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FCC TEST REPORT (15.247)

REPORT NO.: RF130715C31

MODEL NO.: I-241W-U

FCC ID: H8N-RTF3026VWD25

RECEIVED: Jul. 15, 2013

TESTED: Aug. 02 ~ Aug. 15, 2013

ISSUED: Aug. 19, 2013

APPLICANT: Askey Computer Corp

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130715C31	Original release	Aug. 19, 2013



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1. CERTIFICATION

PRODUCT: GPON ONT
MODEL NO.: I-241W-U
BRAND: Alcatel-Lucent
APPLICANT: Askey Computer Corp
TESTED: Aug. 02 ~ Aug. 15, 2013
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
ANSI C63.10-2009

The above equipment (model: I-241W-U) 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 : Maggie Wu , **DATE :** Aug. 19, 2013
Maggie Wu / Specialist

APPROVED BY : Ken Liu , **DATE :** Aug. 19, 2013
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 -10.57dB at 0.17734MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 2483.50 & 5725.00MHz.
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	No antenna connector is used.

2.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 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	GPON ONT
MODEL NO.	I-241W-U
POWER SUPPLY	12Vdc from 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 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300.0Mbps
OPERATING FREQUENCY	2.4GHz: 2412 ~ 2462MHz 5.0GHz: 5745 ~ 5825MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz) 5.0GHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
OUTPUT POWER	900.742 mW for 2412 ~ 2462MHz 477.082 mW for 5745 ~ 5825MHz
ANTENNA TYPE	Refer to NOTE 2 as below
ANTENNA CONNECTOR	NA
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
802.11a	1TX
802.11n (20MHz)	1TX / 2TX
802.11n (40MHz)	1TX / 2TX



2. The information of antenna is presented as below.

ANTENNA	TYPE	GAIN (dBi)	
		2.4G	5G
Ant. 0	Printed	NA	3.29
Ant. 1	Printed	3.35	4.38
Ant. 2	Printed	2.54	NA

3. The EUT consumes power from the following adapter.

BRAND:	Sunny
MODEL:	SYS1462-3012-T3
INPUT:	100-240Vac, 50-60Hz, 1.0A MAX
OUTPUT:	12Vdc, 2.5A, 30W MAX
POWER LINE:	DC 1.5m non-shielded cable w/o core

4. 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

FOR 2.4GHz:

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		

FOR 5.0GHz (5745 ~ 5825MHz):

5 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz



3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

FOR 2.4GHz:

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

Where **RE≥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 EMISSIONS 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)	TX Function
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	1TX
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	1TX
-	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	1TX
-	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	1TX
-	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2	2TX
-	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	15.0	2TX

RADIATED EMISSIONS 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)	TX Function
-	802.11n (20MHz)	1 to 11	6	OFDM	BPSK	7.2	2TX

POWER LINE CONDUCTED EMISSIONS 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)	TX Function
-	802.11n (20MHz)	1 to 11	6	OFDM	BPSK	7.2	2TX



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)	TX Function
-	802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0	1TX
-	802.11g	1 to 11	1, 11	OFDM	BPSK	6.0	1TX
-	802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	6.5	1TX
-	802.11n (40MHz)	3 to 9	3, 9	OFDM	BPSK	13.5	1TX
-	802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	7.2	2TX
-	802.11n (40MHz)	3 to 9	3, 9	OFDM	BPSK	15.0	2TX

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX Function
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	1TX
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	1TX
-	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	1TX
-	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	1TX
-	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2	2TX
-	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	15.0	2TX

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	23deg. C, 64%RH	120Vac, 60Hz	Brad Tung
RE<1G	23deg. C, 64%RH	120Vac, 60Hz	Brad Tung
PLC	23deg. C, 65%RH	120Vac, 60Hz	Brad Tung
APCM	25deg. C, 60%RH	120Vac, 60Hz	Frank Liu



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FOR 5.0GHz (5745 ~ 5825MHz):

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

Where **RE≥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 **Z-plane**.

RADIATED EMISSIONS 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)	TX Function
-	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0	1TX
-	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	6.5	1TX
-	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5	1TX
-	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	7.2	2TX
-	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0	2TX

RADIATED EMISSIONS 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)	TX Function
-	802.11n (20MHz)	149 to 165	149	OFDM	BPSK	7.2	2TX

POWER LINE CONDUCTED EMISSIONS 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)	TX Function
-	802.11n (20MHz)	149 to 165	149	OFDM	BPSK	7.2	2TX



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)	TX Function
-	802.11a	149 to 165	149, 165	OFDM	BPSK	6.0	1TX
-	802.11n (20MHz)	149 to 165	149, 165	OFDM	BPSK	6.5	1TX
-	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5	1TX
-	802.11n (20MHz)	149 to 165	149, 165	OFDM	BPSK	7.2	2TX
-	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0	2TX

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX Function
-	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0	1TX
-	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	6.5	1TX
-	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5	1TX
-	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	7.2	2TX
-	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0	2TX

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	23deg. C, 64%RH	120Vac, 60Hz	Brad Tung
RE<1G	23deg. C, 64%RH	120Vac, 60Hz	Brad Tung
PLC	23deg. C, 65%RH	120Vac, 60Hz	Brad Tung
APCM	25deg. C, 60%RH	120Vac, 60Hz	Frank Liu



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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.

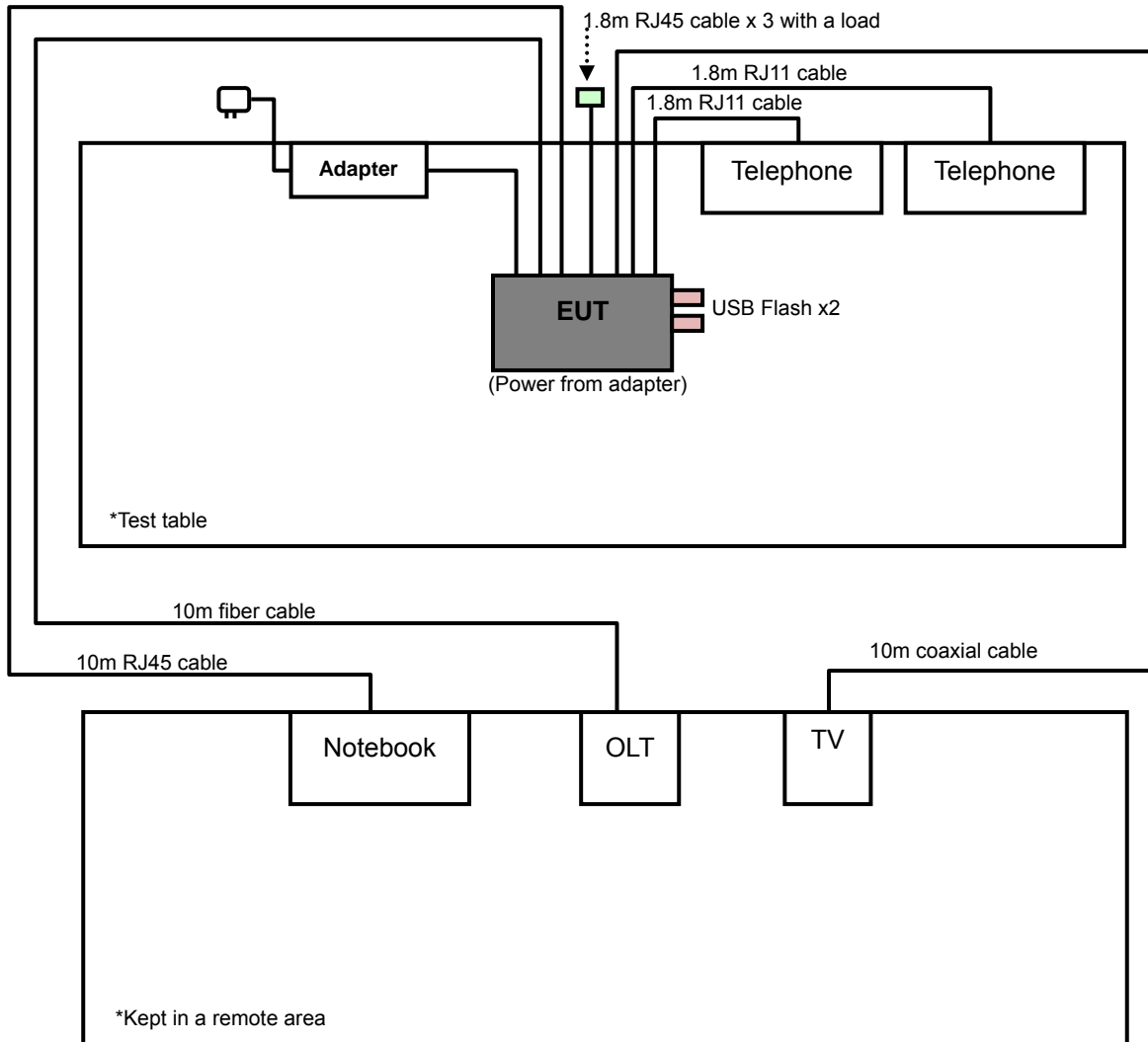
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	JETFLASH V85 4GB	Transcend	V85	569992-8209	FCC DoC Approved
2	JETFLASH V85 4GB	Transcend	V85	569992-8208	FCC DoC Approved
3	TELEPHONE	WONDER	NA	NA	NA
4	TELEPHONE	WONDER	NA	NA	NA
5	NOTEBOOK	DELL	D600	CN-0G5152-48643-4 7H-7674	FCC DoC Approved
6	TV	SONY	NA	NA	NA
7	OLT	Broad Light	BL4300	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA
3	1.8m non-shielded RJ11 cable
4	1.8m non-shielded RJ11 cable
5	10m non-shielded RJ45 cable
6	10m coaxial cable
7	10m fiber cable

NOTE:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items 5-7 acted as communication partners to transfer data.
3. Item 7 was provided by the manufacturer.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST





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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)

558074 D01 DTS Meas Guidance v03r01

662911 D01 Multiple Transmitter Output v01 r02

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 (FOR 2.4GHz BAND)

4.1 RADIATED EMISSIONS AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSIONS 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 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.



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4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 16, 2012	Nov. 15, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 28, 2013	Jan. 27, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Mar. 22, 2013	Mar. 21, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Sep. 03, 2012	Sep. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 15, 2013	Jul. 14, 2014
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier Agilent	8449B	3008A01911	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8447D	2944A10638	Oct. 25, 2012	Oct. 24, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 28, 2012	Aug. 27, 2013
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 11, 2012	Aug. 10, 2013
			Aug. 11, 2013	Aug. 10, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 25, 2012	Oct. 24, 2013
High Speed Peak Power Meter	ML2495A	0824012	Aug. 22, 2012	Aug. 21, 2013
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 calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. The test was performed in HwaYa Chamber 9.
 4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 5. The FCC Site Registration No. is 215374.
 6. The IC Site Registration No. is IC 7450F-9.



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.

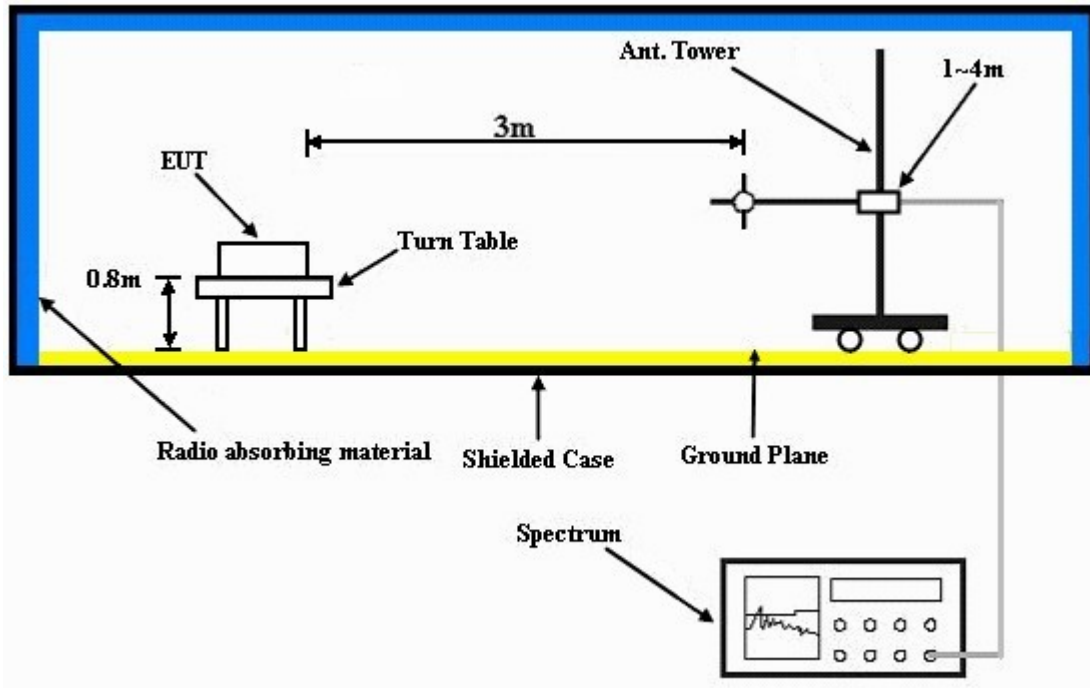
NOTE:

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 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 1kHz(Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



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

4.1.6 EUT OPERATING CONDITIONS

- Placed the EUT on the test table.
- Prepared a notebook, OLT and TV to act as communication partners and placed them outside of test area.
- The EUT linked with the telephones via RJ11 cables.
- The EUT R/W data with the USB flashes.
- The communication partner connected with EUT via a RJ45 cable, a fiber cable and a coaxial cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The communication partners 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	23deg. C, 64%RH	TESTED BY	Brad Tung

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.0 PK	74.0	-9.0	1.09 H	349	29.30	35.70
2	2390.00	52.4 AV	54.0	-1.6	1.09 H	349	16.70	35.70
3	*2412.00	114.9 PK			1.09 H	349	79.20	35.70
4	*2412.00	111.0 AV			1.09 H	349	75.30	35.70
5	4824.00	52.4 PK	74.0	-21.6	1.15 H	243	47.50	4.90
6	4824.00	39.1 AV	54.0	-14.9	1.15 H	243	34.20	4.90
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	60.9 PK	74.0	-13.1	1.20 V	29	25.20	35.70
2	2390.00	49.3 AV	54.0	-4.7	1.20 V	29	13.60	35.70
3	*2412.00	108.0 PK			1.20 V	29	72.30	35.70
4	*2412.00	104.7 AV			1.20 V	29	69.00	35.70
5	4824.00	51.9 PK	74.0	-22.1	1.20 V	167	47.00	4.90
6	4824.00	43.5 AV	54.0	-10.5	1.20 V	167	38.60	4.90

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	23deg. C, 64%RH	TESTED BY	Brad Tung

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	115.5 PK			1.09 H	344	79.70	35.80
2	*2437.00	111.8 AV			1.09 H	344	76.00	35.80
3	2483.50	63.0 PK	74.0	-11.0	1.09 H	344	27.00	36.00
4	2483.50	52.6 AV	54.0	-1.4	1.09 H	344	16.60	36.00
5	4824.00	52.5 PK	74.0	-21.5	1.20 H	235	47.60	4.90
6	4824.00	39.6 AV	54.0	-14.4	1.20 H	235	34.70	4.90
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	113.2 PK			1.05 V	97	77.40	35.80
2	*2437.00	109.3 AV			1.05 V	97	73.50	35.80
3	2483.50	62.0 PK	74.0	-12.0	1.05 V	97	26.00	36.00
4	2483.50	48.9 AV	54.0	-5.1	1.05 V	97	12.90	36.00
5	4874.00	57.9 PK	74.0	-16.1	1.04 V	199	52.90	5.00
6	4874.00	48.8 AV	54.0	-5.2	1.04 V	199	43.80	5.00

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
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	23deg. C, 64%RH	TESTED BY	Brad Tung

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	114.6 PK			1.07 H	351	78.70	35.90
2	*2462.00	110.1 AV			1.07 H	351	74.20	35.90
3	2483.50	65.8 PK	74.0	-8.2	1.07 H	351	29.80	36.00
4	2483.50	52.9 AV	54.0	-1.1	1.07 H	351	16.90	36.00
5	4924.00	52.1 PK	74.0	-21.9	1.18 H	222	47.00	5.10
6	4924.00	38.5 AV	54.0	-15.5	1.18 H	222	33.40	5.10
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	*2462.00	107.6 PK			1.19 V	23	71.70	35.90
2	*2462.00	103.1 AV			1.19 V	23	67.20	35.90
3	2483.50	61.8 PK	74.0	-12.2	1.19 V	23	25.80	36.00
4	2483.50	48.9 AV	54.0	-5.1	1.19 V	23	12.90	36.00
5	4924.00	51.1 PK	74.0	-22.9	1.20 V	160	46.00	5.10
6	4924.00	42.5 AV	54.0	-11.5	1.20 V	160	37.40	5.10

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)
– 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	23deg. C, 64%RH	TESTED BY	Brad Tung

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.6 PK	74.0	-8.4	1.10 H	343	29.90	35.70
2	2390.00	52.7 AV	54.0	-1.3	1.10 H	343	17.00	35.70
3	*2412.00	114.6 PK			1.10 H	343	78.90	35.70
4	*2412.00	102.8 AV			1.10 H	343	67.10	35.70
5	4824.00	51.2 PK	74.0	-22.8	1.18 H	129	46.30	4.90
6	4824.00	39.0 AV	54.0	-15.0	1.18 H	129	34.10	4.90
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	63.6 PK	74.0	-10.4	1.10 V	97	27.90	35.70
2	2390.00	51.2 AV	54.0	-2.8	1.10 V	97	15.50	35.70
3	*2412.00	111.7 PK			1.10 V	97	76.00	35.70
4	*2412.00	99.9 AV			1.10 V	97	64.20	35.70
5	4824.00	52.8 PK	74.0	-21.2	1.22 V	68	47.90	4.90
6	4824.00	40.0 AV	54.0	-14.0	1.22 V	68	35.10	4.90

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	23deg. C, 64%RH	TESTED BY	Brad Tung

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	116.1 PK			1.08 H	343	80.30	35.80
2	*2437.00	104.5 AV			1.08 H	343	68.70	35.80
3	2483.50	64.1 PK	74.0	-9.9	1.08 H	343	28.10	36.00
4	2483.50	52.9 AV	54.0	-1.1	1.08 H	343	16.90	36.00
5	4874.00	56.3 PK	74.0	-17.7	1.17 H	341	51.30	5.00
6	4874.00	44.8 AV	54.0	-9.2	1.17 H	341	39.80	5.00
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	*2437.00	113.1 PK			1.11 V	300	77.30	35.80
2	*2437.00	101.6 AV			1.11 V	300	65.80	35.80
3	2483.50	62.7 PK	74.0	-11.3	1.11 V	300	26.70	36.00
4	2483.50	50.5 AV	54.0	-3.5	1.11 V	300	14.50	36.00
5	4874.00	57.4 PK	74.0	-16.6	1.15 V	75	52.40	5.00
6	4874.00	45.7 AV	54.0	-8.3	1.15 V	75	40.70	5.00

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
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	23deg. C, 64%RH	TESTED BY	Brad Tung

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	115.5 PK			1.35 H	346	79.60	35.90
2	*2462.00	103.9 AV			1.35 H	346	68.00	35.90
3	2483.50	68.9 PK	74.0	-5.1	1.35 H	346	32.90	36.00
4	2483.50	52.9 AV	54.0	-1.1	1.35 H	346	16.90	36.00
5	4924.00	55.9 PK	74.0	-18.1	1.14 H	345	50.80	5.10
6	4924.00	44.2 AV	54.0	-9.8	1.14 H	345	39.10	5.10
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	*2462.00	112.2 PK			1.15 V	289	76.30	35.90
2	*2462.00	100.5 AV			1.15 V	289	64.60	35.90
3	2483.50	65.1 PK	74.0	-8.9	1.15 V	289	29.10	36.00
4	2483.50	48.5 AV	54.0	-5.5	1.15 V	289	12.50	36.00
5	4924.00	54.0 PK	74.0	-20.0	1.20 V	80	48.90	5.10
6	4924.00	42.5 AV	54.0	-11.5	1.20 V	80	37.40	5.10

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)
– 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): 1TX

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	23deg. C, 64%RH	TESTED BY	Brad Tung

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	68.9 PK	74.0	-5.1	1.30 H	71	33.20	35.70
2	2390.00	52.6 AV	54.0	-1.4	1.30 H	71	16.90	35.70
3	*2412.00	112.0 PK			1.30 H	71	76.30	35.70
4	*2412.00	100.4 AV			1.30 H	71	64.70	35.70
5	4824.00	51.9 PK	74.0	-22.1	1.22 H	50	47.00	4.90
6	4824.00	39.5 AV	54.0	-14.5	1.22 H	50	34.60	4.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.9 PK	74.0	-12.1	1.00 V	189	26.20	35.70
2	2390.00	49.6 AV	54.0	-4.4	1.00 V	189	13.90	35.70
3	*2412.00	102.2 PK			1.00 V	189	66.50	35.70
4	*2412.00	90.7 AV			1.00 V	189	55.00	35.70
5	4824.00	51.3 PK	74.0	-22.7	1.06 V	124	46.40	4.90
6	4824.00	38.9 AV	54.0	-15.1	1.06 V	124	34.00	4.90

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	23deg. C, 64%RH	TESTED BY	Brad Tung

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	115.1 PK			1.28 H	75	79.30	35.80
2	*2437.00	104.5 AV			1.28 H	75	68.70	35.80
3	2483.50	63.5 PK	74.0	-10.5	1.28 H	75	27.50	36.00
4	2483.50	52.8 AV	54.0	-1.2	1.28 H	75	16.80	36.00
5	4874.00	51.0 PK	74.0	-23.0	1.35 H	64	46.00	5.00
6	4874.00	39.1 AV	54.0	-14.9	1.35 H	64	34.10	5.00
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	*2437.00	105.3 PK			1.00 V	199	69.50	35.80
2	*2437.00	94.7 AV			1.00 V	199	58.90	35.80
3	2483.50	60.2 PK	74.0	-13.8	1.00 V	199	24.20	36.00
4	2483.50	49.4 AV	54.0	-4.6	1.00 V	199	13.40	36.00
5	4874.00	51.1 PK	74.0	-22.9	1.02 V	200	46.10	5.00
6	4874.00	39.2 AV	54.0	-14.8	1.02 V	200	34.20	5.00

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
5. “ * “: Fundamental frequency.



A D T

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	23deg. C, 64%RH	TESTED BY	Brad Tung

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	112.1 PK			1.26 H	72	76.20	35.90
2	*2462.00	100.7 AV			1.26 H	72	64.80	35.90
3	2483.50	67.7 PK	74.0	-6.3	1.26 H	72	31.70	36.00
4	2483.50	52.4 AV	54.0	-1.6	1.26 H	72	16.40	36.00
5	4924.00	52.1 PK	74.0	-21.9	1.20 H	53	47.00	5.10
6	4924.00	40.1 AV	54.0	-13.9	1.20 H	53	35.00	5.10
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	*2462.00	102.1 PK			1.00 V	185	66.20	35.90
2	*2462.00	90.7 AV			1.00 V	185	54.80	35.90
3	2483.50	63.7 PK	74.0	-10.3	1.00 V	185	27.70	36.00
4	2483.50	49.0 AV	54.0	-5.0	1.00 V	185	13.00	36.00
5	4924.00	52.2 PK	74.0	-21.8	1.00 V	117	47.10	5.10
6	4924.00	40.0 AV	54.0	-14.0	1.00 V	117	34.90	5.10

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)
– 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.



A D T

802.11n (40MHz): 1TX

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	23deg. C, 64%RH	TESTED BY	Brad Tung

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	1.27 H	67	26.90	35.70
2	2390.00	52.5 AV	54.0	-1.5	1.27 H	67	16.80	35.70
3	*2422.00	105.8 PK			1.27 H	67	70.10	35.70
4	*2422.00	92.8 AV			1.27 H	67	57.10	35.70
5	4844.00	51.9 PK	74.0	-22.1	1.27 H	42	46.90	5.00
6	4844.00	39.9 AV	54.0	-14.1	1.27 H	42	34.90	5.00
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	2390.00	59.6 PK	74.0	-14.4	1.00 V	193	23.90	35.70
2	2390.00	49.4 AV	54.0	-4.6	1.00 V	193	13.70	35.70
3	*2422.00	96.0 PK			1.00 V	193	60.30	35.70
4	*2422.00	83.0 AV			1.00 V	193	47.30	35.70
5	4844.00	51.6 PK	74.0	-22.4	1.05 V	245	46.60	5.00
6	4844.00	39.8 AV	54.0	-14.2	1.05 V	245	34.80	5.00

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
5. “ * “: Fundamental frequency.



A D T

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	23deg. C, 64%RH	TESTED BY	Brad Tung

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	110.5 PK			1.27 H	73	74.70	35.80
2	*2437.00	97.9 AV			1.27 H	73	62.10	35.80
3	2483.50	62.2 PK	74.0	-11.8	1.27 H	73	26.20	36.00
4	2483.50	52.5 AV	54.0	-1.5	1.27 H	73	16.50	36.00
5	4874.00	50.8 PK	74.0	-23.2	1.11 H	107	45.80	5.00
6	4874.00	39.0 AV	54.0	-15.0	1.11 H	107	34.00	5.00
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	*2437.00	100.6 PK			1.00 V	142	64.80	35.80
2	*2437.00	89.3 AV			1.00 V	142	53.50	35.80
3	2483.50	60.0 PK	74.0	-14.0	1.00 V	142	24.00	36.00
4	2483.50	49.5 AV	54.0	-4.5	1.00 V	142	13.50	36.00
5	4874.00	50.2 PK	74.0	-23.8	1.02 V	211	45.20	5.00
6	4874.00	38.9 AV	54.0	-15.1	1.02 V	211	33.90	5.00

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
5. “ * “: Fundamental frequency.



A D T

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	23deg. C, 64%RH	TESTED BY	Brad Tung

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	106.3 PK			1.26 H	74	70.40	35.90
2	*2452.00	93.9 AV			1.26 H	74	58.00	35.90
3	2483.50	63.5 PK	74.0	-10.5	1.26 H	74	27.50	36.00
4	2483.50	52.9 AV	54.0	-1.1	1.26 H	74	16.90	36.00
5	4904.00	51.2 PK	74.0	-22.8	1.22 H	35	46.10	5.10
6	4904.00	39.0 AV	54.0	-15.0	1.22 H	35	33.90	5.10
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	*2452.00	97.0 PK			1.00 V	200	61.10	35.90
2	*2452.00	83.8 AV			1.00 V	200	47.90	35.90
3	2483.50	60.0 PK	74.0	-14.0	1.00 V	200	24.00	36.00
4	2483.50	49.4 AV	54.0	-4.6	1.00 V	200	13.40	36.00
5	4904.00	51.3 PK	74.0	-22.7	1.06 V	234	46.20	5.10
6	4904.00	38.9 AV	54.0	-15.1	1.06 V	234	33.80	5.10

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)
– 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.



A D T

802.11n (20MHz): 2TX

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	23deg. C, 64%RH	TESTED BY	Brad Tung

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	68.0 PK	74.0	-6.0	1.06 H	240	32.30	35.70
2	2390.00	52.2 AV	54.0	-1.8	1.06 H	240	16.50	35.70
3	*2412.00	112.9 PK			1.06 H	240	77.20	35.70
4	*2412.00	99.8 AV			1.06 H	240	64.10	35.70
5	4824.00	51.9 PK	74.0	-22.1	1.32 H	85	47.00	4.90
6	4824.00	38.9 AV	54.0	-15.1	1.32 H	85	34.00	4.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.7 PK	74.0	-12.3	1.10 V	97	26.00	35.70
2	2390.00	49.7 AV	54.0	-4.3	1.10 V	97	14.00	35.70
3	*2412.00	108.3 PK			1.10 V	97	72.60	35.70
4	*2412.00	96.7 AV			1.10 V	97	61.00	35.70
5	4824.00	51.8 PK	74.0	-22.2	1.29 V	225	46.90	4.90
6	4824.00	38.8 AV	54.0	-15.2	1.29 V	225	33.90	4.90

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.



A D T

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	23deg. C, 64%RH	TESTED BY	Brad Tung

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	119.0 PK			1.05 H	224	83.20	35.80
2	*2437.00	105.8 AV			1.05 H	224	70.00	35.80
3	2483.50	61.9 PK	74.0	-12.1	1.05 H	224	25.90	36.00
4	2483.50	52.9 AV	54.0	-1.1	1.05 H	224	16.90	36.00
5	4874.00	57.0 PK	74.0	-17.0	1.11 H	196	52.00	5.00
6	4874.00	45.1 AV	54.0	-8.9	1.11 H	196	40.10	5.00
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	*2437.00	115.0 PK			1.09 V	90	79.20	35.80
2	*2437.00	101.8 AV			1.09 V	90	66.00	35.80
3	2483.50	58.0 PK	74.0	-16.0	1.09 V	90	22.00	36.00
4	2483.50	48.9 AV	54.0	-5.1	1.09 V	90	12.90	36.00
5	4874.00	57.4 PK	74.0	-16.6	1.30 V	230	52.40	5.00
6	4874.00	45.5 AV	54.0	-8.5	1.30 V	230	40.50	5.00

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
5. “ * “: Fundamental frequency.



A D T

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	23deg. C, 64%RH	TESTED BY	Brad Tung

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.2 PK			1.02 H	234	77.30	35.90
2	*2462.00	100.0 AV			1.02 H	234	64.10	35.90
3	2483.50	65.8 PK	74.0	-8.2	1.02 H	234	29.80	36.00
4	2483.50	52.2 AV	54.0	-1.8	1.02 H	234	16.20	36.00
5	4924.00	57.0 PK	74.0	-17.0	1.06 H	203	51.90	5.10
6	4924.00	43.2 AV	54.0	-10.8	1.06 H	203	38.10	5.10
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	*2462.00	109.2 PK			1.10 V	100	73.30	35.90
2	*2462.00	96.0 AV			1.10 V	100	60.10	35.90
3	2483.50	61.1 PK	74.0	-12.9	1.10 V	100	25.10	36.00
4	2483.50	48.0 AV	54.0	-6.0	1.00 V	110	12.00	36.00
5	4924.00	58.2 PK	74.0	-15.8	1.24 V	240	53.10	5.10
6	4924.00	44.3 AV	54.0	-9.7	1.24 V	240	39.20	5.10

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)
– 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.



A D T

802.11n (40MHz): 2TX

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	23deg. C, 64%RH	TESTED BY	Brad Tung

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	66.7 PK	74.0	-7.3	1.07 H	227	31.00	35.70
2	2390.00	52.9 AV	54.0	-1.1	1.07 H	227	17.20	35.70
3	*2422.00	108.4 PK			1.07 H	227	72.70	35.70
4	*2422.00	93.7 AV			1.07 H	227	58.00	35.70
5	4844.00	52.6 PK	74.0	-21.4	1.16 H	214	47.60	5.00
6	4844.00	38.9 AV	54.0	-15.1	1.16 H	214	33.90	5.00
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	2390.00	64.1 PK	74.0	-9.9	1.10 V	96	28.40	35.70
2	2390.00	50.9 AV	54.0	-3.1	1.10 V	96	15.20	35.70
3	*2422.00	104.2 PK			1.10 V	96	68.50	35.70
4	*2422.00	91.3 AV			1.10 V	96	55.60	35.70
5	4844.00	53.2 PK	74.0	-20.8	1.20 V	245	48.20	5.00
6	4844.00	39.1 AV	54.0	-14.9	1.20 V	245	34.10	5.00

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
5. “ * “: Fundamental frequency.



A D T

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	23deg. C, 64%RH	TESTED BY	Brad Tung

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	113.3 PK			1.06 H	226	77.50	35.80
2	*2437.00	99.0 AV			1.06 H	226	63.20	35.80
3	2483.50	67.7 PK	74.0	-6.3	1.06 H	226	31.70	36.00
4	2483.50	53.0 AV	54.0	-1.0	1.06 H	226	17.00	36.00
5	4874.00	53.3 PK	74.0	-20.7	1.18 H	225	48.30	5.00
6	4874.00	40.1 AV	54.0	-13.9	1.18 H	225	35.10	5.00
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	*2437.00	109.3 PK			1.09 V	98	73.50	35.80
2	*2437.00	95.0 AV			1.09 V	98	59.20	35.80
3	2483.50	65.0 PK	74.0	-9.0	1.09 V	98	29.00	36.00
4	2483.50	50.0 AV	54.0	-4.0	1.09 V	98	14.00	36.00
5	4874.00	54.0 PK	74.0	-20.0	1.16 V	210	49.00	5.00
6	4874.00	41.0 AV	54.0	-13.0	1.16 V	210	36.00	5.00

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
5. “ * “: Fundamental frequency.



A D T

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	23deg. C, 64%RH	TESTED BY	Brad Tung

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	107.7 PK			1.00 H	237	71.80	35.90
2	*2462.00	93.3 AV			1.00 H	237	57.40	35.90
3	2483.50	65.0 PK	74.0	-9.0	1.00 H	237	29.00	36.00
4	2483.50	53.0 AV	54.0	-1.0	1.00 H	237	17.00	36.00
5	4904.00	52.6 PK	74.0	-21.4	1.30 H	200	47.50	5.10
6	4904.00	38.9 AV	54.0	-15.1	1.30 H	200	33.80	5.10
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	*2462.00	103.7 PK			1.00 V	100	67.80	35.90
2	*2462.00	89.4 AV			1.00 V	100	53.50	35.90
3	2483.50	62.2 PK	74.0	-11.8	1.00 V	100	26.20	36.00
4	2483.50	48.6 AV	54.0	-5.4	1.00 V	100	12.60	36.00
5	4904.00	53.3 PK	74.0	-20.7	1.25 V	244	48.20	5.10
6	4904.00	40.1 AV	54.0	-13.9	1.25 V	244	35.00	5.10

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)
– 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 : 802.11n (20MHz): 2TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	33.5 QP	40.0	-6.5	2.00 H	252	49.10	-15.60
2	179.38	29.3 QP	43.5	-14.2	1.49 H	61	44.30	-15.00
3	400.54	34.9 QP	46.0	-11.1	1.00 H	348	45.60	-10.70
4	641.10	36.9 QP	46.0	-9.1	1.00 H	309	42.50	-5.60
5	751.68	37.7 QP	46.0	-8.3	2.00 H	194	41.20	-3.50
6	802.12	37.3 QP	46.0	-8.7	1.25 H	184	40.10	-2.80
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	35.82	33.5 QP	40.0	-6.5	1.25 V	1	48.50	-15.00
2	99.84	30.5 QP	43.5	-13.0	1.00 V	191	49.30	-18.80
3	375.32	30.3 QP	46.0	-15.7	1.50 V	221	41.40	-11.10
4	400.54	31.4 QP	46.0	-14.6	2.00 V	18	42.10	-10.70
5	641.10	35.4 QP	46.0	-10.6	1.25 V	8	41.00	-5.60
6	875.84	37.7 QP	46.0	-8.3	1.00 V	39	39.20	-1.50

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) – 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 EMISSIONS MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSIONS MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBµV)	
	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	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 02, 2013	Jul. 01, 2014
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

4.2.3 TEST PROCEDURES

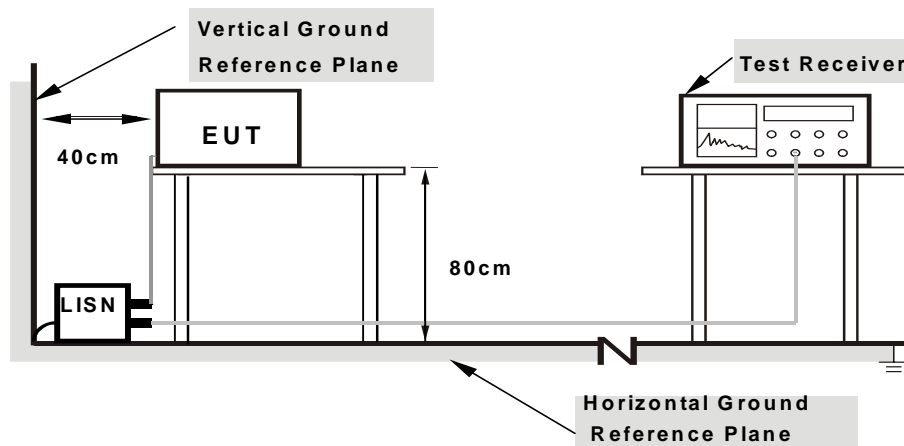
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

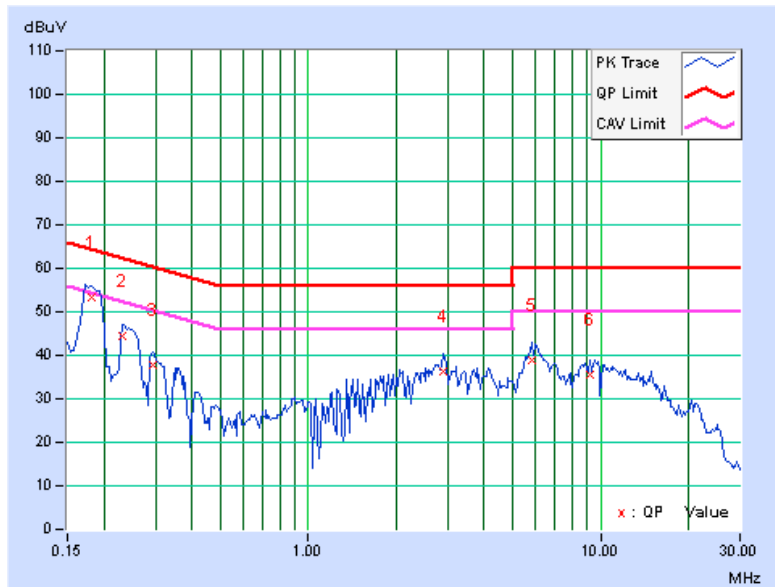
CONDUCTED WORST-CASE DATA : 802.11n (20MHz): 2TX

PHASE	Line 1	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18125	0.17	53.20	39.22	53.37	39.39	64.43
2	0.23203	0.18	44.24	26.10	44.42	26.28	62.38	52.38	-17.96	-26.10
3	0.29453	0.19	37.43	22.06	37.62	22.25	60.40	50.40	-22.78	-28.15
4	2.91406	0.32	35.83	28.09	36.15	28.41	56.00	46.00	-19.85	-17.59
5	5.82031	0.39	38.49	33.33	38.88	33.72	60.00	50.00	-21.12	-16.28
6	9.17578	0.42	35.32	30.23	35.74	30.65	60.00	50.00	-24.26	-19.35

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

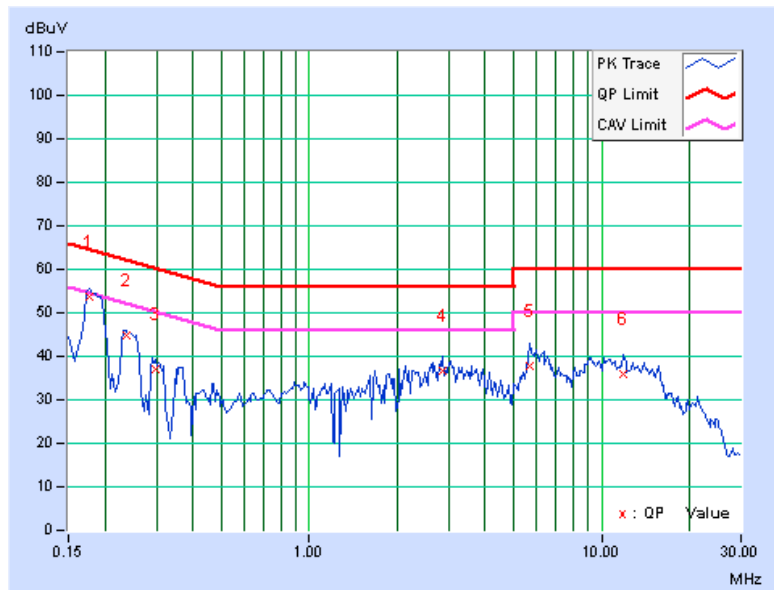


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.17734	0.18	53.68	40.47	53.86	40.65	64.61
2	0.23594	0.19	44.48	30.61	44.67	30.80	62.24	52.24	-17.57	-21.44
3	0.29844	0.21	36.83	23.32	37.04	23.53	60.29	50.29	-23.24	-26.75
4	2.87500	0.33	36.36	29.63	36.69	29.96	56.00	46.00	-19.31	-16.04
5	5.67188	0.42	37.23	32.25	37.65	32.67	60.00	50.00	-22.35	-17.33
6	11.89453	0.53	35.36	29.15	35.89	29.68	60.00	50.00	-24.11	-20.32

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

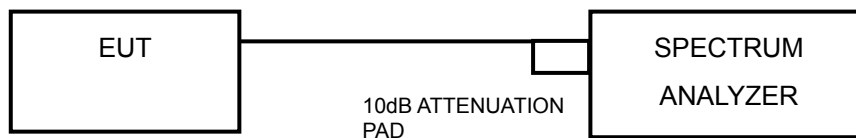


4.3 6dB BANDWIDTH MEASUREMENT

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	8.62	0.5	PASS
6	2437	8.13	0.5	PASS
11	2462	8.15	0.5	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.57	0.5	PASS
6	2437	16.60	0.5	PASS
11	2462	16.57	0.5	PASS

802.11n (20MHz): 1TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.65	0.5	PASS
6	2437	17.65	0.5	PASS
11	2462	17.65	0.5	PASS



802.11n (40MHz): 1TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	35.51	0.5	PASS
6	2437	35.86	0.5	PASS
9	2452	35.74	0.5	PASS

802.11n (20MHz): 2TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	17.84	17.73	0.5	PASS
6	2437	17.79	17.69	0.5	PASS
11	2462	17.80	17.68	0.5	PASS

802.11n (40MHz): 2TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	36.35	35.82	0.5	PASS
6	2437	35.28	35.63	0.5	PASS
9	2452	35.73	35.78	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 bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output v01r02 Method of conducted output power measurement on IEEE 802.11 devices,

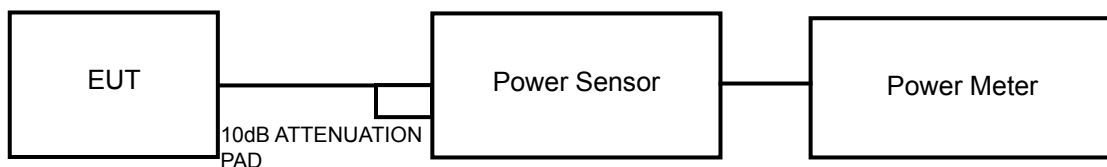
Array Gain = 0 dB (i.e., no array gain) for $NANT \leq 4$;

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

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



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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

FOR PEAK POWER

802.11b

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	139.637	21.45	30	PASS
6	2437	162.930	22.12	30	PASS
11	2462	114.551	20.59	30	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	242.103	23.84	30	PASS
6	2437	386.367	25.87	30	PASS
11	2462	316.228	25.00	30	PASS

802.11n (20MHz): 1TX

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	153.462	21.86	30	PASS
6	2437	391.742	25.93	30	PASS
11	2462	144.212	21.59	30	PASS

802.11n (40MHz): 1TX

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
3	2422	100.693	20.03	30	PASS
6	2437	177.011	22.48	30	PASS
9	2452	96.828	19.86	30	PASS



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802.11n (20MHz): 2TX

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	20.86	22.06	282.593	24.51	30	PASS
6	2437	26.22	26.83	900.742	29.55	30	PASS
11	2462	25.05	25.09	642.739	28.08	30	PASS

802.11n (40MHz): 2TX

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	18.89	20.49	189.390	22.77	30	PASS
6	2437	23.91	25.00	562.265	27.50	30	PASS
9	2452	19.12	20.30	188.810	22.76	30	PASS



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FOR AVERAGE POWER

802.11b

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
1	2412	55.208	17.42
6	2437	62.951	17.99
11	2462	44.055	16.44

802.11g

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
1	2412	30.130	14.79
6	2437	52.723	17.22
11	2462	41.210	16.15

802.11n (20MHz): 1TX

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
1	2412	19.861	12.98
6	2437	61.944	17.92
11	2462	19.454	12.89

802.11n (40MHz): 1TX

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
3	2422	9.931	9.97
6	2437	26.853	14.29
9	2452	9.795	9.91



802.11n (20MHz): 2TX

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
1	2412	12.13	13.27	37.563	15.75
6	2437	17.82	19.72	154.290	21.88
11	2462	16.11	17.05	91.531	19.62

802.11n (40MHz): 2TX

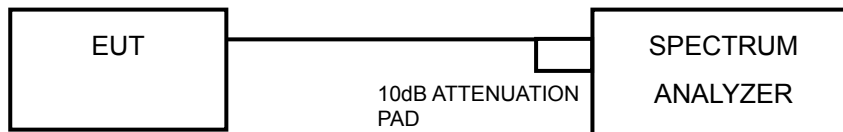
CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
3	2422	9.36	11.06	21.394	13.30
6	2437	14.55	16.21	70.293	18.47
9	2452	9.86	11.13	22.655	13.55

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	-5.66	8	PASS
6	2437	-4.34	8	PASS
11	2462	-5.54	8	PASS

802.11g

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-9.61	8	PASS
6	2437	-7.65	8	PASS
11	2462	-10.35	8	PASS

802.11n (20MHz): 1TX

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-11.76	8	PASS
6	2437	-8.93	8	PASS
11	2462	-13.20	8	PASS

802.11n (40MHz): 1TX

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-18.57	8	PASS
6	2437	-14.20	8	PASS
9	2452	-17.73	8	PASS



802.11n (20MHz): 2TX

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	-12.86	3.01	-9.85	8	PASS
	6	2437	-6.60	3.01	-3.59	8	PASS
	11	2462	-9.44	3.01	-6.43	8	PASS
1	1	2412	-11.64	3.01	-8.63	8	PASS
	6	2437	-7.72	3.01	-4.71	8	PASS
	11	2462	-7.86	3.01	-4.85	8	PASS

NOTE: Directional gain= $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 5.96 < 6\text{dBi}$, so the limit no need to reduced.

802.11n (40MHz): 2TX

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-17.08	3.01	-14.07	8	PASS
	6	2437	-12.96	3.01	-9.95	8	PASS
	9	2452	-18.75	3.01	-15.74	8	PASS
1	3	2422	-17.33	3.01	-14.32	8	PASS
	6	2437	-11.51	3.01	-8.50	8	PASS
	9	2452	-16.57	3.01	-13.56	8	PASS

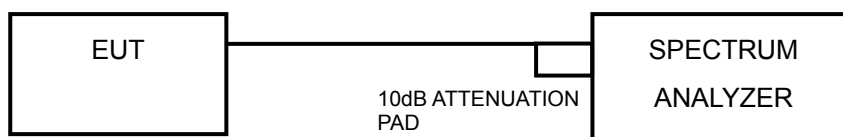
NOTE: Directional gain= $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 5.96 < 6\text{dBi}$, so the limit no need to reduced.

4.6 CONDUCTED OUT OF BAND EMISSIONS MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSIONS 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.



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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.

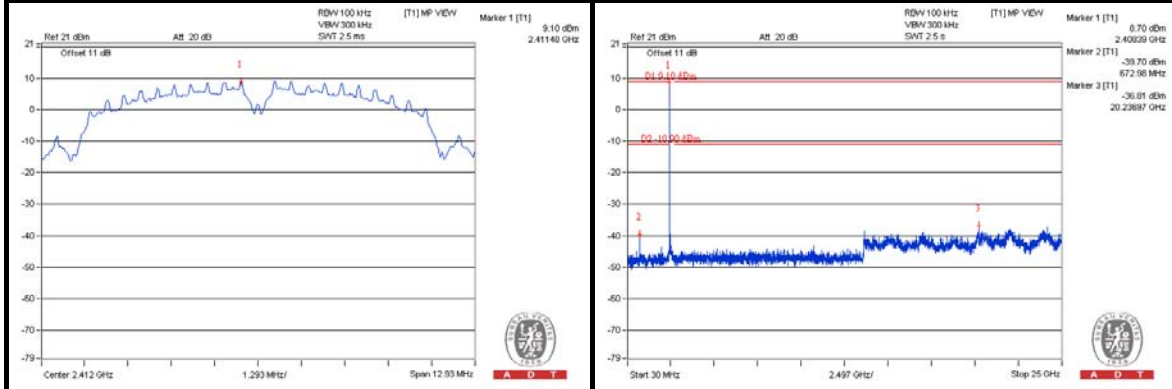
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



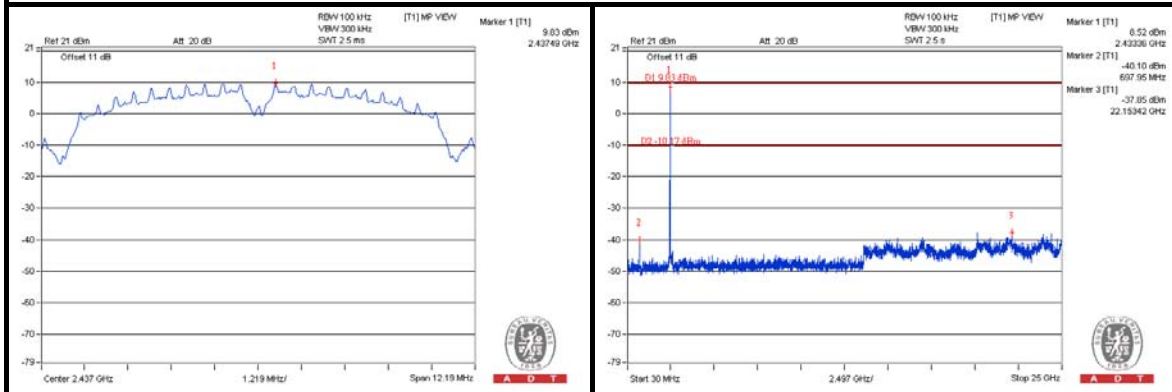
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802.11b

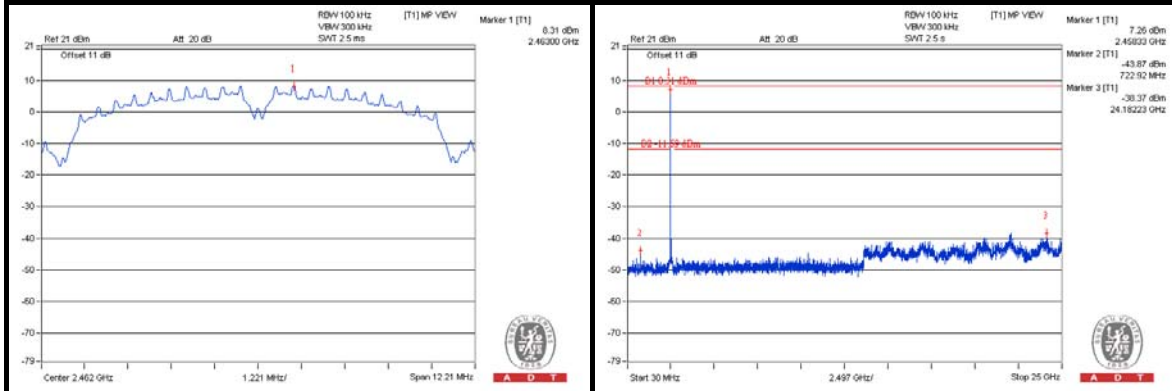
CH 1



CH 6

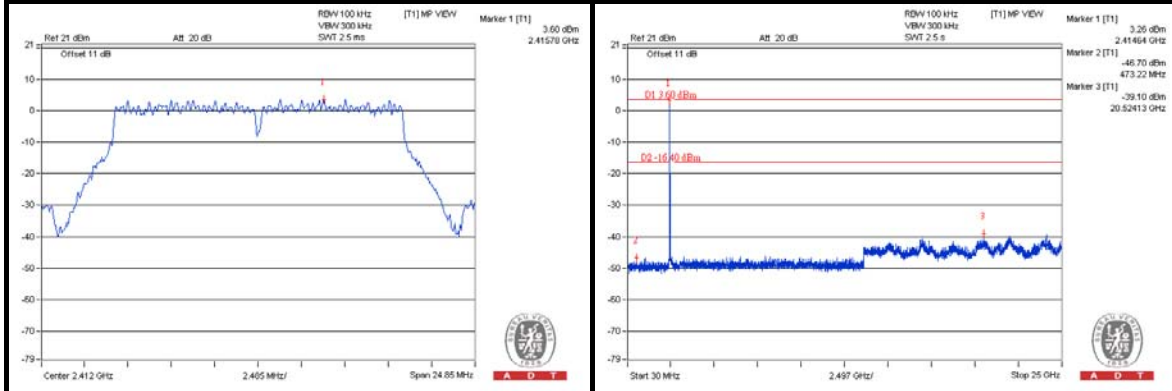


CH 11

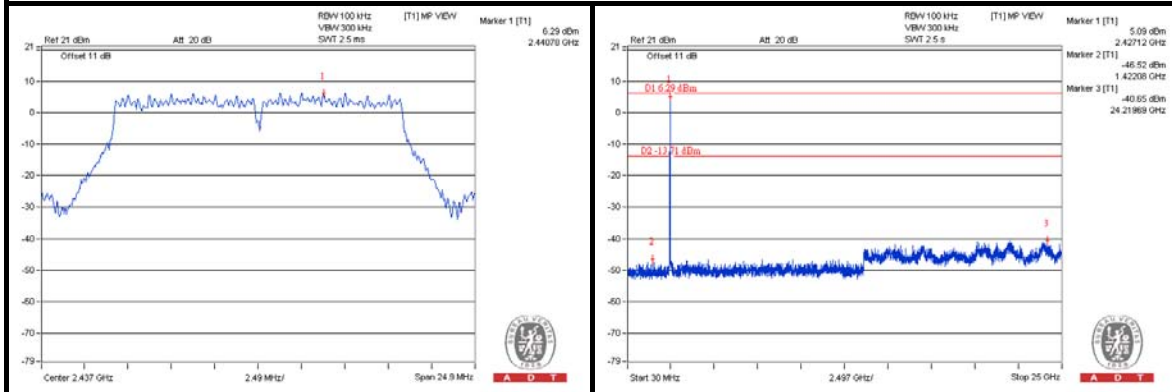


802.11g

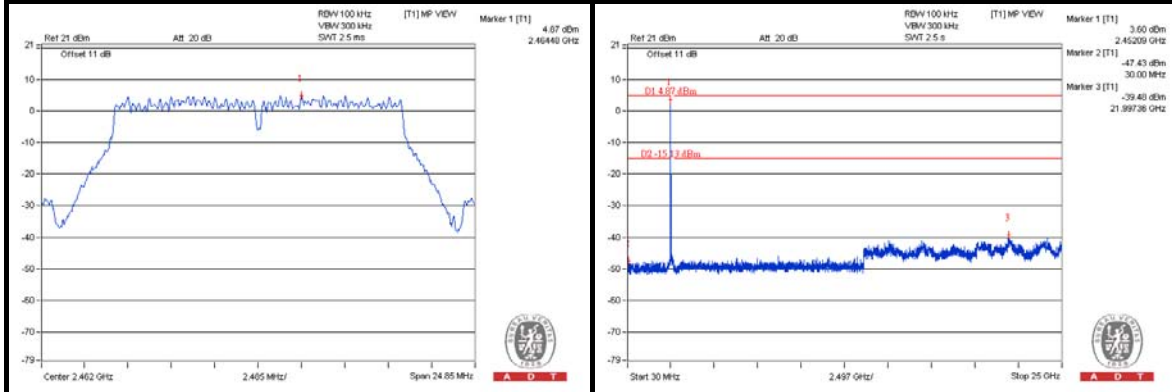
CH 1



CH 6

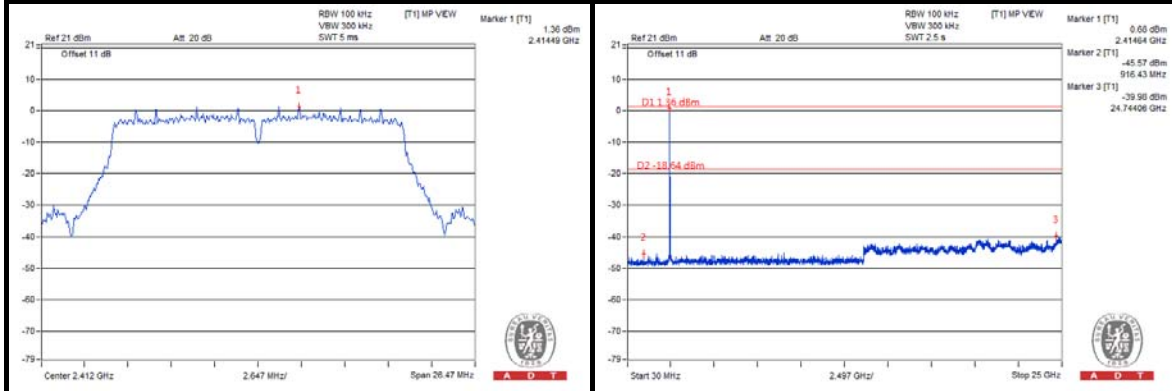


CH 11

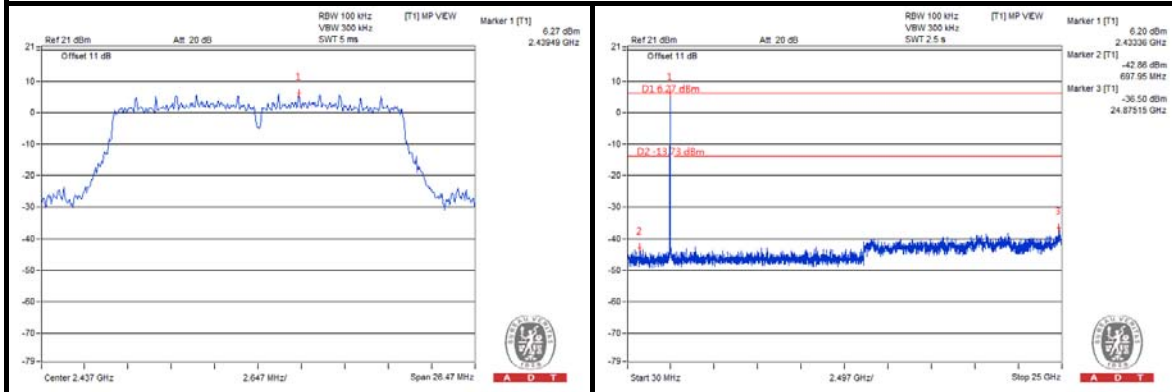


802.11n (20MHz): 1TX

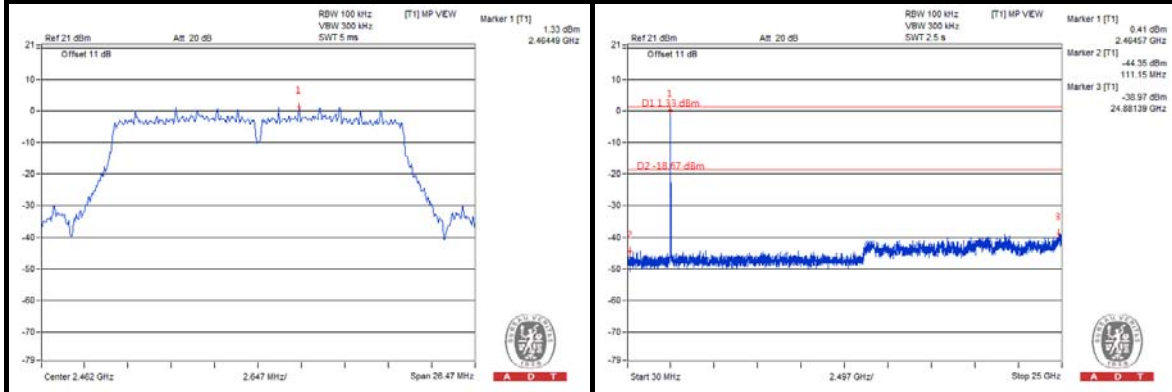
CH 1



CH 6

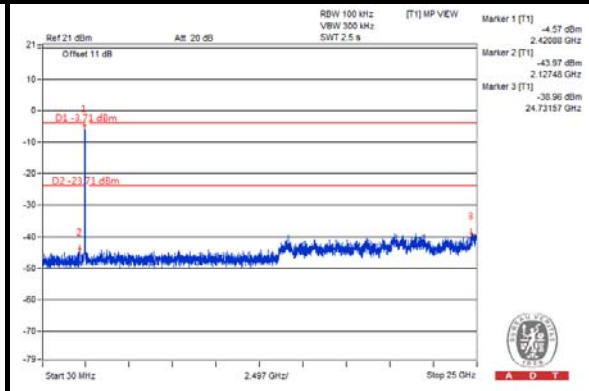
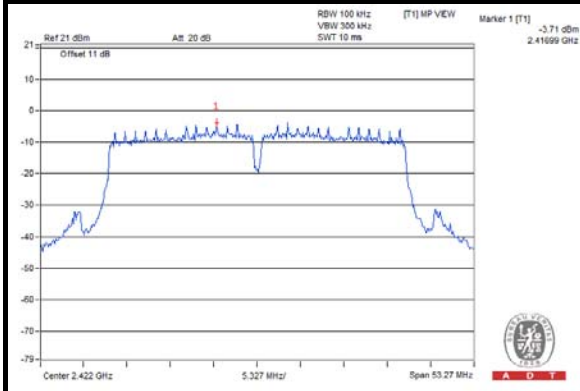


CH 11

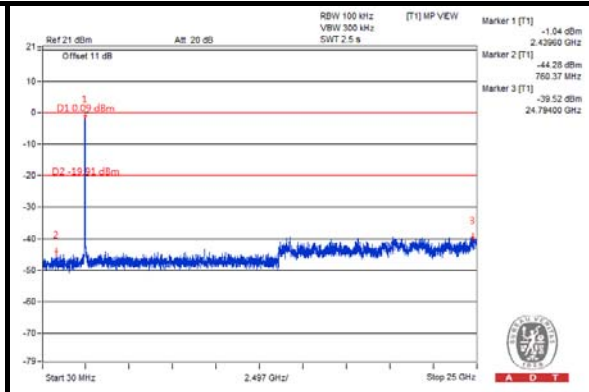
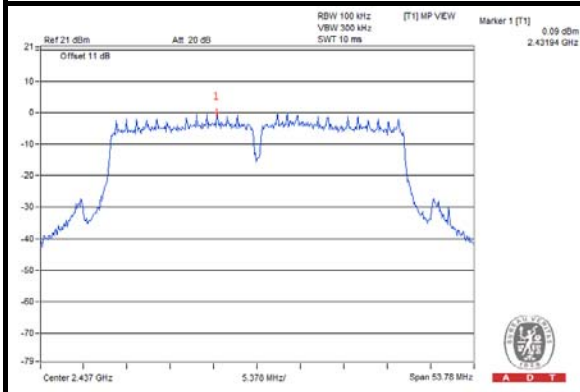


802.11n (40MHz): 1TX

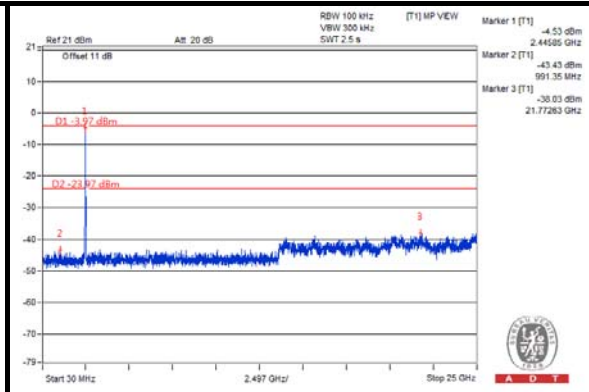
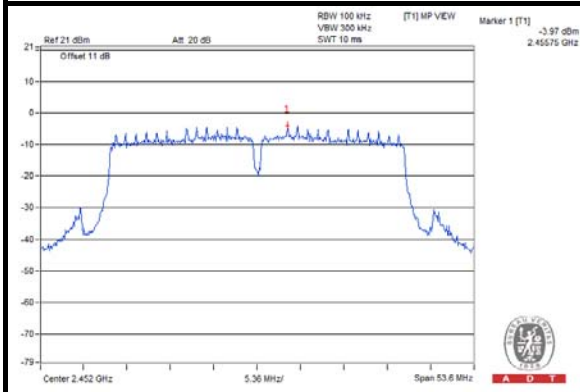
CH 3



CH 6

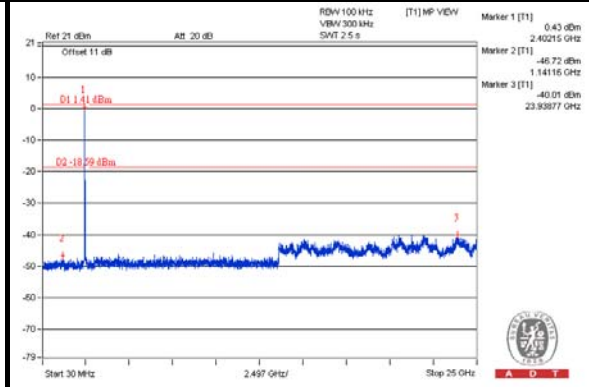
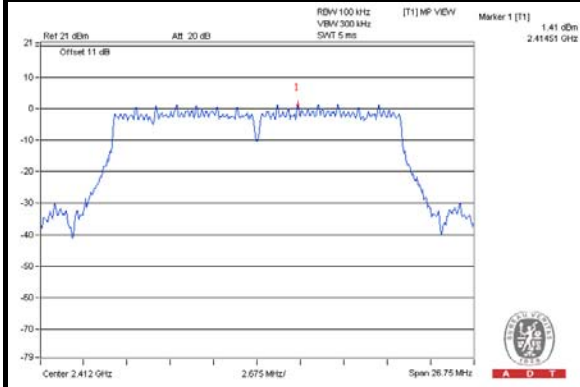


CH 9

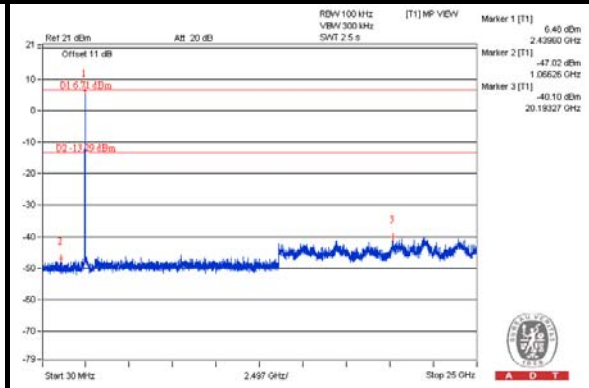
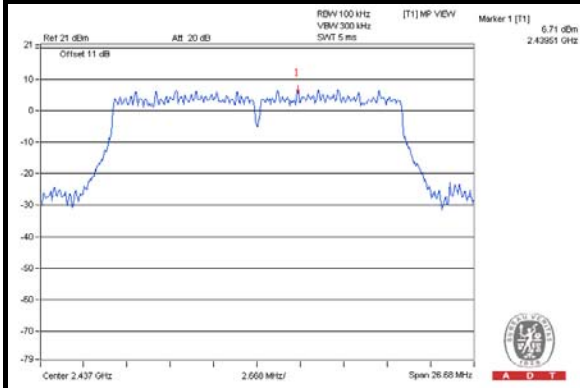


802.11n (20MHz): 2TX
CHAIN 0

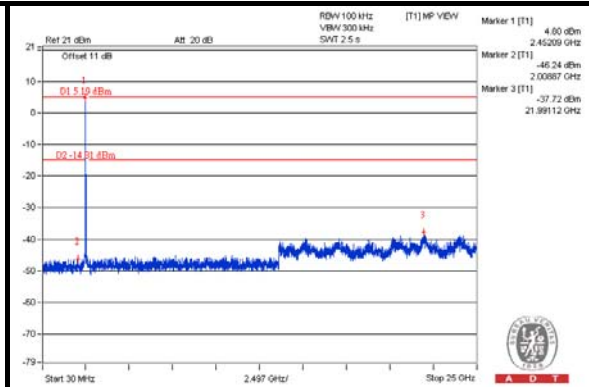
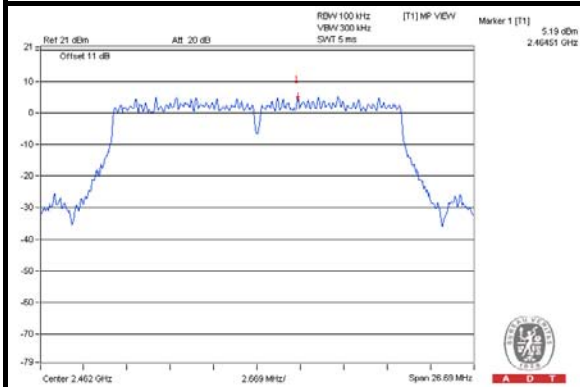
CH 1



CH 6



CH 11

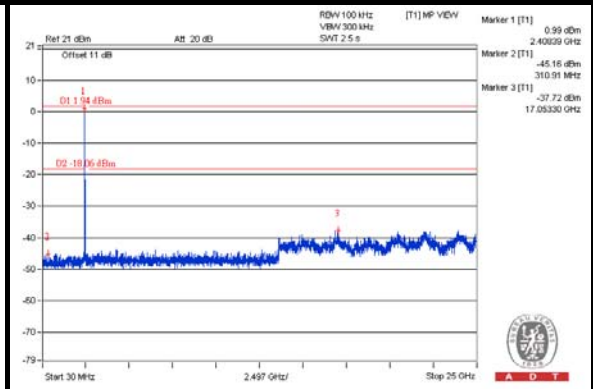
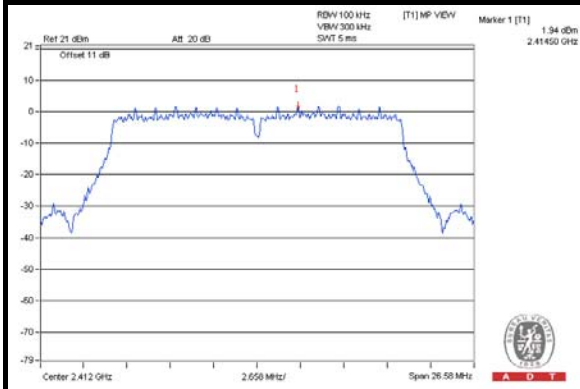




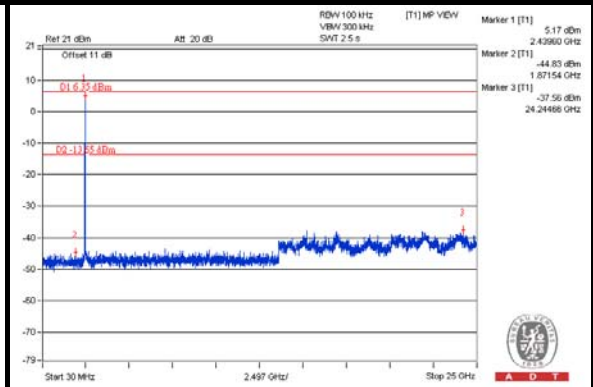
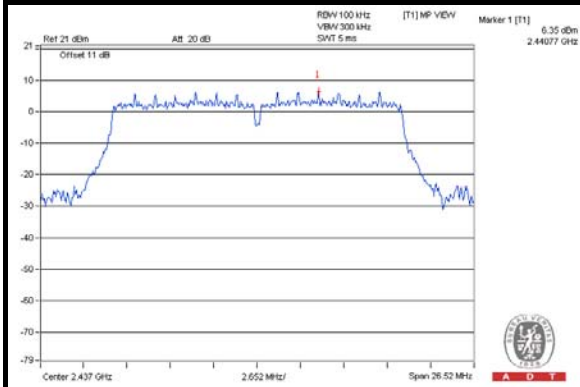
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CHAIN 1

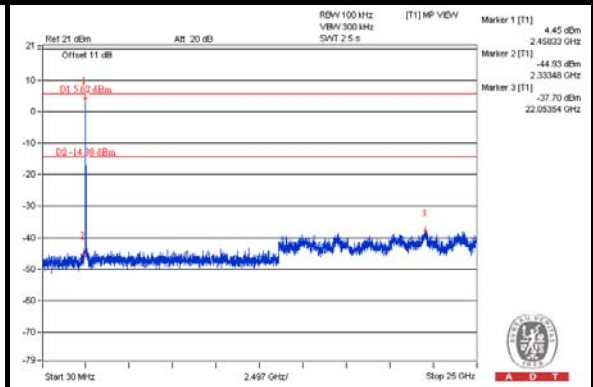
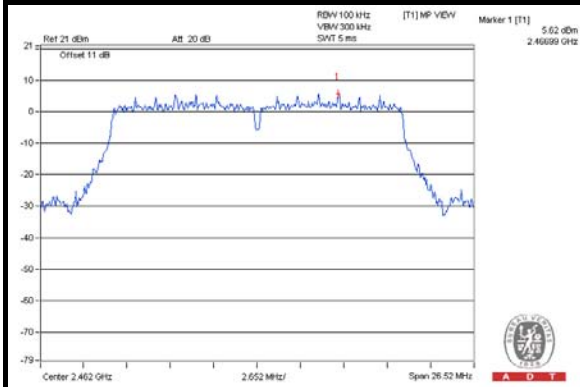
CH 1



CH 6



CH 11

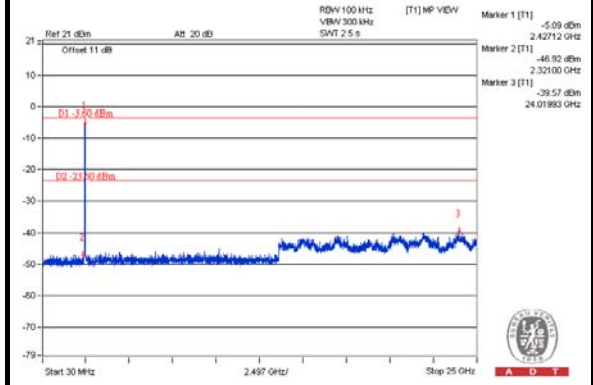
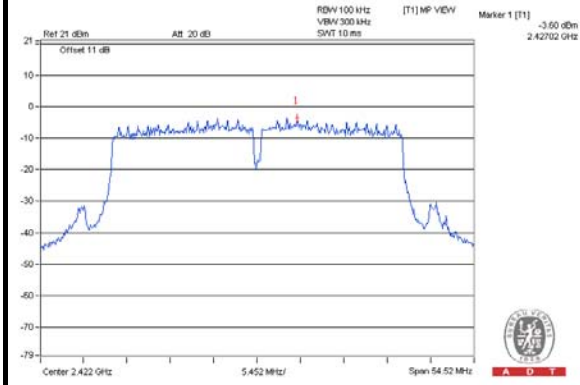




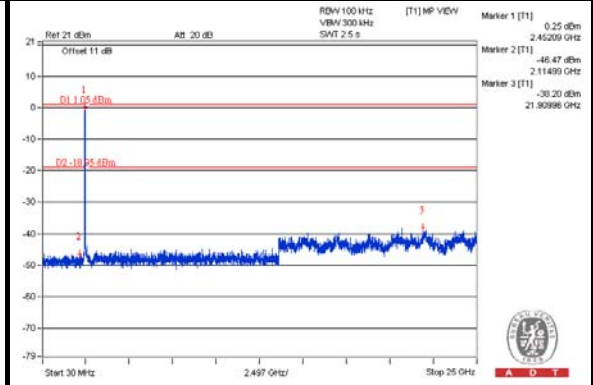
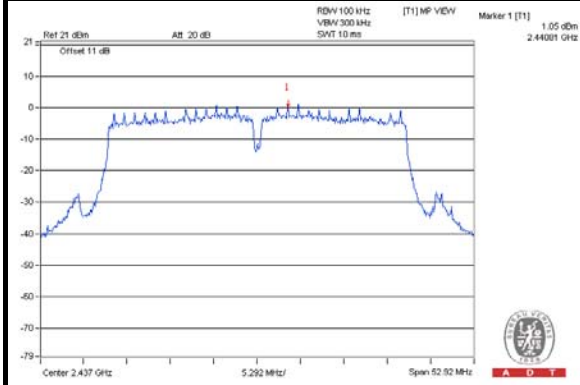
A D T

802.11n (40MHz): 2TX CHAIN 0

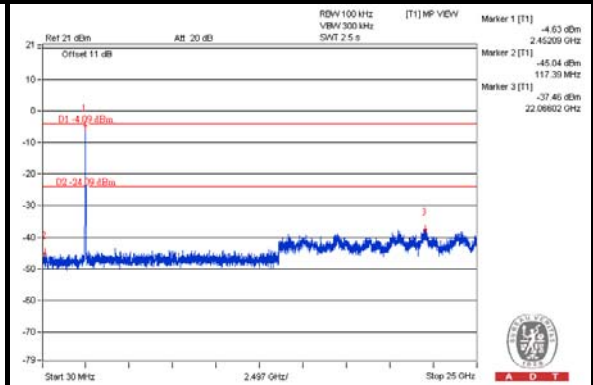
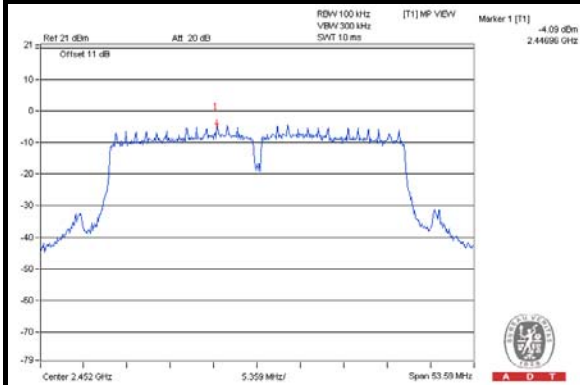
CH 3



CH 6



CH 9

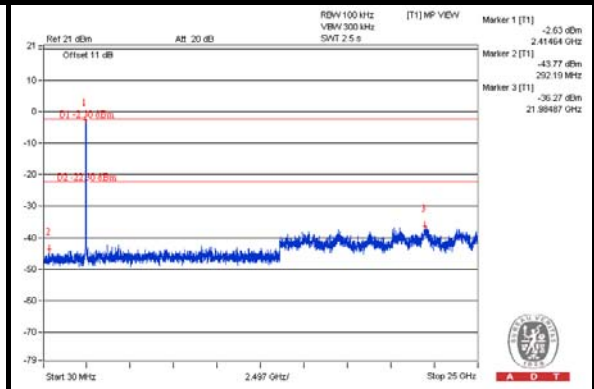
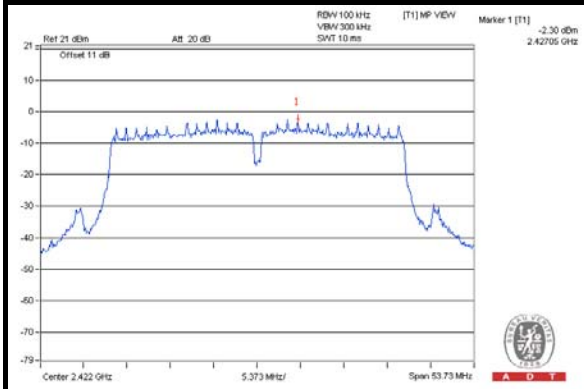




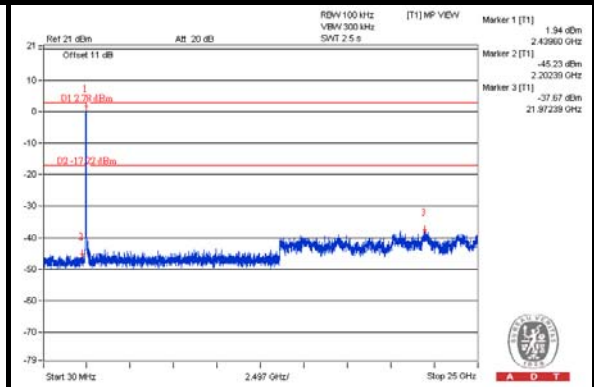
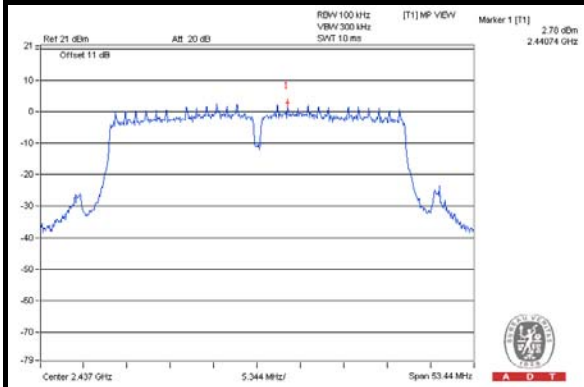
A D T

CHAIN 1

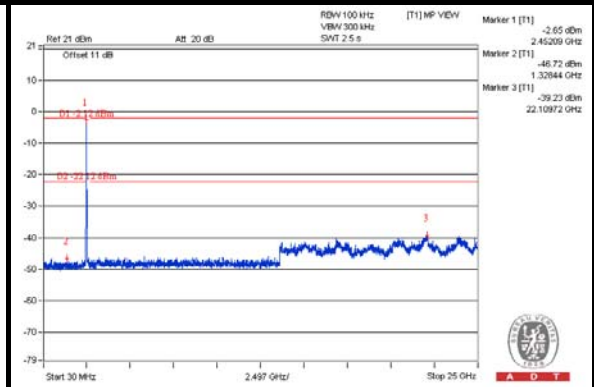
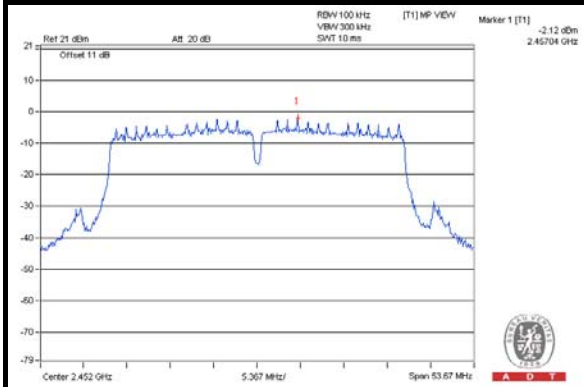
CH 3



CH 6



CH 9





5. TEST TYPES AND RESULTS (FOR 5.0GHz BAND)

5.1 RADIATED EMISSIONS MEASUREMENT

5.1.1 LIMITS OF RADIATED EMISSIONS 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 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.



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5.1.2 TEST INSTRUMENTS

Same as item 4.1.2.

5.1.3 TEST PROCEDURES

Same as item 4.1.3.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation.

5.1.5 TEST SETUP

Same as item 4.1.5.

5.1.6 EUT OPERATING CONDITIONS

Same as item 4.1.6.



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5.1.7 TEST RESULTS

ABOVE 1GHz DATA :

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	#5725.00	81.2 PK	94.2	-13.0	1.12 H	321	74.90	6.30
2	#5725.00	68.8 AV	81.8	-13.0	1.12 H	321	62.50	6.30
3	*5745.00	114.2 PK			1.12 H	321	69.60	44.60
4	*5745.00	101.8 AV			1.12 H	321	57.20	44.60
5	11490.00	59.2 PK	74.0	-14.8	1.06 H	236	44.80	14.40
6	11490.00	46.9 AV	54.0	-7.1	1.06 H	236	32.50	14.40
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	#5725.00	82.5 PK	95.5	-13.0	1.00 V	306	76.20	6.30
2	#5725.00	70.1 AV	83.1	-13.0	1.00 V	306	63.80	6.30
3	*5745.00	115.5 PK			1.00 V	306	70.90	44.60
4	*5745.00	103.1 AV			1.00 V	306	58.50	44.60
5	11490.00	59.1 PK	74.0	-14.9	1.12 V	26	44.70	14.40
6	11490.00	46.5 AV	54.0	-7.5	1.12 V	26	32.10	14.40

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.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	*5785.00	114.7 PK			1.10 H	323	70.00	44.70
2	*5785.00	103.4 AV			1.10 H	323	58.70	44.70
3	11490.00	59.3 PK	74.0	-14.7	1.11 H	234	44.90	14.40
4	11490.00	47.4 AV	54.0	-6.6	1.11 H	234	33.00	14.40
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	*5785.00	115.7 PK			1.00 V	300	71.00	44.70
2	*5785.00	106.2 AV			1.00 V	300	61.50	44.70
3	11490.00	59.2 PK	74.0	-14.8	1.09 V	34	44.80	14.40
4	11490.00	46.4 AV	54.0	-7.6	1.09 V	34	32.00	14.40

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.
6. The limit value is defined as per 15.247.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	*5825.00	114.1 PK			1.00 H	41	69.30	44.80
2	*5825.00	101.5 AV			1.00 H	41	56.70	44.80
3	#5850.00	72.1 PK	94.1	-22.0	1.00 H	41	65.60	6.50
4	#5850.00	59.5 AV	81.5	-22.0	1.00 H	41	53.00	6.50
5	11650.00	59.1 PK	74.0	-14.9	1.05 H	242	44.60	14.50
6	11650.00	46.8 AV	54.0	-7.2	1.05 H	242	32.30	14.50
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	*5825.00	115.1 PK			1.00 V	289	70.30	44.80
2	*5825.00	102.5 AV			1.00 V	289	57.70	44.80
3	#5850.00	73.1 PK	95.1	-22.0	1.00 V	289	66.60	6.50
4	#5850.00	60.5 AV	82.5	-22.0	1.00 V	289	54.00	6.50
5	11650.00	59.2 PK	74.0	-14.8	1.15 V	22	44.70	14.50
6	11650.00	47.0 AV	54.0	-7.0	1.15 V	22	32.50	14.50

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)
– 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.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.



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802.11n (20MHz): 1TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	#5725.00	86.1 PK	96.1	-10.0	1.00 H	310	79.80	6.30
2	#5725.00	73.8 AV	83.8	-10.0	1.00 H	310	67.50	6.30
3	*5745.00	116.1 PK			1.00 H	310	71.50	44.60
4	*5745.00	103.8 AV			1.00 H	310	59.20	44.60
5	11490.00	63.2 PK	74.0	-10.8	1.18 H	70	48.80	14.40
6	11490.00	50.0 AV	54.0	-4.0	1.18 H	70	35.60	14.40

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	#5725.00	89.1 PK	99.1	-10.0	1.10 V	88	82.80	6.30
2	#5725.00	76.8 AV	86.8	-10.0	1.10 V	88	70.50	6.30
3	*5745.00	119.1 PK			1.10 V	88	74.50	44.60
4	*5745.00	106.8 AV			1.10 V	88	62.20	44.60
5	11490.00	63.0 PK	74.0	-11.0	1.06 V	215	48.60	14.40
6	11490.00	49.9 AV	54.0	-4.1	1.06 V	215	35.50	14.40

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.
- The limit value is defined as per 15.247.
- "#":The radiated frequency is out the restricted band.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	*5785.00	117.4 PK			1.00 H	317	72.70	44.70
2	*5785.00	105.4 AV			1.00 H	317	60.70	44.70
3	11570.00	63.3 PK	74.0	-10.7	1.24 H	63	48.90	14.40
4	11570.00	50.2 AV	54.0	-3.8	1.24 H	63	35.80	14.40
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	*5785.00	120.2 PK			1.00 V	73	75.50	44.70
2	*5785.00	108.0 AV			1.00 V	73	63.30	44.70
3	11570.00	63.1 PK	74.0	-10.9	1.03 V	66	48.70	14.40
4	11570.00	50.0 AV	54.0	-4.0	1.03 V	66	35.60	14.40

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.
6. The limit value is defined as per 15.247.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	*5825.00	117.0 PK			1.00 H	311	72.20	44.80
2	*5825.00	104.7 AV			1.00 H	311	59.90	44.80
3	#5850.00	84.0 PK	97.0	-13.0	1.00 H	311	77.50	6.50
4	#5850.00	71.7 AV	84.7	-13.0	1.00 H	311	65.20	6.50
5	11650.00	63.1 PK	74.0	-10.9	1.23 H	63	48.60	14.50
6	11650.00	50.2 AV	54.0	-3.8	1.23 H	63	35.70	14.50
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	*5825.00	120.0 PK			1.06 V	76	75.20	44.80
2	*5825.00	107.7 AV			1.06 V	76	62.90	44.80
3	#5850.00	87.0 PK	100.0	-13.0	1.06 V	76	80.50	6.50
4	#5850.00	74.7 AV	87.7	-13.0	1.06 V	76	68.20	6.50
5	11650.00	63.0 PK	74.0	-11.0	1.08 V	70	48.50	14.50
6	11650.00	50.0 AV	54.0	-4.0	1.08 V	70	35.50	14.50

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)
– 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.
6. The limit value is defined as per 15.247.
7. “#”:The radiated frequency is out the restricted band.



A D T

802.11n (40MHz): 1TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	#5725.00	93.5 PK	94.5	-1.0	1.00 H	39	87.20	6.30
2	#5725.00	80.8 AV	81.8	-1.0	1.00 H	39	74.50	6.30
3	*5755.00	114.5 PK			1.00 H	39	69.80	44.70
4	*5755.00	101.8 AV			1.00 H	39	57.10	44.70
5	11510.00	63.1 PK	74.0	-10.9	1.00 H	36	48.60	14.50
6	11510.00	50.2 AV	54.0	-3.8	1.00 H	36	35.70	14.50
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	#5725.00	96.5 PK	97.5	-1.0	1.00 V	301	90.20	6.30
2	#5725.00	83.8 AV	84.8	-1.0	1.00 V	301	77.50	6.30
3	*5755.00	117.5 PK			1.00 V	301	72.80	44.70
4	*5755.00	104.8 AV			1.00 V	301	60.10	44.70
5	11510.00	63.0 PK	74.0	-11.0	1.11 V	21	48.50	14.50
6	11510.00	50.1 AV	54.0	-3.9	1.11 V	21	35.60	14.50

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) – 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.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	*5795.00	115.4 PK			1.00 H	42	70.70	44.70
2	*5795.00	103.0 AV			1.00 H	42	58.30	44.70
3	#5850.00	81.4 PK	95.4	-14.0	1.00 H	42	74.90	6.50
4	#5850.00	69.0 AV	83.0	-14.0	1.00 H	42	62.50	6.50
5	11590.00	63.0 PK	74.0	-11.0	1.00 H	60	48.50	14.50
6	11590.00	50.0 AV	54.0	-4.0	1.00 H	60	35.50	14.50
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	*5795.00	118.4 PK			1.00 V	304	73.70	44.70
2	*5795.00	106.0 AV			1.00 V	304	61.30	44.70
3	#5850.00	84.4 PK	98.4	-14.0	1.00 V	304	77.90	6.50
4	#5850.00	72.0 AV	86.0	-14.0	1.00 V	304	65.50	6.50
5	11590.00	62.9 PK	74.0	-11.1	1.06 V	25	48.40	14.50
6	11590.00	49.9 AV	54.0	-4.1	1.06 V	25	35.40	14.50

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)
– 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.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.



A D T

802.11n (20MHz): 2TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	#5725.00	79.6 PK	92.6	-13.0	1.35 H	16	73.30	6.30
2	#5725.00	68.2 AV	81.2	-13.0	1.35 H	16	61.90	6.30
3	*5745.00	112.6 PK			1.35 H	16	68.00	44.60
4	*5745.00	101.2 AV			1.35 H	16	56.60	44.60
5	11490.00	59.7 PK	74.0	-14.3	1.25 H	200	45.30	14.40
6	11490.00	46.5 AV	54.0	-7.5	1.25 H	200	32.10	14.40
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	#5725.00	82.1 PK	95.1	-13.0	1.00 V	304	75.80	6.30
2	#5725.00	71.7 AV	84.7	-13.0	1.00 V	304	65.40	6.30
3	*5745.00	115.1 PK			1.00 V	304	70.50	44.60
4	*5745.00	104.7 AV			1.00 V	304	60.10	44.60
5	11490.00	59.6 PK	74.0	-14.4	1.13 V	62	45.20	14.40
6	11490.00	46.4 AV	54.0	-7.6	1.13 V	62	32.00	14.40

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.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	*5785.00	112.4 PK			1.30 H	21	67.70	44.70
2	*5785.00	101.0 AV			1.30 H	21	56.30	44.70
3	11570.00	59.5 PK	74.0	-14.5	1.22 H	205	45.10	14.40
4	11570.00	46.3 AV	54.0	-7.7	1.22 H	205	31.90	14.40
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	*5785.00	115.0 PK			1.00 V	303	70.30	44.70
2	*5785.00	104.0 AV			1.00 V	303	59.30	44.70
3	11570.00	59.6 PK	74.0	-14.4	1.11 V	60	45.20	14.40
4	11570.00	46.5 AV	54.0	-7.5	1.11 V	60	32.10	14.40

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.
6. The limit value is defined as per 15.247.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	*5825.00	112.9 PK			1.33 H	14	68.10	44.80
2	*5825.00	101.9 AV			1.33 H	14	57.10	44.80
3	#5850.00	75.9 PK	92.9	-17.0	1.33 H	14	69.40	6.50
4	#5850.00	64.9 AV	81.9	-17.0	1.33 H	14	58.40	6.50
5	11650.00	59.2 PK	74.0	-14.8	1.20 H	204	44.70	14.50
6	11650.00	46.1 AV	54.0	-7.9	1.20 H	204	31.60	14.50
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	*5825.00	114.9 PK			1.00 V	298	70.10	44.80
2	*5825.00	103.9 AV			1.00 V	298	59.10	44.80
3	#5850.00	77.9 PK	94.9	-17.0	1.00 V	298	71.40	6.50
4	#5850.00	66.9 AV	83.9	-17.0	1.00 V	298	60.40	6.50
5	11650.00	59.4 PK	74.0	-14.6	1.11 V	54	44.90	14.50
6	11650.00	46.3 AV	54.0	-7.7	1.11 V	54	31.80	14.50

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)
– 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.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.



A D T

802.11n (40MHz): 2TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	#5725.00	87.7 PK	93.7	-6.0	1.25 H	188	81.40	6.30
2	#5725.00	71.7 AV	77.7	-6.0	1.25 H	188	65.40	6.30
3	*5755.00	113.7 PK			1.25 H	188	69.00	44.70
4	*5755.00	97.7 AV			1.25 H	188	53.00	44.70
5	11510.00	60.2 PK	74.0	-13.8	1.00 H	82	45.70	14.50
6	11510.00	47.5 AV	54.0	-6.5	1.00 H	82	33.00	14.50
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	#5725.00	89.7 PK	95.7	-6.0	1.13 V	25	83.40	6.30
2	#5725.00	73.7 AV	79.7	-6.0	1.13 V	25	67.40	6.30
3	*5755.00	115.7 PK			1.13 V	25	71.00	44.70
4	*5755.00	99.7 AV			1.13 V	25	55.00	44.70
5	11510.00	61.0 PK	74.0	-13.0	1.20 V	300	46.50	14.50
6	11510.00	48.1 AV	54.0	-5.9	1.20 V	300	33.60	14.50

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) – 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.
6. The limit value is defined as per 15.247.
7. “#”:The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	*5795.00	112.7 PK			1.29 H	180	68.00	44.70
2	*5795.00	99.0 AV			1.29 H	180	54.30	44.70
3	#5850.00	70.7 PK	92.7	-22.0	1.29 H	180	64.20	6.50
4	#5850.00	57.0 AV	79.0	-22.0	1.29 H	180	50.50	6.50
5	11590.00	60.4 PK	74.0	-13.6	1.05 H	86	45.90	14.50
6	11590.00	48.1 AV	54.0	-5.9	1.05 H	86	33.60	14.50
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	*5795.00	115.7 PK			1.00 V	24	71.00	44.70
2	*5795.00	102.0 AV			1.00 V	24	57.30	44.70
3	#5850.00	73.7 PK	95.7	-22.0	1.00 V	24	67.20	6.50
4	#5850.00	60.0 AV	82.0	-22.0	1.00 V	24	53.50	6.50
5	11590.00	61.4 PK	74.0	-12.6	1.13 V	302	46.90	14.50
6	11590.00	48.4 AV	54.0	-5.6	1.13 V	302	33.90	14.50

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)
– 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.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.



A D T

BELOW 1GHz WORST-CASE DATA : 802.11n (20MHz): 2TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 64%RH	TESTED BY	Brad Tung

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	33.88	31.9 QP	40.0	-8.1	1.50 H	350	47.90	-16.00
2	181.32	28.7 QP	43.5	-14.8	2.00 H	40	44.10	-15.40
3	319.06	28.9 QP	46.0	-17.1	1.25 H	238	40.90	-12.00
4	375.32	33.0 QP	46.0	-13.0	1.00 H	358	44.10	-11.10
5	625.58	36.5 QP	46.0	-9.5	1.00 H	165	42.30	-5.80
6	802.12	37.9 QP	46.0	-8.1	1.00 H	192	40.70	-2.80
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	99.84	29.0 QP	43.5	-14.5	1.25 V	194	47.80	-18.80
2	375.32	30.6 QP	46.0	-15.4	1.00 V	193	41.70	-11.10
3	499.48	31.8 QP	46.0	-14.2	1.50 V	229	40.10	-8.30
4	641.10	35.5 QP	46.0	-10.5	1.25 V	328	41.10	-5.60
5	802.12	34.6 QP	46.0	-11.4	2.00 V	151	37.40	-2.80
6	875.84	36.6 QP	46.0	-9.4	1.00 V	36	38.10	-1.50

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

5.2 CONDUCTED EMISSIONS MEASUREMENT

5.2.1 LIMITS OF CONDUCTED EMISSIONS 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.

5.2.2 TEST INSTRUMENTS

Same as item 4.2.2.

5.2.3 TEST PROCEDURES

Same as item 4.2.3.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation.

5.2.5 TEST SETUP

Same as item 4.2.5.

5.2.6 EUT OPERATING CONDITIONS

Same as item 4.1.6.

5.2.7 TEST RESULTS

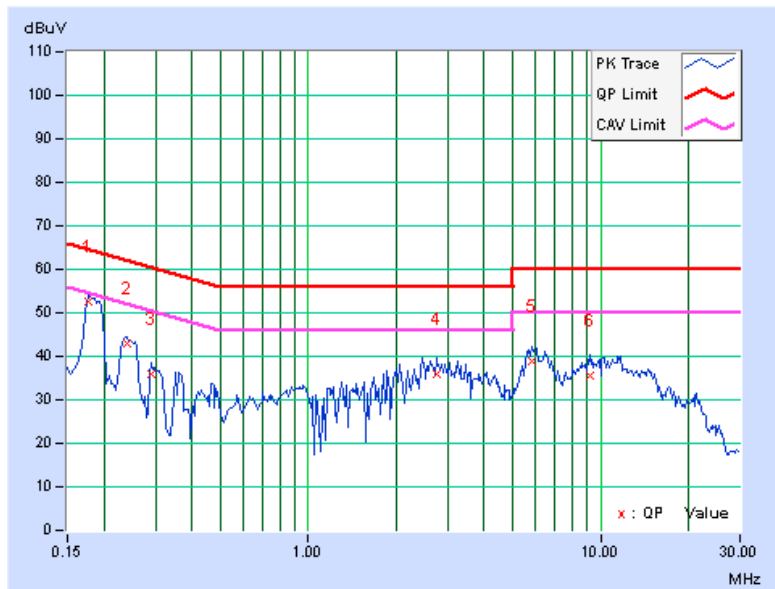
CONDUCTED WORST-CASE DATA : 802.11n (20MHz): 2TX

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	0.17734	0.17	52.39	39.42	52.56	39.59	64.61	54.61	-12.05	-15.02
2	0.23984	0.18	42.60	29.85	42.78	30.03	62.10	52.10	-19.32	-22.07
3	0.29063	0.19	35.63	17.80	35.82	17.99	60.51	50.51	-24.69	-32.52
4	2.73828	0.31	35.74	28.88	36.05	29.19	56.00	46.00	-19.95	-16.81
5	5.85938	0.39	38.61	34.21	39.00	34.60	60.00	50.00	-21.00	-15.40
6	9.25391	0.42	35.18	29.43	35.60	29.85	60.00	50.00	-24.40	-20.15

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

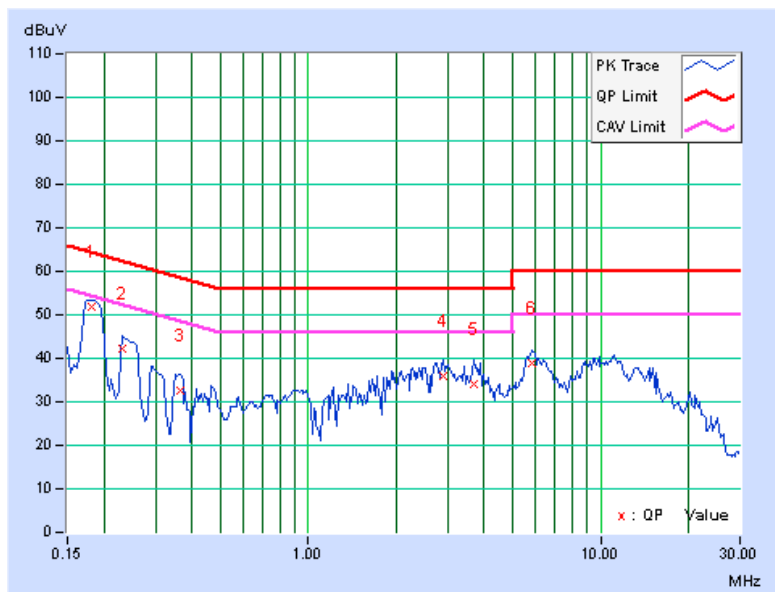


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.18	51.71	39.02	51.89	39.20	64.43	54.43	-12.54	-15.23
2	0.23203	0.19	42.18	24.60	42.37	24.79	62.38	52.38	-20.01	-27.59
3	0.36484	0.24	32.50	18.10	32.74	18.34	58.62	48.62	-25.88	-30.28
4	2.88281	0.33	35.77	29.54	36.10	29.87	56.00	46.00	-19.90	-16.13
5	3.69922	0.37	33.80	26.35	34.17	26.72	56.00	46.00	-21.83	-19.28
6	5.81250	0.42	38.29	33.22	38.71	33.64	60.00	50.00	-21.29	-16.36

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





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5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

5.3.2 TEST SETUP

Same as item 4.3.2.

5.3.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

5.3.4 TEST PROCEDURE

Same as item 4.3.4.

5.3.5 DEVIATION FROM TEST STANDARD

No deviation.

5.3.6 EUT OPERATING CONDITIONS

Same as item 4.3.6.



5.3.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	15.21	0.5	PASS
157	5785	15.16	0.5	PASS
165	5825	15.39	0.5	PASS

802.11n (20MHz): 1TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	15.16	0.5	PASS
157	5785	15.15	0.5	PASS
165	5825	15.20	0.5	PASS

802.11n (40MHz): 1TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	35.24	0.5	PASS
159	5795	35.79	0.5	PASS



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802.11n (20MHz): 2TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	15.49	15.43	0.5	PASS
157	5785	15.19	15.18	0.5	PASS
165	5825	15.21	15.34	0.5	PASS

802.11n (40MHz): 2TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
151	5755	35.77	35.23	0.5	PASS
159	5795	35.51	35.96	0.5	PASS



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5.4 CONDUCTED OUTPUT POWER

5.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 5725 –5850 MHz bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output v01r02 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.

5.4.2 TEST SETUP

Same as Item 4.4.2.

5.4.3 INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

5.4.4 TEST PROCEDURES

Same as Item 4.4.4.

5.4.5 DEVIATION FROM TEST STANDARD

No deviation.

5.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.



5.4.7 TEST RESULTS

FOR PEAK POWER

802.11a

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
149	5745	267.301	24.27	30	PASS
157	5785	259.418	24.14	30	PASS
165	5825	252.348	24.02	30	PASS

802.11n (20MHz): 1TX

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
149	5745	247.742	23.94	30	PASS
157	5785	252.930	24.03	30	PASS
165	5825	250.611	23.99	30	PASS

802.11n (40MHz): 1TX

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
151	5755	213.796	23.30	30	PASS
159	5795	248.313	23.95	30	PASS

802.11n (20MHz): 2TX

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
149	5745	24.33	23.14	477.082	26.79	30	PASS
157	5785	23.77	23.16	445.246	26.49	30	PASS
165	5825	23.68	23.01	433.332	26.37	30	PASS

802.11n (40MHz): 2TX

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
151	5755	23.13	22.46	381.787	25.82	30	PASS
159	5795	23.33	23.03	416.187	26.19	30	PASS



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FOR AVERAGE POWER

802.11a

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
149	5745	49.204	16.92
157	5785	47.534	16.77
165	5825	46.238	16.65

802.11n (20MHz): 1TX

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
149	5745	138.995	21.43
157	5785	138.357	21.41
165	5825	130.617	21.16

802.11n (40MHz): 1TX

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
151	5755	56.234	17.50
159	5795	133.968	21.27

802.11n (20MHz): 2TX

CHANNEL	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
149	5745	15.22	15.72	70.591	18.49
157	5785	15.77	16.61	83.571	19.22
165	5825	14.66	15.29	63.048	18.00

802.11n (40MHz): 2TX

CHANNEL	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
151	5755	14.15	14.81	56.271	17.50
159	5795	15.67	16.67	83.350	19.21



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5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST SETUP

Same as item 4.5.2.

5.5.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

5.5.4 TEST PROCEDURE.

Same as item 4.5.4.

5.5.5 DEVIATION FROM TEST STANDARD

No deviation.

5.5.6 EUT OPERATING CONDITION

Same as item 4.3.6.



5.5.7 TEST RESULTS

802.11a

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	-8.01	8	PASS
157	5785	-7.57	8	PASS
165	5825	-7.08	8	PASS

802.11n (20MHz): 1TX

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	-6.75	8	PASS
157	5785	-4.83	8	PASS
165	5825	-5.94	8	PASS

802.11n (40MHz): 1TX

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
151	5755	-11.30	8	PASS
159	5795	-9.00	8	PASS

802.11n (20MHz): 2TX

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	-9.35	3.01	-6.34	7.14	PASS
	157	5785	-8.62	3.01	-5.61	7.14	PASS
	165	5825	-9.79	3.01	-6.78	7.14	PASS
1	149	5745	-8.53	3.01	-5.52	7.14	PASS
	157	5785	-7.46	3.01	-4.45	7.14	PASS
	165	5825	-9.21	3.01	-6.20	7.14	PASS

NOTE: Directional gain= $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 6.86\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (6.86 - 6) = 7.14\text{dBm}$.



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802.11n (40MHz): 2TX

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	151	5755	-13.82	3.01	-10.81	7.14	PASS
	159	5795	-11.25	3.01	-8.24	7.14	PASS
1	151	5755	-12.30	3.01	-9.29	7.14	PASS
	159	5795	-10.91	3.01	-7.90	7.14	PASS

NOTE: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 6.86 \text{dBi} > 6 \text{dBi}$, so the power density limit shall be reduced to $8 - (6.86 - 6) = 7.14 \text{dBm}$.



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5.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

5.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

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

5.6.2 TEST SETUP

Same as Item 4.6.2

5.6.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

5.6.4 TEST PROCEDURE

Same as Item 4.6.4

5.6.5 DEVIATION FROM TEST STANDARD

No deviation.

5.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

5.6.7 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.

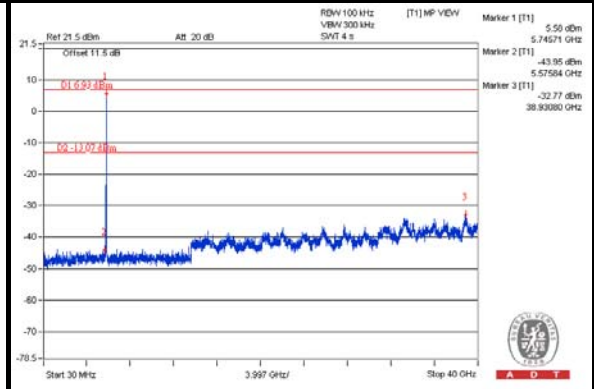
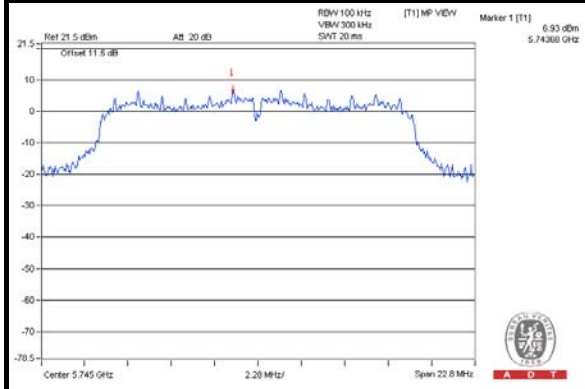
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



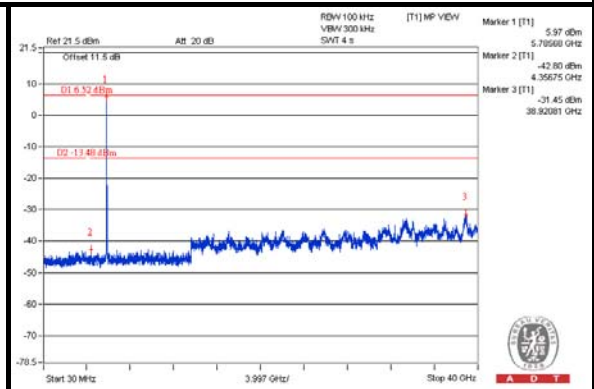
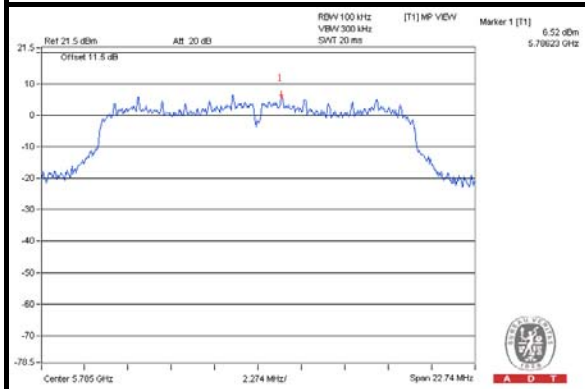
A D T

802.11a

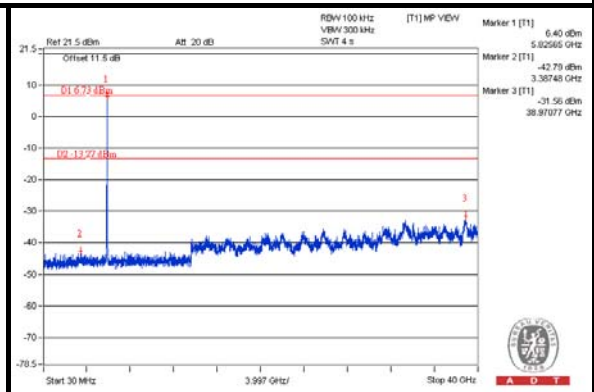
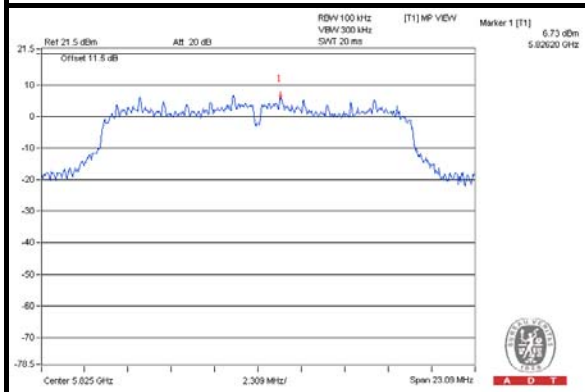
CH 149

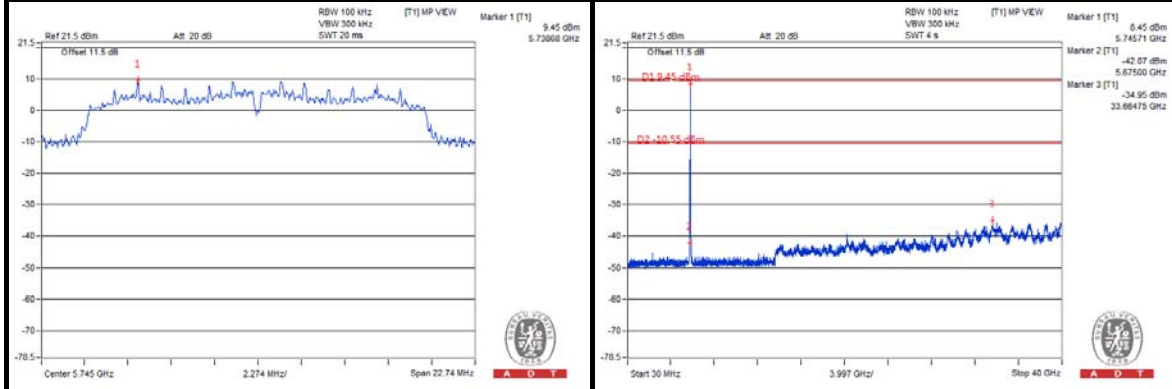
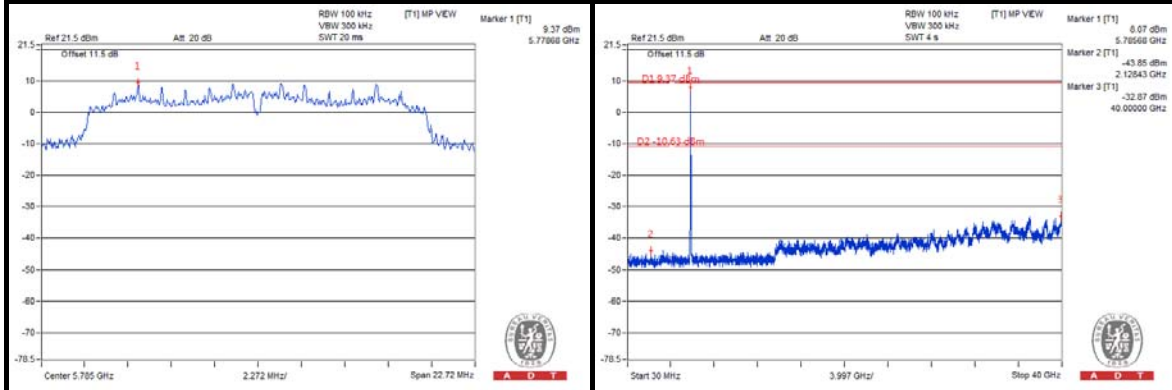
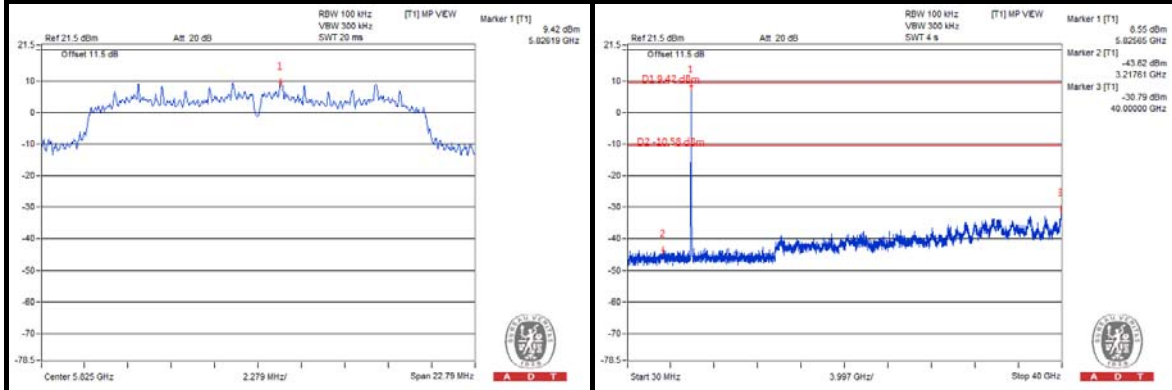


CH 157



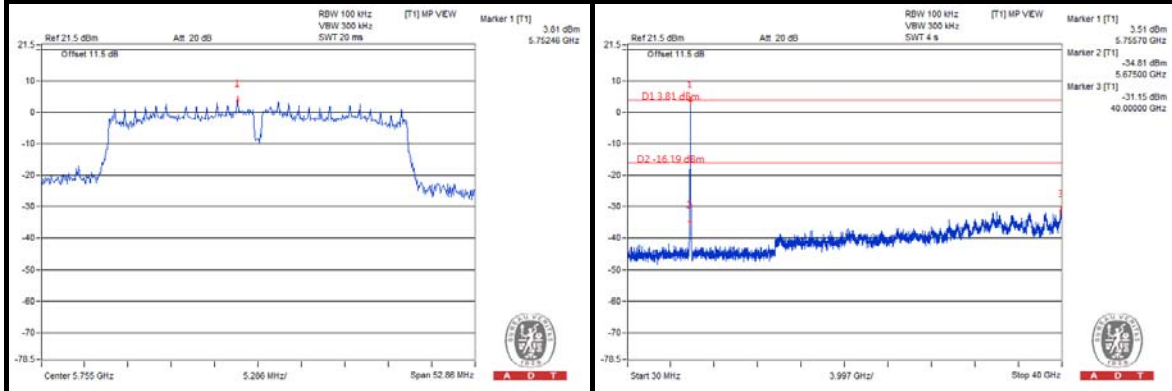
CH 165



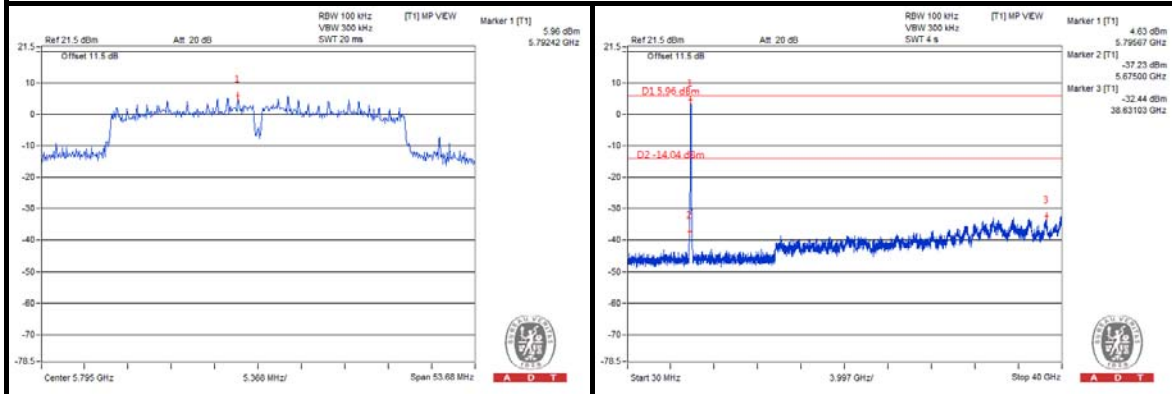
802.11n (20MHz): 1TX
CH 149

CH 157

CH 165


802.11n (40MHz): 1TX

CH 151

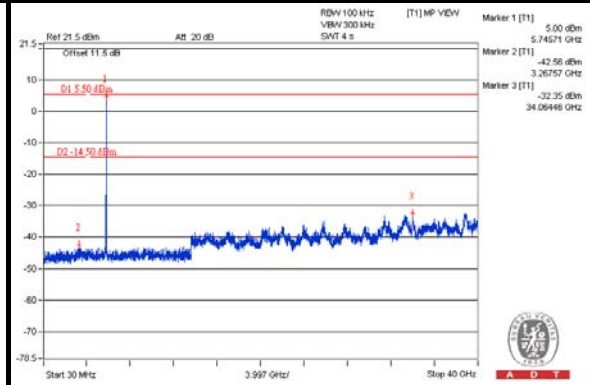
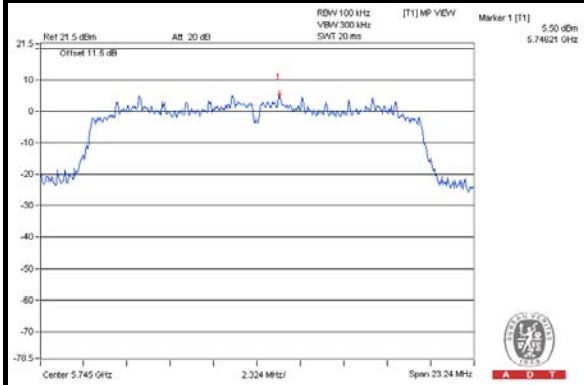


CH 159

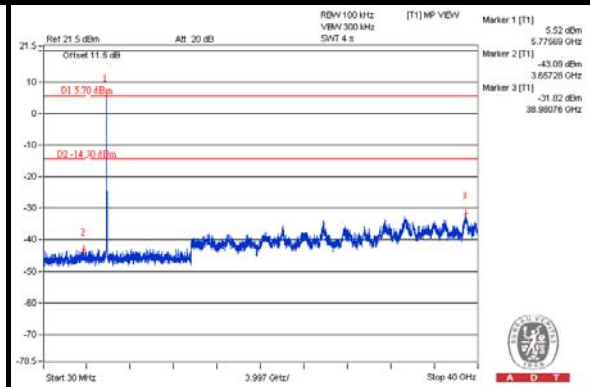
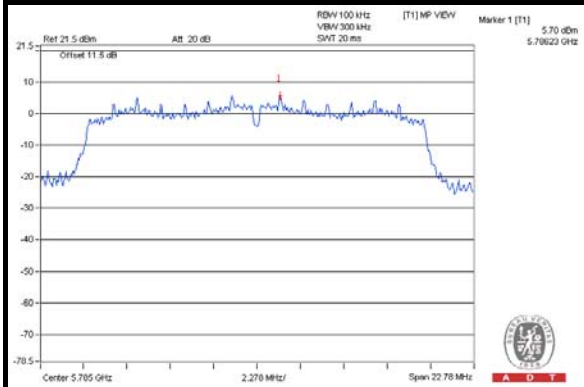


802.11n (20MHz): 2TX
CHAIN 0

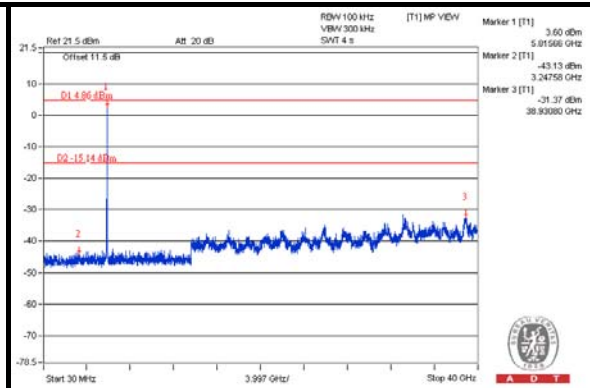
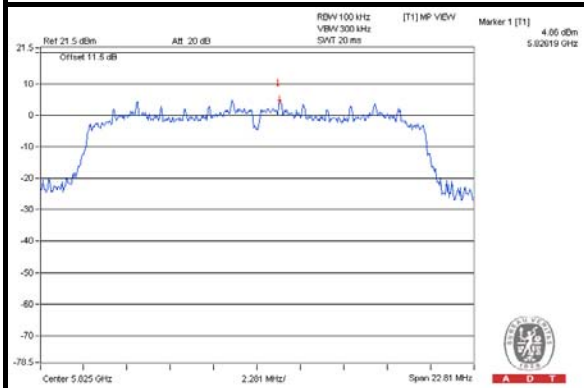
CH 149



CH 157

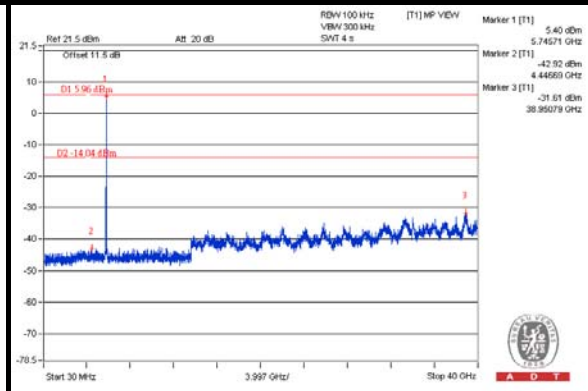
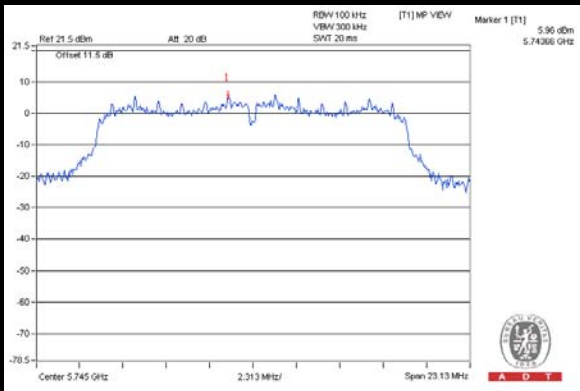


CH 165

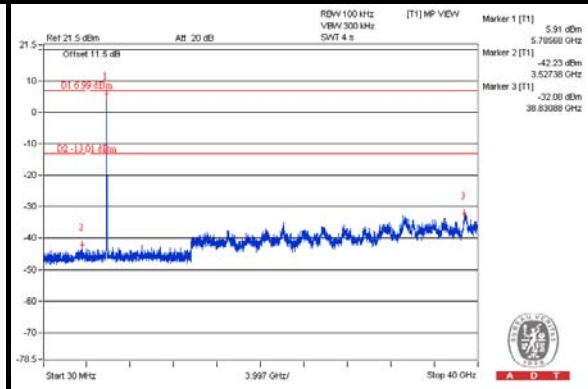
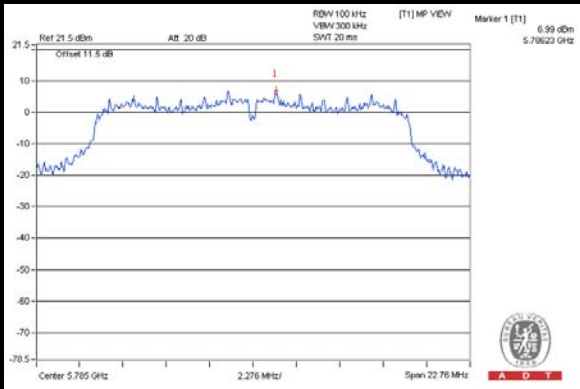


CHAIN 1

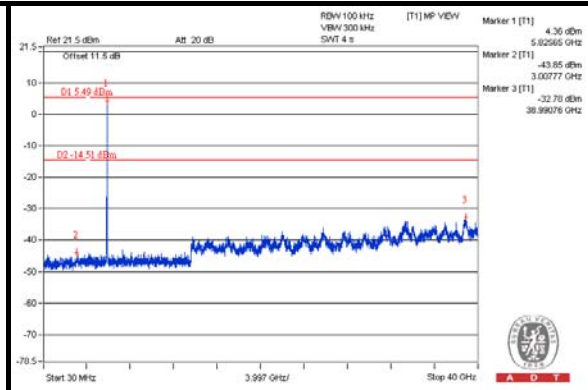
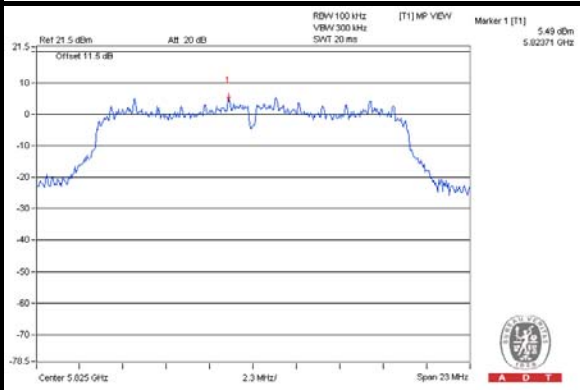
CH 149



CH 157



CH 165

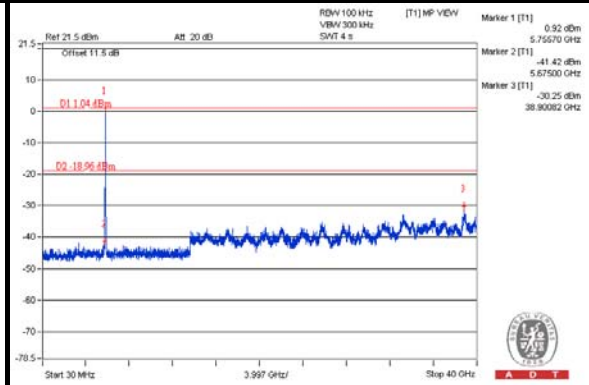
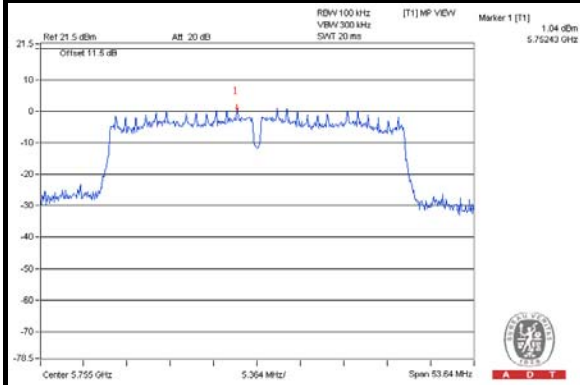




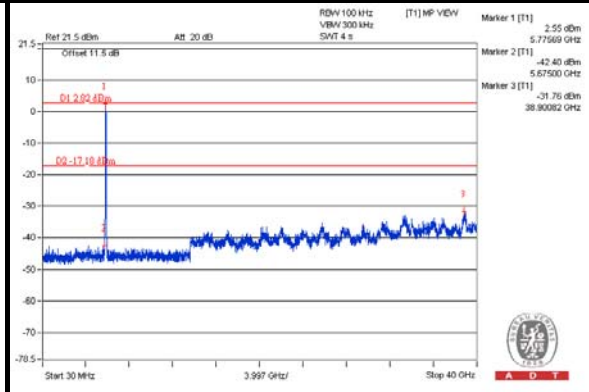
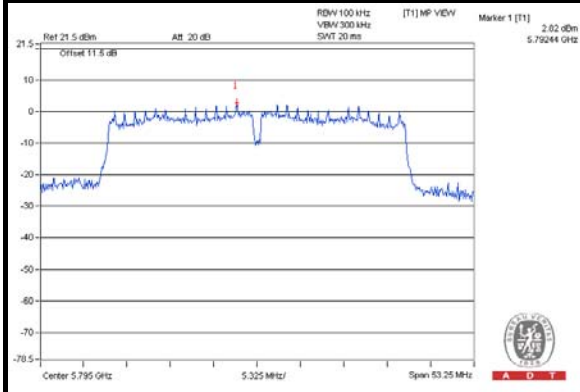
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802.11n (40MHz): 2TX CHAIN 0

CH 151



CH 159

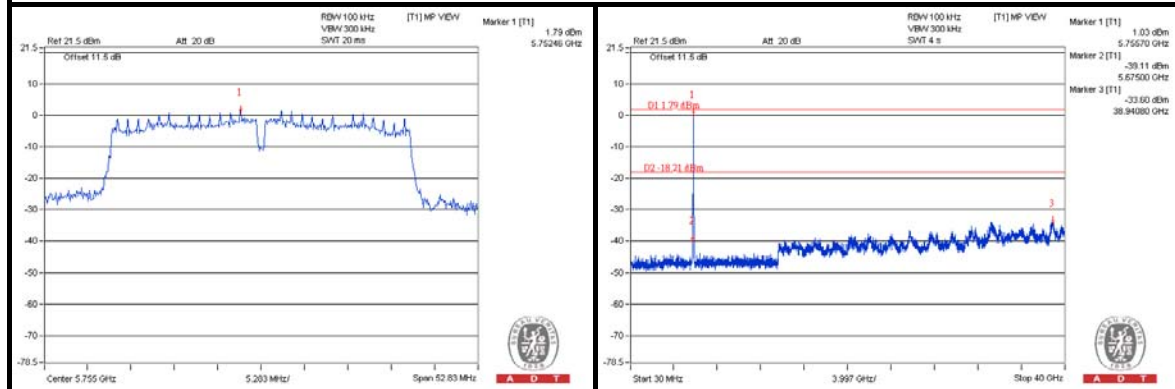




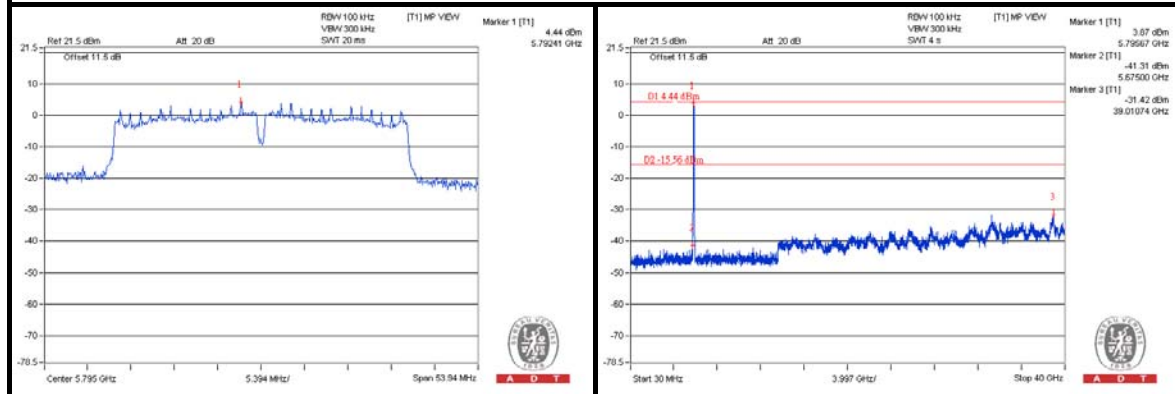
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CHAIN 1

CH 151



CH 159





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6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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7. INFORMATION ON THE TESTING LABORATORIES

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

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

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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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



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8. 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.

---END---