

FCC TEST REPORT (15.247)

REPORT NO.: RF960920L02-1

MODEL NO.: Pixium FE 3543 pR

RECEIVED: Sep. 20, 2007

TESTED: Sep. 22 ~ Oct. 08, 2007

ISSUED: Oct. 16, 2007

APPLICANT: TRIXELL

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FRANCE

ISSUED BY: Advance Data Technology Corporation

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1. CERTIFICATION

PRODUCT: Front End

MODEL: Pixium FE 3543 pR

BRAND: TRIXELL

APPLICANT: TRIXELL

TEST SAMPLE: ENGINEERING SAMPLE

TESTED: Sep. 22 ~ Oct. 08, 2007

STANDARDS: FCC Part 15, Subpart C (Section 15.247)
ANSI C63.4-2003

The above equipment (Model: Pixium FE 3543 pR) 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:** Oct. 16, 2007
Peggy Chen / Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE:** Oct. 16, 2007
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Oct. 16, 2007
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 -66.18dB at 4.957MHz.
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -1.01dB at 3883.00MHz.
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	Front End
MODEL NO.	Pixium FE 3543 pR
FCC ID	VPQPIXIUMFE3543PR
POWER SUPPLY	10.8Vdc from Li-ion 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: up to 54Mbps 802.11a: 54, 48, 36, 24, 18, 12, 9, 6Mbps
FREQUENCY RANGE	2.4GHz: 2.400 ~ 2.4835GHz 5.0GHz: 5.15 ~ 5.25GHz & 5.725 ~ 5.850GHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g 5.0GHz: 5150 ~ 5250MHz: 4 for 802.11a 5725 ~ 5850MHz: 5 for 802.11a
OUTPUT POWER	28.576mW for 2400 ~ 2483.5MHz 15.101mW for 5150 ~ 5250MHz 45.394mW for 5725 ~ 5850MHz
ANTENNA TYPE	Patch antenna with +6.9dBi gain for 2.4 GHz Patch antenna with +10.7dBi gain for 5.0 GHz
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	NA

NOTE:

1. The following docking station was provided to this EUT.

BRAND	TRIXELL
MODEL	Pixium DS 3543 pR

2. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.
3. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 54Mbps.
4. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

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		

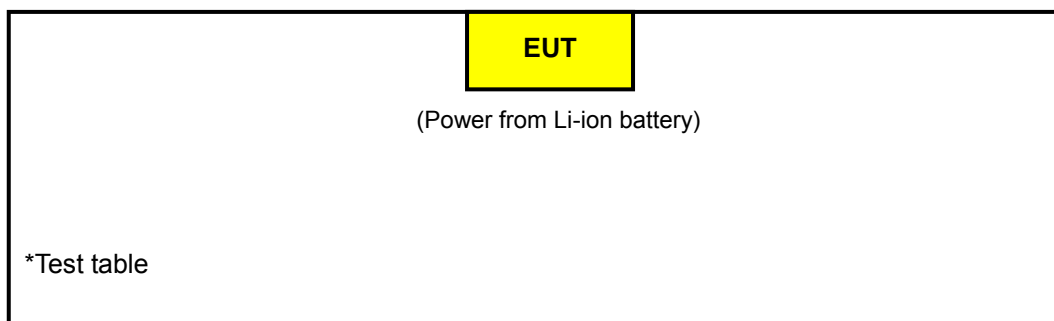
FOR 5.0GHz (5725 ~ 5850MHz):

5 channels are provided for 802.11a:

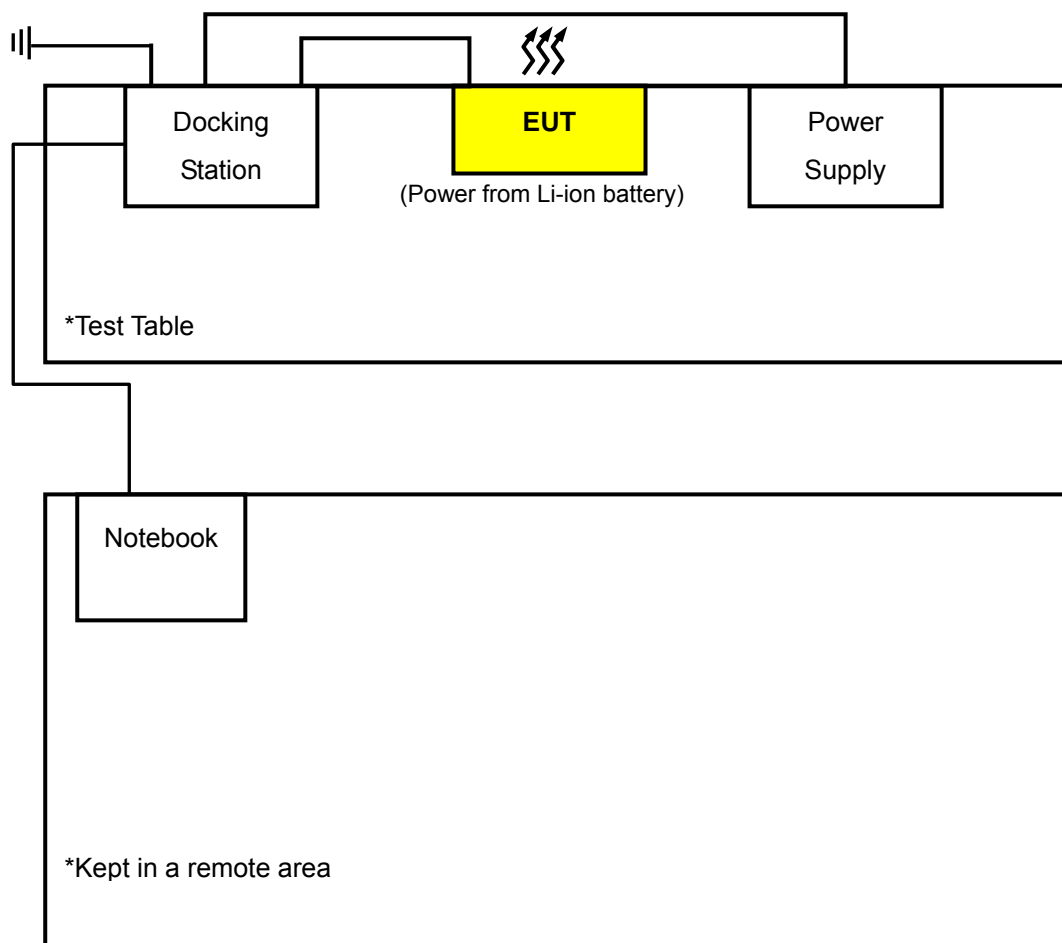
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	5745MHz	4	5805MHz
2	5765MHz	5	5825MHz
3	5785MHz		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Test Mode A



Test Mode B



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL FOR 2.4GHz:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	PLC	RE<1G	RE≥1G	APCM	
A	-	√	-	-	EUT only
B	√	√	√	√	EUT with Docking Station

Where **PLC**: Power Line Conducted Emission **RE<1G**: Radiated Emission below 1GHz
RE≥1G: Radiated Emission above 1GHz **APCM**: Antenna Port Conducted Measurement
 "-": Means no effect.

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)
B	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0

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
A, B	802.11g	1 to 11	1	OFDM	BPSK	6.0	X

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
B	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	X
B	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	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)
B	802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0
B	802.11g	1 to 11	1, 11	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)
B	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
B	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0

FOR 5.0GHz:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	PLC	RE<1G	RE≥1G	APCM	
A	-	√	-	-	EUT only
B	√	√	√	√	EUT with Docking Station

Where **PLC**: Power Line Conducted Emission

RE<1G: Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz

APCM: Antenna Port Conducted Measurement

"-": Means no effect.

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)
B	802.11a	1 to 5	1	OFDM	BPSK	6.0

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
A, B	802.11a	1 to 5	1	OFDM	BPSK	6.0	X

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
B	802.11a	1 to 5	1, 3, 5	OFDM	BPSK	6.0	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)
B	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)
B	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	DOCKING STATION	TRIXELL	Pixium DS 3543 pR	NA	VPQPIXIUMDS3543PR
2	POWER SUPPLY	ISO-TECH	IPS 303DD	NA	NA
3	NOTEBOOK COMPUTER	DELL	PP05L	16484462992	E2K24CLNS

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	2.0 m ground cable without core 7.0 m data cable without core
2	NA
3	NA

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

NOTE 2: Item 3 acted as communication partners to transfer data.

4. TEST TYPES AND RESULTS (FOR 2.4GHz)

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Dec. 08, 2007
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 06, 2008
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 08, 2008
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jan. 16, 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.

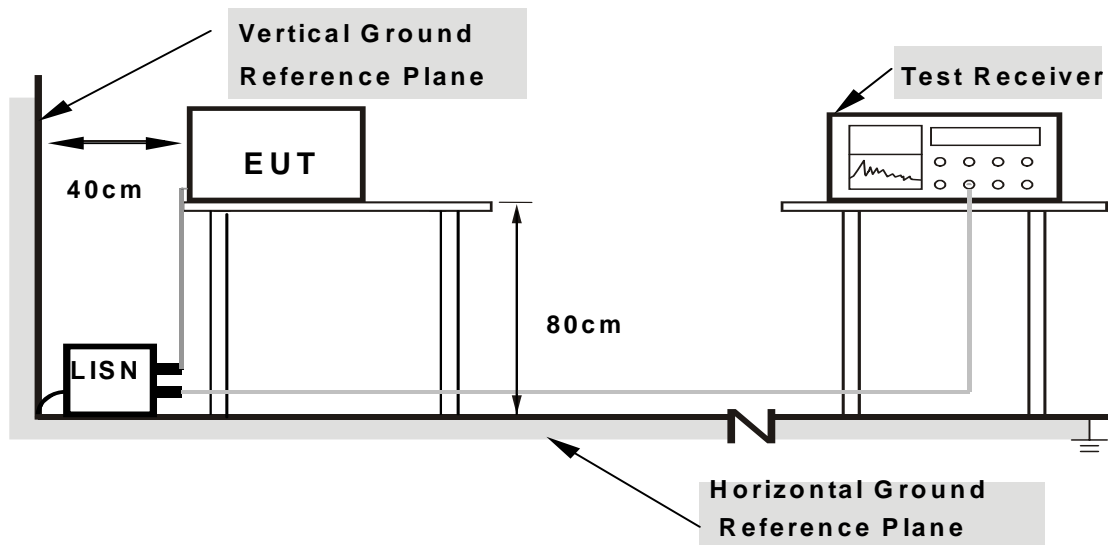
4.1.3 TEST PROCEDURES

- 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) was 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

- Connected EUT with docking station and placed them on a testing table.
- Prepared notebook computer and placed it outside of testing area to act as communication partner for EUT.
- The EUT ran a test program (provided by manufacturer) to enable all functions under transmission condition continuously at specific channel frequency.
- The communication partner sent data to EUT by command "PING".

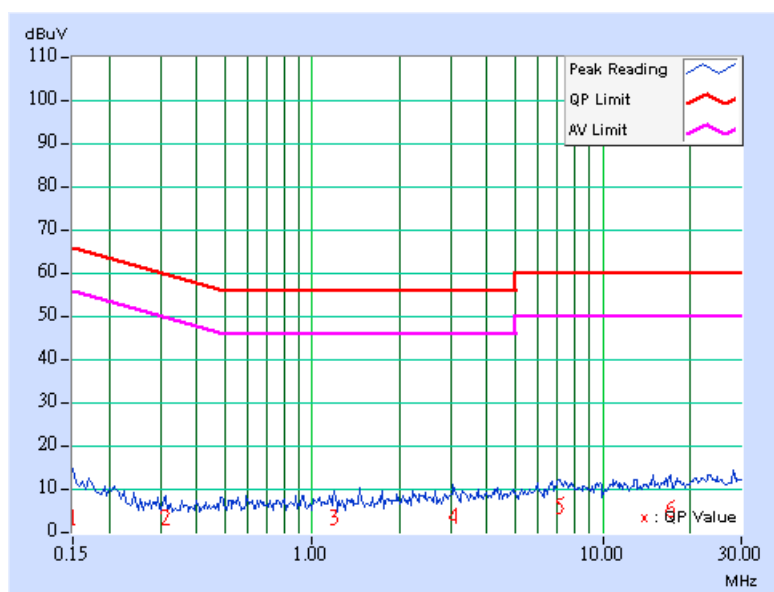
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11g OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	6dB BANDWIDTH	9kHz
TEST MODE	B	TESTED BY	Match Tsui

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	-11.42	-	-11.32	-	66.00	56.00	-77.32	-
2	0.314	0.10	-11.43	-	-11.33	-	59.86	49.86	-71.19	-
3	1.188	0.13	-11.40	-	-11.27	-	56.00	46.00	-67.27	-
4	3.066	0.25	-10.82	-	-10.57	-	56.00	46.00	-66.57	-
5	7.145	0.31	-8.66	-	-8.35	-	60.00	50.00	-68.35	-
6	17.086	0.52	-9.47	-	-8.95	-	60.00	50.00	-68.95	-

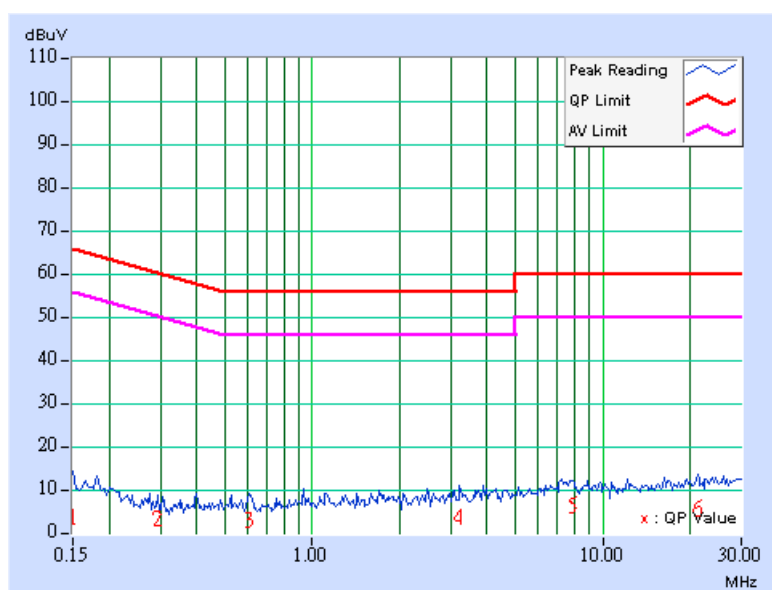
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 1	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	6dB BANDWIDTH	9kHz
TEST MODE	B	TESTED BY	Match Tsui

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	-11.06	-	-10.96	-	66.00	56.00	-76.96	-
2	0.295	0.10	-11.28	-	-11.18	-	60.40	50.40	-71.58	-
3	0.607	0.14	-11.65	-	-11.51	-	56.00	46.00	-67.51	-
4	3.215	0.26	-10.96	-	-10.70	-	56.00	46.00	-66.70	-
5	7.871	0.38	-8.47	-	-8.09	-	60.00	50.00	-68.09	-
6	21.246	0.61	-9.16	-	-8.55	-	60.00	50.00	-68.55	-

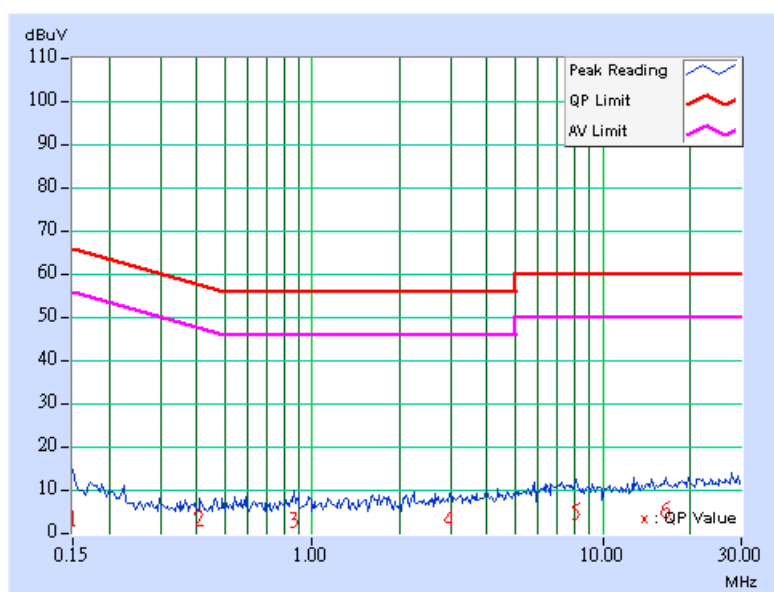
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	6dB BANDWIDTH	9kHz
TEST MODE	B	TESTED BY	Match Tsui

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	-11.14	-	-11.04	-	66.00	56.00	-77.04	-
2	0.412	0.10	-11.34	-	-11.24	-	57.61	47.61	-68.85	-
3	0.869	0.11	-11.56	-	-11.45	-	56.00	46.00	-67.45	-
4	2.980	0.25	-11.08	-	-10.83	-	56.00	46.00	-66.83	-
5	8.074	0.31	-9.70	-	-9.39	-	60.00	50.00	-69.39	-
6	16.500	0.51	-9.26	-	-8.75	-	60.00	50.00	-68.75	-

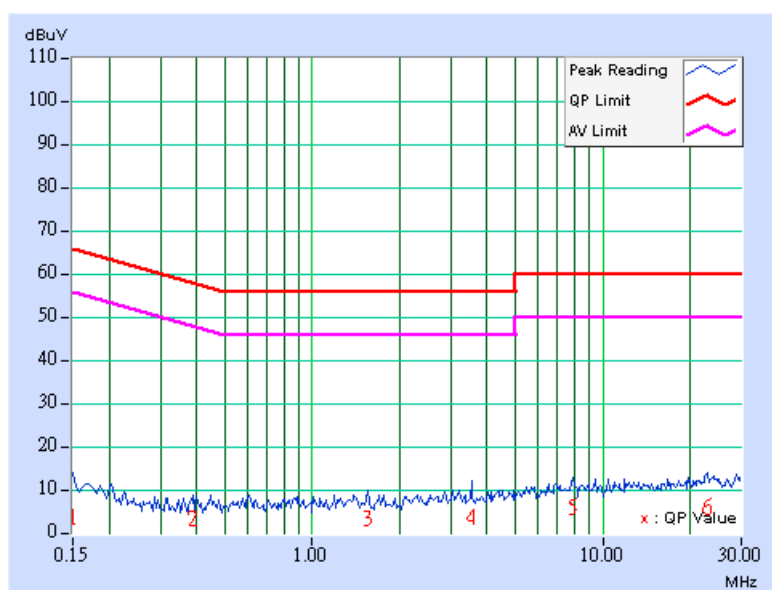
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 2
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	6dB BANDWIDTH	9kHz
TEST MODE	B	TESTED BY	Match Tsui

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	-11.14	-	-11.04	-	66.00	56.00	-77.04	-
2	0.388	0.10	-11.30	-	-11.20	-	58.10	48.10	-69.30	-
3	1.555	0.22	-11.42	-	-11.20	-	56.00	46.00	-67.20	-
4	3.543	0.27	-10.89	-	-10.62	-	56.00	46.00	-66.62	-
5	7.879	0.38	-8.63	-	-8.25	-	60.00	50.00	-68.25	-
6	22.855	0.66	-8.87	-	-8.21	-	60.00	50.00	-68.21	-

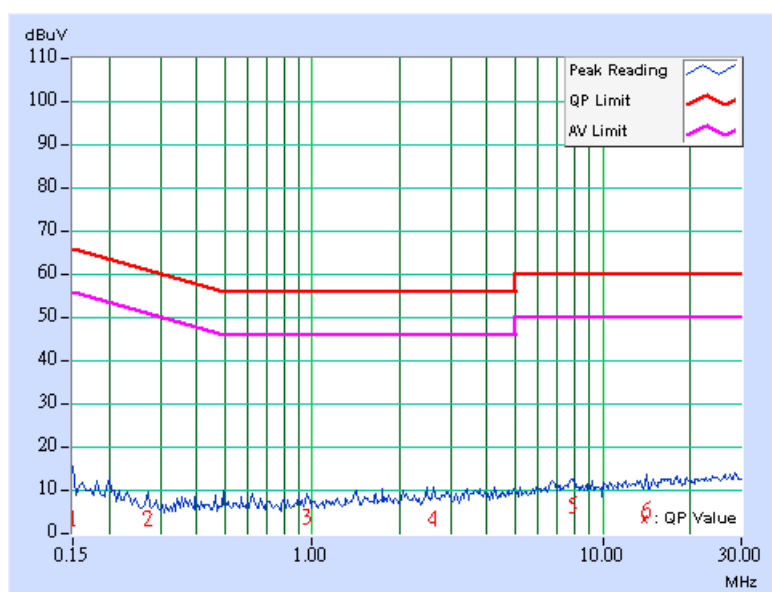
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 11	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	6dB BANDWIDTH	9kHz
TEST MODE	B	TESTED BY	Match Tsui

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	-11.16	-	-11.06	-	66.00	56.00	-77.06	-
2	0.271	0.10	-11.30	-	-11.20	-	61.08	51.08	-72.28	-
3	0.959	0.11	-10.84	-	-10.73	-	56.00	46.00	-66.73	-
4	2.625	0.24	-11.06	-	-10.82	-	56.00	46.00	-66.82	-
5	7.867	0.31	-8.25	-	-7.94	-	60.00	50.00	-67.94	-
6	14.219	0.46	-9.25	-	-8.79	-	60.00	50.00	-68.79	-

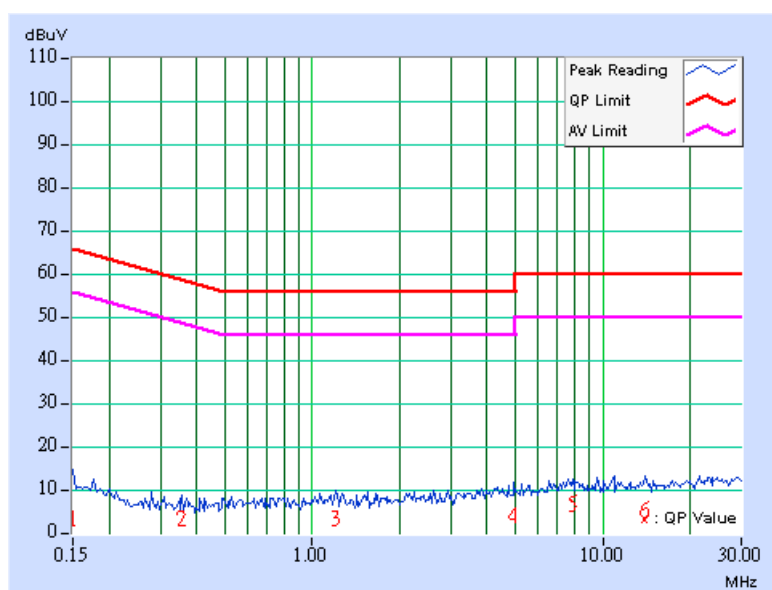
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 11	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	6dB BANDWIDTH	9kHz
TEST MODE	B	TESTED BY	Match Tsui

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	-11.12	-	-11.02	-	66.00	56.00	-77.02	-
2	0.357	0.10	-11.11	-	-11.01	-	58.80	48.80	-69.81	-
3	1.203	0.21	-11.26	-	-11.05	-	56.00	46.00	-67.05	-
4	4.957	0.30	-10.48	-	-10.18	-	56.00	46.00	-66.18	-
5	7.922	0.38	-7.96	-	-7.58	-	60.00	50.00	-67.58	-
6	14.000	0.47	-9.40	-	-8.93	-	60.00	50.00	-68.93	-

- 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
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. 04, 2008
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 16, 2008
Preamplifier Agilent	8449B	3008A01910	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10638	Dec. 20, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218188/218189	Nov. 14, 2007
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.

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

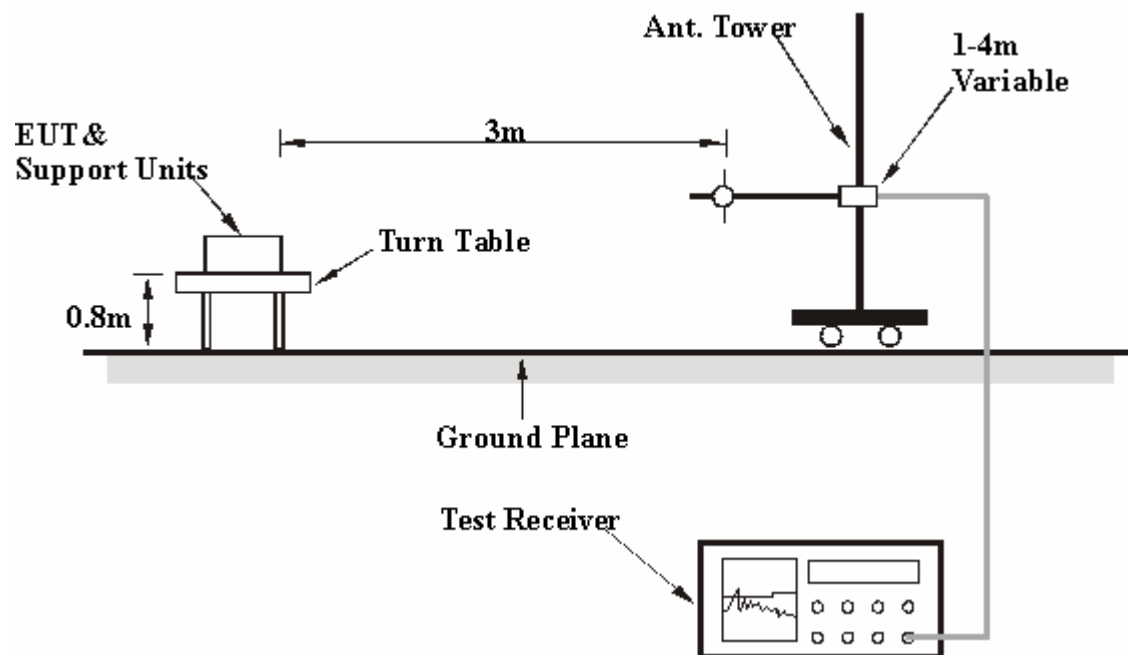
NOTE:

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 1kHz for Average detection (AV) at frequency above 1GHz.

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 4.1.6

4.2.7 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	A	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

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	401.26	40.16 QP	46.00	-5.84	2.50 H	67	24.41	15.75
2	601.52	37.05 QP	46.00	-8.95	2.50 H	334	15.94	21.11
3	702.62	38.28 QP	46.00	-7.72	1.50 H	256	16.23	22.06
4	803.73	38.22 QP	46.00	-7.78	1.00 H	217	13.82	24.40
5	834.84	34.02 QP	46.00	-11.98	1.00 H	181	9.32	24.70
6	869.83	35.91 QP	46.00	-10.09	1.00 H	205	10.88	25.03
7	902.89	42.49 QP	46.00	-3.51	1.00 H	208	17.15	25.34
8	957.33	38.86 QP	46.00	-7.14	1.00 H	10	13.10	25.75

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	64.90	36.62 QP	40.00	-3.38	1.00 V	217	24.29	12.34
2	107.67	31.99 QP	43.50	-11.51	2.50 V	19	21.92	10.08
3	401.26	42.29 QP	46.00	-3.71	1.50 V	268	26.54	15.75
4	601.52	41.69 QP	46.00	-4.31	1.00 V	247	20.58	21.11
5	702.62	40.78 QP	46.00	-5.22	1.00 V	223	18.72	22.06
6	803.73	39.41 QP	46.00	-6.59	1.00 V	163	15.00	24.40
7	834.84	34.57 QP	46.00	-11.43	1.00 V	151	9.87	24.70
8	869.83	34.56 QP	46.00	-11.44	1.00 V	154	9.52	25.03
9	902.89	42.67 QP	46.00	-3.33	1.00 V	130	17.33	25.34
10	951.49	39.80 QP	46.00	-6.20	1.00 V	139	14.06	25.73

- 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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
TRANSFER RATE	6.0Mbps	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	B	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

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	49.34	26.16 QP	40.00	-13.84	1.00 H	10	12.64	13.52
2	70.73	30.19 QP	40.00	-9.81	1.50 H	211	19.07	11.13
3	199.05	38.24 QP	43.50	-5.26	1.50 H	277	27.84	10.40
4	331.26	37.85 QP	46.00	-8.15	1.50 H	91	23.74	14.11
5	399.31	32.84 QP	46.00	-13.16	2.00 H	10	17.15	15.69
6	599.58	37.71 QP	46.00	-8.29	1.50 H	283	16.63	21.09
7	700.68	38.10 QP	46.00	-7.90	1.00 H	64	16.10	22.01
8	799.84	36.53 QP	46.00	-9.47	1.00 H	178	12.17	24.36

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	53.23	34.50 QP	40.00	-5.50	1.00 V	4	20.95	13.55
2	70.73	34.98 QP	40.00	-5.02	1.50 V	157	23.86	11.13
3	129.06	32.44 QP	43.50	-11.06	1.50 V	112	20.53	11.90
4	173.78	30.70 QP	43.50	-12.80	1.00 V	82	18.23	12.47
5	599.58	40.90 QP	46.00	-5.10	1.00 V	4	19.81	21.09
6	700.68	35.61 QP	46.00	-10.39	1.50 V	187	13.60	22.01
7	799.84	34.65 QP	46.00	-11.35	2.00 V	199	10.29	24.36
8	900.94	35.91 QP	46.00	-10.09	1.00 V	181	10.58	25.32

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.

ABOVE 1GHz DATA: 802.11b DSSS MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	DBPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	1.0Mbps	DETECTOR FUNCTION	Peak (PK) Average (AV)
TEST MODE	B	ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH, 991hPa
TESTED BY	Kevin Chen		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	61.90 PK	74.00	-12.10	1.62 H	330	29.58	32.32
2	2390.00	49.42 AV	54.00	-4.58	1.62 H	330	17.10	32.32
3	*2412.00	108.92 PK			1.62 H	329	76.60	32.32
4	*2412.00	102.74 AV			1.62 H	329	70.42	32.32
5	3216.00	48.70 PK	88.92	-40.22	1.00 H	49	15.13	33.57
6	3216.00	43.29 AV	82.74	-39.45	1.00 H	49	9.72	33.57
7	4824.00	48.69 PK	74.00	-25.31	1.19 H	313	10.69	38.00
8	4824.00	36.15 AV	54.00	-17.85	1.19 H	313	-1.85	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	61.73 PK	74.00	-12.27	1.22 V	231	29.41	32.32
2	2390.00	48.12 AV	54.00	-5.88	1.22 V	231	15.80	32.32
3	*2412.00	103.05 PK			1.22 V	234	70.73	32.32
4	*2412.00	95.43 AV			1.22 V	234	63.11	32.32
5	3216.00	47.40 PK	83.05	-35.65	1.03 V	51	13.83	33.57
6	3216.00	35.32 AV	75.43	-40.11	1.03 V	51	1.75	33.57
7	4824.00	48.51 PK	74.00	-25.49	1.03 V	222	10.51	38.00
8	4824.00	35.80 AV	54.00	-18.20	1.03 V	222	-2.20	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
MODULATION TYPE	DBPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	1.0Mbps	DETECTOR FUNCTION	Peak (PK) Average (AV)
TEST MODE	B	ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH, 991hPa
TESTED BY	Kevin Chen		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	107.99 PK			1.62 H	286	75.65	32.34
2	*2437.00	102.47 AV			1.62 H	286	70.13	32.34
3	3249.00	48.21 PK	87.99	-39.78	1.36 H	310	14.76	33.45
4	3249.00	44.91 AV	82.47	-37.56	1.36 H	310	11.46	33.45
5	4874.00	48.85 PK	74.00	-25.15	1.16 H	72	10.73	38.12
6	4874.00	36.13 AV	54.00	-17.87	1.16 H	72	-1.99	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	102.68 PK			1.14 V	241	70.34	32.34
2	*2437.00	97.42 AV			1.14 V	241	65.08	32.34
3	3249.00	46.69 PK	82.68	-35.99	1.10 V	275	13.24	33.45
4	3249.00	37.72 AV	77.42	-39.70	1.10 V	275	4.27	33.45
5	4874.00	49.15 PK	74.00	-24.85	1.08 V	188	11.03	38.12
6	4874.00	36.24 AV	54.00	-17.76	1.08 V	188	-1.88	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
MODULATION TYPE	DBPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	1.0Mbps	DETECTOR FUNCTION	Peak (PK) Average (AV)
TEST MODE	B	ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH, 991hPa
TESTED BY	Kevin Chen		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	108.39 PK			1.05 H	330	76.02	32.37
2	*2462.00	102.43 AV			1.05 H	330	70.06	32.37
3	2483.50	61.16 PK	74.00	-12.84	1.06 H	330	28.77	32.39
4	2483.50	49.37 AV	54.00	-4.63	1.06 H	330	16.98	32.39
5	3282.00	48.79 PK	88.39	-39.60	1.09 H	7	15.45	33.34
6	3282.00	44.22 AV	82.43	-38.21	1.09 H	7	10.88	33.34
7	4924.00	48.59 PK	74.00	-25.41	1.00 H	294	10.36	38.23
8	4924.00	36.02 AV	54.00	-17.98	1.00 H	294	-2.21	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	102.73 PK			1.22 V	227	70.36	32.37
2	*2462.00	97.27 AV			1.22 V	227	64.90	32.37
3	2483.50	59.73 PK	74.00	-14.27	1.22 V	235	27.34	32.39
4	2483.50	47.54 AV	54.00	-6.46	1.22 V	235	15.15	32.39
5	3282.00	45.80 PK	82.73	-36.93	1.46 V	251	12.46	33.34
6	3282.00	37.77 AV	77.27	-39.50	1.46 V	251	4.43	33.34
7	4924.00	48.68 PK	74.00	-25.32	1.12 V	212	10.45	38.23
8	4924.00	37.65 AV	54.00	-16.35	1.12 V	212	-0.58	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
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	DETECTOR FUNCTION	Peak (PK) Average (AV)
TEST MODE	B	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TESTED BY	Kevin Chen		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	62.53 PK	74.00	-11.47	1.26 H	288	30.21	32.32
2	2390.00	52.01 AV	54.00	-1.99	1.26 H	288	19.69	32.32
3	*2412.00	110.87 PK			1.26 H	288	78.55	32.32
4	*2412.00	98.79 AV			1.26 H	288	66.47	32.32
5	3216.00	47.49 PK	90.87	-43.38	1.11 H	37	13.92	33.57
6	3216.00	42.69 AV	78.79	-36.10	1.11 H	37	9.12	33.57
7	4824.00	47.75 PK	74.00	-26.25	1.23 H	264	9.75	38.00
8	4824.00	35.84 AV	54.00	-18.16	1.23 H	264	-2.16	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	58.98 PK	74.00	-15.02	1.00 V	272	26.66	32.32
2	2390.00	47.41 AV	54.00	-6.59	1.00 V	272	15.09	32.32
3	*2412.00	102.90 PK			1.00 V	272	70.58	32.32
4	*2412.00	92.26 AV			1.00 V	272	59.94	32.32
5	3216.00	45.24 PK	82.90	-37.66	1.36 V	333	11.67	33.57
6	3216.00	34.97 AV	72.26	-37.29	1.36 V	333	1.40	33.57
7	4824.00	48.12 PK	74.00	-25.88	1.36 V	0	10.12	38.00
8	4824.00	34.93 AV	54.00	-19.07	1.36 V	0	-3.07	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
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	DETECTOR FUNCTION	Peak (PK) Average (AV)
TEST MODE	B	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TESTED BY	Kevin Chen		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	110.04 PK			1.23 H	289	77.70	32.34
2	*2437.00	99.05 AV			1.23 H	289	66.71	32.34
3	3249.00	48.35 PK	90.04	-41.69	1.15 H	289	14.90	33.45
4	3249.00	43.85 AV	79.05	-35.20	1.15 H	289	10.40	33.45
5	4874.00	48.37 PK	74.00	-25.63	1.14 H	360	10.25	38.12
6	4874.00	35.10 AV	54.00	-18.90	1.14 H	360	-3.02	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	102.35 PK			1.64 V	108	70.01	32.34
2	*2437.00	92.05 AV			1.64 V	108	59.71	32.34
3	3249.00	46.11 PK	82.35	-36.24	1.25 V	350	12.66	33.45
4	3249.00	37.71 AV	72.05	-34.34	1.25 V	350	4.26	33.45
5	4874.00	48.23 PK	74.00	-25.77	1.25 V	350	10.11	38.12
6	4874.00	34.74 AV	54.00	-19.26	1.25 V	350	-3.38	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
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	DETECTOR FUNCTION	Peak (PK) Average (AV)
TEST MODE	B	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TESTED BY	Kevin Chen		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	110.54 PK			1.24 H	287	78.17	32.37
2	*2462.00	98.36 AV			1.24 H	287	65.99	32.37
3	2483.50	64.37 PK	74.00	-9.63	1.25 H	286	31.98	32.39
4	2483.50	49.61 AV	54.00	-4.39	1.25 H	286	17.22	32.39
5	3282.00	49.45 PK	90.54	-41.09	1.05 H	308	16.11	33.34
6	3282.00	45.34 AV	78.36	-33.02	1.05 H	308	12.00	33.34
7	4924.00	48.07 PK	74.00	-25.93	1.19 H	205	9.84	38.23
8	4924.00	34.58 AV	54.00	-19.42	1.19 H	205	-3.65	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	102.86 PK			1.61 V	251	70.49	32.37
2	*2462.00	92.42 AV			1.61 V	251	60.05	32.37
3	2483.50	57.21 PK	74.00	-16.79	1.61 V	251	24.82	32.39
4	2483.50	47.19 AV	54.00	-6.81	1.61 V	251	14.80	32.39
5	3282.00	45.35 PK	82.86	-37.51	1.46 V	156	12.01	33.34
6	3282.00	37.77 AV	72.42	-34.65	1.46 V	156	4.43	33.34
7	4924.00	48.07 PK	74.00	-25.93	1.46 V	156	9.84	38.23
8	4924.00	34.92 AV	54.00	-19.08	1.46 V	156	-3.31	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.

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.

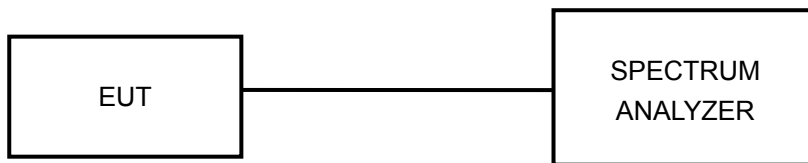
4.3.3 TEST PROCEDURE

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.

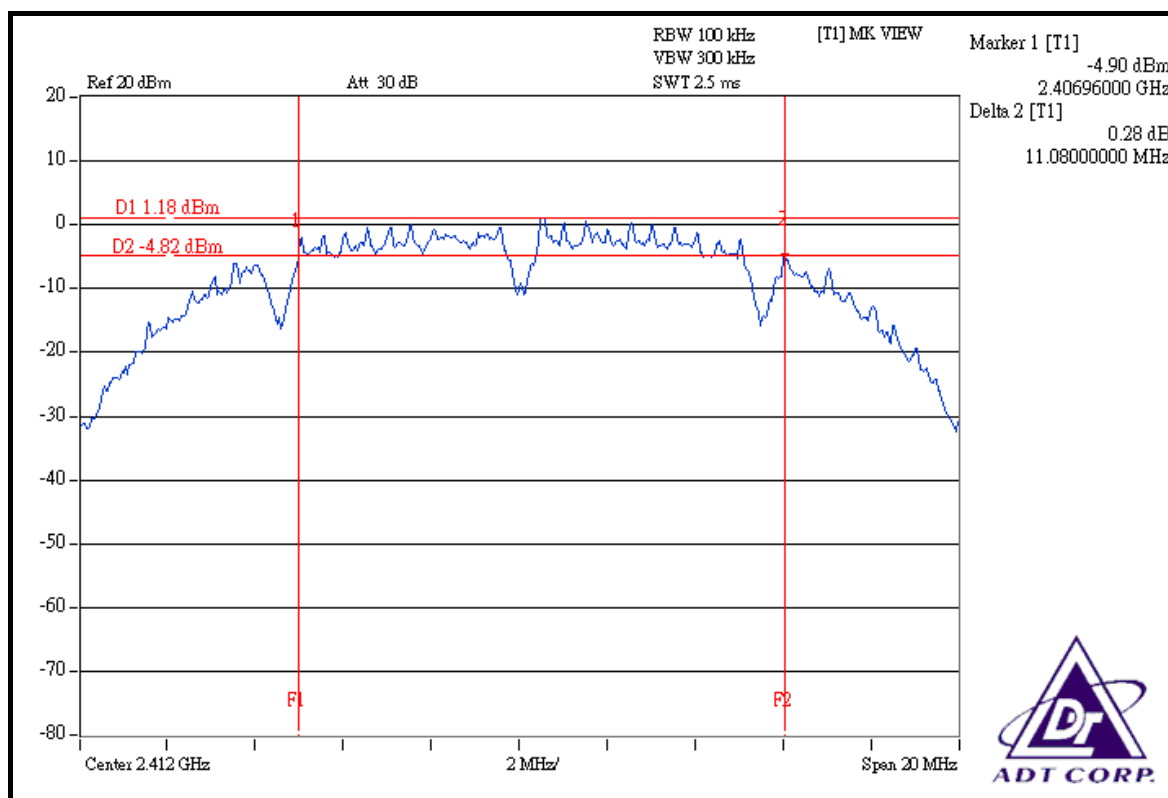
4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

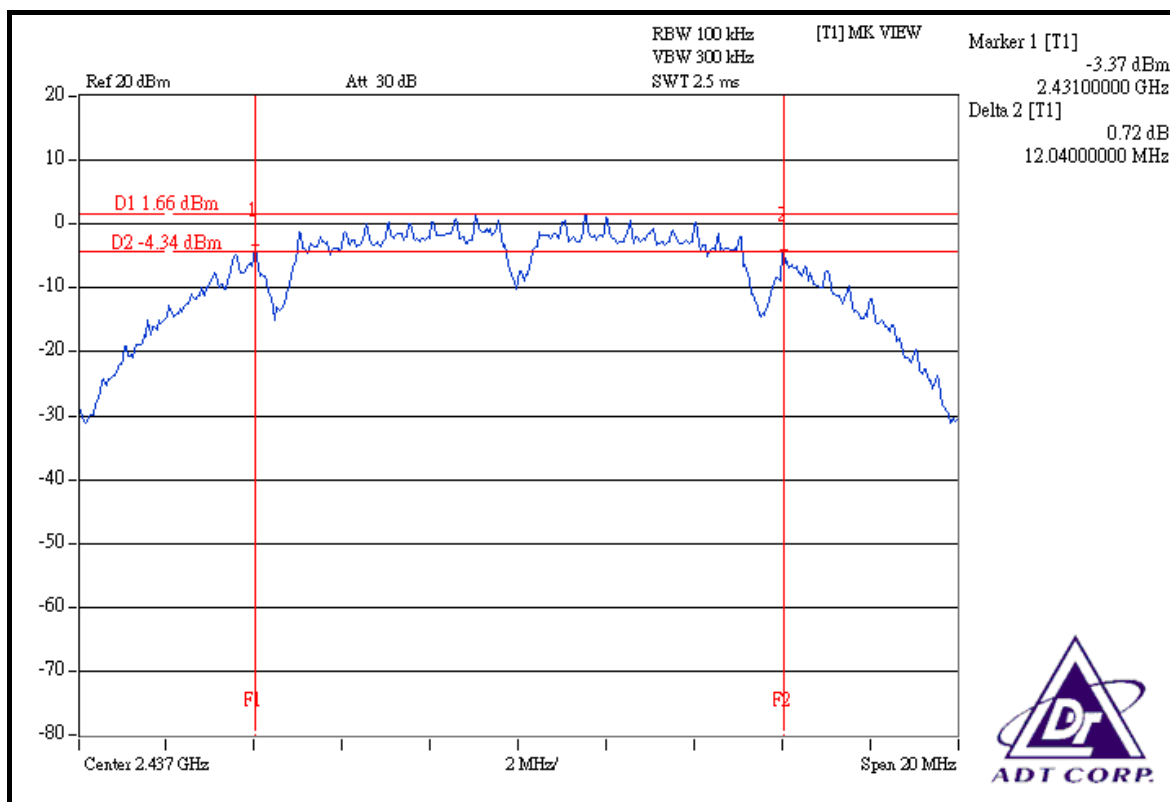
MODULATION TYPE	DBPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.08	0.5	PASS
6	2437	12.04	0.5	PASS
11	2462	10.20	0.5	PASS

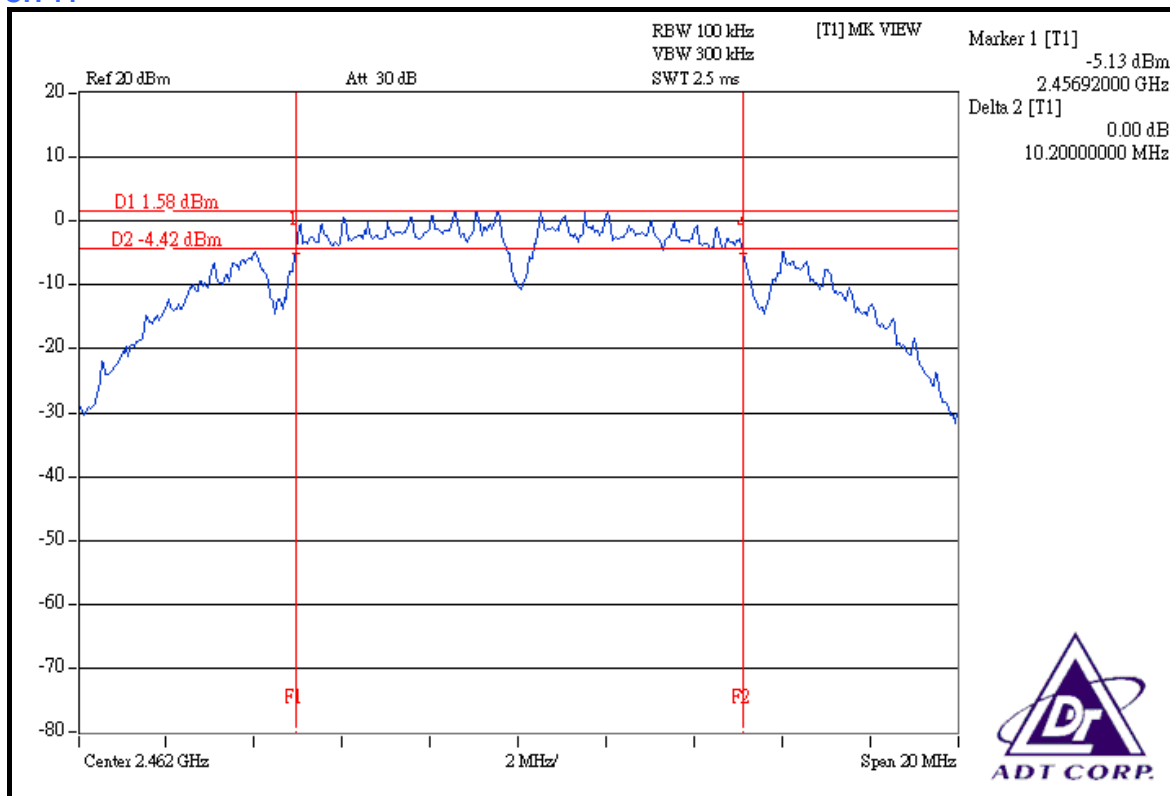
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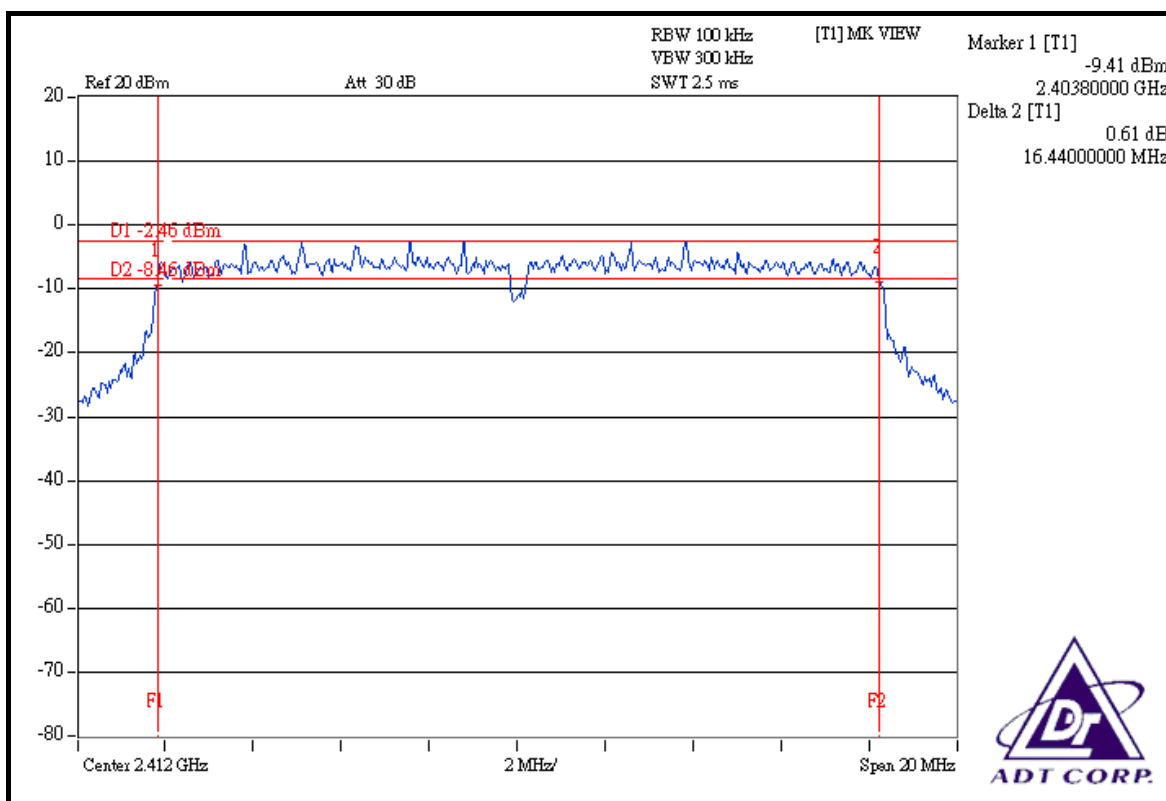


802.11g OFDM MODULATION:

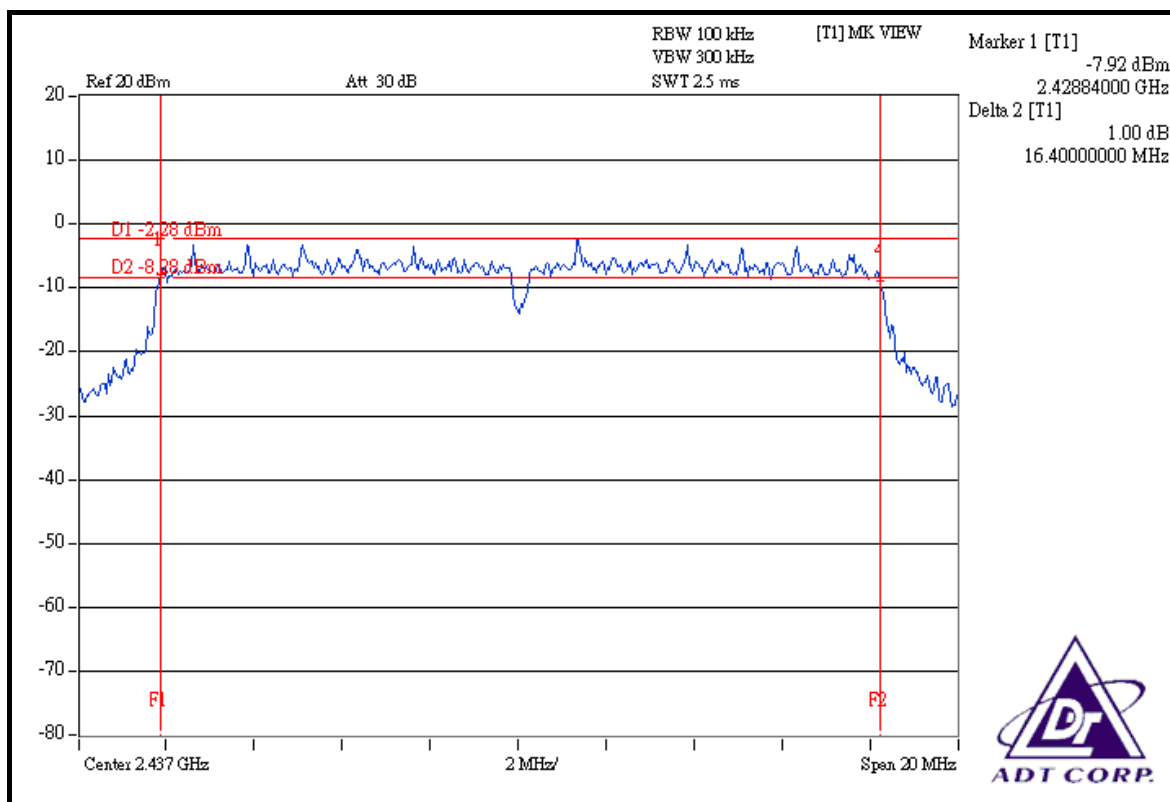
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.44	0.5	PASS
6	2437	16.40	0.5	PASS
11	2462	16.36	0.5	PASS

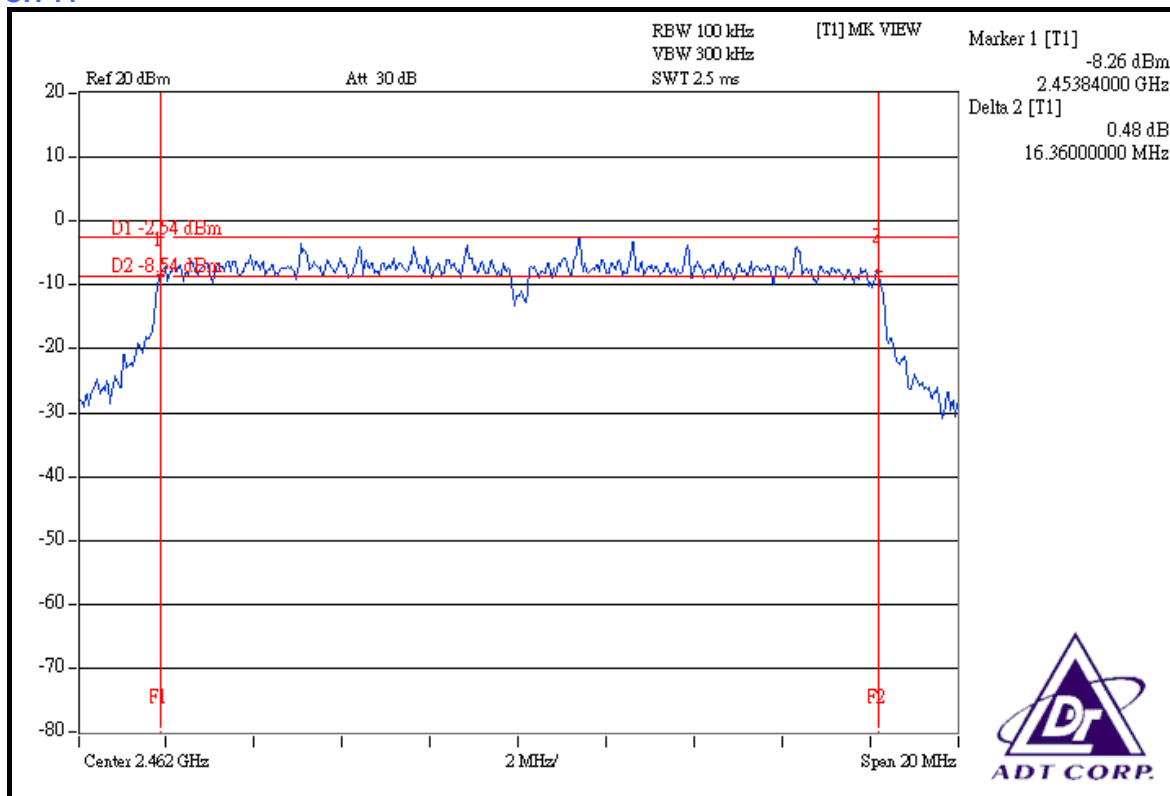
CH 1



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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
ANRITSU SYNTHESIZED SIGNAL GENERATOR	68247B	984703	May 18, 2008
DIGITAL RT OSCILLOSCOPE	TDS1012	C037299	Nov. 27, 2007
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.

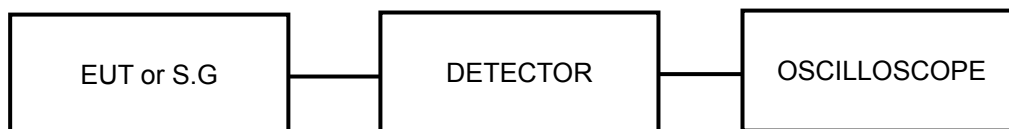
4.4.3 TEST PROCEDURES

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	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	22.909	13.60	29.1	PASS
6	2437	25.704	14.10	29.1	PASS
11	2462	25.293	14.03	29.1	PASS

802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	28.576	14.56	29.1	PASS
6	2437	28.184	14.50	29.1	PASS
11	2462	28.314	14.52	29.1	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

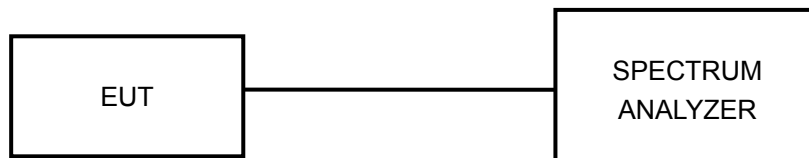
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

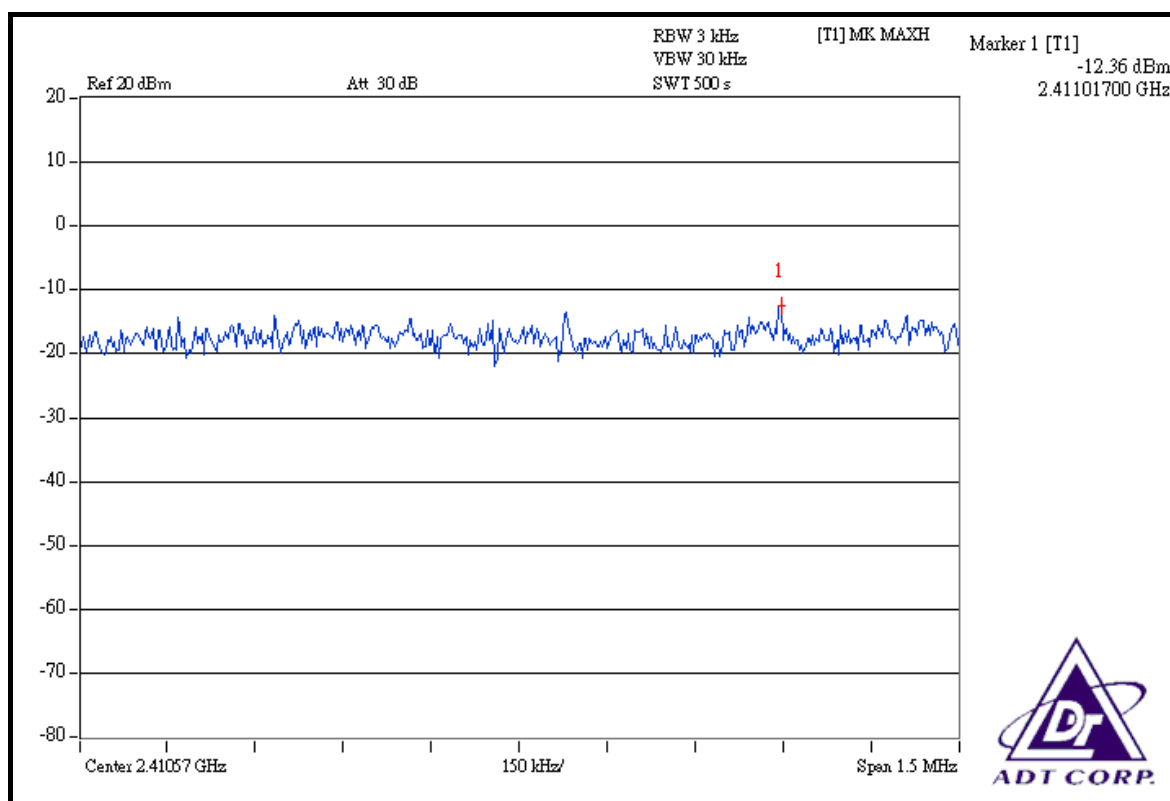
4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

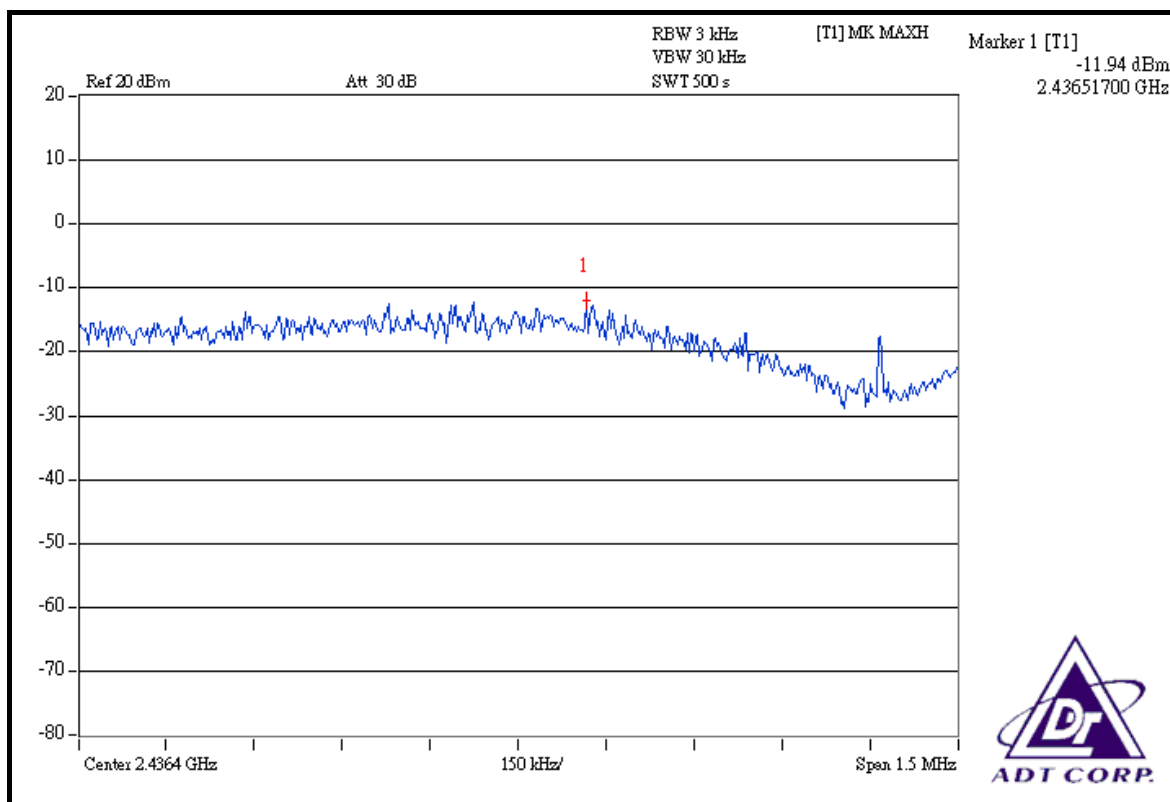
MODULATION TYPE	DBPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-12.36	7.1	PASS
6	2437	-11.94	7.1	PASS
11	2462	-11.61	7.1	PASS

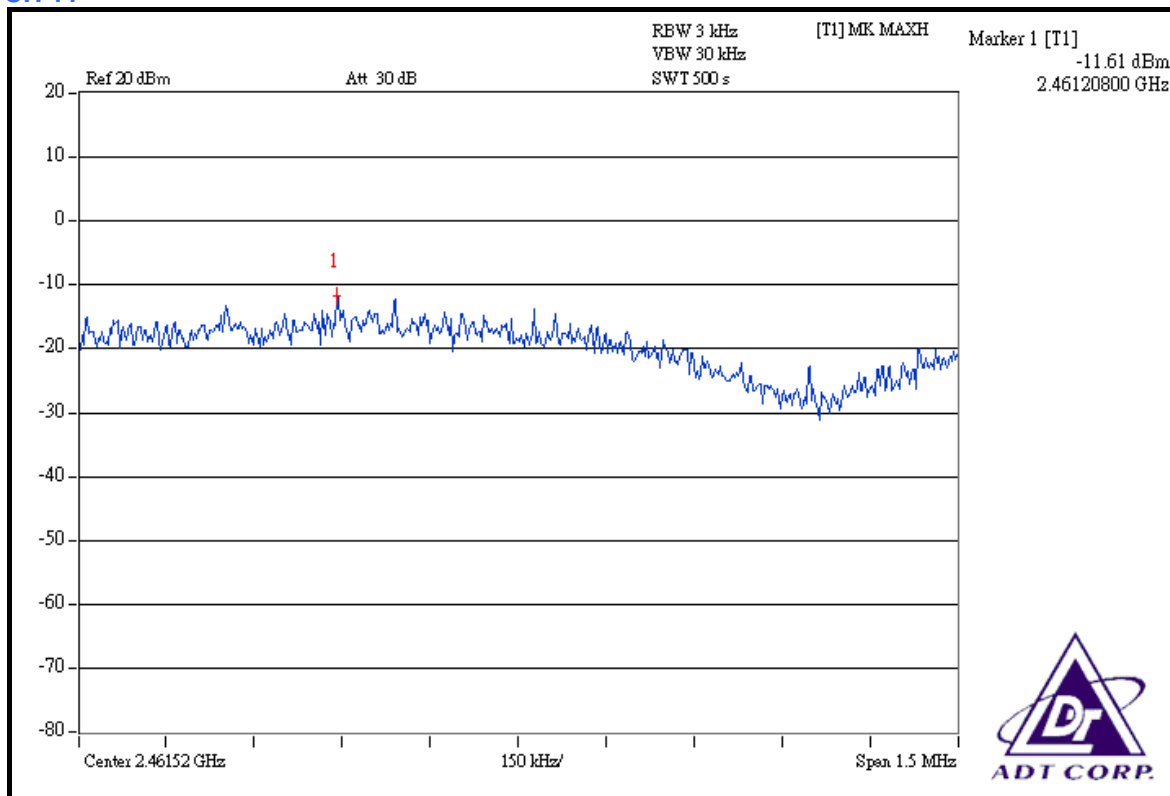
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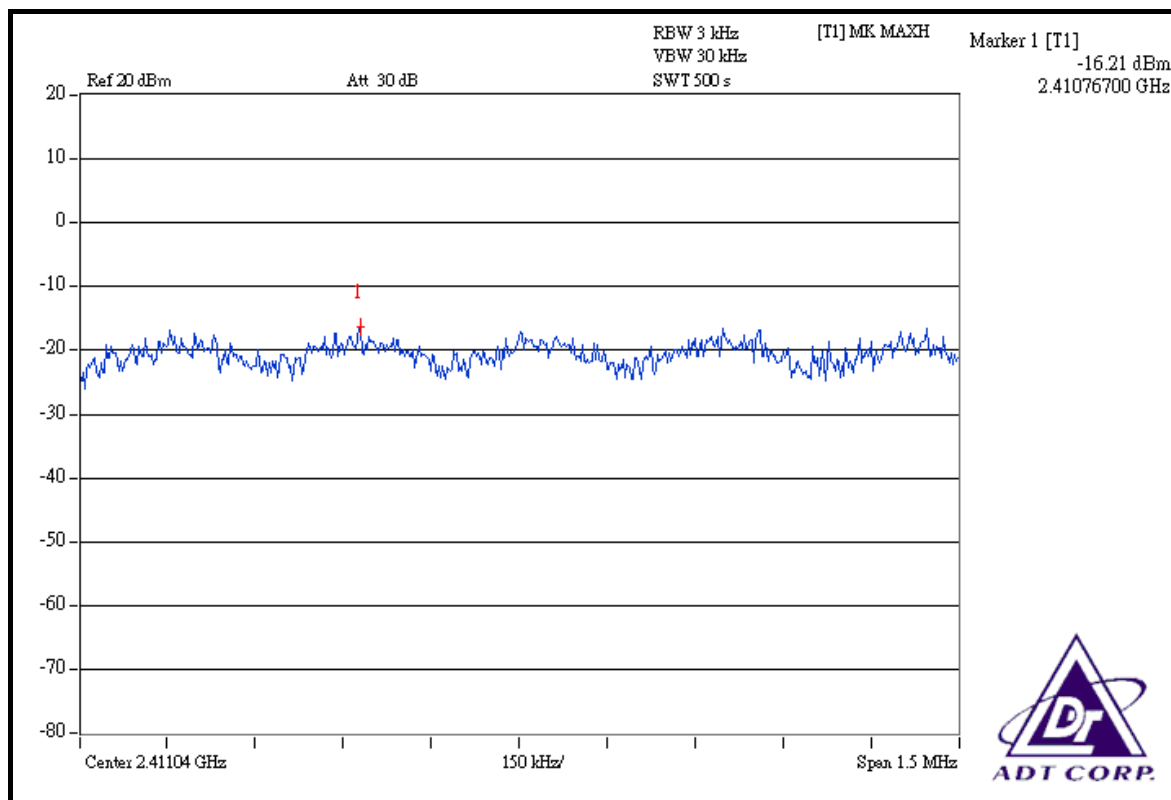


802.11g OFDM MODULATION:

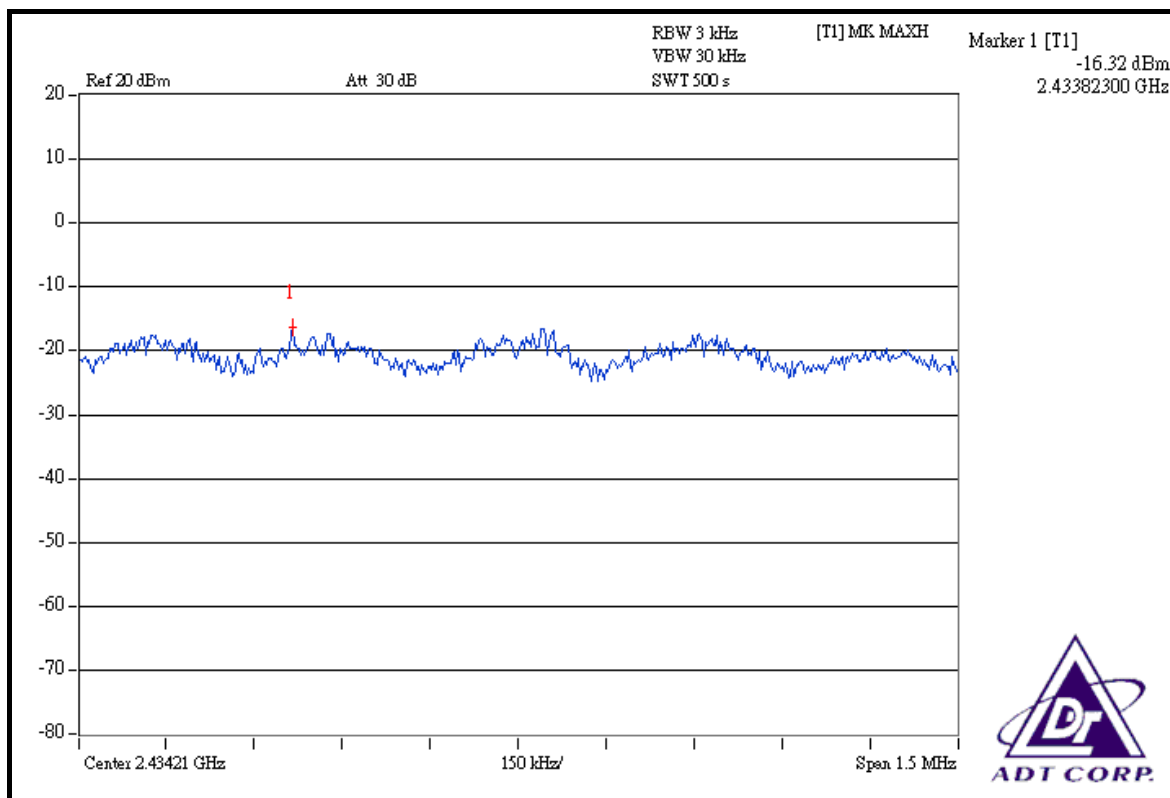
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-16.21	7.1	PASS
6	2437	-16.32	7.1	PASS
11	2462	-16.38	7.1	PASS

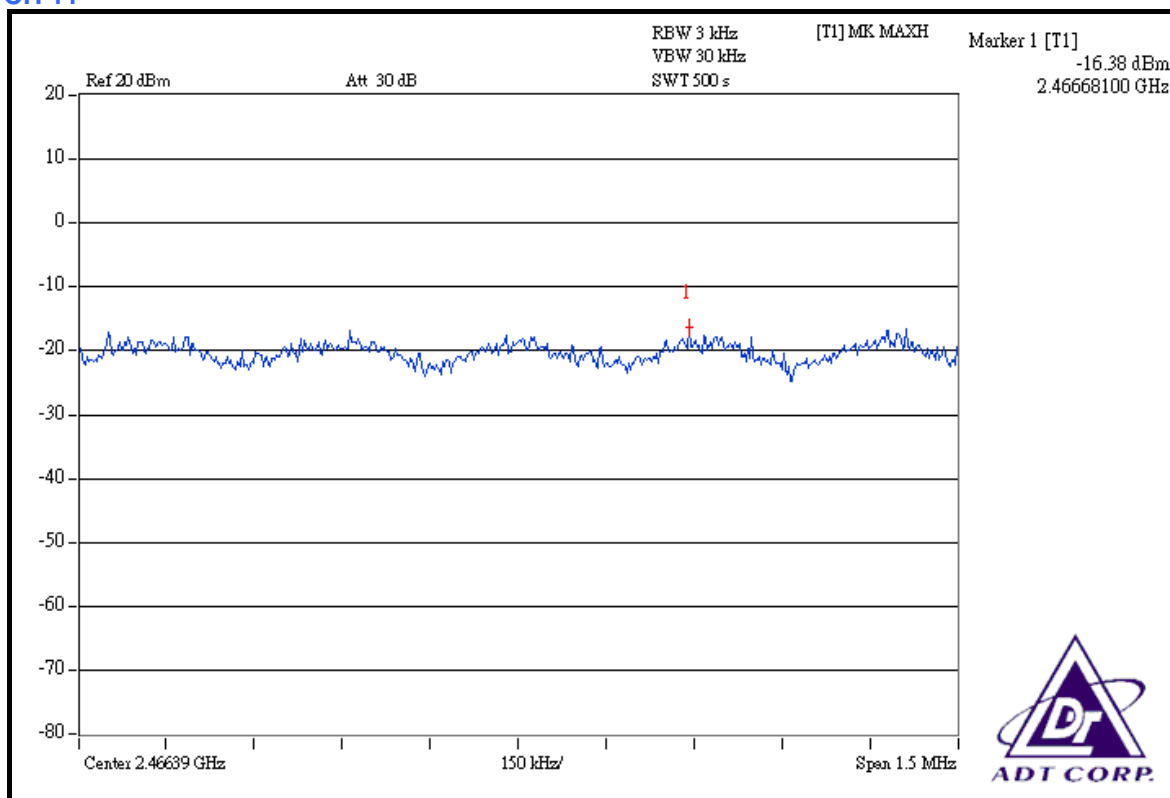
CH 1



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CH 11



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 loss cable. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 300kHz bandwidth from band edge. The band edges were measured and recorded.

The spectrum plots (Peak RBW = 100kHz, VBW = 300kHz; Average RBW = 1MHz, VBW = 1kHz) 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:

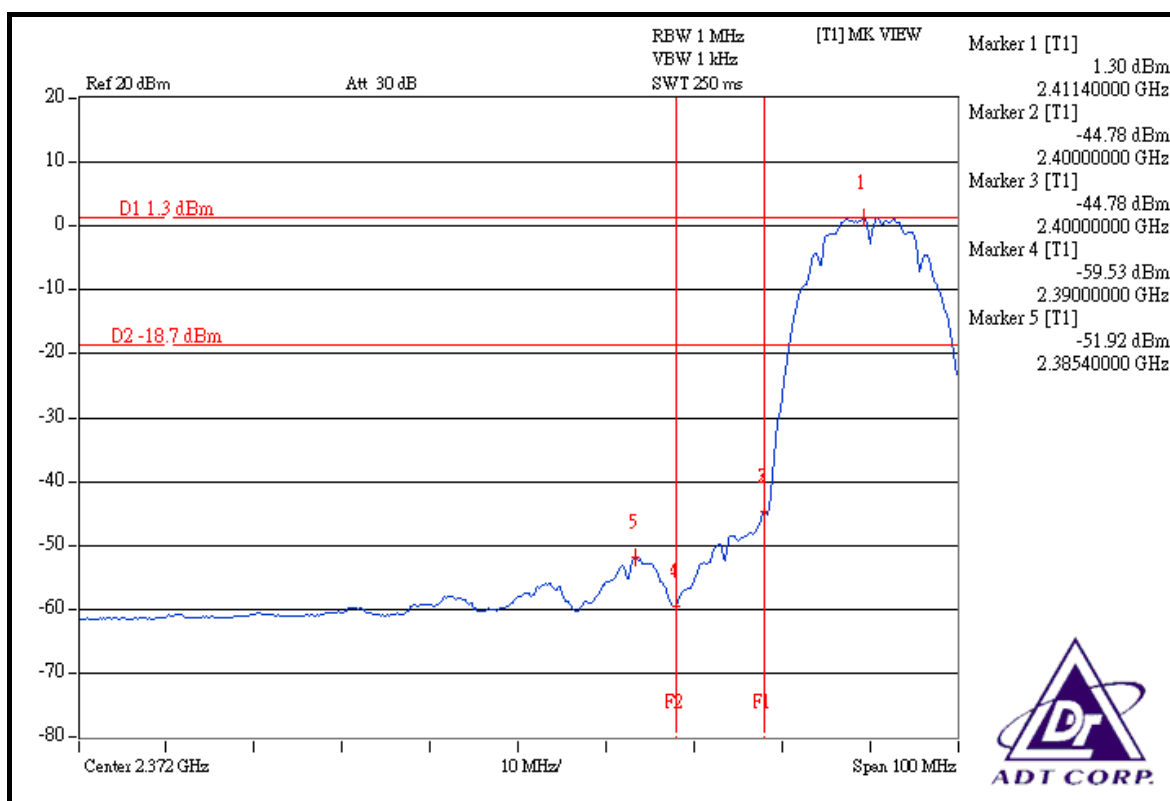
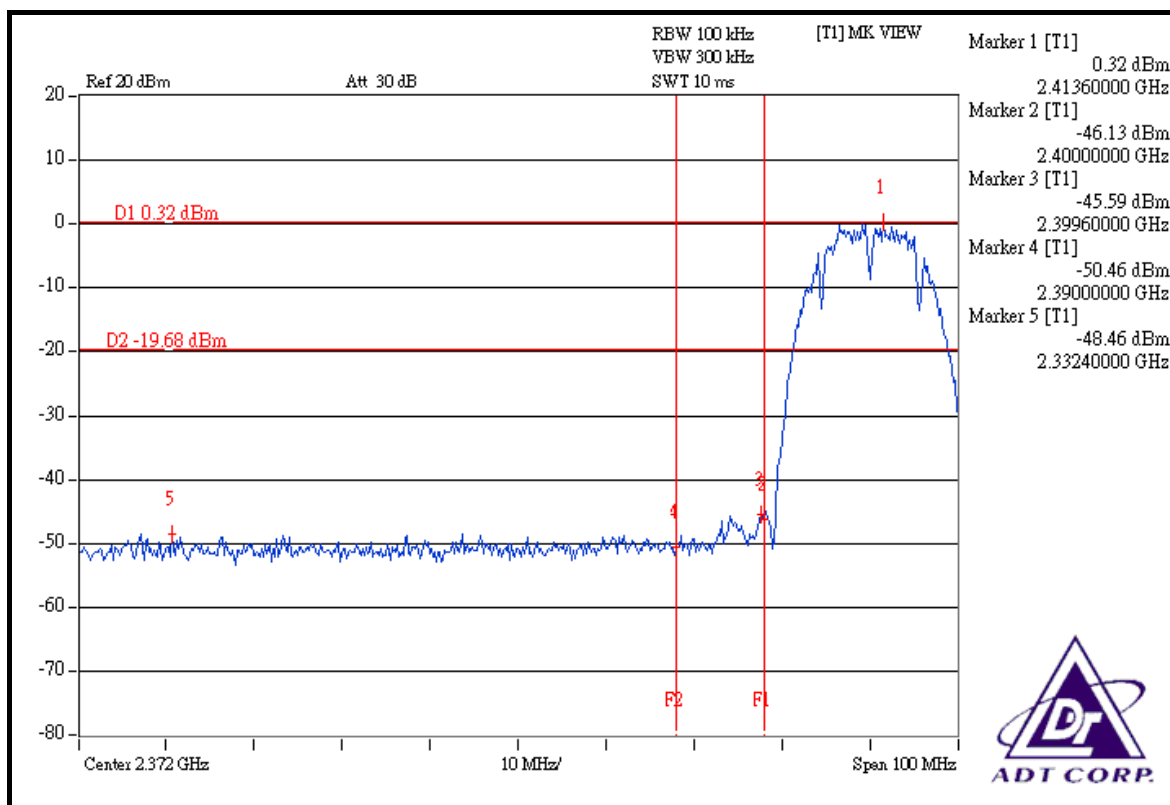
The band edge emission plot on the next page shows 48.78dBc between carrier maximum power and local maximum emission in restrict band (2.33240GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 108.92dBuV/m (Peak), so the maximum field strength in restrict band is $108.92 - 48.78 = 60.14\text{dBuV/m}$ which is under 74dBuV/m limit.

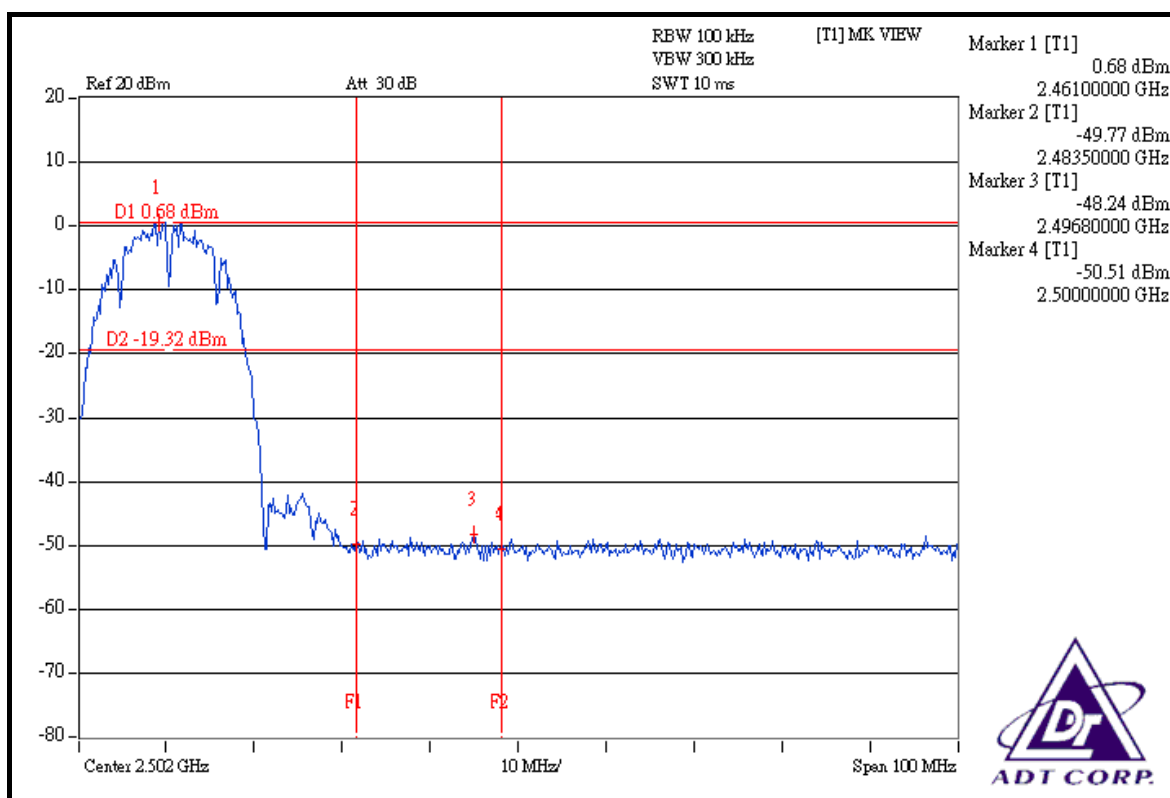
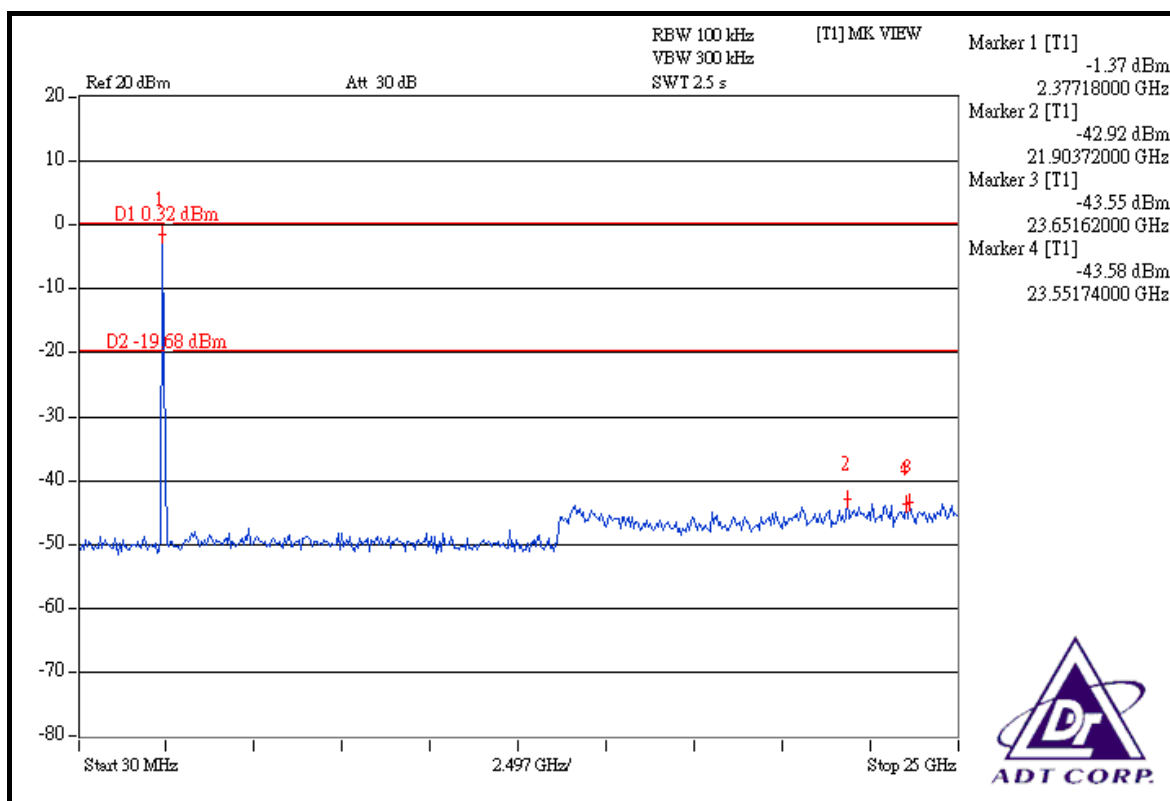
The band edge emission plot on the next page shows 53.22dBc between carrier maximum power and local maximum emission in restrict band (2.38540GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 102.74dBuV/m (Average), so the maximum field strength in restrict band is $102.74 - 53.22 = 49.52\text{dBuV/m}$ which is under 54dBuV/m limit.

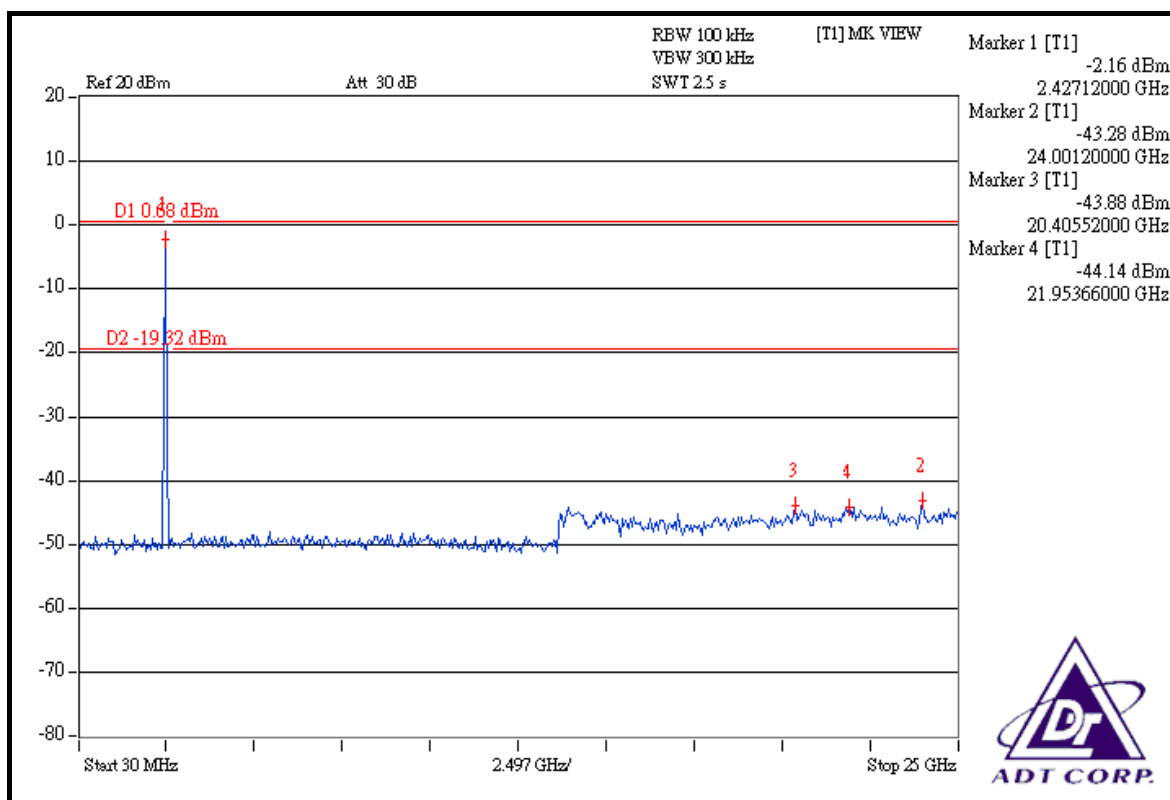
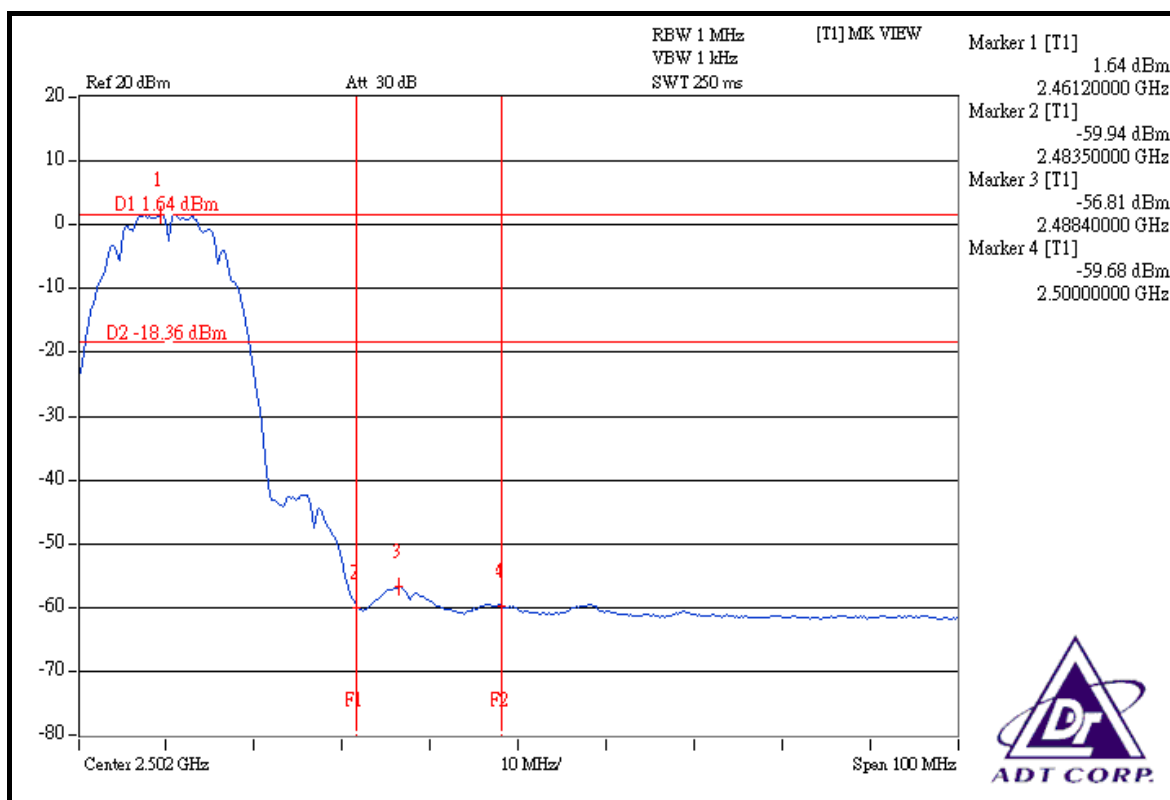
NOTE 2:

The band edge emission plot on the next second page shows 48.92dBc between carrier maximum power and local maximum emission in restrict band (2.49680GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 108.39dBuV/m (Peak), so the maximum field strength in restrict band is $108.39 - 48.92 = 59.47\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 58.45dBc between carrier maximum power and local maximum emission in restrict band (2.48840GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 102.43dBuV/m (Average), so the maximum field strength in restrict band is $102.43 - 58.45 = 43.98\text{dBuV/m}$ which is under 54dBuV/m limit.







802.11g OFDM MODULATION

NOTE 1:

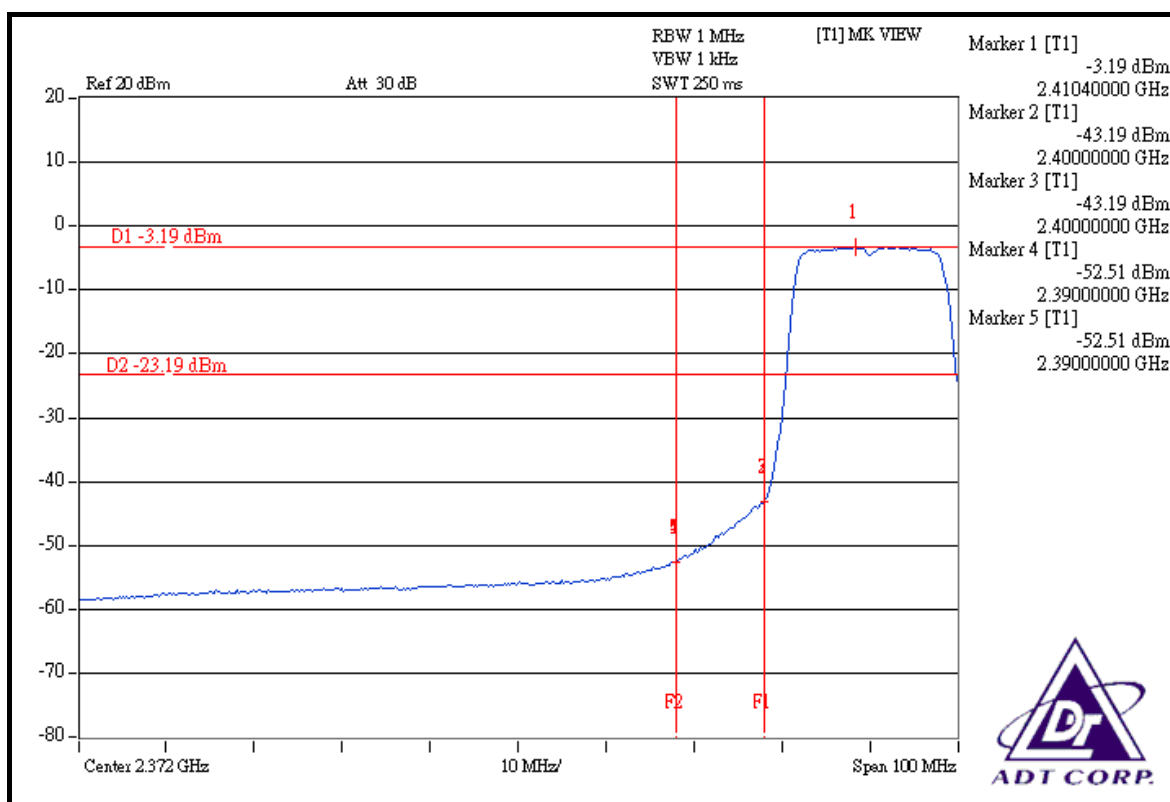
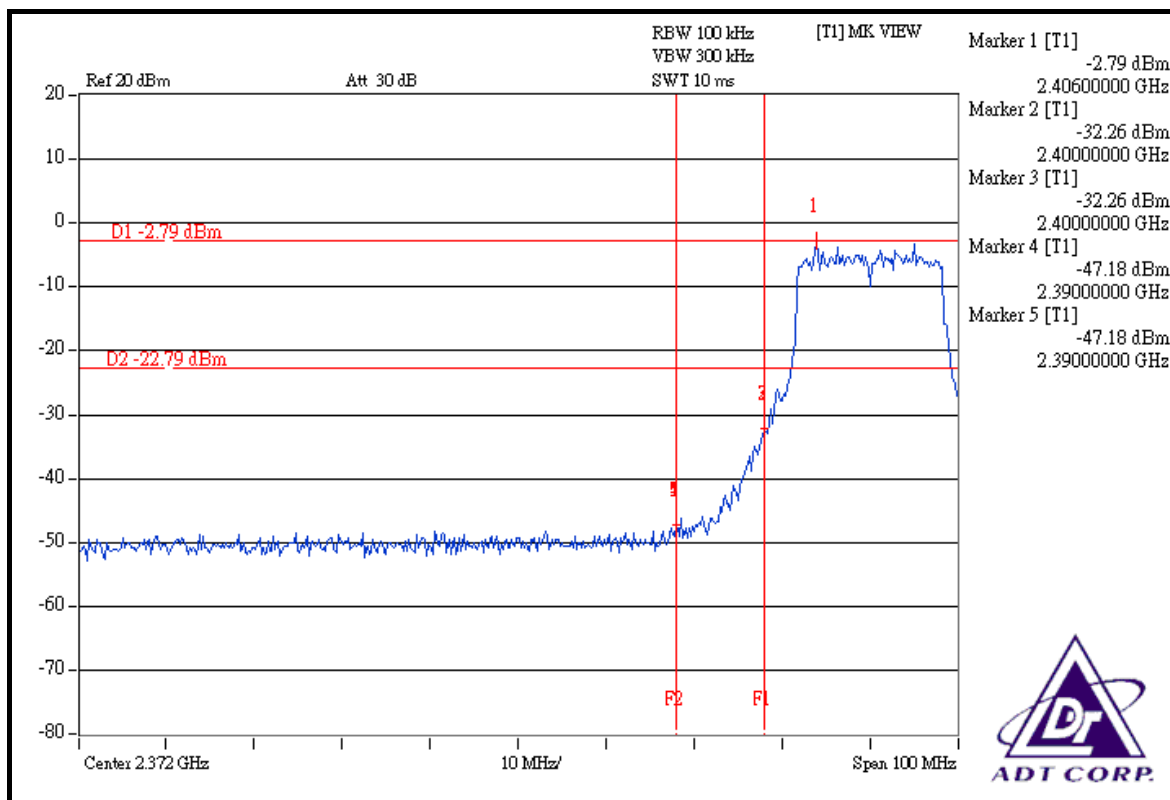
The band edge emission plot on the next page shows 44.39dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 110.87dBuV/m (Peak), so the maximum field strength in restrict band is $110.87 - 44.39 = 66.48\text{dBuV/m}$ which is under 74dBuV/m limit.

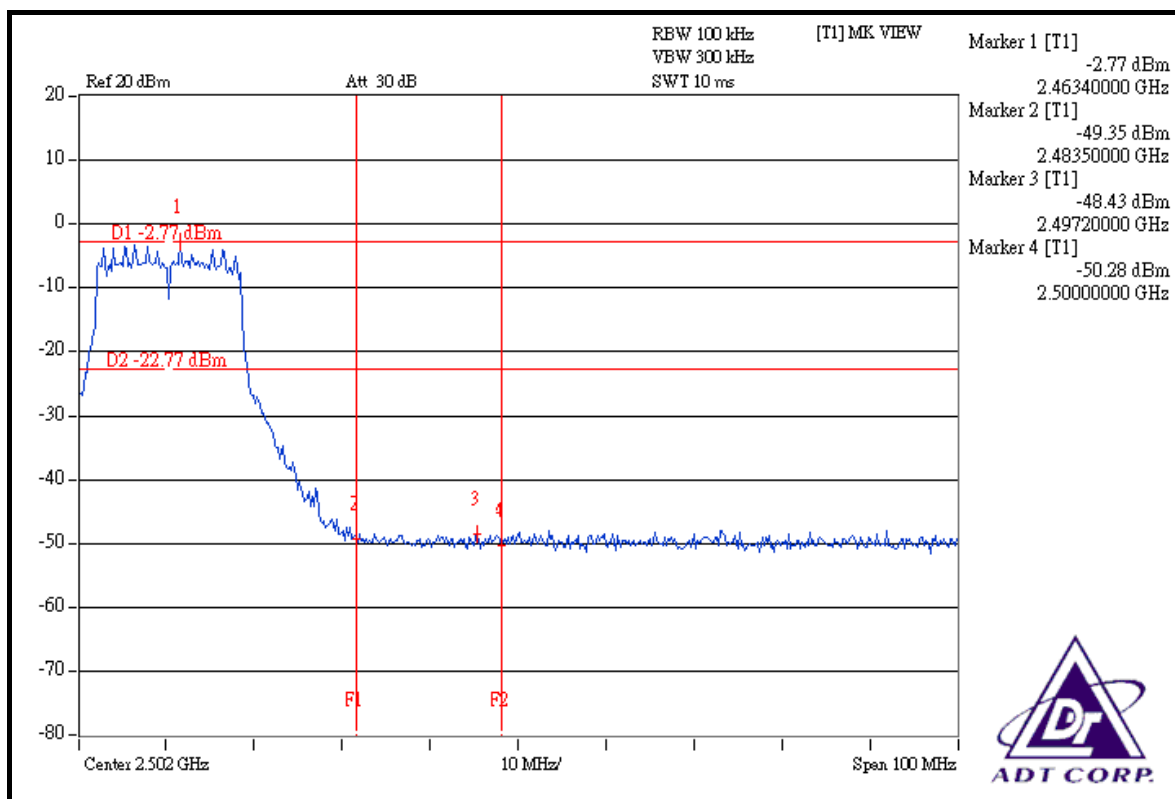
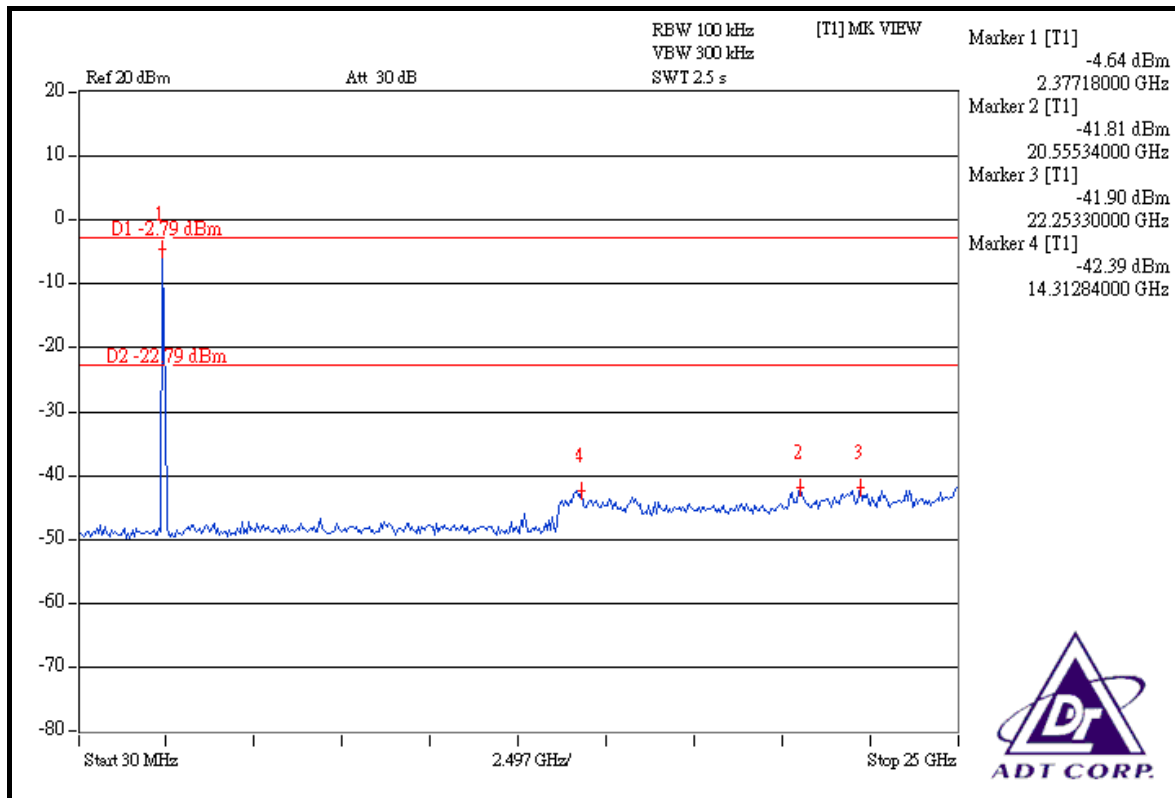
The band edge emission plot on the next page shows 49.32dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 98.79dBuV/m (Average), so the maximum field strength in restrict band is $98.79 - 49.32 = 49.47\text{dBuV/m}$ which is under 54dBuV/m limit.

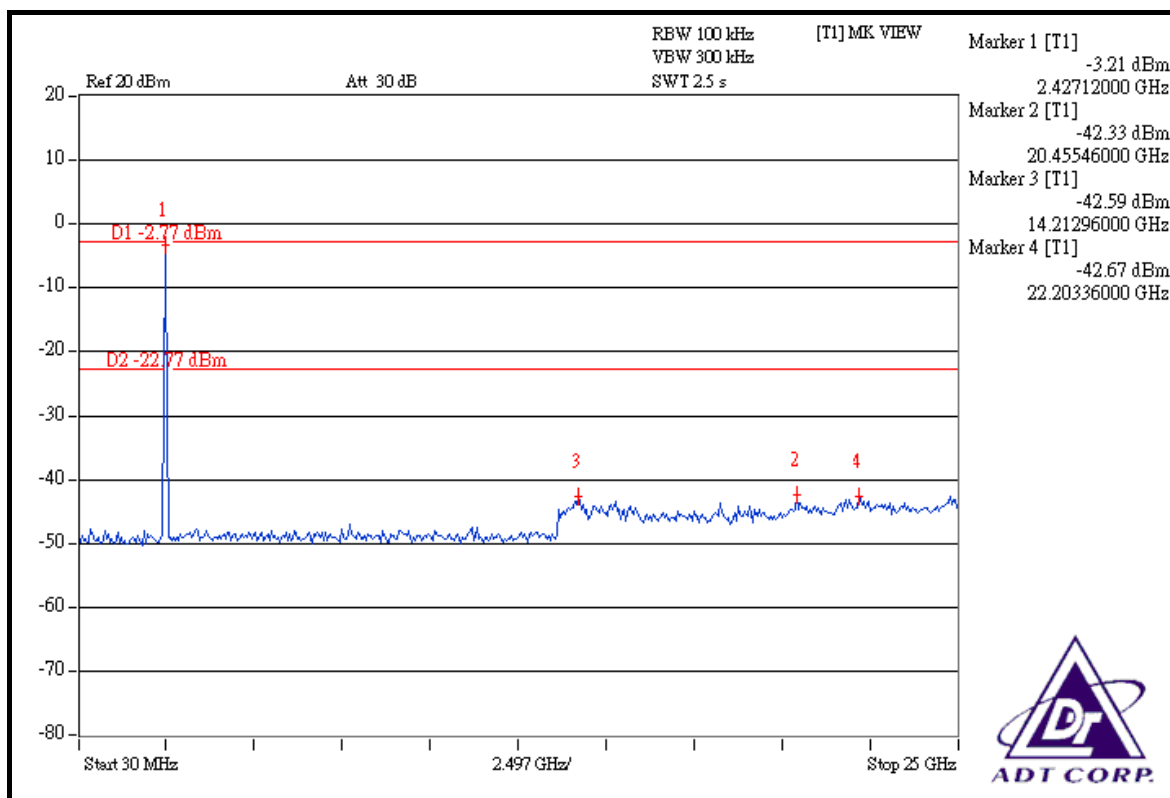
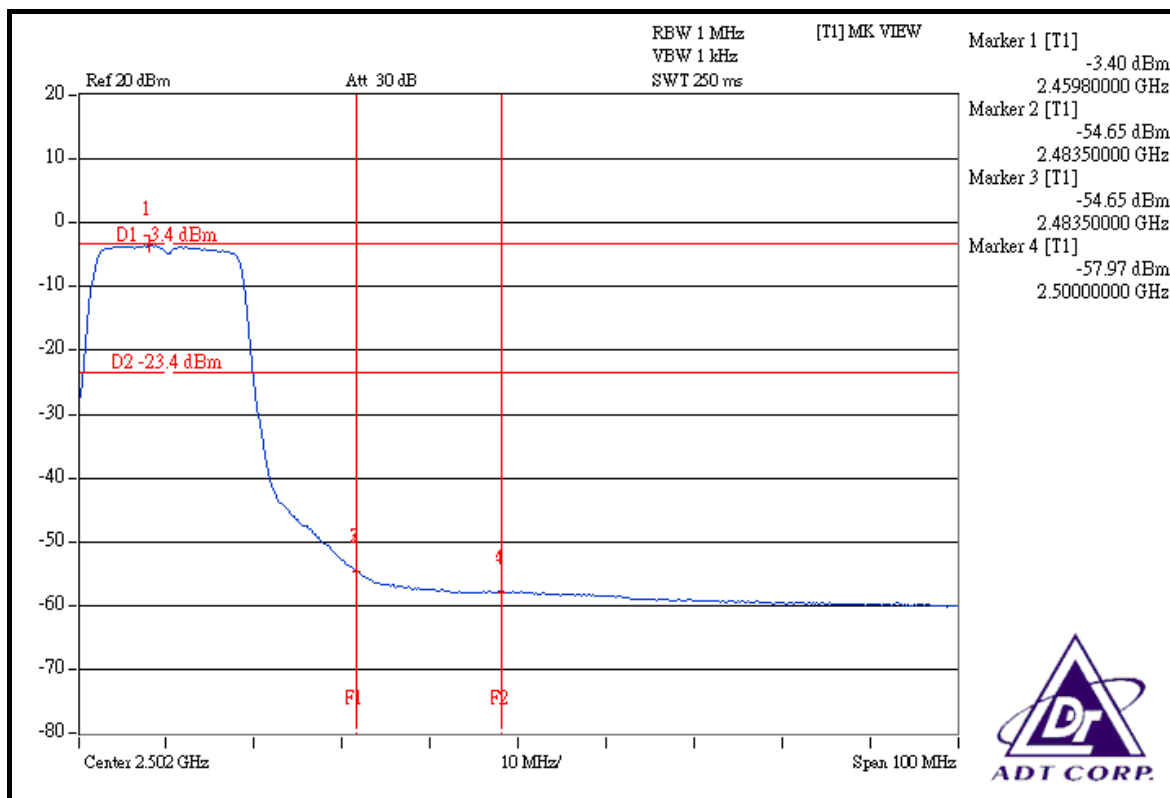
NOTE 2:

The band edge emission plot on the next second page shows 45.66dBc between carrier maximum power and local maximum emission in restrict band (2.49720GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 110.54dBuV/m (Peak), so the maximum field strength in restrict band is $110.54 - 45.66 = 64.88\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 51.25dBc 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 98.36dBuV/m (Average), so the maximum field strength in restrict band is $98.36 - 51.25 = 47.11\text{dBuV/m}$ which is under 54dBuV/m limit.







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 patch antenna with UFL antenna connector. The maximum Gain of the antenna is 6.9dBi.

5. TEST TYPES AND RESULTS (FOR 5.0GHz)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 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.

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Dec. 08, 2007
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 06, 2008
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 08, 2008
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jan. 16, 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.

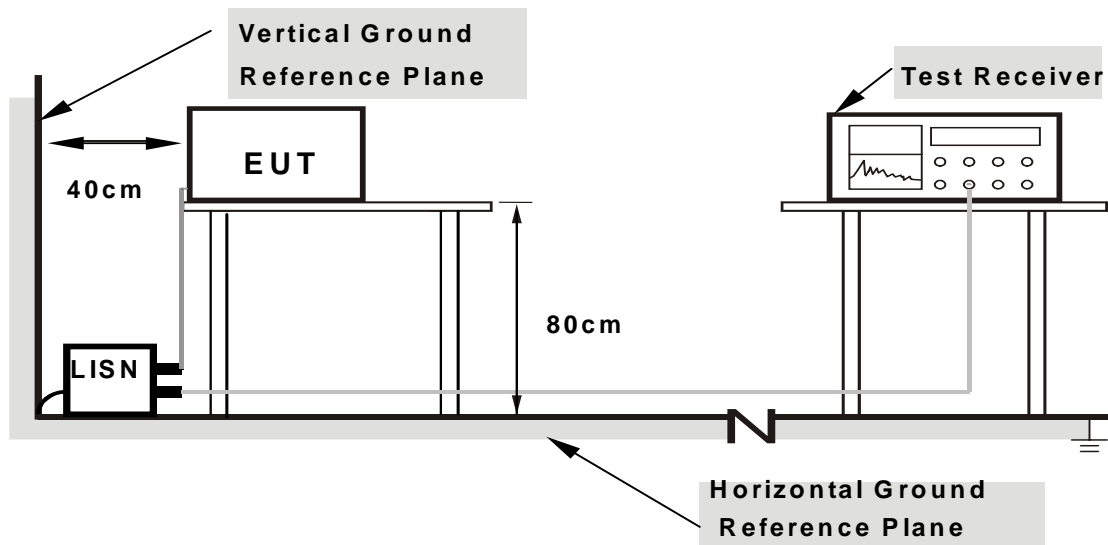
5.1.3 TEST PROCEDURES

- 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) was not recorded.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 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).

5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6

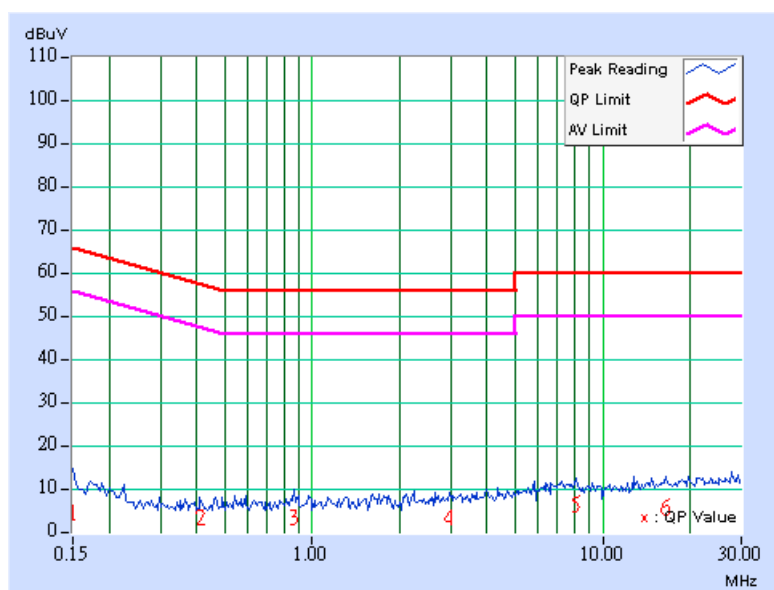
5.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	6dB BANDWIDTH	9kHz
TEST MODE	B	TESTED BY	Match Tsui

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	-10.21	-	-10.11	-	65.99	55.99	-76.10	-
2	0.413	0.10	-11.07	-	-10.97	-	57.60	47.60	-68.56	-
3	0.870	0.11	-11.32	-	-11.21	-	56.00	46.00	-67.21	-
4	2.980	0.25	-11.35	-	-11.10	-	56.00	46.00	-67.10	-
5	8.075	0.31	-8.36	-	-8.05	-	60.00	50.00	-68.05	-
6	16.500	0.51	-9.07	-	-8.56	-	60.00	50.00	-68.56	-

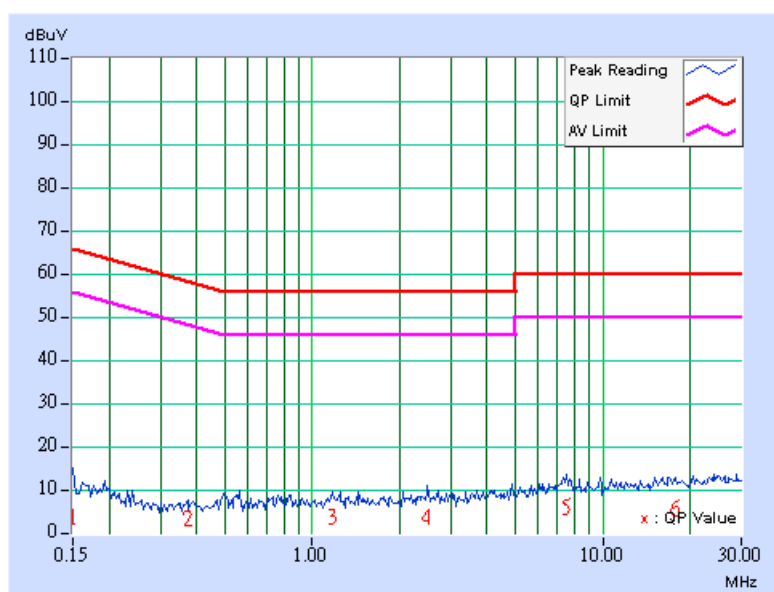
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 1	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	6dB BANDWIDTH	9kHz
TEST MODE	B	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	-11.04	-	-10.94	-	66.00	56.00	-76.94	-
2	0.373	0.10	-11.14	-	-11.04	-	58.44	48.44	-69.48	-
3	1.168	0.21	-11.03	-	-10.82	-	56.00	46.00	-66.82	-
4	2.492	0.23	-11.07	-	-10.84	-	56.00	46.00	-66.84	-
5	7.516	0.37	-8.60	-	-8.23	-	60.00	50.00	-68.23	-
6	17.840	0.53	-9.23	-	-8.70	-	60.00	50.00	-68.70	-

- 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.



5.2 RADIATED EMISSION MEASUREMENT

5.2.1 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.

5.2.2 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. 04, 2008
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 16, 2008
Preamplifier Agilent	8449B	3008A01910	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10638	Dec. 20, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218188/218189	Nov. 14, 2007
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.

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

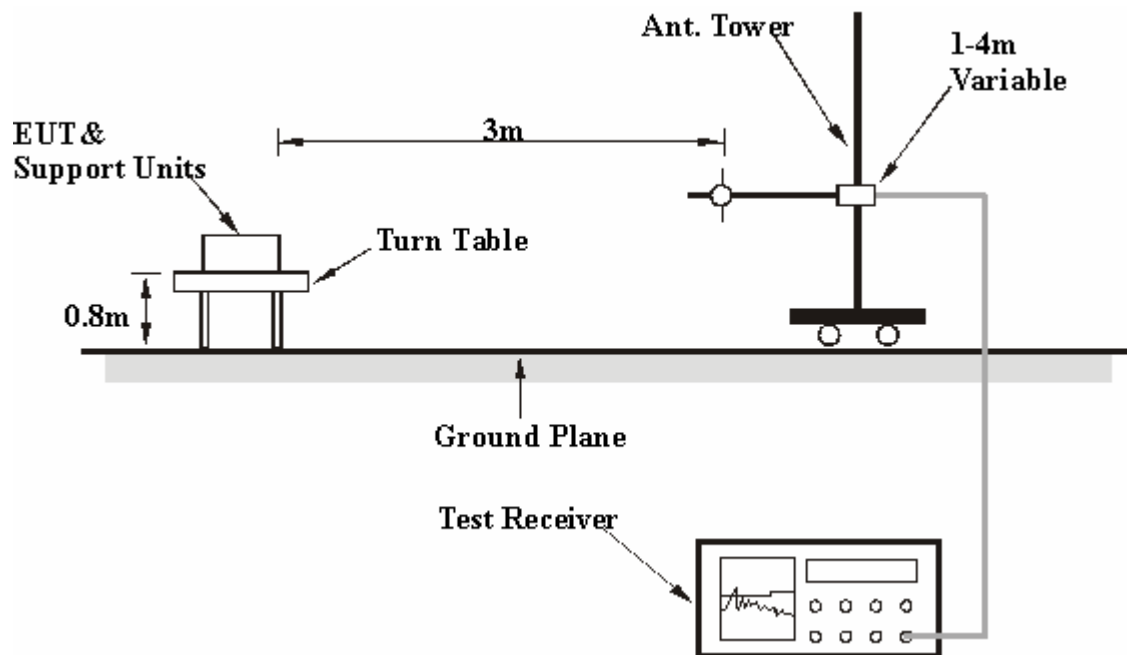
NOTE:

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 1kHz for Average detection (AV) at frequency above 1GHz.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	A	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

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	401.26	39.49 QP	46.00	-6.51	1.00 H	61	23.75	15.75
2	601.52	36.58 QP	46.00	-9.42	2.00 H	349	15.47	21.11
3	702.62	39.81 QP	46.00	-6.19	1.00 H	259	17.76	22.06
4	803.73	35.38 QP	46.00	-10.62	1.50 H	217	10.98	24.40
5	881.50	38.14 QP	46.00	-7.86	1.00 H	250	13.00	25.14
6	957.33	38.28 QP	46.00	-7.72	1.50 H	340	12.52	25.75

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	64.90	36.02 QP	40.00	-3.98	1.00 V	217	23.69	12.34
2	105.73	32.59 QP	43.50	-10.91	1.00 V	328	22.75	9.84
3	401.26	39.56 QP	46.00	-6.44	1.50 V	271	23.82	15.75
4	601.52	41.28 QP	46.00	-4.72	1.00 V	256	20.17	21.11
5	702.62	41.07 QP	46.00	-4.93	1.00 V	220	19.01	22.06
6	803.73	38.64 QP	46.00	-7.36	1.50 V	133	14.24	24.40
7	902.89	40.63 QP	46.00	-5.37	1.00 V	136	15.29	25.34
8	957.33	39.24 QP	46.00	-6.76	1.00 V	157	13.49	25.75

- 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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	B	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TESTED BY	Dean Wang		

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	70.73	30.94 QP	40.00	-9.06	1.50 H	238	19.81	11.13
2	199.05	39.09 QP	43.50	-4.41	1.00 H	286	28.70	10.40
3	333.21	34.84 QP	46.00	-11.16	1.50 H	109	20.68	14.16
4	399.31	33.20 QP	46.00	-12.80	2.00 H	352	17.50	15.69
5	599.58	38.64 QP	46.00	-7.36	1.50 H	37	17.55	21.09
6	700.68	37.78 QP	46.00	-8.22	1.00 H	244	15.77	22.01
7	799.84	36.24 QP	46.00	-9.76	1.00 H	187	11.88	24.36

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	53.23	34.09 QP	40.00	-5.91	1.50 V	10	20.54	13.55
2	70.73	36.30 QP	40.00	-3.70	1.00 V	169	25.18	11.13
3	129.06	32.98 QP	43.50	-10.52	1.00 V	70	21.08	11.90
4	599.58	40.72 QP	46.00	-5.28	1.00 V	10	19.63	21.09
5	700.68	35.76 QP	46.00	-10.24	1.00 V	349	13.75	22.01
6	799.84	33.95 QP	46.00	-12.05	2.00 V	184	9.58	24.36
7	900.94	35.06 QP	46.00	-10.94	1.00 V	187	9.73	25.32

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.

ABOVE 1GHz DATA: 802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	DETECTOR FUNCTION	Peak (PK) Average (AV)
TEST MODE	B	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

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	#3830.00	53.70 PK	74.00	-20.30	1.09 H	357	18.62	35.09
2	#3830.00	51.11 AV	54.00	-2.89	1.09 H	357	16.03	35.09
3	5725.00	70.02 PK	86.74	-16.72	1.01 H	41	30.41	39.61
4	5725.00	58.86 AV	74.59	-15.73	1.01 H	41	19.25	39.61
5	*5745.00	106.74 PK			1.01 H	41	67.08	39.66
6	*5745.00	94.59 AV			1.01 H	41	54.93	39.66
7	#11490.00	60.29 PK	74.00	-13.71	1.00 H	251	10.54	49.74
8	#11490.00	47.33 AV	54.00	-6.67	1.00 H	251	-2.42	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	#3830.00	50.96 PK	74.00	-23.04	1.22 V	248	15.88	35.09
2	#3830.00	46.54 AV	54.00	-7.46	1.22 V	248	11.46	35.09
3	5725.00	69.02 PK	84.63	-15.61	1.25 V	189	29.41	39.61
4	5725.00	59.00 AV	73.00	-14.00	1.25 V	189	19.39	39.61
5	*5745.00	104.63 PK			1.25 V	189	64.97	39.66
6	*5745.00	93.00 AV			1.25 V	189	53.34	39.66
7	#11490.00	60.88 PK	74.00	-13.12	1.03 V	145	11.13	49.74
8	#11490.00	47.26 AV	54.00	-6.74	1.03 V	145	-2.49	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
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	DETECTOR FUNCTION	Peak (PK) Average (AV)
TEST MODE	B	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

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	#3856.00	55.57 PK	74.00	-18.43	1.07 H	184	20.38	35.19
2	#3856.00	52.73 AV	54.00	-1.27	1.07 H	184	17.54	35.19
3	*5785.00	106.10 PK			1.00 H	182	66.35	39.75
4	*5785.00	94.10 AV			1.00 H	182	54.35	39.75
5	#11570.00	60.52 PK	74.00	-13.48	1.09 H	10	10.83	49.69
6	#11570.00	47.36 AV	54.00	-6.64	1.09 H	10	-2.33	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	#3856.00	52.85 PK	74.00	-21.15	1.21 V	360	17.66	35.19
2	#3856.00	48.49 AV	54.00	-5.51	1.21 V	360	13.30	35.19
3	*5785.00	104.72 PK			1.24 V	10	64.97	39.75
4	*5785.00	91.69 AV			1.24 V	10	51.94	39.75
5	#11570.00	59.49 PK	74.00	-14.51	1.20 V	360	9.80	49.69
6	#11570.00	47.02 AV	54.00	-6.98	1.20 V	360	-2.67	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
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	DETECTOR FUNCTION	Peak (PK) Average (AV)
TEST MODE	B	ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

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	#3883.00	55.10 PK	74.00	-18.90	1.07 H	198	19.81	35.29
2	#3883.00	52.99 AV	54.00	-1.01	1.07 H	198	17.70	35.29
3	*5825.00	105.74 PK			1.09 H	180	65.89	39.85
4	*5825.00	93.65 AV			1.09 H	180	53.80	39.85
5	5850.00	69.11 PK	85.74	-16.63	1.09 H	180	29.19	39.91
6	5850.00	58.39 AV	73.65	-15.26	1.09 H	180	18.48	39.91
7	#11650.00	60.77 PK	74.00	-13.23	1.07 H	165	11.09	49.68
8	#11650.00	46.36 AV	54.00	-7.64	1.07 H	165	-3.32	49.68

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	#3883.00	53.51 PK	74.00	-20.49	1.22 V	5	18.22	35.29
2	#3883.00	50.69 AV	54.00	-3.31	1.22 V	5	15.40	35.29
3	*5825.00	103.41 PK			1.37 V	211	63.56	39.85
4	*5825.00	91.98 AV			1.37 V	211	52.13	39.85
5	5850.00	68.24 PK	83.41	-15.17	1.37 V	211	28.32	39.91
6	5850.00	57.17 AV	71.98	-14.81	1.37 V	211	17.26	39.91
7	#11650.00	58.53 PK	74.00	-15.47	1.21 V	160	8.85	49.68
8	#11650.00	46.76 AV	54.00	-7.24	1.21 V	160	-2.92	49.68

- 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.

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.

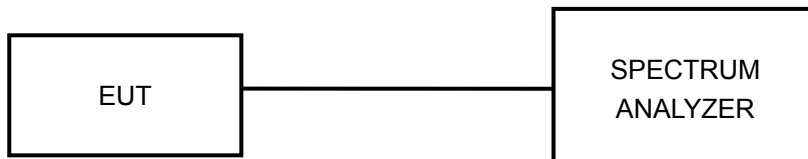
5.3.3 TEST PROCEDURE

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.

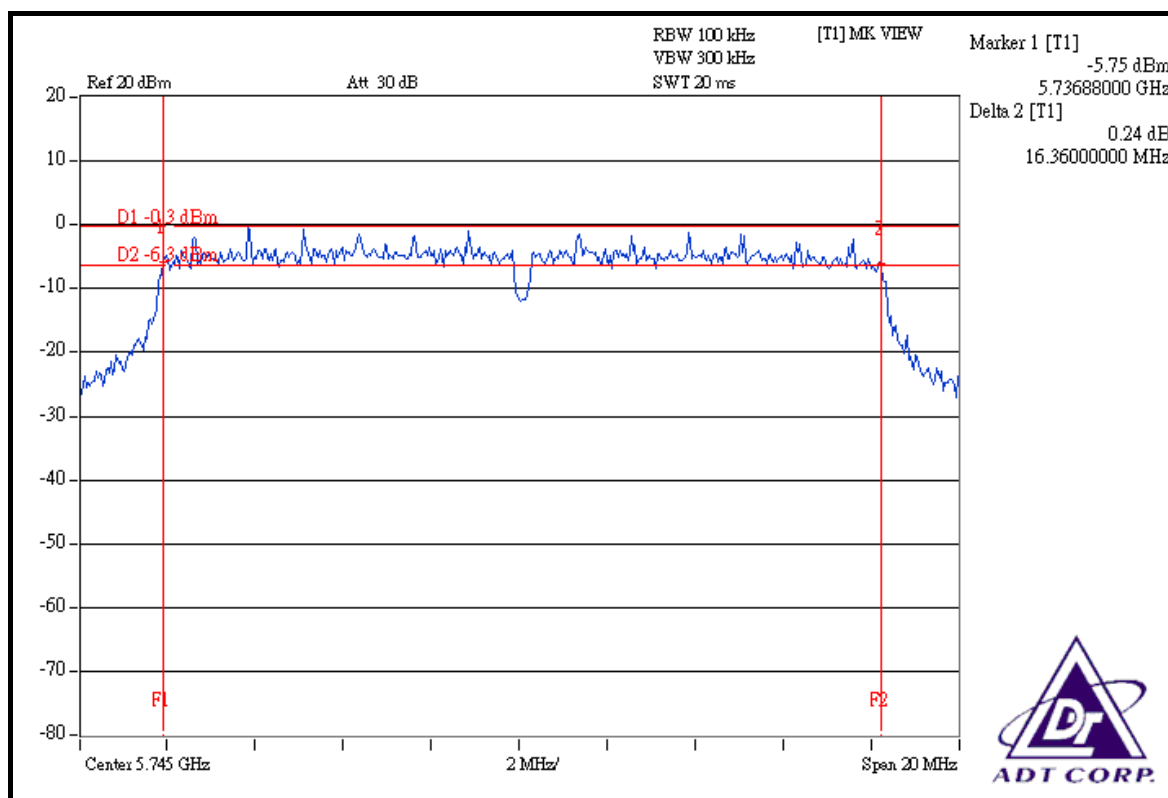
5.3.7 TEST RESULTS

802.11a OFDM MODULATION:

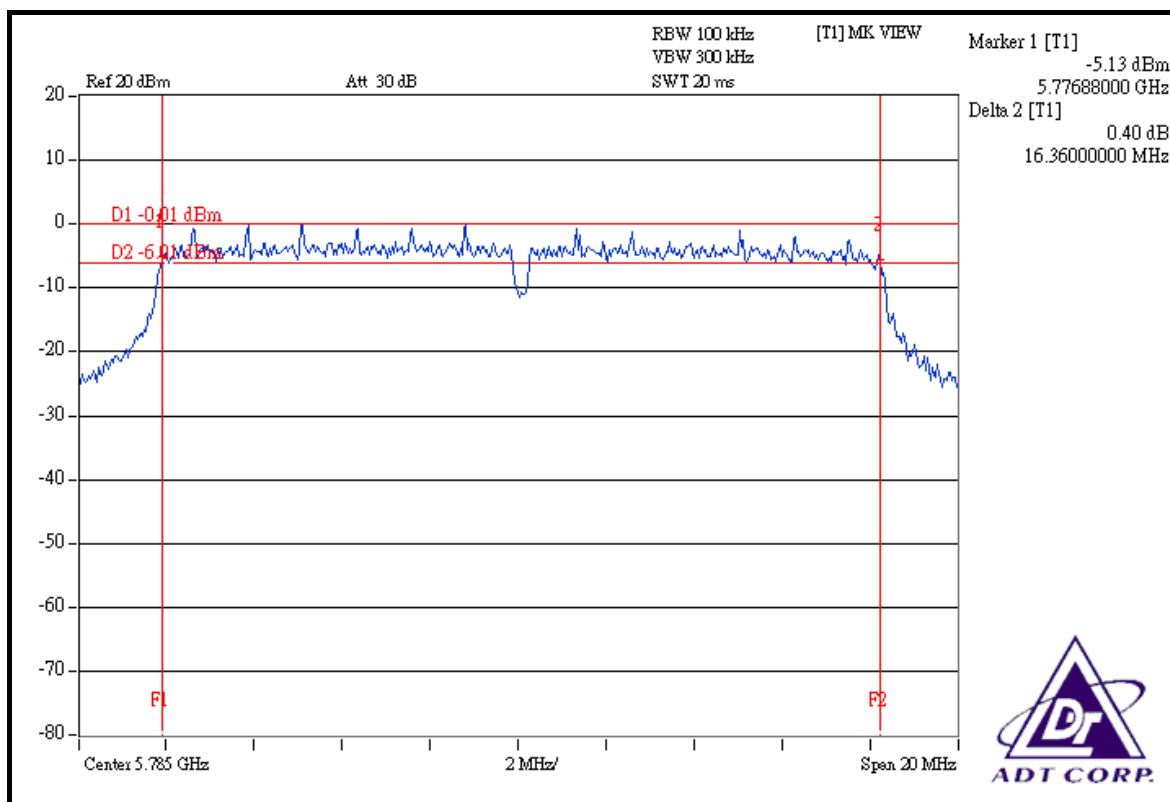
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	5745	16.36	0.5	PASS
3	5785	16.36	0.5	PASS
5	5825	16.36	0.5	PASS

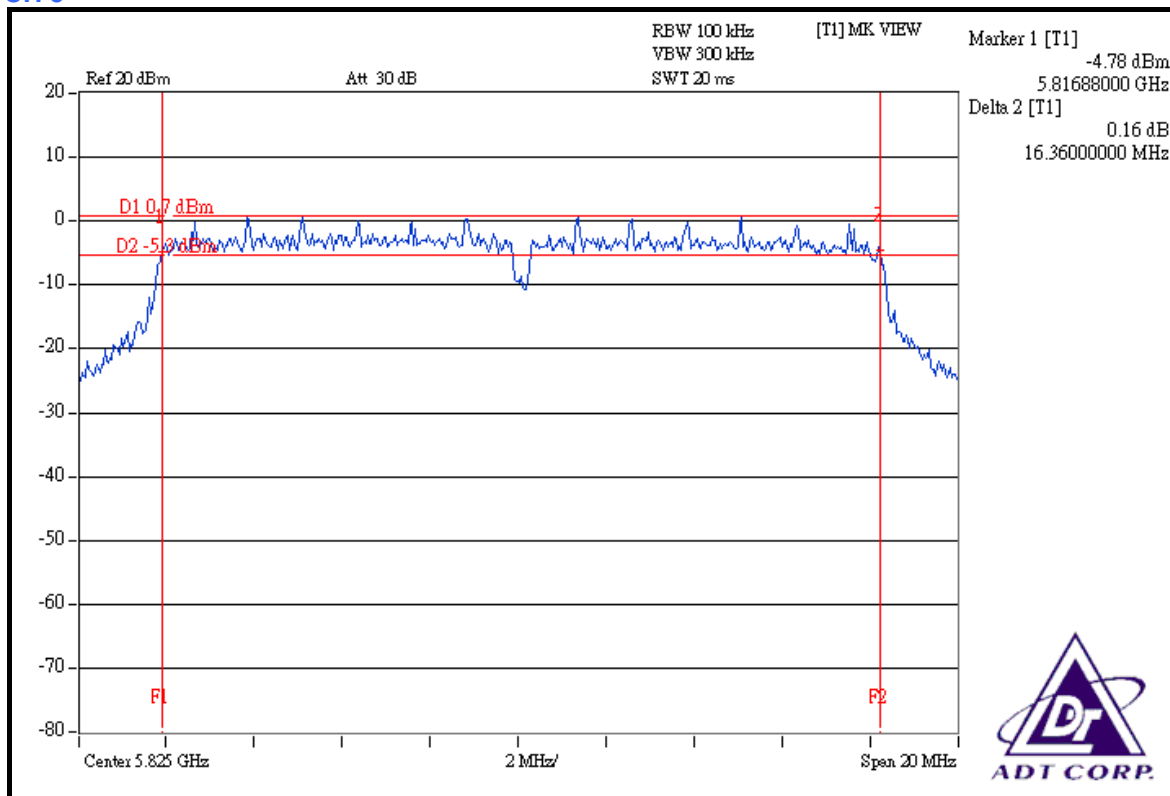
CH 1



CH 3



CH 5



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
ANRITSU SYNTHESIZED SIGNAL GENERATOR	68247B	984703	May 18, 2008
DIGITAL RT OSCILLOSCOPE	TDS1012	C037299	Nov. 27, 2007
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, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	5745	35.563	15.51	25.3	PASS
3	5785	39.902	16.01	25.3	PASS
5	5825	45.394	16.57	25.3	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

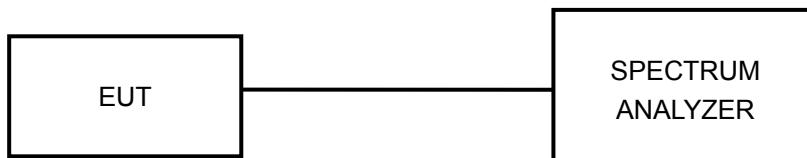
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

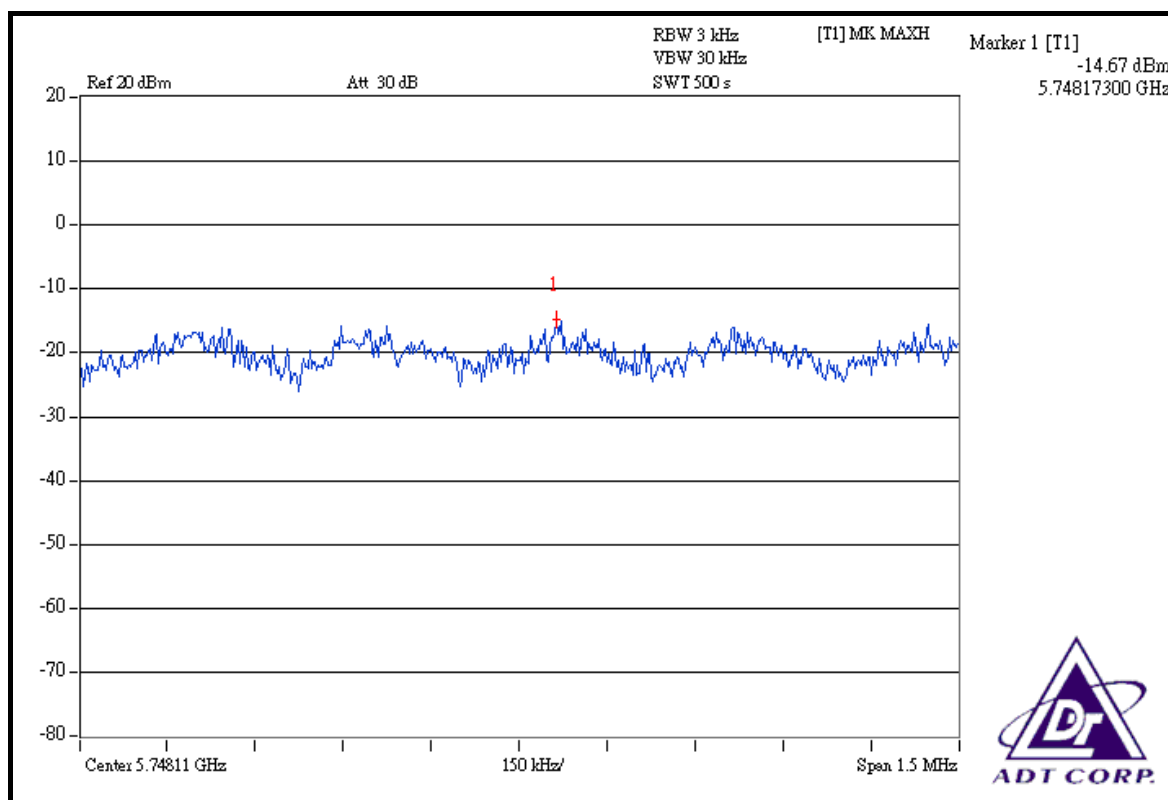
5.5.7 TEST RESULTS

802.11a OFDM MODULATION:

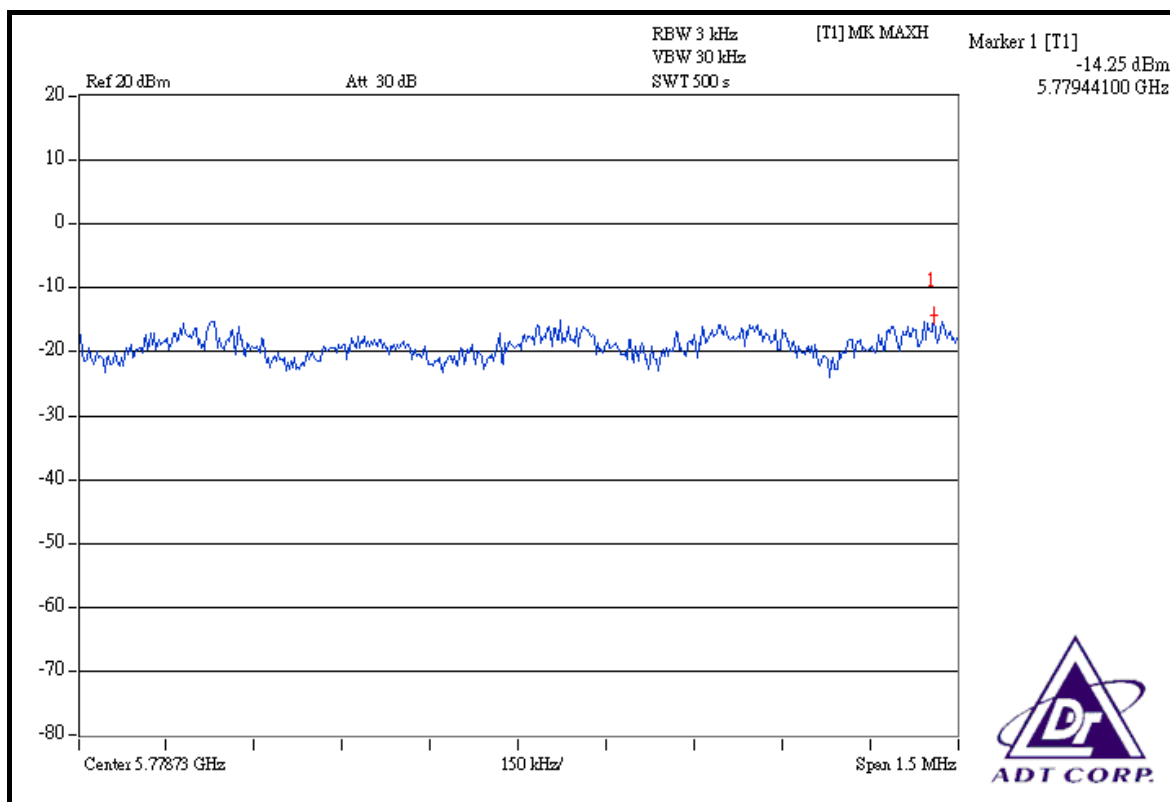
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	5745	-14.67	3.3	PASS
3	5785	-14.25	3.3	PASS
5	5825	-13.69	3.3	PASS

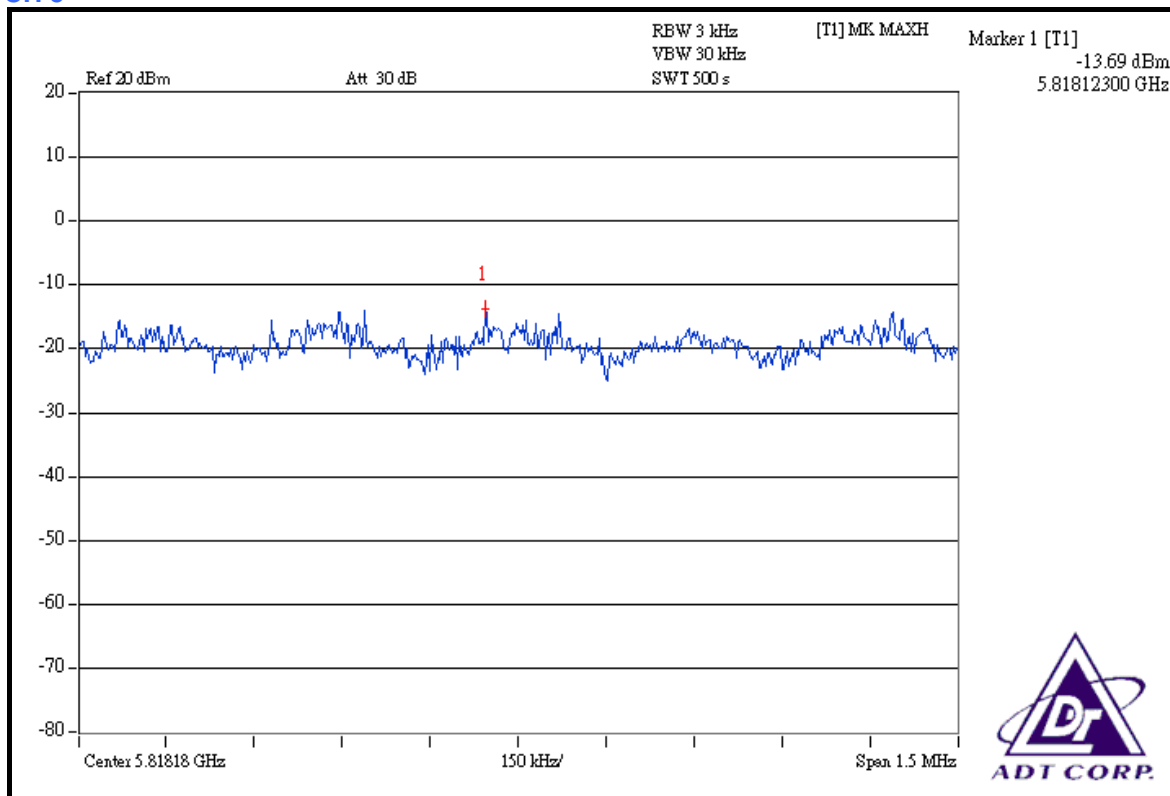
CH 1



CH 3



CH 5



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.

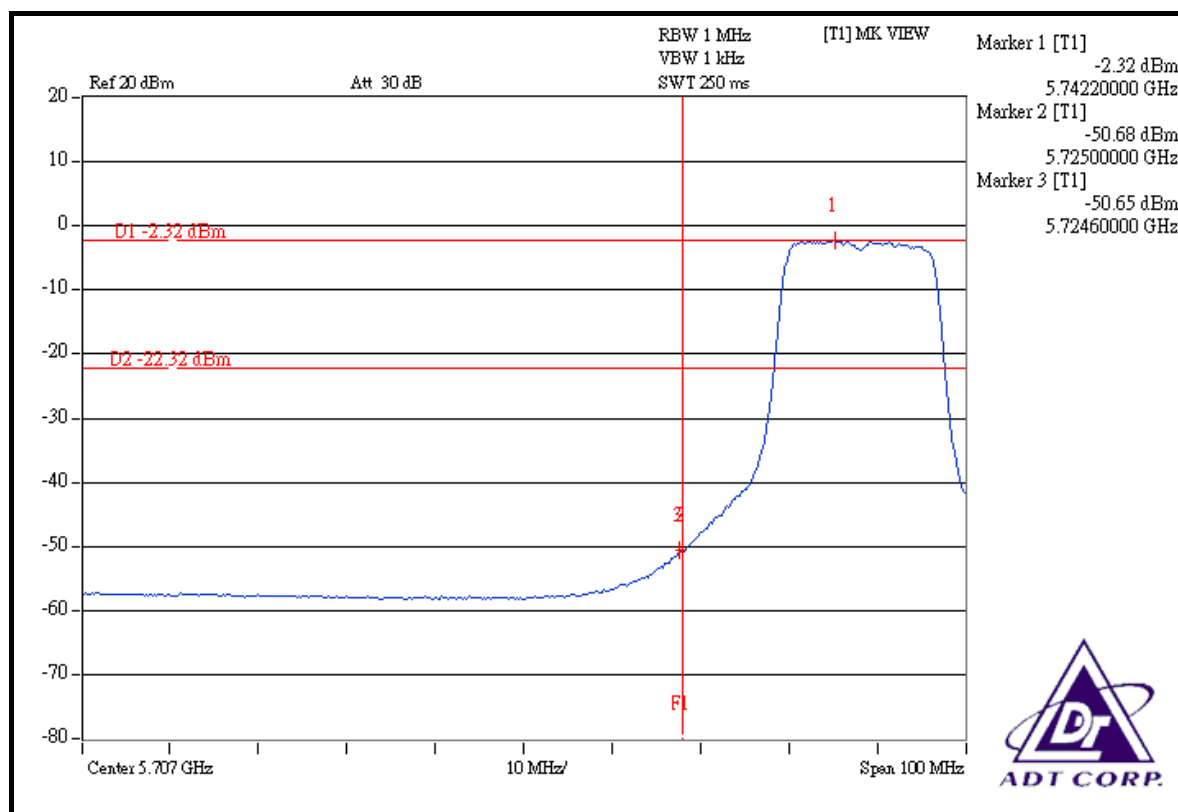
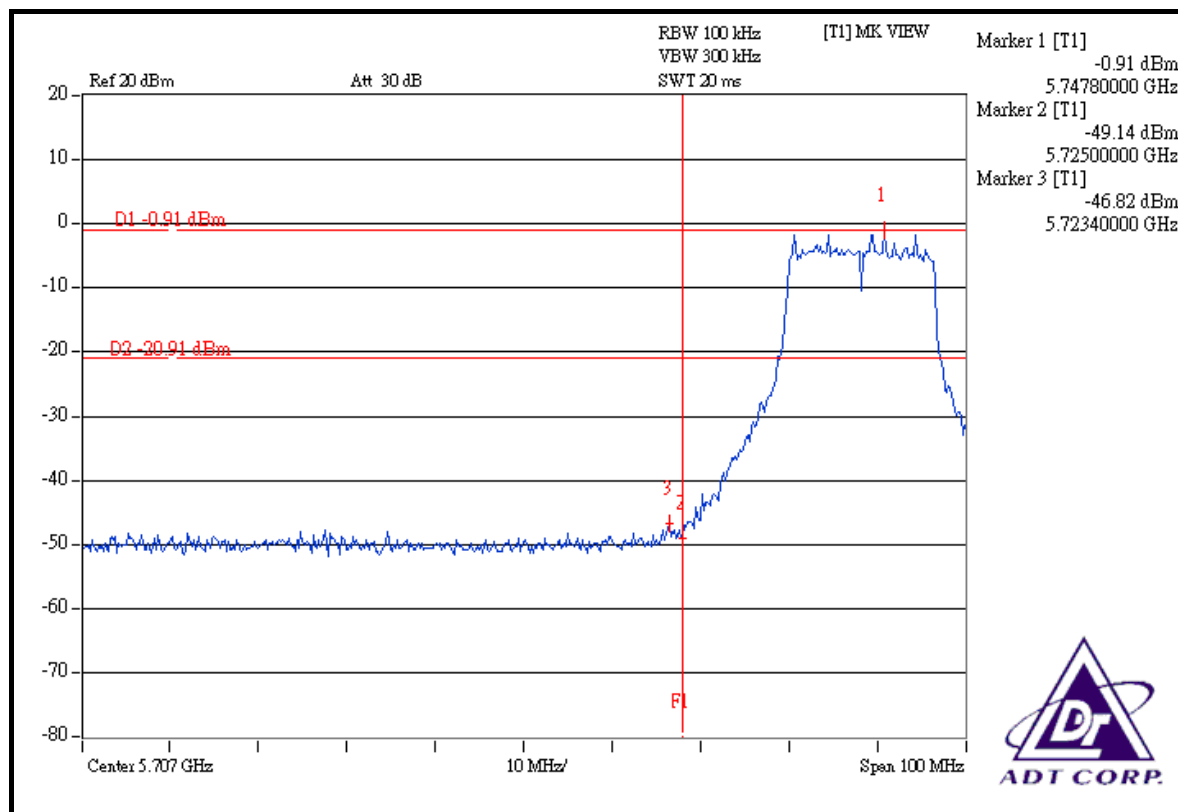
5.6.5 EUT OPERATING CONDITION

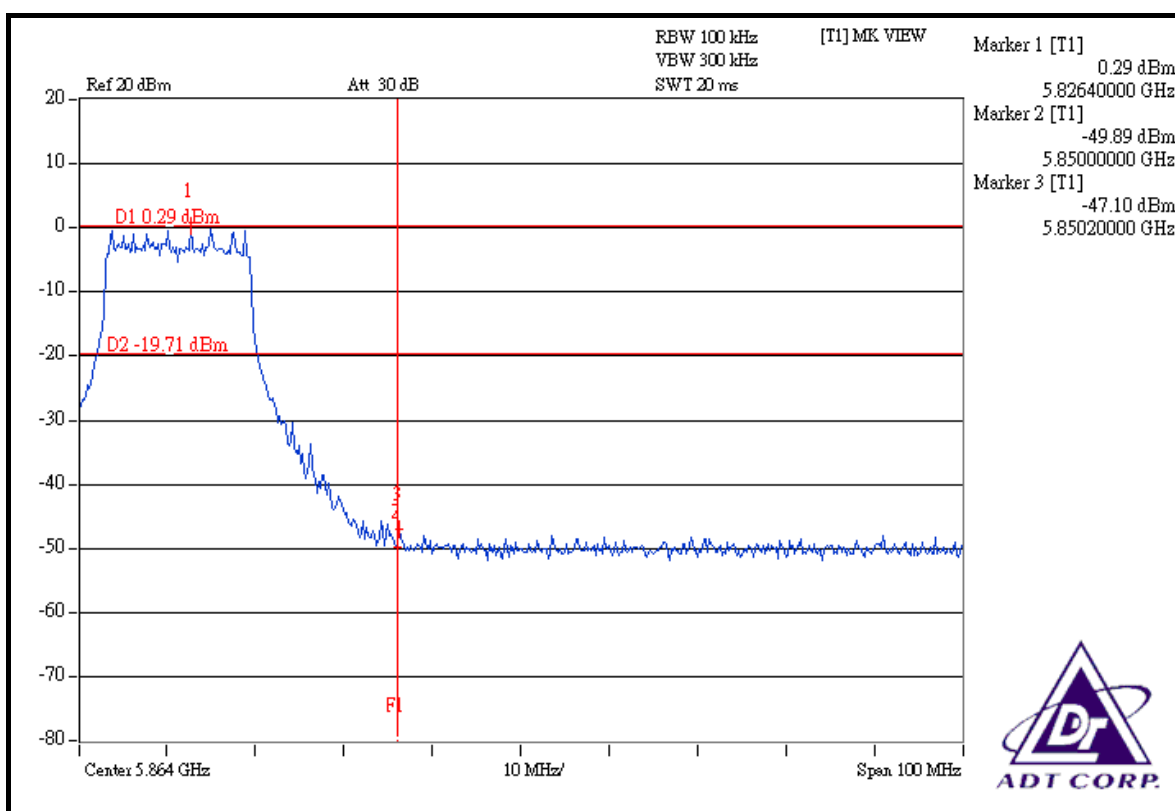
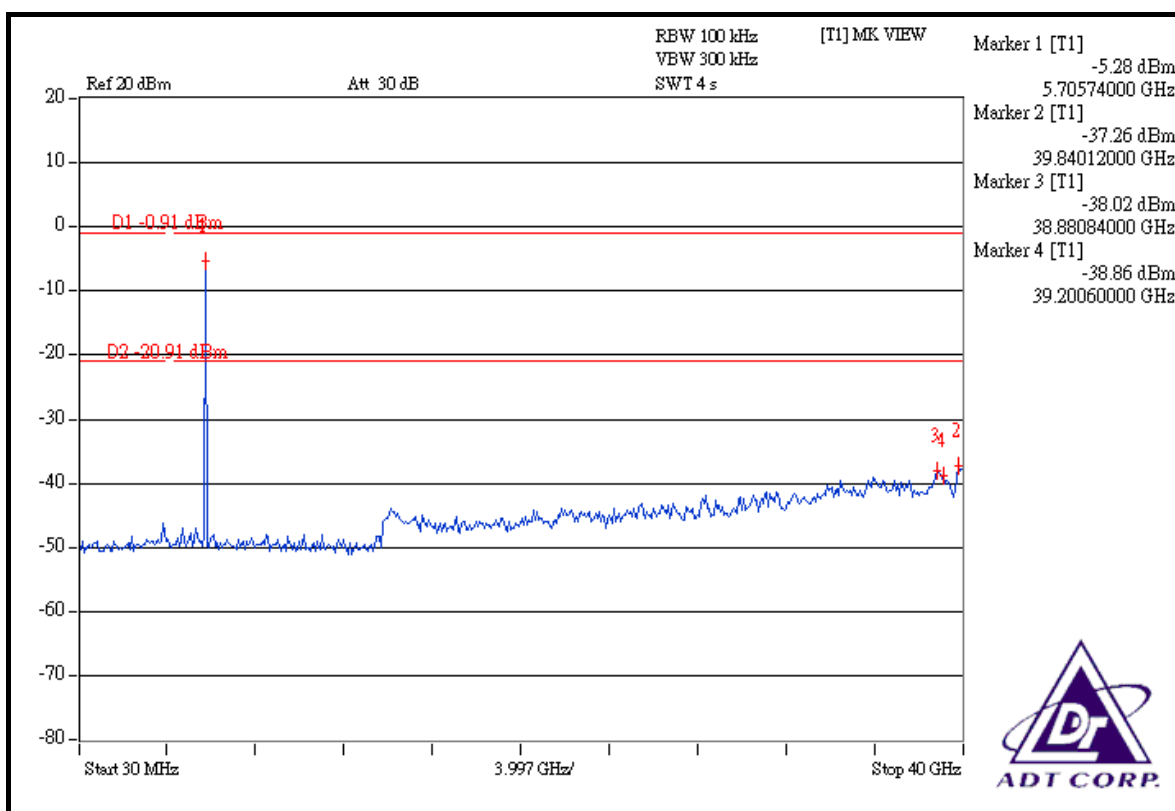
Same as Item 5.3.6

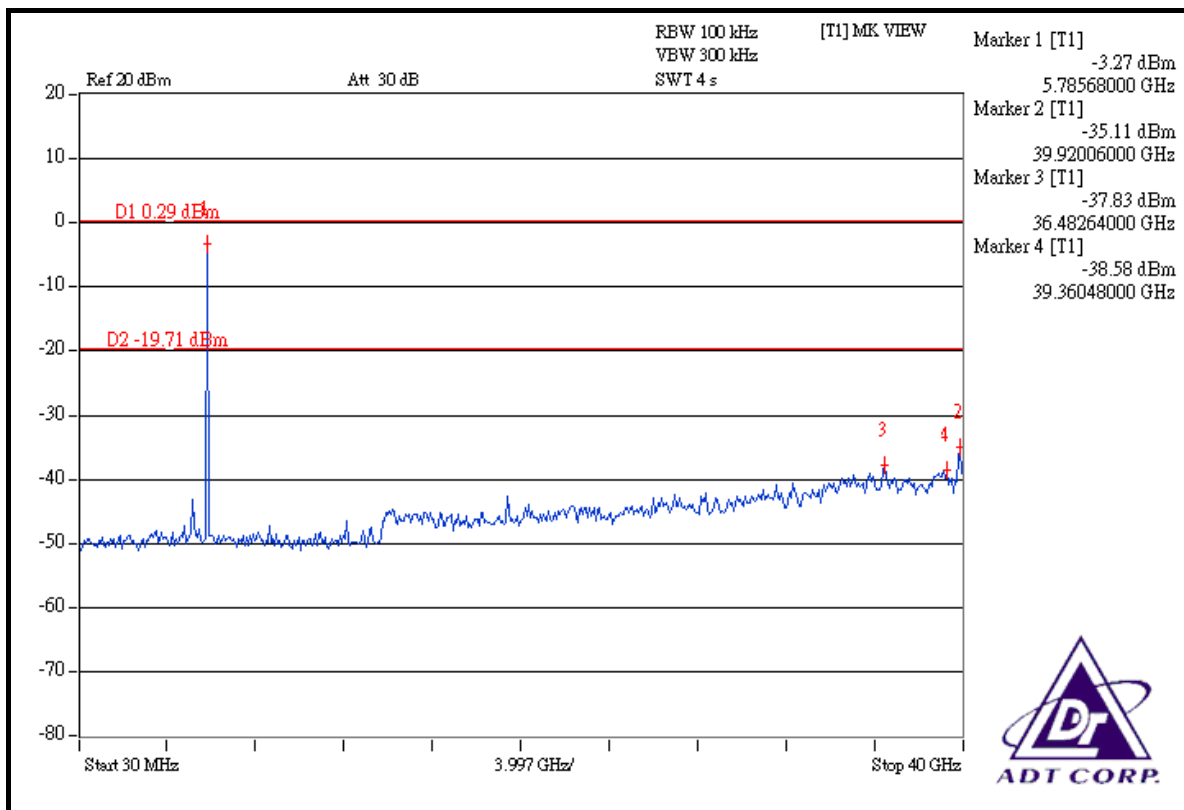
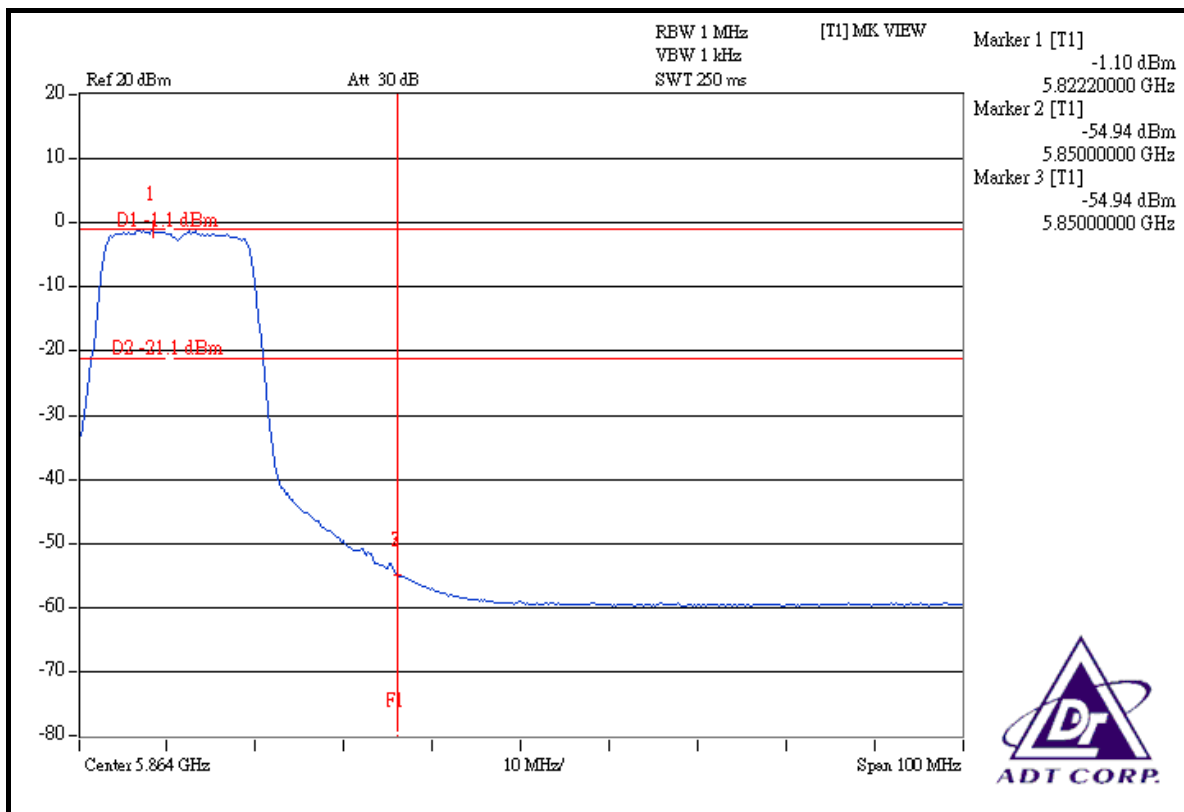
5.6.6 TEST RESULTS

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:







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 patch antenna with UFL connector. The maximum Gain of the antenna is 10.7dBi.

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.