FCC TEST REPORT (15.247)

REPORT NO.: RF970216L05

MODEL NO.: MC7598

RECEIVED: Feb. 17, 2008

TESTED: Feb. 20 ~ Mar. 06, 2008

ISSUED: Mar. 06, 2008

APPLICANT: Symbol Technologies, Inc.

ADDRESS: One Symbol Plaza, Holtsville, NY 11742-1300 USA

ISSUED BY: Advance Data Technology Corporation

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang 244, Taipei Hsien, Taiwan, R.O.C.

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

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1. CERTIFICATION

PRODUCT: EDA (Enterprise Digital Assistant)
MODEL: MC7598
BRAND: Symbol
APPLICANT: Symbol Technologies, Inc.
TESTED: Feb. 20 ~ Feb. 27, 2008
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
ANSI C63.4-2003

The above equipment (Model: MC7598) has been tested by **Advance Data Technology Corporation,** 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 : Peggy Chen , **DATE:** Mar. 06, 2008
Peggy Chen / Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE:** Mar. 06, 2008
Responsible for RF
Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Mar. 06, 2008
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 (Section 15.247)			
Standard Section	**Test Type and Limit**	**Result**	**Remark**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is –13.53dB at 0.150MHz.
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 –3.48dB at 11570MHz.
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 30dB 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	2.44 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	EDA (Enterprise Digital Assistant)
MODEL NO.	MC7598
FCC ID	H9PMC7598
POWER SUPPLY	3.7Vdc from rechargeable lithium battery 5.4Vdc from power adapter
MODULATION TYPE	**Wireless LAN:** CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM **Bluetooth:** GFSK, π/4-DQPSK, 8DPSK **GPS:** C/A code
MODULATION TECHNOLOGY	**Wireless LAN:** DSSS, OFDM **Bluetooth:** FHSS
TRANSFER RATE	**Wireless LAN:** 802.11b: 11, 5.5, 2, 1Mbps 802.11g: up to 54Mbps 802.11a: 54, 48, 36, 24, 18, 12, 9, 6Mbps **Bluetooth:** 1/2/3Mbps **GPS:** 50 bps
FREQUENCY RANGE	**Wireless LAN:** 2.4GHz: 2400 ~ 2483.5MHz 5.0GHz: 5150 ~ 5350MHz & 5470 ~ 5725MHz & 5725 ~ 5850MHz **Bluetooth:** 2402 ~ 2480MHz **GPS:** 1575.42 MHz
NUMBER OF CHANNEL	**Wireless LAN:** **2.4GHz:** 11 for 802.11b, 802.11g **5.0GHz:** 5150 ~ 5350MHz: 8 for 802.11a 5470 ~ 5725MHz: 11 for 802.11a 5725 ~ 5850MHz: 5 for 802.11a **Bluetooth:** 79 **GPS:** 1
OUTPUT POWER	**Wireless LAN:** 101.39mW for 2400 ~ 2483.5MHz 16.41mW for 5150 ~ 5350MHz 26.55mW for 5470 ~ 5725MHz 80.54mW for 5725 ~ 5850MHz **Bluetooth:** 1.82mW

ANTENNA TYPE(S)	**Wireless LAN:** Inverted F antenna Planar inverted antenna **Bluetooth:** Chip antenna		
MAX. ANTENNA GAIN	**2.4GHz:** 2.5dBi	**5.0GHz:** 3.5dBi	**Bluetooth:** -1.5dBi
DATA CABLE	Refer to NOTE		
I/O PORTS	Refer to user's manual		
ACCESSORY DEVICES	Battery		

NOTE:

1. The models as identified below are identical to each other except of the following options:
   - Keypad: Numeric / QWERTY
   - Barcode reader: 1D laser scanner / 2D Imager

BRAND	MODEL	DESCRIPTION
Symbol	MC7598	EVDO 1D Numeric
Symbol	**MC7598**	**EVDO 2D QWERTY**
**the worst case had been marked by boldface.		

2. The EUT is an EDA (Enterprise Digital Assistant). The functions of EUT listed as below:

	TEST STANDARD	REFERENCE REPORT
WLAN 802.11a/b/g (802.11a follows standard 15.247)	FCC Part 15	RF970216L05
WLAN 802.11a (follows standard 15.407)		RF970216L05-2
BLUETOOTH		RF970216L05-3
GSM 850 / WCDMA 850	FCC Part 22	RF970216L05-1
PCS 1900 / WCDMA 1900	FCC Part 24	RF970216L05-4

3. The EUT has one lithium battery listed as below:

LI-LON BATTERY	
BRAND:	MOTOROLA
MODEL:	82-71364-05 Rev A
RATING:	3.7Vdc, 3600mAh

4. The following accessories are for support units only.

PRODUCT	BRAND	MODEL	DESCRIPTION
RS232 charging cable	Motorola	25-102776-01R	1.2m non-shielded cable with one core
USB charging cable	Motorola	25-102775-01R	1.5m shielded cable with one core
Headset	Motorola	50-11300-050R	VR10 headset 0.8m non-shielded cable with one core
Power Supply Adaptor	Motorola	EADP-16BB A	I/P: 100-240Vac, 50-60Hz, 0.4A O/P: 5.4Vdc, 3A 1.8m non-shielded cable without core

5. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.
6. The EUT operates in the 2.4GHz/5GHz frequency spectrum with throughput of up to 54Mbps.
7. 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

FOR 2.4GHz:

11 channels are provided for 802.11b, 802.11g:

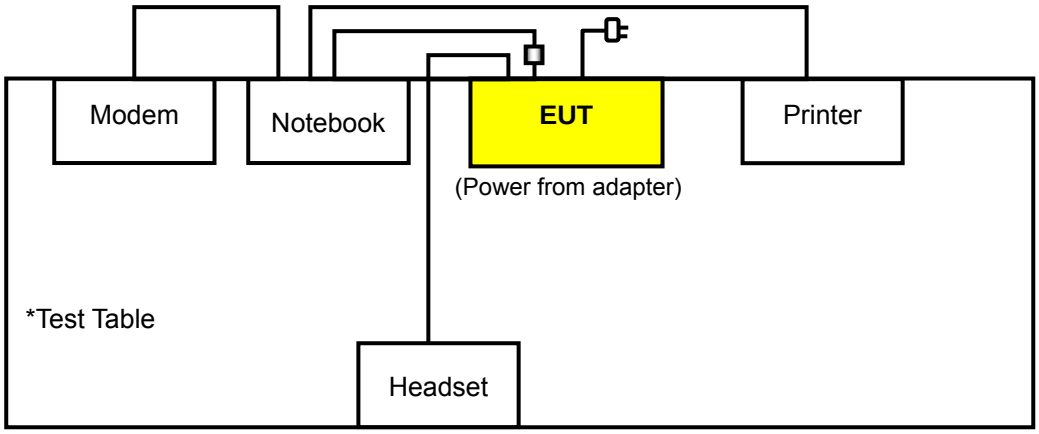
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

FOR 5.0GHz (5725 ~ 5850MHz):

5 channels are provided for 802.11a:

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	5745MHz	4	5805MHz
2	5765MHz	5	5825MHz
3	5785MHz		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 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
"-": Means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, 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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Y
	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	Y

RADIATED EMISSION TEST (BELOW 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis 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)	AXIS
-	802.11g	1 to 11	6	OFDM	BPSK	6.0	Z

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

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

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis 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)	AXIS
-	802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0	Y
-	802.11g	1 to 11	1, 11	OFDM	BPSK	6.0	Y

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0

FOR 5.0GHz:

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

RADIATED EMISSION TEST (ABOVE 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis 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)	AXIS
-	802.11a	1 to 5	1, 3, 5	OFDM	BPSK	6.0	Z

RADIATED EMISSION TEST (BELOW 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis 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)	AXIS
-	802.11a	1 to 5	3	OFDM	BPSK	6.0	Z

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	1 to 5	3	OFDM	BPSK	6.0

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	1 to 5	1, 5	OFDM	BPSK	6.0

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	1 to 5	1, 3, 5	OFDM	BPSK	6.0

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 COMPUTER	DELL	PP05L	12130898320	E2K24CLNS
2	PRINTER	EPSON	LQ-300+	DCGY054011	FCC DoC Approved
3	MODEM	ACEEX	1414V/3	0401008253	IFAXDM1414

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.2m shielded USB cable with one core.
2	1.8m braid shielded wire, DB25 connector, w/o core.
3	1.2m braid shielded wire, DB25 & DB9 connector, w/o core.

NOTE 1: All power cords of the above support units are non shielded (1.8m).

NOTE 2: The 1.2m USB cable with one core was supplied from client, only for test.

4. TEST TYPES AND RESULTS (FOR 2.4GHz)

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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Jul. 27, 2008
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 03, 2009
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 06, 2009
Preamplifier Agilent	8449B	3008A01910	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10638	Dec. 19, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274039/223650	Nov. 07, 2008
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	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 Chamber 9.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The IC Site Registration No. is IC3789B-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.

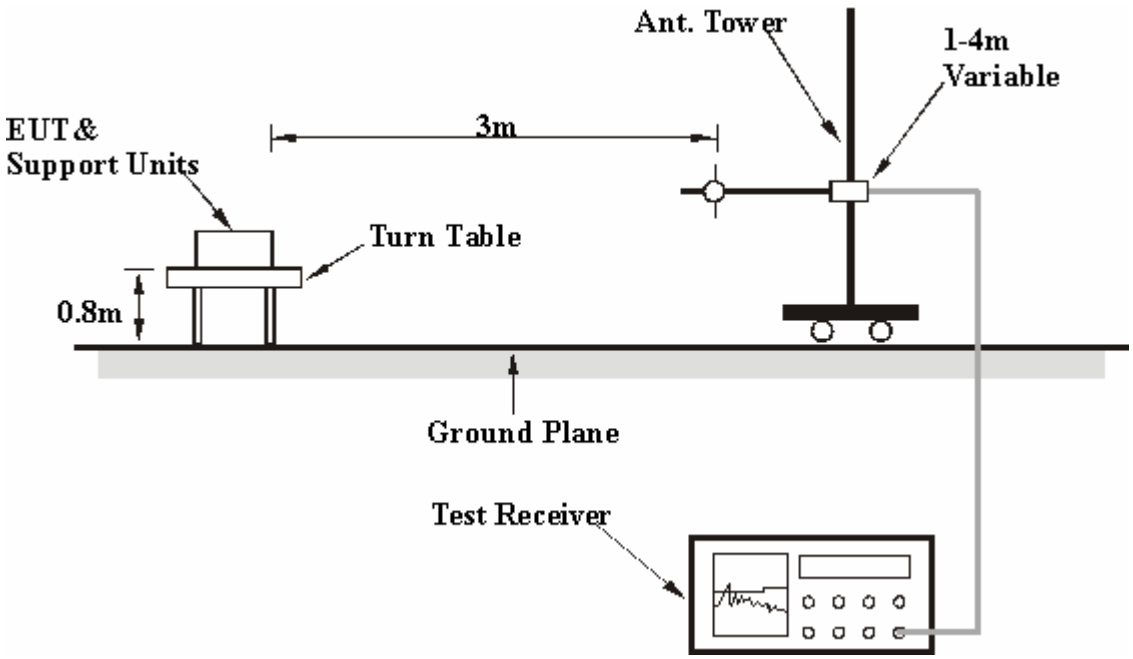
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) 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 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. Connected the EUT to a notebook via a USB cable and placed on a testing table.
b. The notebook system run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
c. The necessary accessories enable the system in full functions.

4.1.7 TEST RESULTS

ABOVE 1GHz DATA: 802.11b DSSS MODULATION

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	24deg. C, 64%RH 1002hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.43 PK	74.00	-6.57	1.00 H	332	35.11	32.32
2	2390.00	46.58 AV	54.00	-7.42	1.00 H	332	14.26	32.32
3	*2412.00	106.72 PK			1.00 H	332	74.40	32.32
4	*2412.00	99.91 AV			1.00 H	332	67.59	32.32
5	4824.00	51.49 PK	74.00	-22.51	1.41 H	306	13.49	38.00
6	4824.00	46.88 AV	54.00	-7.12	1.41 H	306	8.88	38.00
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	63.34 PK	74.00	-10.66	1.10 V	10	31.02	32.32
2	2390.00	45.63 AV	54.00	-8.37	1.10 V	10	13.31	32.32
3	*2412.00	102.69 PK			1.10 V	10	70.37	32.32
4	*2412.00	96.12 AV			1.10 V	10	63.80	32.32
5	4824.00	49.91 PK	74.00	-24.09	1.31 V	302	11.91	38.00
6	4824.00	43.51 AV	54.00	-10.49	1.31 V	302	5.51	38.00

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH 1002hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	106.88 PK			1.05 H	316	74.54	32.34
2	*2437.00	100.32 AV			1.05 H	316	67.98	32.34
3	4874.00	49.95 PK	74.00	-24.05	1.52 H	249	11.83	38.12
4	4874.00	44.38 AV	54.00	-9.62	1.52 H	249	6.26	38.12
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	102.78 PK			1.20 V	136	70.44	32.34
2	*2437.00	96.61 AV			1.20 V	136	64.27	32.34
3	4874.00	47.98 PK	74.00	-26.02	1.00 V	5	9.86	38.12
4	4874.00	41.40 AV	54.00	-12.60	1.00 V	5	3.28	38.12

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.

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	24deg. C, 64%RH 1002hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.56 PK			1.20 H	351	75.19	32.37
2	*2462.00	100.69 AV			1.20 H	351	68.32	32.37
3	2483.50	69.13 PK	74.00	-4.87	1.20 H	351	36.74	32.39
4	2483.50	46.08 AV	54.00	-7.92	1.20 H	351	13.69	32.39
5	4924.00	48.35 PK	74.00	-25.65	1.16 H	54	10.12	38.23
6	4924.00	39.78 AV	54.00	-14.22	1.16 H	54	1.55	38.23
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	103.10 PK			1.06 V	127	70.73	32.37
2	*2462.00	97.26 AV			1.06 V	127	64.89	32.37
3	2483.50	63.58 PK	74.00	-10.42	1.06 V	127	31.19	32.39
4	2483.50	45.37 AV	54.00	-8.63	1.06 V	127	12.98	32.39
5	4924.00	48.56 PK	74.00	-25.44	1.01 V	337	10.33	38.23
6	4924.00	36.25 AV	54.00	-17.75	1.01 V	337	-1.98	38.23

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

802.11g OFDM MODULATION

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	24deg. C, 64%RH 1002hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.70 PK	74.00	-7.30	1.00 H	331	34.38	32.32
2	2390.00	49.44 AV	54.00	-4.56	1.00 H	331	17.12	32.32
3	*2412.00	106.38 PK			1.00 H	333	74.06	32.32
4	*2412.00	95.93 AV			1.00 H	333	63.61	32.32
5	4824.00	45.62 PK	74.00	-28.38	1.08 H	256	7.62	38.00
6	4824.00	33.58 AV	54.00	-20.42	1.08 H	256	-4.42	38.00
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	62.01 PK	74.00	-11.99	1.15 V	0	29.69	32.32
2	2390.00	46.35 AV	54.00	-7.65	1.15 V	0	14.03	32.32
3	*2412.00	103.12 PK			1.15 V	0	70.80	32.32
4	*2412.00	91.72 AV			1.15 V	0	59.40	32.32
5	4824.00	45.58 PK	74.00	-28.42	1.00 V	13	7.58	38.00
6	4824.00	33.46 AV	54.00	-20.54	1.00 V	13	-4.54	38.00

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH 1002hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	109.42 PK			1.13 H	204	77.08	32.34
2	*2437.00	99.25 AV			1.13 H	204	66.91	32.34
3	4874.00	54.93 PK	74.00	-19.07	1.23 H	256	16.81	38.12
4	4874.00	40.12 AV	54.00	-13.88	1.23 H	256	2.00	38.12
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	104.76 PK			1.14 V	208	72.42	32.34
2	*2437.00	94.48 AV			1.14 V	208	62.14	32.34
3	4874.00	52.34 PK	74.00	-21.66	1.01 V	172	14.22	38.12
4	4874.00	36.62 AV	54.00	-17.38	1.01 V	172	-1.50	38.12

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.

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	24deg. C, 64%RH 1002hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.48 PK			1.03 H	311	75.11	32.37
2	*2462.00	96.89 AV			1.03 H	311	64.52	32.37
3	2483.50	68.01 PK	74.00	-5.99	1.03 H	311	35.62	32.39
4	2483.50	49.64 AV	54.00	-4.36	1.03 H	311	17.25	32.39
5	4924.00	50.25 PK	74.00	-23.75	1.10 H	16	12.02	38.23
6	4924.00	34.19 AV	54.00	-19.81	1.10 H	16	-4.04	38.23
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	103.53 PK			1.06 V	135	71.16	32.37
2	*2462.00	92.24 AV			1.06 V	135	59.87	32.37
3	2483.50	65.65 PK	74.00	-8.35	1.06 V	135	33.26	32.39
4	2483.50	48.17 AV	54.00	-5.83	1.06 V	135	15.78	32.39
5	4924.00	50.10 PK	74.00	-23.90	1.00 V	307	11.87	38.23
6	4924.00	34.00 AV	54.00	-20.00	1.00 V	307	-4.23	38.23

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH 1002hPa	TESTED BY	Lori Chiu

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	113.50	26.13 QP	43.50	-17.37	1.50 H	115	15.17	10.96
2	193.22	28.64 QP	43.50	-14.86	1.50 H	163	17.52	11.13
3	237.94	27.86 QP	46.00	-18.14	2.00 H	10	15.62	12.24
4	543.19	25.61 QP	46.00	-20.39	1.50 H	130	5.45	20.15
5	904.83	30.69 QP	46.00	-15.31	1.00 H	73	4.80	25.89
6	945.66	28.31 QP	46.00	-17.69	1.50 H	145	2.03	26.29
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	55.18	22.89 QP	40.00	-17.11	1.50 V	13	9.34	13.55
2	68.79	19.23 QP	40.00	-20.77	1.50 V	196	7.49	11.74
3	115.45	26.53 QP	43.50	-16.97	1.00 V	328	15.34	11.20
4	202.94	25.61 QP	43.50	-17.89	1.00 V	100	14.93	10.68
5	337.10	25.96 QP	46.00	-20.04	1.50 V	43	11.47	14.49
6	442.09	25.15 QP	46.00	-20.85	1.00 V	211	7.87	17.28
7	494.58	25.61 QP	46.00	-20.39	1.00 V	181	6.68	18.93
8	547.08	25.35 QP	46.00	-20.65	1.00 V	208	5.10	20.25
9	945.66	29.51 QP	46.00	-16.49	1.00 V	10	3.22	26.29

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 (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.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 21, 2008
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 06, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 09, 2009
LISN SCHWARZBECK	NNBL 8226-2	8226-142	May 07, 2008
Software ADT	ADT_Cond_V3	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.

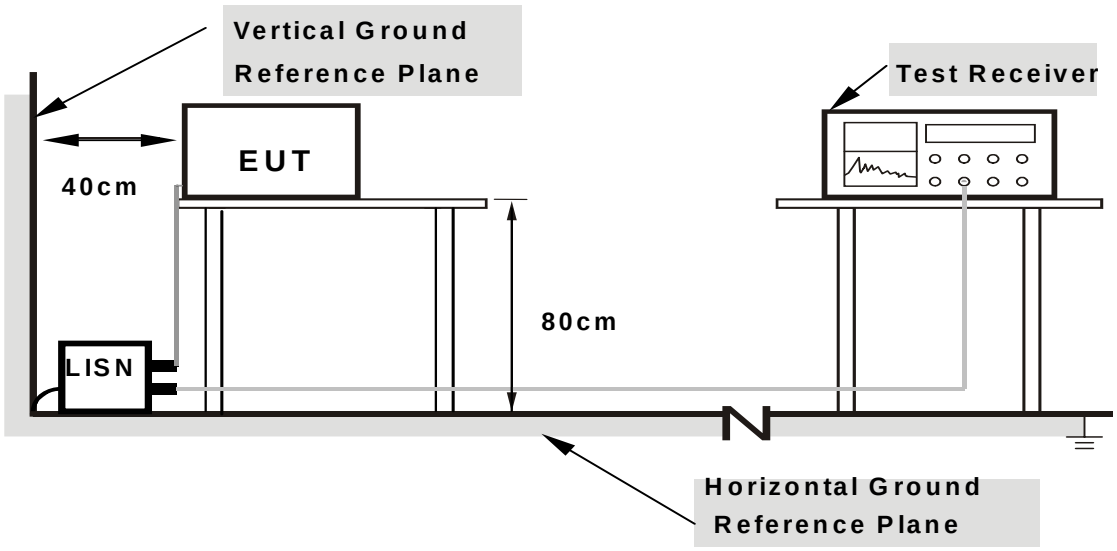
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

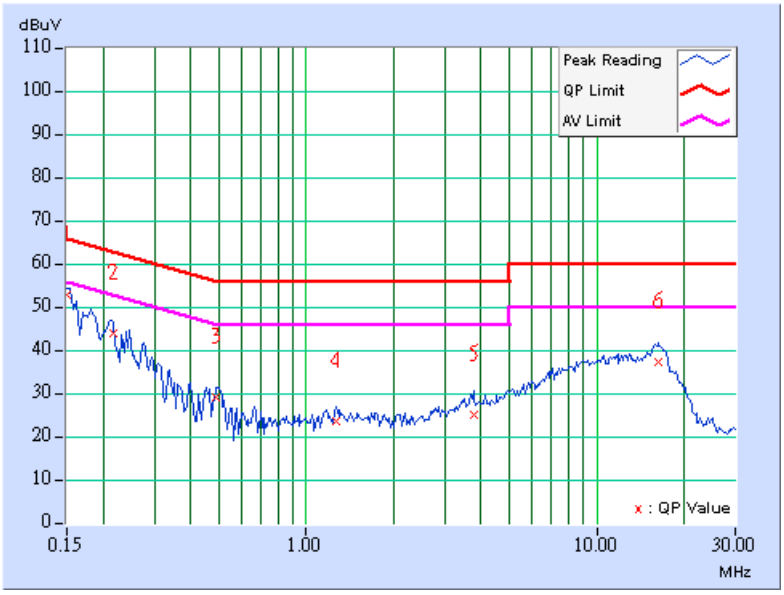
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11g OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH, 991hPa	TESTED BY	Match Tsui

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.150**	**0.10**	**52.37**	**-**	**52.47**	**-**	**66.00**	**56.00**	**-13.53**	**-**
2	0.216	0.10	43.40	-	43.50	-	62.96	52.96	-19.46	-
3	0.490	0.10	28.75	-	28.85	-	56.17	46.17	-27.32	-
4	1.266	0.14	23.14	-	23.28	-	56.00	46.00	-32.72	-
5	3.781	0.27	24.68	-	24.95	-	56.00	46.00	-31.05	-
6	16.391	0.51	36.99	-	37.50	-	60.00	50.00	-22.50	-

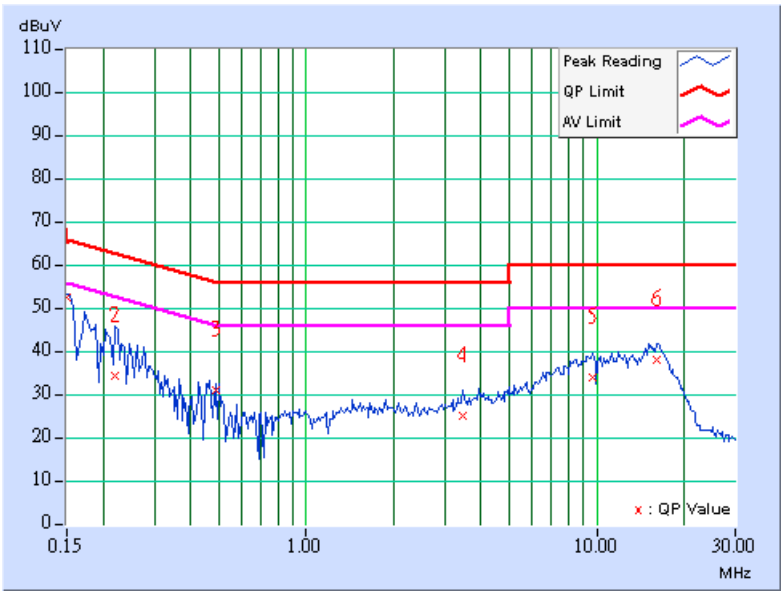
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH, 991hPa	TESTED BY	Match Tsui

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	51.93	-	52.03	-	66.00	56.00	-13.97	-
2	0.220	0.10	33.99	-	34.09	-	62.81	52.81	-28.72	-
3	0.486	0.12	30.73	-	30.85	-	56.24	46.24	-25.39	-
4	3.473	0.26	24.80	-	25.06	-	56.00	46.00	-30.94	-
5	9.699	0.42	33.60	-	34.02	-	60.00	50.00	-25.98	-
6	16.082	0.50	37.62	-	38.12	-	60.00	50.00	-21.88	-

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.	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008

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

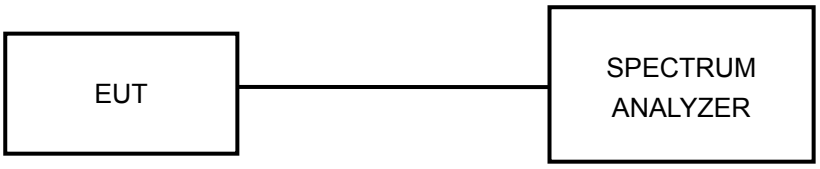
4.3.3 TEST PROCEDURE

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.

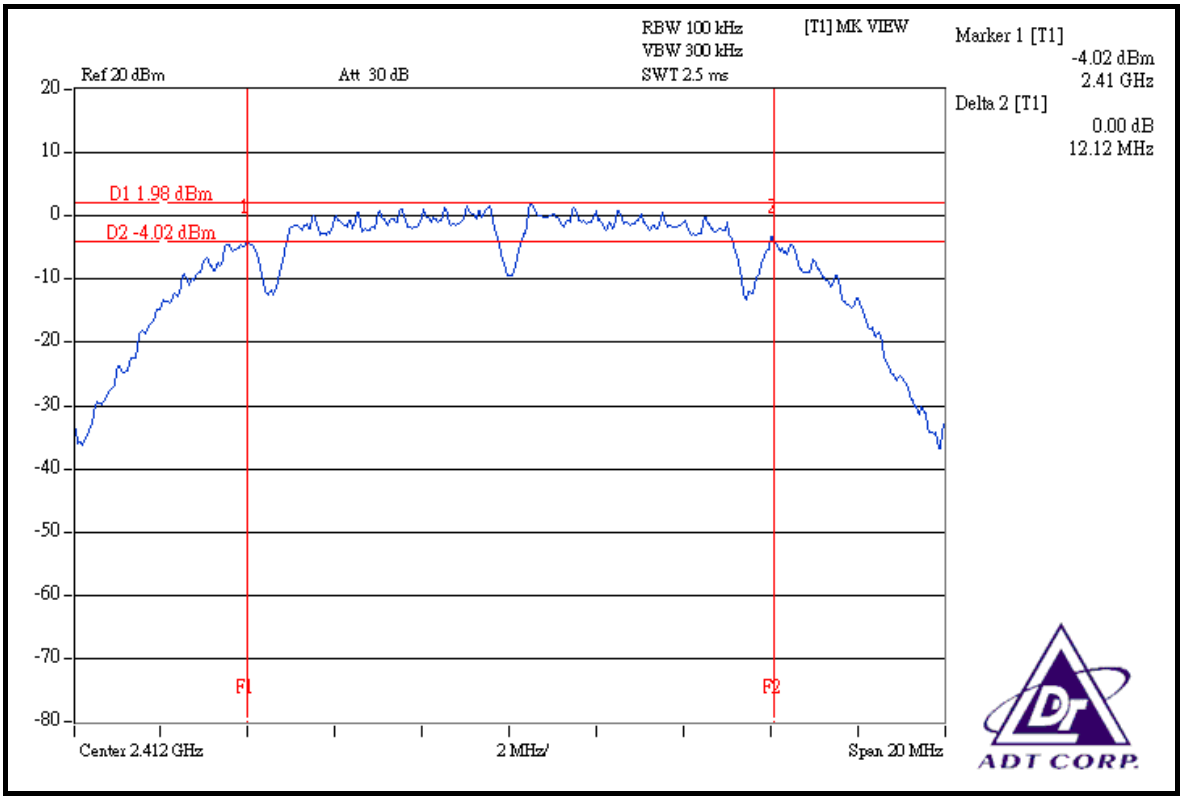
4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

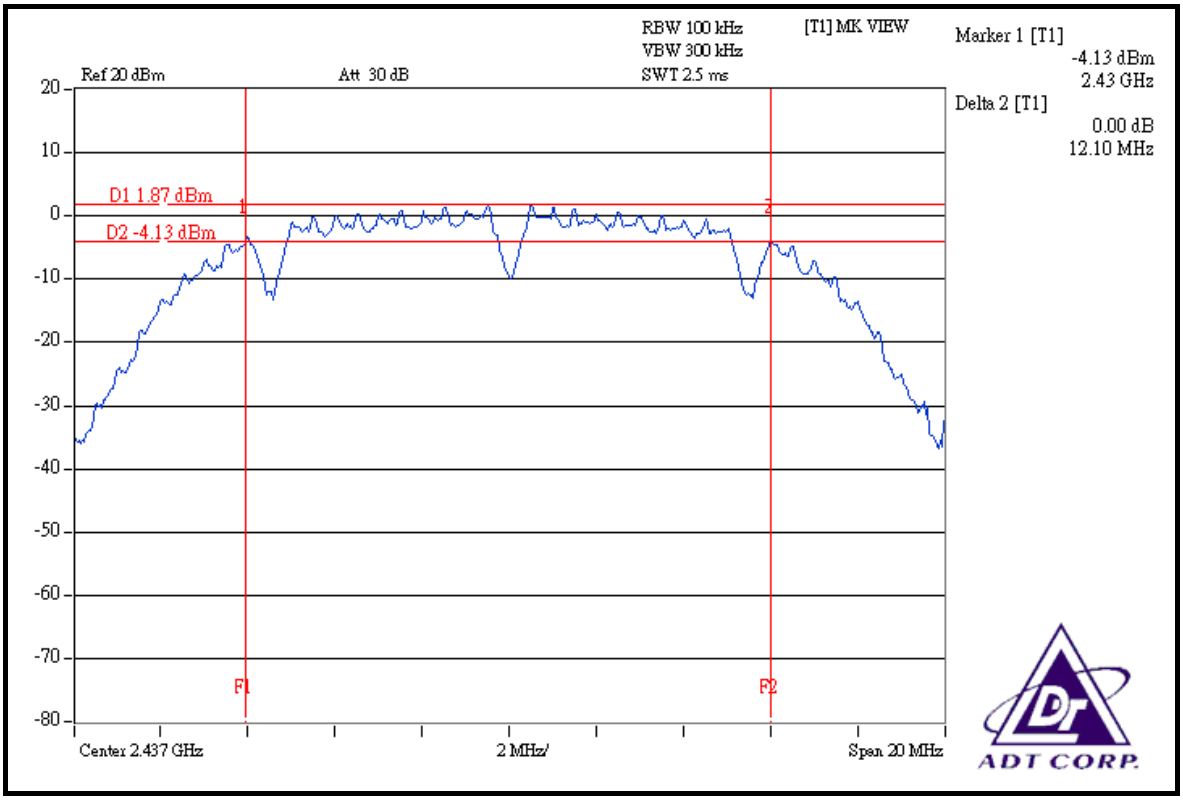
MODULATION TYPE	DBPSK	ENVIRONMENTAL CONDITIONS	26deg.C, 67%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60Hz	TESTED BY	Brad Wu

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	12.12	0.5	PASS
6	2437	12.10	0.5	PASS
11	2462	12.07	0.5	PASS

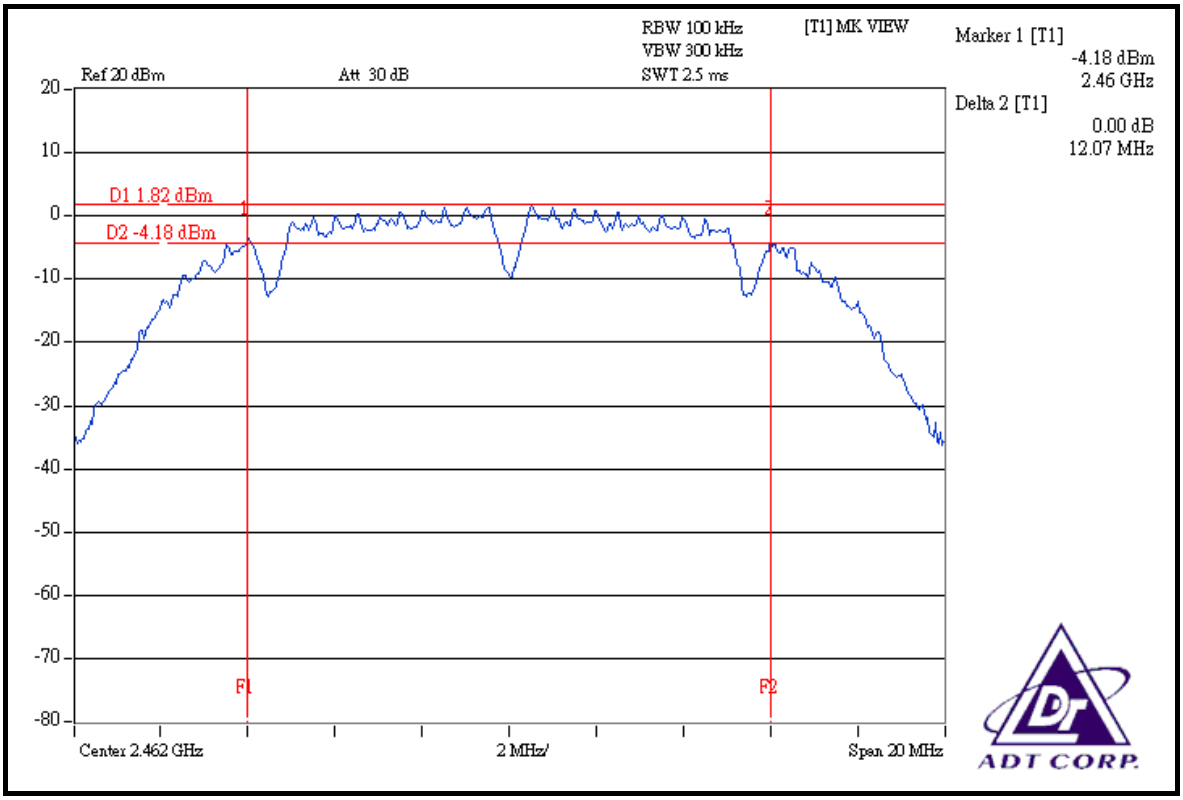
CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-4.13 dBm
2.43 GHz
Delta 2 [T1]
0.00 dB
12.10 MHz
Ref 20 dBm
Att 30 dB
D1 1.87 dBm
D2 -4.13 dBm
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH 11

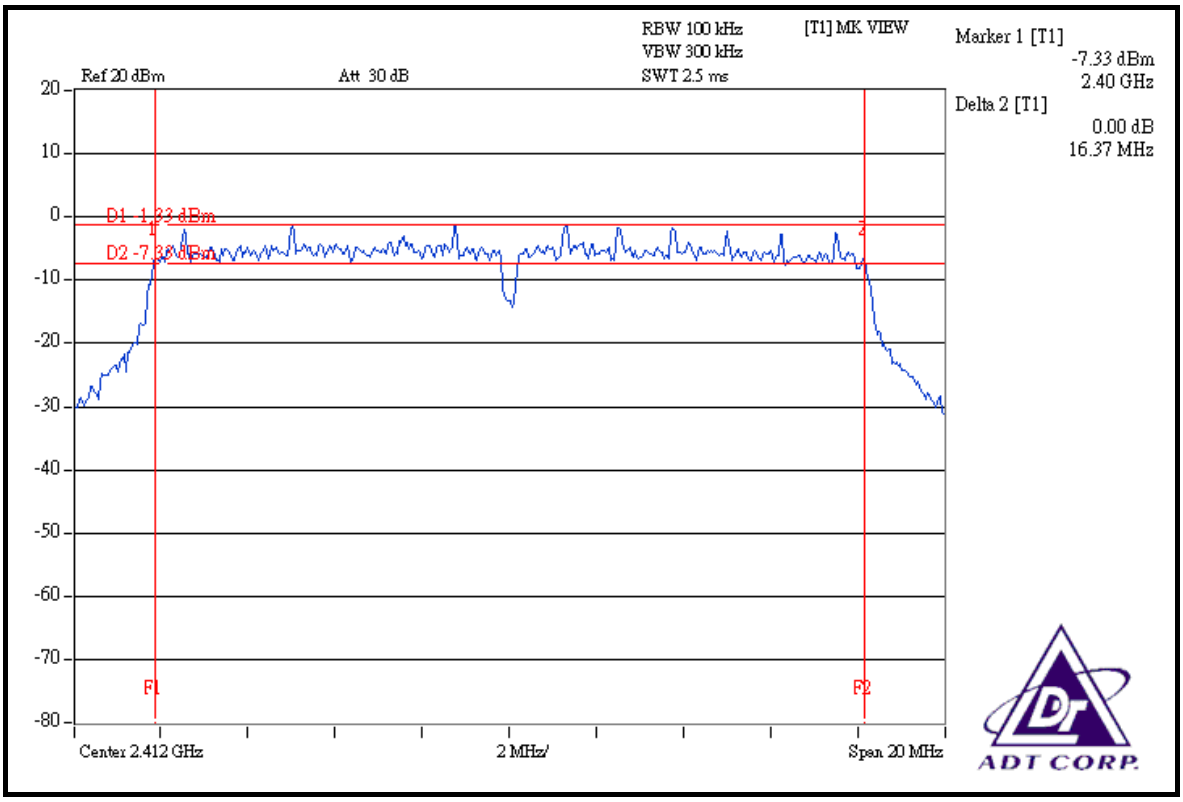

RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-4.18 dBm
2.46 GHz
Delta 2 [T1]
0.00 dB
12.07 MHz
Ref 20 dBm
Att 30 dB
D1 1.82 dBm
D2 -4.18 dBm
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

802.11g OFDM MODULATION:

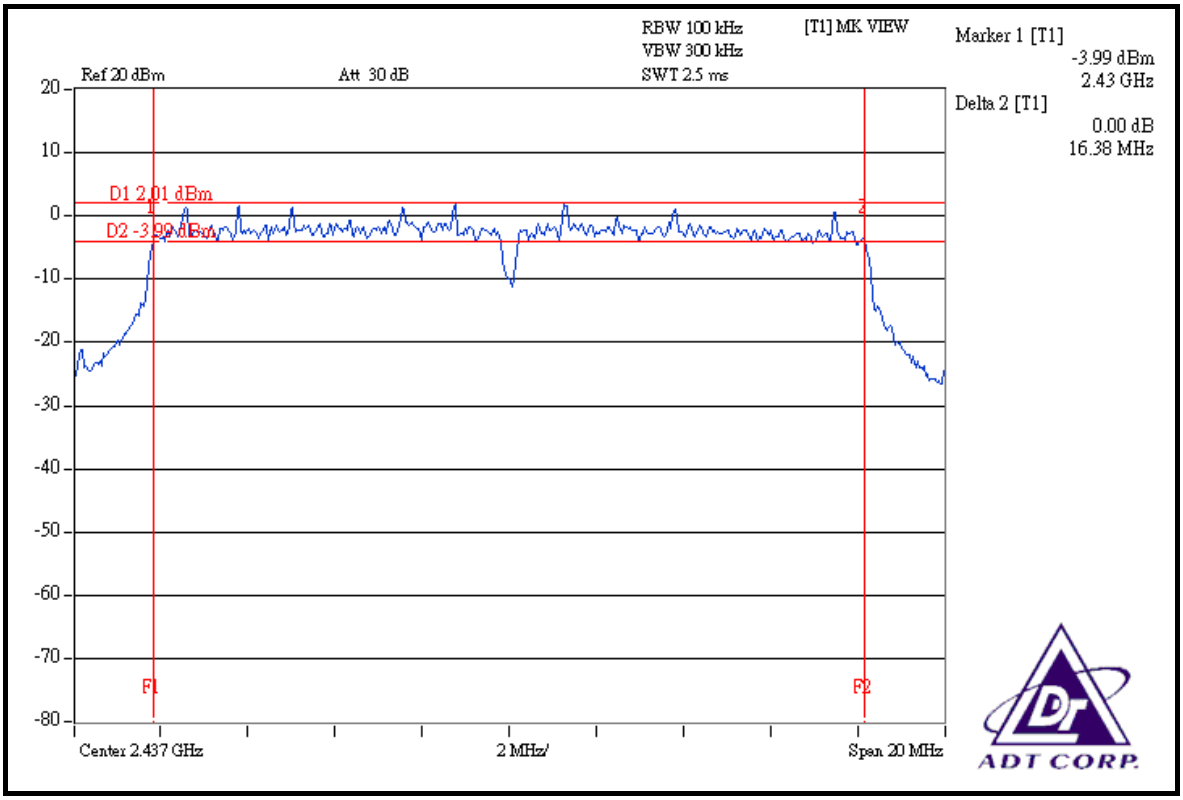
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	26deg.C, 67%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60Hz	TESTED BY	Brad Wu

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.37	0.5	PASS
6	2437	16.38	0.5	PASS
11	2462	16.39	0.5	PASS

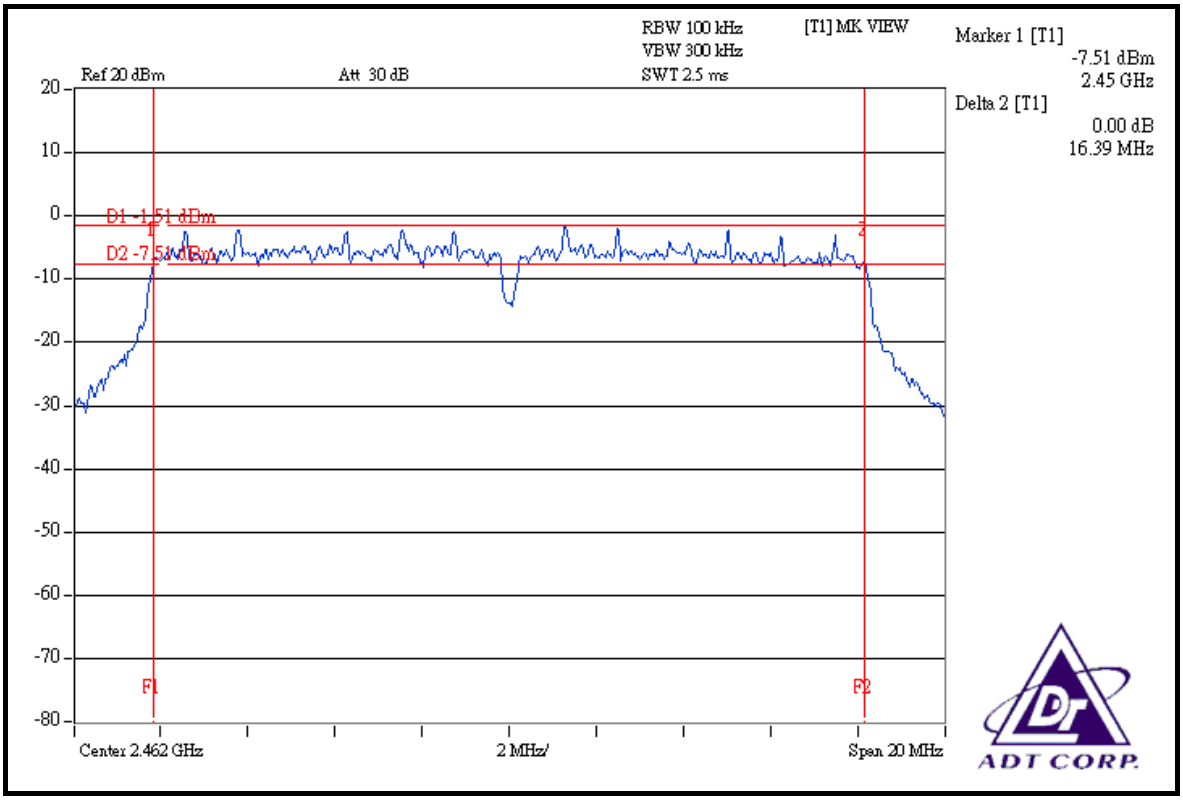
CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-3.99 dBm
2.43 GHz
Delta 2 [T1]
0.00 dB
16.38 MHz
Ref 20 dBm
Att 30 dB
D1 2.01 dBm
D2 -3.99 dBm
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH 11


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-7.51 dBm
2.45 GHz
Delta 2 [T1]
0.00 dB
16.39 MHz
Ref 20 dBm
Att 30 dB
D1 -1.51 dBm
D2 -7.51 dBm
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

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.	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008
AGILENT SYNTHESIZED SIGNAL GENERATOR	E8257C	MY43320668	Dec. 25, 2008
DIGITAL RT OSCILLOSCOPE	TDS1012	C037299	Nov. 21, 2008
NARDA DETECTOR	4503A	FSCM99899	NA

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

4.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. 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	ENVIRONMENTAL CONDITIONS	26deg.C, 67%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60Hz	TESTED BY	Brad Wu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	35.89	15.55	30	PASS
6	2437	35.65	15.52	30	PASS
11	2462	35.65	15.52	30	PASS

802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	26deg.C, 67%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60Hz	TESTED BY	Brad Wu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	45.39	16.57	30	PASS
6	2437	101.39	20.06	30	PASS
11	2462	44.77	16.51	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.	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008

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

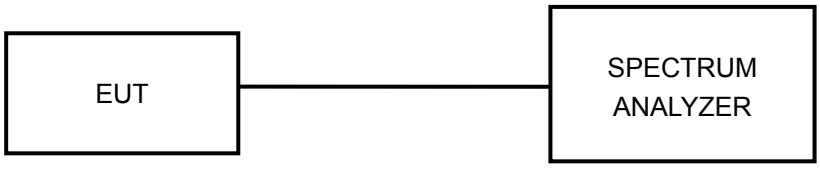
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

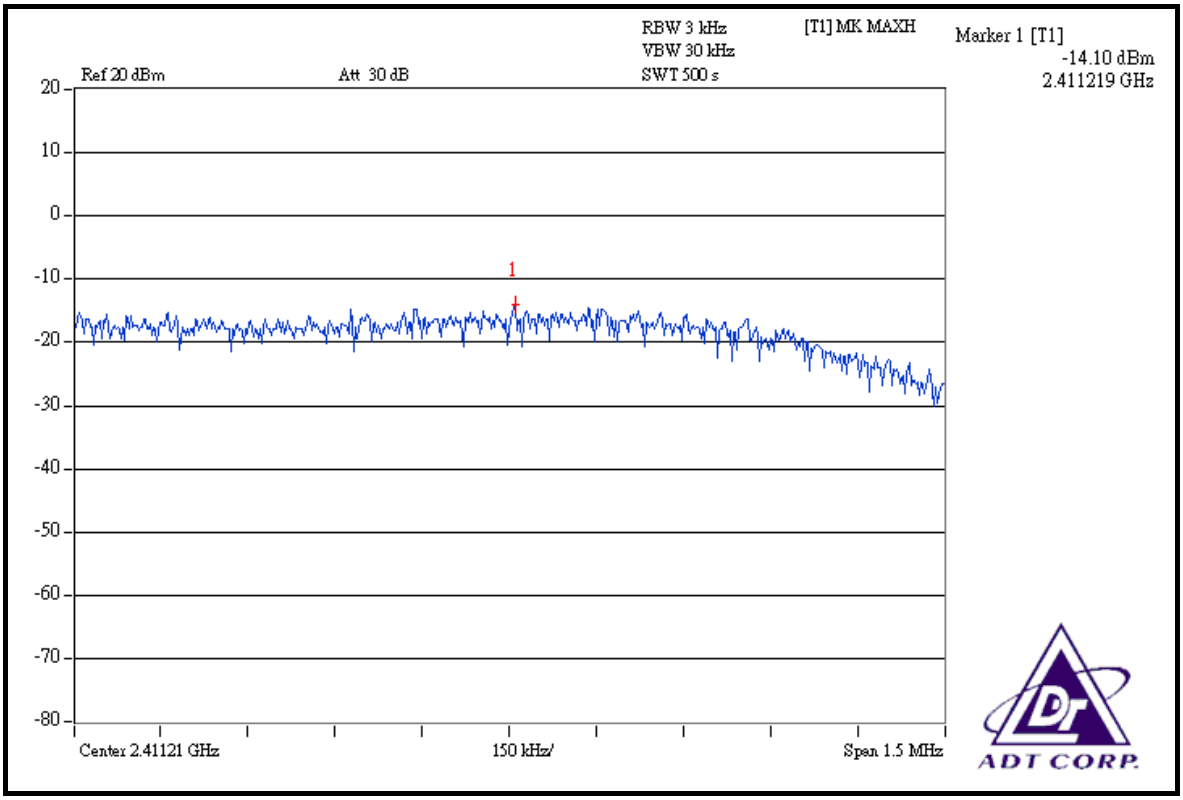
4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

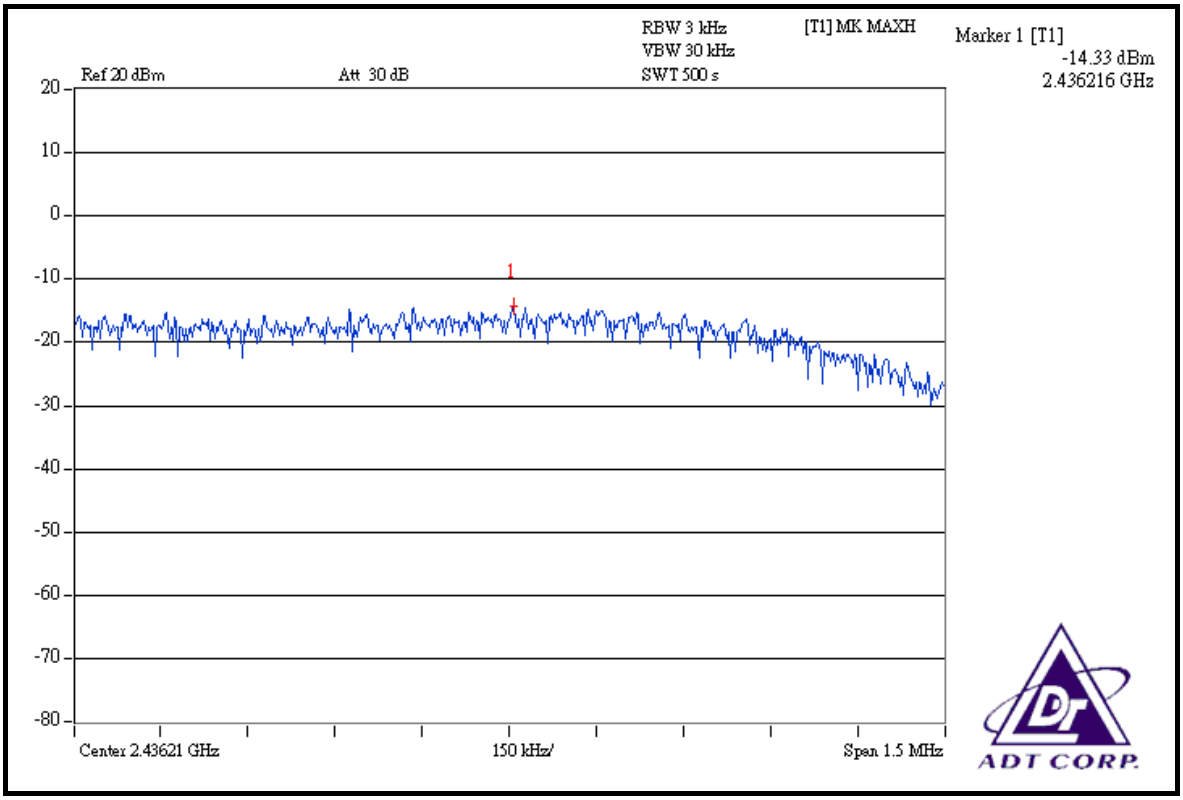
MODULATION TYPE	DBPSK	ENVIRONMENTAL CONDITIONS	26deg.C, 67%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60Hz	TESTED BY	Brad Wu

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-14.10	8	PASS
6	2437	-14.33	8	PASS
11	2462	-14.18	8	PASS

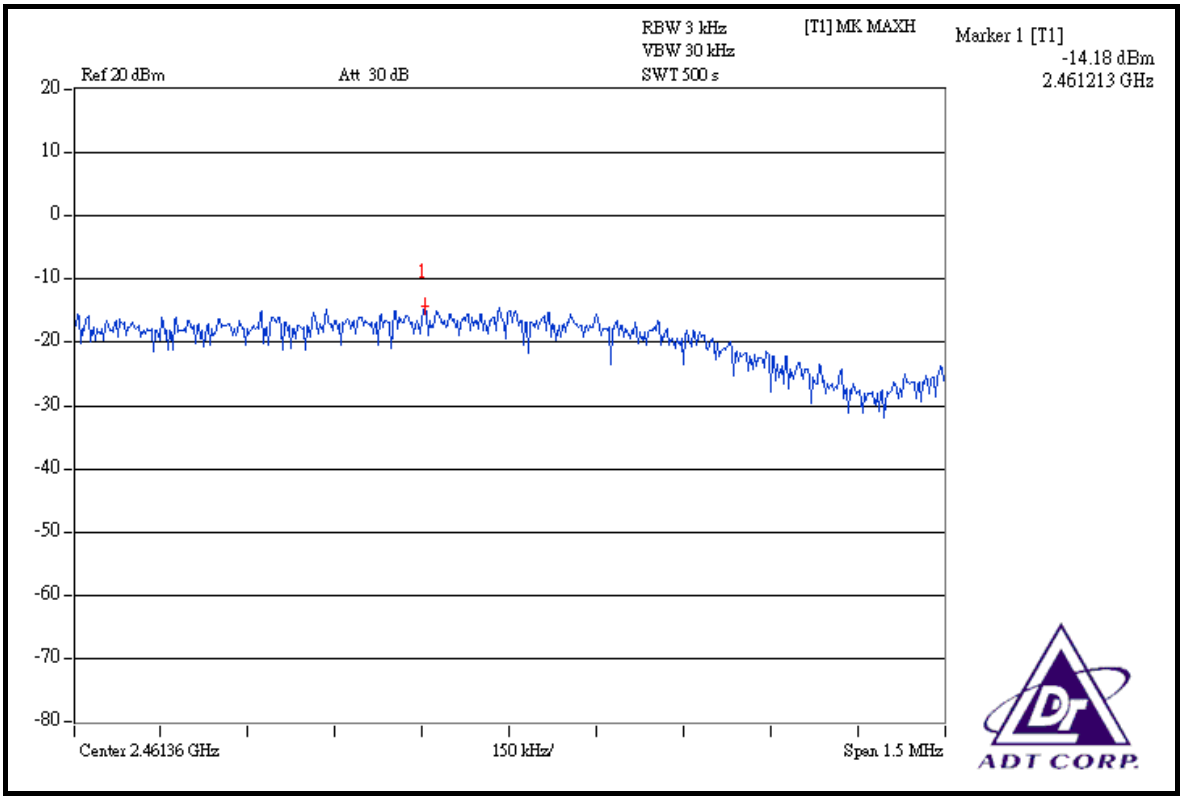
CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.33 dBm
2.436216 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.43621 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH 11

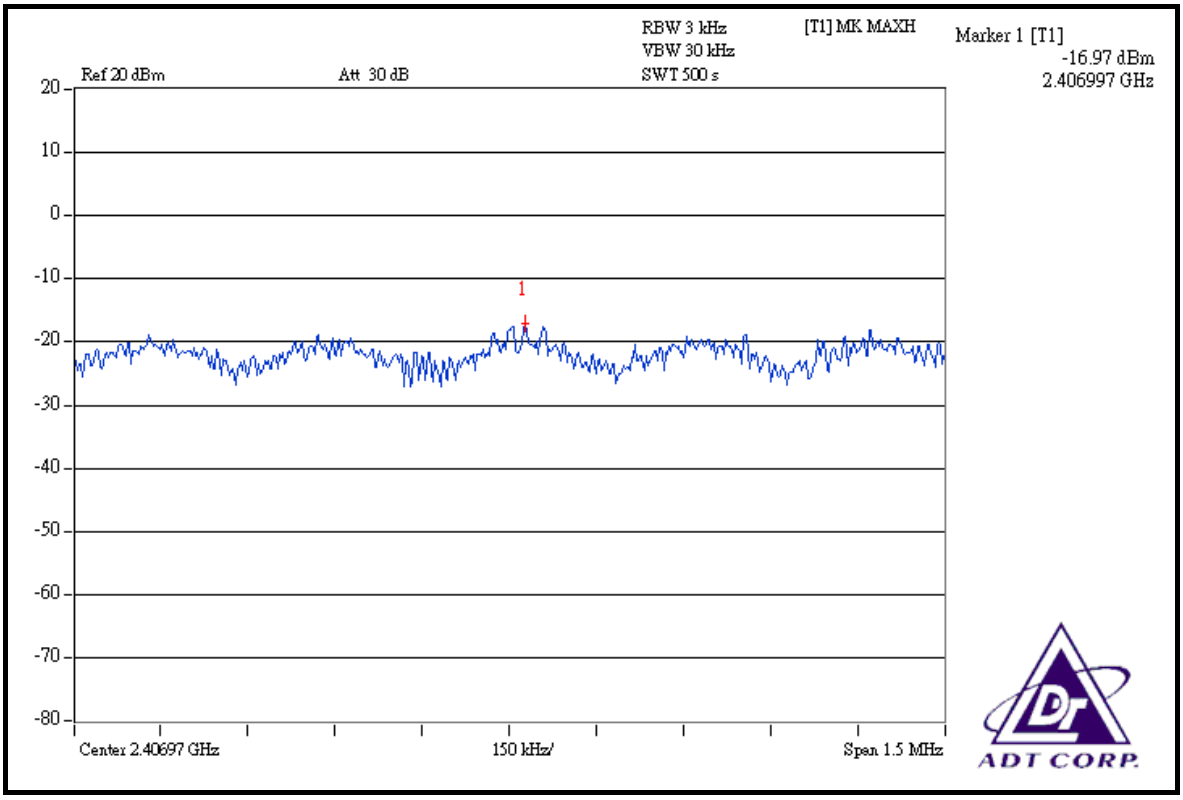

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.18 dBm
2.461213 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.46136 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

802.11g OFDM MODULATION:

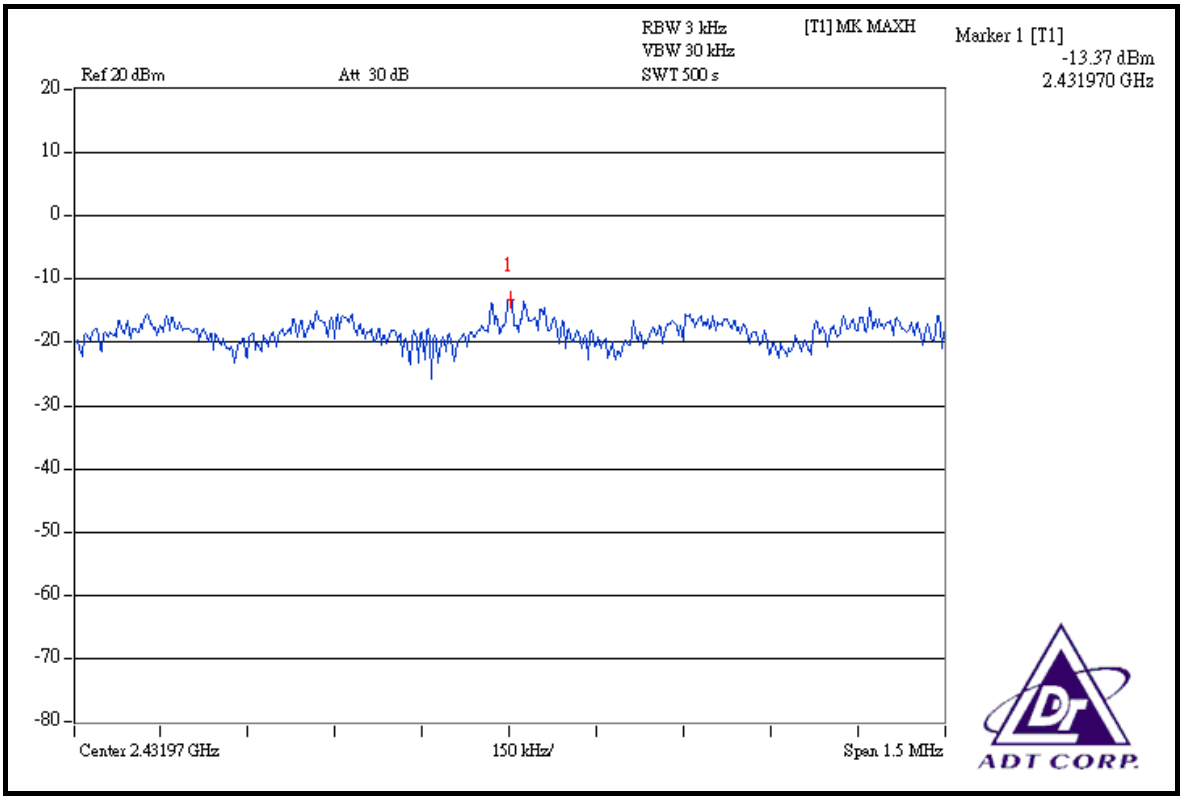
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	26deg.C, 67%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60Hz	TESTED BY	Brad Wu

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-16.97	8	PASS
6	2437	-13.37	8	PASS
11	2462	-17.16	8	PASS

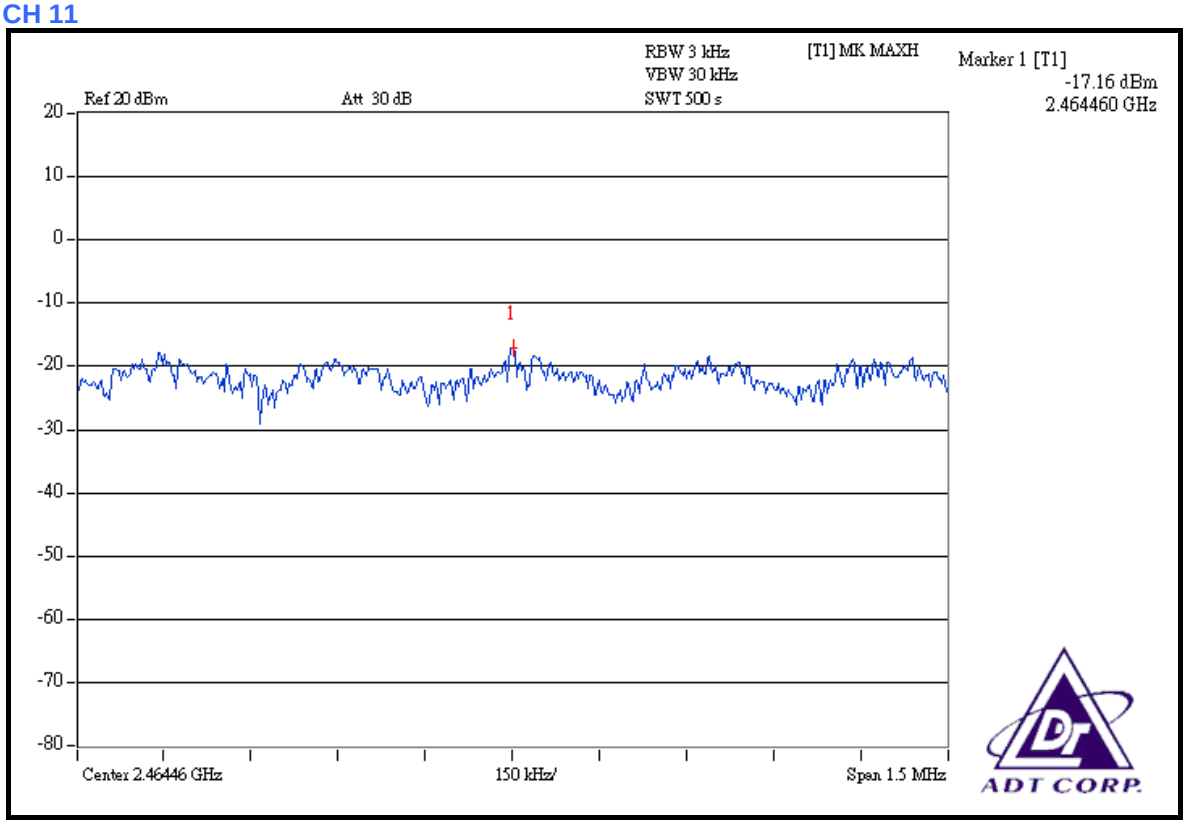
CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-13.37 dBm
2.431970 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.43197 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH 11


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-17.16 dBm
2.464460 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.46446 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

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.	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008

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 lose cable. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 300kMHz 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 pages. 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:

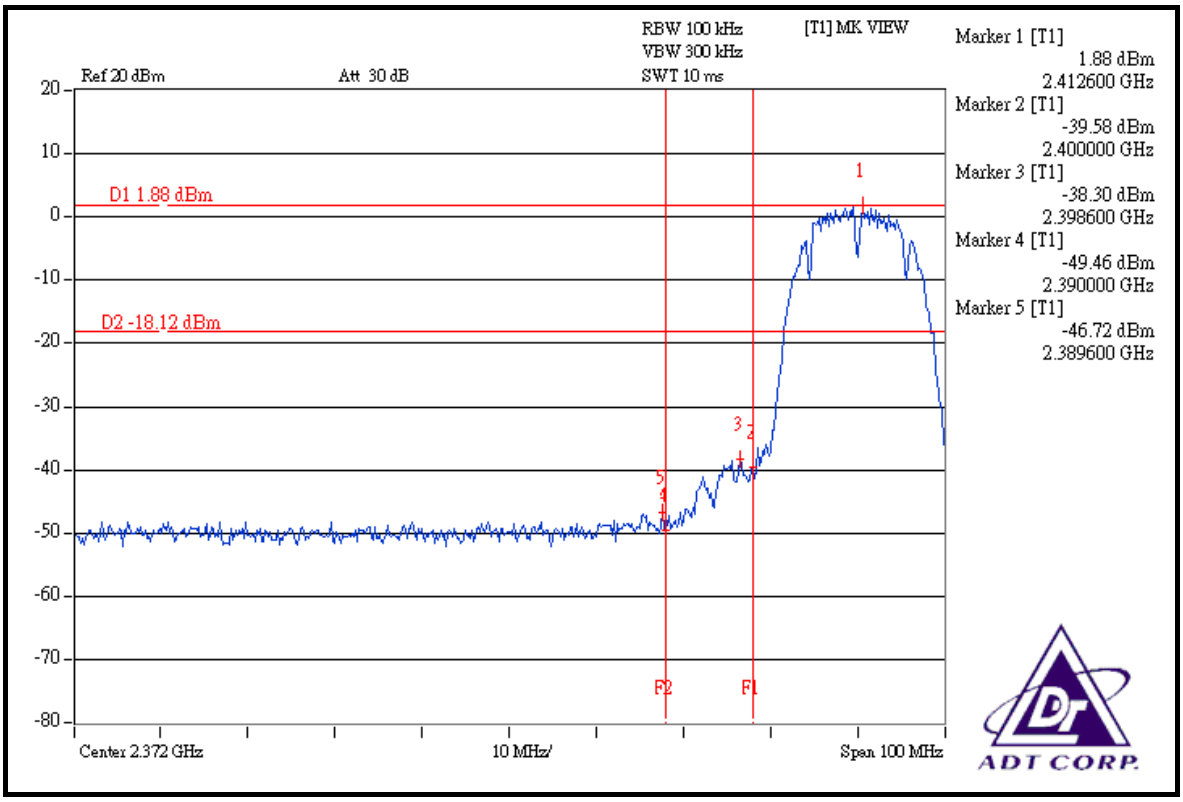
The band edge emission plot on the next page shows 48.60dBc between carrier maximum power and local maximum emission in restrict band (2.38960GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 106.72dBuV/m (Peak), so the maximum field strength in restrict band is 106.72 – 48.60 = 58.12dBuV/m which is under 74dBuV/m limit.

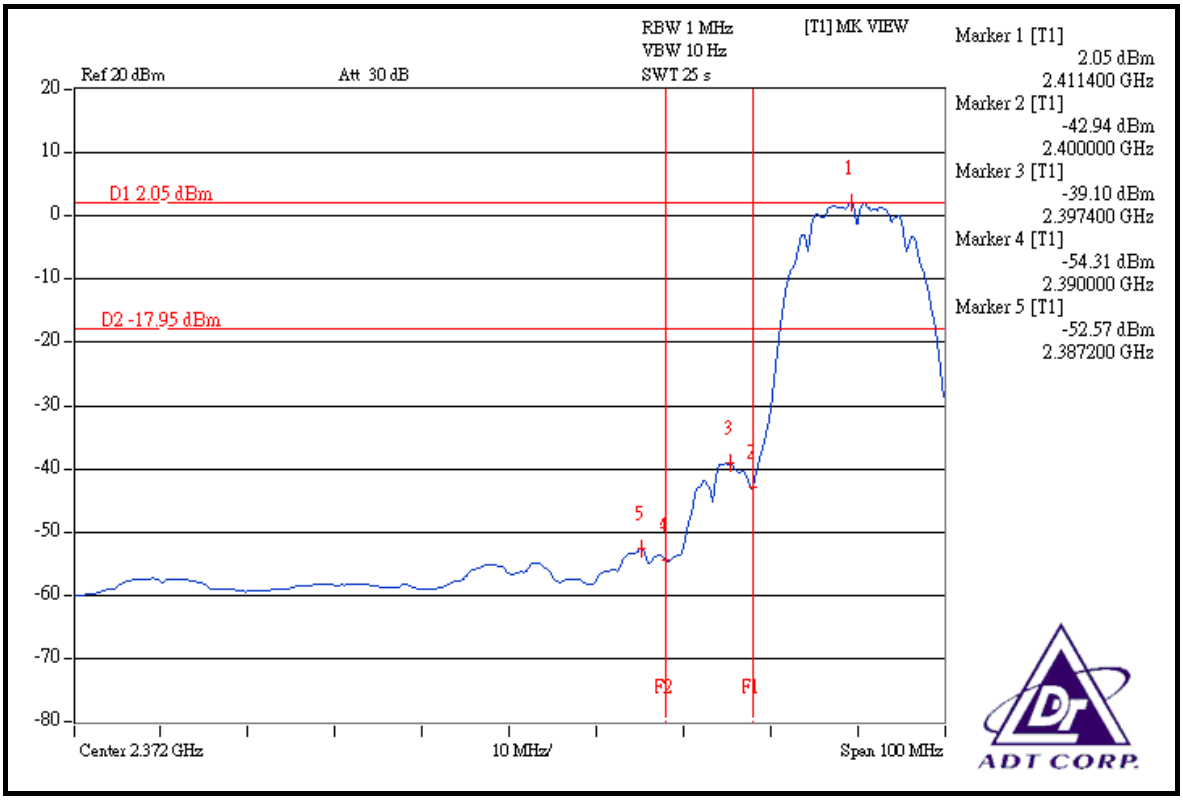
The band edge emission plot on the next page shows 54.62dBc between carrier maximum power and local maximum emission in restrict band (2.38720GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 99.91dBuV/m (Average), so the maximum field strength in restrict band is 99.91 – 54.62 = 45.29dBuV/m which is under 54dBuV/m limit.

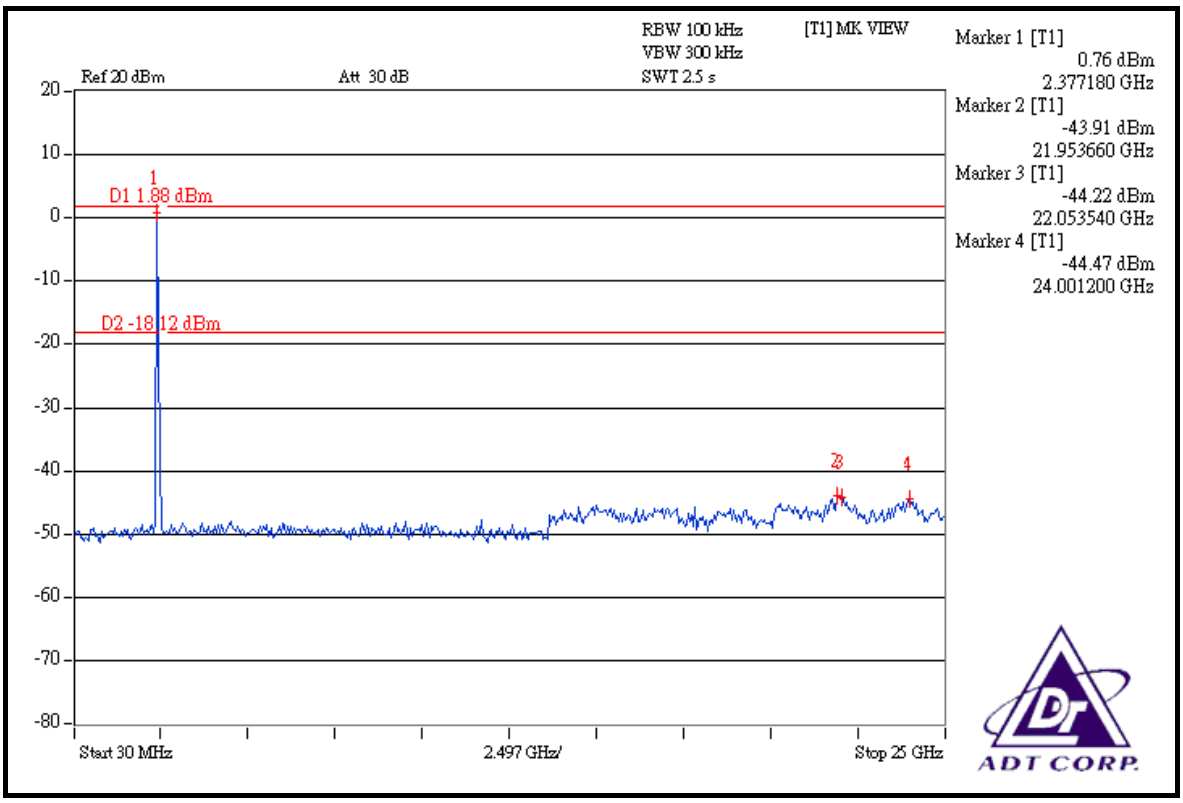
NOTE 2:

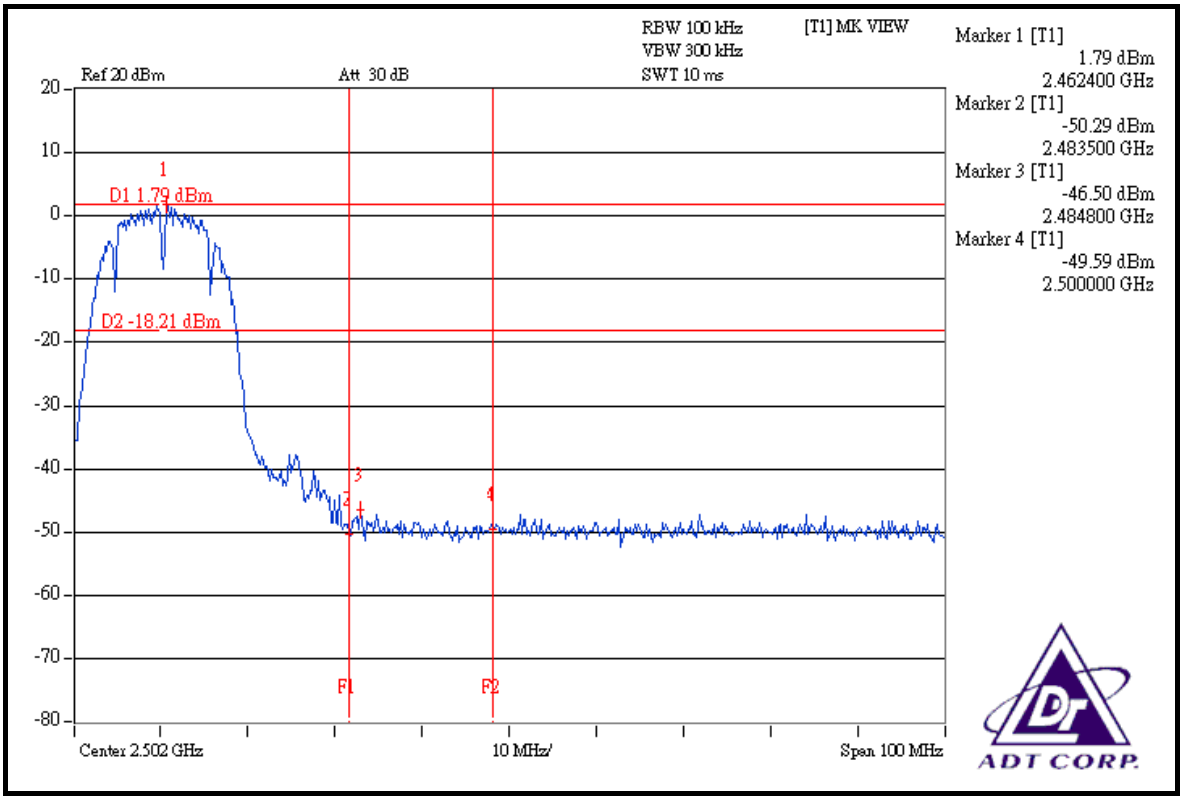
The band edge emission plot on the next second page shows 48.29dBc between carrier maximum power and local maximum emission in restrict band (2.48480GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 107.56dBuV/m (Peak), so the maximum field strength in restrict band is 107.56 – 48.29 = 59.27dBuV/m which is under 74dBuV/m limit.

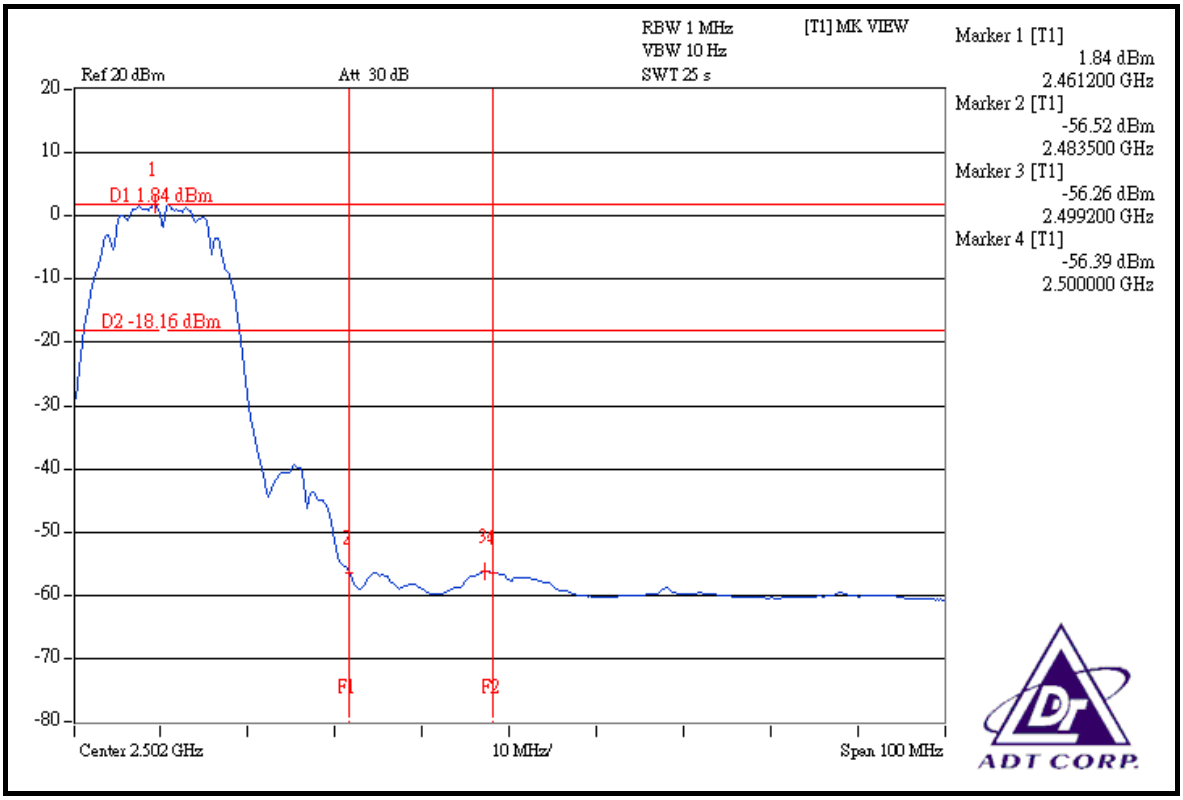
The band edge emission plot on the next third page shows 58.10dBc between carrier maximum power and local maximum emission in restrict band (2.49920GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 100.69dBuV/m (Average), so the maximum field strength in restrict band is 100.69 – 58.10 = 42.59dBuV/m which is under 54dBuV/m limit.

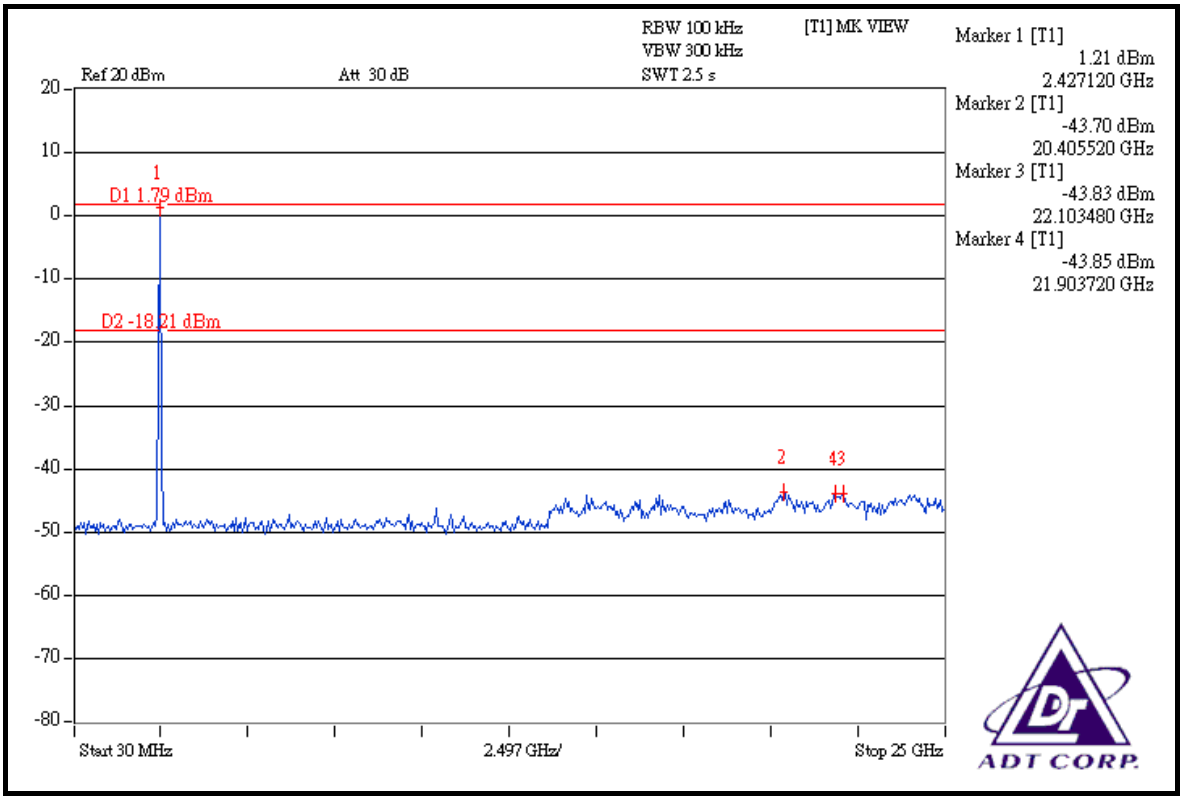

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 1.88 dBm
D2 -18.12 dBm
Center 2.372 GHz
10 MHz/
Span 100 MHz
F2
F1
Marker 1 [T1]
1.88 dBm
2.412600 GHz
Marker 2 [T1]
-39.58 dBm
2.400000 GHz
Marker 3 [T1]
-38.30 dBm
2.398600 GHz
Marker 4 [T1]
-49.46 dBm
2.390000 GHz
Marker 5 [T1]
-46.72 dBm
2.389600 GHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 2.05 dBm
D2 -17.95 dBm
Center 2.372 GHz
10 MHz/
Span 100 MHz
F2
F1
Marker 1 [T1]
2.05 dBm
2.411400 GHz
Marker 2 [T1]
-42.94 dBm
2.400000 GHz
Marker 3 [T1]
-39.10 dBm
2.397400 GHz
Marker 4 [T1]
-54.31 dBm
2.390000 GHz
Marker 5 [T1]
-52.57 dBm
2.387200 GHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 1.88 dBm
D2 -18.12 dBm
Marker 1 [T1]
0.76 dBm
2.377180 GHz
Marker 2 [T1]
-43.91 dBm
21.953660 GHz
Marker 3 [T1]
-44.22 dBm
22.053540 GHz
Marker 4 [T1]
-44.47 dBm
24.001200 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 1.79 dBm
D2 -18.21 dBm
Marker 1 [T1]
1.79 dBm
2.462400 GHz
Marker 2 [T1]
-50.29 dBm
2.483500 GHz
Marker 3 [T1]
-46.50 dBm
2.484800 GHz
Marker 4 [T1]
-49.59 dBm
2.500000 GHz
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
1.84 dBm
2.461200 GHz
Marker 2 [T1]
-56.52 dBm
2.483500 GHz
Marker 3 [T1]
-56.26 dBm
2.499200 GHz
Marker 4 [T1]
-56.39 dBm
2.500000 GHz
D1 1.84 dBm
D2 -18.16 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
1.21 dBm
2.427120 GHz
Marker 2 [T1]
-43.70 dBm
20.405520 GHz
Marker 3 [T1]
-43.83 dBm
22.103480 GHz
Marker 4 [T1]
-43.85 dBm
21.903720 GHz
D1 1.79 dBm
D2 -18.21 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

802.11g OFDM MODULATION

NOTE 1:

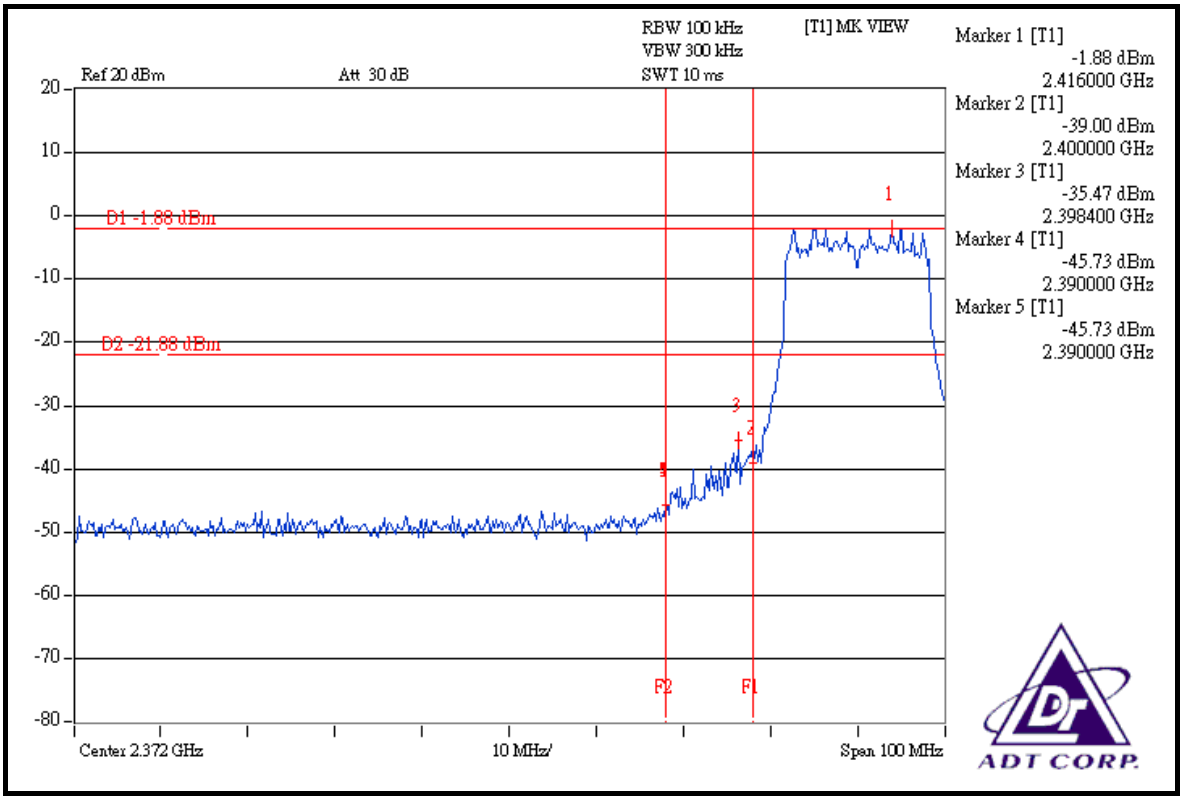
The band edge emission plot on the next page shows 43.85dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 106.38dBuV/m (Peak), so the maximum field strength in restrict band is 106.38 – 43.85 = 62.53dBuV/m which is under 74dBuV/m limit.

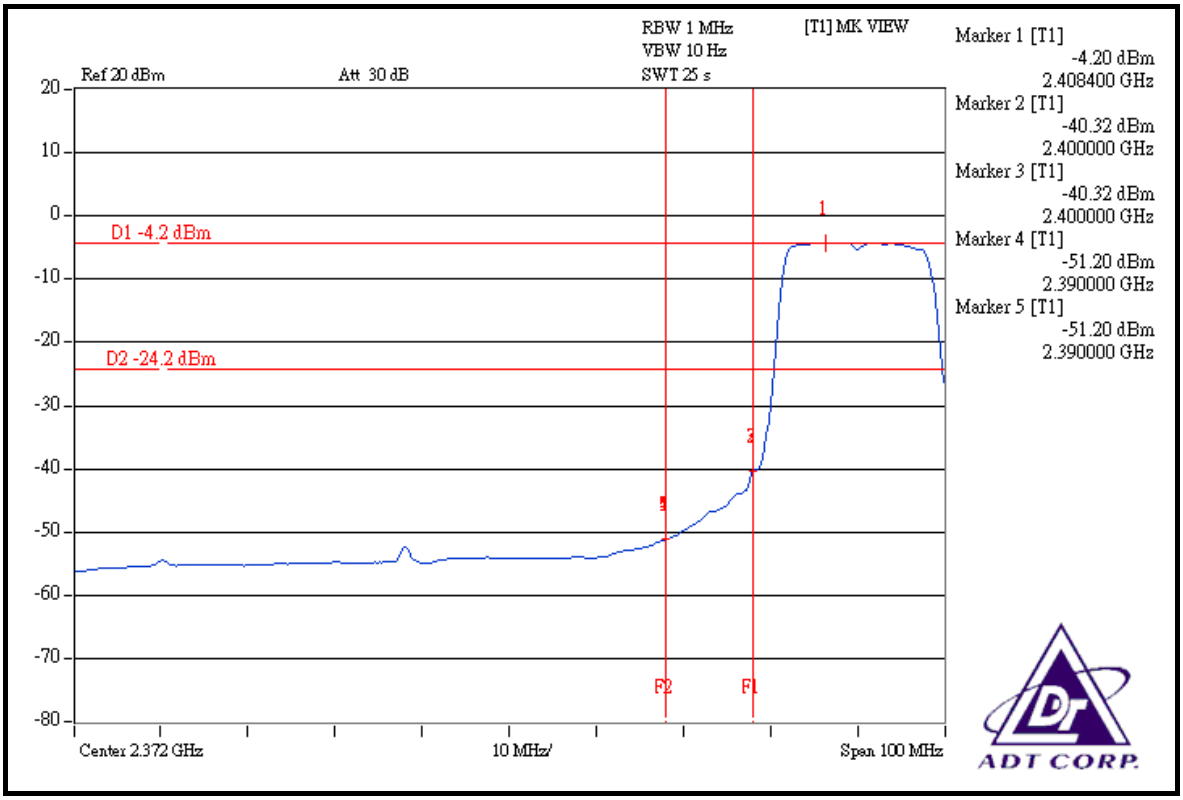
The band edge emission plot on the next page shows 47.00dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 95.93dBuV/m (Average), so the maximum field strength in restrict band is 95.93 – 47.00 = 48.93dBuV/m which is under 54dBuV/m limit.

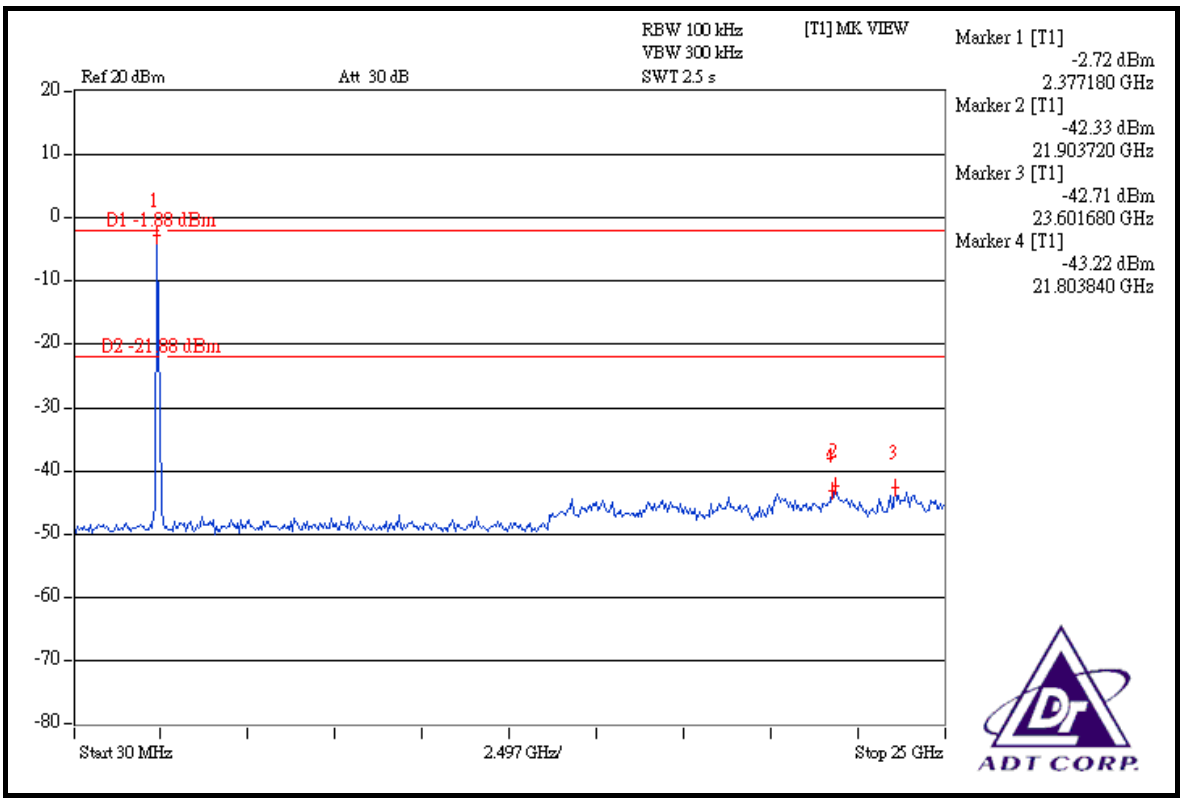
NOTE 2:

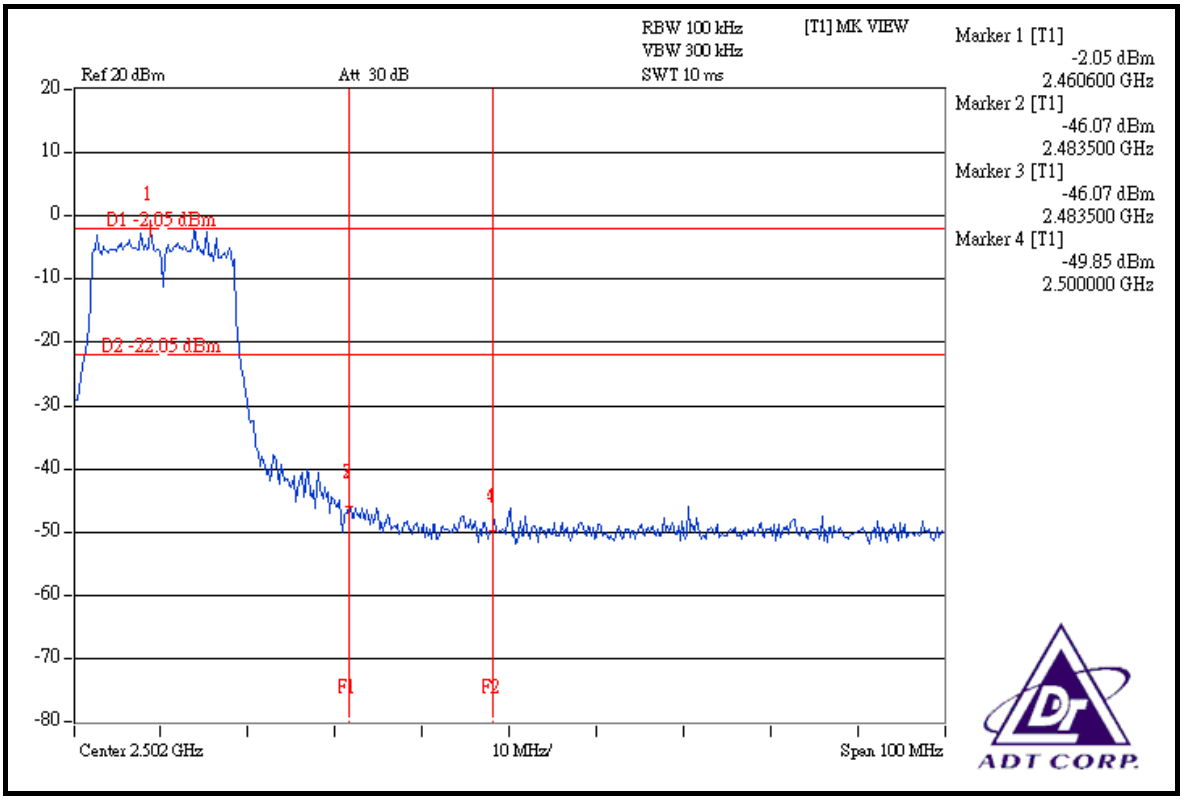
The band edge emission plot on the next second page shows 44.02dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 107.48dBuV/m (Peak), so the maximum field strength in restrict band is 107.48 – 44.02 = 63.46dBuV/m which is under 74dBuV/m limit.

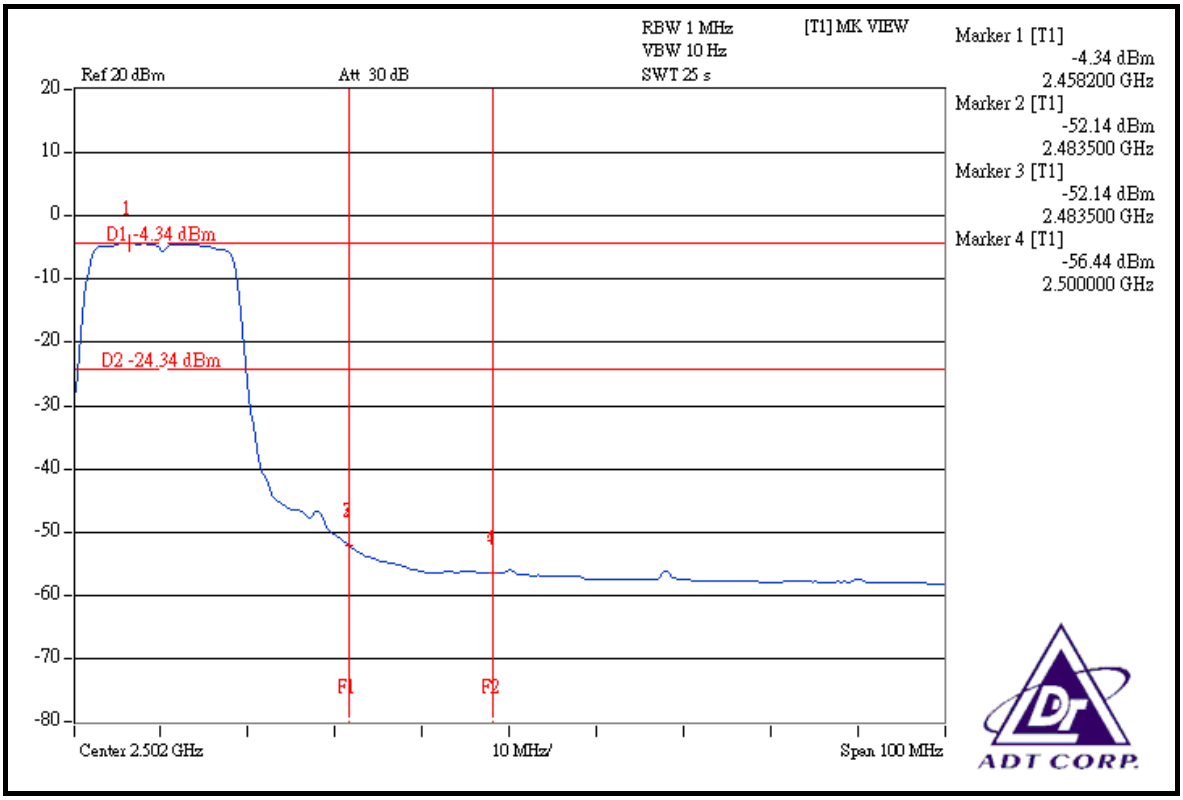
The band edge emission plot on the next third page shows 47.80dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 96.89dBuV/m (Average), so the maximum field strength in restrict band is 96.89 – 47.80 = 49.09dBuV/m which is under 54dBuV/m limit.

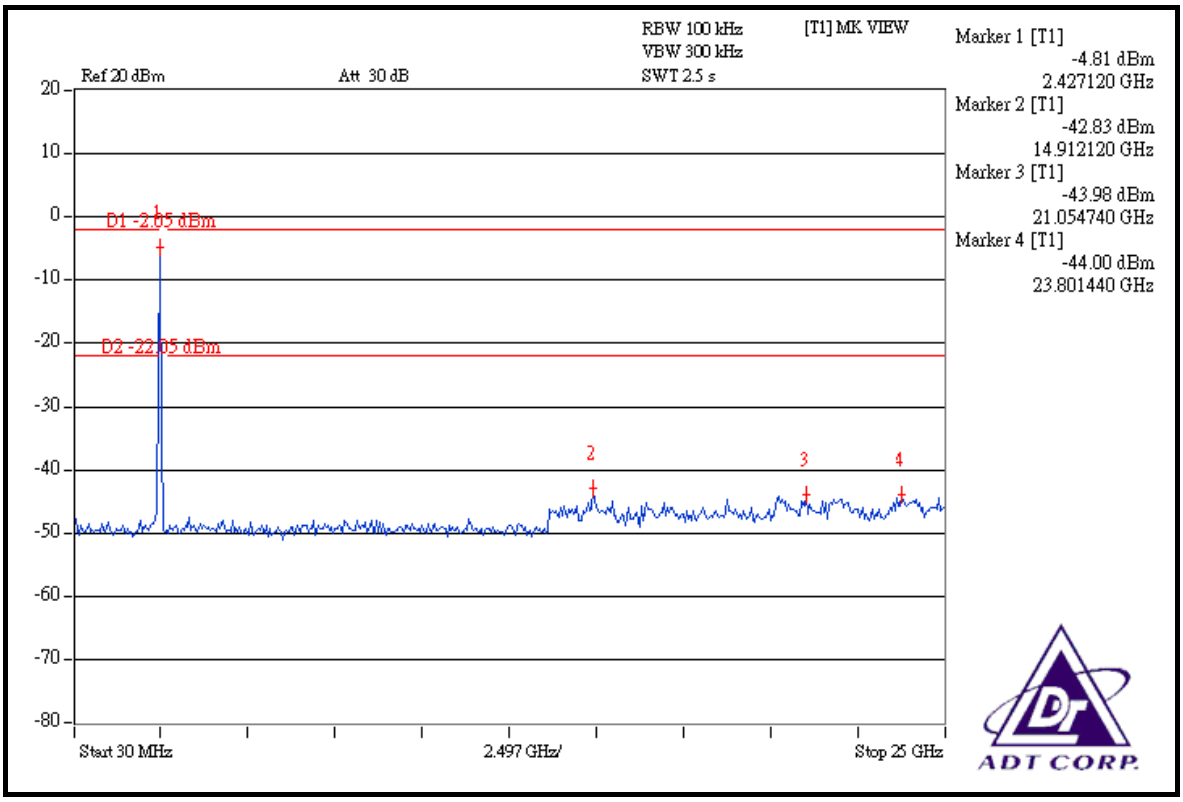

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-1.88 dBm
2.416000 GHz
Marker 2 [T1]
-39.00 dBm
2.400000 GHz
Marker 3 [T1]
-35.47 dBm
2.398400 GHz
Marker 4 [T1]
-45.73 dBm
2.390000 GHz
Marker 5 [T1]
-45.73 dBm
2.390000 GHz
D1 -1.88 dBm
D2 -21.88 dBm
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-4.20 dBm
2.408400 GHz
Marker 2 [T1]
-40.32 dBm
2.400000 GHz
Marker 3 [T1]
-40.32 dBm
2.400000 GHz
Marker 4 [T1]
-51.20 dBm
2.390000 GHz
Marker 5 [T1]
-51.20 dBm
2.390000 GHz
D1 -4.2 dBm
D2 -24.2 dBm
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-2.72 dBm
2.377180 GHz
Marker 2 [T1]
-42.33 dBm
21.903720 GHz
Marker 3 [T1]
-42.71 dBm
23.601680 GHz
Marker 4 [T1]
-43.22 dBm
21.803840 GHz
D1 -1.88 dBm
D2 -21.88 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-2.05 dBm
2.460600 GHz
Marker 2 [T1]
-46.07 dBm
2.483500 GHz
Marker 3 [T1]
-46.07 dBm
2.483500 GHz
Marker 4 [T1]
-49.85 dBm
2.500000 GHz
D1 -2.05 dBm
D2 -22.05 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-4.34 dBm
2.458200 GHz
Marker 2 [T1]
-52.14 dBm
2.483500 GHz
Marker 3 [T1]
-52.14 dBm
2.483500 GHz
Marker 4 [T1]
-56.44 dBm
2.500000 GHz
D1 -4.34 dBm
D2 -24.34 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-4.81 dBm
2.427120 GHz
Marker 2 [T1]
-42.83 dBm
14.912120 GHz
Marker 3 [T1]
-43.98 dBm
21.054740 GHz
Marker 4 [T1]
-44.00 dBm
23.801440 GHz
D1 -2.05 dBm
D2 -22.05 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

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 Inverted F antenna and Planar inverted antenna without antenna connector. The maximum gain of the antenna is 2.5dBi.

5. TEST TYPES AND RESULTS (FOR 5.0GHz)

5.1 RADIATED EMISSION MEASUREMENT

5.1.1 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.

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Jul. 27, 2008
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 03, 2009
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 06, 2009
Preamplifier Agilent	8449B	3008A01910	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10638	Dec. 19, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274039/223650	Nov. 07, 2008
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	Apr. 23, 2008

NOTE:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The IC Site Registration No. is IC3789B-9.

5.1.3 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.

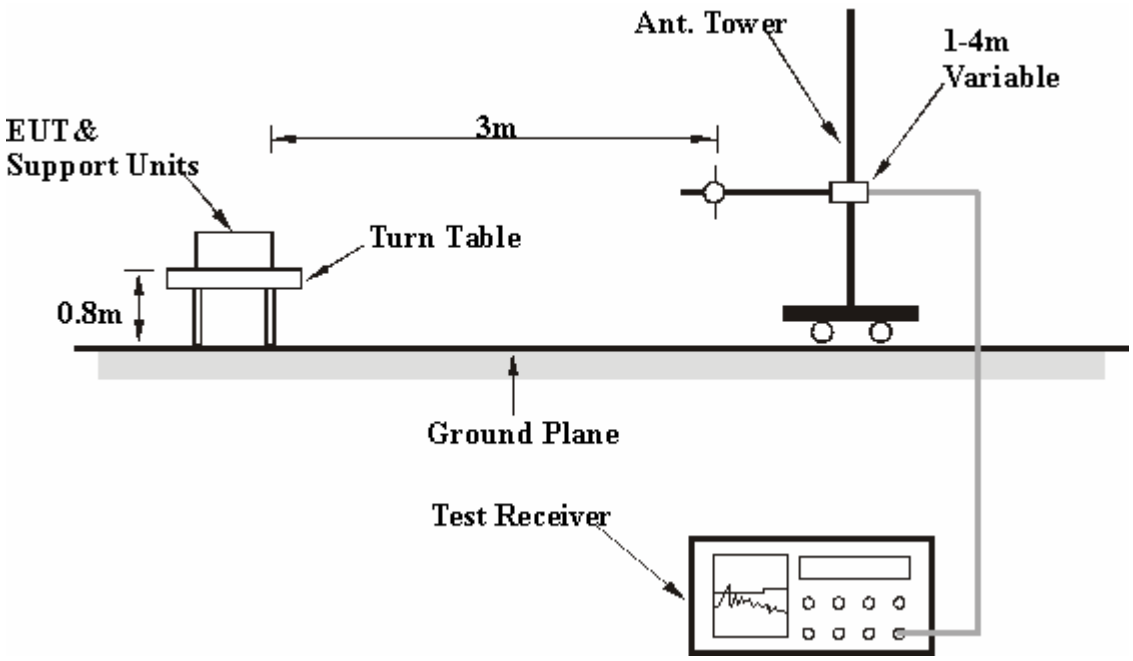
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) 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 1 MHz 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.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



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

5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6

5.1.7 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA: 802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5725.00	72.48 PK	80.24	-7.76	1.11 H	14	32.87	39.61
2	5725.00	53.29 AV	69.78	-16.49	1.11 H	14	13.68	39.61
3	*5745.00	100.24 PK			1.11 H	14	60.58	39.66
4	*5745.00	89.78 AV			1.11 H	14	50.12	39.66
5	#11490.00	65.46 PK	74.00	-8.54	1.16 H	218	15.72	49.74
6	#11490.00	50.18 AV	54.00	-3.82	1.16 H	218	0.44	49.74
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	75.38 PK	83.46	-8.08	1.04 V	188	35.77	39.61
2	5725.00	59.81 AV	73.15	-13.34	1.04 V	188	20.20	39.61
3	*5745.00	103.46 PK			1.04 V	188	63.80	39.66
4	*5745.00	93.15 AV			1.04 V	188	53.49	39.66
5	#11490.00	65.68 PK	74.00	-8.32	1.02 V	5	15.94	49.74
6	#11490.00	51.06 AV	54.00	-2.94	1.02 V	5	1.32	49.74

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 falling in the restricted band.
7. The limit value is defined as per 15.247.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	100.12 PK			1.10 H	16	60.37	39.75
2	*5785.00	89.75 AV			1.10 H	16	50.00	39.75
3	#11570.00	65.86 PK	74.00	-8.14	1.15 H	253	16.17	49.69
4	**#11570.00**	**50.52 AV**	**54.00**	**-3.48**	**1.15 H**	**253**	**0.83**	**49.69**
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	103.46 PK			1.06 V	191	63.71	39.75
2	*5785.00	93.08 AV			1.06 V	191	53.33	39.75
3	#11570.00	62.68 PK	74.00	-11.32	1.21 V	253	12.99	49.69
4	#11570.00	48.39 AV	54.00	-5.61	1.21 V	253	-1.30	49.69

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 falling in the restricted band.
7. The limit value is defined as per 15.247.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	99.84 PK			1.10 H	18	59.99	39.85
2	*5825.00	89.45 AV			1.10 H	18	49.60	39.85
3	5850.00	67.62 PK	79.84	-12.22	1.10 H	18	27.71	39.91
4	5850.00	51.84 AV	69.45	-17.61	1.10 H	18	11.93	39.91
5	16500.00	65.89 PK	79.84	-13.95	1.14 H	236	14.55	51.34
6	16500.00	50.52 AV	69.45	-18.93	1.14 H	236	-0.82	51.34
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	103.24 PK			1.06 V	191	63.39	39.85
2	*5825.00	92.86 AV			1.06 V	191	53.01	39.85
3	5850.00	70.24 PK	83.24	-13.00	1.06 V	191	30.32	39.91
4	5850.00	54.56 AV	72.86	-18.30	1.06 V	191	14.65	39.91
5	16500.00	65.48 PK	83.24	-17.76	1.09 V	60	14.14	51.34
6	16500.00	50.75 AV	72.86	-22.11	1.09 V	60	-0.59	51.34

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 falling in the restricted band.
7. The limit value is defined as per 15.247.

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH 1002hPa	TESTED BY	Lori Chiu

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	113.50	26.62 QP	43.50	-16.88	1.50 H	106	15.66	10.96
2	193.22	28.60 QP	43.50	-14.90	1.50 H	154	17.47	11.13
3	197.11	28.76 QP	43.50	-14.74	1.50 H	148	17.97	10.79
4	241.83	27.92 QP	46.00	-18.08	1.50 H	205	15.50	12.41
5	494.58	25.12 QP	46.00	-20.88	1.50 H	115	6.19	18.93
6	543.19	25.90 QP	46.00	-20.10	1.00 H	280	5.75	20.15
7	951.49	29.94 QP	46.00	-16.06	2.00 H	265	3.60	26.34
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	68.79	20.24 QP	40.00	-19.76	1.00 V	244	8.50	11.74
2	113.50	27.55 QP	43.50	-15.95	1.00 V	178	16.59	10.96
3	185.44	24.77 QP	43.50	-18.73	1.00 V	118	12.98	11.79
4	214.61	26.20 QP	43.50	-17.30	1.00 V	94	15.00	11.20
5	337.10	26.34 QP	46.00	-19.66	1.50 V	19	11.85	14.49
6	494.58	26.27 QP	46.00	-19.73	1.00 V	127	7.34	18.93
7	945.66	30.20 QP	46.00	-15.80	1.00 V	157	3.92	26.29

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.

5.2 CONDUCTED EMISSION MEASUREMENT

5.2.1 LIMITS OF CONDUCTED EMISSION 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.

5.2.2 T EST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 21, 2008
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 06, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 09, 2009
LISN SCHWARZBECK	NNBL 8226-2	8226-142	May 07, 2008
Software ADT	ADT_Cond_V3	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.

5.2.3 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.

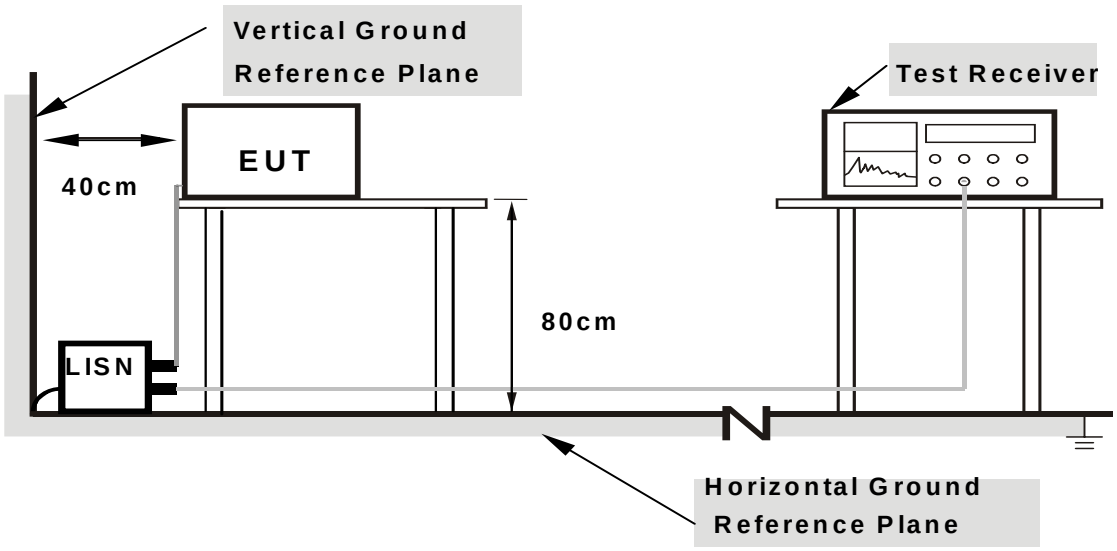
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 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).

5.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

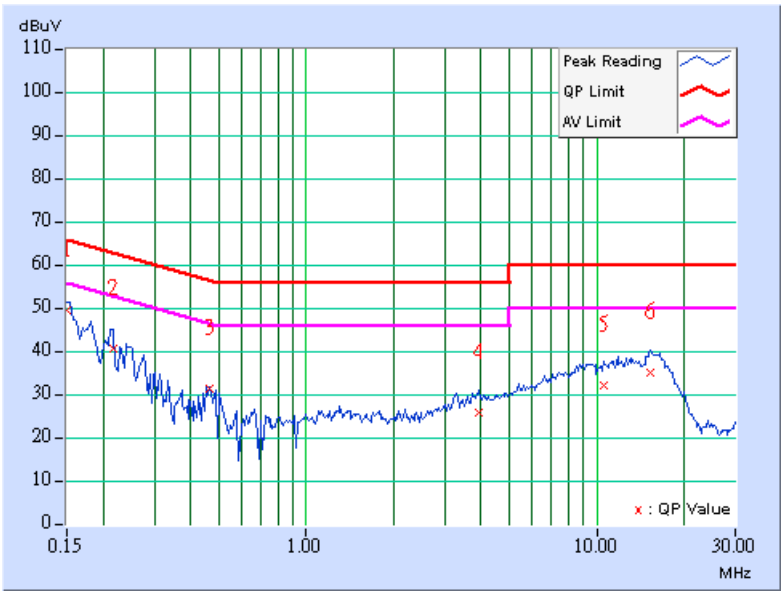
5.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	PHASE	Line 1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH, 991hPa	TESTED BY	Match Tsui

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	49.27	-	49.37	-	66.00	56.00	-16.63	-
2	0.216	0.10	40.18	-	40.28	-	62.96	52.96	-22.68	-
3	0.466	0.10	30.97	-	31.07	-	56.58	46.58	-25.51	-
4	3.922	0.28	25.31	-	25.59	-	56.00	46.00	-30.41	-
5	10.625	0.35	31.83	-	32.18	-	60.00	50.00	-27.82	-
6	15.375	0.49	34.86	-	35.35	-	60.00	50.00	-24.65	-

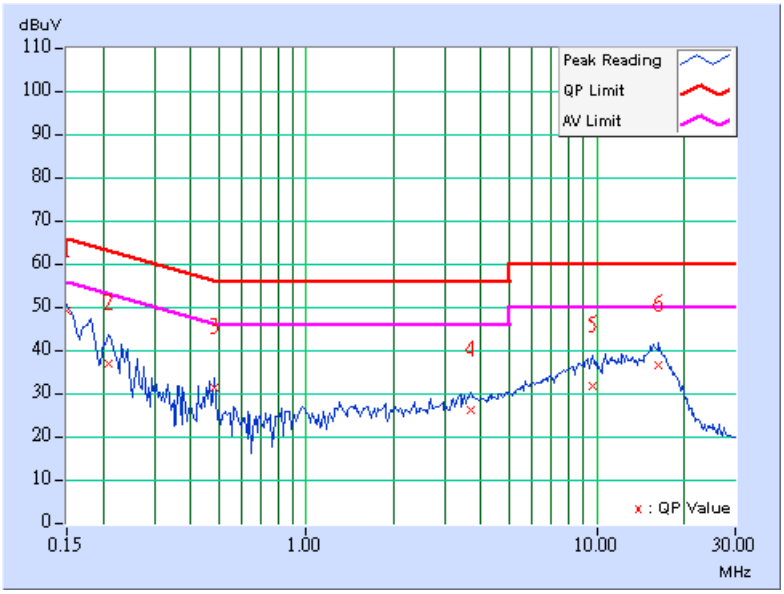
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	PHASE	Line 2
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH, 991hPa	TESTED BY	Match Tsui

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	48.72	-	48.82	-	66.00	56.00	-17.18	-
2	0.209	0.10	36.56	-	36.66	-	63.26	53.26	-26.60	-
3	0.482	0.12	30.83	-	30.95	-	56.30	46.30	-25.36	-
4	3.695	0.27	25.78	-	26.05	-	56.00	46.00	-29.95	-
5	9.715	0.42	31.30	-	31.72	-	60.00	50.00	-28.28	-
6	16.402	0.51	36.12	-	36.63	-	60.00	50.00	-23.37	-

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.



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 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008

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

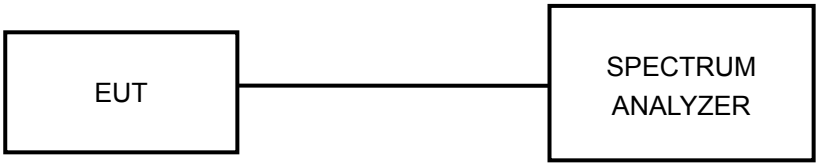
5.3.3 TEST PROCEDURE

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 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

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

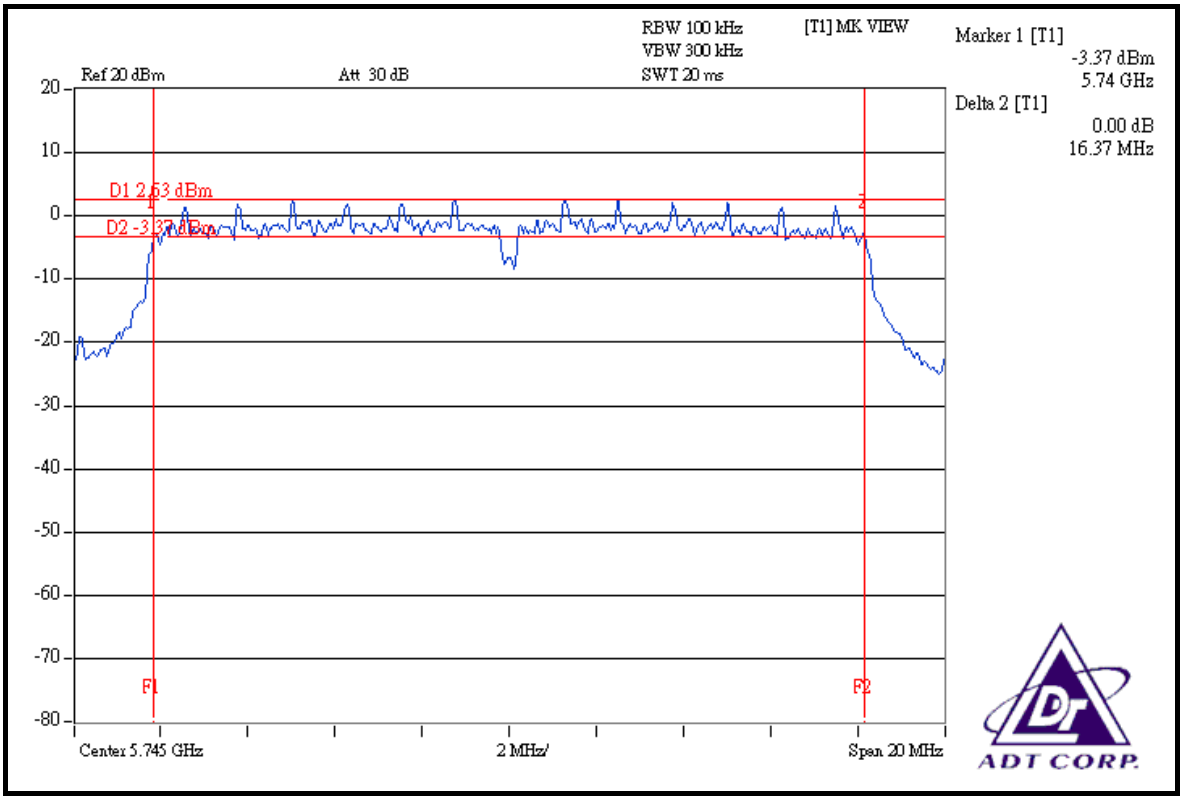
5.3.7 TEST RESULTS

802.11a OFDM MODULATION:

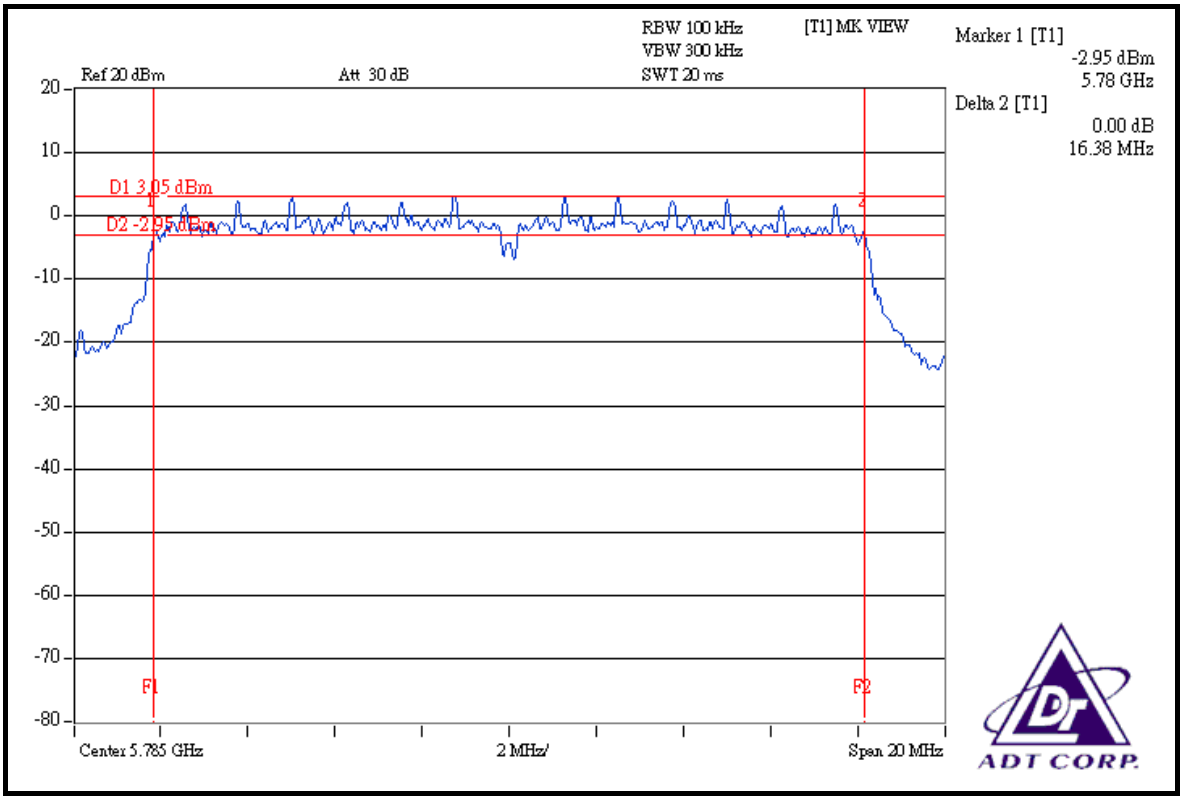
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 67%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60Hz	TESTED BY	Brad Wu

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	5745	16.37	0.5	PASS
3	5785	16.38	0.5	PASS
5	5825	16.38	0.5	PASS

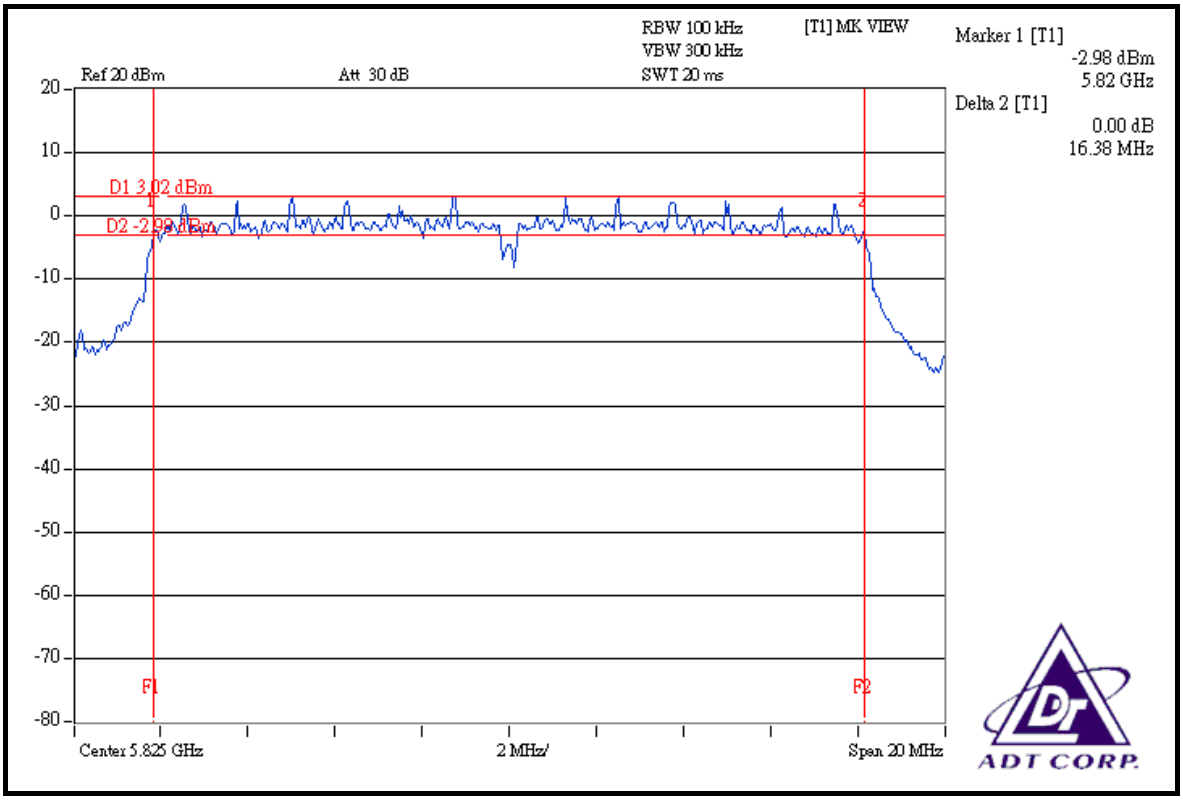
CH 1



CH 3


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-2.95 dBm
5.78 GHz
Delta 2 [T1]
0.00 dB
16.38 MHz
Ref 20 dBm
Att 30 dB
D1 3.05 dBm
D2 -2.95 dBm
F1
F2
Center 5.785 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH 5


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-2.98 dBm
5.82 GHz
Delta 2 [T1]
0.00 dB
16.38 MHz
Ref 20 dBm
Att 30 dB
D1 3.02 dBm
D2 -2.98 dBm
F1
F2
Center 5.825 GHz
2 MHz/
Span 20 MHz
ADT CORP.

5.4 MAXIMUM PEAK OUTPUT POWER

5.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

5.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008
AGILENT SYNTHESIZED SIGNAL GENERATOR	E8257C	MY43320668	Dec. 25, 2008
DIGITAL RT OSCILLOSCOPE	TDS1012	C037299	Nov. 21, 2008
NARDA DETECTOR	4503A	FSCM99899	NA

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

5.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP

5.4.6 EUT OPERATING CONDITIONS

Same as Item 5.3.6

5.4.7 TEST RESULTS

802.11a OFDM MODULATION:

MODULATION TYPE	BPSK	**ENVIRONMENTAL CONDITIONS**	25deg.C, 67%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Brad Wu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	5745	71.61	18.55	30	PASS
3	5785	80.54	19.06	30	PASS
5	5825	80.17	19.04	30	PASS

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 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008

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

5.5.3 TEST PROCEDURE

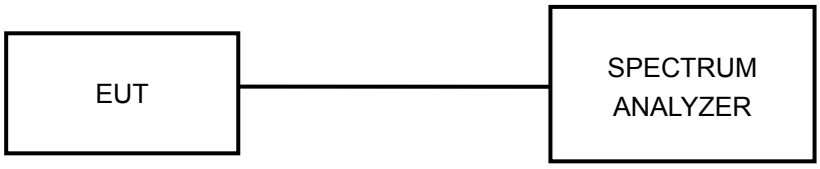
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

Same as Item 5.3.6

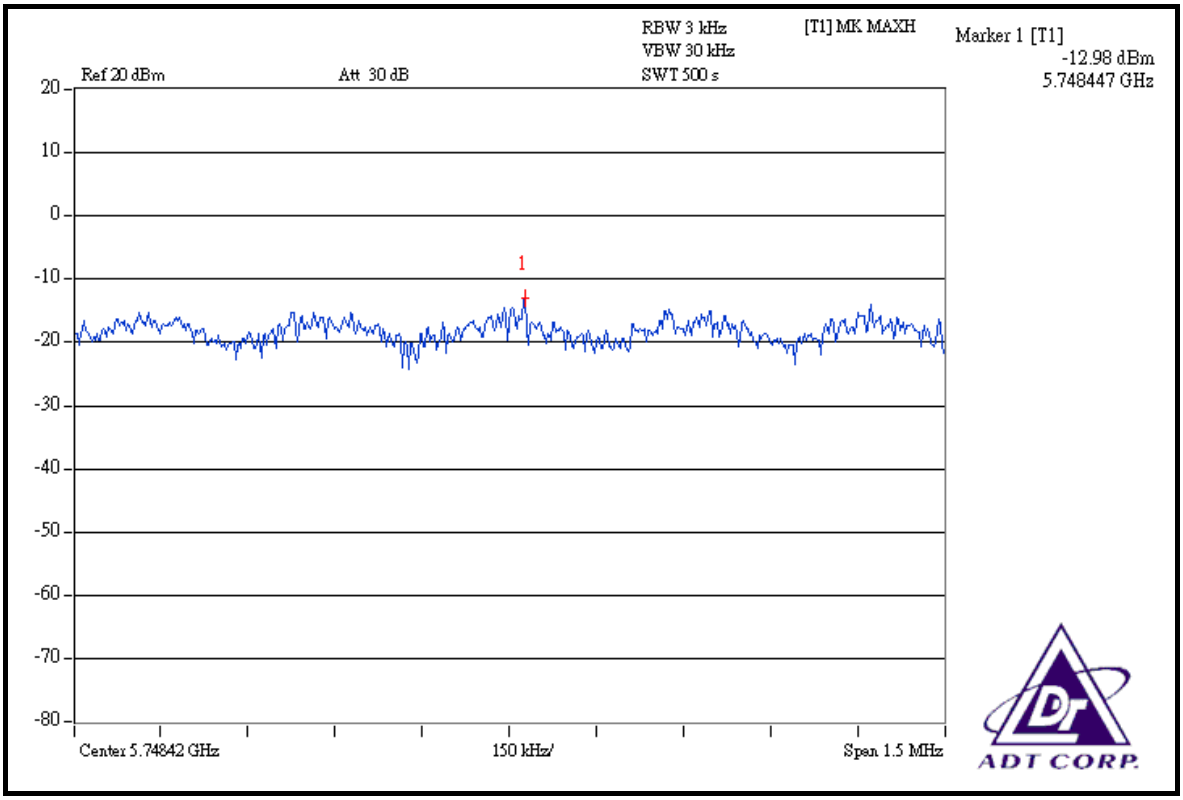
5.5.7 TEST RESULTS

802.11a OFDM MODULATION:

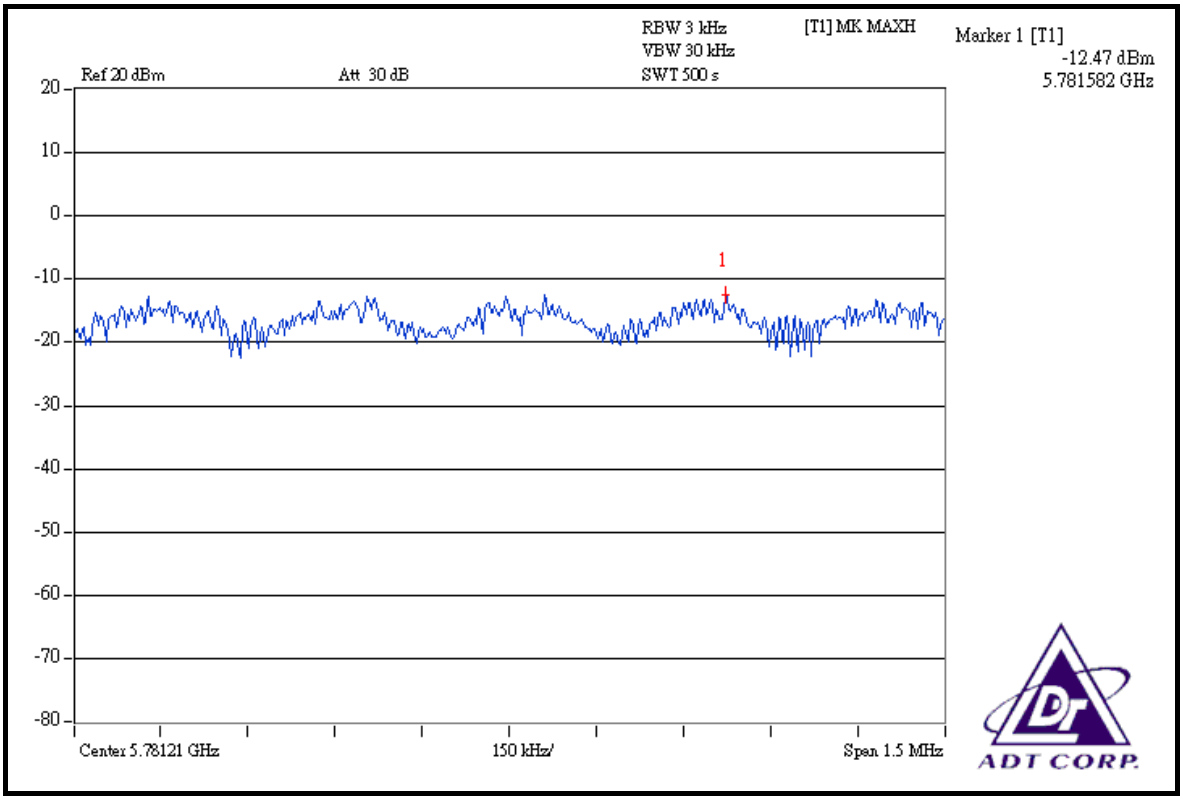
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 67%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60Hz	TESTED BY	Brad Wu

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	5745	-12.98	8	PASS
3	5785	-12.47	8	PASS
5	5825	-12.33	8	PASS

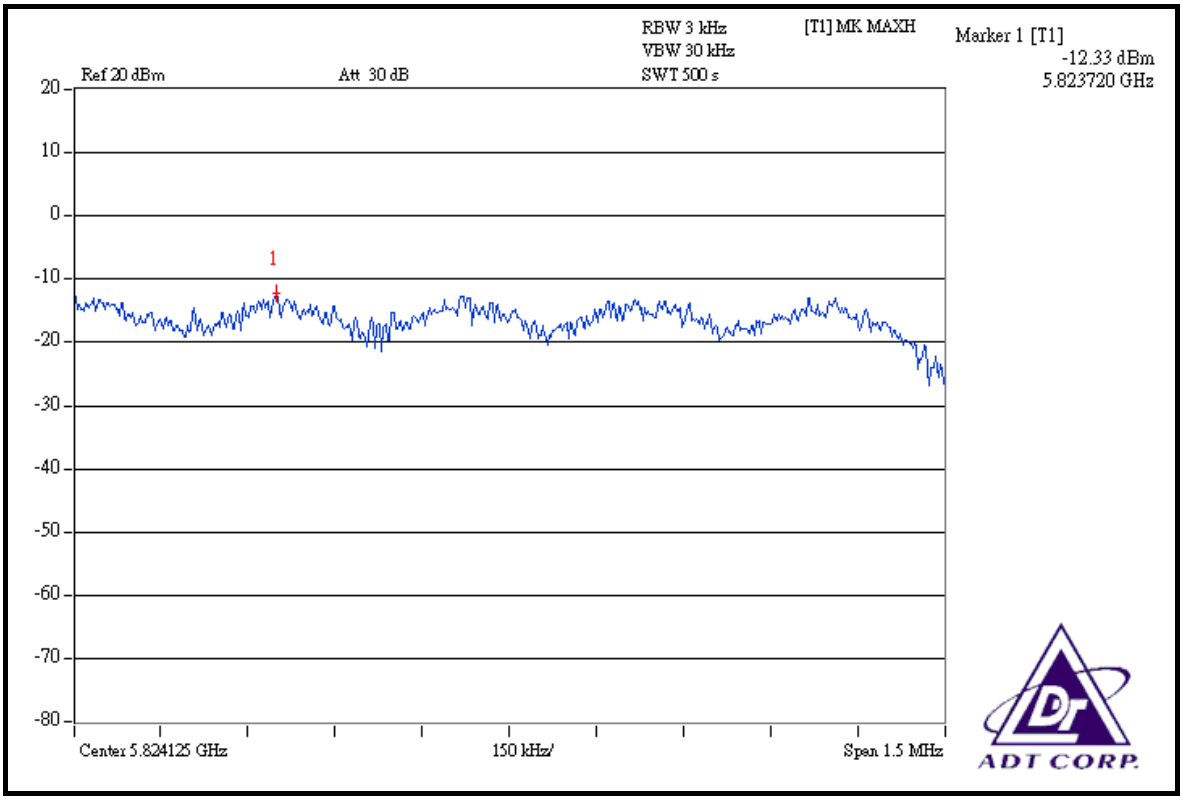
CH 1



CH 3


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-12.47 dBm
5.781582 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 5.78121 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH 5


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-12.33 dBm
5.823720 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 5.824125 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

5.6 BAND EDGES MEASUREMENT

5.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

5.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008

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

5.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose 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.

5.6.4 DEVIATION FROM TEST STANDARD

No deviation.

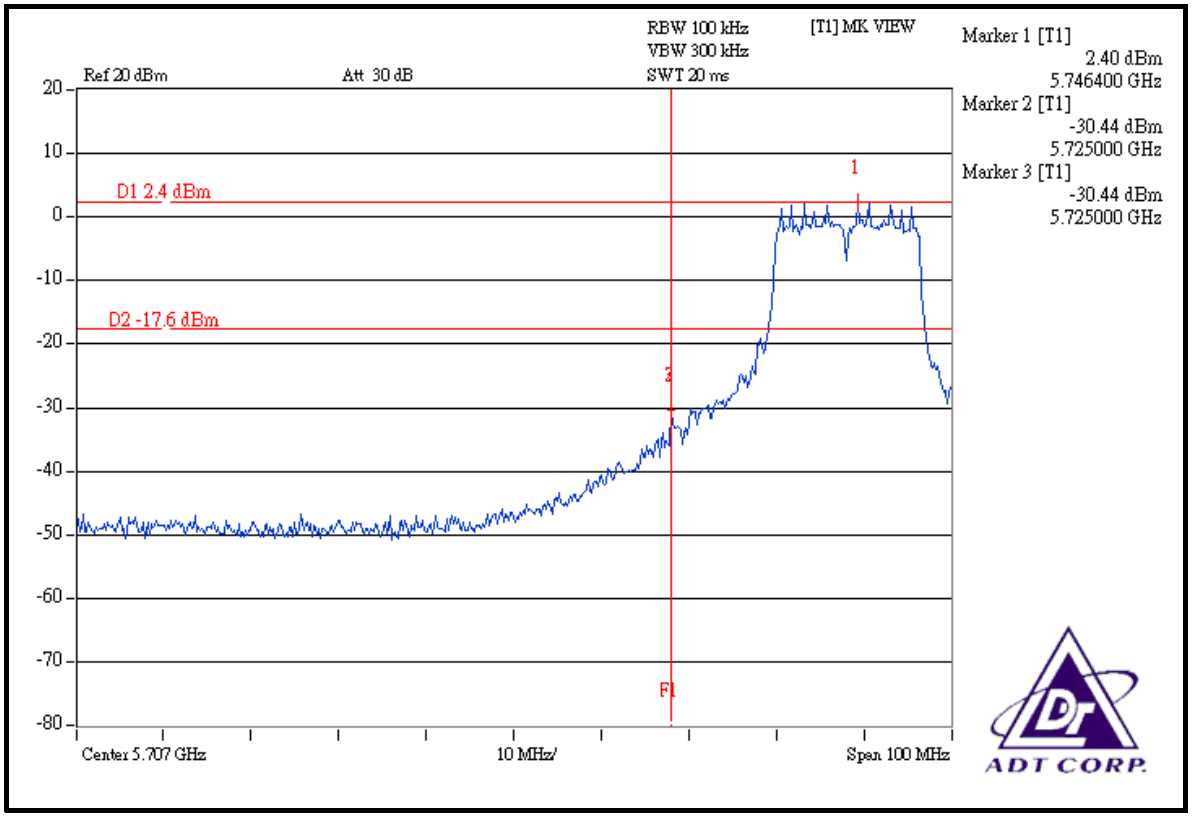
5.6.5 EUT OPERATING CONDITION

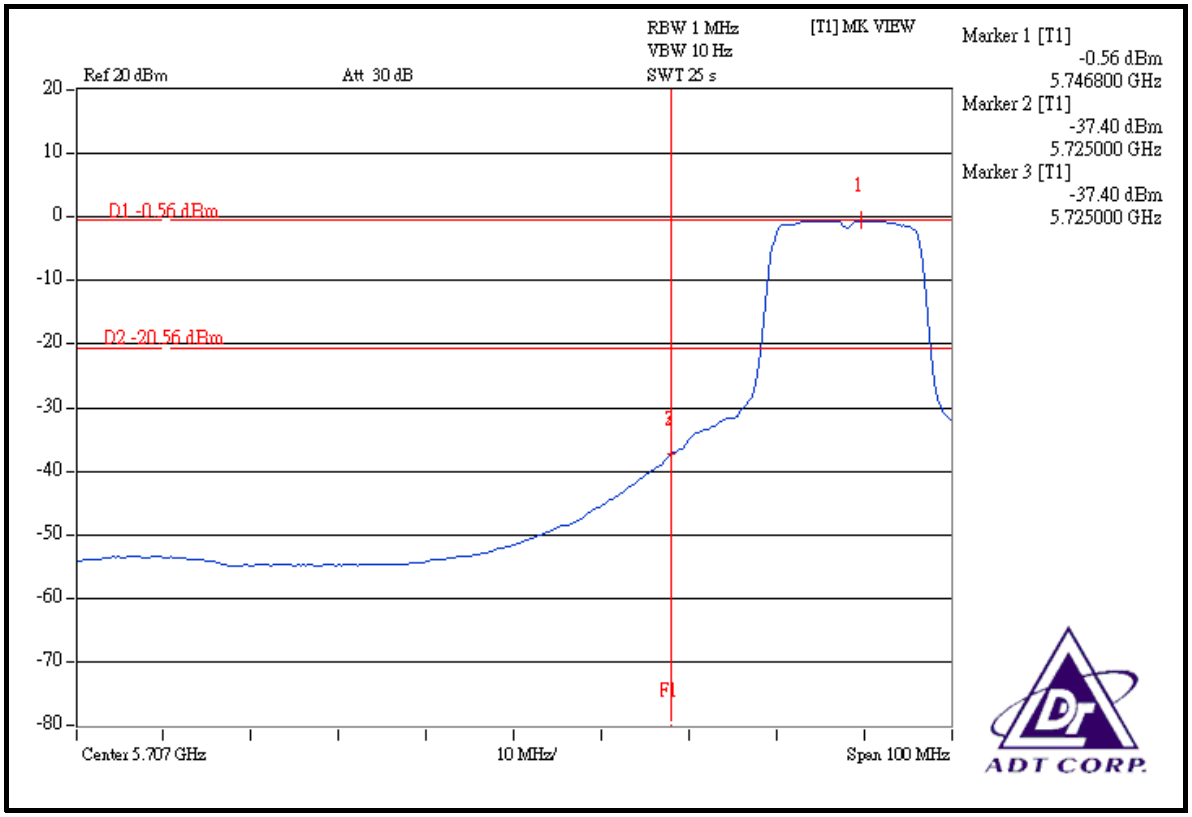
Same as Item 5.3.6

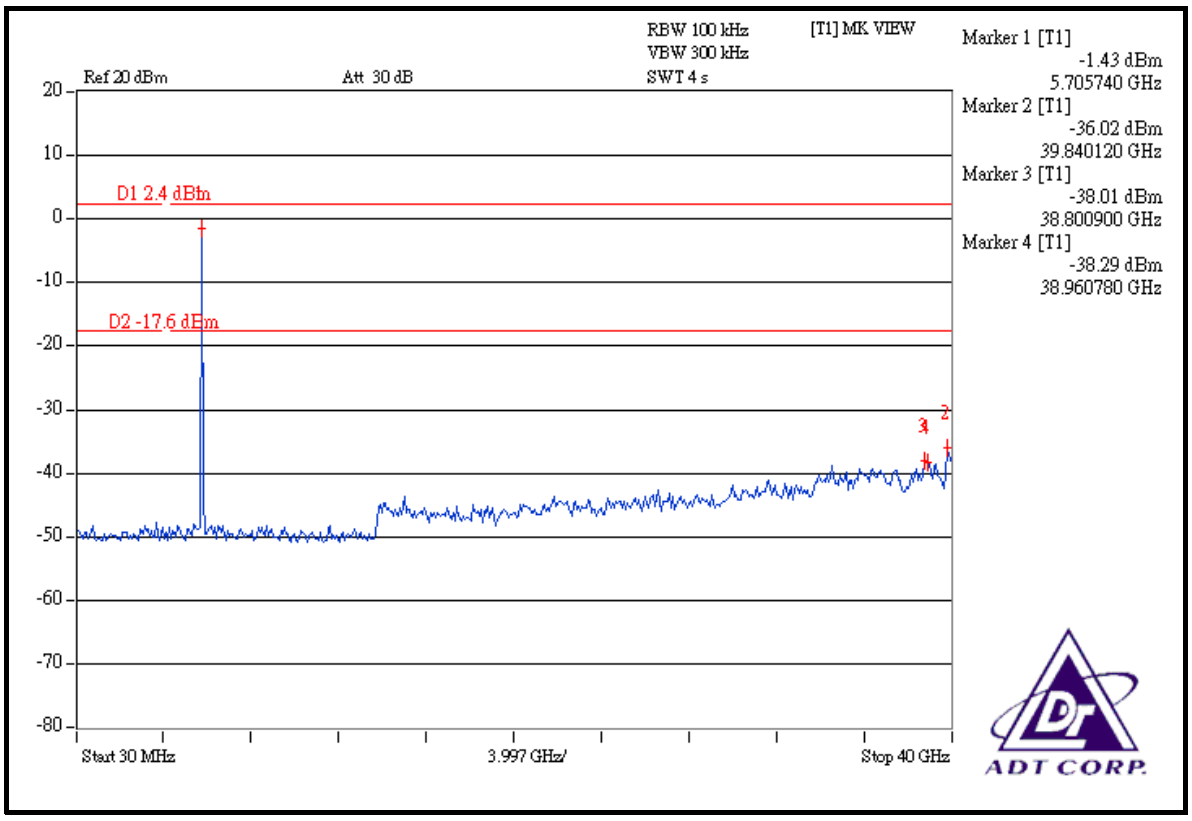
5.6.6 TEST RESULTS

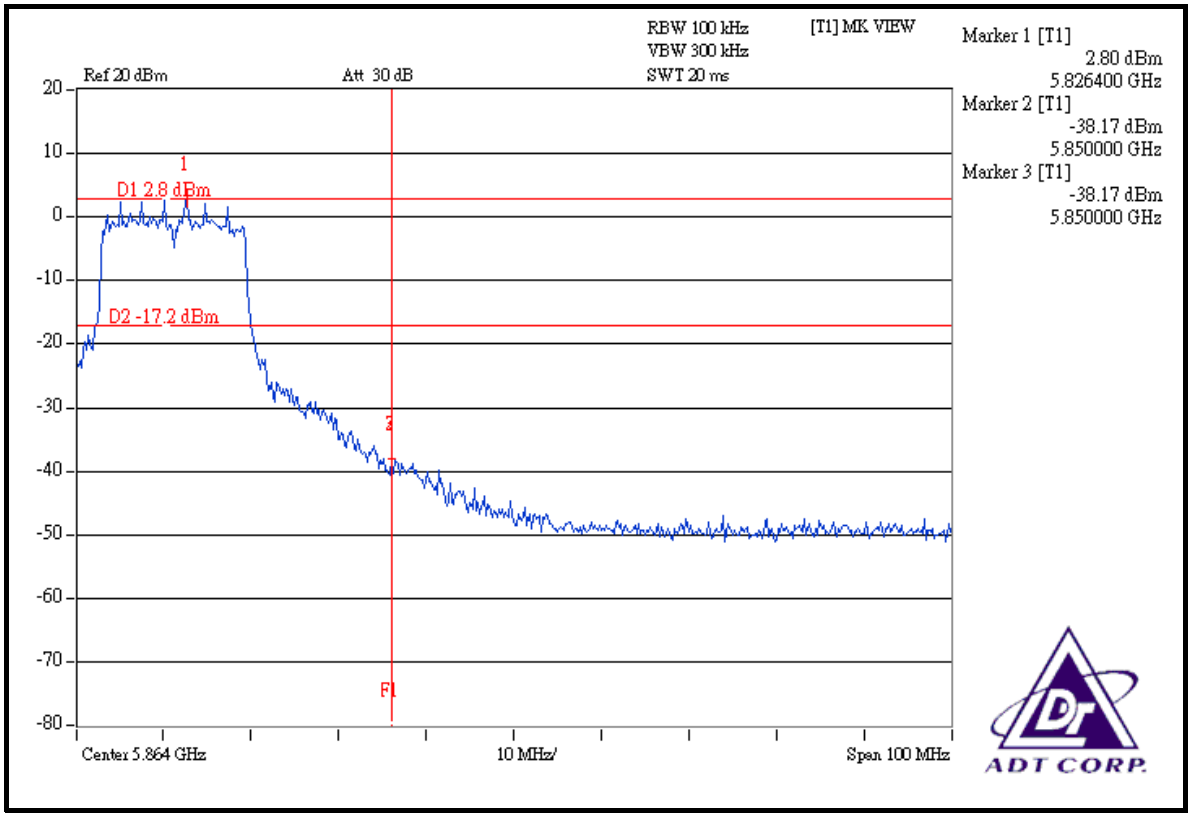
The spectrum plots are attached on the following pages. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

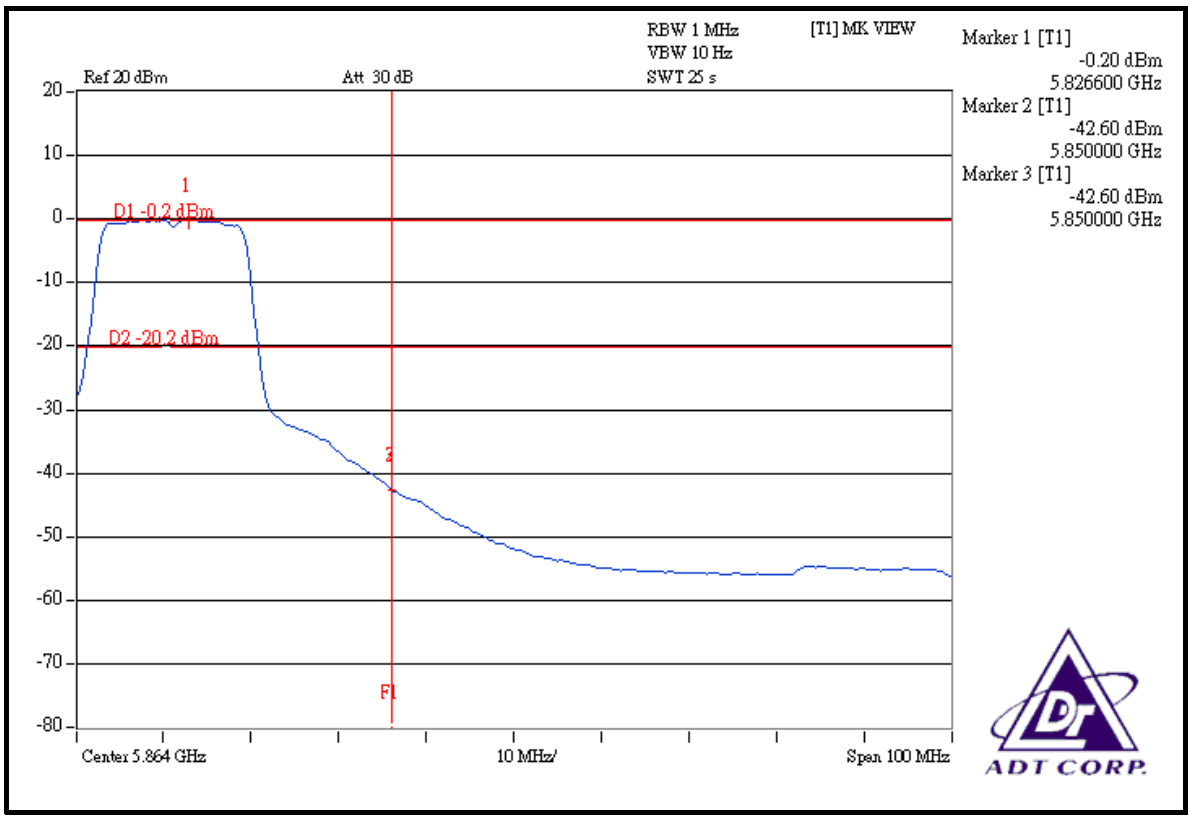
802.11a OFDM MODULATION:

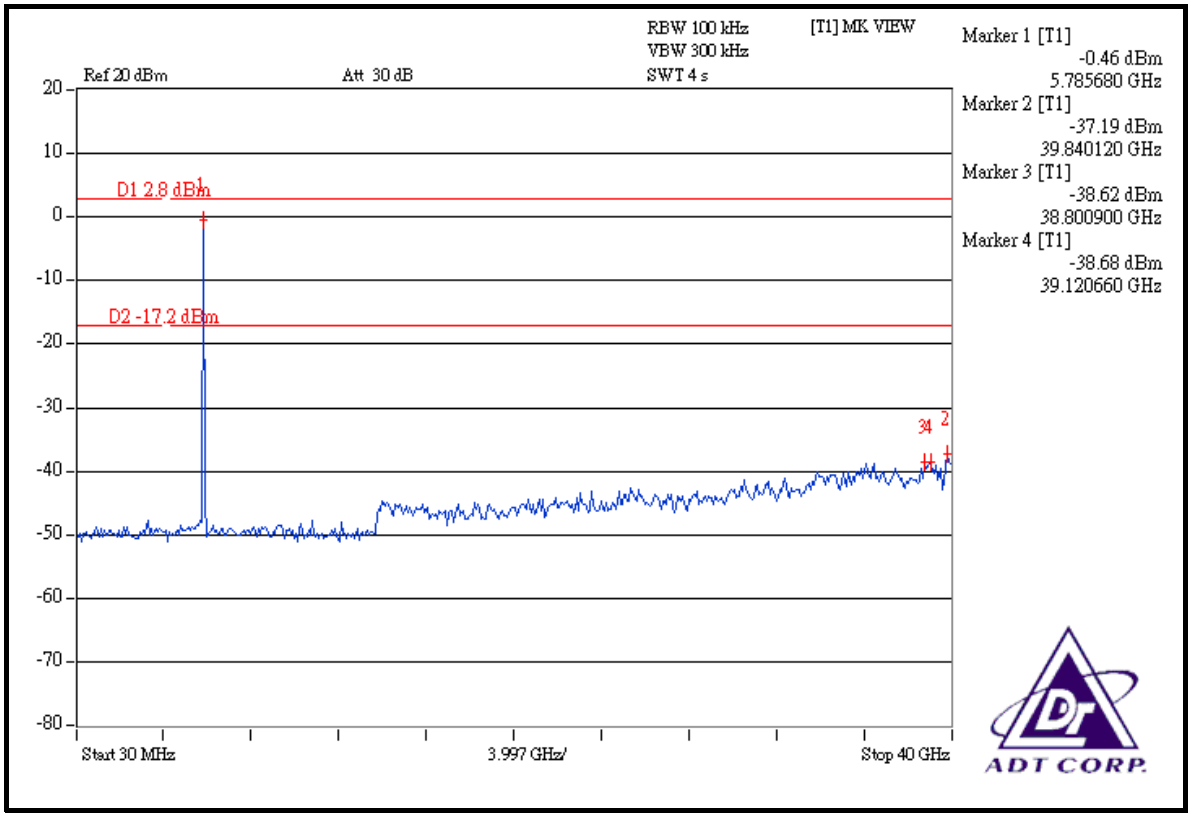





RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 2.4 dBm
D2 -17.6 dBm
Marker 1 [T1]
-1.43 dBm
5.705740 GHz
Marker 2 [T1]
-36.02 dBm
39.840120 GHz
Marker 3 [T1]
-38.01 dBm
38.800900 GHz
Marker 4 [T1]
-38.29 dBm
38.960780 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 2.8 dBm
D2 -17.2 dBm
Marker 1 [T1]
2.80 dBm
5.826400 GHz
Marker 2 [T1]
-38.17 dBm
5.850000 GHz
Marker 3 [T1]
-38.17 dBm
5.850000 GHz
Center 5.864 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-0.20 dBm
5.826600 GHz
Marker 2 [T1]
-42.60 dBm
5.850000 GHz
Marker 3 [T1]
-42.60 dBm
5.850000 GHz
D1 -0.2 dBm
D2 -20.2 dBm
Center 5.864 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-0.46 dBm
5.785680 GHz
Marker 2 [T1]
-37.19 dBm
39.840120 GHz
Marker 3 [T1]
-38.62 dBm
38.800900 GHz
Marker 4 [T1]
-38.68 dBm
39.120660 GHz
D1 2.8 dBm
D2 -17.2 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz

5.7 ANTENNA REQUIREMENT

5.7.1 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(a), 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.

5.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Inverted F antenna and Planar inverted antenna without antenna connector. The maximum gain of the antenna is 3.5dBi.

6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

7. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., 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, UL, A2LA
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.

8. 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.