



FCC TEST REPORT

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MODEL NO.: DWL-2600AP
FCC ID: KA2WL2600APA1
RECEIVED: Feb. 21, 2012
TESTED: Mar. 08 ~ Apr. 25, 2012
ISSUED: Apr. 27, 2012

APPLICANT: D-Link Corporation

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TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei
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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120303C29	Original release	Apr. 27, 2012



1. CERTIFICATION

PRODUCT: 802.11n Single-band Unified Access Point

MODEL: DWL-2600AP

BRAND: D-Link

APPLICANT: D-Link Corporation

TESTED: Mar. 08 ~ Apr. 25, 2012

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**

ANSI C63.10-2009

The above equipment (Model: DWL-2600AP) 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 : Apr. 27, 2012
Polly Chien / Specialist

APPROVED BY :  , DATE : Apr. 27, 2012
Gary Chang / Technical 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 AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -5.18dB at 15.46094MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 2390.00MHz & 2483.50MHz.
15.247(d)	Band Edge Measurement	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	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 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	802.11n Single-band Unified Access Point
MODEL NO.	DWL-2600AP
POWER SUPPLY	12Vdc (adapter) 55Vdc (PSE)
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	458.7mW
ANTENNA TYPE	PIFA antenna with 3.2dBi gain
ANTENNA CONNECTOR	UFL
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter

NOTE:

1. 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	1TX
802.11n (20MHz)	1TX / 2TX
802.11n (40MHz)	1TX / 2TX

2. The EUT consumes power from the following adapter.

BRAND	D-Link
MODEL	CAP012121 US 12.0W
INPUT POWER	100-240Vac, 47-63Hz, 0.35A
OUTPUT POWER	12.0Vdc, 1.0A
POWER LINE	1.2m non-shielded cable w/o core

3. The EUT uses following PSE.

MODEL	PD-7001G
INPUT POWER	100-240Vac, 50-60Hz, 0.8A
OUTPUT POWER	55Vdc, 0.570A

*The PSE is for support units only.

4. The above EUT information is declared by the 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	
A	√	√	√	√	Power from Adapter
B	-	√	√	-	Power from PSE

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: "-" means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations 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	TX FUNCTION	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1TX	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	1TX	6.0
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	1TX	7.2
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	2TX	7.2
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	1TX	15.0
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	2TX	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 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	TX FUNCTION	DATA RATE (Mbps)
A, B	802.11n (20MHz)	1 to 11	6	OFDM	BPSK	2TX	7.2

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	TX FUNCTION	DATA RATE (Mbps)
A, B	802.11n (20MHz)	1 to 11	6	OFDM	BPSK	2TX	7.2

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	TX FUNCTION	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 11	DSSS	DBPSK	1TX	1.0
A	802.11g	1 to 11	1, 11	OFDM	BPSK	1TX	6.0
A	802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	1TX	7.2
A	802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	2TX	7.2
A	802.11n (40MHz)	3 to 9	3, 9	OFDM	BPSK	1TX	15.0
A	802.11n (40MHz)	3 to 9	3, 9	OFDM	BPSK	2TX	15.0

ANTENNA PORT CONDUCTED 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	TX FUNCTION	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1TX	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	1TX	6.0
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	1TX	7.2
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	2TX	7.2
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	1TX	15.0
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	2TX	15.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Aska Huang, Haru Yang
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Aska Huang
	25deg. C, 68%RH	55Vdc	Haru Yang
PLC	25deg. C, 68%RH	120Vac, 60Hz 55Vdc	Sun Lin
APCM	24deg. C, 64%RH	120Vac, 60Hz	Brad Wu

3.3 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	E5410	1HC2XM1	FCC DoC Approved

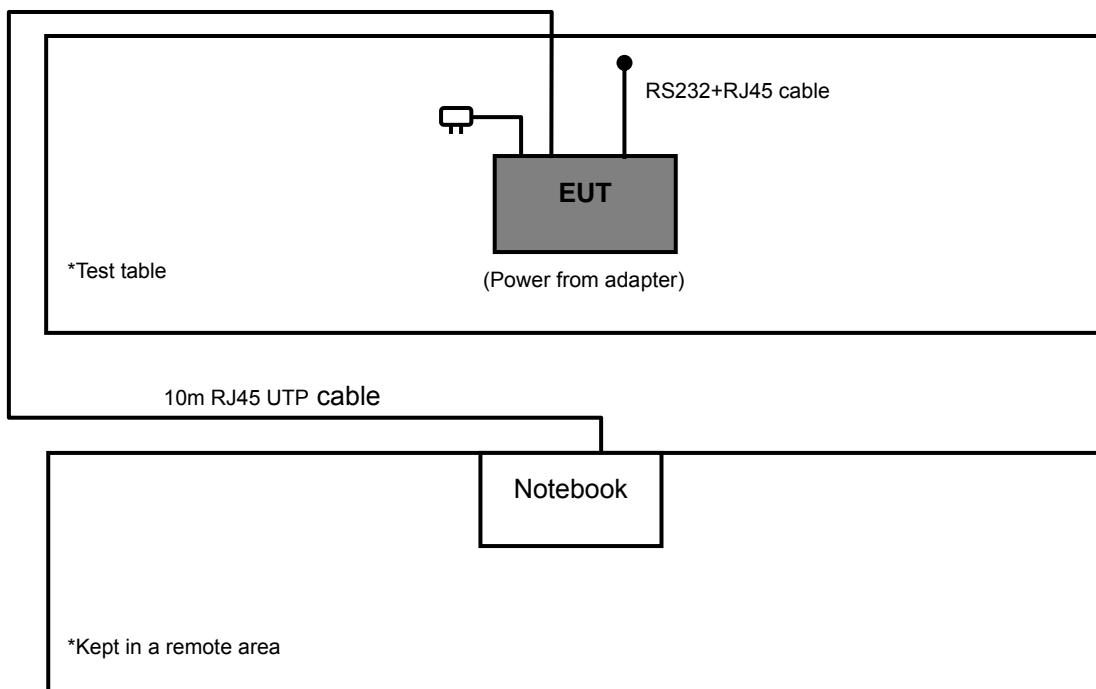
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m RJ45 UTP cable or 1.8m RJ45 UTP cable

NOTE:

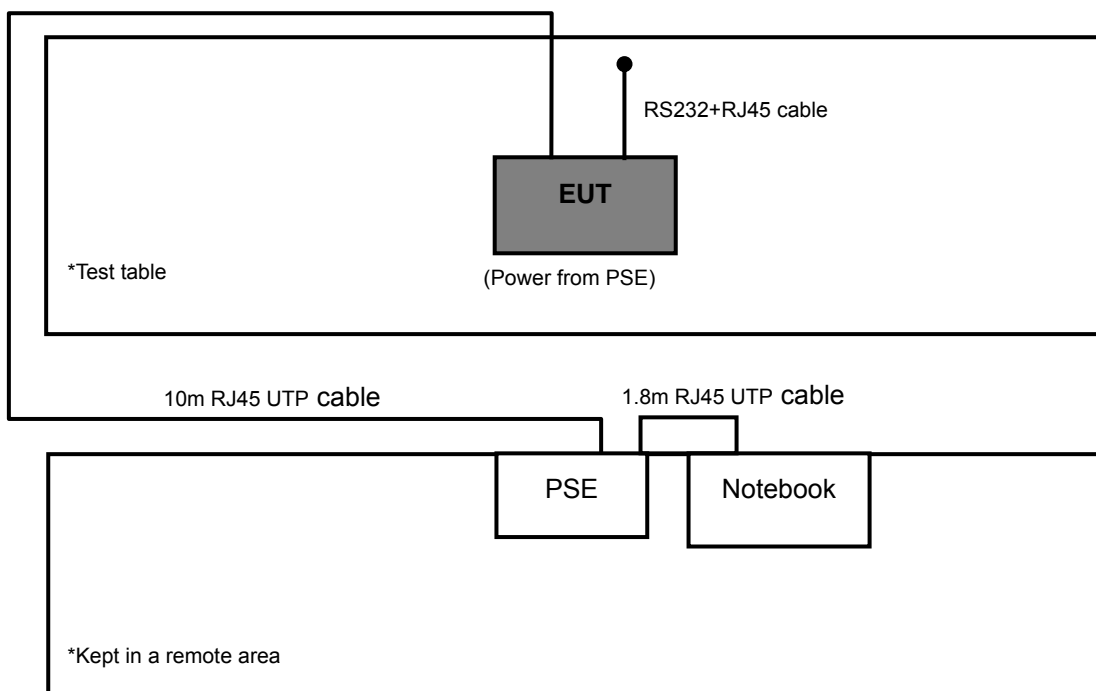
1. All power cords of the above support units are non-shielded (1.8m).
2. Item 1 acted as communication partner to transfer data.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST

TEST MODE A



TEST MODE B





3.4 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)

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 BANDEGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEGE MEASUREMENT

Radiated emissions which fall in the restricted bands must also comply with the radiated emission limits as below table. Other emissions shall be at least 20dB below the highest level of the desired power.

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	Aug. 02, 2011	Aug. 01, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Jul. 21, 2011	Jul. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	9120D	209	Aug. 25, 2011	Aug. 24, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 20, 2011	Jul. 19, 2012
Preamplifier Agilent	8447D	2944A10633	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8449B	3008A01964	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 30, 2011	Aug. 29, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6+309224/4	Aug. 30, 2011	Aug. 29, 2012
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100	TT93021703	NA	NA
Turn Table Controller ADT.	SC100	SC93021703	NA	NA
High Speed Peak Power Meter	ML2495A	0824011	Aug. 04, 2011	Aug. 03, 2012
Power Sensor	MA2411B	0738171	Aug. 04, 2011	Aug. 03, 2012

- 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 3.
 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 988962.
 5. The IC Site Registration No. is IC 7450F-3.

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. The antenna is a broadband antenna, and its height 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.

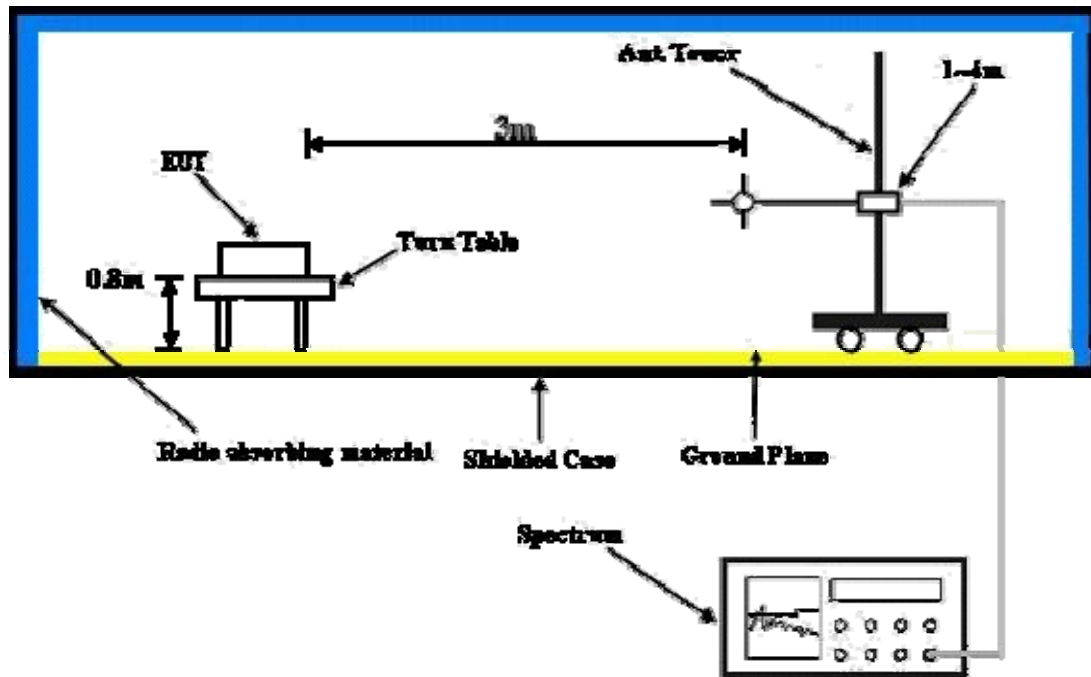
NOTE:

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 100kHz and video bandwidth is 300kHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1kHz 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 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 a communication partner and placed them outside of testing area.
- c. The communication partners connected with EUT via RJ45 cables 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".

4.1.7 TEST RESULTS

802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

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	62.6 PK	74.0	-11.4	1.35 H	311	31.30	31.30
2	2390.00	52.7 AV	54.0	-1.3	1.35 H	311	21.40	31.30
3	*2412.00	110.0 PK			1.35 H	311	78.60	31.40
4	*2412.00	105.6 AV			1.35 H	311	74.20	31.40
5	4824.00	51.7 PK	74.0	-22.3	1.00 H	117	14.50	37.20
6	4824.00	48.2 AV	54.0	-5.8	1.00 H	117	11.00	37.20
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	60.5 PK	74.0	-13.5	1.02 V	279	29.20	31.30
2	2390.00	51.9 AV	54.0	-2.1	1.02 V	279	20.60	31.30
3	*2412.00	107.9 PK			1.65 V	279	76.50	31.40
4	*2412.00	103.5 AV			1.65 V	279	72.10	31.40
5	4824.00	52.6 PK	74.0	-21.4	1.00 V	2	15.40	37.20
6	4824.00	48.7 AV	54.0	-5.3	1.00 V	2	11.50	37.20

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).
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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

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			1.33 H	309	78.80	31.50
2	*2437.00	105.7 AV			1.33 H	309	74.20	31.50
3	4874.00	53.3 PK	74.0	-20.7	1.10 H	116	16.00	37.30
4	4874.00	49.6 AV	54.0	-4.4	1.10 H	116	12.30	37.30
5	7311.00	53.7 PK	74.0	-20.3	1.41 H	309	10.20	43.50
6	7311.00	44.7 AV	54.0	-9.3	1.41 H	309	1.20	43.50
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	107.0 PK			1.00 V	292	75.50	31.50
2	*2437.00	103.1 AV			1.00 V	292	71.60	31.50
3	4874.00	54.2 PK	74.0	-19.8	1.00 V	4	16.90	37.30
4	4874.00	50.3 AV	54.0	-3.7	1.00 V	4	13.00	37.30
5	7311.00	57.5 PK	74.0	-16.5	1.87 V	22	14.00	43.50
6	7311.00	51.7 AV	54.0	-2.3	1.87 V	22	8.20	43.50

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).
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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.4 PK			1.30 H	310	78.80	31.60
2	*2462.00	105.5 AV			1.30 H	310	73.90	31.60
3	2483.50	61.4 PK	74.0	-12.6	1.30 H	310	29.80	31.60
4	2483.50	52.8 AV	54.0	-1.2	1.30 H	310	21.20	31.60
5	4924.00	53.5 PK	74.0	-20.5	1.00 H	310	16.10	37.40
6	4924.00	49.7 AV	54.0	-4.3	1.00 H	310	12.30	37.40
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	107.1 PK			1.00 V	288	75.50	31.60
2	*2462.00	103.5 AV			1.00 V	288	71.90	31.60
3	2483.50	57.6 PK	74.0	-16.4	1.00 V	285	26.00	31.60
4	2483.50	49.0 AV	54.0	-5.0	1.00 V	285	17.40	31.60
5	4924.00	54.0 PK	74.0	-20.0	1.00 V	0	16.60	37.40
6	4924.00	50.6 AV	54.0	-3.4	1.00 V	0	13.20	37.40

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * “: Fundamental frequency.

802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.1 PK	74.0	-2.9	1.34 H	313	39.80	31.30
2	2390.00	52.7 AV	54.0	-1.3	1.34 H	313	21.40	31.30
3	*2412.00	108.0 PK			1.34 H	312	76.60	31.40
4	*2412.00	98.2 AV			1.34 H	312	66.80	31.40
5	4824.00	46.0 PK	74.0	-28.0	1.00 H	243	8.80	37.20
6	4824.00	32.9 AV	54.0	-21.1	1.00 H	243	-4.30	37.20
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	62.0 PK	74.0	-12.0	1.64 V	286	30.70	31.30
2	2390.00	47.2 AV	54.0	-6.8	1.64 V	286	15.90	31.30
3	*2412.00	103.8 PK			1.64 V	286	72.40	31.40
4	*2412.00	93.9 AV			1.64 V	286	62.50	31.40
5	4824.00	46.4 PK	74.0	-27.6	1.00 V	158	9.20	37.20
6	4824.00	33.2 AV	54.0	-20.8	1.00 V	158	-4.00	37.20

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * “: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

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	64.3 PK	74.0	-9.7	1.33 H	310	33.00	31.30
2	2390.00	48.3 AV	54.0	-5.7	1.33 H	310	17.00	31.30
3	*2437.00	112.1 PK			1.33 H	310	80.60	31.50
4	*2437.00	101.8 AV			1.33 H	310	70.30	31.50
5	4874.00	49.0 PK	74.0	-25.0	1.05 H	196	11.70	37.30
6	4874.00	36.1 AV	54.0	-17.9	1.05 H	196	-1.20	37.30
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	58.4 PK	74.0	-15.6	1.00 V	287	27.10	31.30
2	2390.00	45.4 AV	54.0	-8.6	1.00 V	287	14.10	31.30
3	*2437.00	107.8 PK			1.00 V	287	76.30	31.50
4	*2437.00	97.7 AV			1.00 V	287	66.20	31.50
5	4874.00	48.8 PK	74.0	-25.2	1.00 V	0	11.50	37.30
6	4874.00	36.1 AV	54.0	-17.9	1.00 V	0	-1.20	37.30

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * “: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

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	108.1 PK			1.33 H	310	76.50	31.60
2	*2462.00	97.8 AV			1.33 H	310	66.20	31.60
3	2483.50	72.4 PK	74.0	-1.6	1.29 H	308	40.80	31.60
4	2483.50	52.7 AV	54.0	-1.3	1.29 H	308	21.10	31.60
5	4924.00	45.6 PK	74.0	-28.4	1.00 H	133	8.20	37.40
6	4924.00	32.5 AV	54.0	-21.5	1.00 H	133	-4.90	37.40
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	104.2 PK			1.00 V	286	72.60	31.60
2	*2462.00	94.5 AV			1.00 V	286	62.90	31.60
3	2483.50	60.8 PK	74.0	-13.2	1.00 V	286	29.20	31.60
4	2483.50	47.4 AV	54.0	-6.6	1.00 V	286	15.80	31.60
5	4924.00	46.9 PK	74.0	-27.1	1.00 V	0	9.50	37.40
6	4924.00	33.5 AV	54.0	-20.5	1.00 V	0	-3.90	37.40

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * “: Fundamental frequency.

802.11n (20MHz): 1TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

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	68.3 PK	74.0	-5.7	1.40 H	311	37.00	31.30
2	2390.00	52.7 AV	54.0	-1.3	1.40 H	311	21.40	31.30
3	*2412.00	107.3 PK			1.33 H	310	75.90	31.40
4	*2412.00	97.3 AV			1.33 H	310	65.90	31.40
5	4824.00	45.3 PK	74.0	-28.7	1.00 H	125	8.10	37.20
6	4824.00	32.9 AV	54.0	-21.1	1.00 H	125	-4.30	37.20
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	57.5 PK	74.0	-16.5	1.53 V	288	26.20	31.30
2	2390.00	45.8 AV	54.0	-8.2	1.53 V	288	14.50	31.30
3	*2412.00	101.7 PK			1.53 V	288	70.30	31.40
4	*2412.00	91.8 AV			1.53 V	288	60.40	31.40
5	4824.00	45.4 PK	74.0	-28.6	1.00 V	0	8.20	37.20
6	4824.00	32.8 AV	54.0	-21.2	1.00 V	0	-4.40	37.20

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).
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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.2 PK	74.0	-13.8	1.33 H	312	28.90	31.30
2	2390.00	48.6 AV	54.0	-5.4	1.33 H	312	17.30	31.30
3	*2437.00	111.5 PK			1.33 H	312	80.00	31.50
4	*2437.00	101.7 AV			1.33 H	312	70.20	31.50
5	4874.00	47.7 PK	74.0	-26.3	1.00 H	114	10.40	37.30
6	4874.00	35.6 AV	54.0	-18.4	1.00 H	114	-1.70	37.30
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	58.5 PK	74.0	-15.5	1.08 V	258	27.20	31.30
2	2390.00	46.5 AV	54.0	-7.5	1.08 V	258	15.20	31.30
3	*2437.00	107.2 PK			1.08 V	258	75.70	31.50
4	*2437.00	97.4 AV			1.08 V	258	65.90	31.50
5	4874.00	48.5 PK	74.0	-25.5	1.00 V	0	11.20	37.30
6	4874.00	34.9 AV	54.0	-19.1	1.00 V	0	-2.40	37.30

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).
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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

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	107.0 PK			1.31 H	310	75.40	31.60
2	*2462.00	97.2 AV			1.31 H	310	65.60	31.60
3	2483.50	71.7 PK	74.0	-2.3	1.29 H	308	40.10	31.60
4	2483.50	52.9 AV	54.0	-1.1	1.29 H	308	21.30	31.60
5	4924.00	46.7 PK	74.0	-27.3	1.00 H	127	9.30	37.40
6	4924.00	33.0 AV	54.0	-21.0	1.00 H	127	-4.40	37.40
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	104.8 PK			1.00 V	286	73.20	31.60
2	*2462.00	94.7 AV			1.00 V	286	63.10	31.60
3	2483.50	71.0 PK	74.0	-3.0	1.00 V	286	39.40	31.60
4	2483.50	50.9 AV	54.0	-3.1	1.00 V	286	19.30	31.60
5	4924.00	47.6 PK	74.0	-26.4	1.00 V	0	10.20	37.40
6	4924.00	34.2 AV	54.0	-19.8	1.00 V	0	-3.20	37.40

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * “: Fundamental frequency.

802.11n (20MHz): 2TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Haru Yang

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	66.1 PK	74.0	-7.9	1.34 H	312	34.80	31.30
2	2390.00	52.5 AV	54.0	-1.5	1.34 H	312	21.20	31.30
3	*2412.00	108.8 PK			1.33 H	315	77.40	31.40
4	*2412.00	98.8 AV			1.33 H	315	67.40	31.40
5	4824.00	47.0 PK	74.0	-27.0	1.00 H	164	9.80	37.20
6	4824.00	36.5 AV	54.0	-17.5	1.00 H	164	-0.70	37.20
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	62.8 PK	74.0	-11.2	1.36 V	283	31.50	31.30
2	2390.00	47.8 AV	54.0	-6.2	1.36 V	283	16.50	31.30
3	*2412.00	103.4 PK			1.36 V	283	72.00	31.40
4	*2412.00	93.8 AV			1.36 V	283	62.40	31.40
5	4824.00	47.4 PK	74.0	-26.6	1.24 V	206	10.20	37.20
6	4824.00	39.0 AV	54.0	-15.0	1.24 V	206	1.80	37.20

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).
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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Haru Yang

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	64.8 PK	74.0	-9.2	1.32 H	313	33.50	31.30
2	2390.00	51.0 AV	54.0	-3.0	1.32 H	313	19.70	31.30
3	*2437.00	114.7 PK			1.33 H	314	83.20	31.50
4	*2437.00	104.7 AV			1.33 H	314	73.20	31.50
5	4874.00	52.0 PK	74.0	-22.0	1.13 H	161	14.70	37.30
6	4874.00	40.0 AV	54.0	-14.0	1.13 H	161	2.70	37.30

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	65.1 PK	74.0	-8.9	1.71 V	278	33.80	31.30
2	2390.00	48.7 AV	54.0	-5.3	1.71 V	278	17.40	31.30
3	*2437.00	111.2 PK			1.66 V	278	79.70	31.50
4	*2437.00	100.3 AV			1.66 V	278	68.80	31.50
5	4874.00	51.0 PK	74.0	-23.0	1.22 V	211	13.70	37.30
6	4874.00	38.7 AV	54.0	-15.3	1.22 V	211	1.40	37.30

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).
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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Haru Yang

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	109.6 PK			1.32 H	312	78.00	31.60
2	*2462.00	98.5 AV			1.32 H	312	66.90	31.60
3	2483.50	67.5 PK	74.0	-6.5	1.27 H	314	35.90	31.60
4	2483.50	52.7 AV	54.0	-1.3	1.27 H	314	21.10	31.60
5	4924.00	46.7 PK	74.0	-27.3	1.06 H	145	9.30	37.40
6	4924.00	34.2 AV	54.0	-19.8	1.06 H	145	-3.20	37.40

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	103.0 PK			1.66 V	279	71.40	31.60
2	*2462.00	93.2 AV			1.66 V	279	61.60	31.60
3	2483.50	63.7 PK	74.0	-10.3	1.66 V	279	32.10	31.60
4	2483.50	47.8 AV	54.0	-6.2	1.66 V	279	16.20	31.60
5	4924.00	45.6 PK	74.0	-28.4	1.27 V	162	8.20	37.40
6	4924.00	35.2 AV	54.0	-18.8	1.27 V	162	-2.20	37.40

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * ”: Fundamental frequency.

802.11n (40MHz): 1TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

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	66.8 PK	74.0	-7.2	1.38 H	314	35.50	31.30
2	2390.00	52.7 AV	54.0	-1.3	1.38 H	314	21.40	31.30
3	*2422.00	99.9 PK			1.38 H	314	68.50	31.40
4	*2422.00	91.4 AV			1.38 H	314	60.00	31.40
5	4844.00	45.9 PK	74.0	-28.1	1.00 H	123	8.60	37.30
6	4844.00	33.9 AV	54.0	-20.1	1.00 H	123	-3.40	37.30
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	62.1 PK	74.0	-11.9	1.00 V	278	30.80	31.30
2	2390.00	49.1 AV	54.0	-4.9	1.00 V	278	17.80	31.30
3	*2422.00	97.6 PK			1.00 V	278	66.20	31.40
4	*2422.00	88.5 AV			1.00 V	278	57.10	31.40
5	4844.00	46.2 PK	74.0	-27.8	1.00 V	0	8.90	37.30
6	4844.00	33.3 AV	54.0	-20.7	1.00 V	0	-4.00	37.30

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * ”: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

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	67.9 PK	74.0	-6.1	1.32 H	311	36.60	31.30
2	2390.00	53.0 AV	54.0	-1.0	1.32 H	311	21.70	31.30
3	*2437.00	105.8 PK			1.32 H	311	74.30	31.50
4	*2437.00	96.1 AV			1.32 H	311	64.60	31.50
5	4874.00	46.8 PK	74.0	-27.2	1.00 H	155	9.50	37.30
6	4874.00	33.7 AV	54.0	-20.3	1.00 H	155	-3.60	37.30
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	66.7 PK	74.0	-7.3	1.00 V	279	35.40	31.30
2	2390.00	51.0 AV	54.0	-3.0	1.00 V	279	19.70	31.30
3	*2437.00	101.5 PK			1.00 V	279	70.00	31.50
4	*2437.00	93.0 AV			1.00 V	279	61.50	31.50
5	4874.00	46.1 PK	74.0	-27.9	1.00 V	138	8.80	37.30
6	4874.00	33.5 AV	54.0	-20.5	1.00 V	138	-3.80	37.30

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * ”: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang

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	101.5 PK			1.31 H	310	70.00	31.50
2	*2452.00	92.4 AV			1.31 H	310	60.90	31.50
3	2483.50	70.4 PK	74.0	-3.6	1.31 H	310	38.80	31.60
4	2483.50	52.8 AV	54.0	-1.2	1.31 H	310	21.20	31.60
5	4904.00	46.3 PK	74.0	-27.7	1.00 H	155	8.90	37.40
6	4904.00	33.8 AV	54.0	-20.2	1.00 H	155	-3.60	37.40
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	98.4 PK			1.00 V	279	66.90	31.50
2	*2452.00	89.4 AV			1.00 V	279	57.90	31.50
3	2483.50	67.5 PK	74.0	-6.5	1.00 V	279	35.90	31.60
4	2483.50	49.9 AV	54.0	-4.1	1.00 V	279	18.30	31.60
5	4904.00	46.5 PK	74.0	-27.5	1.00 V	0	9.10	37.40
6	4904.00	33.5 AV	54.0	-20.5	1.00 V	0	-3.90	37.40

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * “: Fundamental frequency.

802.11n (40MHz): 2TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Haru Yang

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	67.7 PK	74.0	-6.3	1.10 H	319	36.40	31.30
2	2390.00	52.6 AV	54.0	-1.4	1.10 H	319	21.30	31.30
3	*2422.00	103.6 PK			1.31 H	311	72.20	31.40
4	*2422.00	94.3 AV			1.31 H	311	62.90	31.40
5	4844.00	47.1 PK	74.0	-26.9	1.09 H	144	9.80	37.30
6	4844.00	33.8 AV	54.0	-20.2	1.09 H	144	-3.50	37.30
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	63.9 PK	74.0	-10.1	1.64 V	263	32.60	31.30
2	2390.00	48.8 AV	54.0	-5.2	1.64 V	263	17.50	31.30
3	*2422.00	99.3 PK			1.64 V	263	67.90	31.40
4	*2422.00	89.4 AV			1.64 V	263	58.00	31.40
5	4844.00	46.1 PK	74.0	-27.9	1.28 V	181	8.80	37.30
6	4844.00	34.1 AV	54.0	-19.9	1.28 V	181	-3.20	37.30

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).
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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Haru Yang

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	109.9 PK			1.31 H	220	78.40	31.50
2	*2437.00	98.1 AV			1.31 H	220	66.60	31.50
3	2483.50	67.1 PK	74.0	-6.9	1.33 H	218	35.50	31.60
4	2483.50	53.0 AV	54.0	-1.0	1.33 H	218	21.40	31.60
5	4874.00	46.1 PK	74.0	-27.9	1.09 H	157	8.80	37.30
6	4874.00	34.1 AV	54.0	-19.9	1.09 H	157	-3.20	37.30
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	103.8 PK			1.70 V	263	72.30	31.50
2	*2437.00	93.0 AV			1.70 V	263	61.50	31.50
3	2483.50	62.9 PK	74.0	-11.1	1.70 V	263	31.30	31.60
4	2483.50	48.7 AV	54.0	-5.3	1.70 V	263	17.10	31.60
5	4874.00	46.0 PK	74.0	-28.0	1.18 V	164	8.70	37.30
6	4874.00	34.3 AV	54.0	-19.7	1.18 V	164	-3.00	37.30

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * ”: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Haru Yang

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	103.5 PK			1.30 H	314	72.00	31.50
2	*2452.00	93.7 AV			1.30 H	314	62.20	31.50
3	2483.50	68.1 PK	74.0	-5.9	1.29 H	312	36.50	31.60
4	2483.50	52.8 AV	54.0	-1.2	1.29 H	312	21.20	31.60
5	4904.00	45.9 PK	74.0	-28.1	1.16 H	183	8.50	37.40
6	4904.00	33.7 AV	54.0	-20.3	1.16 H	183	-3.70	37.40
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	100.4 PK			1.67 V	285	68.90	31.50
2	*2452.00	89.2 AV			1.67 V	285	57.70	31.50
3	2483.50	62.2 PK	74.0	-11.8	1.67 V	285	30.60	31.60
4	2483.50	48.7 AV	54.0	-5.3	1.67 V	285	17.10	31.60
5	4904.00	46.3 PK	74.0	-27.7	1.23 V	137	8.90	37.40
6	4904.00	34.4 AV	54.0	-19.6	1.23 V	137	-3.00	37.40

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).
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 : 802.11n (20MHz): 2TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Aska Huang
TEST MODE	A		

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	107.67	31.9 QP	43.5	-11.6	1.25 H	241	21.50	10.40
2	249.60	39.3 QP	46.0	-6.7	1.00 H	100	26.20	13.10
3	500.42	40.2 QP	46.0	-5.8	1.75 H	337	20.20	20.00
4	624.85	36.4 QP	46.0	-9.6	1.25 H	328	14.00	22.40
5	799.84	37.7 QP	46.0	-8.3	1.00 H	235	12.00	25.70
6	834.84	42.0 QP	46.0	-4.0	1.00 H	133	15.90	26.10
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	62.27	34.8 QP	40.0	-5.2	1.00 V	10	21.50	13.30
2	105.73	32.0 QP	43.5	-11.5	1.00 V	64	21.80	10.20
3	249.60	32.8 QP	46.0	-13.2	1.75 V	178	19.70	13.10
4	323.49	28.5 QP	46.0	-17.5	1.00 V	196	12.90	15.60
5	500.42	37.8 QP	46.0	-8.2	1.00 V	10	17.80	20.00
6	834.84	41.7 QP	46.0	-4.3	1.50 V	256	15.60	26.10

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Aska Huang
TEST MODE	B		

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	187.21	38.5 QP	43.5	-5.0	1.97 H	263	26.40	12.10
2	210.08	40.0 QP	43.5	-3.5	1.00 H	237	28.50	11.50
3	286.55	36.2 QP	46.0	-9.8	1.00 H	76	21.70	14.50
4	500.42	37.1 QP	46.0	-8.9	1.50 H	136	17.10	20.00
5	624.85	39.6 QP	46.0	-6.4	1.25 H	310	17.20	22.40
6	799.84	34.5 QP	46.0	-11.5	1.00 H	208	8.80	25.70

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	45.45	30.9 QP	40.0	-9.1	1.25 V	352	16.90	14.00
2	187.39	37.5 QP	43.5	-6.0	1.75 V	64	25.50	12.00
3	208.77	38.0 QP	43.5	-5.5	1.75 V	34	26.60	11.40
4	282.66	34.3 QP	46.0	-11.7	1.25 V	169	20.00	14.30
5	500.42	34.0 QP	46.0	-12.0	1.50 V	169	14.00	20.00
6	624.85	35.9 QP	46.0	-10.1	2.00 V	235	13.50	22.40

- 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).
 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	100289	Nov. 19, 2011	Nov. 18, 2012
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 22, 2011	Dec. 21, 2012
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Dec. 30, 2011	Dec. 29, 2012
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Jul. 07, 2011	Jul. 06, 2012
V-LISN SCHWARZBECK	NNBL 8226-2	8226-142	Jun. 30, 2011	Jun. 29, 2012
LISN ROHDE & SCHWARZ	ENV216	100072	Jun. 10, 2011	Jun. 09, 2012
Software ADT	ADT_Cond_ V7.3.7	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 2.
3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

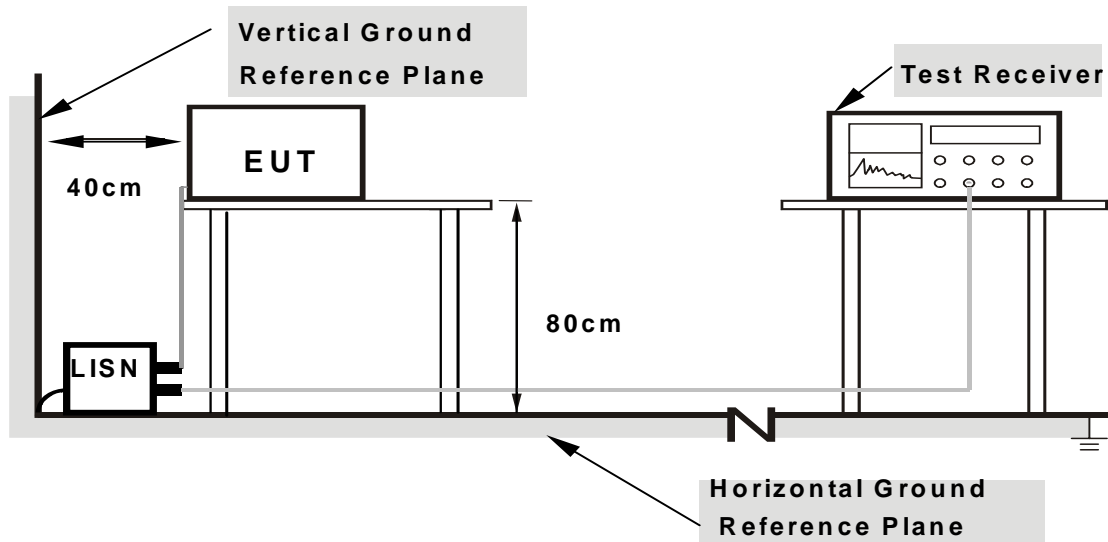
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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.

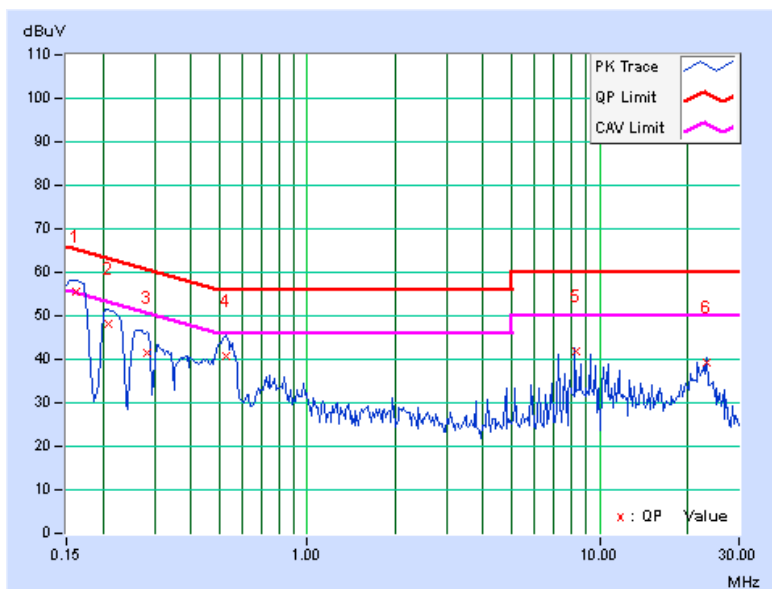
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 802.11n (20MHz): 2TX

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	A		

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	0.16172	0.17	55.27	42.79	55.44	42.96	65.38	55.38	-9.94	-12.42
2	0.20859	0.17	47.82	32.00	47.99	32.17	63.26	53.26	-15.27	-21.09
3	0.28281	0.18	41.16	22.78	41.34	22.96	60.73	50.73	-19.39	-27.77
4	0.52500	0.21	40.64	28.55	40.85	28.76	56.00	46.00	-15.15	-17.24
5	8.26153	0.45	41.39	36.91	41.84	37.36	60.00	50.00	-18.16	-12.64
6	23.12891	0.70	38.44	35.46	39.14	36.16	60.00	50.00	-20.86	-13.84

- 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.



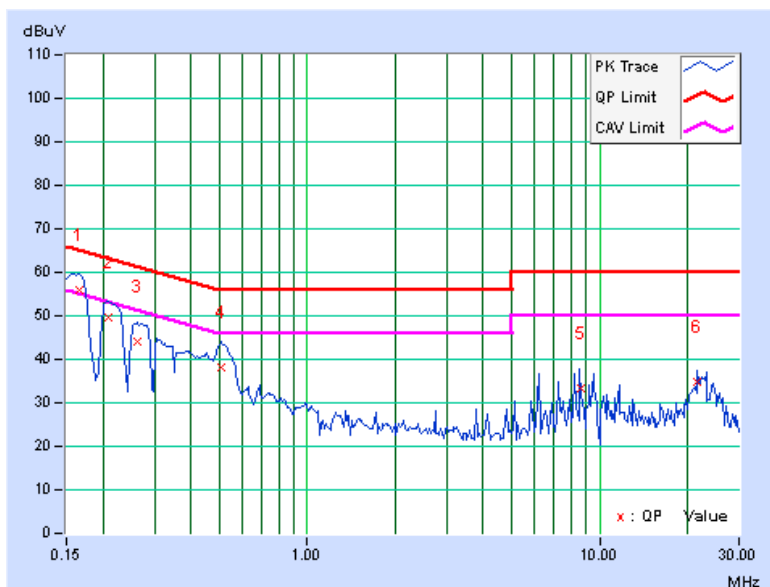


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	A		

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	0.16562	0.16	55.68	38.88	55.84	39.04	65.18	55.18	-9.33	-16.13
2	0.20859	0.15	49.49	32.24	49.64	32.39	63.26	53.26	-13.62	-20.87
3	0.26328	0.16	43.99	26.33	44.15	26.49	61.33	51.33	-17.18	-24.84
4	0.50547	0.18	38.08	23.94	38.26	24.12	56.00	46.00	-17.74	-21.88
5	8.59509	0.53	32.88	28.26	33.41	28.79	60.00	50.00	-26.59	-21.21
6	21.66406	0.80	33.85	29.15	34.65	29.95	60.00	50.00	-25.35	-20.05

- 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.



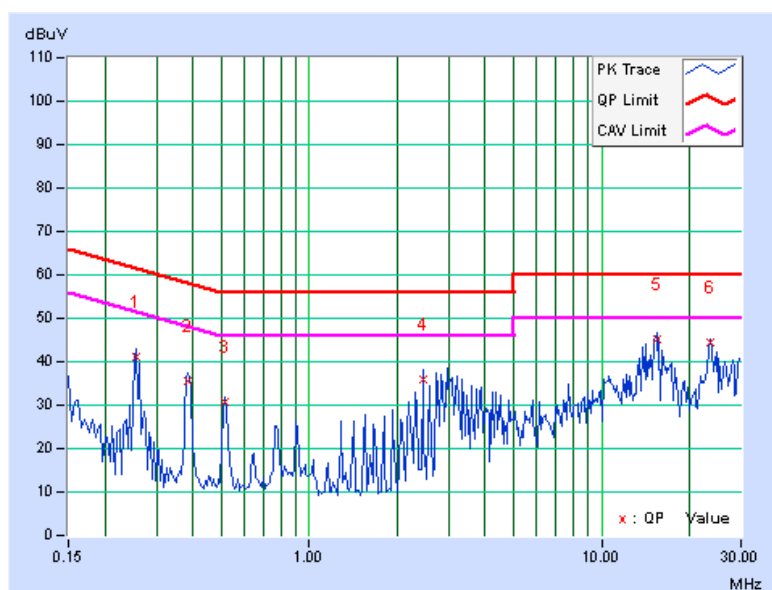


A D T

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	B		

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	0.25547	0.16	41.11	30.83	41.27	30.99	61.58	51.58	-20.31	-20.59
2	0.38438	0.17	35.51	33.77	35.68	33.94	58.18	48.18	-22.51	-14.25
3	0.51328	0.17	30.42	28.69	30.59	28.86	56.00	46.00	-25.41	-17.14
4	2.44141	0.28	35.50	26.19	35.78	26.47	56.00	46.00	-20.22	-19.53
5	15.46094	0.54	44.69	44.28	45.23	44.82	60.00	50.00	-14.77	-5.18
6	23.51563	0.59	43.82	39.47	44.41	40.06	60.00	50.00	-15.59	-9.94

- 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.



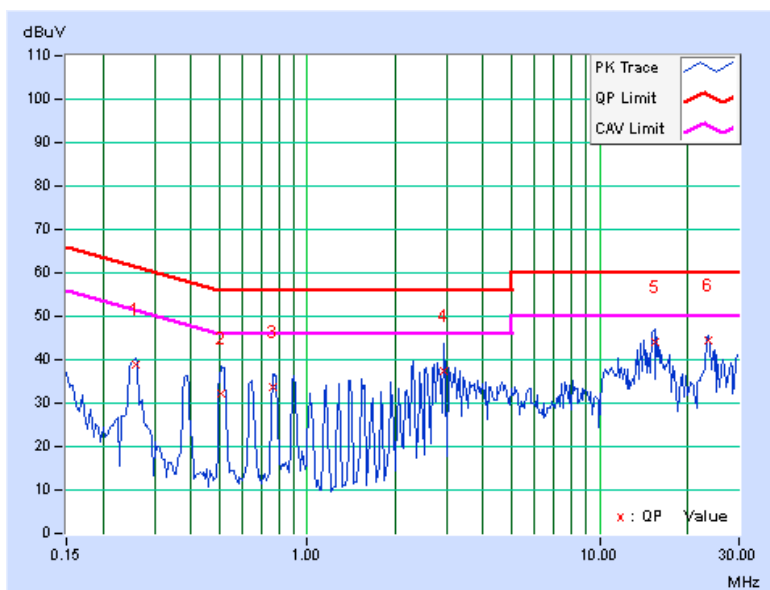


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	B		

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	0.25938	0.15	38.77	38.15	38.92	38.30	61.45	51.45	-22.54	-13.16
2	0.50547	0.17	32.16	22.19	32.33	22.36	56.00	46.00	-23.67	-23.64
3	0.76328	0.18	33.53	25.61	33.71	25.79	56.00	46.00	-22.29	-20.21
4	2.93647	0.30	36.97	25.68	37.27	25.98	56.00	46.00	-18.73	-20.02
5	15.46094	0.61	43.38	39.24	43.99	39.85	60.00	50.00	-16.01	-10.15
6	23.51172	0.66	43.66	37.91	44.32	38.57	60.00	50.00	-15.68	-11.43

- 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.

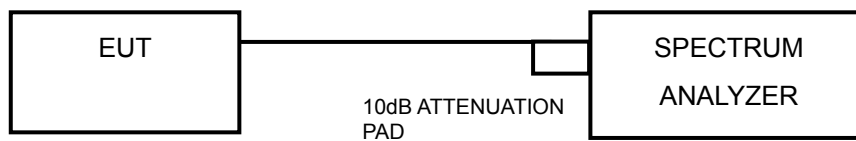


4.3 6dB BANDWIDTH MEASUREMENT

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

1. Set resolution bandwidth (RBW) = approximately 1% of the emission bandwidth
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. 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	8.61	0.5	PASS
6	2437	8.13	0.5	PASS
11	2462	8.10	0.5	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	15.70	0.5	PASS
6	2437	15.88	0.5	PASS
11	2462	15.92	0.5	PASS

802.11n (20MHz): 1TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.41	0.5	PASS
6	2437	17.24	0.5	PASS
11	2462	17.31	0.5	PASS

802.11n (20MHz): 2TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	17.00	16.58	0.5	PASS
6	2437	17.22	17.05	0.5	PASS
11	2462	17.06	16.87	0.5	PASS



A D T

802.11n (40MHz): 1TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	35.83	0.5	PASS
6	2437	35.60	0.5	PASS
9	2452	35.73	0.5	PASS

802.11n (40MHz): 2TX

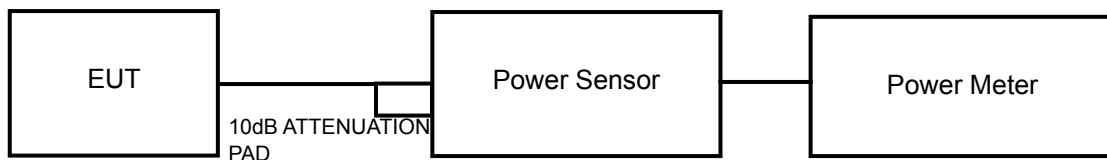
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	35.47	35.88	0.5	PASS
6	2437	35.57	35.38	0.5	PASS
9	2452	35.61	35.88	0.5	PASS

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: 1 Watt (30dBm)

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

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the peak 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)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	183.2	22.63	30	PASS
6	2437	214.3	23.31	30	PASS
11	2462	191.9	22.83	30	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	216.3	23.35	30	PASS
6	2437	269.8	24.31	30	PASS
11	2462	215.8	23.34	30	PASS

802.11n (20MHz): 1TX

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	172.6	22.37	30	PASS
6	2437	269.2	24.30	30	PASS
11	2462	195.4	22.91	30	PASS

802.11n (20MHz): 2TX

CHAN.	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	20.39	21.03	236.2	23.7	30	PASS
6	2437	23.02	24.12	458.7	26.6	30	PASS
11	2462	20.48	20.96	236.4	23.7	30	PASS



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802.11n (40MHz): 1TX

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
3	2422	105.7	20.24	30	PASS
6	2437	192.8	22.85	30	PASS
9	2452	150.0	21.76	30	PASS

802.11n (40MHz): 2TX

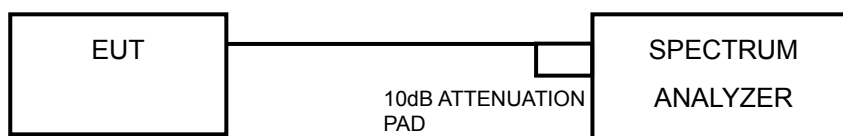
CHAN.	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	18.57	19.63	163.8	22.1	30	PASS
6	2437	21.39	22.46	313.9	25.0	30	PASS
9	2452	19.31	20.21	190.3	22.8	30	PASS

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

1. Set the RBW = 100 kHz, VBW = 300 kHz, Detector = peak.
2. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
3. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(3 \text{ kHz}/100\text{kHz})$

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/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	9.78	-5.45	8	PASS
6	2437	10.30	-4.93	8	PASS
11	2462	10.30	-4.93	8	PASS

802.11g

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	3.62	-11.61	8	PASS
6	2437	4.79	-10.44	8	PASS
11	2462	3.77	-11.46	8	PASS

802.11n (20MHz): 1TX

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	2.42	-12.81	8	PASS
6	2437	4.20	-11.03	8	PASS
11	2462	2.96	-12.27	8	PASS

802.11n (20MHz): 2TX

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	1.12	-14.11	3.01	-11.10	8	PASS
	6	2437	3.62	-11.61	3.01	-8.60	8	PASS
	11	2462	1.41	-13.82	3.01	-10.81	8	PASS
1	1	2412	1.57	-13.66	3.01	-10.65	8	PASS
	6	2437	4.48	-10.75	3.01	-7.74	8	PASS
	11	2462	1.36	-13.87	3.01	-10.86	8	PASS

802.11n (40MHz): 1TX

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-2.53	-17.76	8	PASS
6	2437	0.04	-15.19	8	PASS
9	2452	-0.92	-16.15	8	PASS

802.11n (40MHz): 2TX

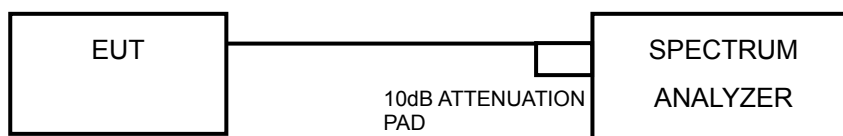
TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-3.57	-18.8	3.01	-15.79	8	PASS
	6	2437	-0.81	-16.04	3.01	-13.03	8	PASS
	9	2452	-2.91	-18.14	3.01	-15.13	8	PASS
1	3	2422	-3.15	-18.38	3.01	-15.37	8	PASS
	6	2437	-0.37	-15.6	3.01	-12.59	8	PASS
	9	2452	-2.51	-17.74	3.01	-14.73	8	PASS

4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

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 \geq 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 OOB

1. Set RBW = 100 kHz.
2. Set VBW \geq 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. 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.

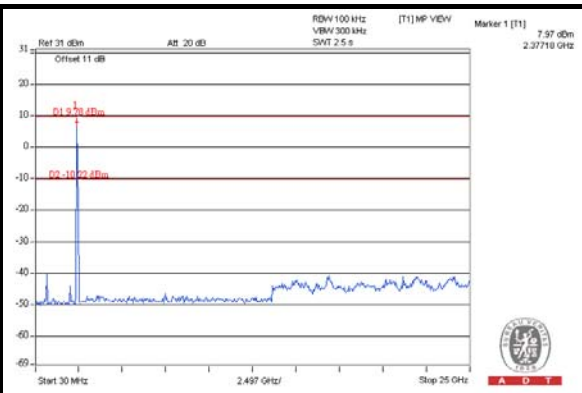
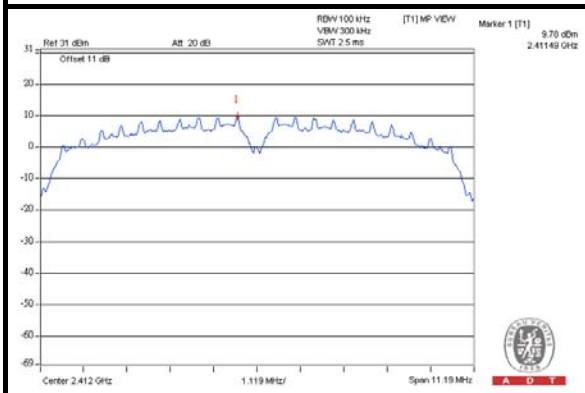
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



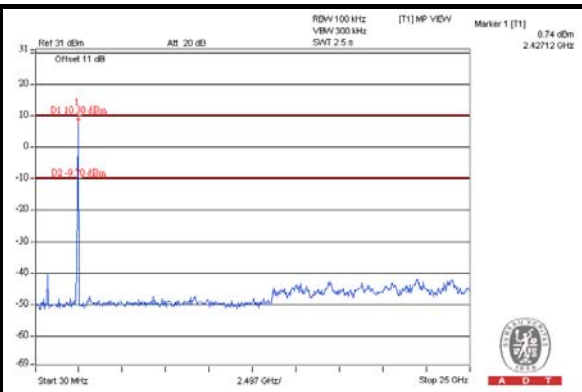
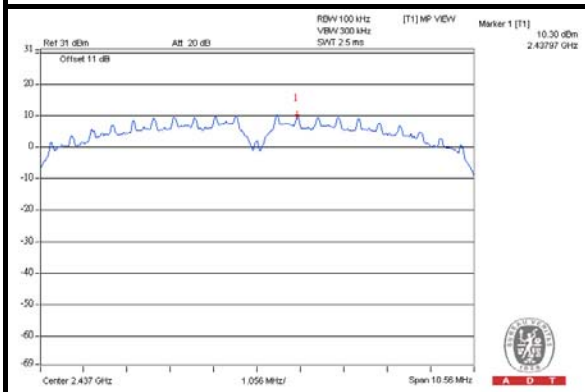
A D T

802.11b

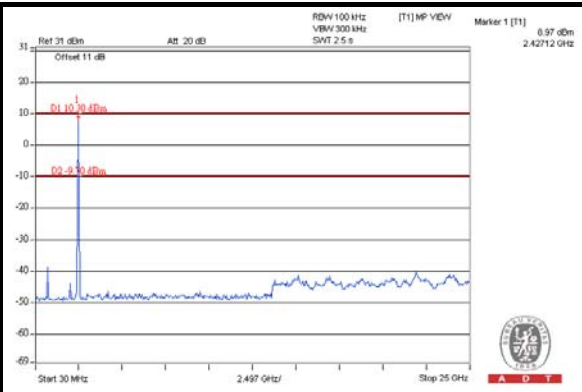
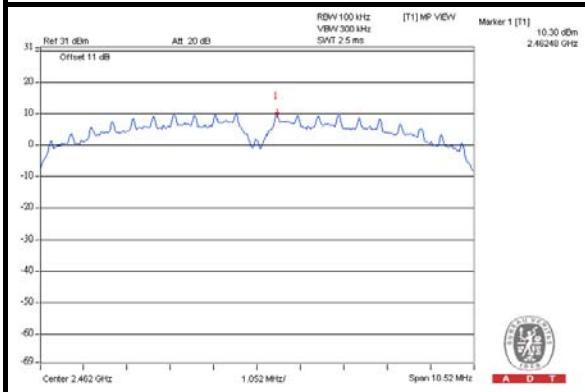
CH 1



CH 6



CH 11

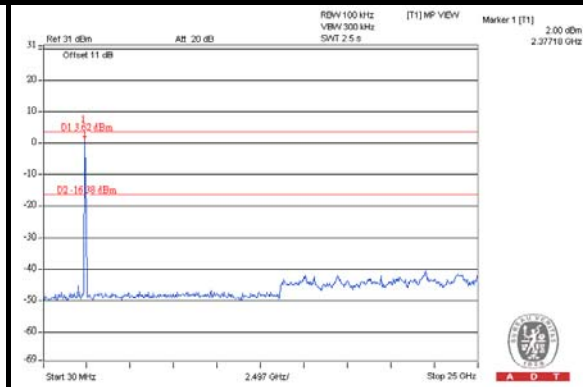
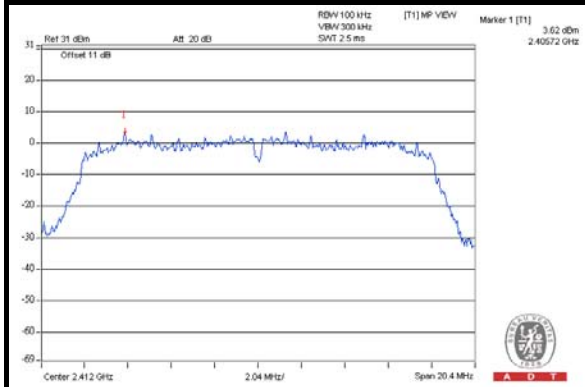




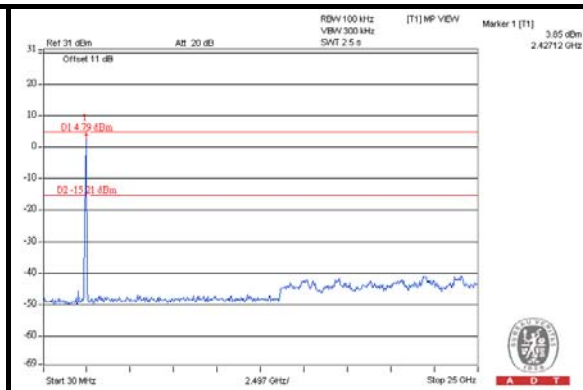
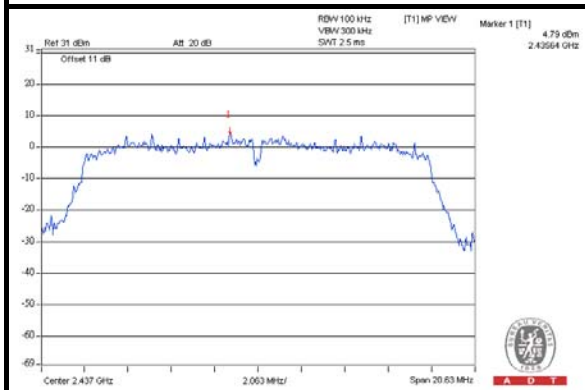
A D T

802.11g

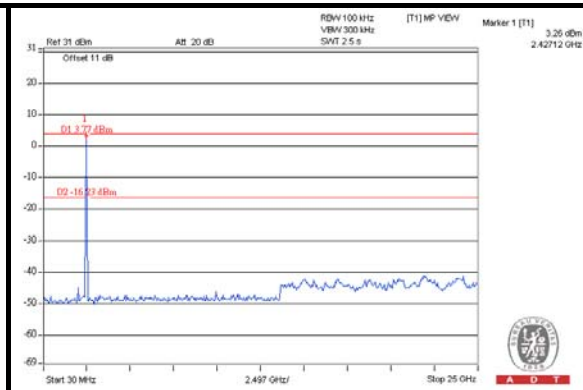
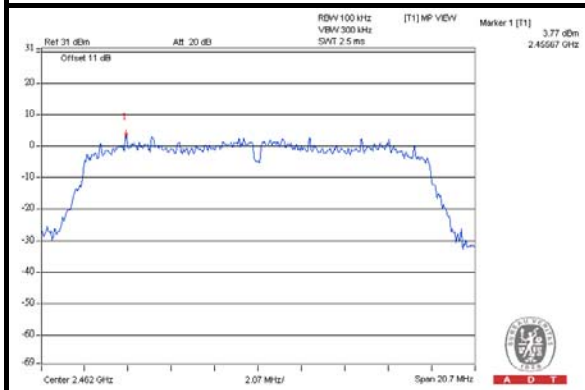
CH 1



CH 6



CH 11

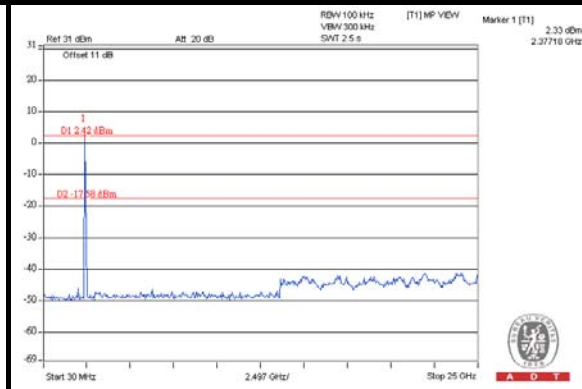
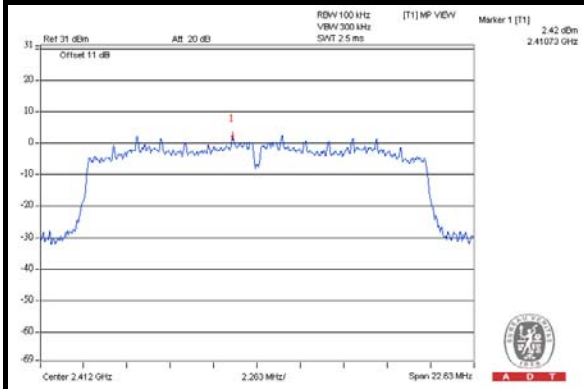




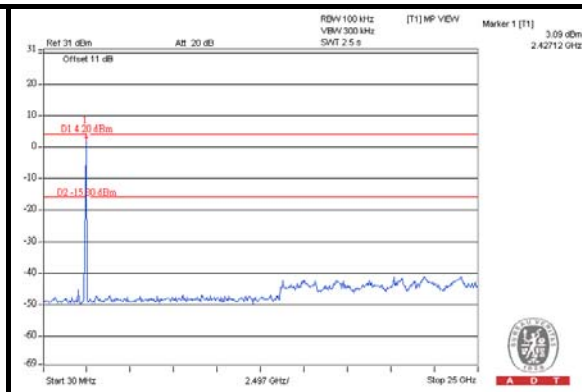
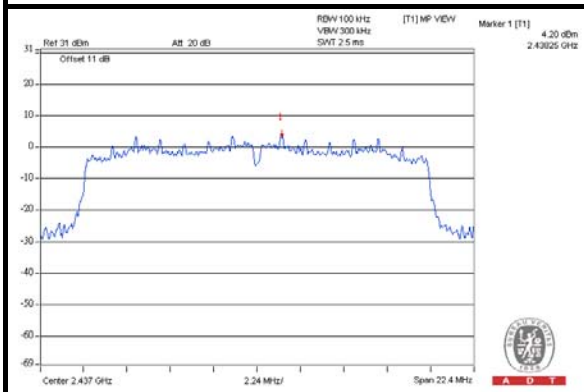
A D T

802.11n (20MHz): 1TX

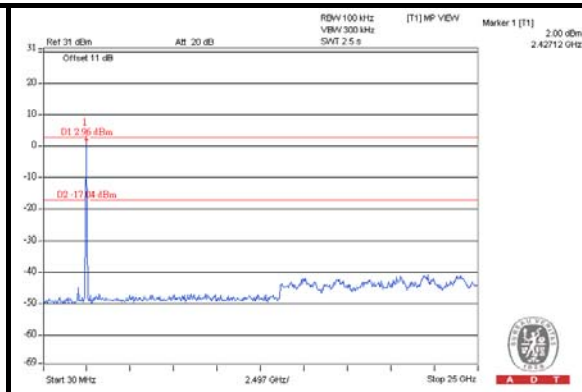
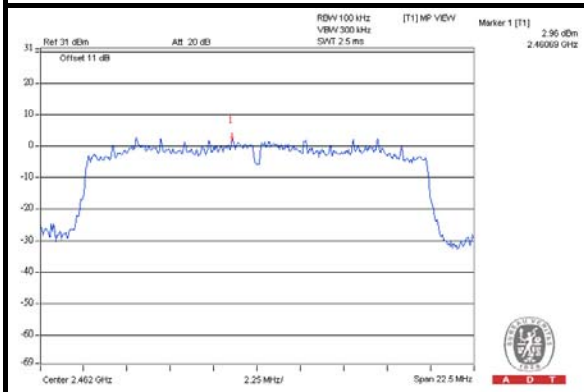
CH 1



CH 6



CH 11

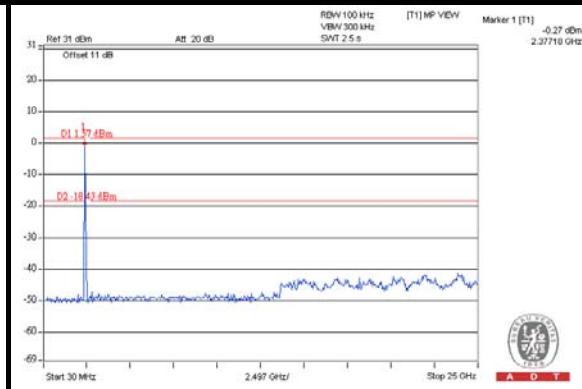
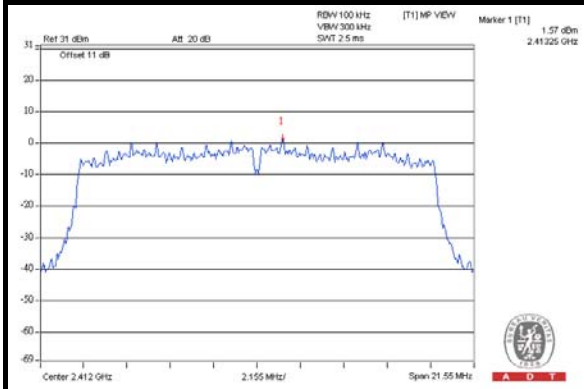




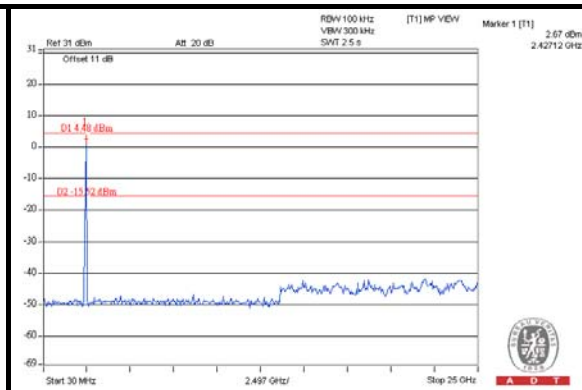
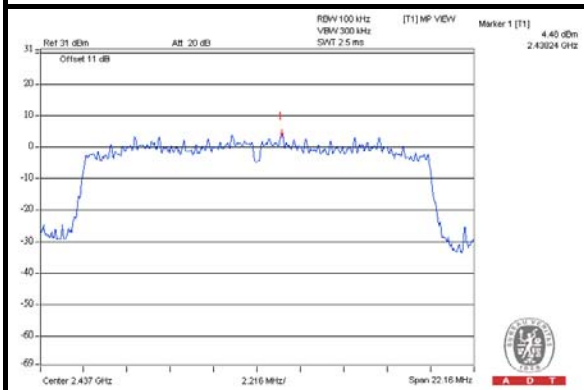
A D T

802.11n (20MHz): 2TX

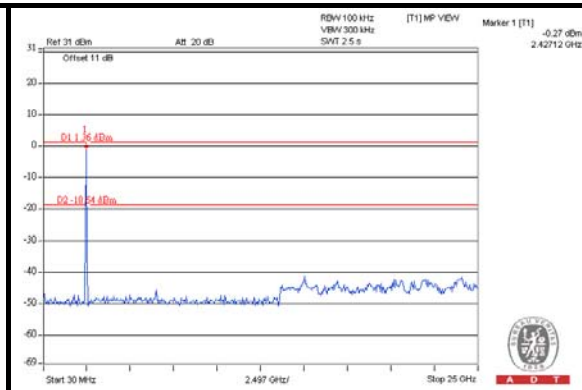
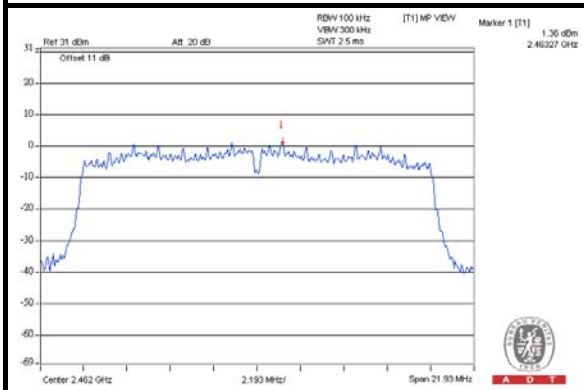
CH 1



CH 6



CH 11

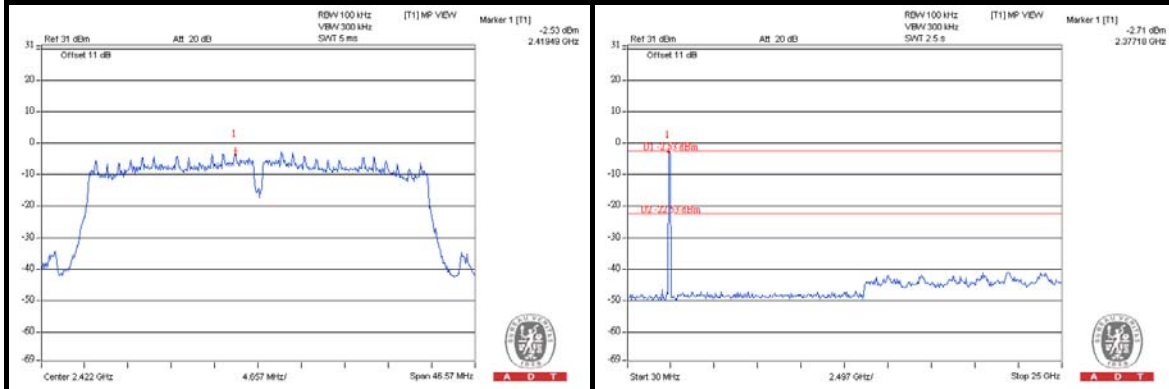




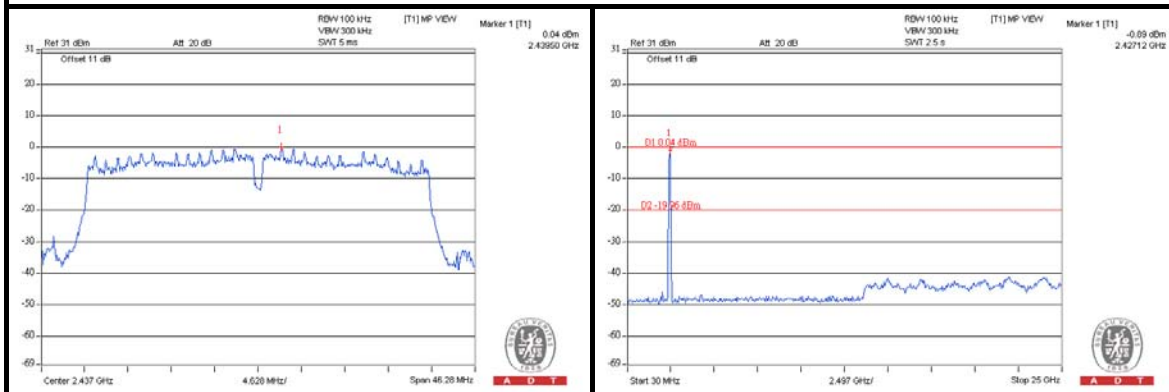
A D T

802.11n (40MHz): 1TX

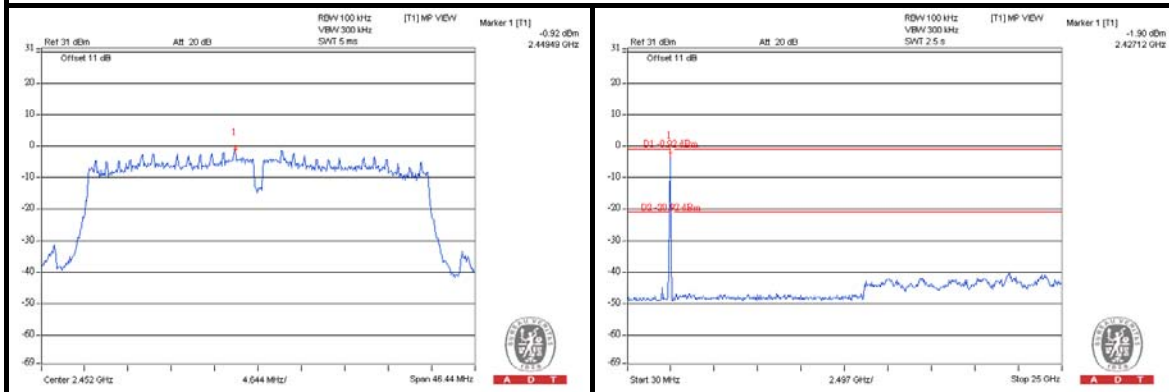
CH 3



CH 6



CH 9

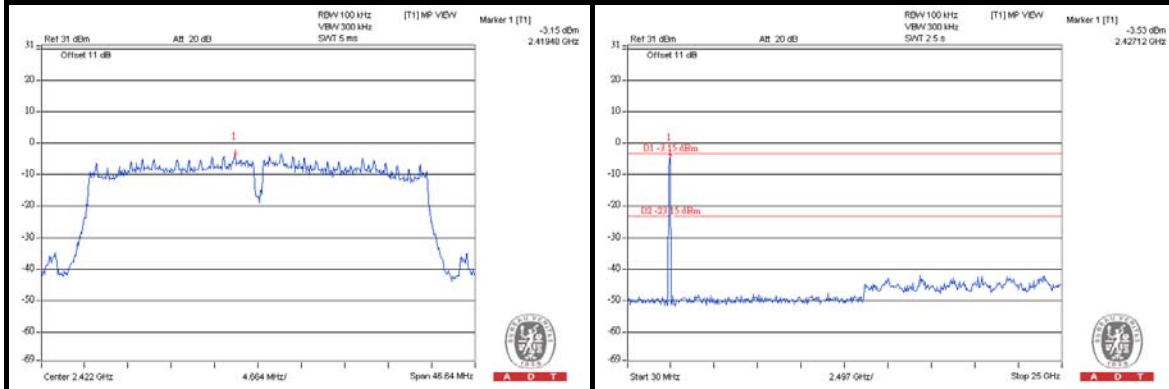




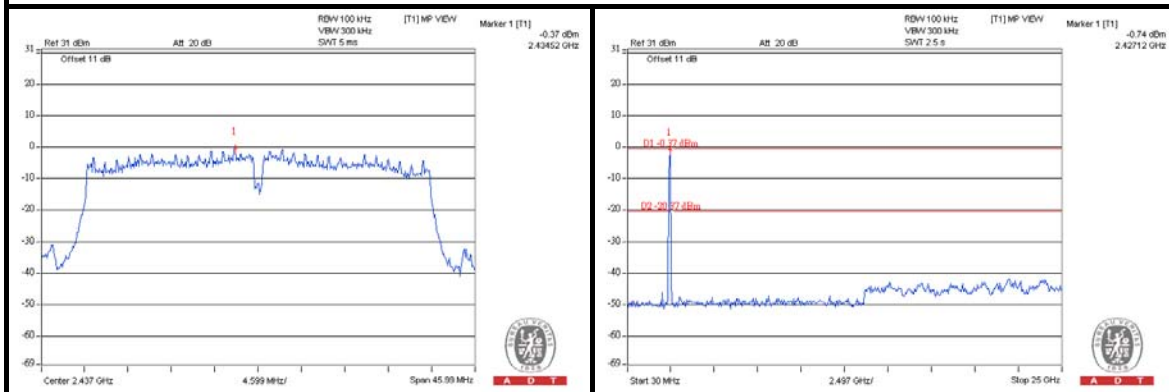
A D T

802.11n (40MHz): 2TX

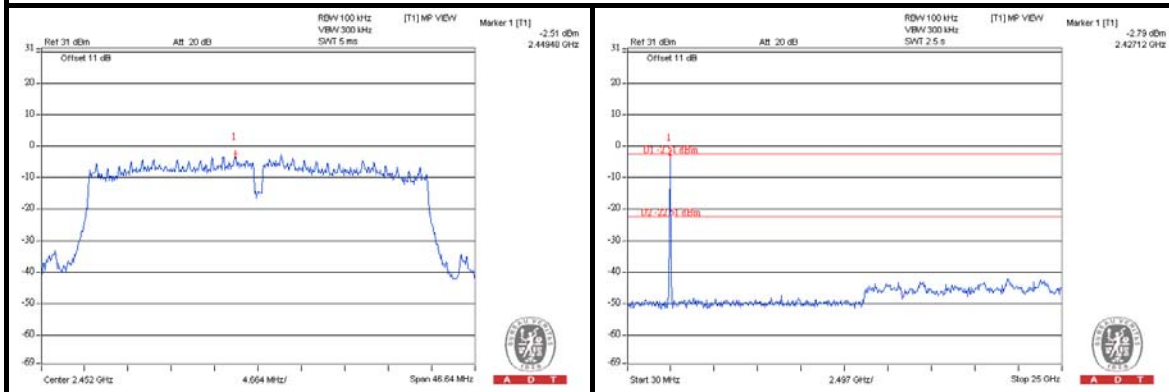
CH 3



CH 6



CH 9



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.

Copies of accreditation and authorization certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5.phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab

Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab

Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab

Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.adt.com.tw

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

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

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

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