FCC TEST REPORT

REPORT NO.: RF960910A10B
MODEL NO.: E100, E100N
RECEIVED: Sep. 11, 2007
TESTED: Oct. 1 ~ 2, 2007
ISSUED: Feb. 4, 2008

APPLICANT : MITAC TECHNOLOGY CORP.

ADDRESS : 9 FL., NO. 75, SEC. 3 MING SHENG E. RD., TAIPEI, TAIWAN, R.O.C.

ISSUED BY : Advance Data Technology Corporation

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

Testing Laboratory
0528

ACCREDITED
No.: 2177-01

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1 CERTIFICATION

PRODUCT:	Tablet PC
BRAND NAME:	MTC; GETAC
MODEL NO.:	E100, E100N
APPLICANT:	MITAC TECHNOLOGY CORP.
TESTED:	Oct. 1 ~ 2, 2007
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	FCC Part 15, Subpart C (Section 15.247) ANSI C63.4-2003

The above equipment (Model: E100N) 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 : Annie Chang , **DATE:** Feb. 4, 2008
(Annie Chang / Senior Specialist)

TECHNICAL ACCEPTANCE : Jamison Chan , **DATE:** Feb. 4, 2008
Responsible for RF
(Jamison Chan / Senior Engineer)

APPROVED BY : Ken Liu , **DATE:** Feb. 4, 2008
(Ken Liu / Deputy 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 -15.33dB at 0.185MHz.
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)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -2.74dB at 47.495MHz.
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 20 dB 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 ~ 1GHz	3.75 dB
	1GHz ~ 40GHz	2.89 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

PRODUCT	Tablet PC
MODEL NO.	E100, E100N
FCC ID	MAUE02
POWER SUPPLY	12Vdc from adapter or 7.4Vdc from battery
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
MAXIMUM OUTPUT POWER	45.290mW for 802.11b 22.699mW for 802.11g
ANTENNA TYPE	PIFA antenna (UFL connector) with 0.70dBi gain
DATA CABLE	Refer to user's manual
I/O PORTS	N/A
ACCESSORY DEVICE	Refer to note 4 as below

NOTE:

1. The EUT is a Personal Computer with IEEE 802.11b/g and Bluetooth functions.

2. The EUT has following models as follows:

Brand	Model	Panel Size	Resolution	Differentiation
MTC; GETAC	E100	8.4"	800 x 600	Marketing Differentiation
	E100N	8.9"	1024 x 768	

After pre-tested both models, found **model: E100N** was the worst, therefore, all test results came out from this.

3. This report covered IEEE 802.11b/g function. Bluetooth function showed in another report, which report no. is RF960910A10-1B.

4. The EUT was power supplied from the following power adapter and batteries:

Item	Brand	Model	Rating
Adapter	FSP	FSP050-1AD101C	AC I/P: 100~240V,1.3A, 50~60Hz DC O/P: DC12V, 4.16AMAX (50W MAX) Non-shielded DC (1.8m), AC 2-pin
Battery	Panasonic	BP2S2P2550	7.2Vdc
Battery	Sanyo	BP2S2P2600	7.4Vdc

After pre-tested both batteries, found **Sanyo battery** was the worst, therefore, all test results came out from this.

5. The wireless LAN card, 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 of up to 54Mbps.

6. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

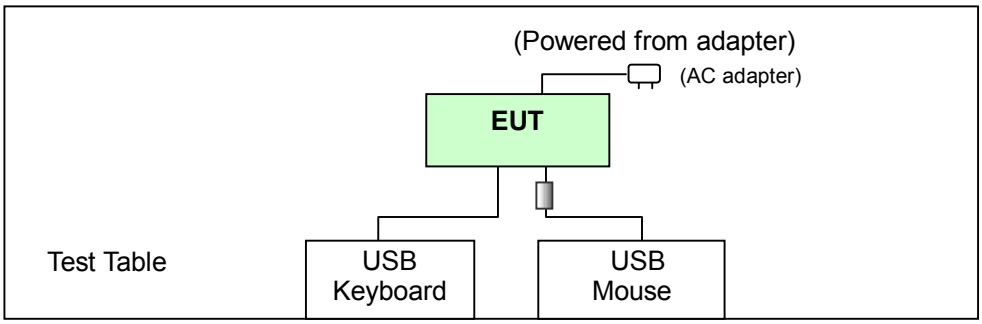
3.2 DESCRIPTION OF TEST MODES

11 channels are provided to this EUT.

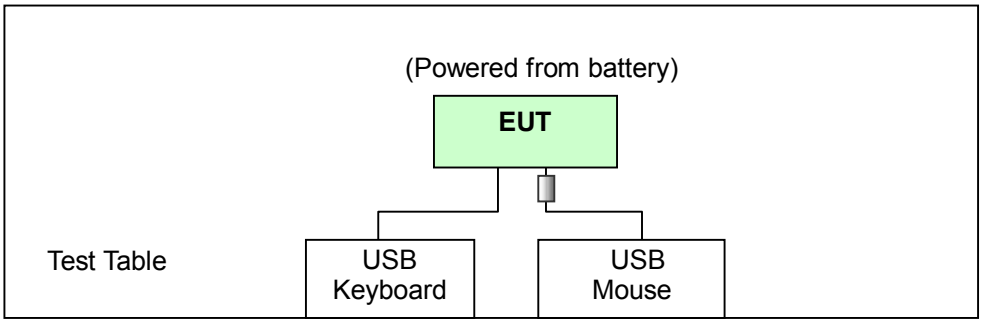
CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Mode A:



Mode B:



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT Configure Mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
A	√	√	√	√	EUT with adapter (Powered from adapter)
B	Note	√	-	-	EUT with Sanyo battery (Powered from battery)

Where PLC: Power Line Conducted Emission RE<1G RE: Radiated Emission below 1GHz
RE≥1G: Radiated Emission above 1GHz APCM: Antenna Port Conducted Measurement

NOTE: No need to concern of Conducted Emission due to the EUT is powered by battery.

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)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1

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, X,Y,Z 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
A	802.11b	1 to 11	1	DSSS	DBPSK	1	X
B	802.11b	1 to 11	1	DSSS	DBPSK	1	X

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, X,Y,Z 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
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	X
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	X

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)
A	802.11b	1 to 11	1, 11	DSSS	DBPSK	1
A	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.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
A	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.

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	USB KEYBOARD	BTC	5200U	G09302046659	E5XKB5122U
2	USB MOUSE	MICROSOFT	X800898	9241804-30608	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.5 m braid shielded wire, terminated with USB connector via drain wire, w/o core.
2	1.8 m foil shielded wire, terminated with USB connector via drain wire, with 1 core.

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

4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBµV)	
	Quasi-peak	Average
0.15 ~ 0.5 0.5 ~ 5 5 ~ 30	66 to 56 56 60	56 to 46 46 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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	838251/021	Nov. 23, 2007
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	100218	Nov. 21, 2007
LISN With Adapter (for EUT)	AD10	C10Ada-001	Nov. 21, 2007
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100219	Nov. 07, 2007
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100220	Oct. 26, 2007
Software	ADT_Cond_V7.3.2	NA	NA
Software	ADT_ISN_V7.3.2	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C10.01	Mar. 01, 2008
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010773	Feb. 11, 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 ADT Shielded Room No. 10.
3. The VCCI Site Registration No. C-1852.

4.1.3 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.

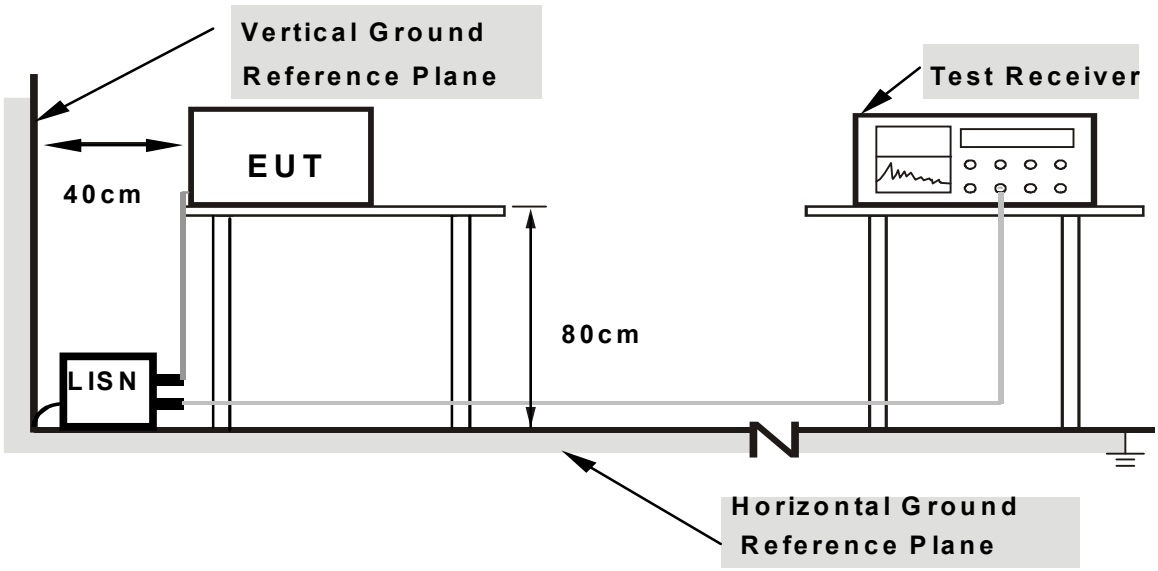
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 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).

4.1.6 EUT OPERATING CONDITIONS

a. Connected the EUT with an AC adapter placed on testing table.

b. Set the EUT under transmission/receiving condition continuously at specific channel frequency.

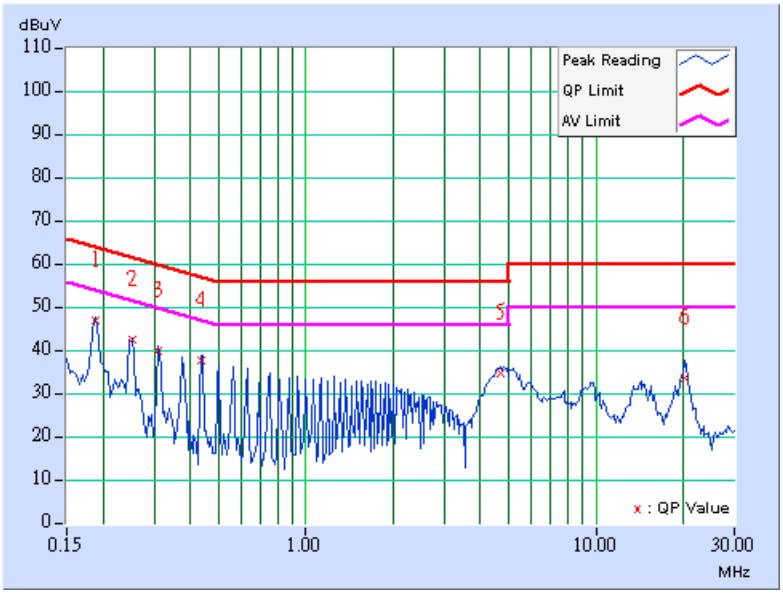
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA

TEST MODE	A		
MODULATION TYPE	DBPSK	**CHANNEL**	1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**6dB BANDWIDTH**	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 999hPa	**PHASE**	Line 1
TRANSFER RATE	1Mbps	**TESTED BY**	Jamison Chan

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	0.189	0.20	45.67	-	45.87	-	64.08	54.08	-18.21	-
2	0.252	0.20	41.21	-	41.41	-	61.71	51.71	-20.30	-
3	0.310	0.20	38.71	-	38.91	-	59.97	49.97	-21.06	-
4	0.435	0.21	36.36	-	36.57	-	57.15	47.15	-20.59	-
5	4.688	0.43	33.53	-	33.96	-	56.00	46.00	-22.04	-
6	20.219	1.41	32.45	-	33.86	-	60.00	50.00	-26.14	-

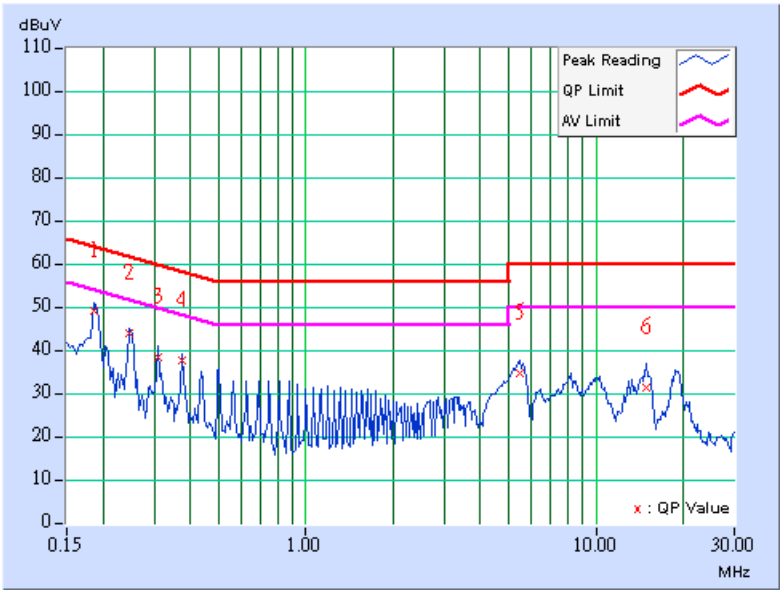
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



TEST MODE	A		
MODULATION TYPE	DBPSK	**CHANNEL**	1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**6dB BANDWIDTH**	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 999hPa	**PHASE**	Line 2
TRANSFER RATE	1Mbps	**TESTED BY**	Jamison Chan

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.185**	**0.20**	**48.72**	**-**	**48.92**	**-**	**64.25**	**54.25**	**-15.33**	**-**
2	0.248	0.20	43.31	-	43.51	-	61.84	51.84	-18.33	-
3	0.310	0.20	37.92	-	38.12	-	59.97	49.97	-21.85	-
4	0.373	0.20	37.21	-	37.41	-	58.44	48.44	-21.03	-
5	5.477	0.35	34.00	-	34.35	-	60.00	50.00	-25.65	-
6	14.965	0.70	30.68	-	31.38	-	60.00	50.00	-28.62	-

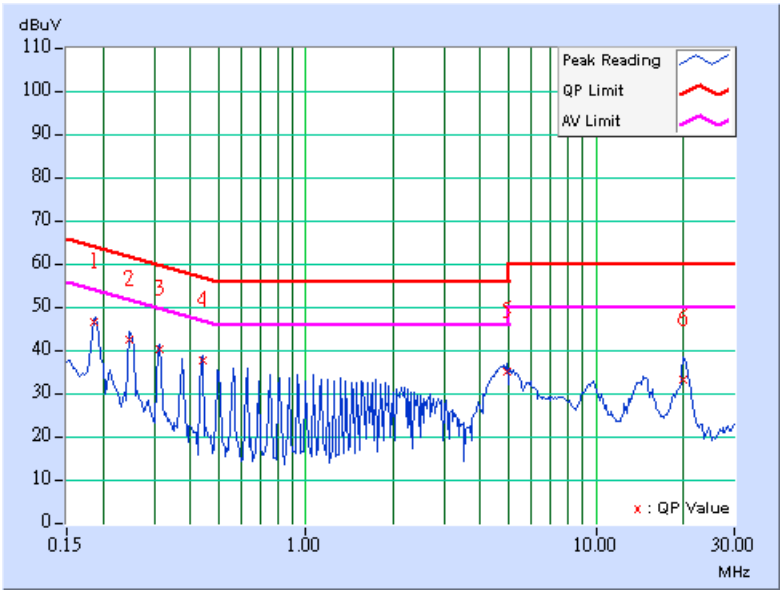
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



TEST MODE	A		
MODULATION TYPE	DBPSK	**CHANNEL**	6
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**6dB BANDWIDTH**	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 999hPa	**PHASE**	Line 1
TRANSFER RATE	1Mbps	**TESTED BY**	Jamison Chan

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.185	0.20	45.13	-	45.33	-	64.25	54.25	-18.92	-
2	0.248	0.20	41.18	-	41.38	-	61.84	51.84	-20.46	-
3	0.314	0.20	38.96	-	39.16	-	59.86	49.86	-20.70	-
4	0.439	0.21	36.46	-	36.67	-	57.08	47.08	-20.41	-
5	4.938	0.45	33.84	-	34.29	-	56.00	46.00	-21.71	-
6	20.031	1.40	31.93	-	33.33	-	60.00	50.00	-26.67	-

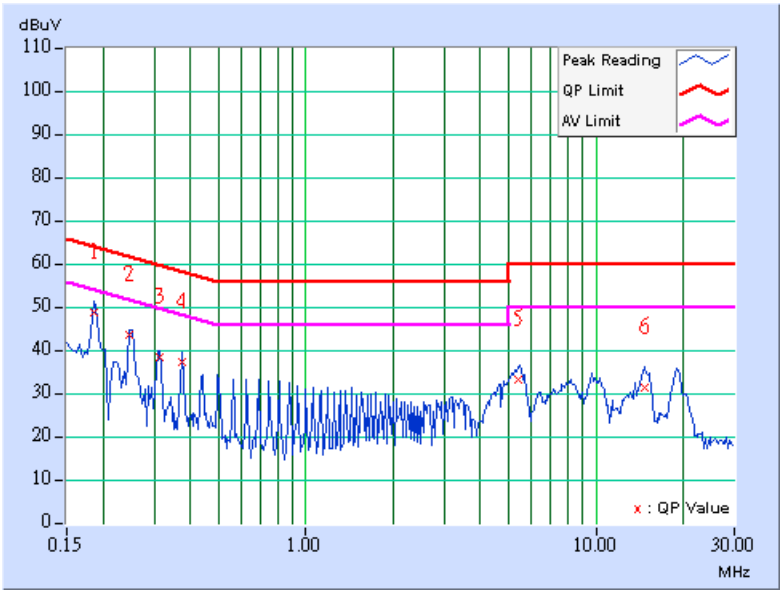
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



TEST MODE	A		
MODULATION TYPE	DBPSK	**CHANNEL**	6
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**6dB BANDWIDTH**	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 999hPa	**PHASE**	Line 2
TRANSFER RATE	1Mbps	**TESTED BY**	Jamison Chan

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.185	0.20	48.36	-	48.56	-	64.25	54.25	-15.69	-
2	0.248	0.20	43.07	-	43.27	-	61.84	51.84	-18.57	-
3	0.314	0.20	37.78	-	37.98	-	59.86	49.86	-21.88	-
4	0.373	0.20	36.66	-	36.86	-	58.44	48.44	-21.58	-
5	5.414	0.35	32.48	-	32.83	-	60.00	50.00	-27.17	-
6	14.645	0.69	30.86	-	31.55	-	60.00	50.00	-28.45	-

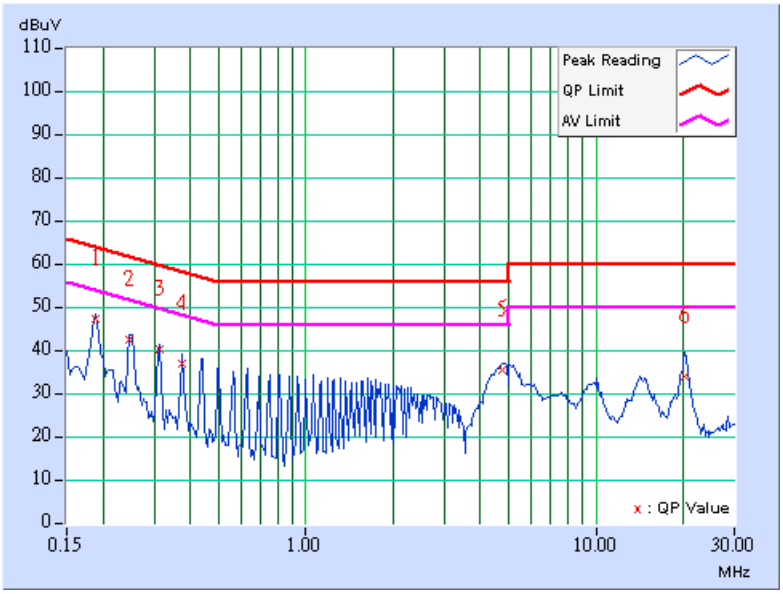
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



TEST MODE	A		
MODULATION TYPE	DBPSK	**CHANNEL**	11
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**6dB BANDWIDTH**	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 999hPa	**PHASE**	Line 1
TRANSFER RATE	1Mbps	**TESTED BY**	Jamison Chan

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.20	46.06	-	46.26	-	64.08	54.08	-17.82	-
2	0.248	0.20	41.31	-	41.51	-	61.84	51.84	-20.33	-
3	0.314	0.20	39.09	-	39.29	-	59.86	49.86	-20.57	-
4	0.377	0.20	35.57	-	35.77	-	58.35	48.35	-22.58	-
5	4.750	0.44	34.23	-	34.67	-	56.00	46.00	-21.33	-
6	20.223	1.41	32.53	-	33.94	-	60.00	50.00	-26.06	-

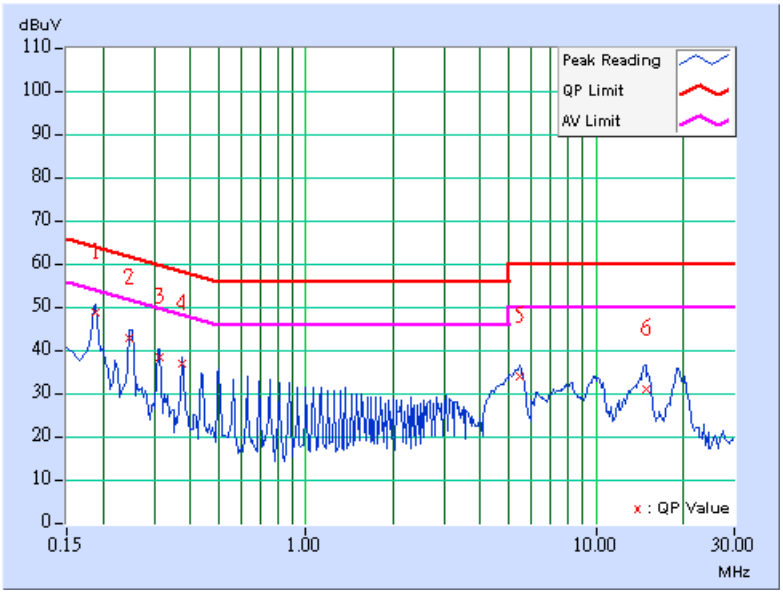
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



TEST MODE	A		
MODULATION TYPE	DBPSK	CHANNEL	11
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 999hPa	PHASE	Line 2
TRANSFER RATE	1Mbps	TESTED BY	Jamison Chan

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.20	48.22	-	48.42	-	64.08	54.08	-15.66	-
2	0.248	0.20	42.31	-	42.51	-	61.84	51.84	-19.33	-
3	0.314	0.20	37.64	-	37.84	-	59.86	49.86	-22.02	-
4	0.373	0.20	36.30	-	36.50	-	58.44	48.44	-21.94	-
5	5.438	0.35	33.49	-	33.84	-	60.00	50.00	-26.16	-
6	14.848	0.69	30.40	-	31.09	-	60.00	50.00	-28.91	-

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.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 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.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	May 09, 2008
HP Preamplifier	8449B	3008A01292	Aug. 05, 2008
ROHDE & SCHWARZ TEST RECEIVER	ESI7	836697/012	Oct. 24, 2007
Schwarzbeck Antenna	VULB 9168	137	Sep. 13, 2008
Schwarzbeck Antenna	VHBA 9123	480	Apr. 18, 2008
EMCO Horn Antenna	3115	6714	Oct. 24, 2007
EMCO Horn Antenna	3115	9312-4192	Apr. 19, 2008
ADT. Turn Table	TT100	0306	NA
ADT. Tower	AT100	0306	NA
Software	ADT_Radiated_V 7.6.15	NA	NA
SUHNER RF cable	SF104-26.5	CABLE-CH6-17 m-01	Dec. 11, 2007
ROHDE & SCHWARZ Spectrum Analyzer	FSP 40	100036	Mar. 13, 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 horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in ADT Chamber No. 6.
4. The Industry Canada Reference No. IC 3789-6.

4.2.3 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 method or average method as specified and then reported in data sheet.

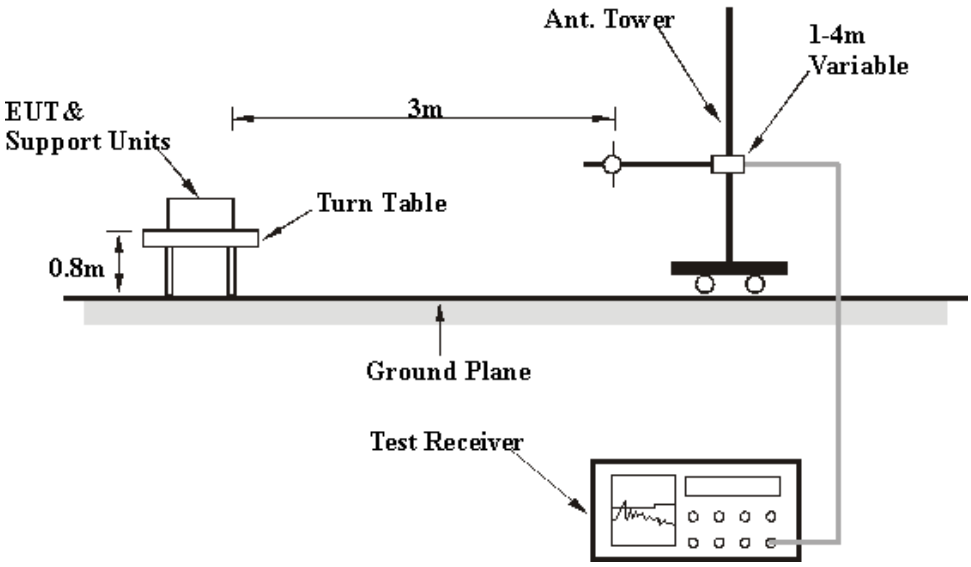
NOTE:

1. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.
3. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the interference-receiving antenna.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as item 4.1.6.

4.2.7 TEST RESULTS

RADIATED WORST-CASE DATA: 802.11b DSSS MODULATION (BELOW 1GHz)

TEST MODE	A		
MODULATION TYPE	DBPSK	**CHANNEL**	1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 997Pa	**DETECTOR FUNCTION**	Quasi-Peak
TRANSFER RATE	1Mbps	**TESTED BY**	Jun 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	47.495	37.20 QP	40.00	-2.80	1.40 H	10	23.83	13.37
2	86.373	29.02 QP	40.00	-10.98	1.36 H	10	20.03	8.99
3	131.082	38.50 QP	43.50	-5.00	1.30 H	280	25.33	13.17
4	169.960	29.57 QP	43.50	-13.93	1.24 H	343	16.46	13.11
5	257.435	32.81 QP	46.00	-13.19	1.26 H	25	17.83	14.98
6	307.976	32.88 QP	46.00	-13.12	1.32 H	238	16.62	16.26
7	385.731	33.59 QP	46.00	-12.41	1.21 H	25	14.94	18.65

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	47.495	31.49 QP	40.00	-8.51	1.00 V	325	18.12	13.37
2	84.429	25.46 QP	40.00	-14.54	1.00 V	127	16.48	8.98
3	117.475	33.23 QP	43.50	-10.27	1.00 V	331	20.11	13.12
4	131.082	30.33 QP	43.50	-13.17	1.00 V	64	17.16	13.17
5	432.385	29.50 QP	46.00	-16.50	1.00 V	247	9.37	20.13
6	801.723	30.18 QP	46.00	-15.82	1.18 V	325	1.93	28.25

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.

TEST MODE	B		
MODULATION TYPE	DBPSK	**CHANNEL**	1
INPUT POWER	7.4Vdc	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 997Pa	**DETECTOR FUNCTION**	Quasi-Peak
TRANSFER RATE	1Mbps	**TESTED BY**	Jun 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	**47.495**	**37.26 QP**	**40.00**	**-2.74**	**1.46 H**	**10**	**23.89**	**13.37**
2	86.373	29.80 QP	40.00	-10.20	1.40 H	121	20.81	8.99
3	119.419	36.21 QP	43.50	-7.29	1.35 H	328	22.93	13.28
4	131.082	38.77 QP	43.50	-4.73	1.28 H	130	25.60	13.17
5	166.072	33.73 QP	43.50	-9.77	1.25 H	211	20.40	13.33
6	201.062	33.28 QP	43.50	-10.22	1.14 H	163	21.45	11.83
7	284.649	37.74 QP	46.00	-8.26	1.36 H	31	22.11	15.63

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	76.653	35.50 QP	40.00	-4.50	1.00 V	49	25.60	9.90
2	125.251	37.60 QP	43.50	-5.90	1.00 V	10	24.34	13.26
3	131.082	40.21 QP	43.50	-3.29	1.00 V	67	27.04	13.17
4	179.679	35.84 QP	43.50	-7.66	1.00 V	295	22.22	13.62
5	195.230	32.96 QP	43.50	-10.54	1.00 V	331	20.74	12.22
6	284.649	40.23 QP	46.00	-5.77	1.00 V	28	24.60	15.63
7	321.583	37.44 QP	46.00	-8.56	1.00 V	298	20.74	16.70

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.

RADIATED WORST-CASE DATA: 802.11b DSSS MODULATION (ABOVE 1GHz)

TEST MODE	A		
MODULATION TYPE	DBPSK	**CHANNEL**	1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**FREQUENCY RANGE**	1 ~ 25GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 997Pa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	1Mbps	**TESTED BY**	Jun 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	2386.000	61.29 PK	74.00	-12.71	1.25 H	123	26.88	34.41
2	2386.000	48.71 AV	54.00	-5.29	1.25 H	123	14.30	34.41
3	*2412.000	106.08 PK			1.25 H	123	71.62	34.46
4	*2412.000	101.32 AV			1.25 H	123	66.86	34.46
5	4824.000	52.08 PK	74.00	-21.92	1.21 H	179	10.63	41.45
6	4824.000	44.13 AV	54.00	-9.87	1.21 H	179	2.68	41.45

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	2386.000	58.57 PK	74.00	-15.43	1.52 V	55	24.16	34.41
2	2386.000	45.70 AV	54.00	-8.30	1.52 V	55	11.29	34.41
3	*2412.000	101.99 PK			1.52 V	55	67.53	34.46
4	*2412.000	97.15 AV			1.52 V	55	62.69	34.46
5	4824.000	51.64 PK	74.00	-22.36	1.00 V	170	10.19	41.45
6	4824.000	41.43 AV	54.00	-12.57	1.00 V	170	-0.02	41.45

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.

TEST MODE	A		
MODULATION TYPE	DBPSK	**CHANNEL**	6
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**FREQUENCY RANGE**	1 ~ 25GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 997Pa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	1Mbps	**TESTED BY**	Jun 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	*2437.000	104.59 PK			1.26 H	120	70.08	34.51
2	*2437.000	99.95 AV			1.26 H	120	65.44	34.51
3	4874.000	54.42 PK	74.00	-19.58	1.34 H	257	12.85	41.57
4	4874.000	48.38 AV	54.00	-5.62	1.34 H	257	6.81	41.57

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	*2437.000	99.88 PK			1.55 V	55	65.37	34.51
2	*2437.000	95.42 AV			1.55 V	55	60.91	34.51
3	4874.000	54.85 PK	74.00	-19.15	1.00 V	169	13.28	41.57
4	4874.000	48.80 AV	54.00	-5.20	1.00 V	169	7.23	41.57

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.

TEST MODE	A		
MODULATION TYPE	DBPSK	**CHANNEL**	11
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**FREQUENCY RANGE**	1 ~ 25GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 997Pa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	1Mbps	**TESTED BY**	Jun 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	*2462.000	104.64 PK			1.26 H	122	70.08	34.56
2	*2462.000	100.29 AV			1.26 H	122	65.73	34.56
3	2483.500	62.14 PK	74.00	-11.86	1.26 H	122	27.53	34.61
4	2483.500	50.27 AV	54.00	-3.73	1.26 H	122	15.66	34.61
5	4924.000	53.08 PK	74.00	-20.92	1.17 H	157	11.37	41.70
6	4924.000	45.91 AV	54.00	-8.09	1.17 H	157	4.20	41.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.000	100.34 PK			1.19 V	44	65.78	34.56
2	*2462.000	95.69 AV			1.19 V	44	61.13	34.56
3	2483.500	57.43 PK	74.00	-16.57	1.19 V	44	22.82	34.61
4	2483.500	46.17 AV	54.00	-7.83	1.19 V	44	11.56	34.61
5	4924.000	54.86 PK	74.00	-19.14	1.05 V	25	13.15	41.70
6	4924.000	49.14 AV	54.00	-4.86	1.05 V	25	7.43	41.70

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.

RADIATED WORST-CASE DATA: 802.11g OFDM MODULATION (ABOVE 1GHz)

TEST MODE	A		
MODULATION TYPE	BPSK	**CHANNEL**	1
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**FREQUENCY RANGE**	1 ~ 25GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 997Pa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	6Mbps	**TESTED BY**	Jun 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	2390.000	59.49 PK	74.00	-14.51	1.30 H	122	25.07	34.42
2	2390.000	46.75 AV	54.00	-7.25	1.00 H	122	12.33	34.42
3	*2412.000	103.02 PK			1.30 H	122	68.56	34.46
4	*2412.000	92.61 AV			1.30 H	122	58.15	34.46
5	4824.000	48.60 PK	74.00	-25.40	1.13 H	304	7.15	41.45
6	4824.000	36.41 AV	54.00	-17.59	1.13 H	304	-5.04	41.45

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	2390.000	58.10 PK	74.00	-15.90	1.21 V	45	23.68	34.42
2	2390.000	45.77 AV	54.00	-8.23	1.21 V	45	11.35	34.42
3	*2412.000	98.98 PK			1.21 V	45	64.52	34.46
4	*2412.000	88.14 AV			1.21 V	45	53.68	34.46
5	4824.000	50.87 PK	74.00	-23.13	1.24 V	119	9.42	41.45
6	4824.000	37.01 AV	54.00	-16.99	1.24 V	119	-4.44	41.45

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.

TEST MODE	A		
MODULATION TYPE	BPSK	**CHANNEL**	6
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**FREQUENCY RANGE**	1 ~ 25GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 997Pa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	6Mbps	**TESTED BY**	Jun 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	*2437.000	101.83 PK			1.27 H	120	67.32	34.51
2	*2437.000	91.13 AV			1.27 H	120	56.62	34.51
3	4874.000	50.64 PK	74.00	-23.36	1.19 H	84	9.07	41.57
4	4874.000	37.33 AV	54.00	-16.67	1.19 H	84	-4.24	41.57

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	*2437.000	97.83 PK			1.19 V	45	63.32	34.51
2	*2437.000	86.81 AV			1.19 V	45	52.30	34.51
3	4874.000	50.90 PK	74.00	-23.10	1.03 V	201	9.33	41.57
4	4874.000	36.82 AV	54.00	-17.18	1.03 V	201	-4.75	41.57

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.

TEST MODE	A		
MODULATION TYPE	BPSK	**CHANNEL**	11
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**FREQUENCY RANGE**	1 ~ 25GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 997Pa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TRANSFER RATE	6Mbps	**TESTED BY**	Jun 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	*2462.000	101.71 PK			1.24 H	121	67.15	34.56
2	*2462.000	90.83 AV			1.24 H	121	56.27	34.56
3	2483.500	57.96 PK	74.00	-16.04	1.24 H	121	23.35	34.61
4	2483.500	46.94 AV	54.00	-7.06	1.24 H	121	12.33	34.61
5	4924.000	50.72 PK	74.00	-23.28	1.11 H	89	9.01	41.70
6	4924.000	37.47 AV	54.00	-16.53	1.11 H	89	-4.24	41.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.000	96.89 PK			1.18 V	46	62.33	34.56
2	*2462.000	86.32 AV			1.18 V	46	51.76	34.56
3	2483.500	56.94 PK	74.00	-17.06	1.18 V	46	22.33	34.61
4	2483.500	45.99 AV	54.00	-8.01	1.18 V	46	11.38	34.61
5	4924.000	50.89 PK	74.00	-23.11	1.00 V	162	9.18	41.70
6	4924.000	36.93 AV	54.00	-17.07	1.00 V	162	-4.78	41.70

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.

4.3 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
SPECTRUM ANALYZER	FSP 40	100036	Mar. 13, 2008

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

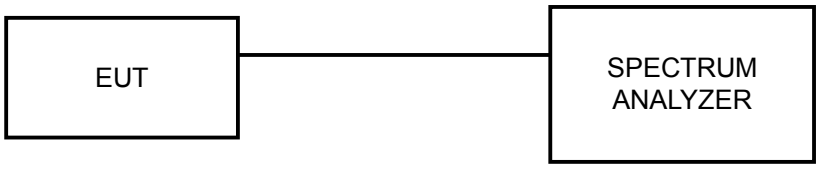
4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 kHz 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



For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

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.

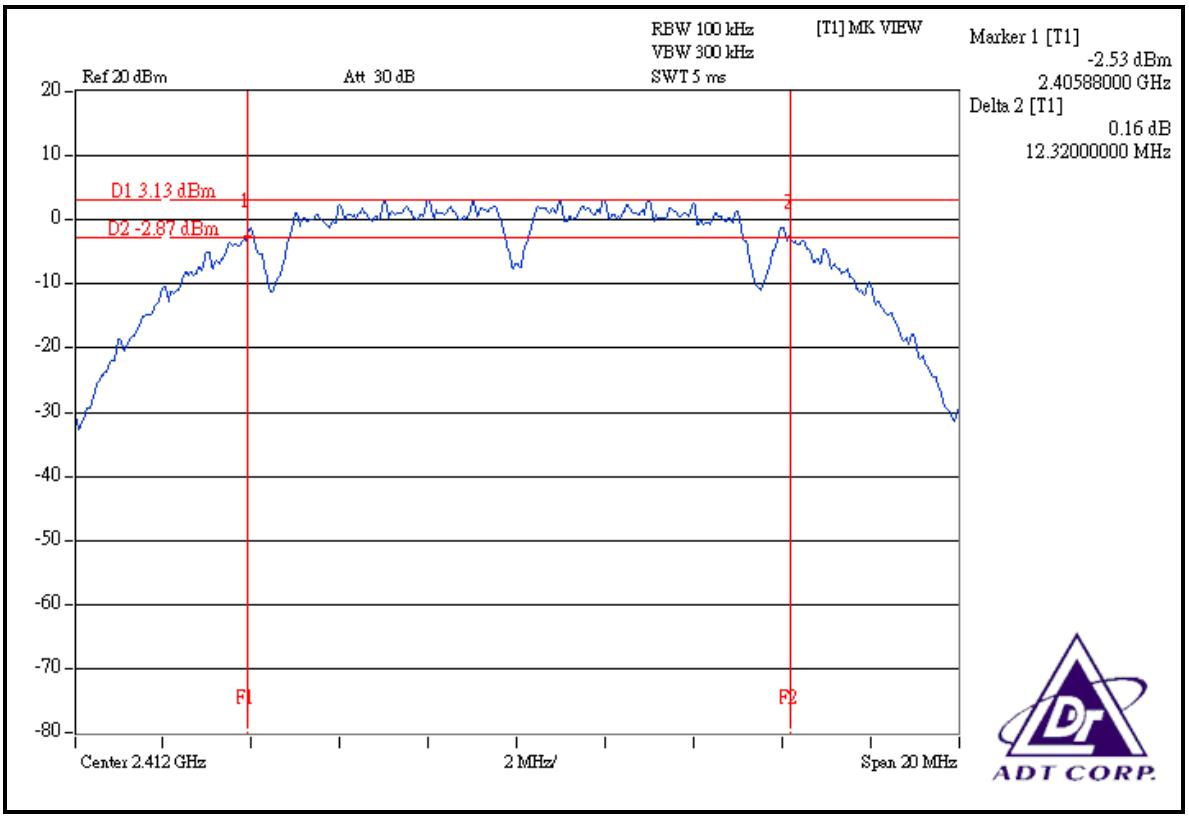
4.3.7 TEST RESULTS

802.11b DSSS MODULATION

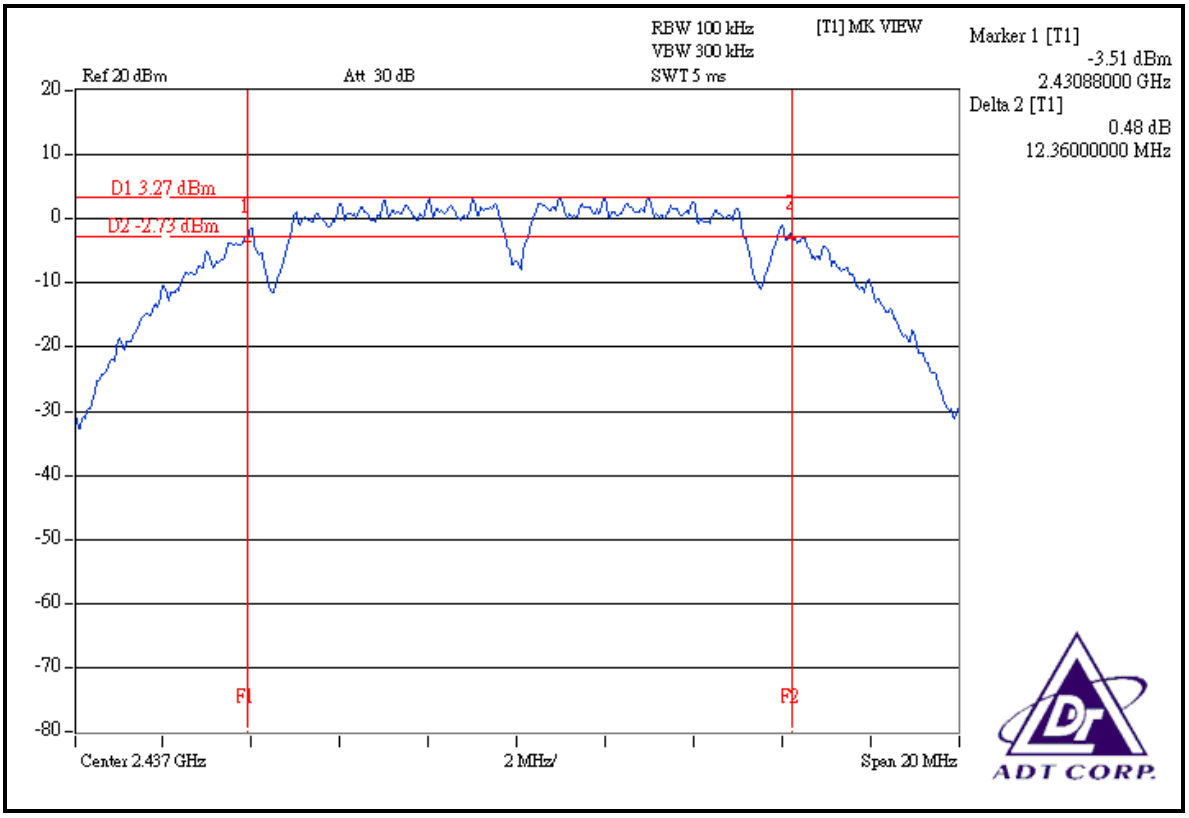
TEST MODE	A		
MODULATION TYPE	DBPSK	CHANNEL	1, 6, 11
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 997hPa
TRANSFER RATE	1Mbps	TESTED BY	Jamison Chan

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	12.32	0.5	PASS
6	2437	12.36	0.5	PASS
11	2462	12.32	0.5	PASS

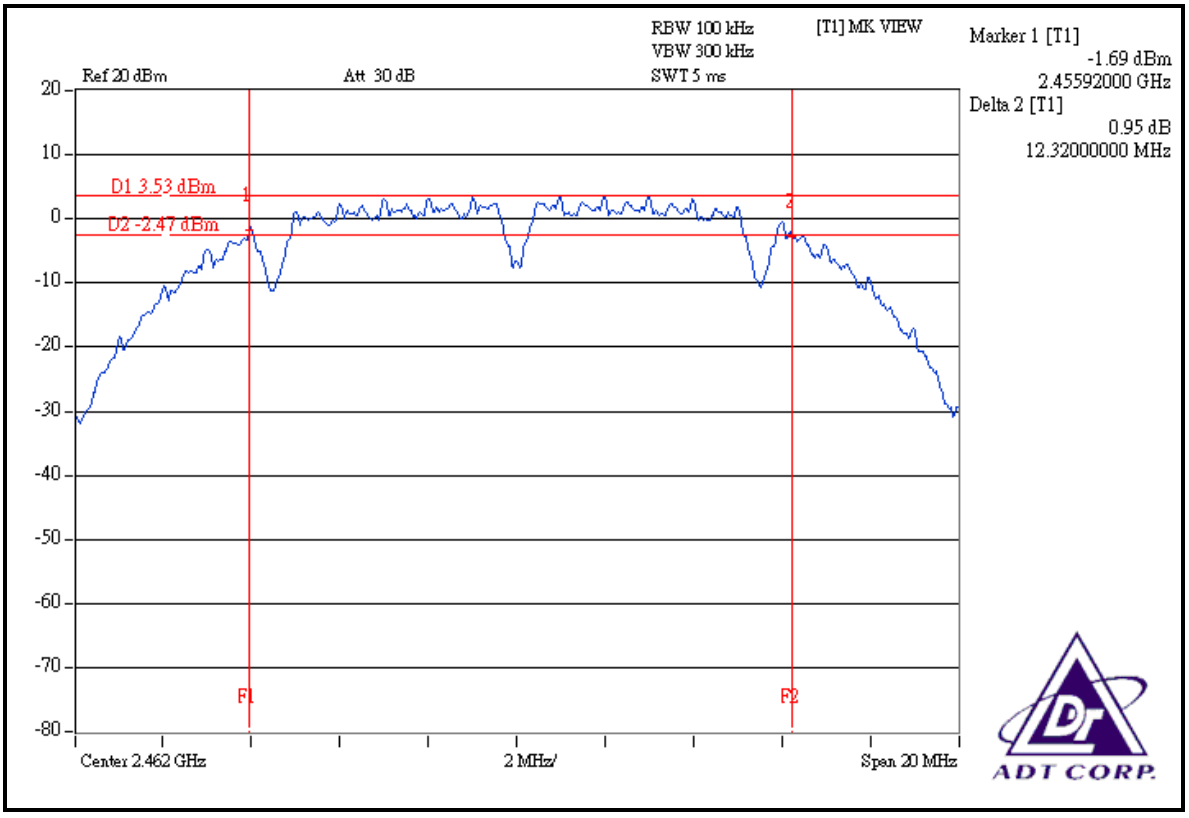
CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-3.51 dBm
2.43088000 GHz
Delta 2 [T1]
0.48 dB
12.36000000 MHz
Ref 20 dBm
Att 30 dB
D1 3.27 dBm
D2 -2.73 dBm
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH 11

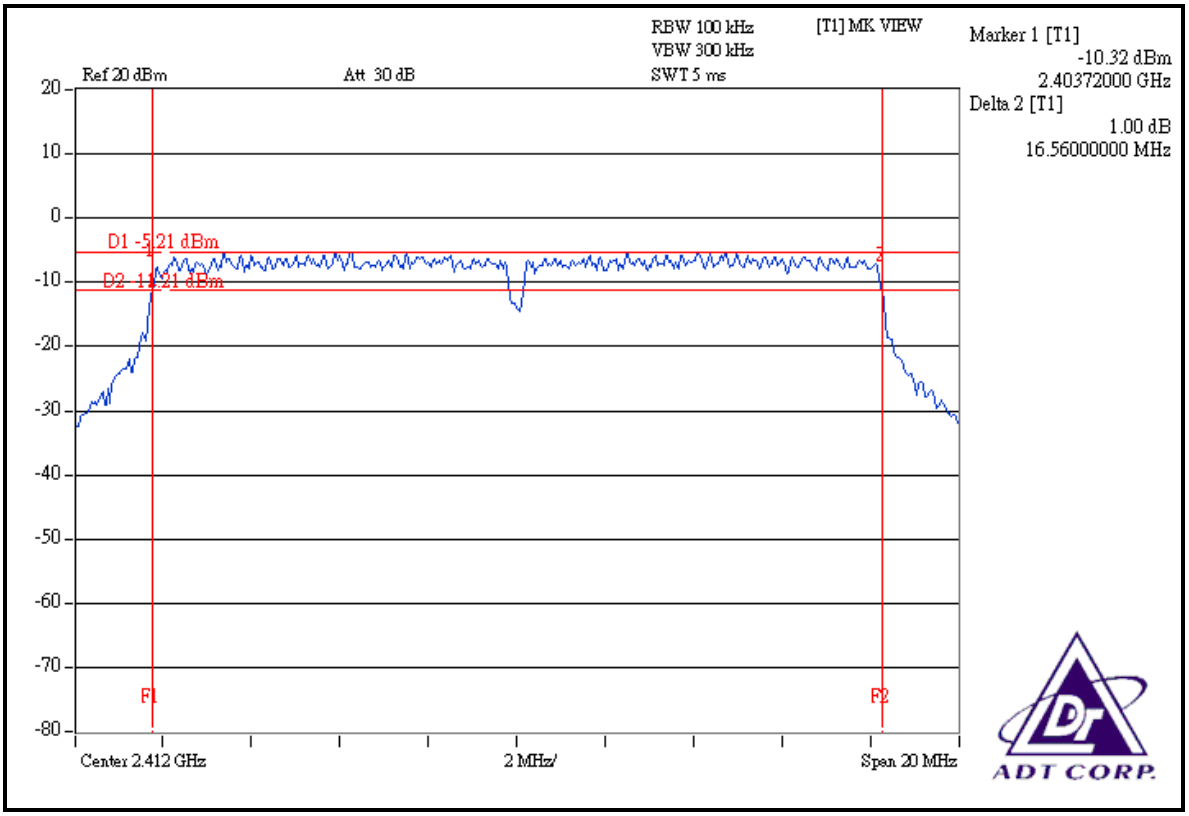

RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-1.69 dBm
2.45592000 GHz
Delta 2 [T1]
0.95 dB
12.32000000 MHz
Ref 20 dBm
Att 30 dB
D1 3.53 dBm
D2 -2.47 dBm
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

802.11g OFDM MODULATION

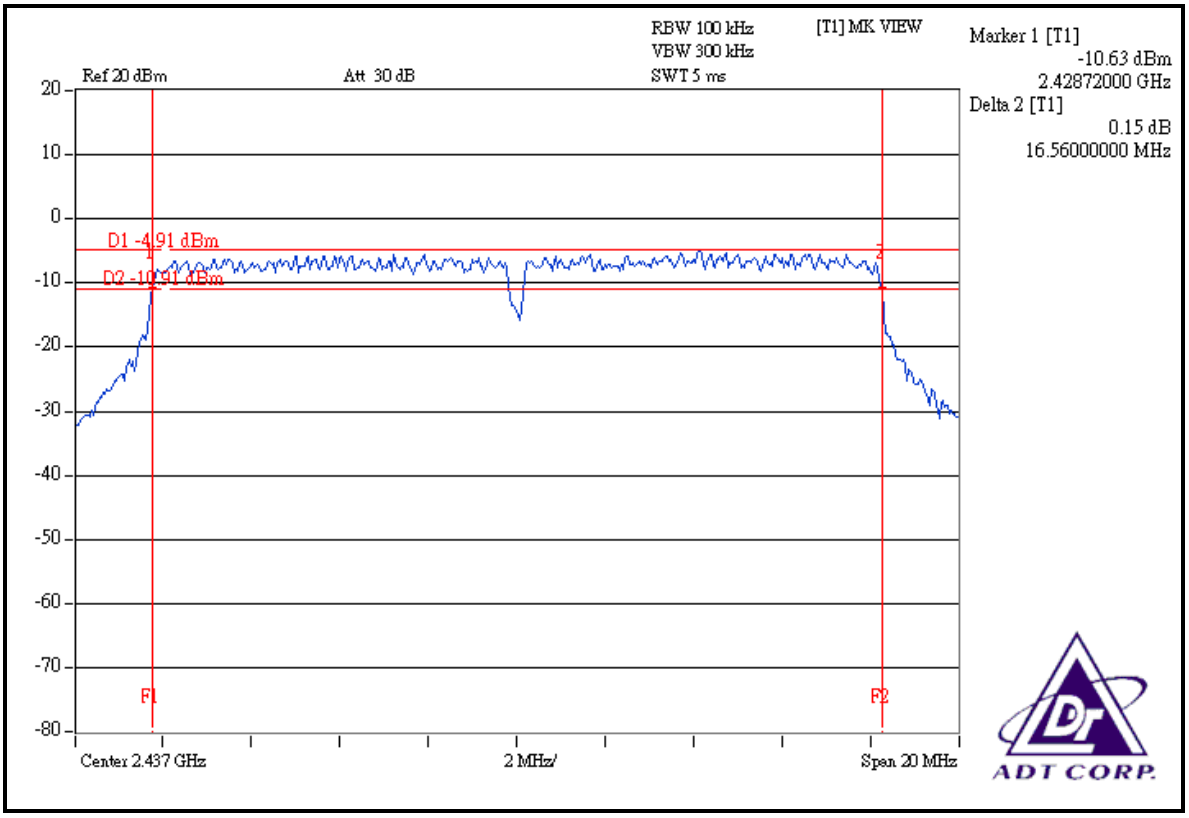
TEST MODE	A		
MODULATION TYPE	BPSK	CHANNEL	1, 6, 11
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 997hPa
TRANSFER RATE	6Mbps	TESTED BY	Jamison Chan

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.56	0.5	PASS
6	2437	16.56	0.5	PASS
11	2462	16.48	0.5	PASS

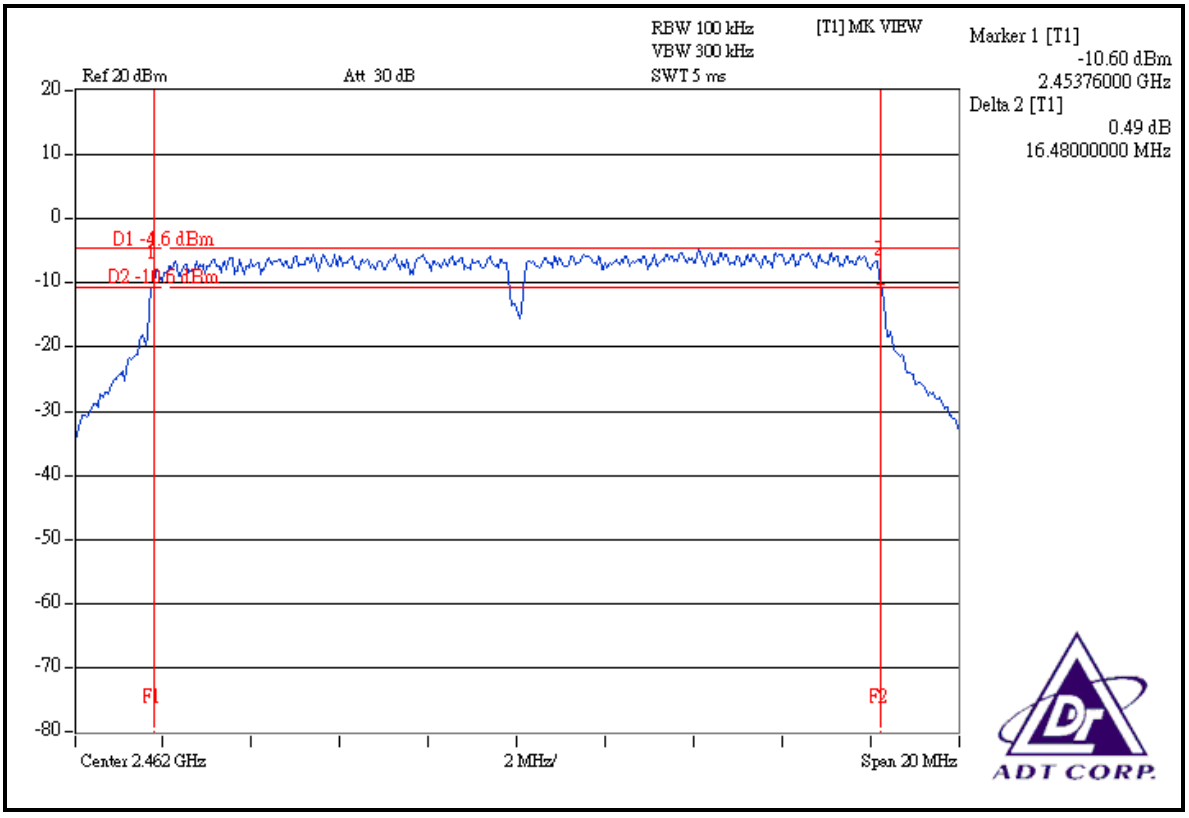
CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-10.63 dBm
2.42872000 GHz
Delta 2 [T1]
0.15 dB
16.56000000 MHz
Ref 20 dBm
Att 30 dB
D1 -4.91 dBm
D2 -10.91 dBm
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH 11


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-10.60 dBm
2.45376000 GHz
Delta 2 [T1]
0.49 dB
16.48000000 MHz
Ref 20 dBm
Att 30 dB
D1 -4.6 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 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ Spectrum Analyzer	FSP 40	100036	Mar. 13, 2008
ROHDE & SCHWARZ Signal Generator	SMR 40	100231	Mar. 27, 2008
Tektronix Oscilloscope	TDS1012	C019167	Jan. 16, 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.

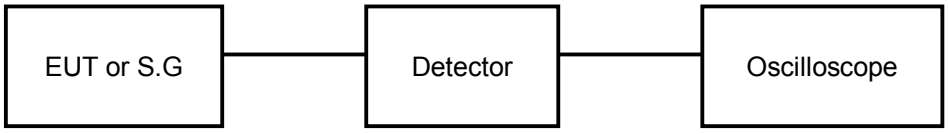
4.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to peak 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 peak 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 4.3.6.

4.4.7 TEST RESULTS

802.11b DSSS MODULATION

TEST MODE	A		
MODULATION TYPE	DBPSK	CHANNEL	1, 6, 11
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 997hPa
TRANSFER RATE	1Mbps	TESTED BY	Jamison Chan

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	16.16	41.305	30	PASS
6	2437	16.38	43.451	30	PASS
11	2462	16.56	45.290	30	PASS

802.11g OFDM MODULATION

TEST MODE	A		
MODULATION TYPE	BPSK	CHANNEL	1, 6, 11
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 997hPa
TRANSFER RATE	6Mbps	TESTED BY	Jamison Chan

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	13.11	20.464	30	PASS
6	2437	13.12	20.512	30	PASS
11	2462	13.56	22.699	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	FSP 40	100036	Mar. 13, 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

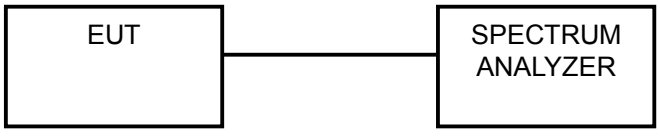
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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 CONDITIONS

Same as 4.3.6.

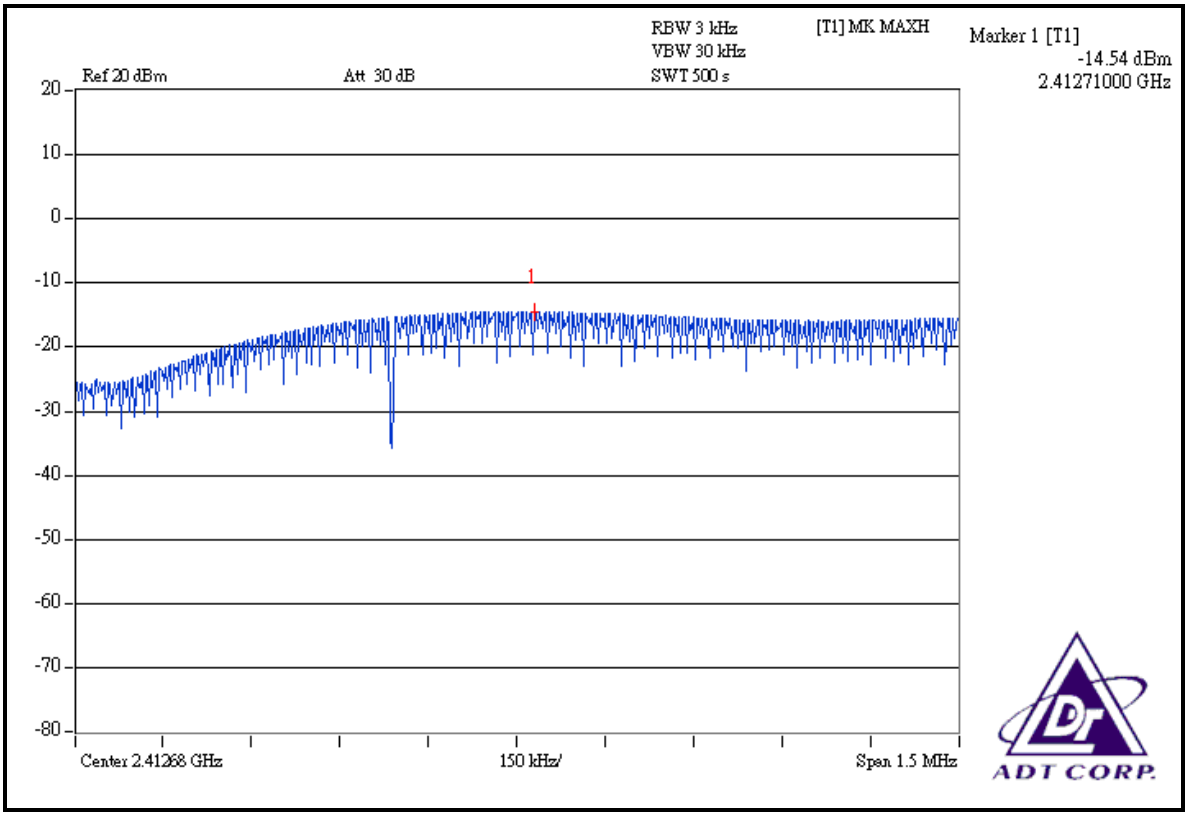
4.5.7 TEST RESULTS

802.11b DSSS MODULATION

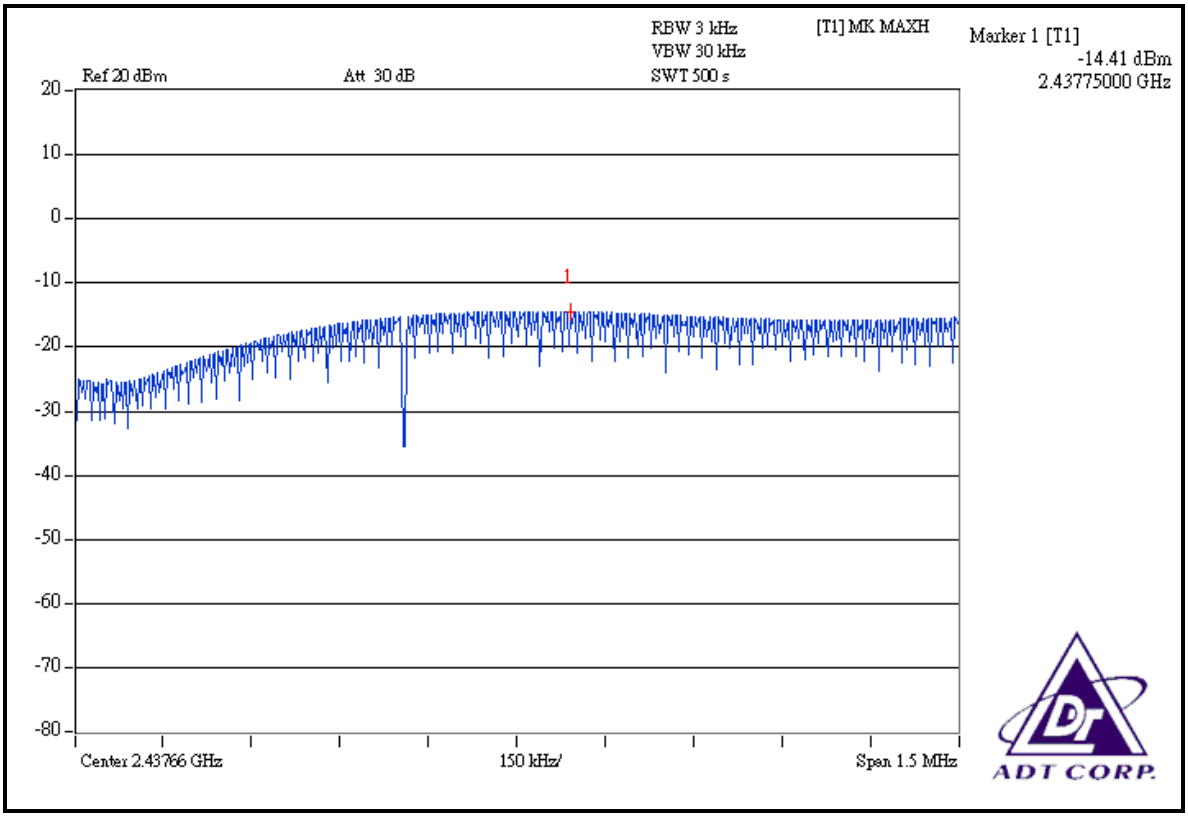
TEST MODE	A		
MODULATION TYPE	DBPSK	CHANNEL	1, 6, 11
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 997hPa
TRANSFER RATE	1Mbps	TESTED BY	Jamison Chan

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-14.54	8	PASS
6	2437	-14.41	8	PASS
11	2462	-14.18	8	PASS

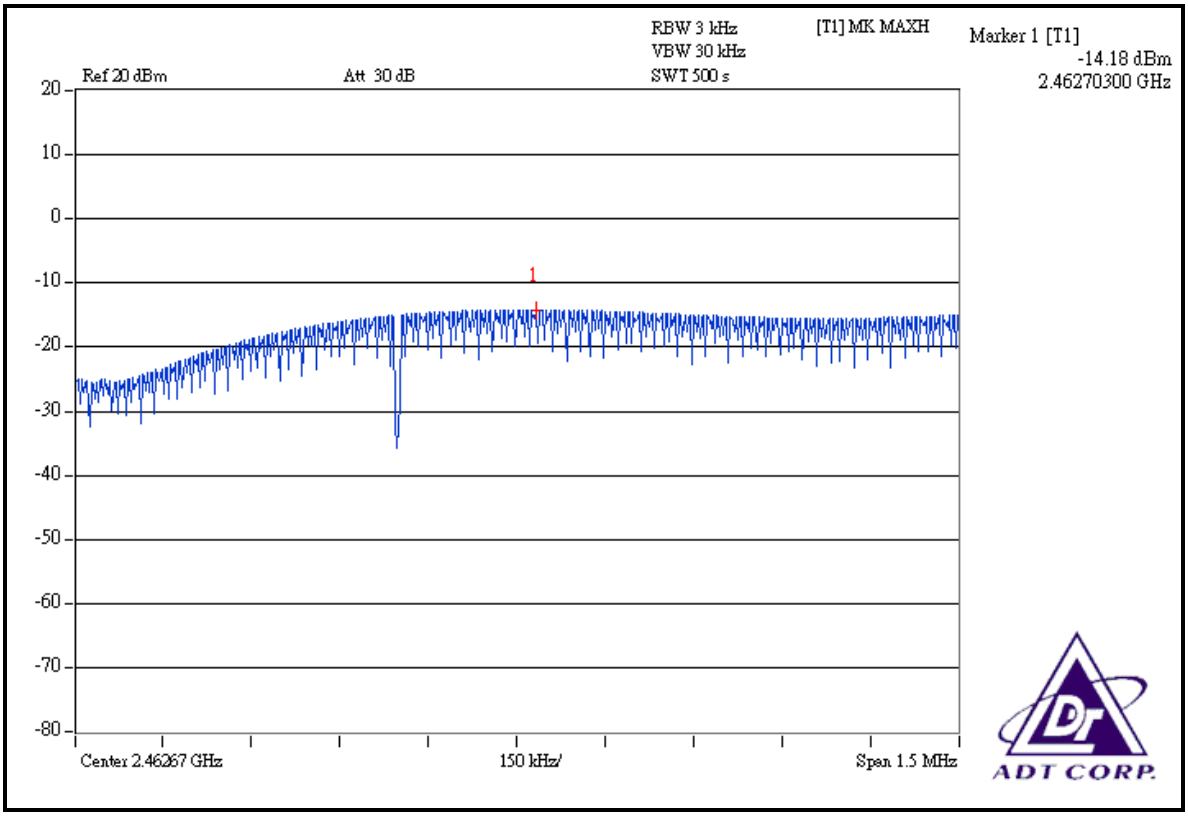
CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.41 dBm
2.43775000 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.43766 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH 11

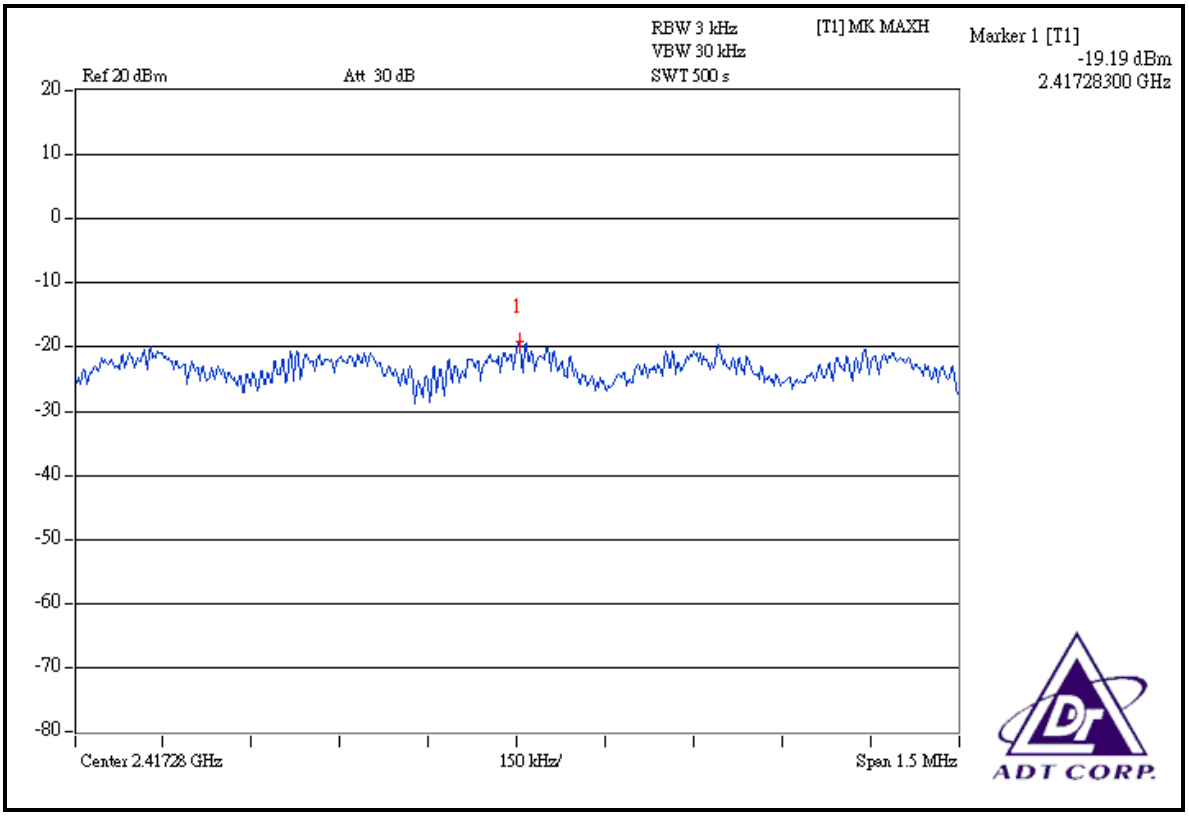

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.18 dBm
2.46270300 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.46267 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

802.11g OFDM MODULATION

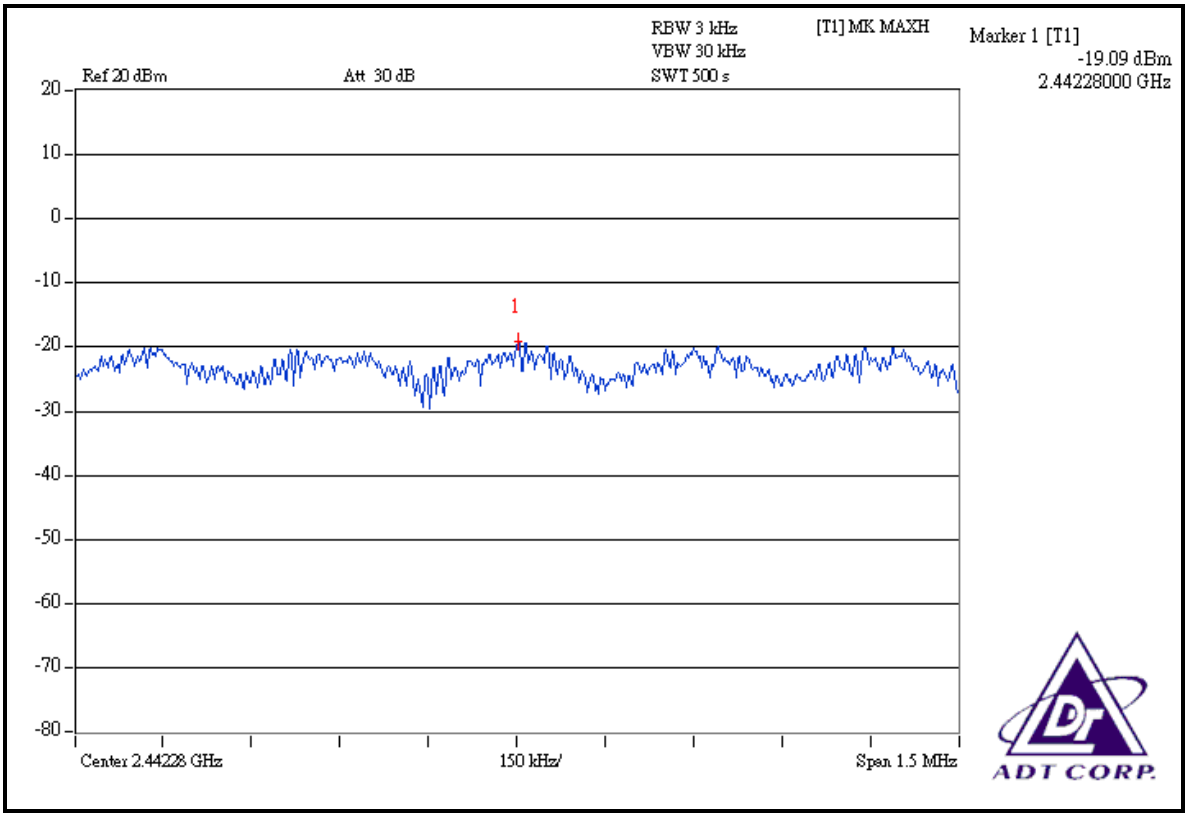
TEST MODE	A		
MODULATION TYPE	BPSK	CHANNEL	1, 6, 11
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 997hPa
TRANSFER RATE	6Mbps	TESTED BY	Jamison Chan

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-19.19	8	PASS
6	2437	-19.09	8	PASS
11	2462	-18.83	8	PASS

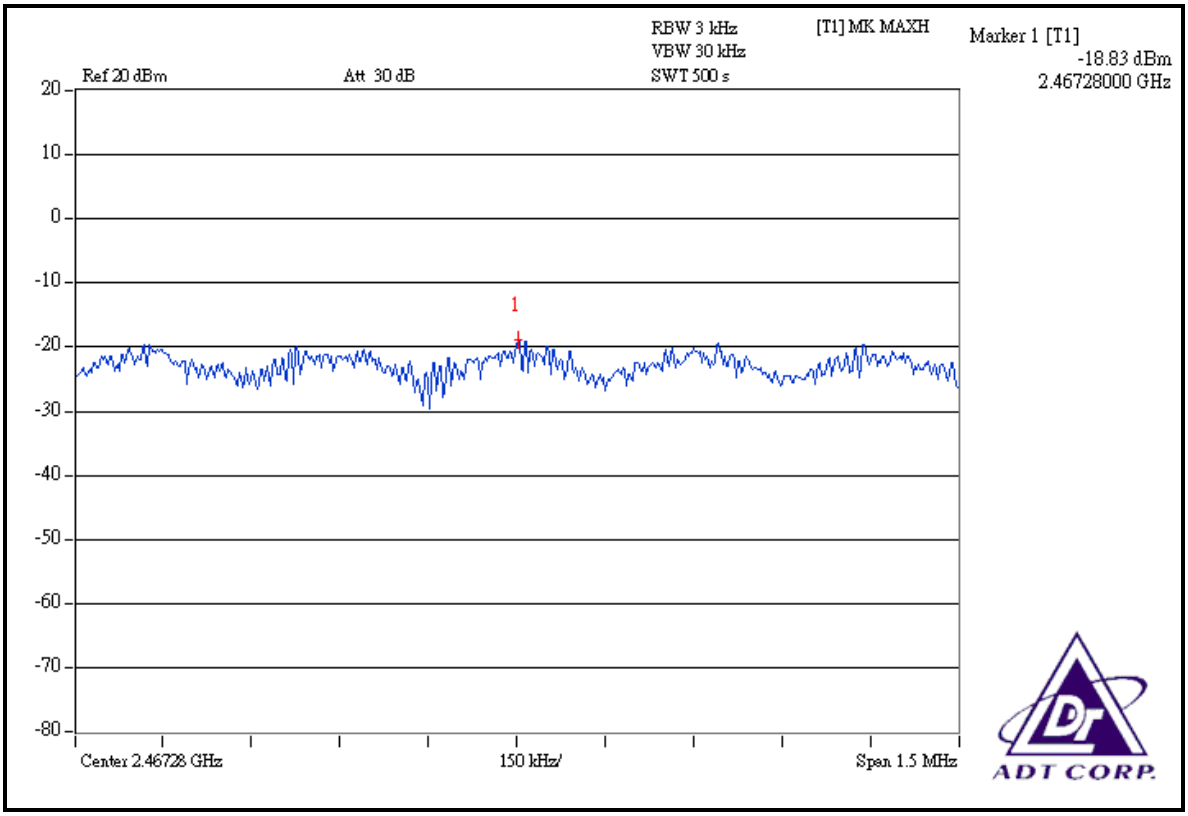
CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-19.09 dBm
2.44228000 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.44228 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]
-18.83 dBm
2.46728000 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.46728 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	FSP 40	100036	Mar. 13, 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 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 4.3.6.

4.6.6 TEST RESULTS

The spectrum plots are attached on the following 12 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).

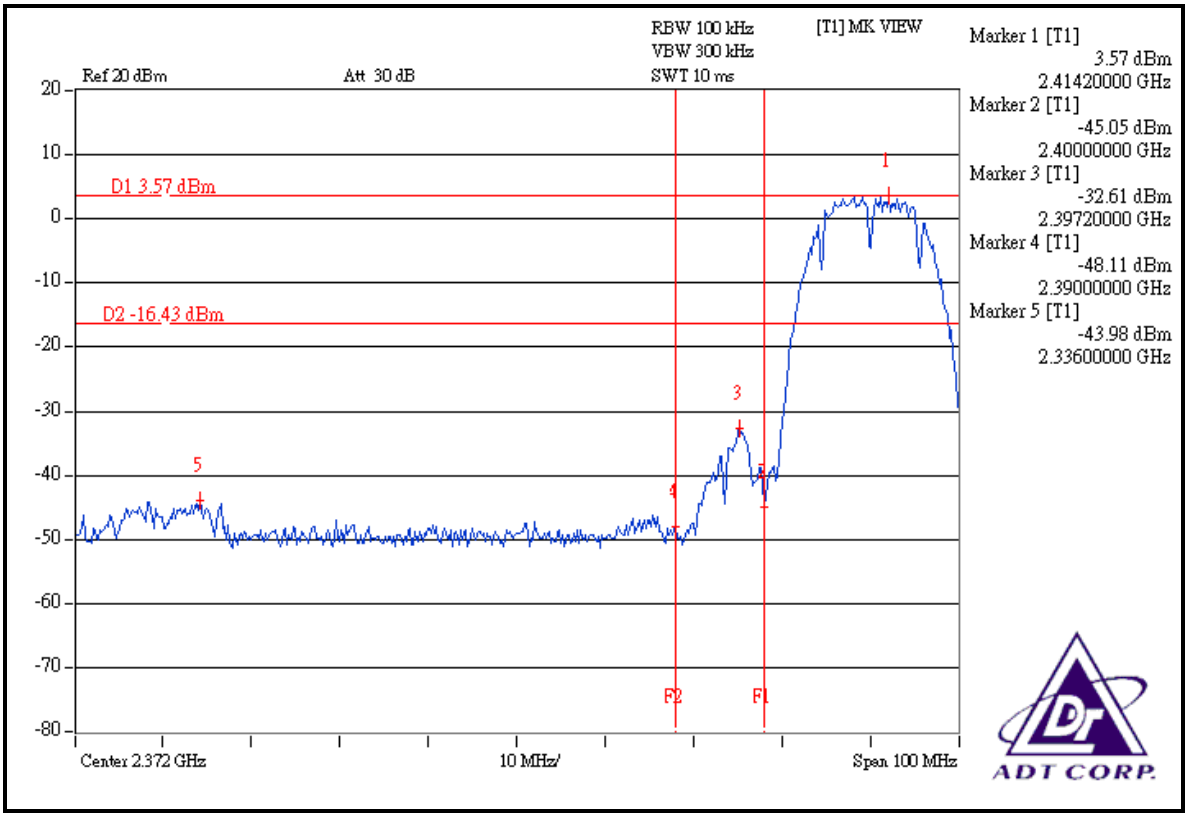
802.11b DSSS MODULATION

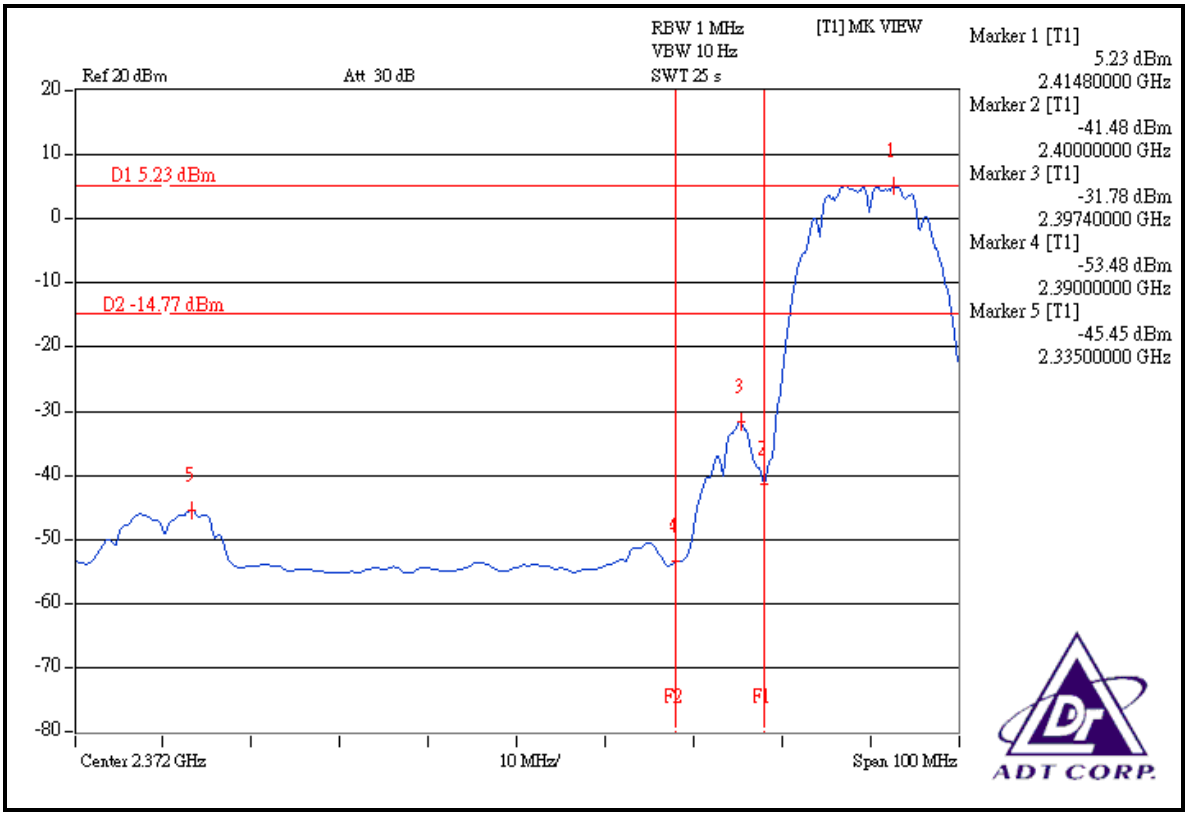
NOTE 1: The band edge emission plot on the next page shows 47.55dBc between carrier maximum power and local maximum emission in restrict band (2.3360GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 106.08dBuV/m (Peak), so the maximum field strength in restrict band is 106.08 – 47.55 = 58.53dBuV/m which is under 74dBuV/m limit.

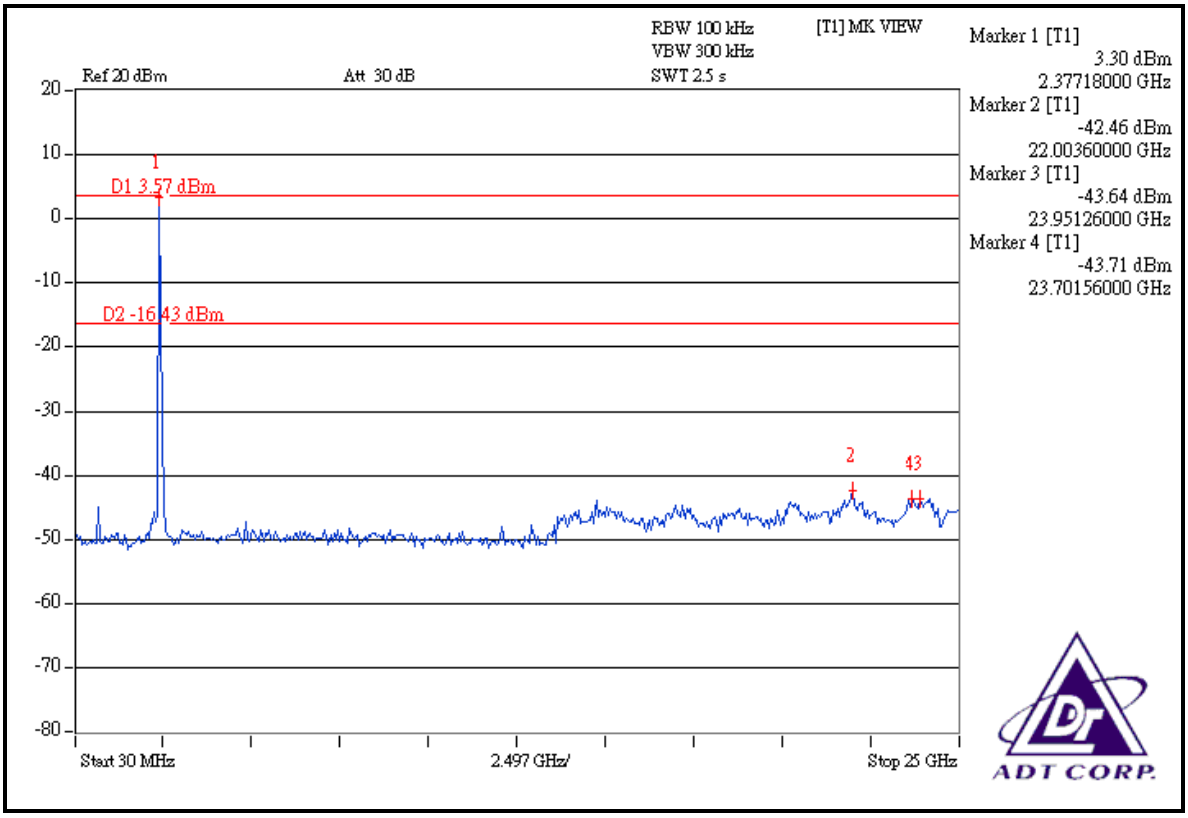
The band edge emission plot of on the next page shows 50.68dBc between carrier maximum power and local maximum emission in restrict band (2.3350GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 101.32dBuV/m (Average), so the maximum field strength in restrict band is 101.32 – 50.68 = 50.64dBuV/m which is under 54dBuV/m limit.

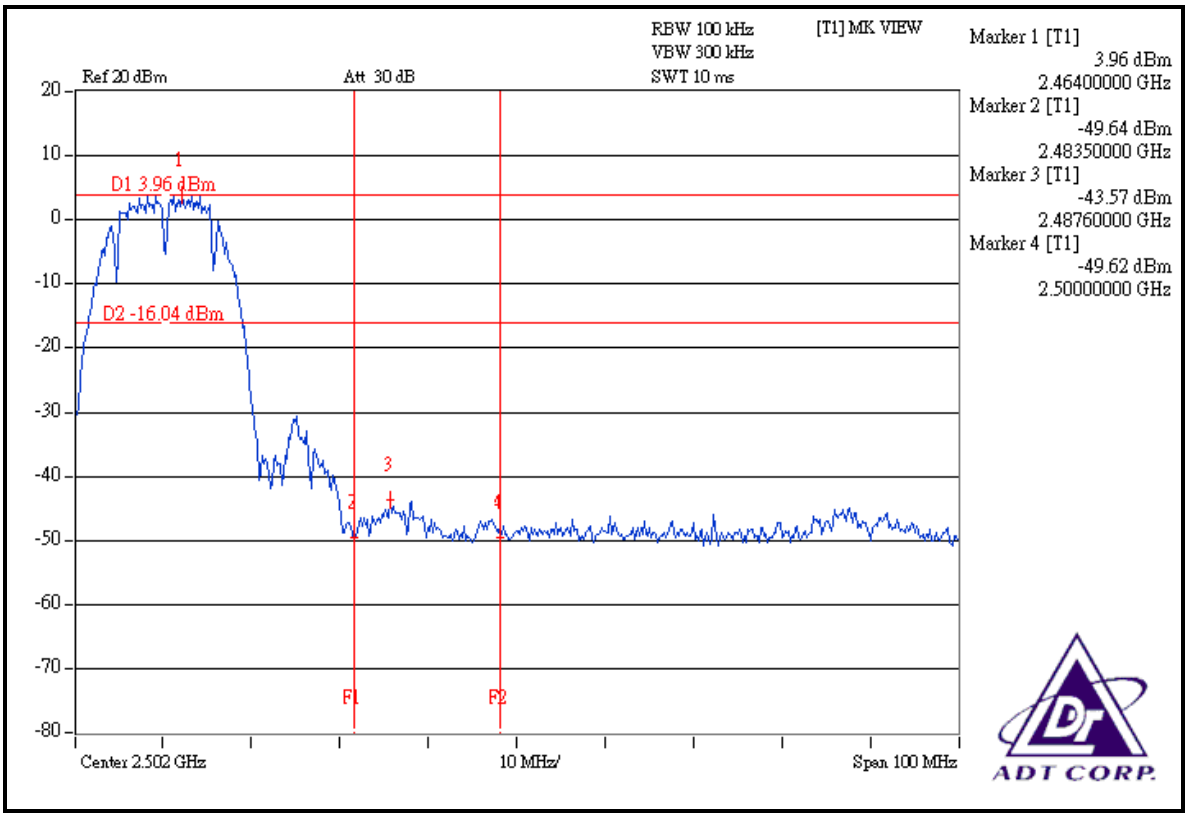
NOTE 2: The band edge emission plot on the next second page shows 47.53dBc between carrier maximum power and local maximum emission in restrict band (2.4876GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 104.64dBuV/m (Peak), so the maximum field strength in restrict band is 104.64 – 47.53 = 57.11dBuV/m which is under 74dBuV/m limit.

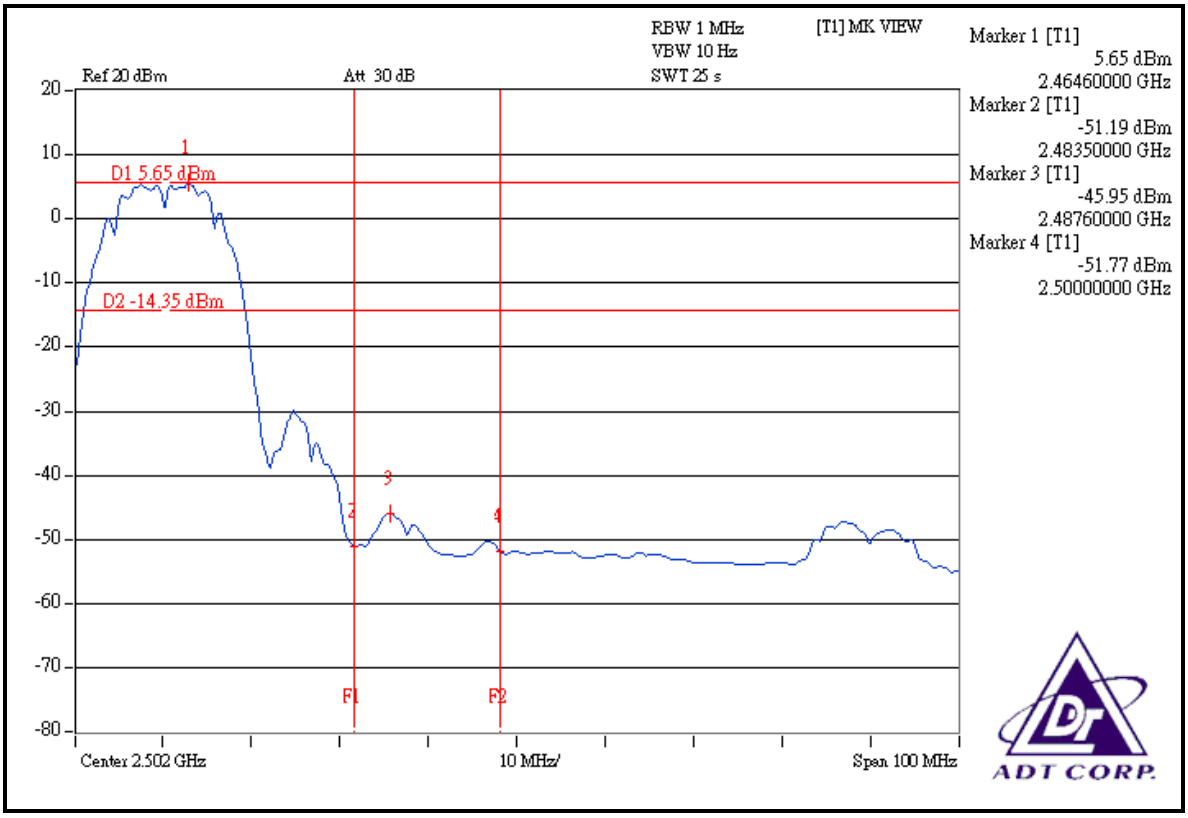
The band edge emission plot on the next third page shows 51.60dBc between carrier maximum power and local maximum emission in restrict band (2.4876GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 100.29dBuV/m (Average), so the maximum field strength in restrict band is 100.29 – 51.60 = 48.69dBuV/m which is under 54dBuV/m limit.

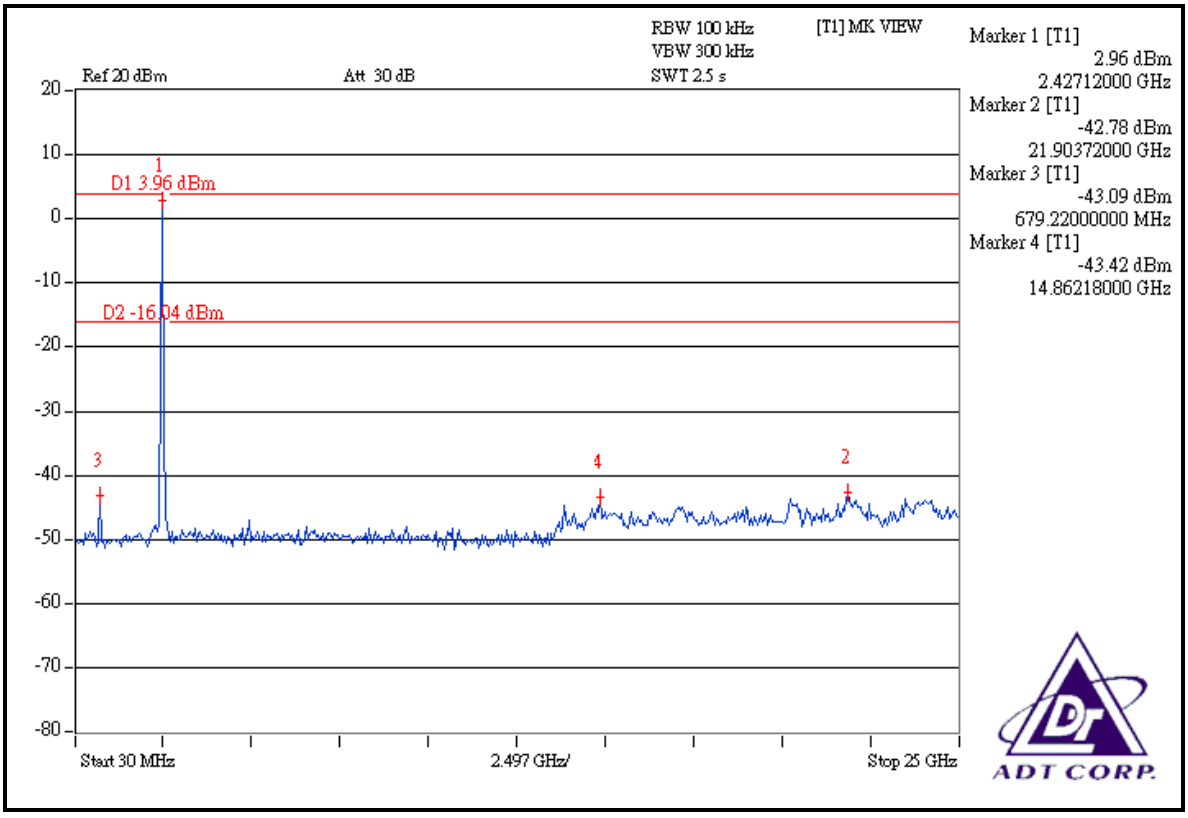

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 3.57 dBm
D2 -16.43 dBm
Center 2.372 GHz
10 MHz/
Span 100 MHz
Marker 1 [T1]
3.57 dBm
2.41420000 GHz
Marker 2 [T1]
-45.05 dBm
2.40000000 GHz
Marker 3 [T1]
-32.61 dBm
2.39720000 GHz
Marker 4 [T1]
-48.11 dBm
2.39000000 GHz
Marker 5 [T1]
-43.98 dBm
2.33600000 GHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 5.23 dBm
D2 -14.77 dBm
Center 2.372 GHz
10 MHz/
Span 100 MHz
Marker 1 [T1]
5.23 dBm
2.41480000 GHz
Marker 2 [T1]
-41.48 dBm
2.40000000 GHz
Marker 3 [T1]
-31.78 dBm
2.39740000 GHz
Marker 4 [T1]
-53.48 dBm
2.39000000 GHz
Marker 5 [T1]
-45.45 dBm
2.33500000 GHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 3.57 dBm
D2 -16.43 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz
Marker 1 [T1]
3.30 dBm
2.37718000 GHz
Marker 2 [T1]
-42.46 dBm
22.00360000 GHz
Marker 3 [T1]
-43.64 dBm
23.95126000 GHz
Marker 4 [T1]
-43.71 dBm
23.70156000 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 3.96 dBm
D2 -16.04 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
Marker 1 [T1]
3.96 dBm
2.46400000 GHz
Marker 2 [T1]
-49.64 dBm
2.48350000 GHz
Marker 3 [T1]
-43.57 dBm
2.48760000 GHz
Marker 4 [T1]
-49.62 dBm
2.50000000 GHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 5.65 dBm
D2 -14.35 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
Marker 1 [T1]
5.65 dBm
2.46460000 GHz
Marker 2 [T1]
-51.19 dBm
2.48350000 GHz
Marker 3 [T1]
-45.95 dBm
2.48760000 GHz
Marker 4 [T1]
-51.77 dBm
2.50000000 GHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 3.96 dBm
D2 -16.04 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz
Marker 1 [T1]
2.96 dBm
2.42712000 GHz
Marker 2 [T1]
-42.78 dBm
21.90372000 GHz
Marker 3 [T1]
-43.09 dBm
679.22000000 MHz
Marker 4 [T1]
-43.42 dBm
14.86218000 GHz

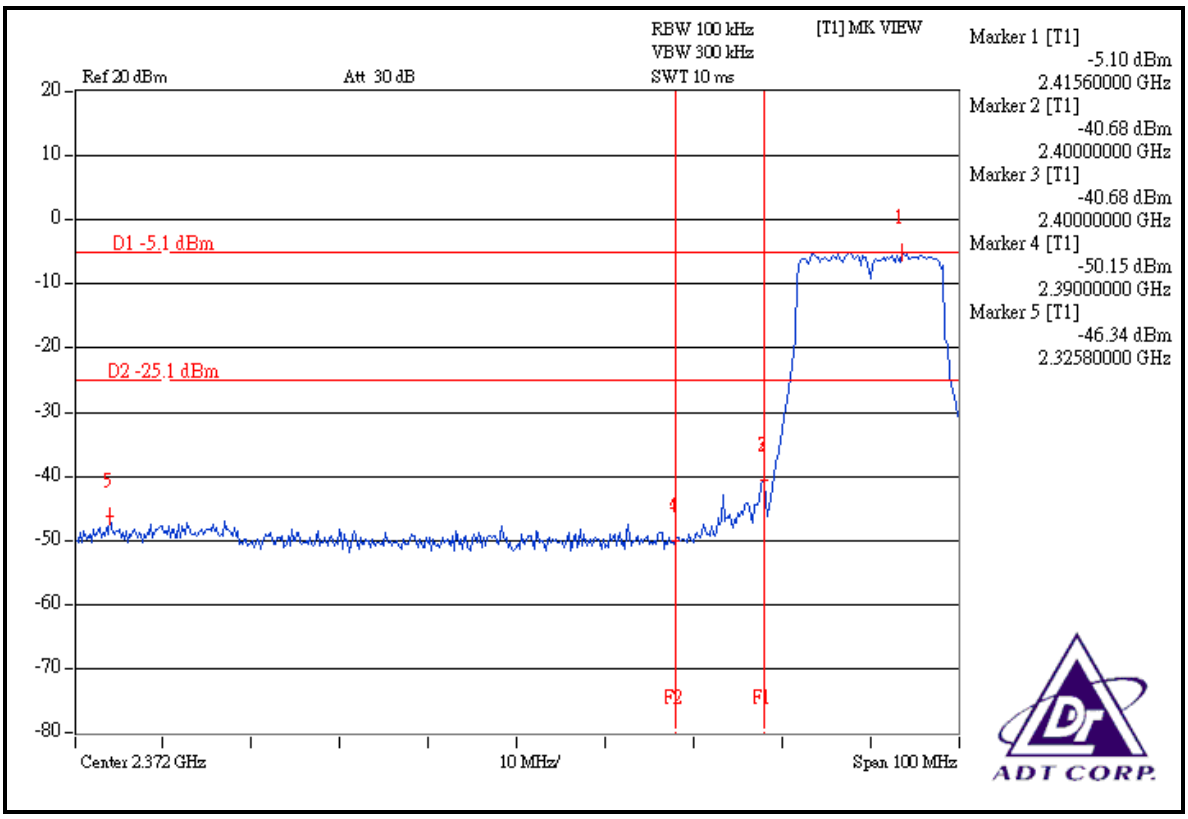
802.11g OFDM MODULATION

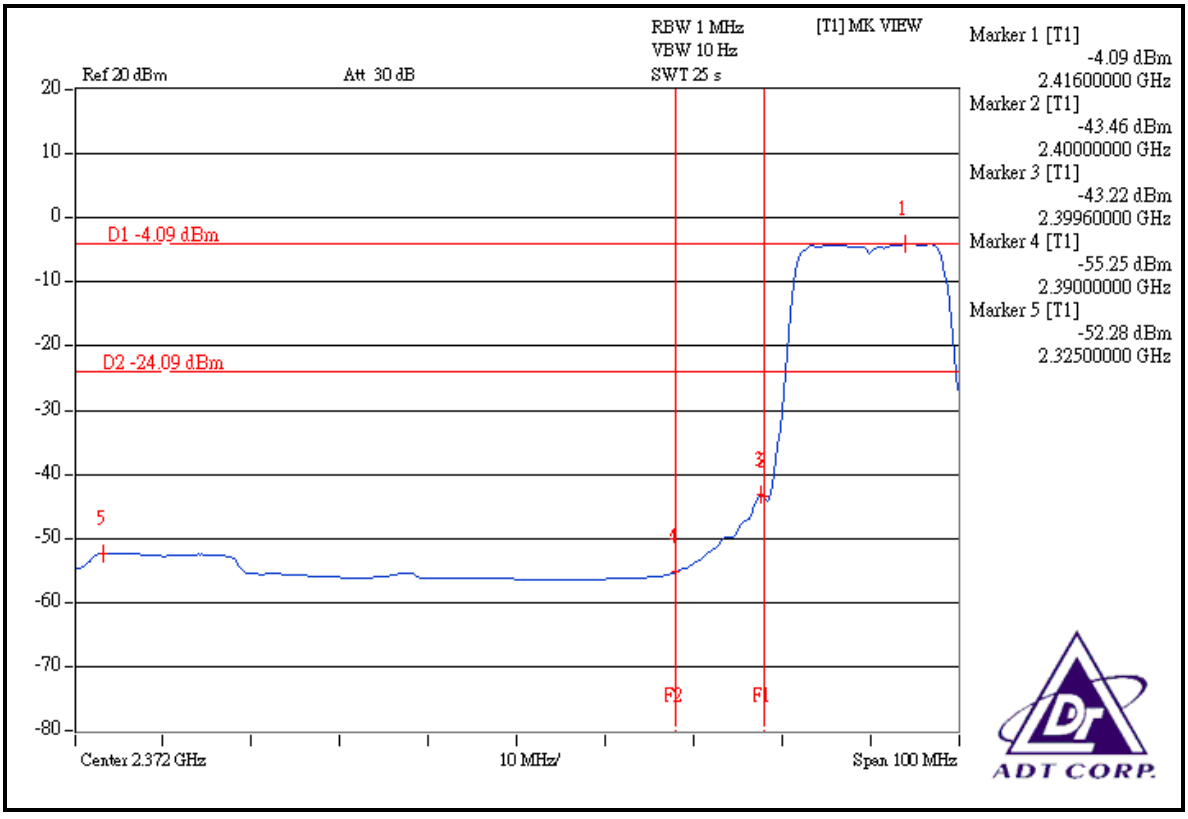
NOTE 1: The band edge emission plot on the next page shows 41.24dBc between carrier maximum power and local maximum emission in restrict band (2.3258GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 103.02dBuV/m (Peak), so the maximum field strength in restrict band is 103.02 – 41.24 = 61.78dBuV/m which is under 74dBuV/m limit.

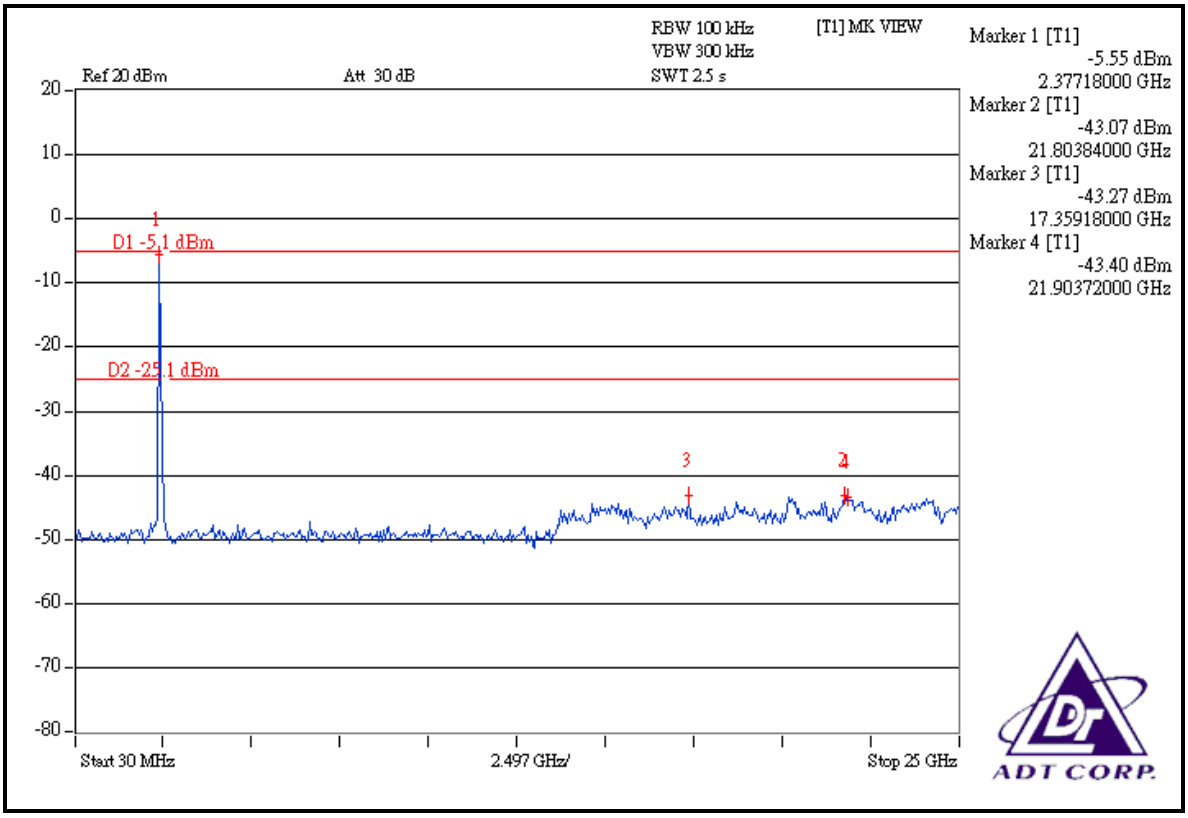
The band edge emission plot of on the next page shows 48.19dBc between carrier maximum power and local maximum emission in restrict band (2.3250GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 92.61dBuV/m (Average), so the maximum field strength in restrict band is 92.61 – 48.19 = 44.42dBuV/m which is under 54dBuV/m limit.

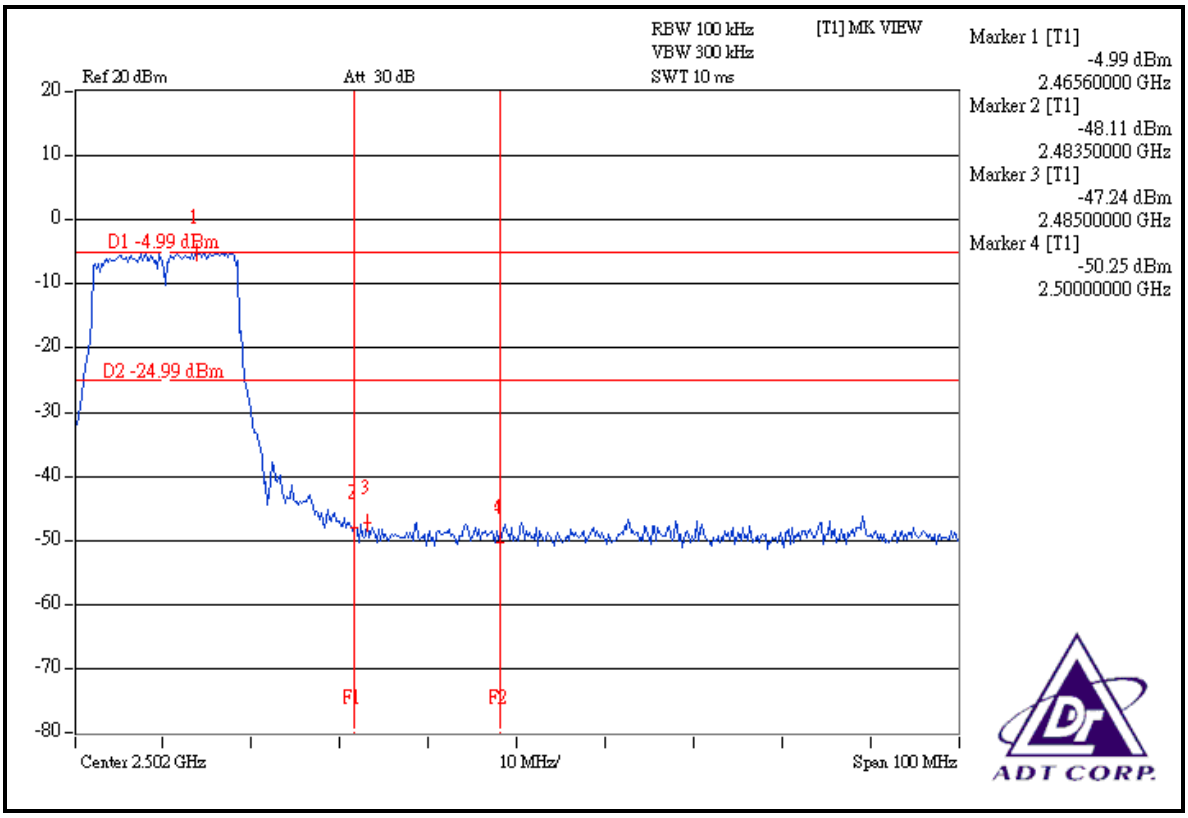
NOTE 2: The band edge emission plot on the next second page shows 42.25dBc between carrier maximum power and local maximum emission in restrict band (2.4850GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 101.71dBuV/m (Peak), so the maximum field strength in restrict band is 101.71 – 42.25 = 59.46dBuV/m which is under 74dBuV/m limit.

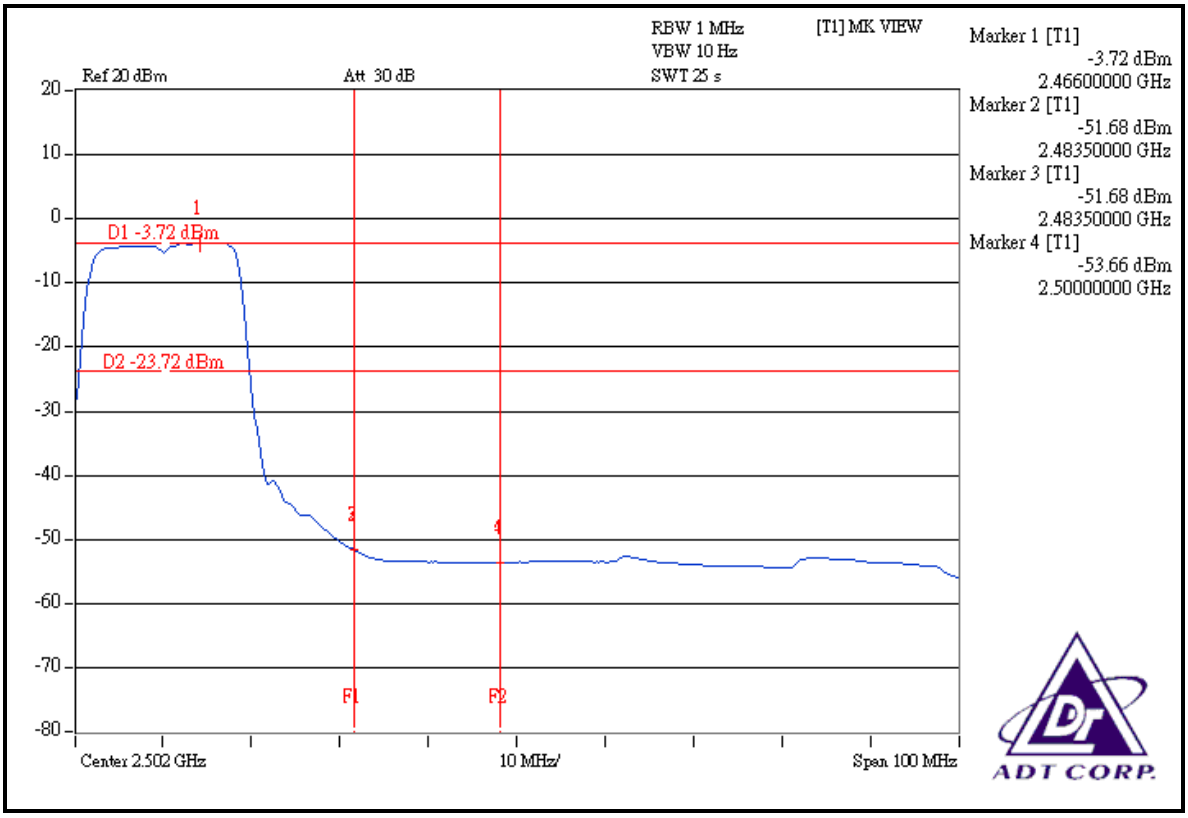
The band edge emission plot on the next third page shows 47.96dBc between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 90.83dBuV/m (Average), so the maximum field strength in restrict band is 90.83 – 47.96 = 42.87dBuV/m which is under 54dBuV/m limit.

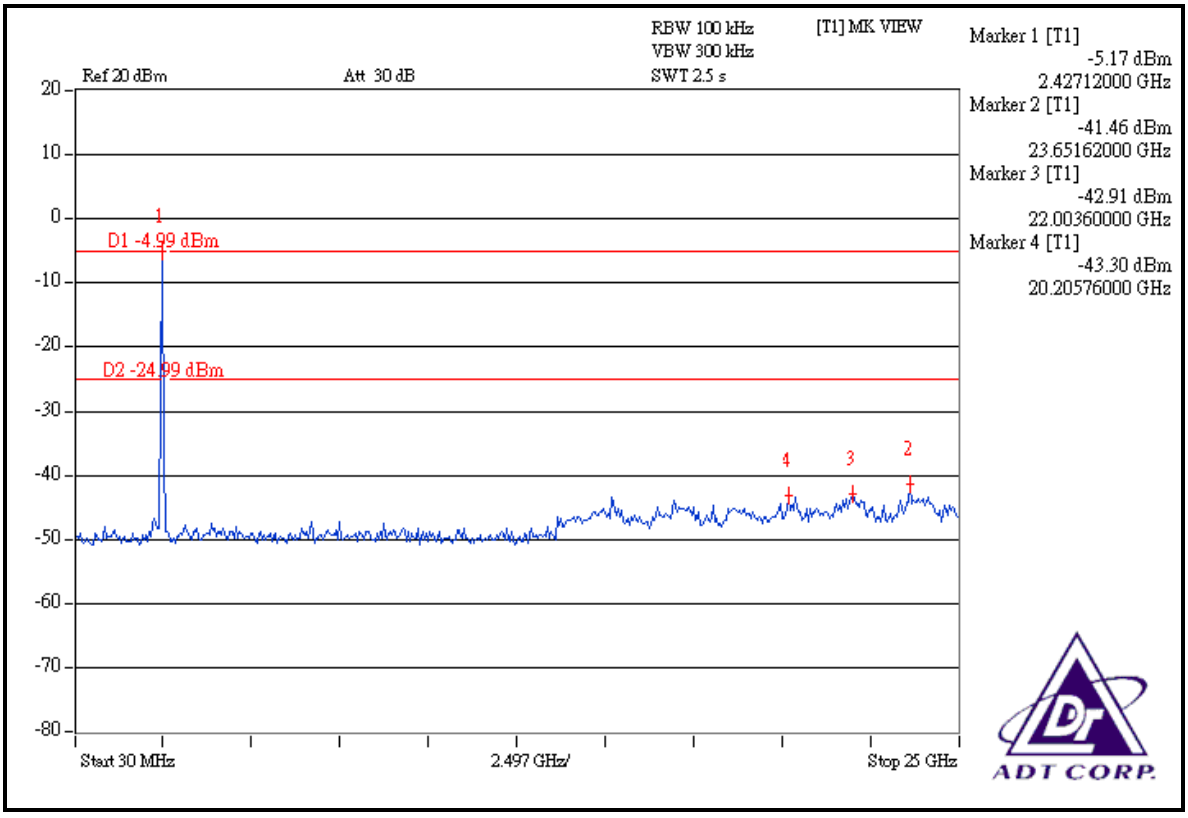

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 -5.1 dBm
D2 -25.1 dBm
Marker 1 [T1]
-5.10 dBm
2.41560000 GHz
Marker 2 [T1]
-40.68 dBm
2.40000000 GHz
Marker 3 [T1]
-40.68 dBm
2.40000000 GHz
Marker 4 [T1]
-50.15 dBm
2.39000000 GHz
Marker 5 [T1]
-46.34 dBm
2.32580000 GHz
Center 2.372 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
D1 -4.09 dBm
D2 -24.09 dBm
Marker 1 [T1]
-4.09 dBm
2.41600000 GHz
Marker 2 [T1]
-43.46 dBm
2.40000000 GHz
Marker 3 [T1]
-43.22 dBm
2.39960000 GHz
Marker 4 [T1]
-55.25 dBm
2.39000000 GHz
Marker 5 [T1]
-52.28 dBm
2.32500000 GHz
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]
-5.55 dBm
2.37718000 GHz
Marker 2 [T1]
-43.07 dBm
21.80384000 GHz
Marker 3 [T1]
-43.27 dBm
17.35918000 GHz
Marker 4 [T1]
-43.40 dBm
21.90372000 GHz
D1 -5.1 dBm
D2 -25.1 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-4.99 dBm
2.46560000 GHz
Marker 2 [T1]
-48.11 dBm
2.48350000 GHz
Marker 3 [T1]
-47.24 dBm
2.48500000 GHz
Marker 4 [T1]
-50.25 dBm
2.50000000 GHz
D1 -4.99 dBm
D2 -24.99 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 -3.72 dBm
D2 -23.72 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
Marker 1 [T1]
-3.72 dBm
2.46600000 GHz
Marker 2 [T1]
-51.68 dBm
2.48350000 GHz
Marker 3 [T1]
-51.68 dBm
2.48350000 GHz
Marker 4 [T1]
-53.66 dBm
2.50000000 GHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 -4.99 dBm
D2 -24.99 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz
Marker 1 [T1]
-5.17 dBm
2.42712000 GHz
Marker 2 [T1]
-41.46 dBm
23.65162000 GHz
Marker 3 [T1]
-42.91 dBm
22.00360000 GHz
Marker 4 [T1]
-43.30 dBm
20.20576000 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 type used in this product is PIFA antenna with UFL connector. The maximum Gain of the antenna is -0.15dBi gain.

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6 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

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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.