



FCC TEST REPORT

REPORT NO.: RF980217L05

MODEL NO.: AP-5900

RECEIVED: Feb. 17, 2009

TESTED: Mar. 06 ~ Mar. 19, 2009

ISSUED: Mar. 23, 2009

APPLICANT: MOTOROLA, INC.

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1. CERTIFICATION

PRODUCT: Access Point
MODEL: AP-5900
BRAND: MOTOROLA
APPLICANT: MOTOROLA, INC.
TESTED: Mar. 06 ~ Mar. 19, 2009
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
ANSI C63.4-2003

The above equipment (model: AP-5900) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Ivy Lin , **DATE:** Mar. 23, 2009
Ivy Lin / Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE:** Mar. 23, 2009
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Mar. 23, 2009
Gary Chang / Assistant Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
Standard Section	Test Type and Limit	Result	Remark
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -24.23dB at 11.848MHz.
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -1.64dB at 2390.000MHz.
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

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	2.44dB
Radiated emissions	30MHz ~ 1000MHz	4.03dB
	1000MHz ~ 40GHz	2.89dB

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

PRODUCT	Access Point
MODEL NO.	AP-5900
FCC ID	UZ7AP5900
POWER SUPPLY	12Vdc from AC 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
FREQUENCY RANGE	2412.0MHz ~ 2462.0MHz
NUMBER OF CHANNEL	11
MAXIMUM OUTPUT POWER	284.446mW
ANTENNA TYPE	Refer to NOTE 2
DATA CABLE	NA
I/O PORTS	Please refer to user's manual
ACCESSORY DEVICES	Adapter

NOTE:

1. The EUT was powered by the following adapter:

ADAPTER	
BRAND:	DVE
MODEL:	DSA-15P-12 US 120120
INPUT:	100-240Vac, 50/ 60Hz, 0.5A
OUTPUT:	12Vdc, 1A
POWER LINE:	1.8m non-shielded DC cable without core

2. The EUT has the following antenna types:

Antenna	Antenna Type	Antenna Gain (dBi)
1	Dipole	1.8 dBi
2		5.0 dBi

* The Antenna 2 was chosen to test and presented in this report.

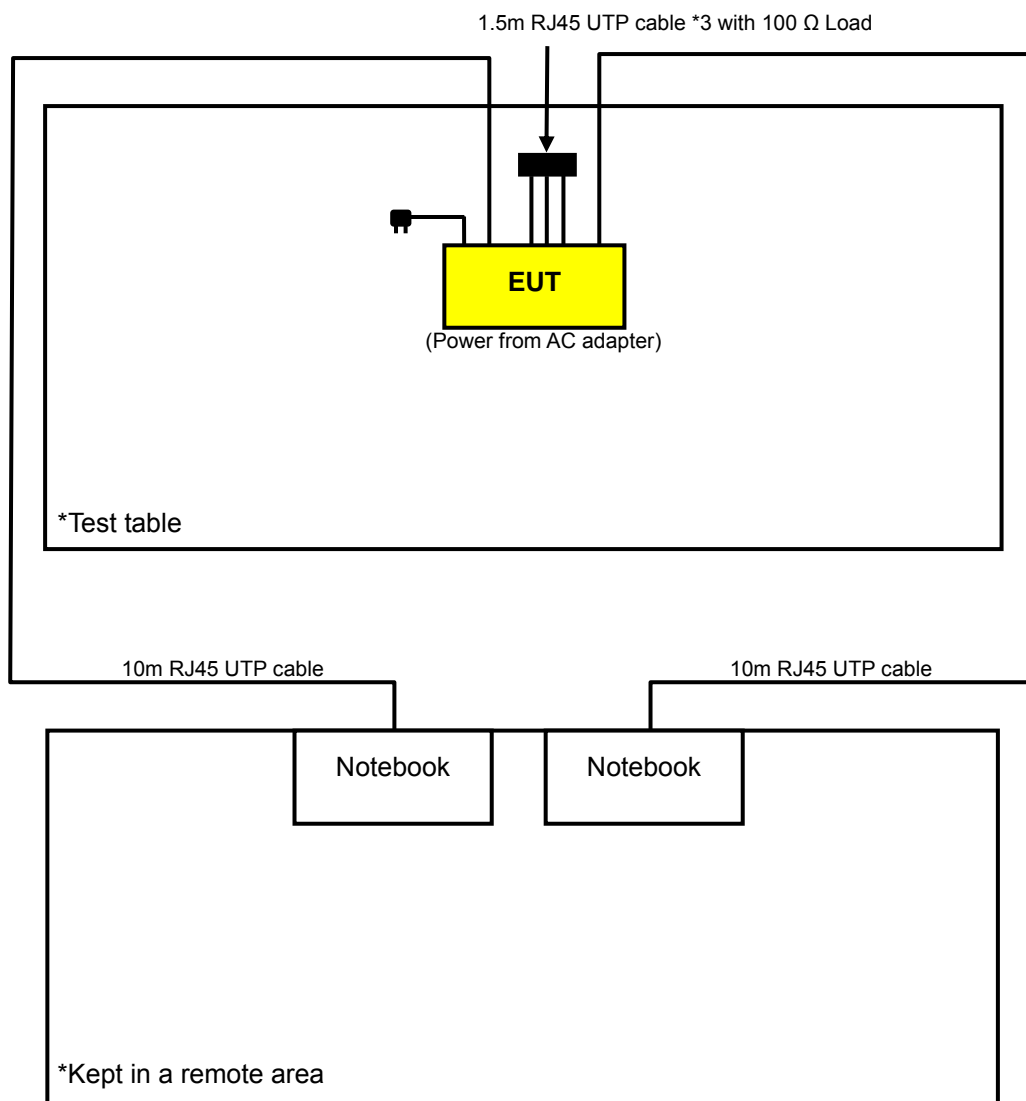
3. The EUT, operates in the 2.4GHz frequency range, lets you connect IEEE 802.11g or IEEE 802.11b devices to the network. With its high-speed data transmissions up to 54Mbps.
4. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

Eleven channels are provided to this EUT:

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		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

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

RADIATED EMISSION TEST (ABOVE 1 GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	X
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	X

RADIATED EMISSION TEST (BELOW 1 GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
802.11g	1 to 11	6	OFDM	BPSK	6	X

POWER LINE CONDUCTED EMISSION TEST:

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

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



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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 11	OFDM	BPSK	6

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.247)

ANSI C63.4-2003

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.

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	PP05L	20375526736	FCC DoC Approved
2	NOTEBOOK	DELL	PP05L	16484462992	E2K24CLNS

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m RJ45 UTP cable
2	10m RJ45 UTP cable

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 TEST INSTRUMENTS

For frequency below 1 GHz

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	DUE DATE OF CALIBRATION
ROHDE & SCHWARZ TEST RECEIVER	ESCI	100412	Jul. 22, 2008	Jul. 21, 2009
SCHAFFENR BILOG Antenna	CBL6111D	21872	Apr. 29, 2008	Apr. 28, 2009
CT Turn Table	TT100	NA	NA	NA
CT Tower	AT100	NA	NA	NA
Software	ADT_Radiated_V7.6.15	NA	NA	NA
ADT RF Switches BOX	EM-H-01-1	1002	Aug. 19, 2008	Aug. 18, 2009
TIMES RF cable	LMR-600	CABLE-ST5-01	Aug. 19, 2008	Aug. 18, 2009

- 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 Open Site No. 5.
 3. The VCCI Site Registration No. R-1039.
 4. The Industry Canada Reference No. IC 7450E-5

For frequency above 1 GHz

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	DUE DATE OF CALIBRATION
Agilent Spectrum	8564EC	4208A00659	Jul. 25, 2008	Jul. 24, 2009
Agilent Preamplifier	8449B	3008A01924	Sep. 03, 2008	Sep. 02, 2009
Agilent Preamplifier	8449B	3008A01292	Aug. 11, 2008	Aug. 10, 2009
MITEQ Preamplifier	AMF-6F-260400-3 3-8P	892164	Sep. 05, 2008	Sep. 04, 2009
Schwarzbeck Horn Antenna	BBHA-9170	BBHA9170190	Oct. 03, 2008	Oct. 02, 2009
Schwarzbeck Horn Antenna	BBHA-9120	D130	May 28, 2008	May 27, 2009
CT Turn Table	TT100	NA	NA	NA
CT Tower	AT100	NA	NA	NA
Software	ADT_Radiated_V7.6.15	NA	NA	NA
SUHNER RF cable	SF106-18	PHACAB-1G-40G Hz	Dec. 11, 2008	Dec. 10, 2009

- 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 Open Site No. 5.
 3. The VCCI Site Registration No. R-1039.
 4. The Industry Canada Reference No. IC 7450E-5.

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 10 meters open area test site. 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.

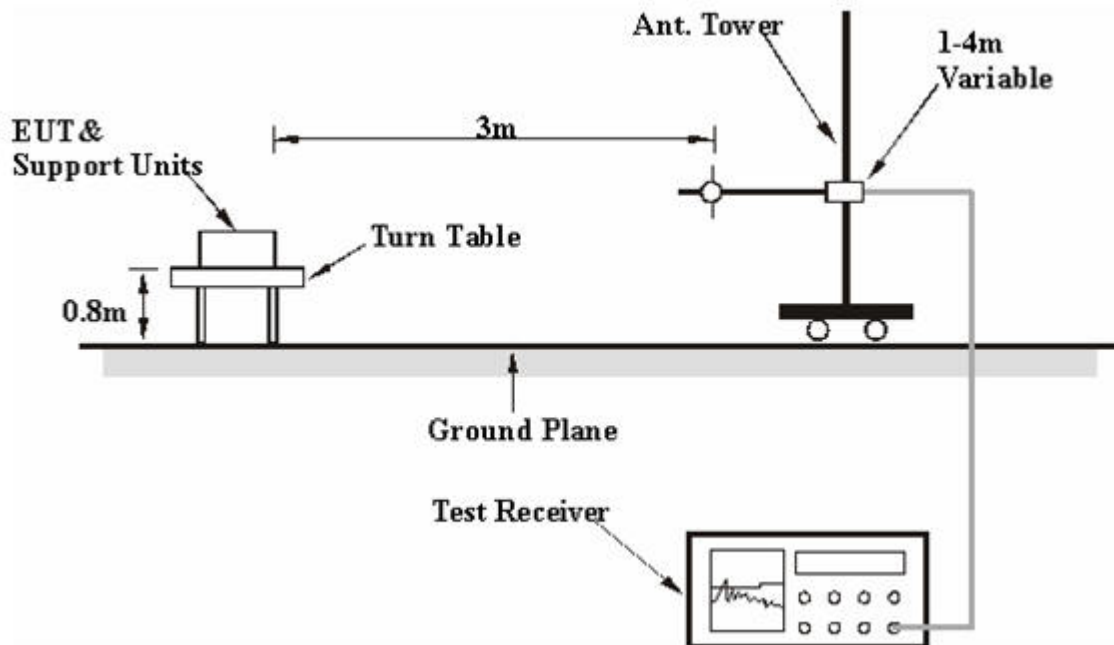
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz 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 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



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

4.1.6 EUT OPERATING CONDITIONS

- a. Placed the EUT on the testing table.
- b. Prepared two notebook systems outside of testing area to act as a communication partners.
- c. The communication partner connected with EUT via a RJ45 UTP cable and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- d. The communication partner sent data to EUT by command "PING".



4.1.7 TEST RESULTS

802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 72%RH 1024hPa	TESTED BY	Nick Chen

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	2375.00	56.69 PK	74.00	-17.31	1.46 H	216	21.51	35.18
2	2375.00	47.52 AV	54.00	-6.48	1.46 H	216	12.34	35.18
3	*2412.00	102.13 PK			1.46 H	216	66.81	35.32
4	*2412.00	97.47 AV			1.46 H	216	62.15	35.32
5	#3216.00	53.38 PK	82.13	-28.75	1.46 H	106	13.89	39.49
6	#3216.00	41.43 AV	77.47	-36.04	1.46 H	106	1.94	39.49
7	4824.00	54.18 PK	74.00	-19.82	1.46 H	192	11.02	43.17
8	4824.00	40.96 AV	54.00	-13.04	1.46 H	192	-2.20	43.17
9	#7236.00	61.34 PK	82.13	-20.79	1.54 H	208	10.74	50.60
10	#7236.00	47.48 AV	77.47	-29.99	1.54 H	208	-3.12	50.60
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	2375.00	61.10 PK	74.00	-12.90	1.34 V	112	25.92	35.18
2	2375.00	50.08 AV	54.00	-3.92	1.34 V	112	14.90	35.18
3	*2412.00	113.82 PK			1.34 V	112	78.50	35.32
4	*2412.00	109.02 AV			1.34 V	112	73.70	35.32
5	#3216.00	56.03 PK	93.82	-37.79	1.34 V	225	16.54	39.49
6	#3216.00	50.82 AV	89.02	-38.20	1.34 V	225	11.33	39.49
7	4824.00	55.17 PK	74.00	-18.83	1.00 V	3	12.01	43.17
8	4824.00	44.19 AV	54.00	-9.81	1.00 V	3	1.03	43.17
9	#7236.00	64.02 PK	93.82	-29.80	1.73 V	55	13.42	50.60
10	#7236.00	53.13 AV	89.02	-35.89	1.73 V	55	2.53	50.60

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”:The radiated frequency is out the restricted band.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 72%RH 1024hPa	TESTED BY	Nick Chen

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	102.42 PK			1.32 H	199	67.05	35.37
2	*2437.00	97.94 AV			1.32 H	199	62.57	35.37
3	#3249.00	51.31 PK	82.42	-31.11	1.29 H	76	11.78	39.53
4	#3249.00	37.93 AV	77.94	-40.01	1.29 H	76	-1.60	39.53
5	4874.00	53.47 PK	74.00	-20.53	1.39 H	16	10.19	43.28
6	4874.00	39.71 AV	54.00	-14.29	1.39 H	16	-3.57	43.28
7	7311.00	60.38 PK	74.00	-13.62	1.52 H	86	9.61	50.77
8	7311.00	45.97 AV	54.00	-8.03	1.52 H	86	-4.80	50.77

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	116.65 PK			1.62 V	14	81.28	35.37
2	*2437.00	110.96 AV			1.62 V	14	75.59	35.37
3	#3249.00	54.63 PK	96.65	-42.02	1.38 V	139	15.10	39.53
4	#3249.00	46.51 AV	90.96	-44.45	1.38 V	139	6.98	39.53
5	4874.00	53.62 PK	74.00	-20.38	1.46 V	309	10.34	43.28
6	4874.00	40.20 AV	54.00	-13.80	1.46 V	309	-3.08	43.28
7	7311.00	61.57 PK	74.00	-12.43	1.59 V	65	10.80	50.77
8	7311.00	49.47 AV	54.00	-4.53	1.59 V	65	-1.30	50.77

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#“: The radiated frequency is out the restricted band.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 72%RH 1024hPa	TESTED BY	Nick Chen

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	103.50 PK			1.59 H	264	68.08	35.42
2	*2462.00	98.74 AV			1.59 H	264	63.32	35.42
3	2487.00	58.09 PK	74.00	-15.91	1.59 H	264	22.62	35.47
4	2487.00	46.76 AV	54.00	-7.24	1.59 H	264	11.29	35.47
5	#3282.00	51.86 PK	83.50	-31.64	1.26 H	68	12.30	39.57
6	#3282.00	38.33 AV	78.74	-40.41	1.26 H	68	-1.23	39.57
7	4934.00	54.09 PK	74.00	-19.91	1.31 H	190	10.66	43.42
8	4934.00	39.89 AV	54.00	-14.11	1.31 H	190	-3.54	43.42
9	7386.00	60.53 PK	74.00	-13.47	1.51 H	43	9.59	50.94
10	7386.00	46.52 AV	54.00	-7.48	1.51 H	43	-4.42	50.94

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	115.50 PK			1.34 V	317	80.08	35.42
2	*2462.00	110.84 AV			1.34 V	317	75.42	35.42
3	2487.00	61.25 PK	74.00	-12.75	1.34 V	317	25.78	35.47
4	2487.00	50.68 AV	54.00	-3.32	1.34 V	317	15.21	35.47
5	#3282.00	54.07 PK	95.50	-41.43	1.48 V	127	14.51	39.57
6	#3282.00	45.23 AV	90.84	-45.61	1.48 V	127	5.67	39.57
7	4924.00	54.39 PK	74.00	-19.61	1.49 V	112	10.99	43.40
8	4924.00	40.46 AV	54.00	-13.54	1.49 V	112	-2.94	43.40
9	7386.00	61.68 PK	74.00	-12.32	1.69 V	67	10.74	50.94
10	7386.00	50.54 AV	54.00	-3.46	1.69 V	67	-0.40	50.94

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”: The radiated frequency is out the restricted band.



A D T

802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 72%RH 1024hPa	TESTED BY	Nick Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.45 PK	74.00	-13.55	1.34 H	296	25.20	35.25
2	2390.00	47.96 AV	54.00	-6.04	1.34 H	296	12.71	35.25
3	*2412.00	102.70 PK			1.34 H	296	67.38	35.32
4	*2412.00	91.98 AV			1.34 H	296	56.66	35.32
5	#3216.00	54.67 PK	82.70	-28.03	1.49 H	273	15.18	39.49
6	#3216.00	45.61 AV	71.98	-26.37	1.49 H	273	6.12	39.49
7	4824.00	53.40 PK	74.00	-20.60	1.43 H	187	10.24	43.17
8	4824.00	38.69 AV	54.00	-15.31	1.43 H	187	-4.47	43.17
9	#7236.00	60.28 PK	82.70	-22.42	1.43 H	33	9.67	50.60
10	#7236.00	47.26 AV	71.98	-24.72	1.43 H	33	-3.35	50.60

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	70.78 PK	74.00	-3.22	1.52 V	333	39.48	31.30
2	2390.00	52.36 AV	54.00	-1.64	1.52 V	333	21.06	31.30
3	*2412.00	113.66 PK			1.52 V	333	82.33	31.33
4	*2412.00	102.14 AV			1.52 V	333	70.81	31.33
5	#3216.00	59.08 PK	93.66	-34.58	1.36 V	192	24.80	34.28
6	#3216.00	56.71 AV	82.14	-25.43	1.36 V	192	22.43	34.28
7	4824.00	51.63 PK	74.00	-22.37	1.55 V	342	14.60	37.03
8	4824.00	37.75 AV	54.00	-16.25	1.55 V	342	0.72	37.03
9	#7236.00	59.02 PK	93.66	-34.64	1.40 V	328	17.90	41.12
10	#7236.00	45.77 AV	82.14	-36.37	1.40 V	328	4.65	41.12

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#“: The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 72%RH 1024hPa	TESTED BY	Nick Chen

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	106.01 PK			1.50 H	291	70.64	35.37
2	*2437.00	95.14 AV			1.50 H	291	59.77	35.37
3	#3249.00	53.95 PK	86.01	-32.06	1.50 H	55	14.42	39.53
4	#3249.00	44.22 AV	75.14	-30.92	1.50 H	55	4.69	39.53
5	4874.00	53.95 PK	74.00	-20.05	1.34 H	211	10.67	43.28
6	4874.00	39.41 AV	54.00	-14.59	1.34 H	211	-3.87	43.28
7	7311.00	60.00 PK	74.00	-14.00	1.40 H	297	9.23	50.77
8	7311.00	45.81 AV	54.00	-8.19	1.40 H	297	-4.96	50.77

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	118.63 PK			1.32 V	203	83.26	35.37
2	*2437.00	107.81 AV			1.32 V	203	72.44	35.37
3	#3249.00	57.70 PK	98.63	-40.93	1.36 V	262	18.17	39.53
4	#3249.00	52.89 AV	87.81	-34.92	1.36 V	262	13.36	39.53
5	4874.00	53.55 PK	74.00	-20.45	1.31 V	215	10.27	43.28
6	4874.00	39.76 AV	54.00	-14.24	1.31 V	215	-3.52	43.28
7	7311.00	64.57 PK	74.00	-9.43	1.31 V	80	13.80	50.77
8	7311.00	49.45 AV	54.00	-4.55	1.31 V	80	-1.32	50.77

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#“: The radiated frequency is out the restricted band.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 72%RH 1024hPa	TESTED BY	Nick Chen

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	104.27 PK			1.45 H	204	68.85	35.42
2	*2462.00	92.93 AV			1.45 H	204	57.51	35.42
3	2483.50	60.63 PK	74.00	-13.37	1.45 H	204	25.17	35.46
4	2483.50	47.65 AV	54.00	-6.35	1.45 H	204	12.19	35.46
5	#3282.00	52.18 PK	84.27	-32.09	1.46 H	190	12.62	39.57
6	#3282.00	39.05 AV	72.93	-33.88	1.46 H	190	-0.51	39.57
7	4924.00	52.72 PK	74.00	-21.28	1.46 H	285	9.32	43.40
8	4924.00	39.59 AV	54.00	-14.41	1.46 H	285	-3.81	43.40
9	7386.00	59.73 PK	74.00	-14.27	1.39 H	275	8.79	50.94
10	7386.00	45.39 AV	54.00	-8.61	1.39 H	275	-5.55	50.94
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	114.59 PK			1.35 V	147	79.17	35.42
2	*2462.00	103.05 AV			1.35 V	147	67.63	35.42
3	2483.50	70.70 PK	74.00	-3.30	1.35 V	147	35.24	35.46
4	2483.50	52.26 AV	54.00	-1.74	1.35 V	147	16.80	35.46
5	#3282.00	54.77 PK	94.59	-39.82	1.50 V	261	15.21	39.57
6	#3282.00	46.99 AV	83.05	-36.06	1.50 V	261	7.43	39.57
7	4924.00	53.58 PK	74.00	-20.42	1.38 V	13	10.18	43.40
8	4924.00	39.59 AV	54.00	-14.41	1.38 V	13	-3.81	43.40
9	7386.00	59.51 PK	74.00	-14.49	1.44 V	59	8.57	50.94
10	7386.00	45.61 AV	54.00	-8.39	1.44 V	59	-5.33	50.94

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”: The radiated frequency is out the restricted band.

BELOW 1GHz WORST-CASE DATA : 802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 84%RH 1016hPa	TESTED BY	Chad Lee

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	160.22	35.82 QP	43.50	-7.68	1.12 H	154	22.81	13.01
2	166.07	36.52 QP	43.50	-6.98	1.02 H	205	24.32	12.20
3	224.38	34.11 QP	46.00	-11.89	1.00 H	225	21.64	12.47
4	249.65	37.11 QP	46.00	-8.89	1.05 H	52	22.14	14.97
5	274.93	38.76 QP	46.00	-7.24	1.73 H	226	23.76	15.00
6	300.20	37.11 QP	46.00	-8.89	1.00 H	77	22.06	15.05
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	164.13	36.69 QP	43.50	-6.81	1.00 V	160	24.22	12.47
2	249.66	36.72 QP	46.00	-9.28	1.12 V	10	21.75	14.97
3	372.12	36.20 QP	46.00	-9.80	1.52 V	178	18.92	17.28
4	451.82	37.33 QP	46.00	-8.67	1.12 V	152	18.03	19.30
5	475.12	39.82 QP	46.00	-6.18	1.09 V	108	19.99	19.83
6	525.96	36.22 QP	46.00	-9.78	1.00 V	139	14.92	21.30

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

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
 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	Sep. 22, 2008	Sep. 21, 2009
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 31, 2008	Dec. 30, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Dec. 29, 2008	Dec. 28, 2009
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jul. 30, 2008	Jul. 29, 2009
Software ADT	ADT_Cond_ V7.3.7	NA	NA	NA

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

4.2.3 TEST PROCEDURES

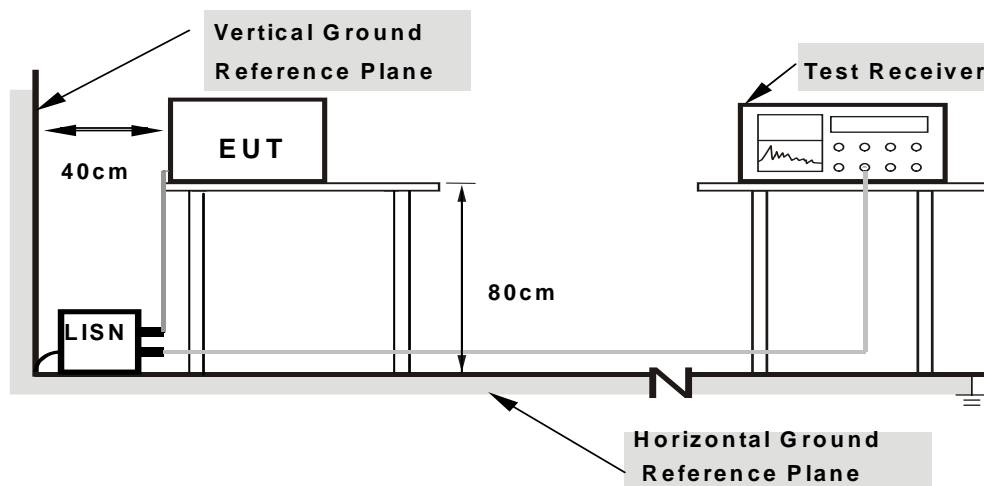
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

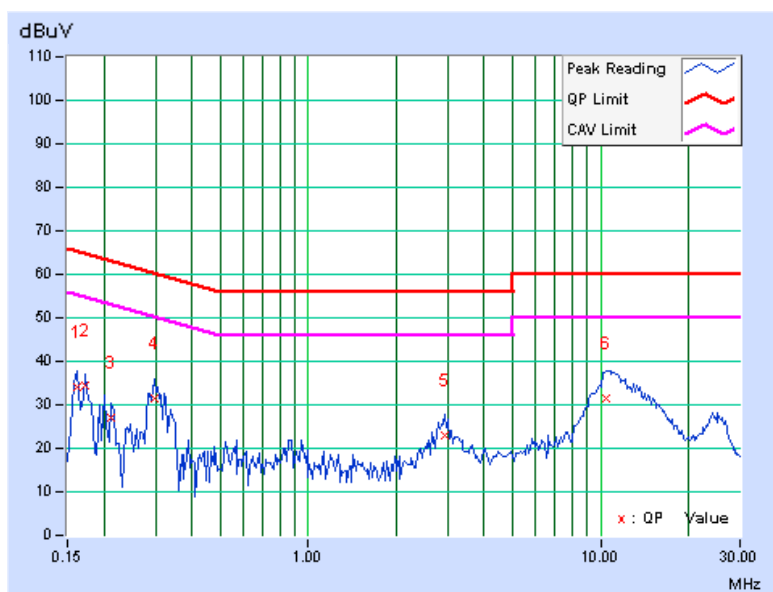
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH, 1021hPa	TESTED BY	Sun Lin

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	0.162	0.13	33.92	-	34.05	-	65.38	55.38	-31.33	-
2	0.173	0.13	34.22	-	34.35	-	64.79	54.79	-30.44	-
3	0.213	0.13	26.92	-	27.05	-	63.11	53.11	-36.06	-
4	0.298	0.13	31.23	-	31.36	-	60.29	50.29	-28.92	-
5	2.918	0.23	22.81	-	23.04	-	56.00	46.00	-32.96	-
6	10.516	0.44	31.18	-	31.62	-	60.00	50.00	-28.38	-

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



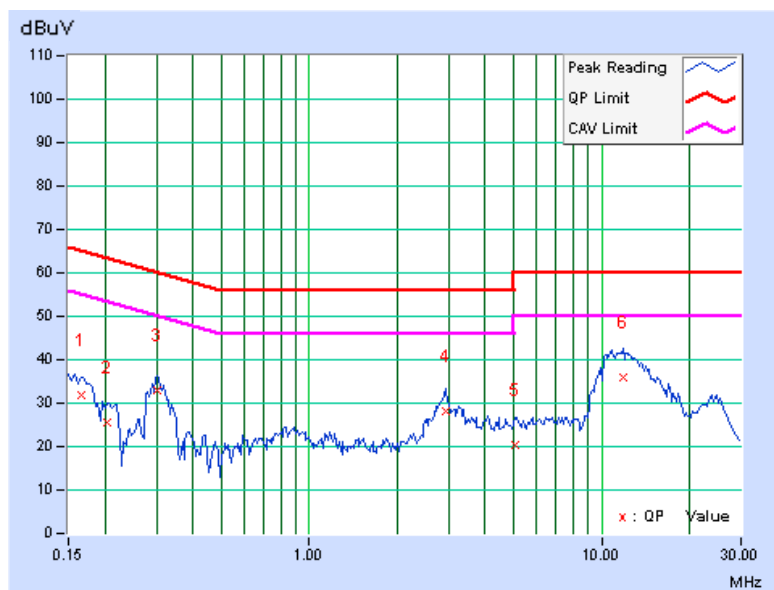


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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH, 1021hPa	TESTED BY	Sun Lin

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	0.167	0.13	31.63	-	31.76	-	65.12	55.12	-33.36	-
2	0.205	0.13	25.58	-	25.71	-	63.42	53.42	-37.71	-
3	0.302	0.14	32.67	-	32.81	-	60.18	50.18	-27.37	-
4	2.922	0.25	27.79	-	28.04	-	56.00	46.00	-27.96	-
5	5.082	0.34	20.11	-	20.45	-	60.00	50.00	-39.55	-
6	11.848	0.56	35.21	-	35.77	-	60.00	50.00	-24.23	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. 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 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSP 40	100035	Mar. 26, 2008	Mar. 25, 2009

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

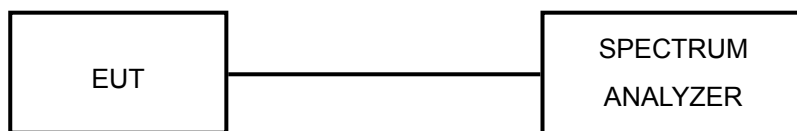
4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

4.3.5 TEST SETUP



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.



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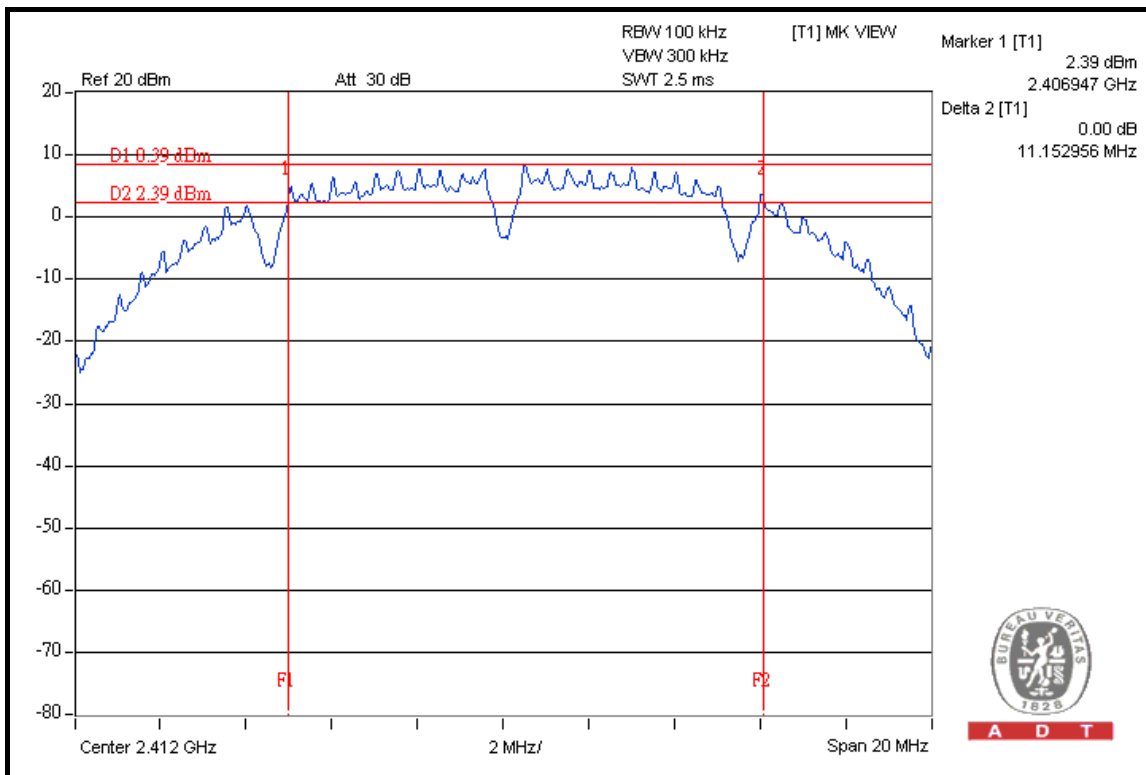
4.3.7 TEST RESULTS

802.11b DSSS MODULATION

MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	18deg.C, 72%RH, 1022hPa
TESTED BY	Chad Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.153	0.5	PASS
6	2437	12.077	0.5	PASS
11	2462	10.110	0.5	PASS

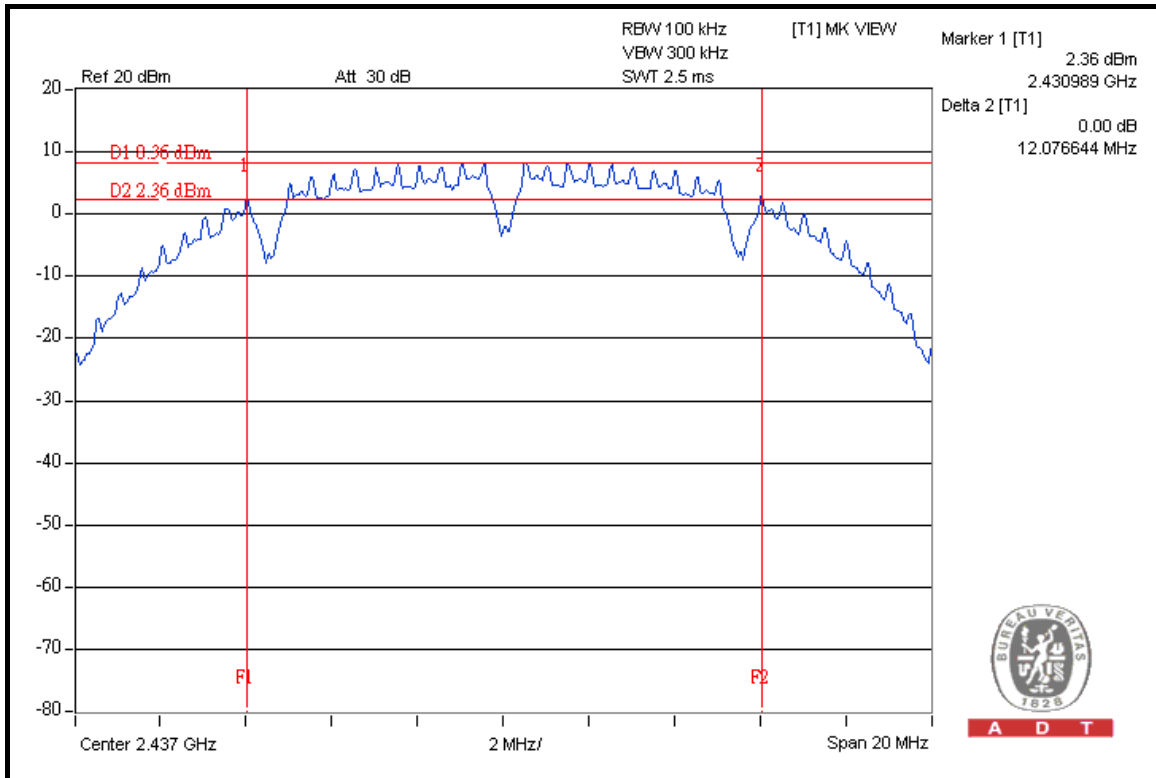
CH 1



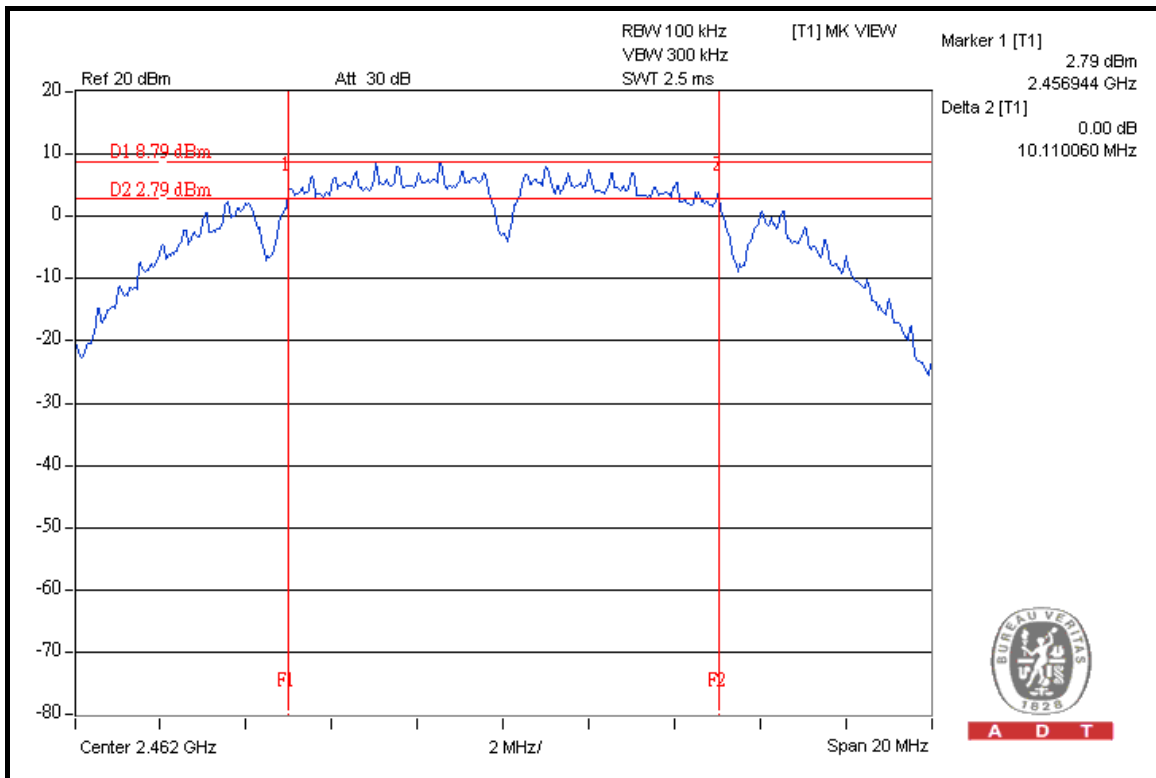


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CH 6



CH 11





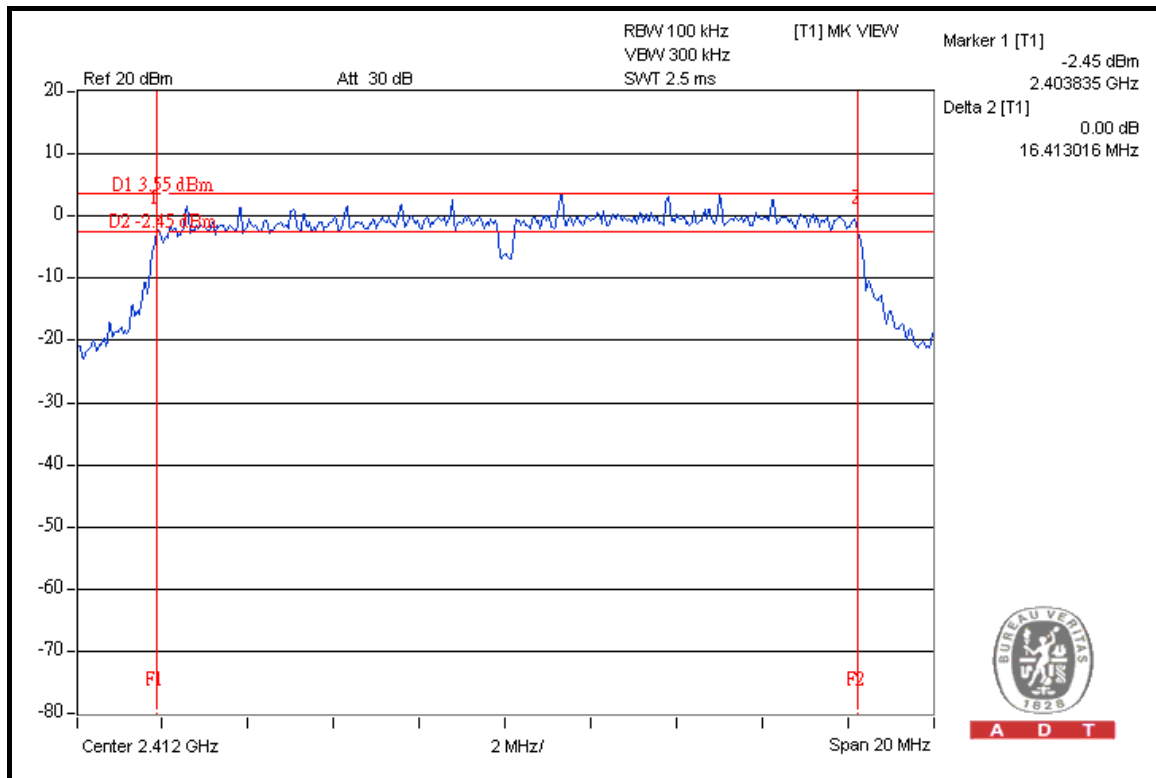
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802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	18deg.C, 72%RH, 1022hPa
TESTED BY	Chad Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.413	0.5	PASS
6	2437	16.416	0.5	PASS
11	2462	15.839	0.5	PASS

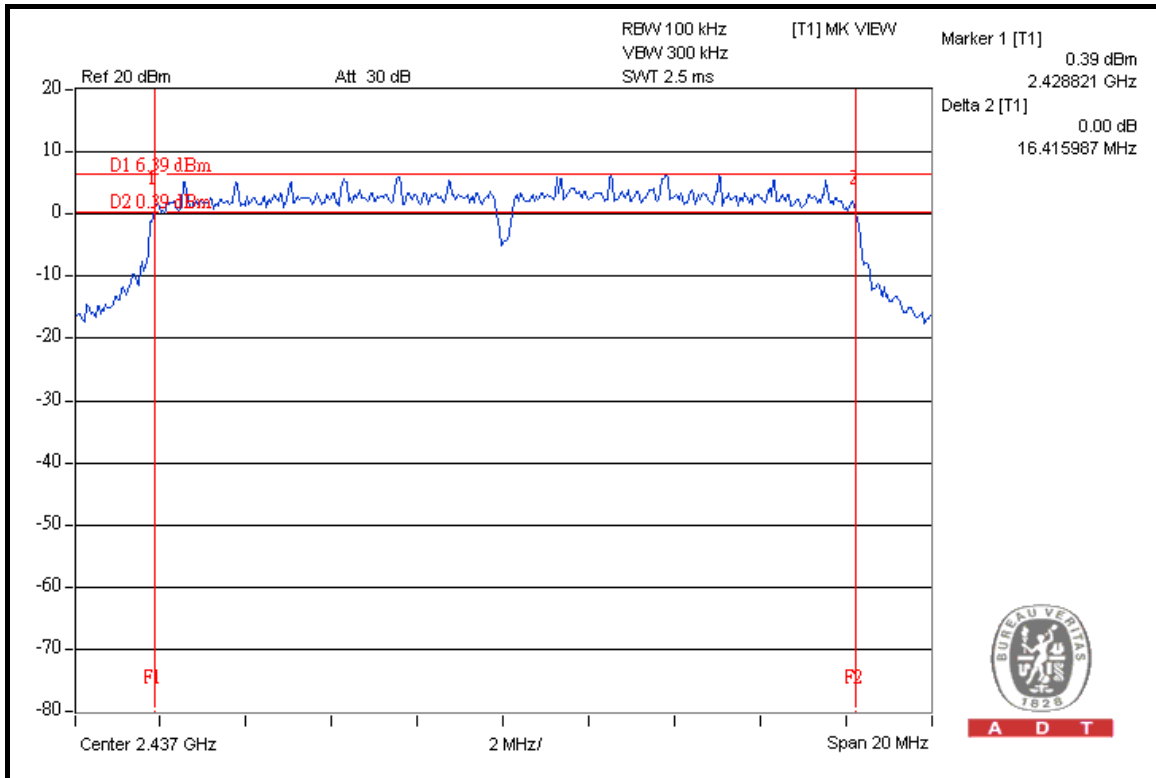
CH 1



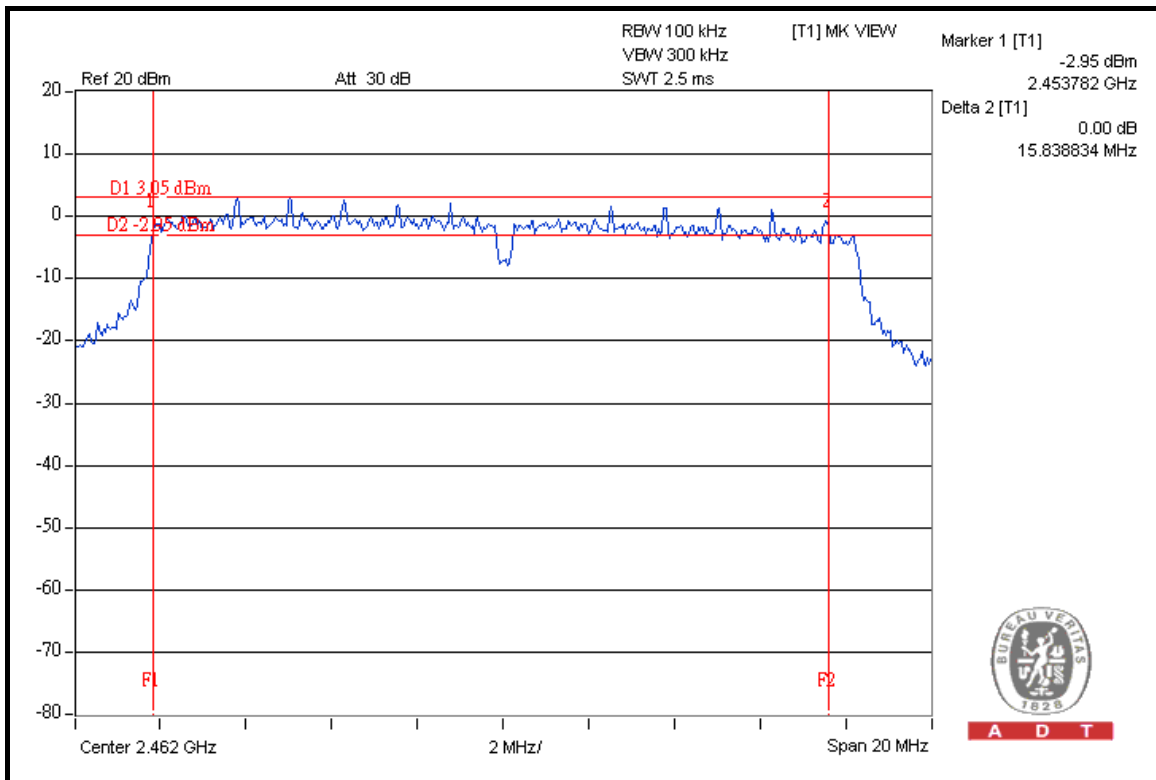


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CH 6



CH 11



4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	CALIBRATED UNTIL
Peak Power meter	ML2495A	0842014	Oct. 23, 2008	Oct. 22, 2009
Pulse Power Sensor	MA2411B	0738404	Sep. 11, 2008	Sep. 12, 2009

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. Measurement Bandwidth of ML2495A is 65MHz greater than 6dB bandwidth of emission.

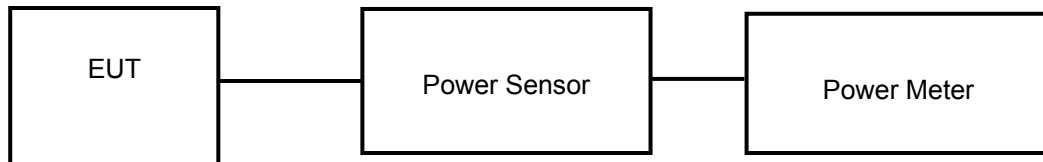
4.4.3 TEST PROCEDURES

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

4.4.4 DEVIATION FROM TEST STANDARD

No deviation.

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.



4.4.7 TEST RESULTS

802.11b DSSS MODULATION

MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	18deg.C, 72%RH, 1022hPa
TESTED BY	Chad Lee		

CHAN	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	101.625	20.07	30	PASS
6	2437	117.490	20.70	30	PASS
11	2462	121.899	20.86	30	PASS

802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	18deg.C, 72%RH, 1022hPa
TESTED BY	Chad Lee		

CHAN	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	166.725	22.22	30	PASS
6	2437	284.446	24.54	30	PASS
11	2462	144.212	21.59	30	PASS



4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSP 40	100035	Mar. 26, 2008	Mar. 25, 2009

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.5.3 TEST PROCEDURE

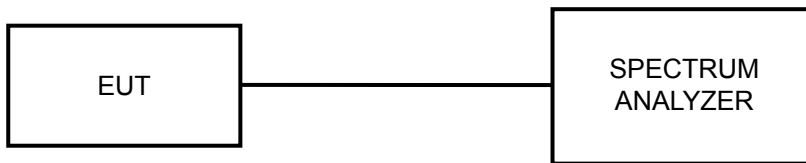
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation.

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6.



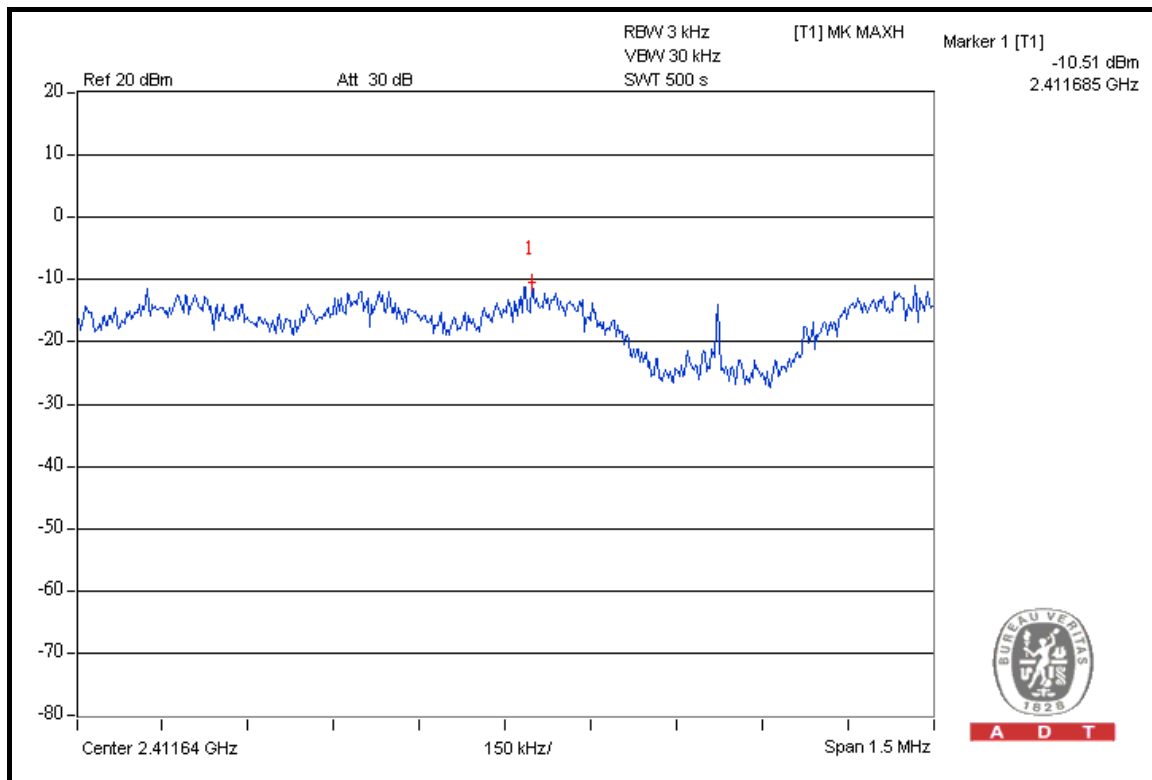
A D T

802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	18deg.C, 72%RH, 1022hPa
TESTED BY	Chad Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-10.51	8	PASS
6	2437	-7.76	8	PASS
11	2462	-10.78	8	PASS

CH 1

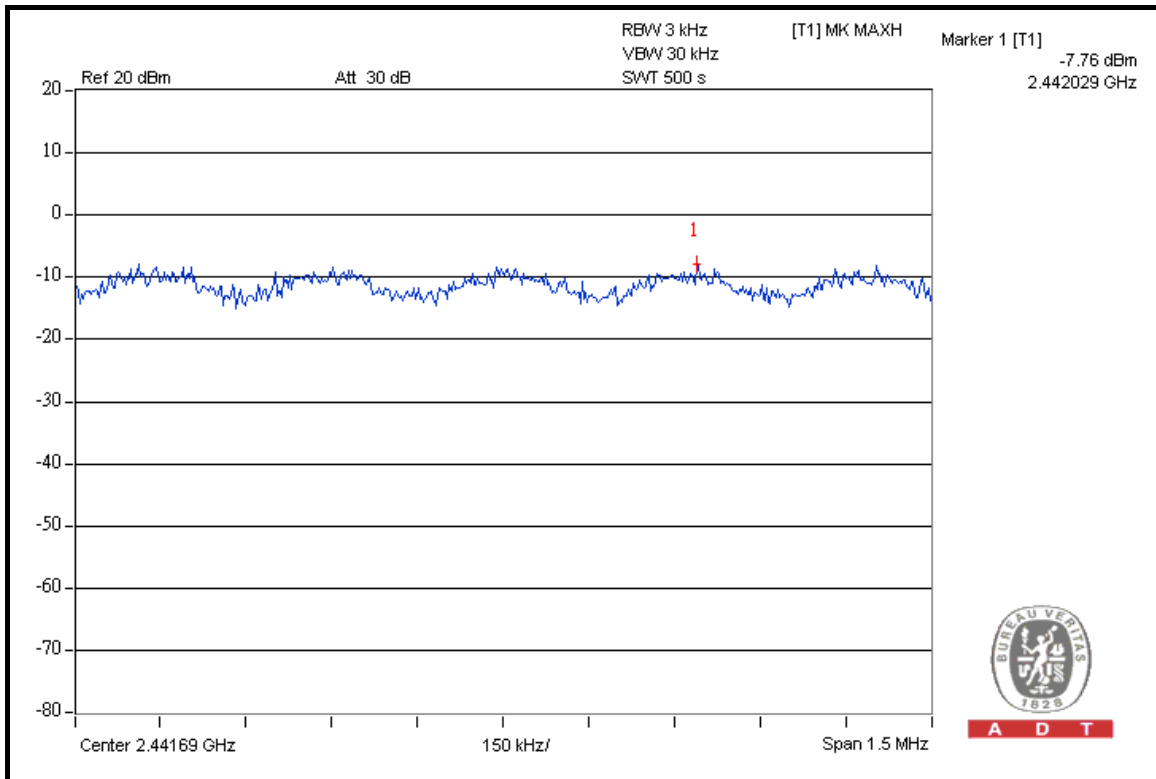


A D T



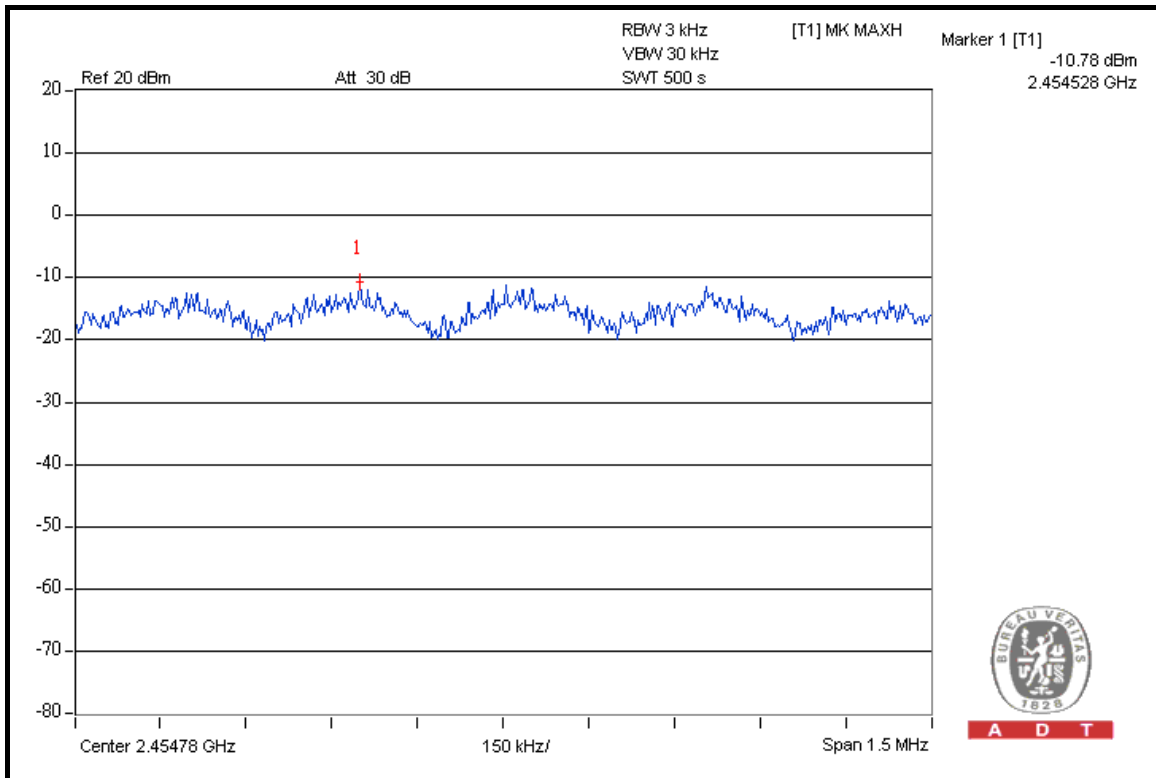
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CH 6



A D T

CH 11



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4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSP 40	100035	Mar. 26, 2008	Mar. 25, 2009

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW = 100kHz, VBW = 300kHz; Average RBW = 1MHz, VBW = 10Hz) are attached on the following pages.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation.

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6.

4.6.6 TEST RESULTS

The spectrum plots are attached on the following 24 images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b DSSS MODULATION

NOTE 1: The band edge emission plot on the next page shows 55.49dBc between carrier maximum power and local maximum emission in restrict band (2.38900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 113.82dBuV/m (Peak), so the maximum field strength in restrict band is $113.82 - 55.49 = 58.33$ dBuV/m which is under 74dBuV/m limit.

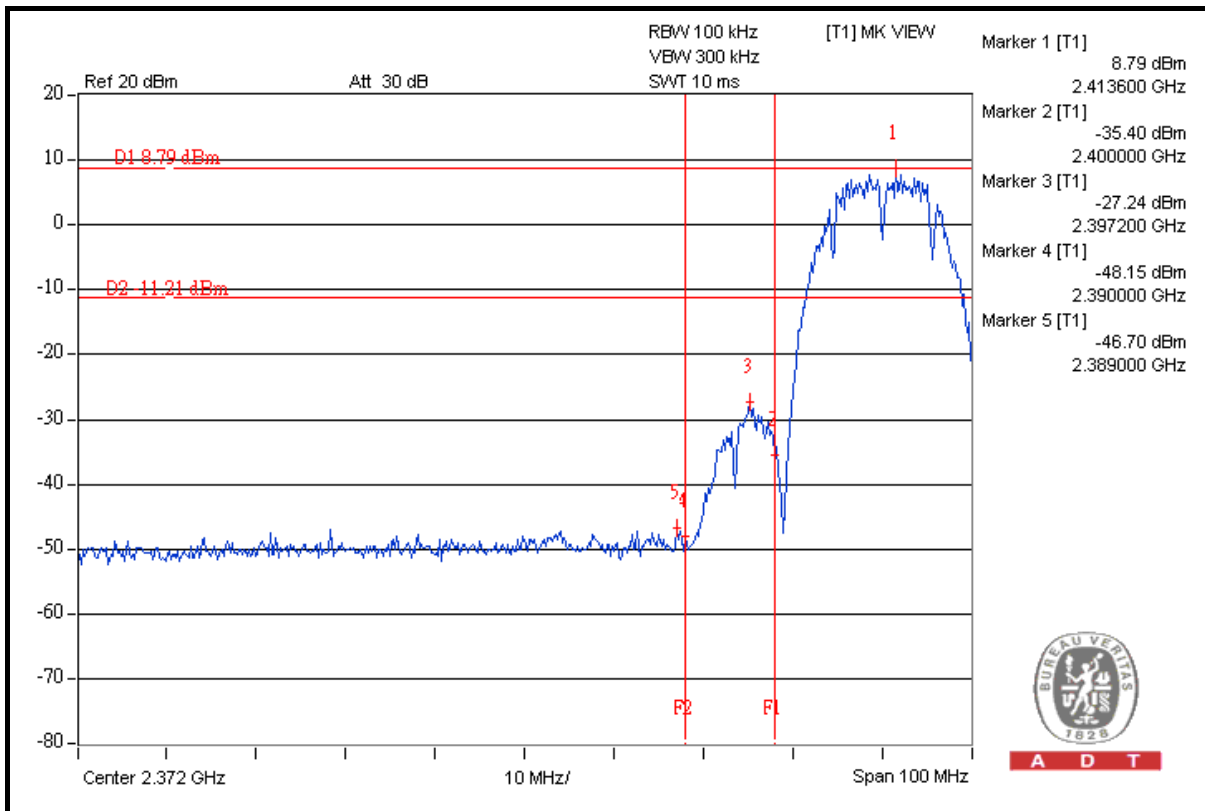
The band edge emission plot on the next page shows 58.95dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 109.02dBuV/m (Average), so the maximum field strength in restrict band is $109.02 - 58.95 = 50.07$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next second page shows 55.22dBc between carrier maximum power and local maximum emission in restrict band (2.48780GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 115.50dBuV/m (Peak), so the maximum field strength in restrict band is $115.50 - 55.22 = 60.28$ dBuV/m which is under 74dBuV/m limit.

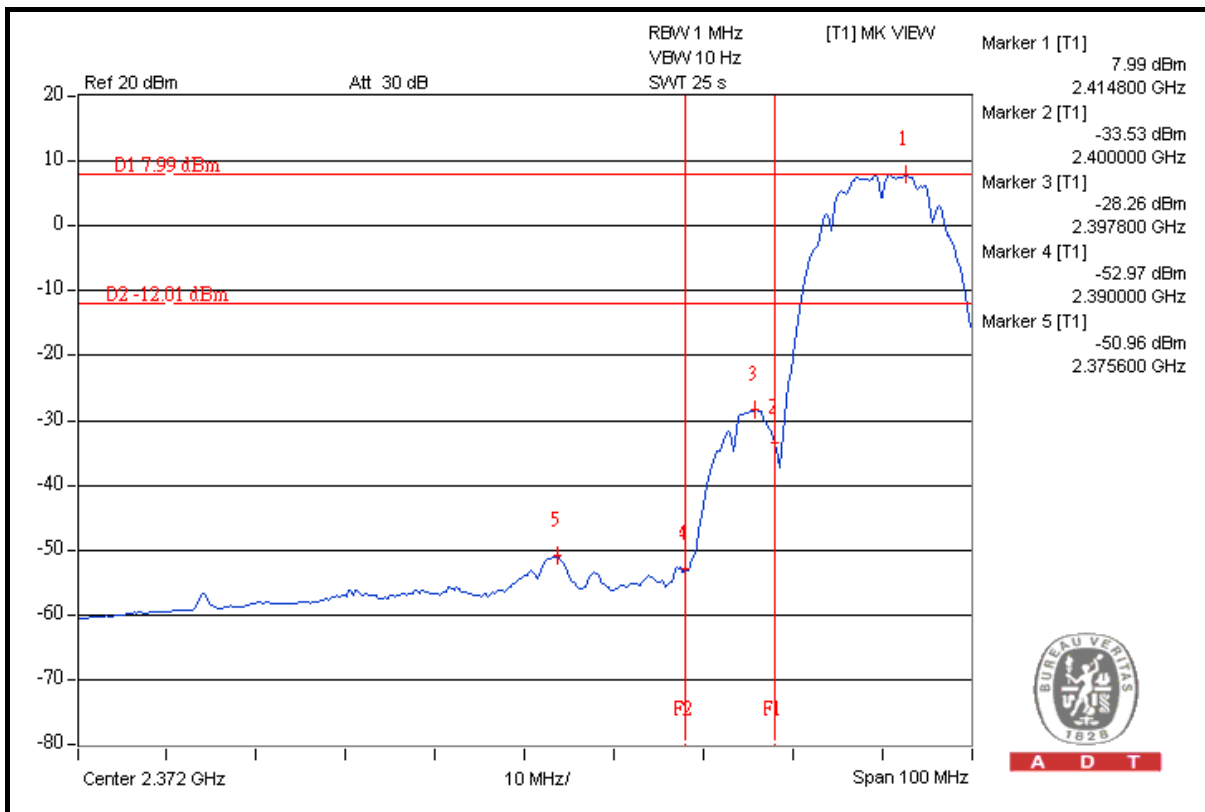
The band edge emission plot on the next third page shows 60.10dBc between carrier maximum power and local maximum emission in restrict band (2.48760GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 110.84dBuV/m (Average), so the maximum field strength in restrict band is $110.84 - 60.10 = 50.74$ dBuV/m which is under 54dBuV/m limit.



A D T



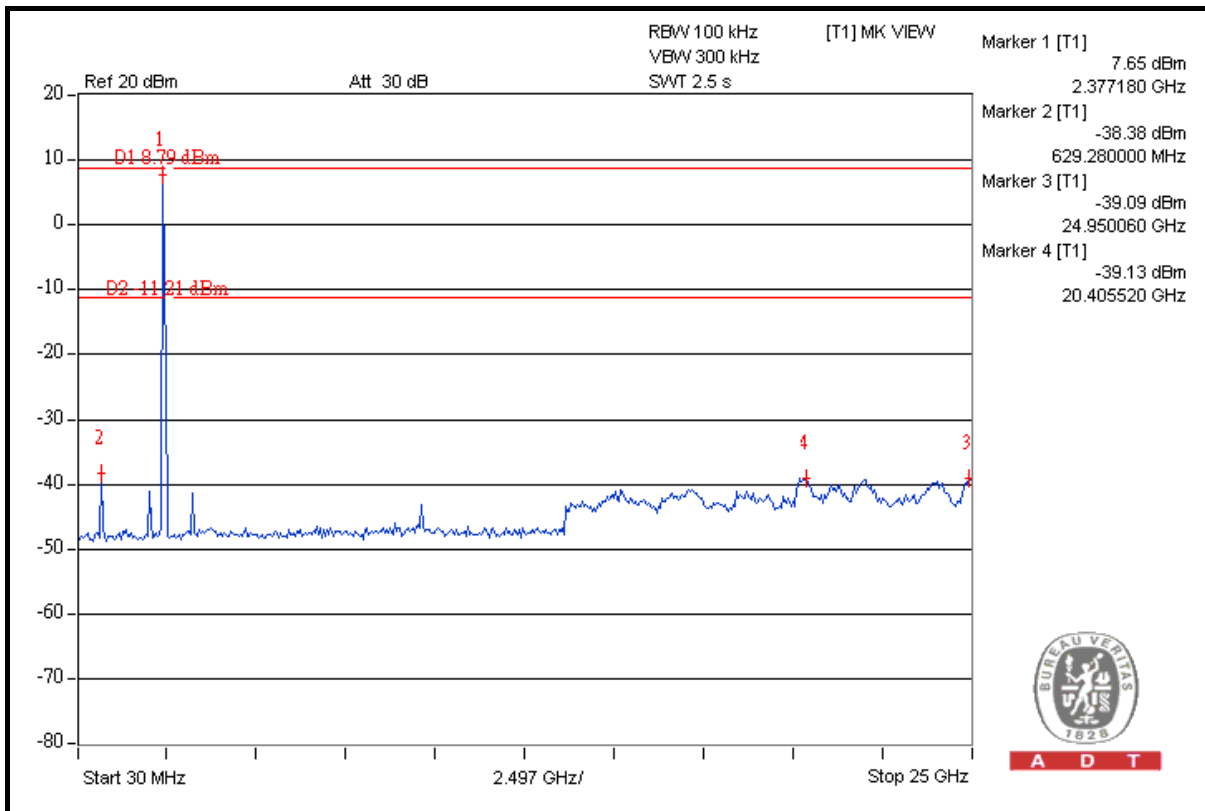
A D T



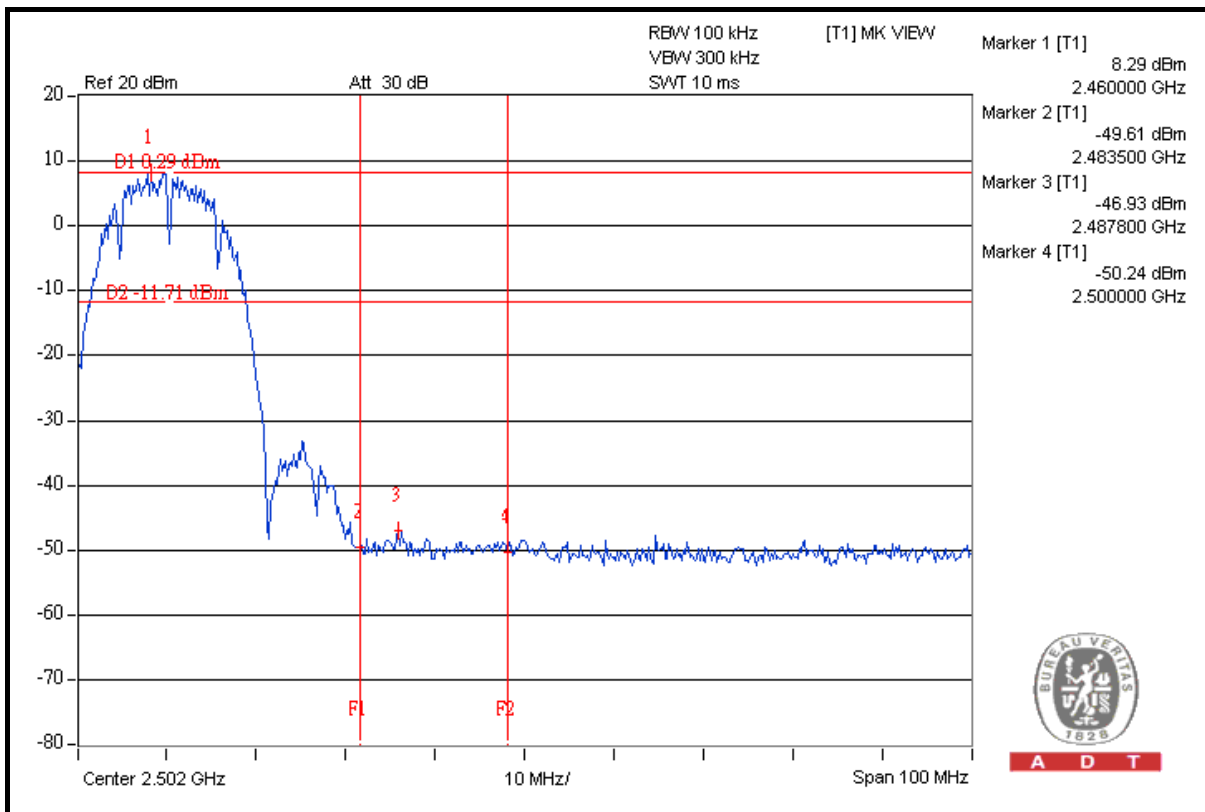
A D T



A D T



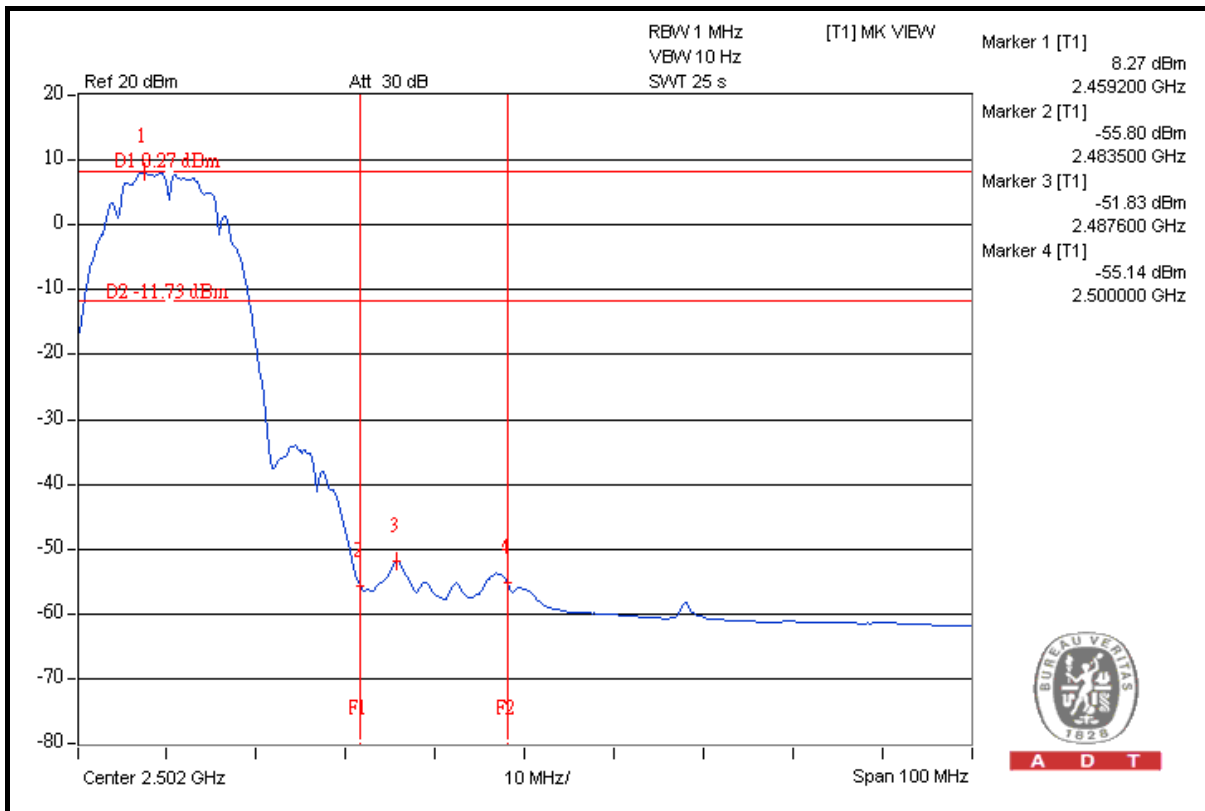
A D T



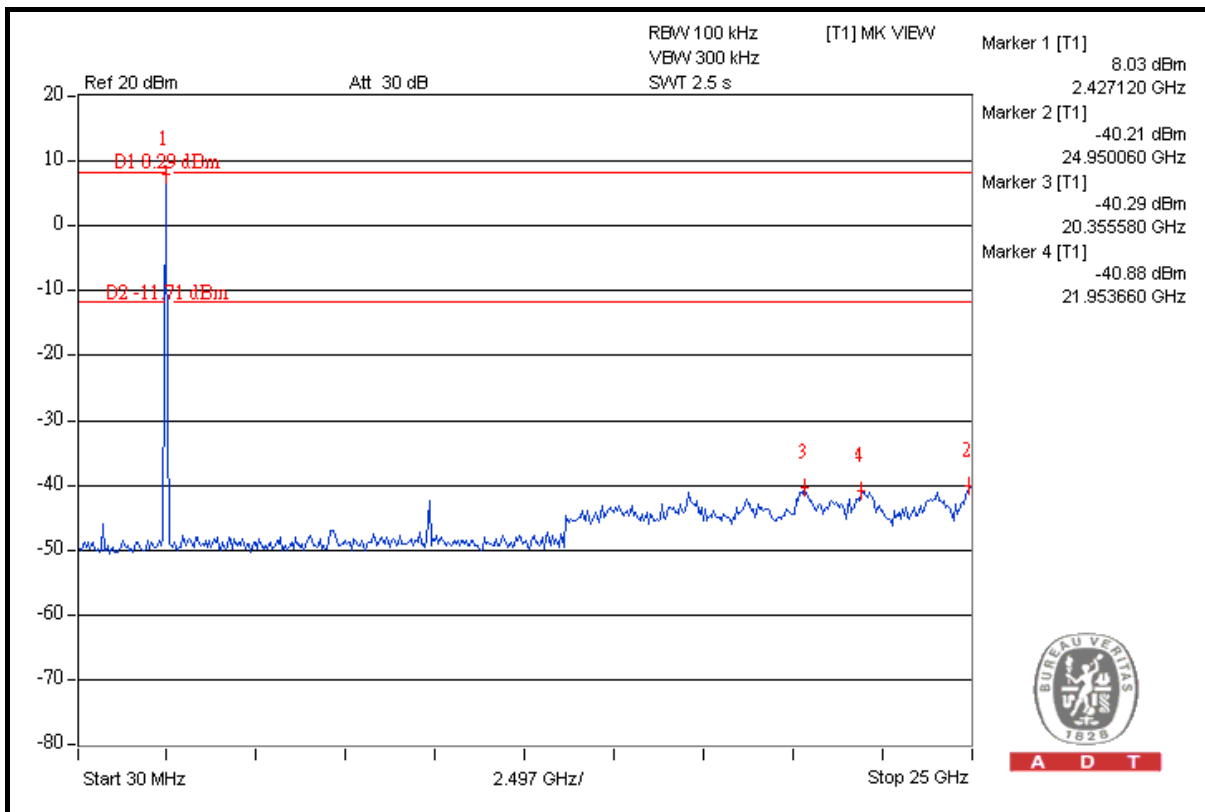
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802.11g OFDM MODULATION

NOTE 1: The band edge emission plot on the next page shows 46.09dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 113.66dBuV/m (Peak), so the maximum field strength in restrict band is $113.66 - 46.09 = 67.57$ dBuV/m which is under 74dBuV/m limit.

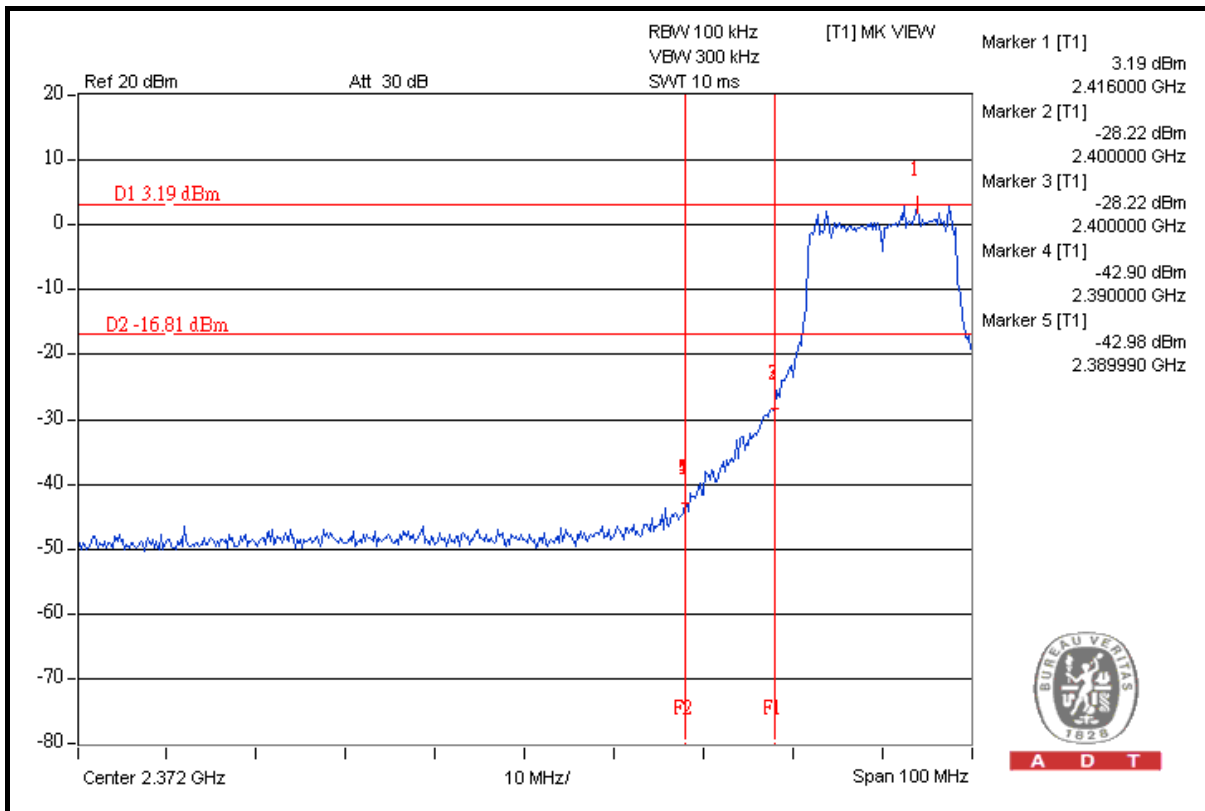
The band edge emission plot on the next page shows 48.91dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 102.14dBuV/m (Average), so the maximum field strength in restrict band is $102.14 - 48.91 = 53.23$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next second page shows 47.46dBc between carrier maximum power and local maximum emission in restrict band (2.48400GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 114.59dBuV/m (Peak), so the maximum field strength in restrict band is $114.59 - 47.46 = 67.13$ dBuV/m which is under 74dBuV/m limit.

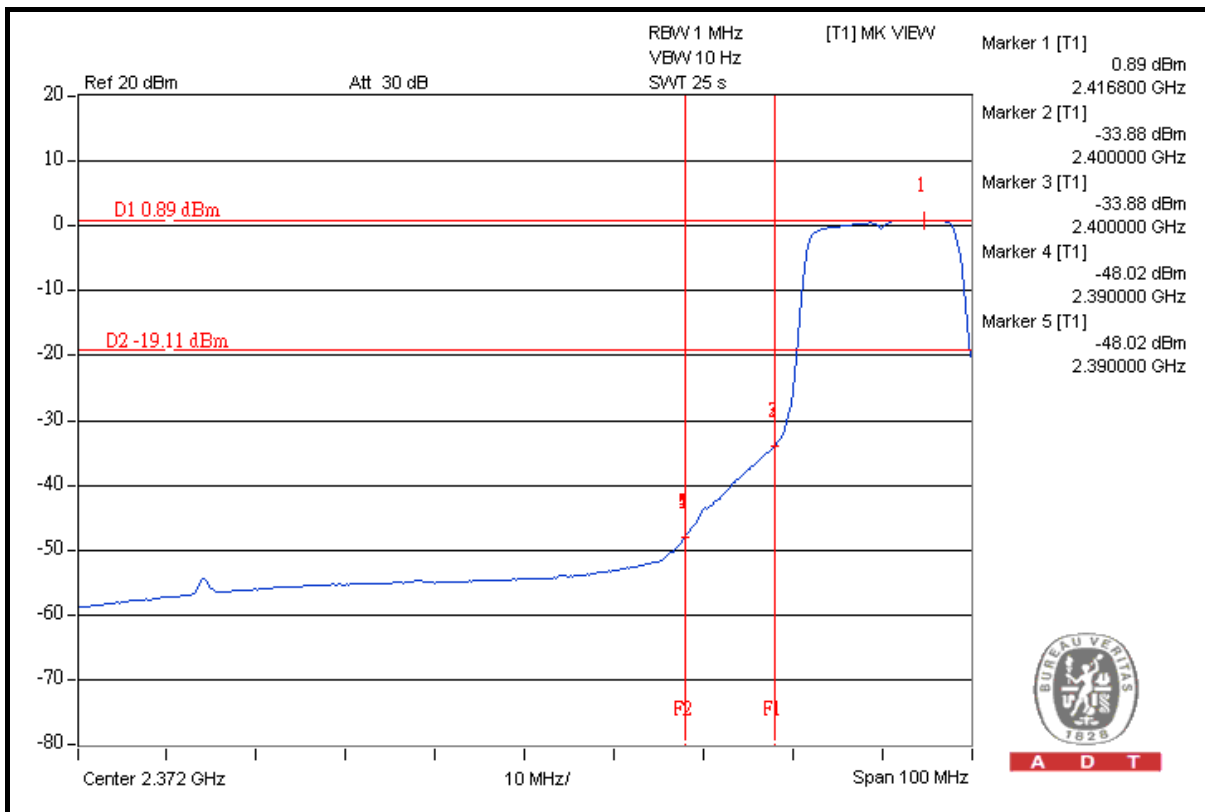
The band edge emission plot on the next third page shows 51.68dBc between carrier maximum power and local maximum emission in restrict band (2.50000GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 103.05dBuV/m (Average), so the maximum field strength in restrict band is $103.05 - 51.68 = 51.37$ dBuV/m which is under 54dBuV/m limit.



A D T



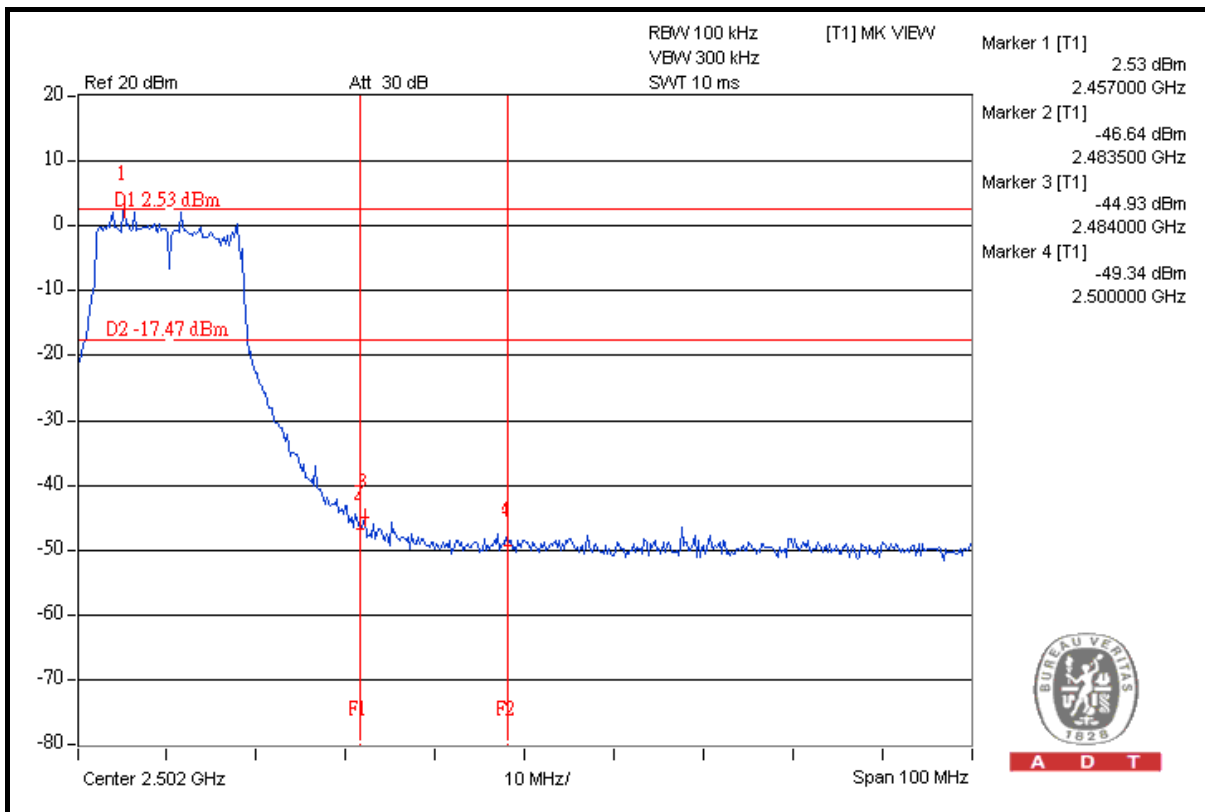
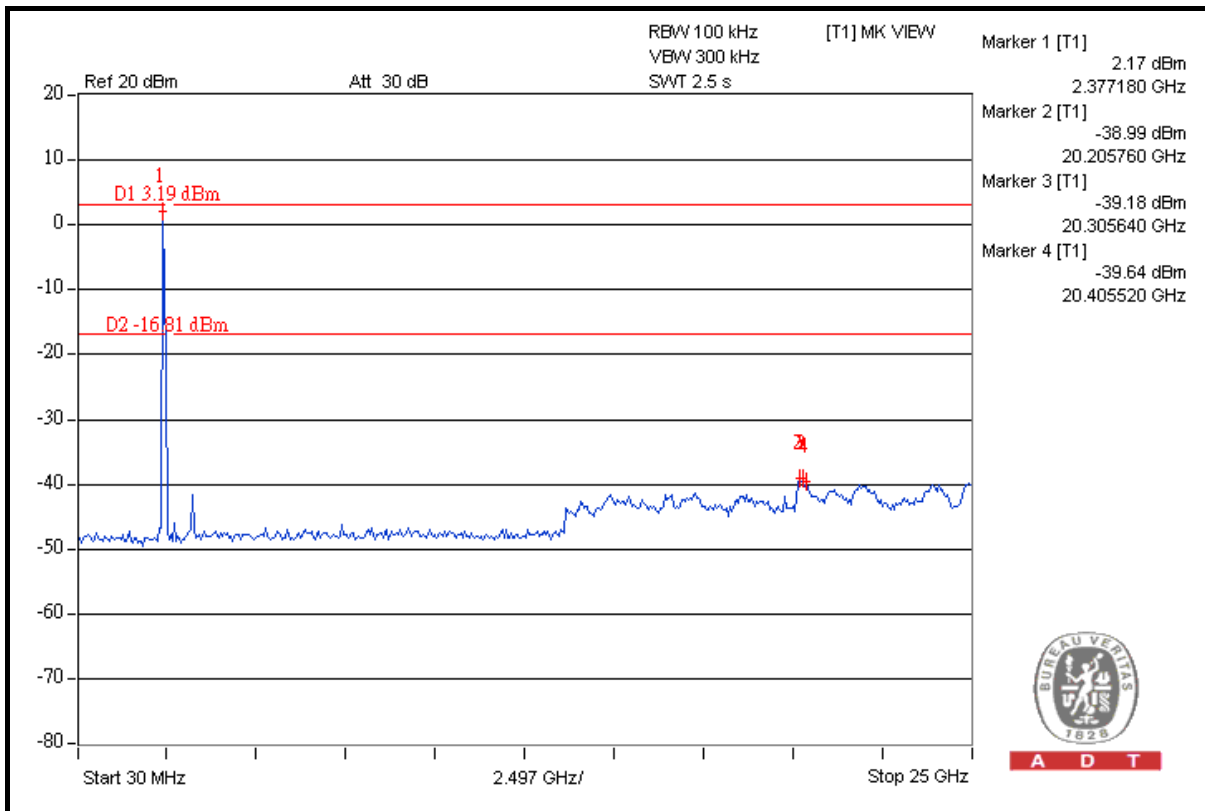
A D T



A D T

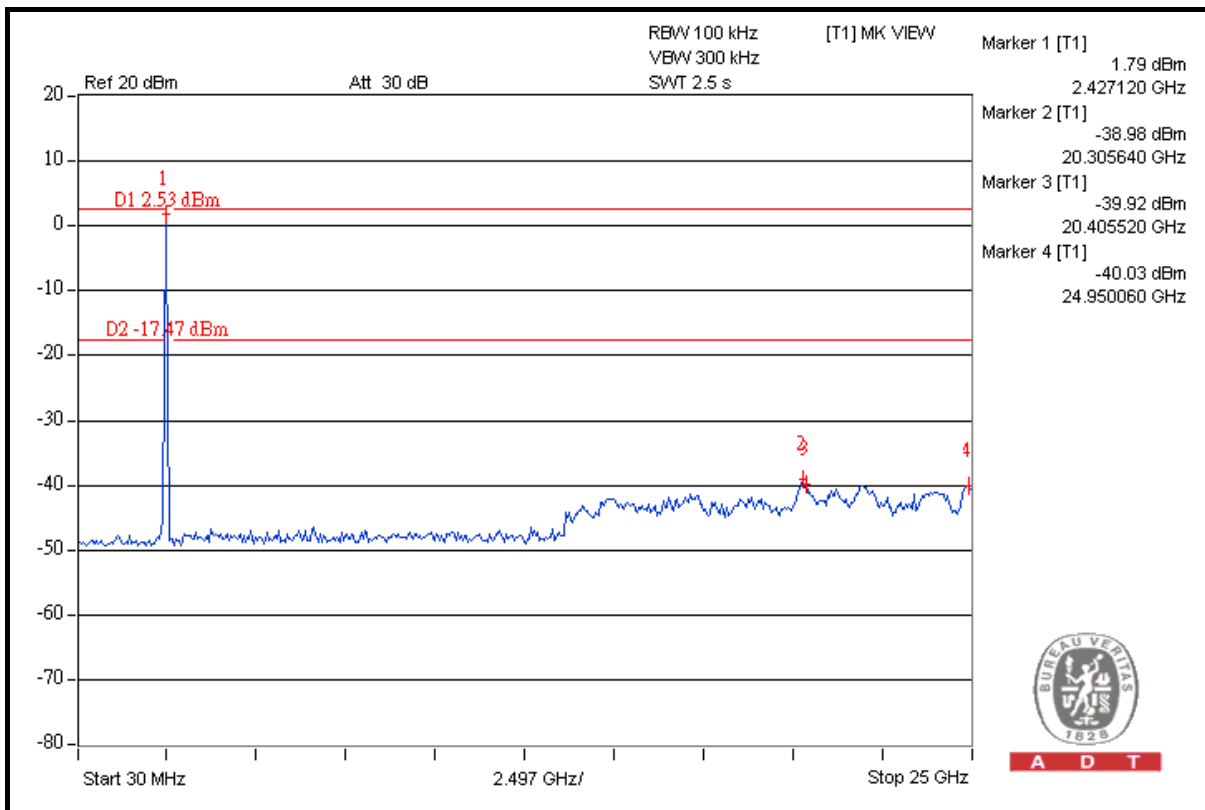
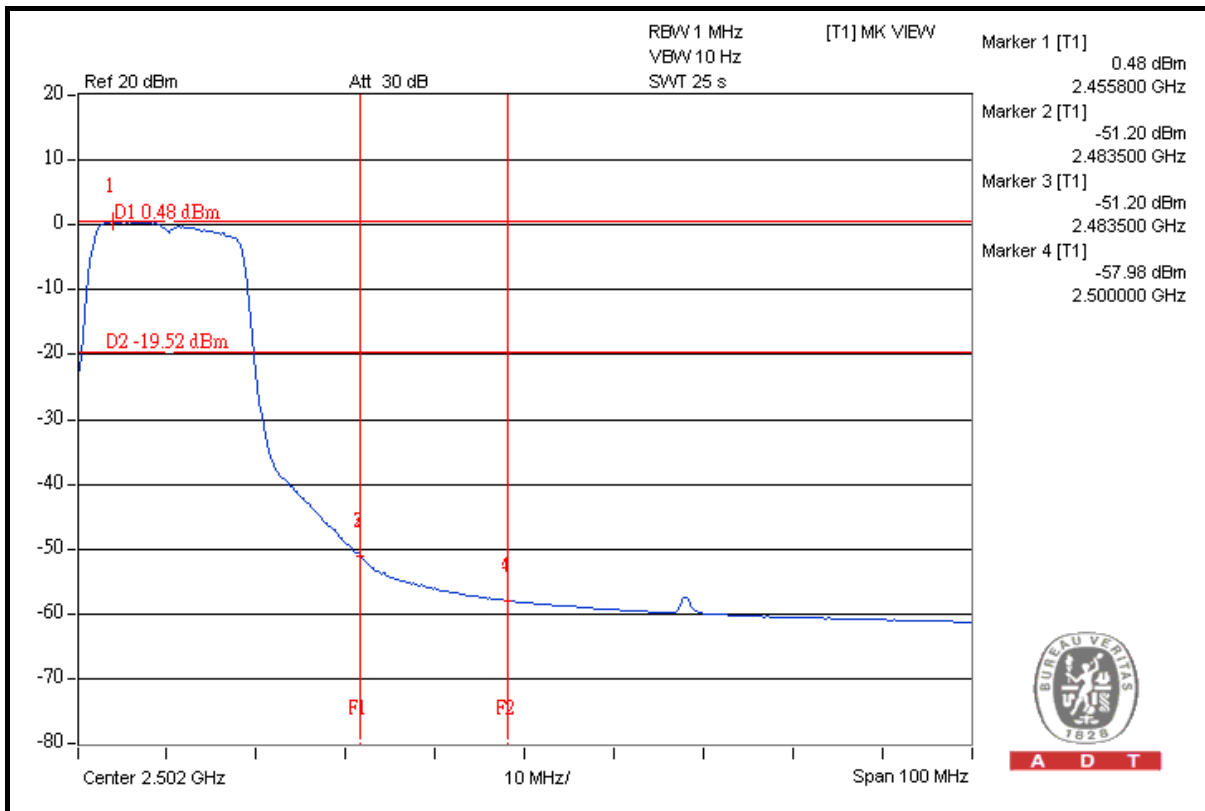


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4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Dipole antenna with R-SMA antenna connector. The maximum Gain of the antenna is 5.0dBi.

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

USA	FCC, NVLAP
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	TAF, BSMI, NCC
Netherlands	Telefication
Singapore	GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Web Site: www.adt.com.tw

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

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

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

--- END ---