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FCC TEST REPORT

REPORT NO.: RF140505C01

MODEL NO.: DVW32D

FCC ID: XCNDVW32D

RECEIVED: May 05, 2014

TESTED: May 14 ~ May 22, 2014

ISSUED: May 23, 2014

APPLICANT: Ubee Interactive Corp.

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ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1. CERTIFICATION.....	5
2. SUMMARY OF TEST RESULTS	6
2.1 MEASUREMENT UNCERTAINTY	6
3. GENERAL INFORMATION.....	7
3.1 GENERAL DESCRIPTION OF EUT.....	7
3.2 DESCRIPTION OF TEST MODES.....	9
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL.....	10
3.3 DUTY CYCLE OF TEST SIGNAL.....	12
3.4 DESCRIPTION OF SUPPORT UNITS	13
3.4.1 CONFIGURATION OF SYSTEM UNDER TEST	14
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS.....	15
4. TEST TYPES AND RESULTS	16
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	16
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT.....	16
4.1.2 TEST INSTRUMENTS.....	17
4.1.3 TEST PROCEDURES	18
4.1.4 DEVIATION FROM TEST STANDARD	18
4.1.5 TEST SETUP.....	19
4.1.6 EUT OPERATING CONDITIONS	20
4.1.7 TEST RESULTS	21
4.2 CONDUCTED EMISSION MEASUREMENT	34
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	34
4.2.2 TEST INSTRUMENTS.....	34
4.2.3 TEST PROCEDURES	35
4.2.4 DEVIATION FROM TEST STANDARD	35
4.2.5 TEST SETUP.....	35
4.2.6 EUT OPERATING CONDITIONS	35
4.2.7 TEST RESULTS	36
4.3 6dB BANDWIDTH MEASUREMENT	38
4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT.....	38
4.3.2 TEST SETUP.....	38
4.3.3 TEST INSTRUMENTS.....	38
4.3.4 TEST PROCEDURE.....	38
4.3.5 DEVIATION FROM TEST STANDARD	38
4.3.6 EUT OPERATING CONDITIONS	38
4.3.7 TEST RESULTS	39
4.4 CONDUCTED OUTPUT POWER	41
4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT	41
4.4.2 TEST SETUP.....	41
4.4.3 TEST INSTRUMENTS.....	41
4.4.4 TEST PROCEDURES	41



A D T

4.4.5	DEVIATION FROM TEST STANDARD	42
4.4.6	EUT OPERATING CONDITIONS	42
4.4.7	TEST RESULTS	43
4.5	POWER SPECTRAL DENSITY MEASUREMENT.....	44
4.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT.....	44
4.5.2	TEST SETUP.....	44
4.5.3	TEST INSTRUMENTS.....	44
4.5.4	TEST PROCEDURE.....	44
4.5.5	DEVIATION FROM TEST STANDARD	44
4.5.6	EUT OPERATING CONDITION	44
4.5.7	TEST RESULTS	45
4.6	CONDUCTED OUT OF BAND EMISSION MEASUREMENT	47
4.6.1	LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT.....	47
4.6.2	TEST SETUP.....	47
4.6.3	TEST INSTRUMENTS.....	47
4.6.4	TEST PROCEDURE.....	48
4.6.5	DEVIATION FROM TEST STANDARD	48
4.6.6	EUT OPERATING CONDITION	48
4.6.7	TEST RESULTS	49
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION	57
6.	INFORMATION ON THE TESTING LABORATORIES.....	58
7.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB.....	59



RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140505C01	Original release	May 23, 2014

1. CERTIFICATION

PRODUCT: Cable Modem
MODEL NO.: DVW32D
BRAND: Ubee
APPLICANT: Ubee Interactive Corp.
TESTED: May 14 ~ May 22, 2014
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
ANSI C63.10-2009

The above equipment (model: DVW32D) 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 : Ivy Lin , **DATE** : May 23, 2014
Ivy Lin / Specialist

APPROVED BY : Ken Liu , **DATE** : May 23, 2014
Ken Liu / Senior Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -10.27dB at 0.33750MHz.
15.205 & 209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.2dB at 2390.00MHz.
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.3dB at 2483.50MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is IPEX 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	UNCERTAINTY
Conducted emissions	150kHz~30MHz	2.44dB
Radiated emissions	30MHz ~ 200MHz	3.19 dB
	200MHz ~1000MHz	3.21 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Cable Modem
MODEL NO.	DVW32D
POWER SUPPLY	12Vdc (adapter)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300.0Mbps
OPERATING FREQUENCY	2412 ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
OUTPUT POWER	153.394mW
ANTENNA TYPE	Refer to Note
ANTENNA CONNECTOR	Refer to Note
DATA CABLE	N/A
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter, Battery

NOTE:

1. The EUT has the following samples.

Sample	P/N	Cable Modem	Cable Modem Bonding	ETH (Giga)	VOIP	WiFi 2.4GHz	Battery	Adaptor
1	DVW32D0BU	1 port	Yes	LAN x2	2 port	Yes	Yes	12V 2A, US plug
2	DVW32D0U	1 port	Yes	LAN x2	2 port	Yes	No	12V 2A, US plug
3	DVW32D0BE	1 port	Yes	LAN x2	2 port	Yes	Yes	12V 2A, EU plug
4	DVW32E0U	1 port	Yes	LAN x2	2 port	Yes	No	12V 1.5A, US plug
5	DDW36A0U	1 port	Yes	LAN x2	No	Yes	No	12V 1.5A, US plug
6	DDW36A0E	1 port	Yes	LAN x2	No	Yes	No	12V 1.5A, EU plug

* Sample 1 is the worst case for final test.

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

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	2TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

3. The following antennas are used in this EUT.

Antenna	Type	Gain (dBi)	Connector
Antenna 0	Printed	2.66	IPEX
Antenna 1	Printed	3.09	IPEX

4. The EUT consumes power from the following adapter and battery.

ADAPTER 1	
BRAND:	I.T.E POWER SUPPLY
MODEL:	MU24-V120200-A1
INPUT:	100-240Vac, 50/60Hz, 1.0A
OUTPUT:	12Vdc, 2A
POWER LINE:	1.5m cable without core attached on adapter

ADAPTER 2	
BRAND:	LEADER ELECTRONICS INC.
MODEL:	MU18-R120150-A1
INPUT:	100-240Vac, 50/60Hz, 0.6A
OUTPUT:	12Vdc, 1.5A
POWER LINE:	1.5m cable without core attached on adapter

* After pre-testing, adapter 1 is the worst case for final test.

BATTERY	
BRAND:	SMP
MODEL:	SMPCM10
POWER RATING:	7.4Vdc, 2.55Ahr, 18.87Wh

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



3.2 DESCRIPTION OF TEST MODES

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE \geq 1G	RE $<$ 1G	PLC	APCM	
-	√	√	√	√	-

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

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

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
-	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
-	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	15.0

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11g	1 to 11	6	OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11g	1 to 11	6	OFDM	BPSK	6.0



BANDEDGE MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
-	802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	7.2
-	802.11n (40MHz)	3 to 9	3, 9	OFDM	BPSK	15.0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
-	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
-	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	15.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	29deg. C, 64%RH	120Vac, 60Hz	Alan Wu
RE<1G	29deg. C, 63%RH	120Vac, 60Hz	Alan Wu
PLC	20deg. C, 70%RH	120Vac, 60Hz	Martin Lee
APCM	25deg. C, 60%RH	120Vac, 60Hz	Martin Lee

3.3 DUTY CYCLE OF TEST SIGNAL

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

802.11b: Duty cycle of test signal is 100 %.

802.11g: Duty cycle = $2.0625/2.0825 = 0.990$

802.11n (20MHz): Duty cycle = $1.9175/1.9400 = 0.988$

Duty cycle is < 98%, duty factor shall be considered.

802.11n (40MHz): Duty cycle = $0.9375/1.0775 = 0.870$, Duty factor = $10 * \log(1/0.870) = 0.60$





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.

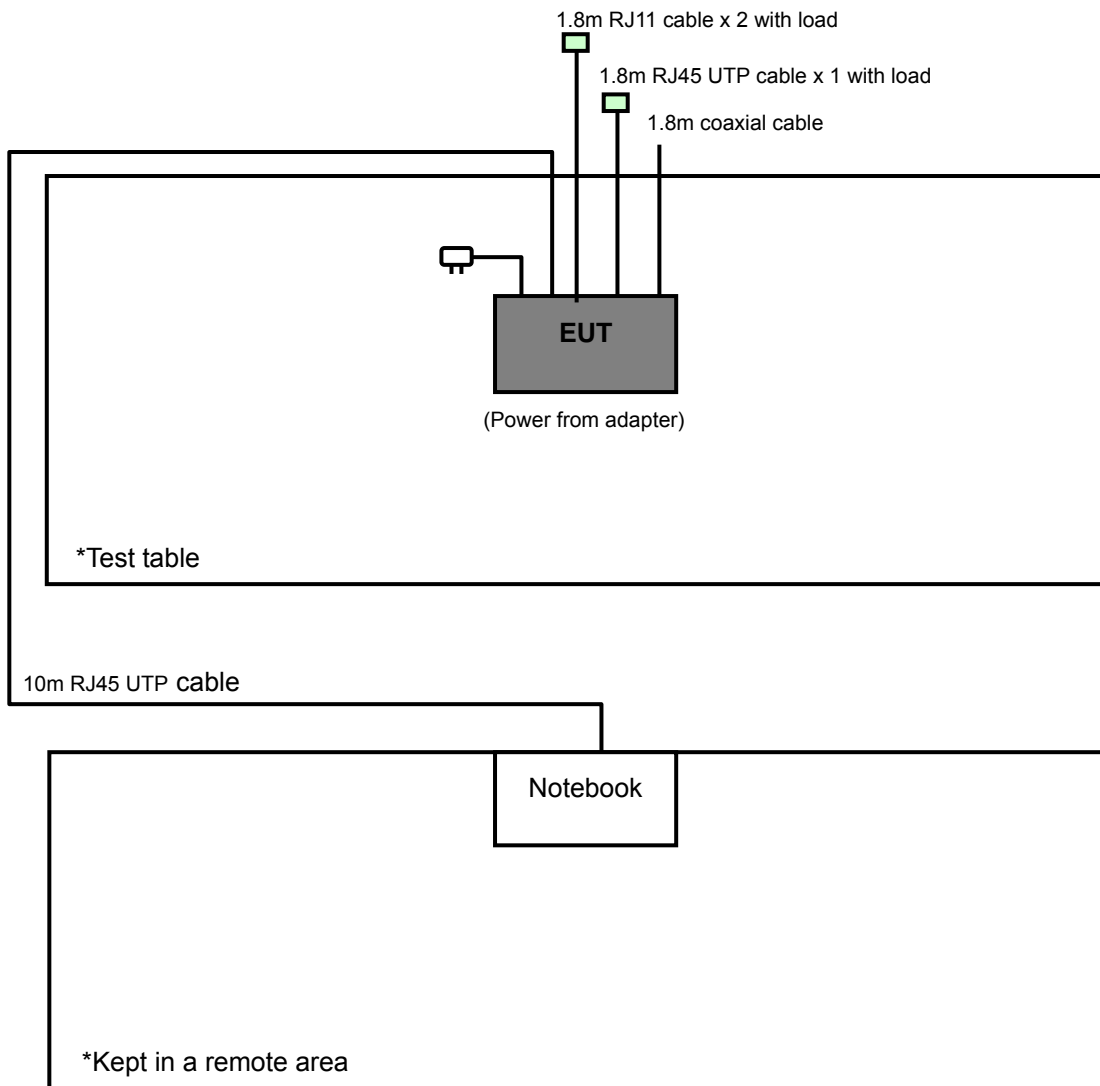
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	D531	CN-0XM006-48643-81U-2610	QDS-BRCM1020

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m RJ45 UTP cable.

NOTE:

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

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)

558074 D01 DTS Meas Guidance v03r01

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2009

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

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It 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.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Sep. 09, 2013	Sep. 08, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU 43	100115	Dec. 18, 2013	Dec. 17, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Feb. 26, 2014	Feb. 25, 2015
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Jan. 05, 2014	Jan. 04, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 15, 2013	Jul. 14, 2014
Preamplifier Agilent	8449B	3008A01961	Oct. 28, 2013	Oct. 27, 2014
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309220/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250724/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295012/4	Aug. 26, 2013	Aug. 25, 2014
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 inn-co GmbH	CO2000	019303	NA	NA
Turn Table BV ADT	TT100.	TT93021704	NA	NA
Turn Table Controller BV ADT	SC100.	SC93021704	NA	NA
High Speed Peak Power Meter	ML2495A	0824011	Jul. 29, 2013	Jul. 28, 2014
Power Sensor	MA2411B	0738171	Jul. 29, 2013	Jul. 28, 2014

- 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 HP 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

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. 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. Height of receiving 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

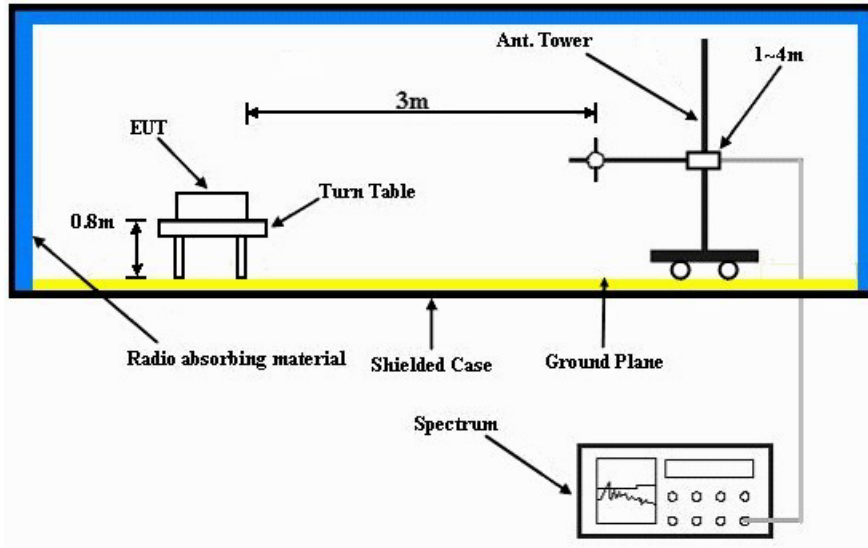
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

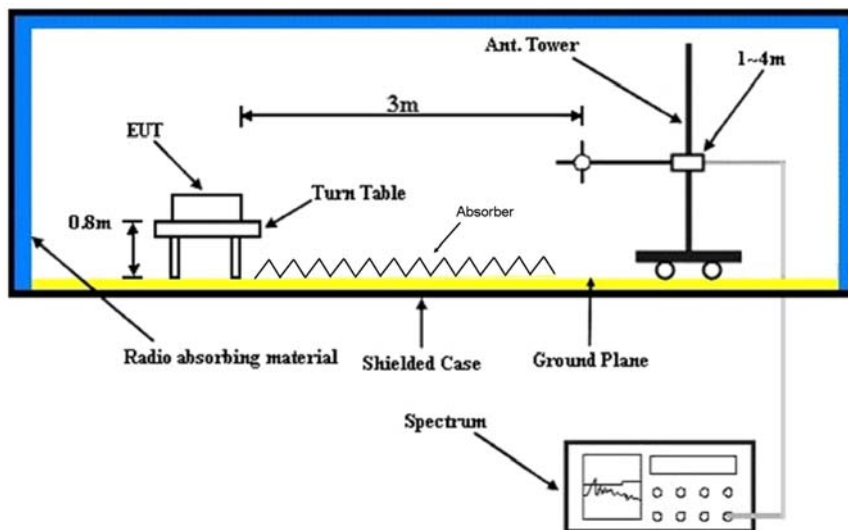
No deviation.

4.1.5 TEST SETUP

Frequency range 30MHz~1GHz



Frequency range 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 notebook to act as communication partner and placed it outside of testing area.
- c. The communication partner connected with EUT via a RJ45 cable and run 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".



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4.1.7 TEST RESULTS

ABOVE 1GHz DATA :

802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

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	61.3 PK	74.0	-12.7	1.02 H	7	29.30	32.00
2	2390.00	53.7 AV	54.0	-0.3	1.02 H	7	21.70	32.00
3	*2412.00	110.4 PK			1.07 H	6	78.40	32.00
4	*2412.00	106.6 AV			1.07 H	6	74.60	32.00
5	4824.00	56.1 PK	74.0	-17.9	1.12 H	80	50.90	5.20
6	4824.00	53.1 AV	54.0	-0.9	1.12 H	80	47.90	5.20

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	58.8 PK	74.0	-15.2	1.00 V	272	26.80	32.00
2	2390.00	49.1 AV	54.0	-4.9	1.00 V	272	17.10	32.00
3	*2412.00	104.7 PK			1.00 V	272	72.70	32.00
4	*2412.00	101.6 AV			1.00 V	272	69.60	32.00
5	4824.00	52.7 PK	74.0	-21.3	1.00 V	270	47.50	5.20
6	4824.00	47.4 AV	54.0	-6.6	1.00 V	270	42.20	5.20

REMARKS:

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

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	108.8 PK			1.08 H	168	76.70	32.10
2	*2437.00	105.2 AV			1.08 H	168	73.10	32.10
3	4874.00	55.5 PK	74.0	-18.5	1.00 H	190	50.20	5.30
4	4874.00	52.4 AV	54.0	-1.6	1.00 H	190	47.10	5.30
5	7311.00	59.2 PK	74.0	-14.8	1.00 H	197	47.90	11.30
6	7311.00	53.1 AV	54.0	-0.9	1.00 H	197	41.80	11.30

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	101.4 PK			1.00 V	233	69.30	32.10
2	*2437.00	98.0 AV			1.00 V	233	65.90	32.10
3	4874.00	52.1 PK	74.0	-21.9	1.00 V	277	46.80	5.30
4	4874.00	47.0 AV	54.0	-7.0	1.00 V	277	41.70	5.30
5	7311.00	56.1 PK	74.0	-17.9	1.00 V	290	44.80	11.30
6	7311.00	48.7 AV	54.0	-5.3	1.00 V	290	37.40	11.30

REMARKS:

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

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	109.2 PK			1.02 H	171	76.90	32.30
2	*2462.00	105.3 AV			1.02 H	171	73.00	32.30
3	2483.50	61.7 PK	74.0	-12.3	1.06 H	171	29.30	32.40
4	2483.50	53.6 AV	54.0	-0.4	1.06 H	171	21.20	32.40
5	4924.00	54.1 PK	74.0	-19.9	1.00 H	190	48.70	5.40
6	4924.00	50.7 AV	54.0	-3.3	1.00 H	190	45.30	5.40
7	7386.00	58.6 PK	74.0	-15.4	1.00 H	188	47.20	11.40
8	7386.00	52.4 AV	54.0	-1.6	1.00 H	188	41.00	11.40

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	102.1 PK			1.00 V	235	69.80	32.30
2	*2462.00	98.9 AV			1.00 V	235	66.60	32.30
3	2483.50	56.4 PK	74.0	-17.6	1.00 V	230	24.00	32.40
4	2483.50	45.7 AV	54.0	-8.3	1.00 V	230	13.30	32.40
5	4924.00	51.5 PK	74.0	-22.5	1.00 V	270	46.10	5.40
6	4924.00	46.7 AV	54.0	-7.3	1.00 V	270	41.30	5.40
7	7386.00	55.4 PK	74.0	-18.6	1.00 V	290	44.00	11.40
8	7386.00	48.6 AV	54.0	-5.4	1.00 V	290	37.20	11.40

REMARKS:

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



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802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.4 PK	74.0	-3.6	1.07 H	44	38.40	32.00
2	2390.00	53.3 AV	54.0	-0.7	1.07 H	44	21.30	32.00
3	*2412.00	109.9 PK			1.07 H	7	77.90	32.00
4	*2412.00	100.2 AV			1.07 H	7	68.20	32.00
5	4824.00	49.6 PK	74.0	-24.4	1.00 H	88	44.40	5.20
6	4824.00	36.5 AV	54.0	-17.5	1.00 H	88	31.30	5.20
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	66.0 PK	74.0	-8.0	1.00 V	273	34.00	32.00
2	2390.00	48.4 AV	54.0	-5.6	1.00 V	273	16.40	32.00
3	*2412.00	105.3 PK			1.00 V	277	73.30	32.00
4	*2412.00	95.7 AV			1.00 V	277	63.70	32.00
5	4824.00	48.5 PK	74.0	-25.5	1.00 V	276	43.30	5.20
6	4824.00	35.1 AV	54.0	-18.9	1.00 V	276	29.90	5.20

REMARKS:

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	112.5 PK			1.06 H	19	80.40	32.10
2	*2437.00	103.0 AV			1.06 H	19	70.90	32.10
3	4874.00	64.2 PK	74.0	-9.8	1.00 H	193	58.90	5.30
4	4874.00	51.2 AV	54.0	-2.8	1.00 H	193	45.90	5.30
5	7311.00	66.8 PK	74.0	-7.2	1.17 H	135	55.50	11.30
6	7311.00	53.6 AV	54.0	-0.4	1.17 H	135	42.30	11.30
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	109.9 PK			1.00 V	279	77.80	32.10
2	*2437.00	100.7 AV			1.00 V	279	68.60	32.10
3	4874.00	51.6 PK	74.0	-22.4	1.00 V	278	46.30	5.30
4	4874.00	46.3 AV	54.0	-7.7	1.00 V	278	41.00	5.30
5	7311.00	55.4 PK	74.0	-18.6	1.00 V	298	44.10	11.30
6	7311.00	47.9 AV	54.0	-6.1	1.00 V	298	36.60	11.30

REMARKS:

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

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	108.3 PK			1.02 H	17	76.00	32.30
2	*2462.00	98.2 AV			1.02 H	17	65.90	32.30
3	2483.50	68.6 PK	74.0	-5.4	1.00 H	44	36.20	32.40
4	2483.50	53.4 AV	54.0	-0.6	1.00 H	44	21.00	32.40
5	4924.00	48.8 PK	74.0	-25.2	1.00 H	192	43.40	5.40
6	4924.00	35.7 AV	54.0	-18.3	1.00 H	192	30.30	5.40
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	103.5 PK			1.00 V	281	71.20	32.30
2	*2462.00	94.6 AV			1.00 V	281	62.30	32.30
3	2483.50	65.4 PK	74.0	-8.6	1.00 V	284	33.00	32.40
4	2483.50	49.5 AV	54.0	-4.5	1.00 V	284	17.10	32.40
5	4924.00	47.6 PK	74.0	-26.4	1.00 V	273	42.20	5.40
6	4924.00	34.2 AV	54.0	-19.8	1.00 V	273	28.80	5.40

REMARKS:

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



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802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.1 PK	74.0	-1.9	1.09 H	3	40.10	32.00
2	2390.00	53.8 AV	54.0	-0.2	1.09 H	3	21.80	32.00
3	*2412.00	107.9 PK			1.07 H	15	75.90	32.00
4	*2412.00	98.2 AV			1.07 H	15	66.20	32.00
5	4824.00	49.5 PK	74.0	-24.5	1.00 H	82	44.30	5.20
6	4824.00	36.4 AV	54.0	-17.6	1.00 H	82	31.20	5.20
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	62.9 PK	74.0	-11.1	1.00 V	279	30.90	32.00
2	2390.00	48.3 AV	54.0	-5.7	1.00 V	279	16.30	32.00
3	*2412.00	104.4 PK			1.00 V	275	72.40	32.00
4	*2412.00	94.6 AV			1.00 V	275	62.60	32.00
5	4824.00	48.4 PK	74.0	-25.6	1.00 V	270	43.20	5.20
6	4824.00	34.9 AV	54.0	-19.1	1.00 V	270	29.70	5.20

REMARKS:

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

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	111.5 PK			1.02 H	48	79.40	32.10
2	*2437.00	101.1 AV			1.02 H	48	69.00	32.10
3	4874.00	63.7 PK	74.0	-10.3	1.00 H	194	58.40	5.30
4	4874.00	50.6 AV	54.0	-3.4	1.00 H	194	45.30	5.30
5	7311.00	67.8 PK	74.0	-6.2	1.33 H	71	56.50	11.30
6	7311.00	53.3 AV	54.0	-0.7	1.33 H	71	42.00	11.30
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	107.6 PK			1.00 V	278	75.50	32.10
2	*2437.00	98.4 AV			1.00 V	278	66.30	32.10
3	4874.00	51.0 PK	74.0	-23.0	1.00 V	273	45.70	5.30
4	4874.00	45.6 AV	54.0	-8.4	1.00 V	273	40.30	5.30
5	7311.00	55.5 PK	74.0	-18.5	1.00 V	295	44.20	11.30
6	7311.00	47.6 AV	54.0	-6.4	1.00 V	295	36.30	11.30

REMARKS:

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.9 PK			1.00 H	46	74.60	32.30
2	*2462.00	97.1 AV			1.00 H	46	64.80	32.30
3	2483.50	70.2 PK	74.0	-3.8	1.00 H	46	37.80	32.40
4	2483.50	53.7 AV	54.0	-0.3	1.00 H	46	21.30	32.40
5	4924.00	49.9 PK	74.0	-24.1	1.00 H	199	44.50	5.40
6	4924.00	37.0 AV	54.0	-17.0	1.00 H	199	31.60	5.40
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	102.8 PK			1.00 V	280	70.50	32.30
2	*2462.00	93.5 AV			1.00 V	280	61.20	32.30
3	2483.50	67.0 PK	74.0	-7.0	1.00 V	276	34.60	32.40
4	2483.50	50.1 AV	54.0	-3.9	1.00 V	276	17.70	32.40
5	4924.00	48.8 PK	74.0	-25.2	1.00 V	272	43.40	5.40
6	4924.00	35.5 AV	54.0	-18.5	1.00 V	272	30.10	5.40

REMARKS:

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



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802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

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	1.10 H	4	34.50	32.00
2	2390.00	53.3 AV	54.0	-0.7	1.10 H	4	21.30	32.00
3	*2422.00	103.2 PK			1.08 H	200	71.10	32.10
4	*2422.00	93.4 AV			1.08 H	200	61.30	32.10
5	4844.00	49.1 PK	74.0	-24.9	1.00 H	85	43.80	5.30
6	4844.00	36.1 AV	54.0	-17.9	1.00 H	85	30.80	5.30

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	64.7 PK	74.0	-9.3	1.00 V	274	32.70	32.00
2	2390.00	48.3 AV	54.0	-5.7	1.00 V	274	16.30	32.00
3	*2422.00	99.7 PK			1.00 V	273	67.60	32.10
4	*2422.00	89.3 AV			1.00 V	273	57.20	32.10
5	4844.00	48.0 PK	74.0	-26.0	1.00 V	272	42.70	5.30
6	4844.00	34.7 AV	54.0	-19.3	1.00 V	272	29.40	5.30

REMARKS:

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	107.1 PK			1.03 H	49	75.00	32.10
2	*2437.00	96.4 AV			1.03 H	49	64.30	32.10
3	2483.50	68.1 PK	74.0	-5.9	1.02 H	50	35.70	32.40
4	2483.50	53.4 AV	54.0	-0.6	1.02 H	50	21.00	32.40
5	4874.00	48.2 PK	74.0	-25.8	1.00 H	191	42.90	5.30
6	4874.00	35.4 AV	54.0	-18.6	1.00 H	191	30.10	5.30
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	101.6 PK			1.00 V	278	69.50	32.10
2	*2437.00	92.4 AV			1.00 V	278	60.30	32.10
3	2483.50	67.0 PK	74.0	-7.0	1.00 V	272	34.60	32.40
4	2483.50	51.0 AV	54.0	-3.0	1.00 V	272	18.60	32.40
5	4874.00	48.0 PK	74.0	-26.0	1.00 V	272	42.70	5.30
6	4874.00	34.9 AV	54.0	-19.1	1.00 V	272	29.60	5.30

REMARKS:

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	29deg. C, 64%RH	TESTED BY	Alan Wu

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	101.9 PK			1.02 H	46	69.60	32.30
2	*2452.00	92.2 AV			1.02 H	46	59.90	32.30
3	2483.50	67.9 PK	74.0	-6.1	1.00 H	46	35.50	32.40
4	2483.50	53.5 AV	54.0	-0.5	1.00 H	46	21.10	32.40
5	4904.00	48.1 PK	74.0	-25.9	1.00 H	193	42.70	5.40
6	4904.00	34.7 AV	54.0	-19.3	1.00 H	193	29.30	5.40
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	97.6 PK			1.00 V	279	65.30	32.30
2	*2452.00	87.9 AV			1.00 V	279	55.60	32.30
3	2483.50	63.9 PK	74.0	-10.1	1.00 V	275	31.50	32.40
4	2483.50	49.1 AV	54.0	-4.9	1.00 V	275	16.70	32.40
5	4904.00	46.9 PK	74.0	-27.1	1.00 V	275	41.50	5.40
6	4904.00	33.1 AV	54.0	-20.9	1.00 V	275	27.70	5.40

REMARKS:

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



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BELOW 1GHz WORST-CASE DATA : 802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	29deg. C, 63%RH	TESTED BY	Alan Wu

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	249.17	45.0 QP	46.0	-1.0	1.00 H	284	59.40	-14.40
2	330.66	38.7 QP	46.0	-7.3	1.00 H	18	50.50	-11.80
3	375.29	42.9 QP	46.0	-3.1	1.00 H	129	54.00	-11.10
4	625.60	42.1 QP	46.0	-3.9	1.49 H	212	48.20	-6.10
5	749.79	39.2 QP	46.0	-6.8	1.00 H	223	42.90	-3.70
6	875.91	41.3 QP	46.0	-4.7	1.00 H	225	43.30	-2.00

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	43.48	37.4 QP	40.0	-2.6	1.24 V	79	51.70	-14.30
2	124.98	35.3 QP	43.5	-8.2	1.00 V	352	51.00	-15.70
3	249.17	40.0 QP	46.0	-6.0	1.00 V	52	54.40	-14.40
4	375.29	40.1 QP	46.0	-5.9	1.24 V	139	51.20	-11.10
5	625.60	42.3 QP	46.0	-3.7	1.49 V	188	48.40	-6.10
6	875.91	40.0 QP	46.0	-6.0	1.24 V	229	42.00	-2.00

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 OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	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.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Apr. 24, 2014	Apr. 23, 2015
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 23, 2013	Dec. 22, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 08, 2013	Jul. 07, 2014
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- Notes:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 2.
 3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

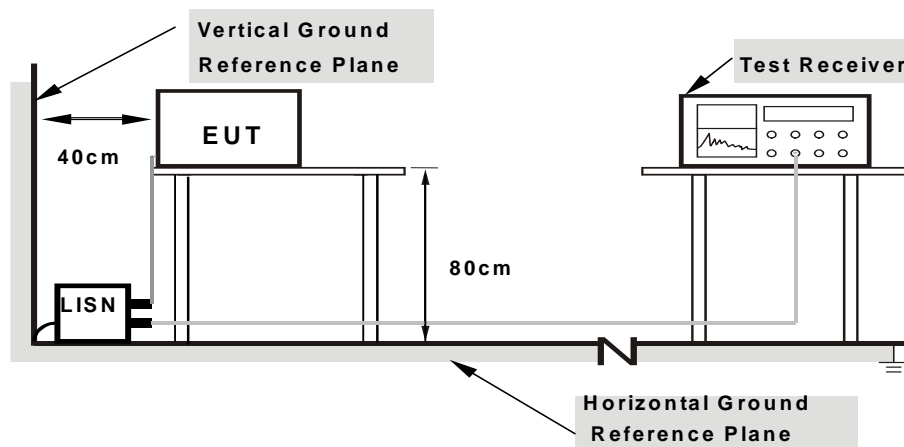
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



- Note:** 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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.

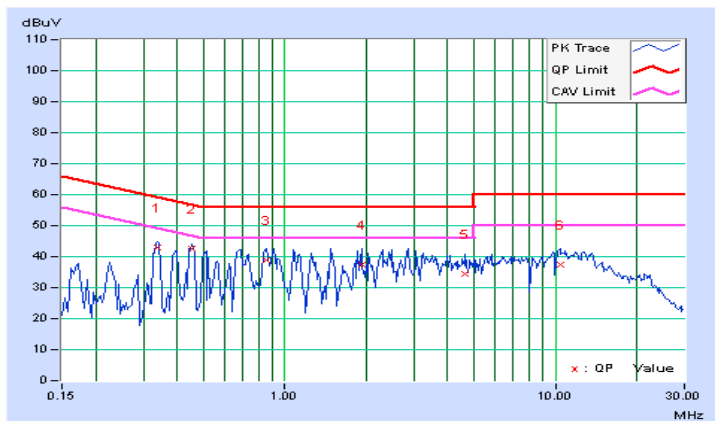
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 802.11g

PHASE	Line 1	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.33750	0.29	42.58	38.70	42.87	38.99	59.26	49.26	-16.39	-10.27
2	0.45078	0.30	42.13	36.10	42.43	36.40	56.86	46.86	-14.43	-10.46
3	0.85313	0.33	38.42	26.10	38.75	26.43	56.00	46.00	-17.25	-19.57
4	1.92578	0.36	37.00	26.48	37.36	26.84	56.00	46.00	-18.64	-19.16
5	4.63672	0.44	34.04	25.70	34.48	26.14	56.00	46.00	-21.52	-19.86
6	10.38672	0.50	36.96	29.75	37.46	30.25	60.00	50.00	-22.54	-19.75

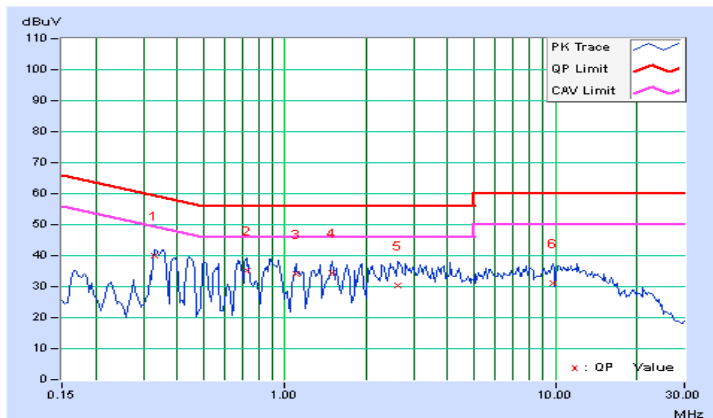
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. The emission levels of other frequencies were very low against the limit.
 3. Margin value = Emission level - Limit value
 4. Correction factor = Insertion loss + Cable loss
 5. Emission Level = Correction Factor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



PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.32969	0.29	39.59	31.34	39.88	31.63	59.46	49.46	-19.58	-17.83
2	0.72422	0.32	34.83	25.60	35.15	25.92	56.00	46.00	-20.85	-20.08
3	1.09766	0.34	33.71	20.63	34.05	20.97	56.00	46.00	-21.95	-25.03
4	1.50391	0.36	34.02	23.68	34.38	24.04	56.00	46.00	-21.62	-21.96
5	2.62500	0.39	29.82	19.32	30.21	19.71	56.00	46.00	-25.79	-26.29
6	9.82031	0.52	30.64	23.34	31.16	23.86	60.00	50.00	-28.84	-26.14

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

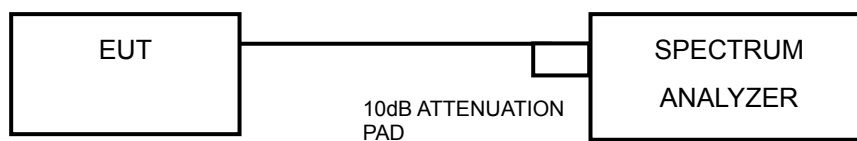


4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST SETUP



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.3.4 TEST PROCEDURE

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

802.11b

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.10	0.5	PASS
6	2437	8.11	0.5	PASS
11	2462	8.11	0.5	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	14.48	15.16	0.5	PASS
6	2437	15.13	15.13	0.5	PASS
11	2462	15.16	15.04	0.5	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	15.12	15.72	0.5	PASS
6	2437	15.12	15.72	0.5	PASS
11	2462	15.13	15.10	0.5	PASS

802.11n (40MHz)

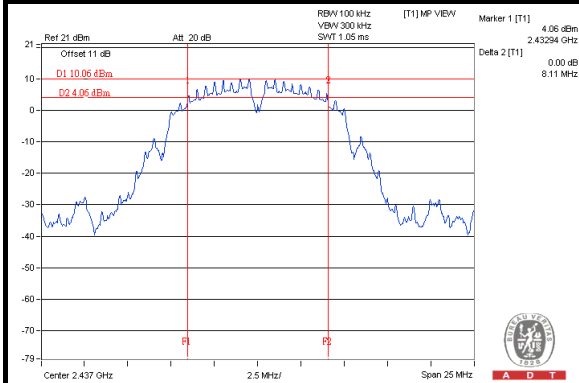
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	34.05	35.08	0.5	PASS
6	2437	33.94	35.82	0.5	PASS
9	2452	35.20	35.23	0.5	PASS



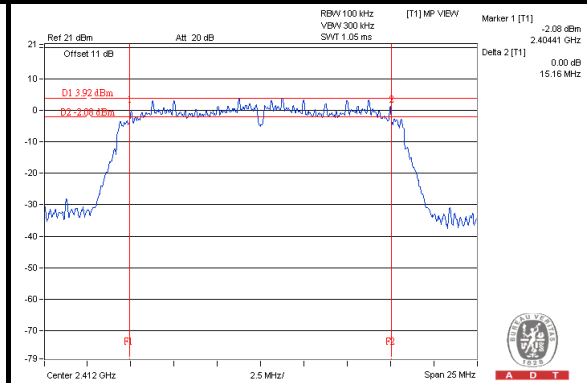
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SPECTRUM PLOT OF WORST VALUE

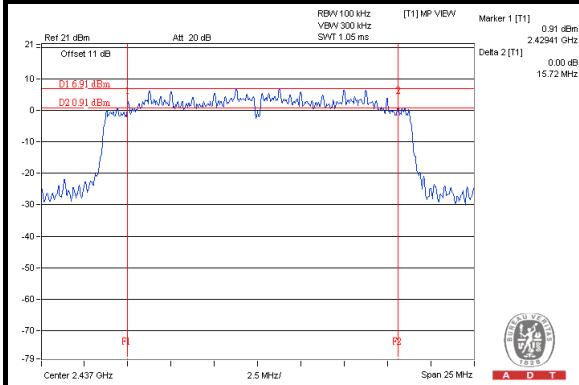
802.11b



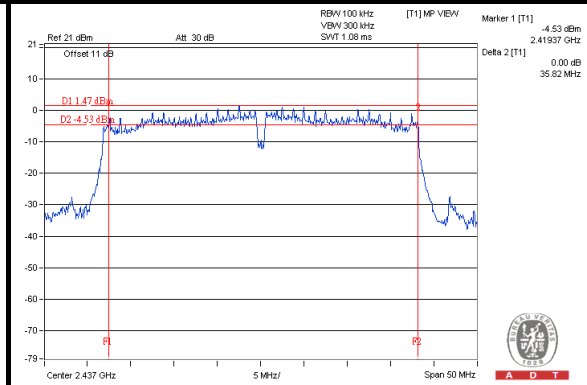
802.11g



802.11n (20MHz)



802.11n (40MHz)



4.4 CONDUCTED OUTPUT POWER

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 v02r01 Method of conducted output power measurement on IEEE 802.11 devices,

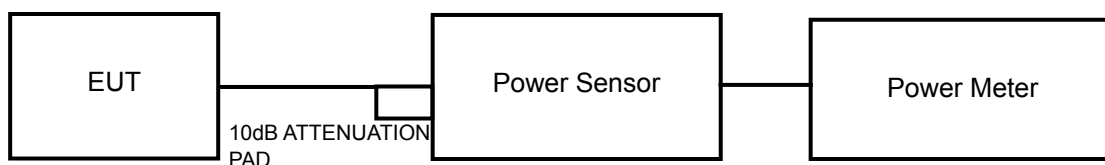
Array Gain = 0 dB (i.e., no array gain) for $NANT \leq 4$;

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

Array Gain = $5 \log(NANT/NSS)$ dB or 3 dB, whichever is less for 20-MHz channel widths with $NANT \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(NANT/NSS)$ 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

802.11b

CHANNEL	FREQUENCY (MHz)	AVG. POWER (mW)	AVG. POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	77.983	18.92	30	PASS
6	2437	69.663	18.43	30	PASS
11	2462	61.802	17.91	30	PASS

802.11g

CHAN.	FREQ. (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	14.02	14.46	53.160	17.26	30	PASS
6	2437	18.58	19.10	153.394	21.86	30	PASS
11	2462	13.32	13.86	45.800	16.61	30	PASS

802.11n (20MHz)

CHAN.	FREQ. (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	12.58	13.00	38.066	15.81	30	PASS
6	2437	17.30	18.21	119.925	20.79	30	PASS
11	2462	12.94	13.00	39.632	15.98	30	PASS

802.11n (40MHz)

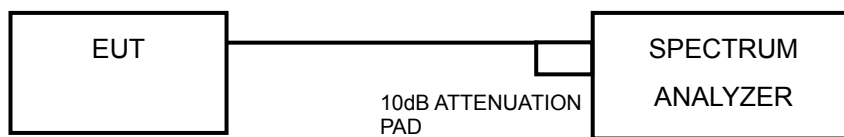
CHAN.	FREQ. (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	11.04	11.11	25.618	14.09	30	PASS
6	2437	14.13	15.00	57.505	17.60	30	PASS
9	2452	10.13	11.21	23.517	13.71	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.5.4 TEST PROCEDURE

- Set the RBW = 3 kHz, VBW = 10 kHz, Detector = peak.
- Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.5.7 TEST RESULTS

802.11b

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-9.55	8	PASS
6	2437	-11.14	8	PASS
11	2462	-12.68	8	PASS

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-20.26	3.01	-17.25	8	PASS
	6	2437	-15.35	3.01	-12.34	8	PASS
	11	2462	-19.76	3.01	-16.75	8	PASS
1	1	2412	-19.24	3.01	-16.23	8	PASS
	6	2437	-14.78	3.01	-11.77	8	PASS
	11	2462	-20.29	3.01	-17.28	8	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 5.89 < 6\text{dBi}$, so the limit no need to reduced.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-21.61	3.01	-18.60	8	PASS
	6	2437	-16.75	3.01	-13.74	8	PASS
	11	2462	-21.27	3.01	-18.26	8	PASS
1	1	2412	-20.93	3.01	-17.92	8	PASS
	6	2437	-16.47	3.01	-13.46	8	PASS
	11	2462	-20.69	3.01	-17.68	8	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 5.89 < 6\text{dBi}$, so the limit no need to reduced.
- Refer to section 3.3 for duty cycle spectrum plot.



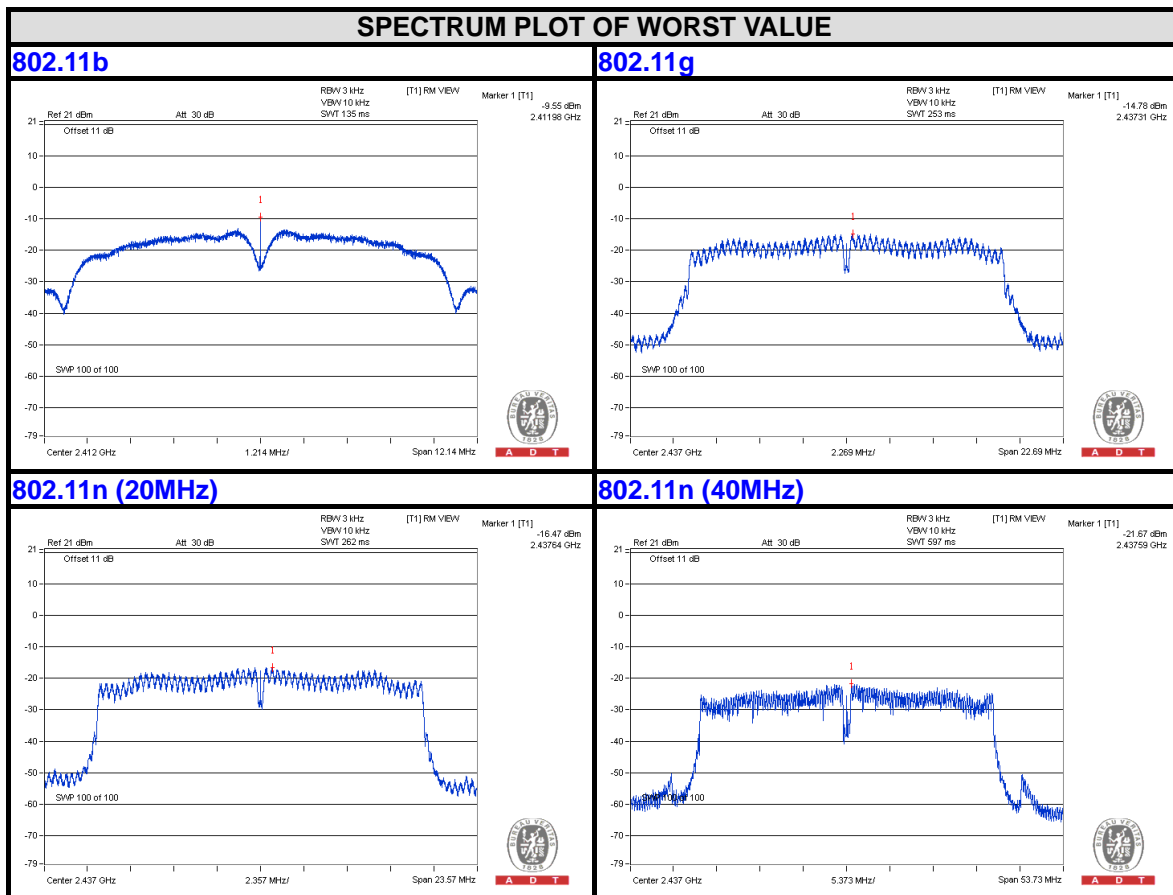
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802.11n (40MHz)

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD without Duty Factor (dBm/3kHz)	Duty Factor	Total PSD with Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-25.26	3.01	-22.25	0.60	-21.65	8	PASS
	6	2437	-22.21	3.01	-19.20	0.60	-18.60	8	PASS
	11	2462	-26.94	3.01	-23.93	0.60	-23.33	8	PASS
1	1	2412	-23.86	3.01	-20.85	0.60	-20.25	8	PASS
	6	2437	-21.67	3.01	-18.66	0.60	-18.06	8	PASS
	11	2462	-26.20	3.01	-23.19	0.60	-22.59	8	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 5.89 < 6\text{dBi}$, so the limit no need to reduced.
- Refer to section 3.3 for duty cycle spectrum plot.

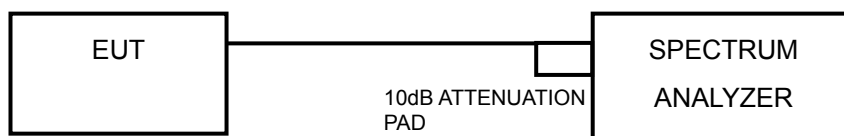


4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

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.



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4.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW \geq 300 kHz.
3. Detector = average.
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 OOB

1. Set RBW = 100 kHz.
2. Set VBW \geq 300 kHz.
3. Ensure that the number of measurement points \geq span/RBW
4. According to measurement points to set differ measurement span.
5. Detector = peak.
6. Trace Mode = max hold.
7. Sweep = auto couple.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.7 TEST RESULTS

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

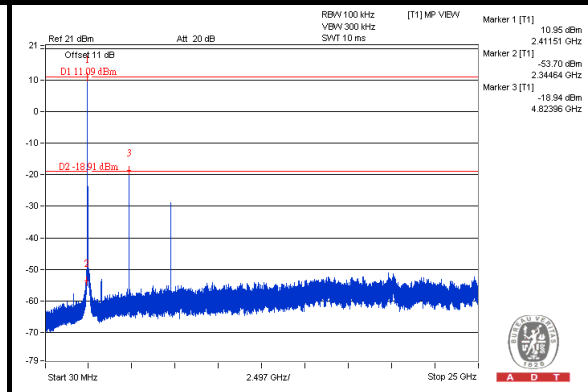
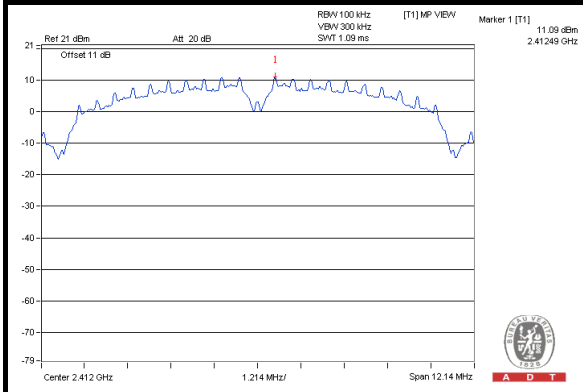
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.



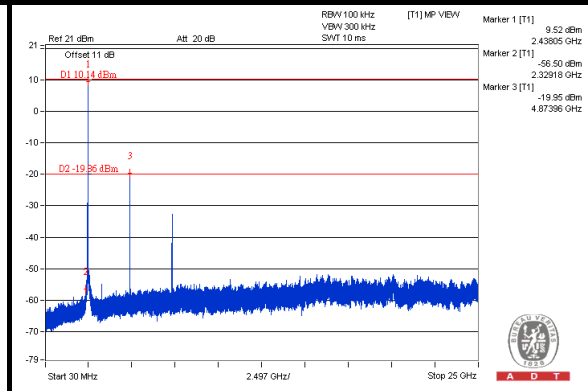
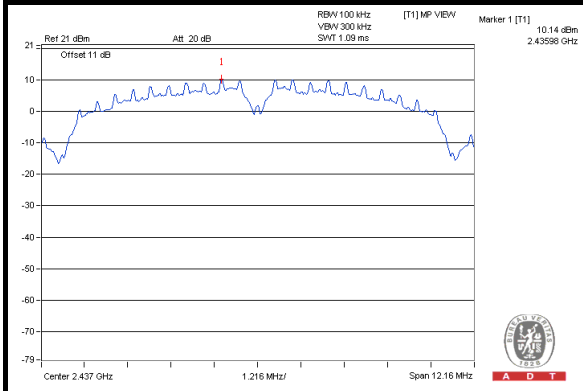
A D T

802.11b

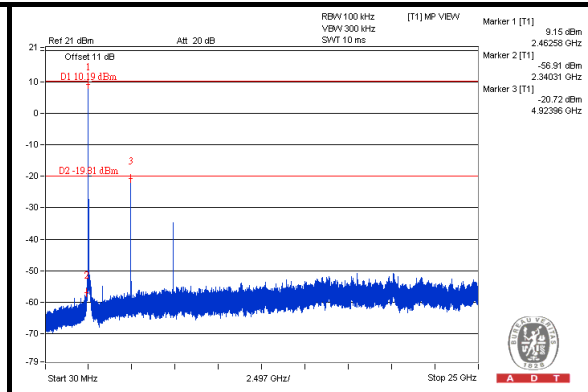
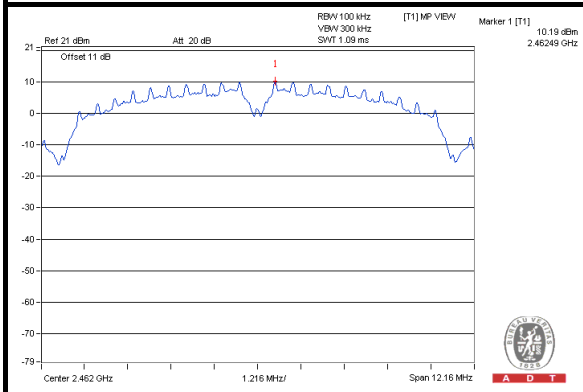
CH 1



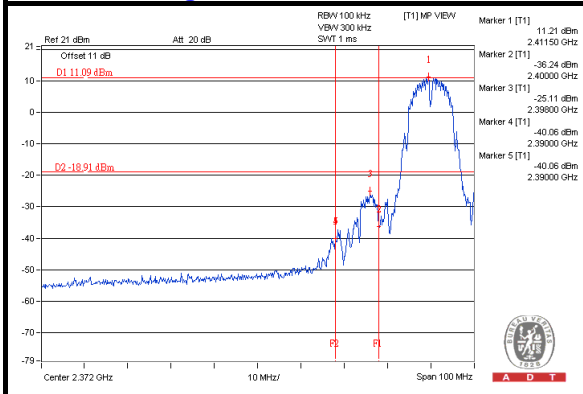
CH 6



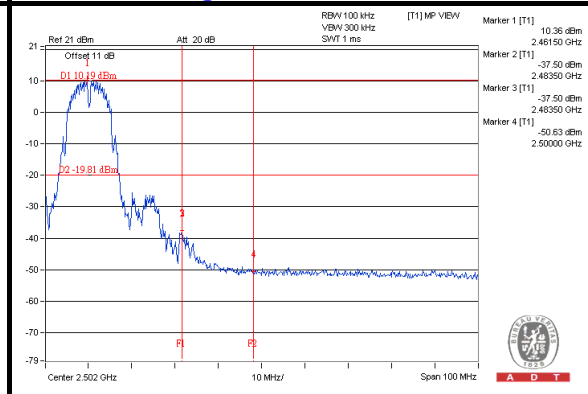
CH 11



CH 1 Band edge



CH 11 Band edge

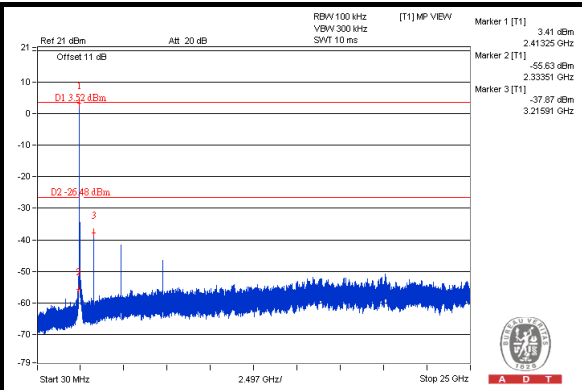
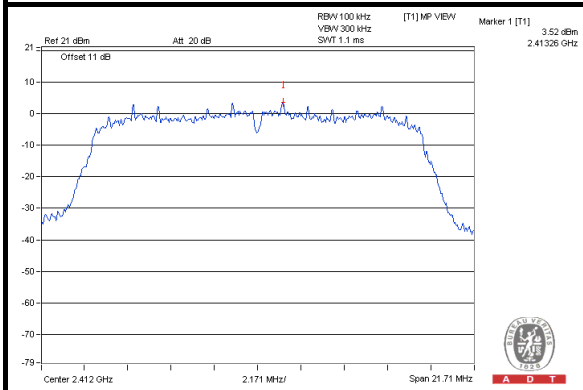




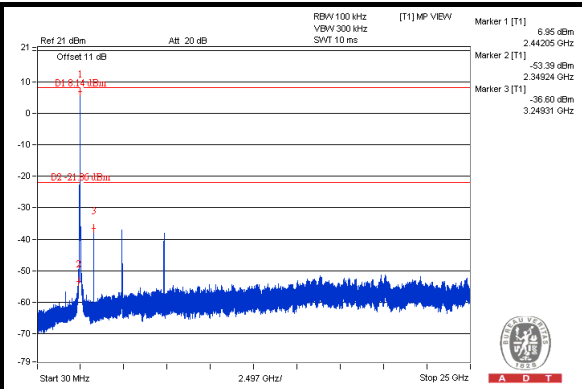
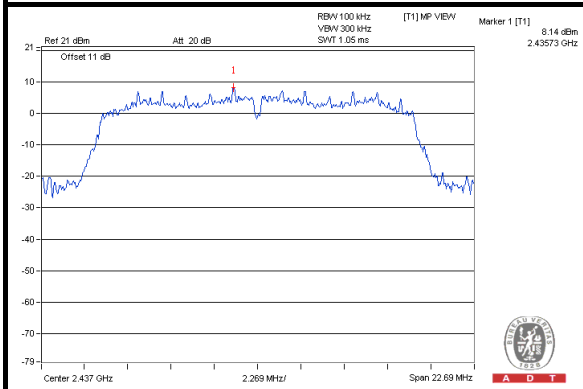
A D T

802.11g: CHAIN 0

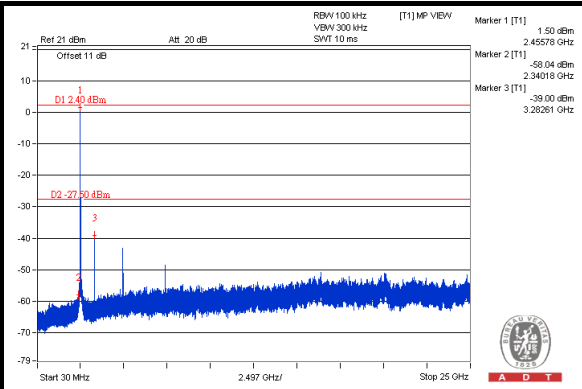
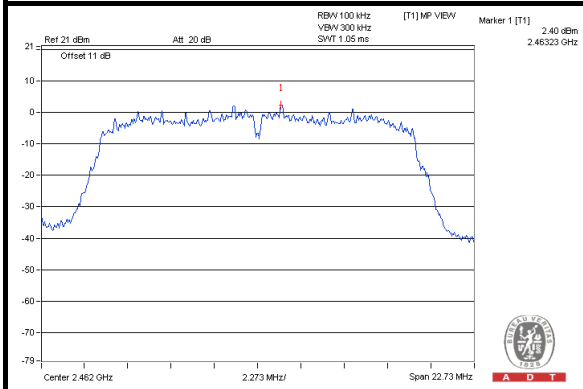
CH 1



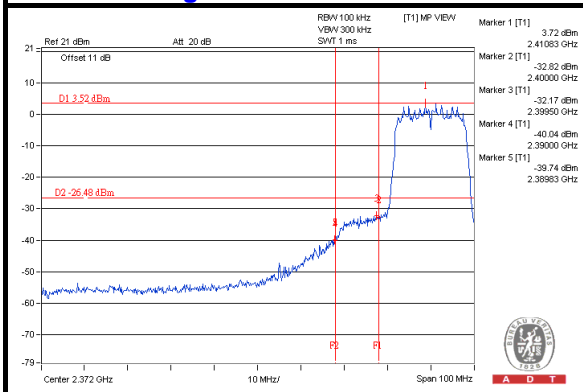
CH 6



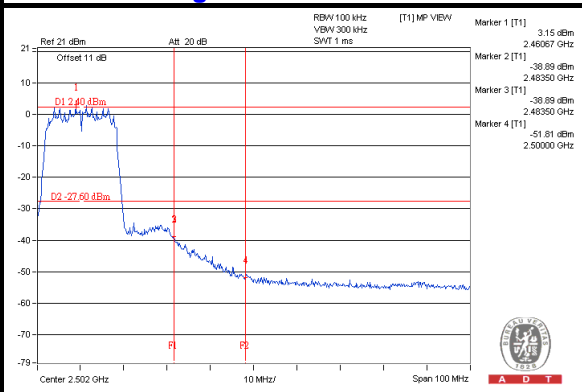
CH 11



CH 1 Band edge



CH 11 Band edge

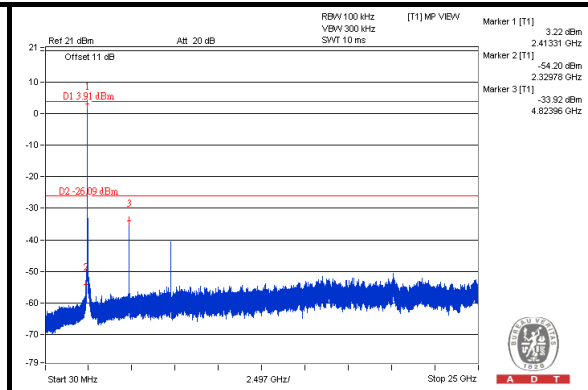
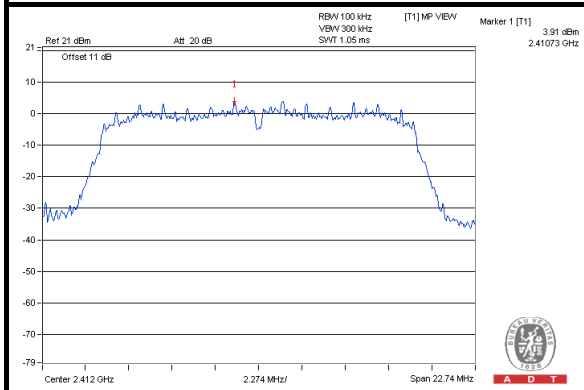




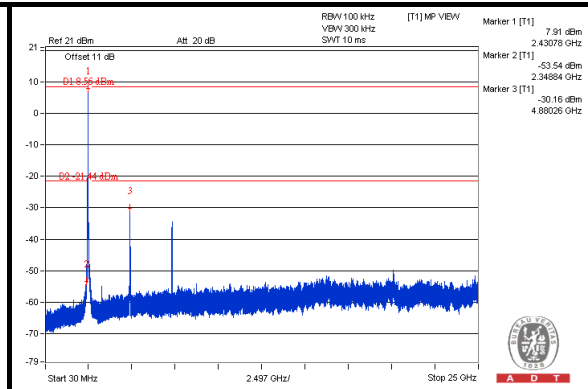
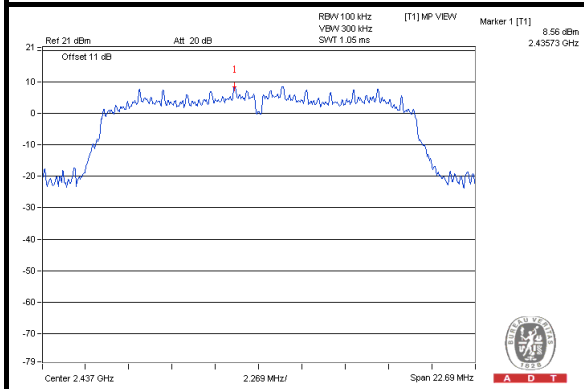
A D T

CHAIN 1

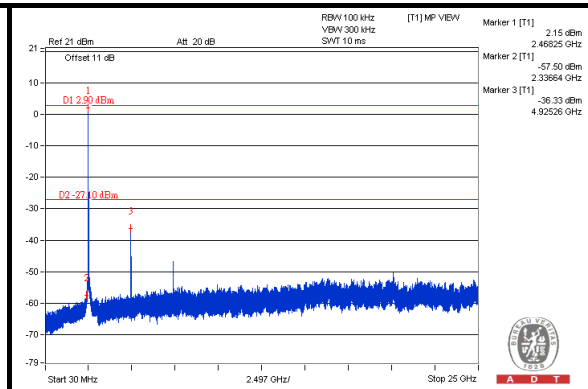
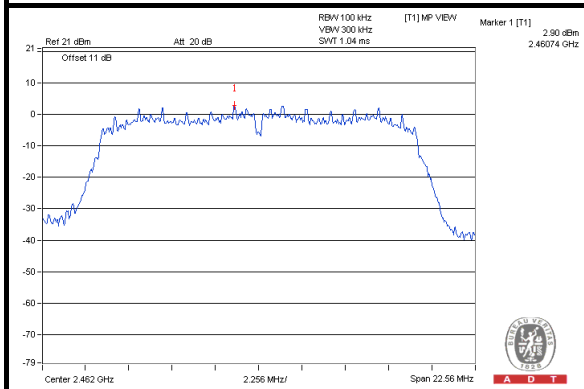
CH 1



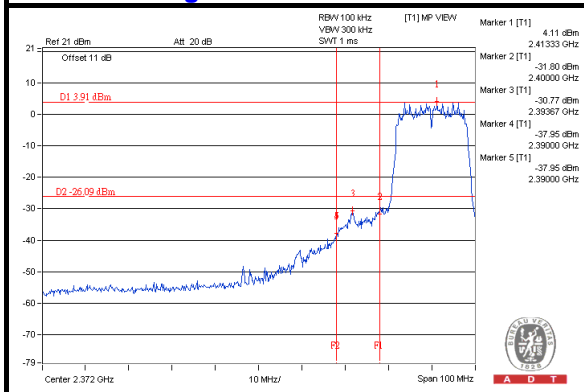
CH 6



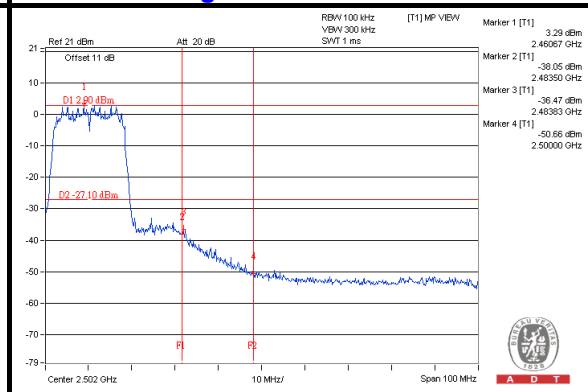
CH 11



CH 1 Band edge



CH 11 Band edge

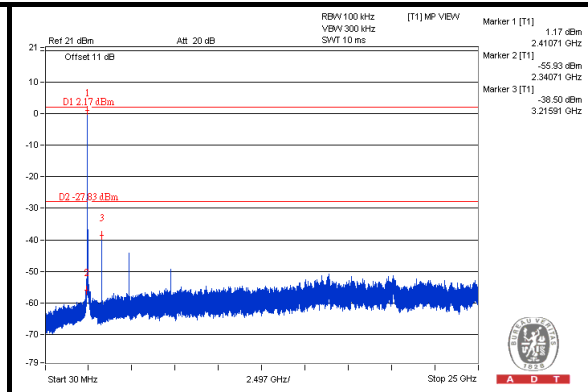
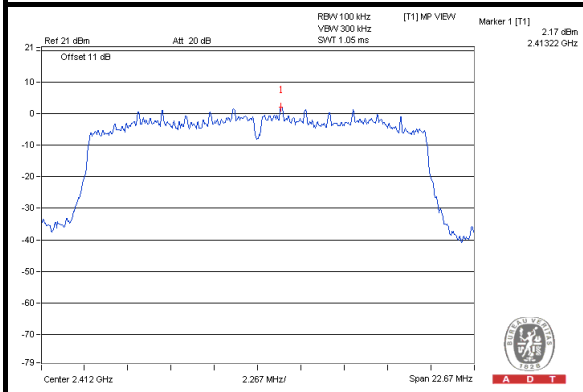




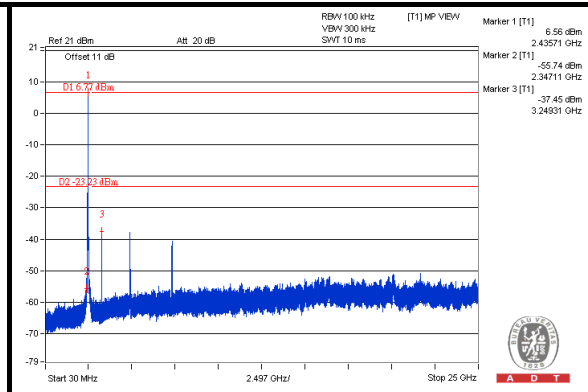
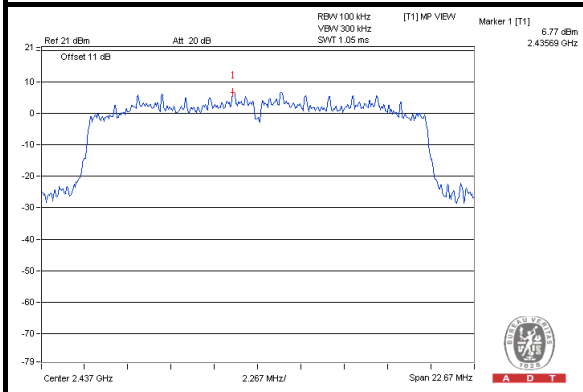
A D T

802.11n (20MHz): CHAIN 0

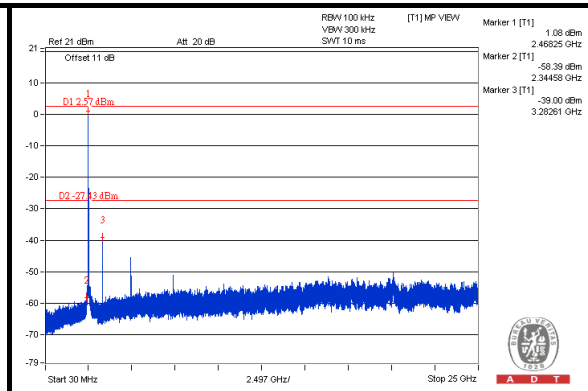
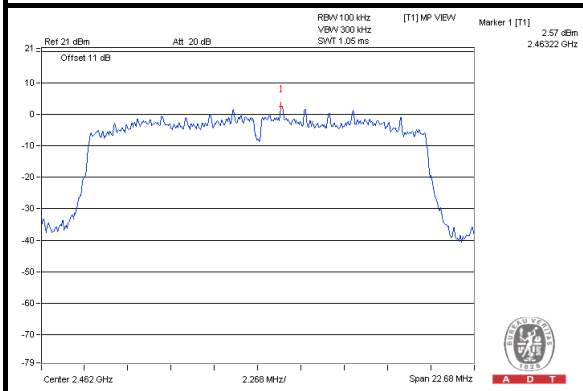
CH 1



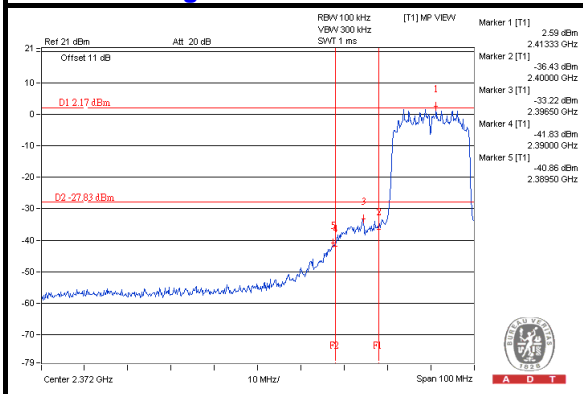
CH 6



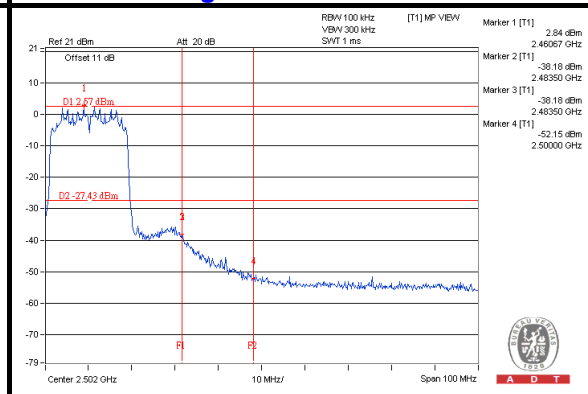
CH 11



CH 1 Band edge



CH 11 Band edge

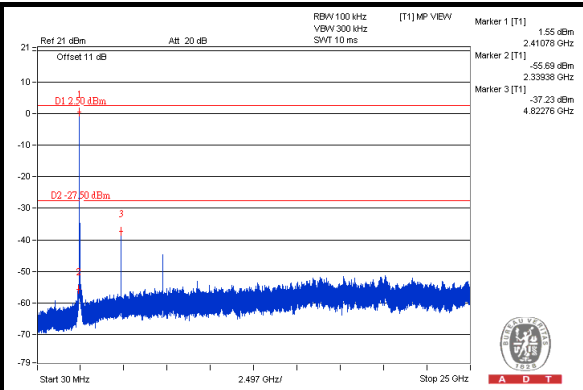
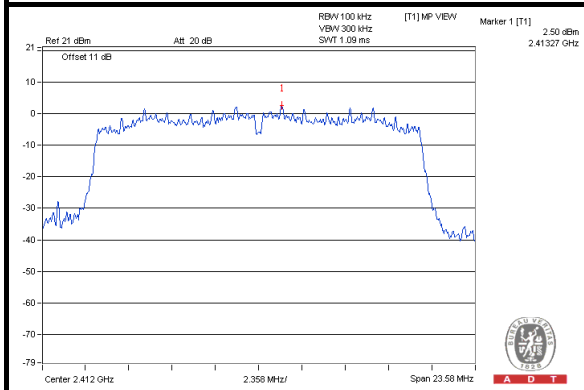




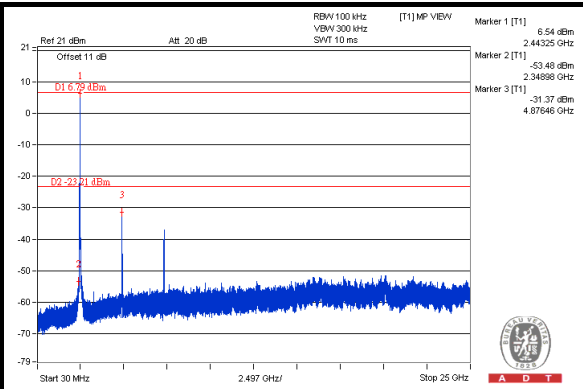
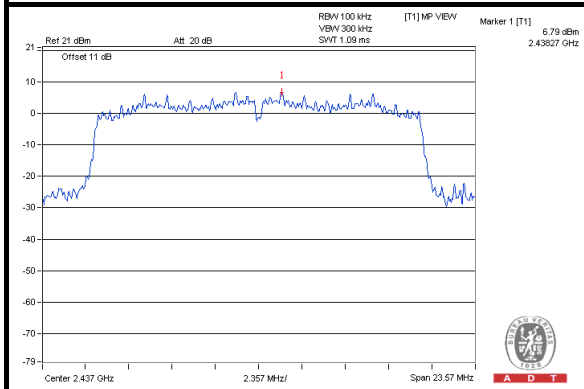
A D T

CHAIN 1

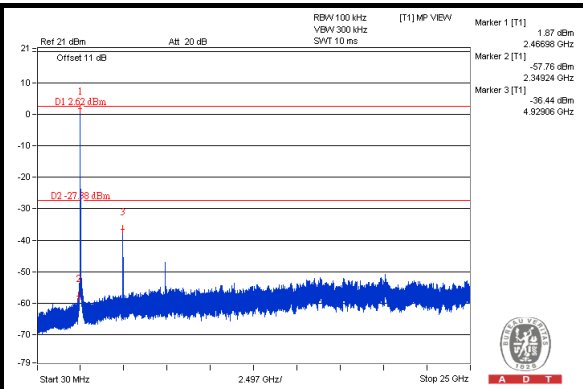
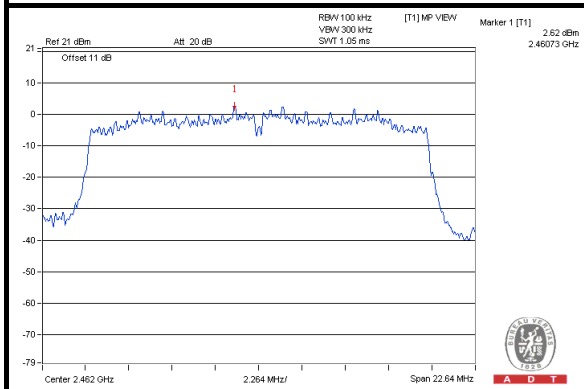
CH 1



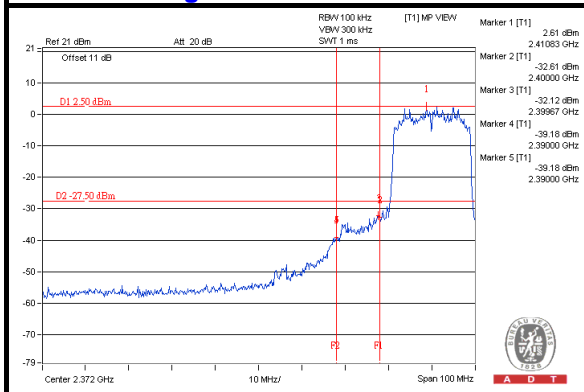
CH 6



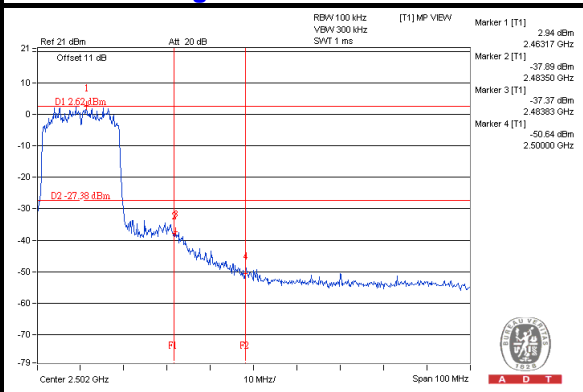
CH 11



CH 1 Band edge



CH 11 Band edge

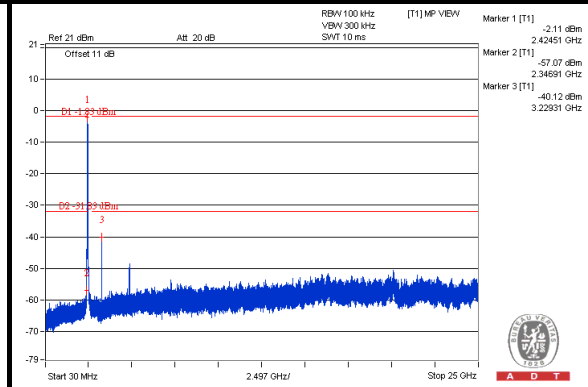
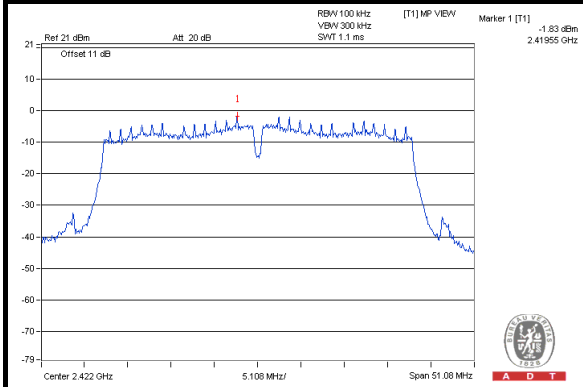




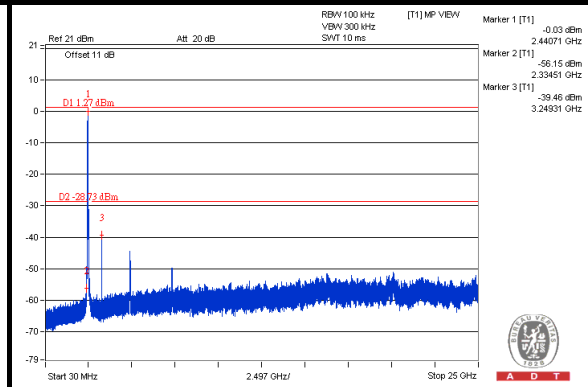
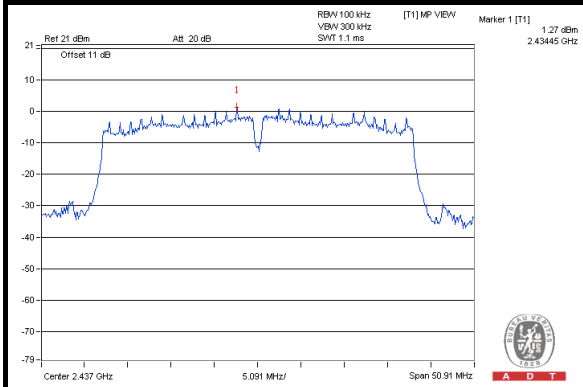
A D T

802.11n (40MHz): CHAIN 0

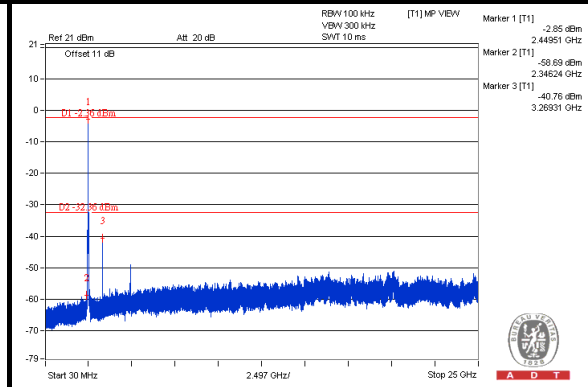
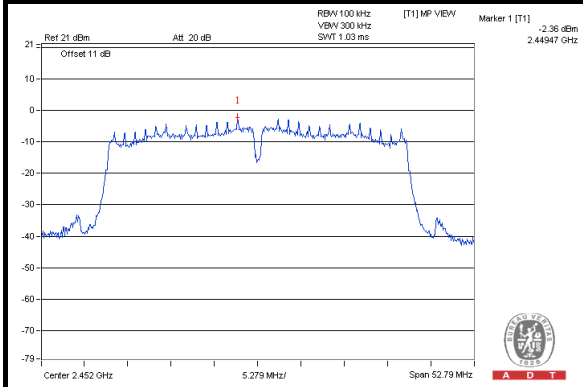
CH 3



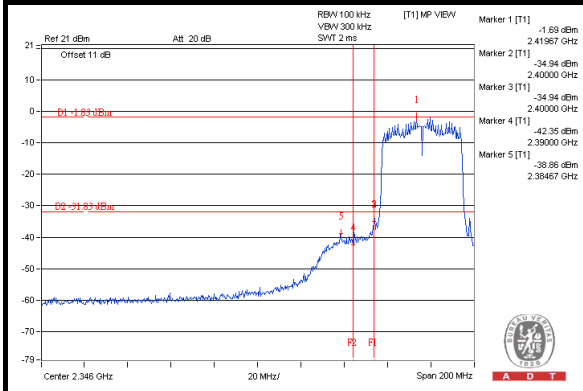
CH 6



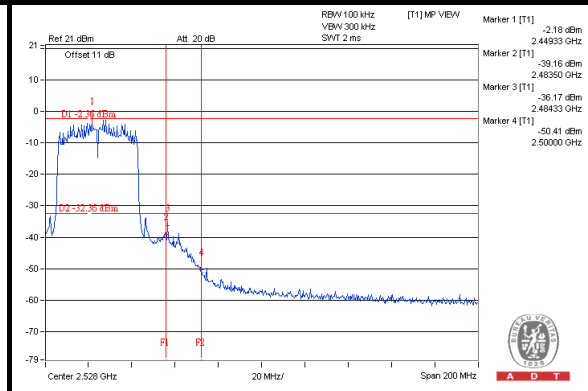
CH 9



CH 3 Band edge



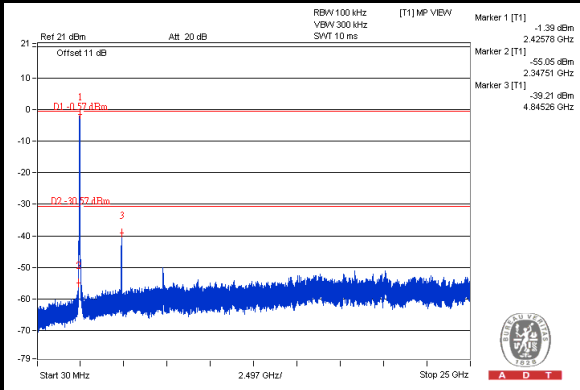
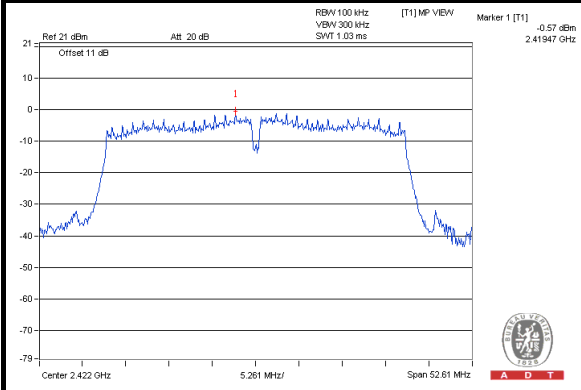
CH 9 Band edge



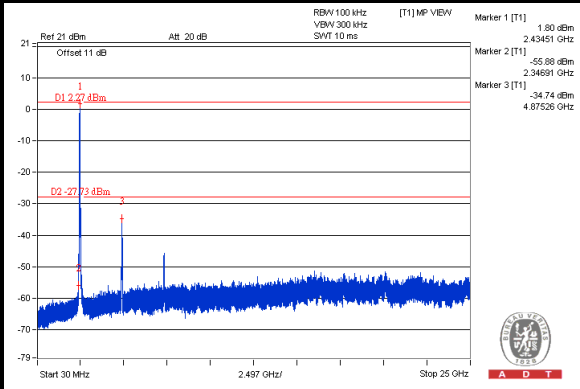
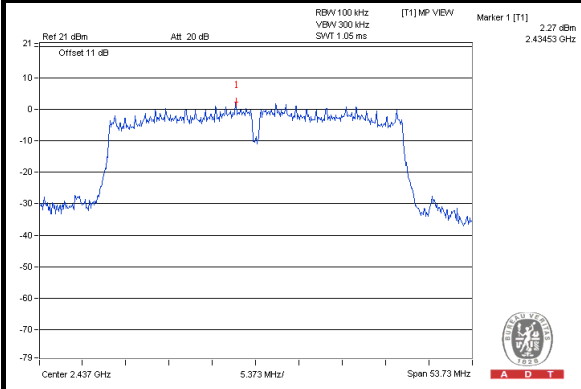


A D T

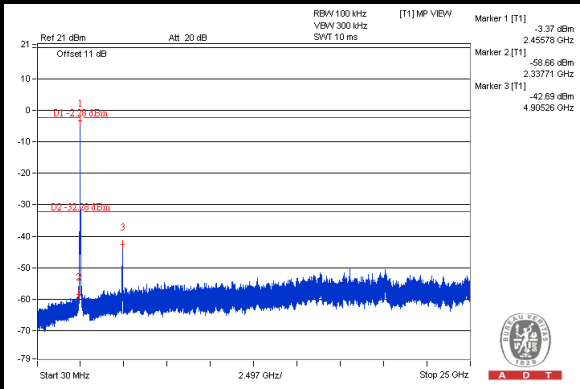
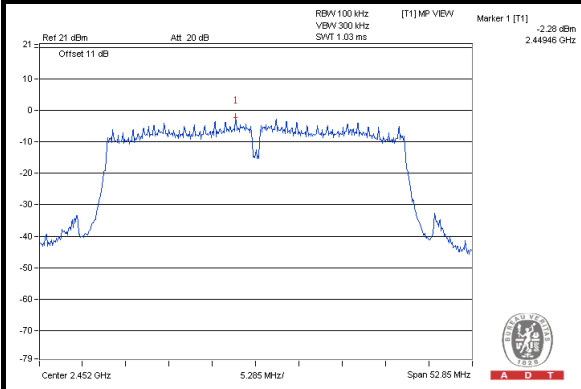
CHAIN 1 CH 3



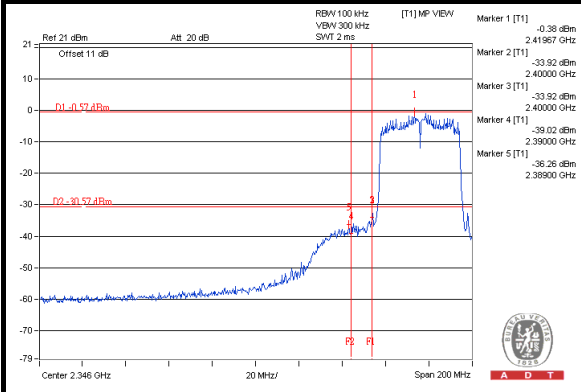
CH 6



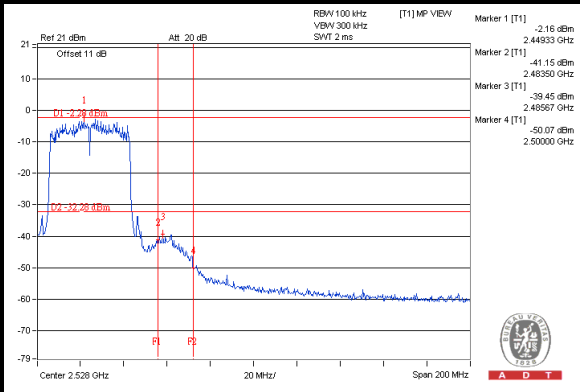
CH 9



CH 3 Band edge



CH 9 Band edge





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5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



6. 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.



A D T

7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

---END---