



FCC TEST REPORT (15.247)

REPORT NO.: RF960807L13

MODEL NO.: DIR-855

RECEIVED: Aug. 08, 2007

TESTED: Aug. 09 ~ Aug. 15, 2007

ISSUED: Aug. 20, 2007

APPLICANT: D-Link Corporation

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1. CERTIFICATION

PRODUCT: Xtreme N DUO Media Router

MODEL: DIR-855

BRAND: D-Link

APPLICANT: D-Link Corporation

TEST SAMPLE: ENGINEERING SAMPLE

TESTED: Aug. 09 ~ Aug. 15, 2007

STANDARDS: FCC Part 15, Subpart C (Section 15.247)

ANSI C63.4-2003

The above equipment (Model: DIR-855) 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 : Andrea Hsia , **DATE:** Aug. 20, 2007
Andrea Hsia / Specialist

TECHNICAL
ACCEPTANCE : Long Chen , **DATE:** Aug. 20, 2007
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Aug. 20, 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 -6.05dB at 0.197MHz
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 -1.04dB at 2390.00MHz
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	3.34 dB
	200MHz ~1000MHz	3.35 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	Xtreme N DUO Media Router
MODEL NO.	DIR-855
FCC ID	KA2DIR855A1
POWER SUPPLY	12Vdc from AC Adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps Draft 802.11n (20MHz): 130.0/ 117.0/ 104.0/ 78.0/ 52.0/ 39.0/ 26.0/ 13.0/ 65.0/ 58.5/ 52.0/ 29.0/ 26.0/ 19.5/ 13.0/ 6.5Mbps Draft 802.11n (40MHz): 270.0/ 243.0/ 216.0/ 162.0/ 108.0/ 81.0/ 54.0/ 27.0 /135.0/ 121.5/ 108.0/ 81.0/ 54.0/ 40.5/ 27.0/ 13.5Mbps
FREQUENCY RANGE	2.4GHz: 2400 ~ 2483.5MHz 5.0GHz: 5150 ~ 5250MHz, 5725 ~ 5850MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz) 5.0GHz: 5150 ~ 5250MHz: 4 for 802.11a, draft 802.11n (20MHz) 2 for draft 802.11n (40MHz) 5725 ~ 5850MHz: 5 for 802.11a, draft 802.11n (20MHz) 2 for draft 802.11n (40MHz)
OUTPUT POWER	98.015mW for 2400 ~ 2483.5MHz 41.489mW for 5150 ~ 5250MHz 147.892mW for 5725 ~ 5850MHz
ANTENNA TYPE	Dipole antenna with 2.0dBi gain
DATA CABLE	NA
I/O PORTS	RJ45, USB console port
ASSOCIATED DEVICES	Adapter

NOTE:

1. For this EUT with two antennas that was only different in color of appearance and manufacture. After pre-tested found black one was the worst and presented in the test report.
2. The EUT was operated with following adapter.

BRAND:	D-Link
MODEL:	AG2412-B
INPUT:	100-240Vac, 50-60Hz, 0.5A
OUTPUT:	12Vdc, 2A
POWER LINE:	1.8m non-shielded cable without core

3. The USB console port without any function.
4. The EUT incorporates a MIMO function. Physically, the card provides three completed transmitters and three receivers.
5. The EUT with following module cards:

MODULE CARDS	REMARKS
A	With 802.11b, 802.11g, and 802.11n function
B	With 802.11a, 802.11b, 802.11g and 802.11n function

**For the module cards B, all the function of 2.4GHz will be closed by software.

6. For the 802.11n, the EUT is 3 * 3 spatial MIMO (3Tx & 3Rx) without beam forming function.
7. When the EUT operating in 802.11b, 802.11g, 802.11a, the software operation, which is defined by manufacturer, only set single Tx.
8. When the EUT operating in draft 802.11n, the software operation, which is defined by manufacturer, only set 0 ~ 15 of "MCS" (MCS: Modulation and Coding Schemes) for Triple Tx.
9. The EUT complies with draft 802.11n standards and backwards compatible with 802.11b, 802.11g, 802.11a products.
10. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 270Mbps.
11. 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, draft 802.11n (20MHz):

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

7 channels are provided for draft 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2422MHz	5	2442MHz
2	2427MHz	6	2447MHz
3	2432MHz	7	2452MHz
4	2437MHz		

FOR 5.0GHz (5725 ~ 5850MHz):

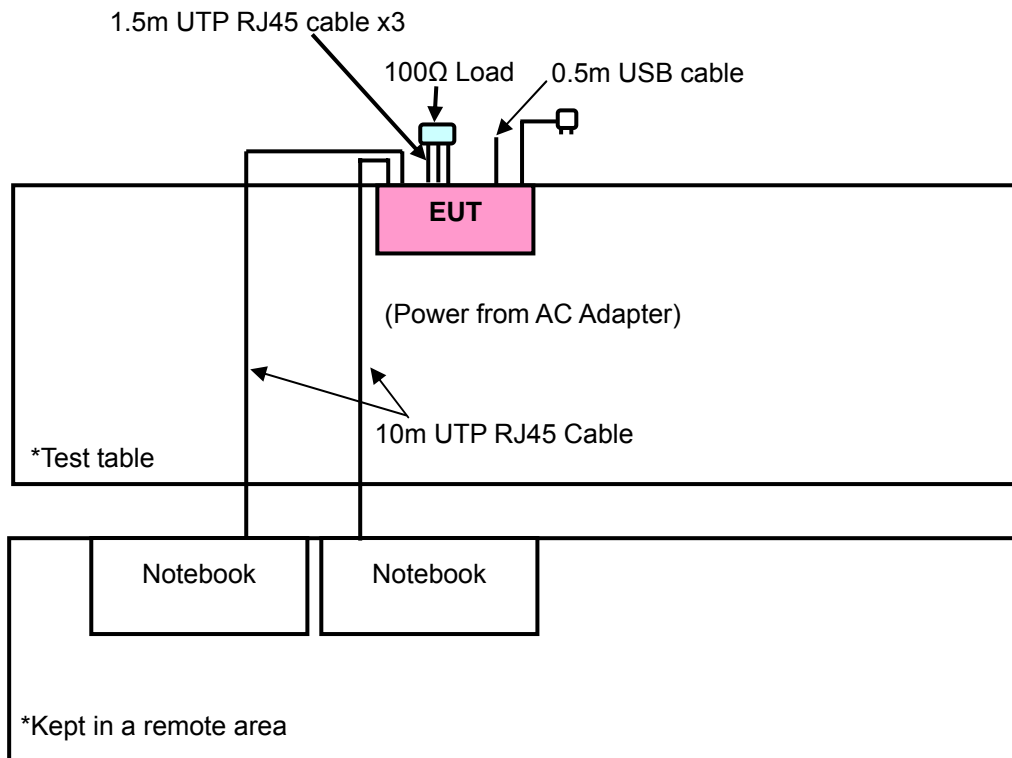
5 channels are provided for 802.11a, draft 802.11n (20MHz):

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	5755MHz	2	5795MHz

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



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

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

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

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	13.5

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 and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	1	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 7	1	OFDM	BPSK	13.5

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 and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	13.5



BANDEDGE MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0
802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	13.5

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	13.5

FOR 5.0GHz:

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

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

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	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 and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

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

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 and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 5	1, 3, 5	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 5	1, 3, 5	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 2	1, 2	OFDM	BPSK	13.5

BANDEDGE MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 5	1, 5	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 5	1, 5	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 2	1, 2	OFDM	BPSK	13.5

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 5	1, 3, 5	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 5	1, 3, 5	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 2	1, 2	OFDM	BPSK	13.5



3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C (15.247)

ANSI C63.4-2003

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP05L	12130898320	E2K24CLNS
2	NOTEBOOK COMPUTER	DELL	PP05L	9954115984	E2K24CLNS

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

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

NOTE 2: Item 1 ~ 2 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	100288	Sep. 25, 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.

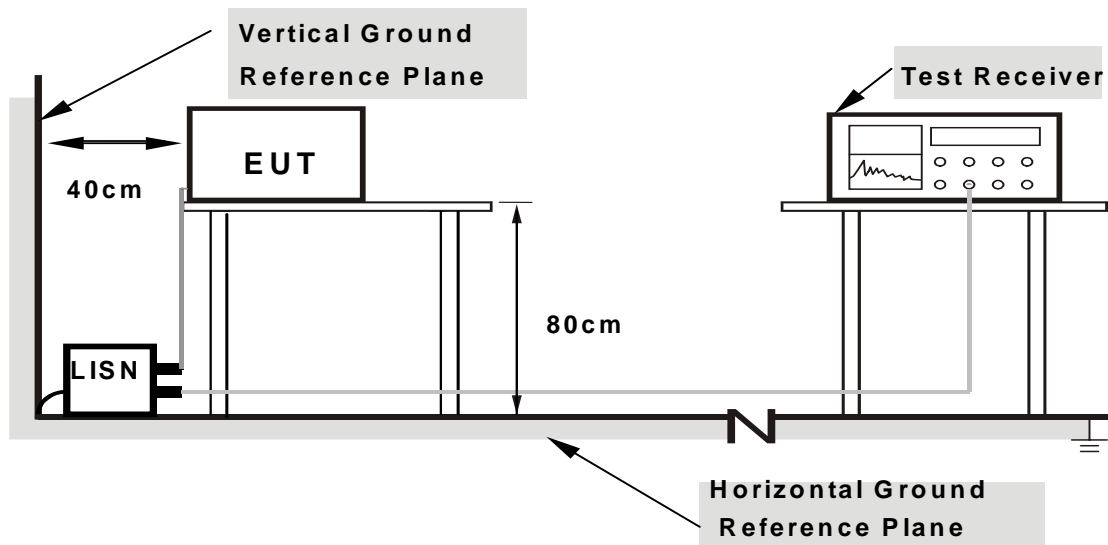
4.1.3 TEST PROCEDURES

- 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

- a. Placed the EUT on a testing table.
- b. Prepared notebook computer and placed it outside of testing area to act as communication partner for EUT.
- c. The EUT ran a test program (provided by manufacturer) to enable all functions under transmission condition continuously at specific channel frequency.
- d. The necessary accessories enable the EUT in full functions.

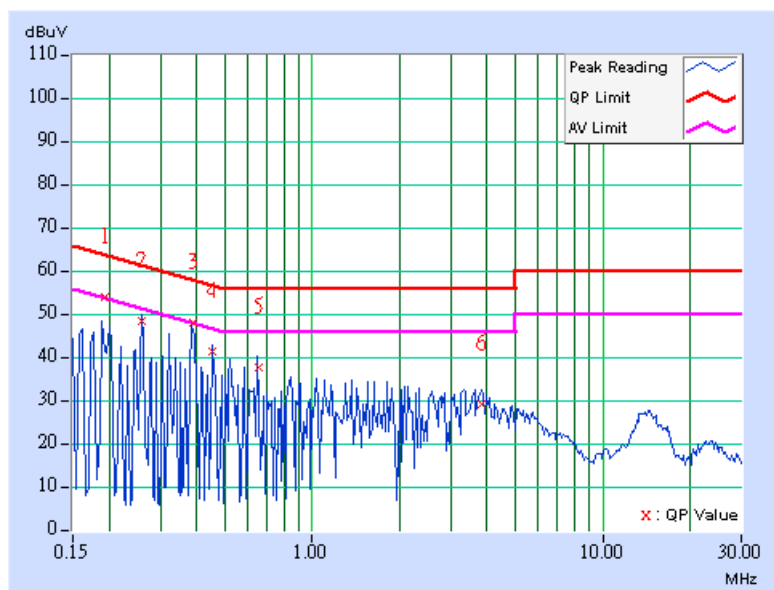
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11g OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.194	0.10	53.77	44.92	53.87	45.02	63.85	53.85	-9.98	-8.83
2	0.259	0.10	48.27	-	48.37	-	61.45	51.45	-13.08	-
3	0.388	0.10	48.00	-	48.10	-	58.10	48.10	-10.00	-
4	0.455	0.10	41.32	-	41.42	-	56.79	46.79	-15.37	-
5	0.651	0.10	37.60	-	37.70	-	56.00	46.00	-18.30	-
6	3.840	0.28	29.15	-	29.43	-	56.00	46.00	-26.57	-

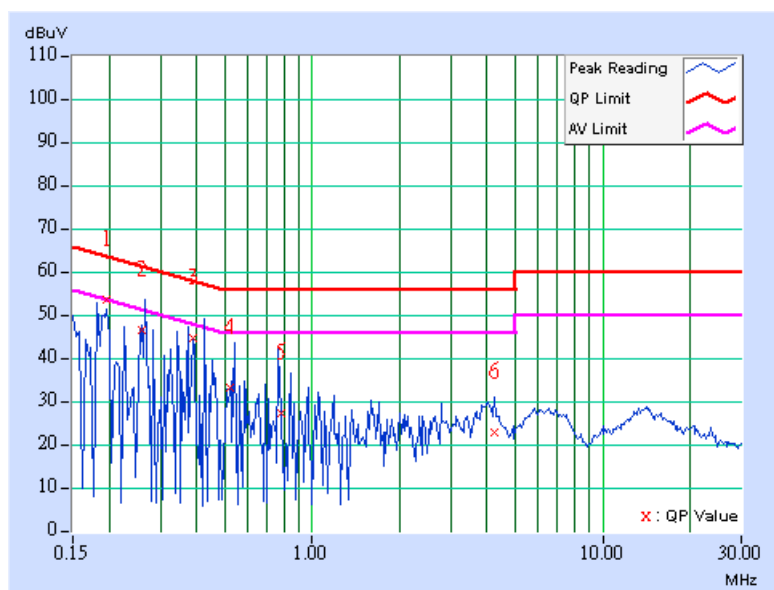
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor [dB]	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.195	0.10	53.53	-	53.63	-	63.81	53.81	-10.18	-
2	0.260	0.10	46.30	-	46.40	-	61.45	51.45	-15.05	-
3	0.388	0.10	44.64	-	44.74	-	58.10	48.10	-13.36	-
4	0.522	0.12	32.99	-	33.11	-	56.00	46.00	-22.89	-
5	0.781	0.17	27.10	-	27.27	-	56.00	46.00	-28.73	-
6	4.237	0.29	22.65	-	22.94	-	56.00	46.00	-33.06	-

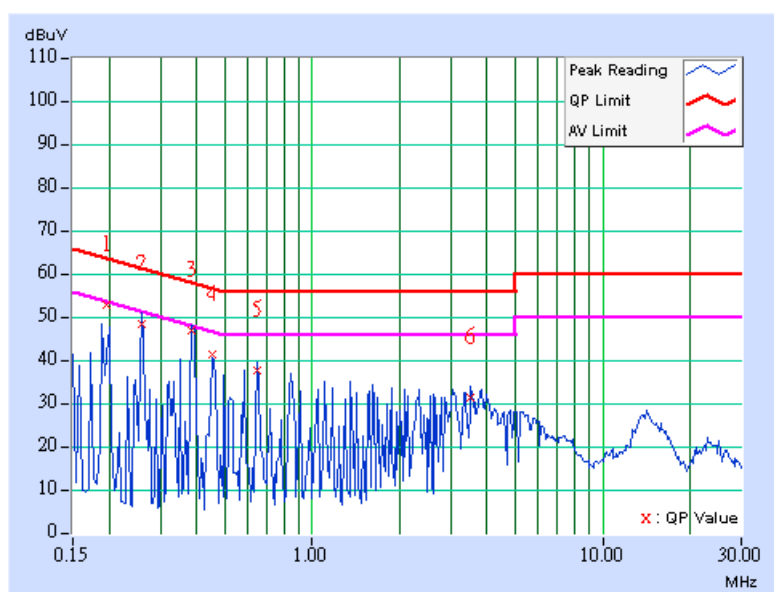
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.10	52.77	-	52.87	-	63.75	53.75	-10.88	-
2	0.259	0.10	48.21	-	48.31	-	61.45	51.45	-13.14	-
3	0.386	0.10	46.89	-	46.99	-	58.16	48.16	-11.17	-
4	0.455	0.10	41.34	-	41.44	-	56.79	46.79	-15.35	-
5	0.649	0.10	37.56	-	37.66	-	56.00	46.00	-18.34	-
6	3.516	0.27	31.35	-	31.62	-	56.00	46.00	-24.38	-

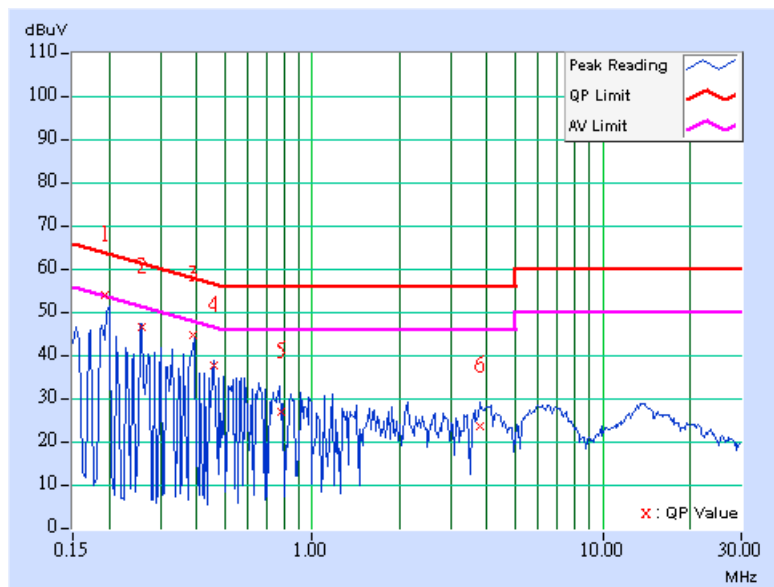
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor [dB]	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.194	0.10	53.71	-	53.81	-	63.84	53.84	-10.03	-
2	0.259	0.10	46.28	-	46.38	-	61.45	51.45	-15.07	-
3	0.388	0.10	44.62	-	44.72	-	58.10	48.10	-13.38	-
4	0.457	0.11	37.54	-	37.65	-	56.75	46.75	-19.09	-
5	0.778	0.17	26.63	-	26.80	-	56.00	46.00	-29.20	-
6	3.777	0.27	23.48	-	23.75	-	56.00	46.00	-32.25	-

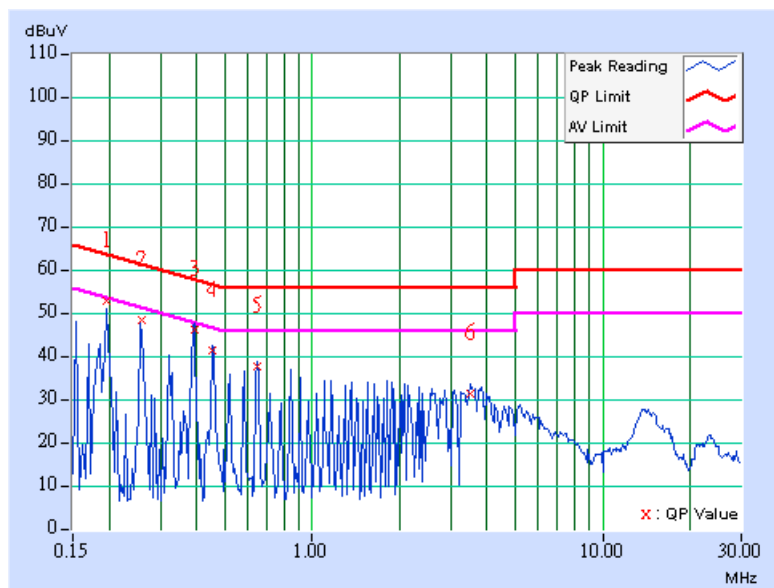
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.10	52.69	-	52.79	-	63.74	53.74	-10.95	-
2	0.261	0.10	48.09	-	48.19	-	61.41	51.41	-13.22	-
3	0.393	0.10	46.13	-	46.23	-	57.99	47.99	-11.76	-
4	0.453	0.10	41.06	-	41.16	-	56.81	46.81	-15.65	-
5	0.650	0.10	37.45	-	37.55	-	56.00	46.00	-18.45	-
6	3.519	0.27	31.08	-	31.35	-	56.00	46.00	-24.65	-

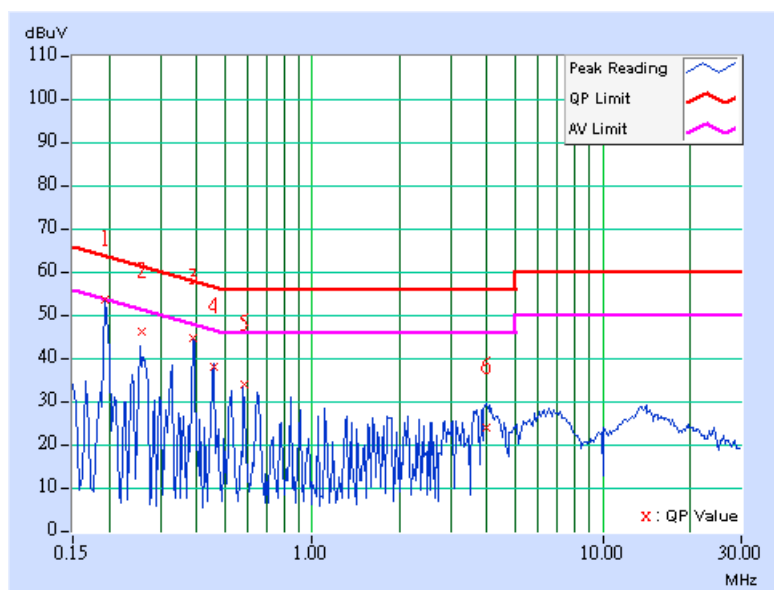
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor [dB]	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.194	0.10	53.61	-	53.71	-	63.85	53.85	-10.14	-
2	0.258	0.10	46.02	-	46.12	-	61.49	51.49	-15.37	-
3	0.388	0.10	44.60	-	44.70	-	58.10	48.10	-13.40	-
4	0.456	0.11	37.90	-	38.01	-	56.76	46.76	-18.75	-
5	0.585	0.13	33.64	-	33.77	-	56.00	46.00	-22.23	-
6	3.959	0.28	23.94	-	24.22	-	56.00	46.00	-31.78	-

- 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.

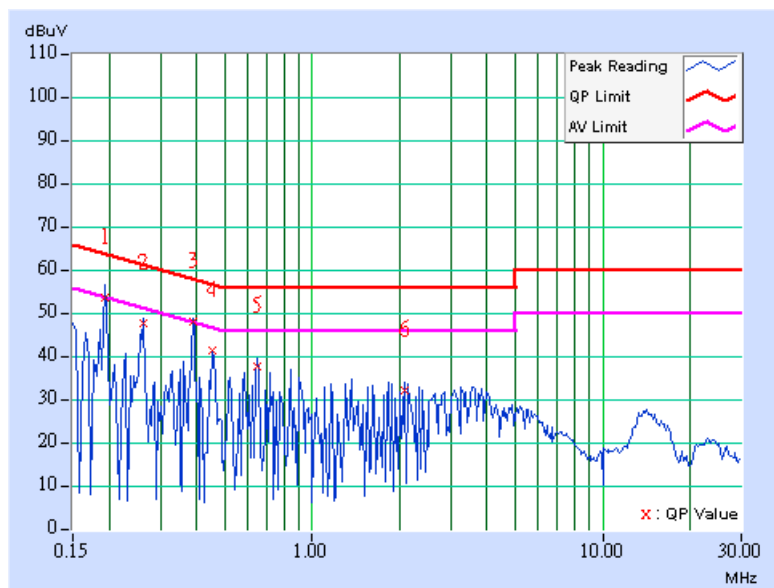


DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.194	0.10	53.63	-	53.73	-	63.85	53.85	-10.12	-
2	0.262	0.10	47.58	-	47.68	-	61.37	51.37	-13.69	-
3	0.387	0.10	47.76	-	47.86	-	58.13	48.13	-10.27	-
4	0.455	0.10	41.28	-	41.38	-	56.79	46.79	-15.41	-
5	0.650	0.10	37.60	-	37.70	-	56.00	46.00	-18.30	-
6	2.078	0.22	32.01	-	32.23	-	56.00	46.00	-23.77	-

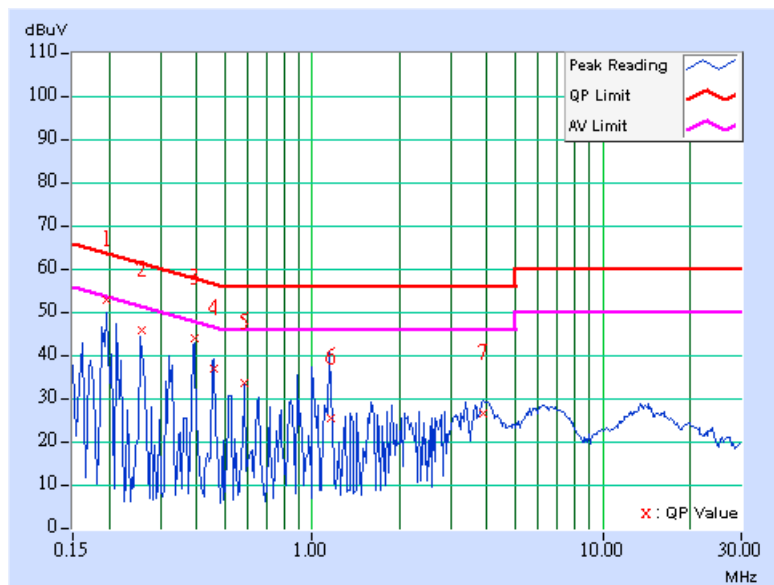
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.10	52.69	-	52.79	-	63.74	53.74	-10.95	-
2	0.258	0.10	45.77	-	45.87	-	61.49	51.49	-15.62	-
3	0.392	0.10	43.69	-	43.79	-	58.02	48.02	-14.23	-
4	0.459	0.11	36.62	-	36.73	-	56.72	46.72	-19.99	-
5	0.585	0.13	33.27	-	33.40	-	56.00	46.00	-22.60	-
6	1.167	0.21	25.42	-	25.63	-	56.00	46.00	-30.37	-
7	3.898	0.28	26.50	-	26.78	-	56.00	46.00	-29.22	-

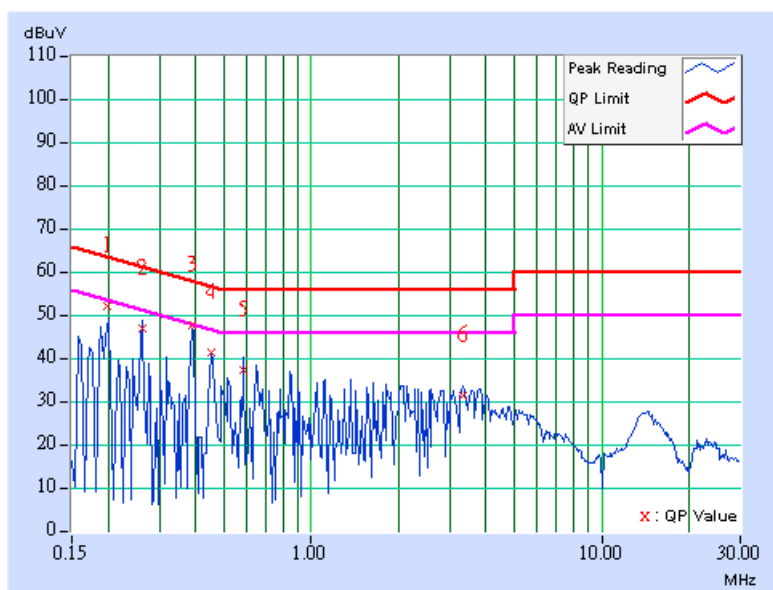
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.198	0.10	51.90	-	52.00	-	63.68	53.68	-11.68	-
2	0.263	0.10	46.78	-	46.88	-	61.33	51.33	-14.45	-
3	0.387	0.10	47.60	-	47.70	-	58.13	48.13	-10.43	-
4	0.455	0.10	41.18	-	41.28	-	56.79	46.79	-15.51	-
5	0.586	0.10	37.21	-	37.31	-	56.00	46.00	-18.69	-
6	3.320	0.26	31.13	-	31.39	-	56.00	46.00	-24.61	-

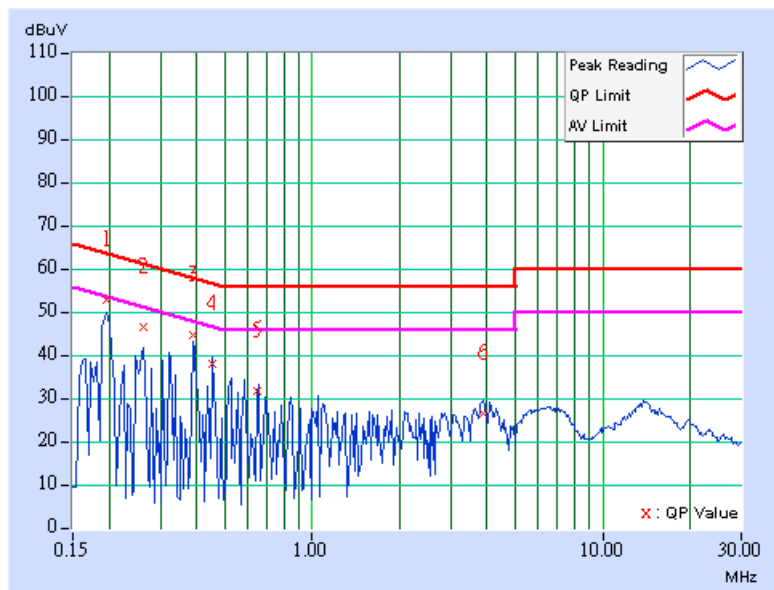
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.10	52.73	-	52.83	-	63.74	53.74	-10.91	-
2	0.261	0.10	46.34	-	46.44	-	61.41	51.41	-14.97	-
3	0.388	0.10	44.56	-	44.66	-	58.10	48.10	-13.44	-
4	0.455	0.11	37.91	-	38.02	-	56.79	46.79	-18.77	-
5	0.650	0.15	31.64	-	31.79	-	56.00	46.00	-24.21	-
6	3.898	0.28	26.50	-	26.78	-	56.00	46.00	-29.22	-

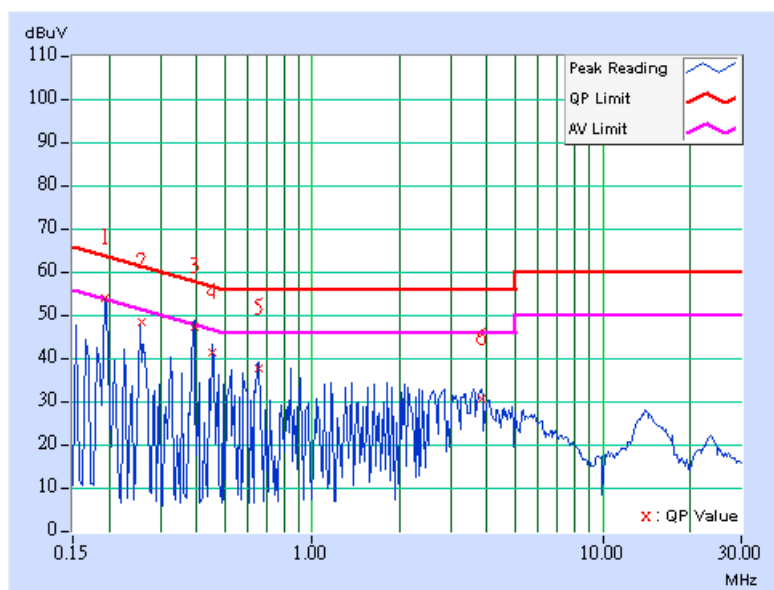
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.194	0.10	53.95	45.01	54.05	45.11	63.85	53.85	-9.80	-8.74
2	0.259	0.10	48.26	-	48.36	-	61.45	51.45	-13.09	-
3	0.392	0.10	47.10	-	47.20	-	58.02	48.02	-10.82	-
4	0.455	0.10	41.20	-	41.30	-	56.79	46.79	-15.49	-
5	0.651	0.10	37.50	-	37.60	-	56.00	46.00	-18.40	-
6	3.816	0.27	30.36	-	30.63	-	56.00	46.00	-25.37	-

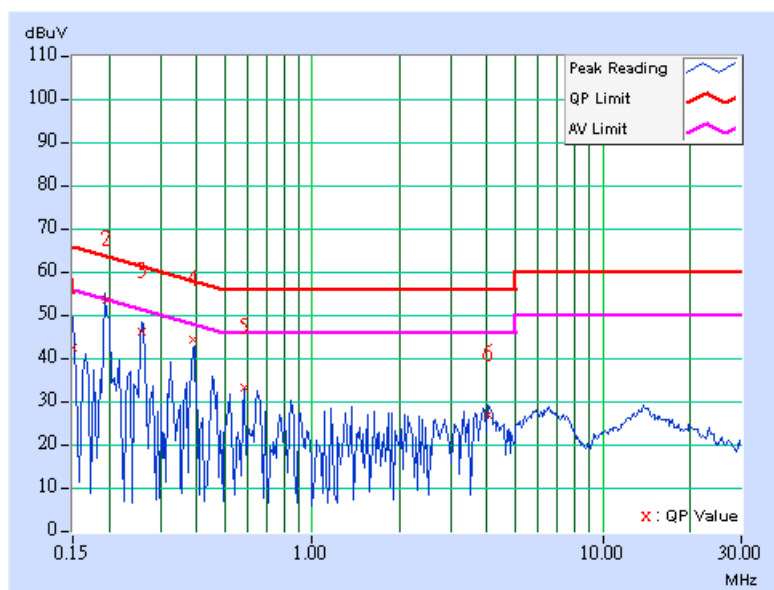
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor [dB]	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	42.26	-	42.36	-	66.00	56.00	-23.64	-
2	0.196	0.10	53.34	-	53.44	-	63.80	53.80	-10.36	-
3	0.259	0.10	46.20	-	46.30	-	61.45	51.45	-15.15	-
4	0.391	0.10	44.24	-	44.34	-	58.04	48.04	-13.70	-
5	0.584	0.13	33.12	-	33.25	-	56.00	46.00	-22.75	-
6	4.043	0.28	26.67	-	26.95	-	56.00	46.00	-29.05	-

- 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.

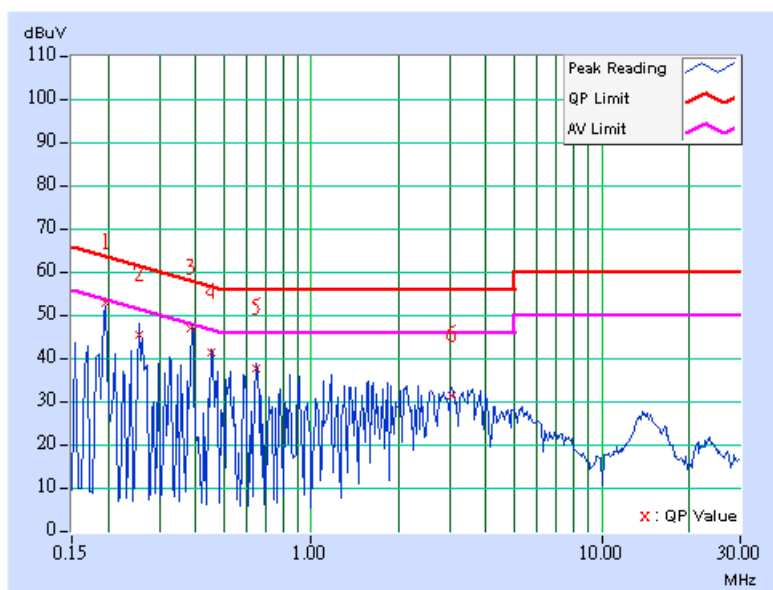


DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	13.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.197	0.10	52.65	-	52.75	-	63.74
2	0.255	0.10	45.22	-	45.32	-	61.58	51.58	-16.26	-
3	0.386	0.10	46.91	-	47.01	-	58.16	48.16	-11.15	-
4	0.455	0.10	41.26	-	41.36	-	56.79	46.79	-15.43	-
5	0.650	0.10	37.58	-	37.68	-	56.00	46.00	-18.32	-
6	3.055	0.25	31.28	-	31.53	-	56.00	46.00	-24.47	-

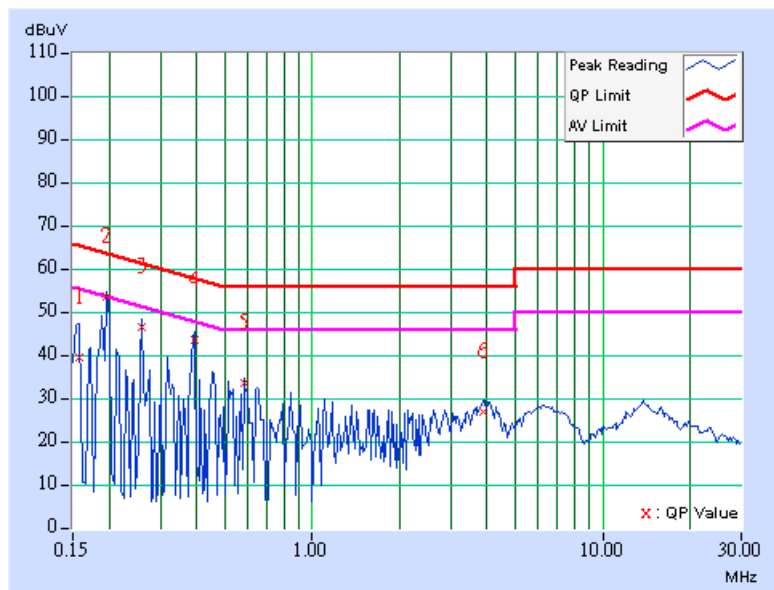
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	13.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.10	39.48	-	39.58	-	65.58	55.58	-26.00	-
2	0.197	0.10	53.26	-	53.36	-	63.74	53.74	-10.38	-
3	0.259	0.10	46.47	-	46.57	-	61.45	51.45	-14.88	-
4	0.392	0.10	43.27	-	43.37	-	58.02	48.02	-14.65	-
5	0.584	0.13	33.25	-	33.38	-	56.00	46.00	-22.62	-
6	3.898	0.28	26.80	-	27.08	-	56.00	46.00	-28.92	-

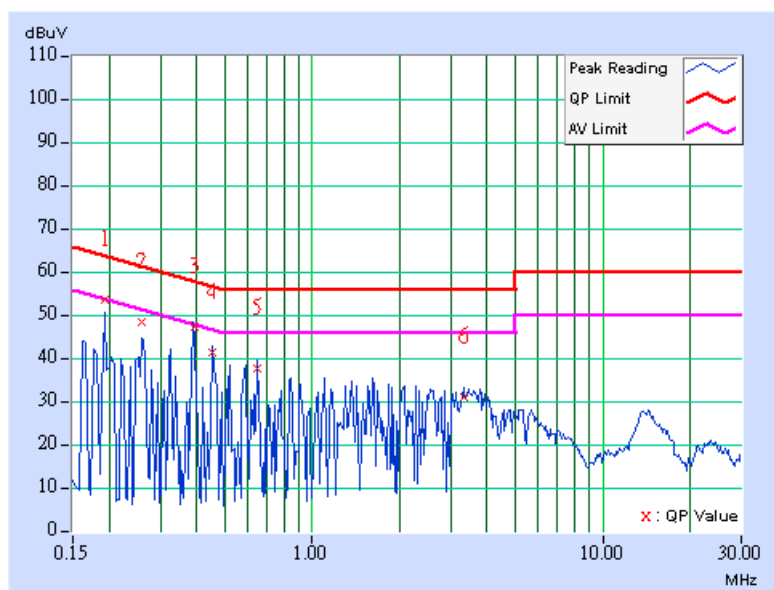
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 4	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	13.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.194	0.10	53.59	-	53.69	-	63.85	53.85	-10.16	-
2	0.259	0.10	48.27	-	48.37	-	61.45	51.45	-13.08	-
3	0.392	0.10	47.03	-	47.13	-	58.02	48.02	-10.89	-
4	0.456	0.10	41.17	-	41.27	-	56.77	46.77	-15.50	-
5	0.650	0.10	37.52	-	37.62	-	56.00	46.00	-18.38	-
6	3.320	0.26	30.85	-	31.11	-	56.00	46.00	-24.89	-

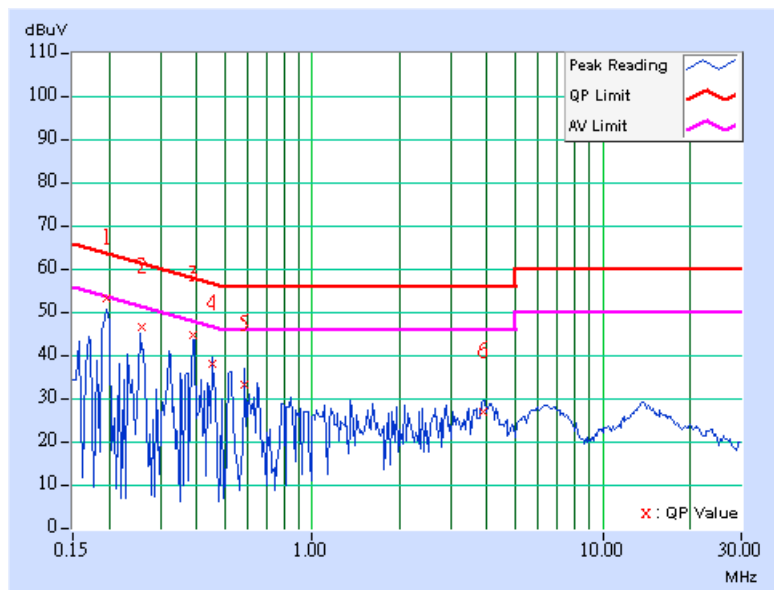
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 4	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	13.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor [dB]	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.10	53.12	-	53.22	-	63.74	53.74	-10.52	-
2	0.259	0.10	46.25	-	46.35	-	61.45	51.45	-15.10	-
3	0.388	0.10	44.52	-	44.62	-	58.10	48.10	-13.48	-
4	0.455	0.11	37.94	-	38.05	-	56.79	46.79	-18.74	-
5	0.588	0.13	33.16	-	33.29	-	56.00	46.00	-22.71	-
6	3.895	0.28	26.79	-	27.07	-	56.00	46.00	-28.93	-

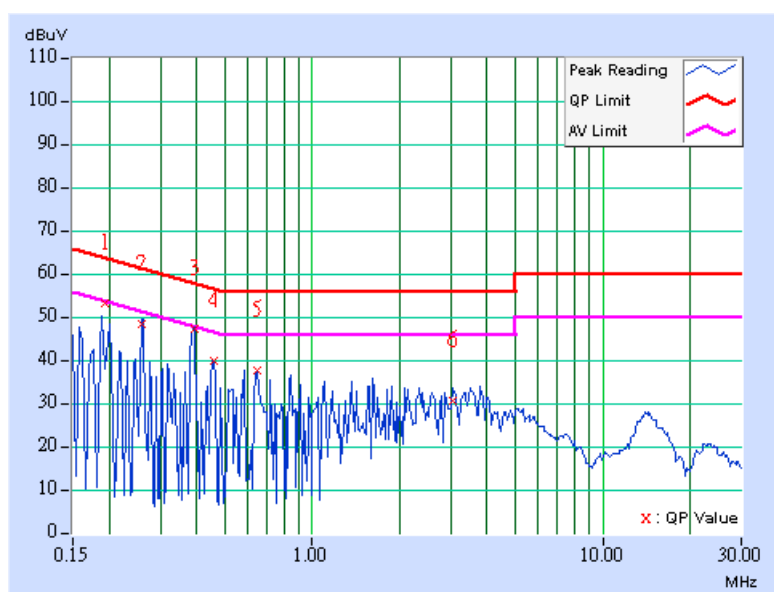
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	13.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.193	0.10	53.26	-	53.36	-	63.90	53.90	-10.54	-
2	0.261	0.10	48.19	-	48.29	-	61.41	51.41	-13.12	-
3	0.392	0.10	47.01	-	47.11	-	58.02	48.02	-10.91	-
4	0.459	0.10	39.81	-	39.91	-	56.72	46.72	-16.81	-
5	0.647	0.10	37.50	-	37.60	-	56.00	46.00	-18.40	-
6	3.063	0.25	30.57	-	30.82	-	56.00	46.00	-25.18	-

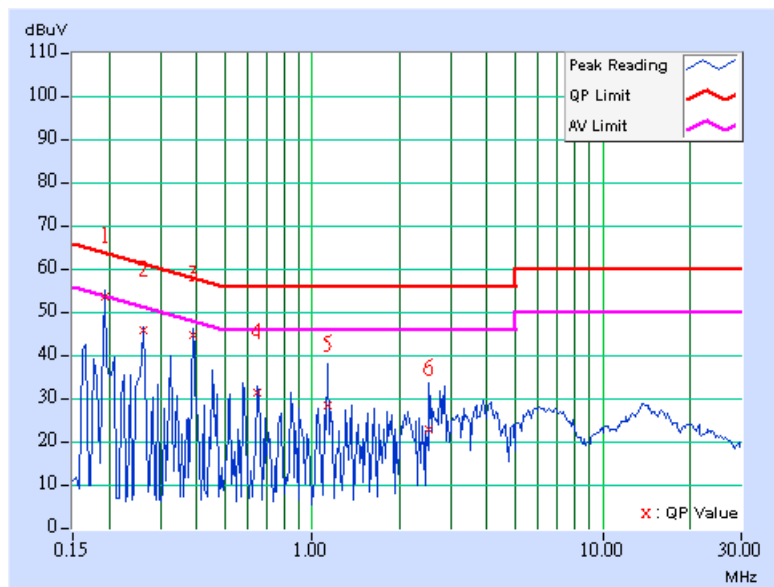
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 7	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	13.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Kevin Chen

No	Freq. [MHz]	Corr. Factor [dB]	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.194	0.10	53.59	-	53.69	-	63.85	53.85	-10.16	-
2	0.262	0.10	45.51	-	45.61	-	61.37	51.37	-15.76	-
3	0.388	0.10	44.52	-	44.62	-	58.10	48.10	-13.48	-
4	0.650	0.15	31.26	-	31.41	-	56.00	46.00	-24.59	-
5	1.137	0.21	28.37	-	28.58	-	56.00	46.00	-27.42	-
6	2.534	0.24	22.65	-	22.89	-	56.00	46.00	-33.11	-

- 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	100025	Oct. 05, 2007
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	May 31, 2008
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jun. 28, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 28, 2007
Preamplifier Agilent	8447D	2944A10633	Oct. 26, 2007
Preamplifier Agilent	8449B	3008A01964	Oct. 26, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238137/4	Dec. 11, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	233233/4	Nov. 14, 2007
Software ADT.	ADT_Radiated_V7.6	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA
Turn Table ADT.	TT100.	TT93021703	NA
Turn Table Controller ADT.	SC100.	SC93021703	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 3.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The VCCI Site Registration No. is R-237.
 5. The IC Site Registration No. is IC3789B-3.

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.

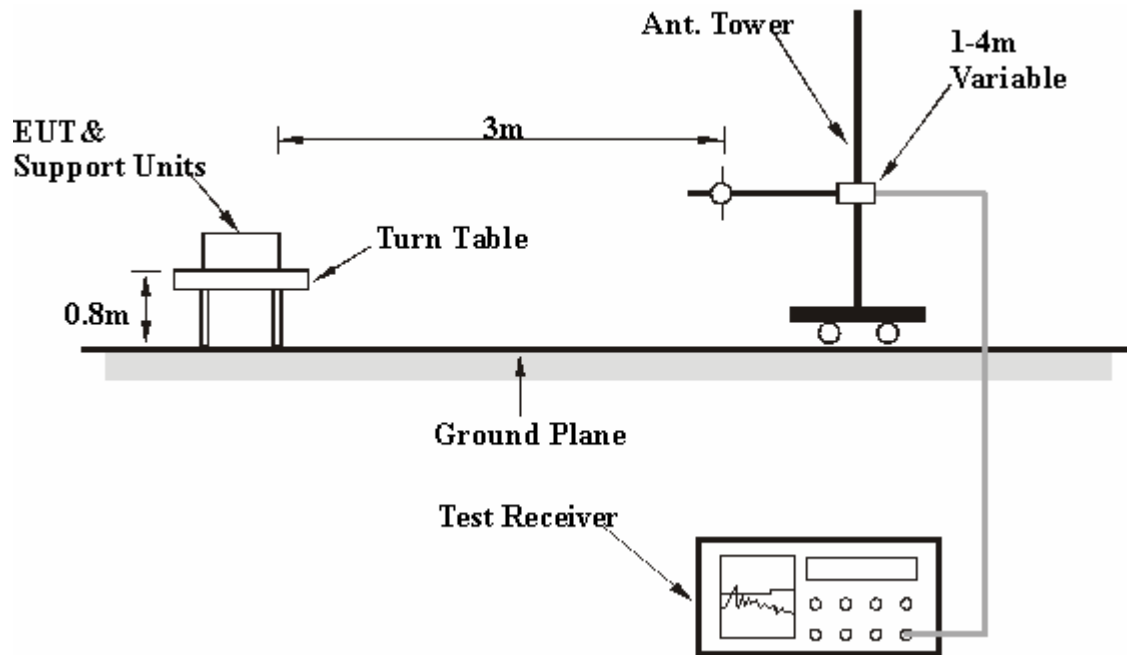
NOTE:

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 10Hz 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	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 68%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	249.60	43.68 QP	46.00	-2.32	1.00 H	103	30.21	13.47
2	300.16	37.14 QP	46.00	-8.86	1.00 H	313	22.00	15.14
3	374.04	35.60 QP	46.00	-10.40	2.00 H	226	18.57	17.03
4	500.42	41.84 QP	46.00	-4.16	1.50 H	256	21.55	20.29
5	624.85	40.10 QP	46.00	-5.90	1.50 H	313	17.08	23.02
6	751.23	39.01 QP	46.00	-6.99	1.00 H	259	13.35	25.65
7	875.67	40.60 QP	46.00	-5.40	1.00 H	85	13.31	27.29

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.84	38.56 QP	40.00	-1.44	1.50 V	190	25.02	13.54
2	66.84	35.04 QP	40.00	-4.96	1.50 V	46	21.93	13.10
3	249.60	40.93 QP	46.00	-5.07	1.00 V	31	27.45	13.47
4	374.04	36.09 QP	46.00	-9.91	1.50 V	10	19.06	17.03
5	500.42	44.67 QP	46.00	-1.33	1.00 V	352	24.37	20.29
6	624.85	43.07 QP	46.00	-2.93	1.50 V	334	20.05	23.02
7	751.23	38.26 QP	46.00	-7.74	1.50 V	235	12.61	25.65
8	875.67	42.31 QP	46.00	-3.69	2.00 V	190	15.02	27.29

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

DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 68%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	183.50	37.73 QP	43.50	-5.77	1.00 H	64	25.03	12.70
2	249.60	41.86 QP	46.00	-4.14	1.00 H	100	28.39	13.47
3	374.04	42.87 QP	46.00	-3.13	1.00 H	250	25.84	17.03
4	500.42	40.69 QP	46.00	-5.31	1.00 H	337	20.39	20.29
5	624.85	38.30 QP	46.00	-7.70	1.50 H	34	15.28	23.02
6	799.84	39.18 QP	46.00	-6.82	1.00 H	304	13.30	25.88
7	875.01	44.48 QP	46.00	-1.52	1.50 H	287	17.20	27.28

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	31.84	36.24 QP	40.00	-3.76	1.00 V	328	22.70	13.54
2	64.90	38.62 QP	40.00	-1.38	1.00 V	4	25.27	13.35
3	111.56	40.32 QP	43.50	-3.18	1.00 V	217	28.71	11.61
4	374.04	39.02 QP	46.00	-6.98	1.00 V	253	21.98	17.03
5	500.42	41.24 QP	46.00	-4.76	2.00 V	310	20.94	20.29
6	624.85	43.36 QP	46.00	-2.64	1.50 V	340	20.34	23.02
7	799.84	39.92 QP	46.00	-6.08	1.50 V	160	14.04	25.88
8	875.67	44.80 QP	46.00	-1.20	1.50 V	112	17.51	27.29

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

DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 68%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	111.56	38.81 QP	43.50	-4.69	1.50 H	343	27.21	11.61
2	183.50	40.71 QP	43.50	-2.79	1.50 H	106	28.01	12.70
3	249.60	44.55 QP	46.00	-1.45	1.00 H	109	31.08	13.47
4	300.16	40.48 QP	46.00	-5.52	1.00 H	295	25.34	15.14
5	374.04	42.53 QP	46.00	-3.47	1.00 H	232	25.50	17.03
6	500.42	43.48 QP	46.00	-2.52	1.50 H	1	23.19	20.29
7	599.58	39.29 QP	46.00	-6.71	2.00 H	25	16.85	22.45
8	875.67	44.22 QP	46.00	-1.78	1.50 H	286	16.93	27.29

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	109.62	37.56 QP	43.50	-5.94	1.00 V	52	26.19	11.37
2	249.60	40.38 QP	46.00	-5.62	1.50 V	70	26.91	13.47
3	500.42	42.16 QP	46.00	-3.84	1.00 V	343	21.86	20.29
4	624.85	42.87 QP	46.00	-3.13	1.50 V	160	19.85	23.02
5	751.23	39.14 QP	46.00	-6.86	1.50 V	4	13.49	25.65
6	799.84	39.02 QP	46.00	-6.98	1.50 V	184	13.14	25.88
7	875.67	43.22 QP	46.00	-2.78	1.00 V	70	15.93	27.29

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

ABOVE 1GHz DATA: 802.11b DSSS MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%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	1125.00	51.27 PK	74.00	-22.73	1.27 H	229	21.87	29.39
2	1125.00	45.28 AV	54.00	-8.72	1.27 H	229	15.88	29.39
3	2390.00	57.86 PK	74.00	-16.14	1.00 H	9	25.62	32.24
4	2390.00	46.77 AV	54.00	-7.23	1.00 H	9	14.53	32.24
5	*2412.00	99.61 PK			1.00 H	8	67.29	32.32
6	*2412.00	95.08 AV			1.00 H	8	62.76	32.32
7	3216.00	47.15 PK	74.00	-26.85	1.00 H	20	12.67	34.49
8	3216.00	34.29 AV	54.00	-19.71	1.00 H	20	-0.19	34.49
9	3500.00	49.89 PK	74.00	-24.11	1.12 H	356	15.20	34.69
10	3500.00	41.87 AV	54.00	-12.13	1.12 H	356	7.18	34.69
11	4824.00	56.06 PK	74.00	-17.94	1.03 H	7	17.93	38.13
12	4824.00	52.86 AV	54.00	-1.14	1.03 H	7	14.73	38.13

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	1125.00	50.59 PK	74.00	-23.41	1.00 V	308	21.20	29.39
2	1125.00	45.80 AV	54.00	-8.20	1.00 V	308	16.40	29.39
3	2387.00	59.82 PK	74.00	-14.18	1.00 V	4	27.59	32.23
4	2387.00	49.89 AV	54.00	-4.11	1.00 V	4	17.66	32.23
5	*2412.00	110.11 PK			1.00 V	3	77.79	32.32
6	*2412.00	105.44 AV			1.00 V	3	73.12	32.32
7	3216.00	54.41 PK	74.00	-19.59	1.08 V	23	19.92	34.49
8	3216.00	45.14 AV	54.00	-8.86	1.08 V	23	10.65	34.49
9	3500.00	49.55 PK	74.00	-24.45	1.04 V	310	14.86	34.69
10	3500.00	41.03 AV	54.00	-12.97	1.04 V	310	6.34	34.69
11	4824.00	54.50 PK	74.00	-19.50	1.37 V	0	16.37	38.13
12	4824.00	51.16 AV	54.00	-2.84	1.37 V	0	13.03	38.13

- 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	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%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	*2437.00	99.42 PK			1.04 H	37	67.02	32.40
2	*2437.00	94.87 AV			1.04 H	37	62.47	32.40
3	4874.00	56.24 PK	74.00	-17.76	1.22 H	164	17.92	38.32
4	4874.00	52.58 AV	54.00	-1.42	1.22 H	164	14.26	38.32

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	109.52 PK			1.04 V	62	77.12	32.40
2	*2437.00	104.87 AV			1.04 V	62	72.47	32.40
3	3248.00	53.67 PK	74.00	-20.33	1.05 V	228	19.17	34.50
4	3248.00	44.82 AV	54.00	-9.18	1.05 V	228	10.32	34.50
5	4874.00	56.06 PK	74.00	-17.94	1.60 V	5	17.74	38.32
6	4874.00	52.27 AV	54.00	-1.73	1.60 V	5	13.95	38.32

- 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.
 5. “ * “: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%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	*2462.00	98.22 PK			1.01 H	45	65.74	32.48
2	*2462.00	93.61 AV			1.01 H	45	61.13	32.48
3	2483.50	55.89 PK	74.00	-18.11	1.01 H	45	23.33	32.56
4	2483.50	45.44 AV	54.00	-8.56	1.01 H	45	12.88	32.56
5	4924.00	54.72 PK	74.00	-19.28	1.48 H	100	16.26	38.46
6	4924.00	51.84 AV	54.00	-2.16	1.48 H	100	13.38	38.46

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	109.07 PK			1.00 V	351	76.59	32.48
2	*2462.00	104.48 AV			1.00 V	351	72.00	32.48
3	2483.50	59.10 PK	74.00	-14.90	1.00 V	350	26.54	32.56
4	2483.50	48.20 AV	54.00	-5.80	1.00 V	350	15.64	32.56
5	3282.00	52.67 PK	74.00	-21.33	1.00 V	12	18.15	34.52
6	3282.00	43.58 AV	54.00	-10.42	1.00 V	12	9.06	34.52
7	4924.00	54.76 PK	74.00	-19.24	1.08 V	326	16.30	38.46
8	4924.00	51.16 AV	54.00	-2.84	1.08 V	326	12.70	38.46

- 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	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	67.07 PK	74.00	-6.93	1.07 H	317	34.83	32.24
2	2390.00	48.41 AV	54.00	-5.59	1.07 H	317	16.17	32.24
3	*2412.00	103.37 PK			1.07 H	317	71.05	32.32
4	*2412.00	92.61 AV			1.07 H	317	60.29	32.32
5	4824.00	53.45 PK	74.00	-20.55	1.38 H	99	15.32	38.13
6	4824.00	39.36 AV	54.00	-14.64	1.38 H	99	1.23	38.13

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	72.83 PK	74.00	-1.17	1.18 V	139	40.59	32.24
2	2390.00	52.96 AV	54.00	-1.04	1.18 V	139	20.72	32.24
3	*2412.00	110.96 PK			1.14 V	5	78.64	32.32
4	*2412.00	99.95 AV			1.14 V	5	67.63	32.32
5	3216.00	47.43 PK	74.00	-26.57	1.06 V	164	12.95	34.49
6	3216.00	38.44 AV	54.00	-15.56	1.06 V	164	3.96	34.49
7	4824.00	52.60 PK	74.00	-21.40	1.09 V	59	14.47	38.13
8	4824.00	38.36 AV	54.00	-15.64	1.09 V	59	0.23	38.13

- 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	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	104.35 PK			1.21 H	330	71.95	32.40
2	*2437.00	93.33 AV			1.21 H	330	60.93	32.40
3	4874.00	54.41 PK	74.00	-19.59	1.35 H	164	16.09	38.32
4	4874.00	40.27 AV	54.00	-13.73	1.35 H	164	1.95	38.32

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	111.08 PK			1.06 V	0	78.68	32.40
2	*2437.00	100.53 AV			1.06 V	0	68.13	32.40
3	3248.00	49.72 PK	74.00	-24.28	1.00 V	258	15.22	34.50
4	3248.00	39.55 AV	54.00	-14.45	1.00 V	258	5.05	34.50
5	4874.00	53.64 PK	74.00	-20.36	1.15 V	167	15.32	38.32
6	4874.00	39.79 AV	54.00	-14.21	1.15 V	167	1.47	38.32

- 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.
 5. “ * “: Fundamental frequency.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	103.40 PK			1.02 H	319	70.92	32.48
2	*2462.00	93.19 AV			1.02 H	319	60.71	32.48
3	2483.50	64.45 PK	74.00	-9.55	1.02 H	319	31.89	32.56
4	2483.50	47.99 AV	54.00	-6.01	1.02 H	319	15.43	32.56
5	4924.00	53.14 PK	74.00	-20.86	1.07 H	346	14.68	38.46
6	4924.00	38.42 AV	54.00	-15.58	1.07 H	346	-0.04	38.46

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	110.87 PK			1.11 V	4	78.39	32.48
2	*2462.00	99.76 AV			1.11 V	4	67.28	32.48
3	2483.50	71.00 PK	74.00	-3.00	1.08 V	3	38.44	32.56
4	2483.50	52.38 AV	54.00	-1.62	1.08 V	3	19.82	32.56
5	3282.00	47.27 PK	74.00	-26.73	1.03 V	185	12.75	34.52
6	3282.00	38.13 AV	54.00	-15.87	1.03 V	185	3.61	34.52
7	4924.00	52.73 PK	74.00	-21.27	1.10 V	60	14.27	38.46
8	4924.00	38.48 AV	54.00	-15.52	1.10 V	60	0.02	38.46

- 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.

DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Morgan 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	1625.00	44.92 PK	74.00	-29.08	1.10 H	172	17.18	27.74
2	1625.00	38.64 AV	54.00	-15.36	1.10 H	172	10.90	27.74
3	2390.00	58.16 PK	74.00	-15.84	1.06 H	159	26.94	31.22
4	2390.00	46.79 AV	54.00	-7.21	1.06 H	159	15.57	31.22
5	*2412.00	103.07 PK			1.06 H	157	71.86	31.21
6	*2412.00	93.26 AV			1.06 H	157	62.05	31.21
7	3216.00	43.62 PK	74.00	-30.38	1.14 H	207	11.29	32.33
8	3216.00	32.79 AV	54.00	-21.21	1.14 H	207	0.46	32.33
9	4824.00	48.14 PK	74.00	-25.86	1.10 H	352	11.66	36.48
10	4824.00	35.20 AV	54.00	-18.80	1.10 H	352	-1.28	36.48

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	1625.00	50.78 PK	74.00	-23.22	1.00 V	97	23.04	27.74
2	1625.00	45.59 AV	54.00	-8.41	1.00 V	97	17.85	27.74
3	2390.00	69.58 PK	74.00	-4.42	1.16 V	186	38.36	31.22
4	2390.00	52.74 AV	54.00	-1.26	1.16 V	186	21.52	31.22
5	*2412.00	114.79 PK			1.17 V	190	83.58	31.21
6	*2412.00	104.93 AV			1.17 V	190	73.72	31.21
7	3216.00	49.52 PK	74.00	-24.48	1.02 V	195	17.19	32.33
8	3216.00	45.96 AV	54.00	-8.04	1.02 V	195	13.63	32.33
9	4824.00	47.83 PK	74.00	-26.17	1.19 V	212	11.35	36.48
10	4824.00	34.34 AV	54.00	-19.66	1.19 V	212	-2.14	36.48

- 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	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Morgan 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	104.47 PK			1.09 H	213	73.25	31.22
2	*2437.00	94.09 AV			1.09 H	213	62.87	31.22
3	3248.00	44.58 PK	74.00	-29.42	1.24 H	109	12.36	32.22
4	3248.00	40.27 AV	54.00	-13.73	1.24 H	109	8.05	32.22
5	4874.00	48.69 PK	74.00	-25.31	1.06 H	359	12.11	36.58
6	4874.00	35.55 AV	54.00	-18.45	1.06 H	359	-1.03	36.58

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	115.23 PK			1.10 V	187	84.01	31.22
2	*2437.00	105.69 AV			1.10 V	187	74.47	31.22
3	3248.00	46.67 PK	74.00	-27.33	1.00 V	113	14.45	32.22
4	3248.00	42.52 AV	54.00	-11.48	1.00 V	113	10.30	32.22
5	4874.00	47.89 PK	74.00	-26.11	1.00 V	292	11.31	36.58
6	4874.00	34.76 AV	54.00	-19.24	1.00 V	292	-1.82	36.58

- 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	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	104.56 PK			1.07 H	199	73.33	31.23
2	*2462.00	94.11 AV			1.07 H	199	62.88	31.23
3	2483.50	58.03 PK	74.00	-15.97	1.07 H	199	26.79	31.24
4	2483.50	46.81 AV	54.00	-7.19	1.07 H	199	15.57	31.24
5	3282.00	42.11 PK	74.00	-31.89	1.00 H	16	10.01	32.10
6	3282.00	31.97 AV	54.00	-22.03	1.00 H	16	-0.13	32.10
7	4924.00	48.27 PK	74.00	-25.73	1.00 H	267	11.59	36.68
8	4924.00	35.55 AV	54.00	-18.45	1.00 H	267	-1.13	36.68

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	*2462.00	115.43 PK			1.12 V	192	84.20	31.23
2	*2462.00	105.71 AV			1.12 V	192	74.48	31.23
3	2483.50	72.08 PK	74.00	-1.92	1.09 V	194	40.84	31.24
4	2483.50	52.21 AV	54.00	-1.79	1.09 V	194	20.97	31.24
5	3282.00	44.70 PK	74.00	-29.30	1.00 V	109	12.60	32.10
6	3282.00	40.33 AV	54.00	-13.67	1.00 V	109	8.23	32.10
7	4924.00	47.41 PK	74.00	-26.59	1.47 V	11	10.73	36.68
8	4924.00	34.85 AV	54.00	-19.15	1.47 V	11	-1.83	36.68

- 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.

DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1625.00	48.34 PK	74.00	-25.66	1.26 H	21	20.60	27.74
2	1625.00	42.19 AV	54.00	-11.81	1.26 H	21	14.45	27.74
3	2390.00	58.96 PK	74.00	-15.04	1.28 H	227	27.74	31.22
4	2390.00	46.88 AV	54.00	-7.12	1.28 H	227	15.66	31.22
5	*2422.00	97.86 PK			1.28 H	227	66.64	31.22
6	*2422.00	87.15 AV			1.28 H	227	55.93	31.22
7	3229.00	42.92 PK	74.00	-31.08	1.30 H	226	10.64	32.28
8	3229.00	31.61 AV	54.00	-22.39	1.30 H	226	-0.67	32.28
9	4844.00	47.55 PK	74.00	-26.45	1.08 H	246	11.03	36.52
10	4844.00	34.29 AV	54.00	-19.71	1.08 H	246	-2.23	36.52

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	1625.00	52.13 PK	74.00	-21.87	1.00 V	117	24.39	27.74
2	1625.00	46.53 AV	54.00	-7.47	1.00 V	117	18.79	27.74
3	2390.00	68.55 PK	74.00	-5.45	1.15 V	199	37.33	31.22
4	2390.00	52.45 AV	54.00	-1.55	1.15 V	199	21.23	31.22
5	*2422.00	108.71 PK			1.12 V	208	77.49	31.22
6	*2422.00	99.24 AV			1.12 V	208	68.02	31.22
7	3229.00	48.34 PK	74.00	-25.66	1.00 V	199	16.06	32.28
8	3229.00	44.11 AV	54.00	-9.89	1.00 V	199	11.83	32.28
9	4844.00	46.12 PK	74.00	-27.88	1.15 V	0	9.60	36.52
10	4844.00	33.19 AV	54.00	-20.81	1.15 V	0	-3.33	36.52

- 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 4	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	98.54 PK			1.32 H	347	67.32	31.22
2	*2437.00	88.67 AV			1.32 H	347	57.45	31.22
3	4874.00	47.94 PK	74.00	-26.06	1.25 H	261	11.36	36.58
4	4874.00	34.88 AV	54.00	-19.12	1.25 H	261	-1.70	36.58

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	1625.00	24.32 PK	74.00	-49.68	1.08 V	176	-3.42	27.74
2	1625.00	46.51 AV	54.00	-7.49	1.08 V	176	18.77	27.74
3	*2437.00	109.82 PK			1.10 V	230	78.60	31.22
4	*2437.00	100.20 AV			1.10 V	230	68.98	31.22
5	3248.00	46.49 PK	74.00	-27.51	1.10 V	166	14.27	32.22
6	3248.00	42.52 AV	54.00	-11.48	1.10 V	166	10.30	32.22
7	4874.00	46.87 PK	74.00	-27.13	1.05 V	349	10.29	36.58
8	4874.00	33.69 AV	54.00	-20.31	1.05 V	349	-2.89	36.58

- 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 7	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2452.00	98.46 PK			1.22 H	216	67.23	31.23
2	*2452.00	88.58 AV			1.22 H	216	57.35	31.23
3	2483.50	58.12 PK	74.00	-15.88	1.22 H	216	26.88	31.24
4	2483.50	46.96 AV	54.00	-7.04	1.22 H	216	15.72	31.24
5	4904.00	47.89 PK	74.00	-26.11	1.00 H	61	11.25	36.64
6	4904.00	34.50 AV	54.00	-19.50	1.00 H	61	-2.14	36.64

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	1625.00	52.03 PK	74.00	-21.97	1.00 V	115	24.29	27.74
2	1625.00	46.44 AV	54.00	-7.56	1.00 V	115	18.70	27.74
3	*2452.00	109.77 PK			1.11 V	204	78.54	31.23
4	*2452.00	100.01 AV			1.11 V	204	68.78	31.23
5	2483.50	67.75 PK	74.00	-6.25	1.12 V	198	36.51	31.24
6	2483.50	52.42 AV	54.00	-1.58	1.12 V	198	21.18	31.24
7	3268.00	45.09 PK	74.00	-28.91	1.09 V	228	12.94	32.15
8	3268.00	40.08 AV	54.00	-13.92	1.09 V	228	7.93	32.15
9	4904.00	46.57 PK	74.00	-27.43	1.01 V	310	9.93	36.64
10	4904.00	33.28 AV	54.00	-20.72	1.01 V	310	-3.36	36.64

- 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.

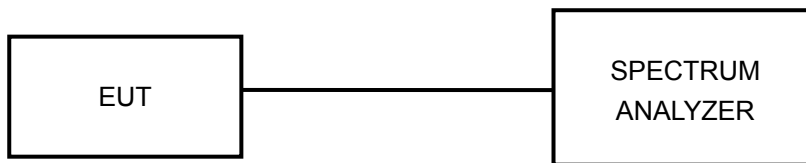
4.3.3 TEST PROCEDURE

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.

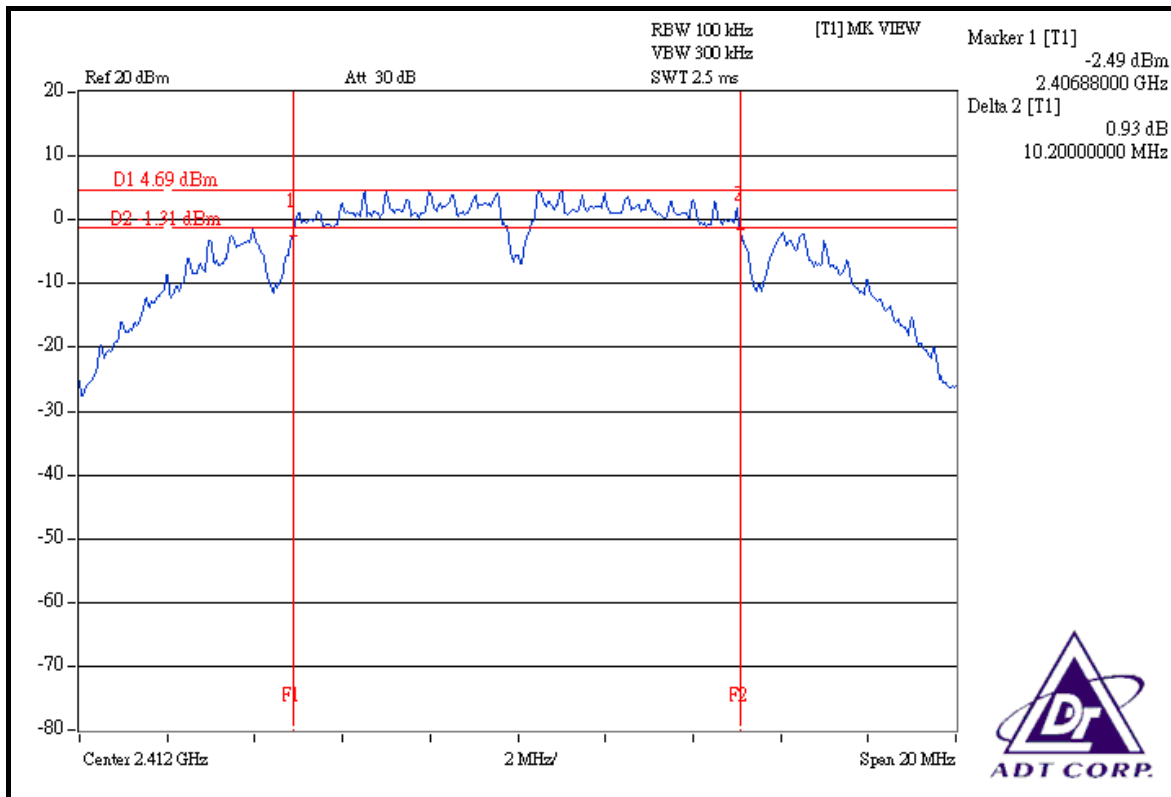
4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

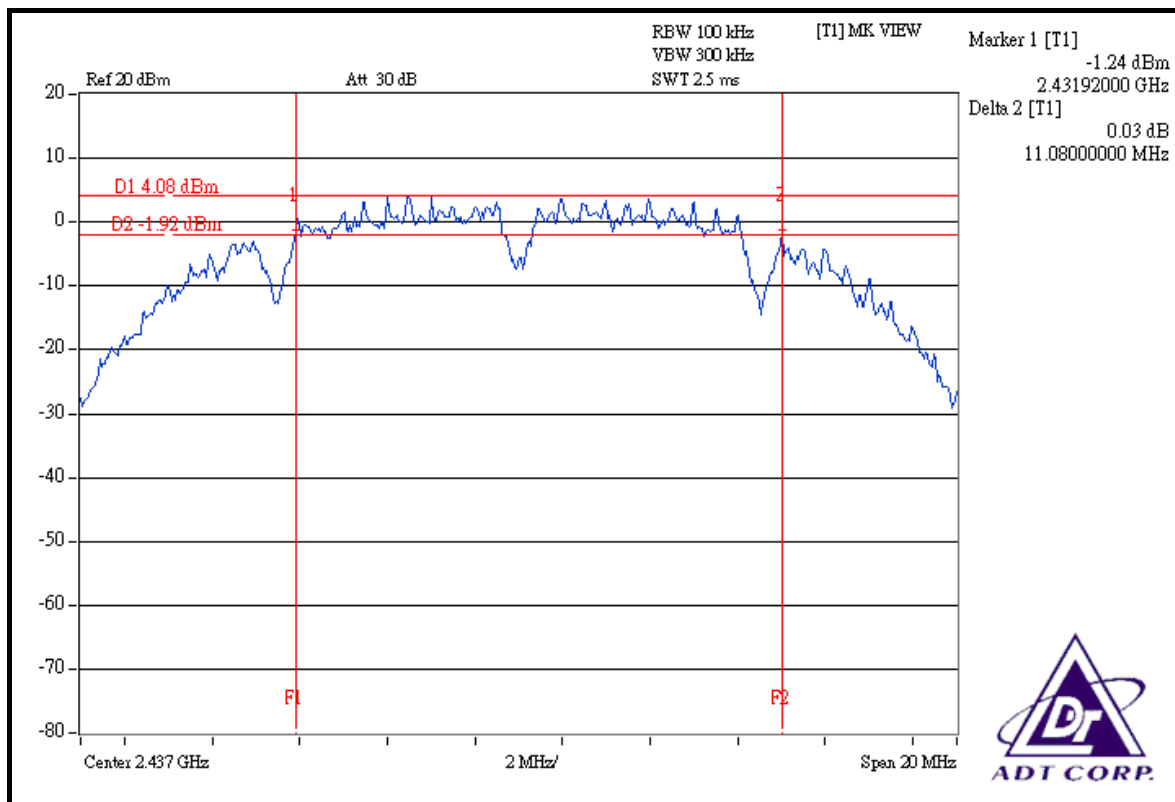
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

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

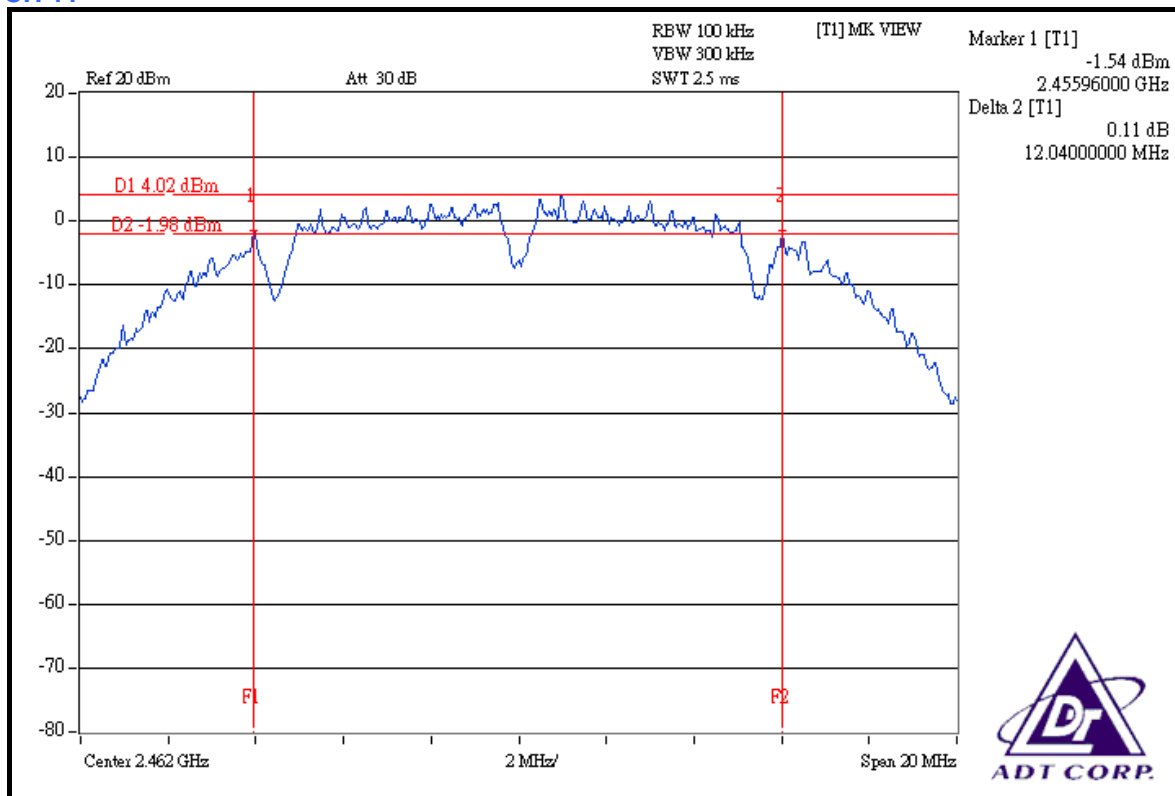
CH 1



CH 6



CH 11

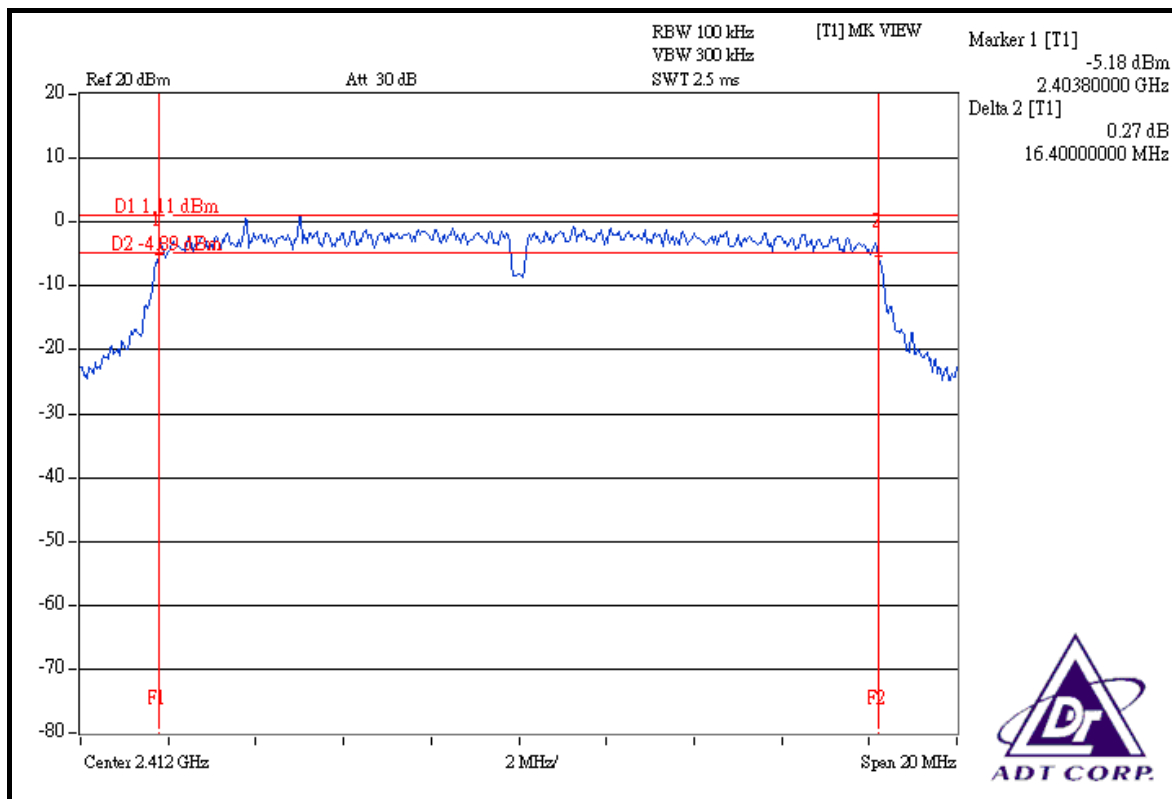


802.11g OFDM MODULATION:

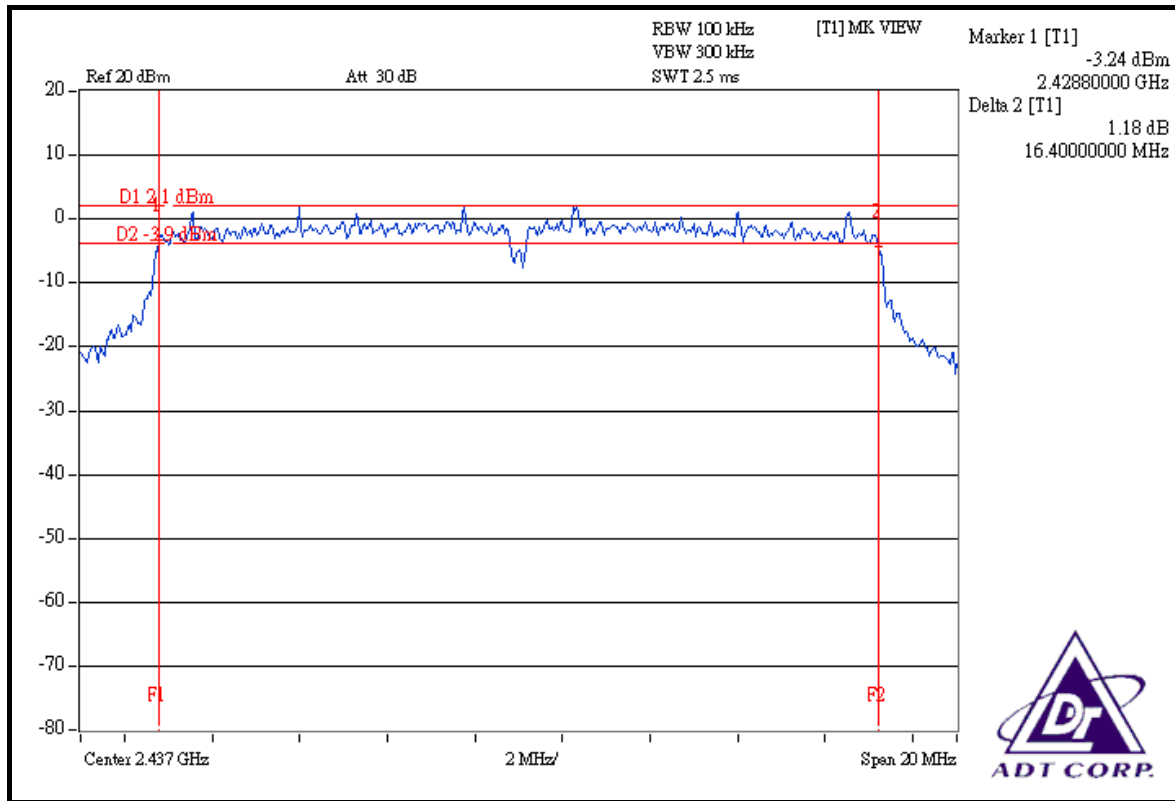
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

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

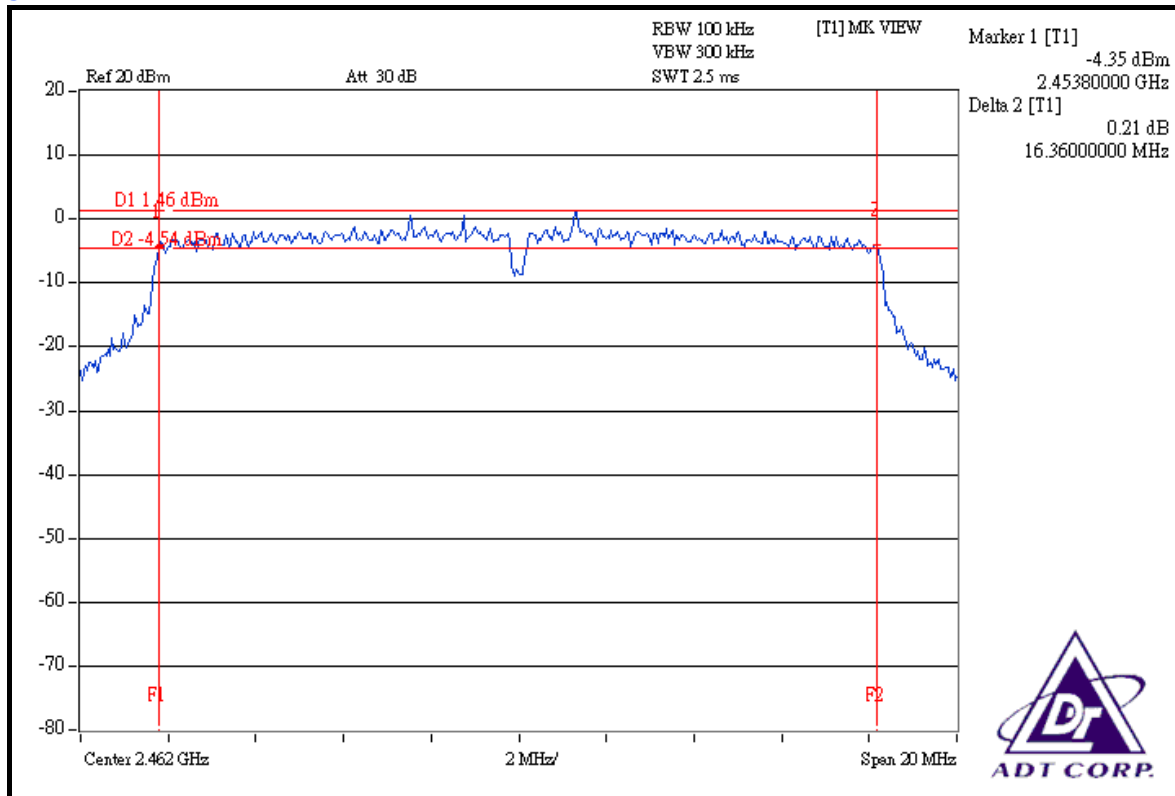
CH 1



CH 6



CH 11



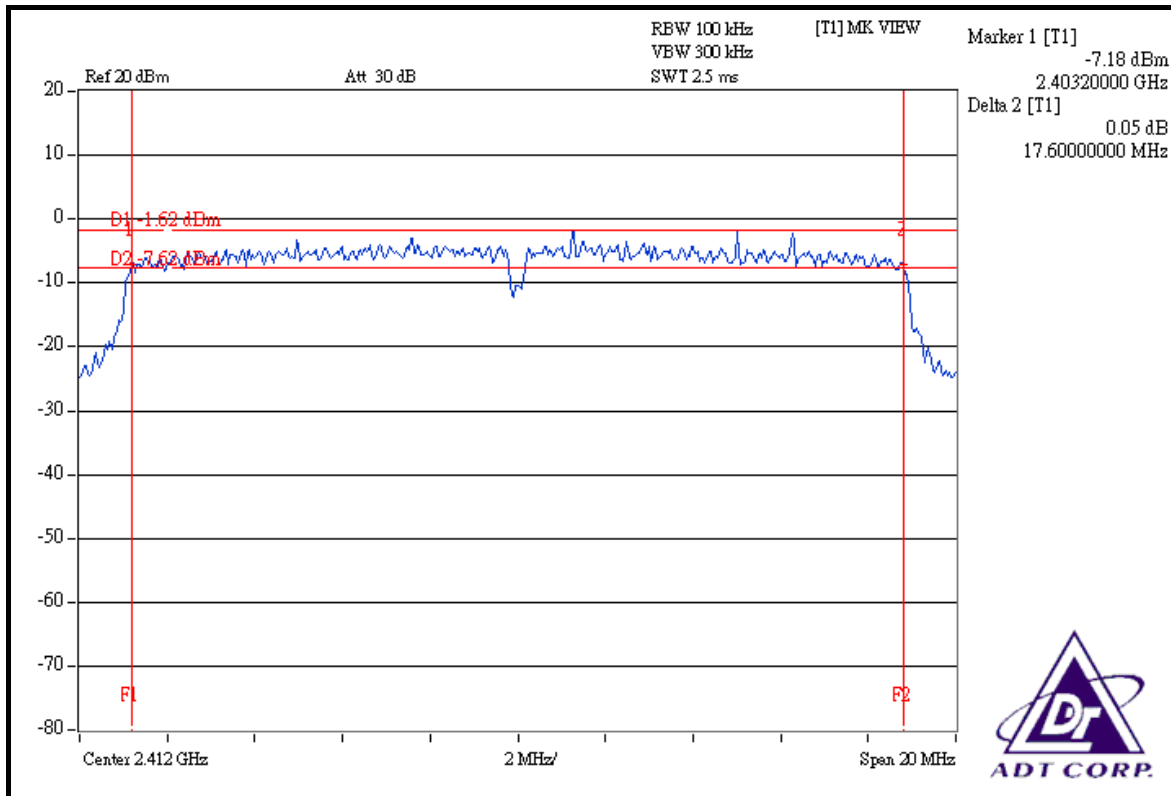


DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

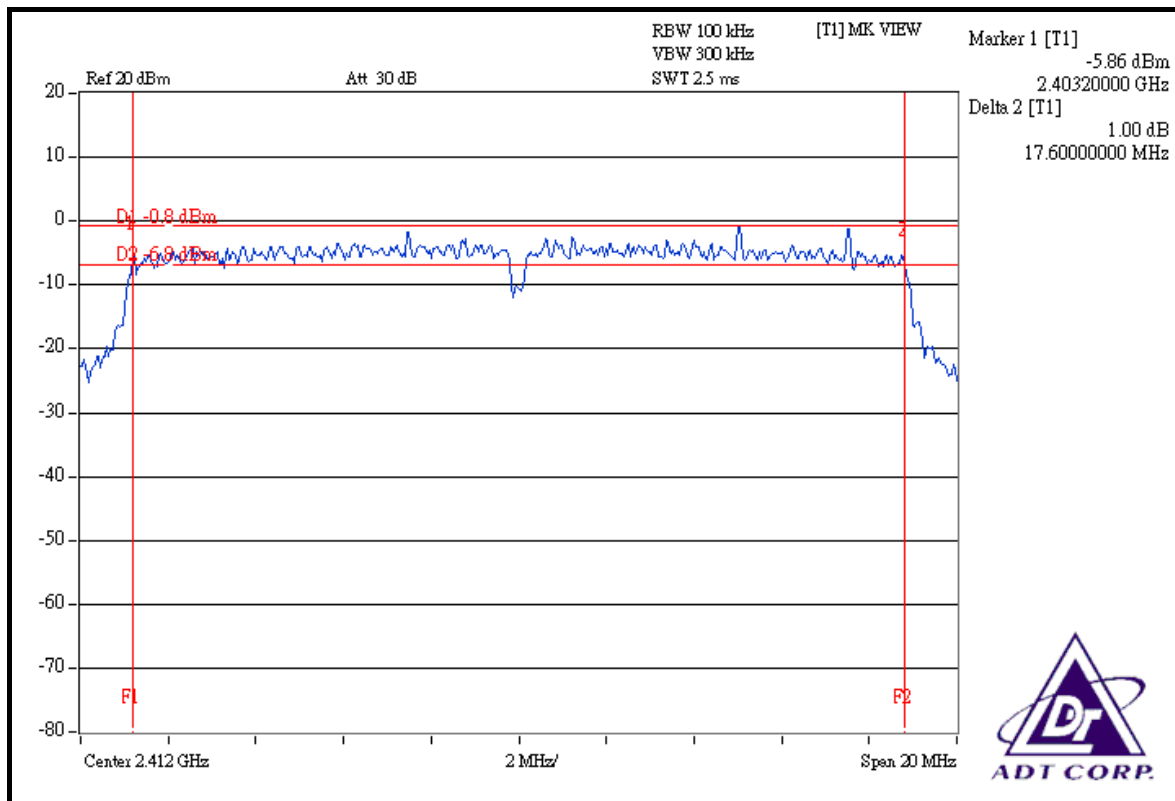
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	2412	17.60	17.60	17.32	0.5	PASS
6	2437	17.28	17.64	17.60	0.5	PASS
11	2462	17.64	17.64	17.60	0.5	PASS

FOR CHAIN 0: CH 1

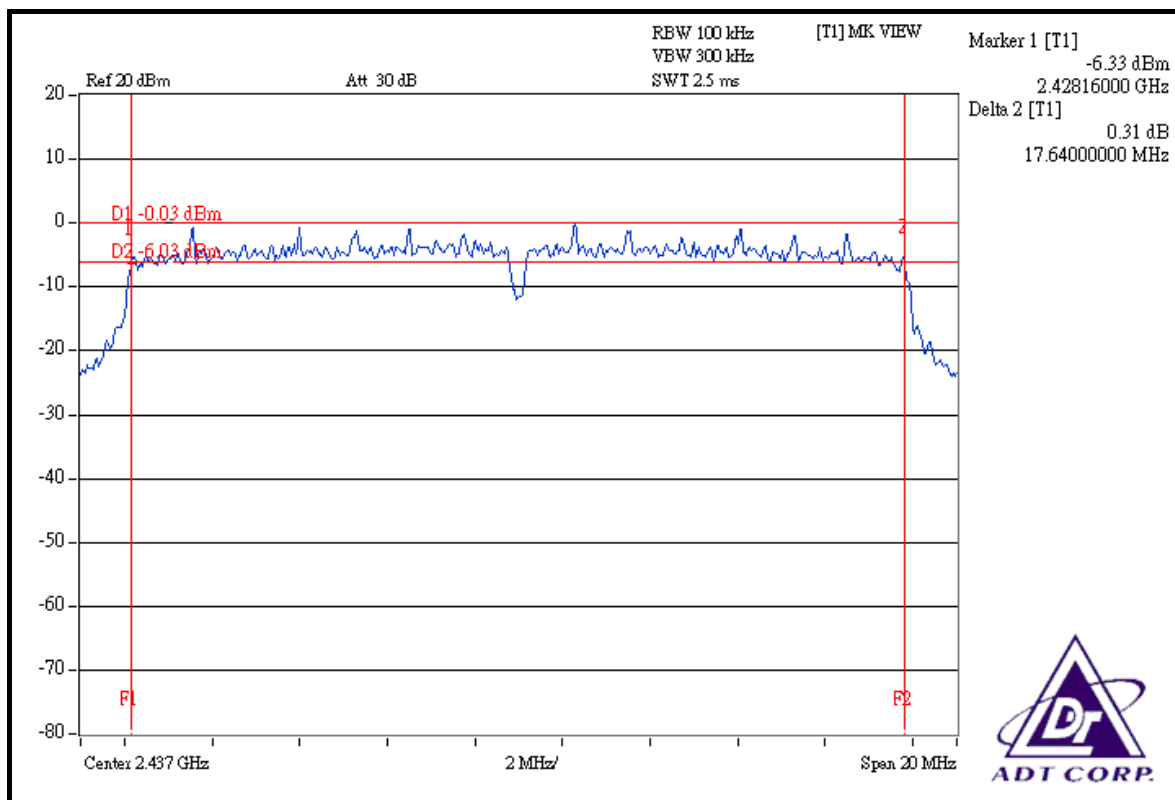




FOR CHAIN 1: CH 1

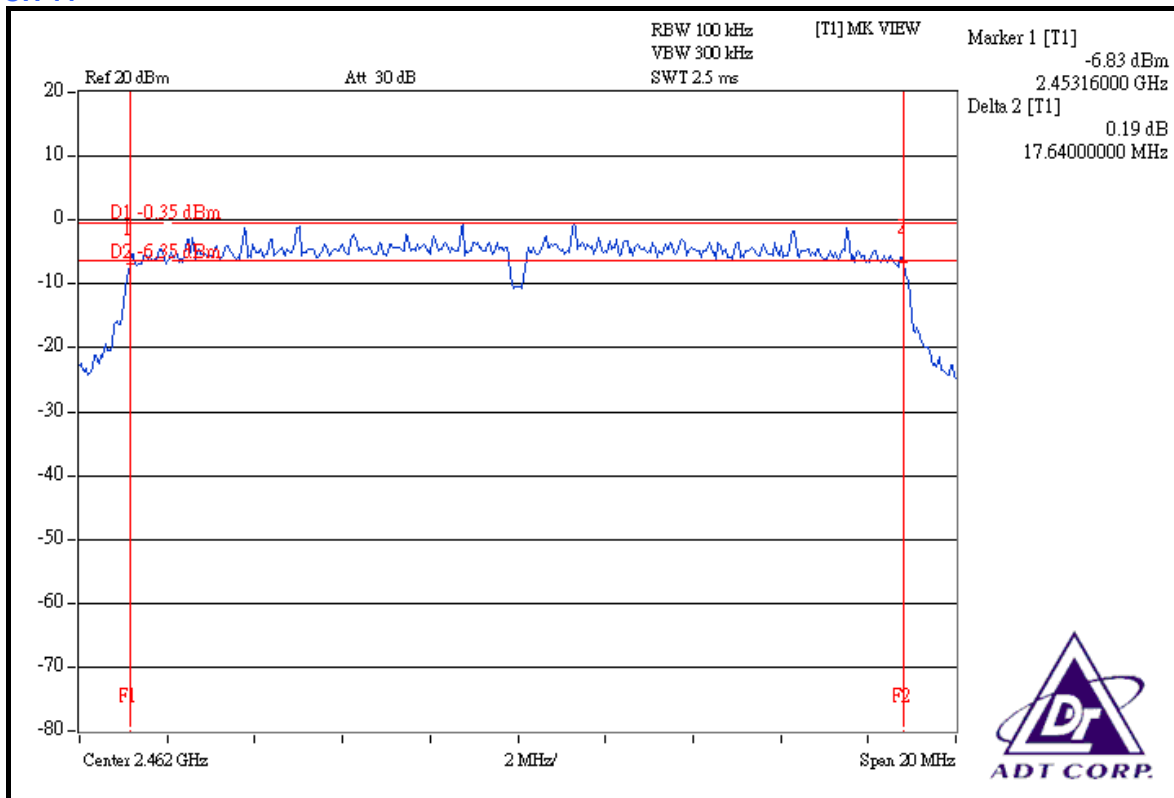


CH 6

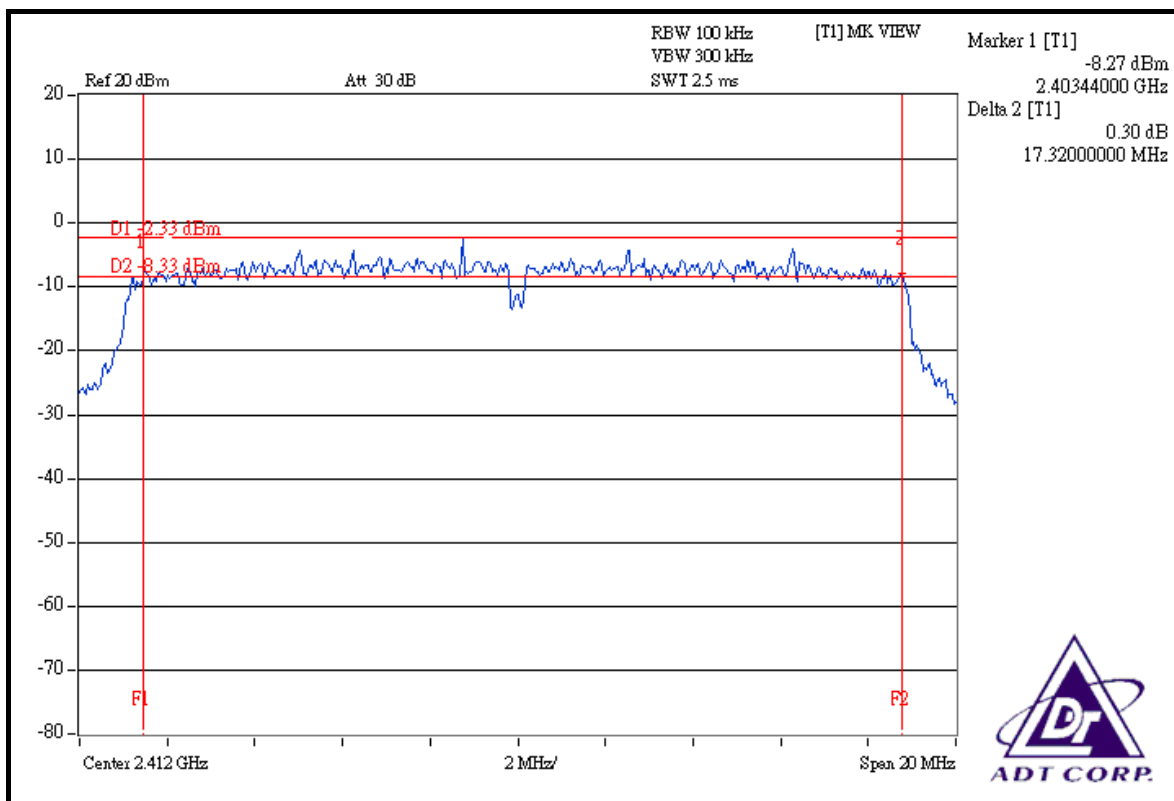




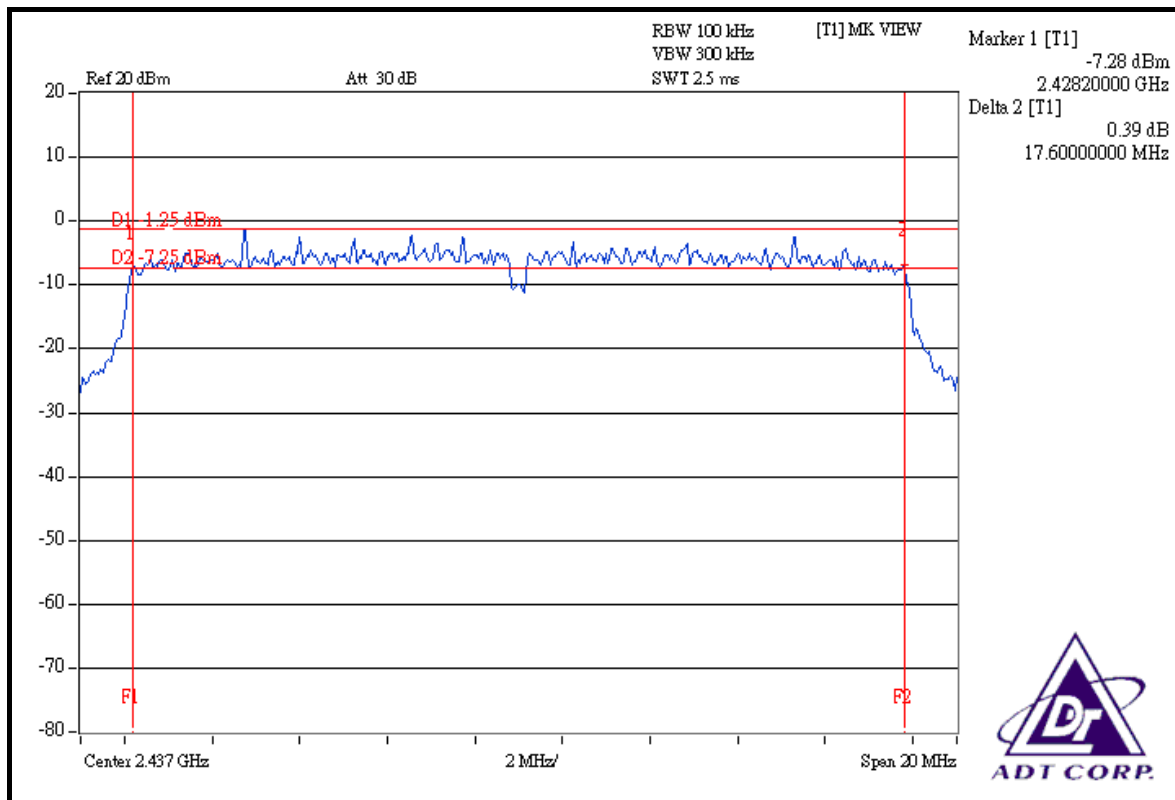
CH 11



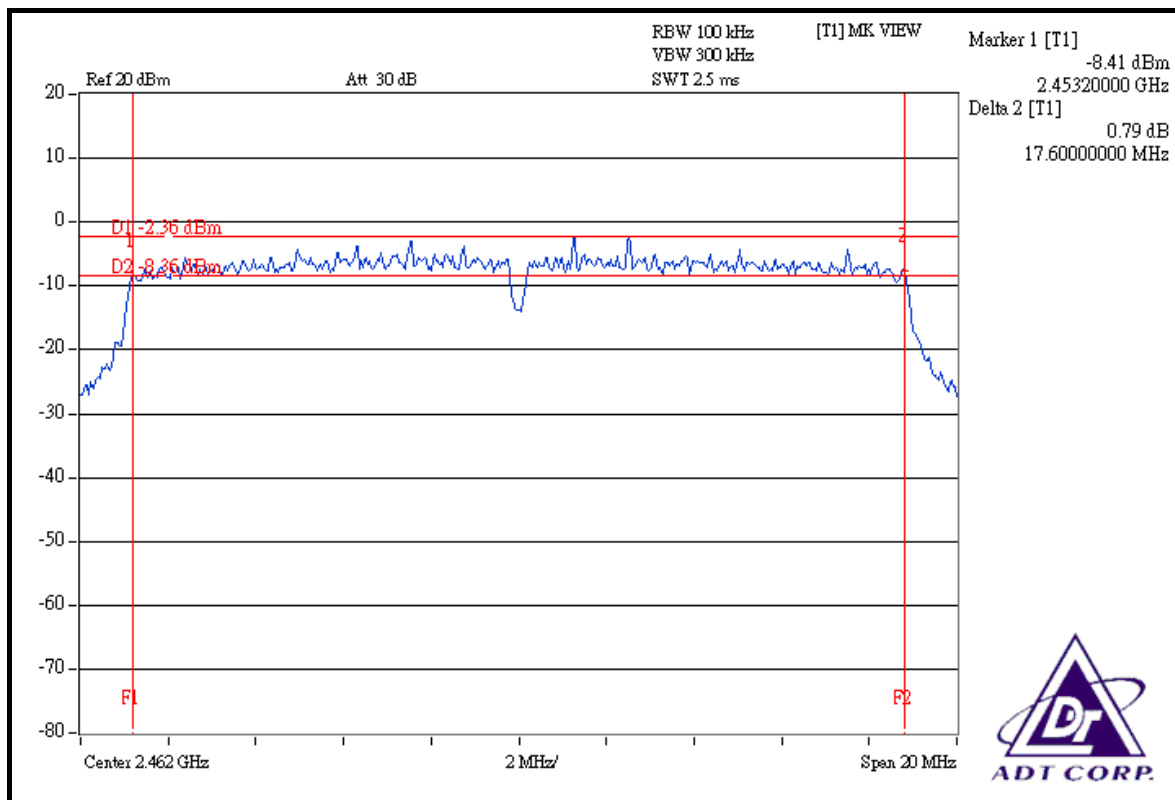
FOR CHAIN 2: CH 1



CH 6



CH 11



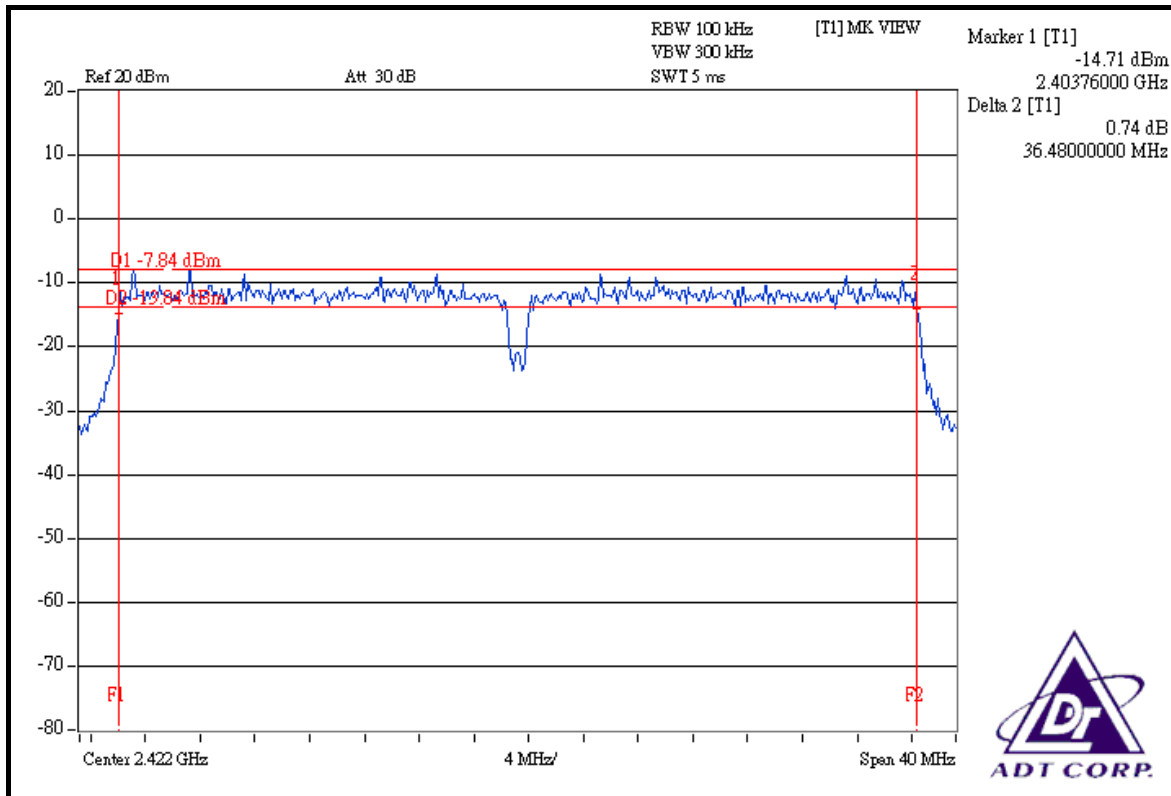


DRAFT 802.11n (40MHz) OFDM MODULATION:

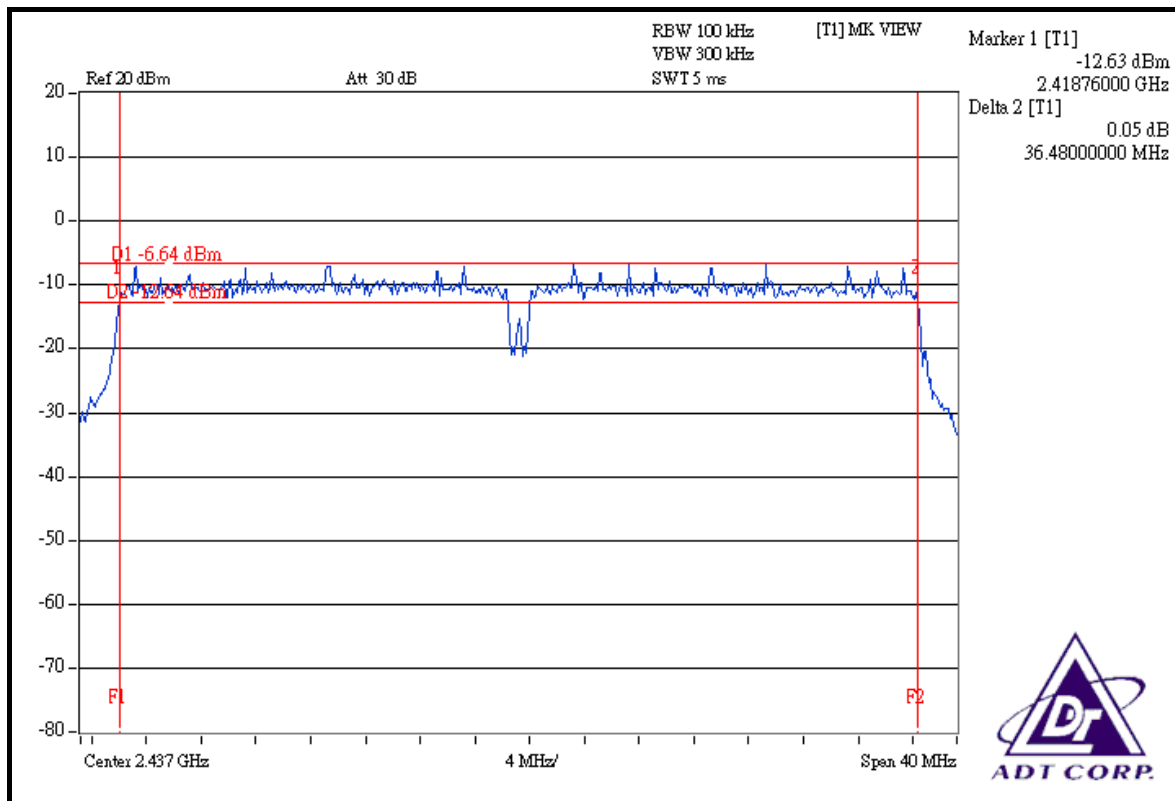
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	2422	36.48	36.48	36.48	0.5	PASS
4	2437	36.48	36.48	36.56	0.5	PASS
7	2452	36.48	36.48	36.48	0.5	PASS

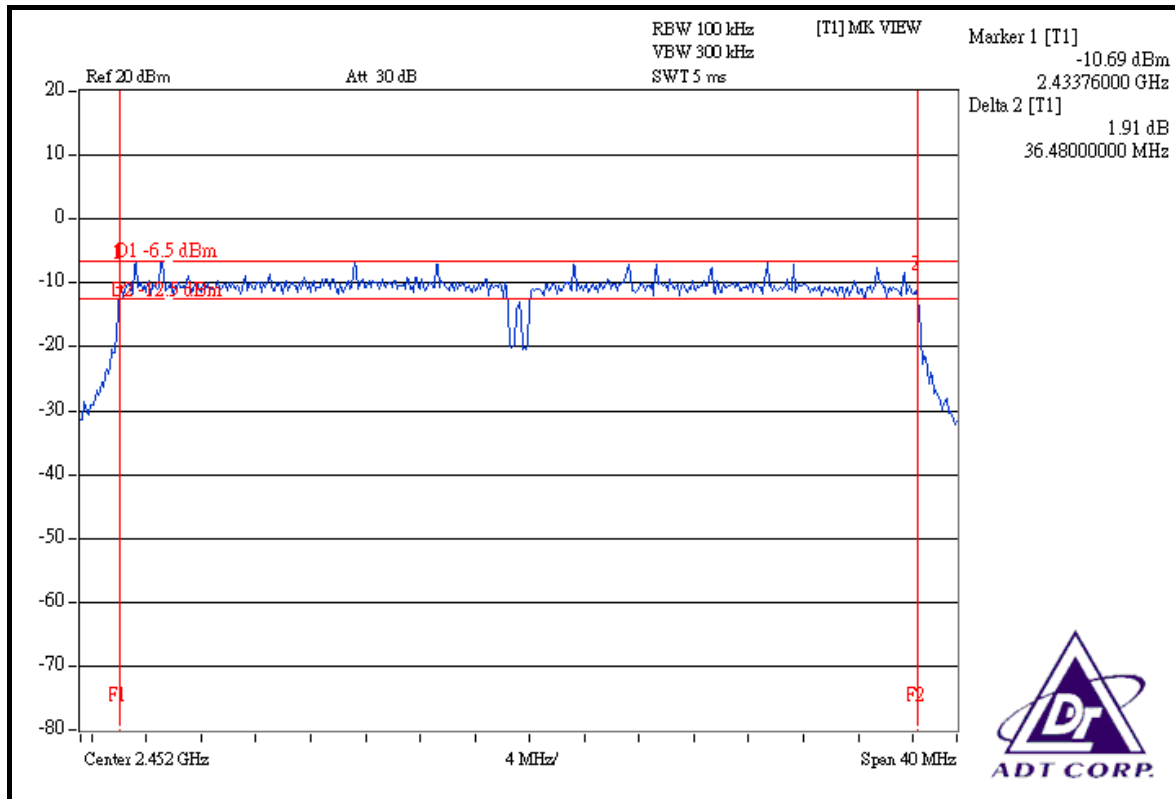
FOR CHAIN 0: CH 1



CH 4

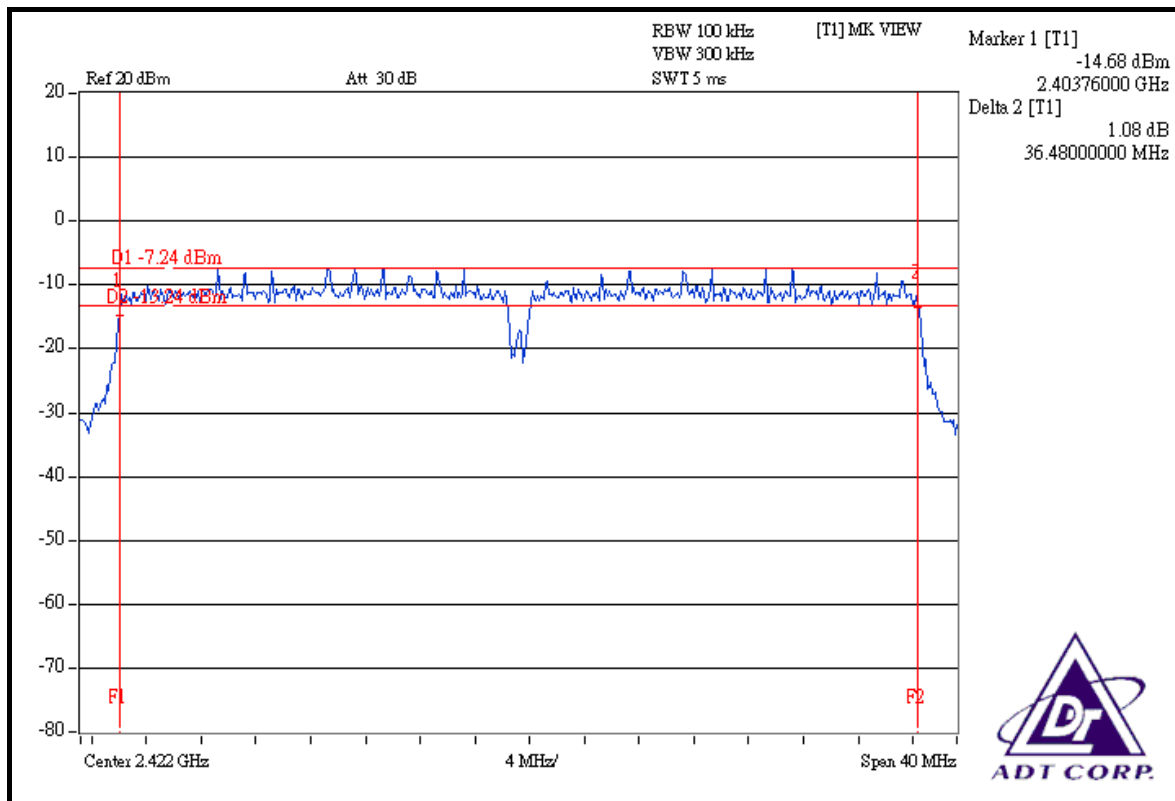


CH 7

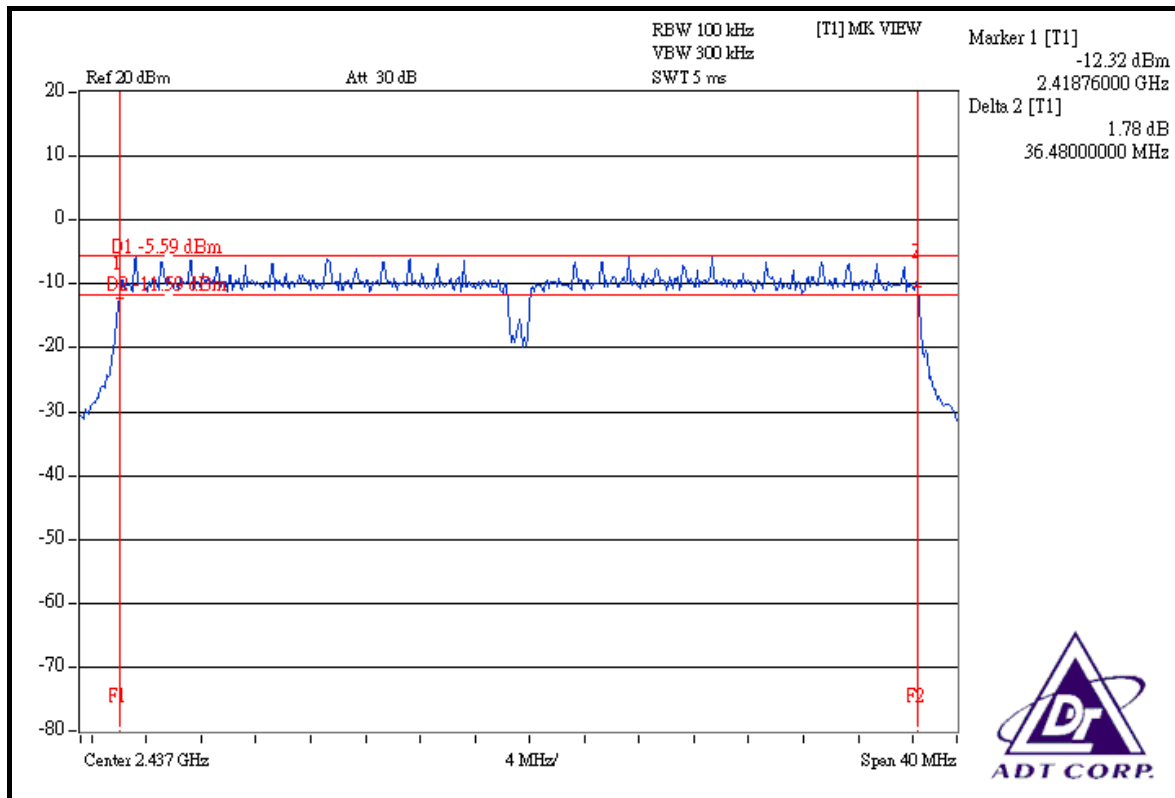




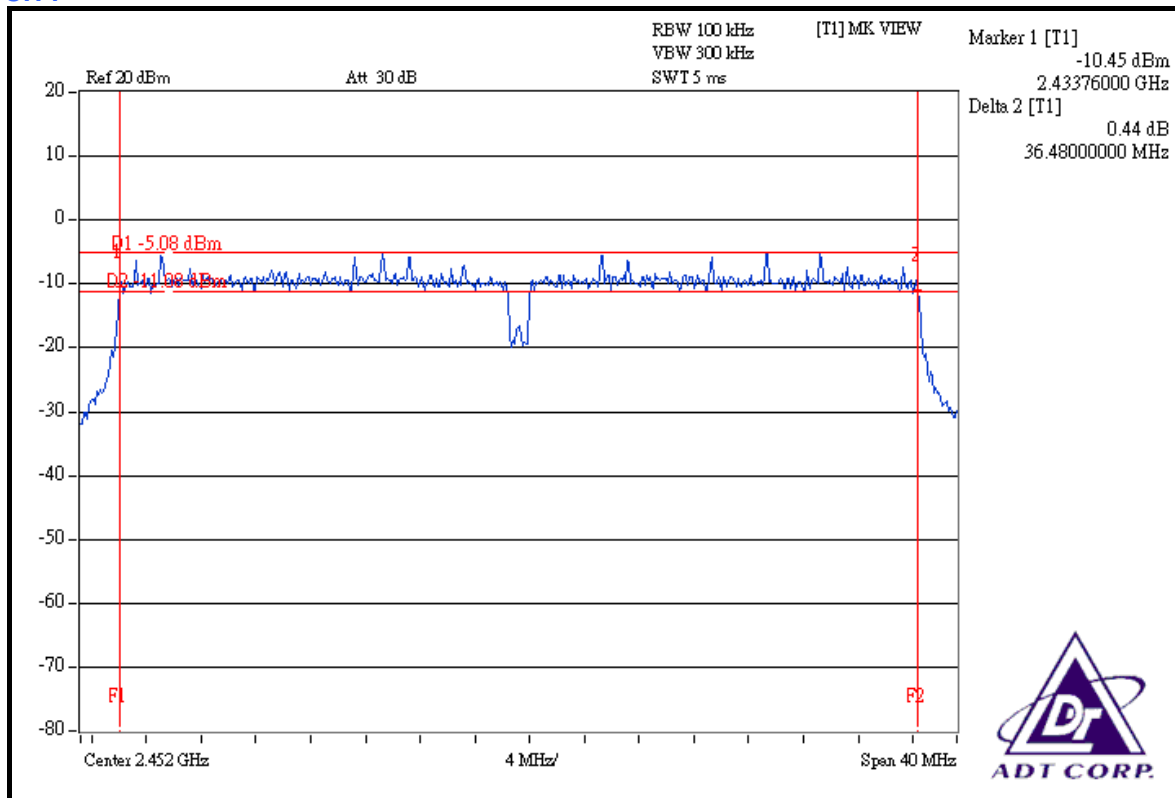
FOR CHAIN 1: CH 1



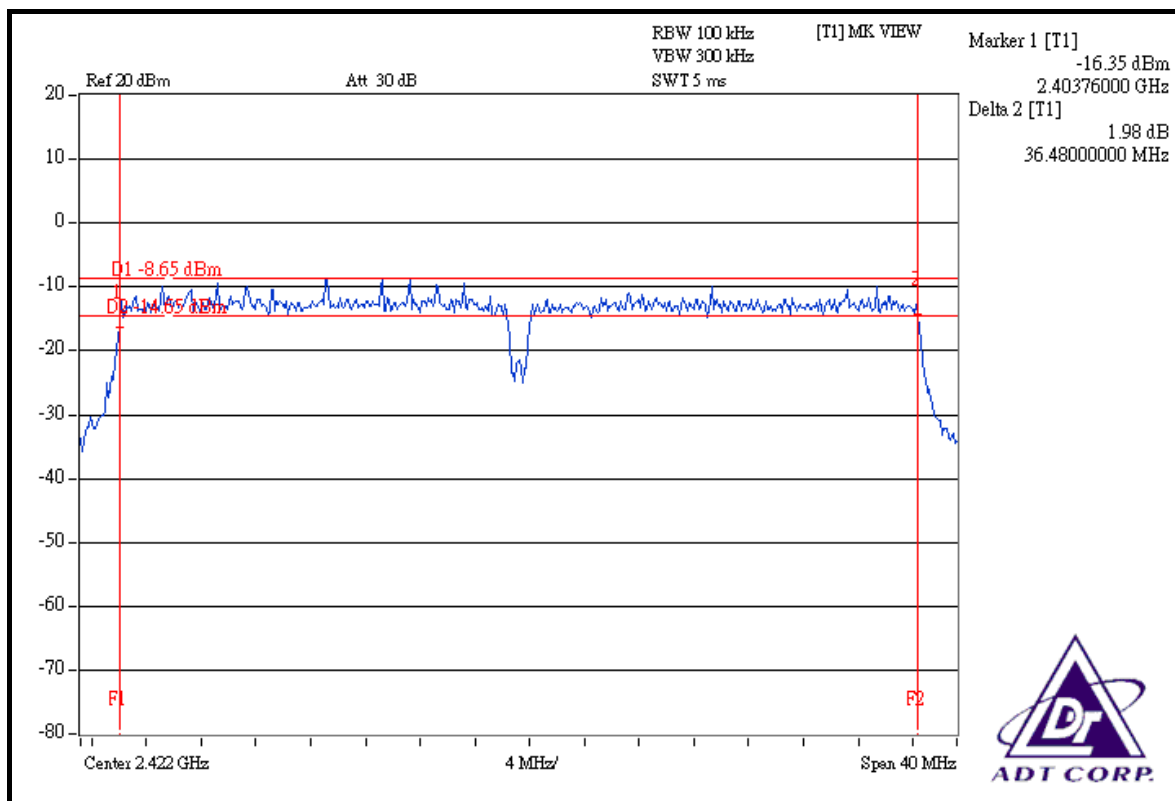
CH 4



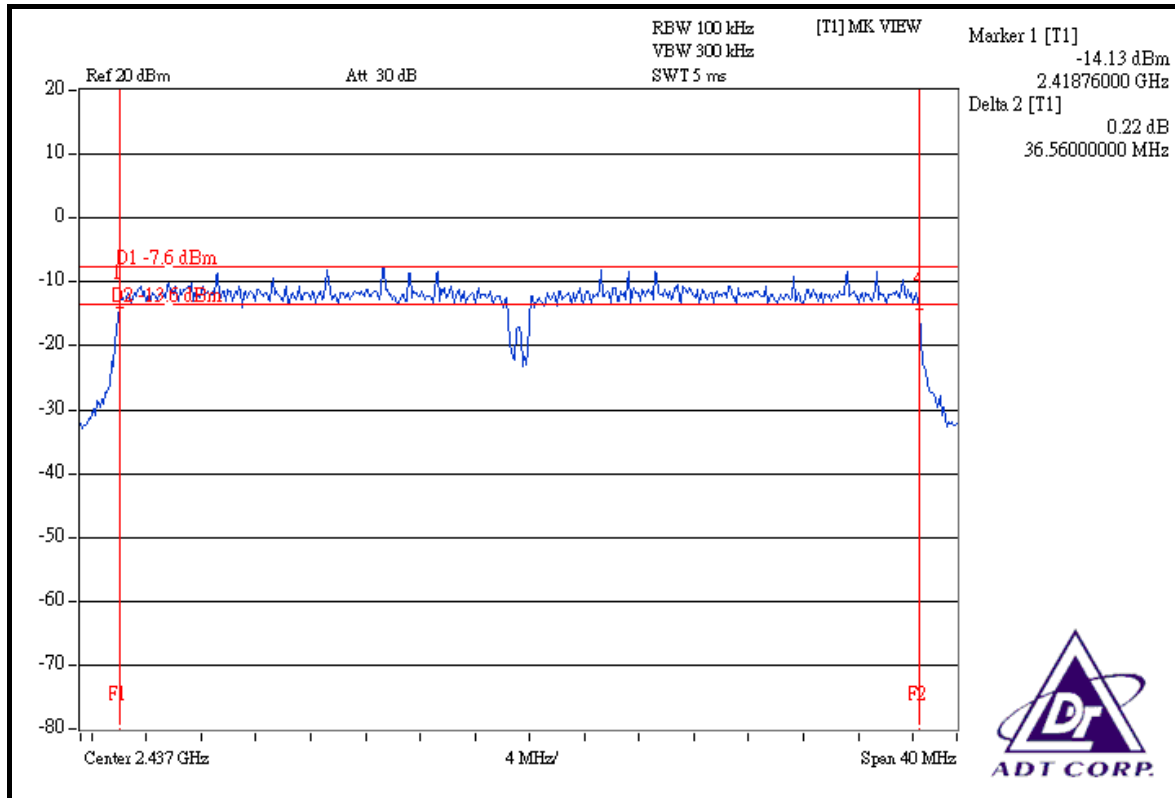
CH 7



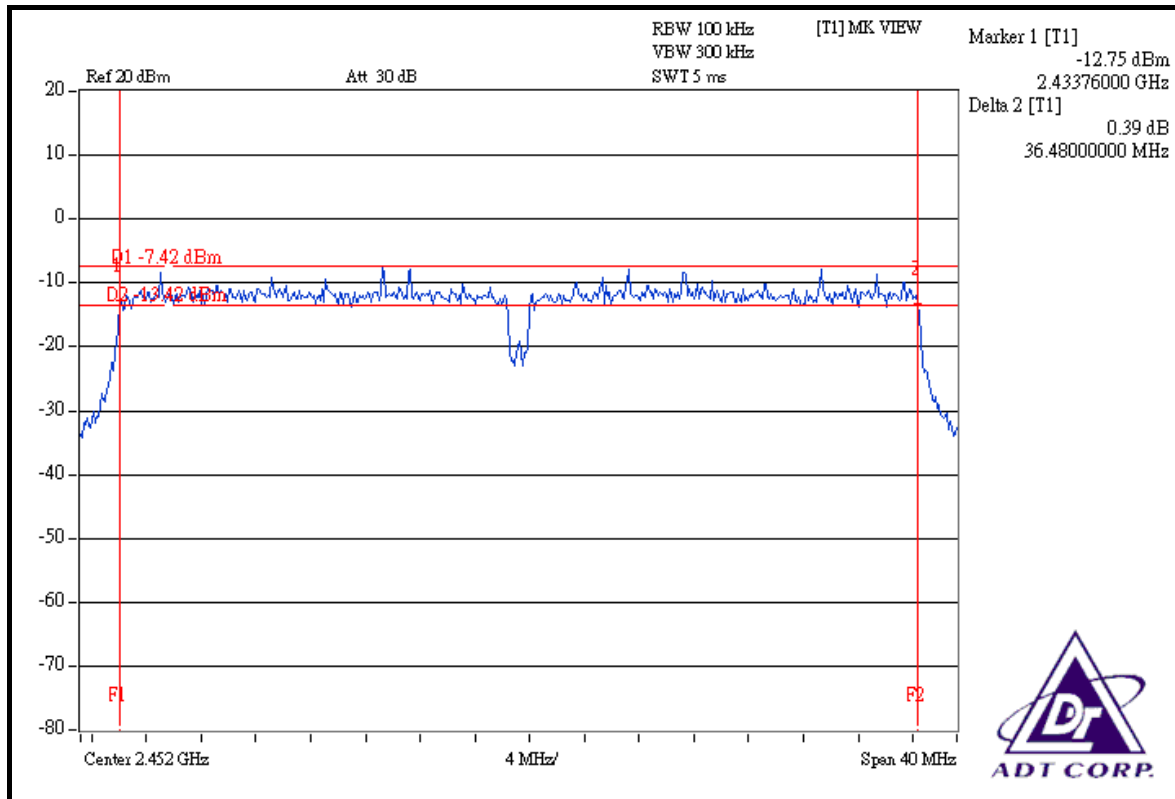
FOR CHAIN 2: CH 1



CH 4



CH 7





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	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	50.350	17.02	30	PASS
6	2437	41.020	16.13	30	PASS
11	2462	40.458	16.07	30	PASS

802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	50.466	17.03	30	PASS
6	2437	65.163	18.14	30	PASS
11	2462	50.350	17.02	30	PASS



DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)			PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	25.293	31.842	20.370	14.03	15.03	13.09	77.505	18.89	30	PASS
6	2437	31.989	40.365	25.235	15.05	16.06	14.02	97.588	19.89	30	PASS
11	2462	32.509	40.272	25.235	15.12	16.05	14.02	98.015	19.91	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)			PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	2422	14.454	14.223	11.272	11.60	11.53	10.52	39.950	16.02	30	PASS
4	2437	17.906	22.909	14.289	12.53	13.60	11.55	55.104	17.41	30	PASS
7	2452	18.155	22.751	14.555	12.59	13.57	11.63	55.461	17.44	30	PASS



4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

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

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

4.5.3 TEST PROCEDURE

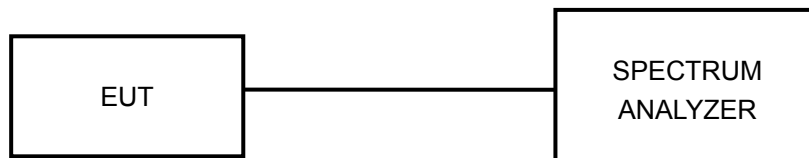
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP

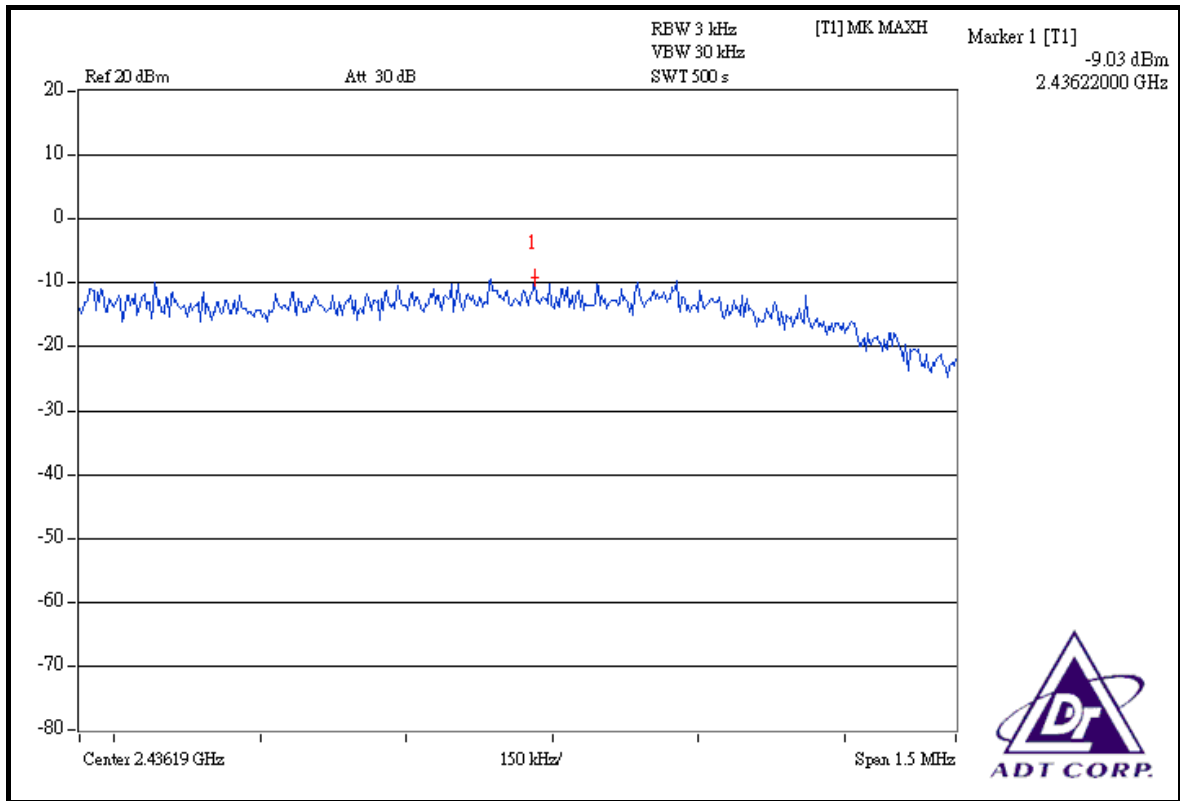


4.5.6 EUT OPERATING CONDITION

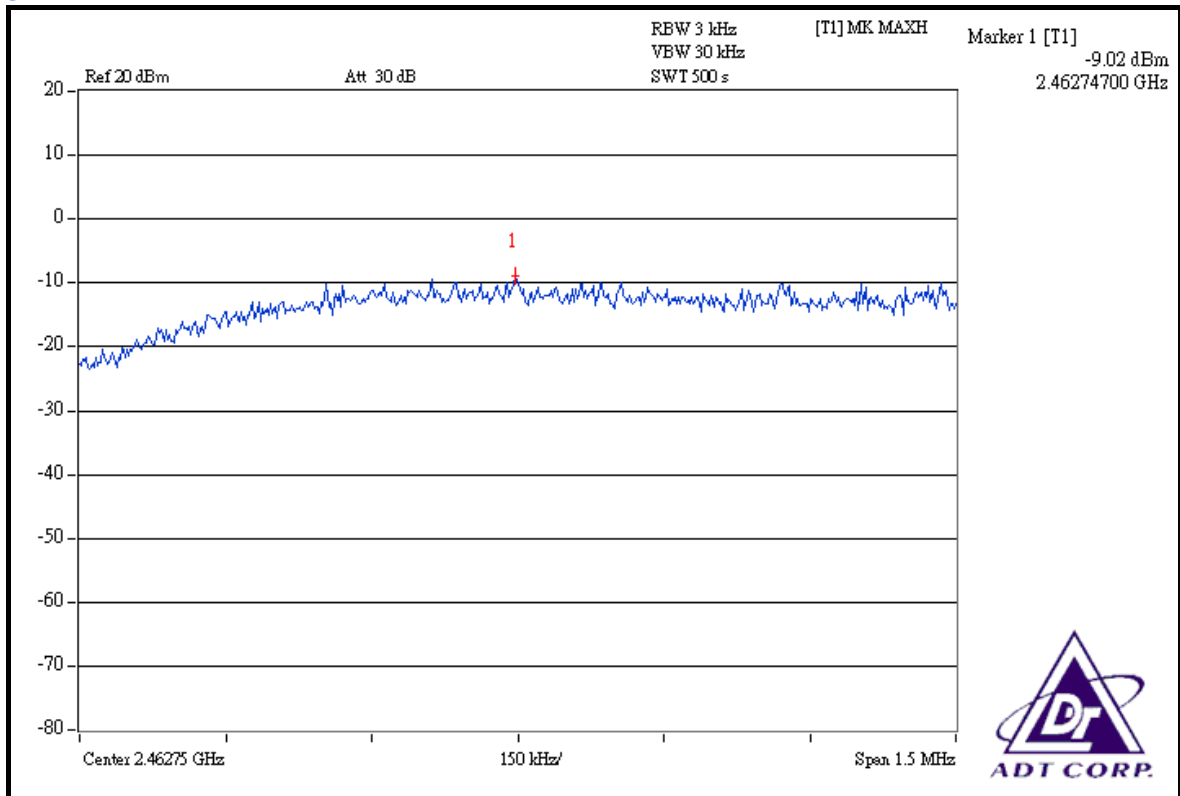
Same as Item 4.3.6



CH 6



CH 11



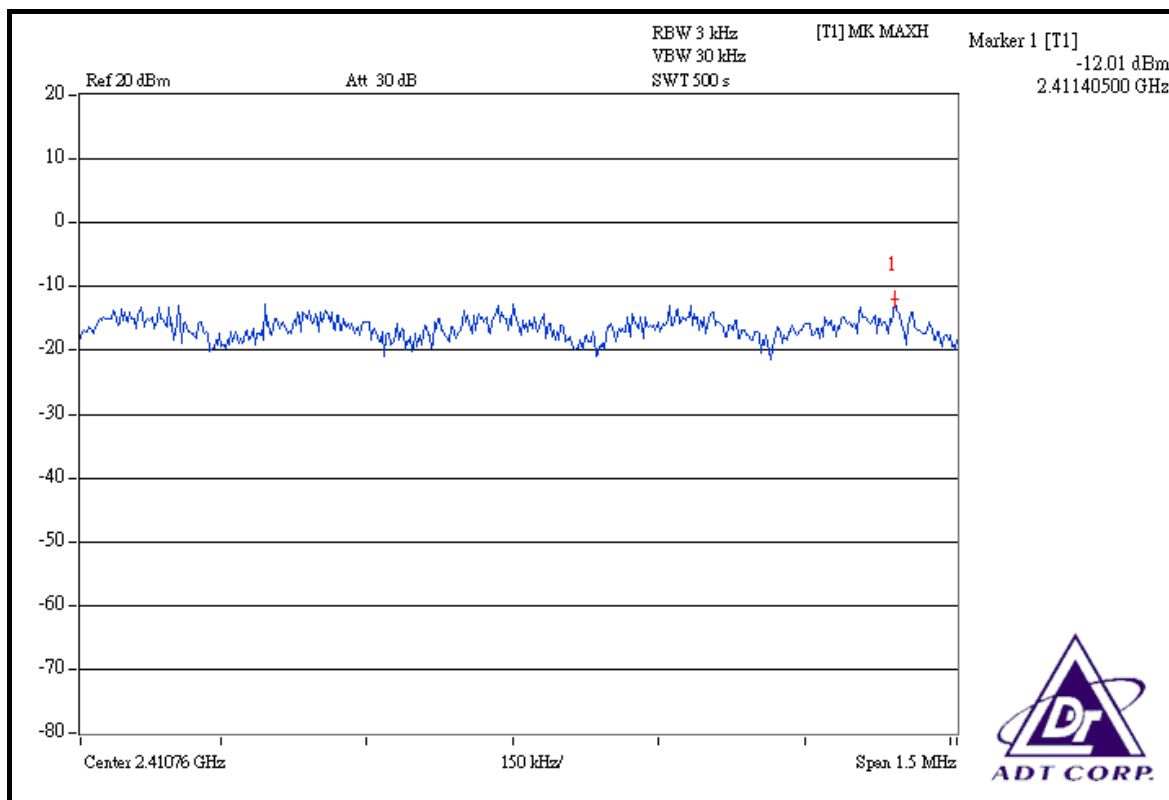


802.11g OFDM MODULATION:

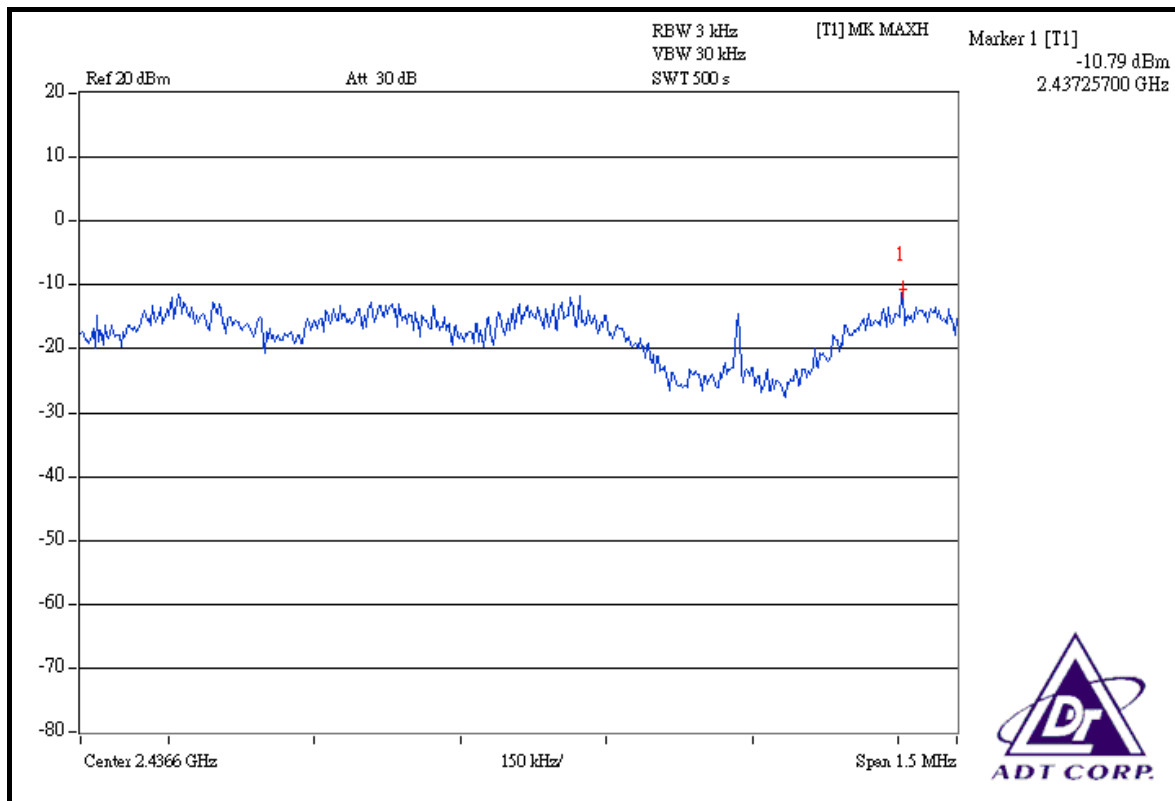
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-12.01	8	PASS
6	2437	-10.79	8	PASS
11	2462	-12.18	8	PASS

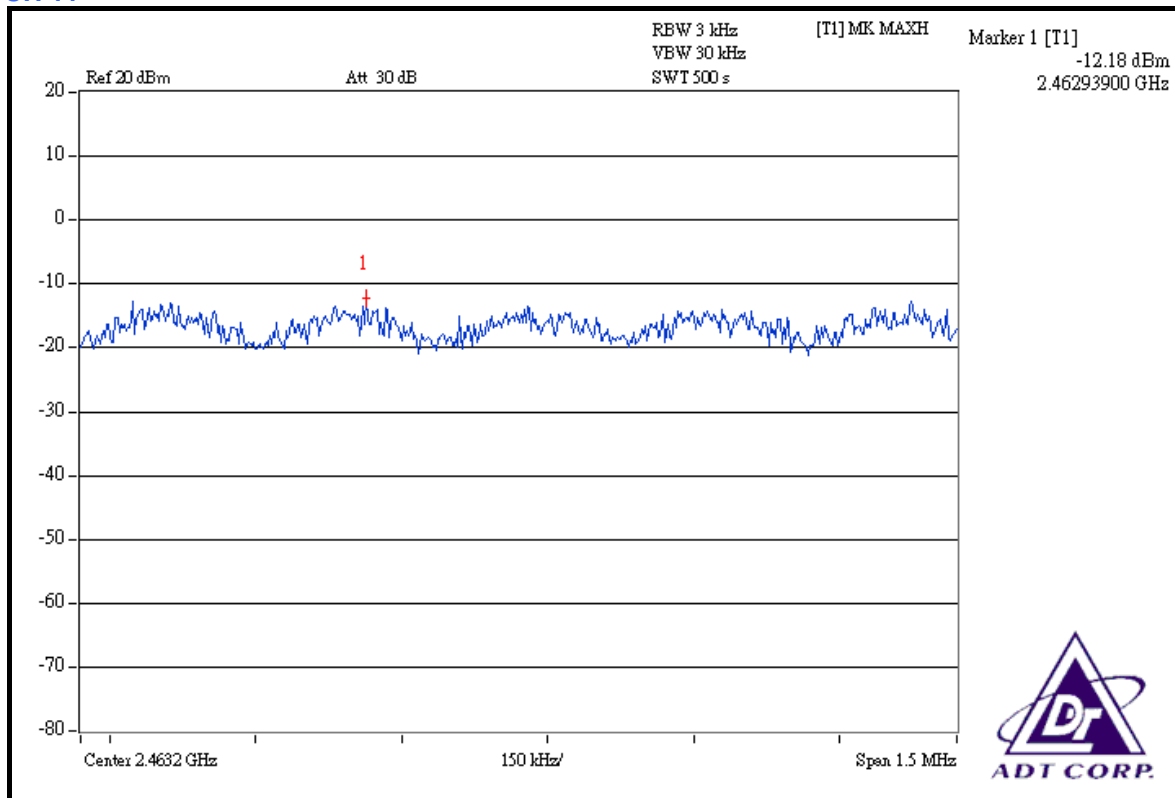
CH 1



CH 6



CH 11



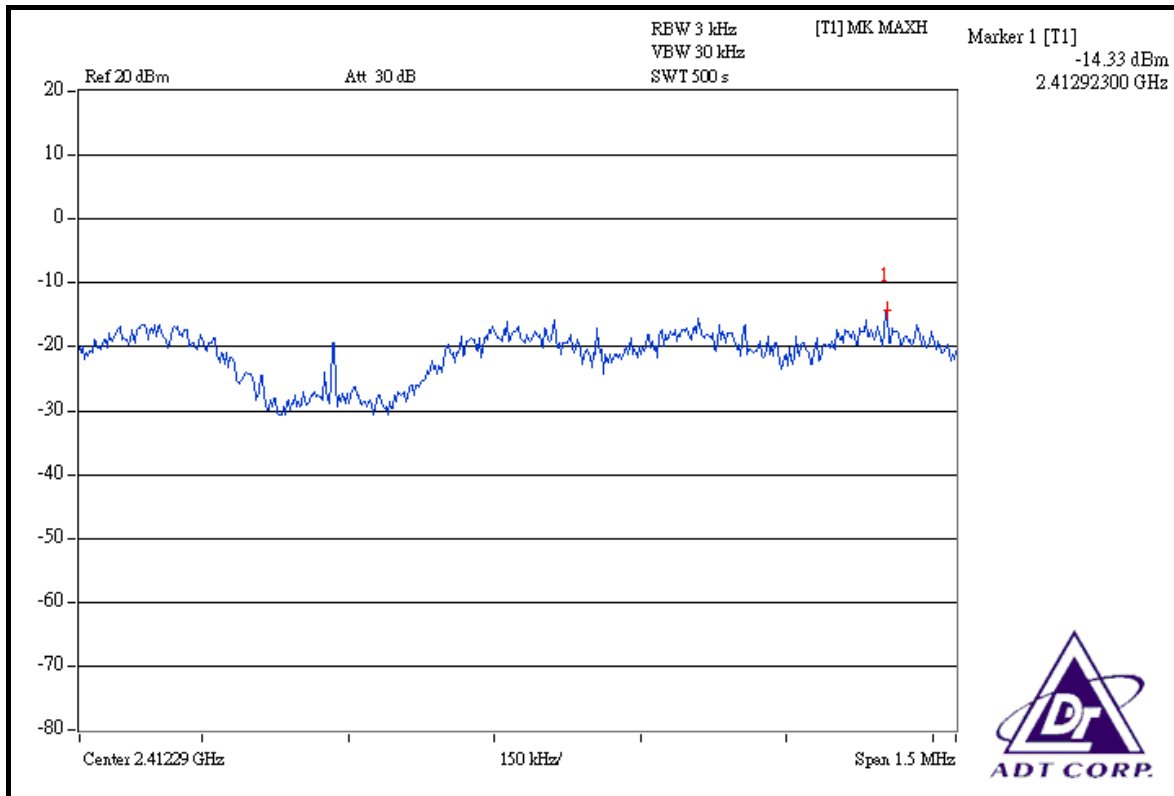


DRAFT 802.11n (20MHz) OFDM MODULATION:

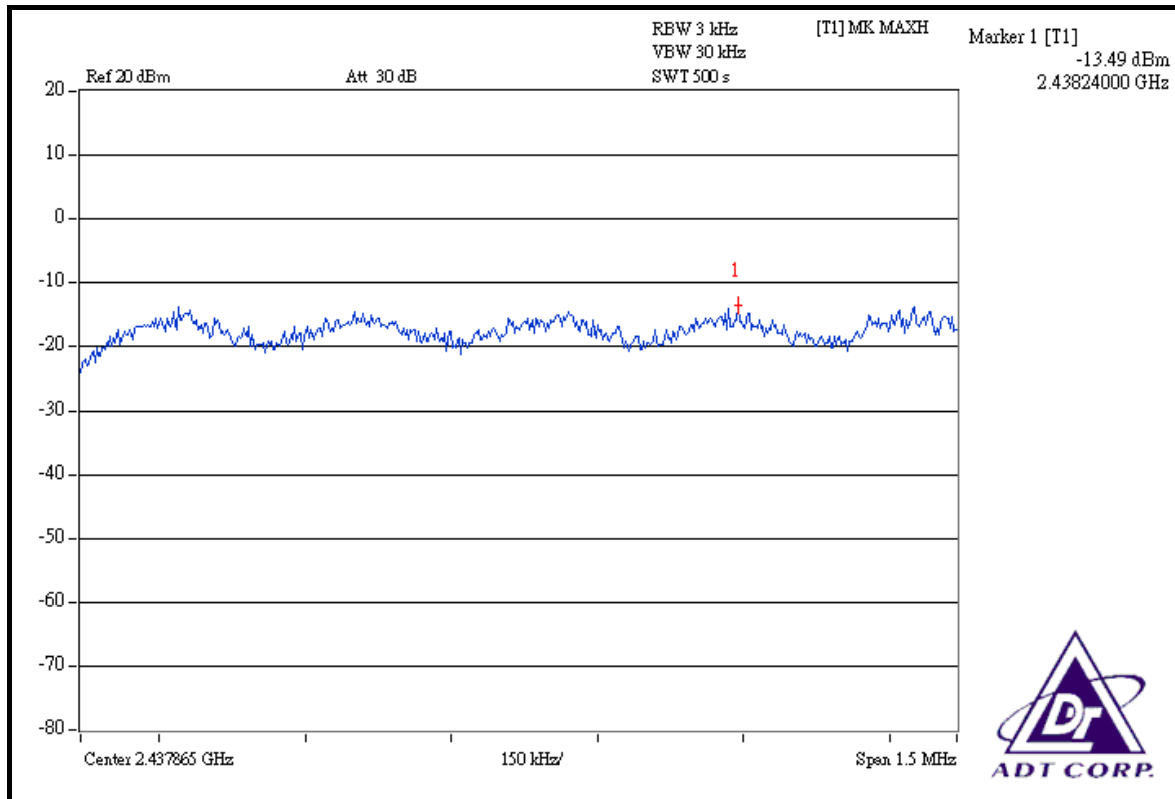
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHAN.	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	0.037	0.029	0.018	-14.33	-15.34	-17.39	0.084	-10.76	8	PASS
6	2437	0.045	0.036	0.022	-13.49	-14.43	-16.52	0.103	-9.87	8	PASS
11	2462	0.044	0.038	0.024	-13.52	-14.20	-16.24	0.106	-9.75	8	PASS

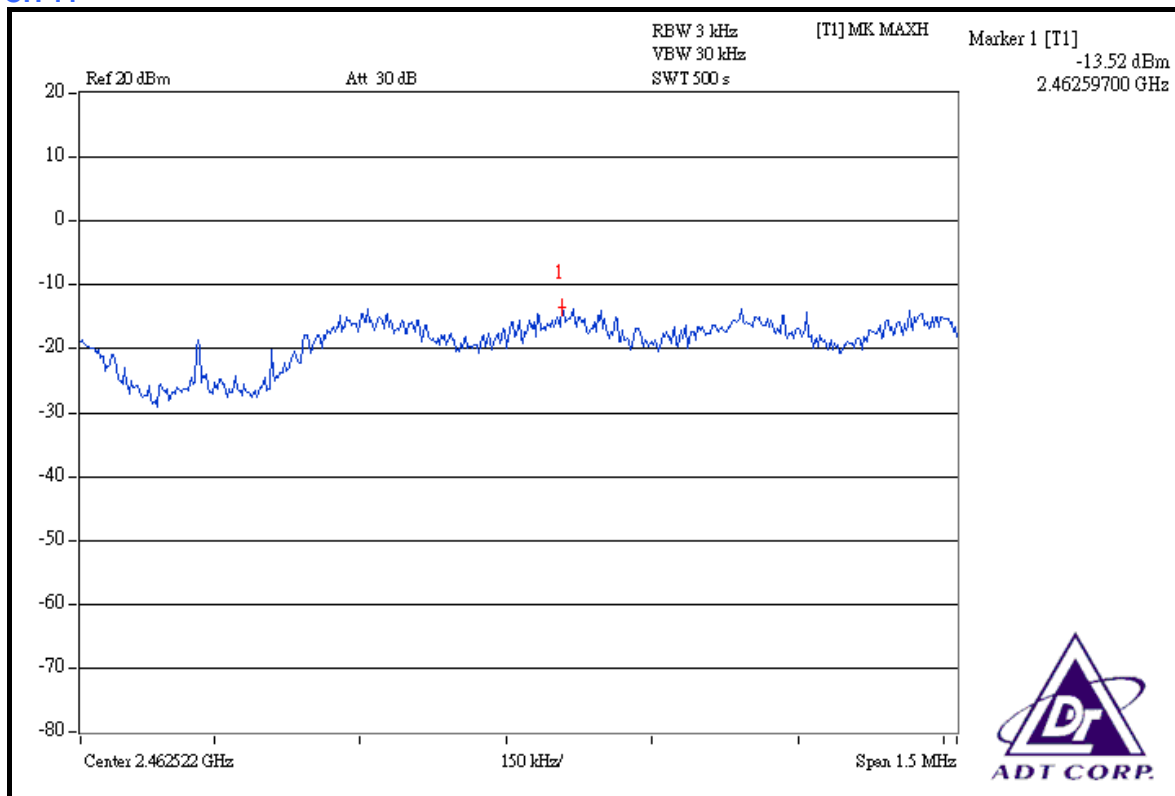
FOR CHAIN 0: CH 1



CH 6

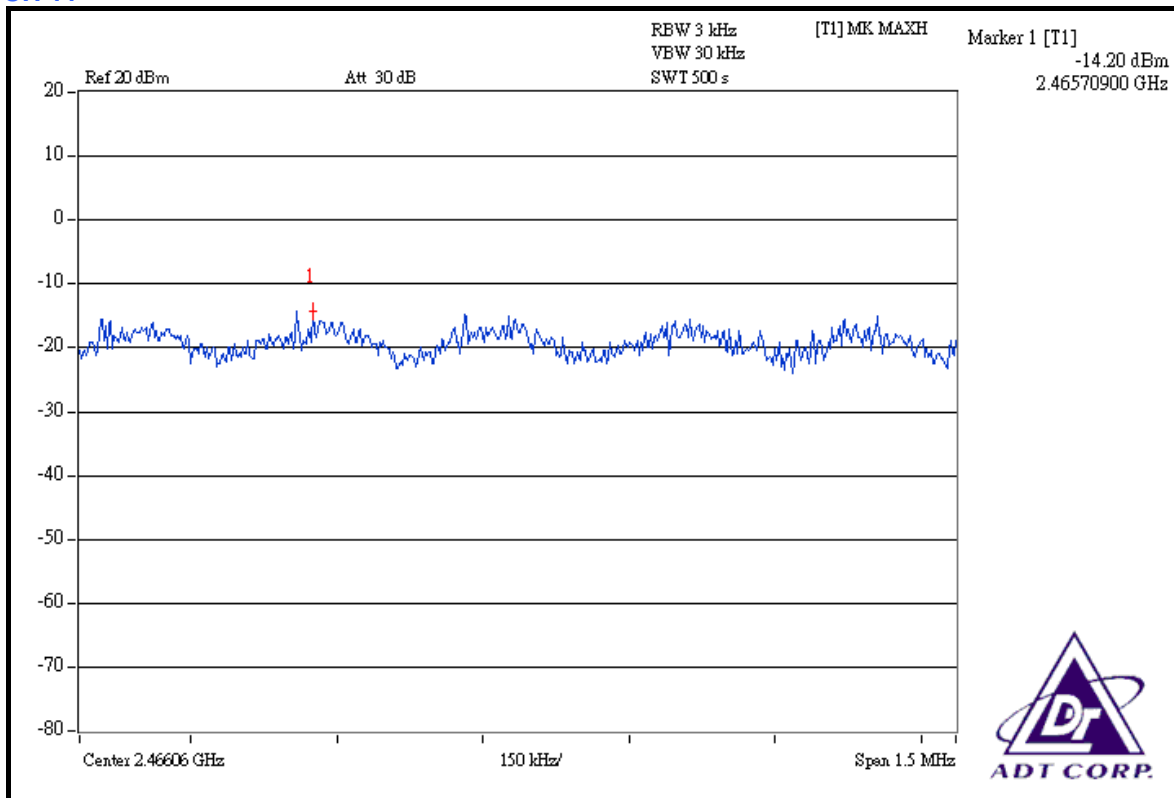


CH 11

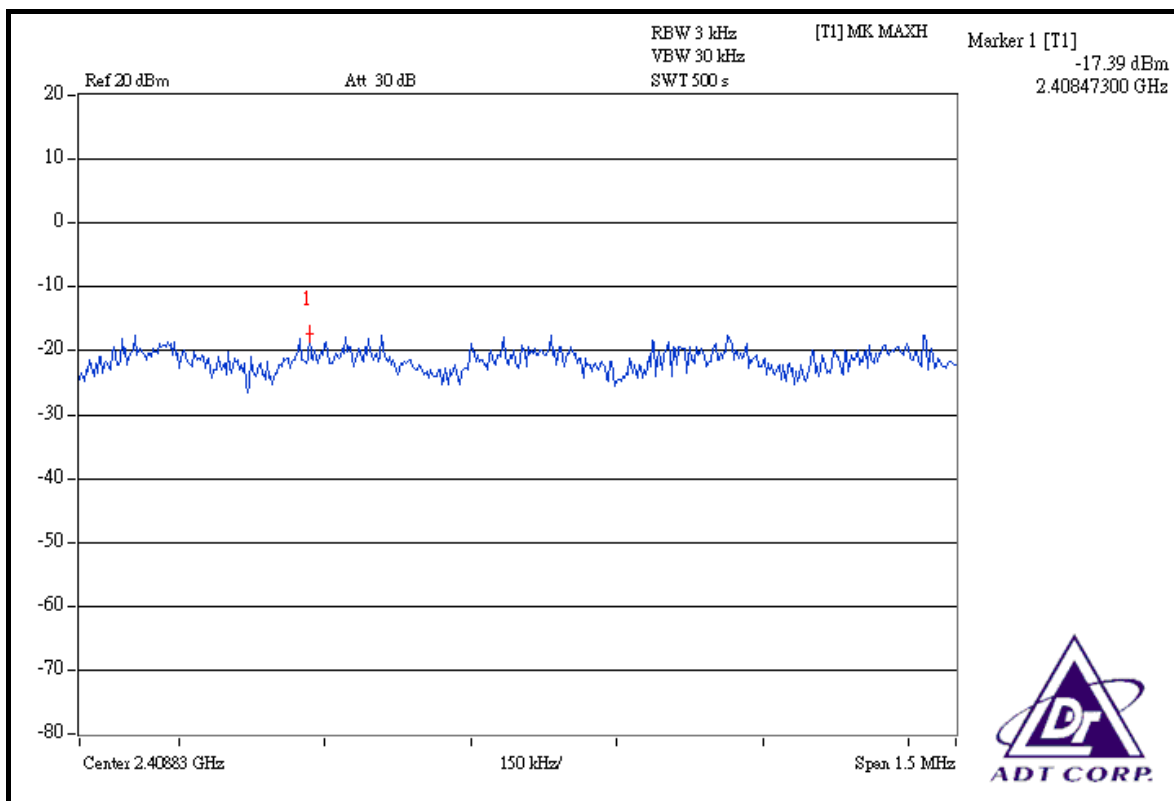




CH 11

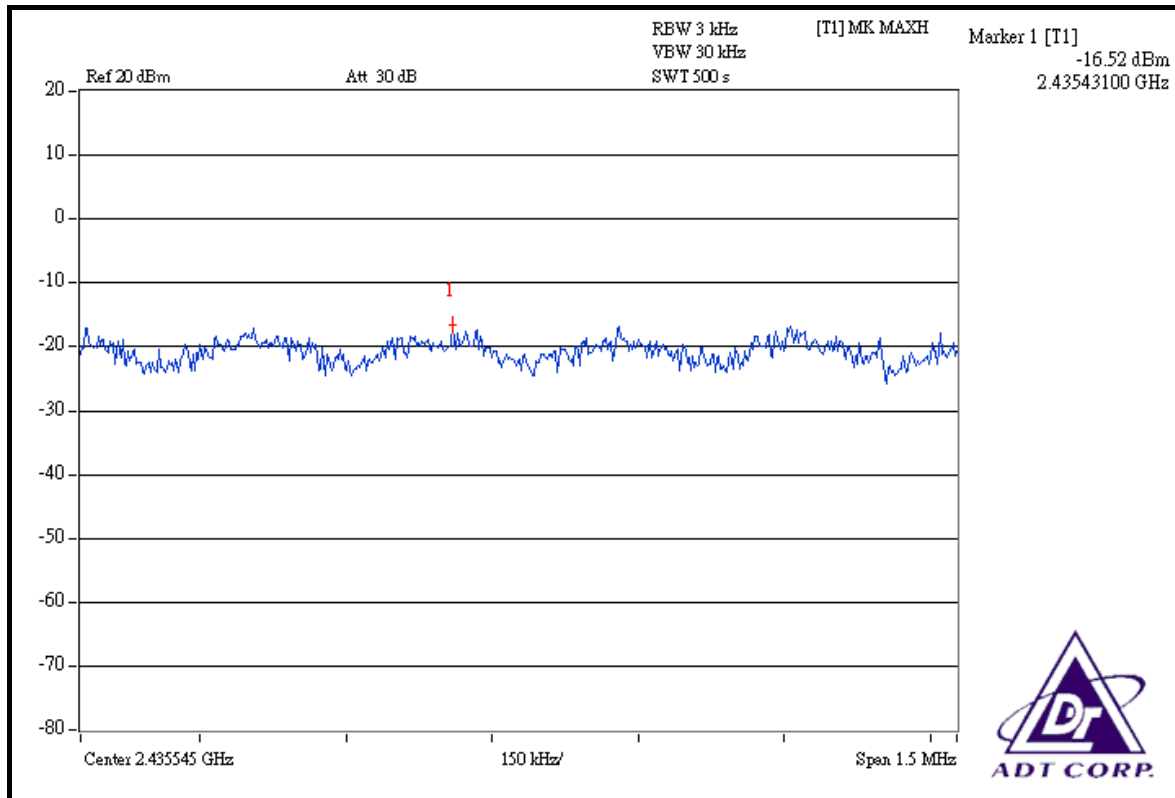


FOR CHAIN 2: CH 1

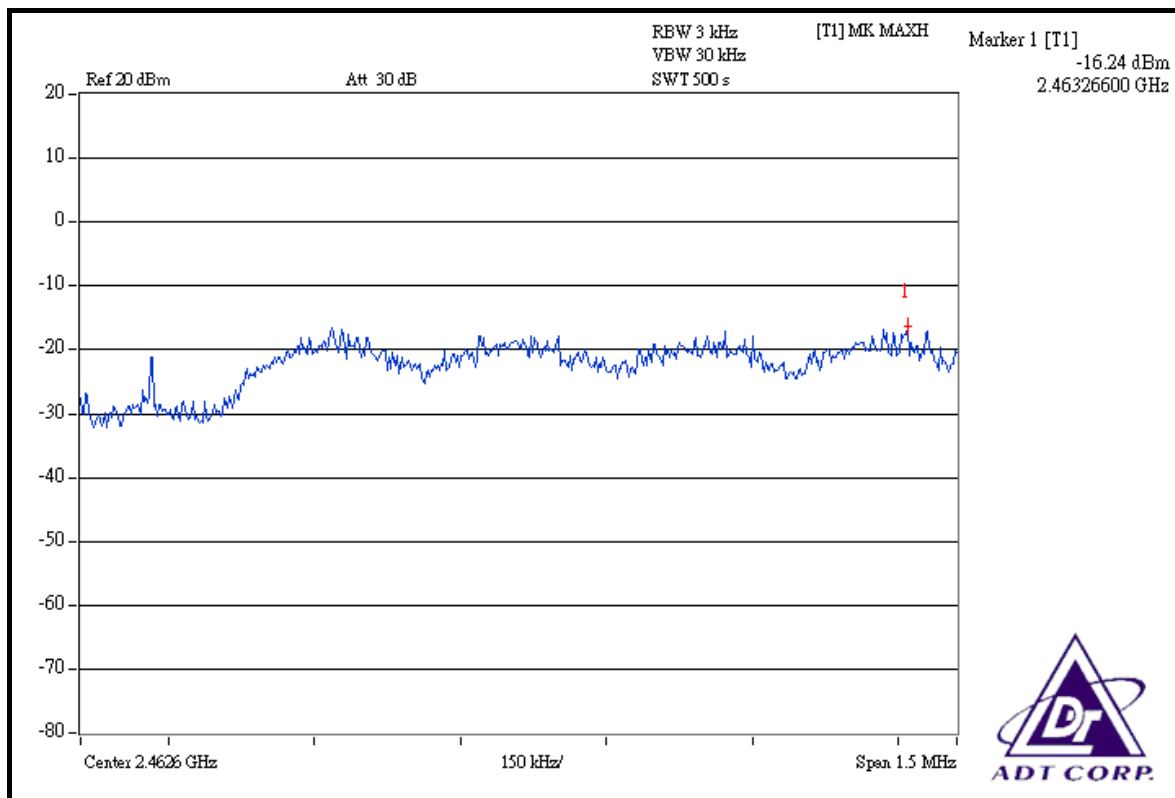




CH 6



CH 11



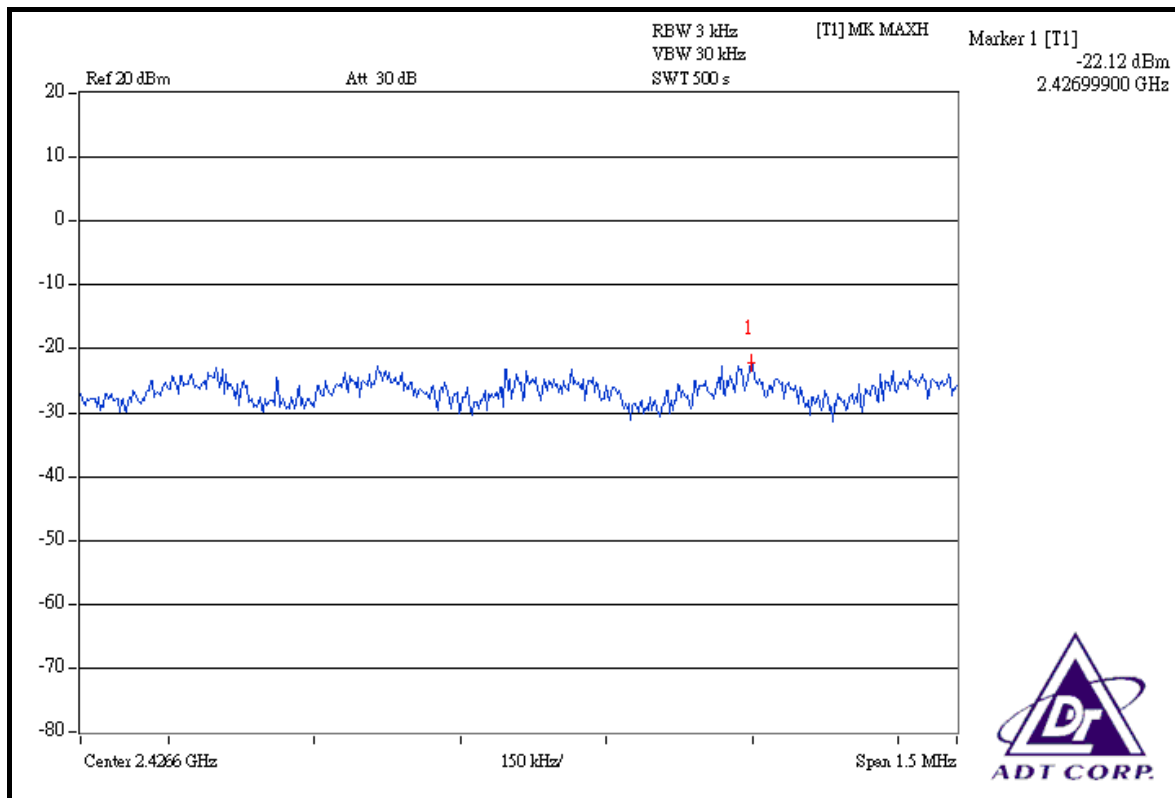


DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

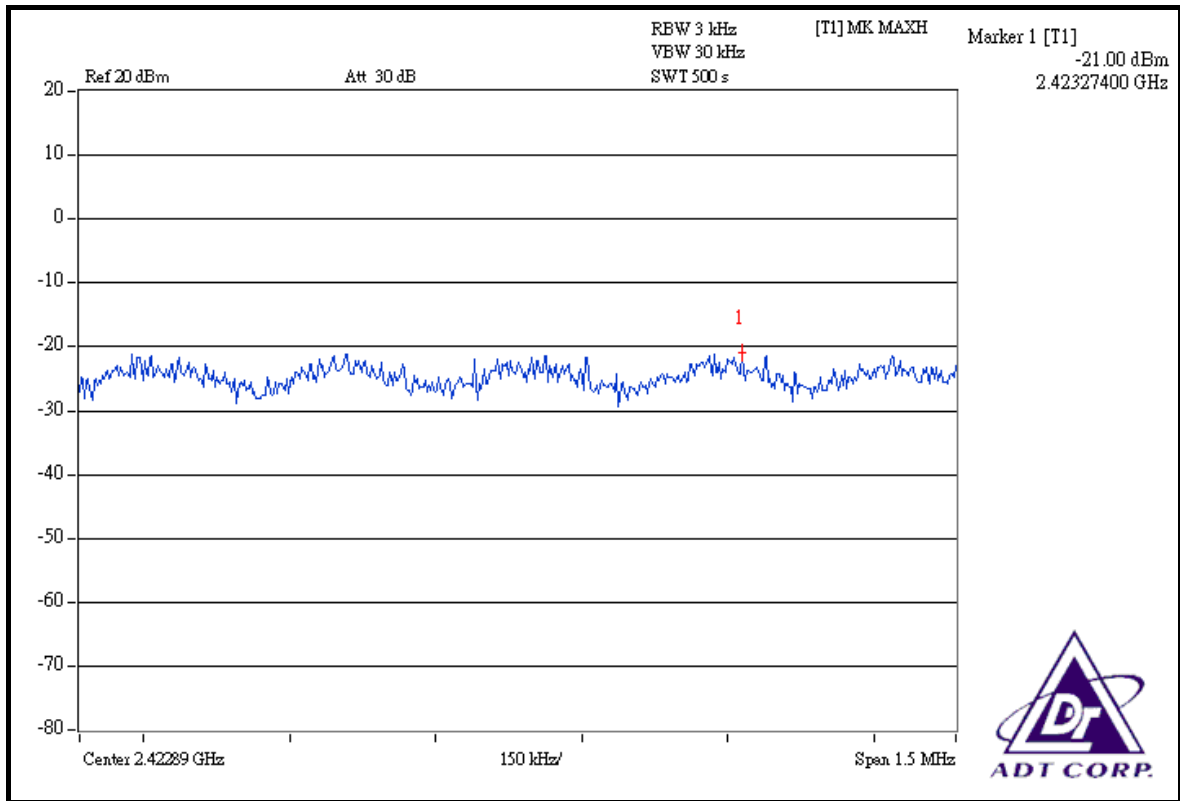
CHAN.	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	2422	0.006	0.007	0.005	-22.12	-21.37	-22.84	0.018	-17.45	8	PASS
4	2437	0.008	0.012	0.006	-21.00	-19.39	-21.94	0.026	-15.85	8	PASS
7	2452	0.008	0.012	0.007	-21.08	-19.21	-21.76	0.027	-15.69	8	PASS

FOR CHAIN 0: CH 1

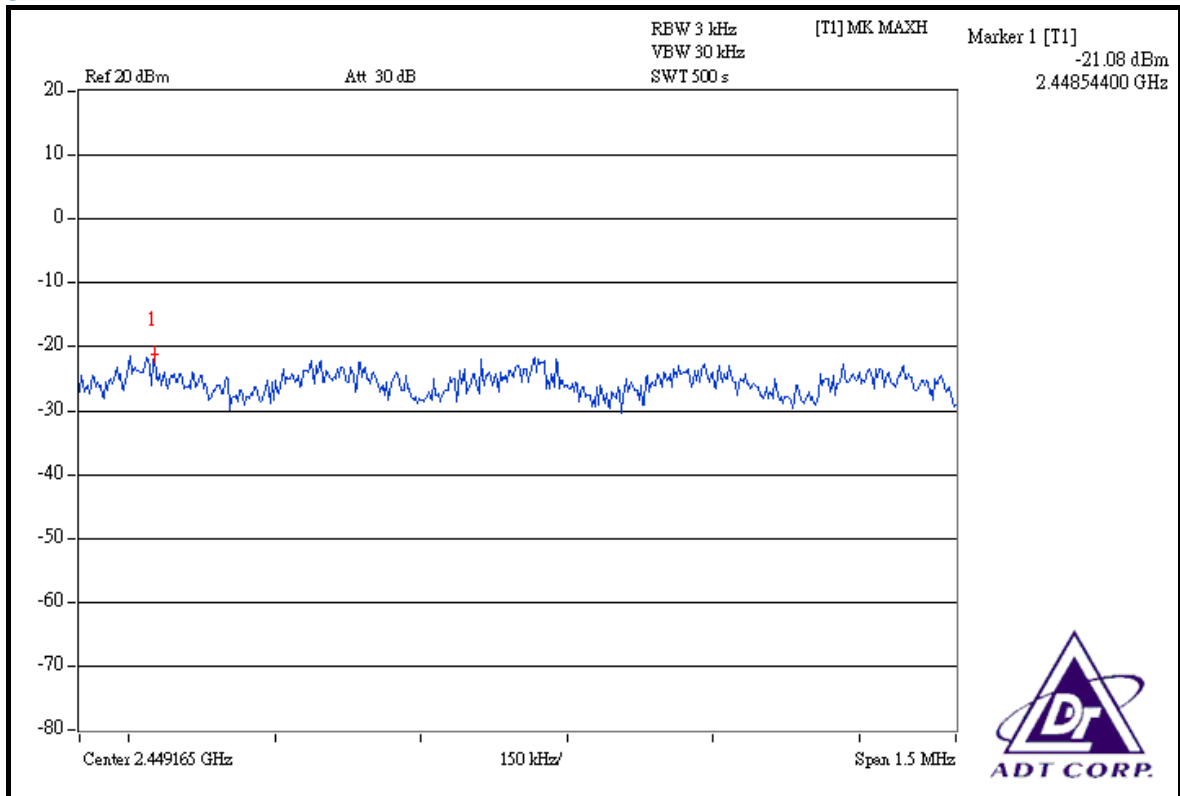




CH 4

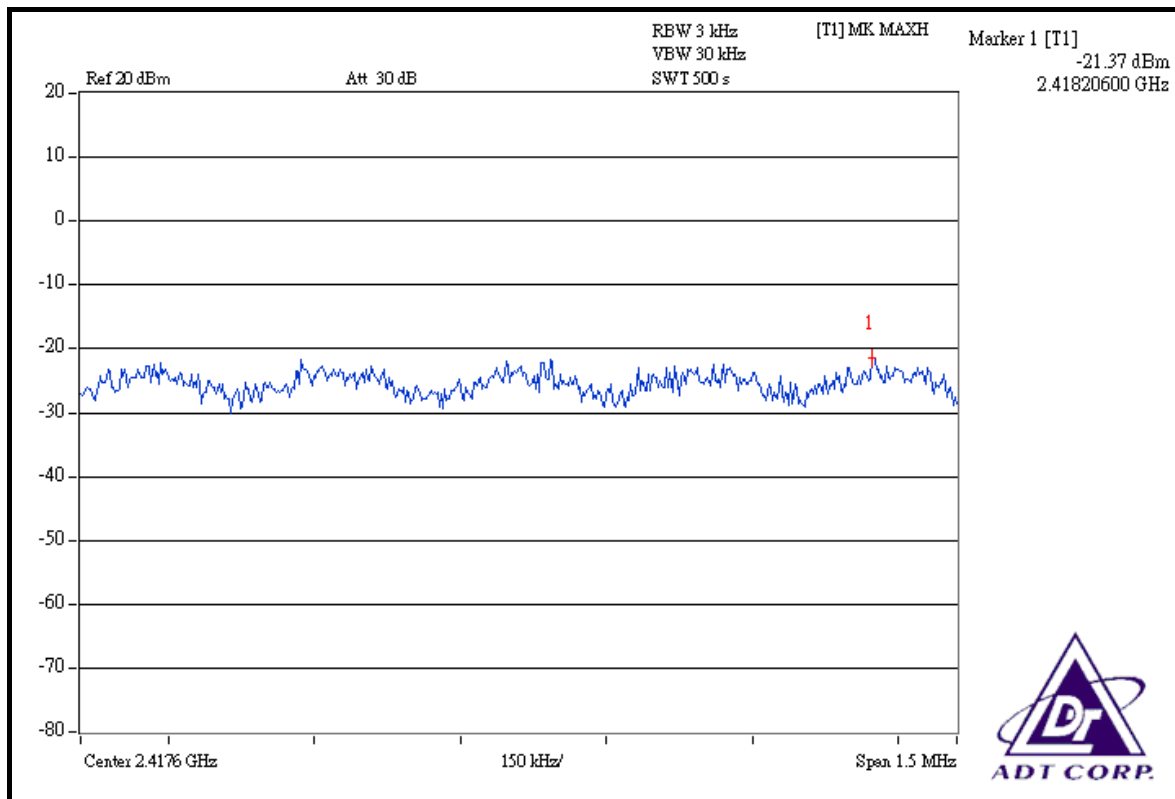


CH 7

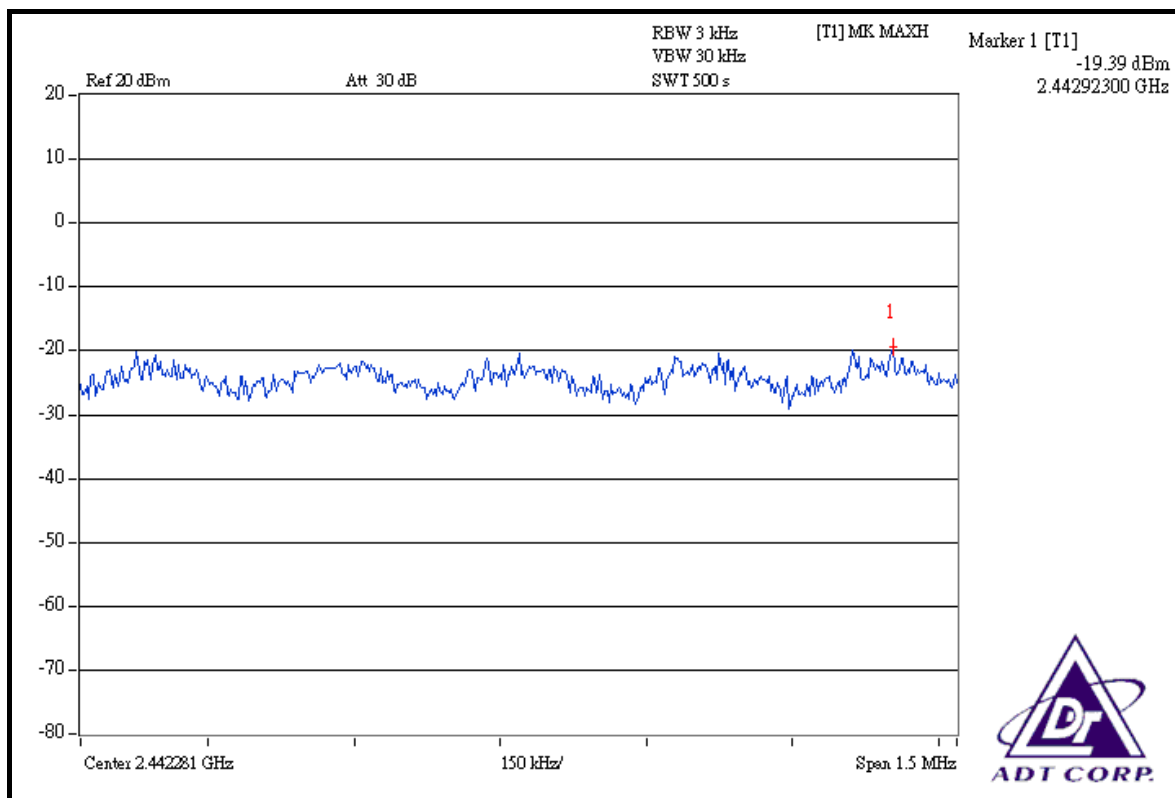




FOR CHAIN 1: CH 1

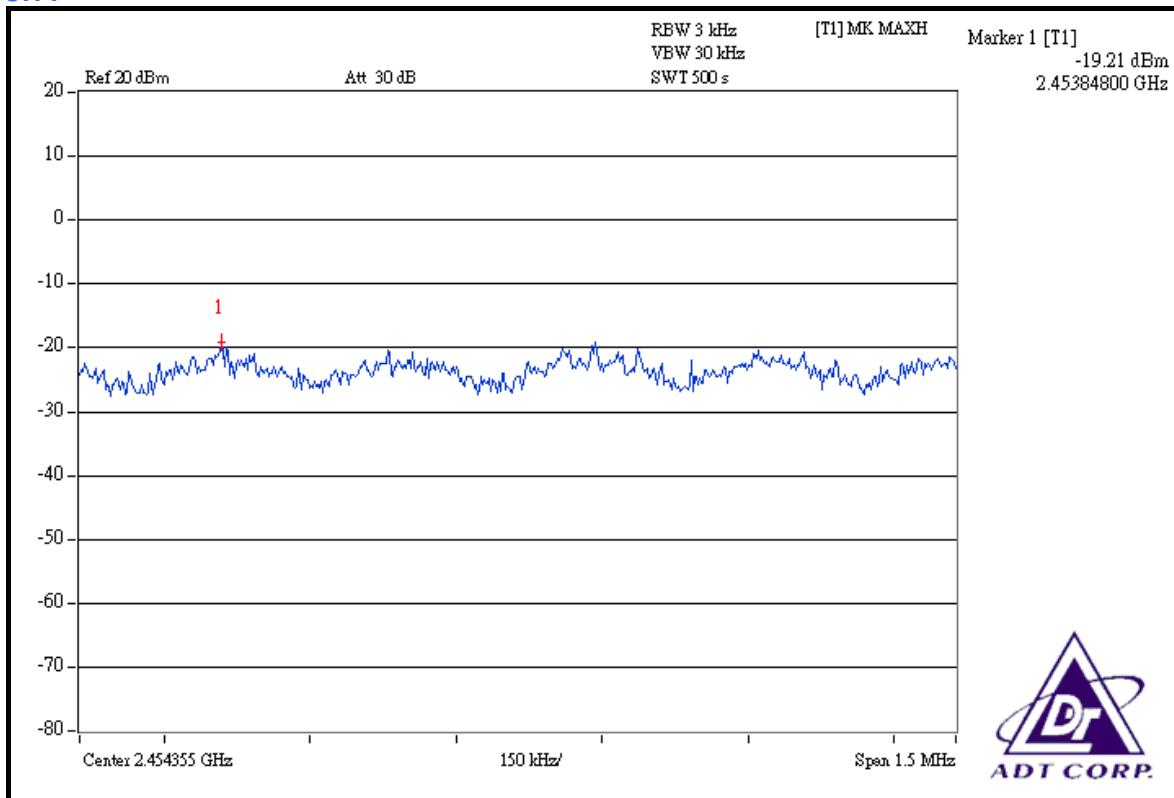


CH 4

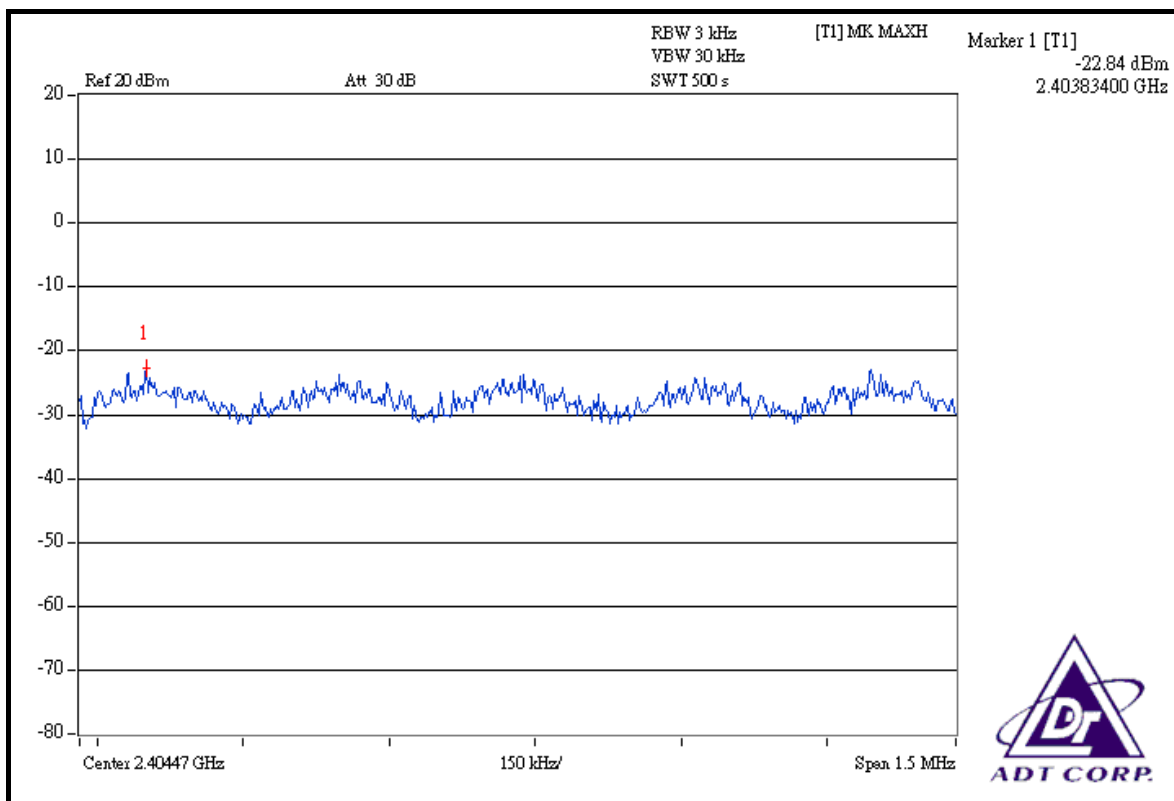




CH 7

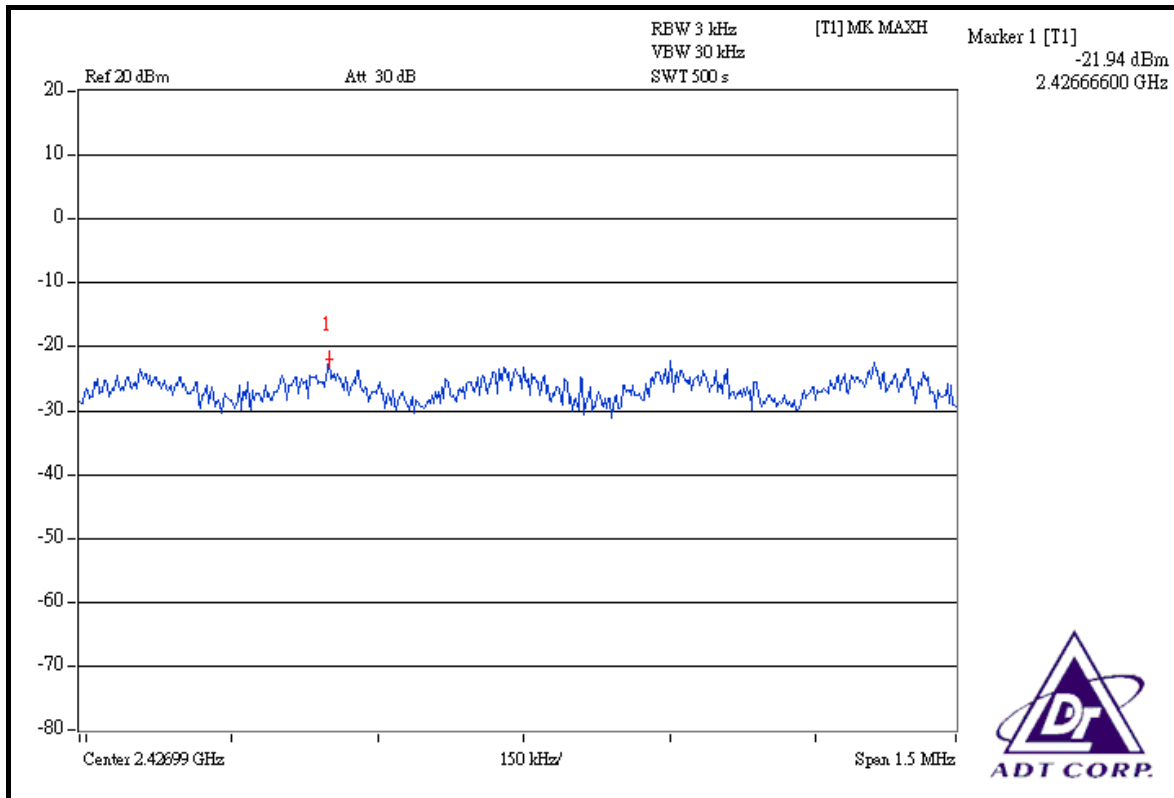


FOR CHAIN 2: CH 1

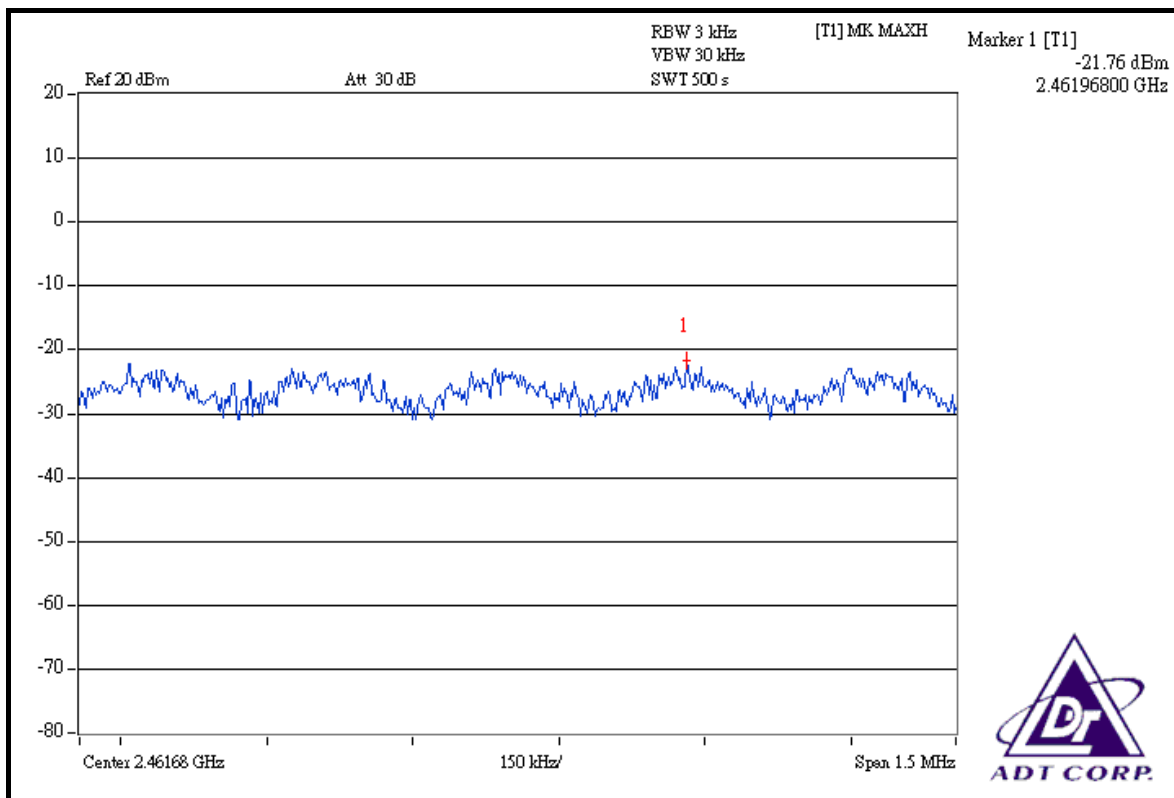




CH 4



CH 7





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
802.11b, 802.11g:			
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008
DRAFT 802.11n (20MHz), DRAFT 802.11n (40MHz):			
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100025	Oct. 05, 2007
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	May 31, 2008
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jun. 28, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 28, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238137/4	Dec. 11, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	233233/4	Nov. 14, 2007
Software ADT.	ADT_Radiated_V7.6	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA
Turn Table ADT.	TT100.	TT93021703	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA

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

4.6.3 TEST PROCEDURE

802.11b, 802.11g:

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 300MHz 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.

DRAFT 802.11n (20MHz), DRAFT 802.11n (40MHz):

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter 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. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW = VBW = 100kHz) are attached on the following pages.

NOTE: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.

4.6.4 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:

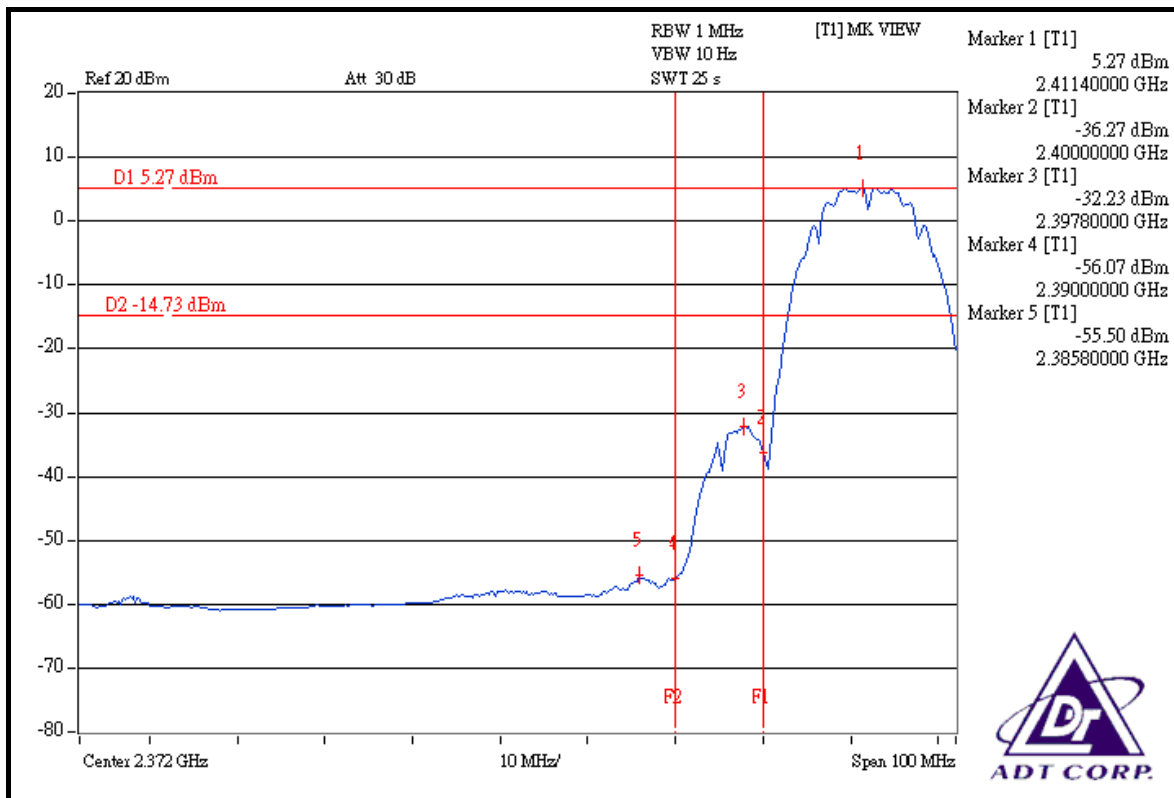
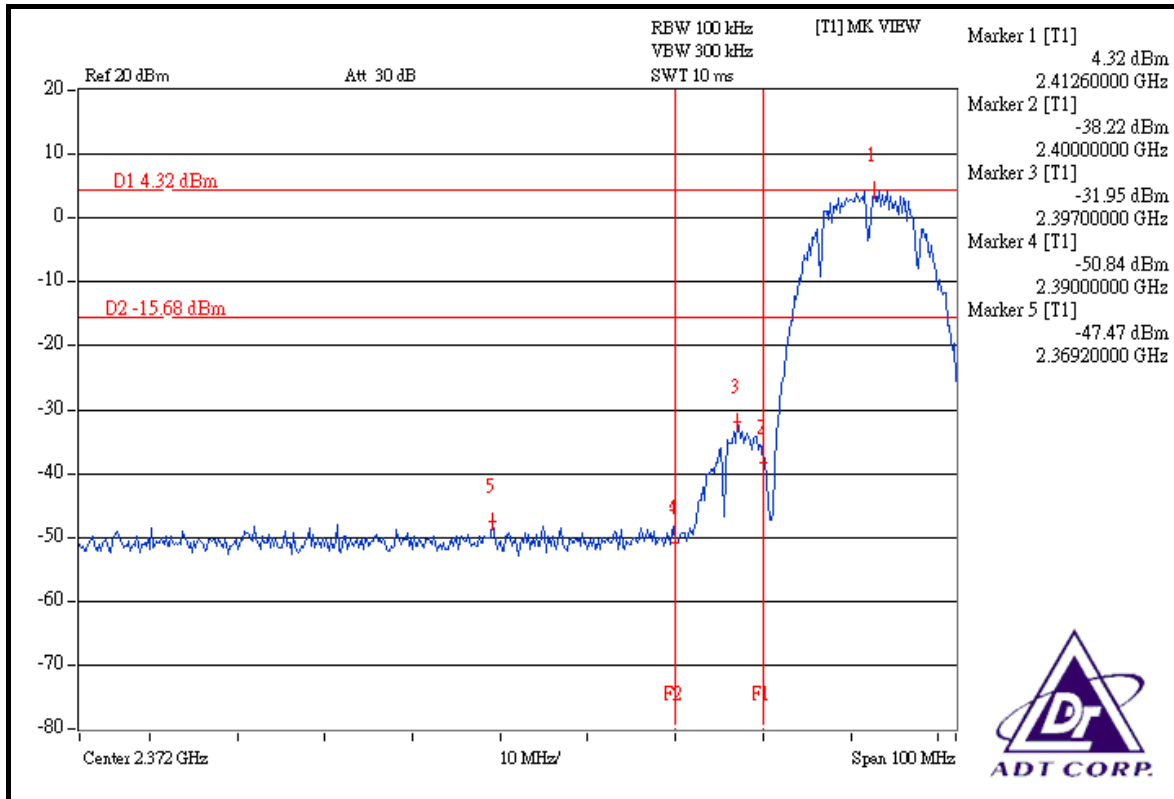
The band edge emission plot on the next page shows 51.79dBc between carrier maximum power and local maximum emission in restrict band (2.3692GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 110.11dBuV/m (Peak), so the maximum field strength in restrict band is $110.11 - 51.79 = 58.32$ dBuV/m which is under 74dBuV/m limit.

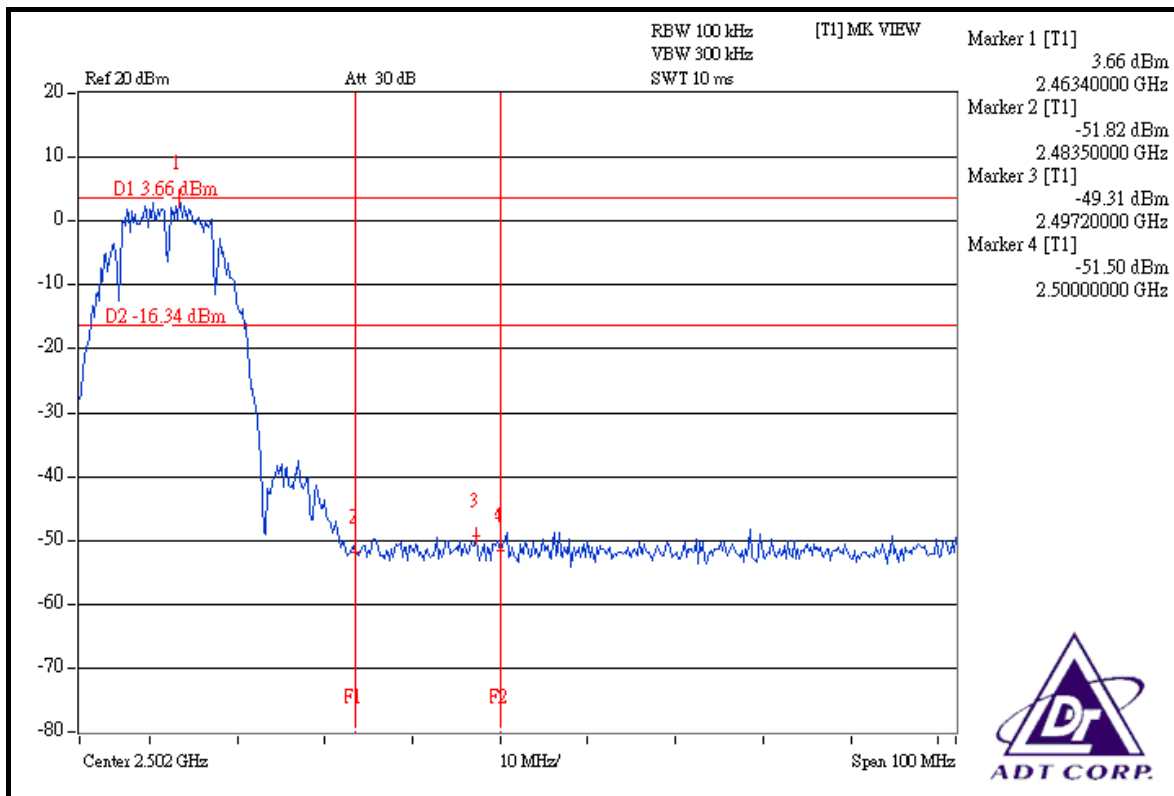
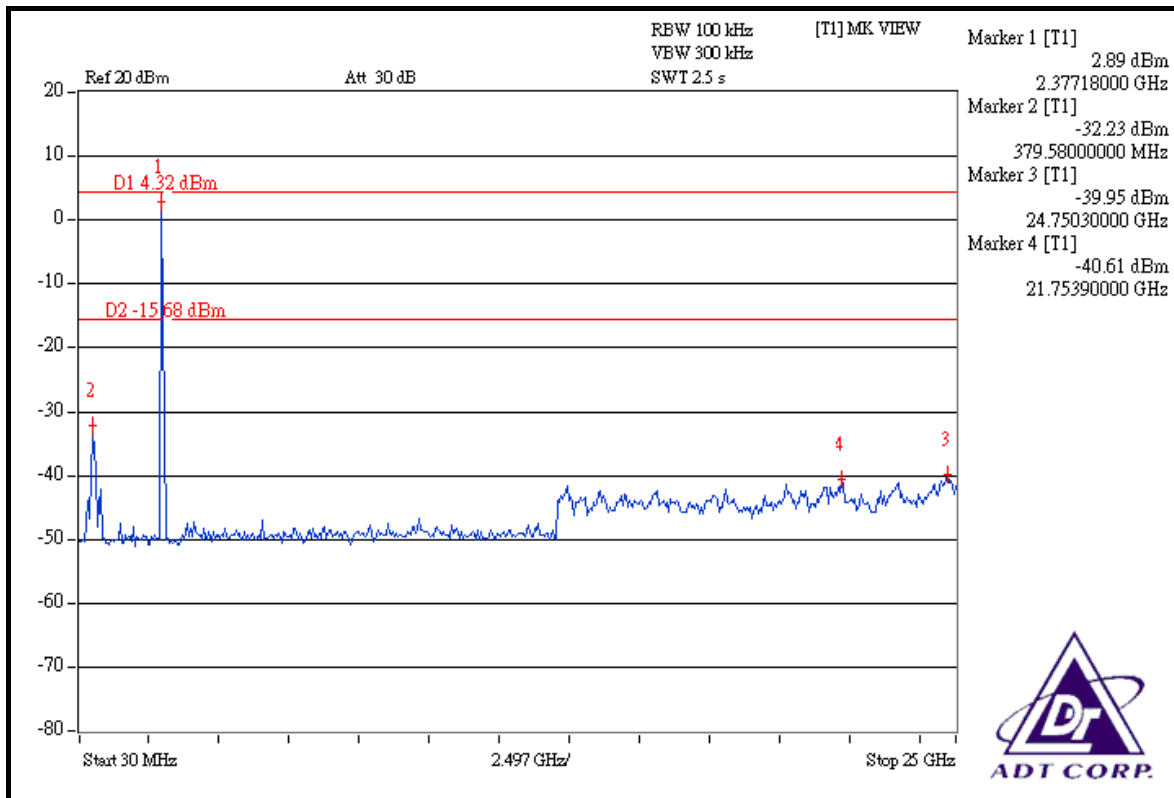
The band edge emission plot on the next page shows 60.77dBc between carrier maximum power and local maximum emission in restrict band (2.3858GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 105.44dBuV/m (Average), so the maximum field strength in restrict band is $105.44 - 60.77 = 44.67$ dBuV/m which is under 54dBuV/m limit.

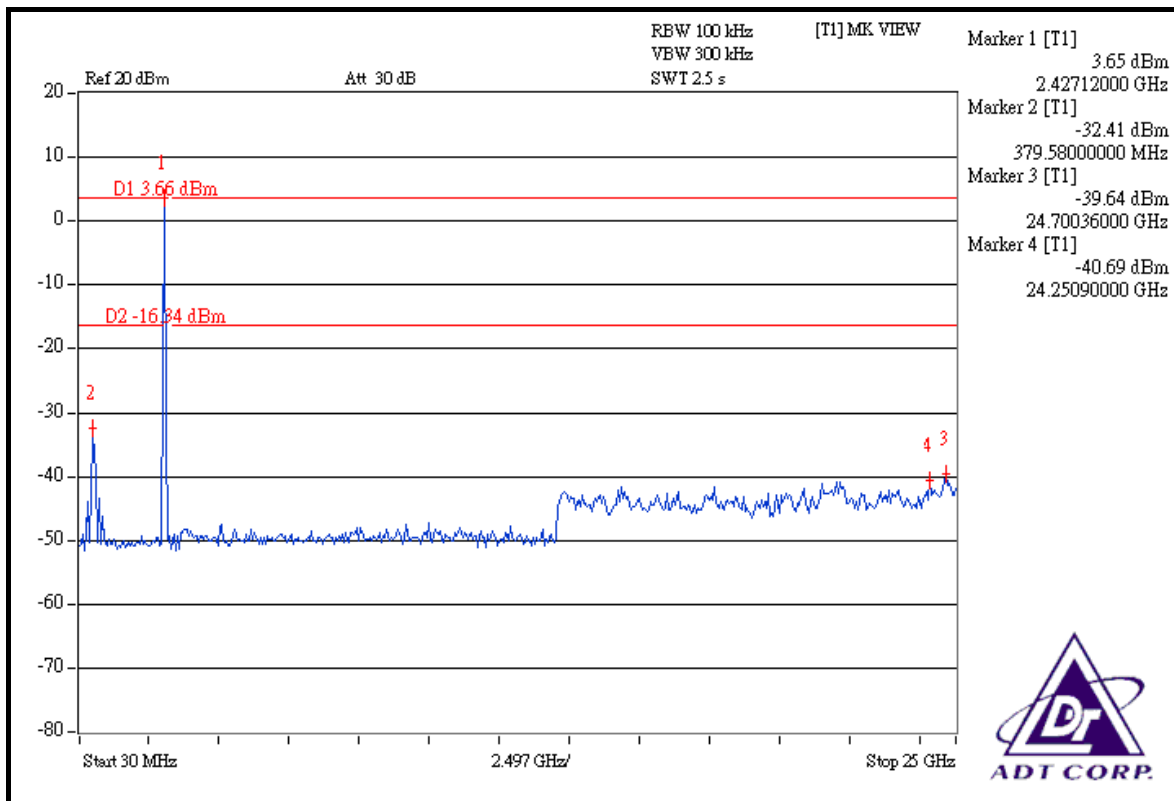
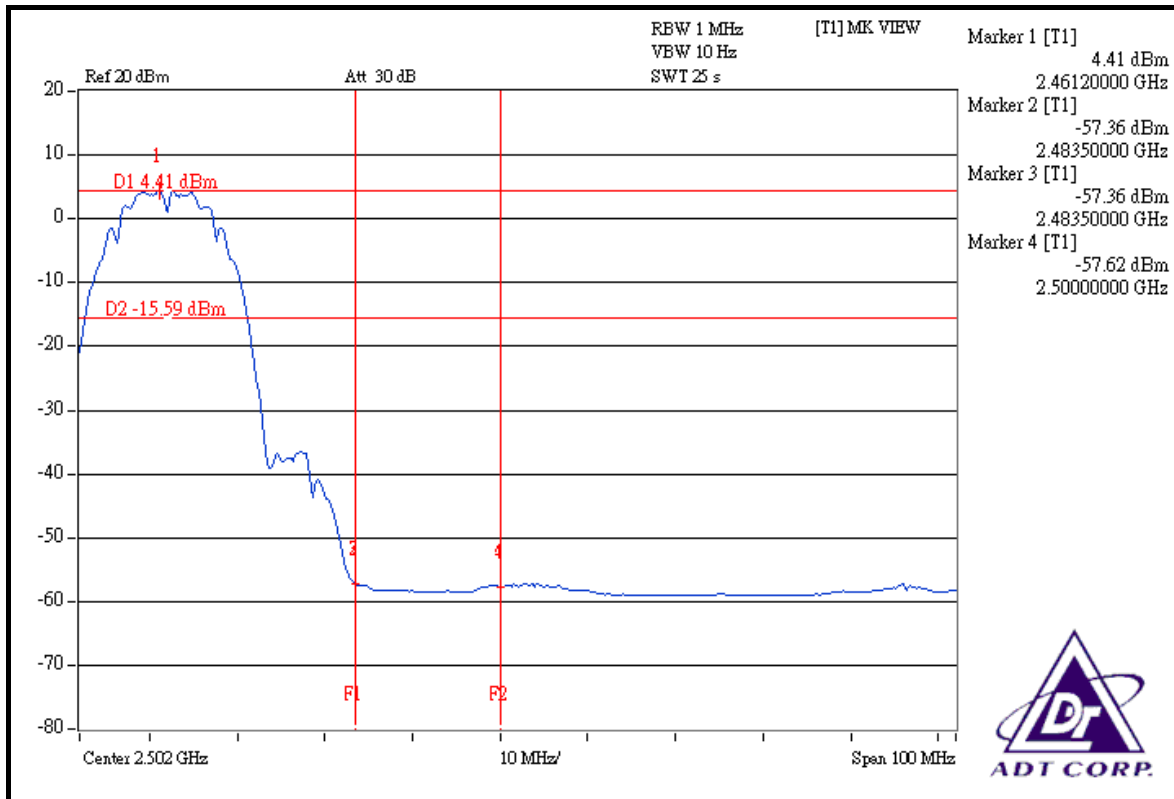
NOTE 2:

The band edge emission plot on the next second page shows 52.97dBc between carrier maximum power and local maximum emission in restrict band (2.4972GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 109.07dBuV/m (Peak), so the maximum field strength in restrict band is $109.07 - 52.97 = 56.10$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 61.77dBc 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 104.48dBuV/m (Average), so the maximum field strength in restrict band is $104.48 - 61.77 = 42.71$ dBuV/m which is under 54dBuV/m limit.







802.11g OFDM MODULATION

NOTE 1:

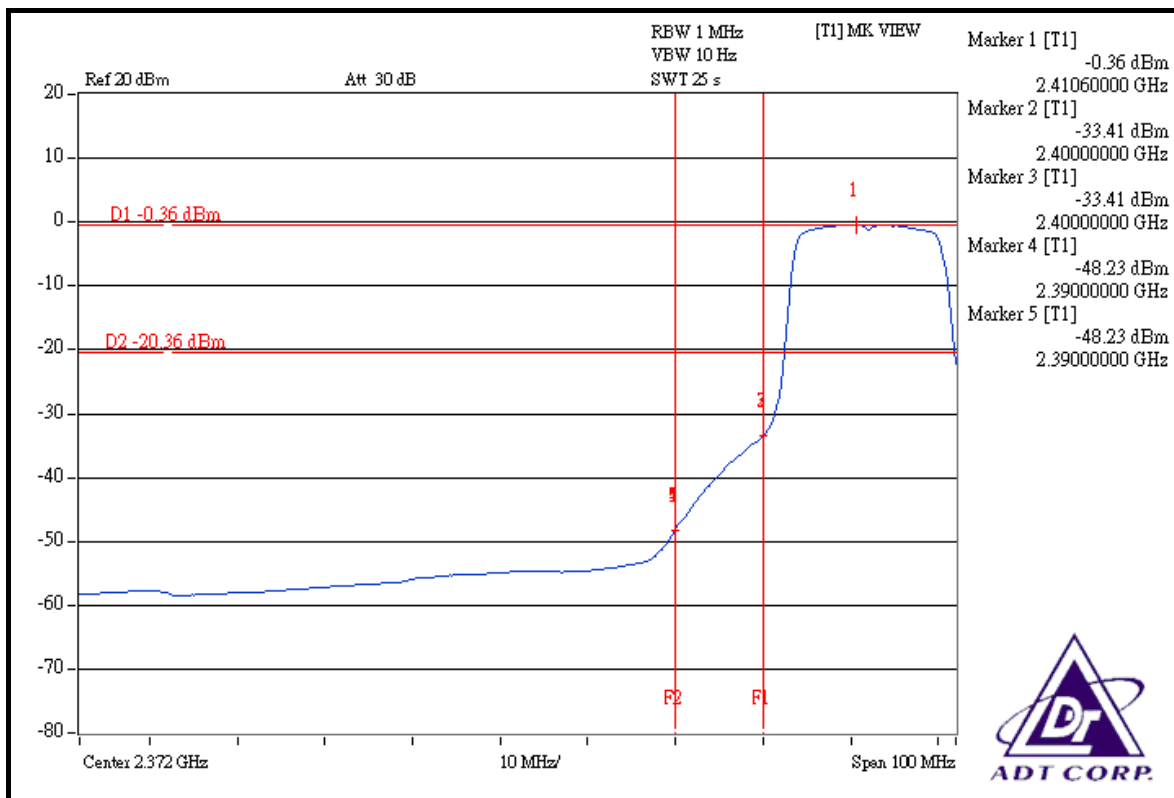
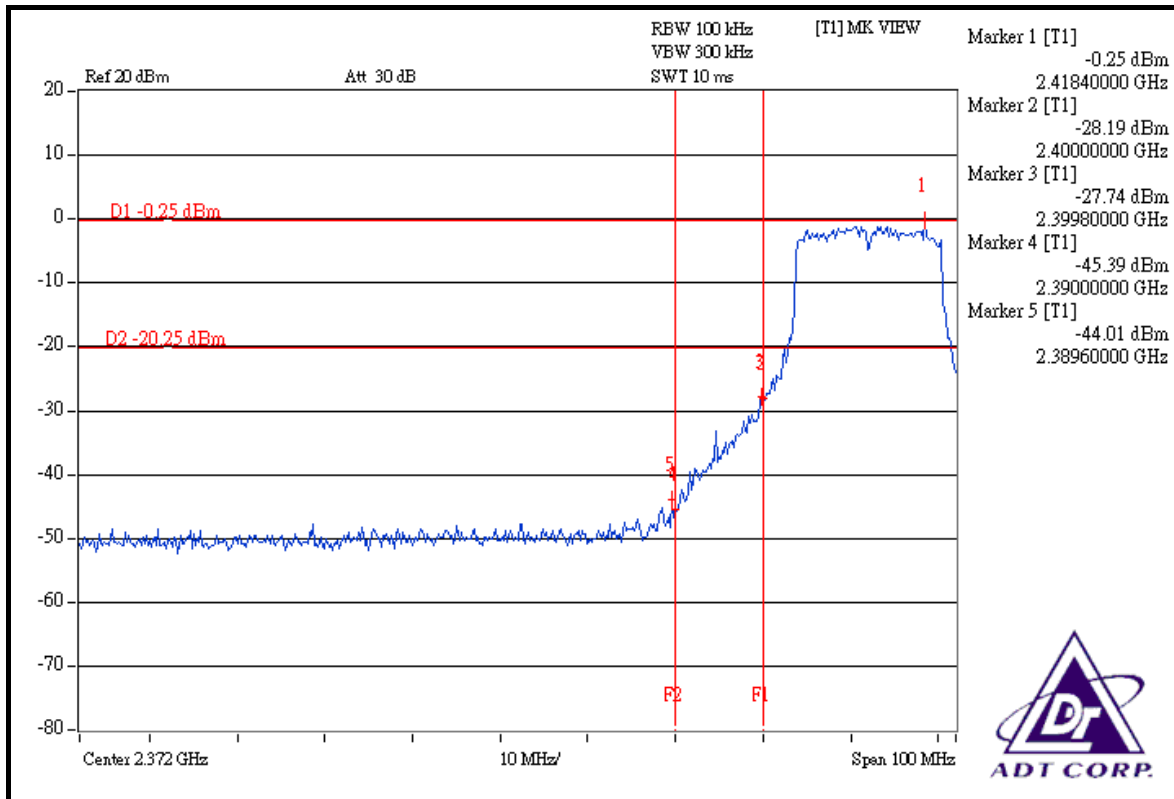
The band edge emission plot on the next page shows 43.76dBc between carrier maximum power and local maximum emission in restrict band (2.3896GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 110.96dBuV/m (Peak), so the maximum field strength in restrict band is $110.96 - 43.76 = 67.20$ dBuV/m which is under 74dBuV/m limit.

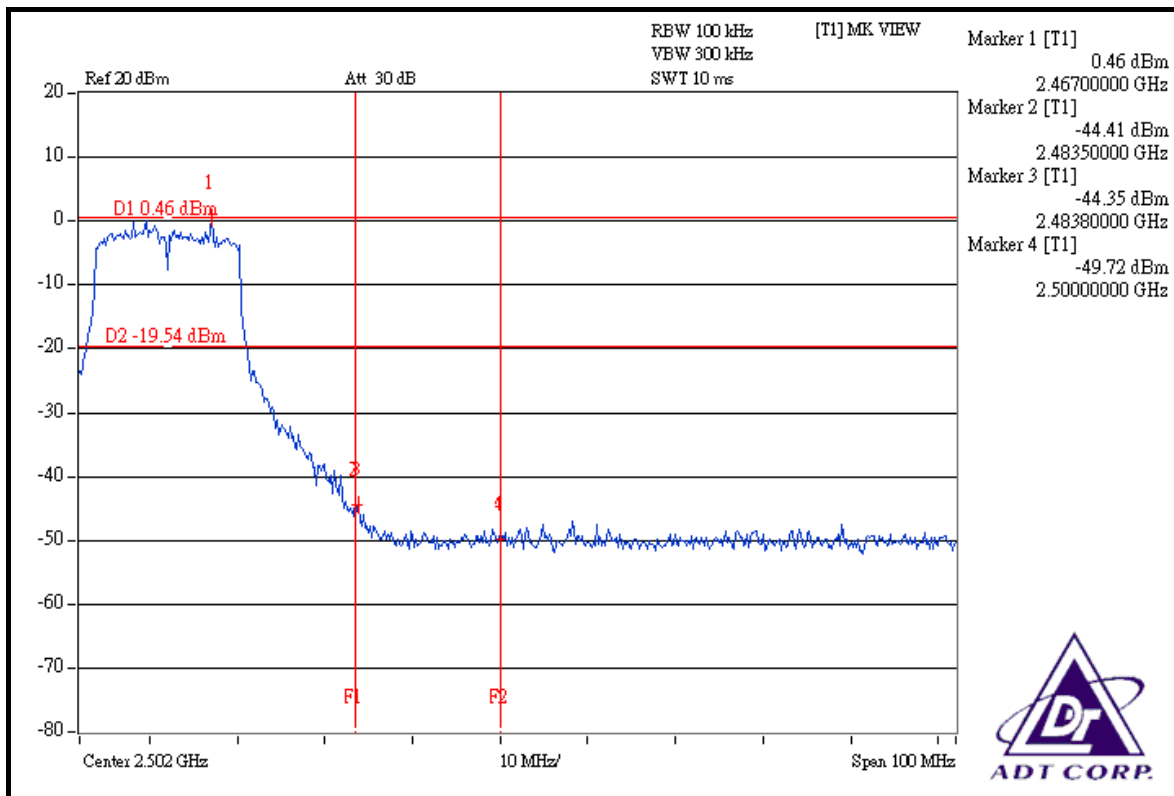
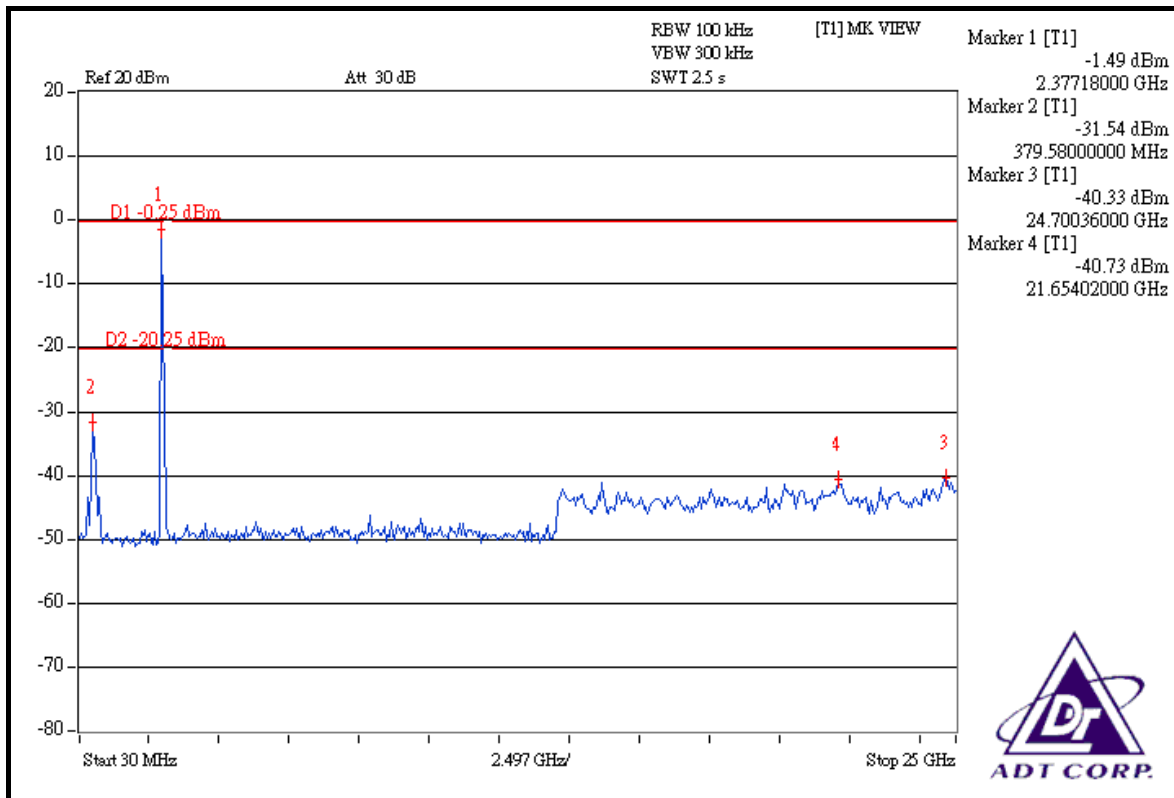
The band edge emission plot on the next page shows 47.87dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 99.95dBuV/m (Average), so the maximum field strength in restrict band is $99.95 - 47.87 = 52.08$ dBuV/m which is under 54dBuV/m limit.

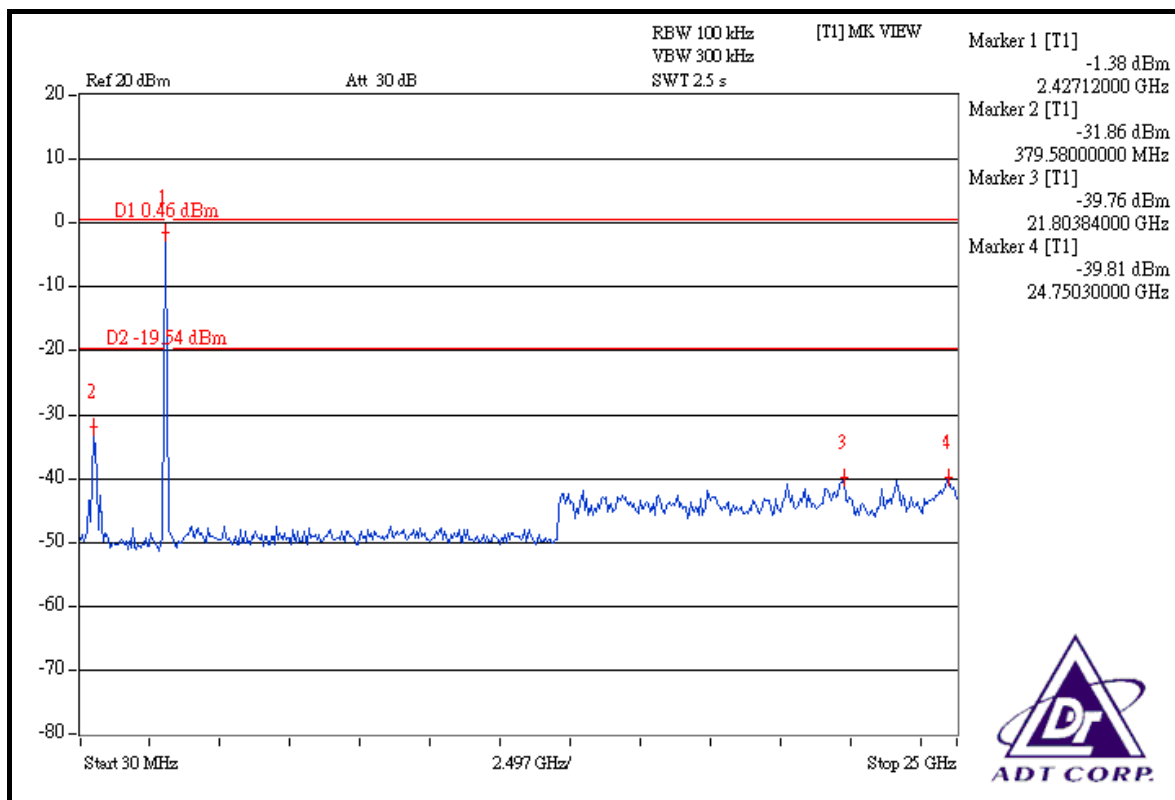
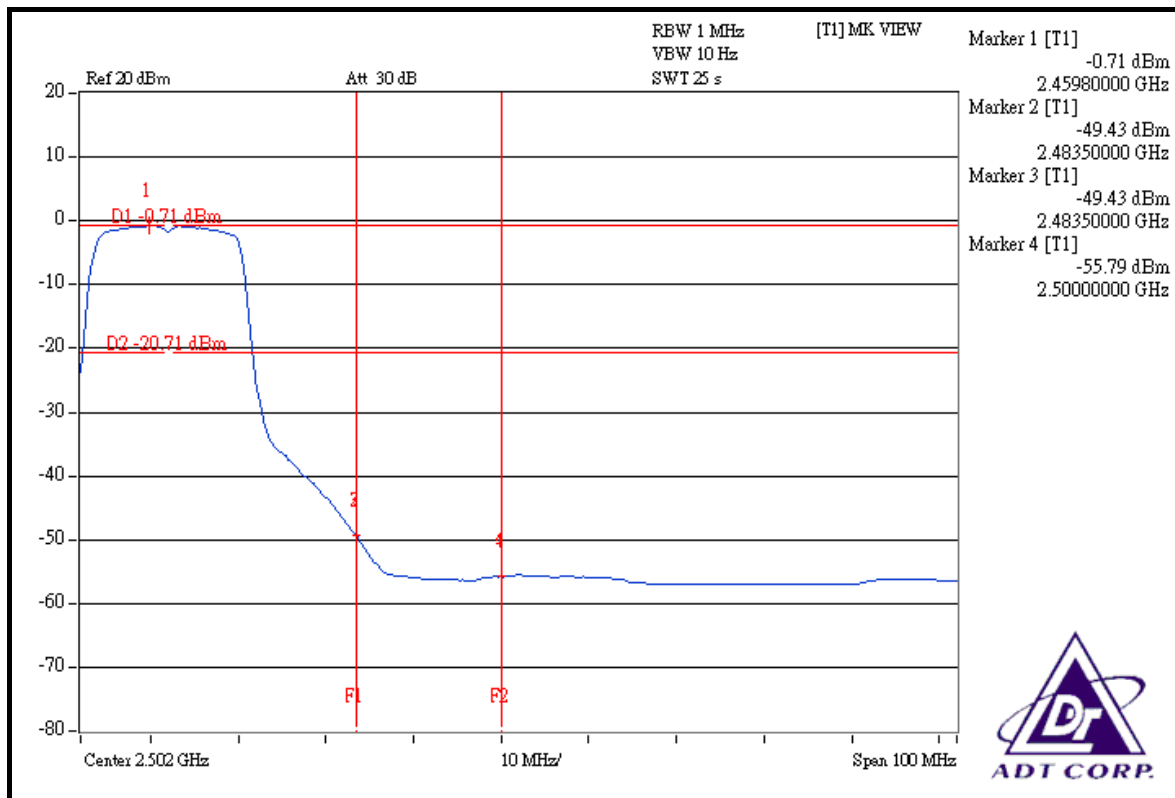
NOTE 2:

The band edge emission plot on the next second page shows 44.81dBc between carrier maximum power and local maximum emission in restrict band (2.4838GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 110.87dBuV/m (Peak), so the maximum field strength in restrict band is $110.87 - 44.81 = 66.06$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 48.72dBc 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 99.76dBuV/m (Average), so the maximum field strength in restrict band is $99.76 - 48.72 = 51.04$ dBuV/m which is under 54dBuV/m limit.







DRAFT 802.11n (20MHz) OFDM MODULATION:

NOTE 1:

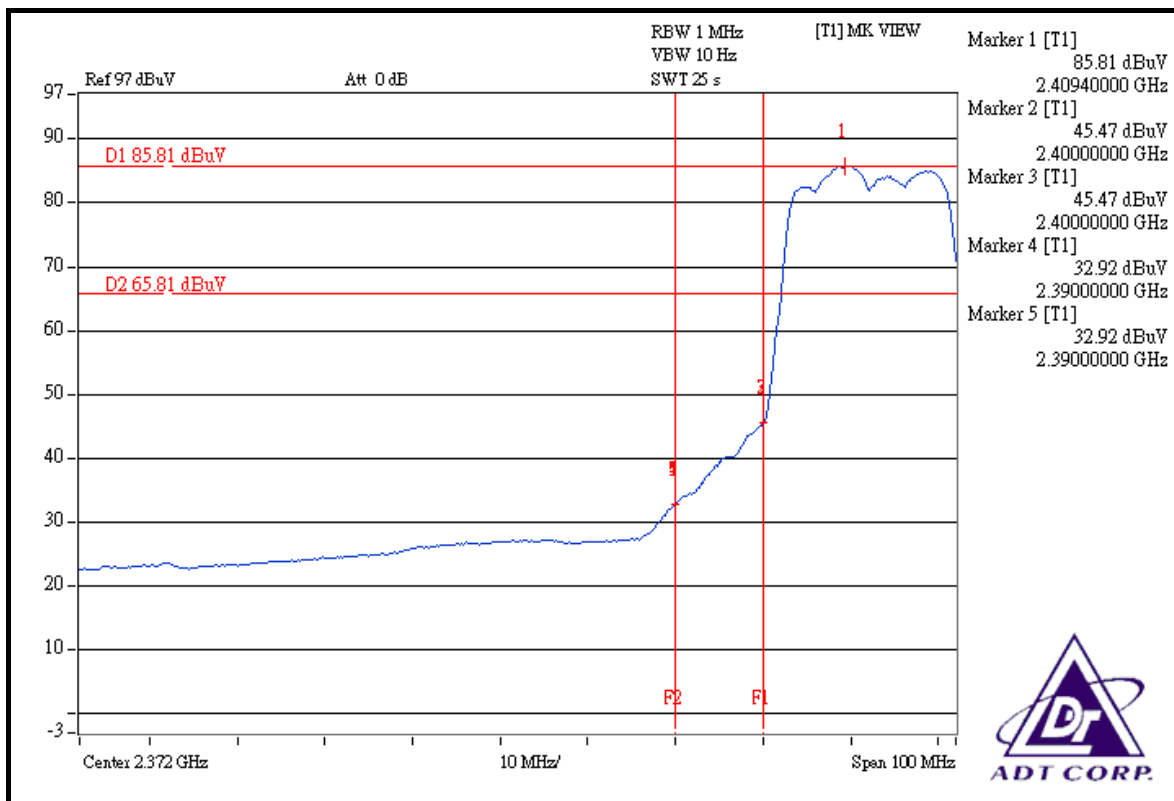
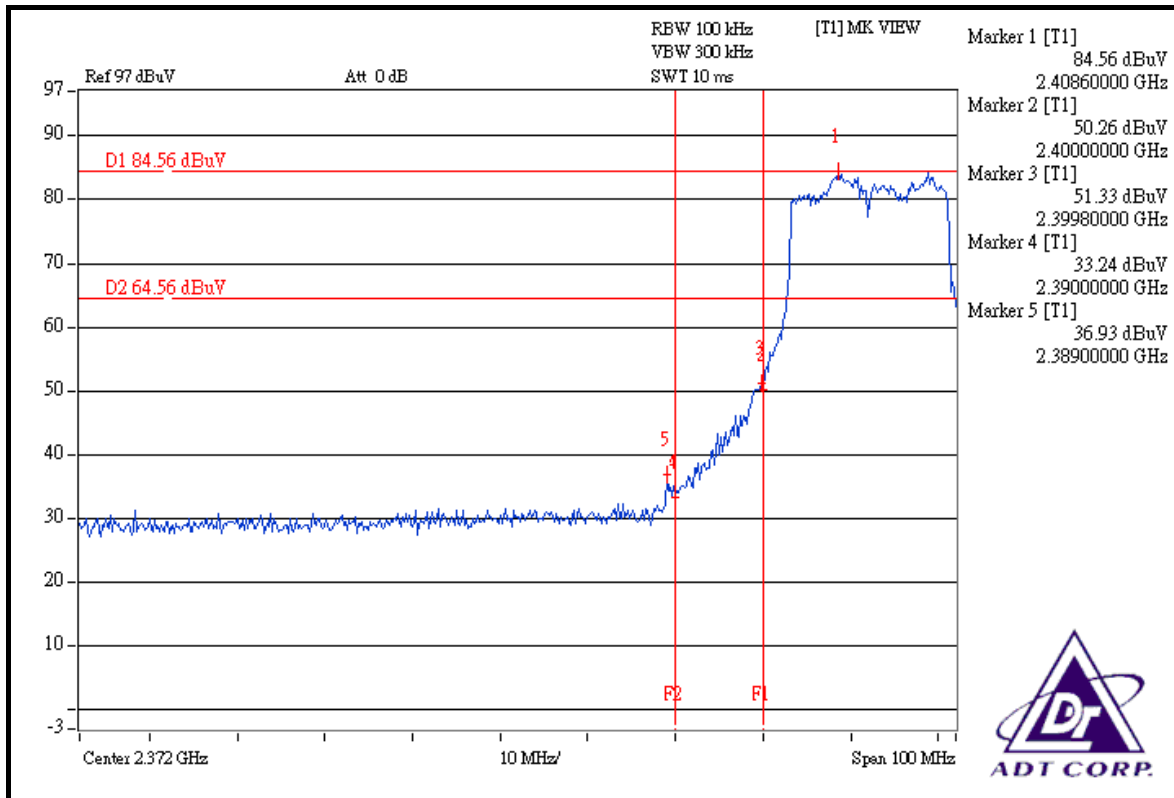
The band edge emission plot on the next page shows 47.63dBc between carrier maximum power and local maximum emission in restrict band (2.3890GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 114.79dBuV/m (Peak), so the maximum field strength in restrict band is $114.79 - 47.63 = 67.16$ dBuV/m which is under 74dBuV/m limit.

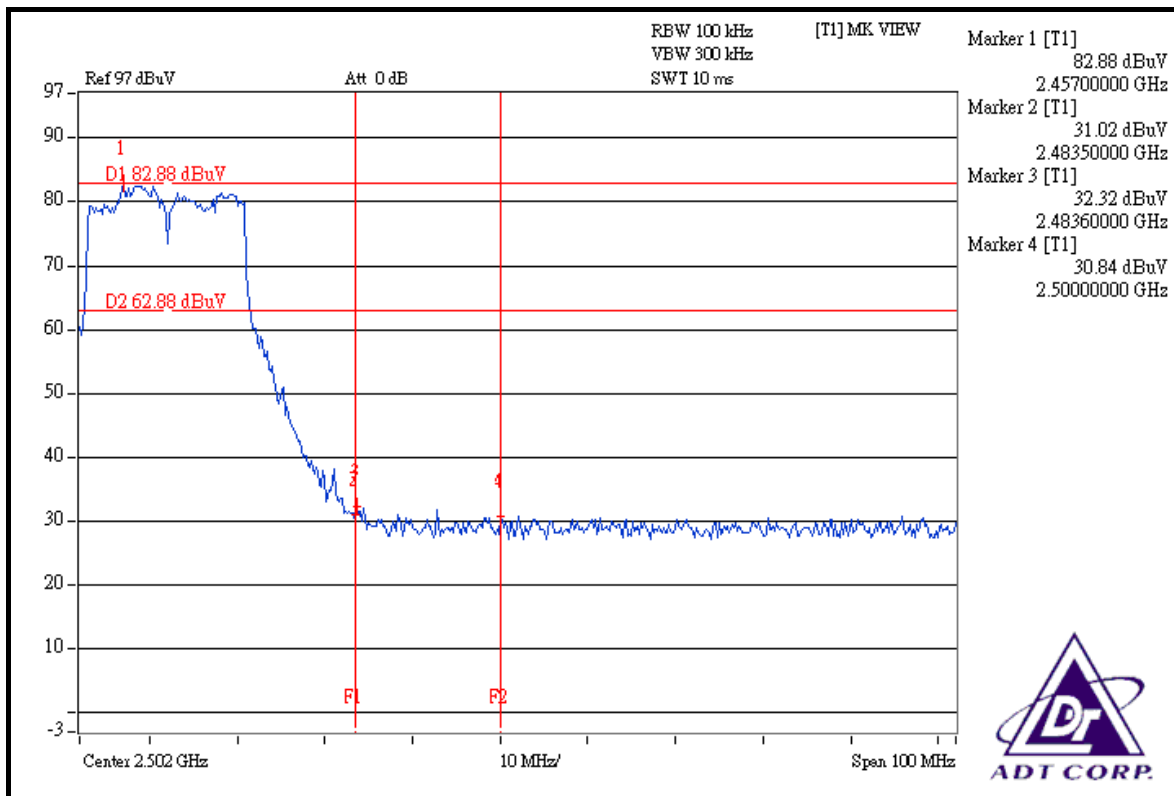
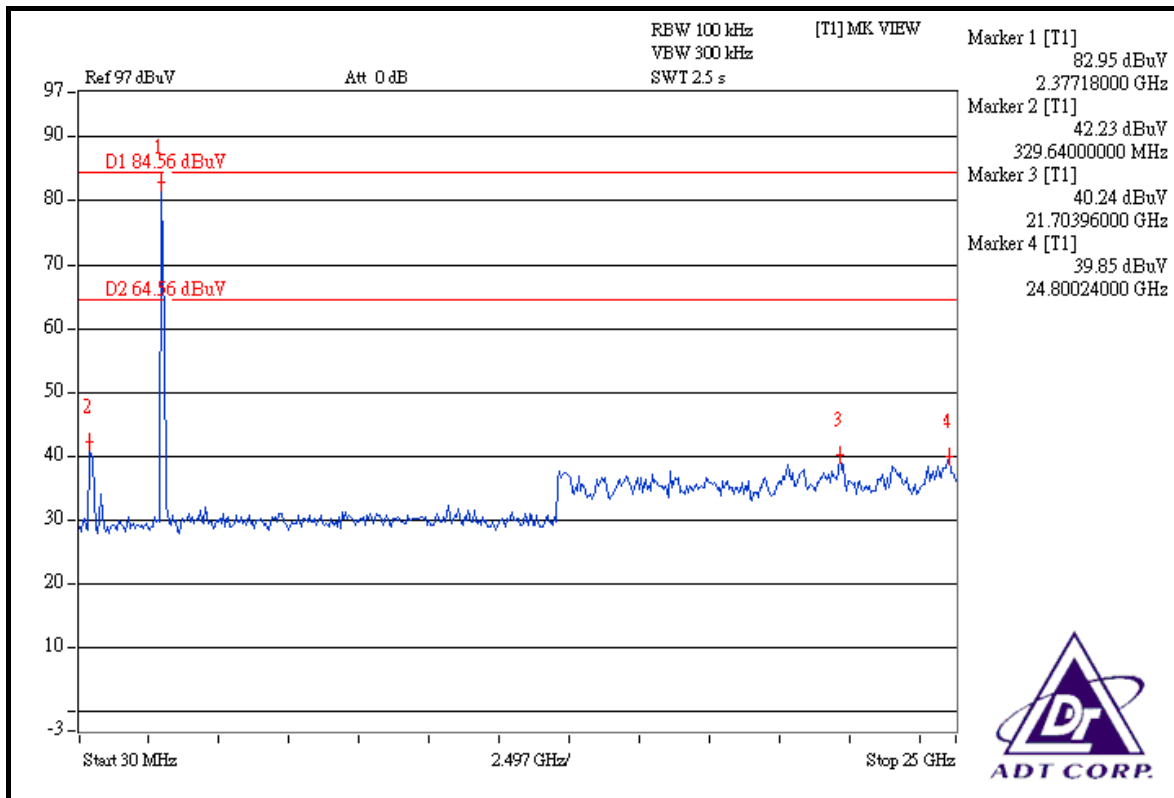
The band edge emission plot on the next page shows 52.89dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 104.93dBuV/m (Average), so the maximum field strength in restrict band is $104.93 - 52.89 = 52.04$ dBuV/m which is under 54dBuV/m limit.

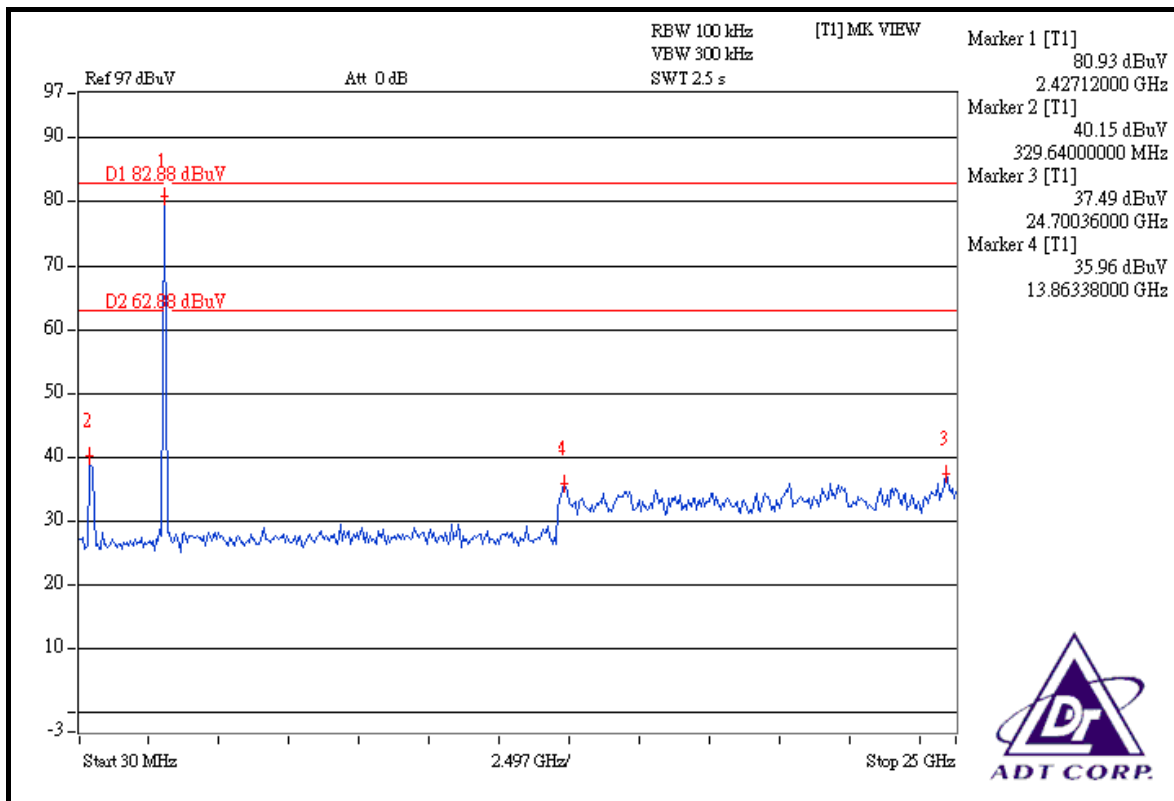
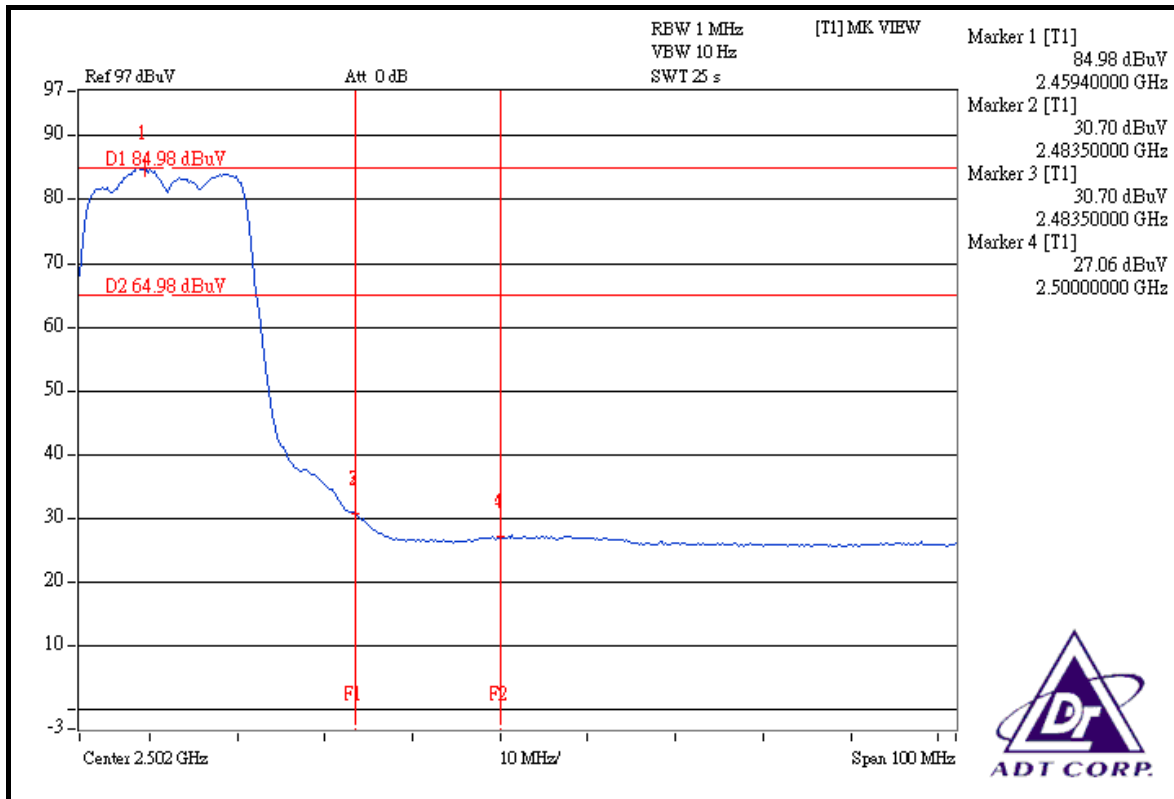
NOTE 2:

The band edge emission plot on the next second page shows 50.56dBc between carrier maximum power and local maximum emission in restrict band (2.4836GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 115.43dBuV/m (Peak), so the maximum field strength in restrict band is $115.43 - 50.56 = 64.87$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 54.28dBc 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 105.71dBuV/m (Average), so the maximum field strength in restrict band is $105.71 - 54.28 = 51.43$ dBuV/m which is under 54dBuV/m limit.







DRAFT 802.11n (40MHz) OFDM MODULATION:

NOTE 1:

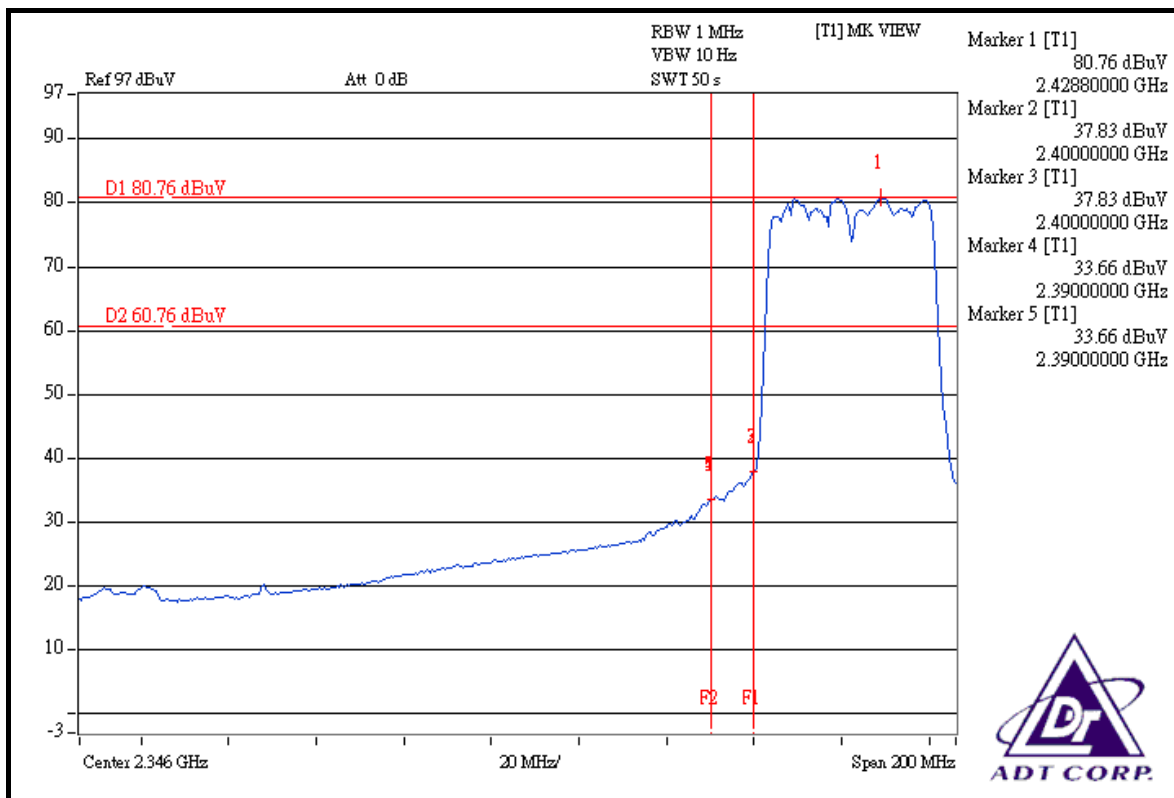
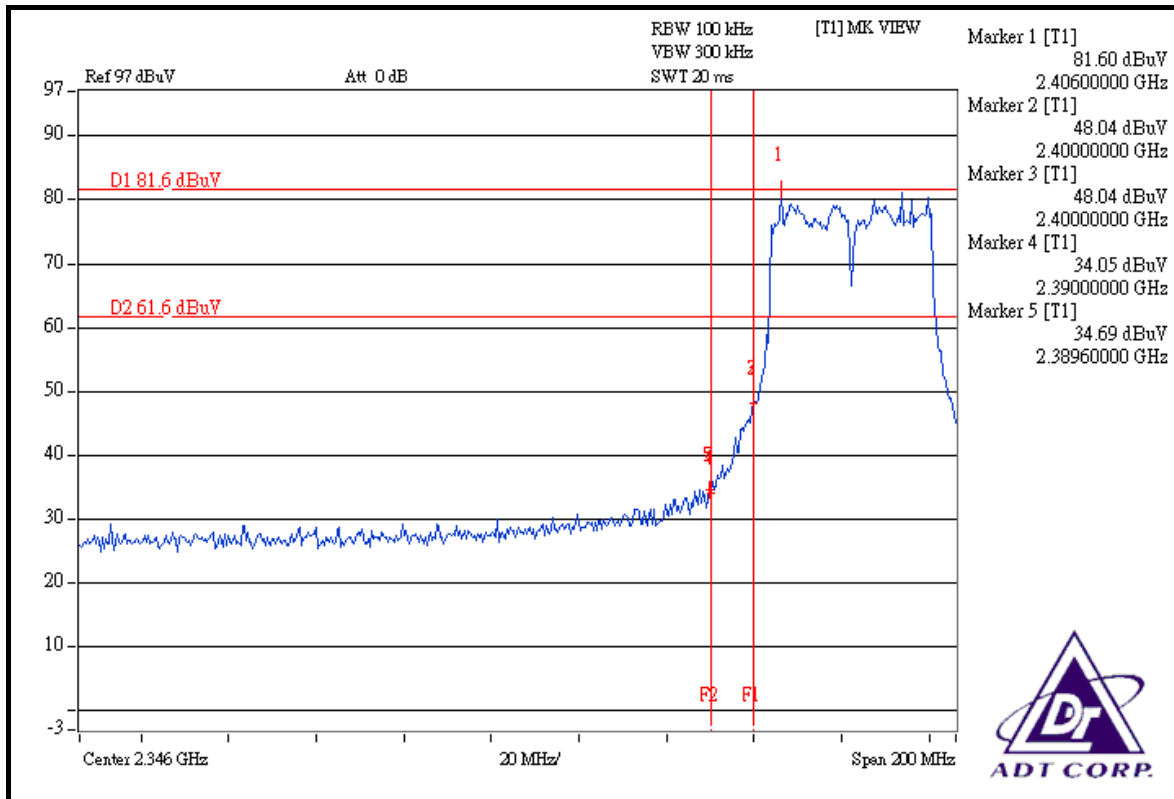
The band edge emission plot on the next page shows 46.91dBc between carrier maximum power and local maximum emission in restrict band (2.3896GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 108.71dBuV/m (Peak), so the maximum field strength in restrict band is $108.71 - 46.91 = 61.80$ dBuV/m which is under 74dBuV/m limit.

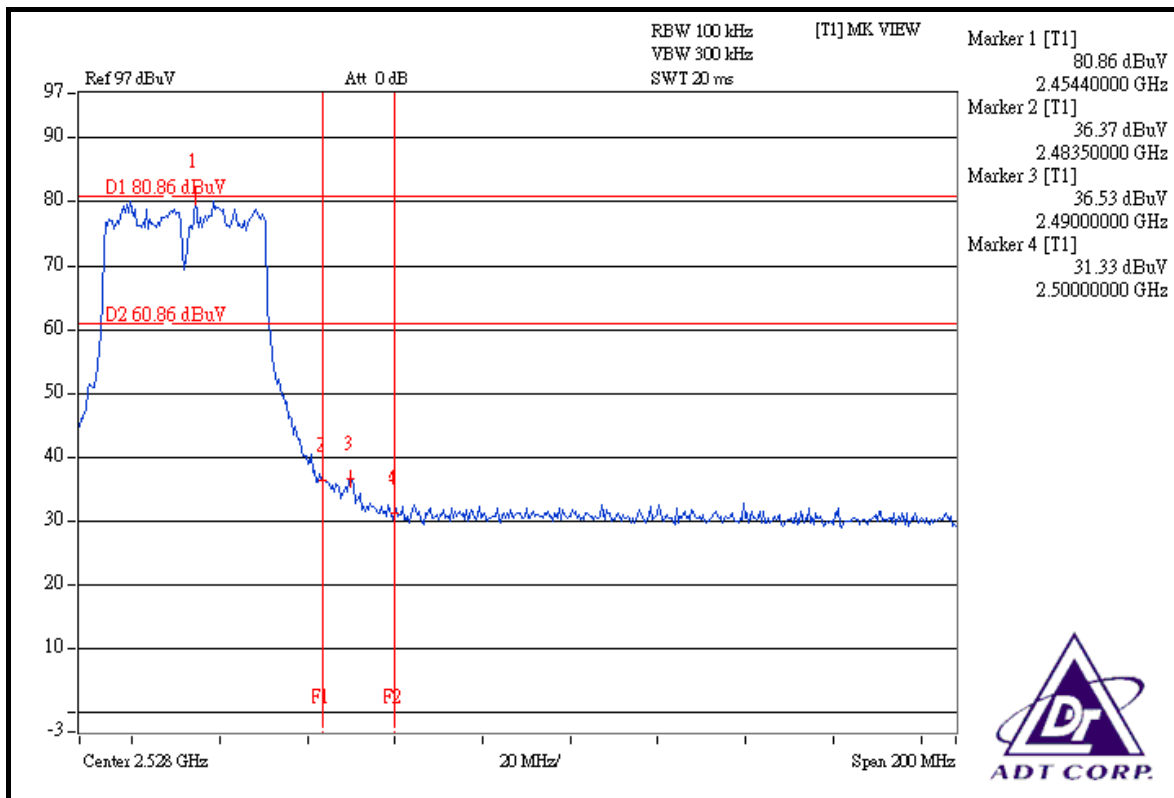
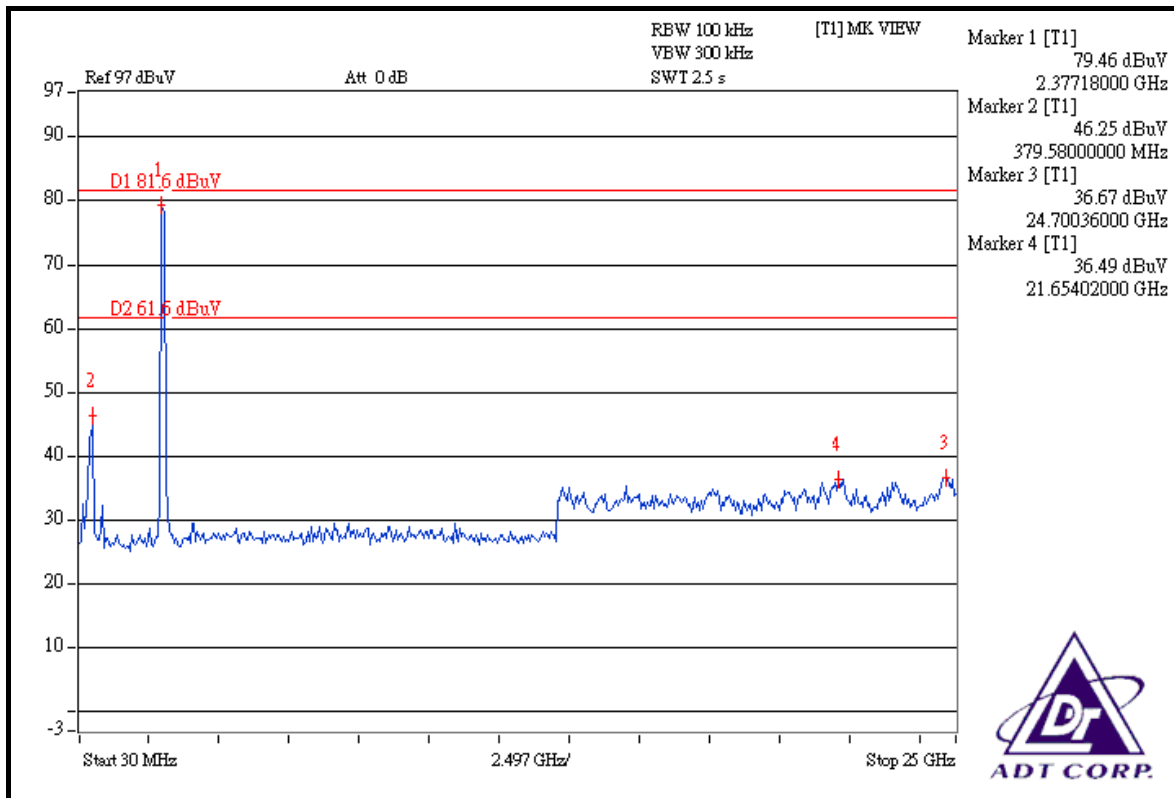
The band edge emission plot on the next page shows 47.10dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 99.24dBuV/m (Average), so the maximum field strength in restrict band is $99.24 - 47.10 = 52.14$ dBuV/m which is under 54dBuV/m limit.

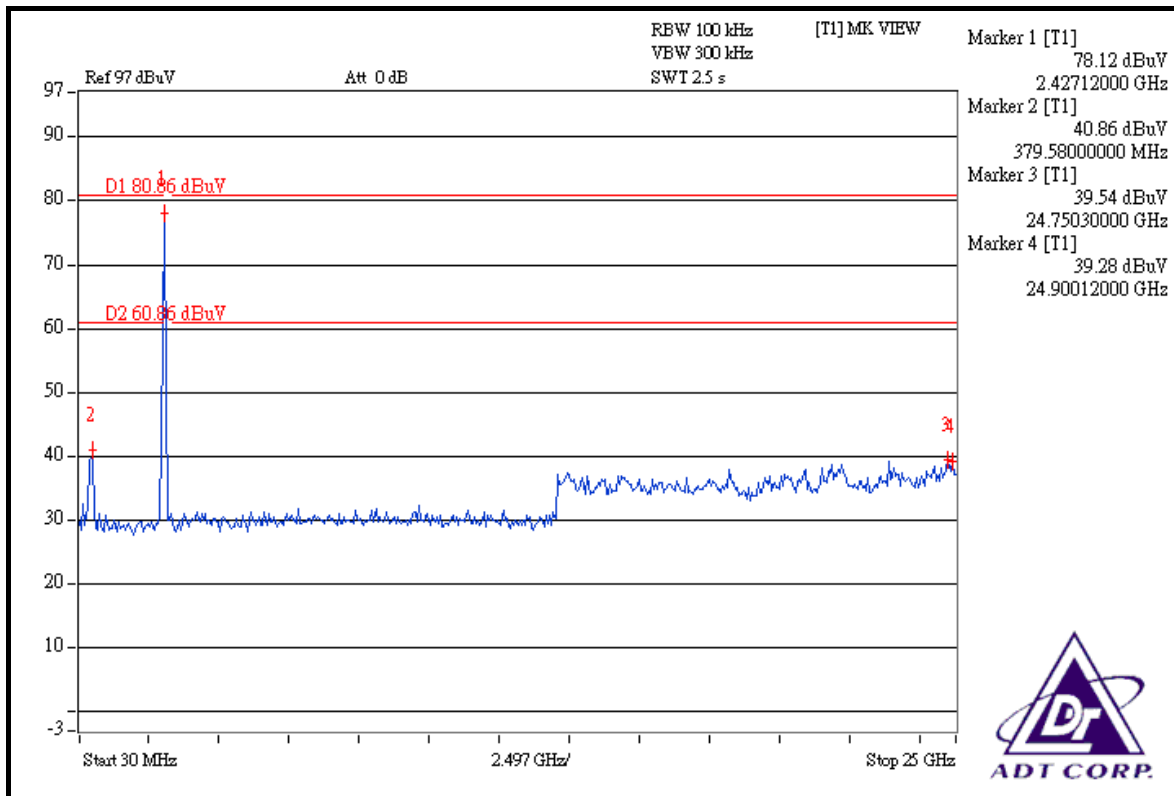
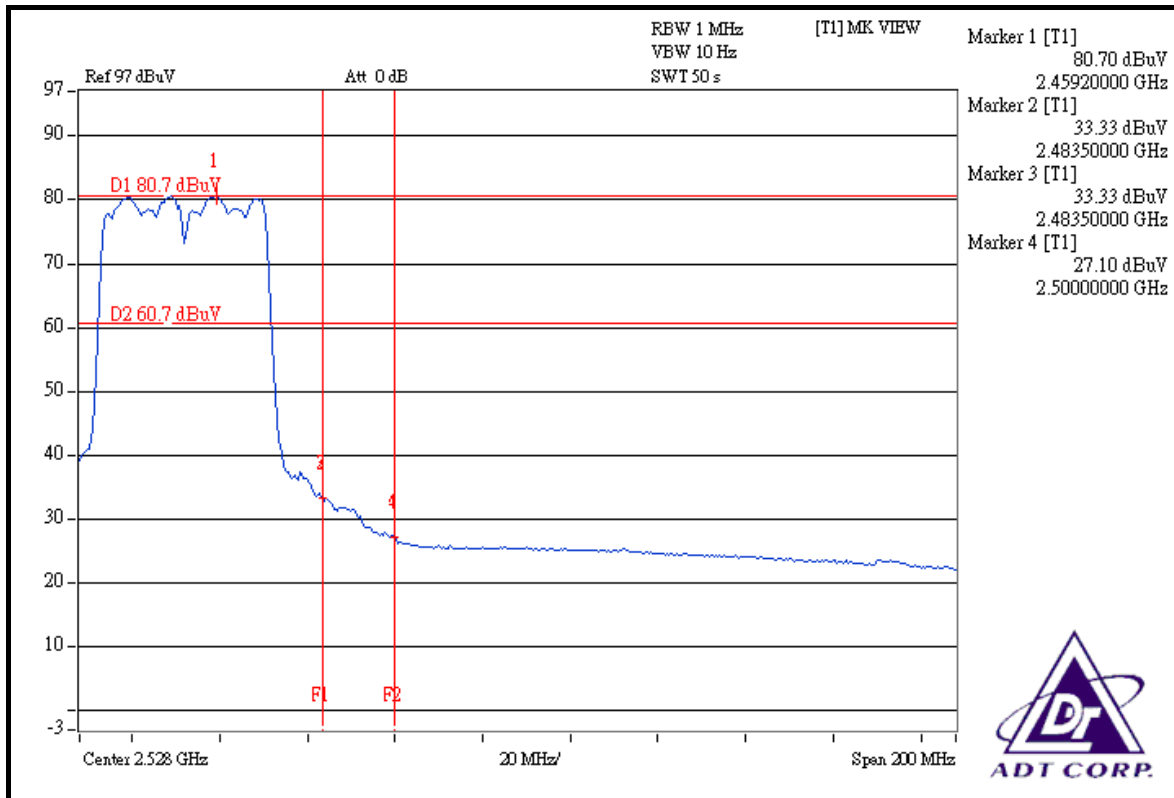
NOTE 2:

The band edge emission plot on the next second page shows 44.33dBc between carrier maximum power and local maximum emission in restrict band (2.4900GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.2.7 is 109.77dBuV/m (Peak), so the maximum field strength in restrict band is $109.77 - 44.33 = 65.44$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 47.37dBc 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 7 at the item 4.2.7 is 100.01dBuV/m (Average), so the maximum field strength in restrict band is $100.01 - 47.37 = 52.64$ 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 Dipole antenna with RSMA connector. The maximum Gain of the antenna is 2.0dBi.

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 (dB μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

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

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 25, 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.

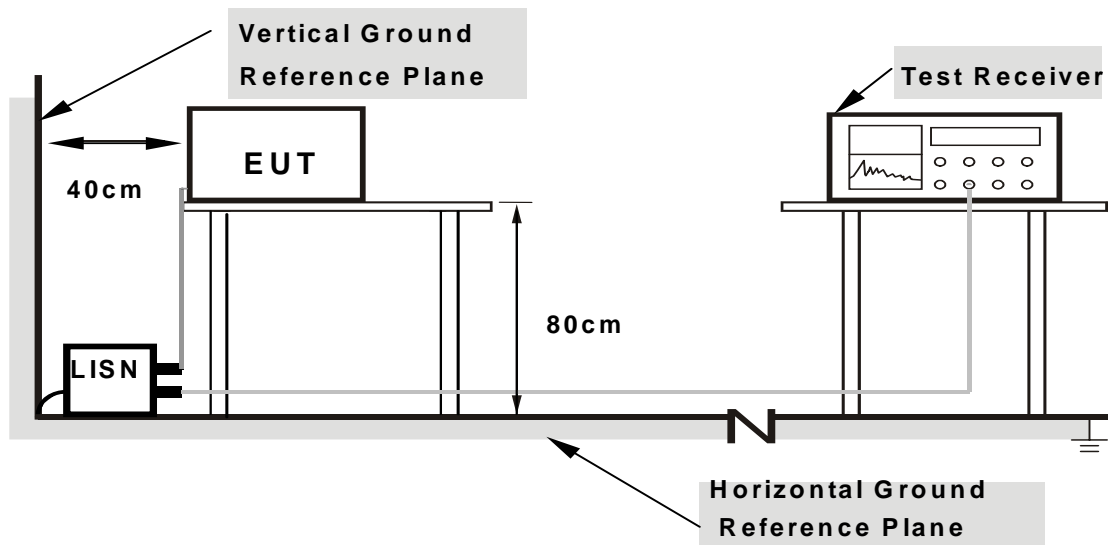
5.1.3 TEST PROCEDURES

- 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

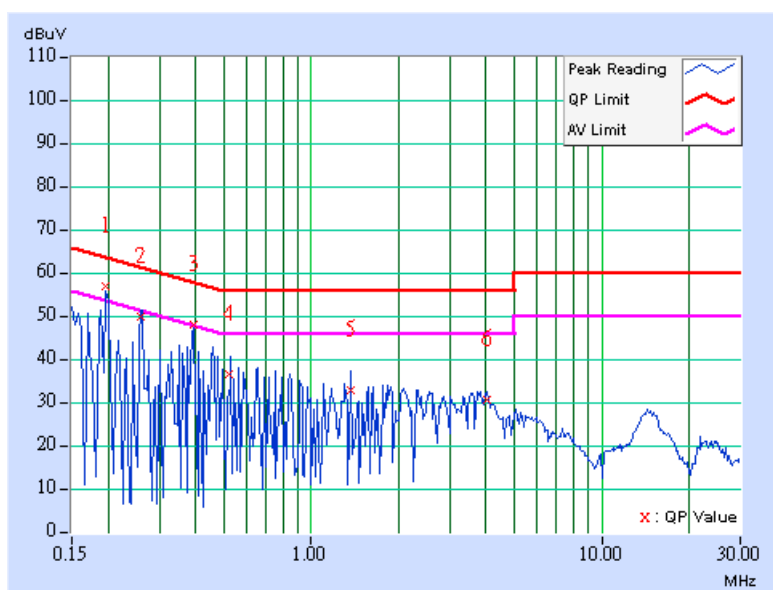
5.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Dean Wang

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.197	0.10	56.70	46.85	56.80	46.95	63.74
2	0.259	0.10	49.70	-	49.80	-	61.45	51.45	-11.65	-
3	0.392	0.10	47.73	-	47.83	-	58.02	48.02	-10.19	-
4	0.522	0.10	36.55	-	36.65	-	56.00	46.00	-19.35	-
5	1.375	0.15	32.58	-	32.73	-	56.00	46.00	-23.27	-
6	4.031	0.28	30.31	-	30.59	-	56.00	46.00	-25.41	-

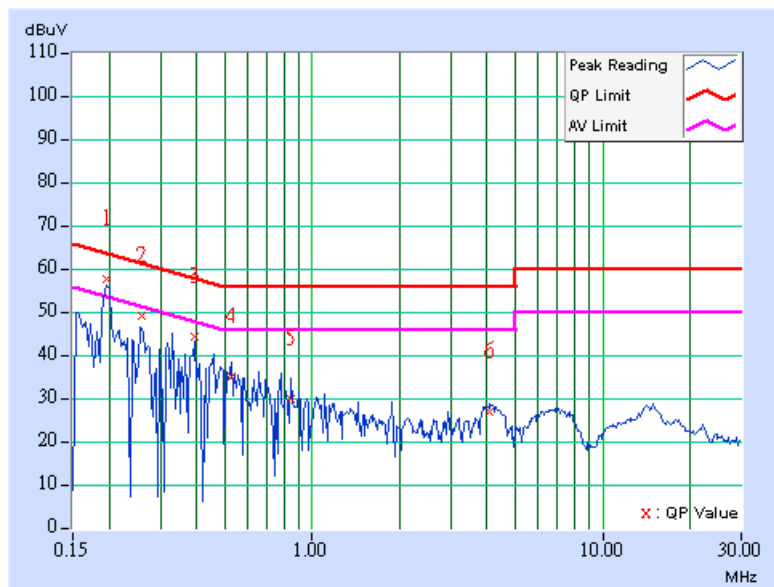
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH, 991hPa	TESTED BY	Dean Wang

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.10	57.59	47.17	57.69	47.27	63.74	53.74	-6.05	-6.47
2	0.261	0.10	49.11	-	49.21	-	61.41	51.41	-12.20	-
3	0.394	0.10	44.16	-	44.26	-	57.99	47.99	-13.73	-
4	0.525	0.12	34.94	-	35.06	-	56.00	46.00	-20.94	-
5	0.845	0.18	29.70	-	29.88	-	56.00	46.00	-26.12	-
6	4.063	0.28	26.62	-	26.90	-	56.00	46.00	-29.10	-

- 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	100025	Oct. 05, 2007
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	May 31, 2008
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jun. 28, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 28, 2007
Preamplifier Agilent	8447D	2944A10633	Oct. 26, 2007
Preamplifier Agilent	8449B	3008A01964	Oct. 26, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238137/4	Dec. 11, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	233233/4	Nov. 14, 2007
Software ADT.	ADT_Radiated_V7.6	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA
Turn Table ADT.	TT100.	TT93021703	NA
Turn Table Controller ADT.	SC100.	SC93021703	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 3.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The VCCI Site Registration No. is R-237.
 5. The IC Site Registration No. is IC3789B-3.

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.

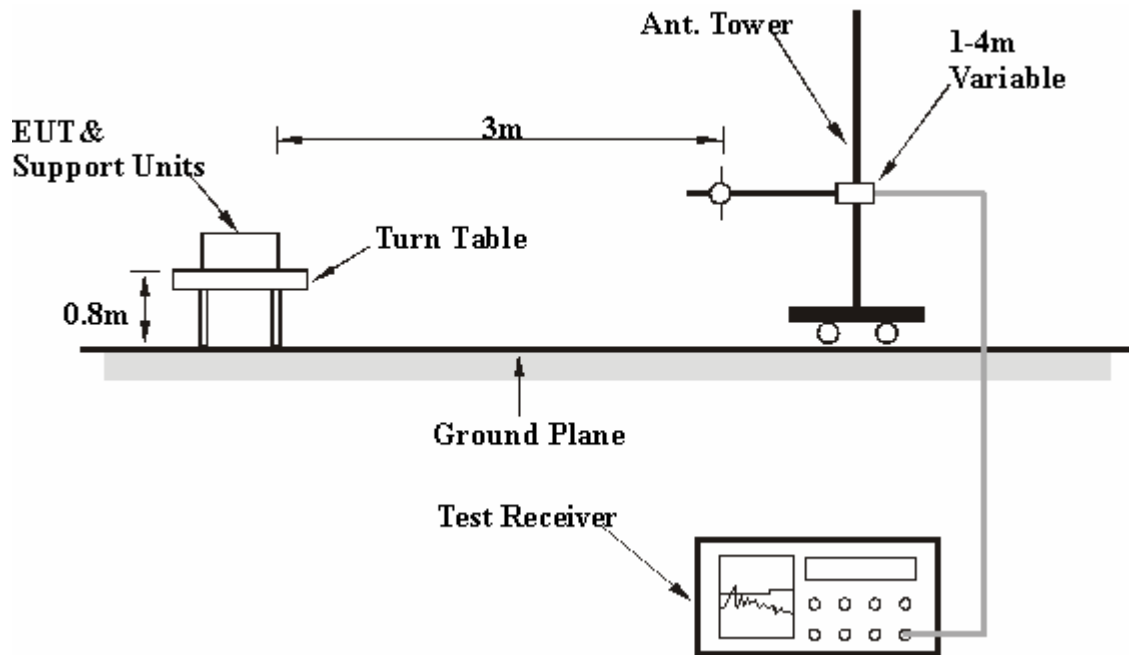
NOTE:

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 10Hz 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	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 68%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	111.56	38.72 QP	43.50	-4.78	1.50 H	352	27.12	11.61
2	181.55	38.63 QP	43.50	-4.87	1.00 H	103	25.76	12.86
3	249.60	40.24 QP	46.00	-5.76	1.00 H	325	26.76	13.47
4	374.04	40.64 QP	46.00	-5.36	1.00 H	232	23.61	17.03
5	500.42	43.25 QP	46.00	-2.75	1.50 H	349	22.96	20.29
6	599.58	41.10 QP	46.00	-4.90	1.50 H	22	18.65	22.45
7	751.23	39.73 QP	46.00	-6.27	1.00 H	244	14.08	25.65
8	875.67	44.46 QP	46.00	-1.54	1.50 H	283	17.18	27.29

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.84	37.90 QP	40.00	-2.10	1.50 V	52	24.36	13.54
2	64.90	37.68 QP	40.00	-2.32	1.50 V	10	24.33	13.35
3	111.56	37.53 QP	43.50	-5.97	1.00 V	52	25.93	11.61
4	374.04	39.56 QP	46.00	-6.44	1.00 V	235	22.53	17.03
5	500.42	41.05 QP	46.00	-4.95	1.00 V	346	20.76	20.29
6	624.85	43.23 QP	46.00	-2.77	1.50 V	157	20.21	23.02
7	751.23	40.76 QP	46.00	-5.24	1.00 V	256	15.10	25.65
8	875.67	44.55 QP	46.00	-1.45	1.00 V	70	17.26	27.29

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

ABOVE 1GHz DATA: 802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5725.00	72.39 PK	79.07	-6.68	1.00 H	294	34.46	37.93
2	5725.00	54.65 AV	68.34	-13.69	1.00 H	294	16.72	37.93
3	*5745.00	99.07 PK			1.00 H	294	61.09	37.98
4	*5745.00	88.34 AV			1.00 H	294	50.36	37.98
5	#11490.00	56.23 PK	74.00	-17.77	1.01 H	58	8.76	47.47
6	#11490.00	43.73 AV	54.00	-10.27	1.01 H	58	-3.74	47.47

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5725.00	83.66 PK	88.01	-4.35	1.32 V	259	45.73	37.93
2	5725.00	62.71 AV	77.39	-14.68	1.32 V	259	24.78	37.93
3	*5745.00	108.01 PK			1.31 V	259	70.03	37.98
4	*5745.00	97.39 AV			1.31 V	259	59.41	37.98
5	#11490.00	58.17 PK	74.00	-15.83	1.34 V	92	10.70	47.47
6	#11490.00	46.11 AV	54.00	-7.89	1.34 V	92	-1.36	47.47

- 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	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5785.00	98.23 PK			1.01 H	295	60.16	38.07
2	*5785.00	88.40 AV			1.01 H	295	50.33	38.07
3	#11570.00	57.23 PK	74.00	-16.77	1.01 H	304	9.84	47.39
4	#11570.00	44.15 AV	54.00	-9.85	1.01 H	304	-3.24	47.39

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5785.00	107.65 PK			1.42 V	250	69.58	38.07
2	*5785.00	96.91 AV			1.42 V	250	58.84	38.07
3	#11570.00	57.98 PK	74.00	-16.02	1.02 V	46	10.59	47.39
4	#11570.00	44.80 AV	54.00	-9.20	1.02 V	46	-2.59	47.39

- 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	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5825.00	97.94 PK			1.02 H	292	59.77	38.17
2	*5825.00	88.04 AV			1.02 H	292	49.87	38.17
3	5850.00	57.10 PK	77.94	-20.84	1.02 H	292	18.87	38.23
4	5850.00	41.81 AV	68.04	-26.23	1.02 H	292	3.58	38.23
5	#11650.00	56.34 PK	74.00	-17.66	1.15 H	301	9.03	47.31
6	#11650.00	44.12 AV	54.00	-9.88	1.15 H	301	-3.19	47.31

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5825.00	107.28 PK			1.45 V	253	69.11	38.17
2	*5825.00	96.52 AV			1.45 V	253	58.35	38.17
3	5850.00	64.64 PK	87.28	-22.64	1.45 V	253	26.41	38.23
4	5850.00	47.32 AV	76.52	-29.20	1.45 V	253	9.09	38.23
5	#11650.00	56.68 PK	74.00	-17.32	1.13 V	214	9.37	47.31
6	#11650.00	44.46 AV	54.00	-9.54	1.13 V	214	-2.85	47.31

- 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.

DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5725.00	72.40 PK	81.65	-9.25	1.15 H	163	34.47	37.93
2	5725.00	53.95 AV	71.66	-17.71	1.15 H	163	16.02	37.93
3	*5745.00	101.65 PK			1.15 H	163	63.67	37.98
4	*5745.00	91.66 AV			1.15 H	163	53.68	37.98
5	#11490.00	57.41 PK	74.00	-16.59	1.24 H	256	9.94	47.47
6	#11490.00	43.42 AV	54.00	-10.58	1.24 H	256	-4.05	47.47

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5725.00	81.42 PK	93.05	-11.63	1.69 V	1	43.49	37.93
2	5725.00	63.19 AV	82.70	-19.51	1.69 V	1	25.26	37.93
3	*5745.00	113.05 PK			1.69 V	1	75.07	37.98
4	*5745.00	102.70 AV			1.69 V	1	64.72	37.98
5	#11490.00	57.65 PK	74.00	-16.35	1.08 V	112	10.18	47.47
6	#11490.00	44.33 AV	54.00	-9.67	1.08 V	112	-3.14	47.47

- 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	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5785.00	100.74 PK			1.11 H	159	62.67	38.07
2	*5785.00	90.55 AV			1.11 H	159	52.48	38.07
3	#11570.00	56.54 PK	74.00	-17.46	1.00 H	225	9.15	47.39
4	#11570.00	43.87 AV	54.00	-10.13	1.00 H	225	-3.52	47.39

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5785.00	112.04 PK			1.39 V	338	73.97	38.07
2	*5785.00	101.81 AV			1.39 V	338	63.74	38.07
3	#11570.00	57.59 PK	74.00	-16.41	1.34 V	56	10.20	47.39
4	#11570.00	44.31 AV	54.00	-9.69	1.34 V	56	-3.08	47.39

- 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	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5825.00	100.47 PK			1.03 H	161	62.30	38.17
2	*5825.00	90.49 AV			1.03 H	161	52.32	38.17
3	5850.00	58.98 PK	80.47	-21.49	1.00 H	160	20.75	38.23
4	5850.00	41.19 AV	70.49	-29.30	1.00 H	160	2.96	38.23
5	#11650.00	57.65 PK	74.00	-16.35	1.00 H	168	10.34	47.31
6	#11650.00	44.19 AV	54.00	-9.81	1.00 H	168	-3.12	47.31

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5825.00	111.31 PK			1.56 V	1	73.14	38.17
2	*5825.00	102.06 AV			1.56 V	1	63.89	38.17
3	5850.00	67.41 PK	91.31	-23.90	1.56 V	1	29.18	38.23
4	5850.00	47.98 AV	82.06	-34.08	1.56 V	1	9.75	38.23
5	#11650.00	57.88 PK	74.00	-16.12	1.27 V	33	10.57	47.31
6	#11650.00	44.27 AV	54.00	-9.73	1.27 V	33	-3.04	47.31

- 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.

DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5725.00	64.53 PK	74.61	-10.08	1.06 H	296	26.60	37.93
2	5725.00	48.17 AV	64.66	-16.49	1.06 H	296	10.24	37.93
3	*5755.00	94.61 PK			1.06 H	296	56.61	38.00
4	*5755.00	84.66 AV			1.06 H	296	46.66	38.00
5	#11510.00	55.65 PK	74.00	-18.35	1.02 H	18	8.19	47.46
6	#11510.00	42.40 AV	54.00	-11.60	1.02 H	18	-5.06	47.46

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5725.00	75.30 PK	86.80	-11.50	1.43 V	0	37.37	37.93
2	5725.00	59.39 AV	76.33	-16.94	1.43 V	0	21.46	37.93
3	*5755.00	106.80 PK			1.43 V	0	68.80	38.00
4	*5755.00	96.33 AV			1.43 V	0	58.33	38.00
5	#11510.00	56.15 PK	74.00	-17.85	1.00 V	145	8.69	47.46
6	#11510.00	43.36 AV	54.00	-10.64	1.00 V	145	-4.10	47.46

- 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 2	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5795.00	94.74 PK			1.00 H	294	56.64	38.10
2	*5795.00	84.43 AV			1.00 H	294	46.33	38.10
3	5850.00	51.19 PK	74.74	-23.55	1.00 H	294	12.96	38.23
4	5850.00	38.61 AV	64.43	-25.82	1.00 H	294	0.38	38.23
5	#11590.00	55.96 PK	74.00	-18.04	1.06 H	296	8.60	47.37
6	#11590.00	42.57 AV	54.00	-11.43	1.06 H	296	-4.79	47.37

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5795.00	107.49 PK			1.44 V	0	69.39	38.10
2	*5795.00	97.55 AV			1.44 V	0	59.45	38.10
3	5850.00	56.87 PK	87.49	-30.62	1.44 V	0	18.64	38.23
4	5850.00	41.97 AV	77.55	-35.58	1.44 V	0	3.74	38.23
5	#11590.00	55.53 PK	74.00	-18.47	1.44 V	311	8.17	47.37
6	#11590.00	42.96 AV	54.00	-11.04	1.44 V	311	-4.40	47.37

- 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.

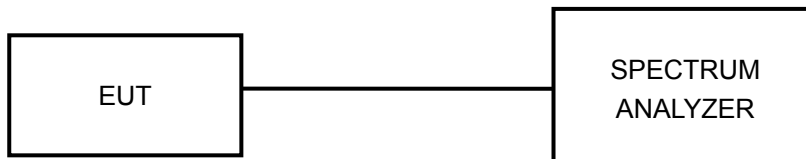
5.3.3 TEST PROCEDURE

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.



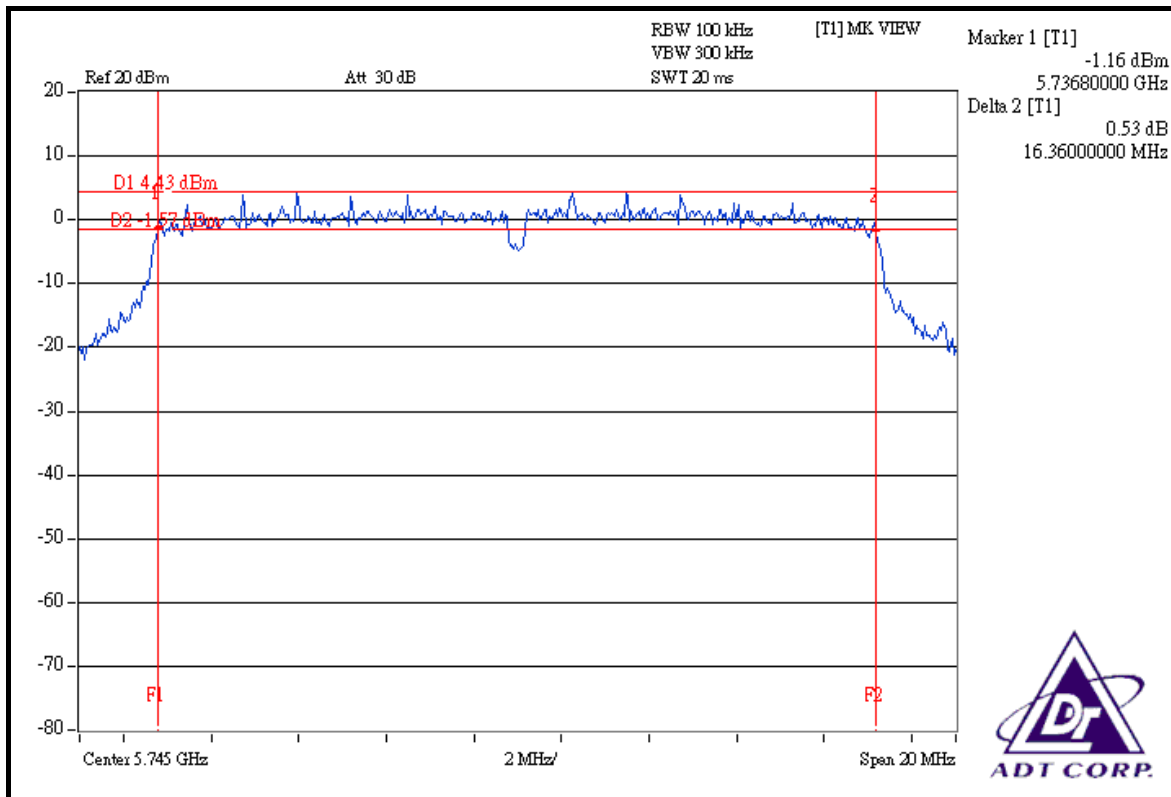
5.3.7 TEST RESULTS

802.11a OFDM MODULATION:

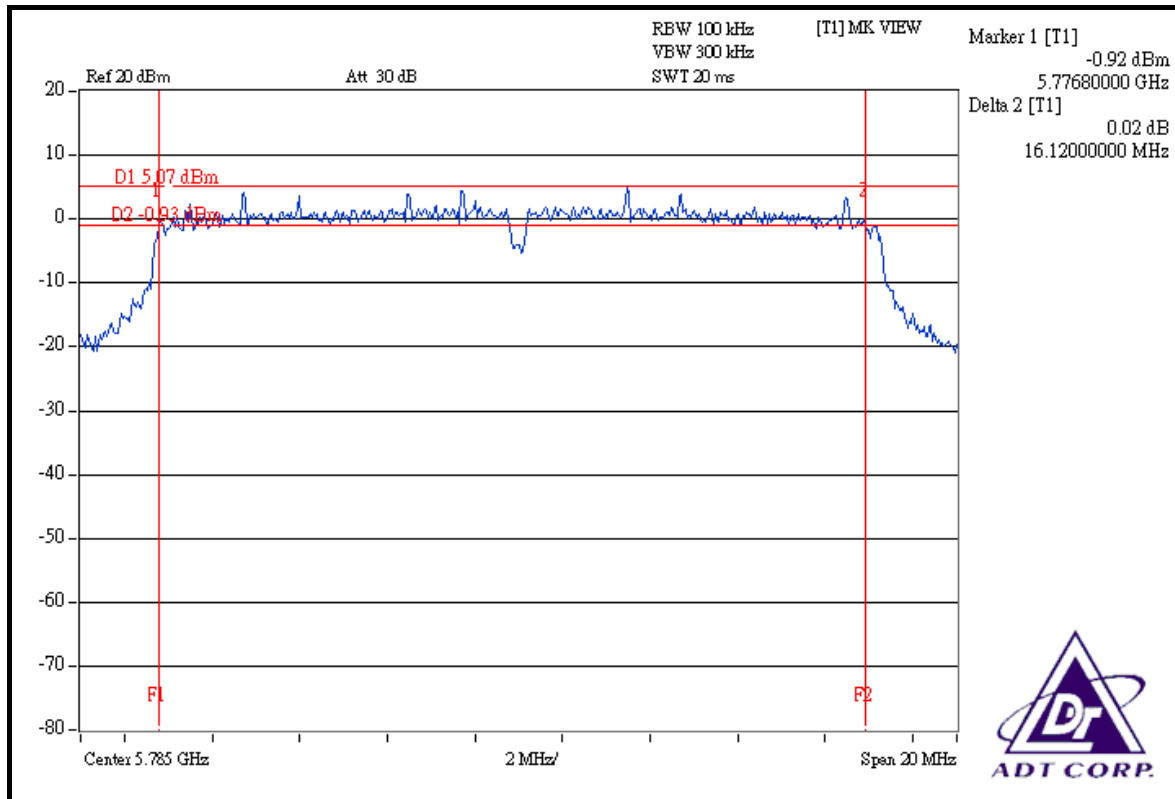
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	5745	16.36	0.5	PASS
3	5785	16.12	0.5	PASS
5	5825	16.40	0.5	PASS

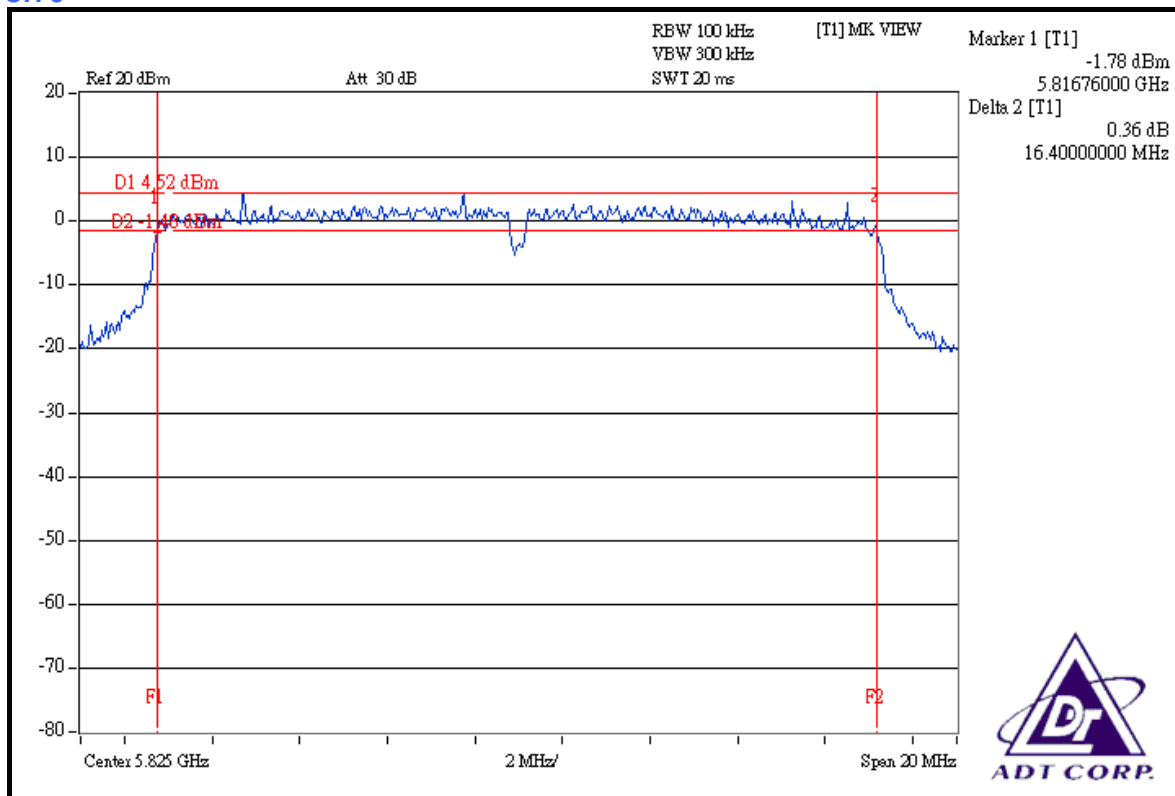
CH 1



CH 3



CH 5



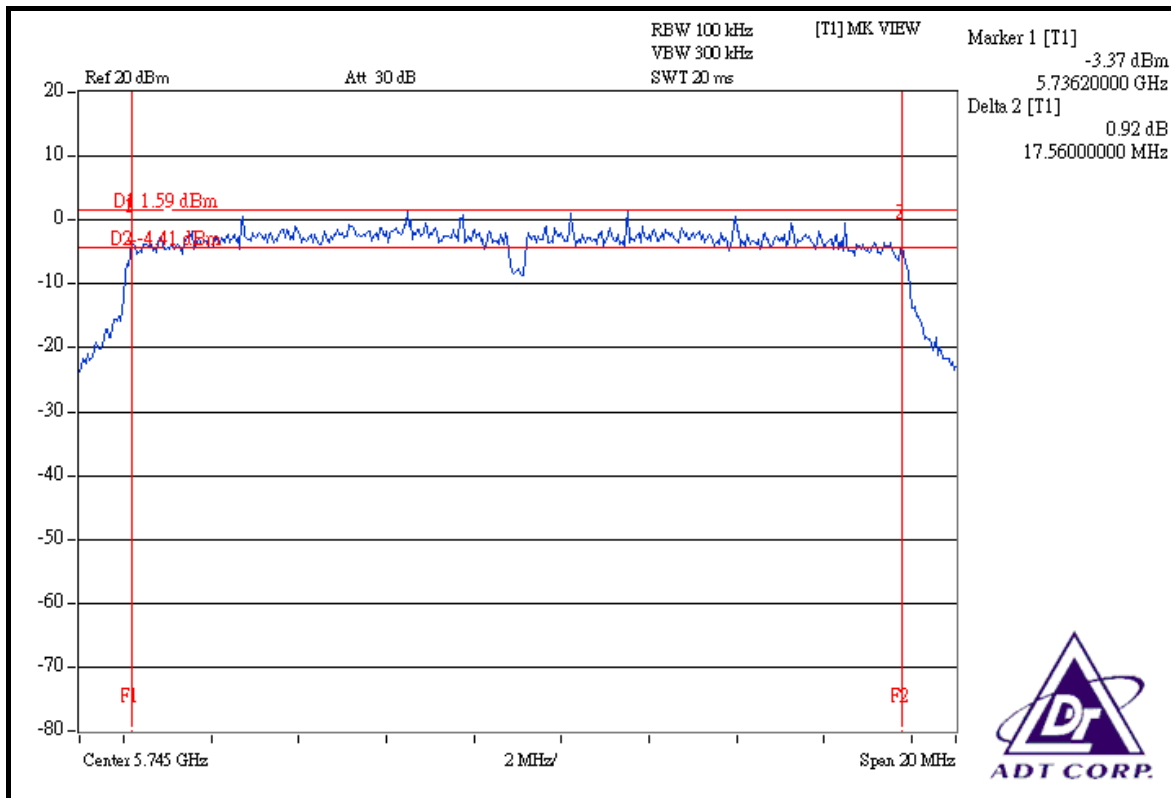


DRAFT 802.11n (20MHz) OFDM MODULATION:

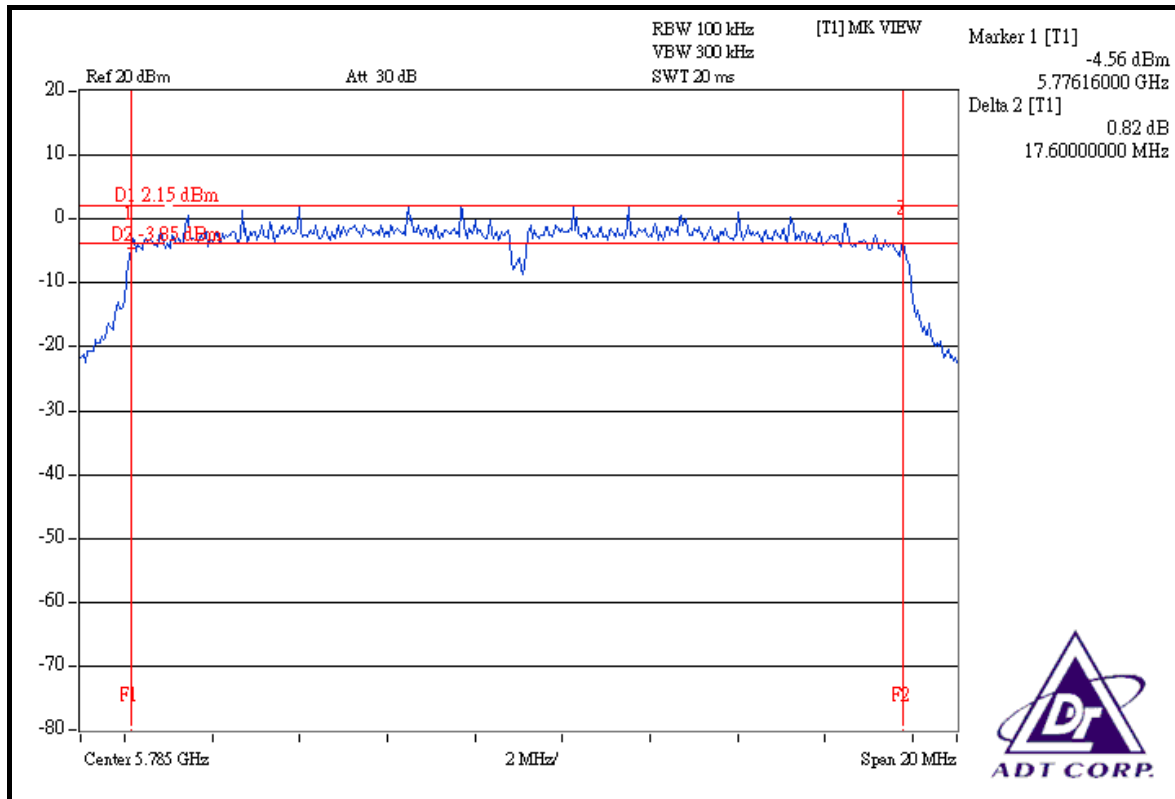
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	5745	17.56	17.16	17.36	0.5	PASS
3	5785	17.60	17.36	17.60	0.5	PASS
5	5825	17.60	16.92	17.56	0.5	PASS

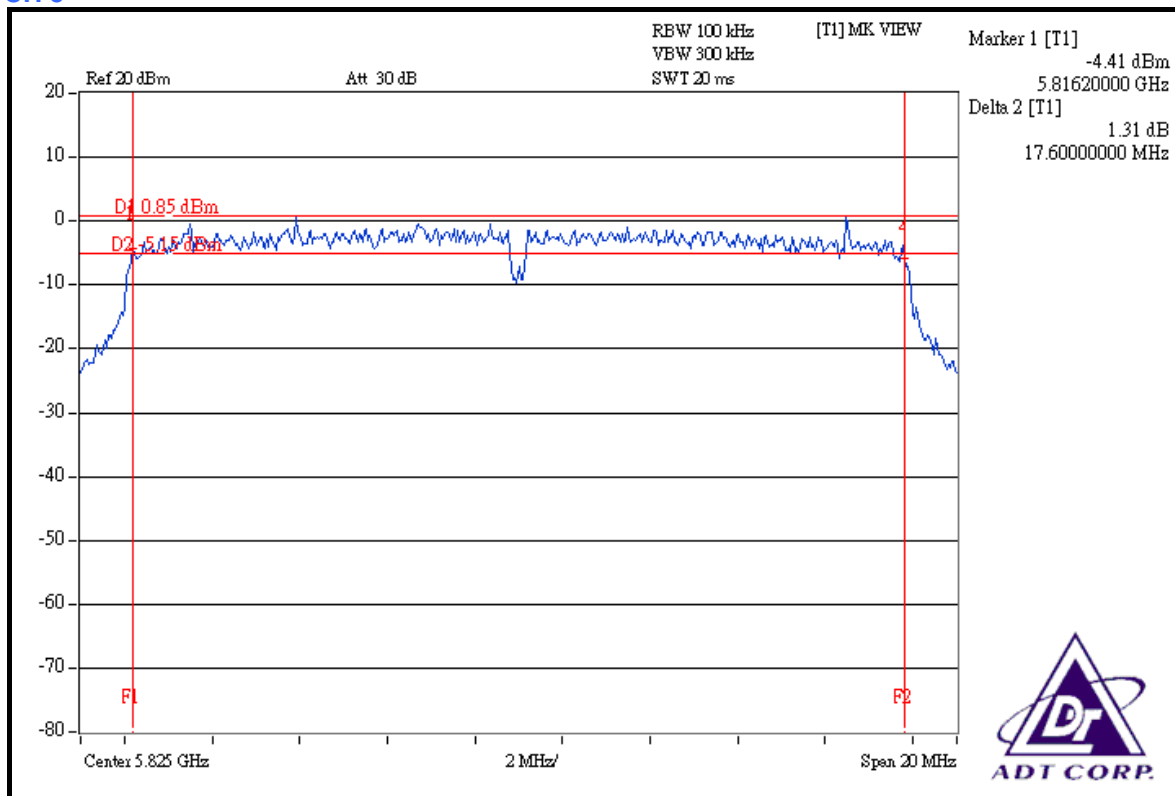
FOR CHAIN 0: CH 1



CH 3

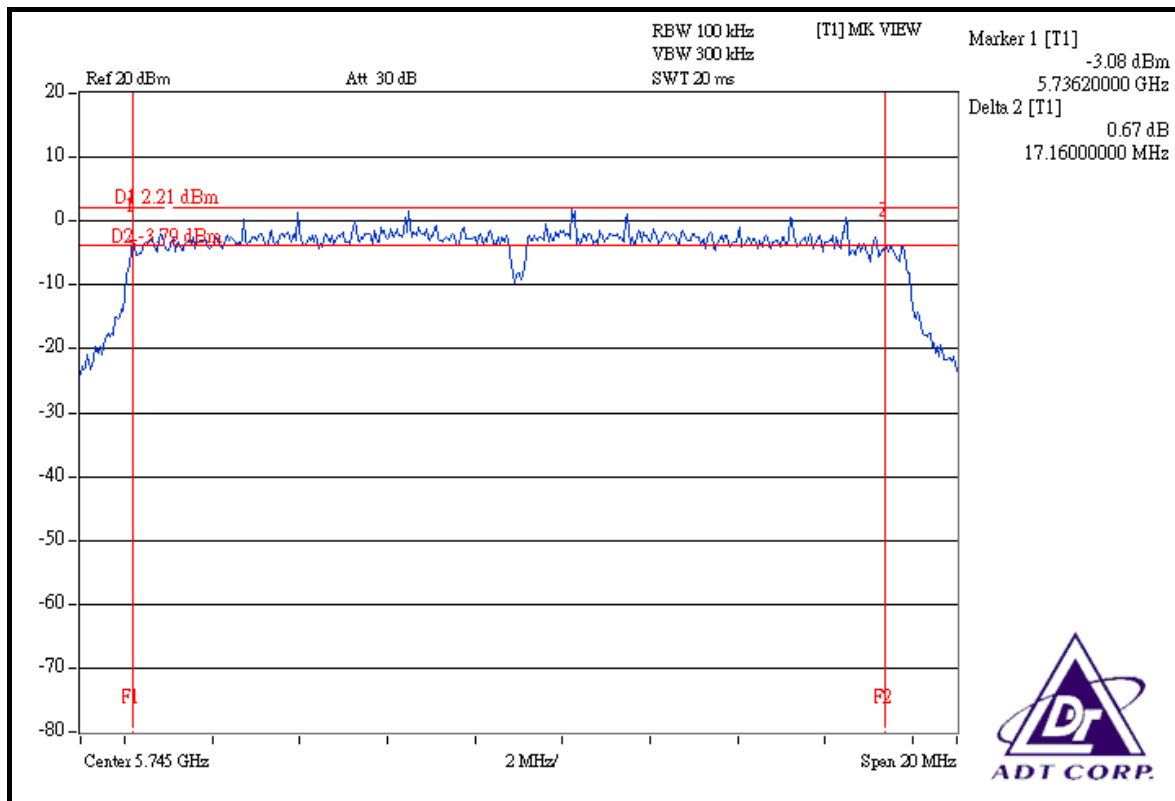


CH 5

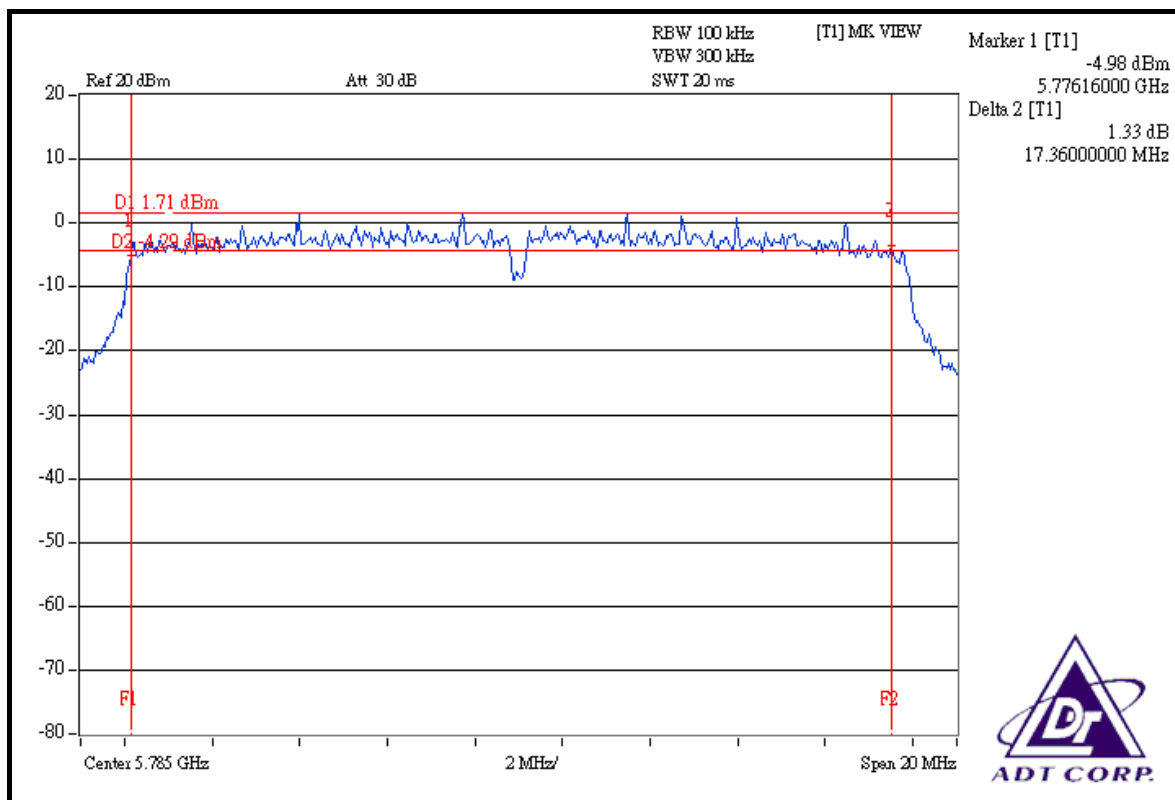




FOR CHAIN 1: CH 1

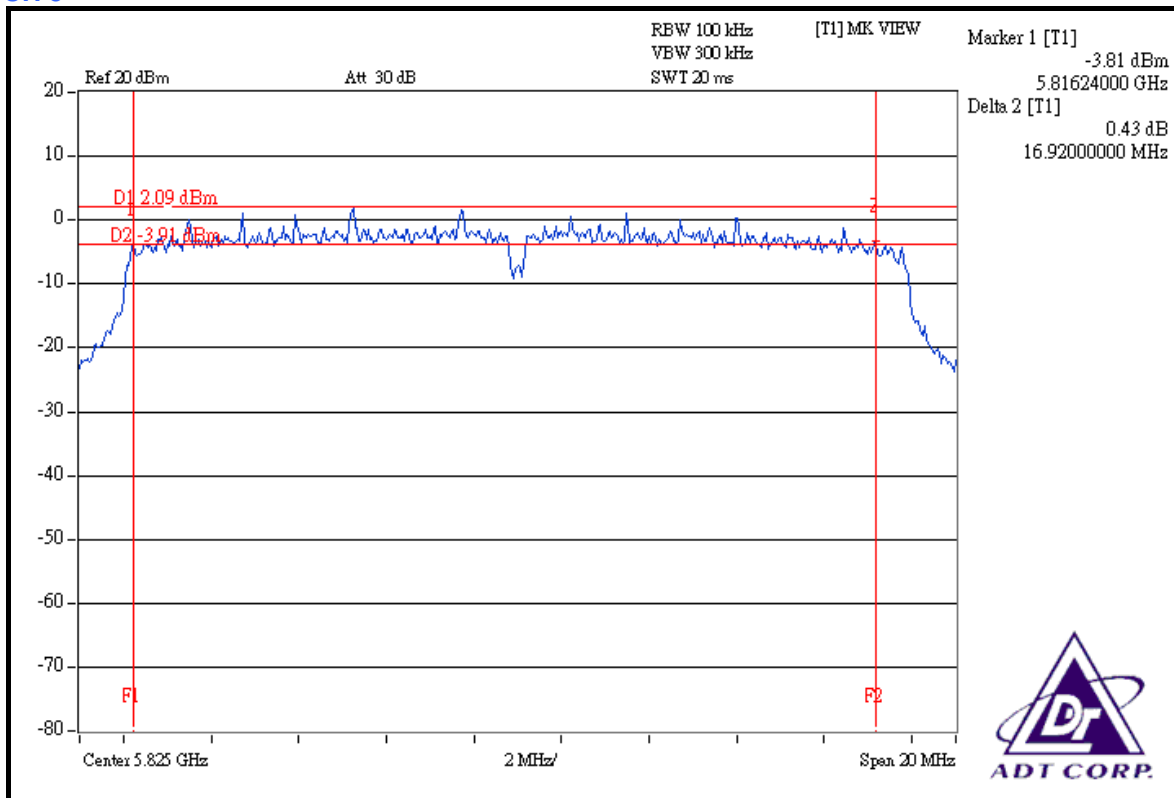


CH 3

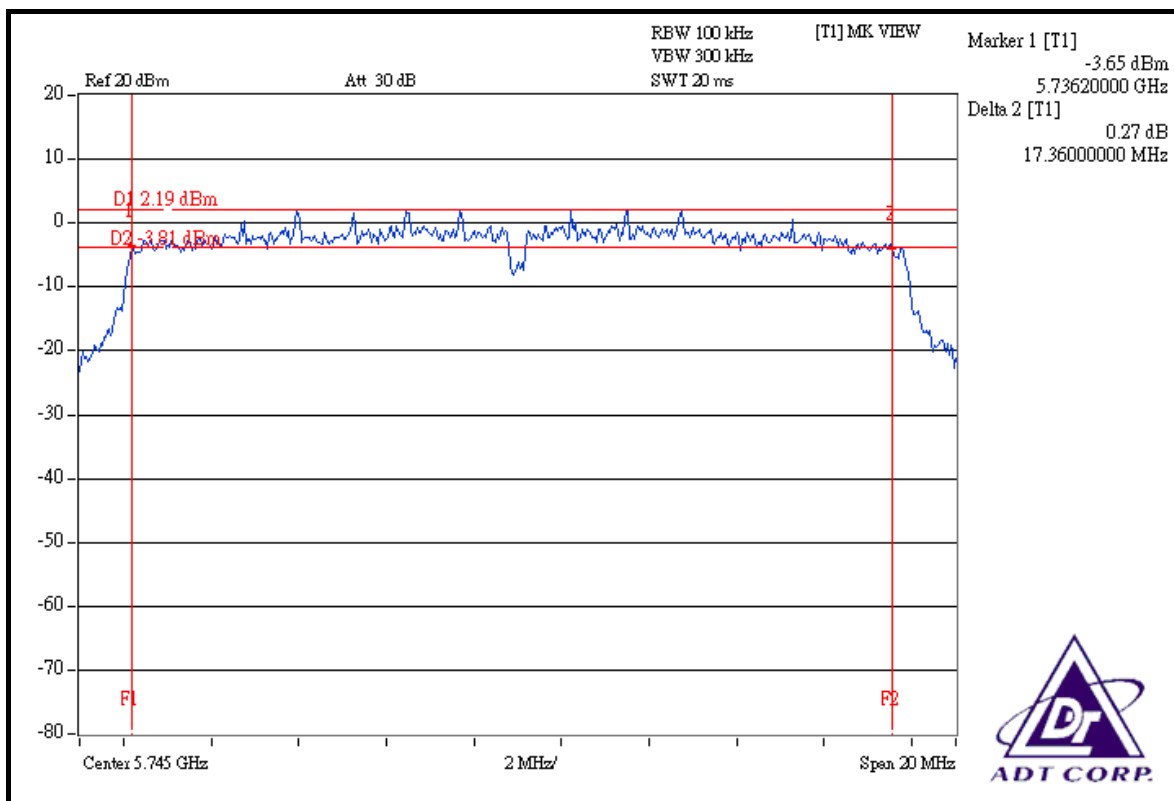




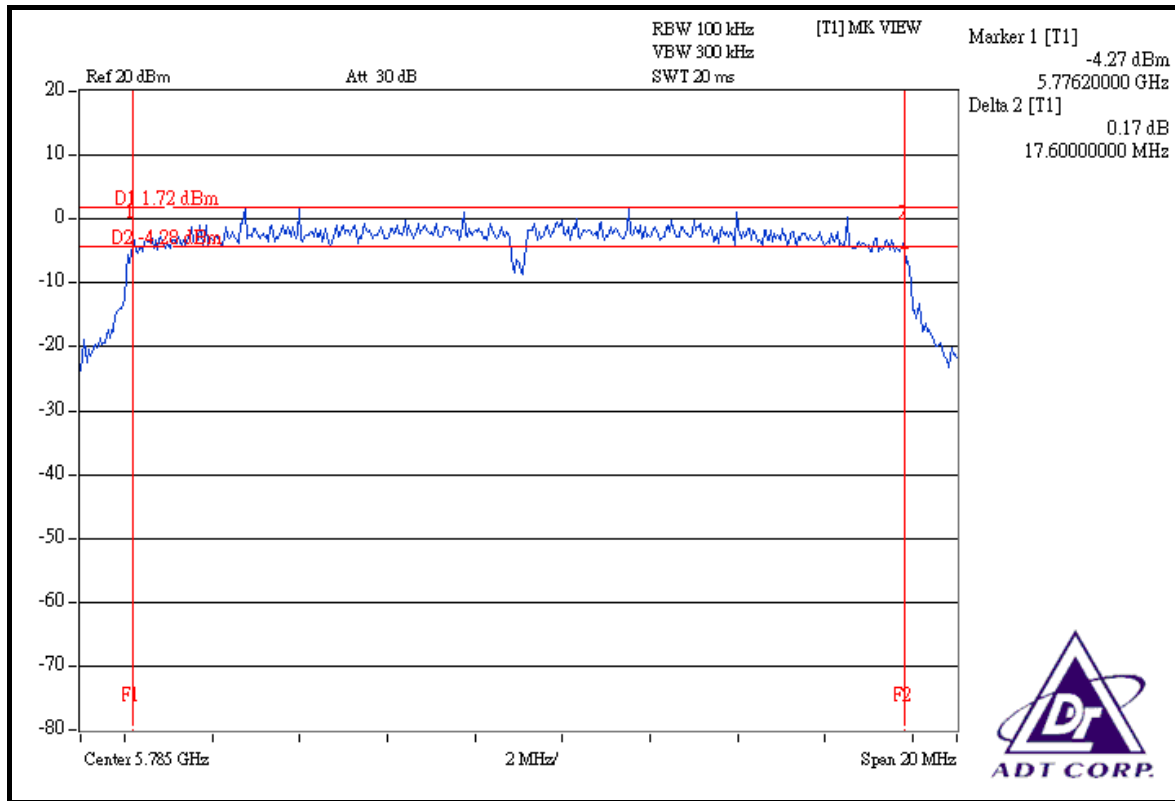
CH 5



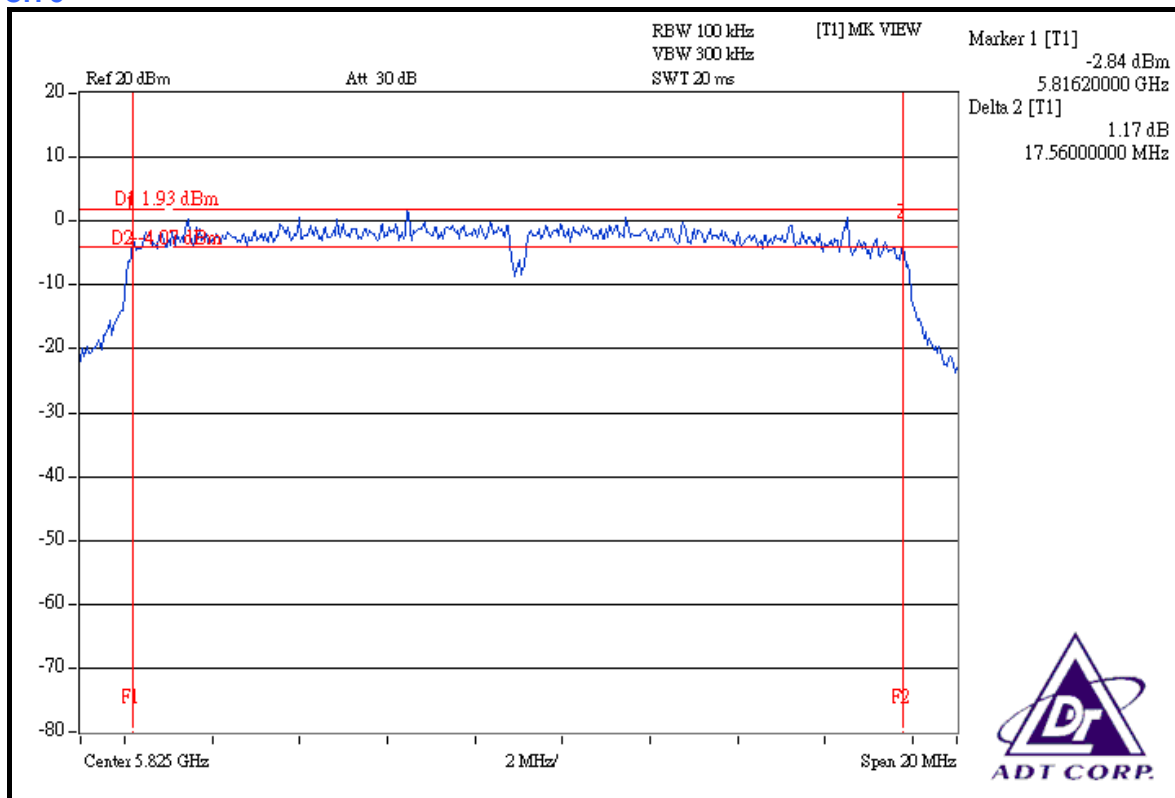
FOR CHAIN 2: CH 1



CH 3



CH 5





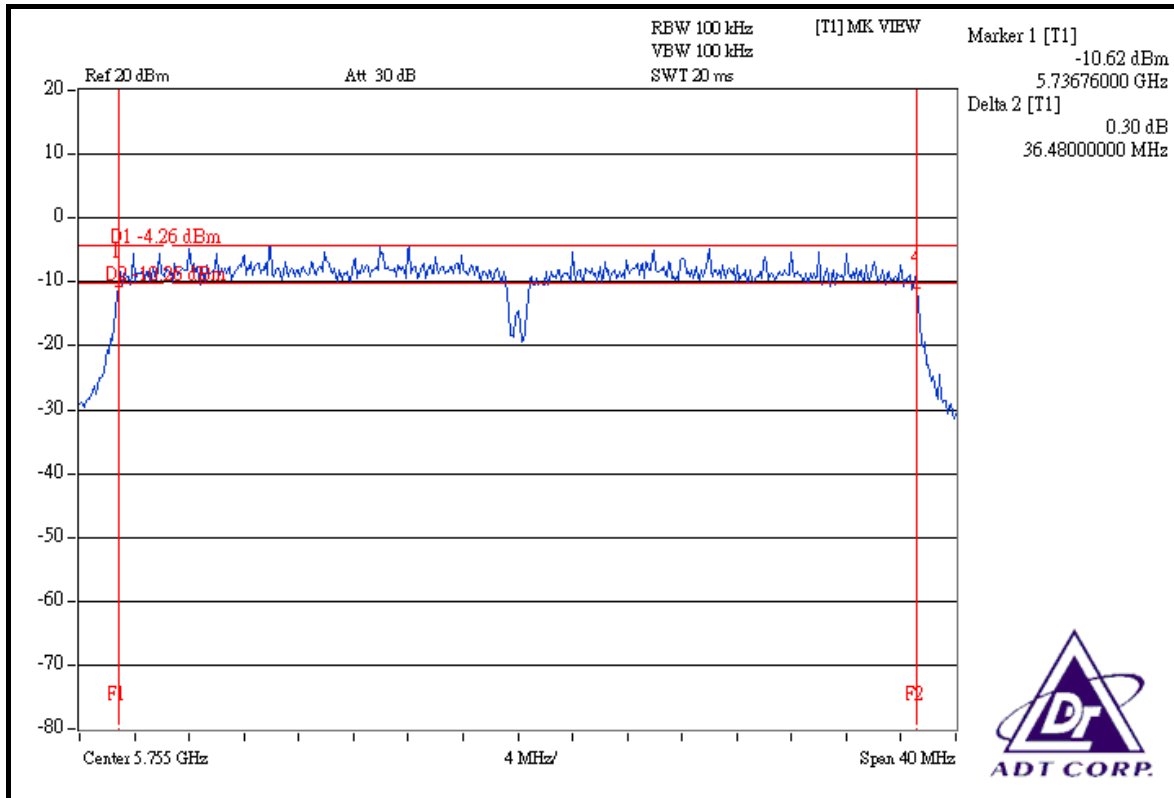
DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

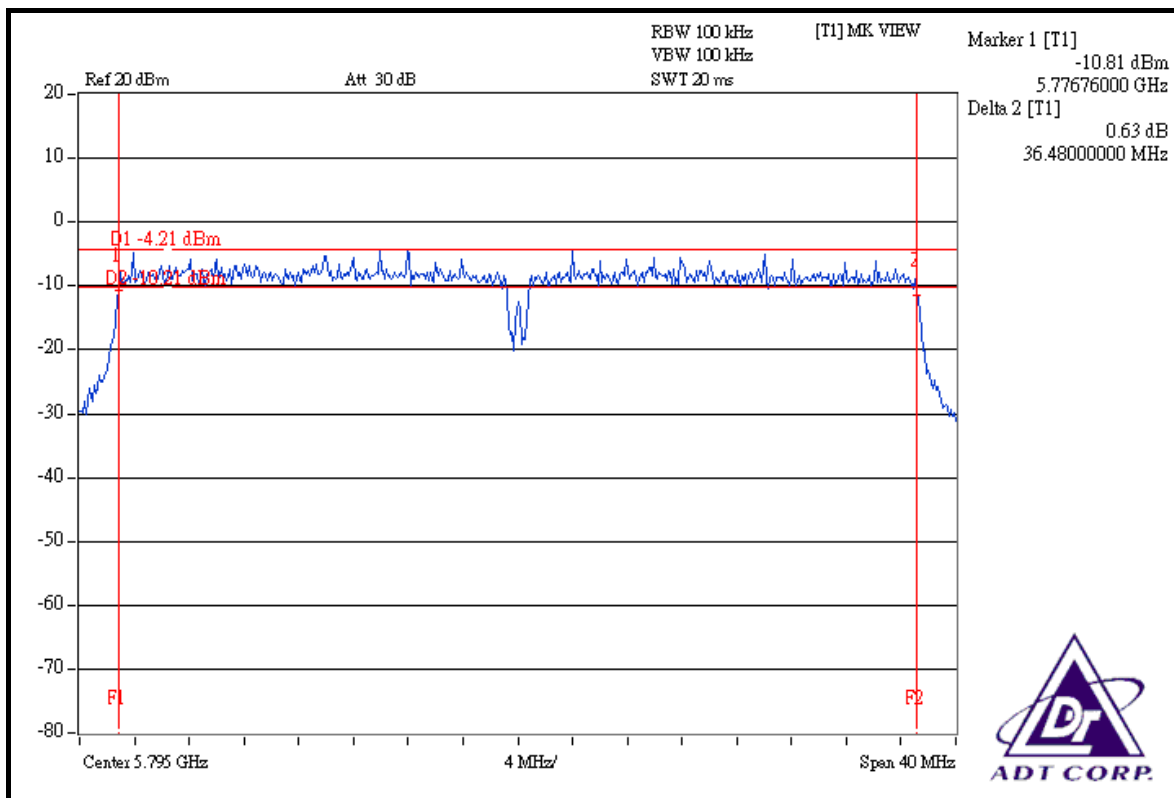
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	5755	36.48	36.48	36.48	0.5	PASS
2	5795	36.48	36.40	36.40	0.5	PASS



FOR CHAIN 0: CH 1

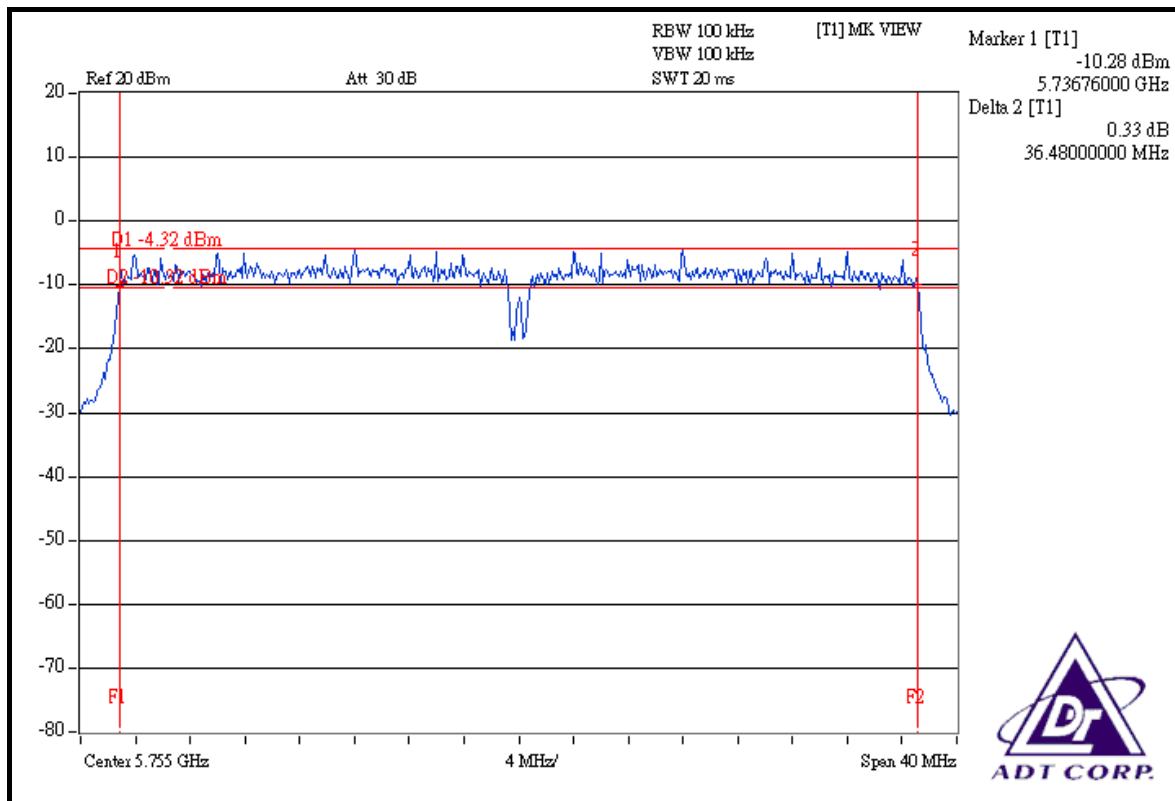


CH 2

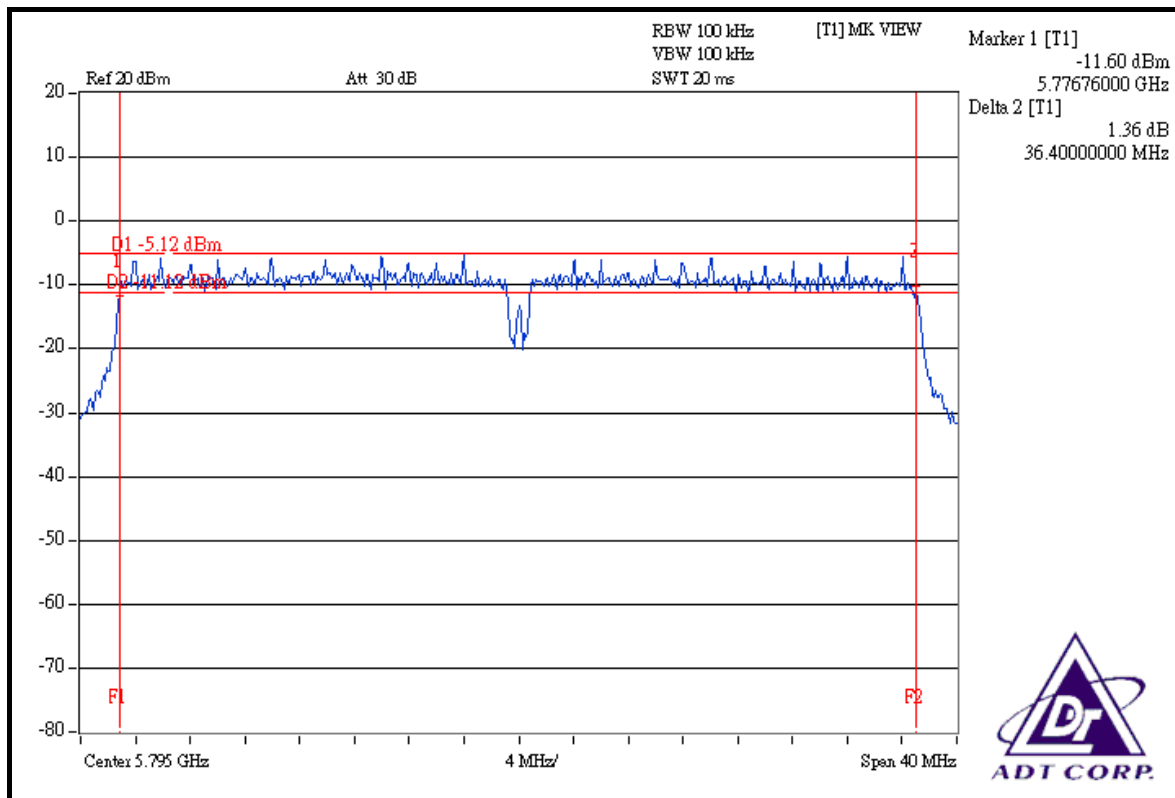




FOR CHAIN 1: CH 1

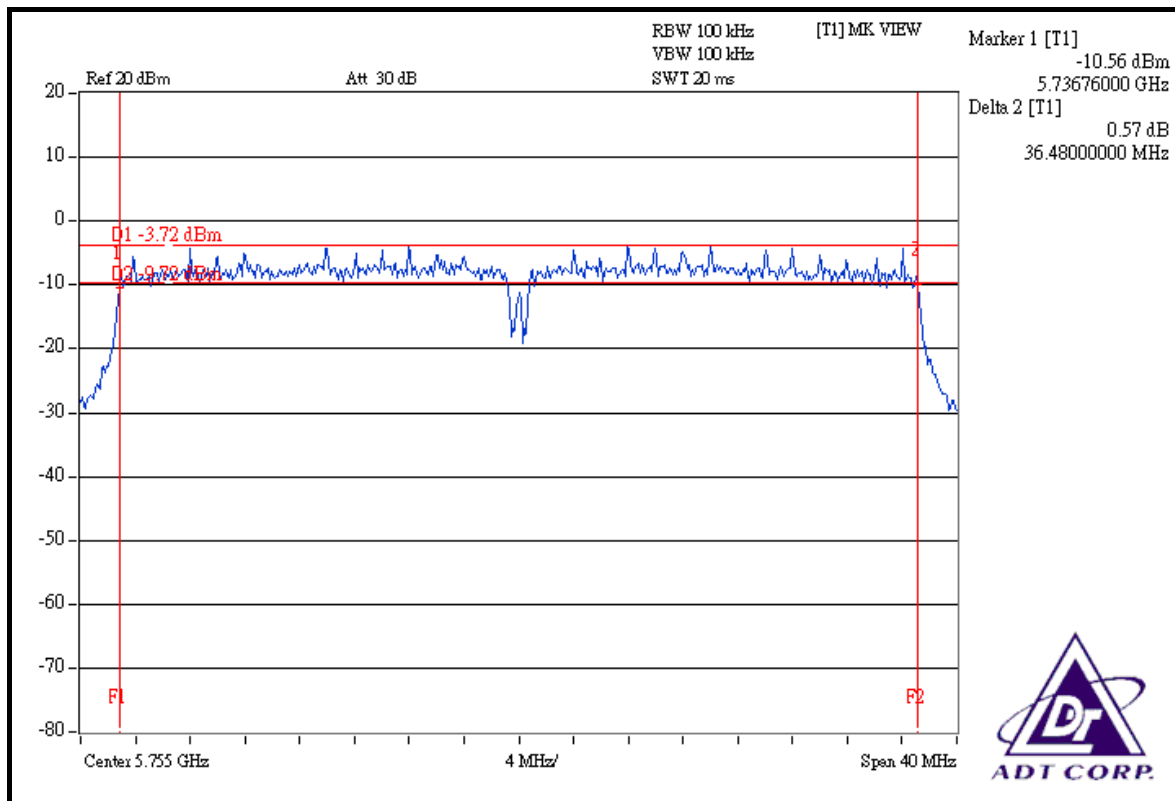


CH 2

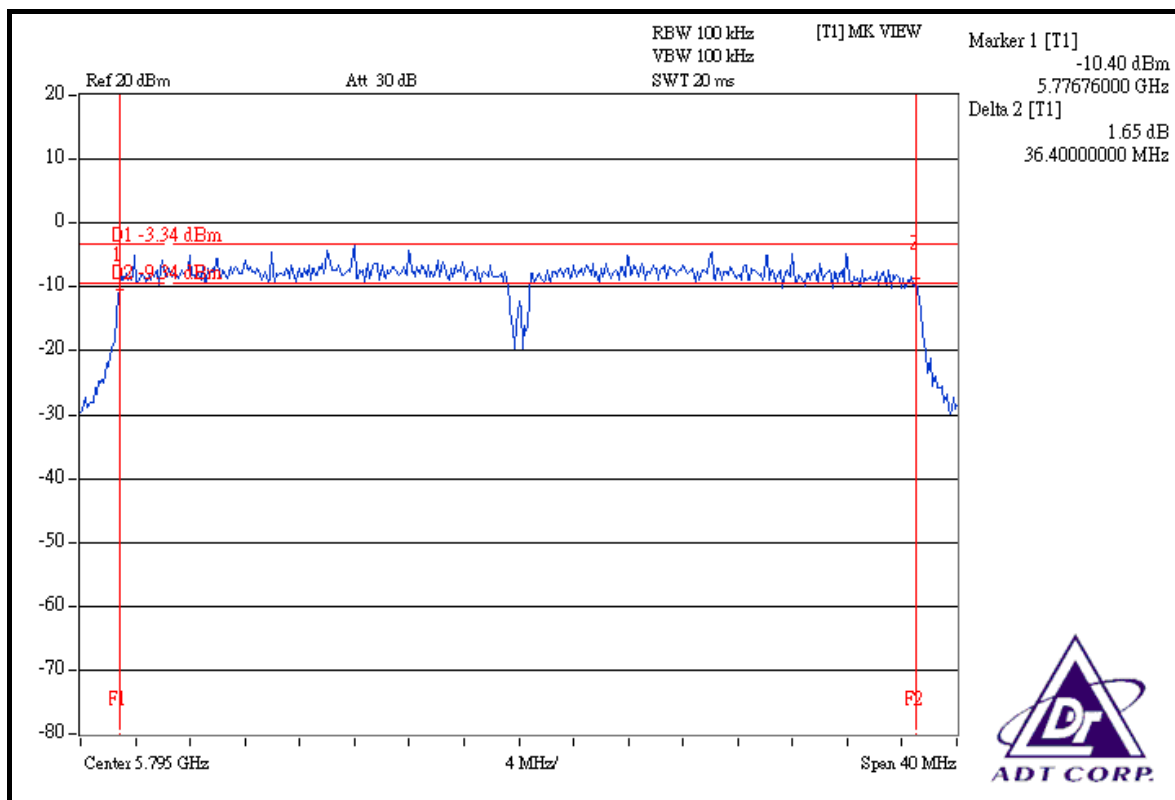




FOR CHAIN 2: CH 1



CH 2





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	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	5745	63.680	18.04	30	PASS
3	5785	63.241	18.01	30	PASS
5	5825	63.387	18.02	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)			PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	5745	56.885	44.875	45.186	17.55	16.52	16.55	146.945	21.67	30	PASS
3	5785	57.412	45.709	44.771	17.59	16.60	16.51	147.892	21.70	30	PASS
5	5825	50.466	45.604	40.087	17.03	16.59	16.03	136.156	21.34	30	PASS



DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)			PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	5755	28.576	28.314	28.642	14.56	14.52	14.57	85.532	19.32	30	PASS
2	5795	28.379	28.774	28.840	14.53	14.59	14.60	85.993	19.34	30	PASS



5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

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

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

5.5.3 TEST PROCEDURE

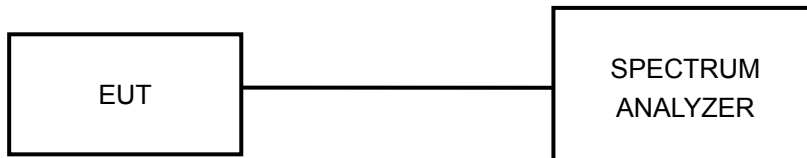
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

Same as Item 5.3.6



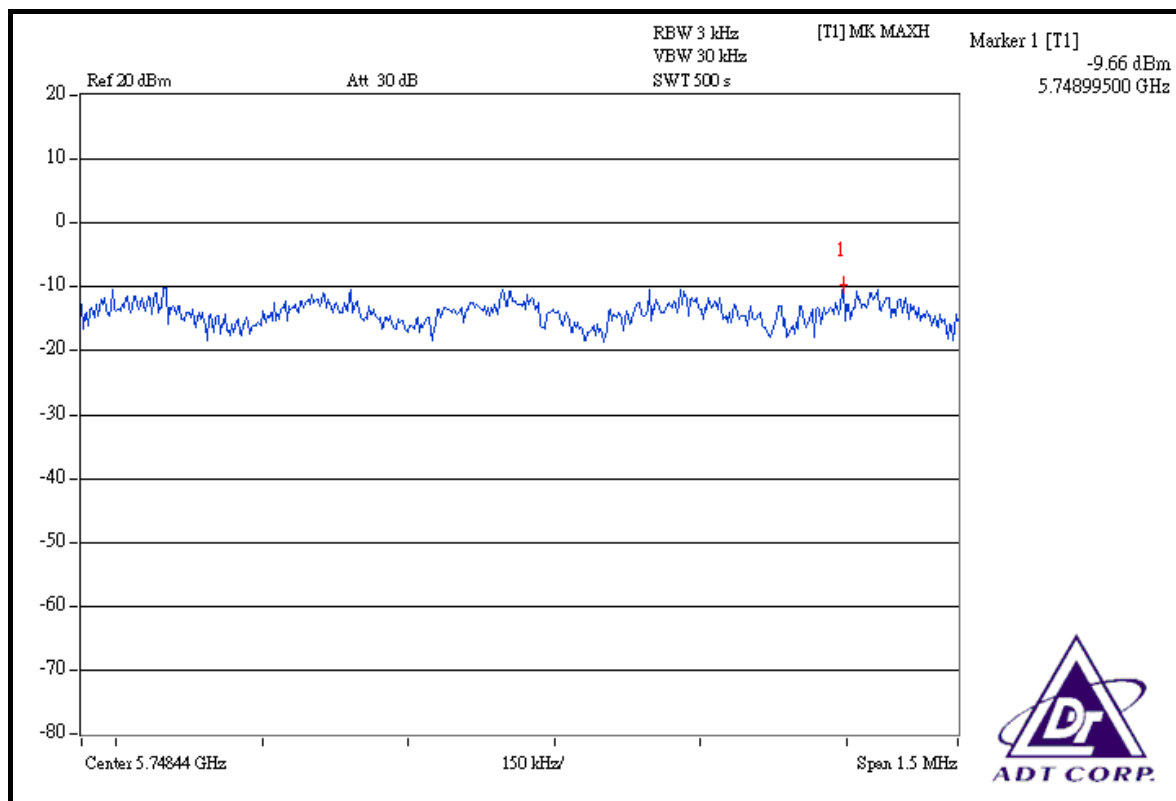
5.5.7 TEST RESULTS

802.11a OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

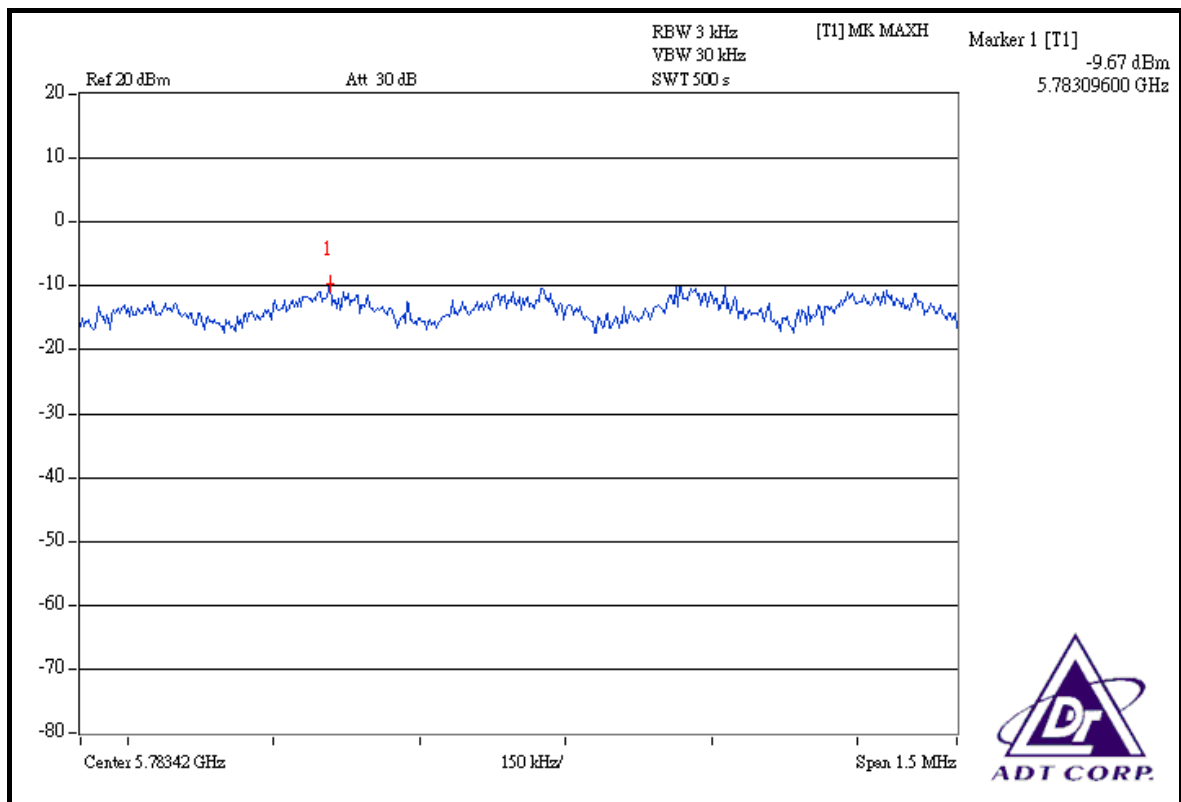
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	5745	-9.66	8	PASS
3	5785	-9.67	8	PASS
5	5825	-9.56	8	PASS

CH 1

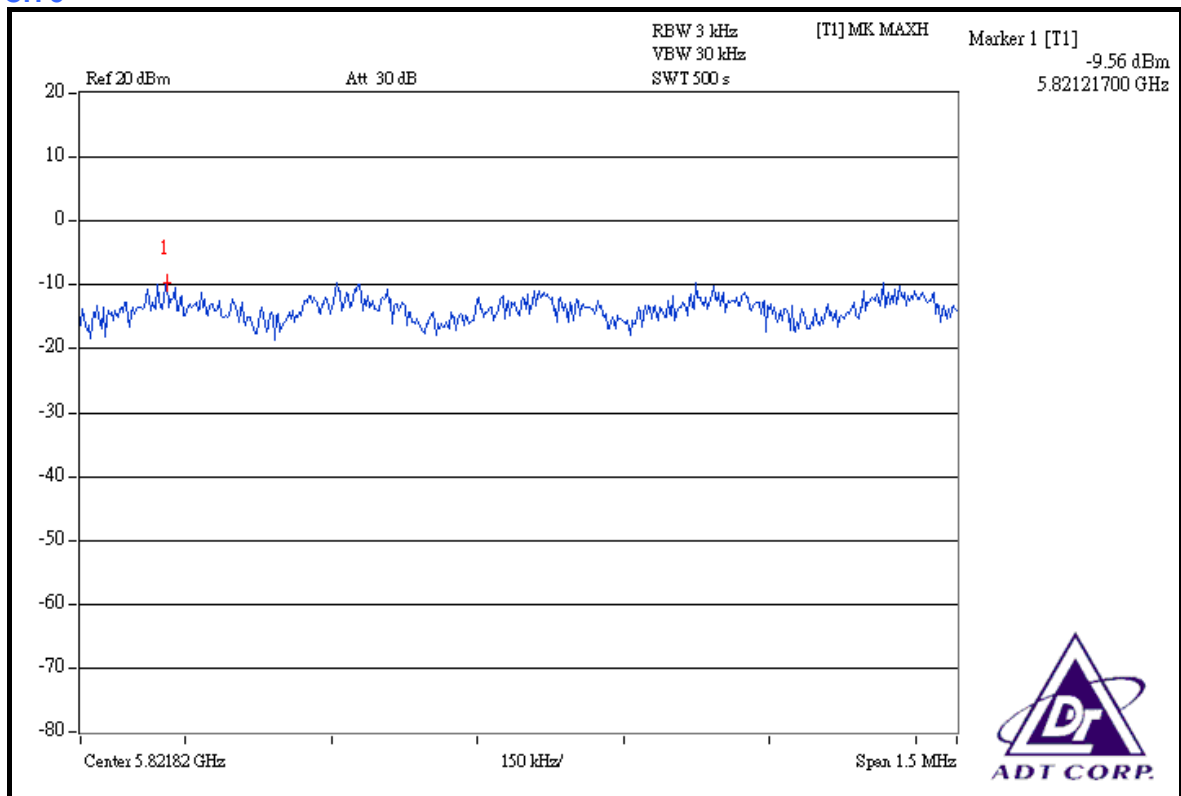




CH 3



CH 5



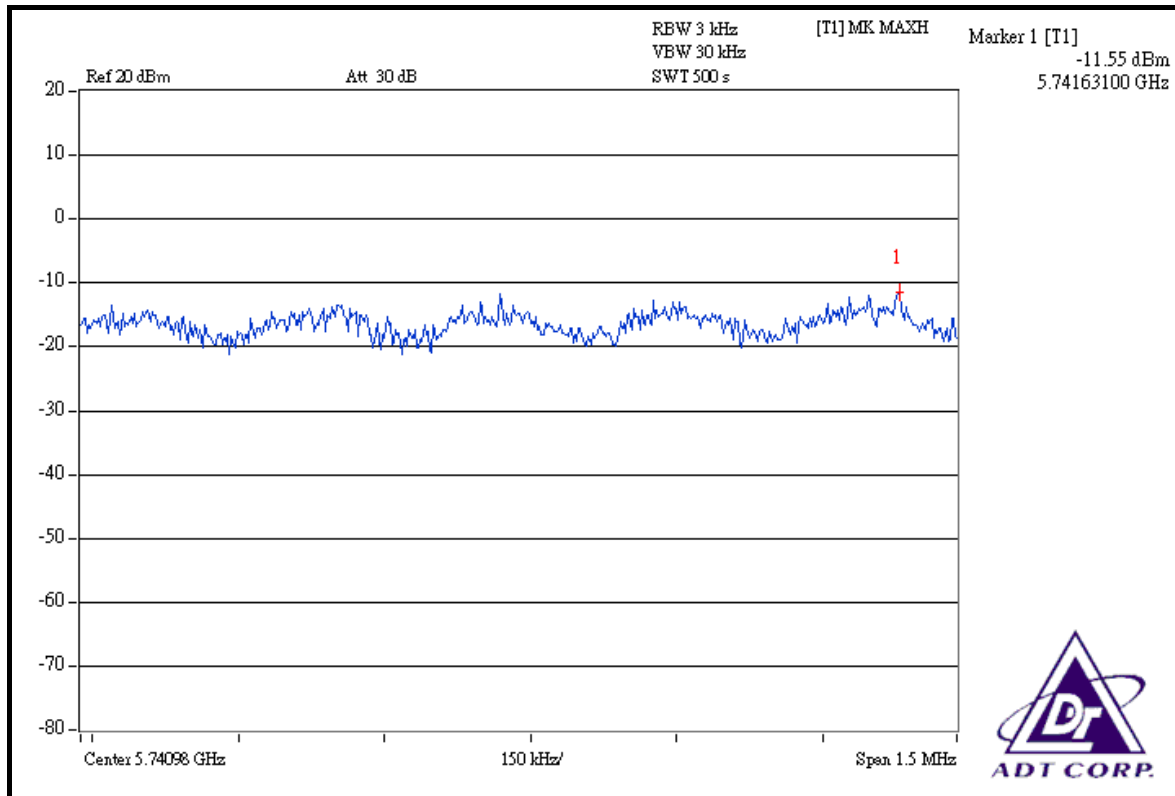


DRAFT 802.11n (20MHz) OFDM MODULATION:

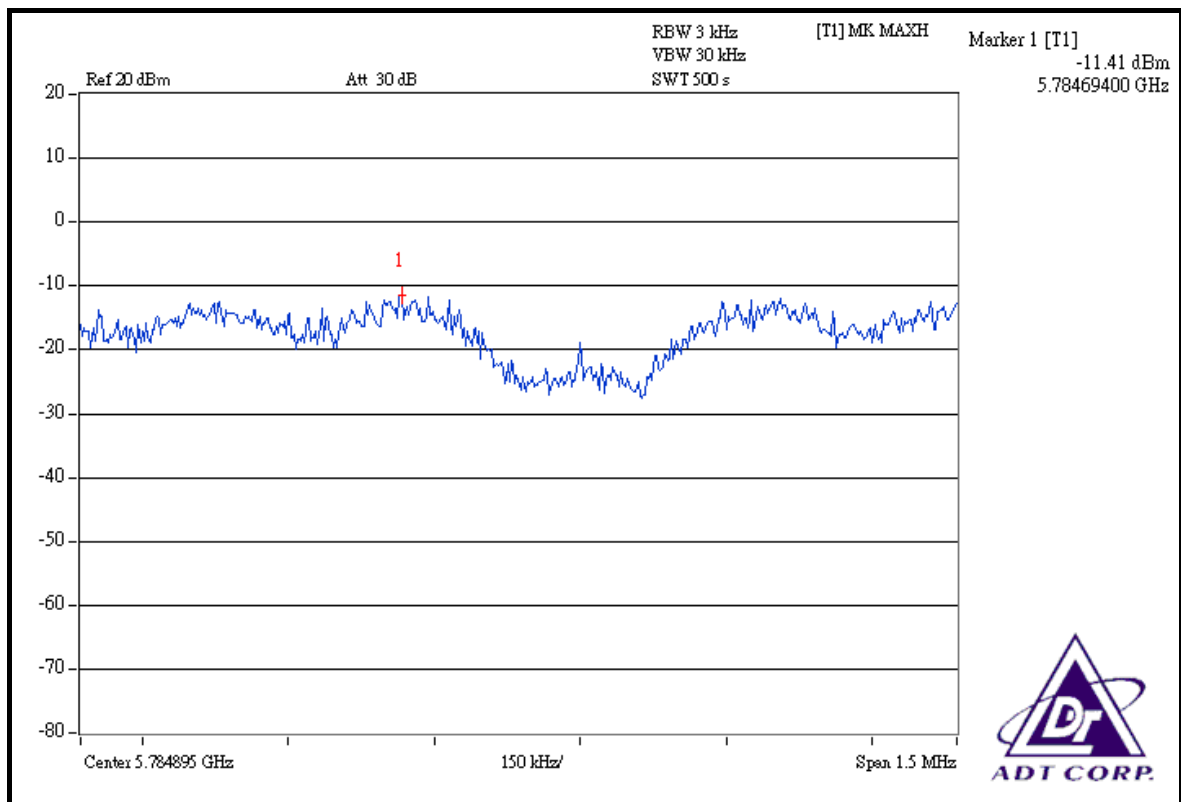
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHAN.	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	5745	0.070	0.051	0.056	-11.55	-12.93	-12.52	0.177	-7.52	8	PASS
3	5785	0.072	0.053	0.053	-11.41	-12.74	-12.76	0.178	-7.50	8	PASS
5	5825	0.064	0.053	0.052	-11.93	-12.74	-12.86	0.169	-7.72	8	PASS

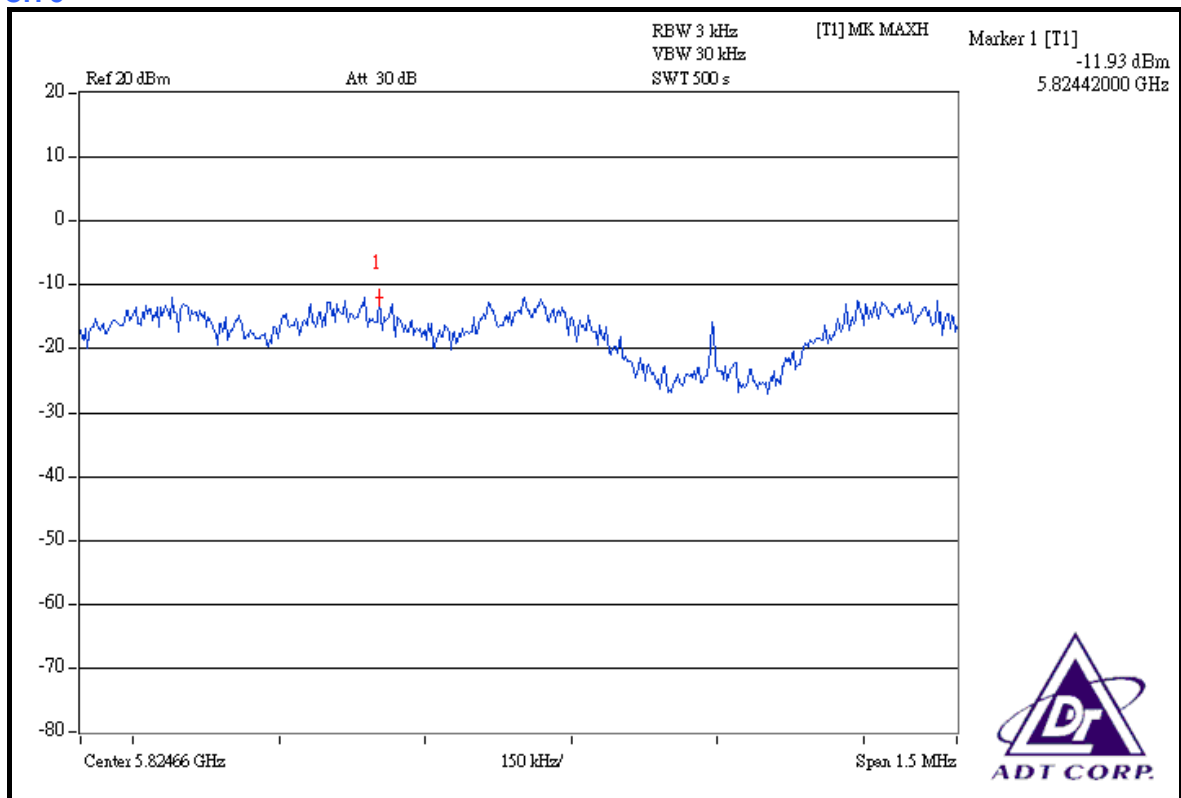
FOR CHAIN 0: CH 1



CH 3

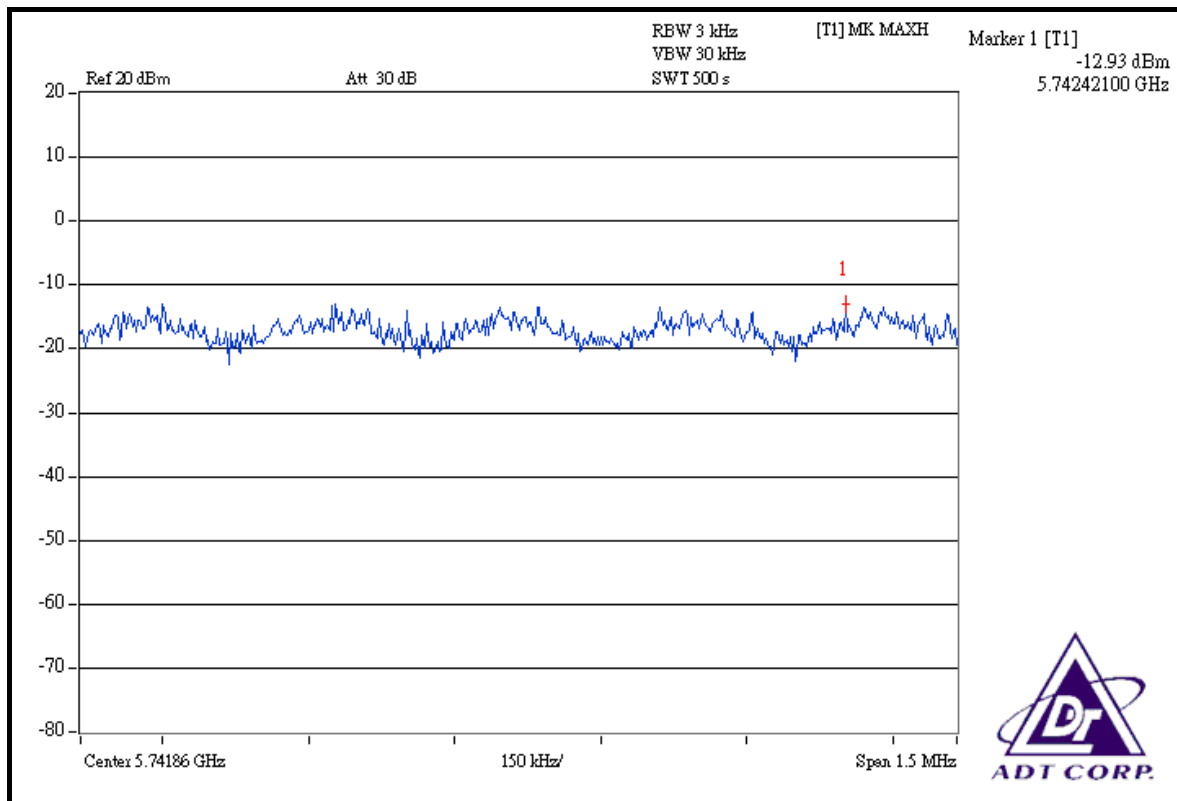


CH 5

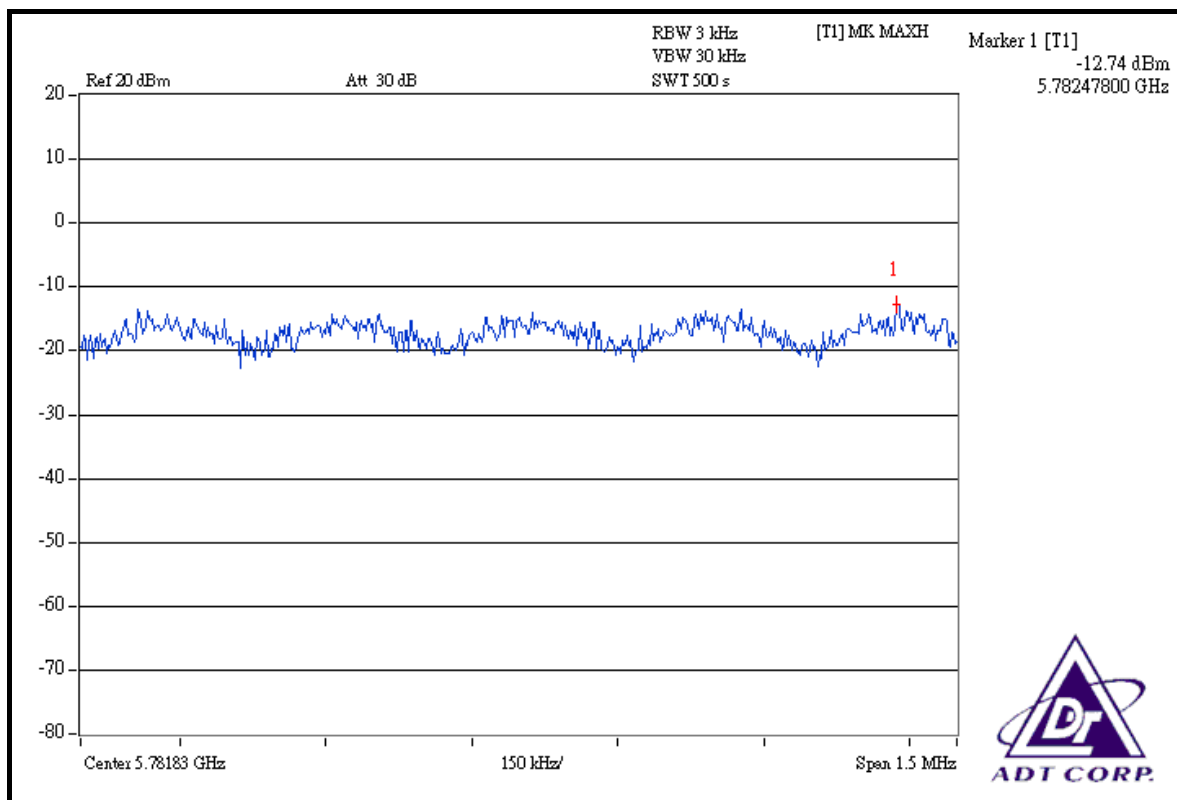




FOR CHAIN 1: CH 1

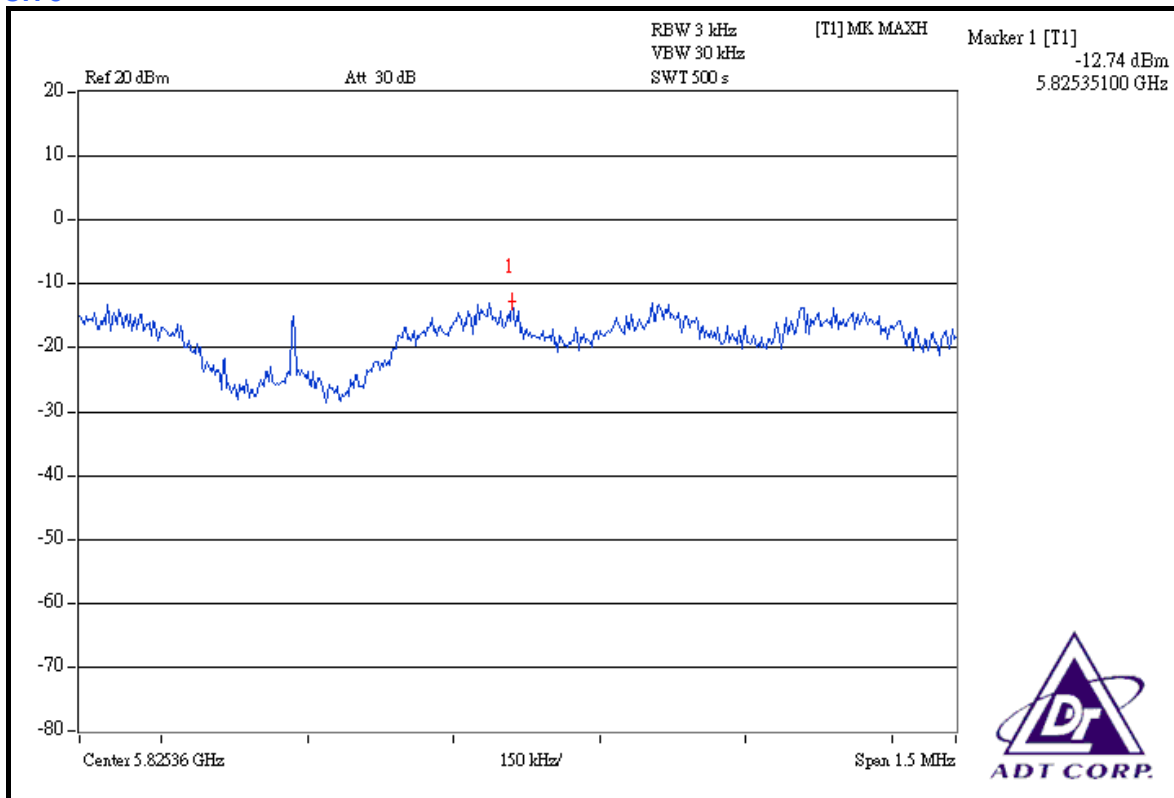


CH 3

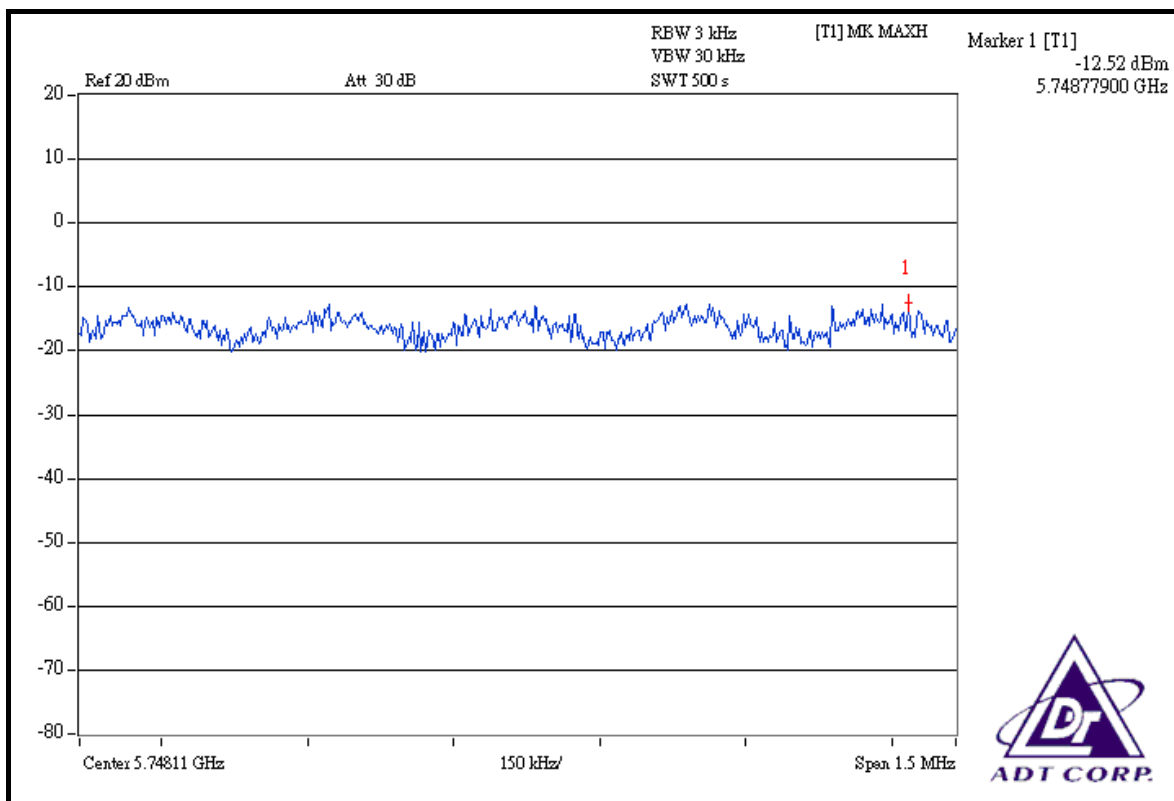




CH 5

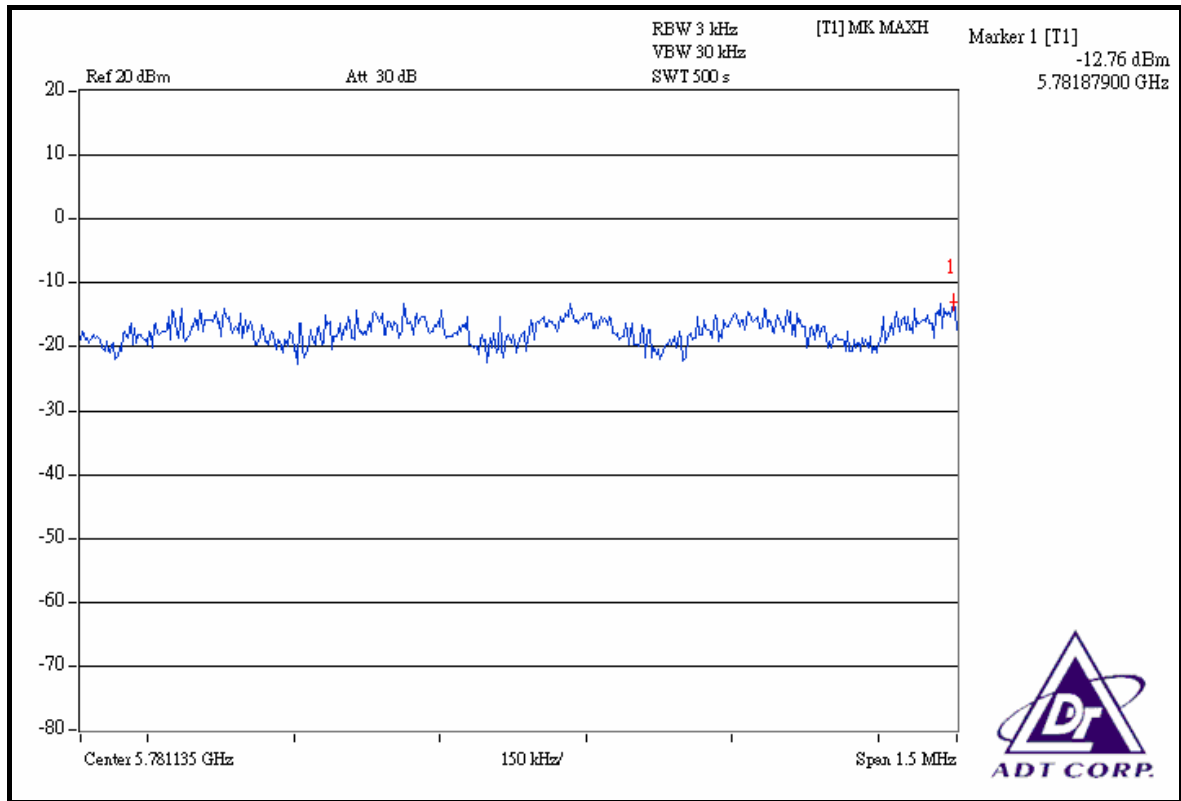


FOR CHAIN 2: CH 1

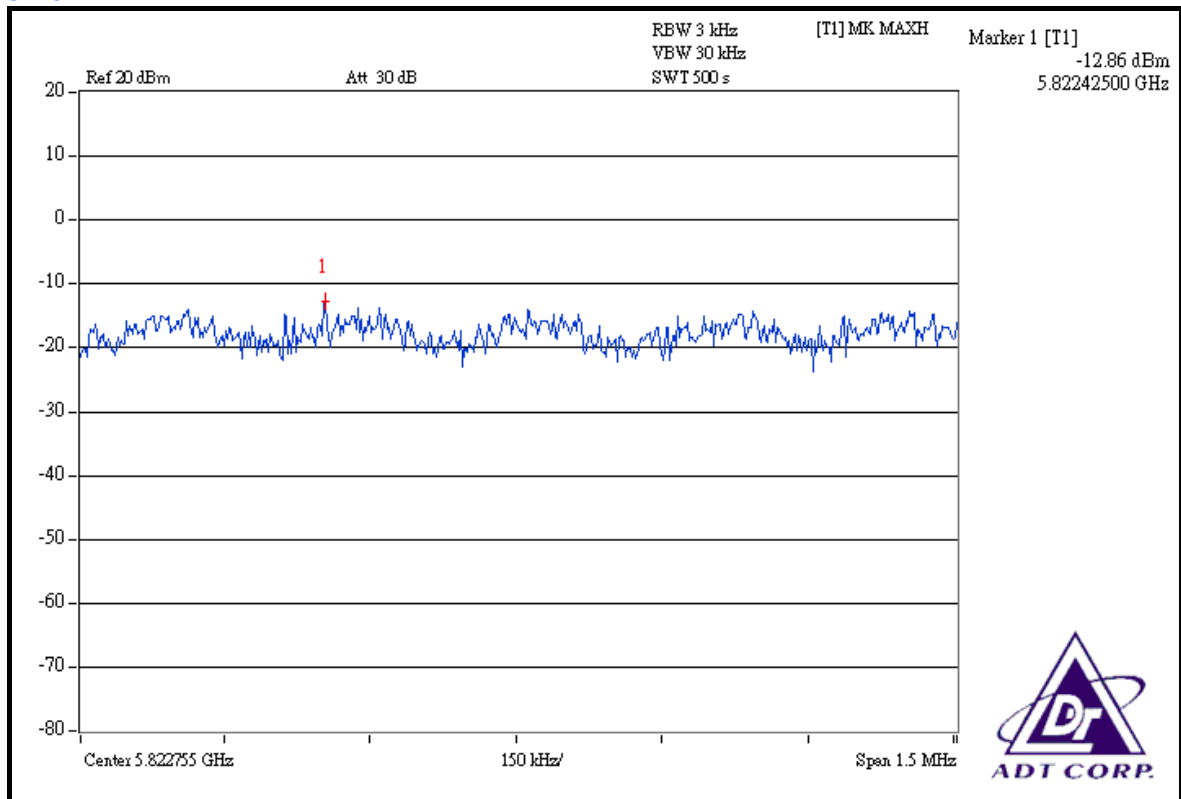




CH 3



CH 5





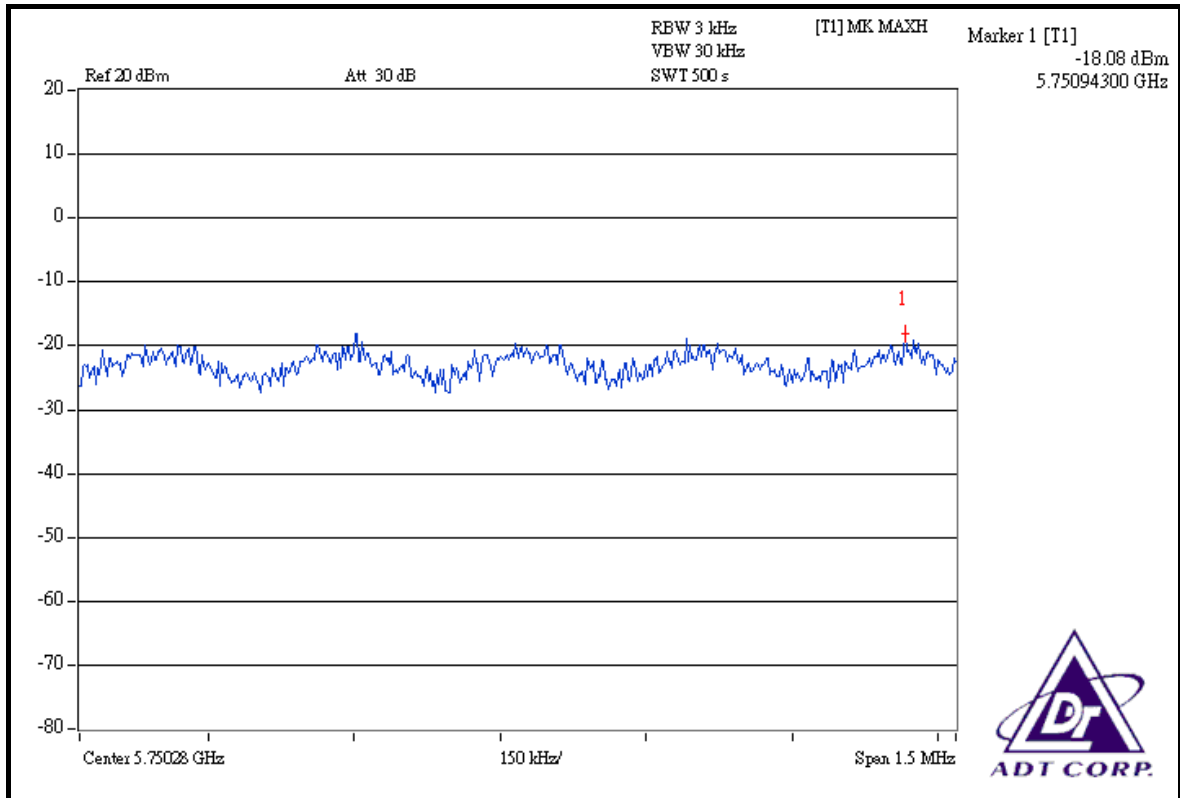
DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

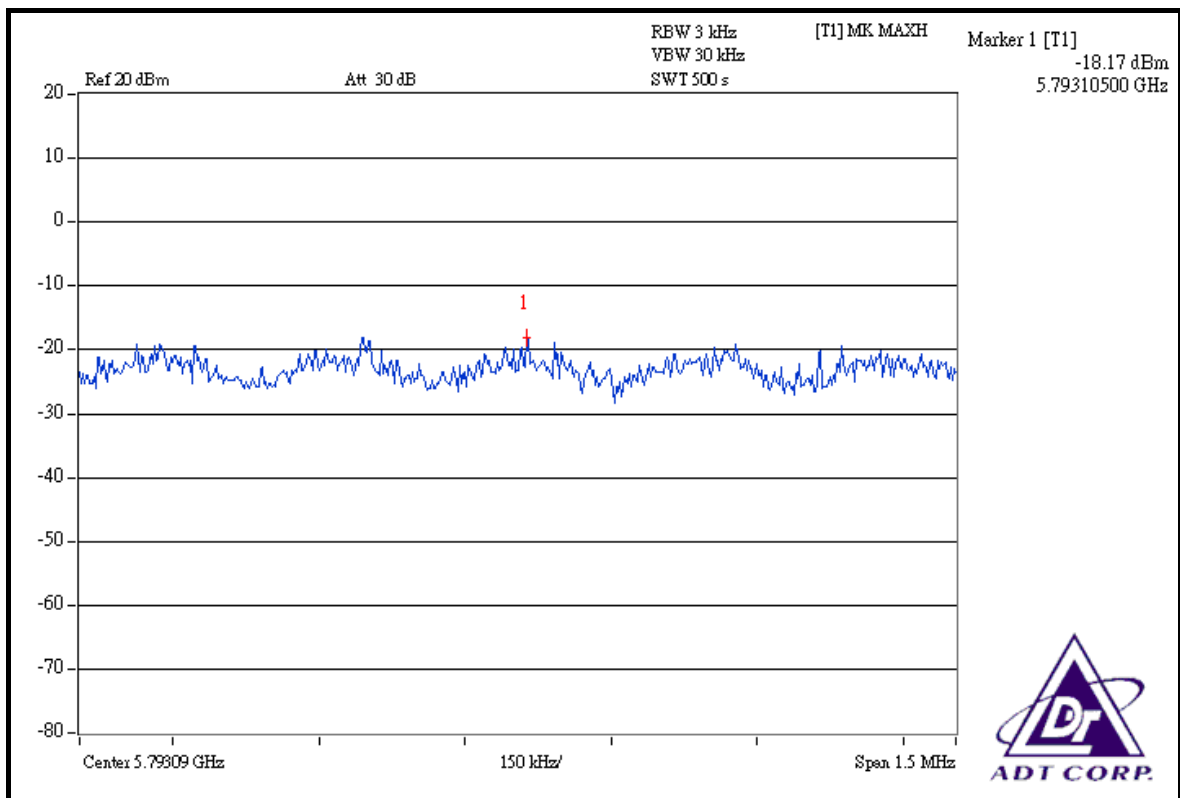
CHAN.	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	5755	0.016	0.025	0.032	-18.08	-16.05	-14.95	0.073	-11.37	8	PASS
2	5795	0.015	0.023	0.032	-18.17	-16.38	-14.90	0.070	-11.55	8	PASS



FOR CHAIN 0: CH 1

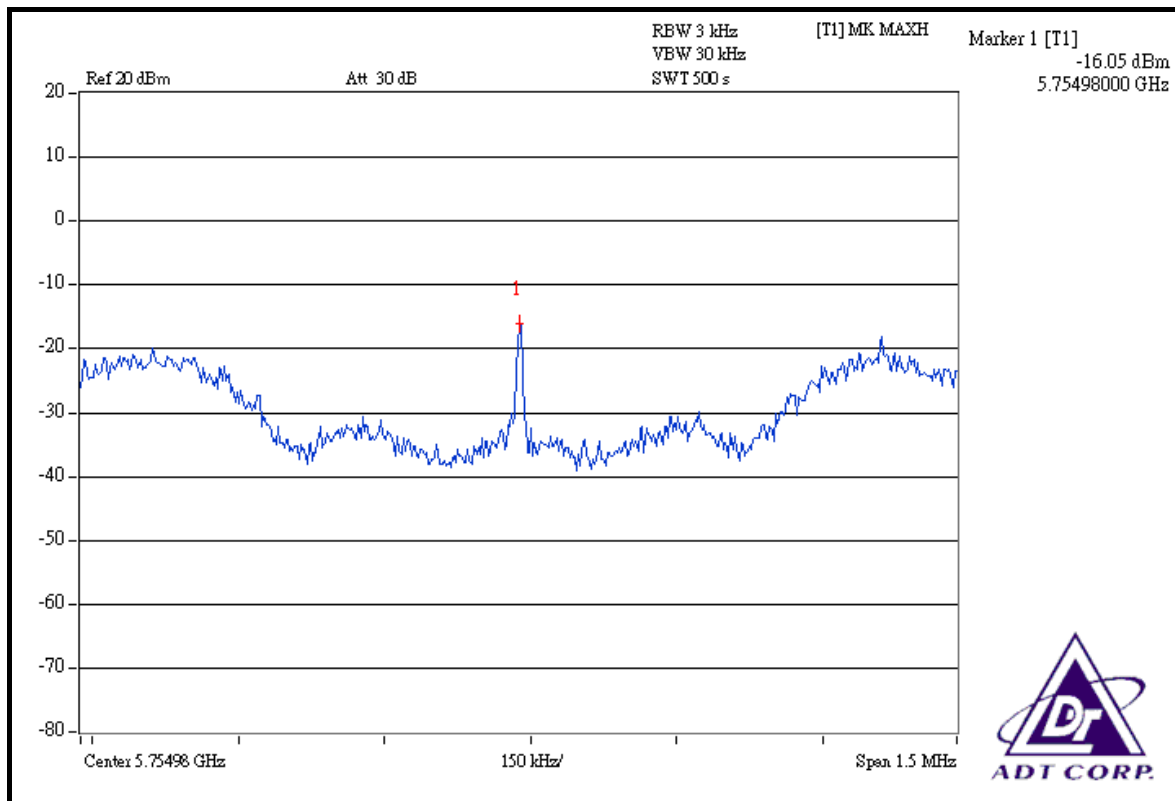


CH 2

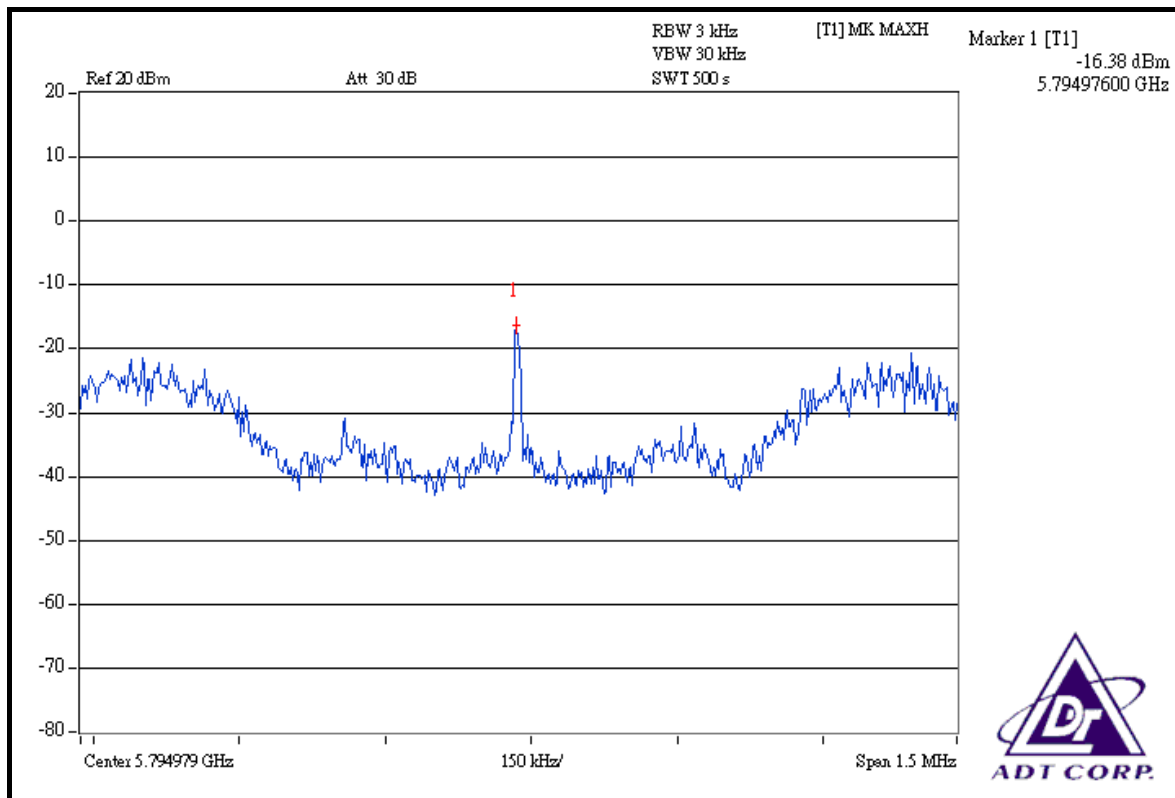




FOR CHAIN 1: CH 1

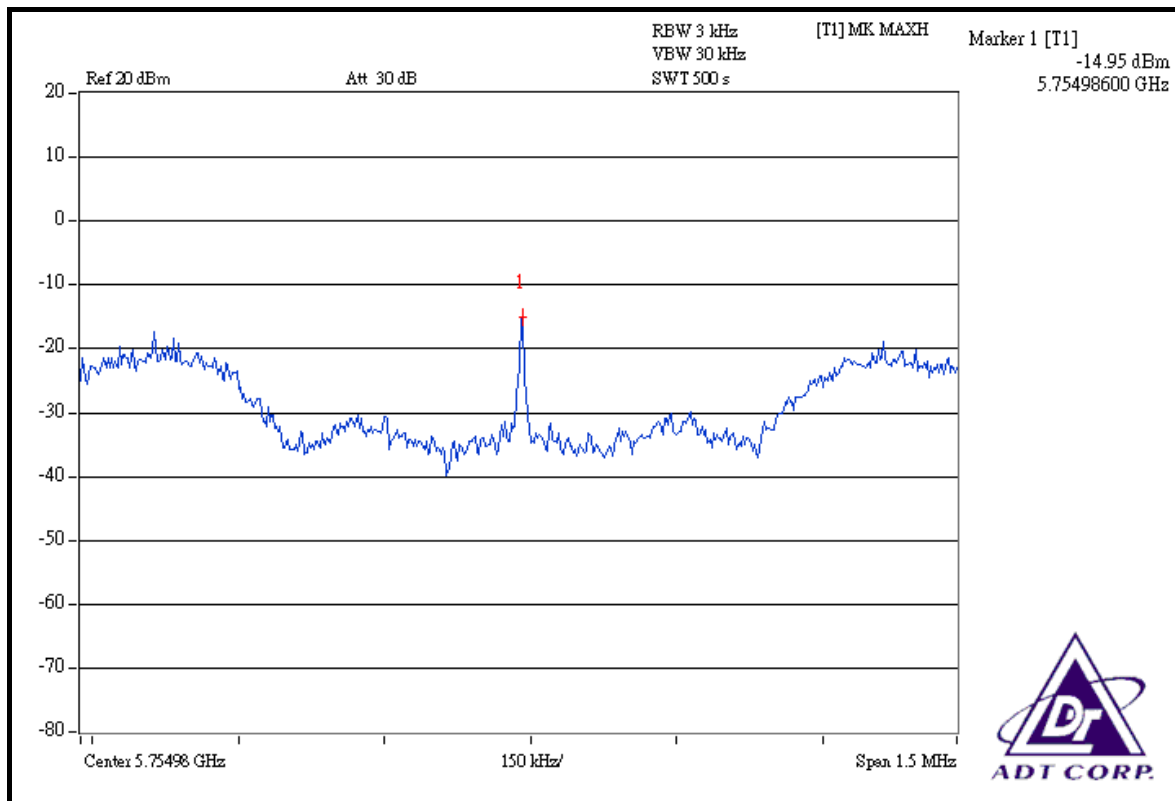


CH 2

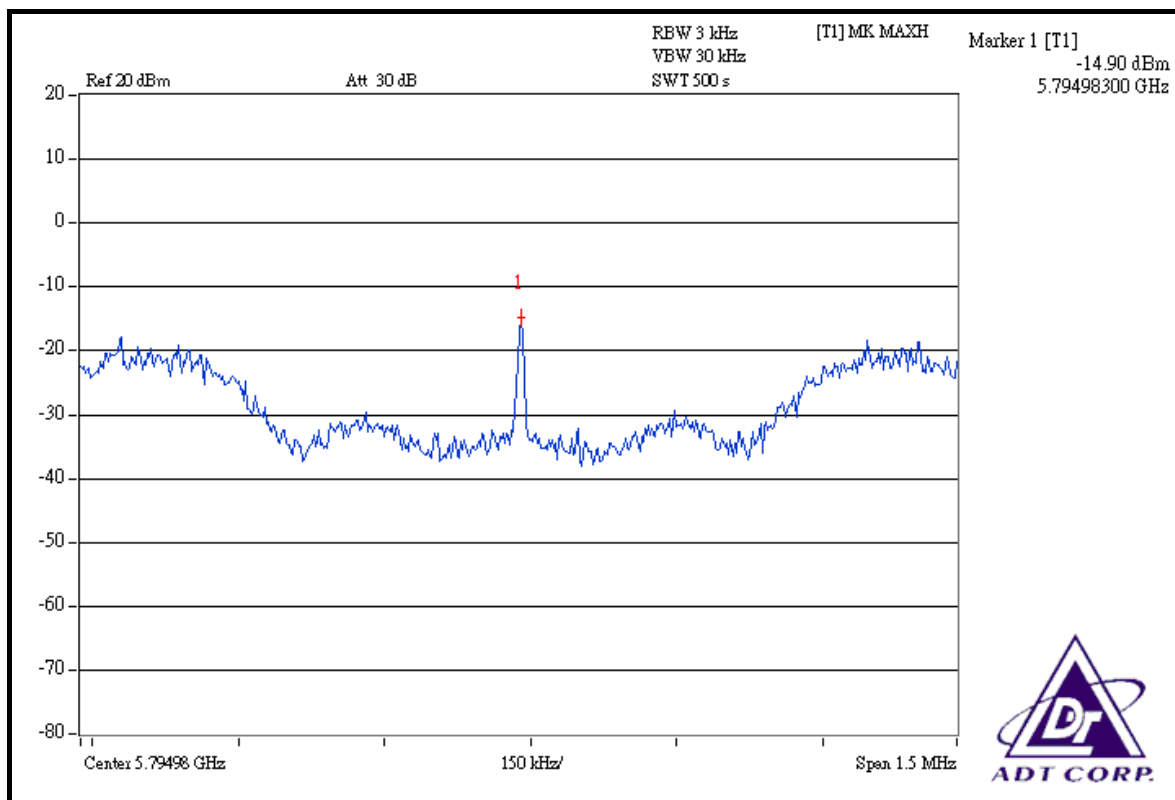




FOR CHAIN 2: CH 1



CH 2





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
802.11a:			
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008
DRAFT 802.11n (20MHz), DRAFT 802.11n (40MHz):			
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100025	Oct. 05, 2007
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	May 31, 2008
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jun. 28, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 28, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238137/4	Dec. 11, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	233233/4	Nov. 14, 2007
Software ADT.	ADT_Radiated_V7.6	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA
Turn Table ADT.	TT100.	TT93021703	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA

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

5.6.3 TEST PROCEDURE

802.11a:

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 was measured and recorded.

DRAFT 802.11n (20MHz), DRAFT 802.11n (40MHz):

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter 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. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

NOTE: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.



5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 EUT OPERATING CONDITION

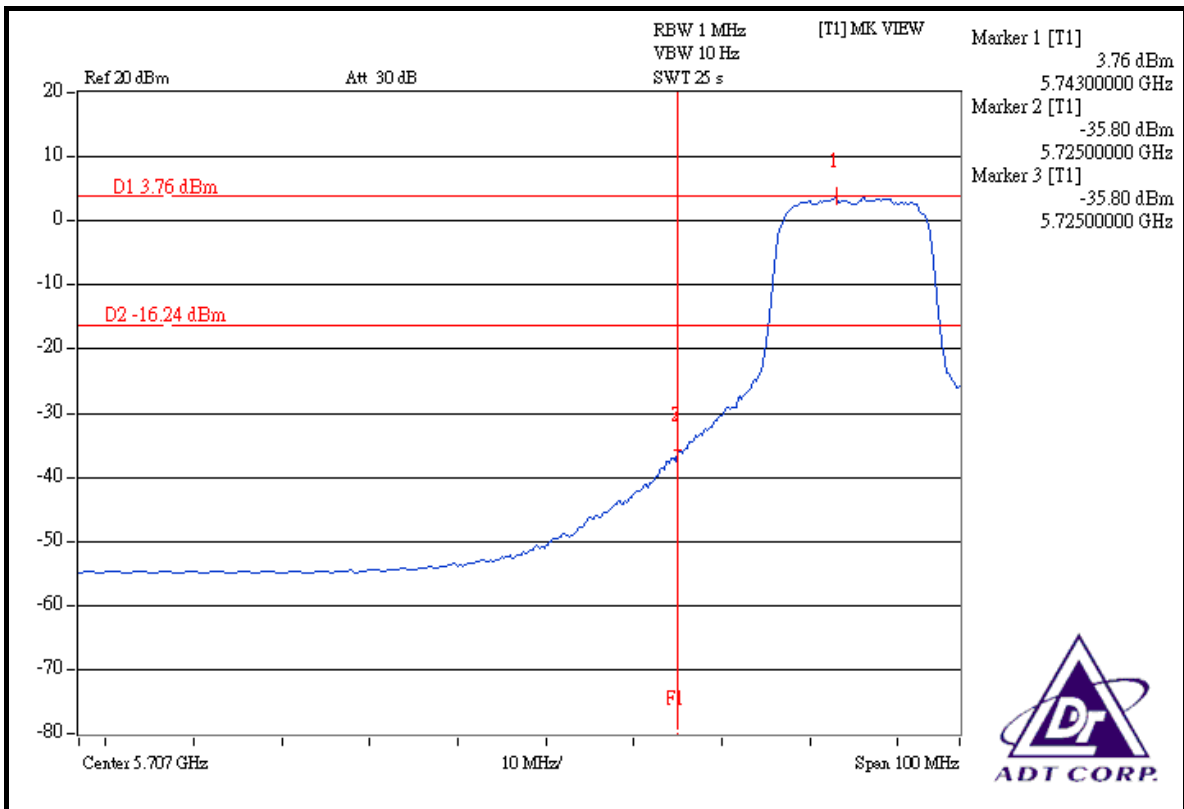
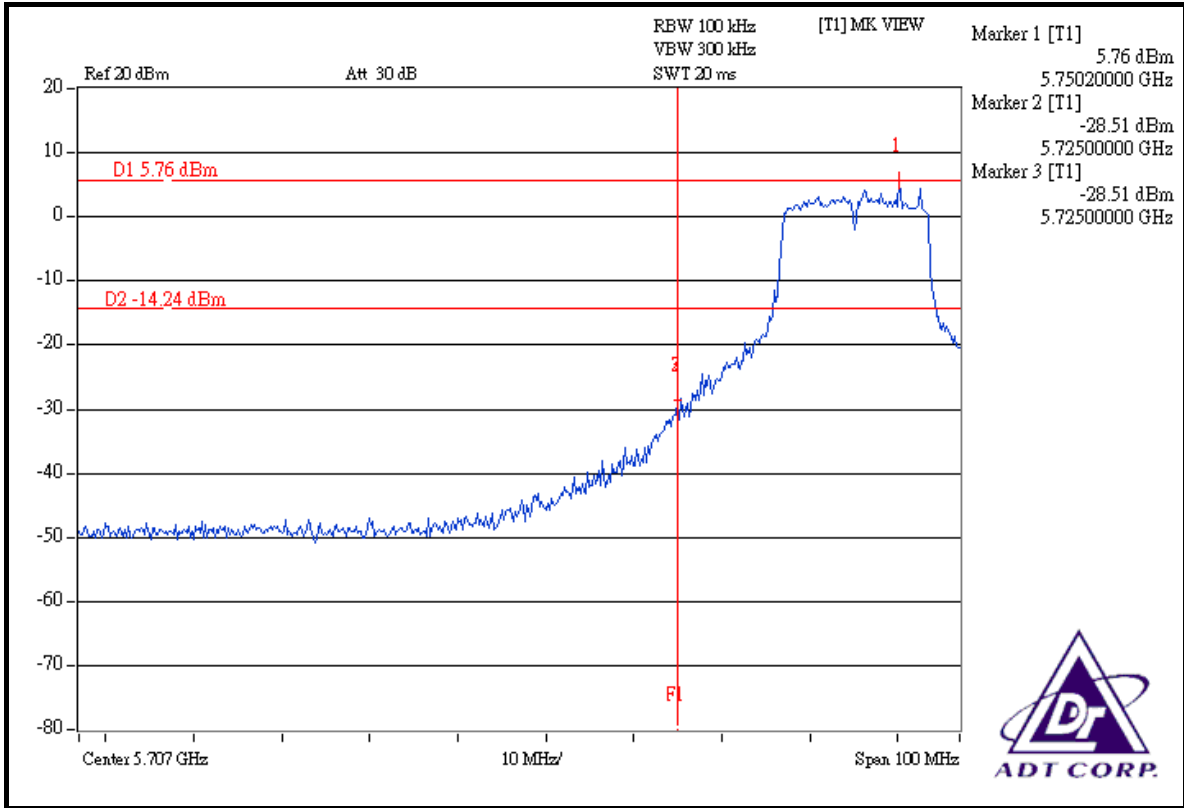
Same as Item 5.3.6

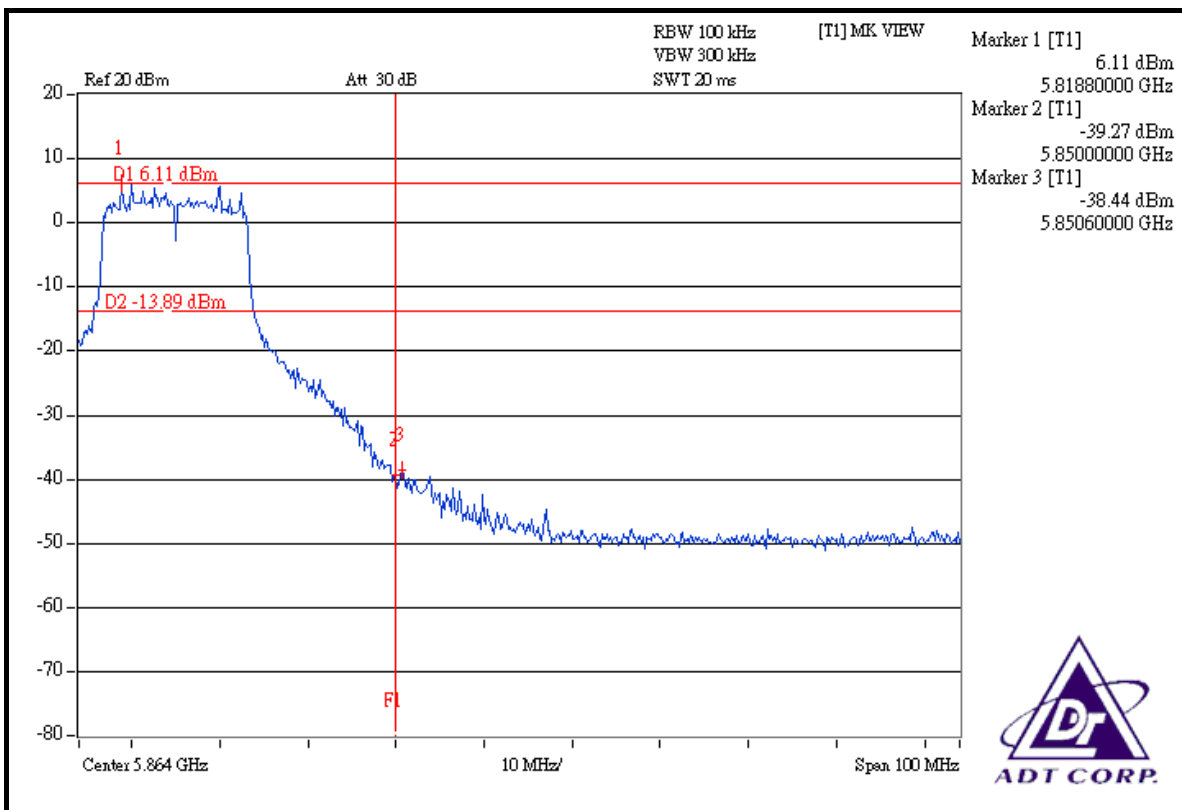
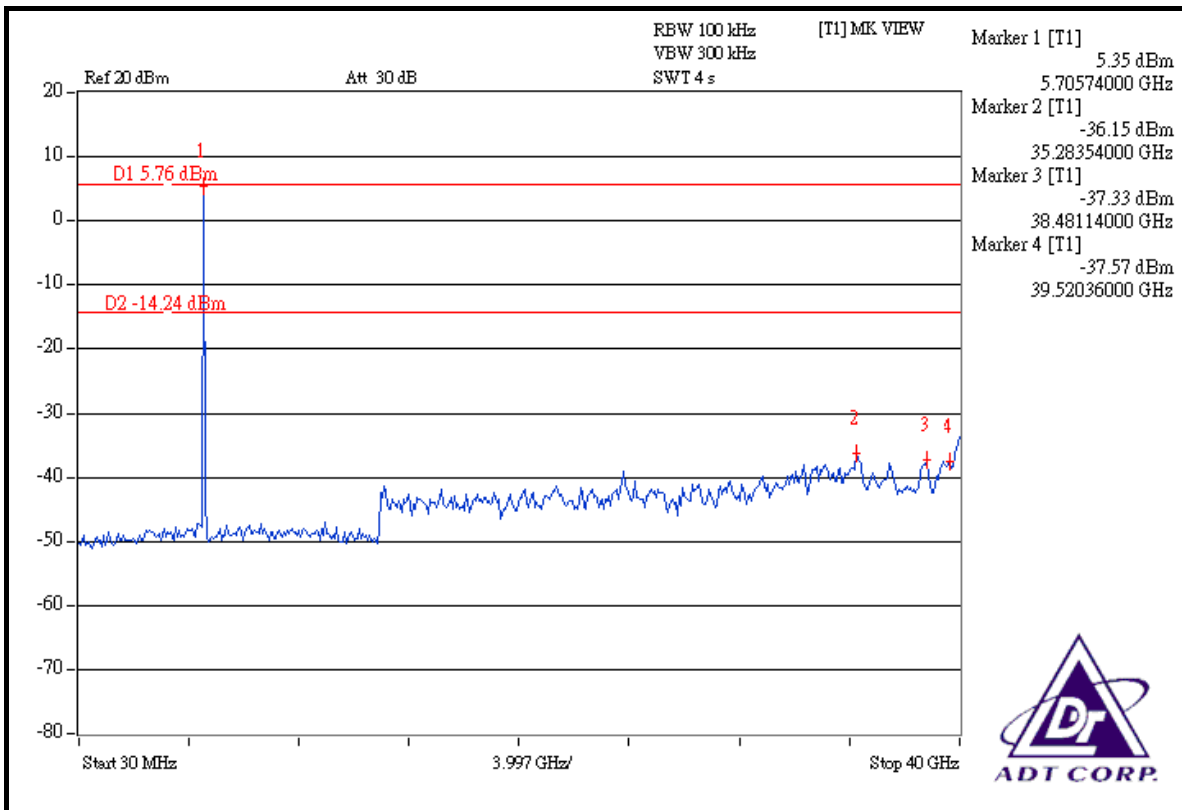
5.6.6 TEST RESULTS

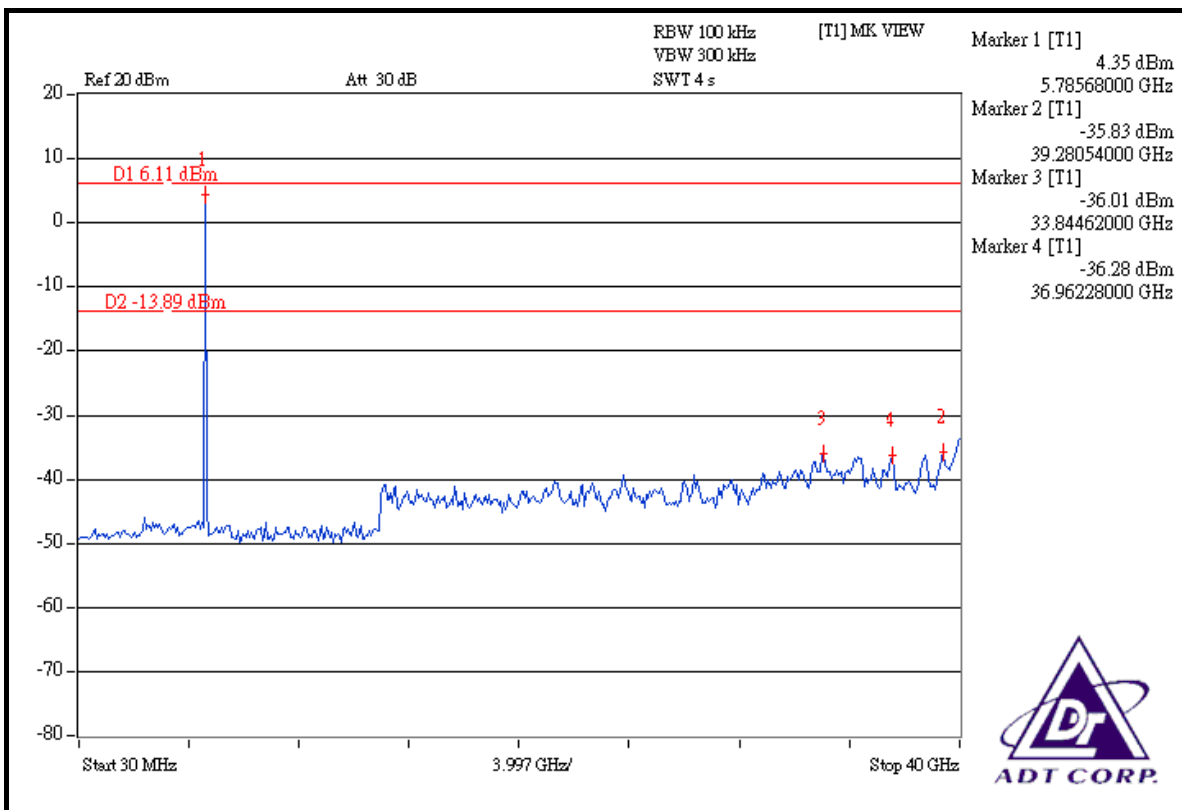
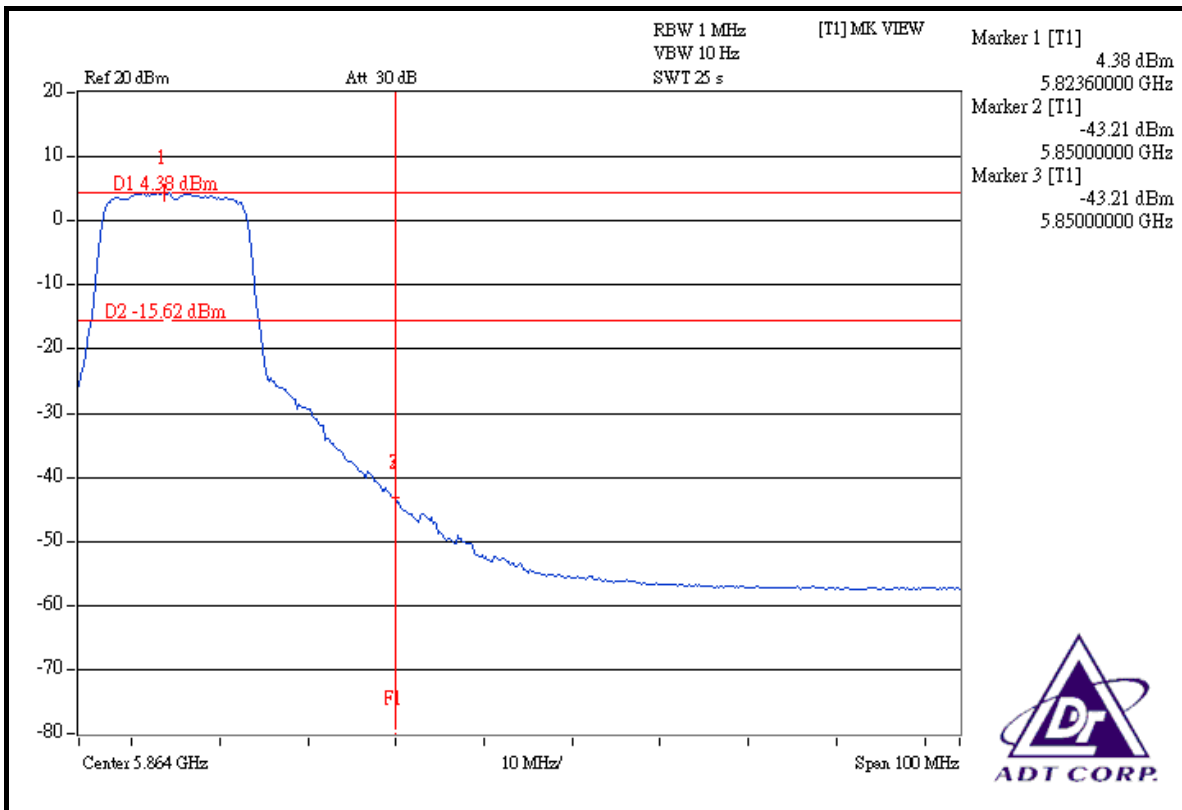
The spectrum plots are attached on the following pages. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).



802.11a OFDM MODULATION:

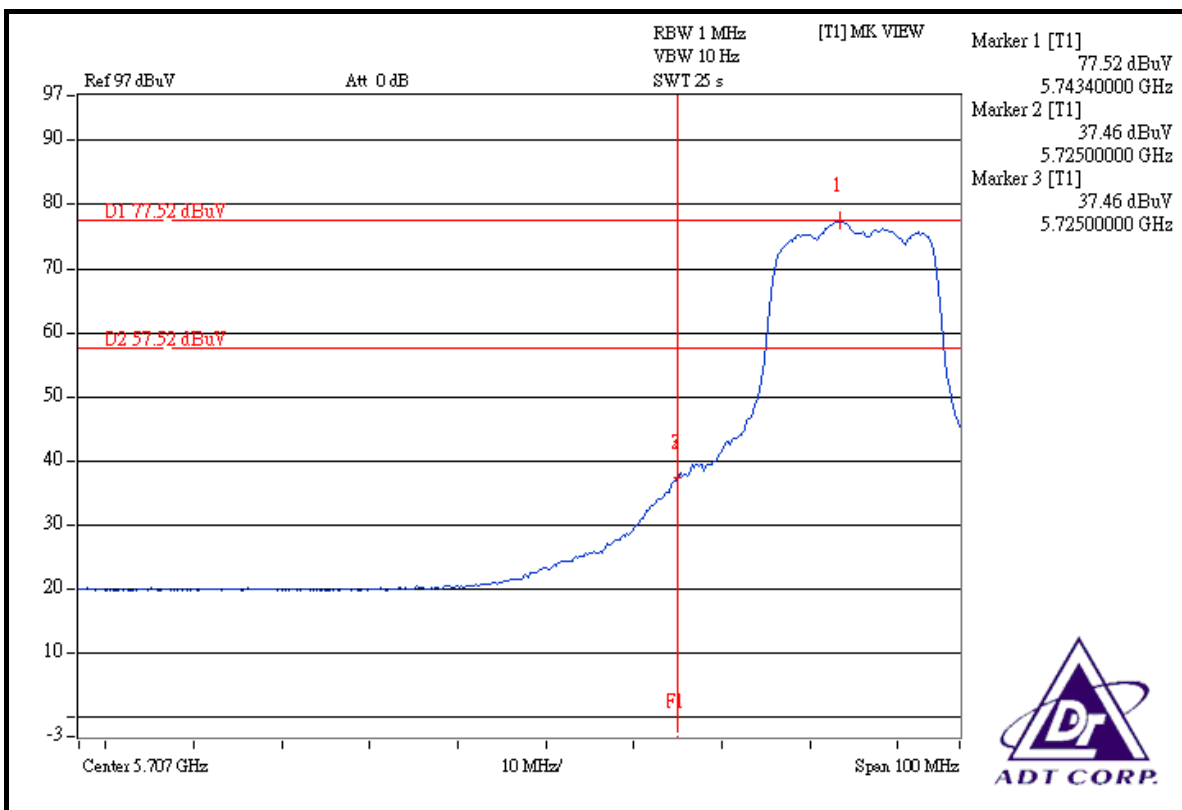
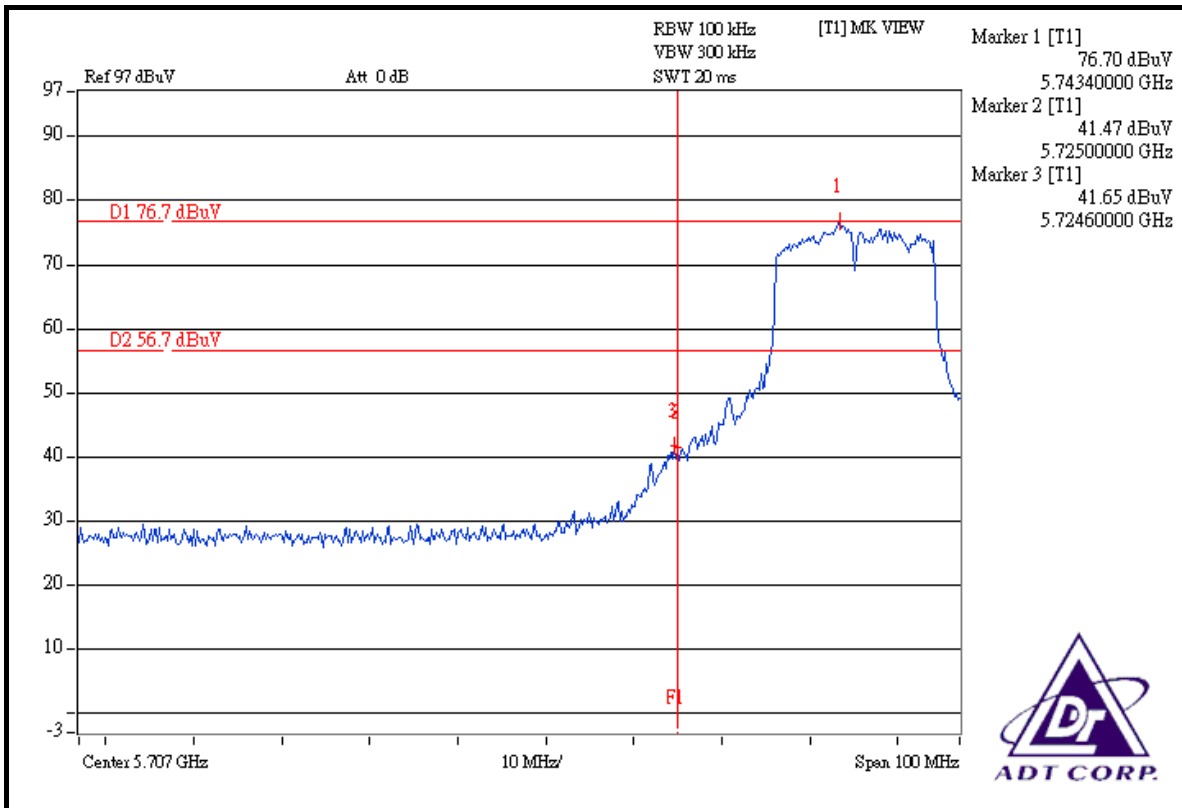


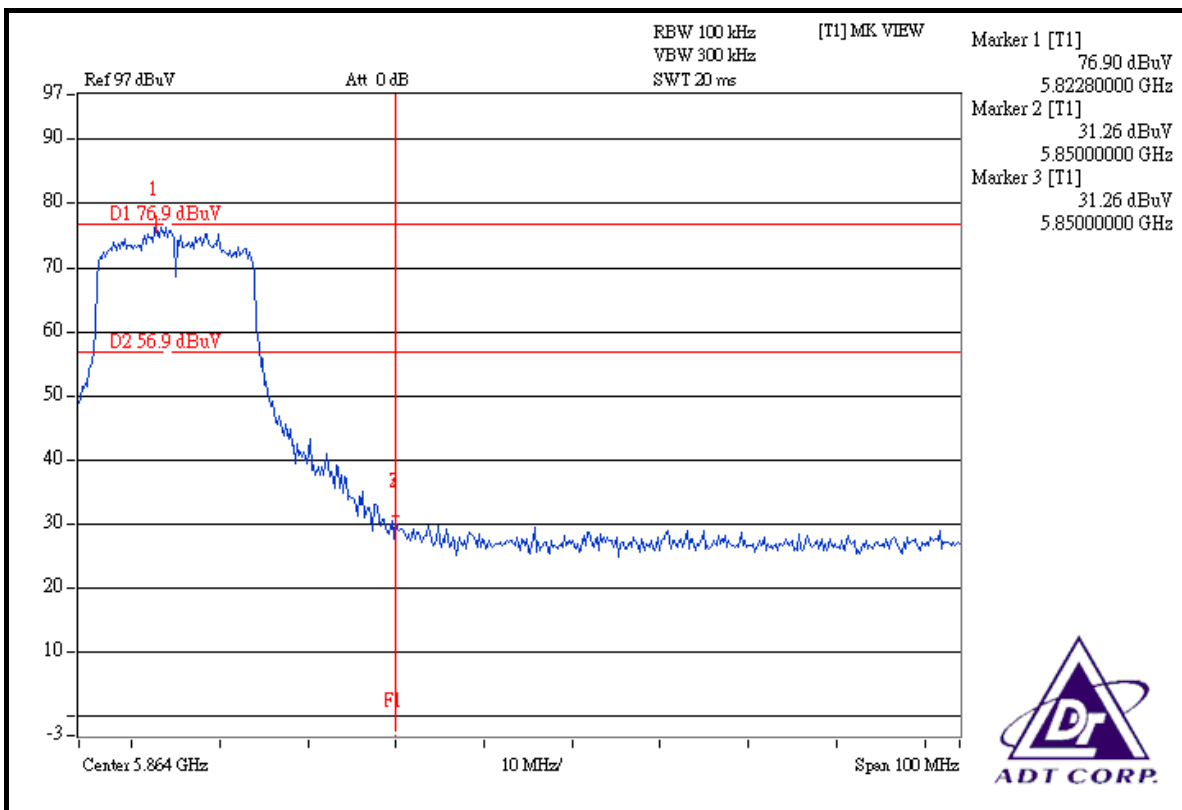
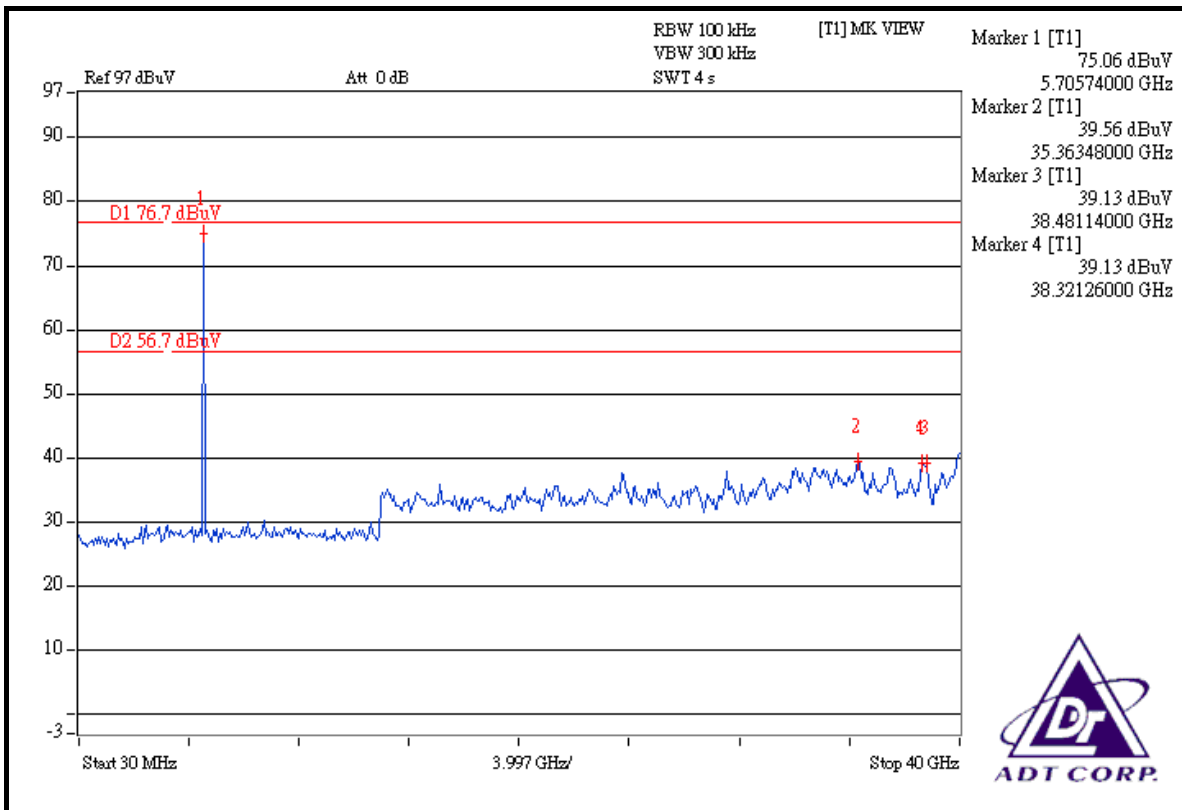


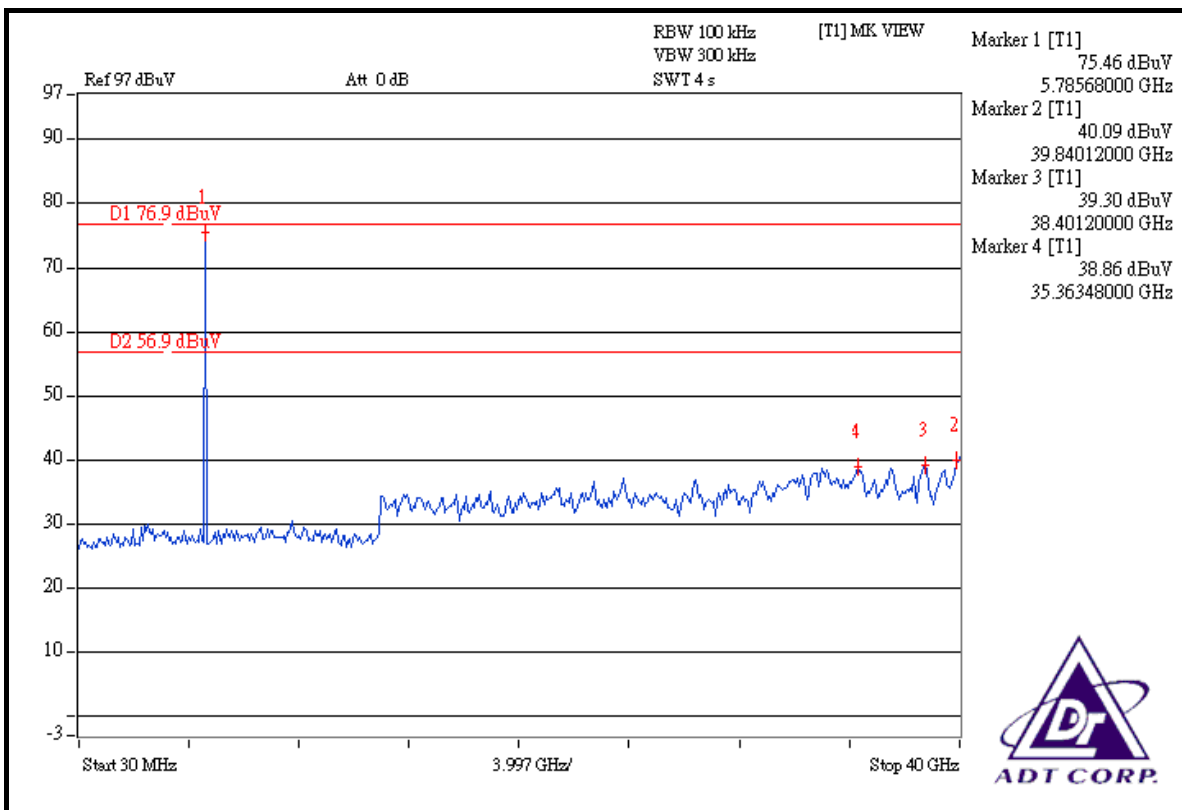
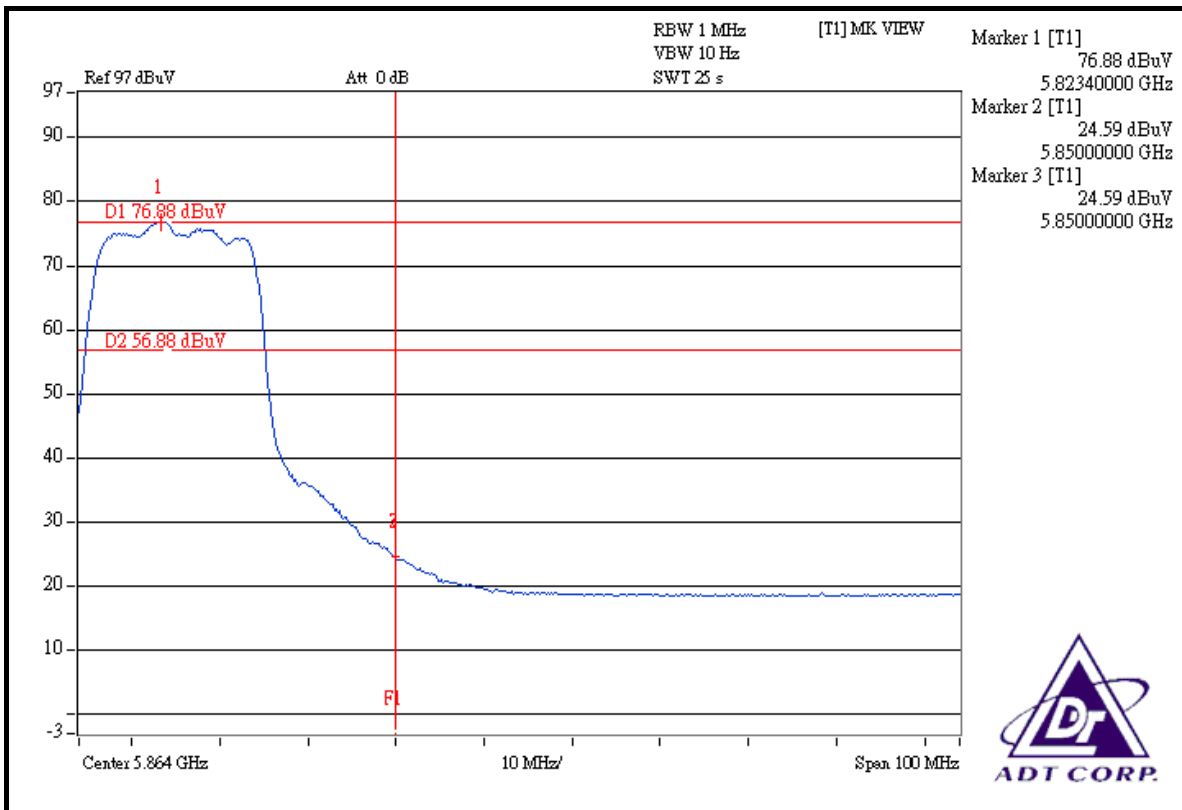




DRAFT 802.11n (20MHz) OFDM MODULATION:

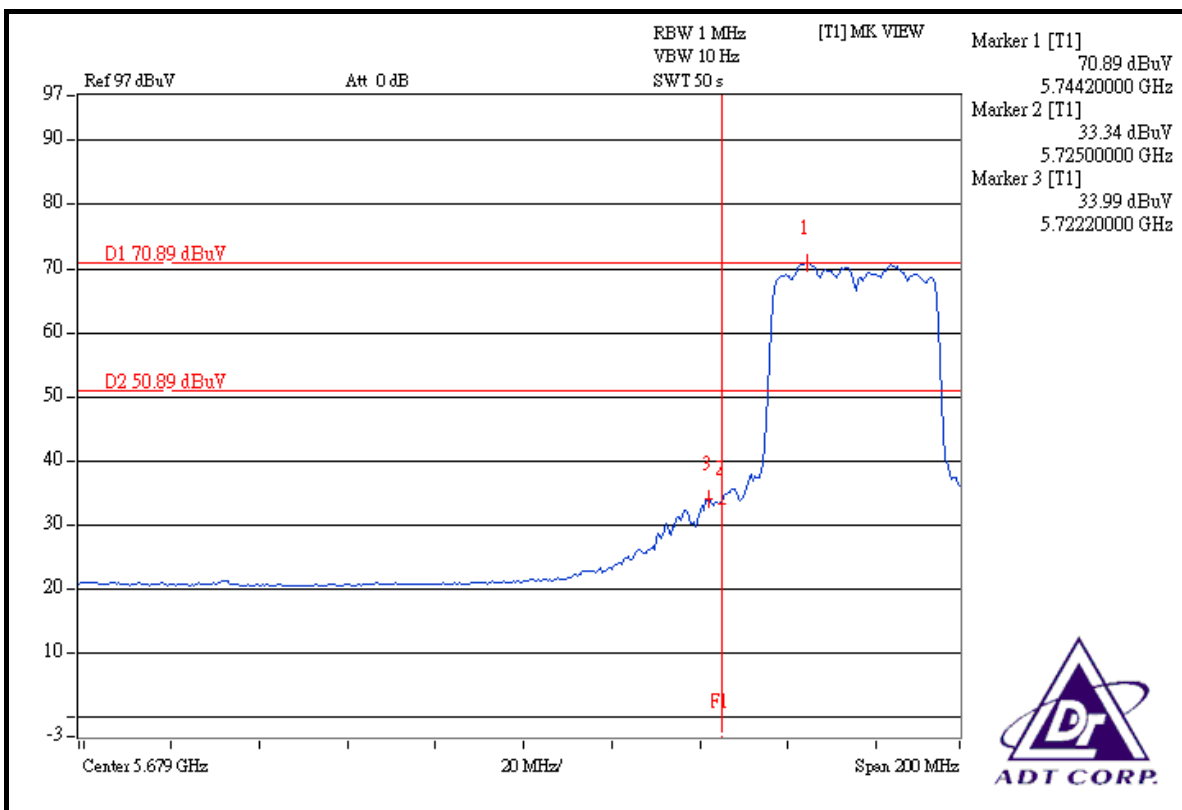
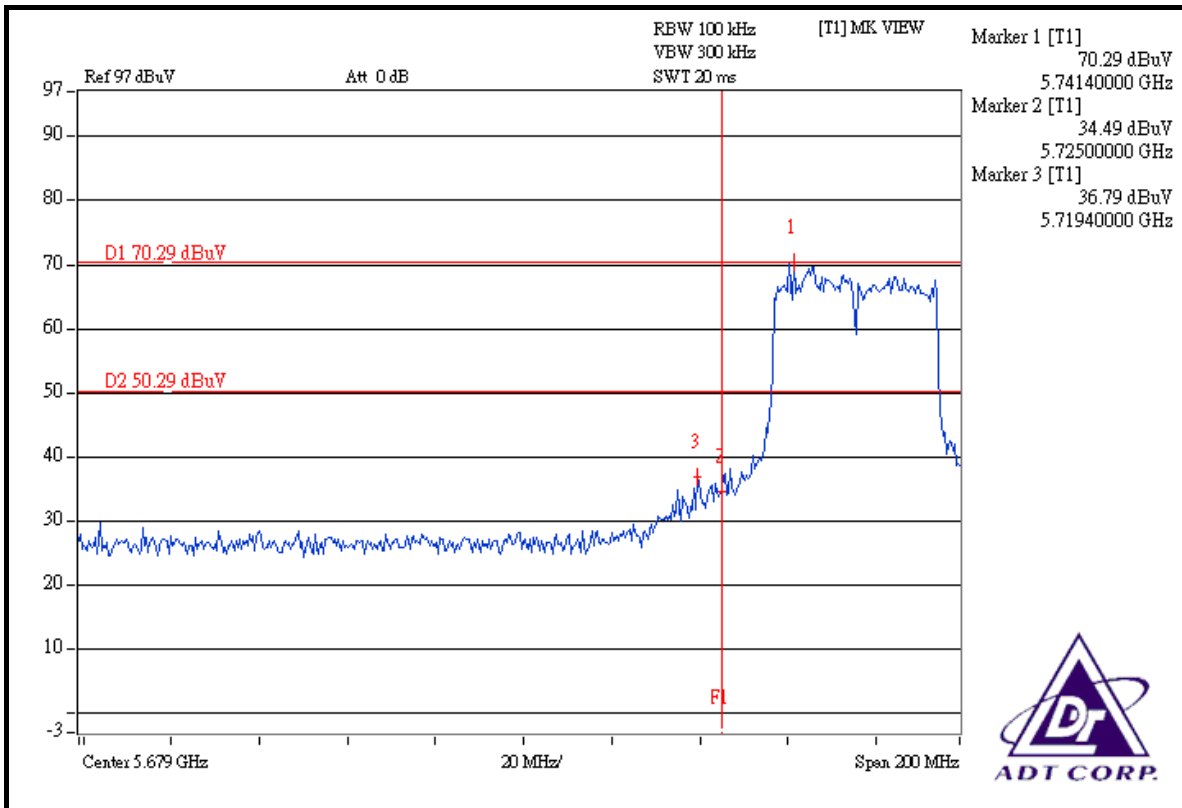


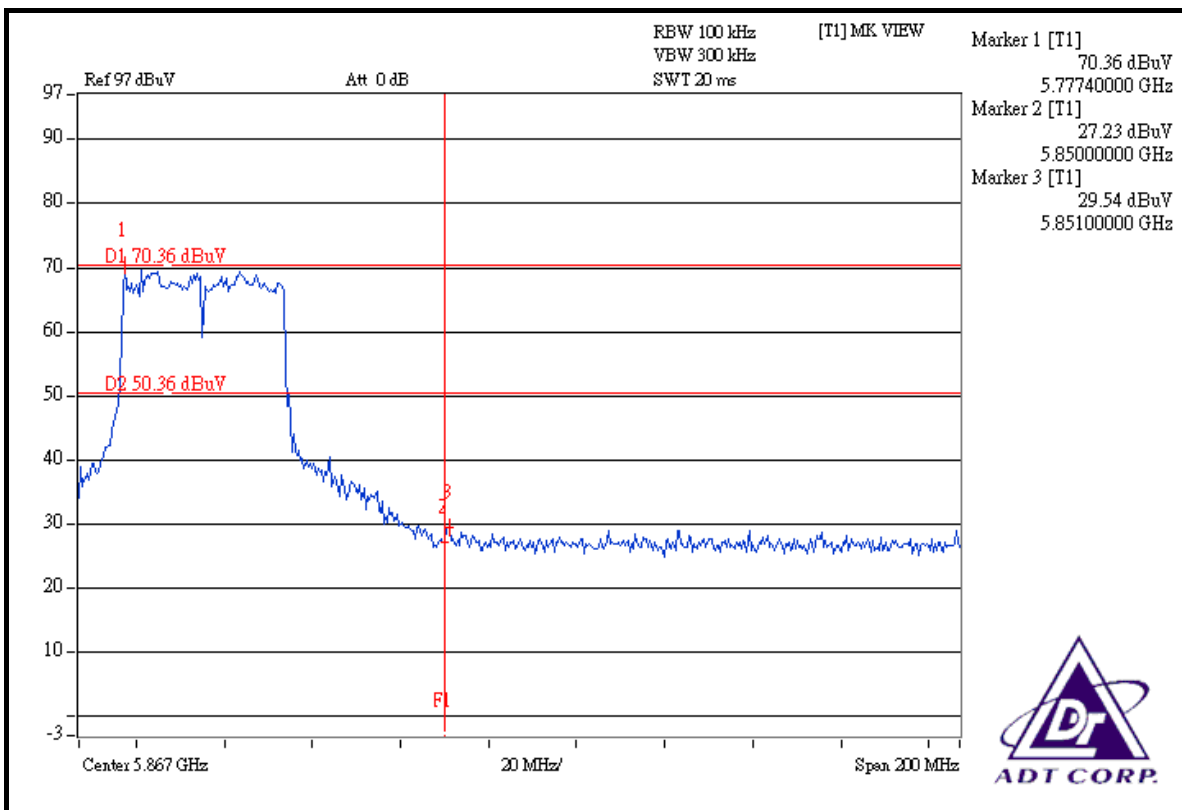
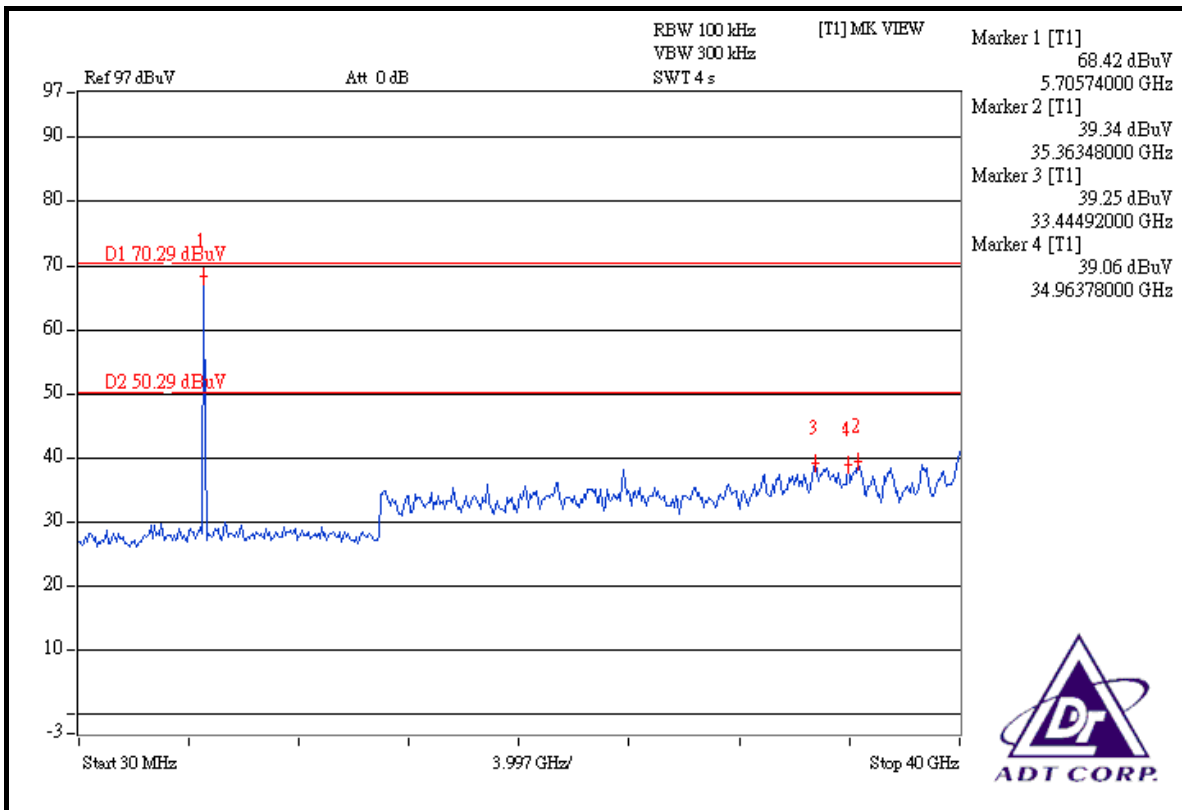


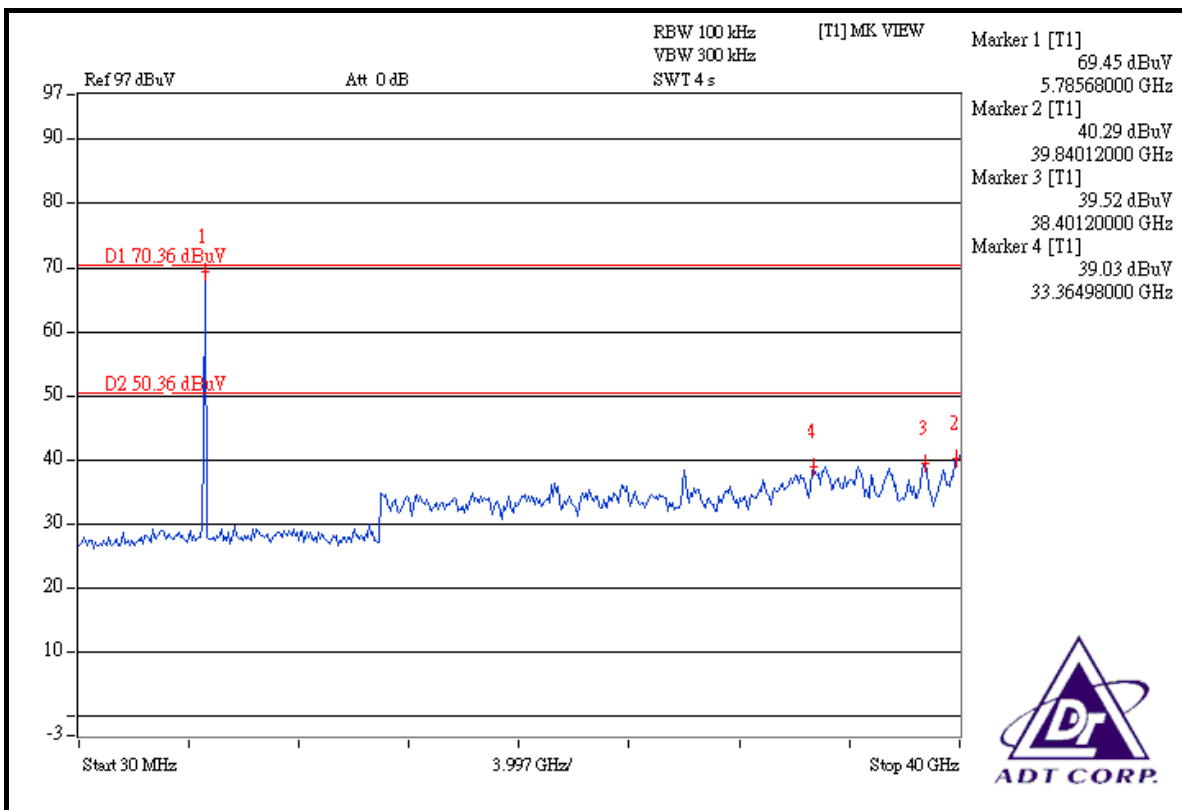
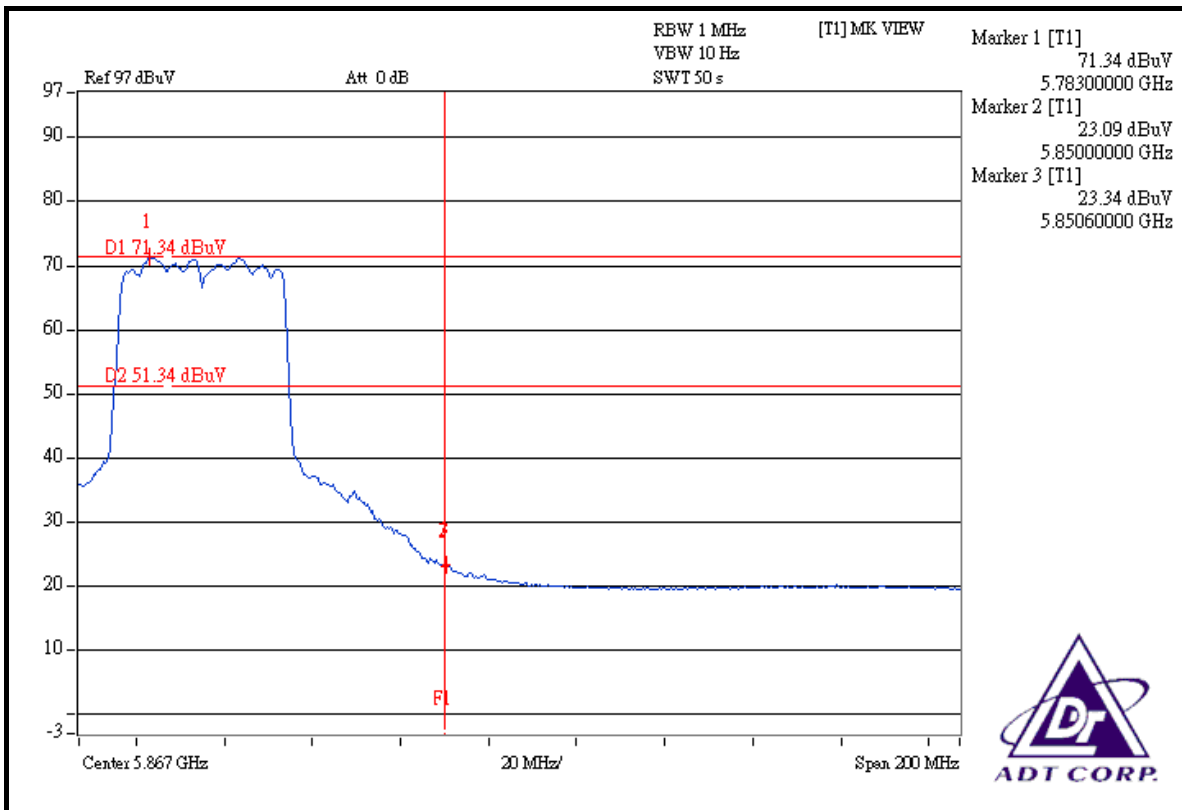




DRAFT 802.11n (40MHz) OFDM MODULATION:







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 Dipole antenna with RSMA connector. The maximum Gain of the antenna is 2.0dBi.



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	PSB , 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.