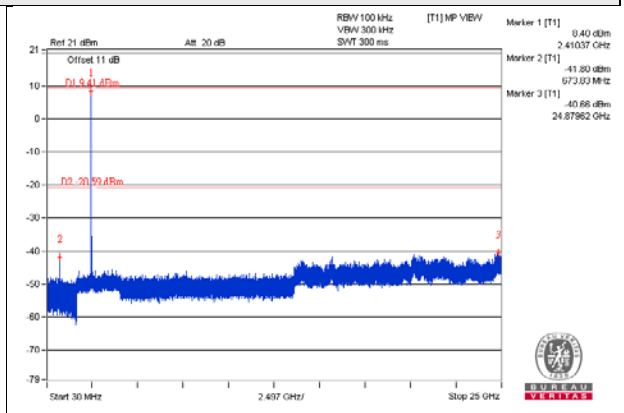
The conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

1TX

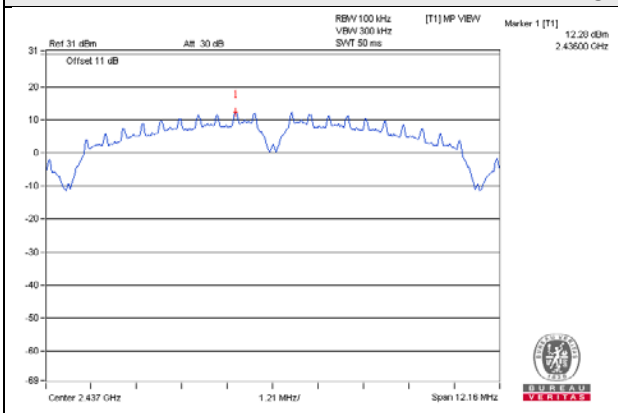
802.11b

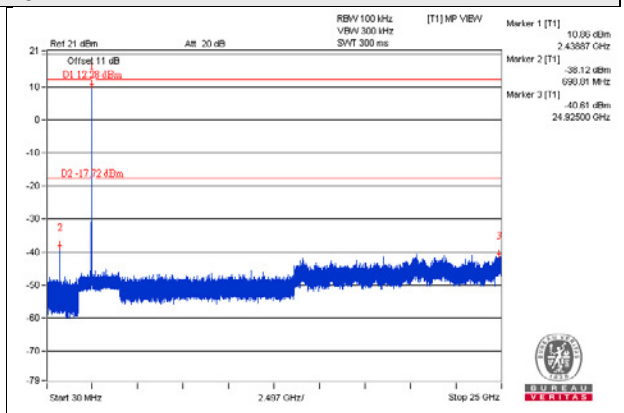
CH 1



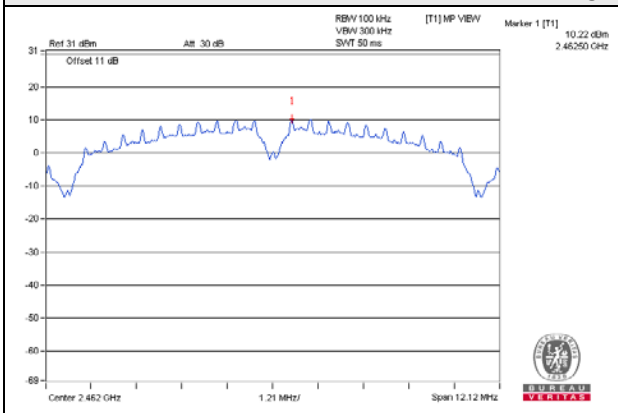


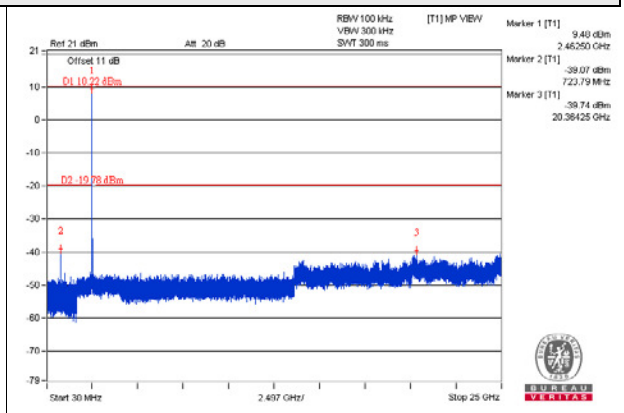
CH 6



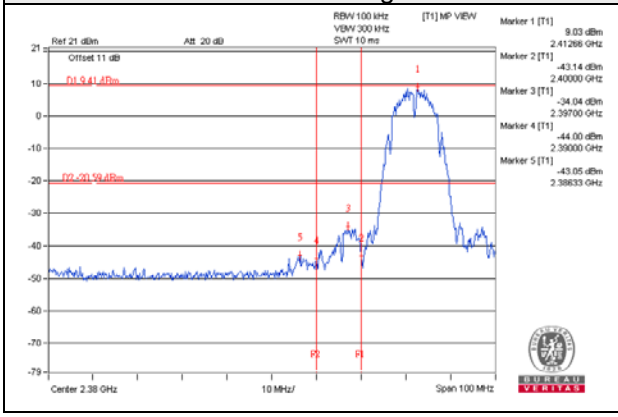


CH 11

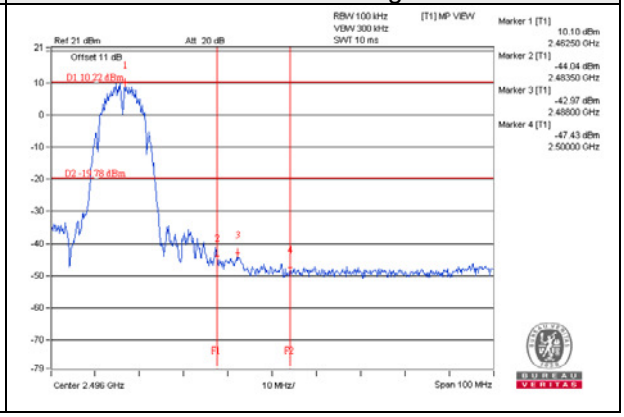




CH 1 Band edge

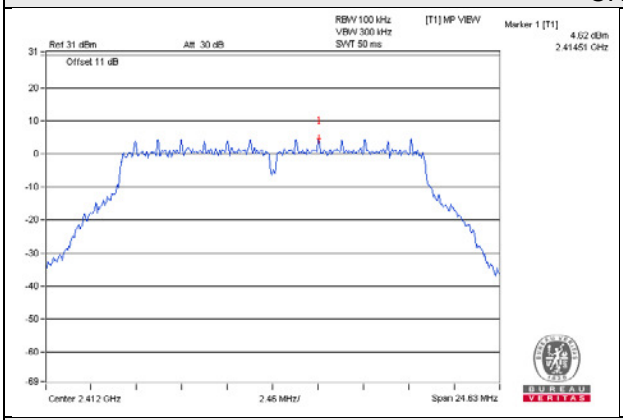


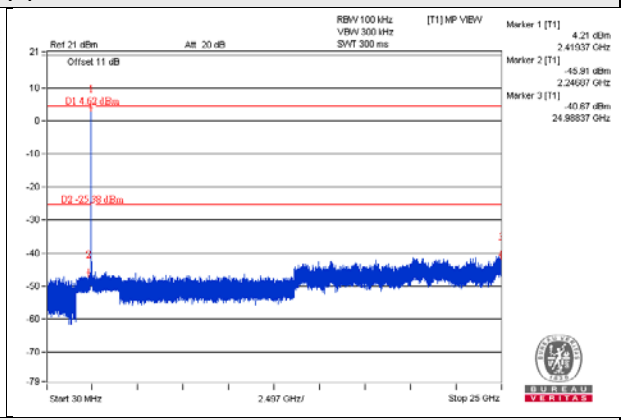
CH 11 Band edge



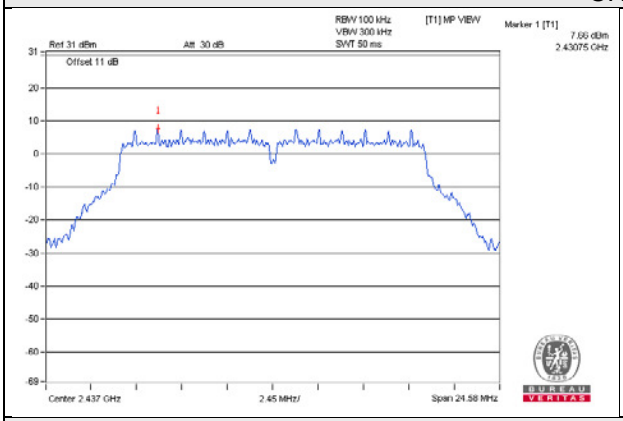
802.11g

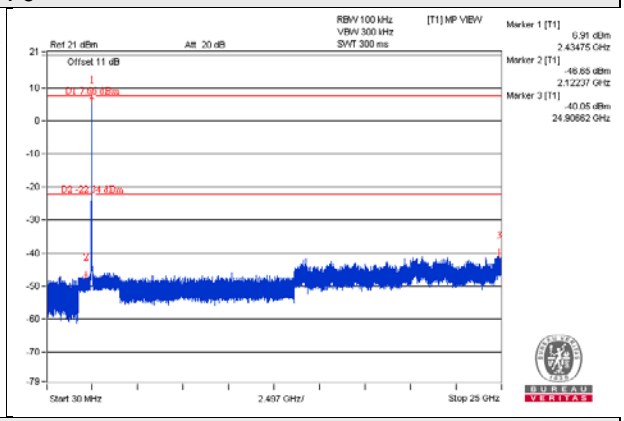
CH 1



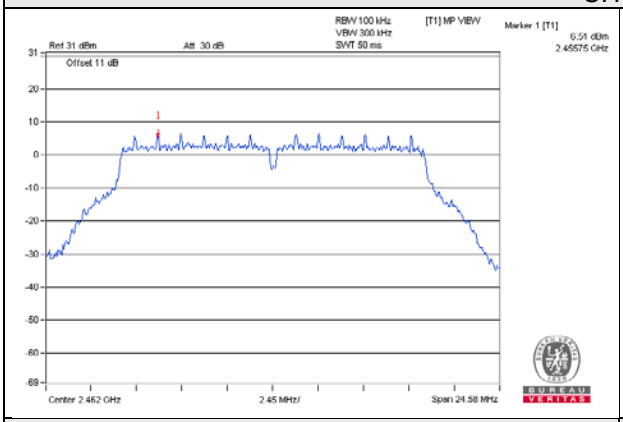


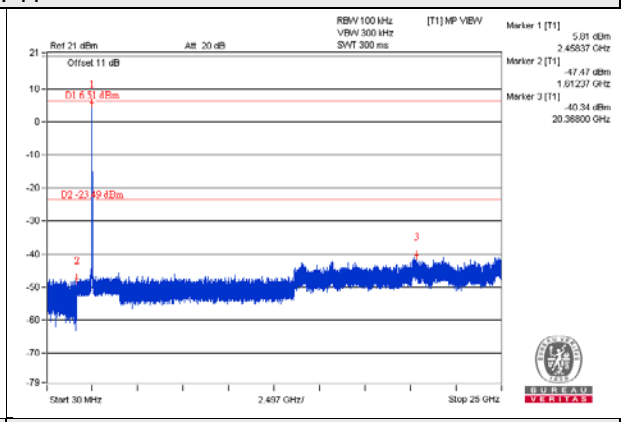
CH 6



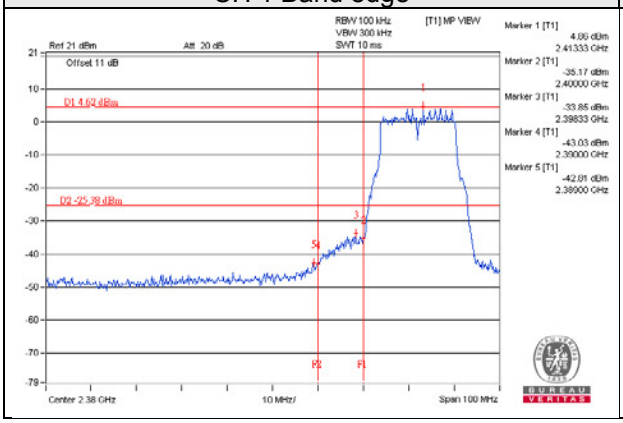


CH 11

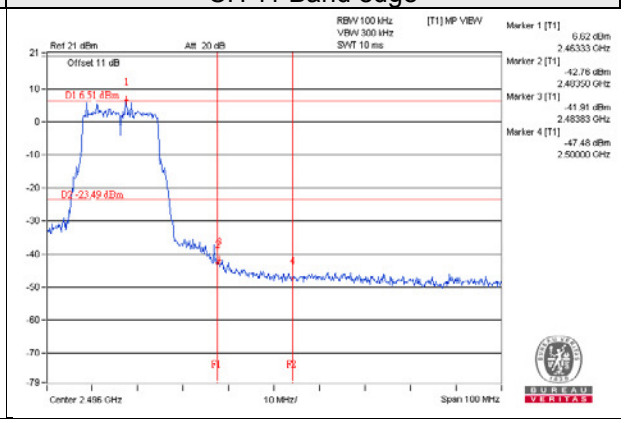




CH 1 Band edge

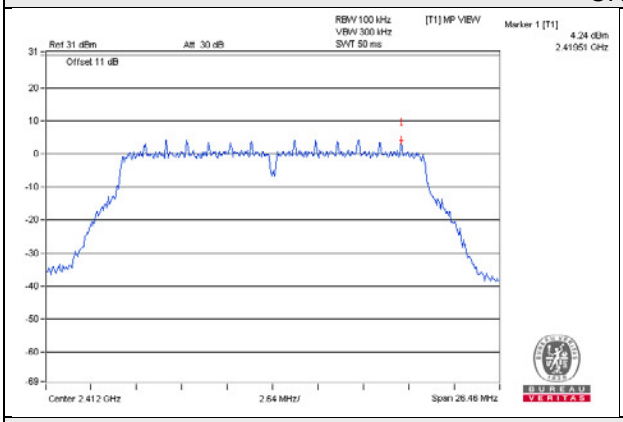


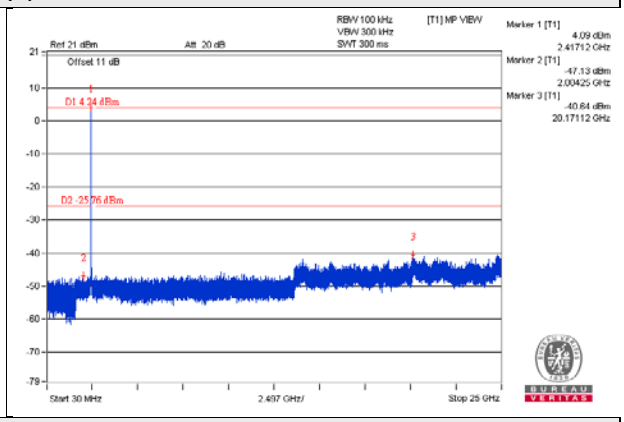
CH 11 Band edge



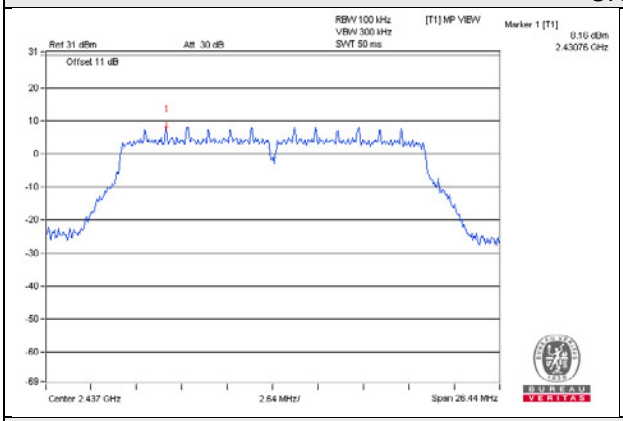
802.11n (HT20)

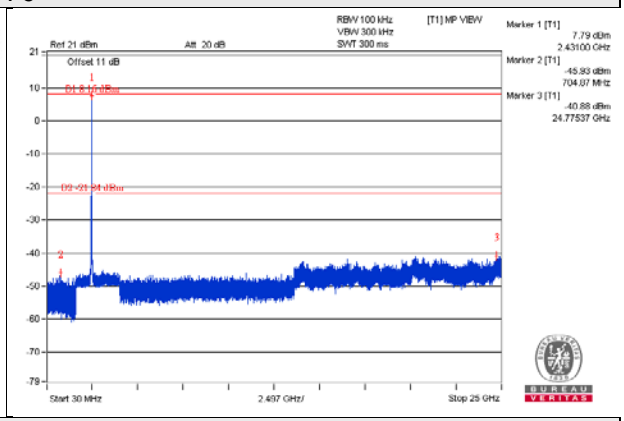
CH 1



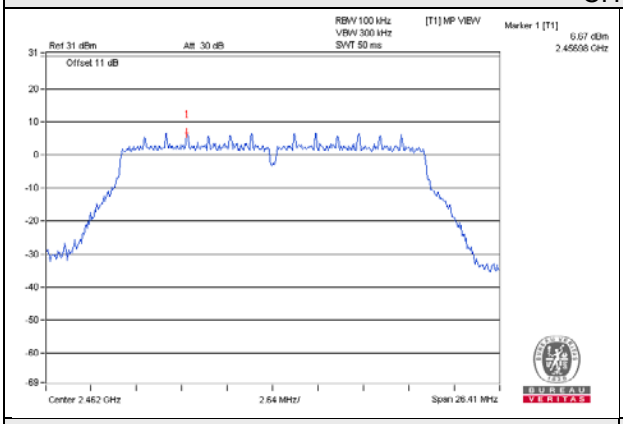


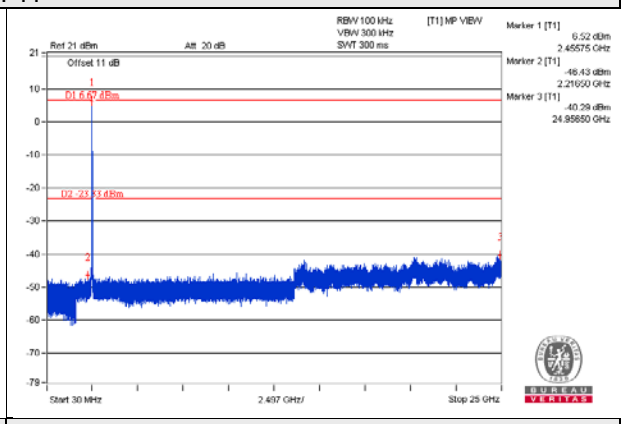
CH 6



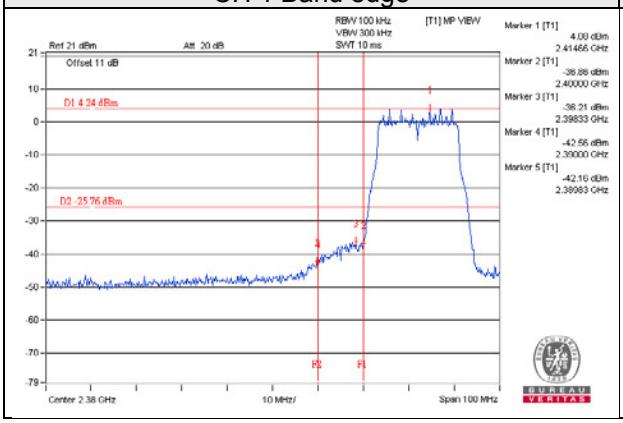


CH 11

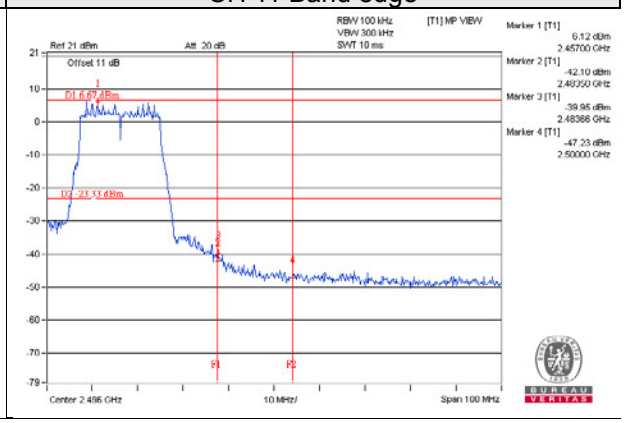




CH 1 Band edge

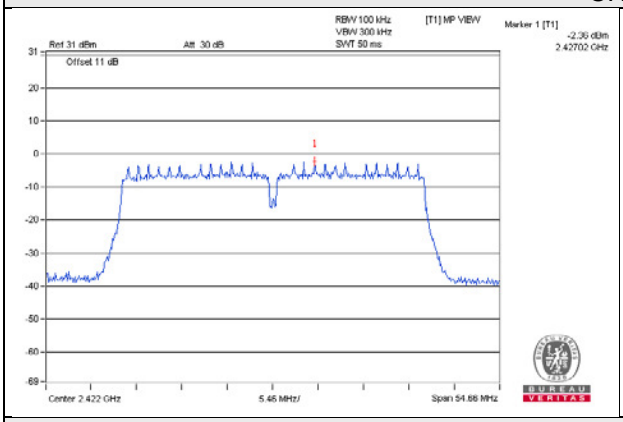


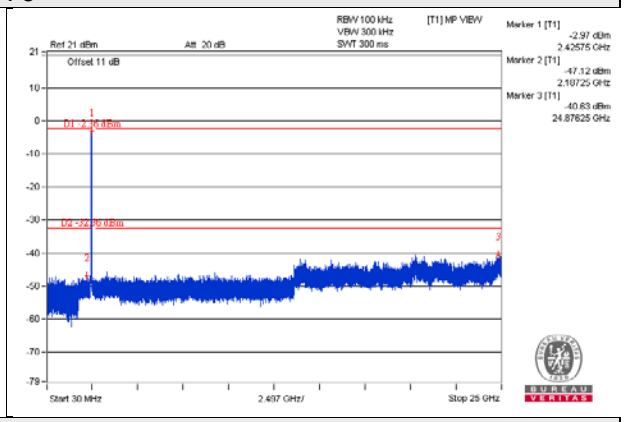
CH 11 Band edge



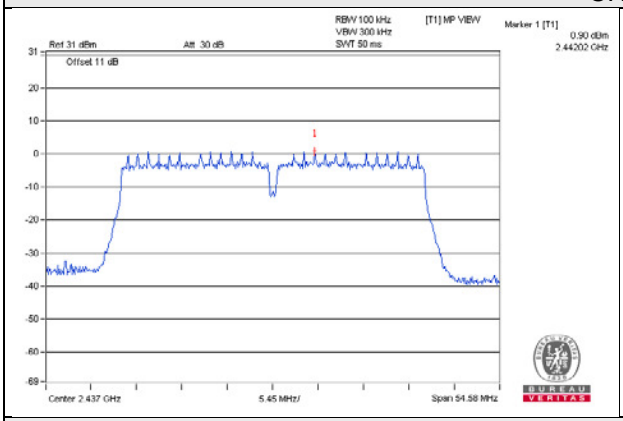
802.11n (HT40)

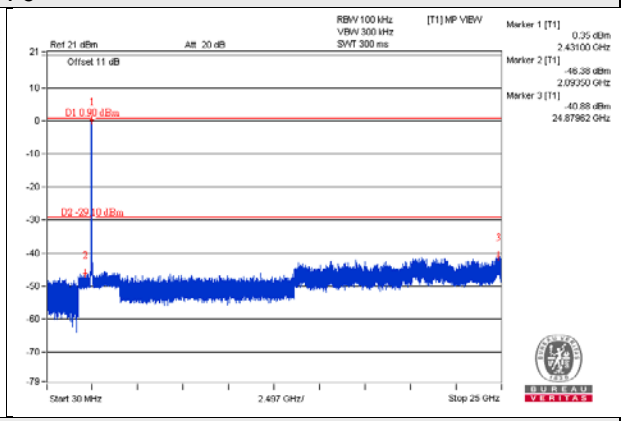
CH 3



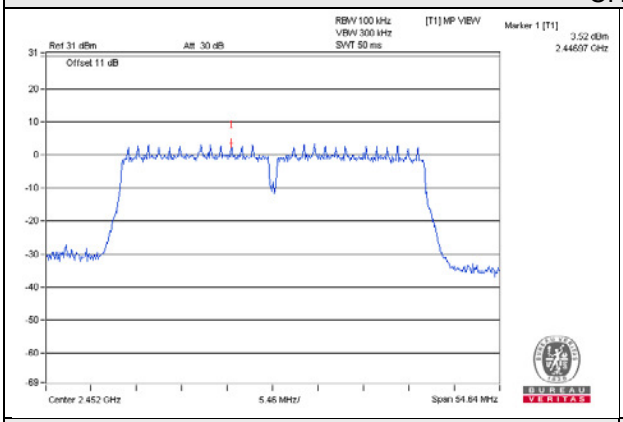


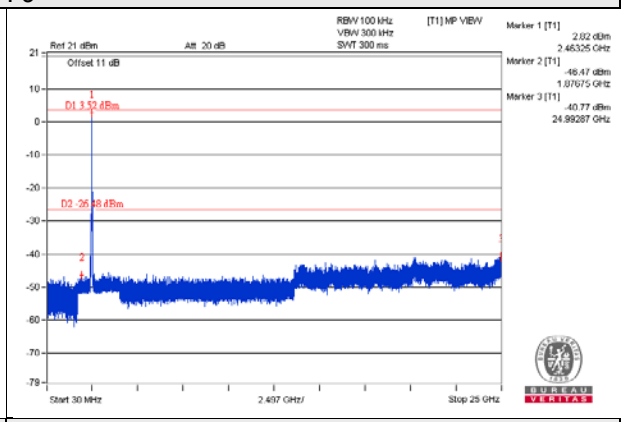
CH 6



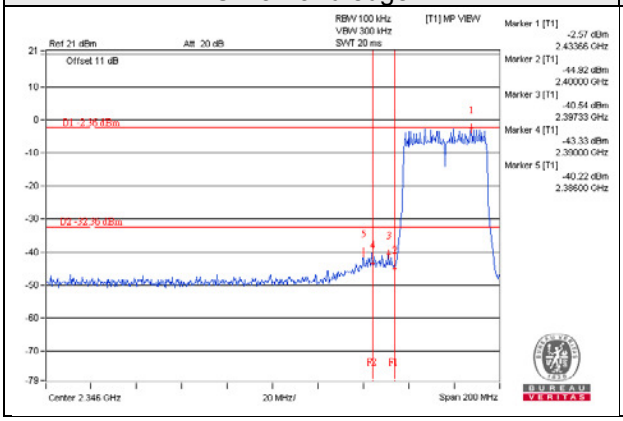


CH 9

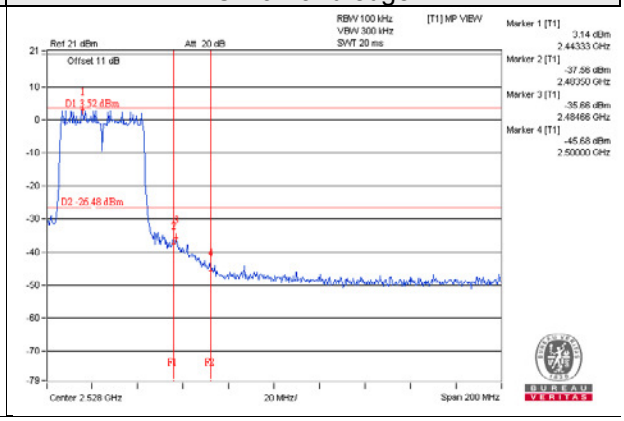




CH 3 Band edge



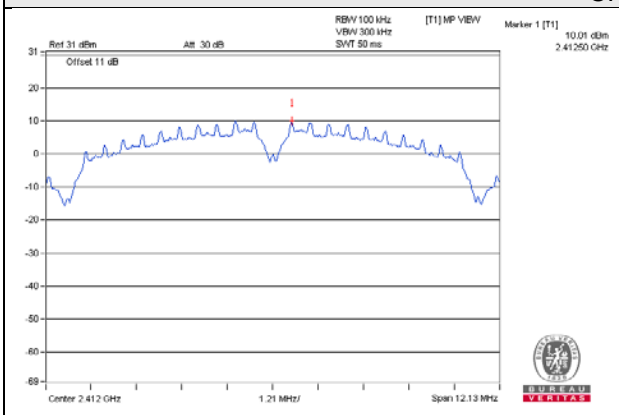
CH 9 Band edge

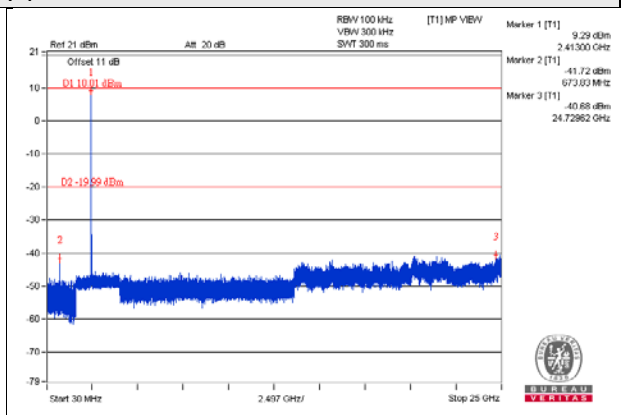


2TX

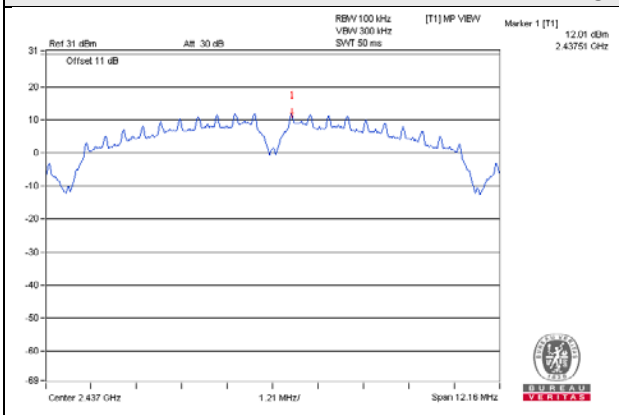
802.11b_Chain 0

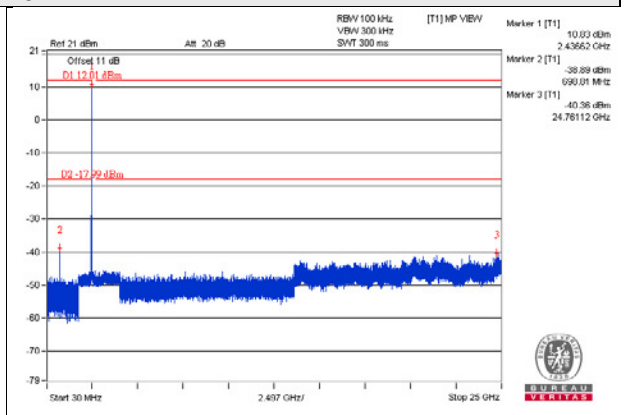
CH 1



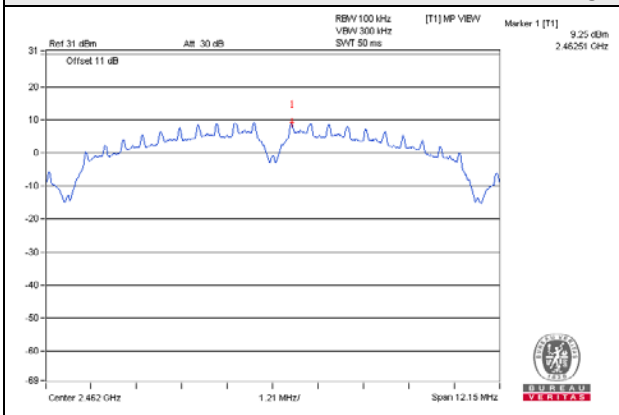


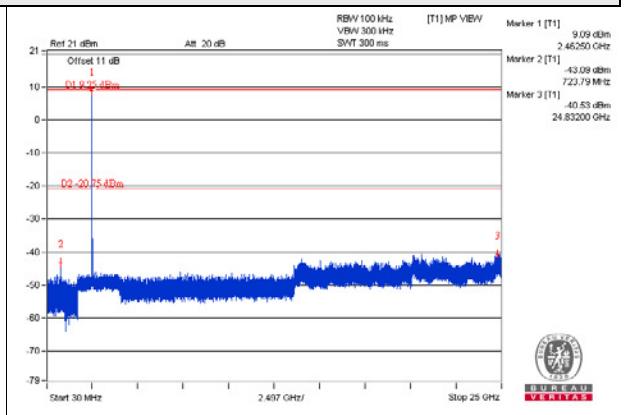
CH 6



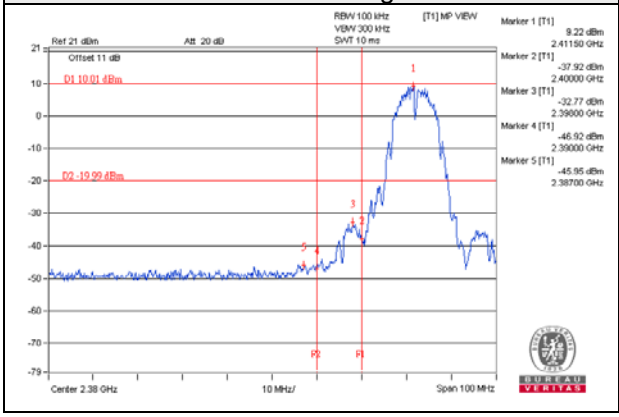


CH 11

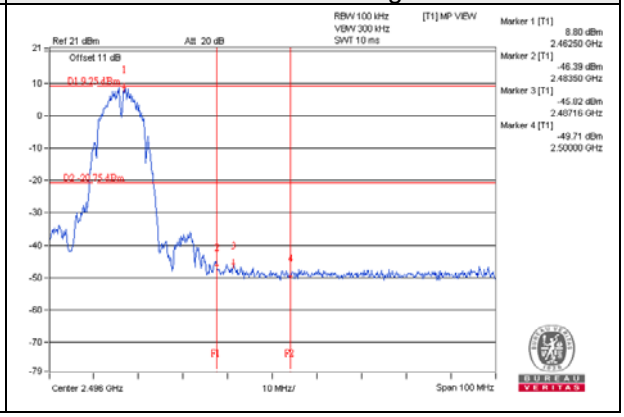




CH 1 Band edge

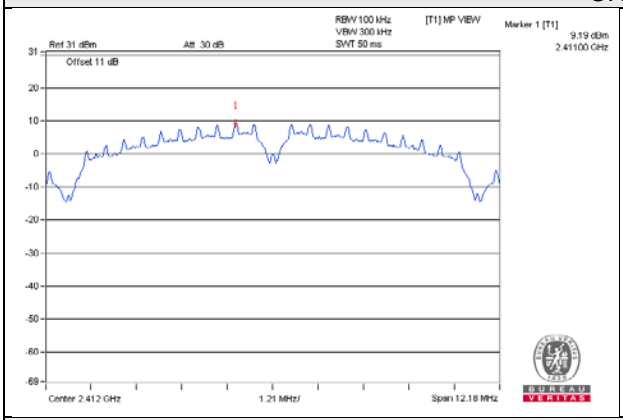


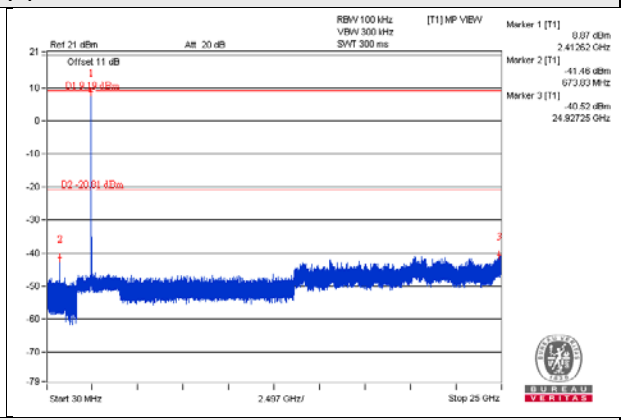
CH 11 Band edge



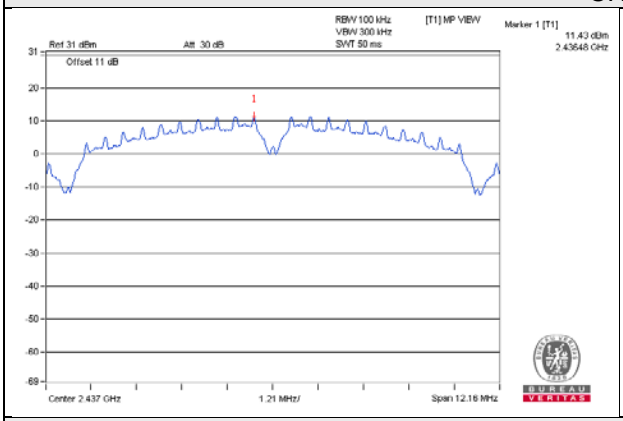
802.11b_Chain 1

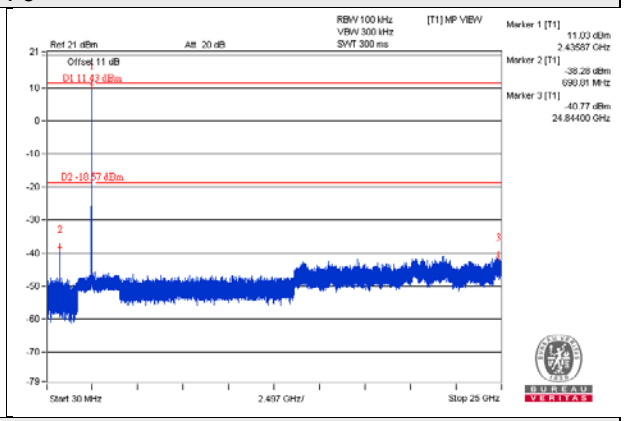
CH 1



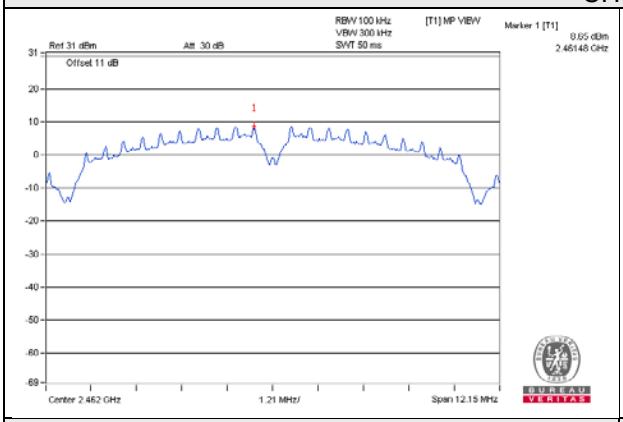


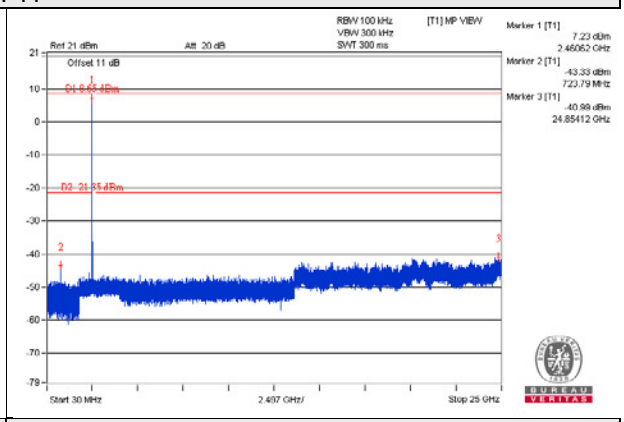
CH 6



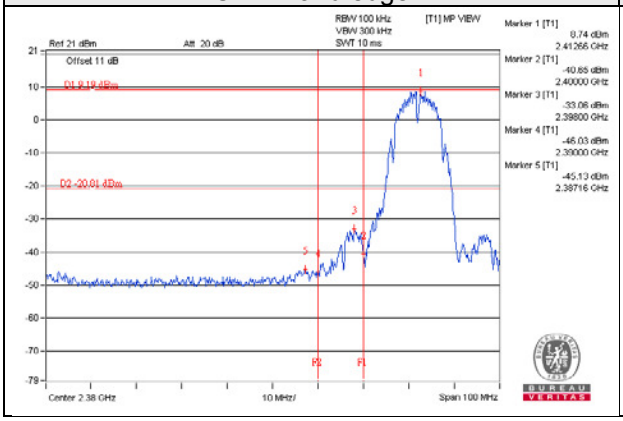


CH 11

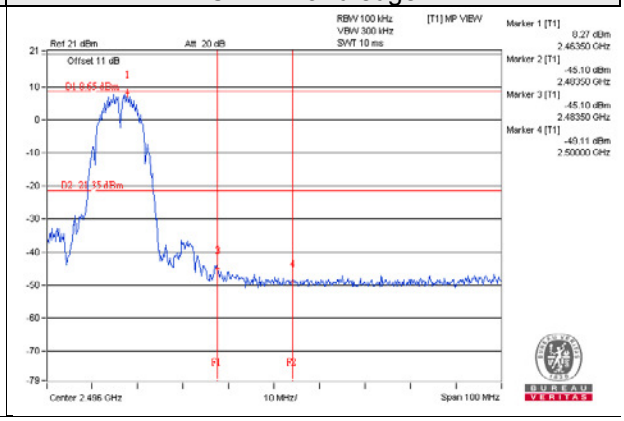




CH 1 Band edge

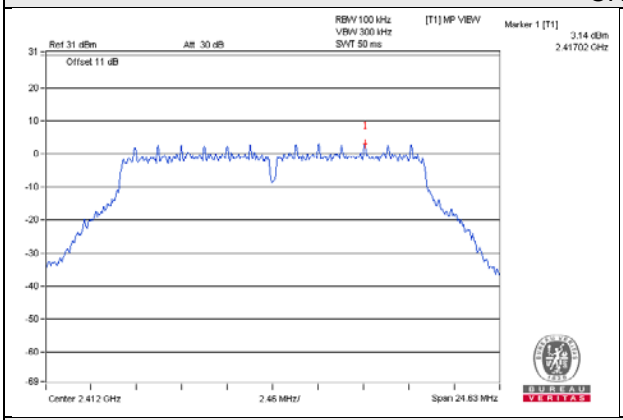


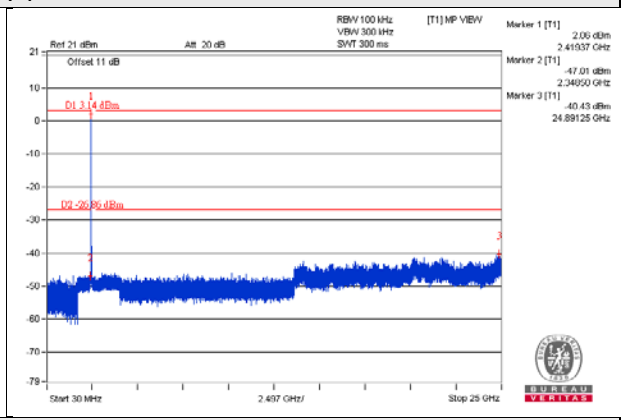
CH 11 Band edge



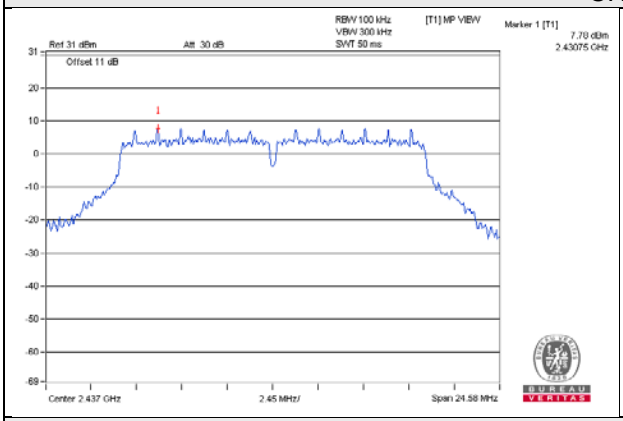
802.11g_Chain 0

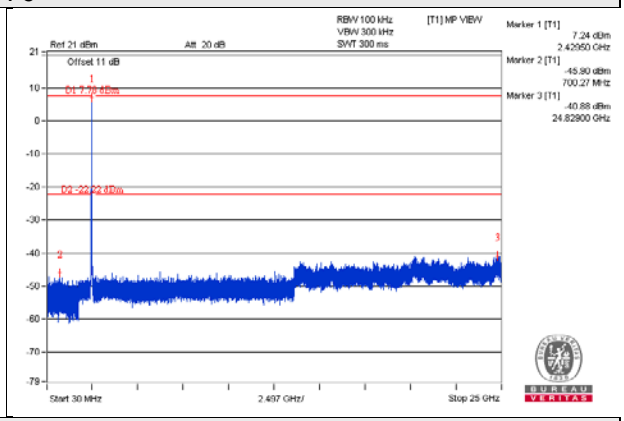
CH 1



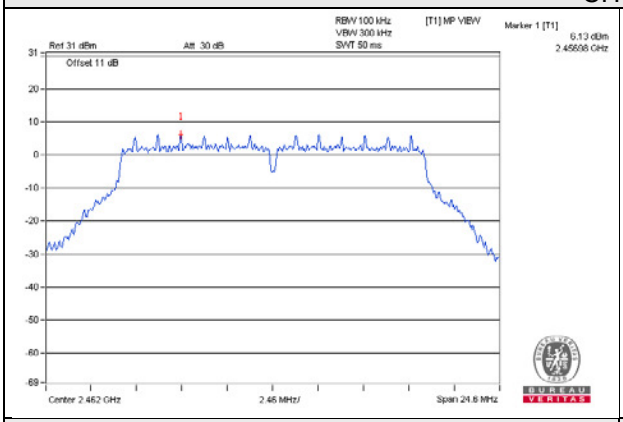


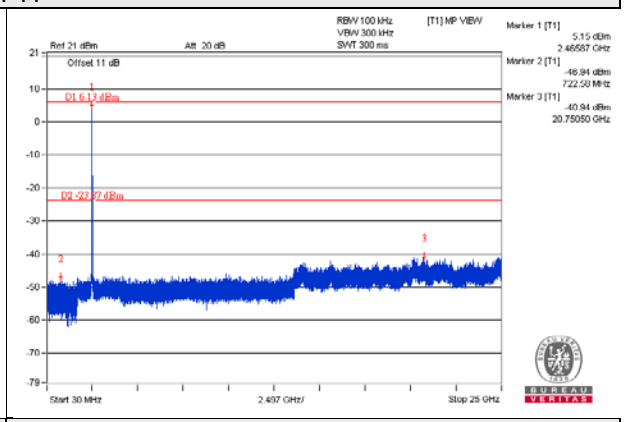
CH 6



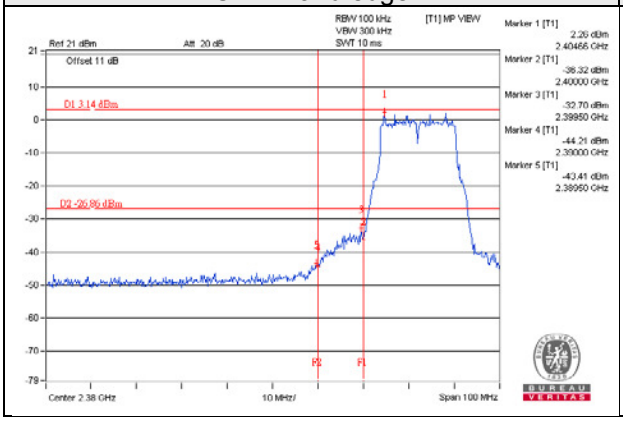


CH 11

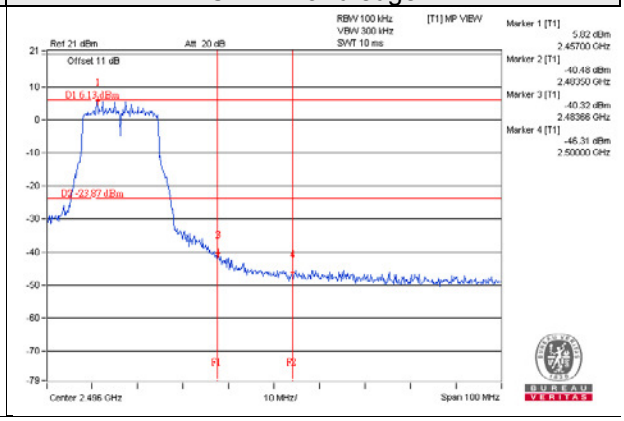




CH 1 Band edge

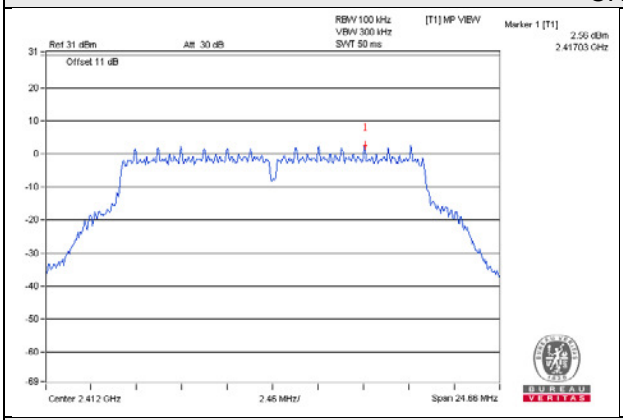


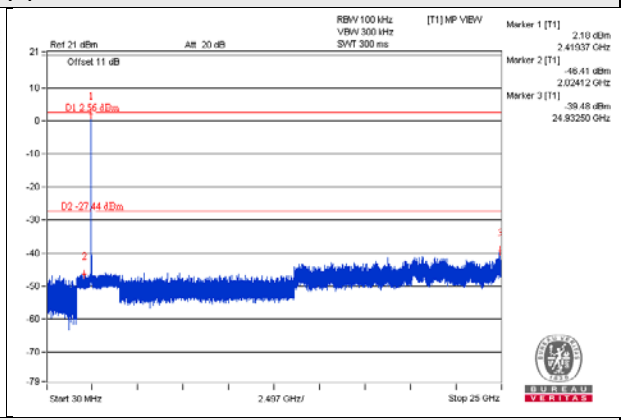
CH 11 Band edge



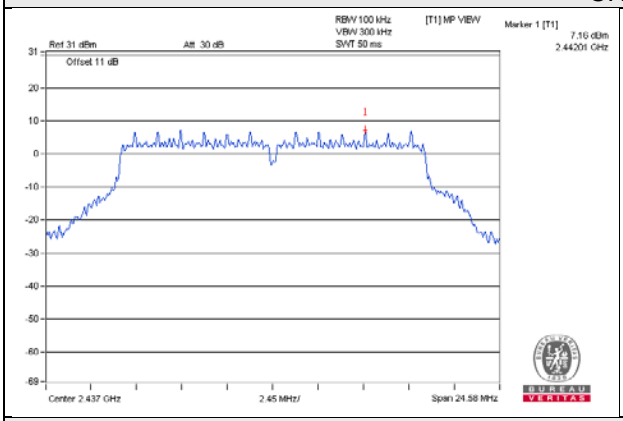
802.11g_Chain 1

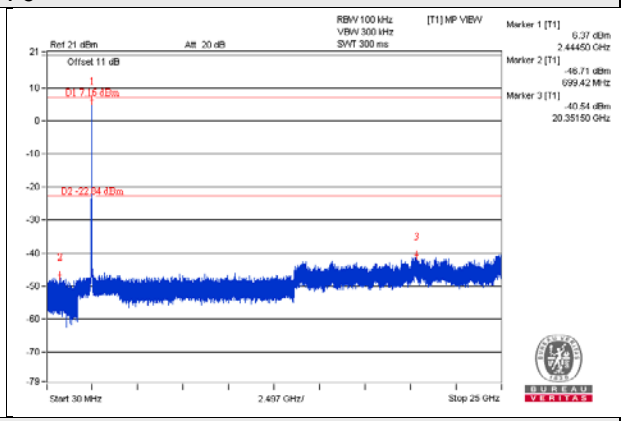
CH 1



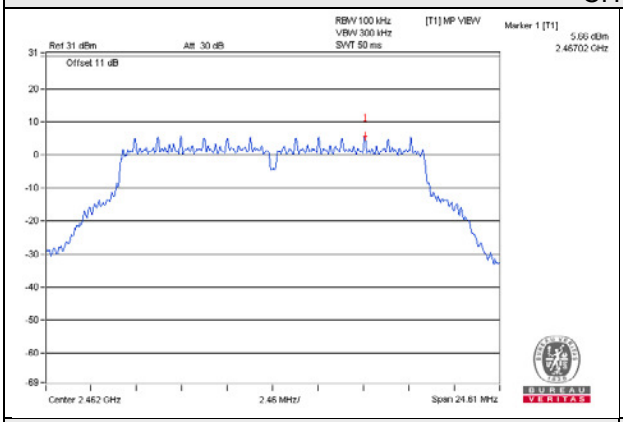


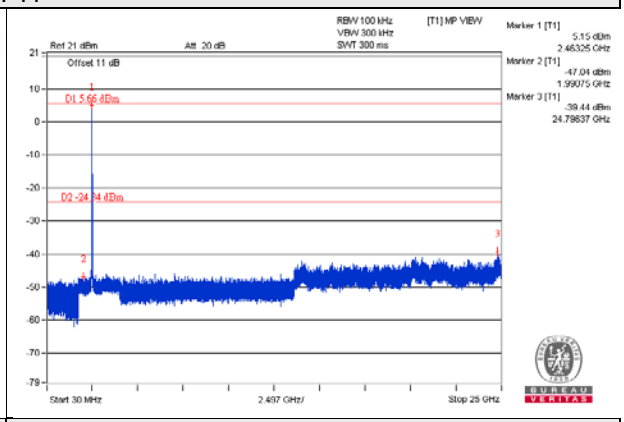
CH 6



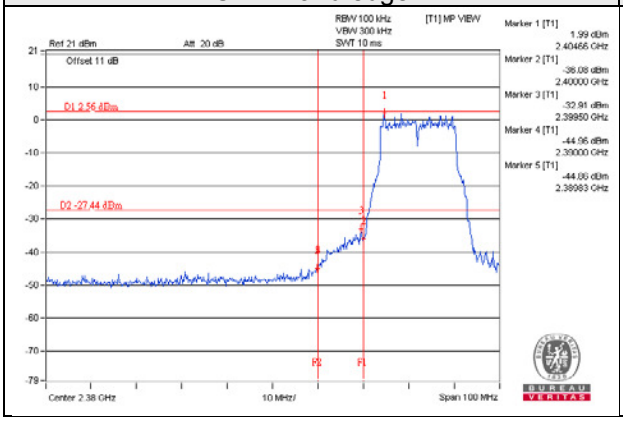


CH 11

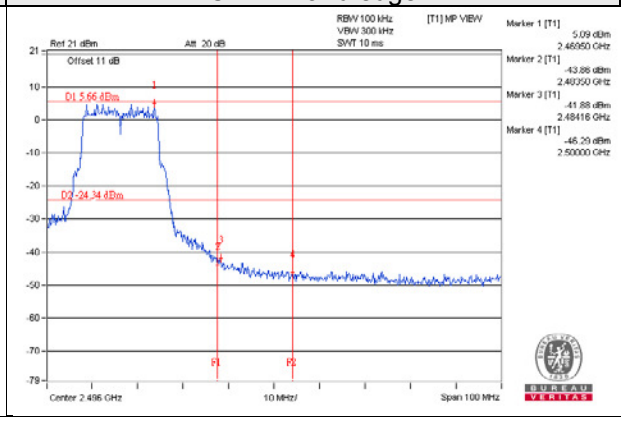




CH 1 Band edge

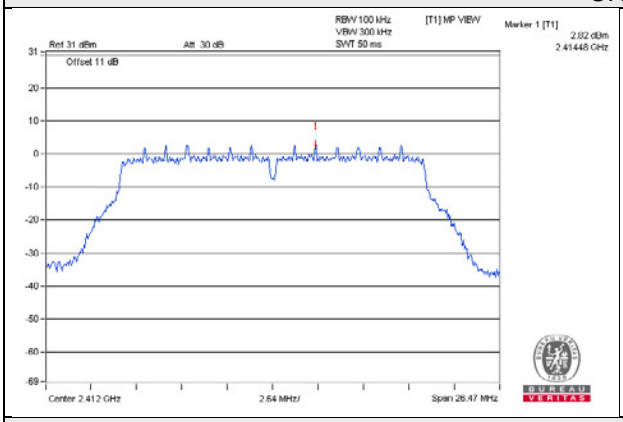


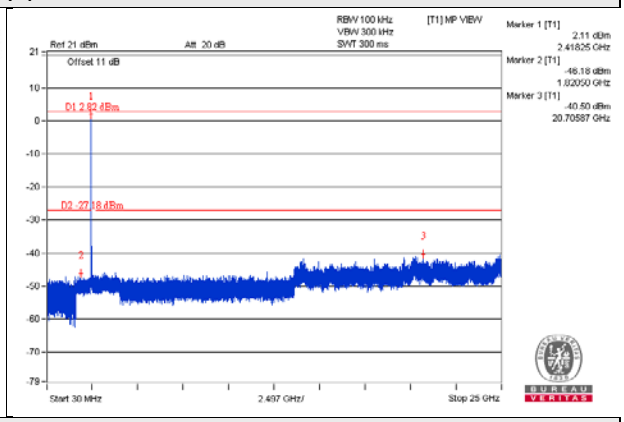
CH 11 Band edge



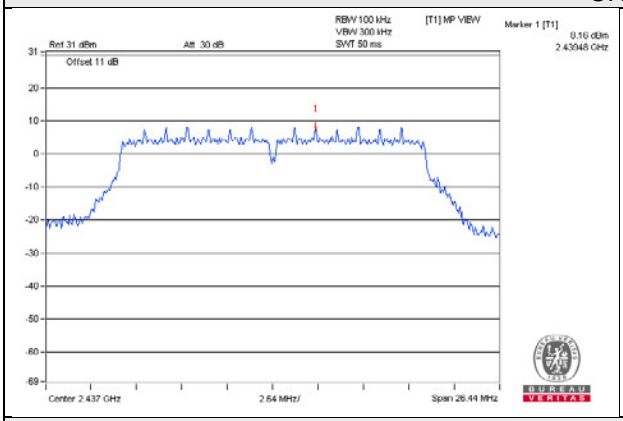
802.11n (HT20)_Chain 0

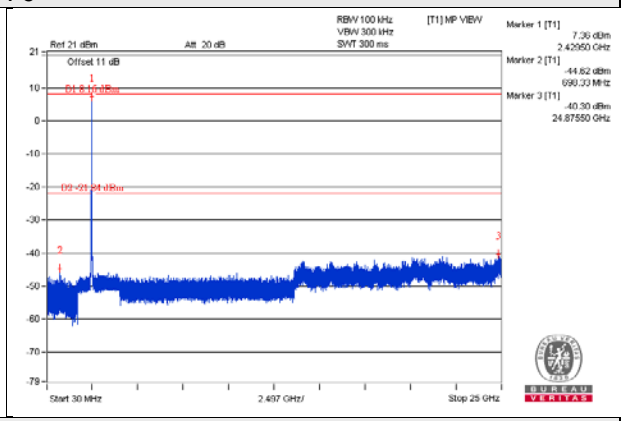
CH 1



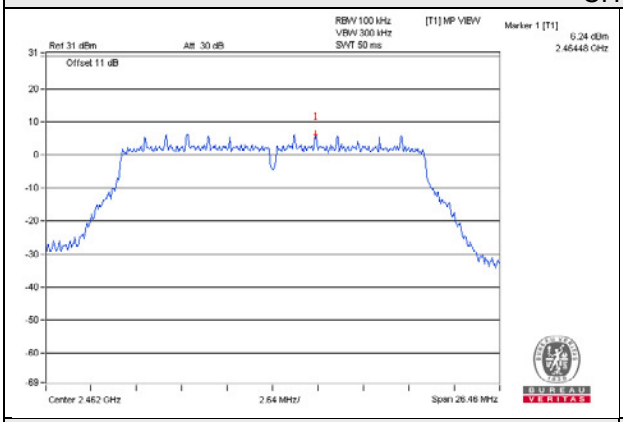


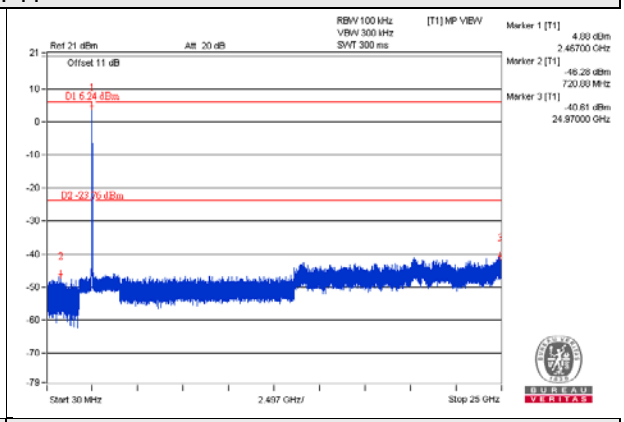
CH 6



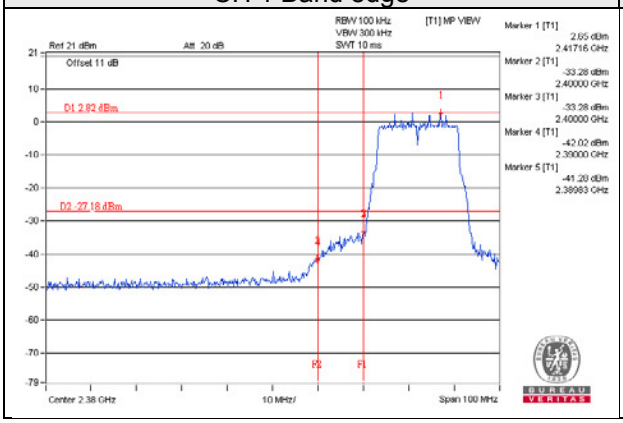


CH 11

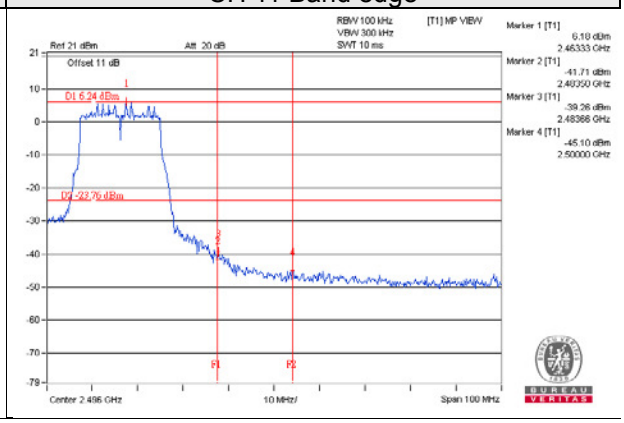




CH 1 Band edge

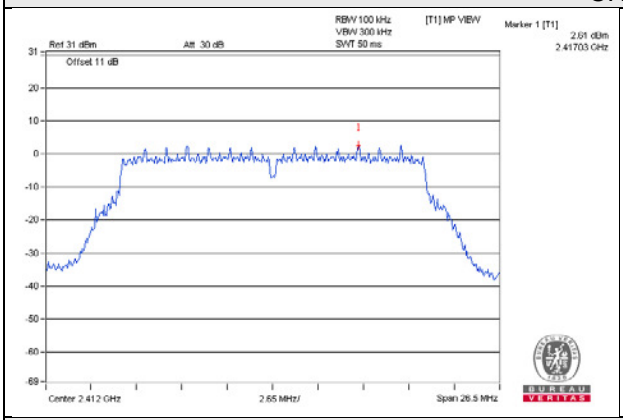


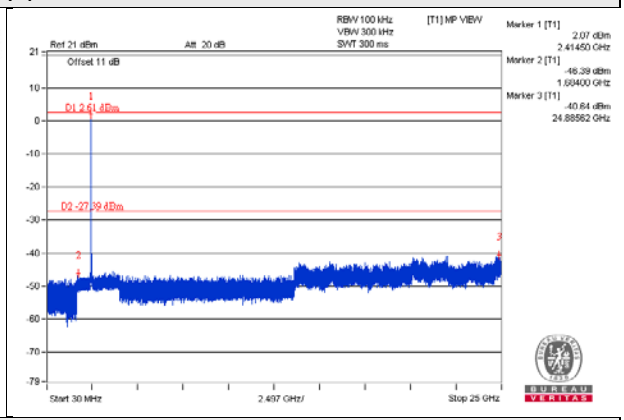
CH 11 Band edge



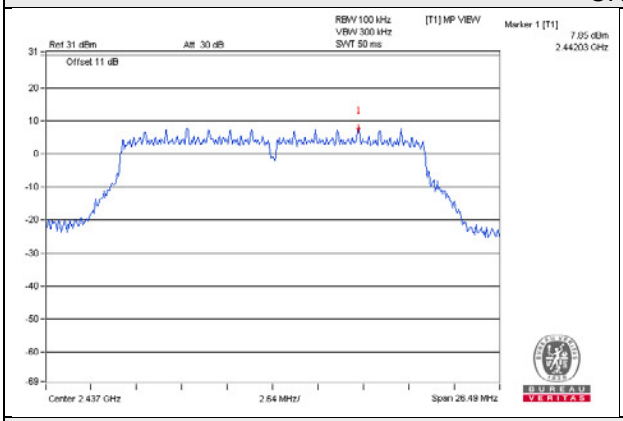
802.11n (HT20)_Chain 1

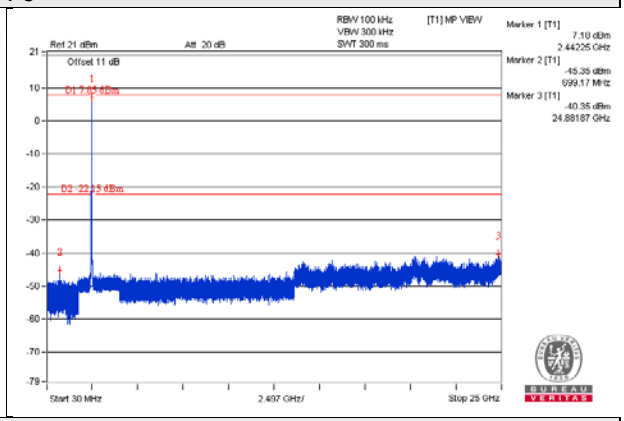
CH 1



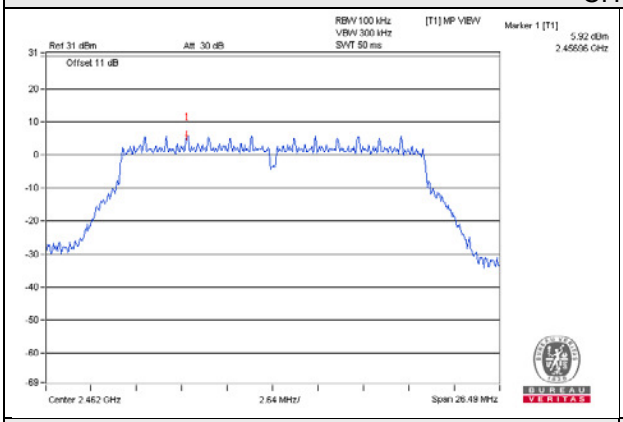


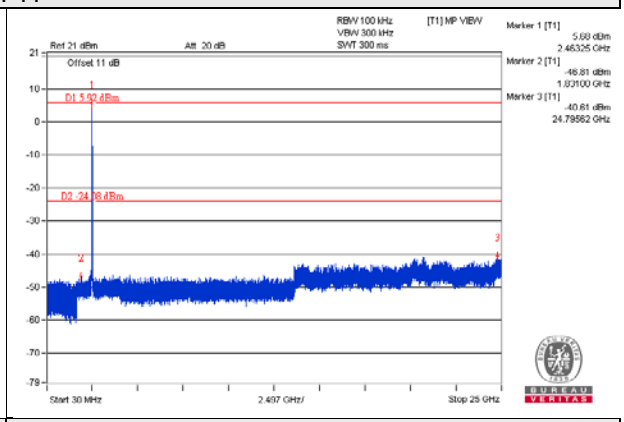
CH 6



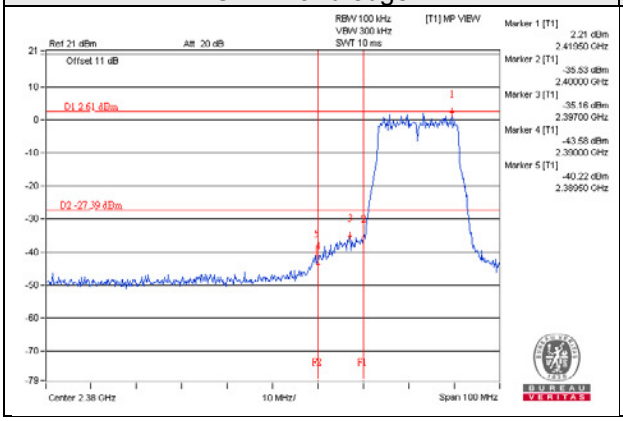


CH 11

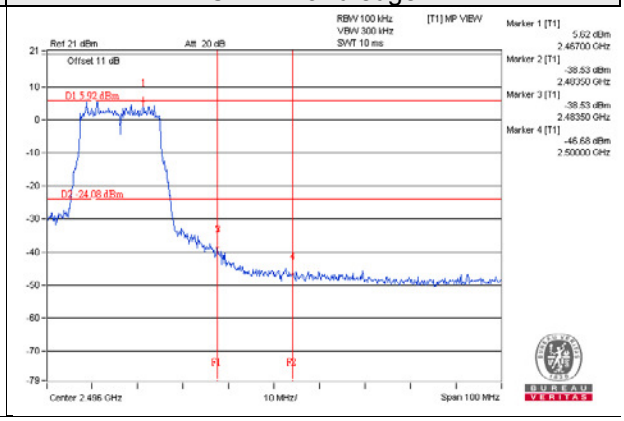




CH 1 Band edge

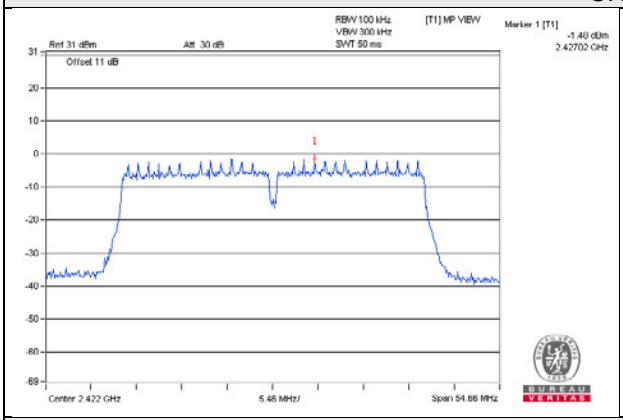


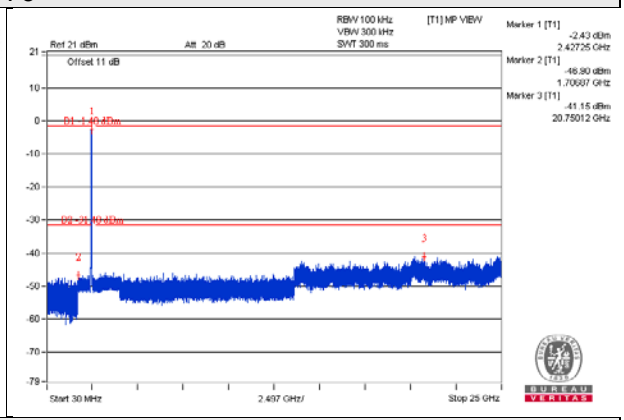
CH 11 Band edge



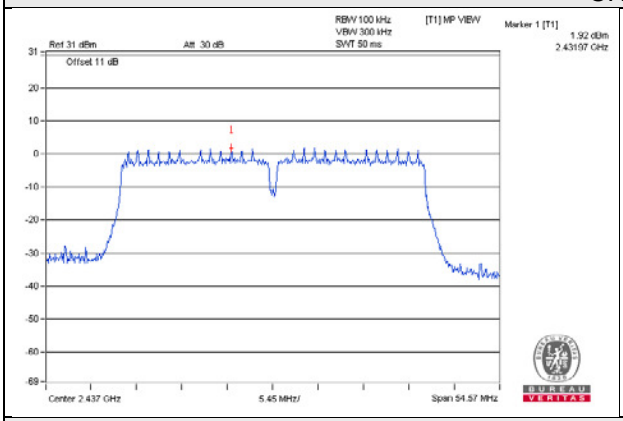
802.11n (HT40)_Chain 0

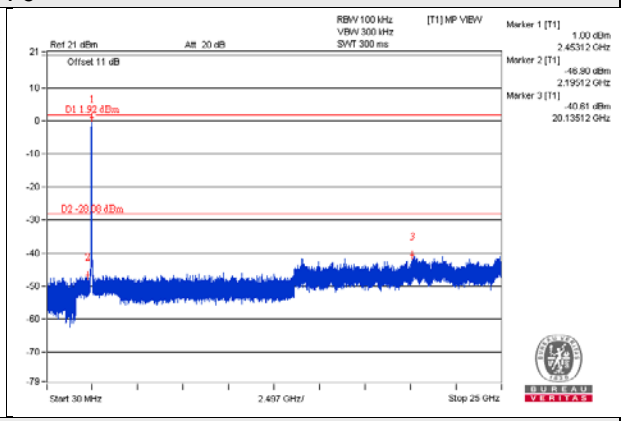
CH 3



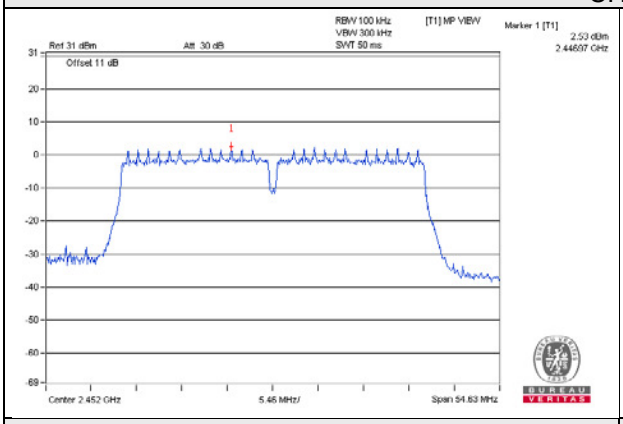


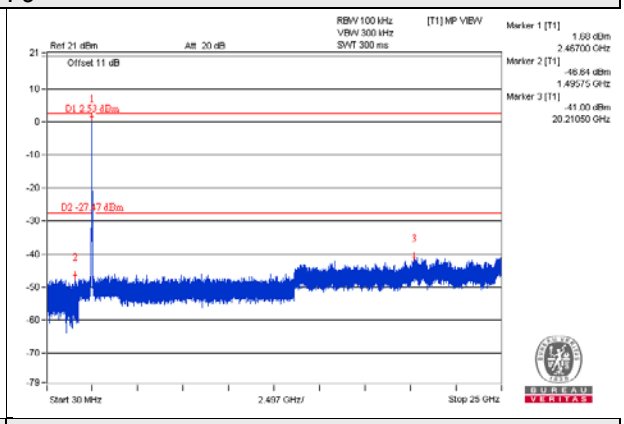
CH 6



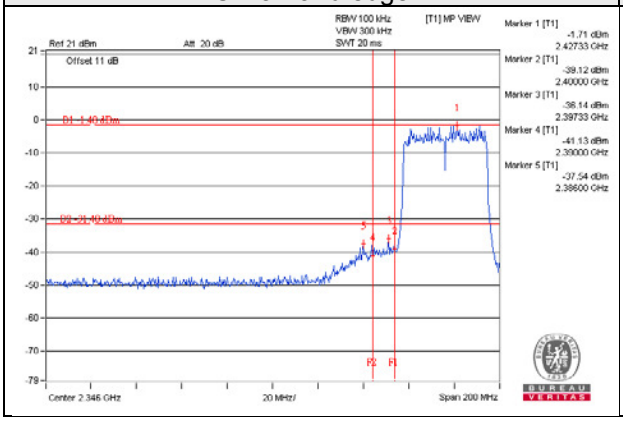


CH 9

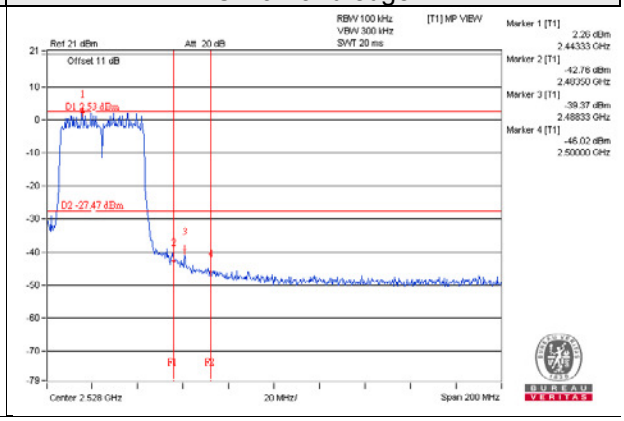




CH 3 Band edge

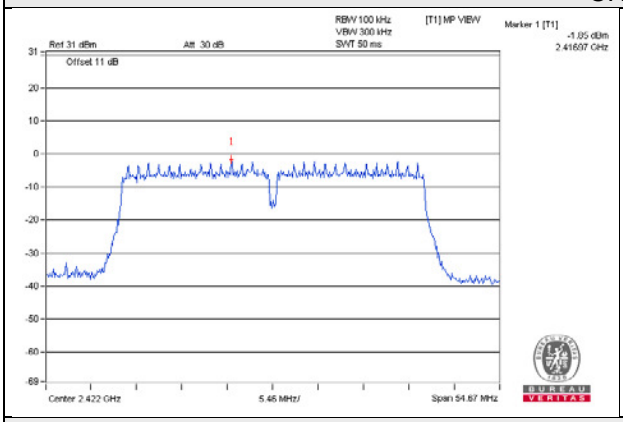


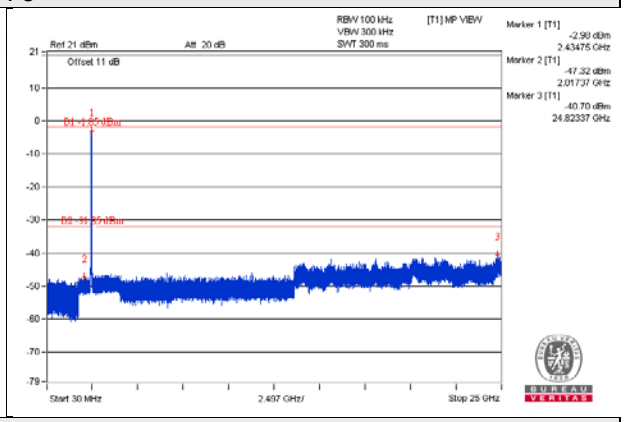
CH 9 Band edge



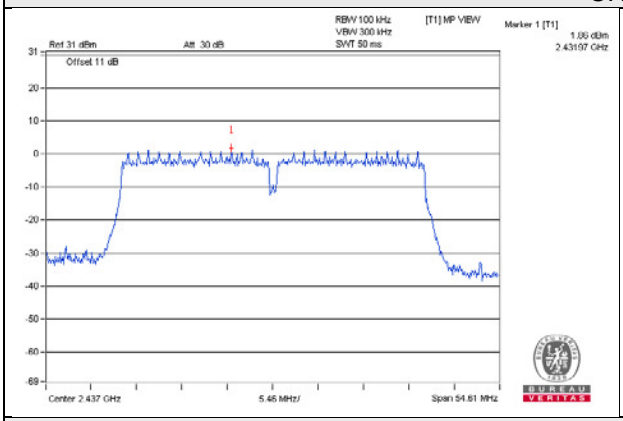
802.11n (HT40)_Chain 1

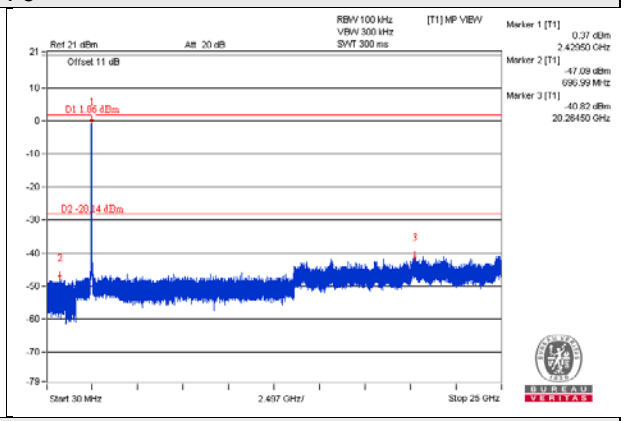
CH 3



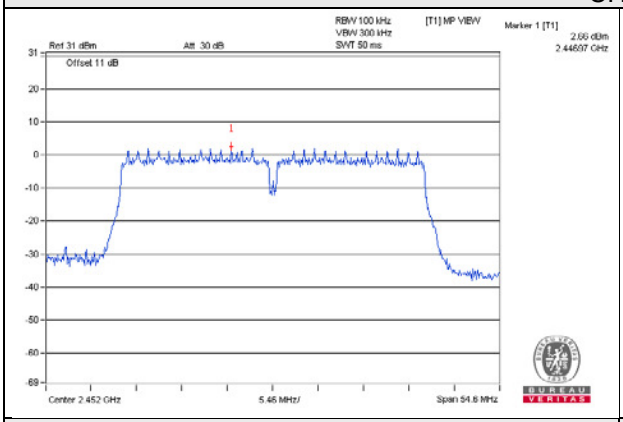


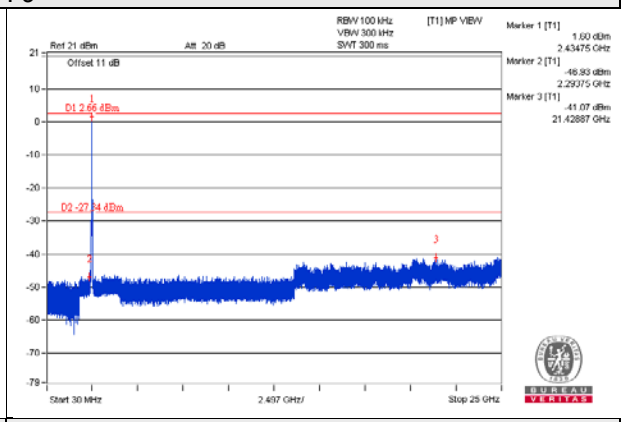
CH 6



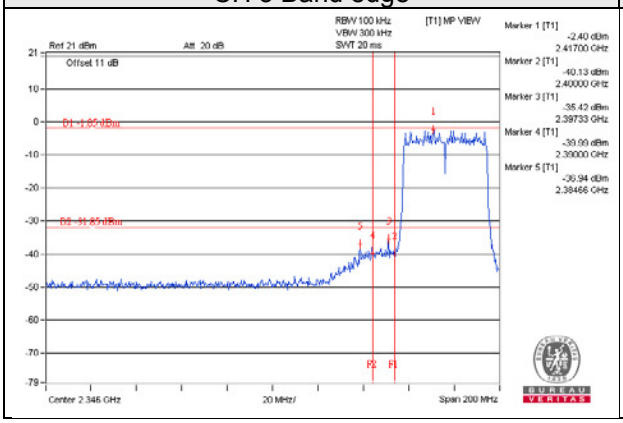


CH 9

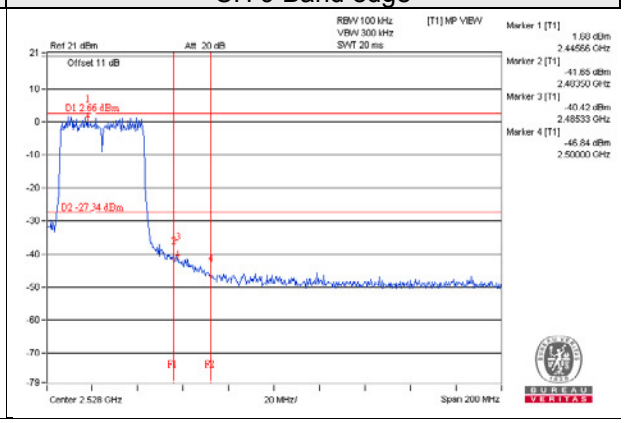




CH 3 Band edge



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 accredited and approved 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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