



FCC TEST REPORT (15.247)

REPORT NO.: RF970520L25

MODEL NO.: DGL-4500

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ISSUED: Jun. 19, 2008

APPLICANT: D-Link Corporation

ADDRESS: 17595 Mt. Herrmann, Fountain Valley, CA
92708, U.S.A.

ISSUED BY: Advance Data Technology Corporation

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

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

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1. CERTIFICATION

PRODUCT: Xtreme N GAMING ROUTER

MODEL: DGL-4500

BRAND: D-Link

APPLICANT: D-Link Corporation

TEST SAMPLE: ENGINEERING SAMPLE

TESTED: May 26 ~ Jun. 12, 2008

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

ANSI C63.4-2003

The above equipment (Model: DGL-4500) 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:** Jun. 19, 2008
Andrea Hsia / Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE:** Jun. 19, 2008
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Jun. 19, 2008
Gary Chang / Assistant Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -12.63dB at 0.189MHz
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 -1.09dB at 249.60MHz
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Xtreme N GAMING ROUTER
MODEL NO.	DGL-4500
FCC ID	KA2DGL4500A2
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: up to 300.0Mbps
FREQUENCY RANGE	2.4GHz: 2400.0 ~ 2483.5MHz 5.0GHz: 5150.0 ~ 5250.0MHz, 5725.0 ~ 5850.0MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz) 5.0GHz: 9 for 802.11a, draft 802.11n (20MHz) 4 for draft 802.11n (40MHz)
OUTPUT POWER	68.051mW for 2400.0 ~ 2483.5MHz 39.771mW for 5150.0 ~ 5250.0MHz 72.325mW for 5725.0 ~ 5850.0MHz
ANTENNA TYPE	2.4GHz: Dipole antenna with 2.0dBi gain 5.0GHz: Dipole antenna with 2.0dBi gain
DATA CABLE	NA
I/O PORTS	RJ45
ASSOCIATED DEVICES	Adapter

NOTE:

- The EUT is an Xtreme N GAMING ROUTER. The functions of EUT listed as below:

	TEST STANDARD	REFERENCE REPORT
WLAN 802.11b/g, draft 802.11n	FCC Part 15, Subpart C (Section 15.247)	RF970520L25
WLAN 802.11a, draft 802.11n (5725~5850 MHz)		
WLAN 802.11a, draft 802.11n (5150~ 5250MHz)	FCC Part 15, Subpart E (Section 15.407)	RF970520L25-1

2. The frequency bands used in this EUT are listed as follows:

Frequency Band (MHz)	2400~2483.5	5150~5250	5725~5850
802.11b	√		
802.11g	√		
802.11a		√	√
Draft 802.11n (20MHz)	√	√	√
Draft 802.11n (40MHz)	√	√	√

3. The EUT was powered by the 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

4. The EUT incorporates a MIMO function. Physically, the EUT provides three completed transmitters and three receivers.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
Draft 802.11n (20MHz)	3TX
Draft 802.11n (40MHz)	3TX

5. 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 and 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):

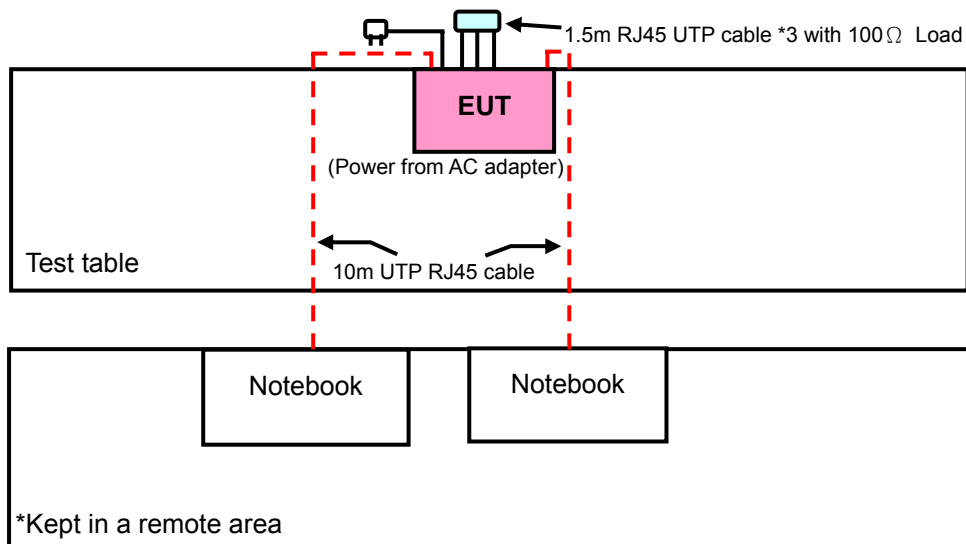
5 channels are provided for 802.11a, draft 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

FOR 2.400 ~ 2.4835GHz:

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

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

RADIATED EMISSION TEST (ABOVE 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates 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	7.2
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15.0

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)
Draft 802.11n (20MHz)	1 to 11	1	OFDM	BPSK	7.2

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)
Draft 802.11n (20MHz)	1 to 11	1	OFDM	BPSK	7.2

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	7.2
Draft 802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	15.0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

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	7.2
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15.0

FOR 5.725 ~ 5.850GHz:

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

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	149 to 165	149, 157, 165	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0

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)
Draft 802.11n (20MHz)	149 to 165	149	OFDM	BPSK	7.2

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)
Draft 802.11n (20MHz)	149 to 165	149	OFDM	BPSK	7.2

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	149 to 165	149, 165	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	149 to 165	149, 165	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0



3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C (15.247)

ANSI C63.4-2003

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

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

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP05L	16484462992	E2K24CLNS
2	NOTEBOOK COMPUTER	DELL	PP05L	12130898320	E2K24CLNS

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m UTP RJ 45 cable
2	10m UTP RJ 45 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 BAND)

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	May. 27, 2009
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 03, 2009
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 06, 2009
Preamplifier Agilent	8449B	3008A01910	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10638	Dec. 19, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274039/223650	Nov. 07, 2008
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 9.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 215374.
 5. The IC Site Registration No. is IC3789B-9.

4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

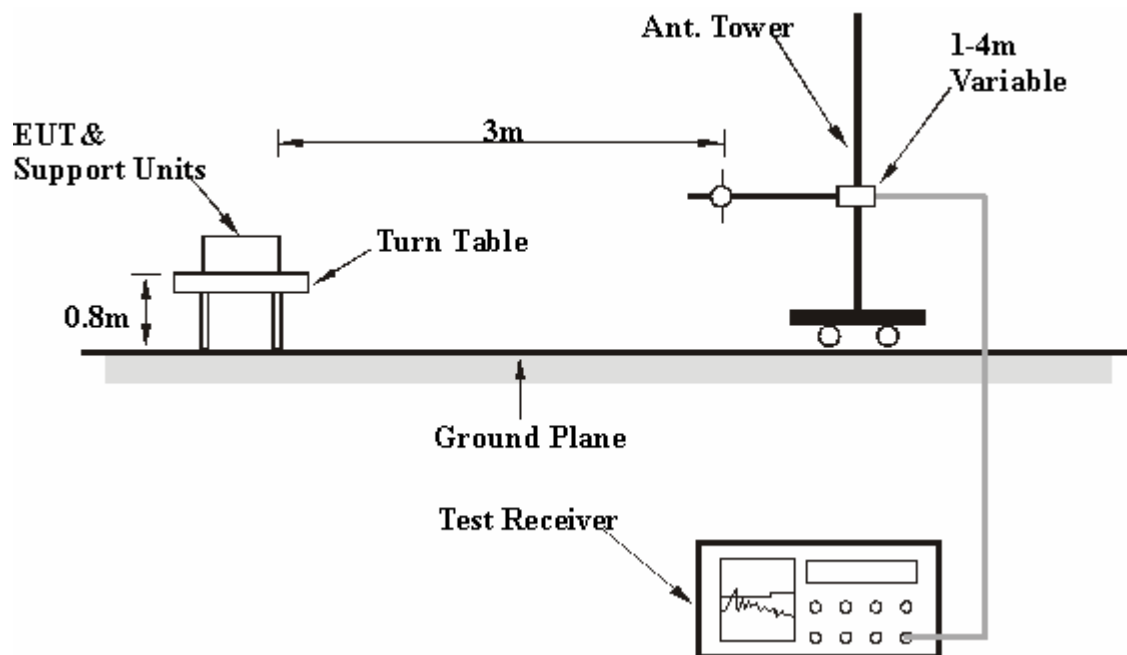
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 100kHz and video bandwidth is 300kHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

4.1.6 EUT OPERATING CONDITIONS

- a. Placed the EUT on 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

802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	56.28 PK	74.00	-17.72	1.24 H	143	28.20	28.08
2	1125.00	46.47 AV	54.00	-7.53	1.24 H	143	18.39	28.08
3	2390.00	57.21 PK	74.00	-16.79	1.28 H	141	24.89	32.32
4	2390.00	46.52 AV	54.00	-7.48	1.28 H	141	14.20	32.32
5	*2412.00	102.17 PK			1.28 H	141	69.85	32.32
6	*2412.00	97.48 AV			1.28 H	141	65.16	32.32
7	#3216.00	45.17 PK	82.17	-37.00	1.12 H	141	11.60	33.57
8	#3216.00	34.90 AV	77.48	-42.58	1.12 H	141	1.33	33.57
9	4824.00	46.95 PK	74.00	-27.05	1.08 H	40	8.95	38.00
10	4824.00	37.28 AV	54.00	-16.72	1.08 H	40	-0.72	38.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	59.73 PK	74.00	-14.27	1.00 V	190	31.65	28.08
2	1125.00	52.77 AV	54.00	-1.23	1.00 V	190	24.69	28.08
3	2390.00	58.15 PK	74.00	-15.85	1.12 V	360	25.83	32.32
4	2390.00	47.63 AV	54.00	-6.37	1.12 V	360	15.31	32.32
5	*2412.00	110.73 PK			1.12 V	360	78.41	32.32
6	*2412.00	106.38 AV			1.12 V	360	74.06	32.32
7	#3216.00	47.32 PK	90.73	-43.41	1.02 V	347	13.75	33.57
8	#3216.00	41.63 AV	86.38	-44.75	1.02 V	347	8.06	33.57
9	4824.00	47.23 PK	74.00	-26.77	1.18 V	178	9.23	38.00
10	4824.00	38.72 AV	54.00	-15.28	1.18 V	178	0.72	38.00

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	55.40 PK	74.00	-18.60	1.31 H	153	27.32	28.08
2	1125.00	46.12 AV	54.00	-7.88	1.31 H	153	18.04	28.08
3	*2437.00	101.98 PK			1.31 H	139	69.64	32.34
4	*2437.00	97.50 AV			1.31 H	139	65.16	32.34
5	#3249.00	45.36 PK	81.98	-36.62	1.10 H	169	11.91	33.45
6	#3249.00	35.35 AV	77.50	-42.15	1.10 H	169	1.90	33.45
7	4874.00	47.12 PK	74.00	-26.88	1.00 H	350	9.00	38.12
8	4874.00	37.62 AV	54.00	-16.38	1.00 H	350	-0.50	38.12

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	59.42 PK	74.00	-14.58	1.00 V	147	31.34	28.08
2	1125.00	52.16 AV	54.00	-1.84	1.00 V	147	24.08	28.08
3	*2437.00	110.42 PK			1.15 V	355	78.08	32.34
4	*2437.00	106.39 AV			1.15 V	355	74.05	32.34
5	#3249.00	47.69 PK	90.42	-42.73	1.06 V	344	14.24	33.45
6	#3249.00	41.86 AV	86.39	-44.53	1.06 V	344	8.41	33.45
7	4874.00	48.18 PK	74.00	-25.82	1.20 V	181	10.06	38.12
8	4874.00	39.05 AV	54.00	-14.95	1.20 V	181	0.93	38.12

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	56.97 PK	74.00	-17.03	1.09 H	150	28.89	28.08
2	1125.00	47.14 AV	54.00	-6.86	1.09 H	150	19.06	28.08
3	*2462.00	101.95 PK			1.31 H	159	69.58	32.37
4	*2462.00	97.04 AV			1.31 H	159	64.67	32.37
5	2483.50	57.63 PK	74.00	-16.37	1.31 H	159	25.24	32.39
6	2483.50	46.74 AV	54.00	-7.26	1.31 H	159	14.35	32.39
7	#3282.00	44.95 PK	81.95	-37.00	1.17 H	160	11.61	33.34
8	#3282.00	34.82 AV	77.04	-42.22	1.17 H	160	1.48	33.34
9	4824.00	47.10 PK	74.00	-26.90	1.10 H	360	9.10	38.00
10	4824.00	37.52 AV	54.00	-16.48	1.10 H	360	-0.48	38.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	59.14 PK	74.00	-14.86	1.01 V	196	31.06	28.08
2	1125.00	51.98 AV	54.00	-2.02	1.01 V	196	23.90	28.08
3	*2462.00	111.01 PK			1.19 V	14	78.64	32.37
4	*2462.00	106.82 AV			1.19 V	14	74.45	32.37
5	2483.50	59.54 PK	74.00	-14.46	1.19 V	14	27.15	32.39
6	2483.50	48.30 AV	54.00	-5.70	1.19 V	14	15.91	32.39
7	#3282.00	49.08 PK	91.01	-41.93	1.03 V	311	15.74	33.34
8	#3282.00	42.95 AV	86.82	-43.87	1.03 V	311	9.61	33.34
9	4924.00	48.17 PK	74.00	-25.83	1.00 V	360	9.94	38.23
10	4924.00	39.04 AV	54.00	-14.96	1.00 V	360	0.81	38.23

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

802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	56.11 PK	74.00	-17.89	1.23 H	149	28.03	28.08
2	1125.00	46.28 AV	54.00	-7.72	1.23 H	149	18.20	28.08
3	2390.00	58.72 PK	74.00	-15.28	1.28 H	145	26.40	32.32
4	2390.00	47.05 AV	54.00	-6.95	1.28 H	145	14.73	32.32
5	*2412.00	102.26 PK			1.25 H	145	69.94	32.32
6	*2412.00	91.72 AV			1.25 H	145	59.40	32.32
7	#3216.00	46.49 PK	82.26	-35.77	1.12 H	135	12.92	33.57
8	#3216.00	40.69 AV	71.72	-31.03	1.12 H	135	7.12	33.57
9	4824.00	44.59 PK	74.00	-29.41	1.05 H	360	6.59	38.00
10	4824.00	31.53 AV	54.00	-22.47	1.05 H	360	-6.47	38.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	59.91 PK	74.00	-14.09	1.00 V	193	31.83	28.08
2	1125.00	52.44 AV	54.00	-1.56	1.00 V	193	24.36	28.08
3	2390.00	66.56 PK	74.00	-7.44	1.14 V	27	34.24	32.32
4	2390.00	51.56 AV	54.00	-2.44	1.14 V	27	19.24	32.32
5	*2412.00	110.36 PK			1.12 V	15	78.04	32.32
6	*2412.00	100.24 AV			1.12 V	15	67.92	32.32
7	#3216.00	49.18 PK	90.36	-41.18	1.08 V	214	15.61	33.57
8	#3216.00	45.45 AV	80.24	-34.79	1.08 V	214	11.88	33.57
9	4824.00	45.30 PK	74.00	-28.70	1.00 V	0	7.30	38.00
10	4824.00	31.89 AV	54.00	-22.11	1.00 V	0	-6.11	38.00

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	55.69 PK	74.00	-18.31	1.19 H	160	27.61	28.08
2	1125.00	45.81 AV	54.00	-8.19	1.19 H	160	17.73	28.08
3	*2437.00	101.97 PK			1.31 H	151	69.63	32.34
4	*2437.00	91.34 AV			1.31 H	151	59.00	32.34
5	#3249.00	47.04 PK	81.97	-34.93	1.33 H	159	13.59	33.45
6	#3249.00	41.11 AV	71.34	-30.23	1.33 H	159	7.66	33.45
7	4874.00	44.54 PK	74.00	-29.46	1.00 H	360	6.42	38.12
8	4874.00	31.98 AV	54.00	-22.02	1.00 H	360	-6.14	38.12

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	60.04 PK	74.00	-13.96	1.01 V	210	31.96	28.08
2	1125.00	52.67 AV	54.00	-1.33	1.01 V	210	24.59	28.08
3	*2437.00	110.47 PK			1.14 V	31	78.13	32.34
4	*2437.00	100.03 AV			1.14 V	31	67.69	32.34
5	#3249.00	50.60 PK	90.47	-39.87	1.10 V	196	17.15	33.45
6	#3249.00	45.62 AV	80.03	-34.41	1.10 V	196	12.17	33.45
7	4874.00	45.58 PK	74.00	-28.42	1.00 V	0	7.46	38.12
8	4874.00	32.06 AV	54.00	-21.94	1.00 V	0	-6.06	38.12

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	56.74 PK	74.00	-17.26	1.31 H	157	28.66	28.08
2	1125.00	47.06 AV	54.00	-6.94	1.31 H	157	18.98	28.08
3	*2462.00	102.33 PK			1.31 H	151	69.96	32.37
4	*2462.00	91.87 AV			1.31 H	151	59.50	32.37
5	2483.50	58.14 PK	74.00	-15.86	1.31 H	151	25.75	32.39
6	2483.50	47.21 AV	54.00	-6.79	1.31 H	151	14.82	32.39
7	#3282.00	47.20 PK	82.33	-35.13	1.01 H	114	13.86	33.34
8	#3282.00	41.14 AV	71.87	-30.73	1.01 H	114	7.80	33.34
9	4924.00	44.69 PK	74.00	-29.31	1.10 H	0	6.46	38.23
10	4924.00	31.62 AV	54.00	-22.38	1.10 H	0	-6.61	38.23

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	59.17 PK	74.00	-14.83	1.00 V	201	31.09	28.08
2	1125.00	51.94 AV	54.00	-2.06	1.00 V	201	23.86	28.08
3	*2462.00	110.47 PK			1.13 V	41	78.10	32.37
4	*2462.00	100.29 AV			1.13 V	41	67.92	32.37
5	2483.50	67.04 PK	74.00	-6.96	1.13 V	41	34.65	32.39
6	2483.50	52.17 AV	54.00	-1.83	1.13 V	41	19.78	32.39
7	#3282.00	50.60 PK	90.47	-39.87	1.07 V	312	17.26	33.34
8	#3282.00	46.29 AV	80.29	-34.00	1.07 V	312	12.95	33.34
9	4924.00	45.62 PK	74.00	-28.38	1.04 V	360	7.39	38.23
10	4924.00	32.01 AV	54.00	-21.99	1.04 V	360	-6.22	38.23

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

DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	55.58 PK	74.00	-18.42	1.22 H	152	27.50	28.08
2	1125.00	45.52 AV	54.00	-8.48	1.22 H	152	17.44	28.08
3	2390.00	56.36 PK	74.00	-17.64	1.29 H	98	24.04	32.32
4	2390.00	46.46 AV	54.00	-7.54	1.29 H	98	14.14	32.32
5	*2412.00	101.70 PK			1.29 H	98	69.38	32.32
6	*2412.00	91.79 AV			1.29 H	98	59.47	32.32
7	#3216.00	44.56 PK	81.70	-37.14	1.09 H	115	10.99	33.57
8	#3216.00	33.80 AV	71.79	-37.99	1.09 H	115	0.23	33.57
9	4824.00	45.70 PK	74.00	-28.30	1.00 H	360	7.70	38.00
10	4824.00	31.71 AV	54.00	-22.29	1.00 H	360	-6.29	38.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	59.22 PK	74.00	-14.78	1.00 V	200	31.14	28.08
2	1125.00	52.18 AV	54.00	-1.82	1.00 V	200	24.10	28.08
3	2390.00	61.13 PK	74.00	-12.87	1.16 V	0	28.81	32.32
4	2390.00	49.36 AV	54.00	-4.64	1.16 V	0	17.04	32.32
5	*2412.00	113.68 PK			1.14 V	360	81.36	32.32
6	*2412.00	102.73 AV			1.14 V	360	70.41	32.32
7	#3216.00	50.08 PK	93.68	-43.60	1.00 V	3	16.51	33.57
8	#3216.00	46.66 AV	82.73	-36.07	1.00 V	3	13.09	33.57
9	4824.00	44.84 PK	74.00	-29.16	1.00 V	360	6.84	38.00
10	4824.00	32.11 AV	54.00	-21.89	1.00 V	360	-5.89	38.00

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	55.17 PK	74.00	-18.83	1.19 H	147	27.09	28.08
2	1125.00	45.23 AV	54.00	-8.77	1.19 H	147	17.15	28.08
3	*2437.00	101.14 PK			1.31 H	101	68.80	32.34
4	*2437.00	91.23 AV			1.31 H	101	58.89	32.34
5	#3249.00	45.69 PK	81.14	-35.45	1.10 H	121	12.24	33.45
6	#3249.00	34.27 AV	71.23	-36.96	1.10 H	121	0.82	33.45
7	4874.00	45.69 PK	74.00	-28.31	1.00 H	0	7.57	38.12
8	4874.00	32.01 AV	54.00	-21.99	1.00 H	0	-6.11	38.12

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	59.44 PK	74.00	-14.56	1.01 V	159	31.36	28.08
2	1125.00	52.35 AV	54.00	-1.65	1.01 V	159	24.27	28.08
3	*2437.00	113.07 PK			1.15 V	355	80.73	32.34
4	*2437.00	102.11 AV			1.15 V	355	69.77	32.34
5	#3249.00	50.41 PK	93.07	-42.66	1.01 V	10	16.96	33.45
6	#3249.00	46.96 AV	82.11	-35.15	1.01 V	10	13.51	33.45
7	4874.00	44.47 PK	74.00	-29.53	1.00 V	360	6.35	38.12
8	4874.00	32.42 AV	54.00	-21.58	1.00 V	360	-5.70	38.12

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	55.41 PK	74.00	-18.59	1.08 H	151	27.33	28.08
2	1125.00	45.69 AV	54.00	-8.31	1.08 H	151	17.61	28.08
3	*2462.00	101.35 PK			1.29 H	95	68.98	32.37
4	*2462.00	91.34 AV			1.29 H	95	58.97	32.37
5	2483.50	55.47 PK	74.00	-18.53	1.29 H	95	23.08	32.39
6	2483.50	46.12 AV	54.00	-7.88	1.29 H	95	13.73	32.39
7	#3282.00	45.45 PK	81.35	-35.90	1.12 H	98	12.11	33.34
8	#3282.00	34.09 AV	71.34	-37.25	1.12 H	98	0.75	33.34
9	4924.00	45.78 PK	74.00	-28.22	1.10 H	0	7.55	38.23
10	4924.00	32.24 AV	54.00	-21.76	1.10 H	0	-5.99	38.23

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	59.61 PK	74.00	-14.39	1.00 V	147	31.53	28.08
2	1125.00	52.56 AV	54.00	-1.44	1.00 V	147	24.48	28.08
3	*2462.00	113.14 PK			1.11 V	15	80.77	32.37
4	*2462.00	102.01 AV			1.11 V	15	69.64	32.37
5	2483.50	61.47 PK	74.00	-12.53	1.11 V	15	29.08	32.39
6	2483.50	50.07 AV	54.00	-3.93	1.11 V	15	17.68	32.39
7	#3282.00	50.96 PK	93.14	-42.18	1.04 V	144	17.62	33.34
8	#3282.00	47.14 AV	82.01	-34.87	1.04 V	144	13.80	33.34
9	4924.00	45.04 PK	74.00	-28.96	1.10 V	360	6.81	38.23
10	4924.00	32.96 AV	54.00	-21.04	1.10 V	360	-5.27	38.23

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

DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	55.58 PK	74.00	-18.42	1.30 H	150	27.50	28.08
2	1125.00	45.55 AV	54.00	-8.45	1.30 H	150	17.47	28.08
3	2390.00	59.98 PK	74.00	-14.02	1.31 H	97	27.66	32.32
4	2390.00	46.80 AV	54.00	-7.20	1.31 H	97	14.48	32.32
5	*2422.00	98.39 PK			1.31 H	97	66.06	32.33
6	*2422.00	88.36 AV			1.31 H	97	56.03	32.33
7	#3299.00	44.64 PK	78.39	-33.75	1.00 H	114	11.36	33.28
8	#3299.00	35.80 AV	68.36	-32.56	1.00 H	114	2.52	33.28
9	4844.00	45.77 PK	74.00	-28.23	1.01 H	0	7.72	38.05
10	4844.00	32.12 AV	54.00	-21.88	1.01 H	0	-5.93	38.05

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	59.35 PK	74.00	-14.65	1.00 V	188	31.27	28.08
2	1125.00	51.60 AV	54.00	-2.40	1.00 V	188	23.52	28.08
3	2390.00	70.08 PK	74.00	-3.92	1.16 V	354	37.76	32.32
4	2390.00	52.51 AV	54.00	-1.49	1.16 V	354	20.19	32.32
5	*2422.00	109.79 PK			1.12 V	355	77.46	32.33
6	*2422.00	99.16 AV			1.12 V	355	66.83	32.33
7	#3229.00	51.83 PK	89.79	-37.96	1.02 V	358	18.31	33.52
8	#3229.00	49.26 AV	79.16	-29.90	1.02 V	358	15.74	33.52
9	4844.00	45.85 PK	74.00	-28.15	1.00 V	0	7.80	38.05
10	4844.00	32.65 AV	54.00	-21.35	1.00 V	0	-5.40	38.05

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	55.37 PK	74.00	-18.63	1.27 H	147	27.29	28.08
2	1125.00	45.61 AV	54.00	-8.39	1.27 H	147	17.53	28.08
3	*2437.00	98.56 PK			1.20 H	101	66.22	32.34
4	*2437.00	88.69 AV			1.20 H	101	56.35	32.34
5	#3249.00	44.47 PK	78.56	-34.09	1.00 H	109	11.02	33.45
6	#3249.00	36.07 AV	68.69	-32.62	1.00 H	109	2.62	33.45
7	4874.00	46.17 PK	74.00	-27.83	1.10 H	0	8.05	38.12
8	4874.00	32.32 AV	54.00	-21.68	1.10 H	0	-5.80	38.12

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	59.74 PK	74.00	-14.26	1.09 V	199	31.66	28.08
2	1125.00	51.86 AV	54.00	-2.14	1.09 V	199	23.78	28.08
3	*2437.00	109.47 PK			1.18 V	314	77.13	32.34
4	*2437.00	99.21 AV			1.18 V	314	66.87	32.34
5	#3249.00	52.26 PK	89.47	-37.21	1.01 V	311	18.81	33.45
6	#3249.00	49.78 AV	79.21	-29.43	1.01 V	311	16.33	33.45
7	4874.00	46.00 PK	74.00	-28.00	1.10 V	360	7.88	38.12
8	4874.00	33.17 AV	54.00	-20.83	1.10 V	360	-4.95	38.12

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 69%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	56.17 PK	74.00	-17.83	1.00 H	199	28.09	28.08
2	1125.00	45.61 AV	54.00	-8.39	1.00 H	199	17.53	28.08
3	*2452.00	98.18 PK			1.29 H	101	65.82	32.36
4	*2452.00	88.24 AV			1.29 H	101	55.88	32.36
5	2483.50	60.14 PK	74.00	-13.86	1.29 H	101	27.75	32.39
6	2483.50	46.48 AV	54.00	-7.52	1.29 H	101	14.09	32.39
7	#3269.00	44.87 PK	78.18	-33.31	1.07 H	114	11.48	33.39
8	#3269.00	36.09 AV	68.24	-32.15	1.07 H	114	2.70	33.39
9	4904.00	45.74 PK	74.00	-28.26	1.00 H	360	7.55	38.19
10	4904.00	32.59 AV	54.00	-21.41	1.00 H	360	-5.60	38.19

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	60.14 PK	74.00	-13.86	1.11 V	211	32.06	28.08
2	1125.00	52.01 AV	54.00	-1.99	1.11 V	211	23.93	28.08
3	*2452.00	109.13 PK			1.37 V	14	76.77	32.36
4	*2452.00	99.04 AV			1.37 V	14	66.68	32.36
5	2483.50	70.56 PK	74.00	-3.44	1.37 V	14	38.17	32.39
6	2483.50	52.57 AV	54.00	-1.43	1.37 V	14	20.18	32.39
7	#3269.00	52.67 PK	89.13	-36.46	1.04 V	117	19.28	33.39
8	#3269.00	50.41 AV	79.04	-28.63	1.04 V	117	17.02	33.39
9	4904.00	46.54 PK	74.00	-27.46	1.07 V	0	8.35	38.19
10	4904.00	32.86 AV	54.00	-21.14	1.07 V	0	-5.33	38.19

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



BELOW 1GHz WORST-CASE DATA : DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 999hPa	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	249.60	44.51 QP	46.00	-1.49	1.25 H	151	31.75	12.76
2	270.99	40.71 QP	46.00	-5.29	1.25 H	151	27.60	13.12
3	300.16	41.69 QP	46.00	-4.31	1.00 H	121	28.09	13.60
4	500.42	43.04 QP	46.00	-2.96	1.25 H	205	23.92	19.12
5	568.47	43.00 QP	46.00	-3.00	1.25 H	232	22.24	20.76
6	877.61	44.74 QP	46.00	-1.26	1.50 H	259	19.10	25.64
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	55.18	37.86 QP	40.00	-2.14	1.50 V	328	24.30	13.55
2	64.90	34.73 QP	40.00	-5.27	1.00 V	337	22.28	12.45
3	249.60	44.91 QP	46.00	-1.09	1.00 V	268	32.15	12.76
4	500.42	44.75 QP	46.00	-1.25	1.00 V	160	25.63	19.12
5	568.47	41.74 QP	46.00	-4.26	1.00 V	52	20.98	20.76
6	877.61	44.36 QP	46.00	-1.64	1.25 V	289	18.72	25.64

- 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.

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 21, 2008
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 06, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 09, 2009
LISN SCHWARZBECK	ESH3-Z5	100311	Jan. 21, 2009
Software ADT	ADT_Cond_V3	NA	NA

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

4.2.3 TEST PROCEDURES

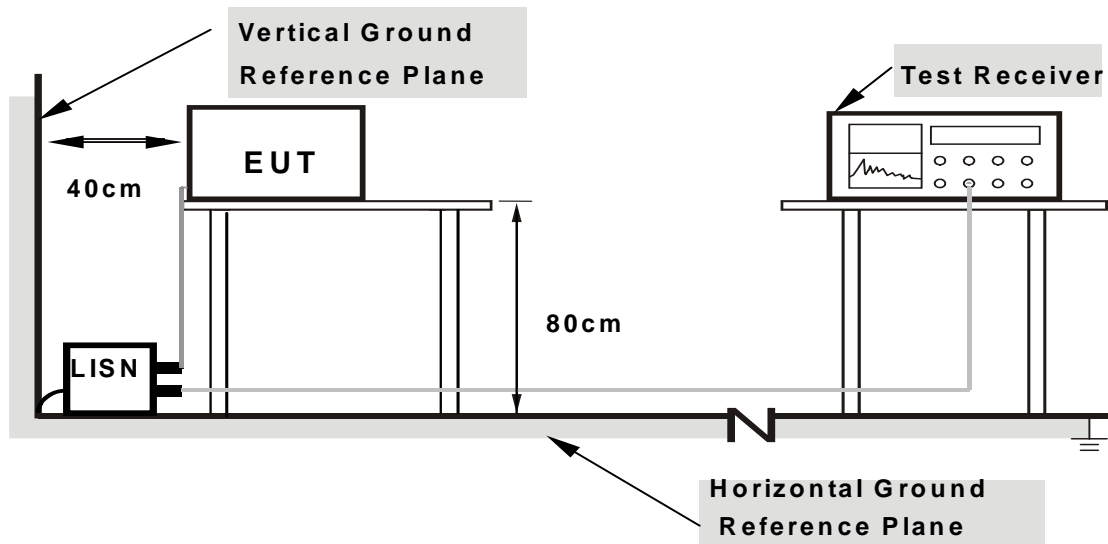
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

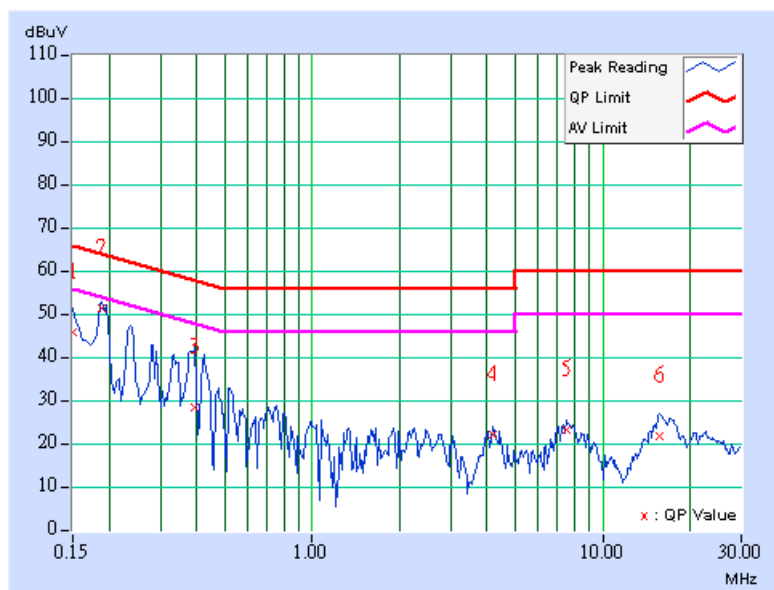
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 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	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 988hPa	TESTED BY	Brad Wu

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	45.44	-	45.54	-	66.00
2	0.189	0.10	51.13	-	51.23	-	64.08	54.08	-12.85	-
3	0.396	0.10	28.20	-	28.30	-	57.93	47.93	-29.63	-
4	4.207	0.28	21.76	-	22.04	-	56.00	46.00	-33.96	-
5	7.543	0.31	22.66	-	22.97	-	60.00	50.00	-37.03	-
6	15.703	0.49	21.20	-	21.69	-	60.00	50.00	-38.31	-

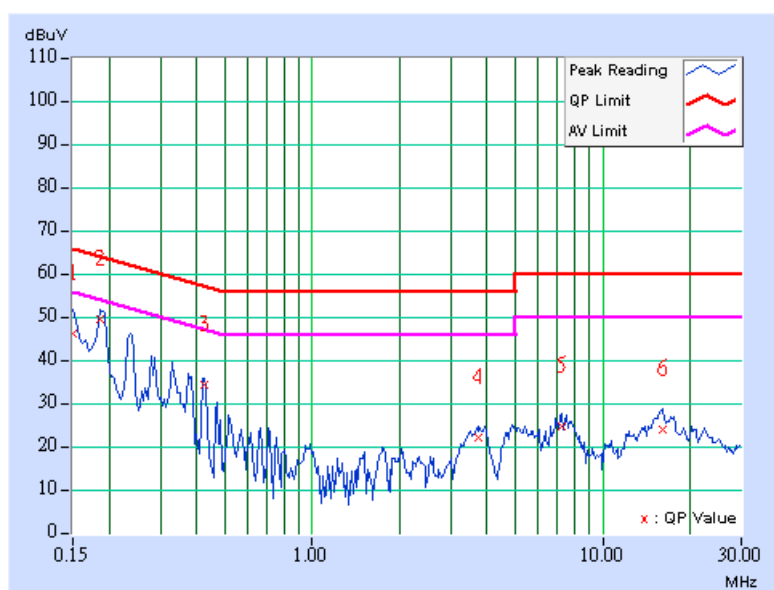
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 988hPa	TESTED BY	Brad Wu

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	45.88	-	45.98	-	66.00	56.00	-20.02	-
2	0.185	0.10	48.98	-	49.08	-	64.25	54.25	-15.17	-
3	0.423	0.10	34.09	-	34.19	-	57.38	47.38	-23.19	-
4	3.754	0.27	21.78	-	22.05	-	56.00	46.00	-33.95	-
5	7.223	0.36	24.32	-	24.68	-	60.00	50.00	-35.32	-
6	16.043	0.50	23.64	-	24.14	-	60.00	50.00	-35.86	-

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





4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

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

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

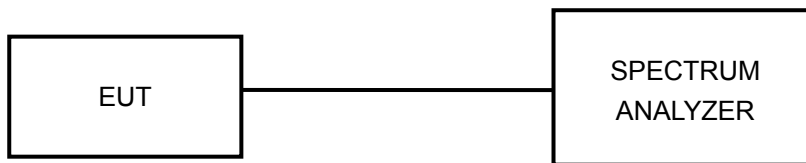
4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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



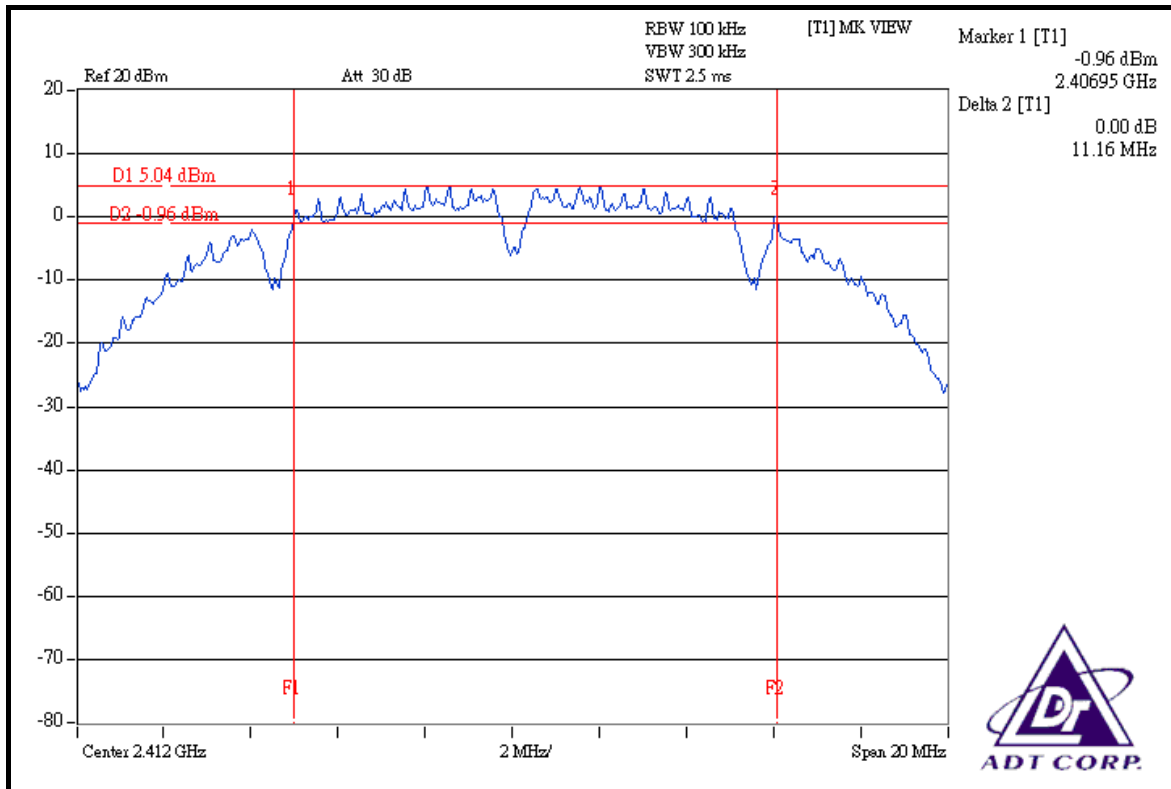
4.3.7 TEST RESULTS

802.11b DSSS MODULATION

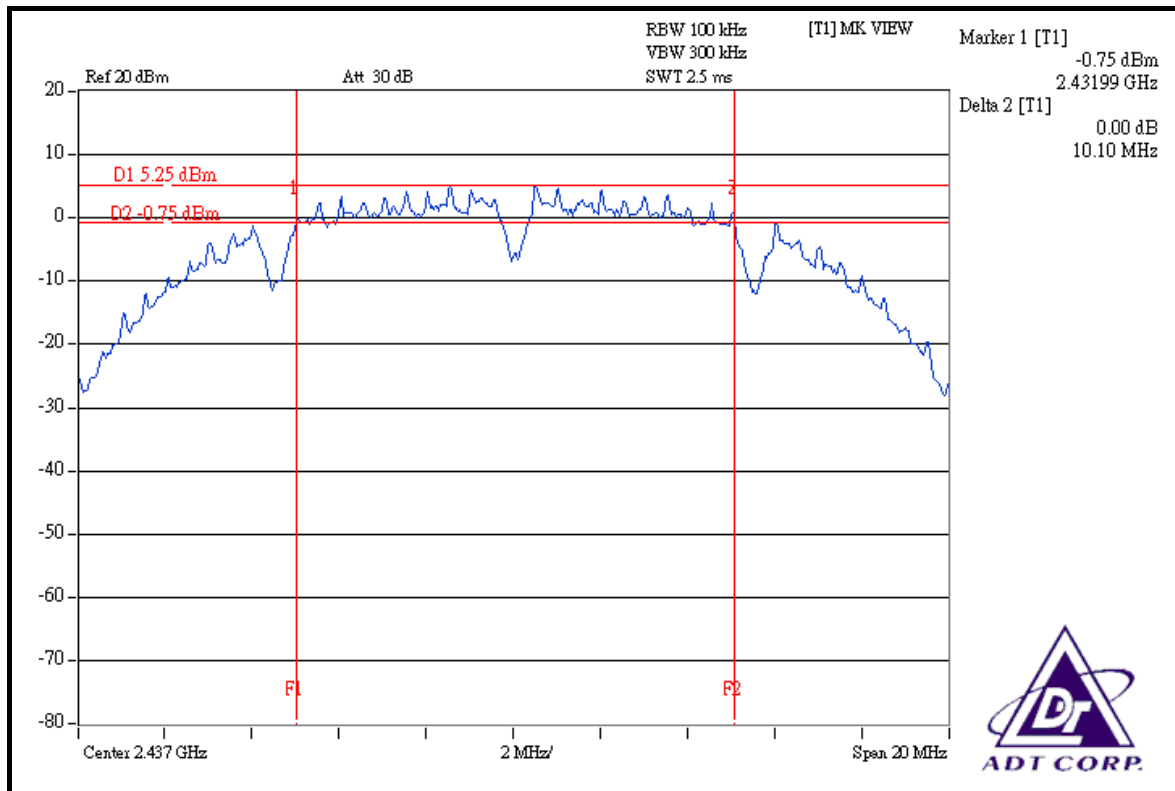
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27deg.C, 66%RH, 991hPa
TESTED BY	Dean Wang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.16	0.5	PASS
6	2437	10.10	0.5	PASS
11	2462	10.15	0.5	PASS

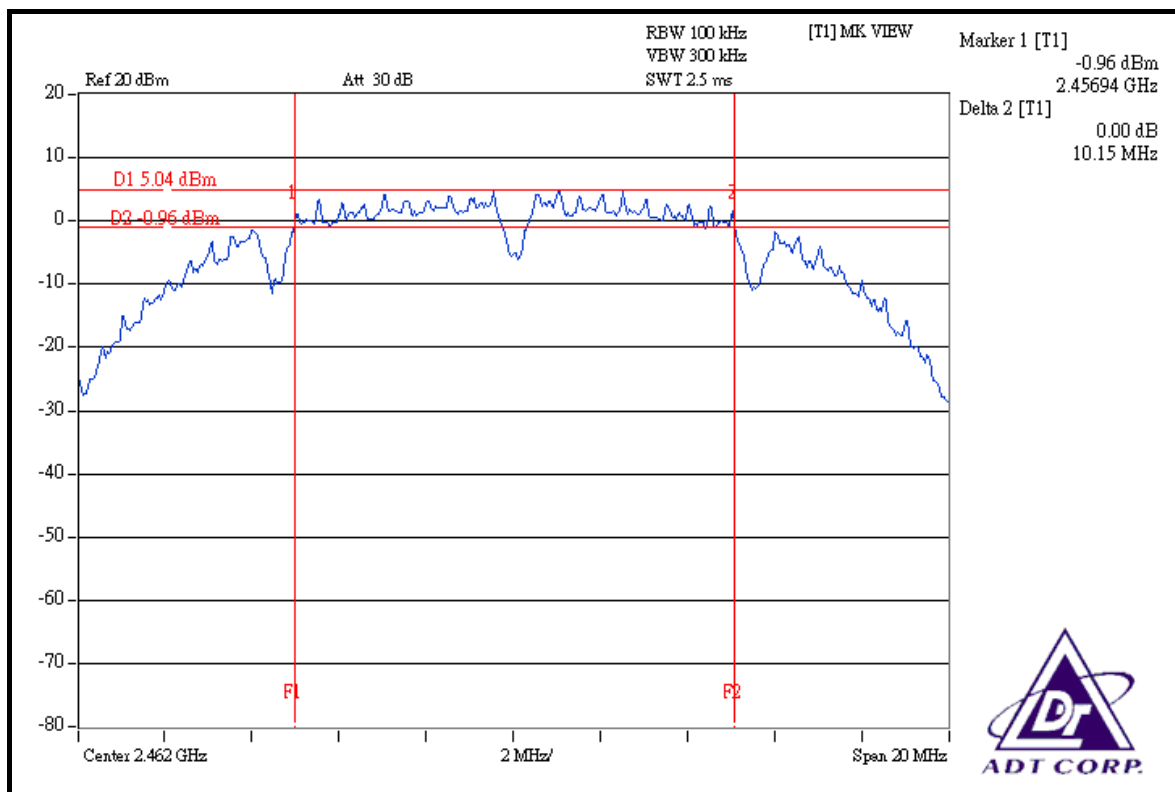
CH 1



CH 6



CH 11



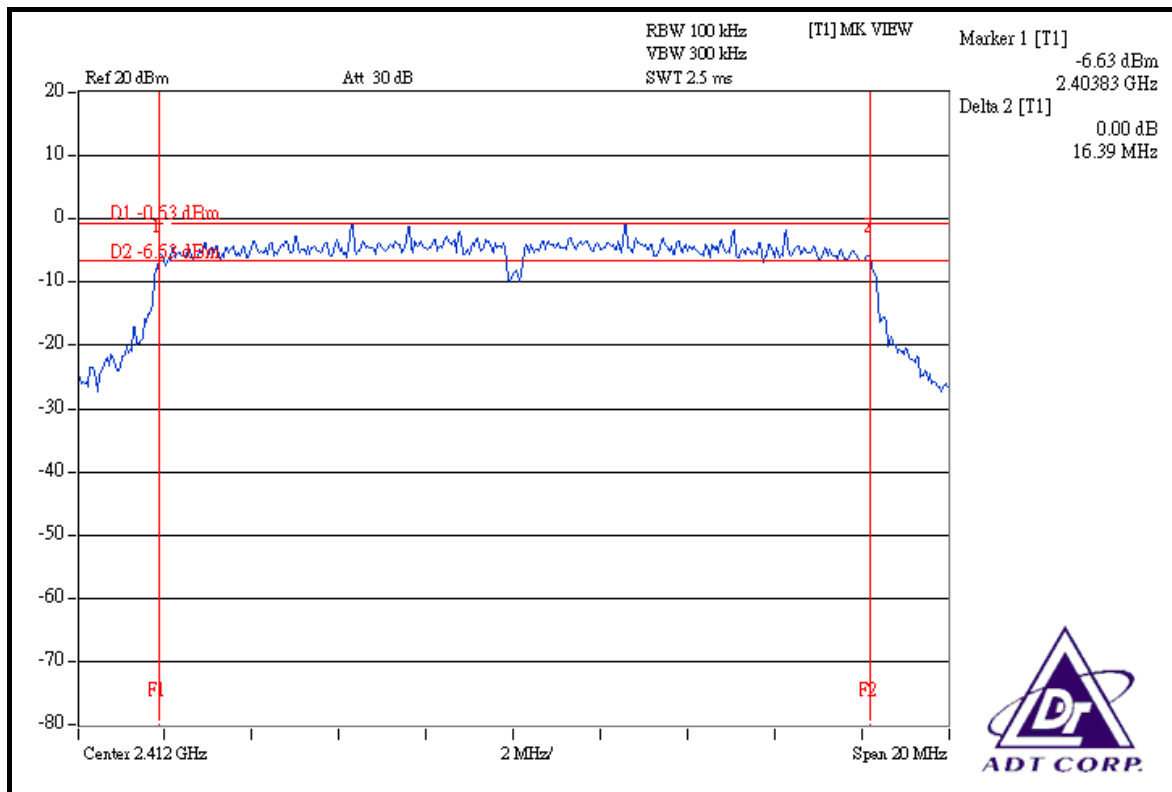


802.11g OFDM MODULATION

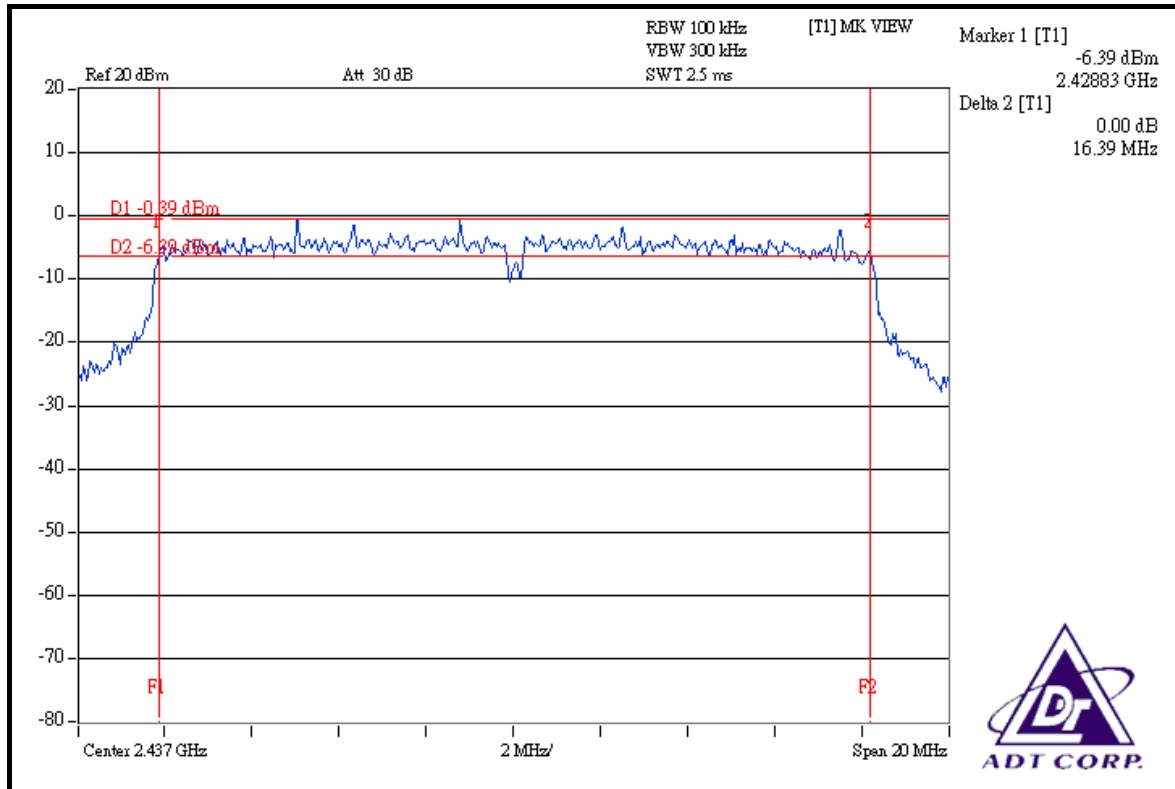
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27deg.C, 66%RH, 991hPa
TESTED BY	Dean Wang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.39	0.5	PASS
6	2437	16.39	0.5	PASS
11	2462	16.36	0.5	PASS

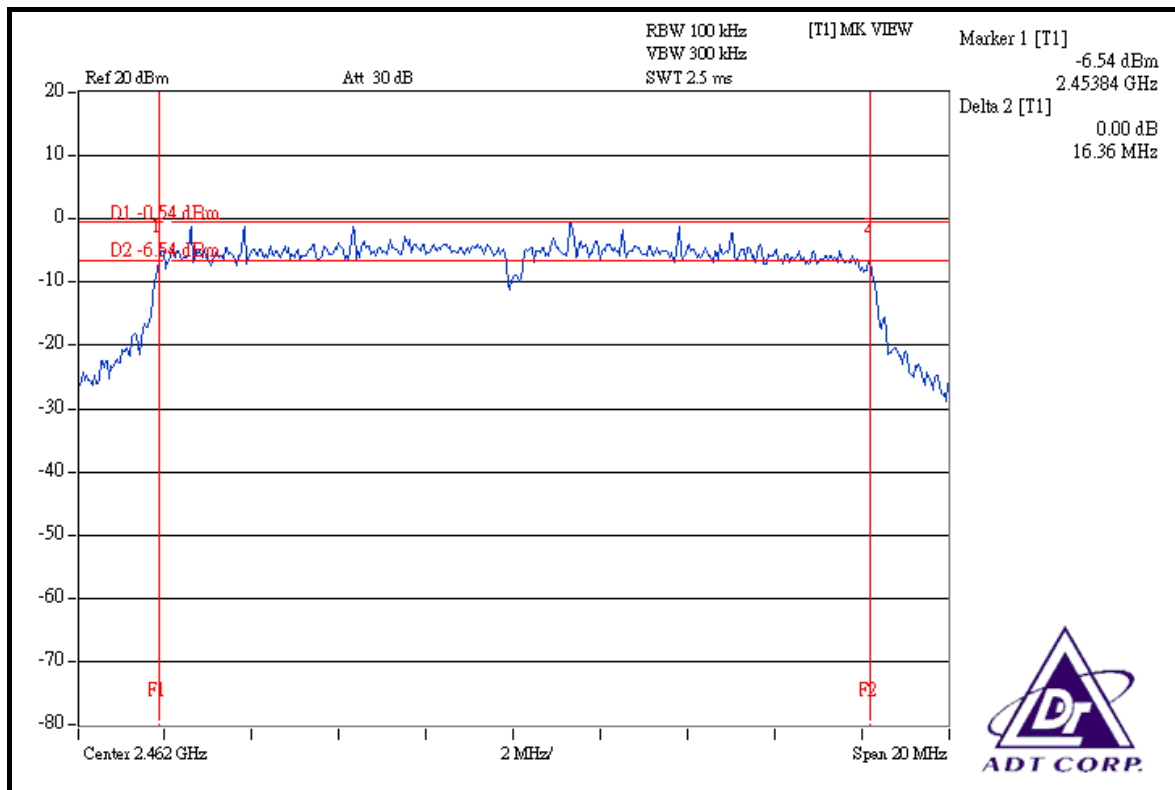
CH 1



CH 6



CH 11



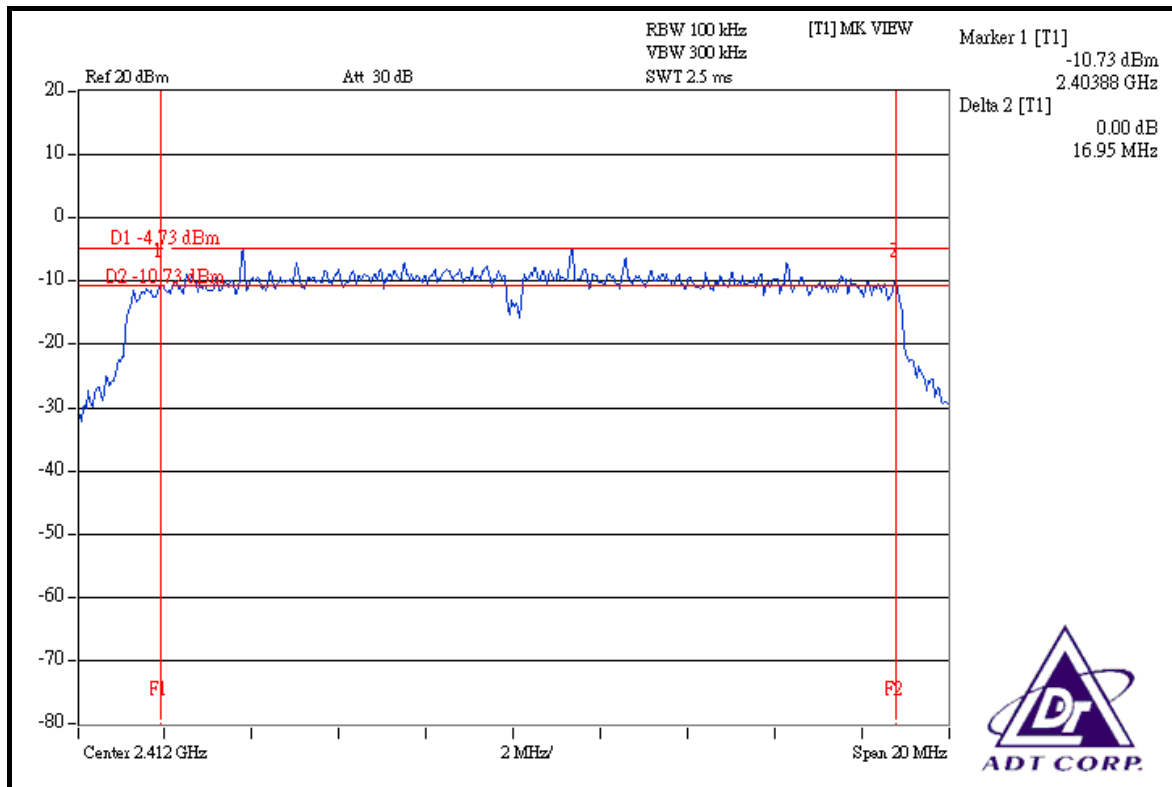


DRAFT 802.11n (20MHz) OFDM MODULATION

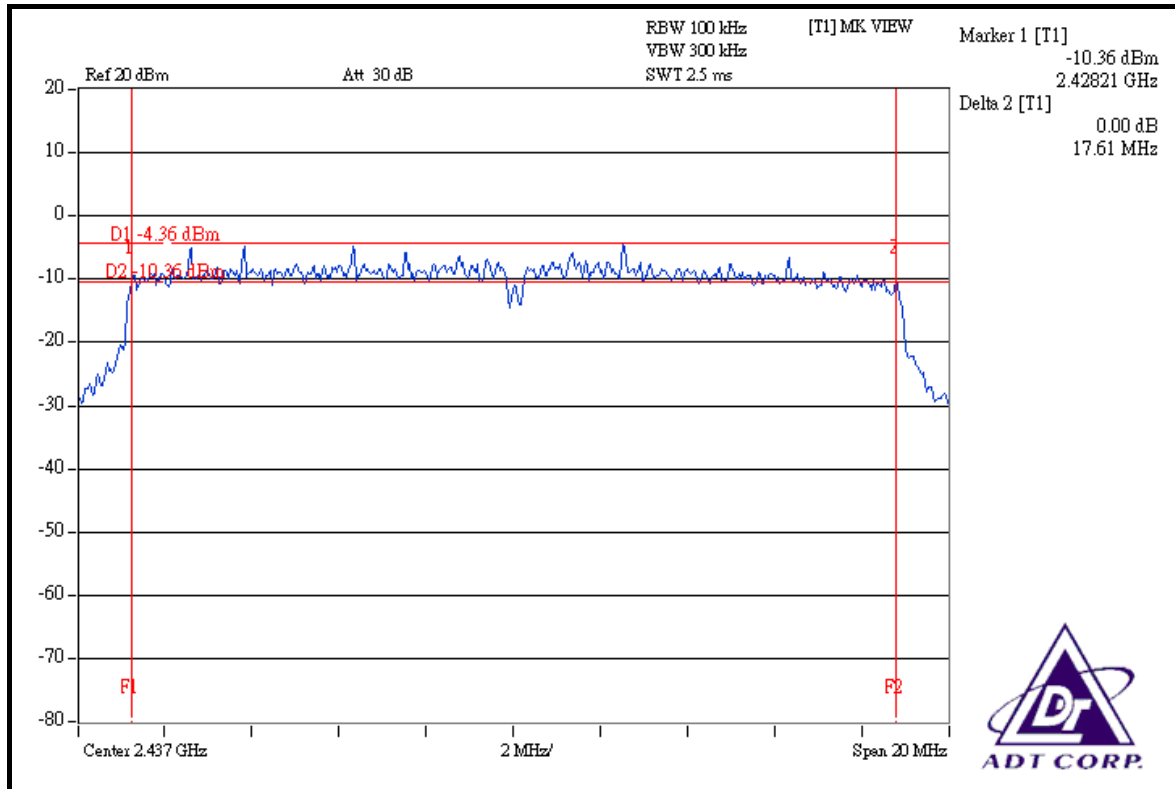
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27deg.C, 66%RH, 991hPa
TESTED BY	Dean Wang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	2412	16.95	16.97	17.66	0.5	PASS
6	2437	17.61	16.99	17.81	0.5	PASS
11	2462	16.99	17.66	17.68	0.5	PASS

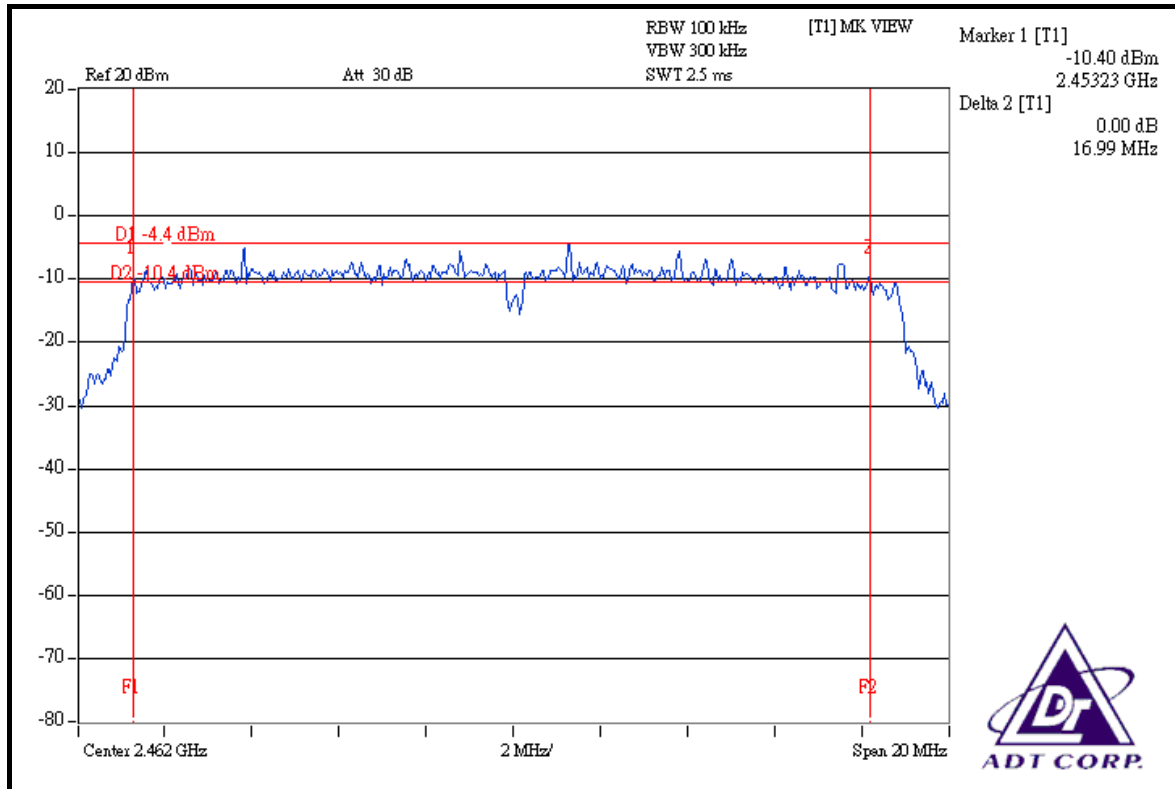
FOR CHAIN 0: CH 1



CH 6

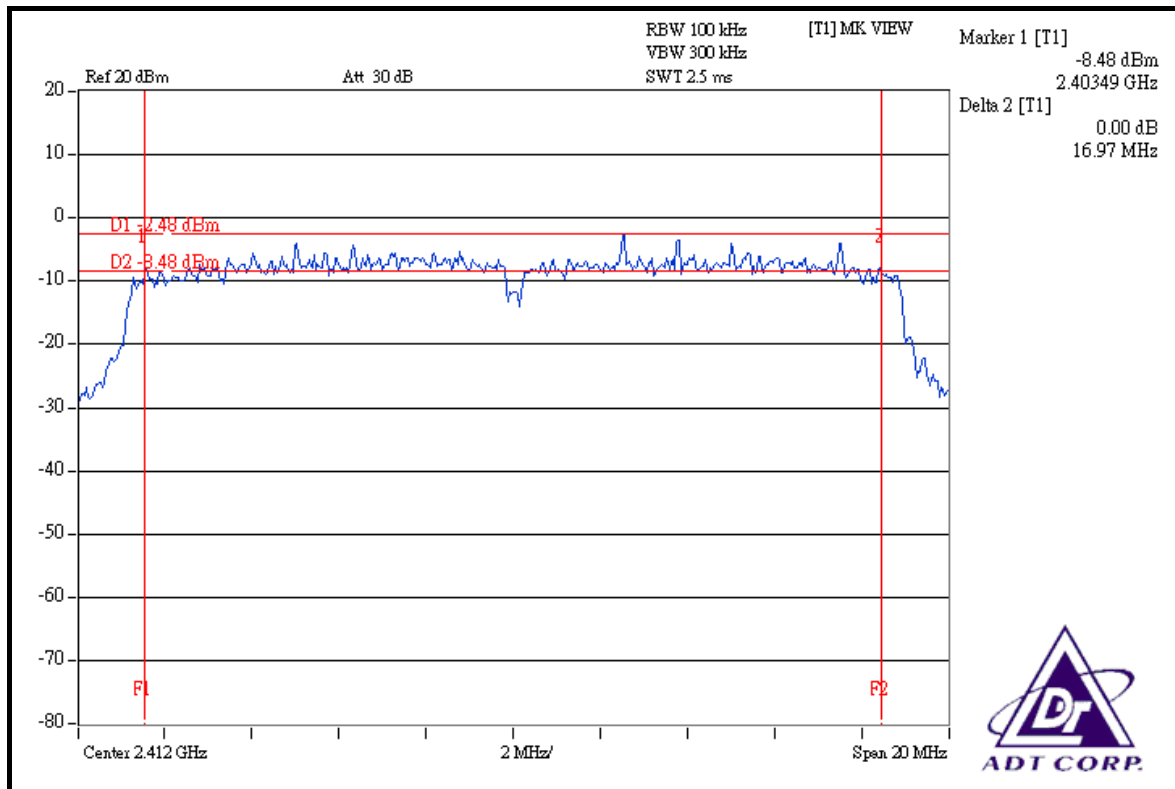


CH 11

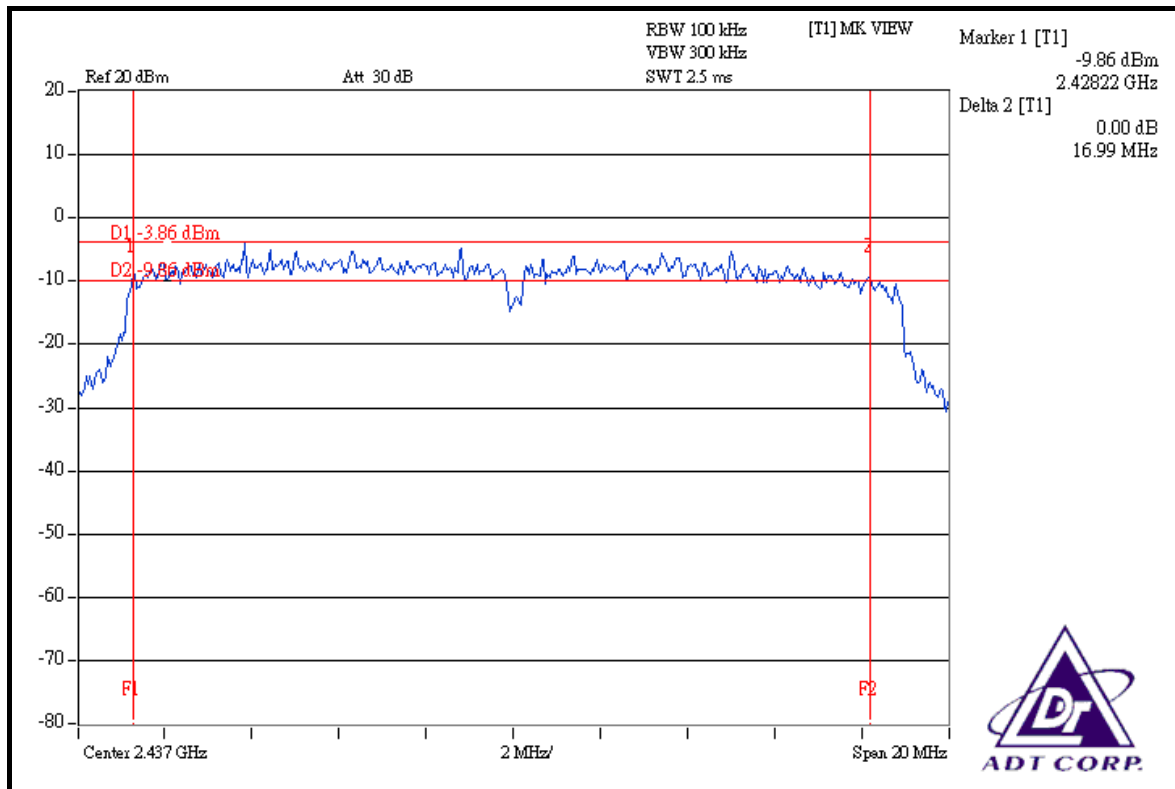




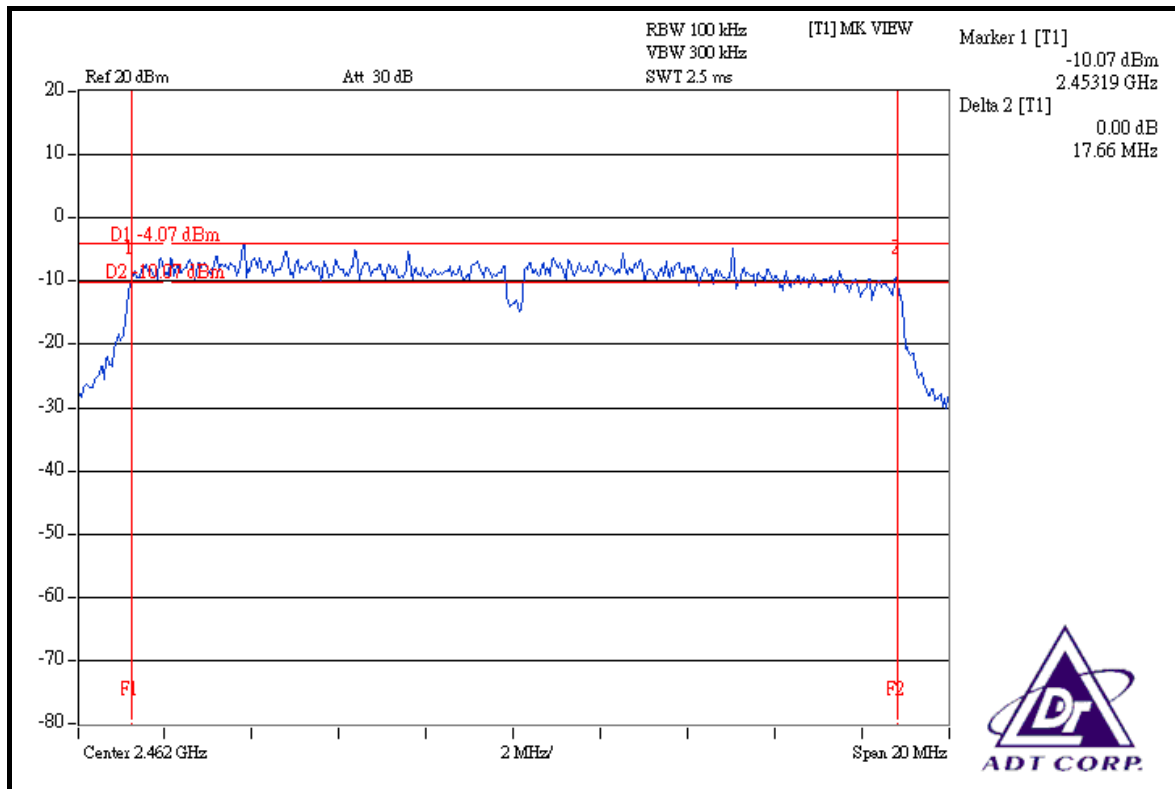
FOR CHAIN 1: CH 1



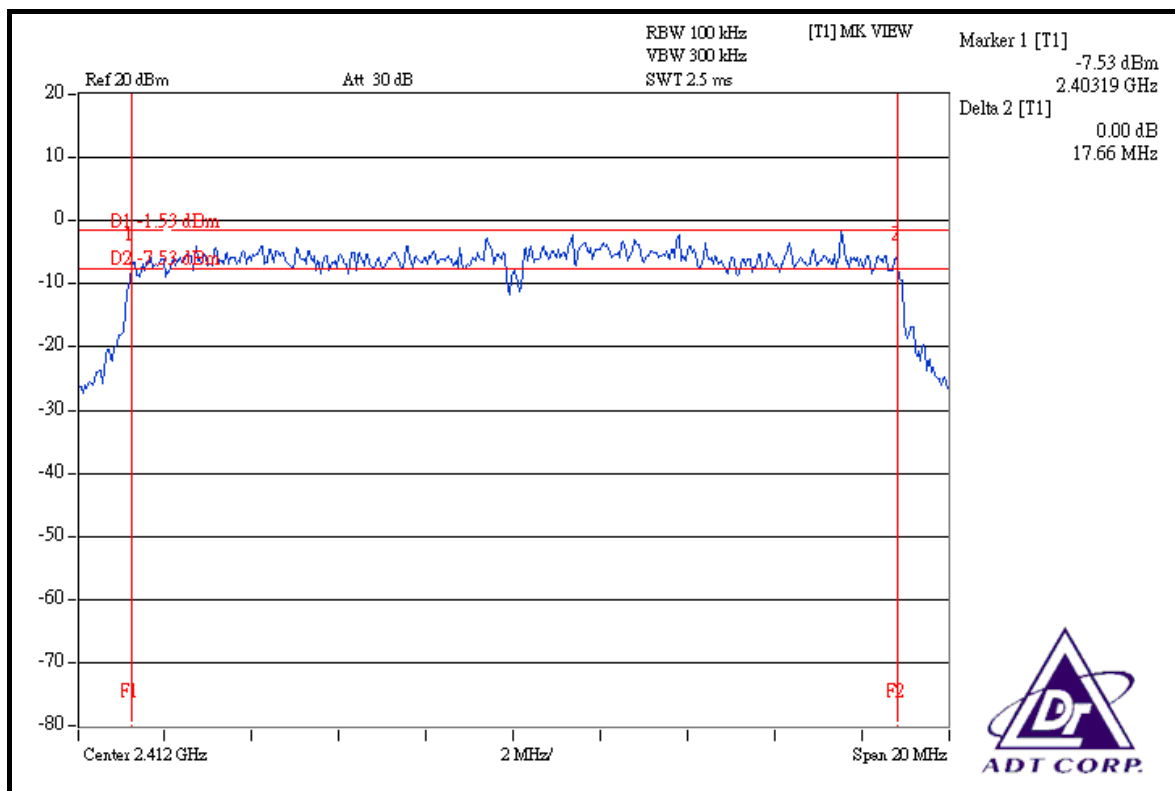
CH 6



CH 11

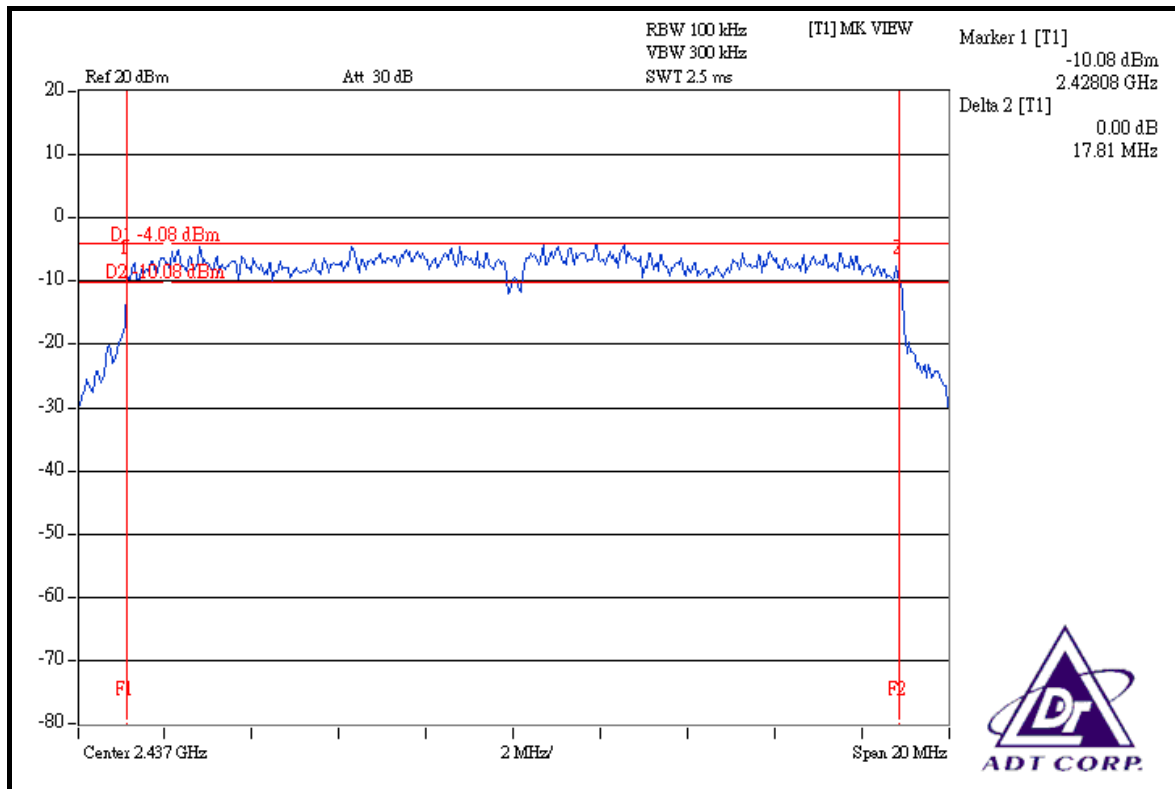


FOR CHAIN 2: CH 1

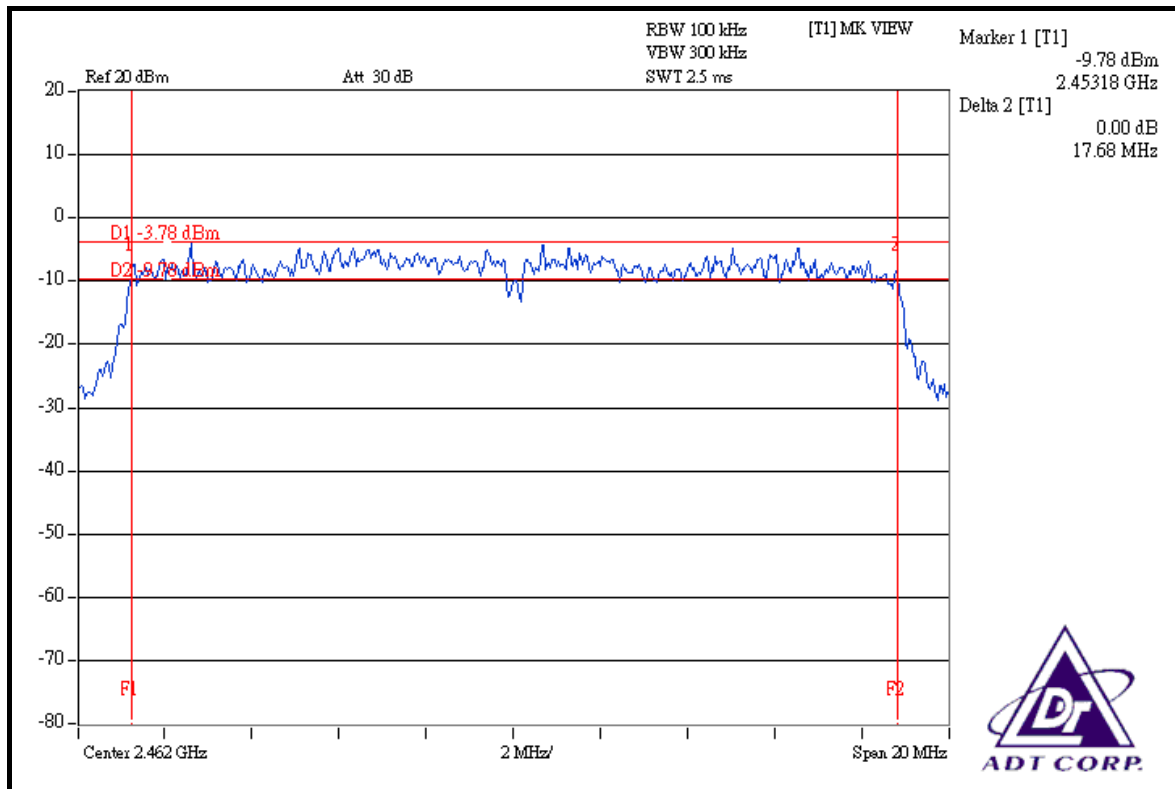




CH 6



CH 11



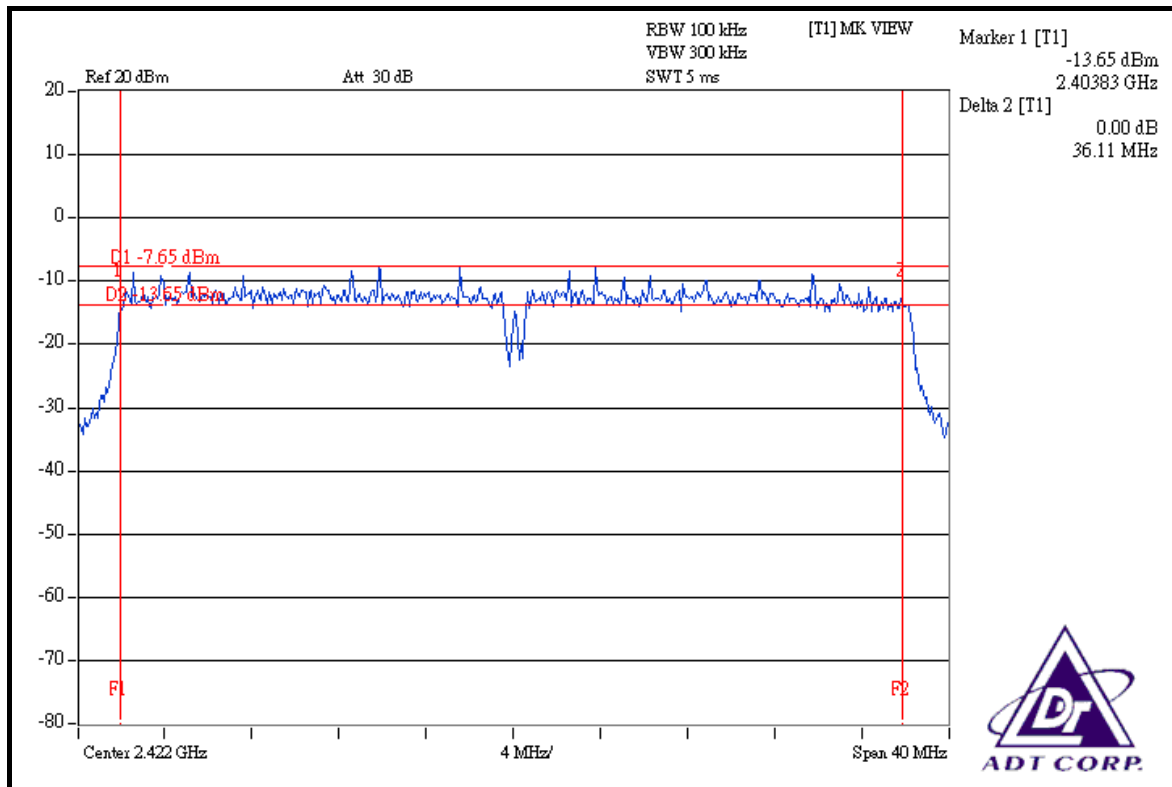


DRAFT 802.11n (40MHz) OFDM MODULATION

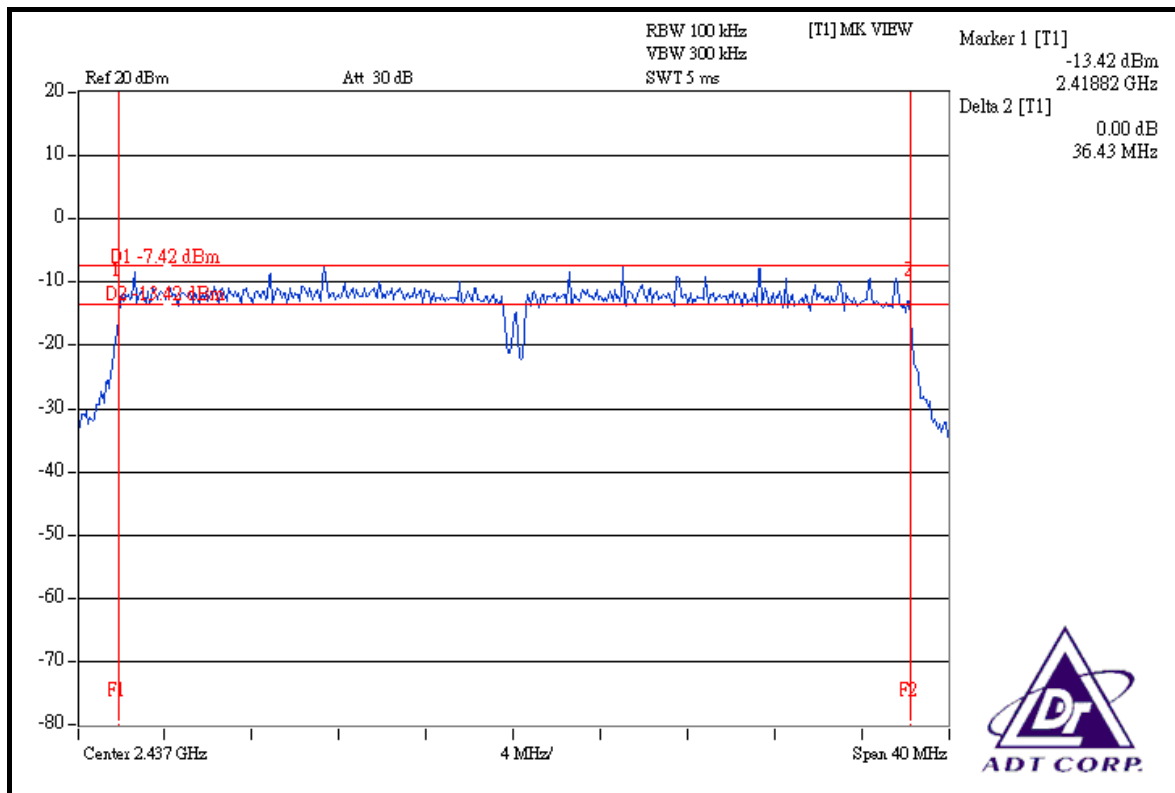
MODULATION TYPE	BPSK	TRANSFER RATE	15Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27deg.C, 66%RH, 991hPa
TESTED BY	Dean Wang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	2422	36.11	35.57	36.51	0.5	PASS
4	2437	36.43	35.94	36.47	0.5	PASS
7	2452	36.42	35.81	36.52	0.5	PASS

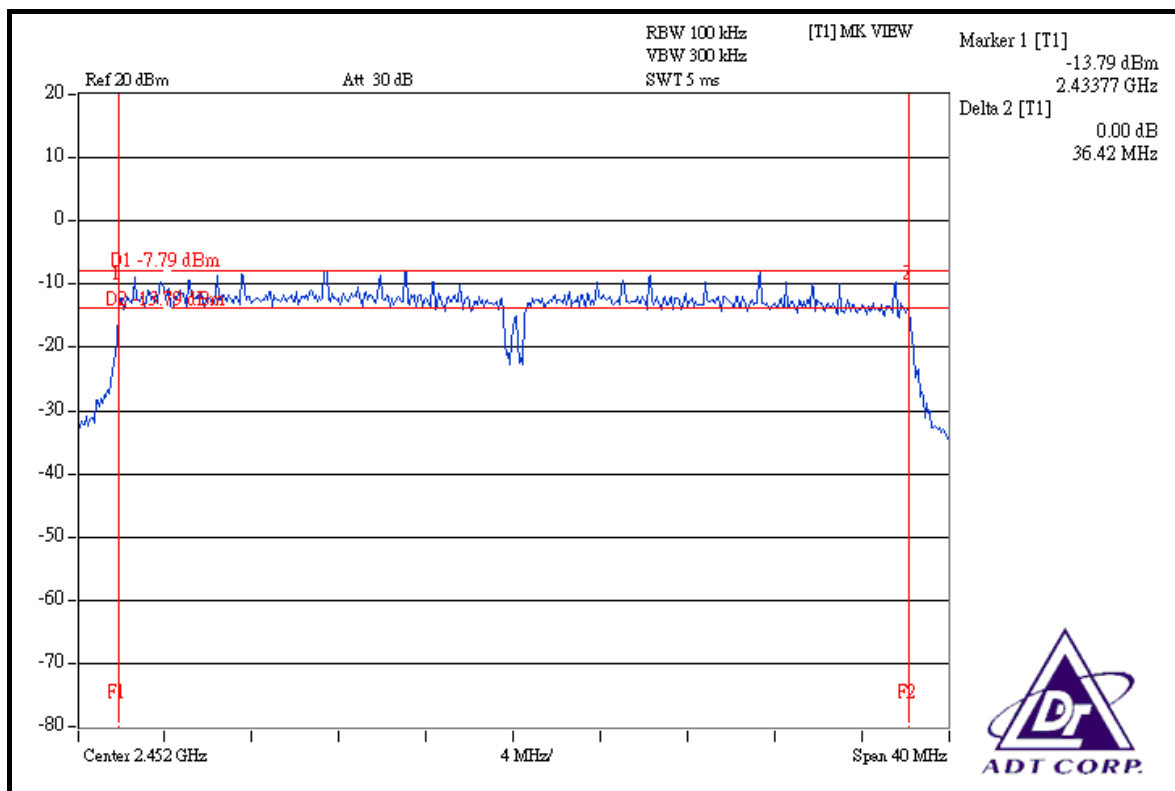
FOR CHAIN 0: CH 1



CH 4

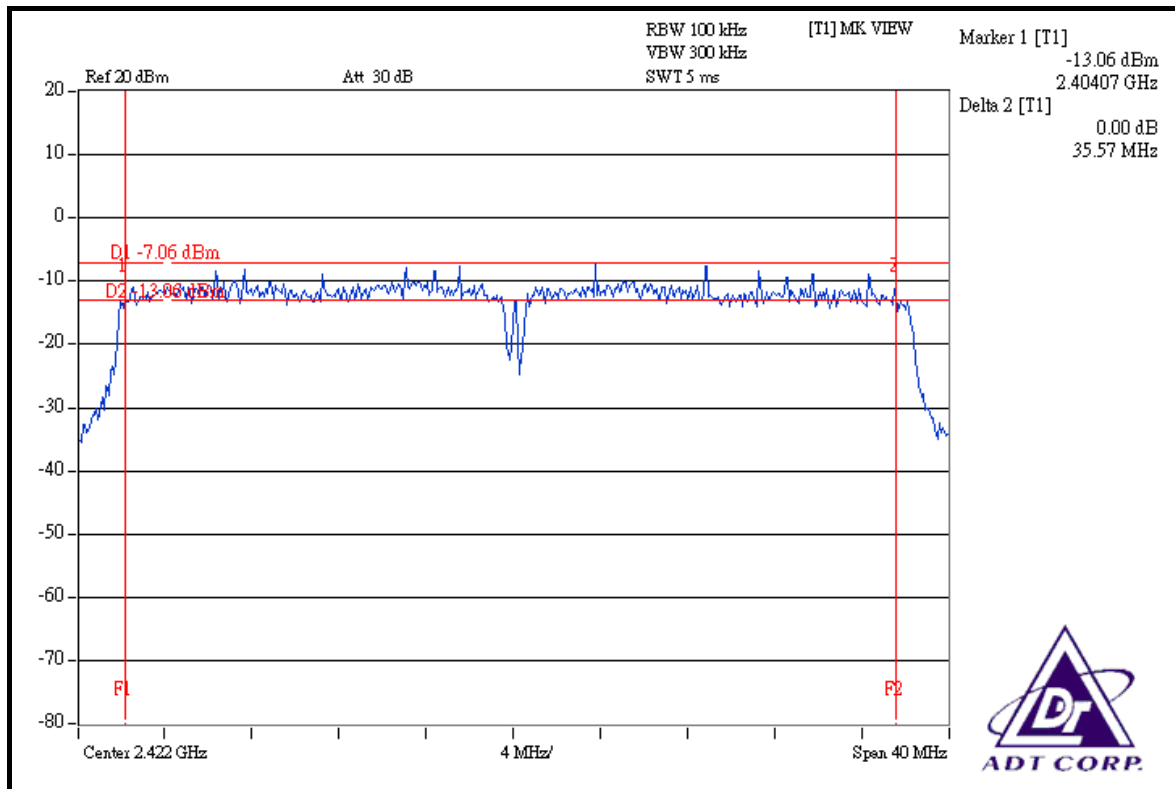


CH 7

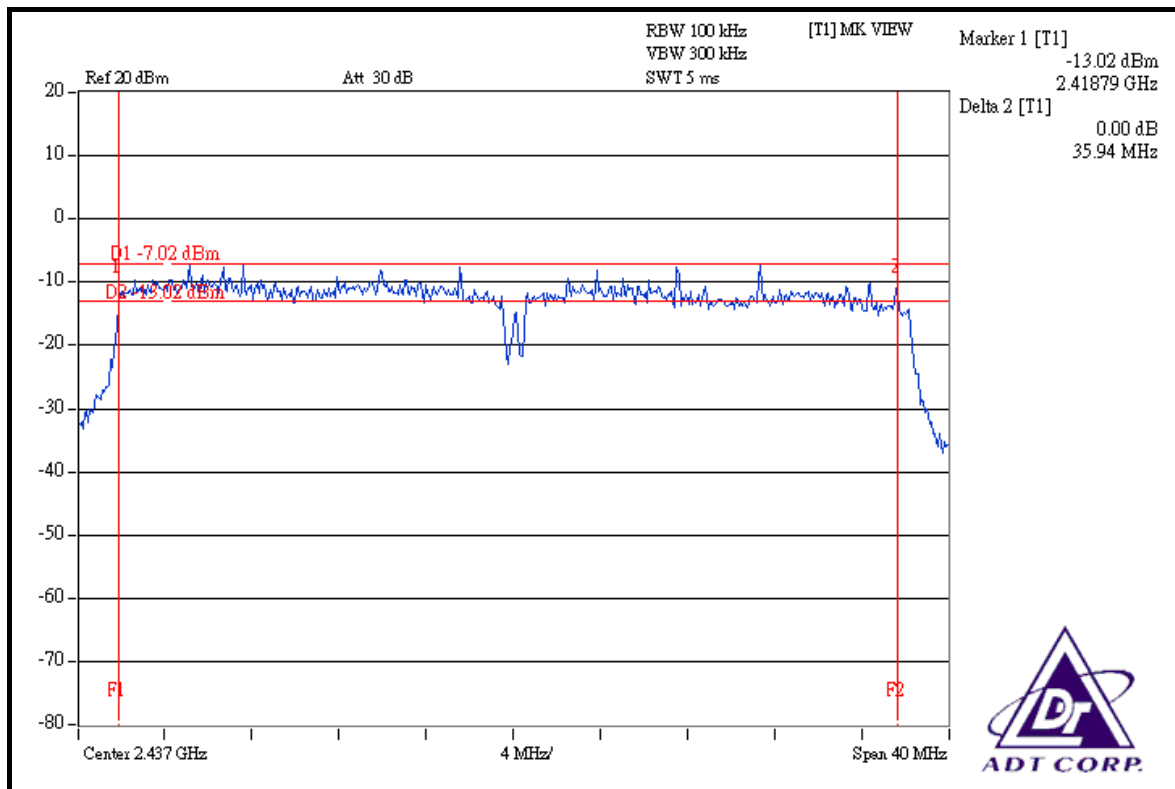




FOR CHAIN 1: CH 1

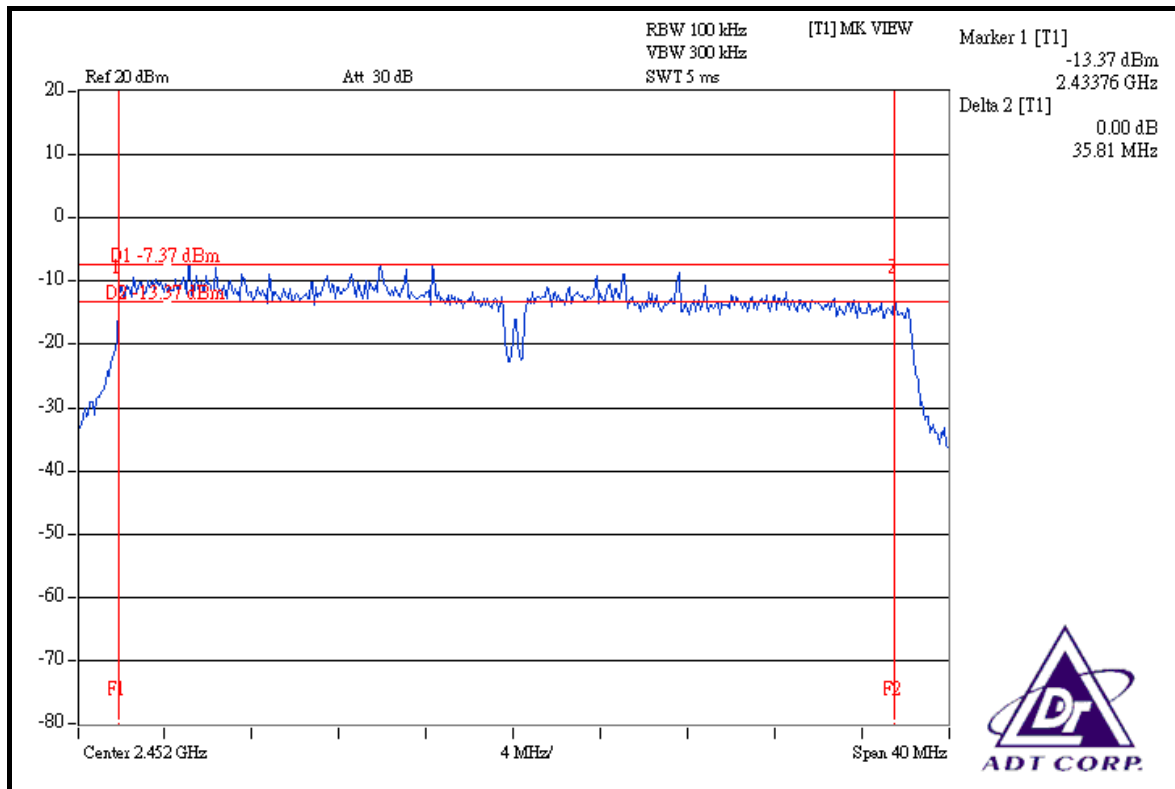


CH 4

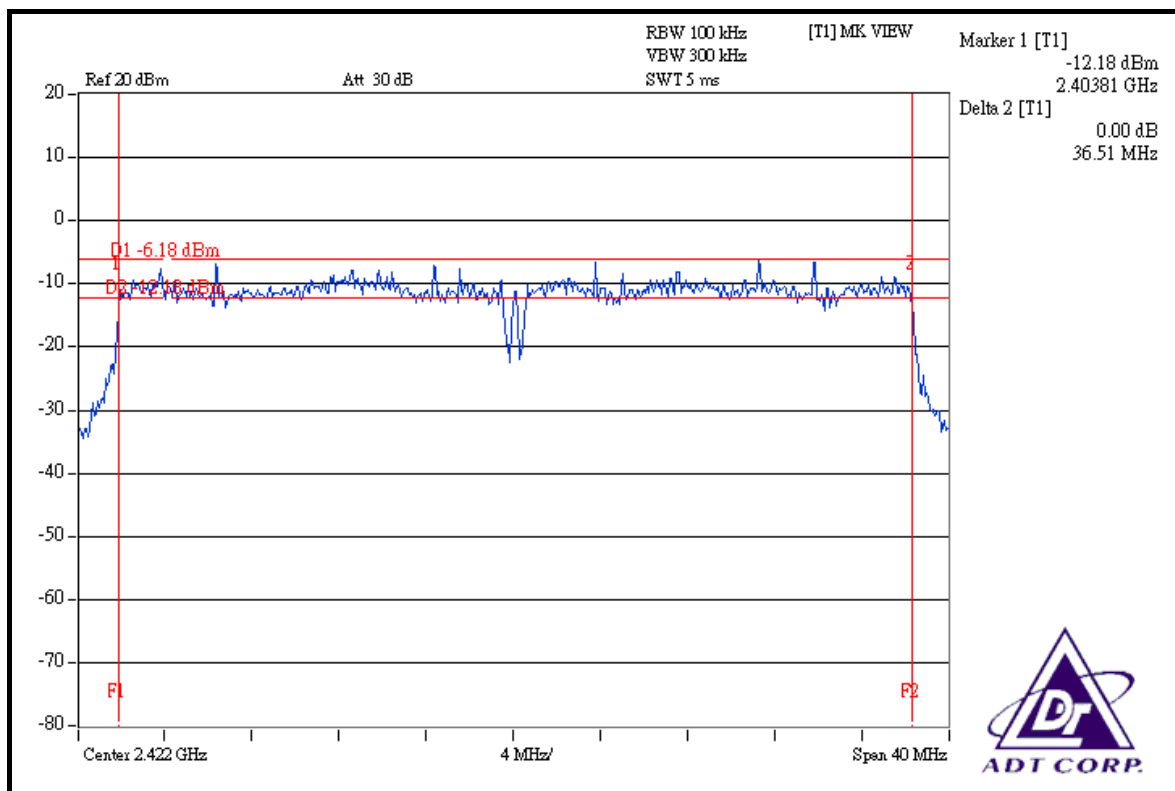




CH 7

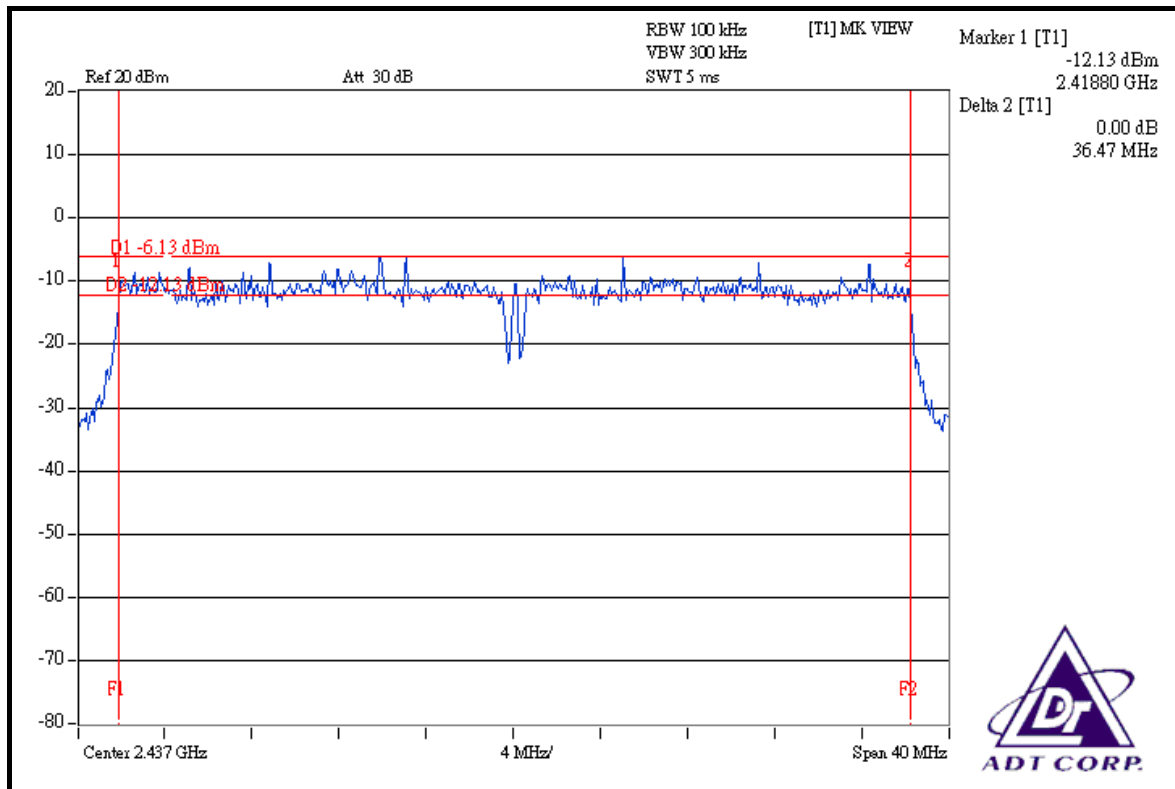


FOR CHAIN 2: CH 1

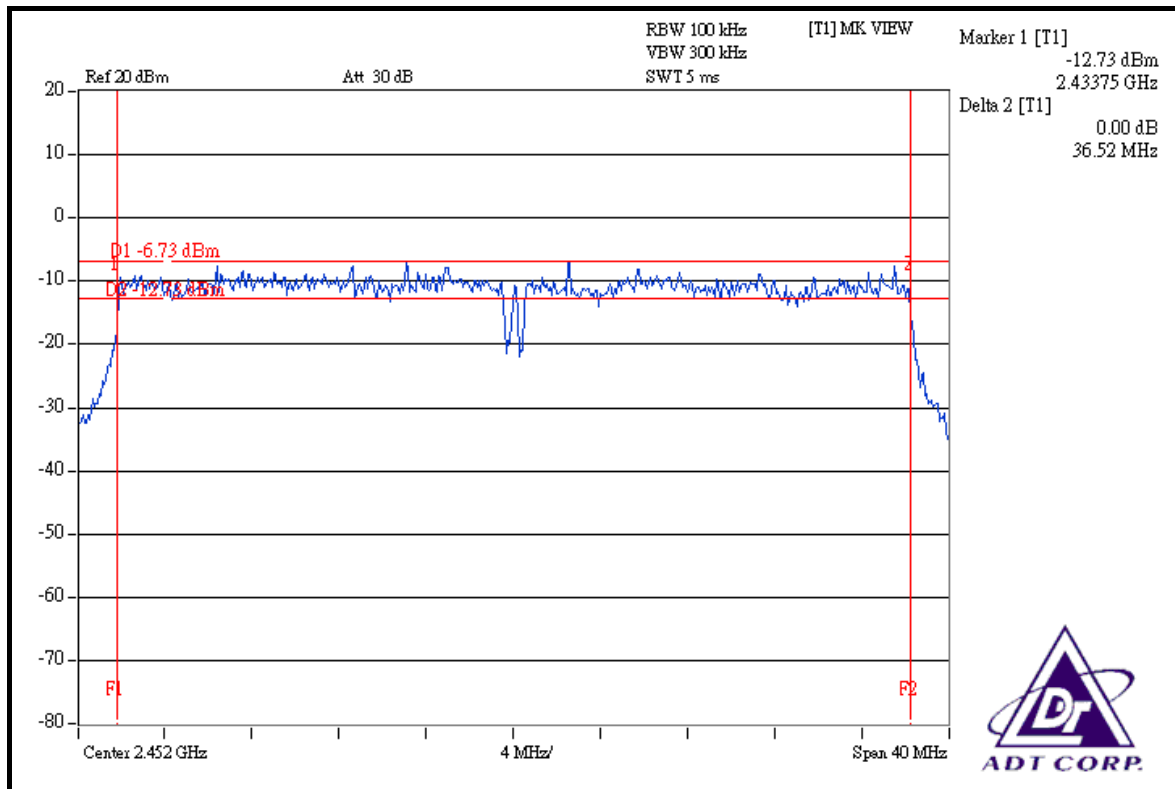




CH 6



CH 11





4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

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

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

4.4.3 TEST PROCEDURES

- a. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
- b. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
- c. 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	27deg.C, 66%RH, 991hPa
TESTED BY	Dean Wang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	64.121	18.07	30	PASS
6	2437	65.163	18.14	30	PASS
11	2462	64.565	18.10	30	PASS

802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 65 %RH, 991hPa
TESTED BY	Dean Wang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	51.404	17.11	30	PASS
6	2437	50.816	17.06	30	PASS
11	2462	51.761	17.14	30	PASS



DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 65 %RH, 991hPa
TESTED BY	Dean Wang		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	12.08	13.63	14.60	68.051	18.33	30	PASS
6	2437	12.63	12.06	12.10	50.611	17.04	30	PASS
11	2462	12.62	12.10	12.09	50.680	17.05	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	15Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27deg.C, 66%RH, 991hPa
TESTED BY	Dean Wang		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2422	11.12	11.14	11.09	38.797	15.89	30	PASS
4	2437	11.02	11.12	11.06	38.354	15.84	30	PASS
7	2452	11.06	10.61	10.63	35.834	15.54	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

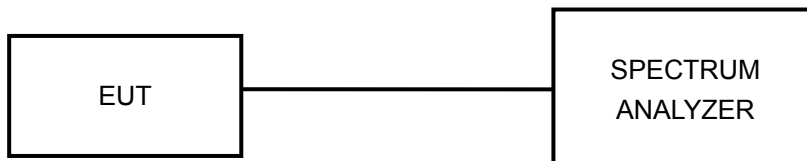
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

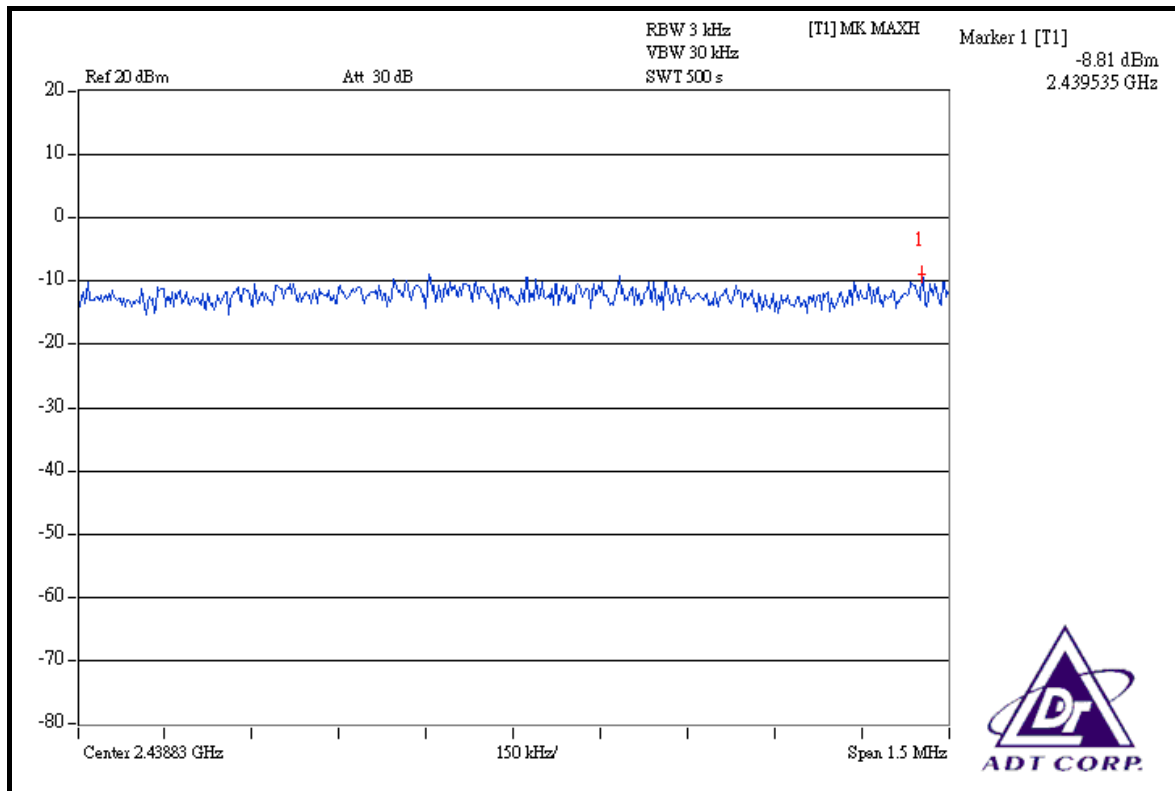


4.5.6 EUT OPERATING CONDITION

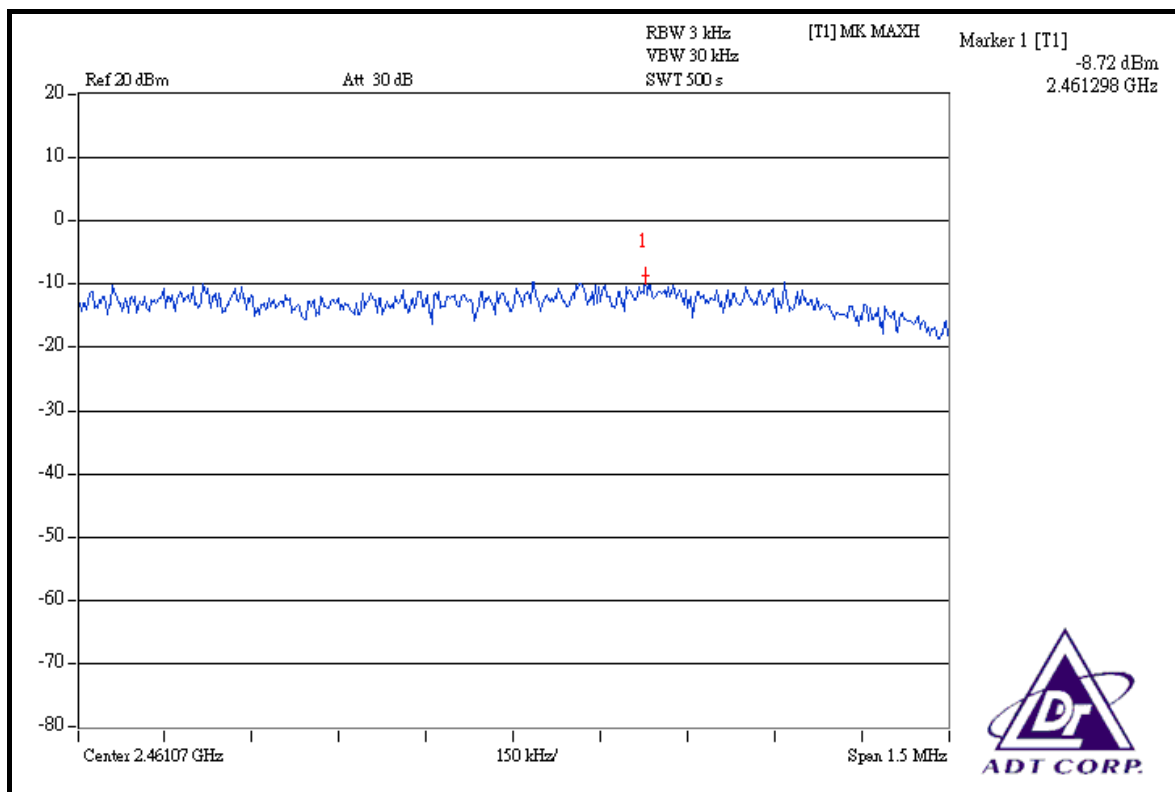
Same as Item 4.3.6



CH 6



CH 11



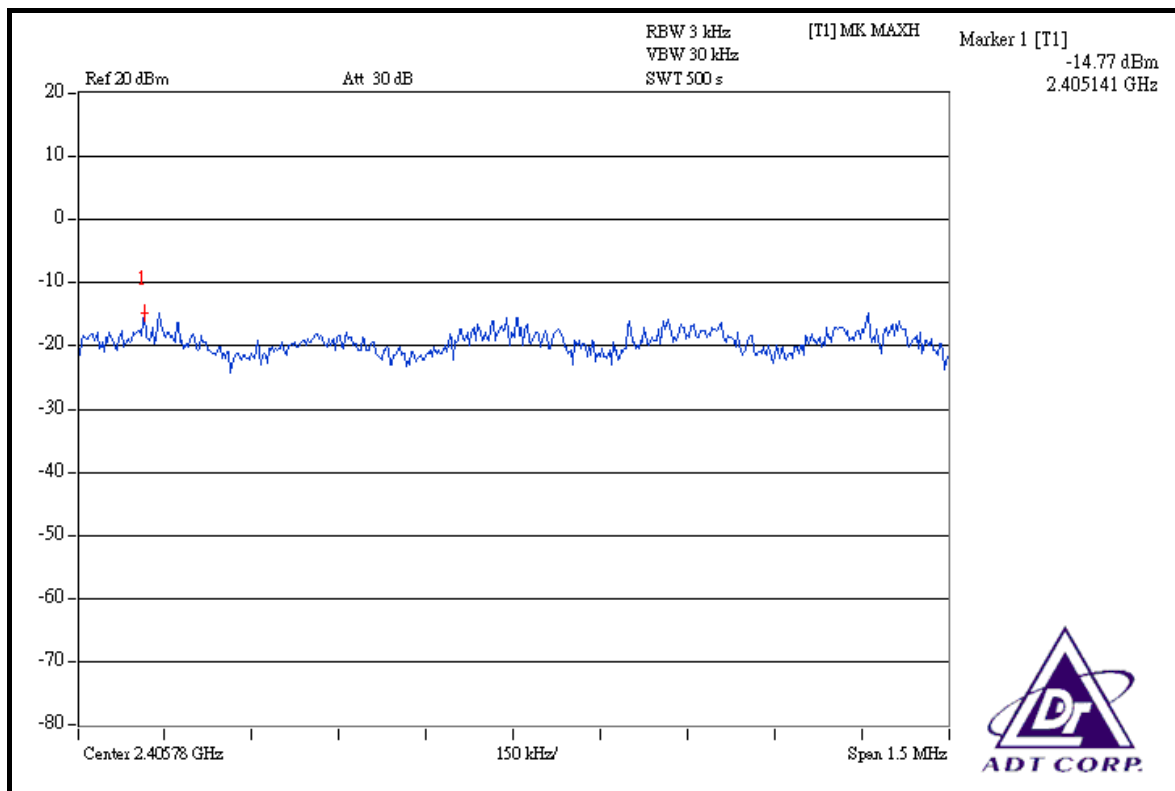


802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27deg.C, 66%RH, 991hPa
TESTED BY	Long Chen		

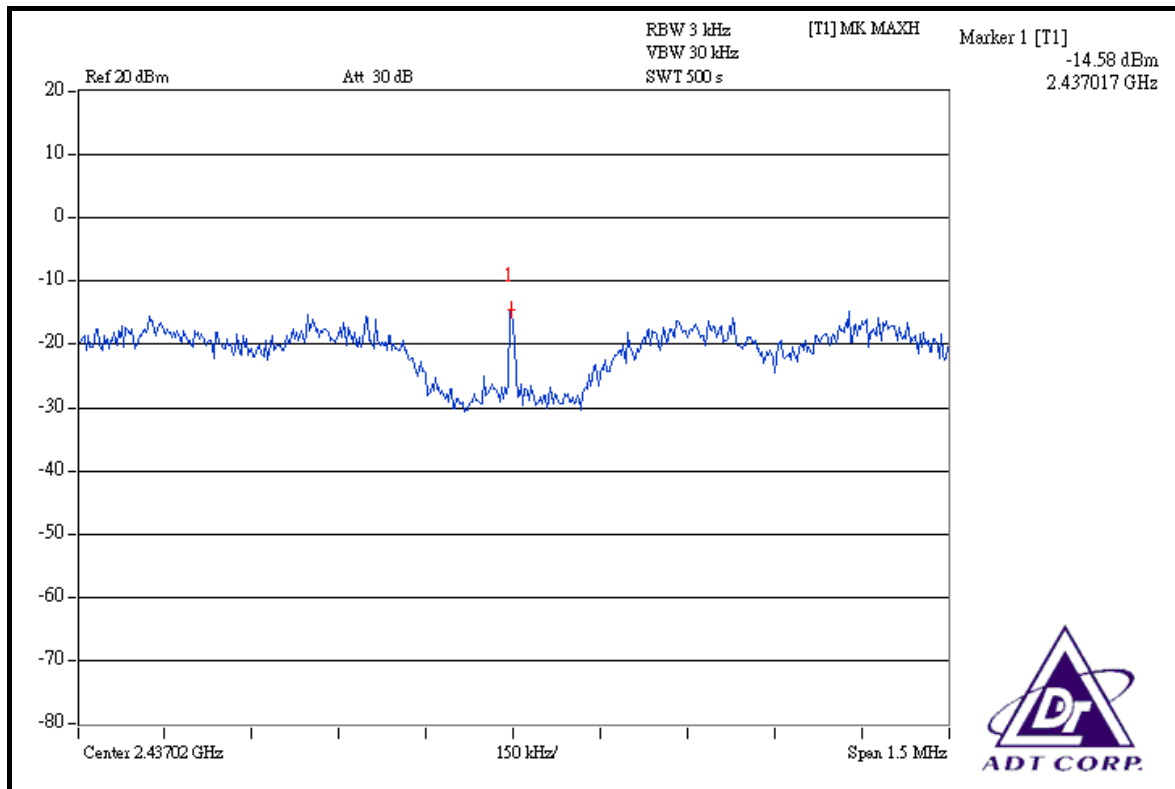
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-14.77	8	PASS
6	2437	-14.58	8	PASS
11	2462	-14.53	8	PASS

CH 1

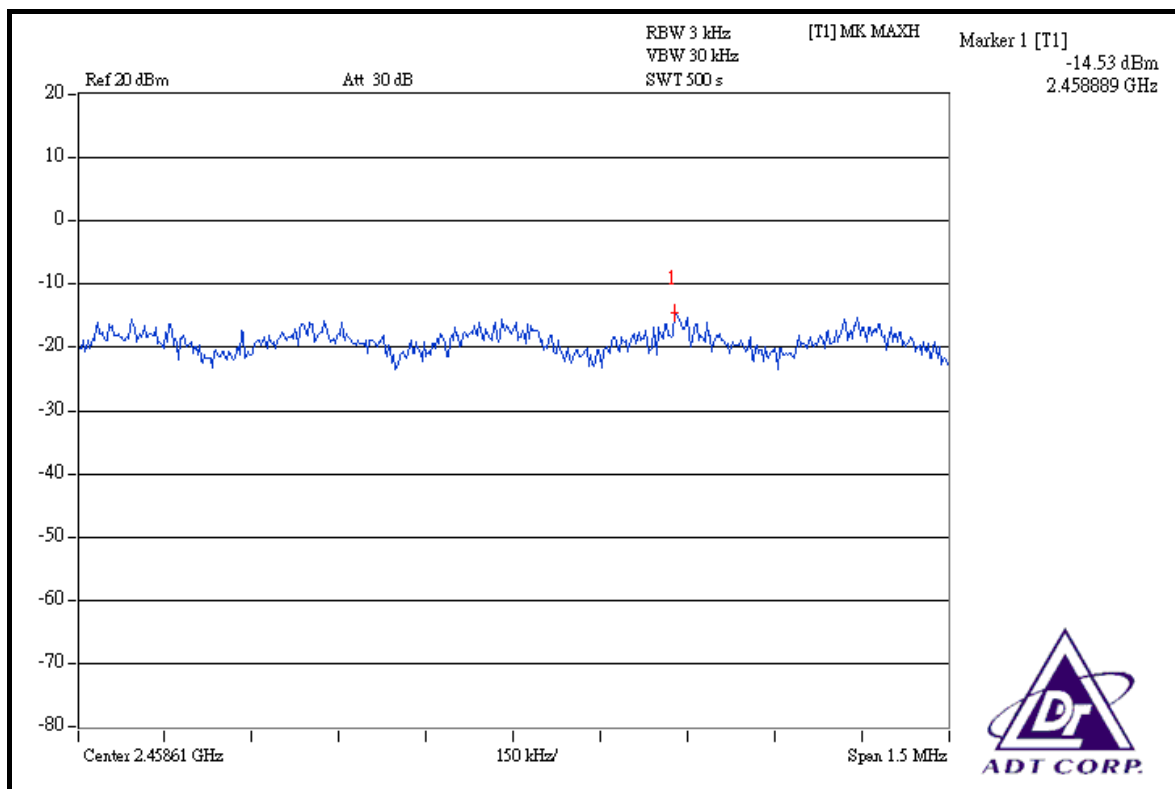




CH 6



CH 11



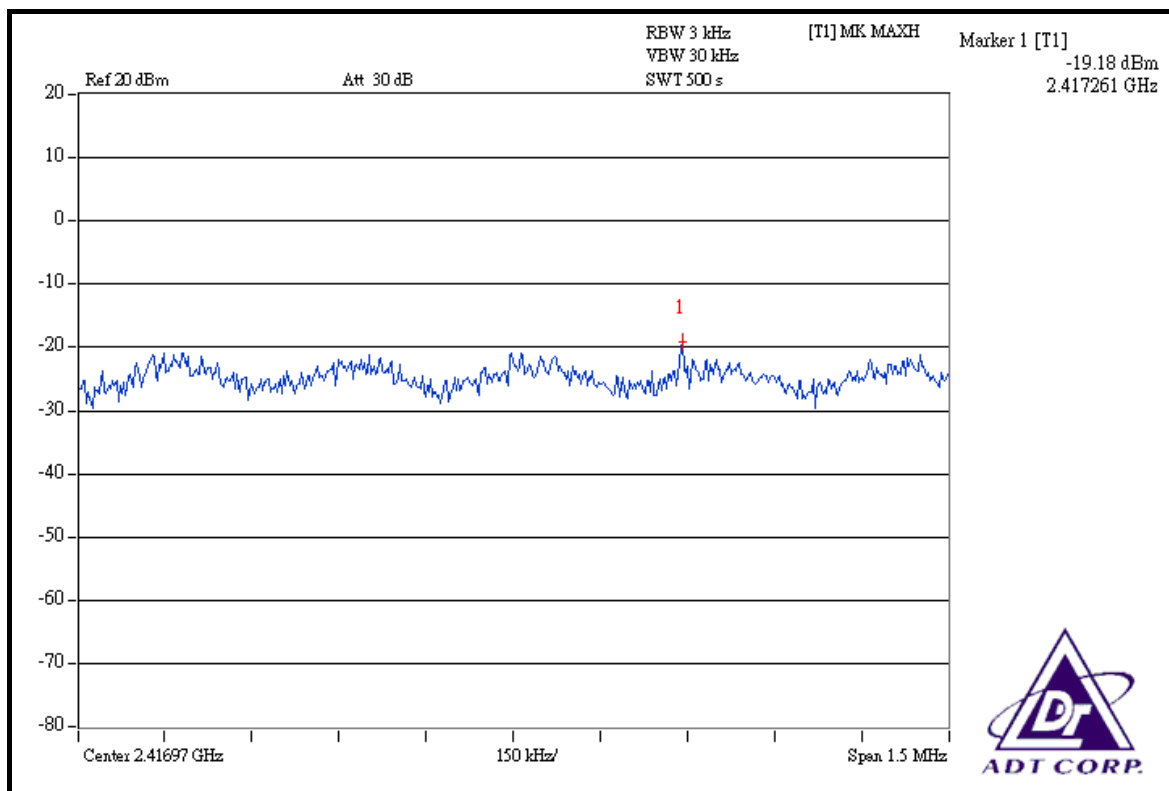


DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27deg.C, 66%RH, 991hPa
TESTED BY	Dean Wang		

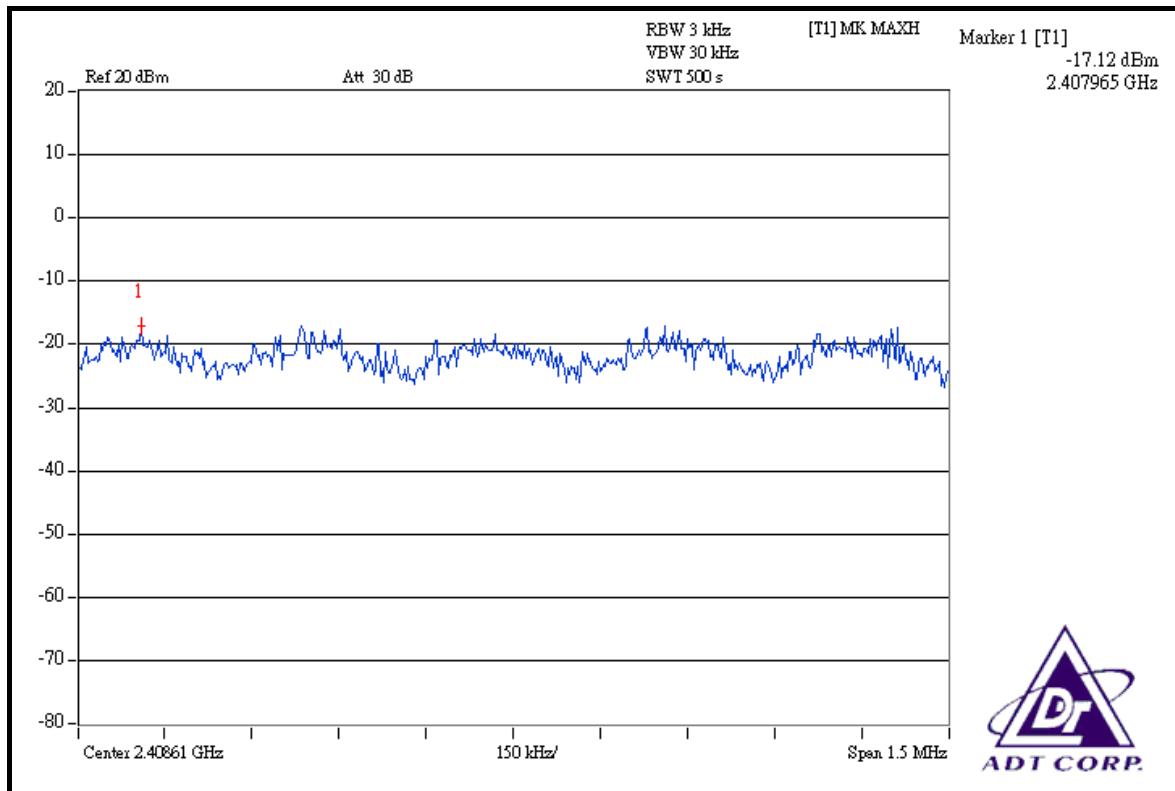
CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	-19.18	-17.12	-13.09	0.081	-10.94	8	PASS
6	2437	-18.48	-18.81	-15.47	0.056	-12.54	8	PASS
11	2462	-18.60	-18.44	-15.43	0.057	-12.46	8	PASS

FOR CHAIN 0: CH 1

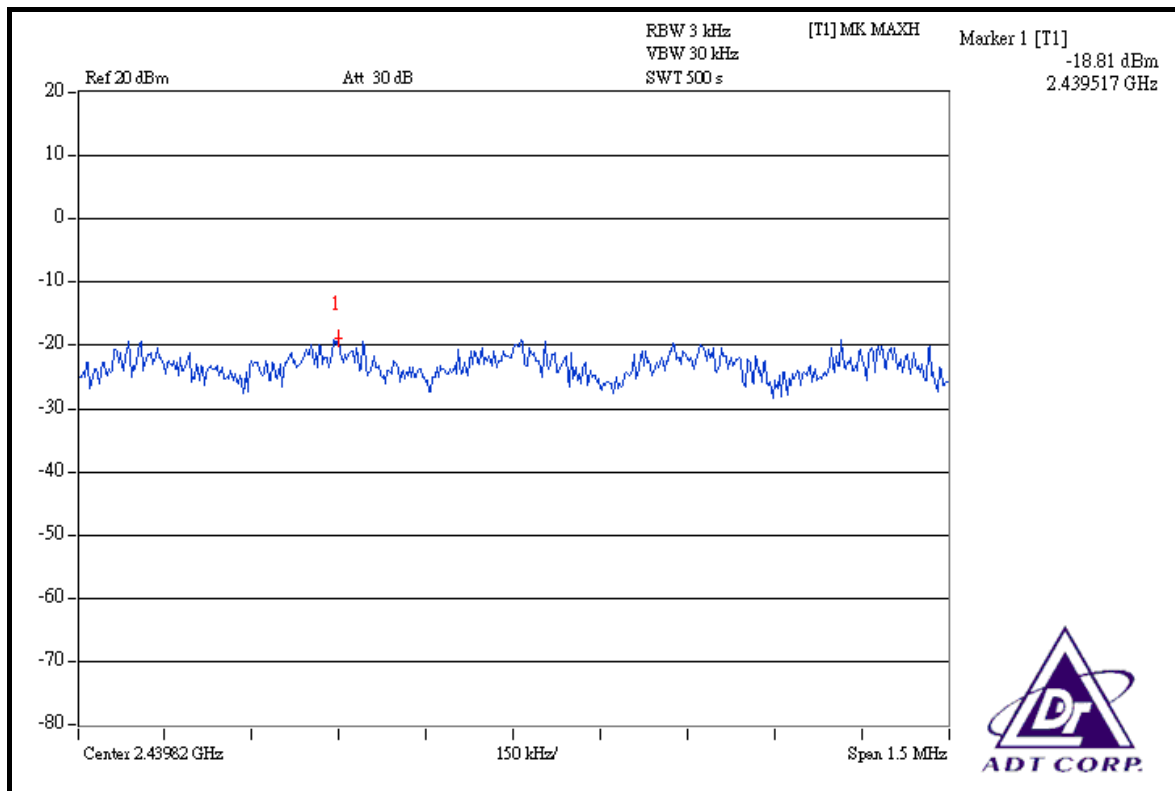




FOR CHAIN 1: CH 1

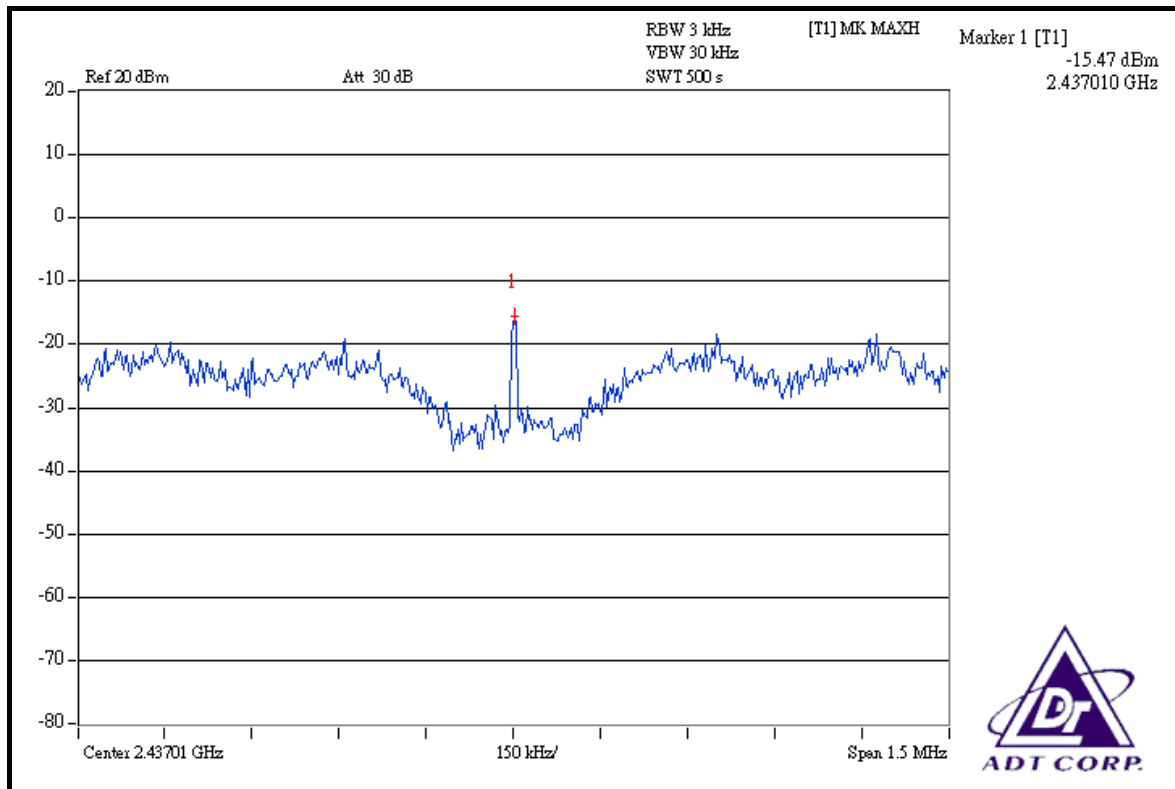


CH 6

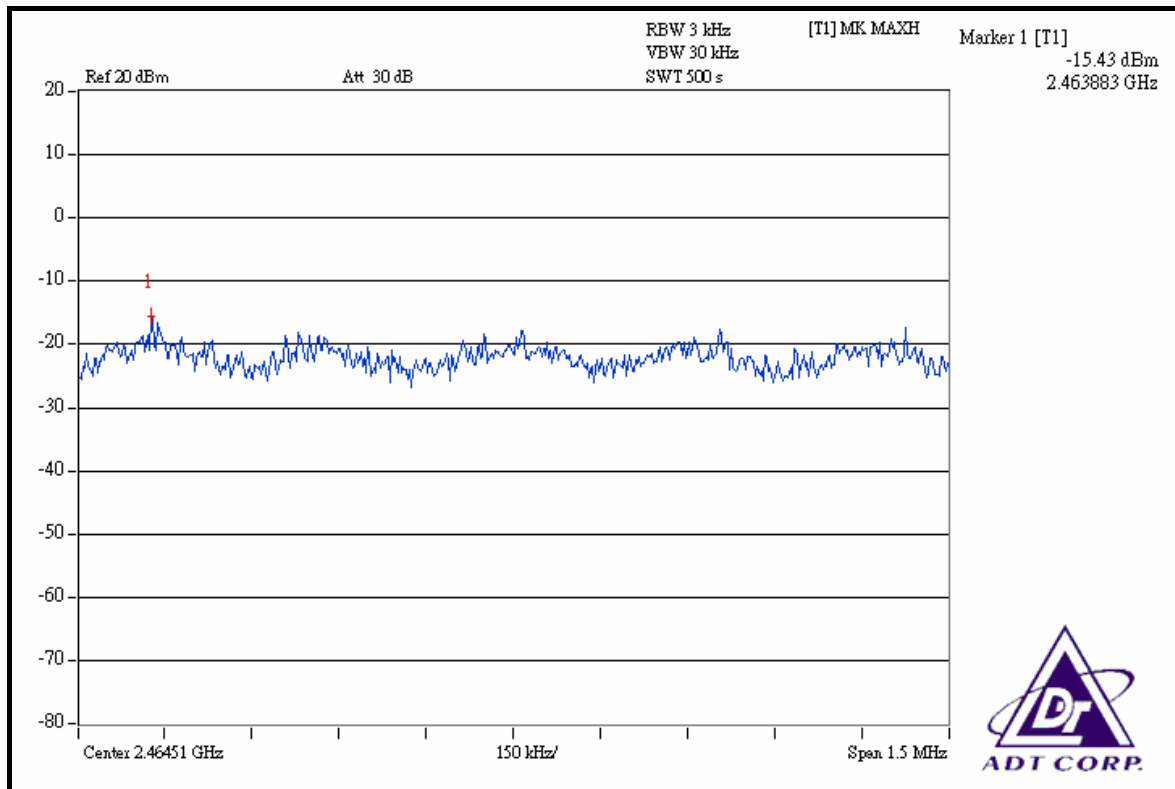




CH 6



CH 11



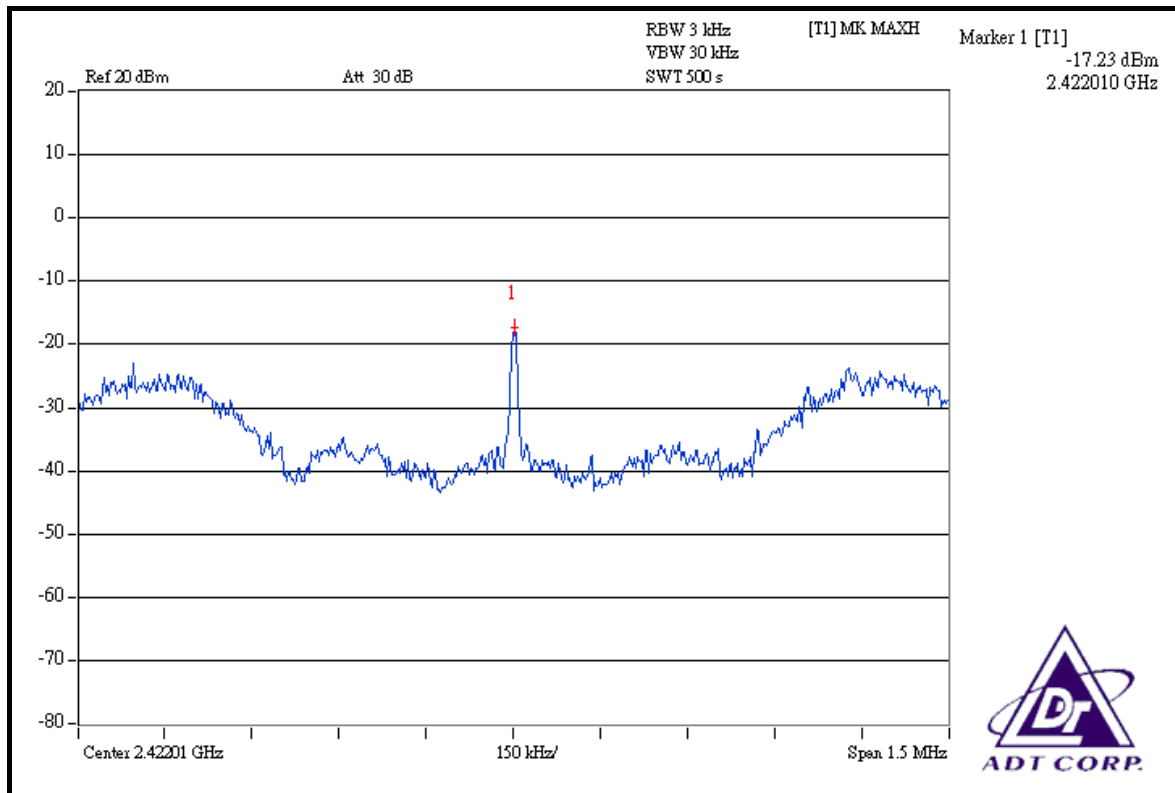


DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	15Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 65 %RH, 991hPa
TESTED BY	Dean Wang		

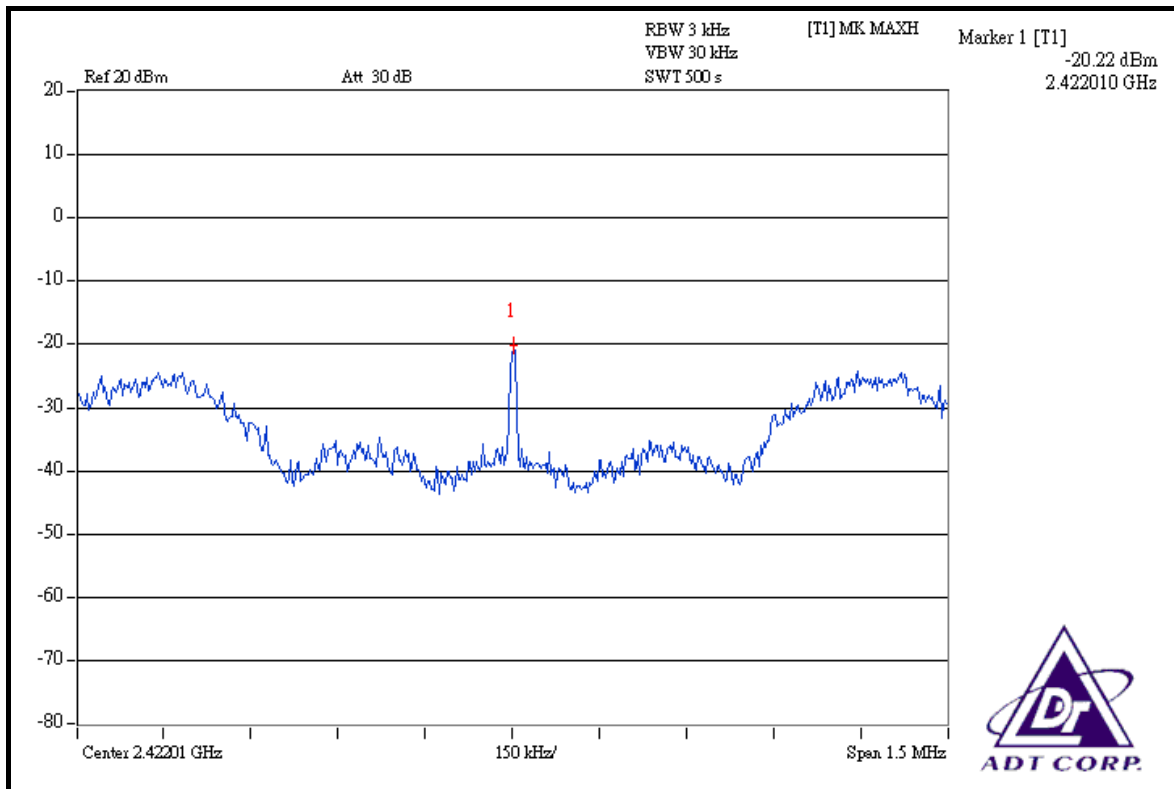
CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2422	-17.23	-20.22	-12.97	0.079	-11.03	8	PASS
4	2437	-16.99	-20.00	-12.84	0.082	-10.86	8	PASS
7	2452	-17.22	-20.57	-13.27	0.075	-11.26	8	PASS

FOR CHAIN 0: CH 1

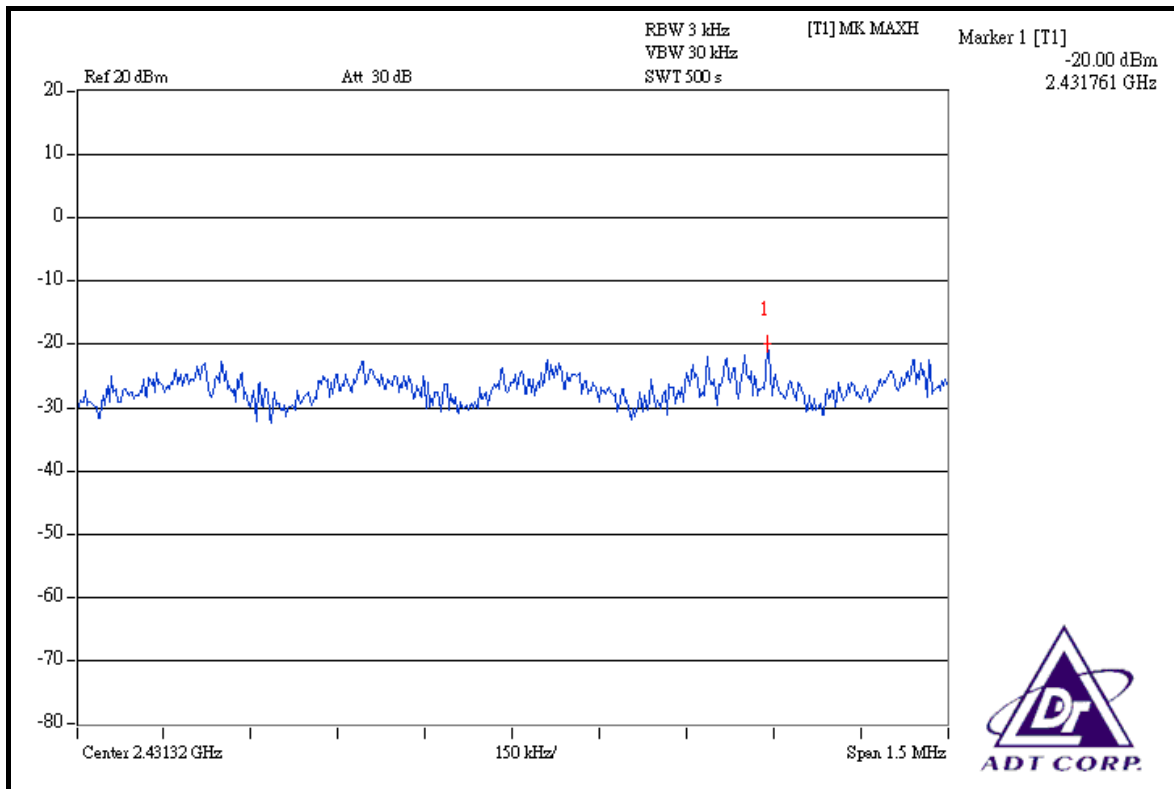




FOR CHAIN 1: CH 1

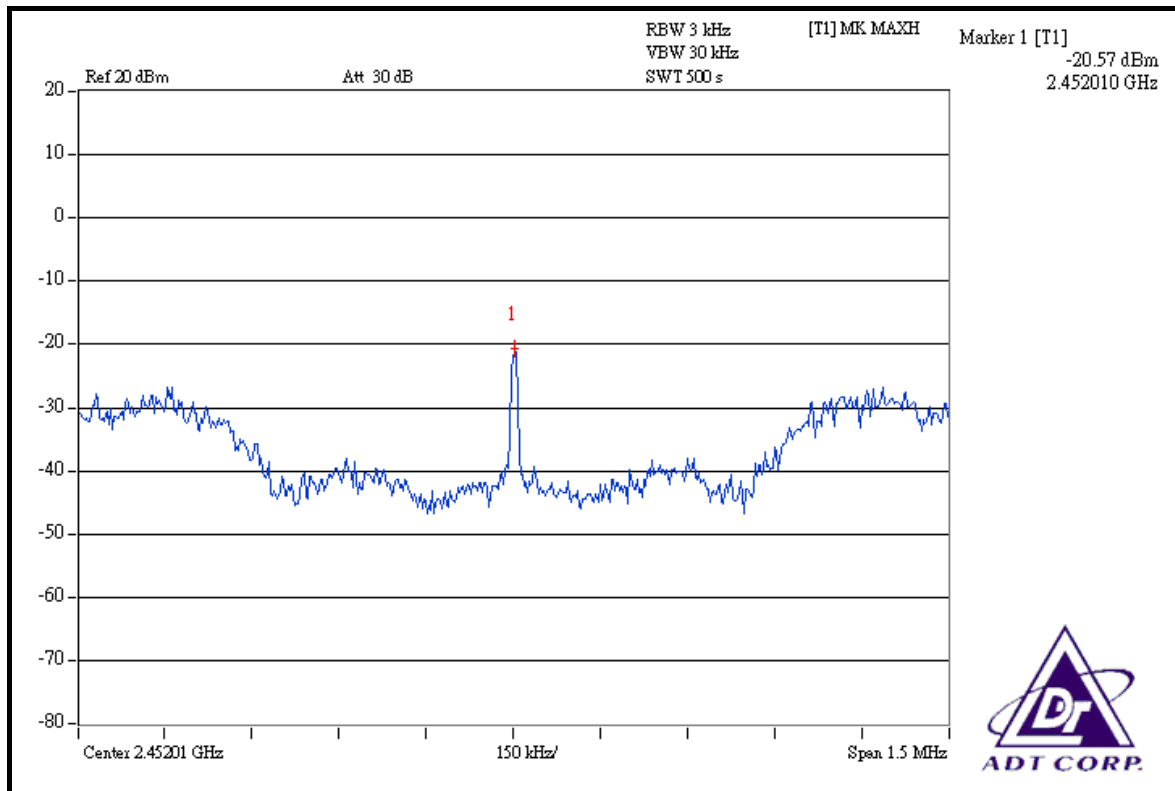


CH 4

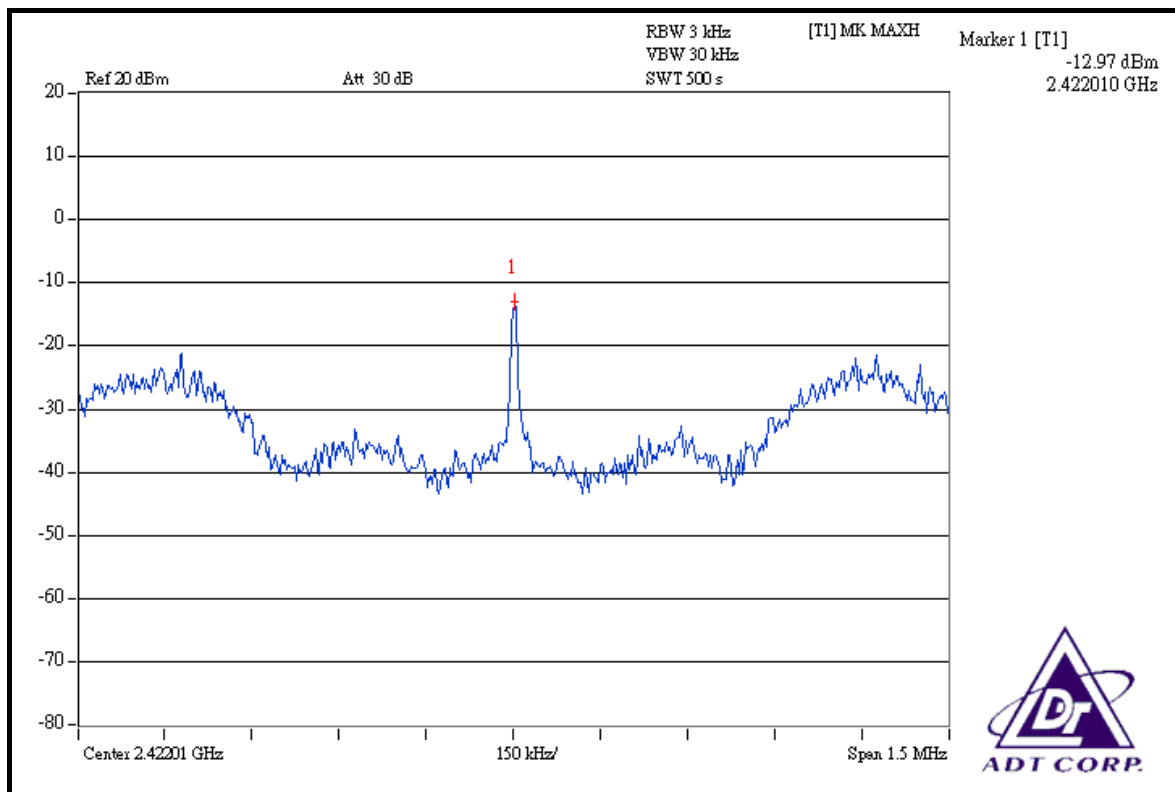




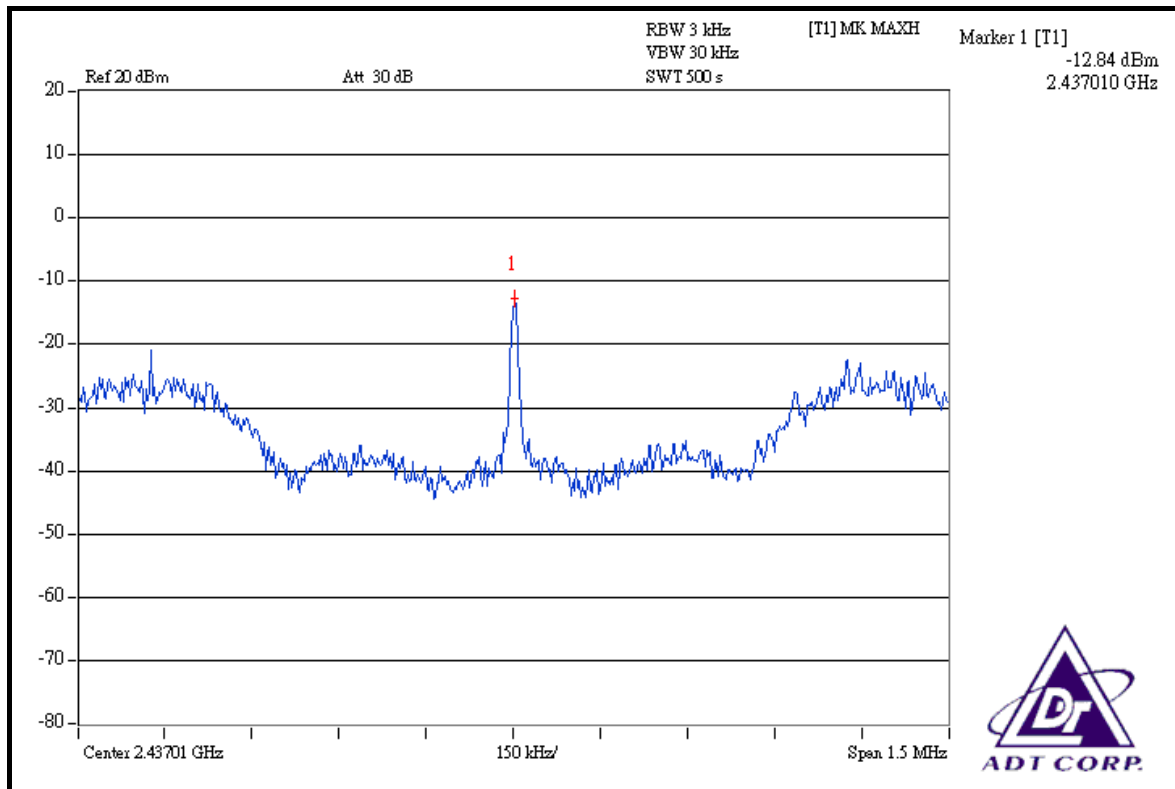
CH 7



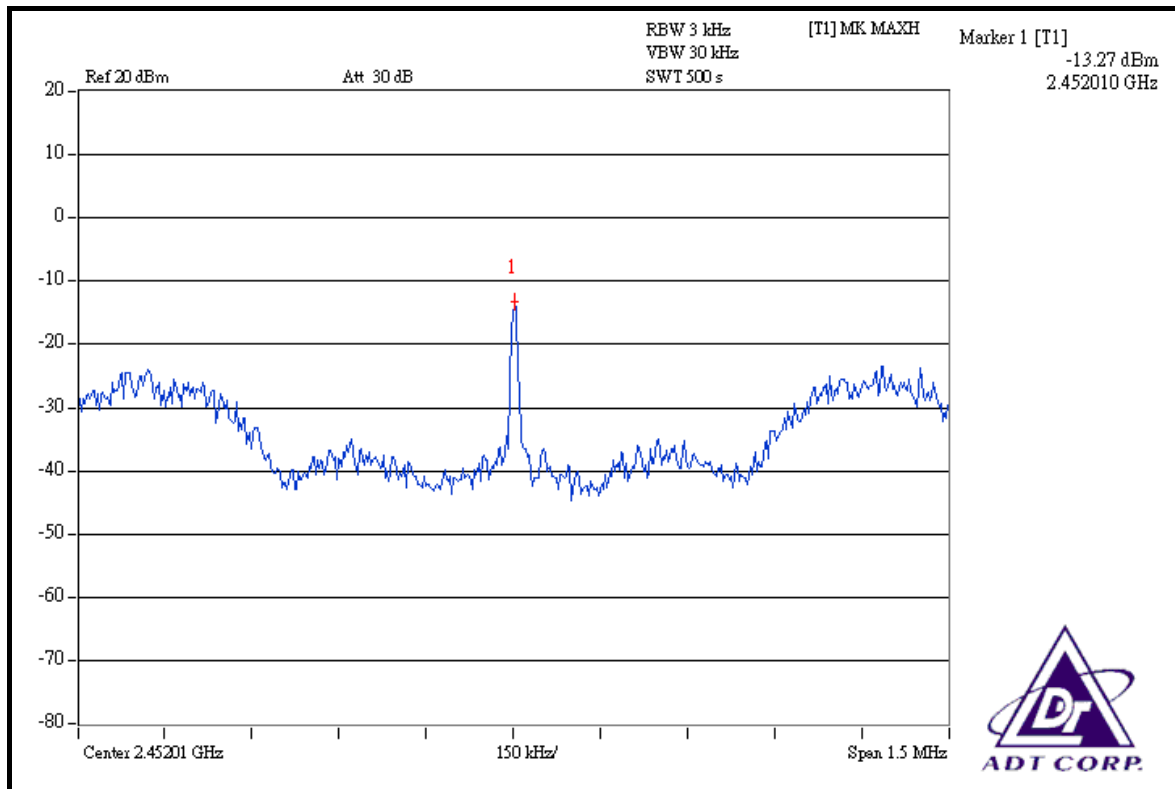
FOR CHAIN 2: CH 1



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
FOR CONDUCTED MEASUREMENT:			
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008
FOR RADIATED MEASUREMENT:			
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	May. 27, 2009
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 03, 2009
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 06, 2009
Preamplifier Agilent	8449B	3008A01910	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10638	Dec. 19, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274039/223650	Nov. 07, 2008
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA

NOTE: 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

FOR CONDUCTED MEASUREMENT:

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

The spectrum plots (Peak RBW = 100kHz, VBW = 300kHz) are attached on the following pages.

FOR RADIATED MEASUREMENT:

- 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 and 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW = 100kHz, VBW = 300kHz) 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).

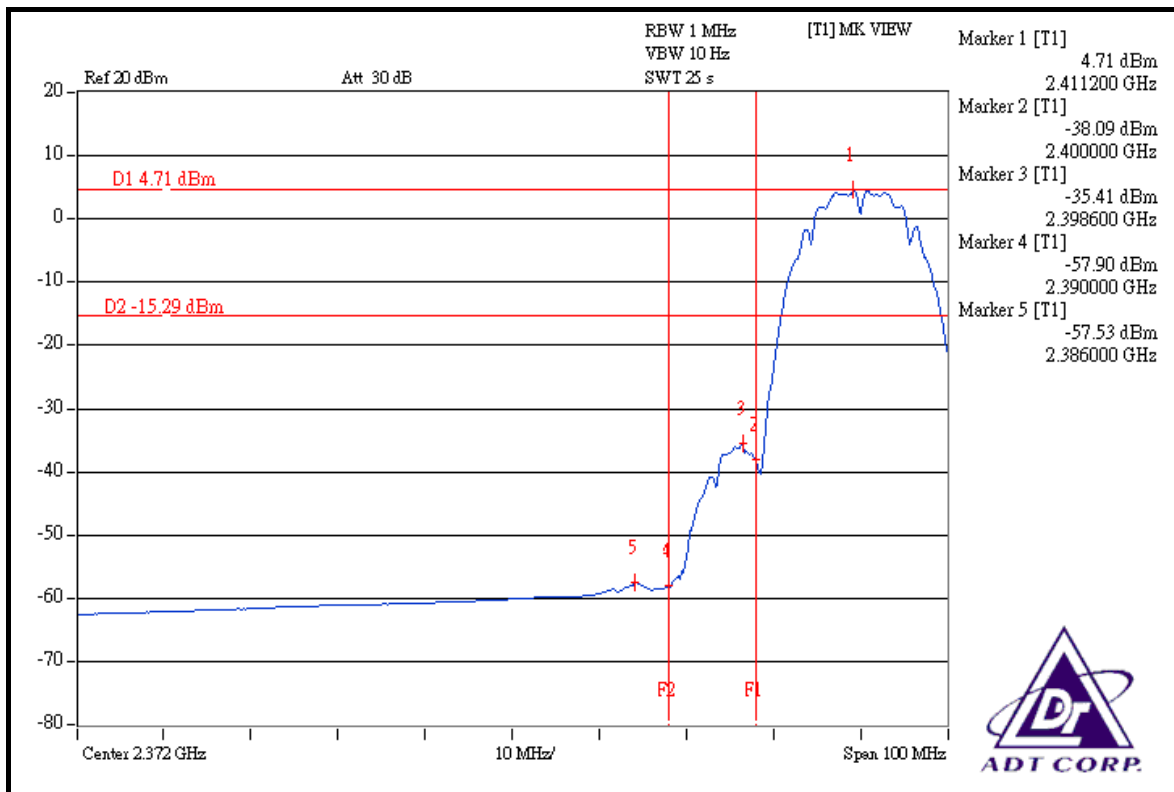
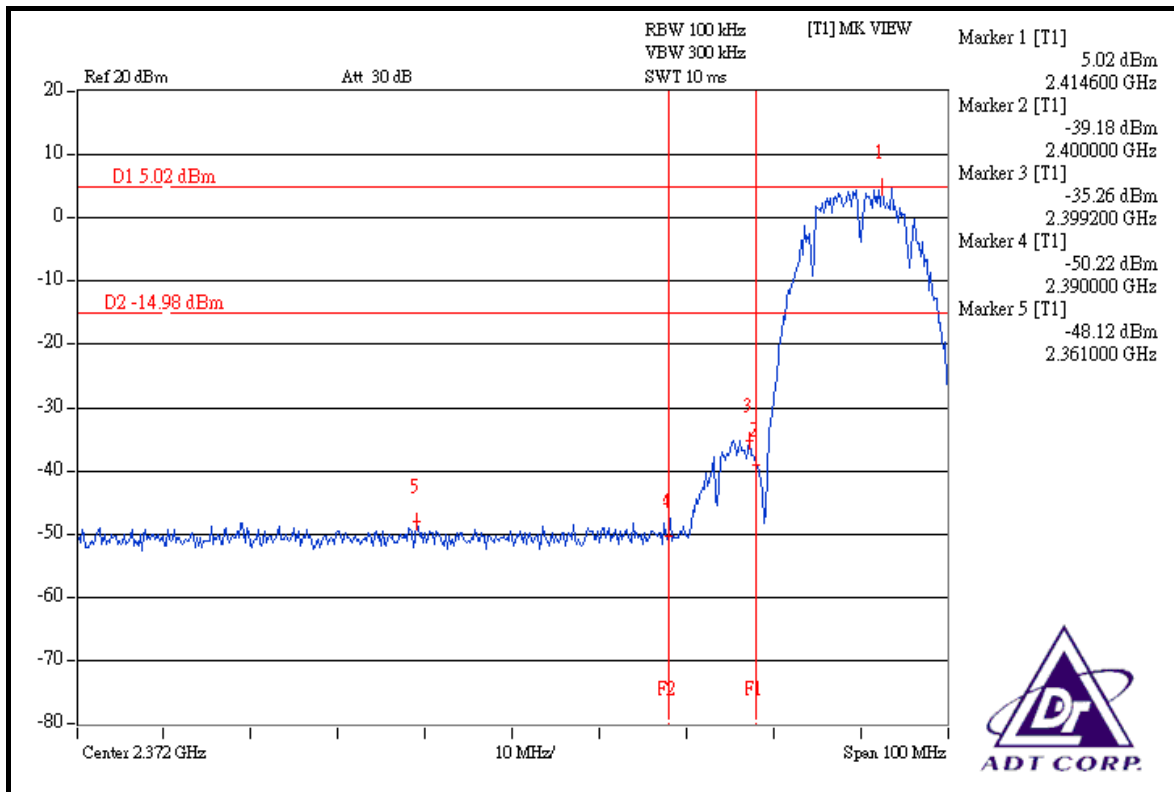
802.11b DSSS MODULATION

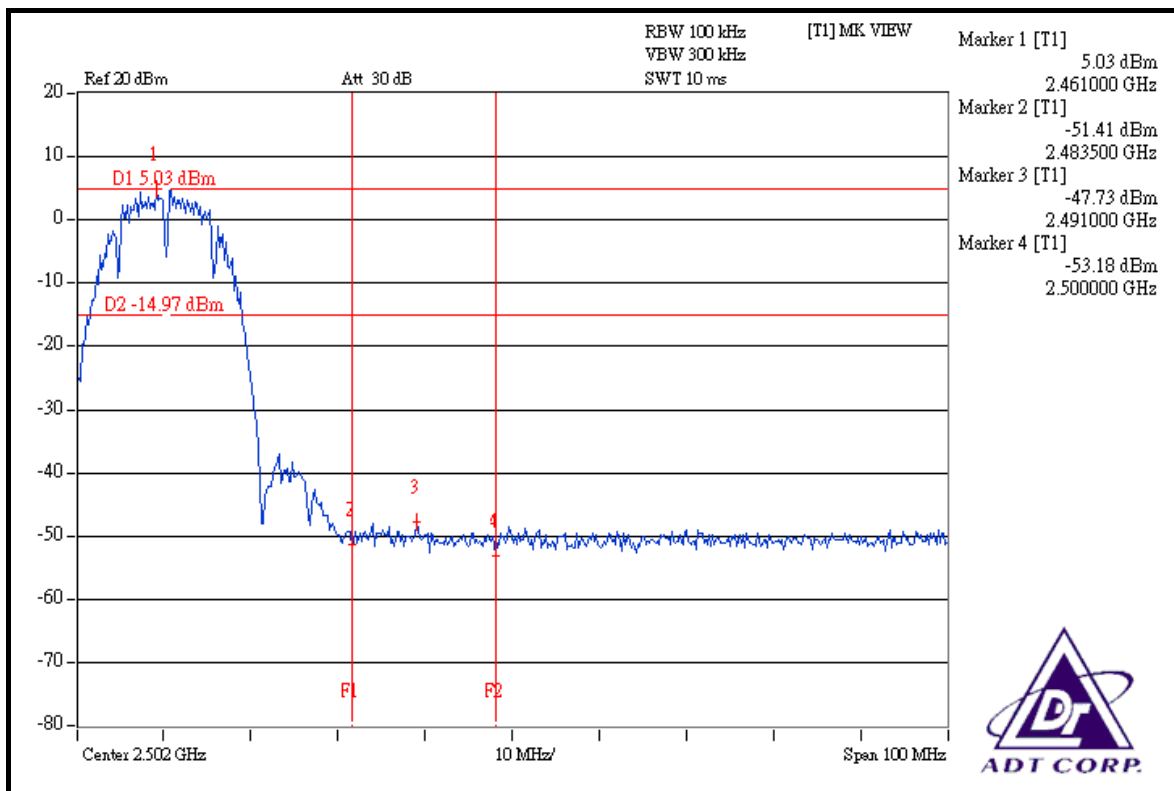
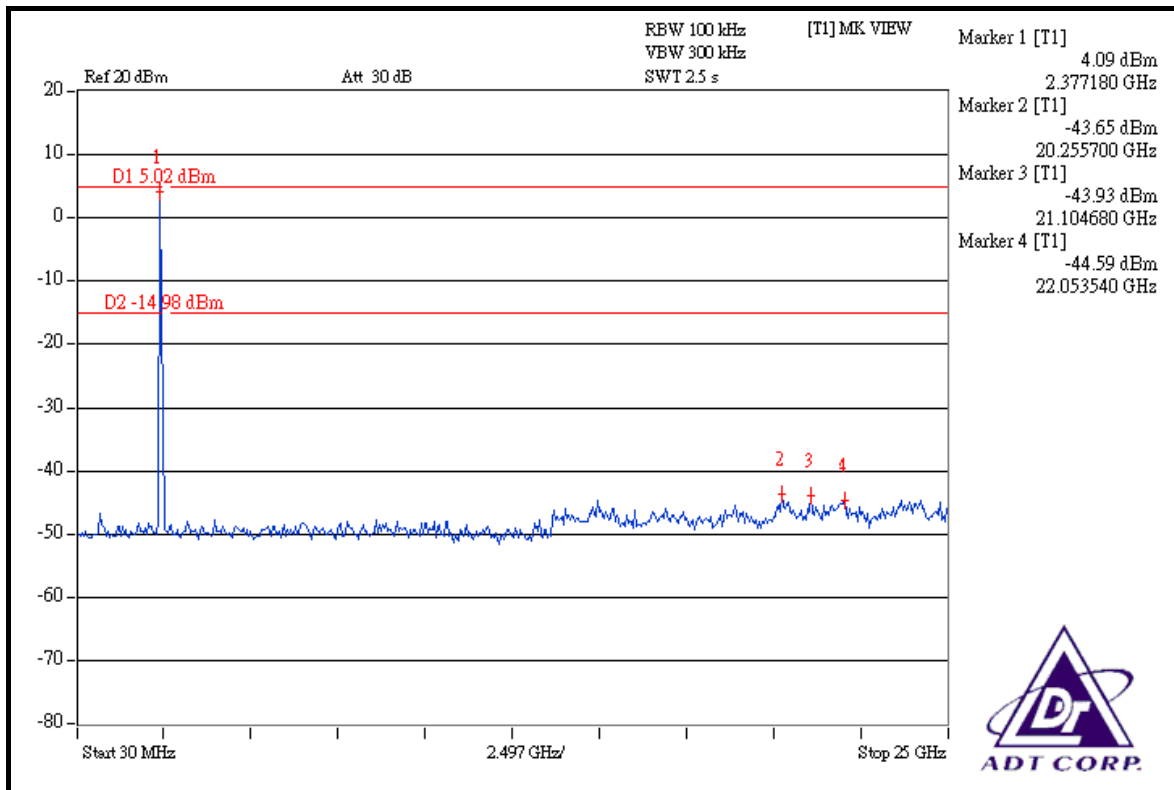
NOTE 1: The band edge emission plot on the next page shows 53.14dBc between carrier maximum power and local maximum emission in restrict band (2.3610GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 110.73dBuV/m (Peak), so the maximum field strength in restrict band is $110.73 - 53.14 = 57.59$ dBuV/m which is under 74dBuV/m limit.

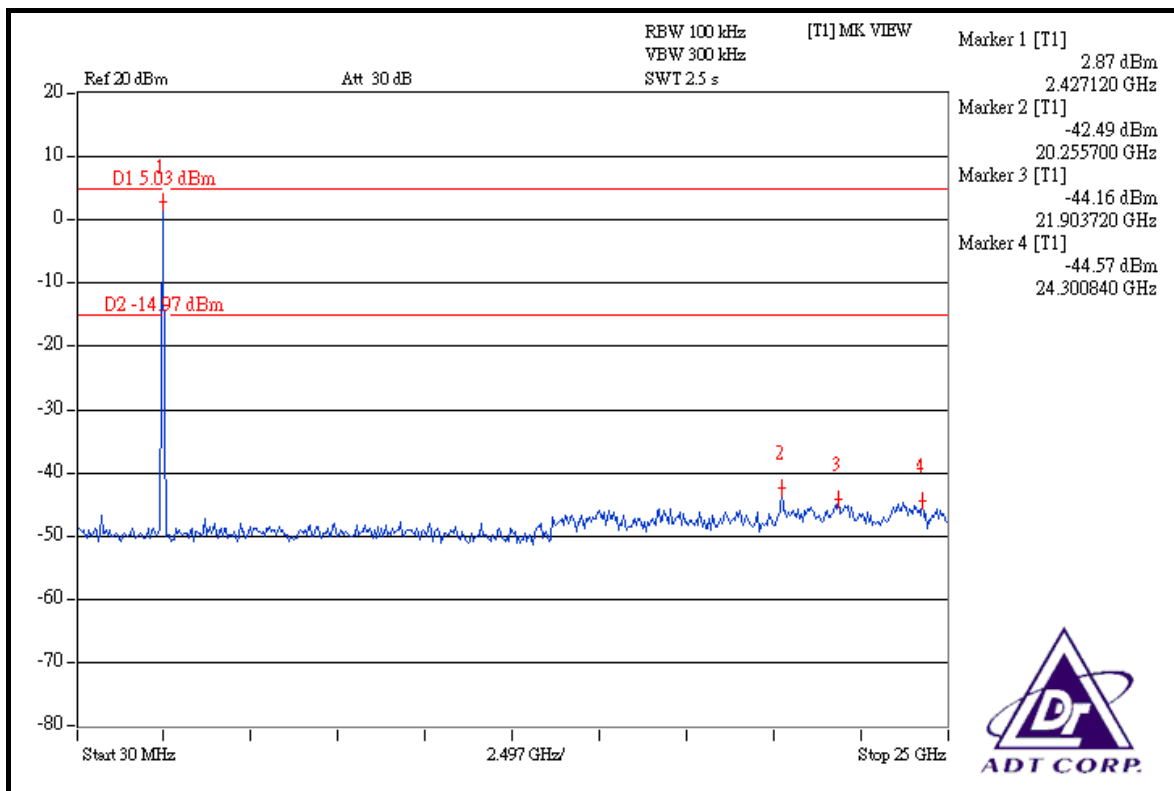
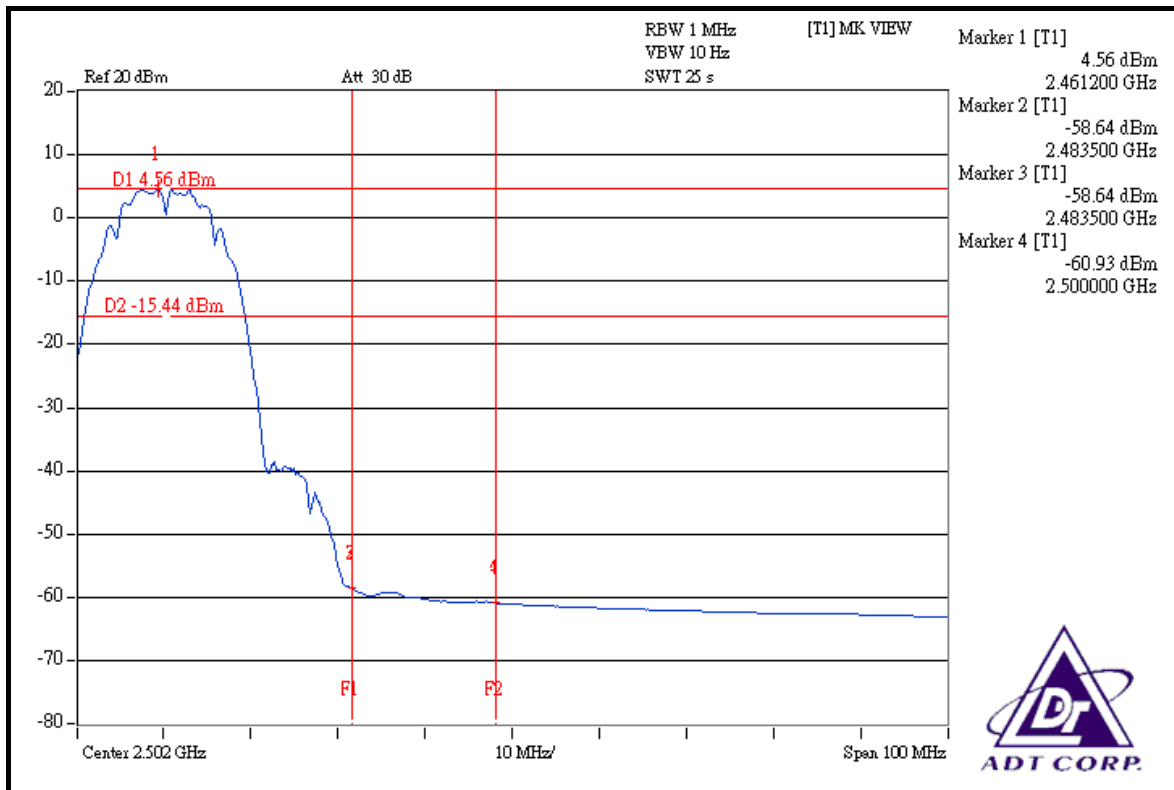
The band edge emission plot of on the next page shows 62.24dBc between carrier maximum power and local maximum emission in restrict band (2.3860GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 106.38dBuV/m (Average), so the maximum field strength in restrict band is $106.38 - 62.24 = 44.14$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next second page shows 52.76dBc between carrier maximum power and local maximum emission in restrict band (2.4910GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 111.01dBuV/m (Peak), so the maximum field strength in restrict band is $111.01 - 52.76 = 58.25$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 63.20dBc 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 106.82dBuV/m (Average), so the maximum field strength in restrict band is $106.82 - 63.20 = 43.62$ dBuV/m which is under 54dBuV/m limit.







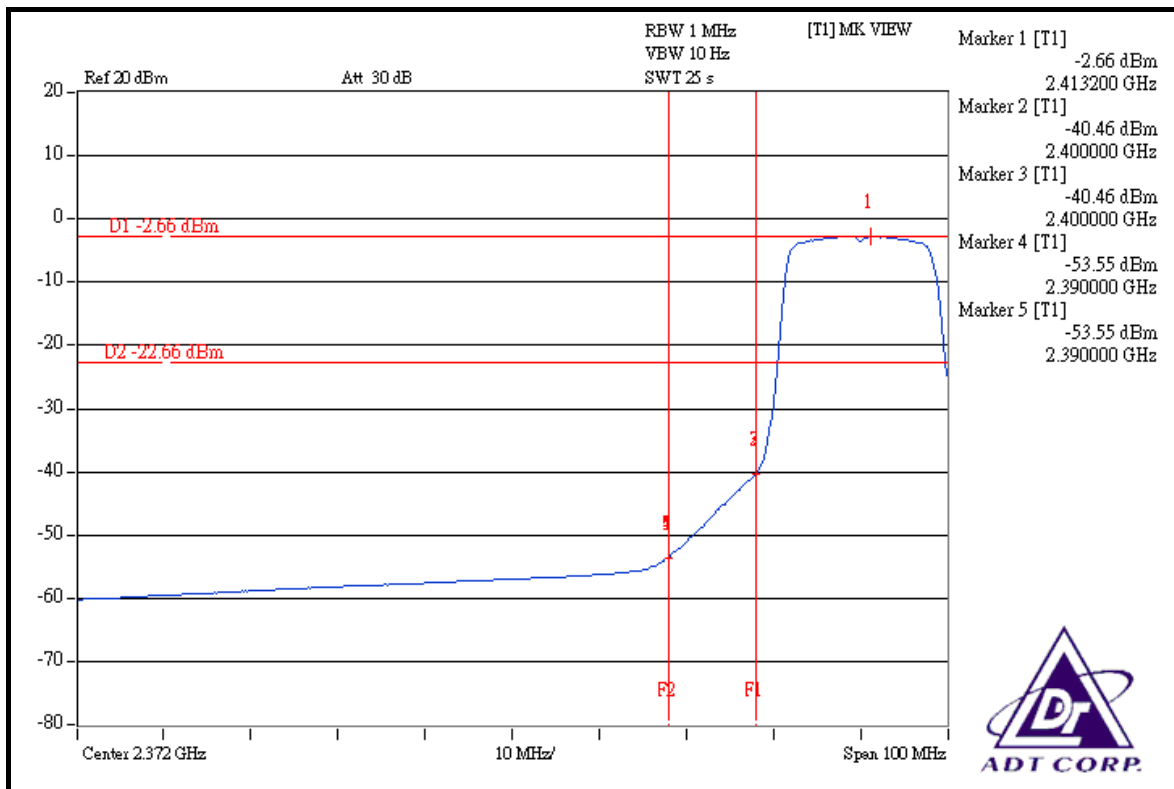
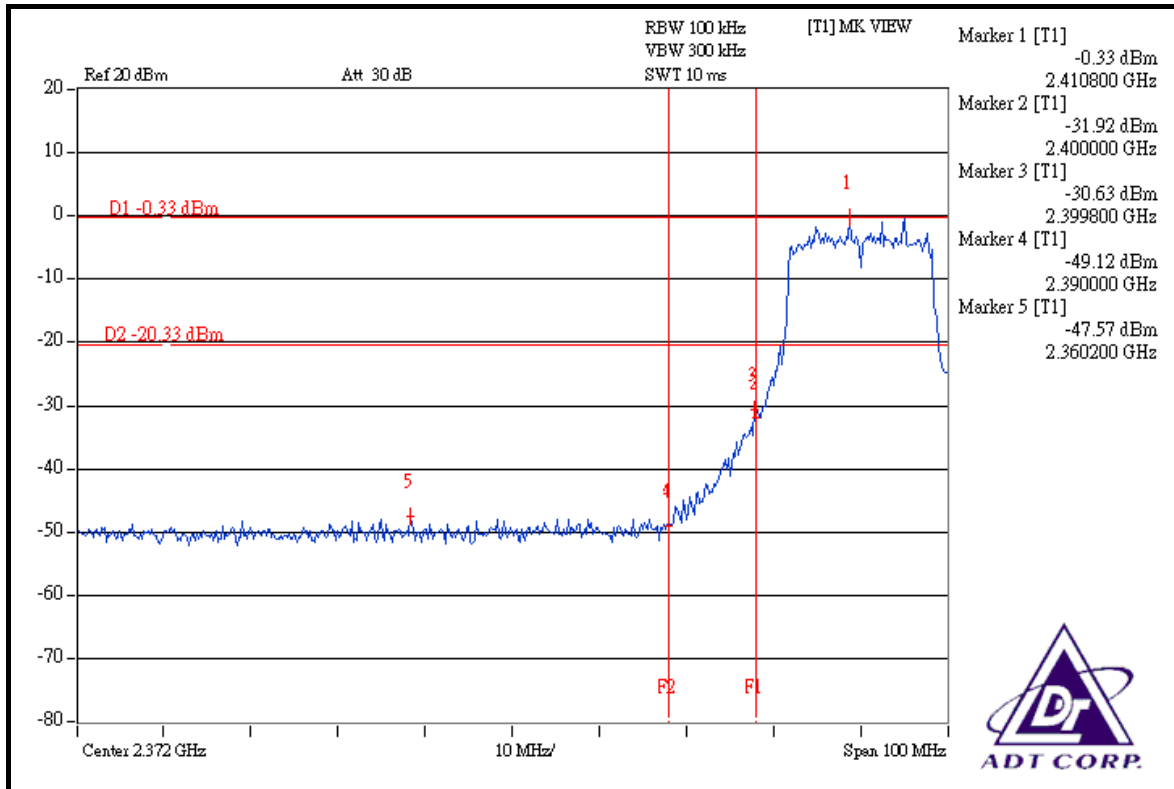
802.11g OFDM MODULATION

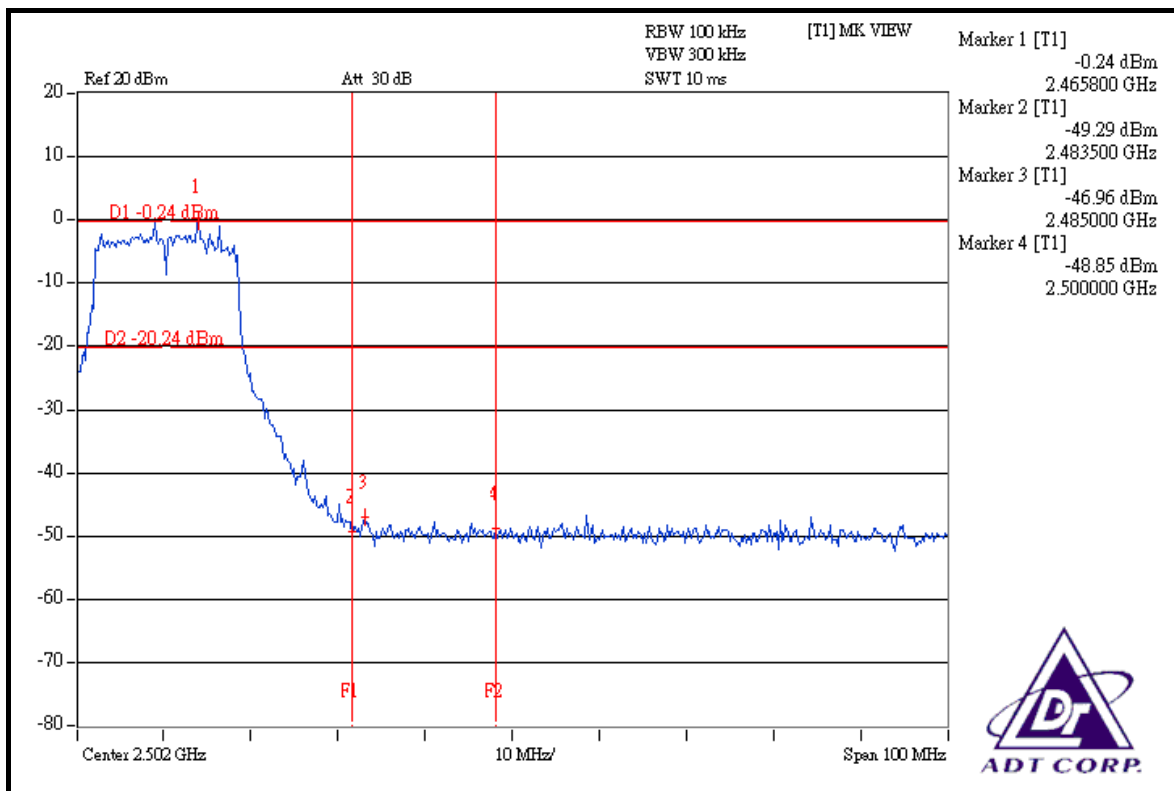
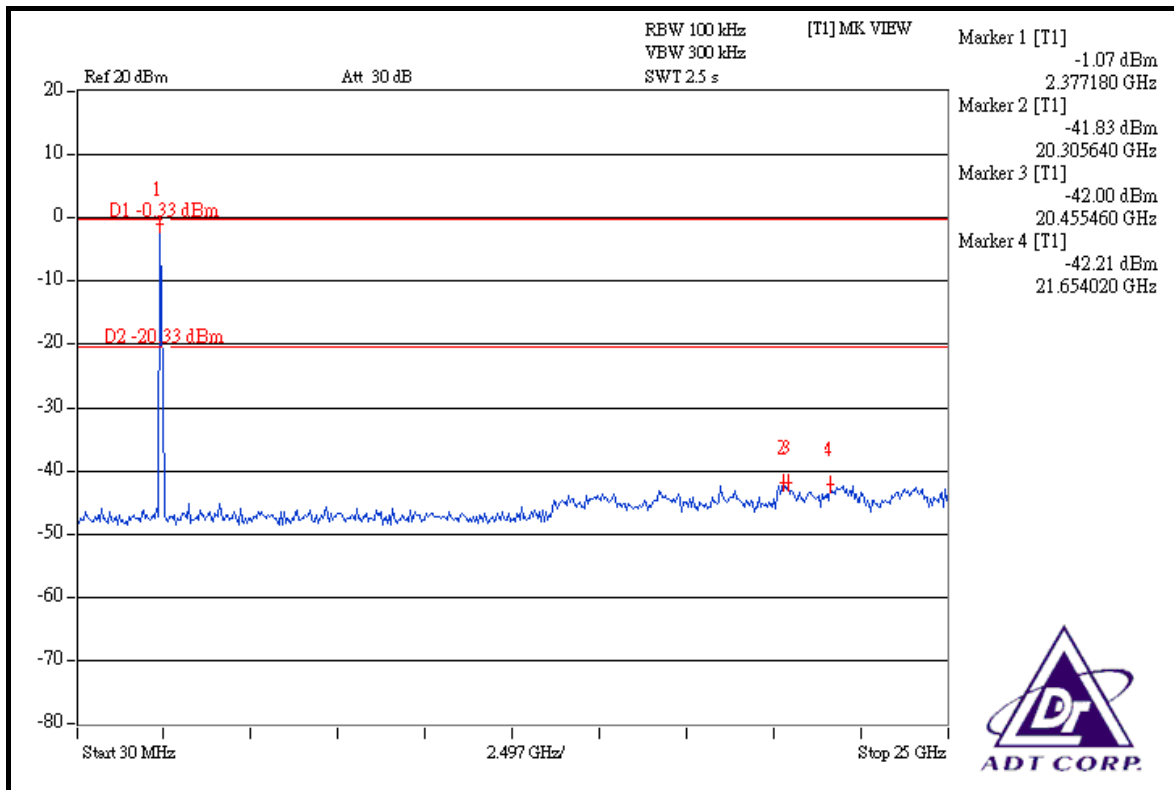
NOTE 1: The band edge emission plot on the next page shows 47.24dBc between carrier maximum power and local maximum emission in restrict band (2.3602GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 110.36dBuV/m (Peak), so the maximum field strength in restrict band is $110.36 - 47.24 = 63.12$ dBuV/m which is under 74dBuV/m limit.

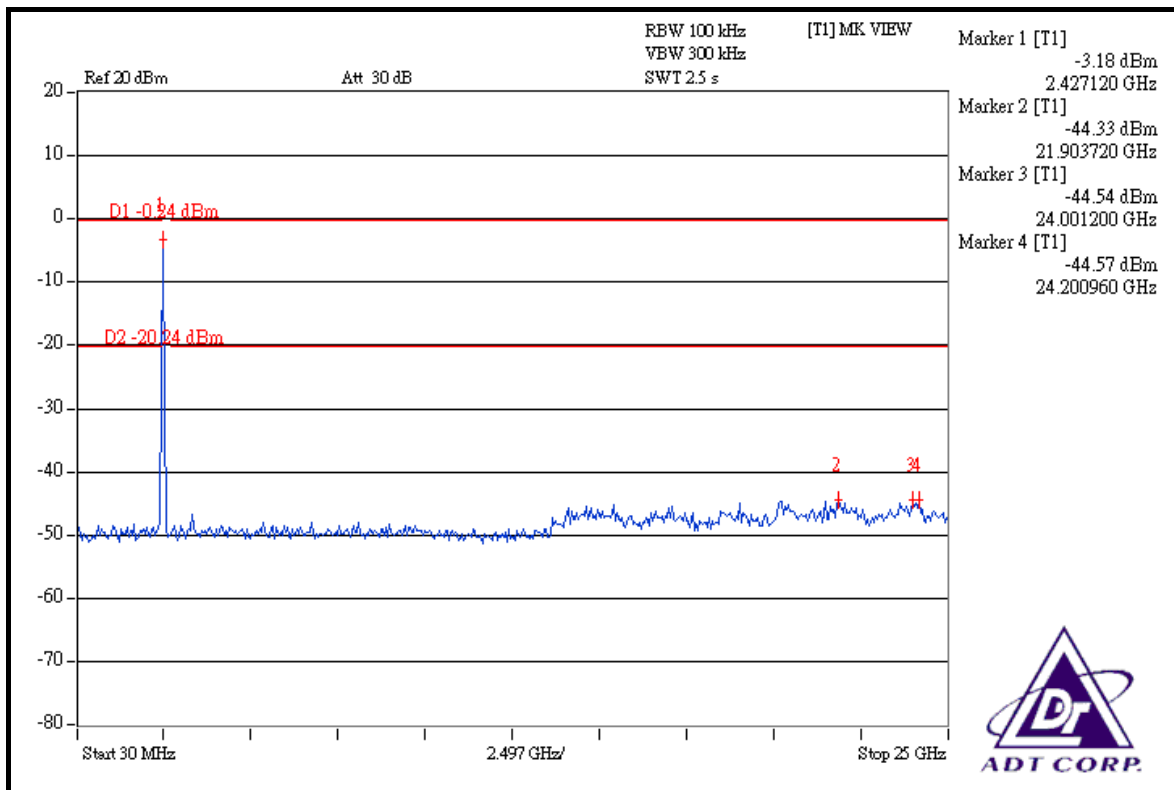
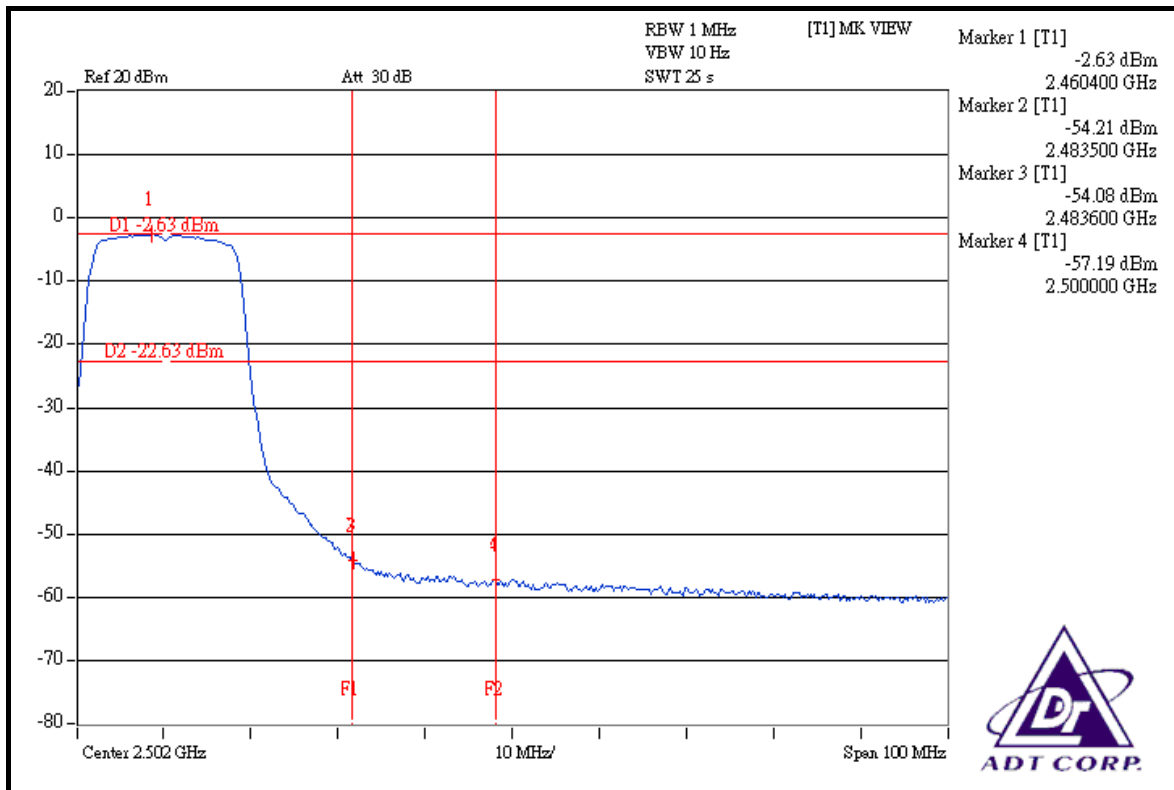
The band edge emission plot of on the next page shows 50.89dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 100.24dBuV/m (Average), so the maximum field strength in restrict band is $100.24 - 50.89 = 49.35$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next second page shows 46.72dBc between carrier maximum power and local maximum emission in restrict band (2.4850GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 110.47dBuV/m (Peak), so the maximum field strength in restrict band is $110.47 - 46.72 = 63.75$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 51.45dBc 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 100.29dBuV/m (Average), so the maximum field strength in restrict band is $100.29 - 51.45 = 48.84$ dBuV/m which is under 54dBuV/m limit.







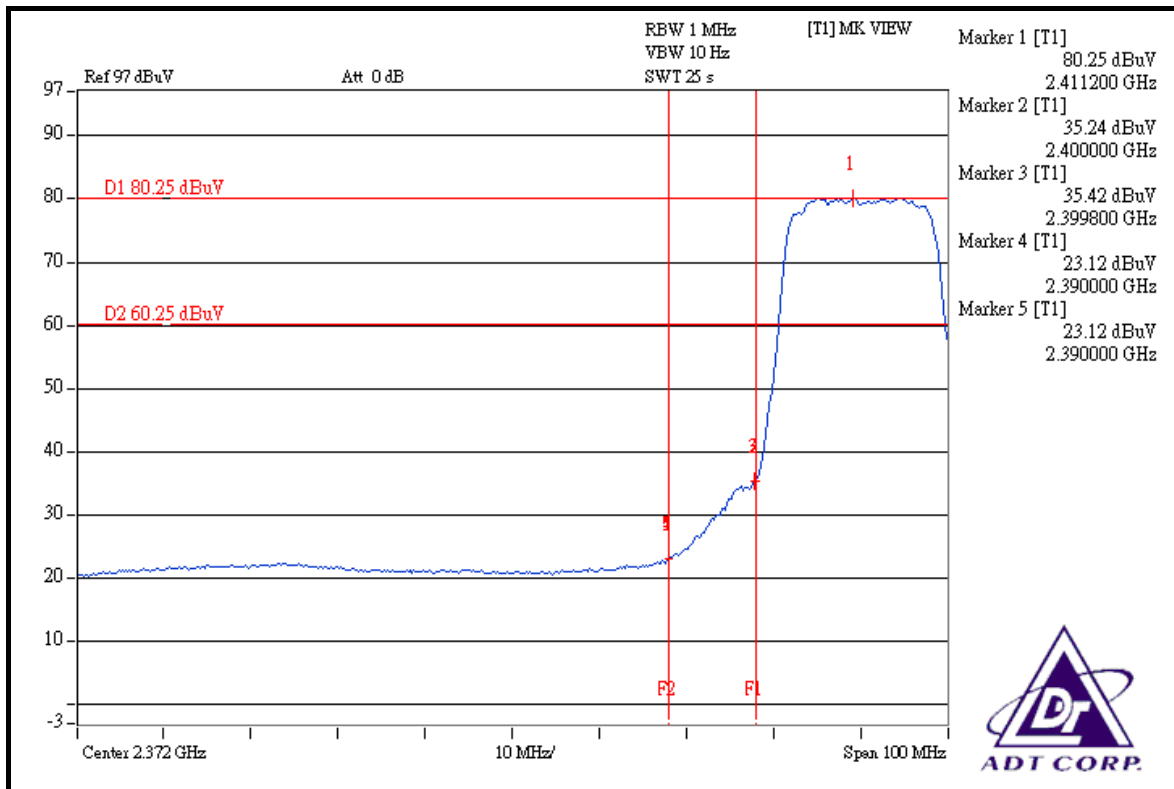
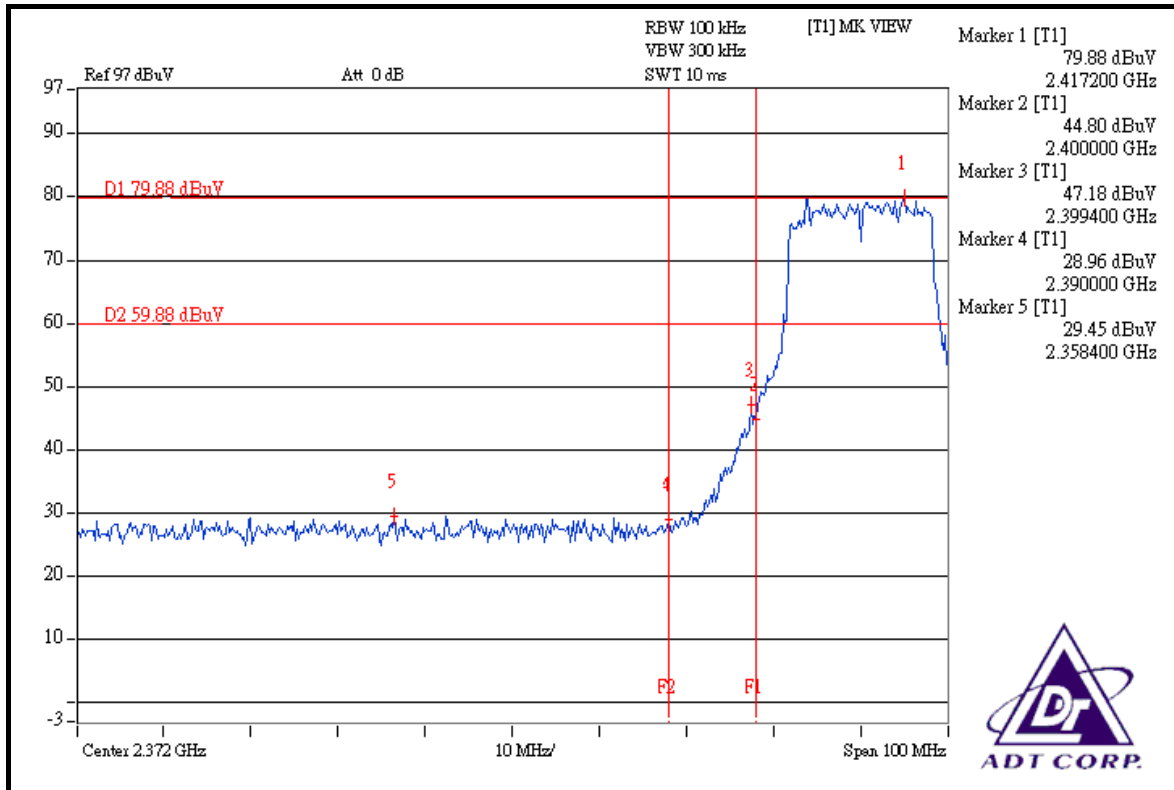
DRAFT 802.11n (20MHz) OFDM MODULATION

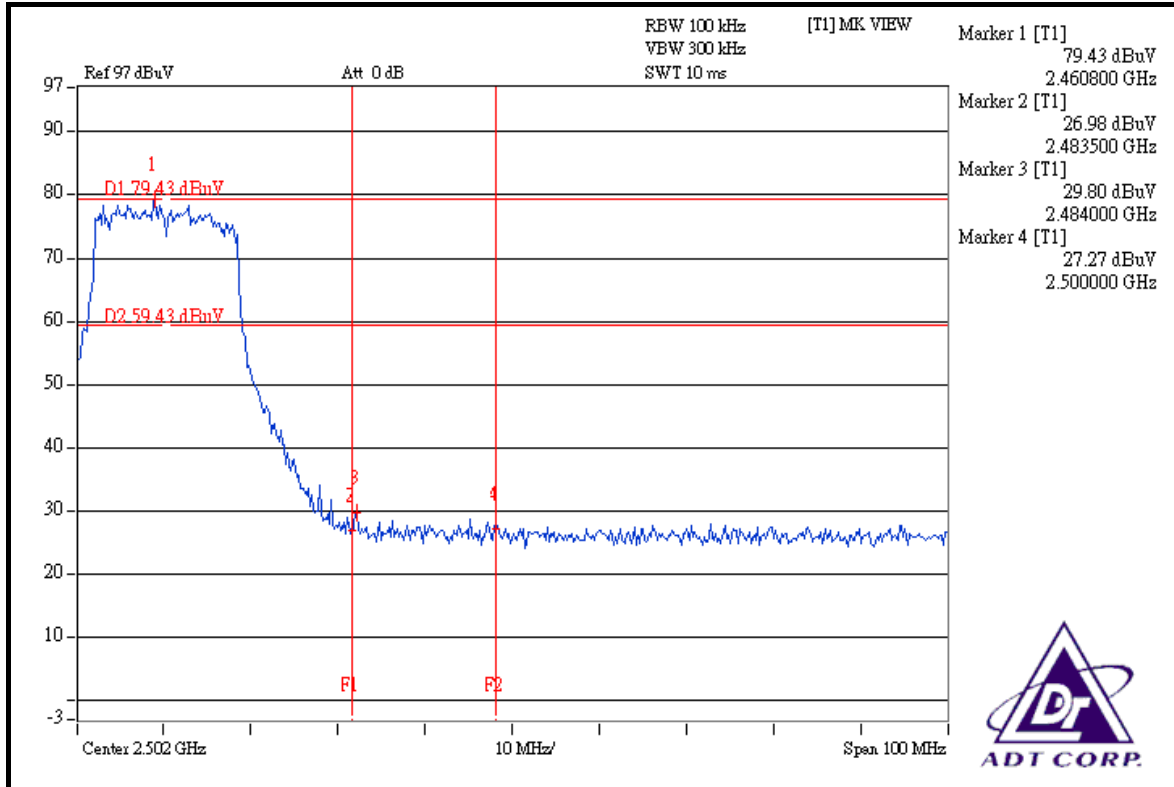
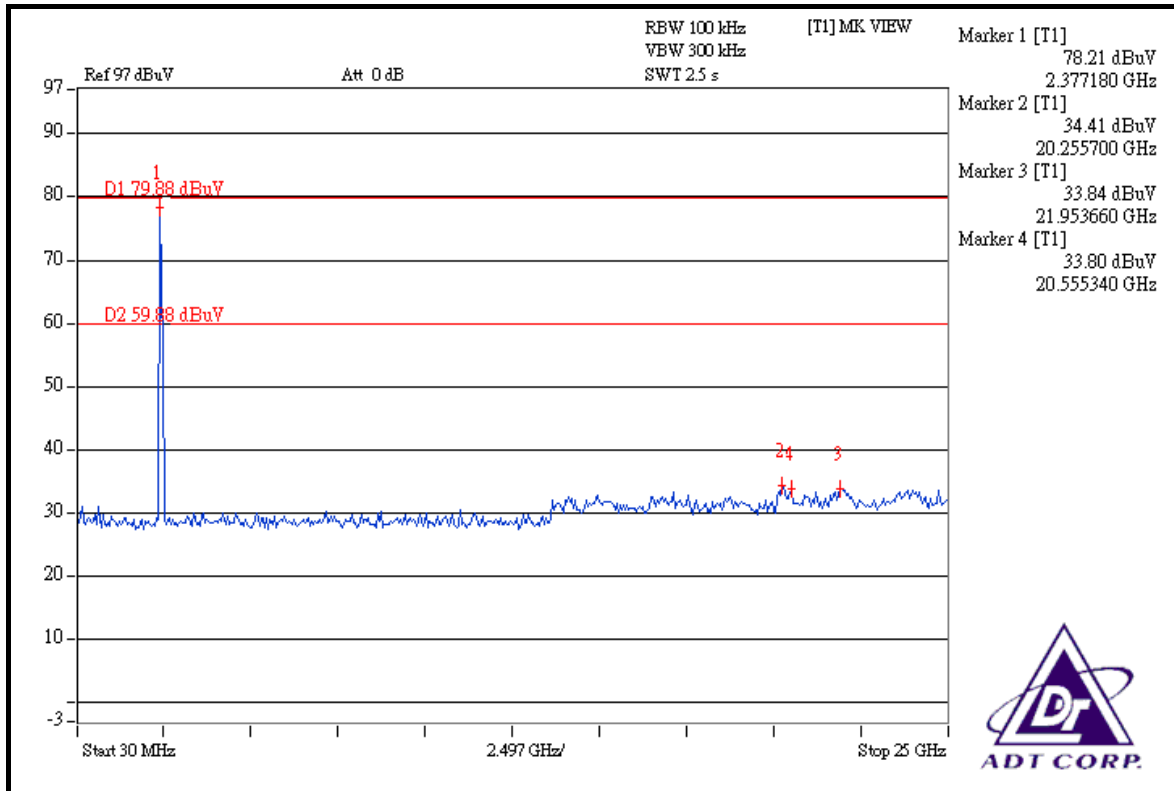
NOTE 1: The band edge emission plot on the next page shows 50.43dBc between carrier maximum power and local maximum emission in restrict band (2.3584GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 113.68dBuV/m (Peak), so the maximum field strength in restrict band is $113.68 - 50.43 = 63.25$ dBuV/m which is under 74dBuV/m limit.

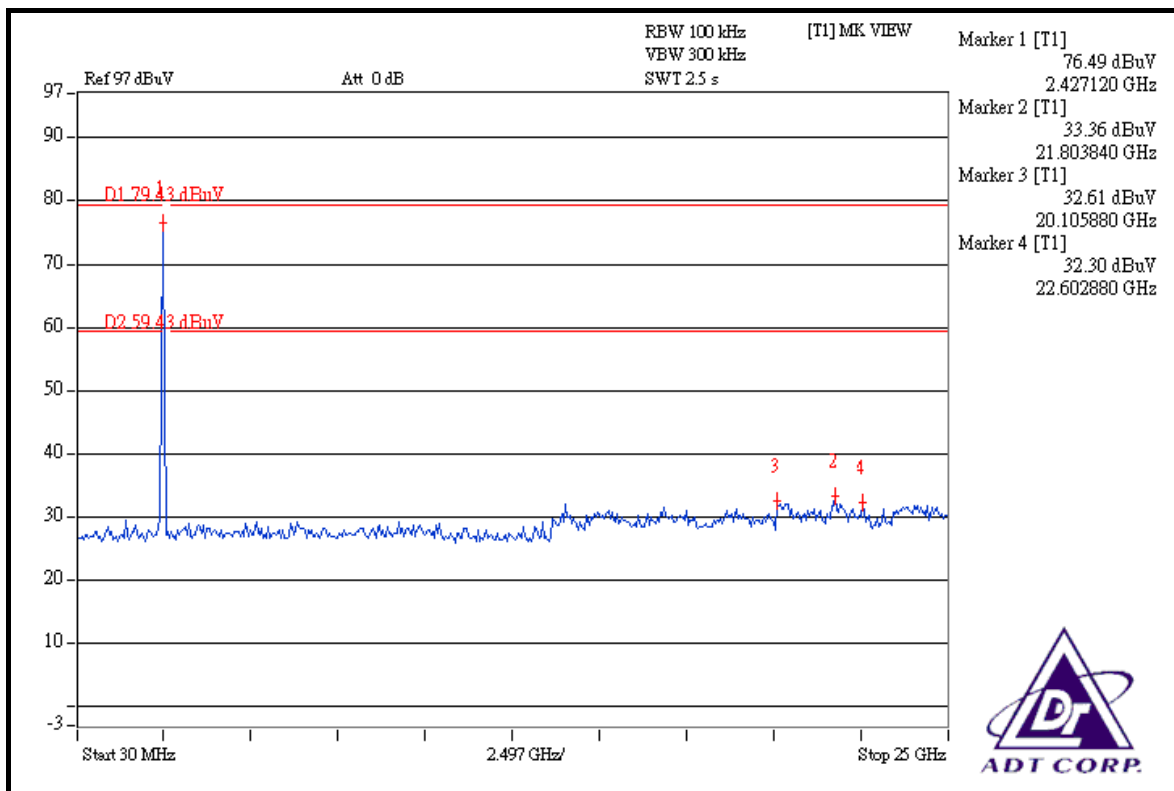
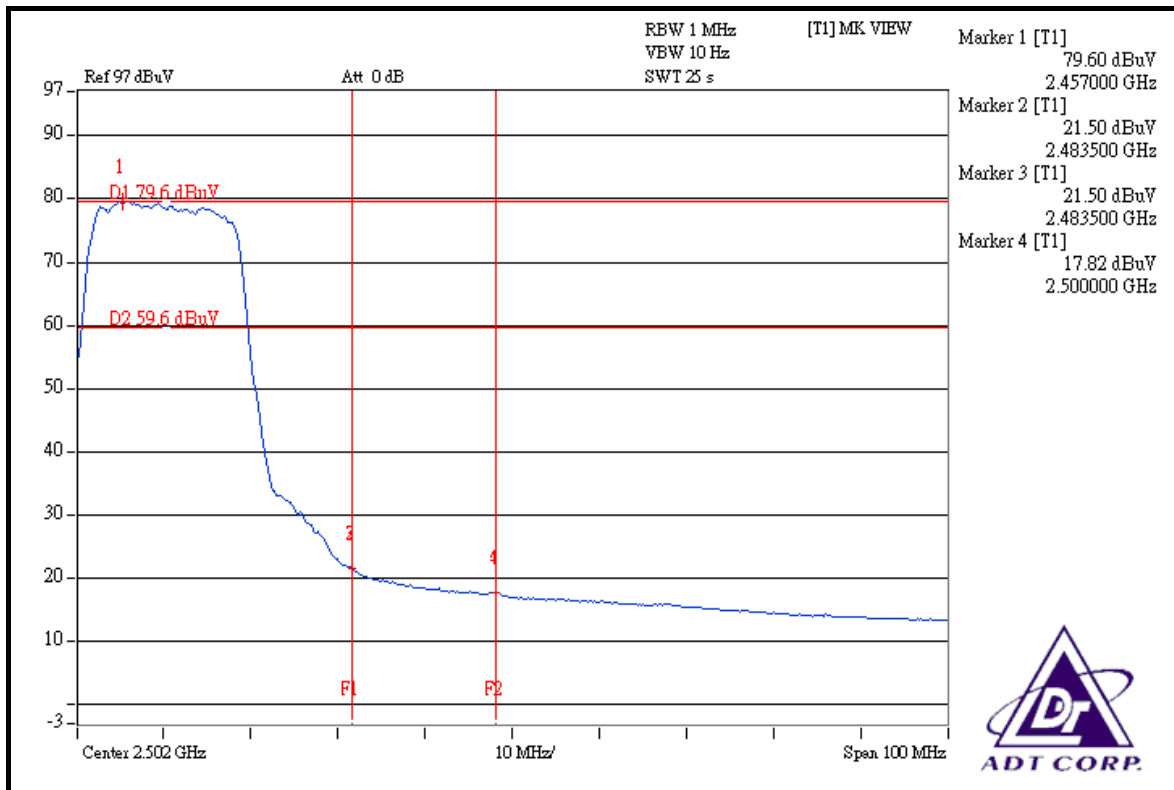
The band edge emission plot of on the next page shows 57.13dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 102.73dBuV/m (Average), so the maximum field strength in restrict band is $102.73 - 57.13 = 45.60$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next second page shows 49.63dBc between carrier maximum power and local maximum emission in restrict band (2.4840GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 113.14dBuV/m (Peak), so the maximum field strength in restrict band is $113.14 - 49.63 = 63.51$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 58.10dBc between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 102.01dBuV/m (Average), so the maximum field strength in restrict band is $102.01 - 58.10 = 43.91$ dBuV/m which is under 54dBuV/m limit.







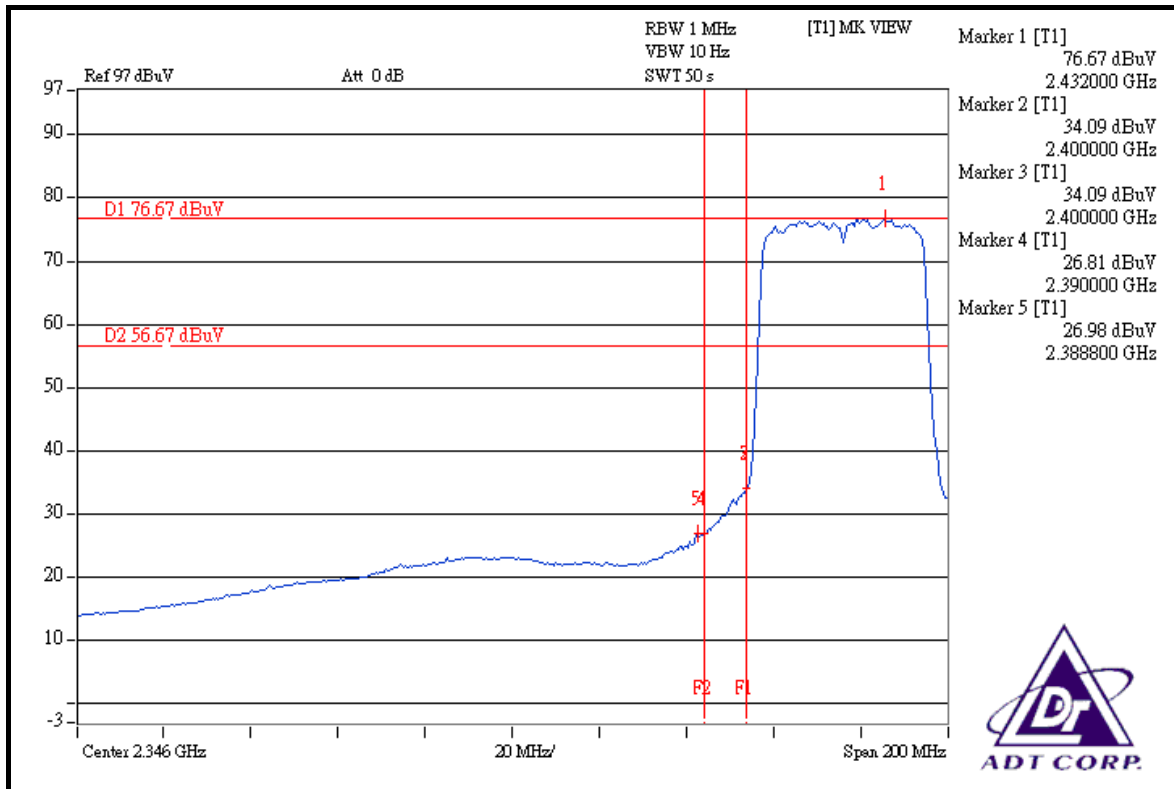
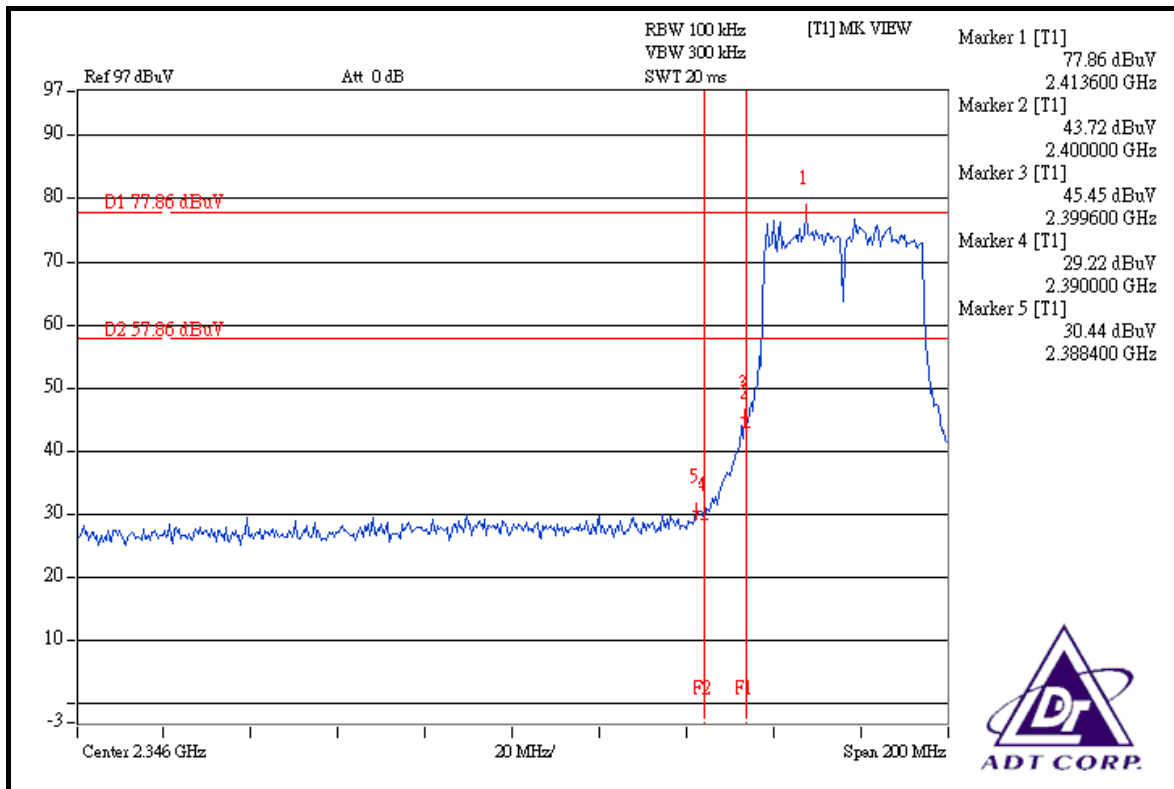
DRAFT 802.11n (40MHz) OFDM MODULATION

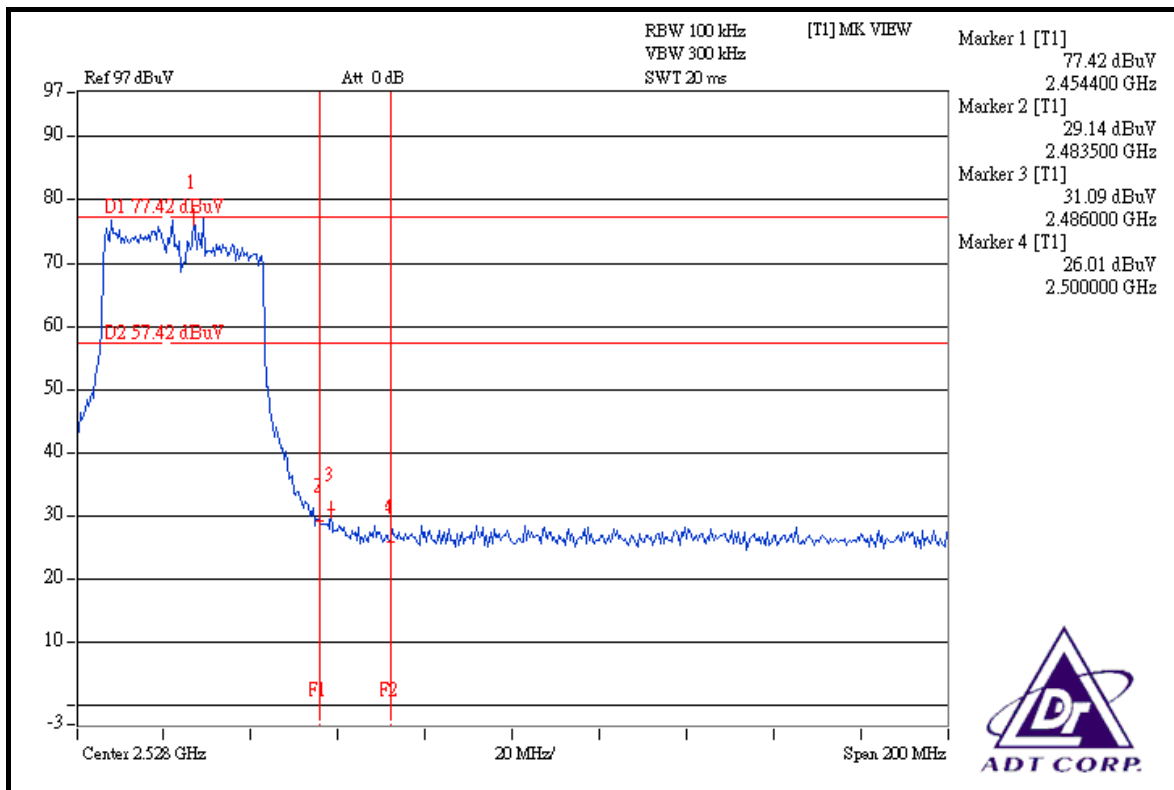
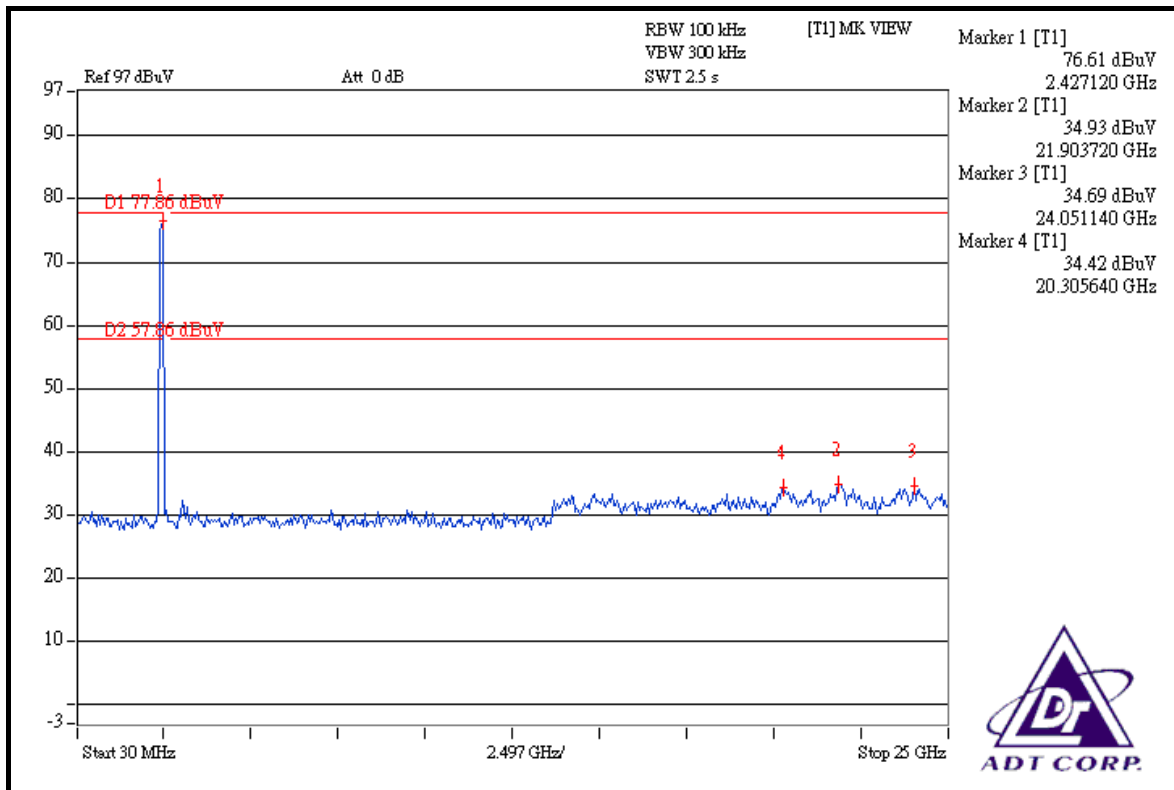
NOTE 1: The band edge emission plot on the next page shows 47.42dBc between carrier maximum power and local maximum emission in restrict band (2.3884GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 109.79dBuV/m (Peak), so the maximum field strength in restrict band is $109.79 - 47.42 = 62.37$ dBuV/m which is under 74dBuV/m limit.

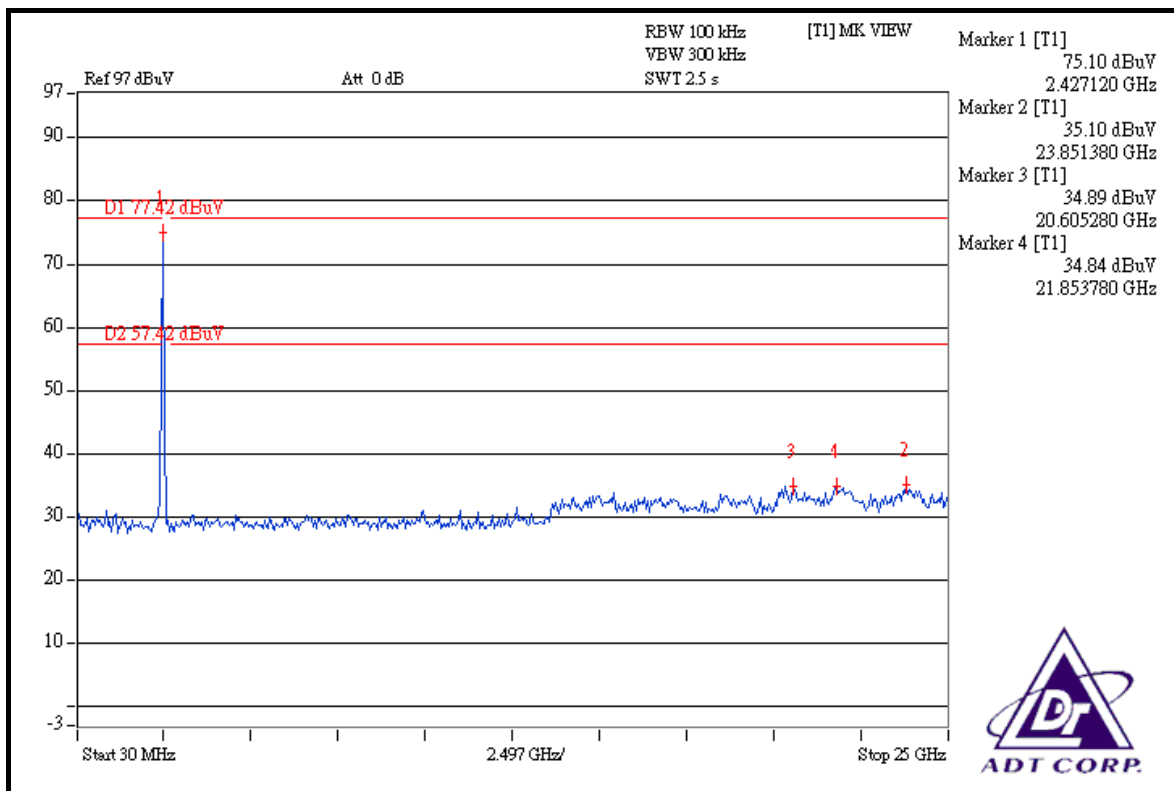
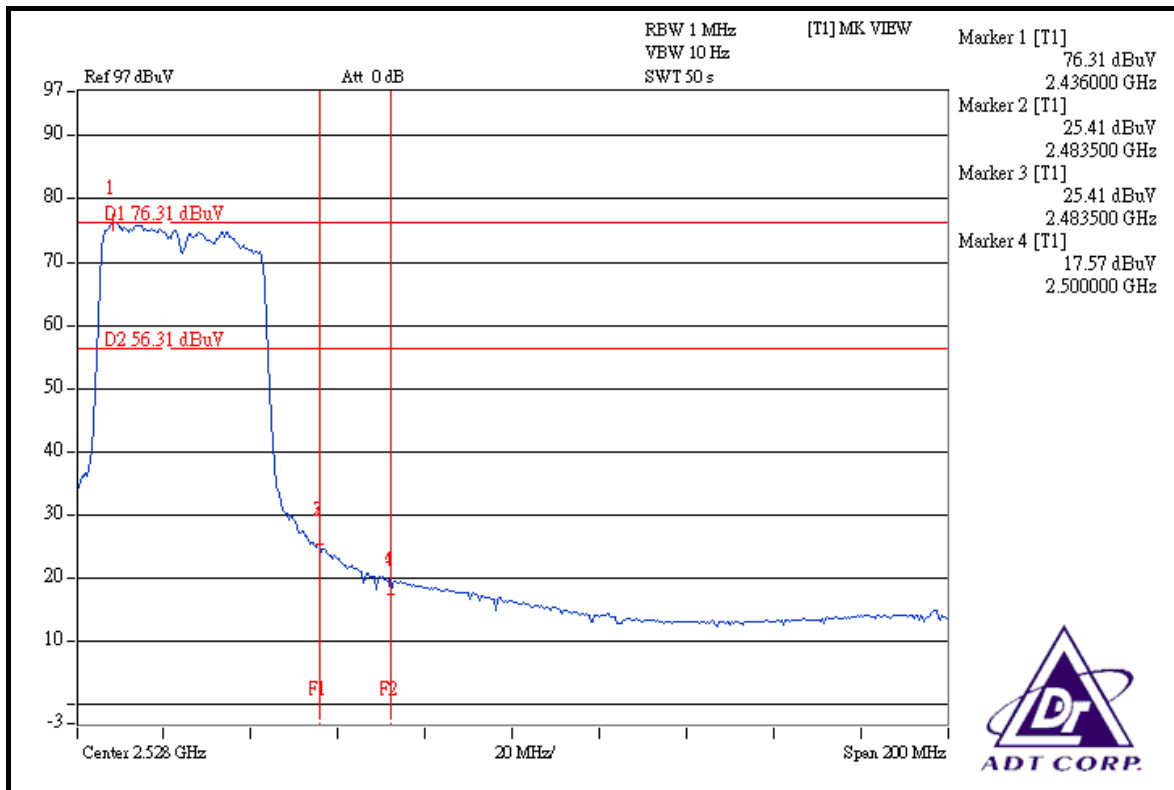
The band edge emission plot of on the next page shows 49.69dBc between carrier maximum power and local maximum emission in restrict band (2.3888GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 99.16dBuV/m (Average), so the maximum field strength in restrict band is $99.16 - 49.69 = 49.47$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next second page shows 46.33dBc between carrier maximum power and local maximum emission in restrict band (2.4860GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.2.7 is 109.13dBuV/m (Peak), so the maximum field strength in restrict band is $109.13 - 46.33 = 62.80$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 50.90dBc 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 7 at the item 4.2.7 is 99.04dBuV/m (Average), so the maximum field strength in restrict band is $99.04 - 50.90 = 48.14$ 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 R-SMA connector. The maximum Gain of the antenna is 2dBi.

5. TEST TYPES AND RESULTS (FOR 5.0GHz BAND)

5.1 RADIATED EMISSION MEASUREMENT

5.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	May. 27, 2009
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 03, 2009
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 06, 2009
Preamplifier Agilent	8449B	3008A01910	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10638	Dec. 19, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274039/223650	Nov. 07, 2008
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	May 05, 2009

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 9.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 215374.
 5. The IC Site Registration No. is IC3789B-9.

5.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

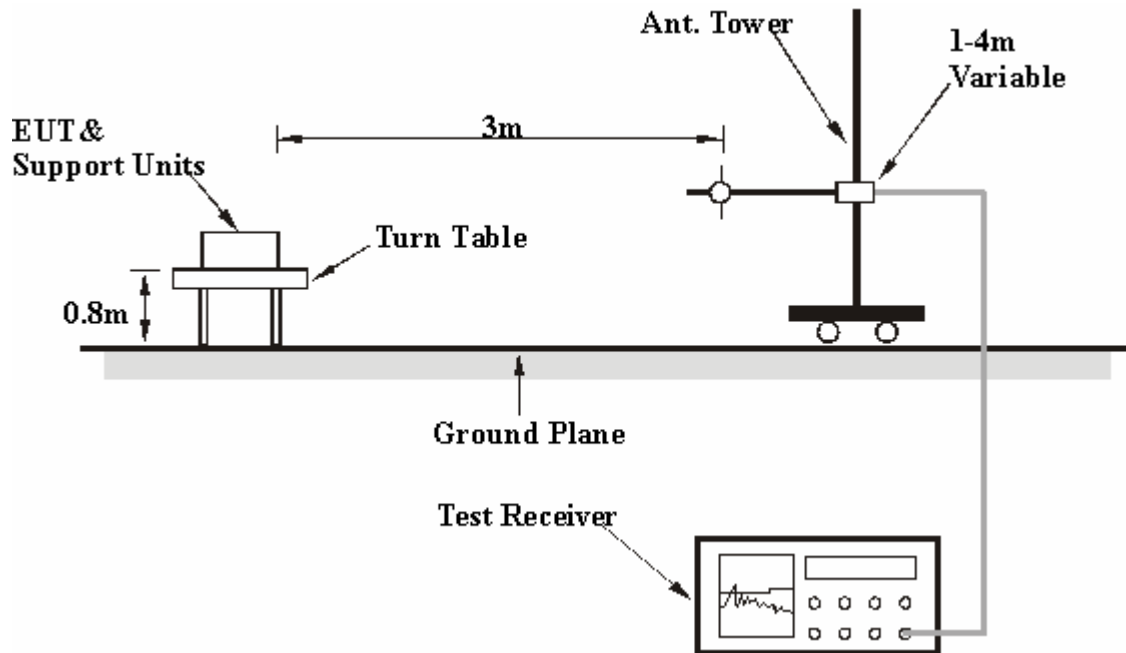
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 100kHz and video bandwidth is 300kHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



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

5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6

5.1.7 TEST RESULTS

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	54.44 PK	74.00	-19.56	1.25 H	165	26.36	28.08
2	1125.00	45.40 AV	54.00	-8.60	1.25 H	165	17.32	28.08
3	#5725.00	58.86 PK	78.24	-19.38	1.00 H	82	19.25	39.61
4	#5725.00	44.58 AV	67.69	-23.11	1.00 H	82	4.97	39.61
5	*5745.00	98.24 PK			1.00 H	81	58.58	39.66
6	*5745.00	87.69 AV			1.00 H	81	48.03	39.66
7	7660.00	54.00 PK	74.00	-20.00	1.30 H	344	8.96	45.05
8	7660.00	42.19 AV	54.00	-11.81	1.30 H	344	-2.85	45.05
9	11490.00	57.34 PK	74.00	-16.66	1.10 H	61	7.60	49.74
10	11490.00	43.85 AV	54.00	-10.15	1.10 H	61	-5.89	49.74

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	58.78 PK	74.00	-15.22	1.00 V	202	30.70	28.08
2	1125.00	50.86 AV	54.00	-3.14	1.00 V	202	22.78	28.08
3	#5725.00	71.19 PK	87.38	-16.19	1.24 V	54	31.58	39.61
4	#5725.00	54.19 AV	76.60	-22.41	1.24 V	54	14.58	39.61
5	*5745.00	107.38 PK			1.24 V	54	67.72	39.66
6	*5745.00	96.60 AV			1.24 V	54	56.94	39.66
7	7660.00	54.81 PK	74.00	-19.19	1.38 V	178	9.77	45.05
8	7660.00	44.99 AV	54.00	-9.01	1.38 V	178	-0.05	45.05
9	11490.00	57.96 PK	74.00	-16.04	1.02 V	330	8.22	49.74
10	11490.00	44.69 AV	54.00	-9.31	1.02 V	330	-5.05	49.74

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.
 7. "#": The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	55.07 PK	74.00	-18.93	1.07 H	355	26.99	28.08
2	1125.00	45.19 AV	54.00	-8.81	1.07 H	355	17.11	28.08
3	*5785.00	98.14 PK			1.03 H	101	58.39	39.75
4	*5785.00	87.47 AV			1.03 H	101	47.72	39.75
5	11570.00	58.12 PK	74.00	-15.88	1.00 H	360	8.43	49.69
6	11570.00	44.96 AV	54.00	-9.04	1.00 H	360	-4.73	49.69
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	59.31 PK	74.00	-14.69	1.09 V	177	31.23	28.08
2	1125.00	51.34 AV	54.00	-2.66	1.09 V	177	23.26	28.08
3	*5785.00	107.43 PK			1.19 V	60	67.68	39.75
4	*5785.00	96.71 AV			1.19 V	60	56.96	39.75
5	11570.00	57.64 PK	74.00	-16.36	1.07 V	360	7.95	49.69
6	11570.00	45.92 AV	54.00	-8.08	1.07 V	360	-3.77	49.69

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.
 6. The limit value is defined as per 15.247.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	53.87 PK	74.00	-20.13	1.20 H	188	25.79	28.08
2	1125.00	45.69 AV	54.00	-8.31	1.20 H	188	17.61	28.08
3	*5825.00	98.17 PK			1.00 H	100	58.32	39.85
4	*5825.00	87.42 AV			1.00 H	100	47.57	39.85
5	#5850.00	57.41 PK	78.17	-20.76	1.00 H	100	17.49	39.91
6	#5850.00	41.63 AV	67.42	-25.79	1.00 H	100	1.72	39.91
7	11650.00	56.78 PK	74.00	-17.22	1.01 H	0	7.10	49.68
8	11650.00	44.69 AV	54.00	-9.31	1.01 H	0	-4.99	49.68
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	58.67 PK	74.00	-15.33	1.01 V	199	30.59	28.08
2	1125.00	51.17 AV	54.00	-2.83	1.01 V	199	23.09	28.08
3	*5825.00	107.68 PK			1.19 V	215	67.83	39.85
4	*5825.00	97.17 AV			1.19 V	215	57.32	39.85
5	#5850.00	60.05 PK	87.68	-27.63	1.19 V	215	20.14	39.91
6	#5850.00	44.73 AV	77.17	-32.44	1.19 V	215	4.81	39.91
7	#7766.00	52.92 PK	87.68	-34.76	1.19 V	329	7.67	45.25
8	#7766.00	40.54 AV	77.17	-36.63	1.19 V	329	-4.71	45.25
9	11650.00	56.78 PK	74.00	-17.22	1.00 V	0	7.10	49.68
10	11650.00	44.62 AV	54.00	-9.38	1.00 V	0	-5.06	49.68

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.
 7. “#”:The radiated frequency is out the restricted band.

DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	55.79 PK	74.00	-18.21	1.21 H	339	27.71	28.08
2	1125.00	45.88 AV	54.00	-8.12	1.21 H	339	17.80	28.08
3	#5725.00	59.24 PK	81.02	-21.78	1.02 H	22	19.63	39.61
4	#5725.00	43.47 AV	71.35	-27.88	1.02 H	22	3.86	39.61
5	*5745.00	101.02 PK			1.02 H	22	61.36	39.66
6	*5745.00	91.35 AV			1.02 H	22	51.69	39.66
7	7660.00	54.50 PK	74.00	-19.50	1.35 H	360	9.46	45.05
8	7660.00	42.23 AV	54.00	-11.77	1.35 H	360	-2.81	45.05
9	11490.00	58.41 PK	74.00	-15.59	1.20 H	360	8.67	49.74
10	11490.00	46.19 AV	54.00	-7.81	1.20 H	360	-3.55	49.74
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	57.79 PK	74.00	-16.21	1.00 V	360	29.71	28.08
2	1125.00	49.74 AV	54.00	-4.26	1.00 V	360	21.66	28.08
3	#5725.00	61.55 PK	93.05	-31.50	1.03 V	0	21.94	39.61
4	#5725.00	45.23 AV	82.44	-37.21	1.03 V	0	5.62	39.61
5	*5745.00	113.05 PK			1.03 V	0	73.39	39.66
6	*5745.00	102.44 AV			1.03 V	0	62.78	39.66
7	7660.00	54.90 PK	74.00	-19.10	1.31 V	182	9.86	45.05
8	7660.00	43.93 AV	54.00	-10.07	1.31 V	182	-1.11	45.05
9	11490.00	58.81 PK	74.00	-15.19	1.19 V	0	9.06	49.74
10	11490.00	46.42 AV	54.00	-7.58	1.19 V	0	-3.33	49.74

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.
 7. “#”:The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	56.41 PK	74.00	-17.59	1.19 H	347	28.33	28.08
2	1125.00	46.05 AV	54.00	-7.95	1.19 H	347	17.97	28.08
3	*5785.00	100.89 PK			1.04 H	69	61.14	39.75
4	*5785.00	91.26 AV			1.04 H	69	51.51	39.75
5	7713.00	54.14 PK	74.00	-19.86	1.04 H	360	8.99	45.15
6	7713.00	42.03 AV	54.00	-11.97	1.04 H	360	-3.12	45.15
7	11570.00	57.69 PK	74.00	-16.31	1.10 H	360	8.00	49.69
8	11570.00	46.00 AV	54.00	-8.00	1.10 H	360	-3.69	49.69
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	60.47 PK	74.00	-13.53	1.01 V	344	32.39	28.08
2	1125.00	50.17 AV	54.00	-3.83	1.01 V	344	22.09	28.08
3	*5785.00	112.98 PK			1.07 V	360	73.23	39.75
4	*5785.00	102.63 AV			1.07 V	360	62.88	39.75
5	7713.00	54.08 PK	74.00	-19.92	1.29 V	178	8.93	45.15
6	7713.00	43.52 AV	54.00	-10.48	1.29 V	178	-1.63	45.15
7	11570.00	59.14 PK	74.00	-14.86	1.00 V	360	9.45	49.69
8	11570.00	46.87 AV	54.00	-7.13	1.00 V	360	-2.82	49.69

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	54.66 PK	74.00	-19.34	1.19 H	310	26.58	28.08
2	1125.00	45.17 AV	54.00	-8.83	1.19 H	310	17.09	28.08
3	*5825.00	101.26 PK			1.00 H	17	61.41	39.85
4	*5825.00	91.45 AV			1.00 H	17	51.60	39.85
5	#5850.00	58.63 PK	81.26	-22.63	1.00 H	17	18.72	39.91
6	#5850.00	44.25 AV	71.45	-27.20	1.00 H	17	4.34	39.91
7	#7766.00	54.14 PK	81.26	-27.12	1.29 H	360	8.89	45.25
8	#7766.00	42.31 AV	71.45	-29.14	1.29 H	360	-2.94	45.25
9	11650.00	57.98 PK	74.00	-16.02	1.00 H	0	8.30	49.68
10	11650.00	46.32 AV	54.00	-7.68	1.00 H	0	-3.36	49.68
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	57.46 PK	74.00	-16.54	1.00 V	341	29.38	28.08
2	1125.00	50.04 AV	54.00	-3.96	1.00 V	341	21.96	28.08
3	*5825.00	113.17 PK			1.07 V	355	73.32	39.85
4	*5825.00	102.64 AV			1.07 V	355	62.79	39.85
5	#5850.00	62.77 PK	93.17	-30.40	1.07 V	355	22.86	39.91
6	#5850.00	45.36 AV	82.64	-37.28	1.07 V	355	5.45	39.91
7	#7766.00	55.63 PK	93.17	-37.54	1.29 V	177	10.38	45.25
8	#7766.00	44.27 AV	82.64	-38.37	1.29 V	177	-0.98	45.25
9	11650.00	57.74 PK	74.00	-16.26	1.20 V	0	8.06	49.68
10	11650.00	46.86 AV	54.00	-7.14	1.20 V	0	-2.82	49.68

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.
 7. “#”:The radiated frequency is out the restricted band.



DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	54.40 PK	74.00	-19.60	1.21 H	314	26.32	28.08
2	1125.00	44.95 AV	54.00	-9.05	1.21 H	314	16.87	28.08
3	#5725.00	69.14 PK	78.87	-9.73	1.00 H	355	29.53	39.61
4	#5725.00	49.29 AV	67.48	-18.19	1.00 H	355	9.68	39.61
5	*5755.00	98.87 PK			1.00 H	355	59.19	39.68
6	*5755.00	87.48 AV			1.00 H	355	47.80	39.68
7	7673.00	50.21 PK	74.00	-23.79	1.10 H	322	5.14	45.07
8	7673.00	40.36 AV	54.00	-13.64	1.10 H	322	-4.71	45.07
9	11510.00	60.24 PK	74.00	-13.76	1.00 H	0	10.52	49.72
10	11510.00	44.17 AV	54.00	-9.83	1.00 H	0	-5.55	49.72

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	58.63 PK	74.00	-15.37	1.02 V	354	30.55	28.08
2	1125.00	50.41 AV	54.00	-3.59	1.02 V	354	22.33	28.08
3	#5725.00	72.32 PK	90.23	-17.91	1.02 V	1	32.71	39.61
4	#5725.00	51.17 AV	79.01	-27.84	1.02 V	1	11.56	39.61
5	*5755.00	110.23 PK			1.04 V	0	70.55	39.68
6	*5755.00	99.01 AV			1.04 V	0	59.33	39.68
7	7673.00	54.46 PK	74.00	-19.54	1.39 V	228	9.39	45.07
8	7673.00	44.81 AV	54.00	-9.19	1.39 V	228	-0.26	45.07
9	11510.00	60.78 PK	74.00	-13.22	1.10 V	360	11.06	49.72
10	11510.00	44.86 AV	54.00	-9.14	1.10 V	360	-4.86	49.72

- 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 limit value is defined as per 15.247.
 7. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 999hPa	TESTED BY	Mitch Tsui

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	55.30 PK	74.00	-18.70	1.29 H	359	27.22	28.08
2	1125.00	45.39 AV	54.00	-8.61	1.29 H	359	17.31	28.08
3	*5795.00	97.58 PK			1.00 H	341	57.80	39.78
4	*5795.00	87.61 AV			1.00 H	341	47.83	39.78
5	#5850.00	68.74 PK	77.58	-8.84	1.00 H	341	28.82	39.91
6	#5850.00	45.26 AV	67.61	-22.35	1.00 H	341	5.34	39.91
7	7726.00	50.11 PK	74.00	-23.89	1.00 H	360	4.93	45.18
8	7726.00	40.19 AV	54.00	-13.81	1.00 H	360	-4.99	45.18
9	11590.00	60.36 PK	74.00	-13.64	1.00 H	0	10.68	49.68
10	11590.00	44.50 AV	54.00	-9.50	1.00 H	0	-5.18	49.68
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1125.00	58.40 PK	74.00	-15.60	1.01 V	356	30.32	28.08
2	1125.00	50.13 AV	54.00	-3.87	1.01 V	356	22.05	28.08
3	*5795.00	109.75 PK			1.49 V	152	69.97	39.78
4	*5795.00	98.74 AV			1.49 V	152	58.96	39.78
5	#5850.00	72.53 PK	89.75	-17.22	1.49 V	152	32.62	39.91
6	#5850.00	49.73 AV	78.74	-29.01	1.49 V	152	9.81	39.91
7	7726.00	55.23 PK	74.00	-18.77	1.41 V	336	10.05	45.18
8	7726.00	45.09 AV	54.00	-8.91	1.41 V	336	-0.09	45.18
9	11590.00	59.14 PK	74.00	-14.86	1.30 V	1	9.46	49.68
10	11590.00	43.44 AV	54.00	-10.56	1.30 V	1	-6.24	49.68

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.
 7. “#”:The radiated frequency is out the restricted band.



BELOW 1GHz WORST-CASE DATA : DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 999hPa	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	249.60	44.71 QP	46.00	-1.29	1.00 H	127	31.94	12.76
2	300.16	42.05 QP	46.00	-3.95	1.00 H	133	28.45	13.60
3	375.98	38.36 QP	46.00	-7.64	1.00 H	241	22.94	15.42
4	500.42	44.12 QP	46.00	-1.88	1.50 H	118	25.01	19.12
5	568.47	42.16 QP	46.00	-3.84	1.25 H	232	21.40	20.76
6	877.61	44.45 QP	46.00	-1.55	1.50 H	250	18.81	25.64

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	55.18	35.89 QP	40.00	-4.11	1.00 V	196	22.34	13.55
2	64.90	35.85 QP	40.00	-4.15	1.00 V	154	23.40	12.45
3	167.94	38.94 QP	43.50	-4.56	1.00 V	229	25.83	13.10
4	249.60	44.65 QP	46.00	-1.35	1.25 V	214	31.89	12.76
5	500.42	44.40 QP	46.00	-1.60	1.00 V	112	25.28	19.12
6	568.47	40.44 QP	46.00	-5.56	1.00 V	157	19.68	20.76
7	877.61	43.81 QP	46.00	-2.19	1.00 V	250	18.17	25.64

- 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.

5.2 CONDUCTED EMISSION MEASUREMENT

5.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 21, 2008
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 06, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 09, 2009
LISN SCHWARZBECK	ESH3-Z5	100311	Jan. 21, 2009
Software ADT	ADT_Cond_V3	NA	NA

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

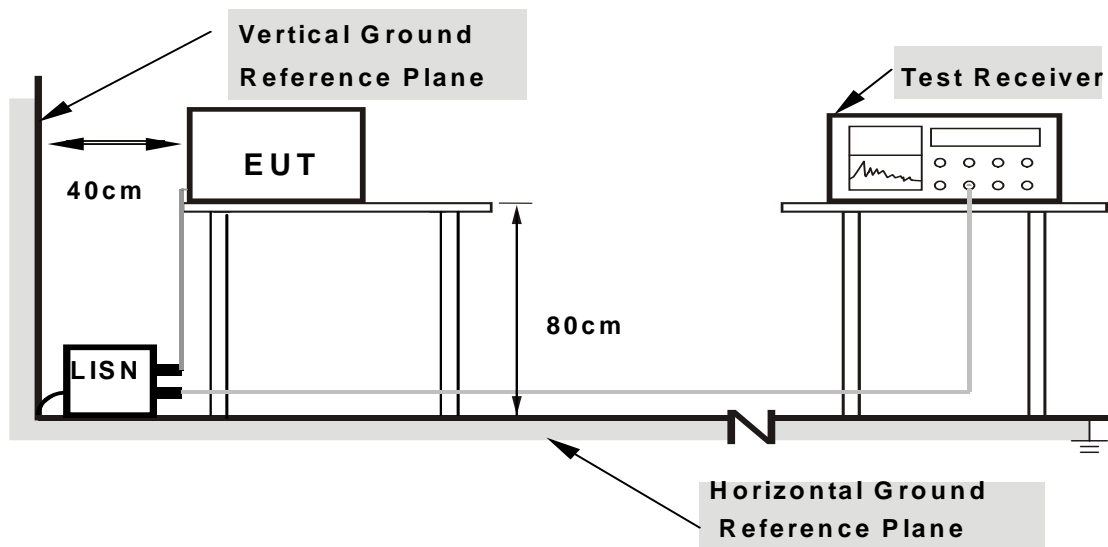
5.2.3 TEST PROCEDURES

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

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

5.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

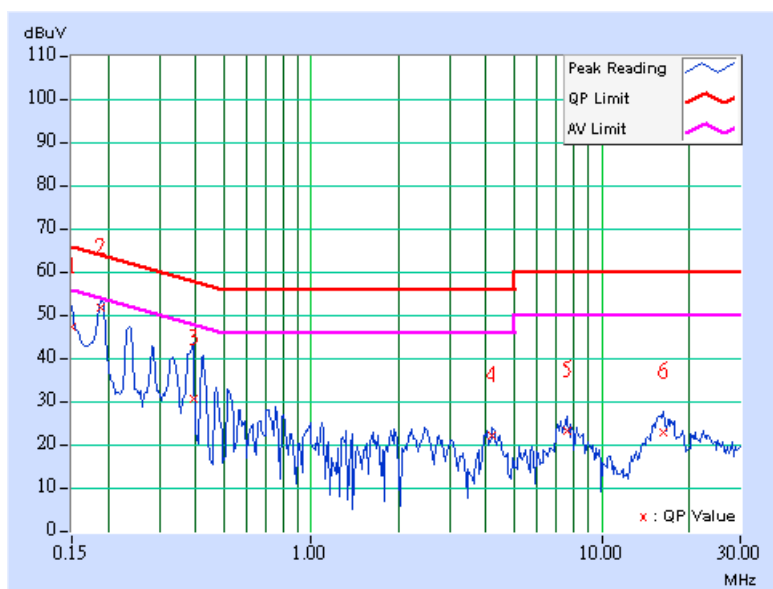
5.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 988hPa	TESTED BY	Brad Wu

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	46.90	-	47.00	-	66.00	56.00	-19.00	-
2	0.189	0.10	51.35	-	51.45	-	64.08	54.08	-12.63	-
3	0.392	0.10	30.28	-	30.38	-	58.02	48.02	-27.64	-
4	4.211	0.28	21.80	-	22.08	-	56.00	46.00	-33.92	-
5	7.559	0.31	22.69	-	23.00	-	60.00	50.00	-37.00	-
6	16.367	0.50	22.42	-	22.92	-	60.00	50.00	-37.08	-

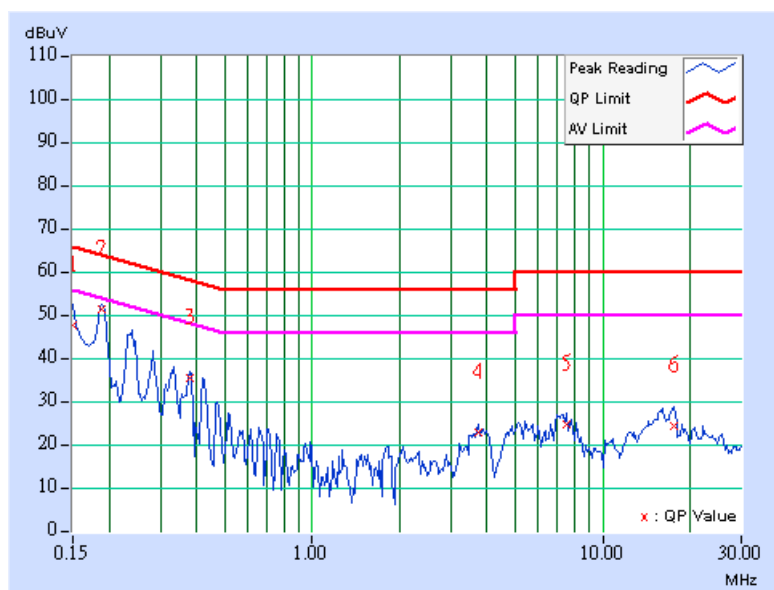
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 149	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 988hPa	TESTED BY	Brad Wu

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	47.37	-	47.47	-	66.00	56.00	-18.53	-
2	0.189	0.10	51.07	-	51.17	-	64.08	54.08	-12.91	-
3	0.380	0.10	34.86	-	34.96	-	58.27	48.27	-23.31	-
4	3.730	0.27	22.42	-	22.69	-	56.00	46.00	-33.31	-
5	7.500	0.37	24.13	-	24.50	-	60.00	50.00	-35.50	-
6	17.539	0.53	23.80	-	24.33	-	60.00	50.00	-35.67	-

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





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.

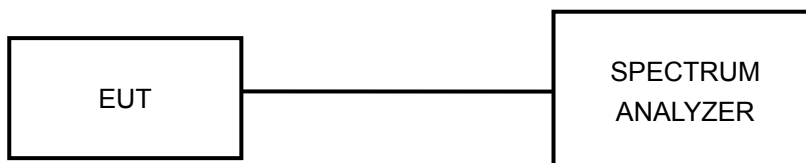
5.3.3 TEST PROCEDURE

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 300kHz 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.



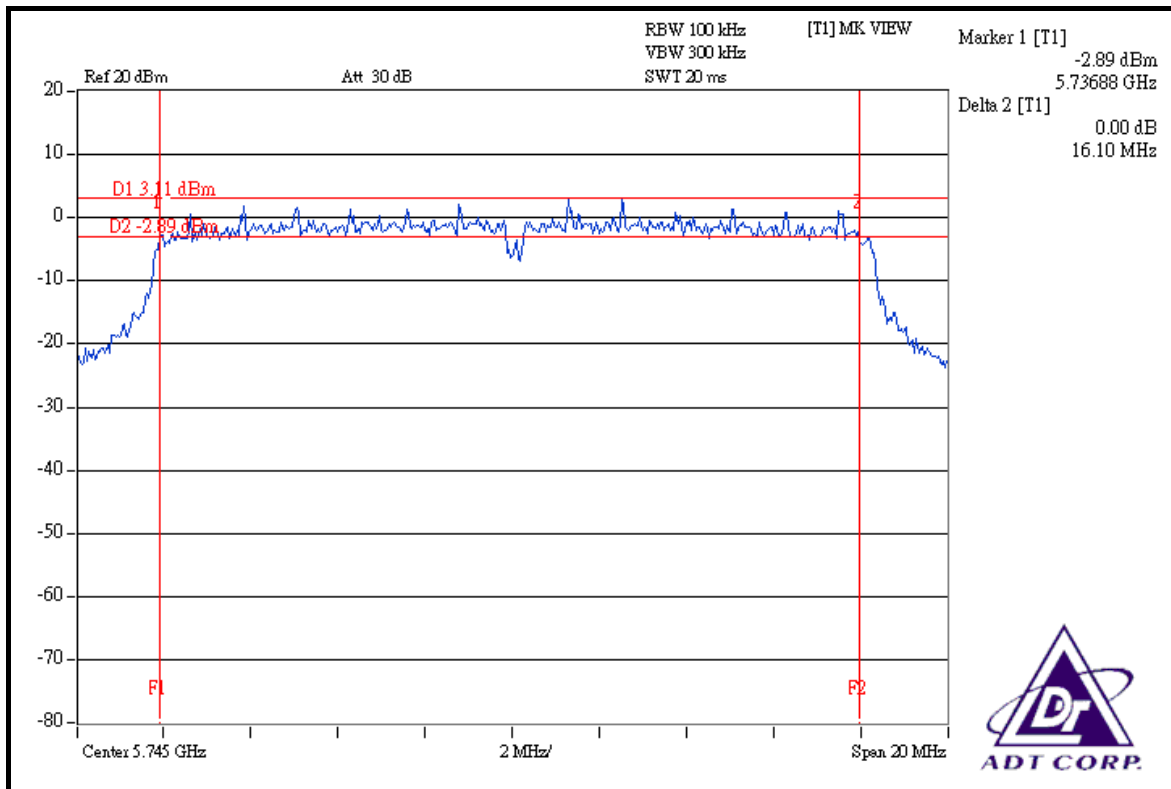
5.3.7 TEST RESULTS

802.11a OFDM MODULATION

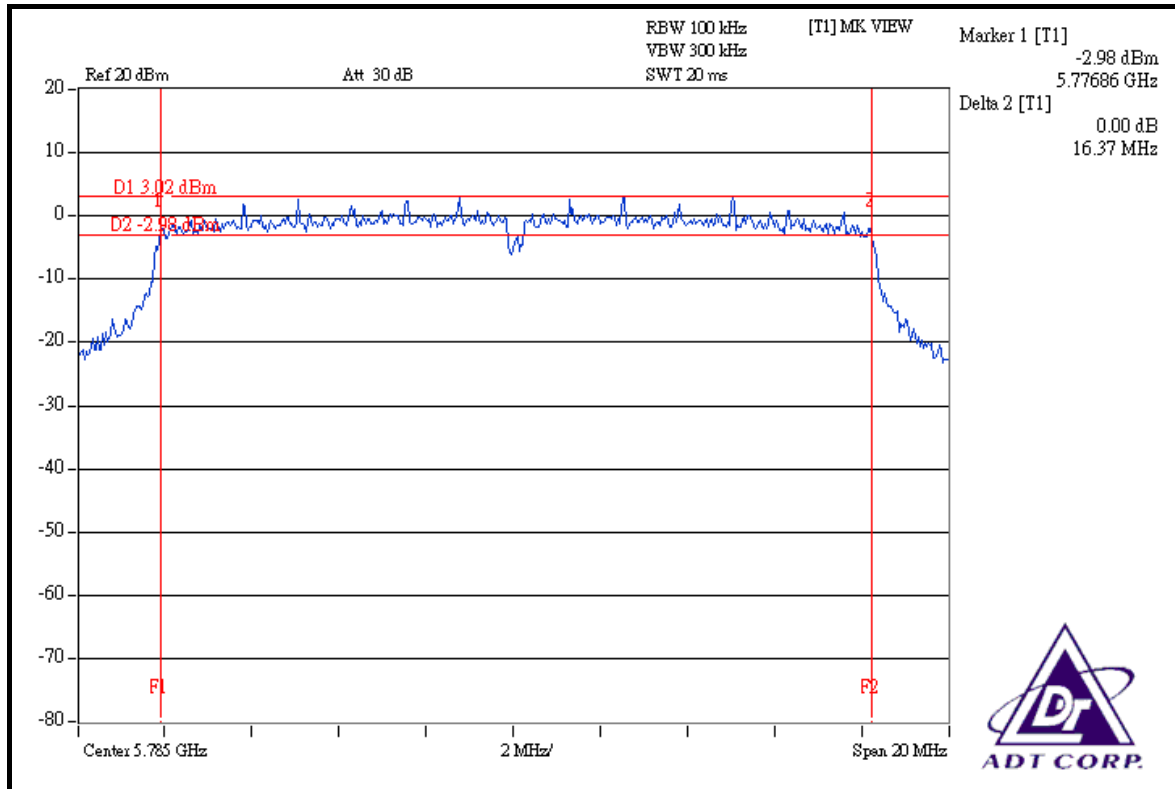
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 65 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.10	0.5	PASS
157	5785	16.37	0.5	PASS
165	5825	16.36	0.5	PASS

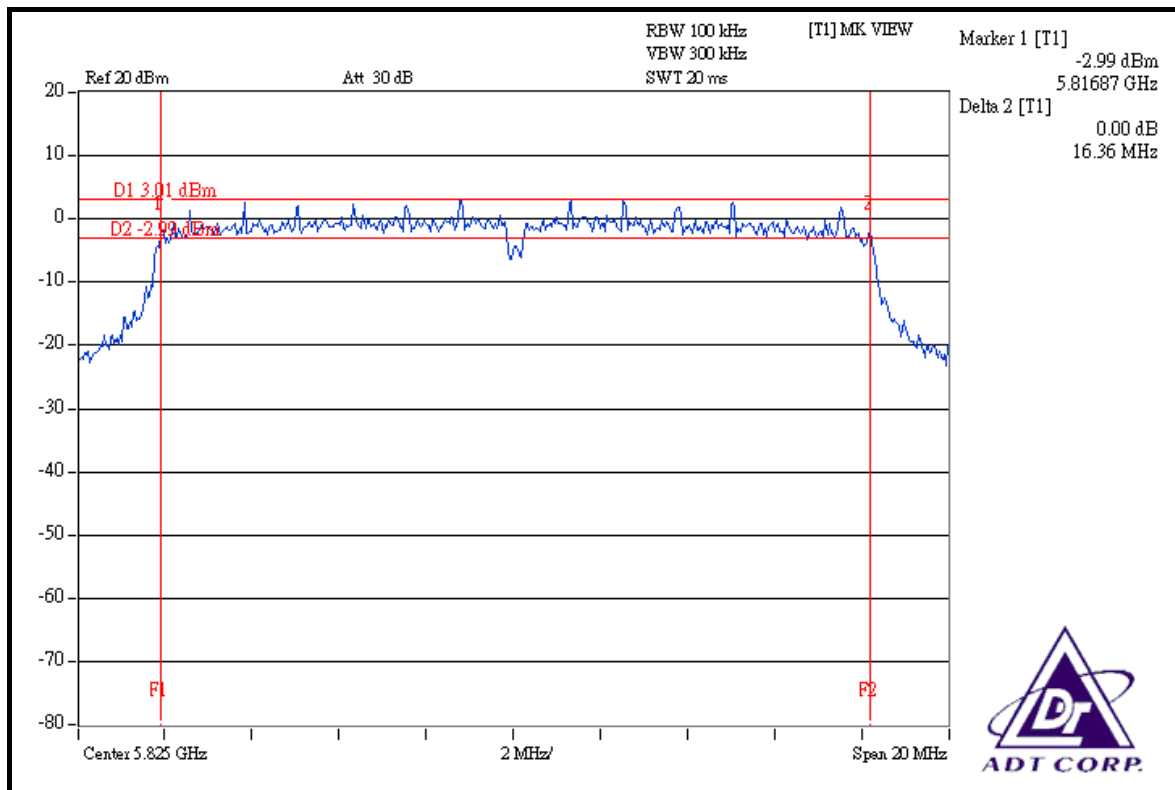
CH 149



CH 157



CH 165



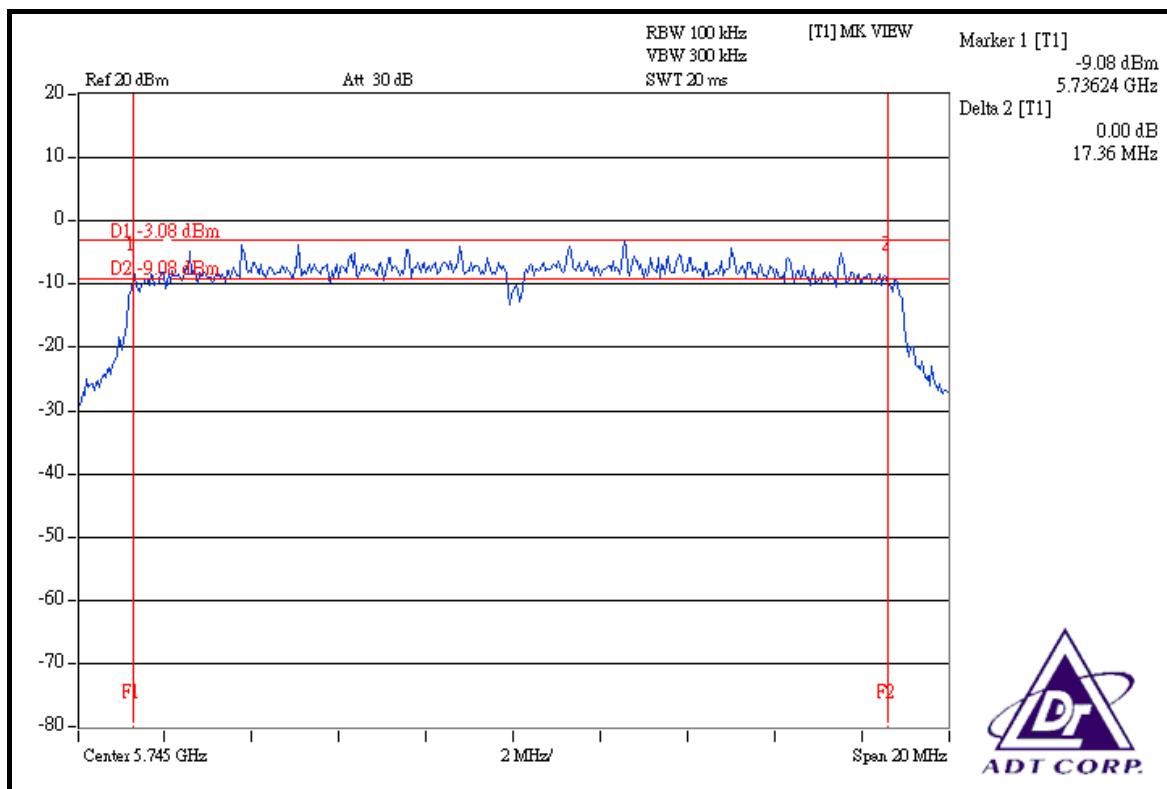


DRAFT 802.11n (20MHz) OFDM MODULATION

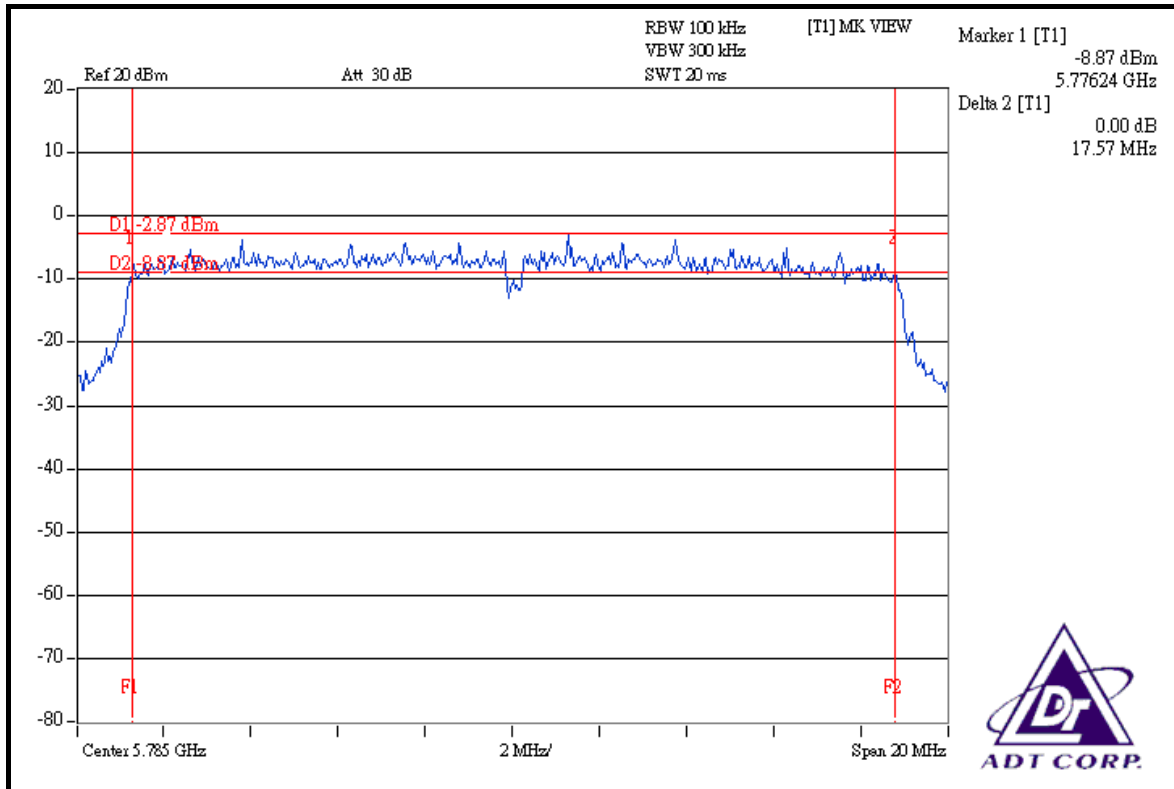
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
149	5745	17.36	16.70	17.58	0.5	PASS
157	5785	17.57	17.02	17.57	0.5	PASS
165	5825	17.35	17.32	16.99	0.5	PASS

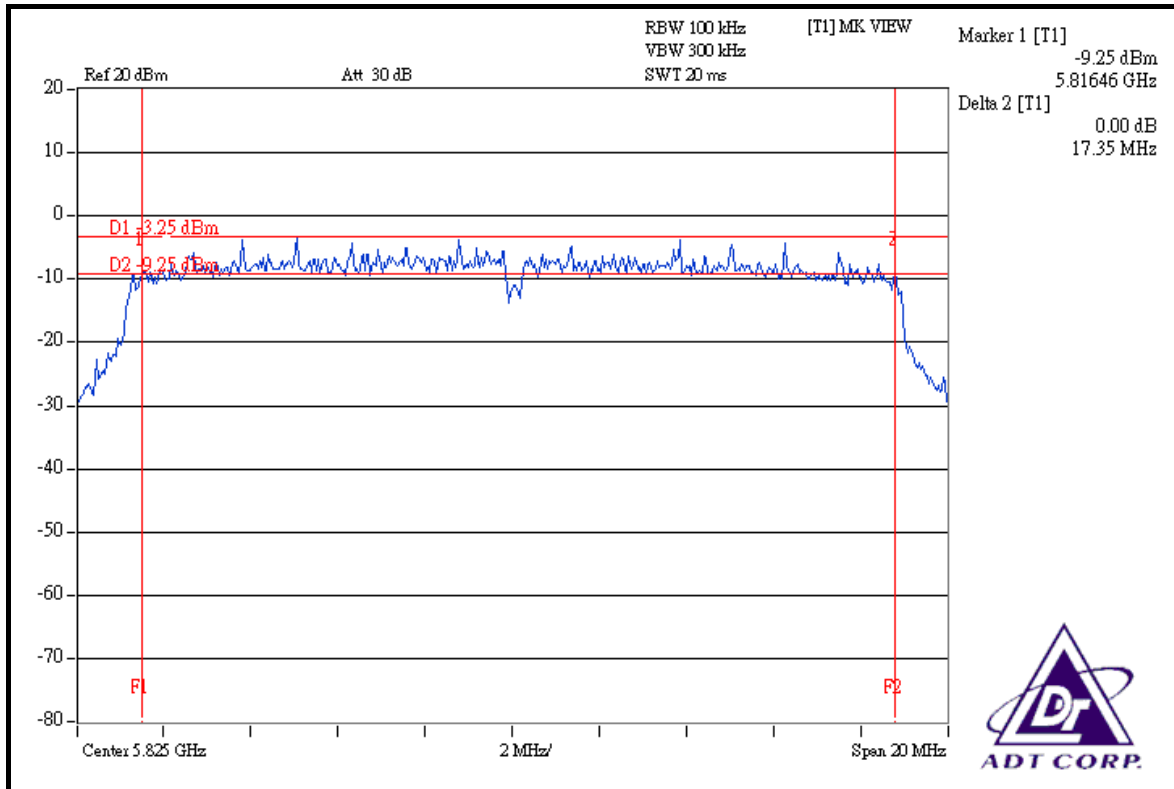
FOR CHAIN 0: CH 149



CH 157

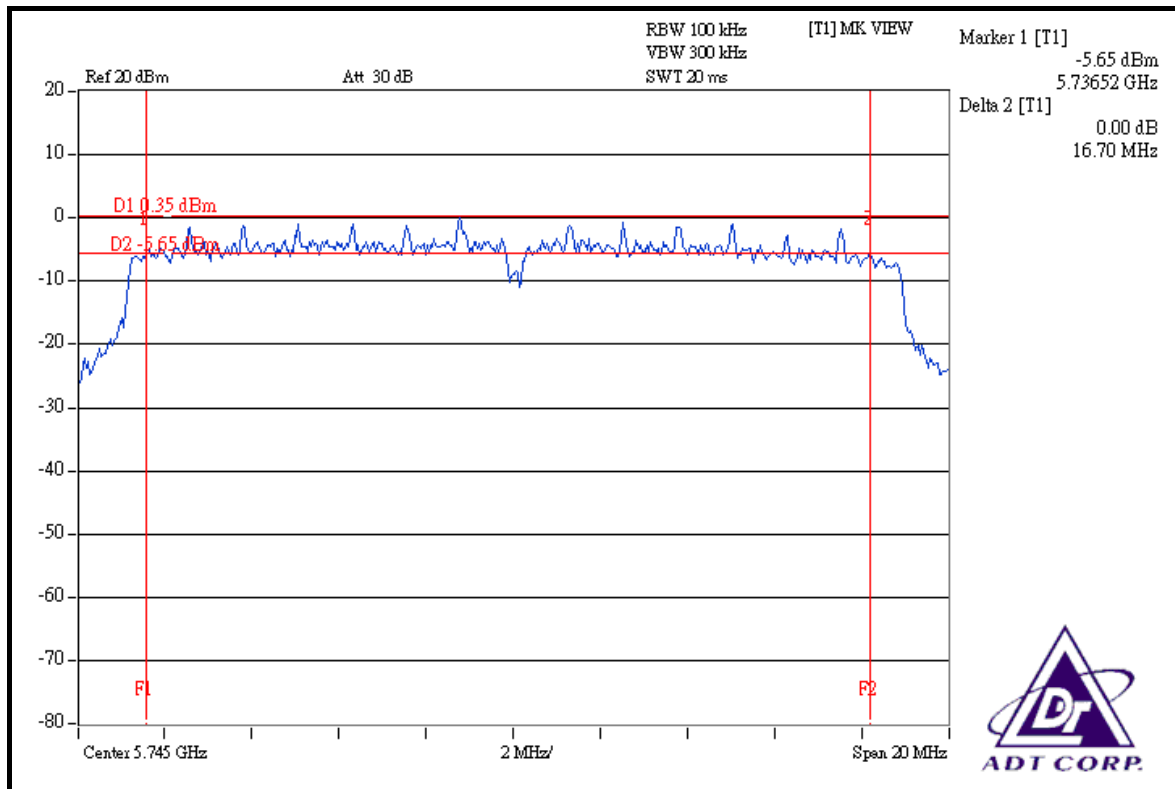


CH 165

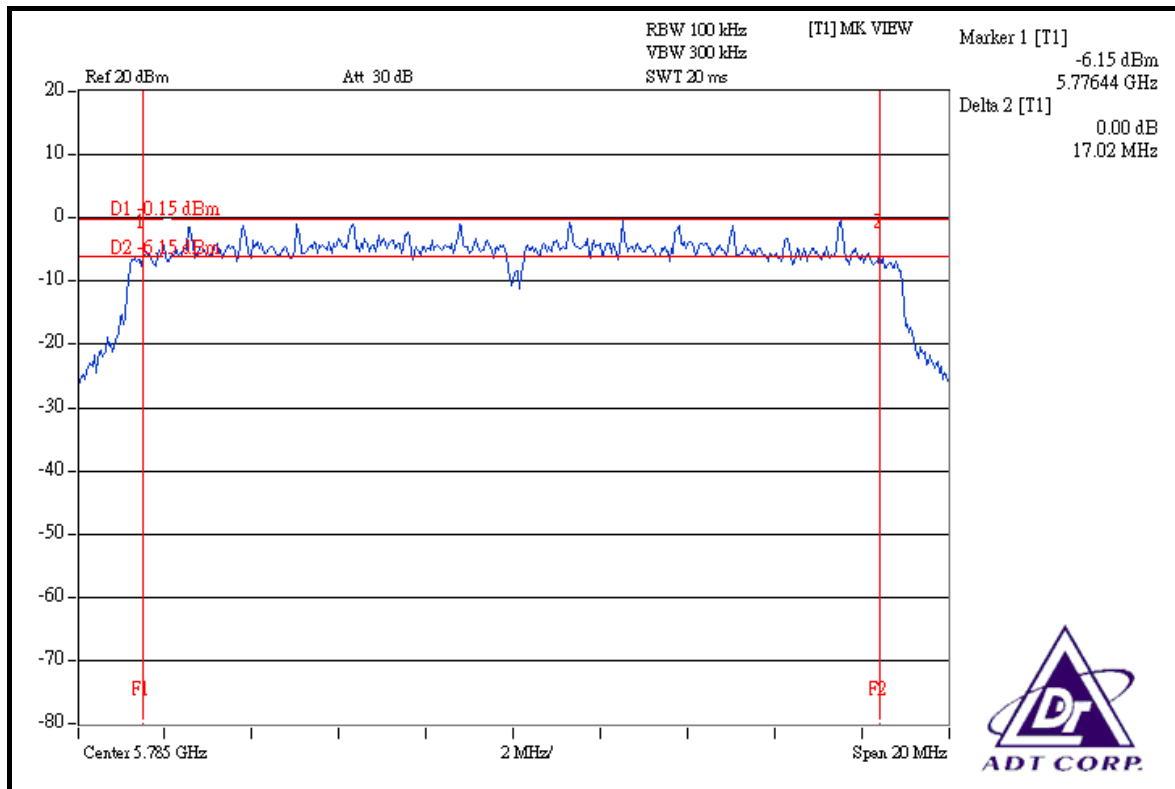




FOR CHAIN 1: CH 149

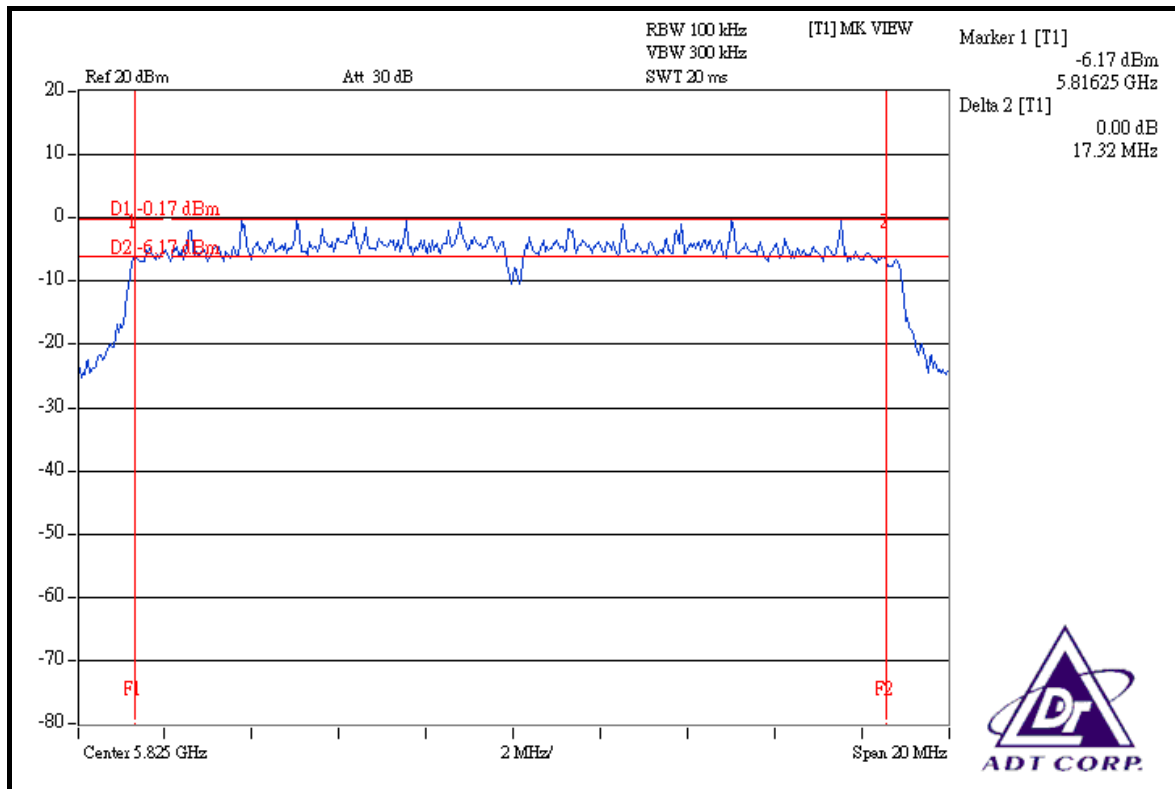


CH 157

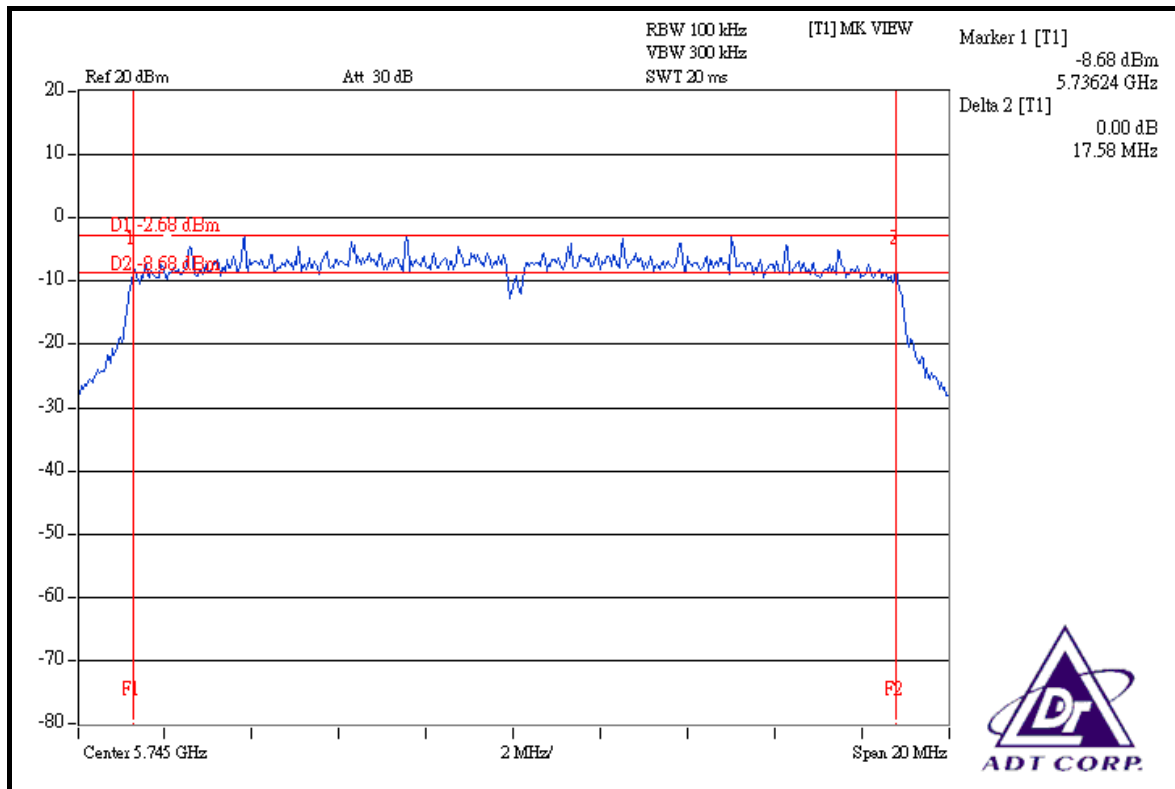




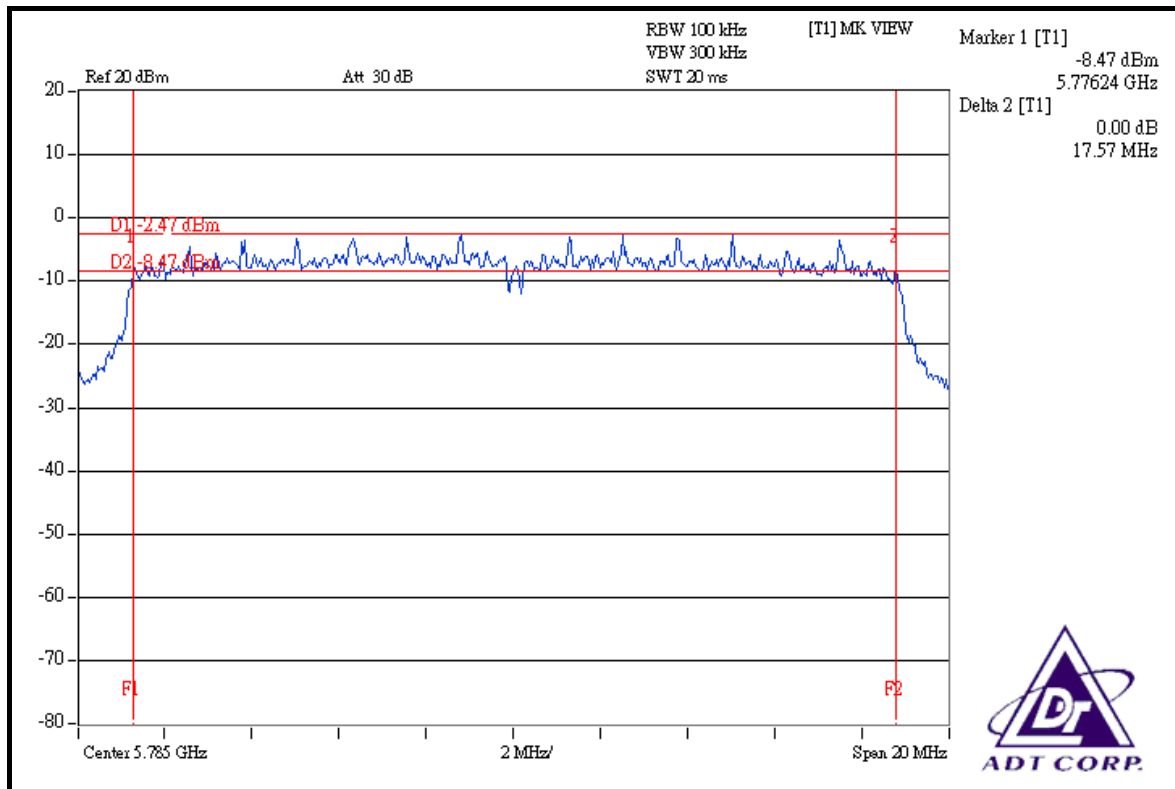
CH 165



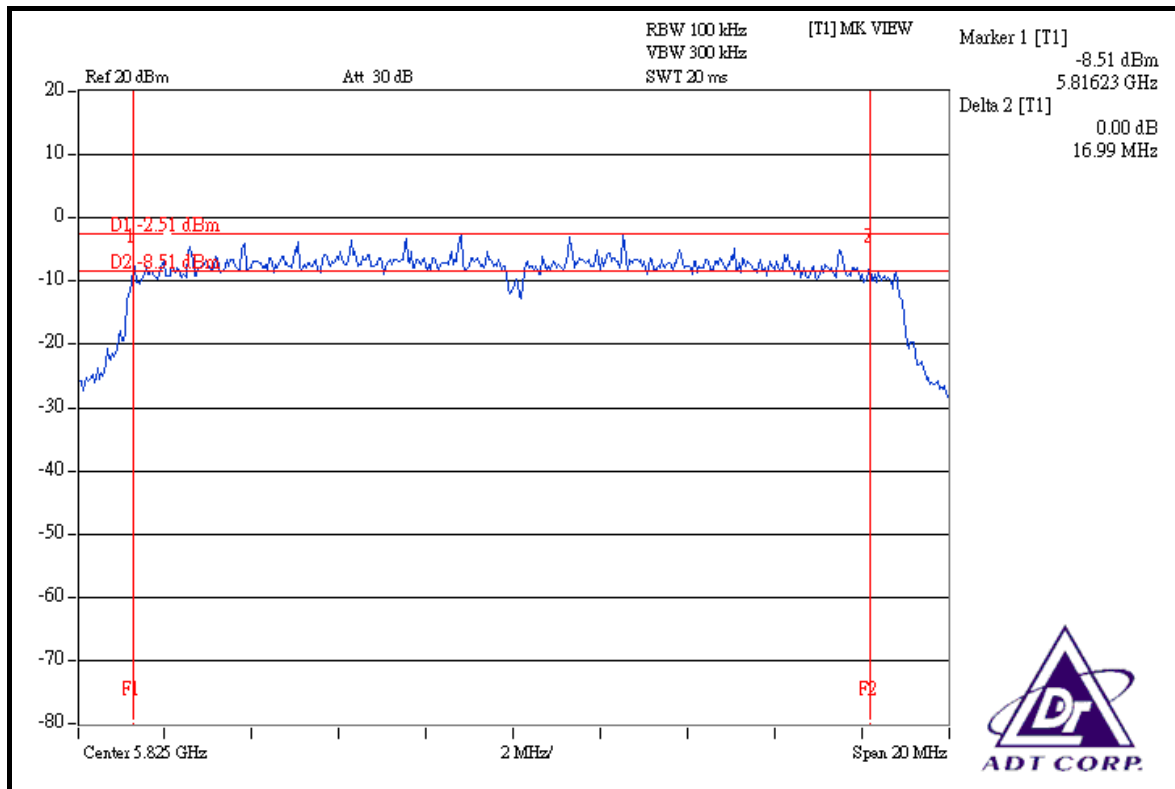
FOR CHAIN 2: CH 149



CH 157



CH 165





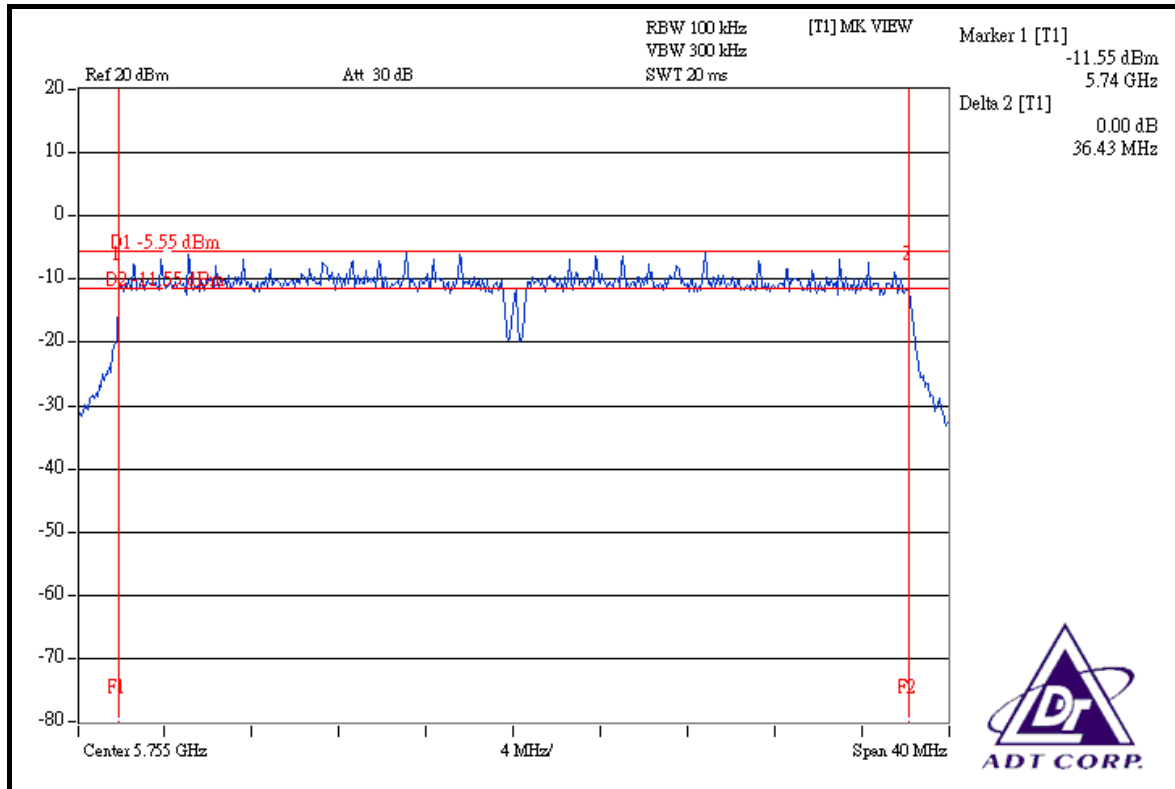
DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	15Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

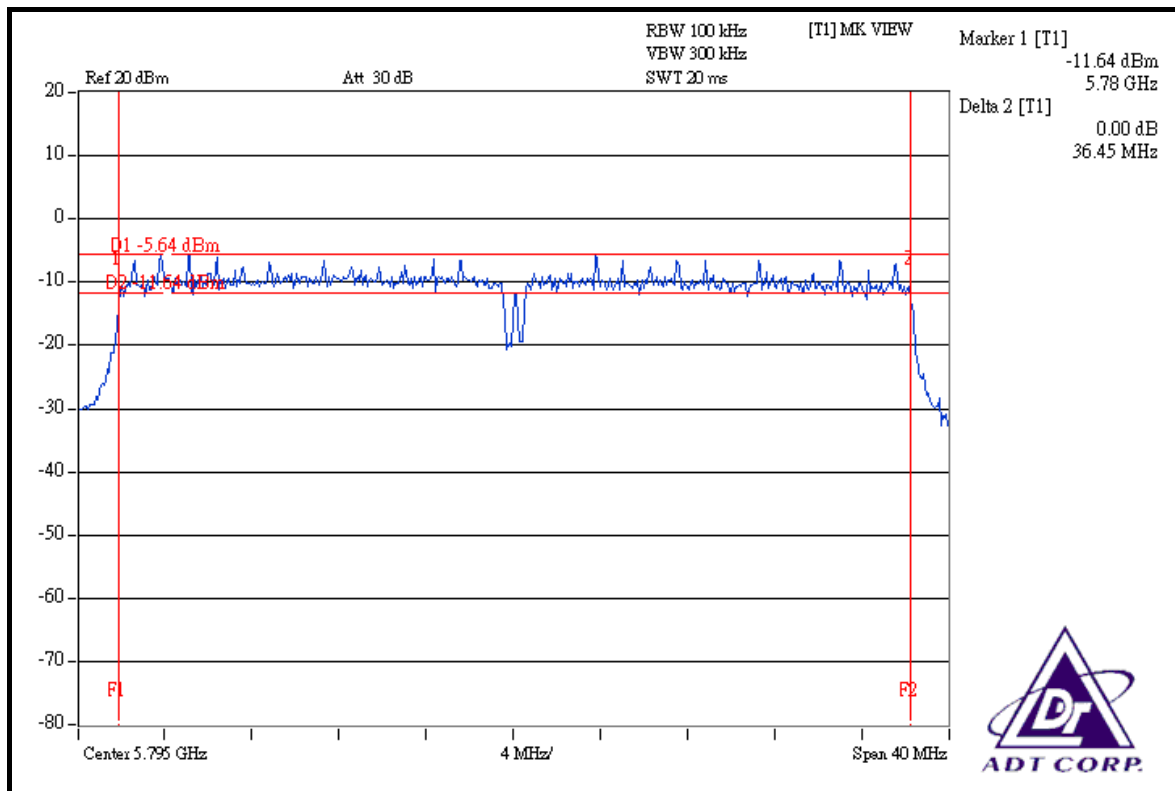
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
151	5755	36.43	36.13	36.46	0.5	PASS
159	5795	36.45	36.45	36.46	0.5	PASS



FOR CHAIN 0: CH 151

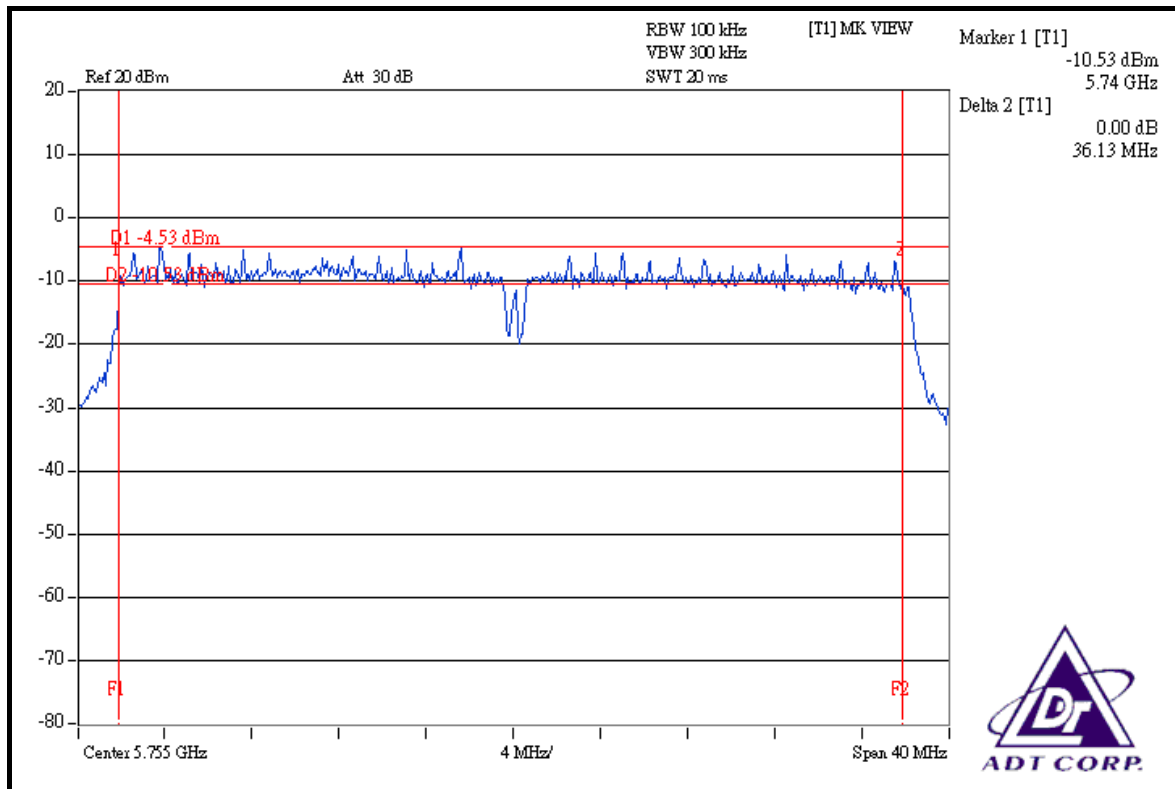


CH 159

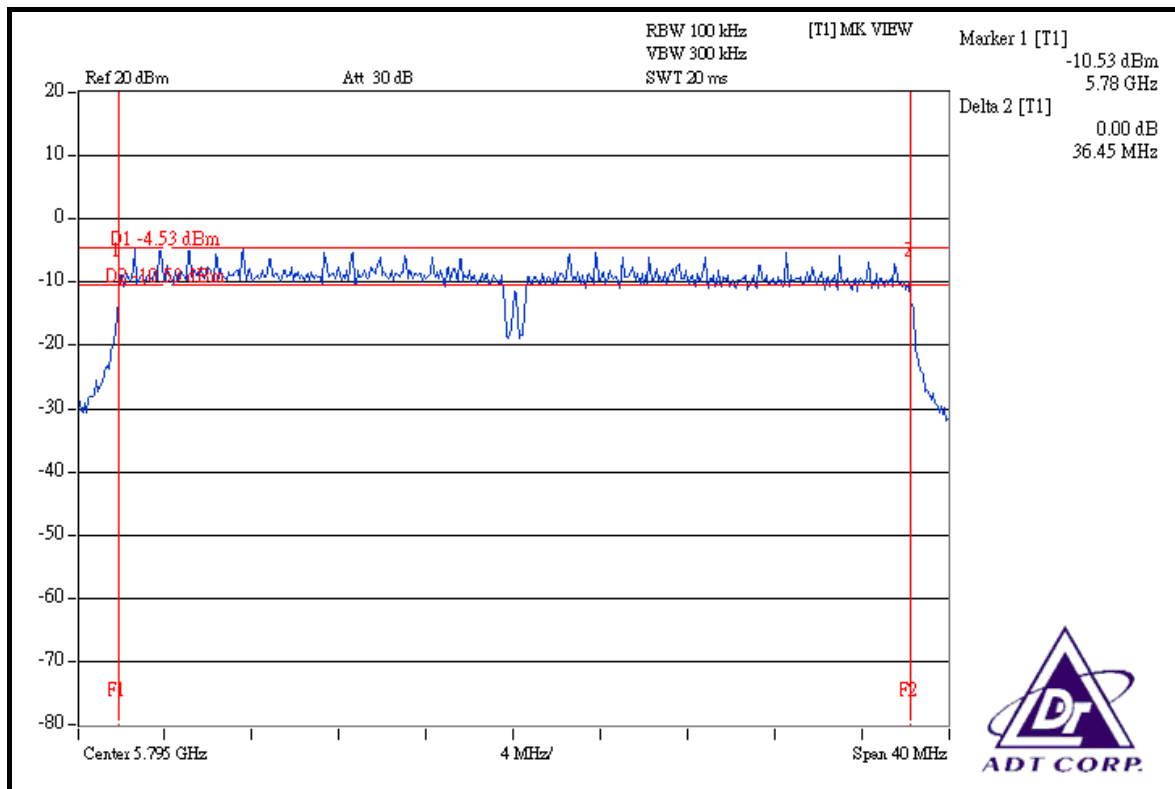




FOR CHAIN 1: CH 151

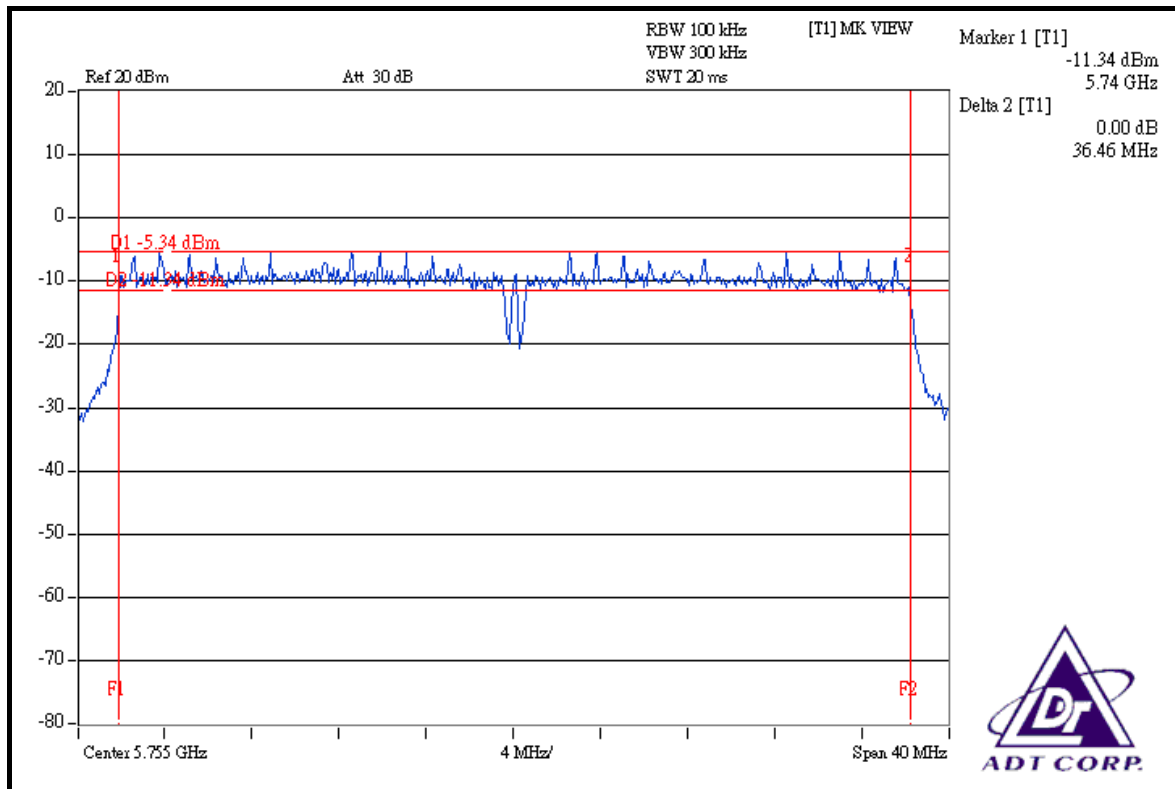


CH 159

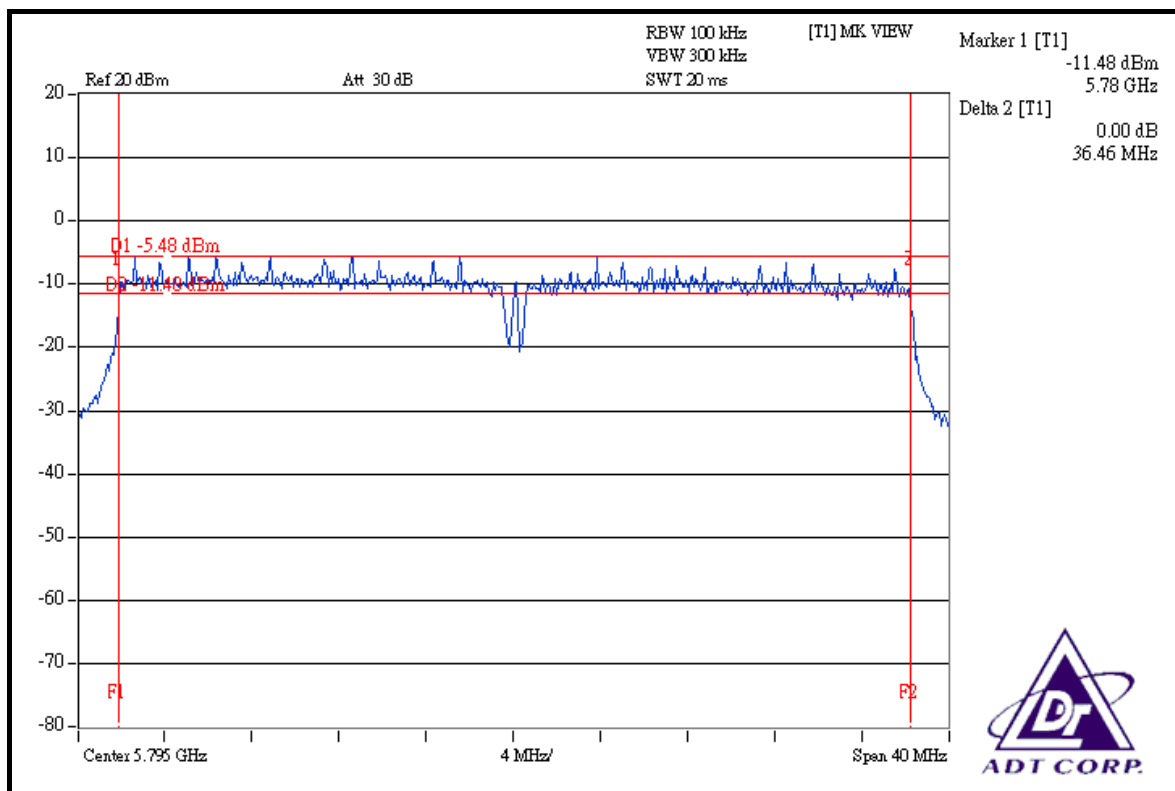




FOR CHAIN 2: CH 151



CH 159





5.4 MAXIMUM PEAK OUTPUT POWER

5.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

5.4.2 INSTRUMENTS

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

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

5.4.3 TEST PROCEDURES

- a. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
- b. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
- c. 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	25 deg.C, 65 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
149	5745	63.973	18.06	30	PASS
157	5785	64.714	18.11	30	PASS
165	5825	63.973	18.06	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 65 %RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
149	5745	13.08	14.63	13.61	72.325	18.59	30	PASS
157	5785	13.03	14.14	13.62	69.047	18.39	30	PASS
165	5825	13.06	14.04	13.61	68.543	18.36	30	PASS



DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	15Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 65 %RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
151	5755	13.09	14.14	13.05	66.496	18.23	30	PASS
159	5795	13.11	14.04	13.10	66.233	18.21	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

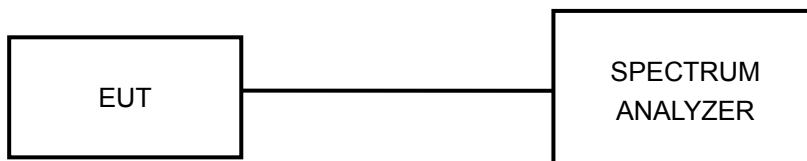
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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



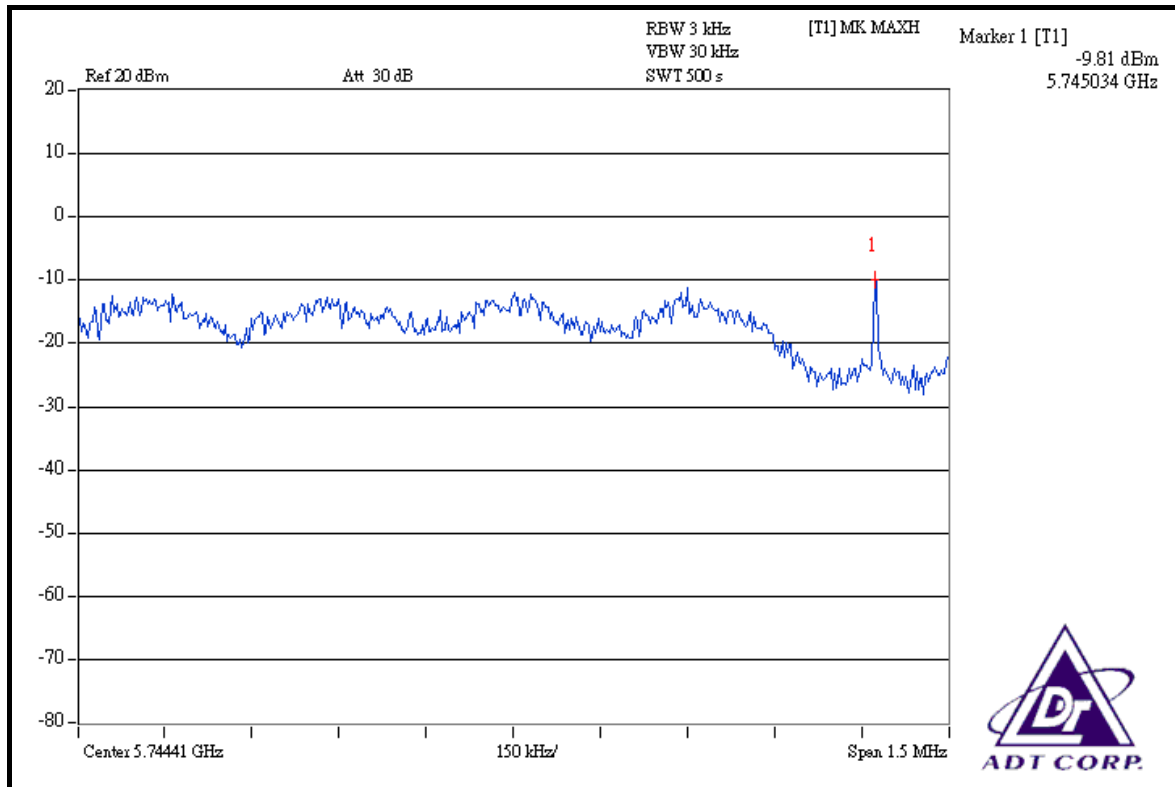
5.5.7 TEST RESULTS

802.11a OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

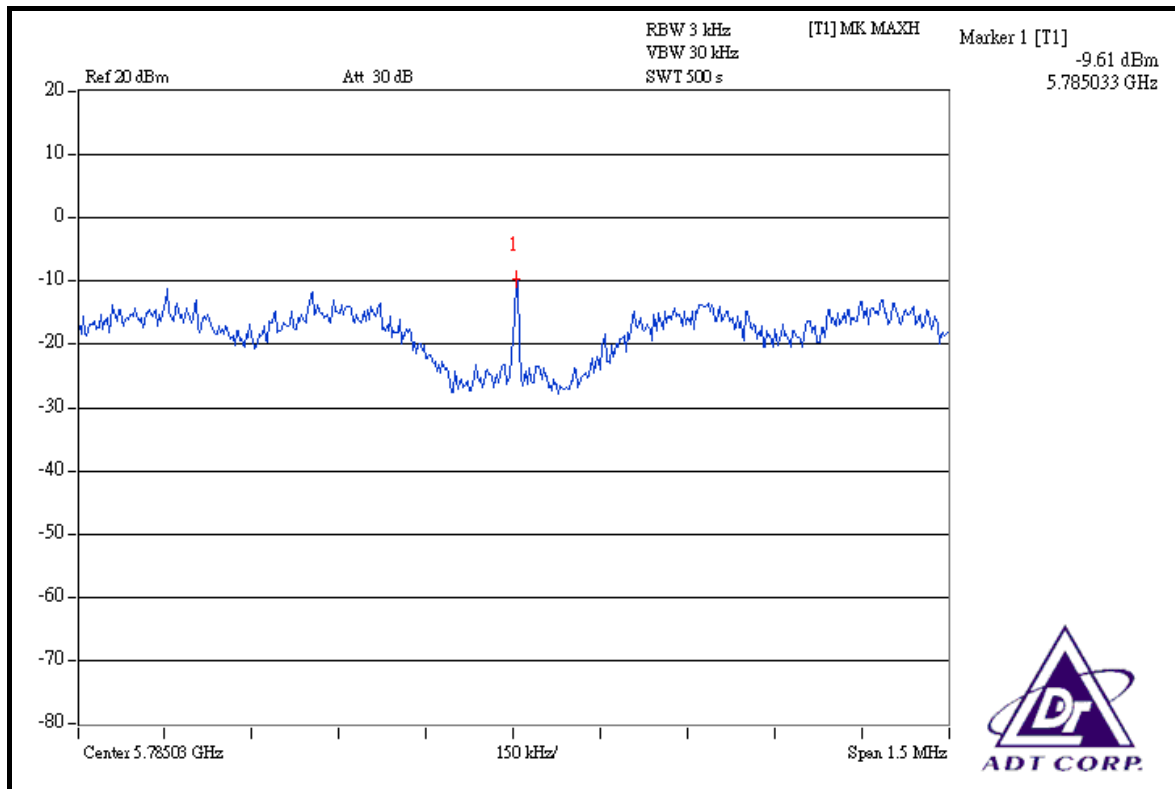
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
149	5745	-9.81	8	PASS
157	5785	-9.61	8	PASS
165	5825	-9.92	8	PASS

CH 149

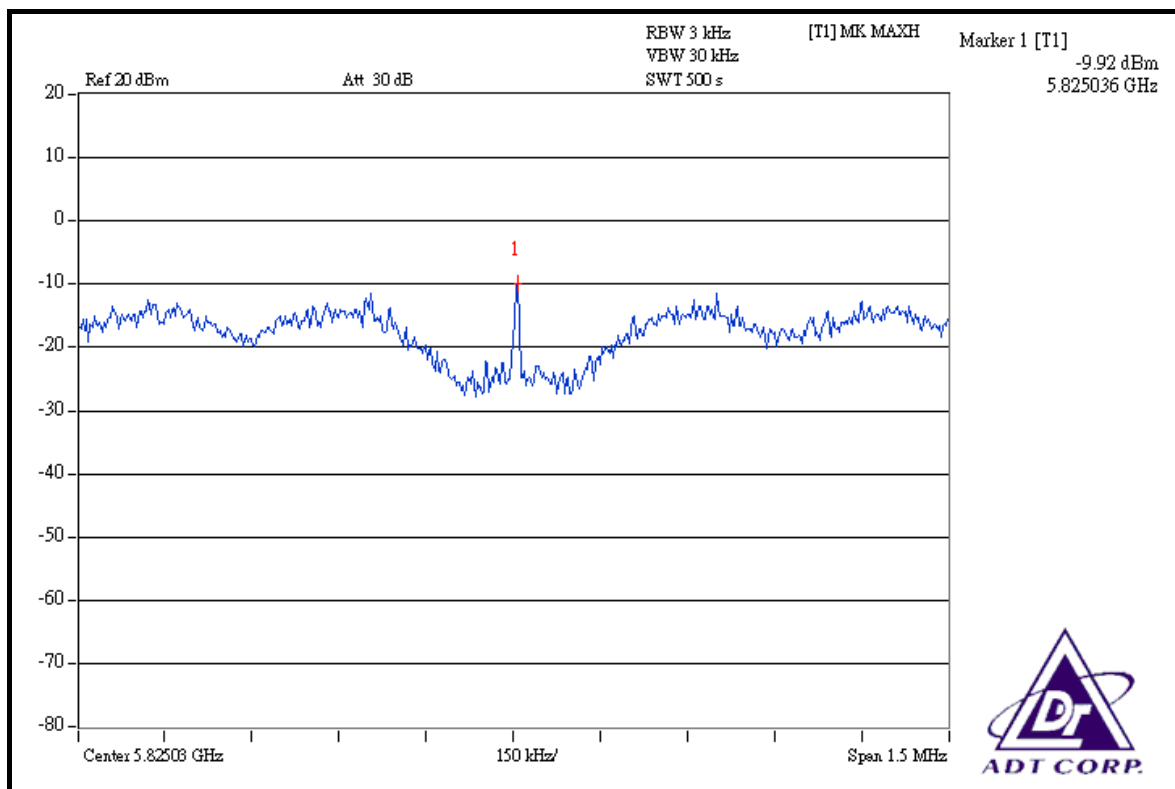




CH 157



CH 165



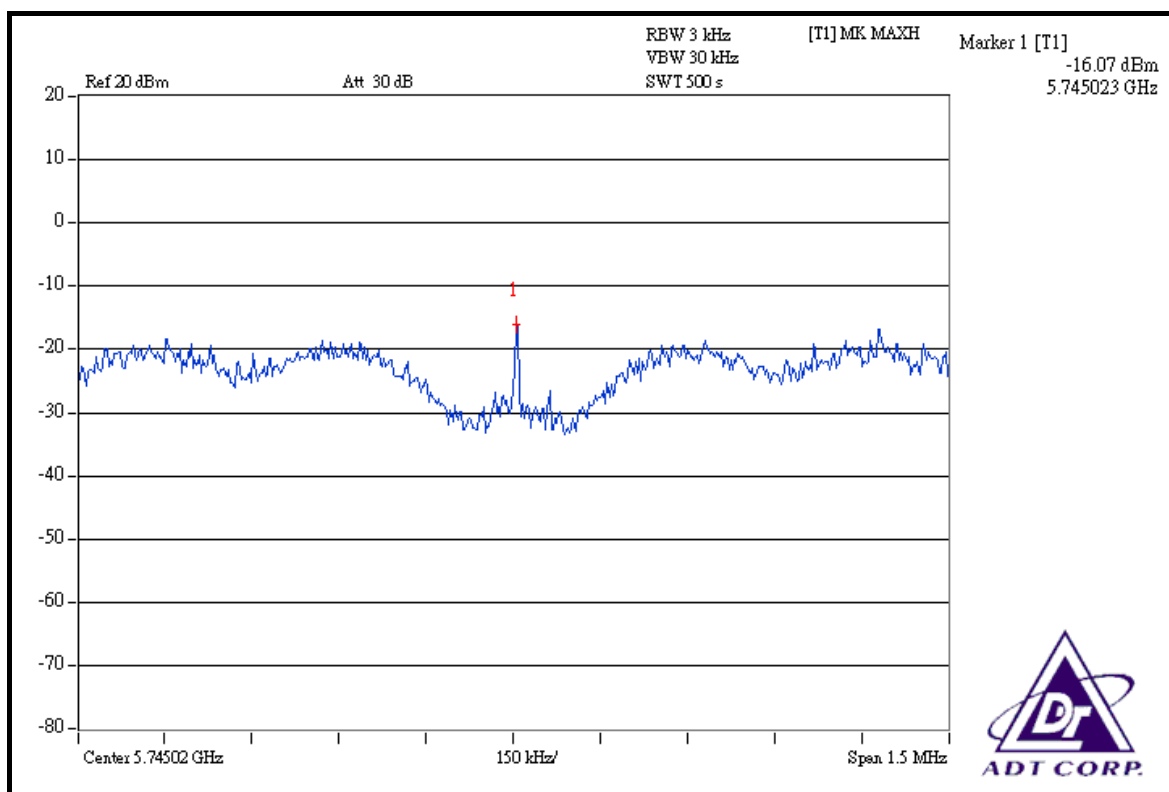


DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 65 %RH, 991hPa
TESTED BY	Brad Wu		

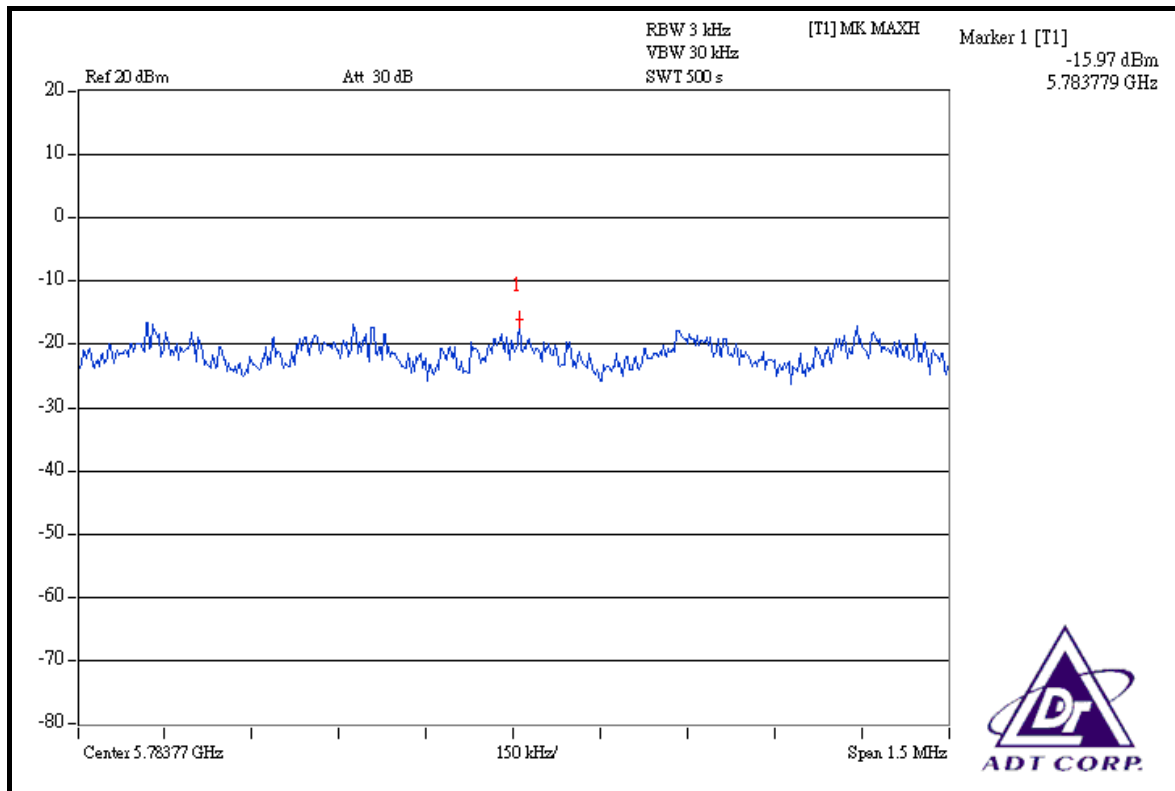
CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
149	5745	-16.07	-15.98	-14.25	0.088	-10.58	8	PASS
157	5785	-15.97	-16.24	-14.10	0.088	-10.56	8	PASS
165	5825	-15.88	-16.36	-14.08	0.088	-10.55	8	PASS

FOR CHAIN 0: CH 149

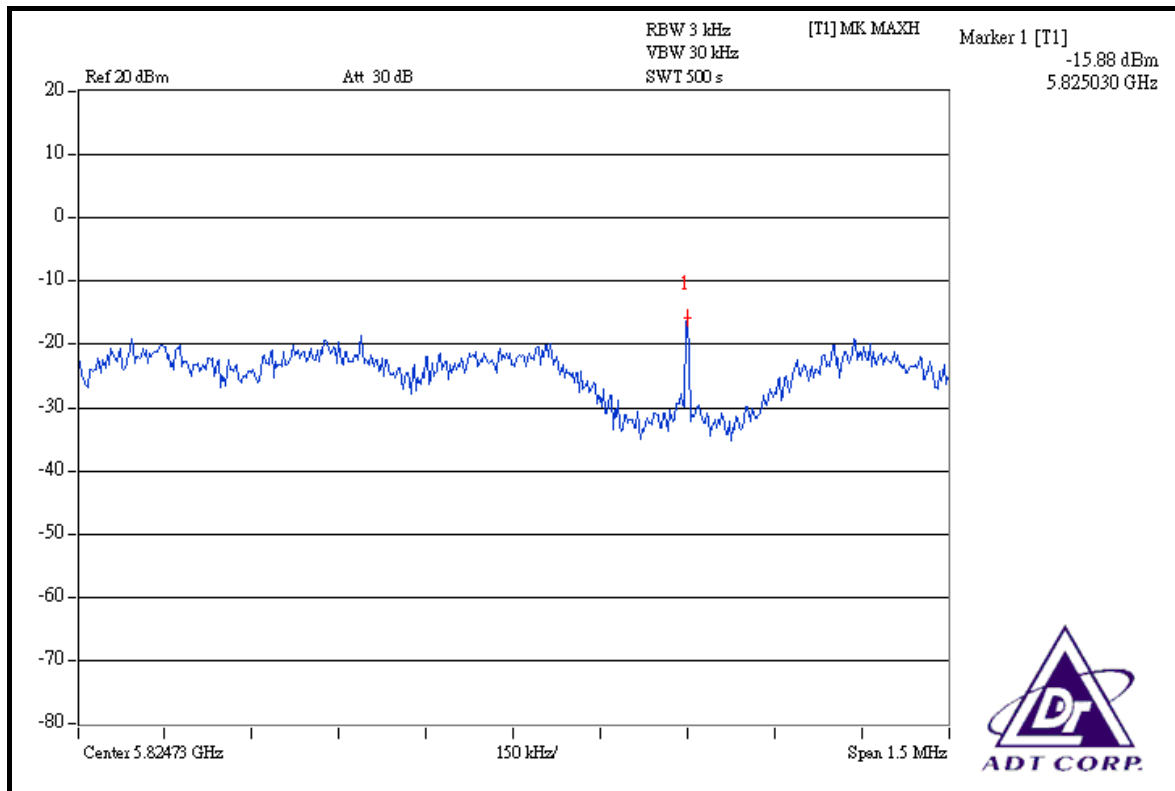




CH 157

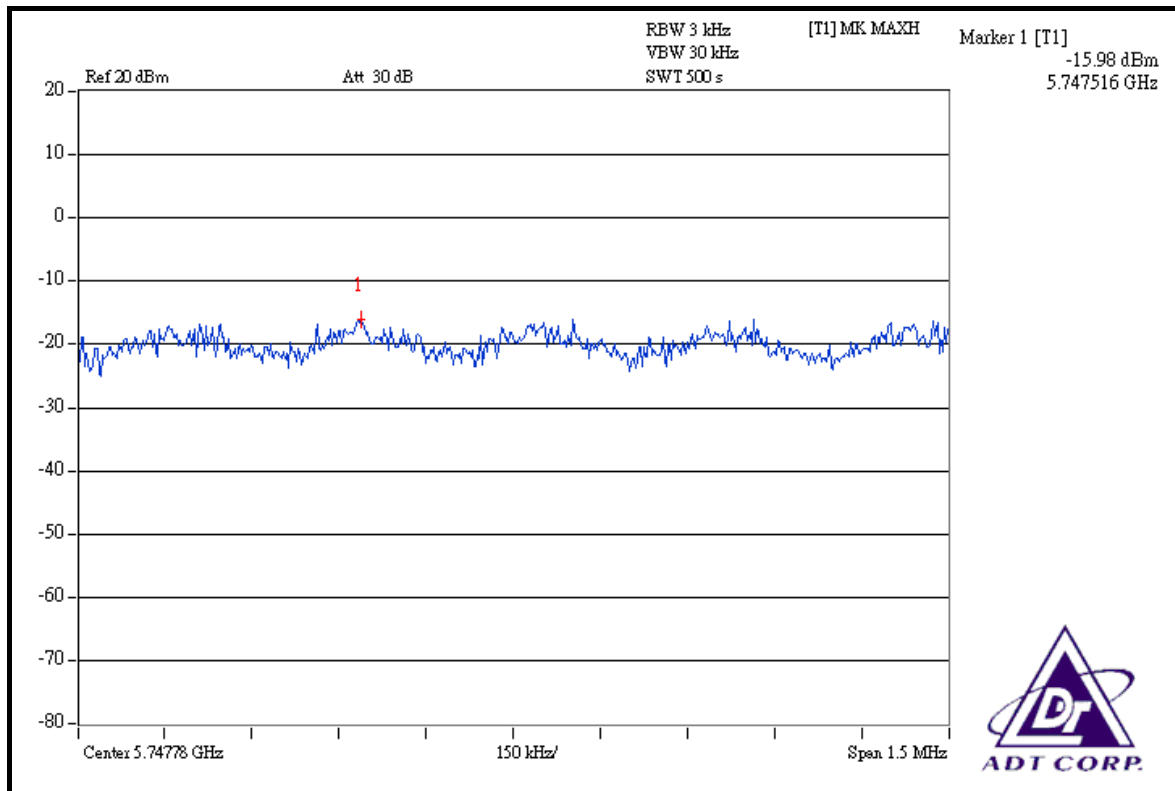


CH 165

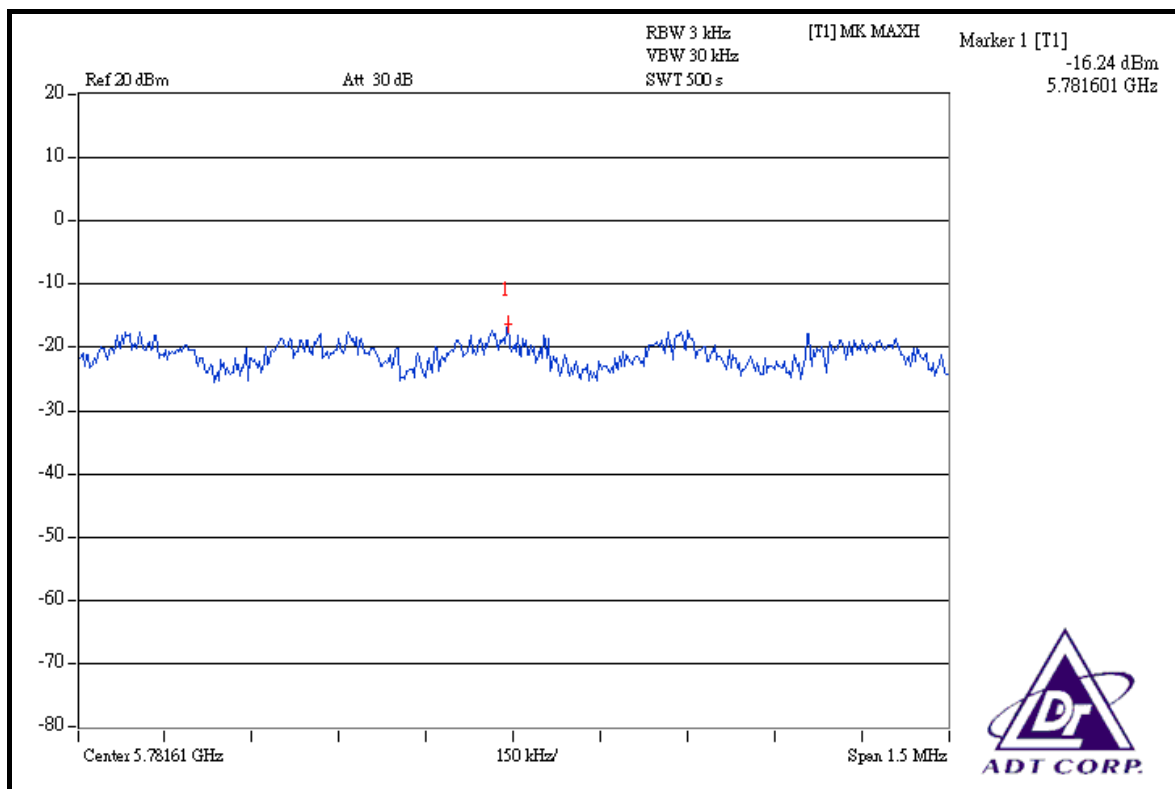




FOR CHAIN 1: CH 149

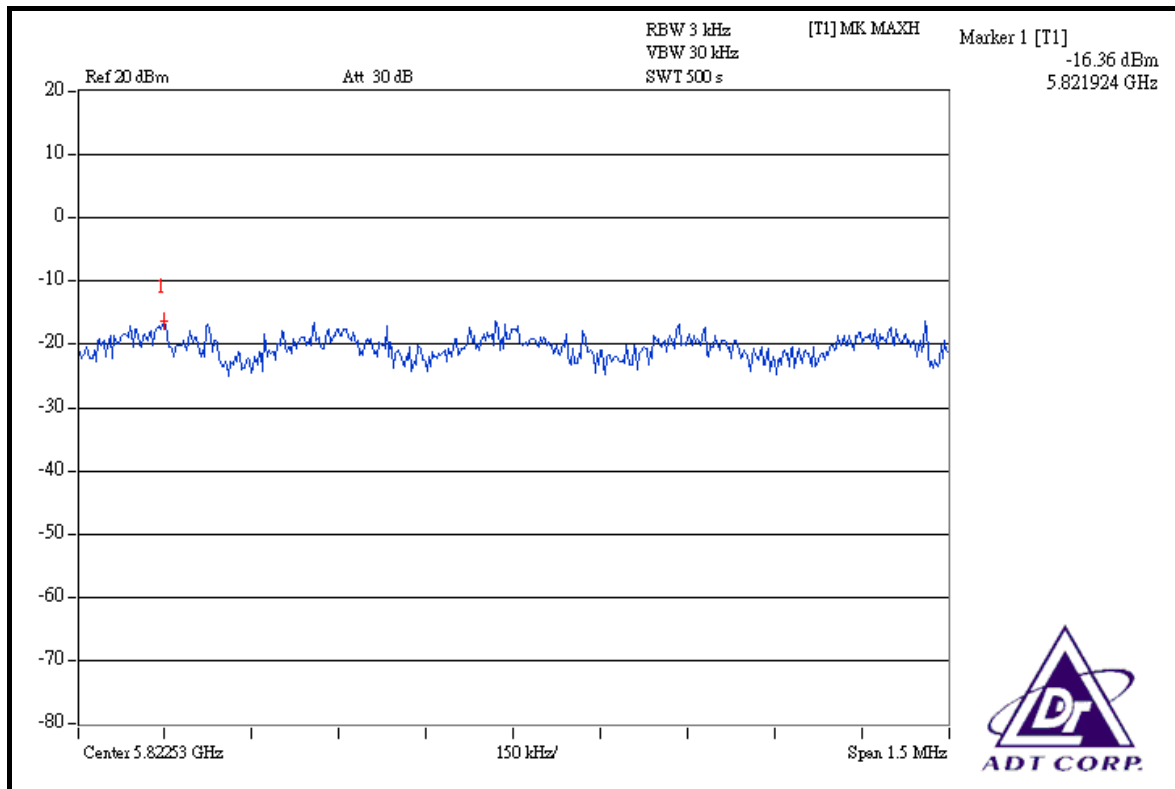


CH 157

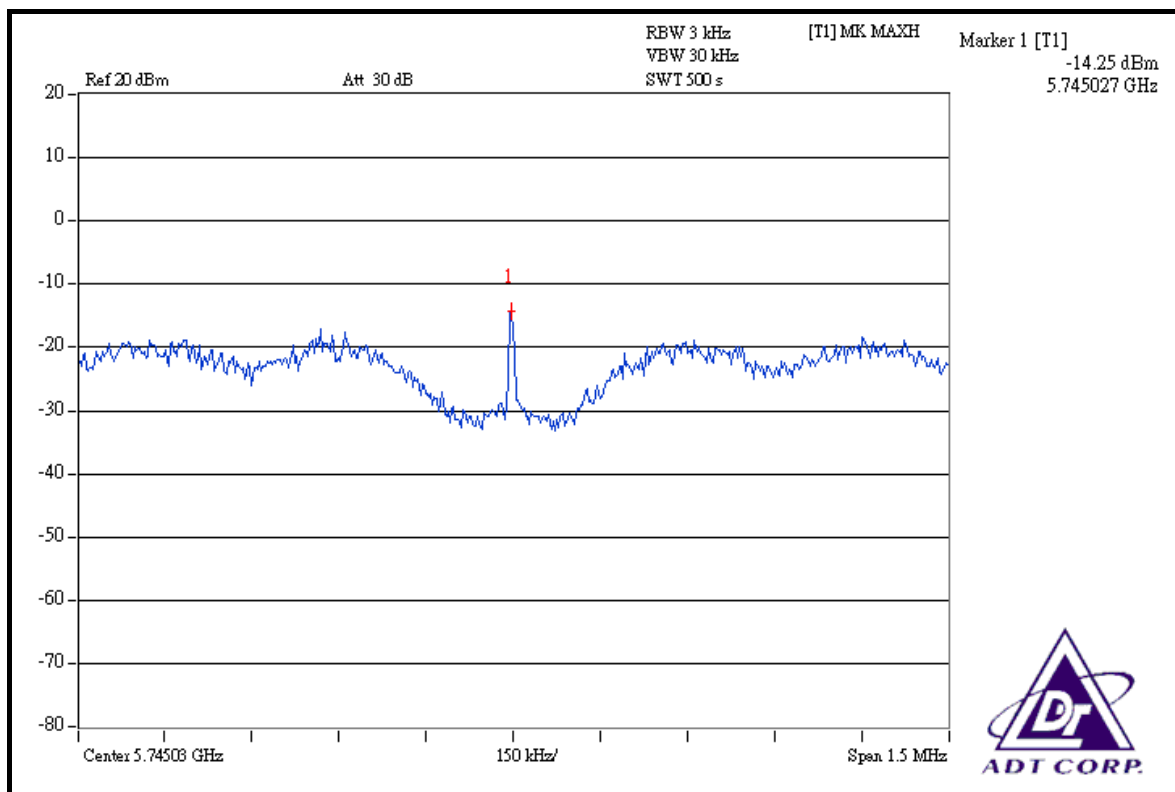




CH 165

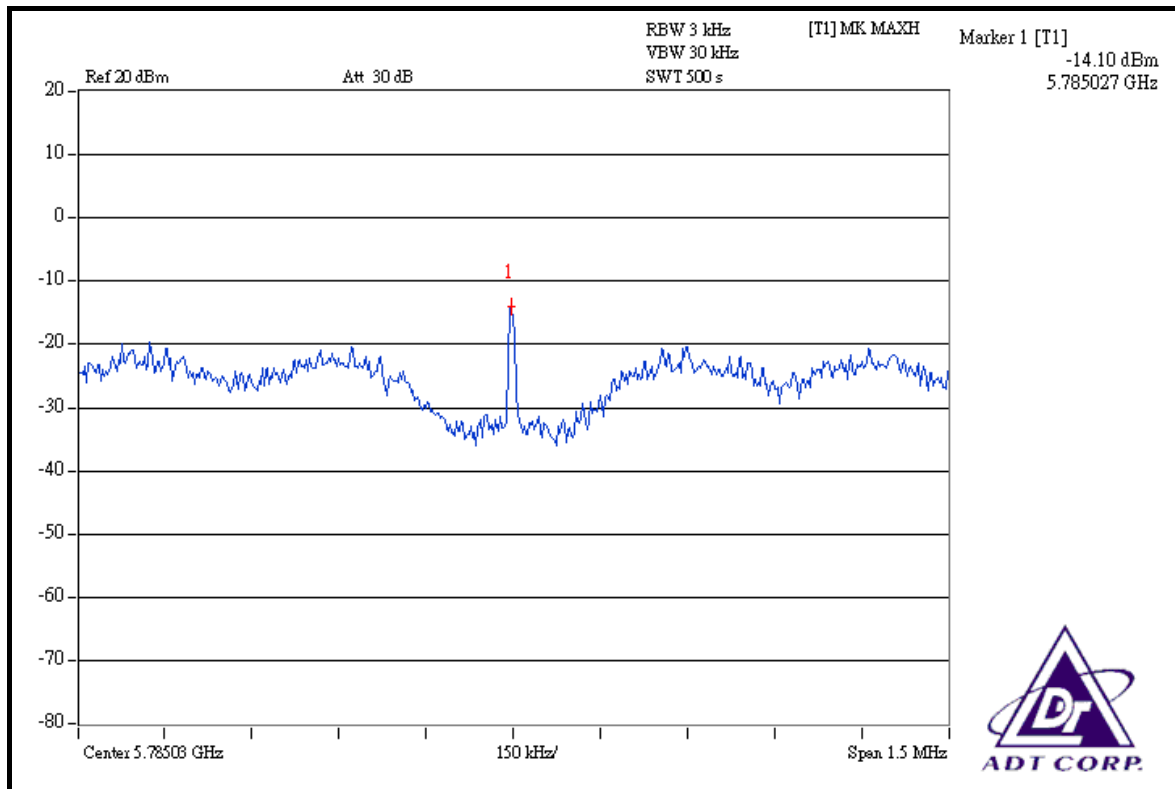


FOR CHAIN 2: CH 149

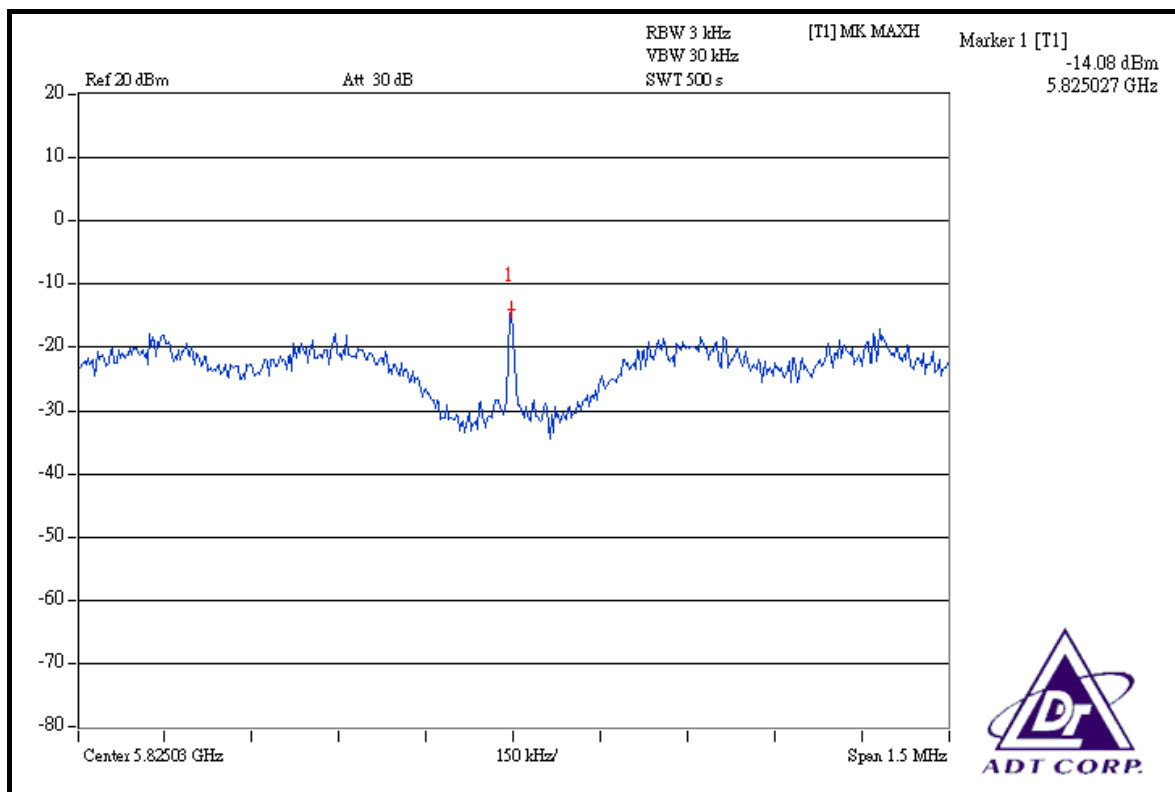




CH 157



CH 165





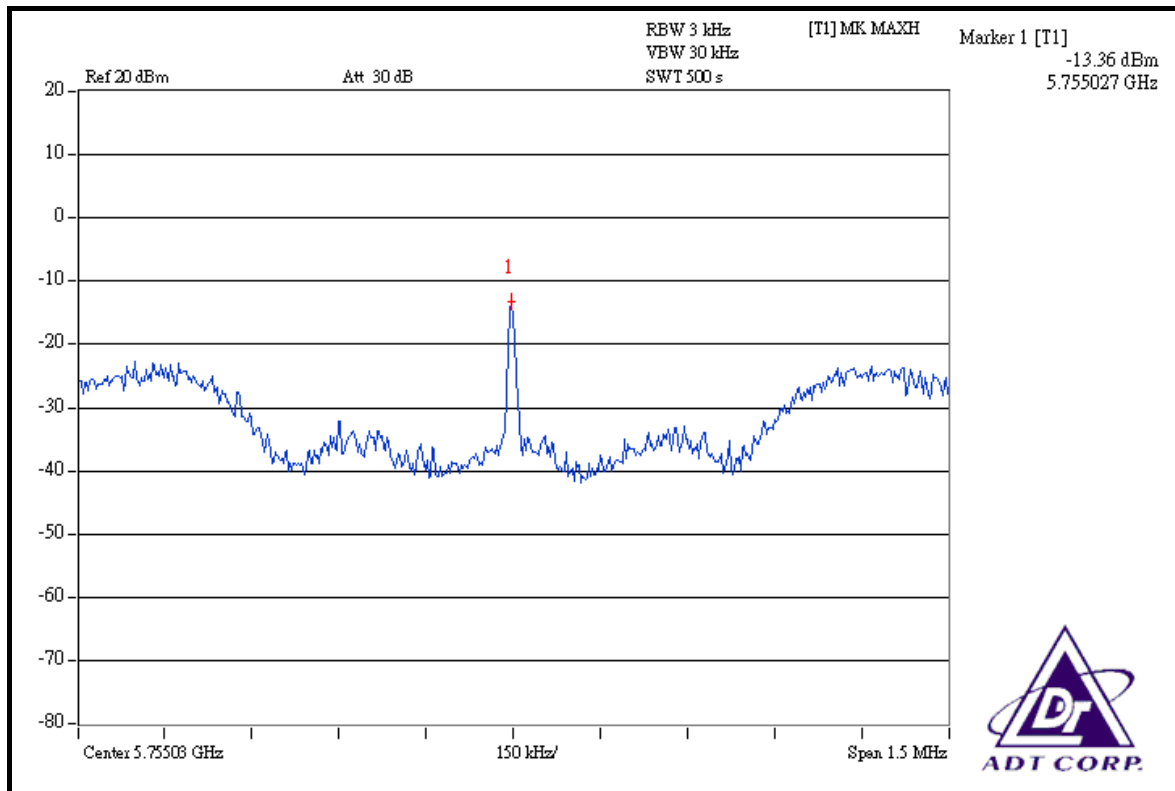
DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	15Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 65 %RH, 991hPa
TESTED BY	Brad Wu		

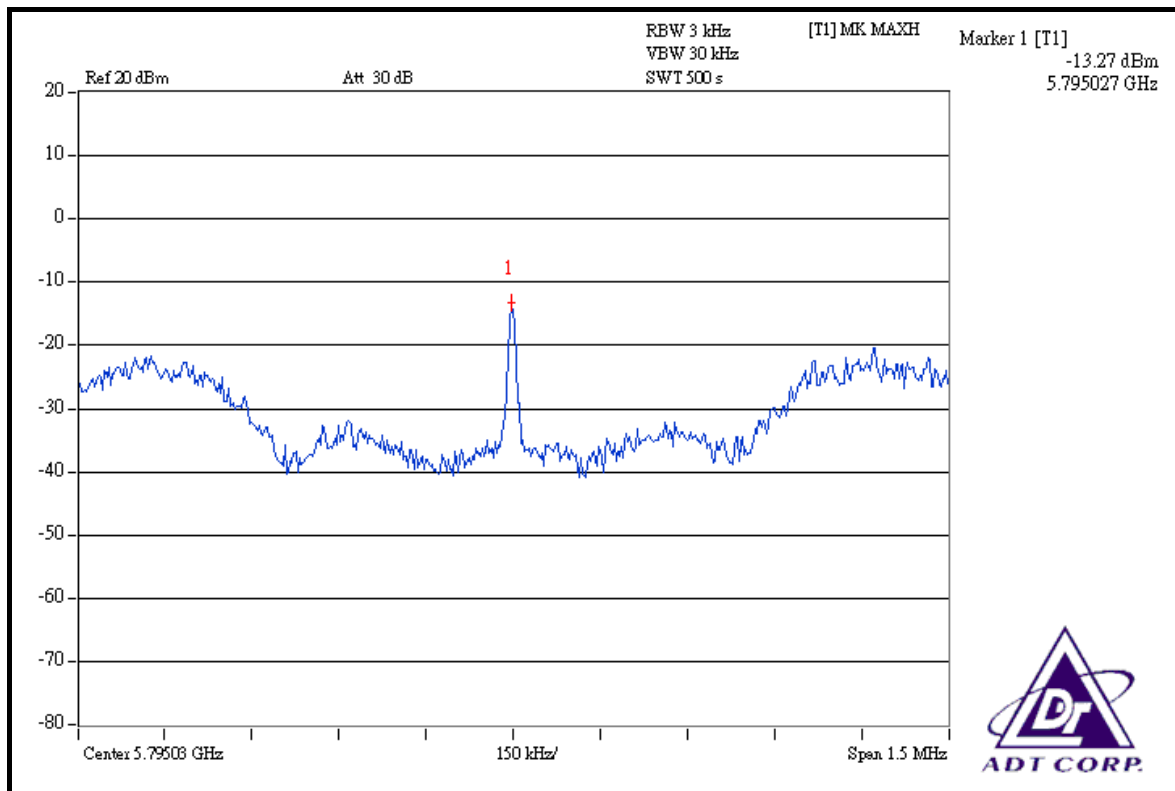
CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
151	5755	-13.36	-13.07	-9.60	0.205	-6.88	8	PASS
159	5795	-13.27	-12.96	-9.45	0.212	-6.75	8	PASS



FOR CHAIN 0: CH 151

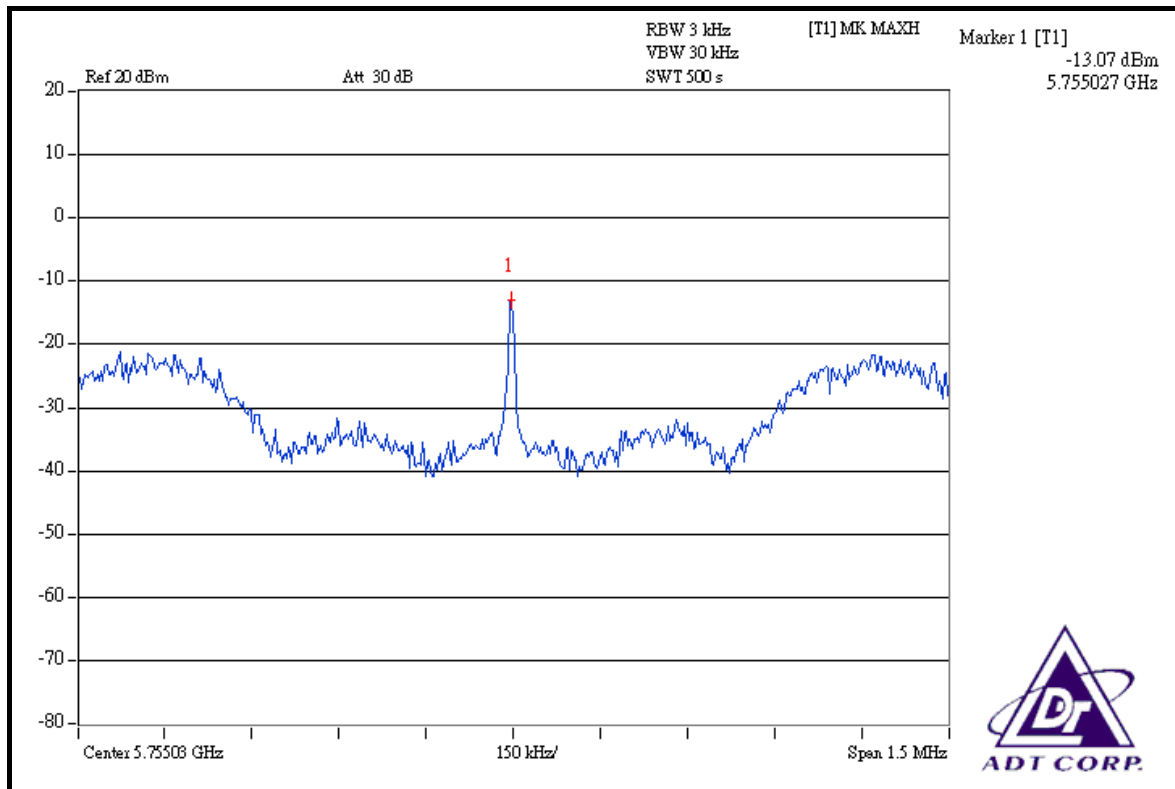


CH 159

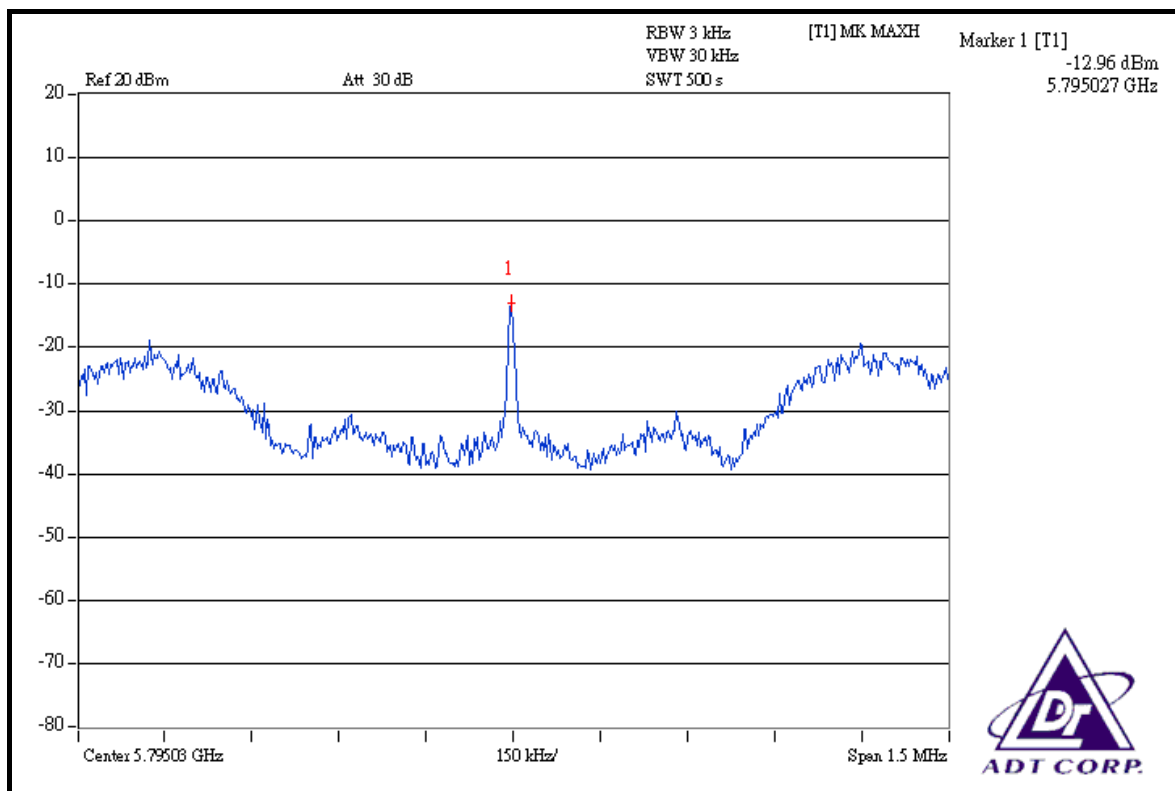




FOR CHAIN 1: CH 151

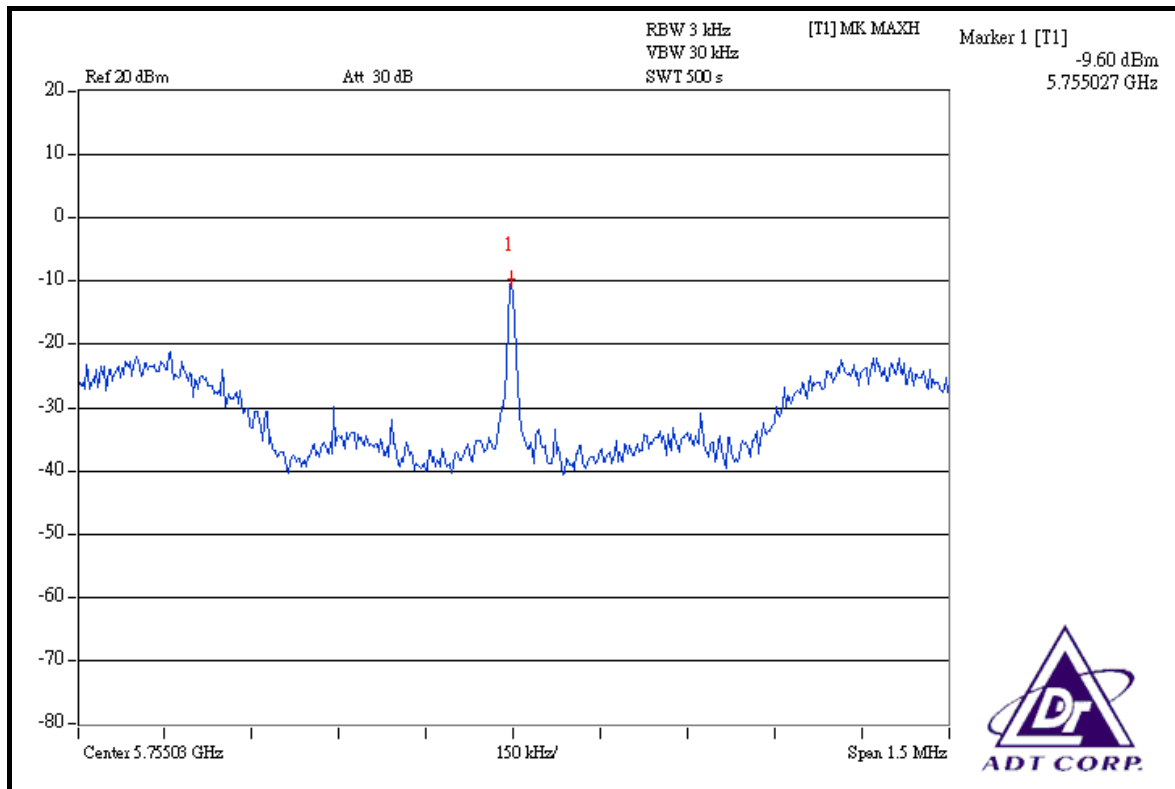


CH 159

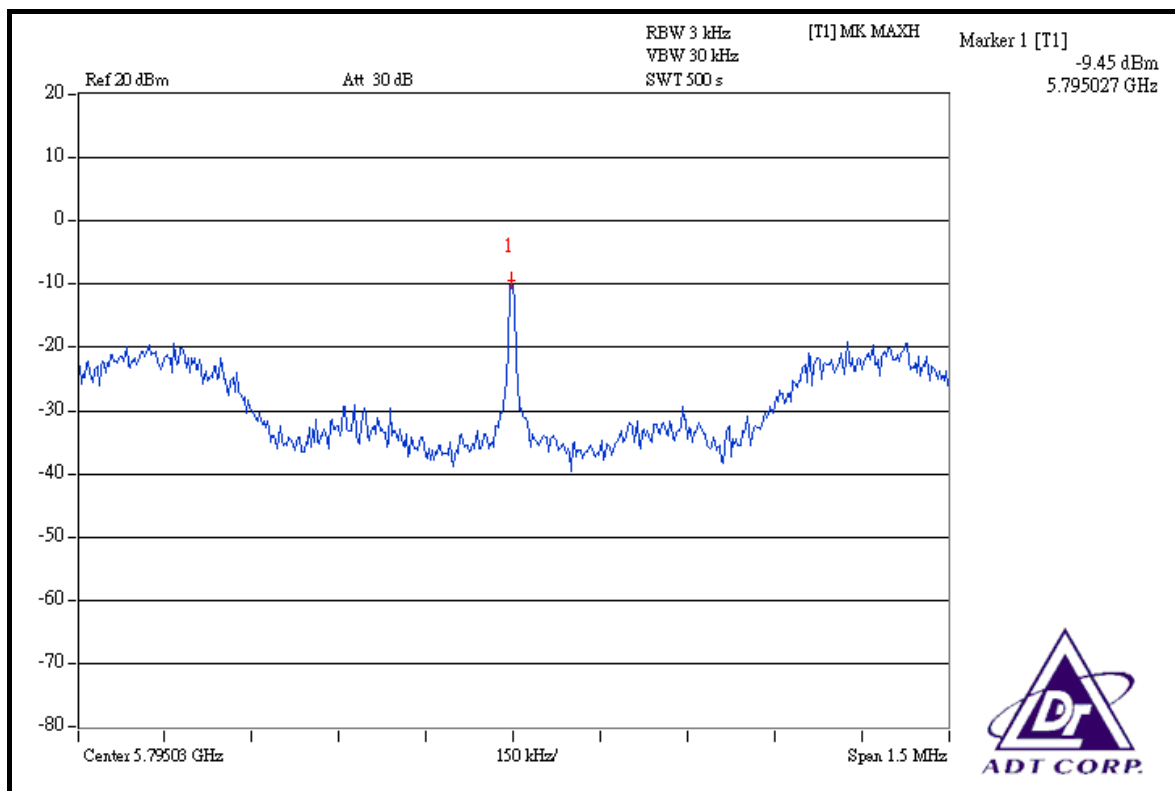




FOR CHAIN 2: CH 151



CH 159





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
FOR CONDUCTED MEASUREMENT:			
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008
FOR RADIATED MEASUREMENT:			
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	May. 27, 2009
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 03, 2009
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 06, 2009
Preamplifier Agilent	8449B	3008A01910	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10638	Dec. 19, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274039/223650	Nov. 07, 2008
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	May 05, 2009

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

FOR CONDUCTED MEASUREMENT:

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

FOR RADIATED MEASUREMENT:

- 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 and 300kHz 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

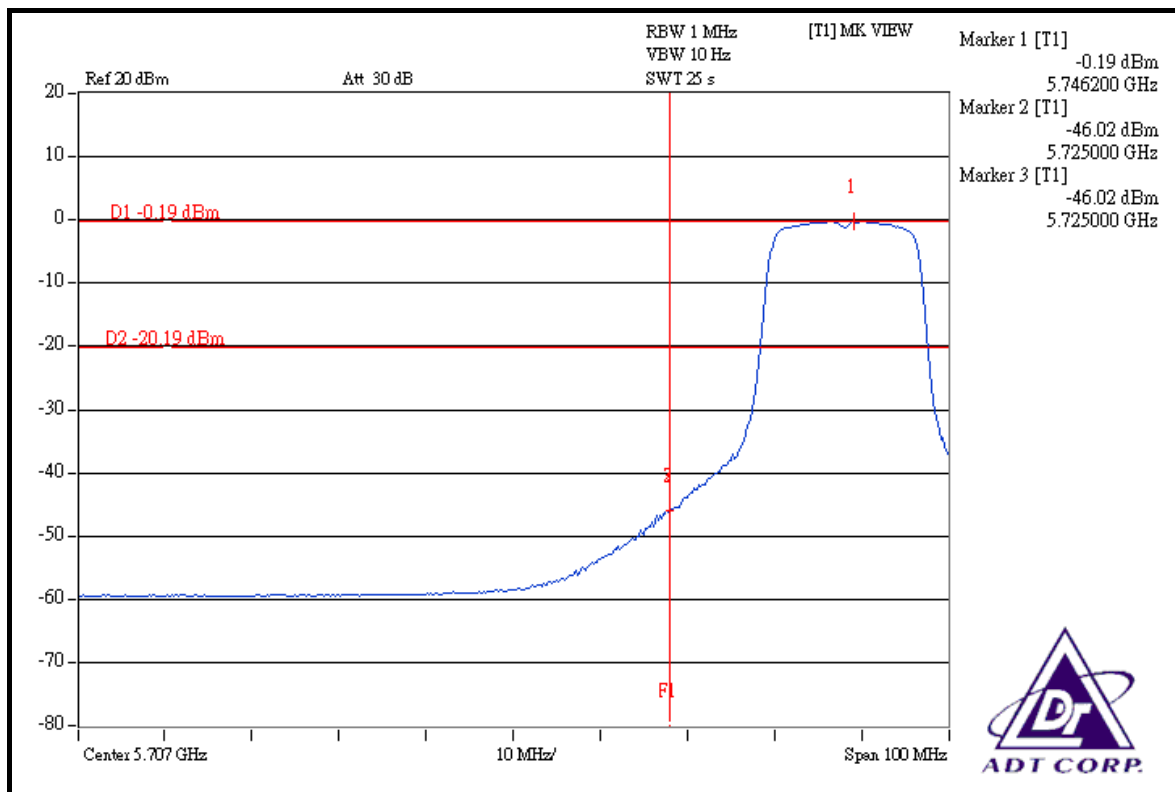
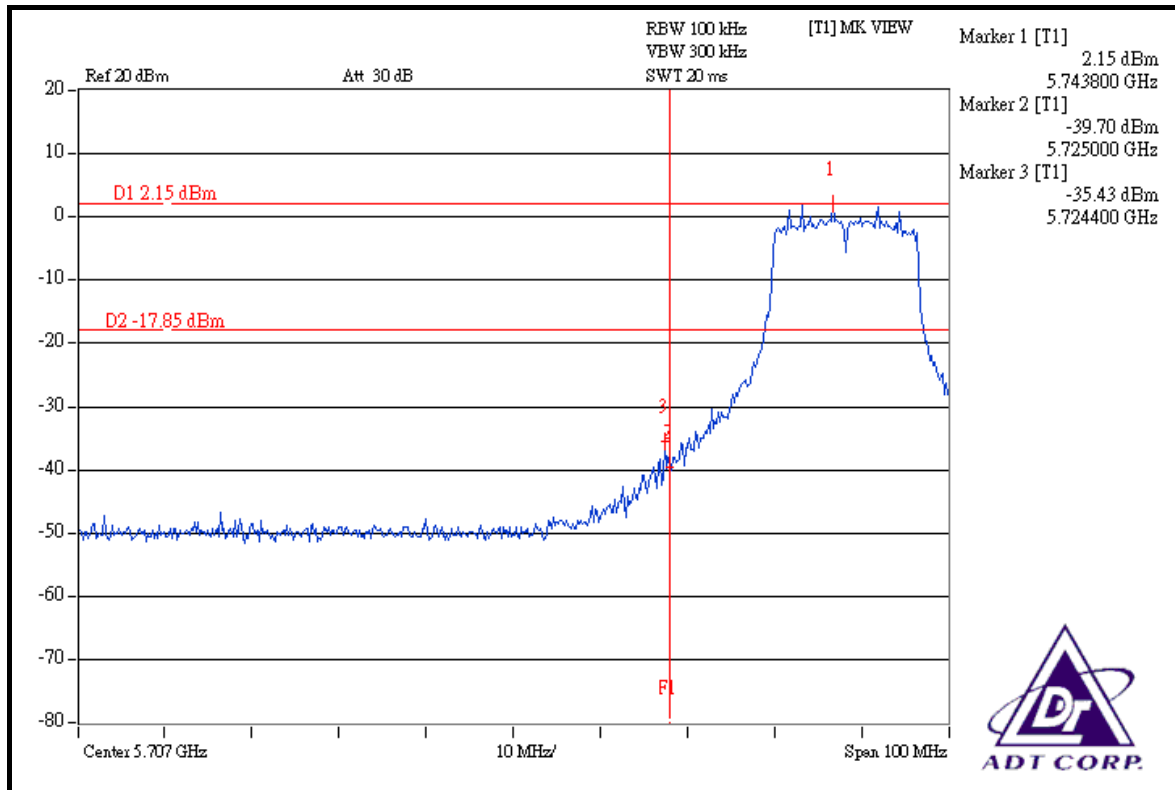
5.6.5 EUT OPERATING CONDITION

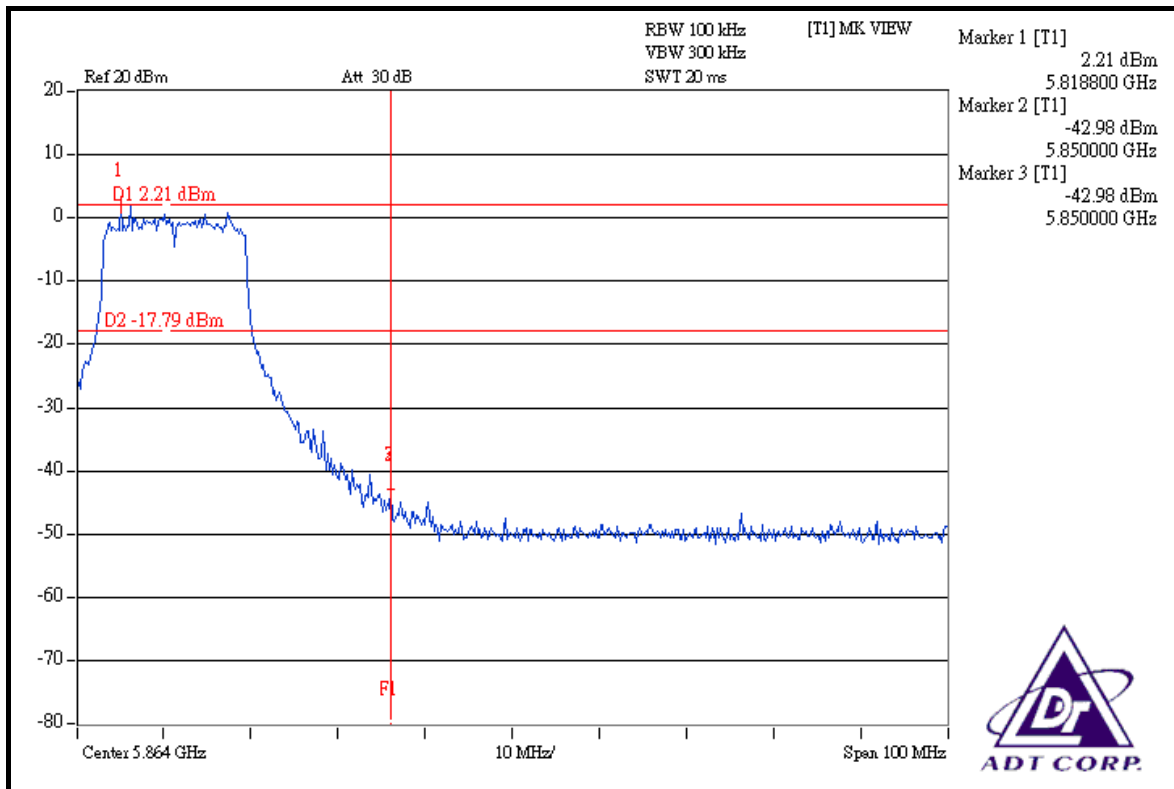
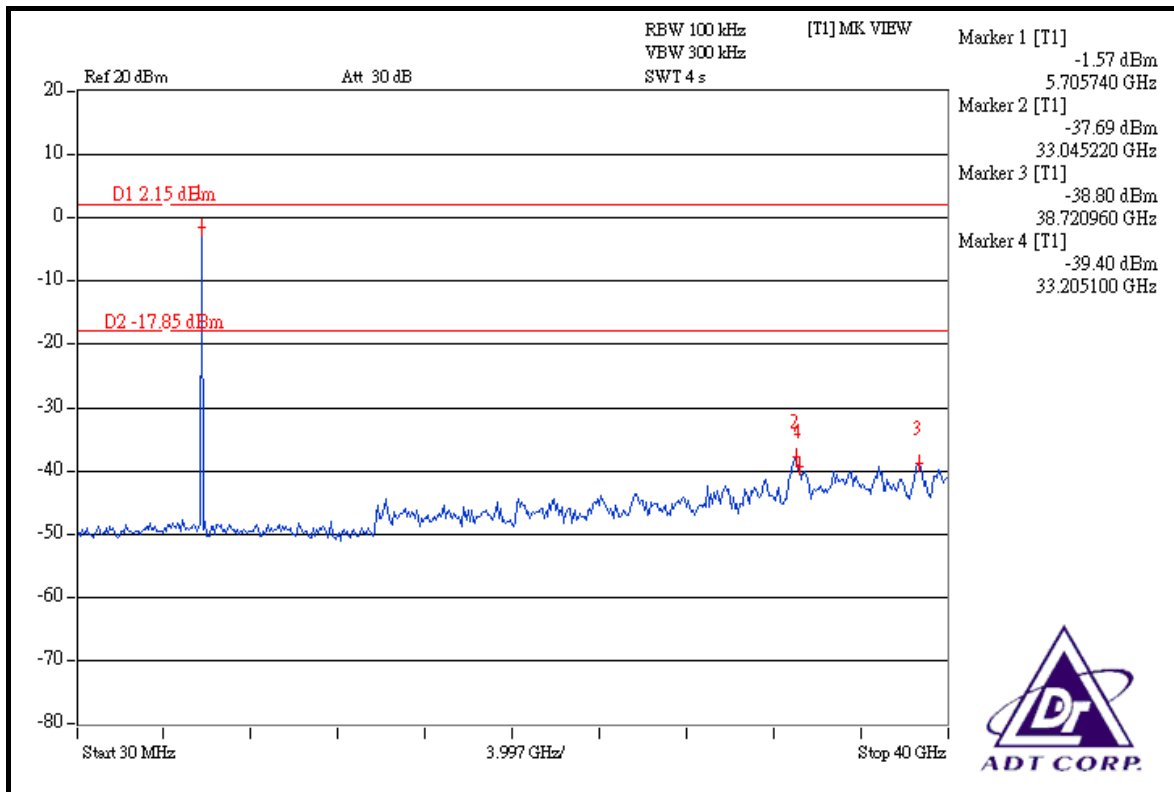
Same as Item 5.3.6

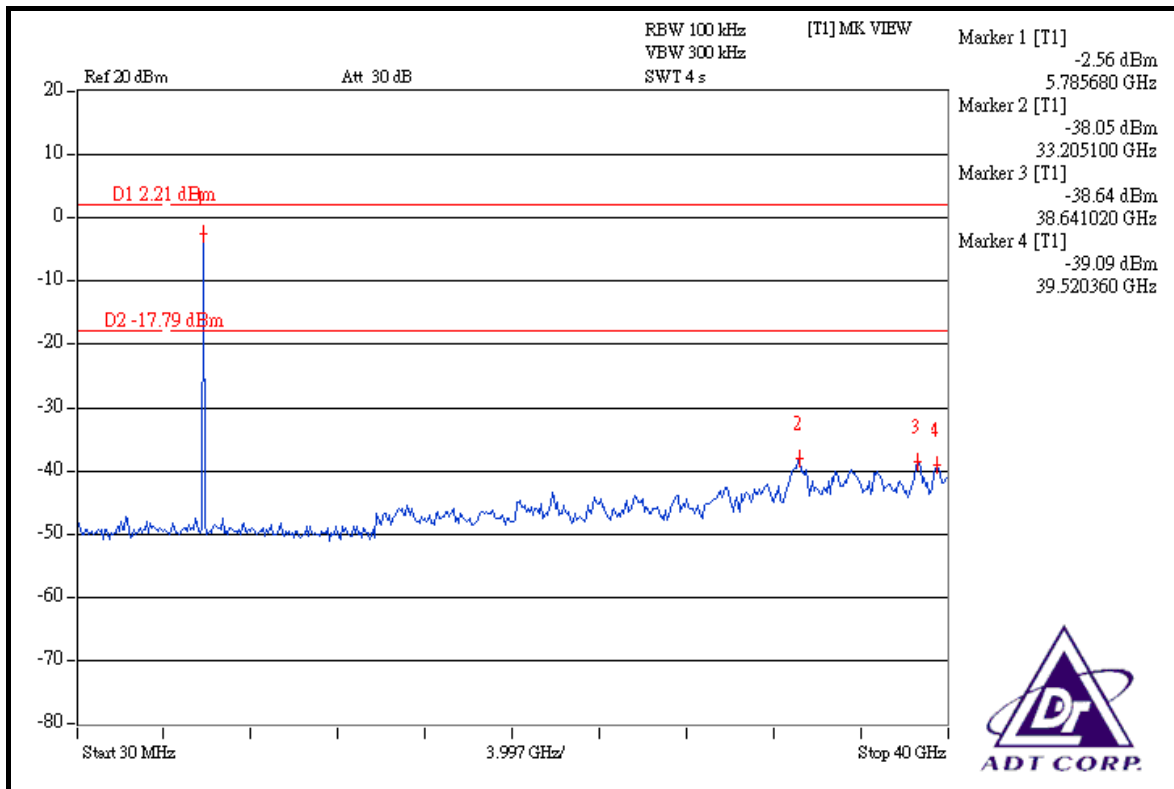
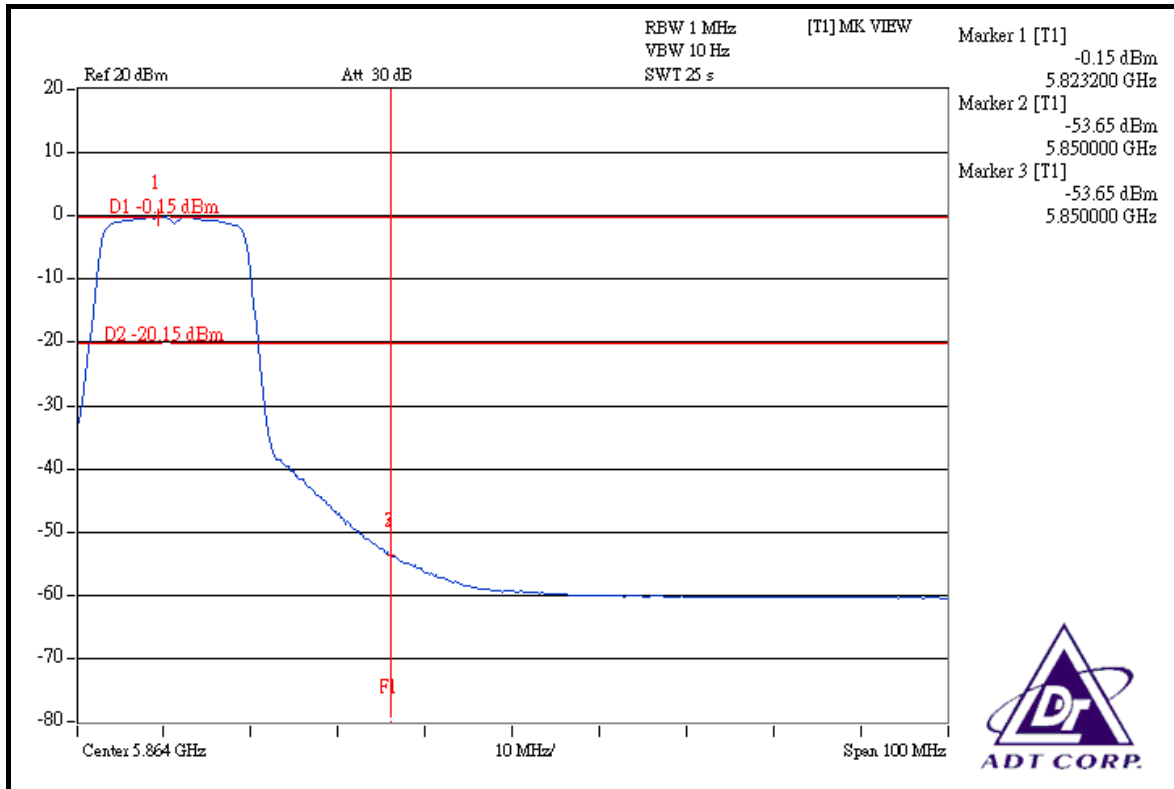
5.6.6 TEST RESULTS

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

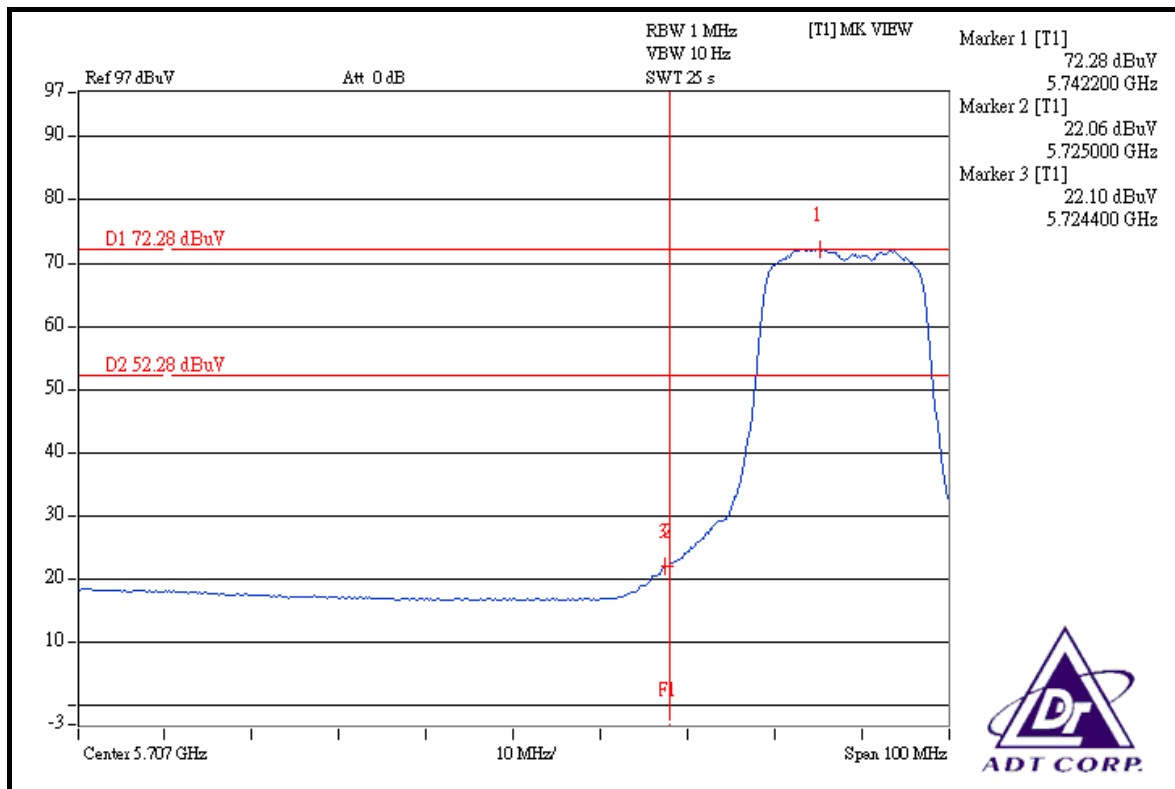
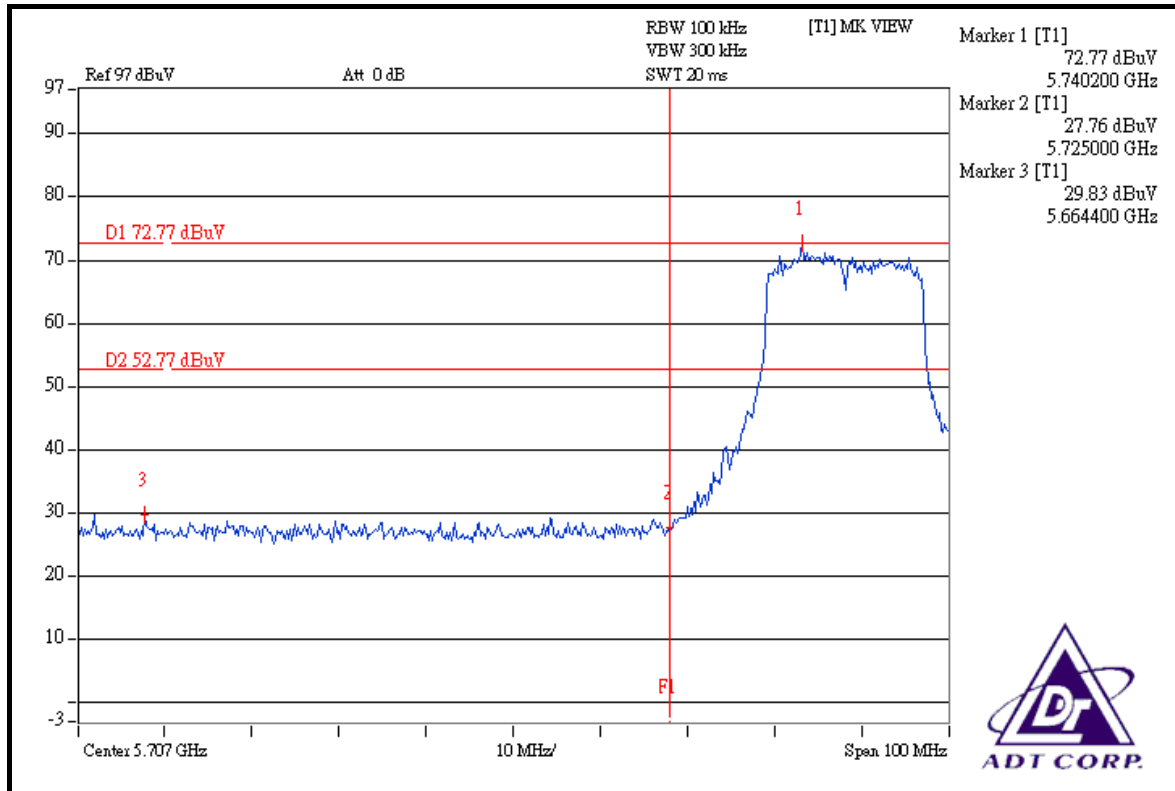


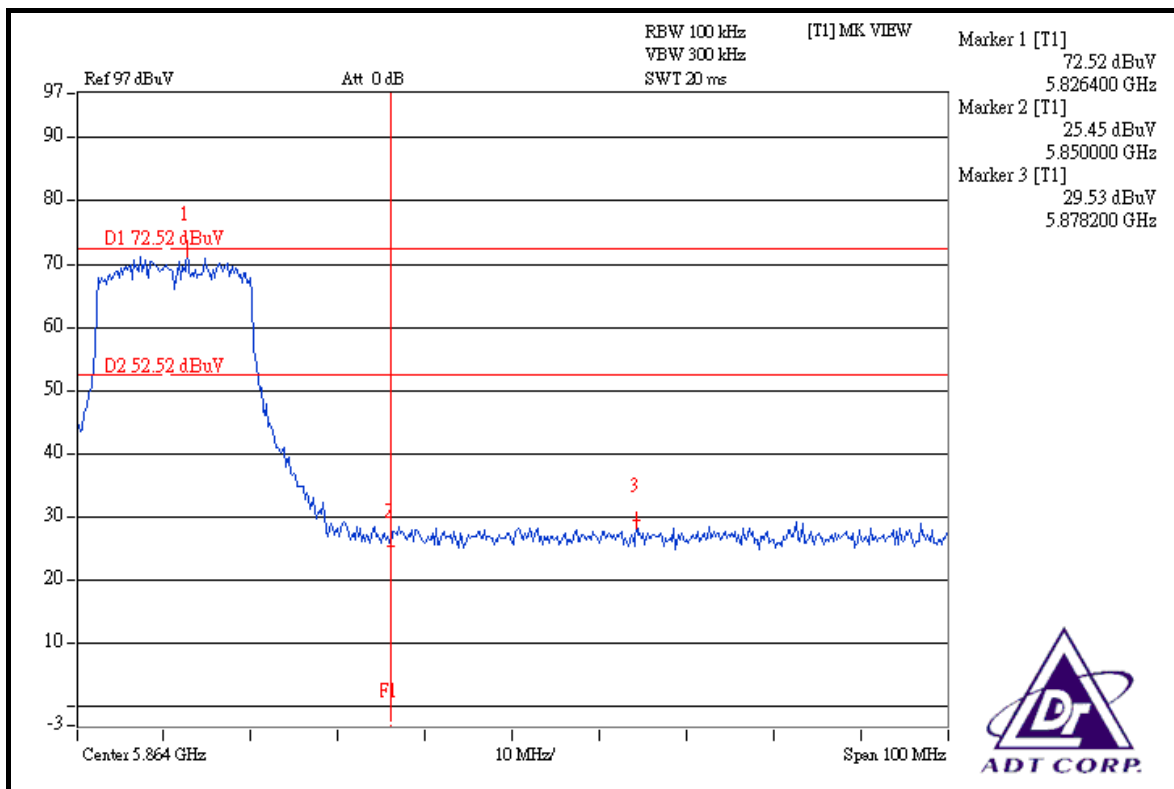
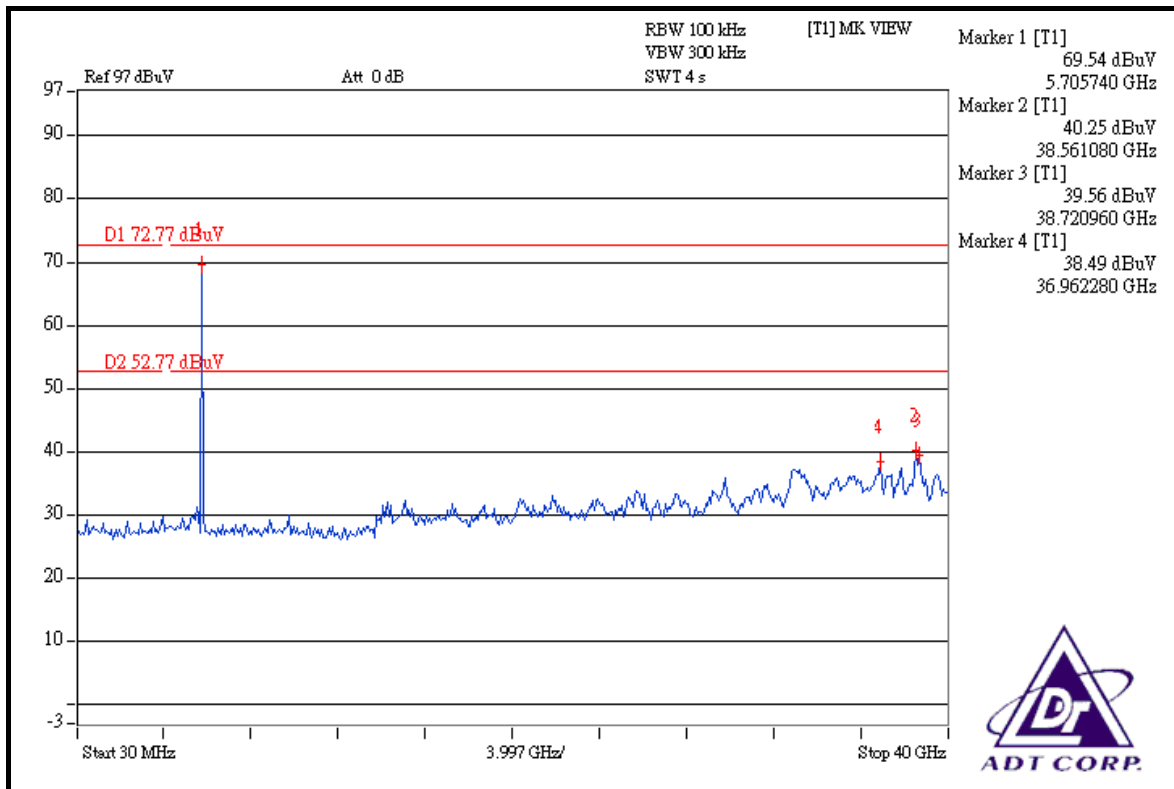


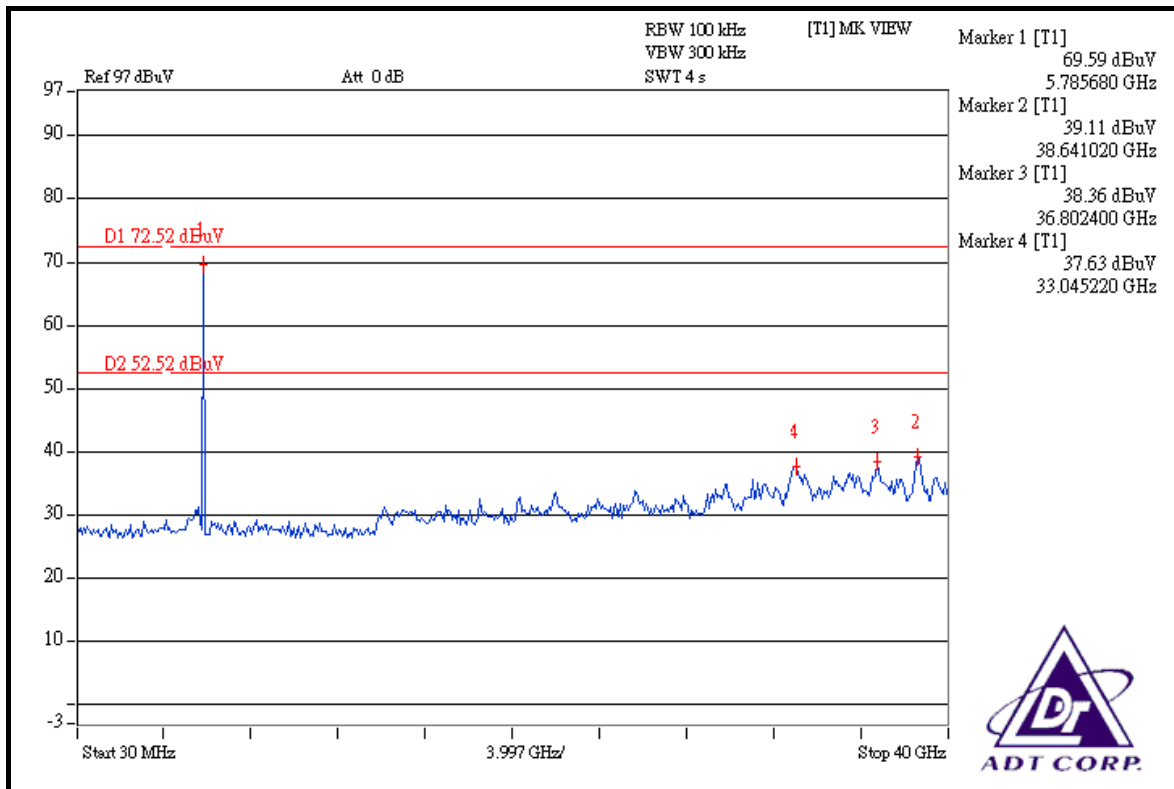
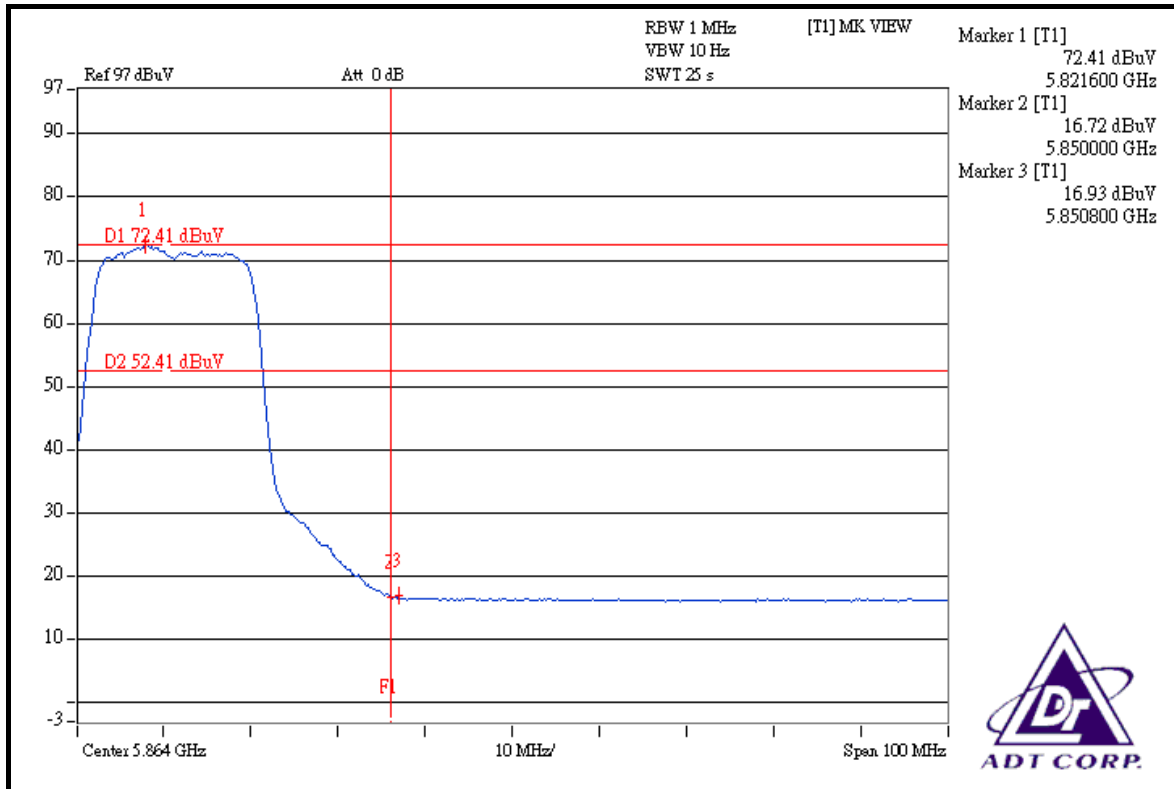




DRAFT 802.11n (20MHz) OFDM MODULATION

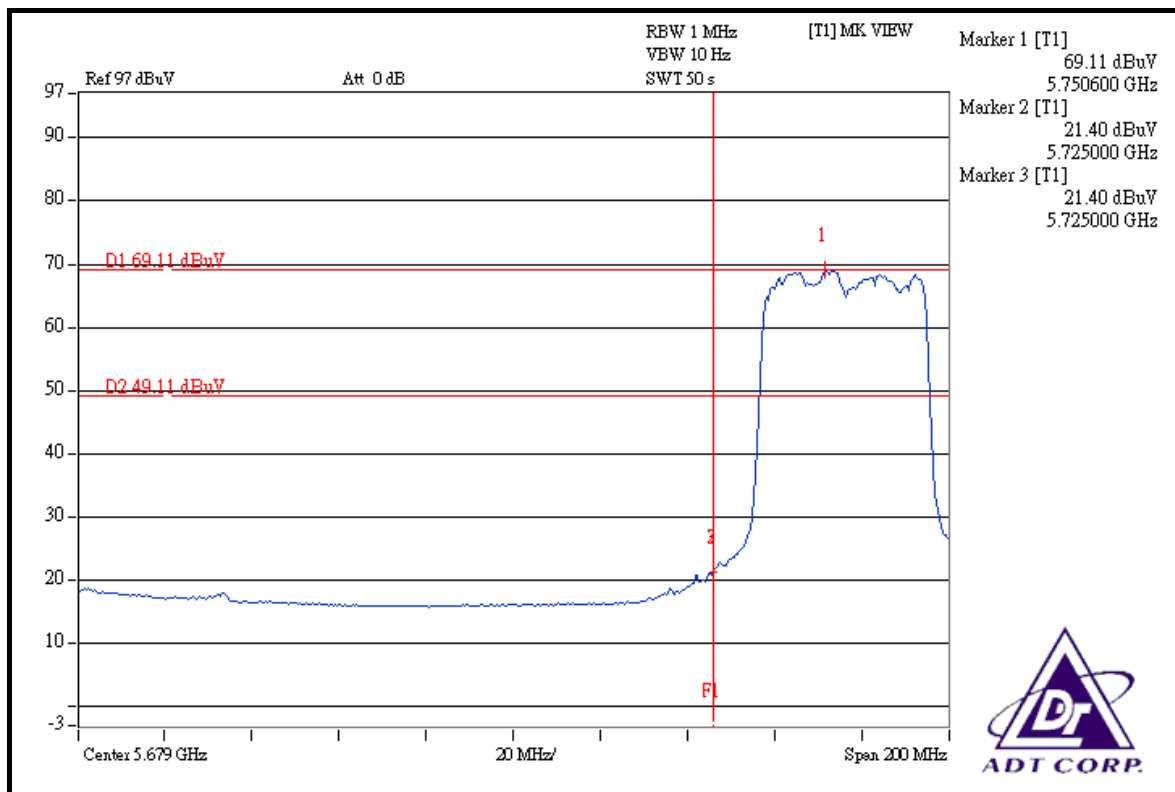
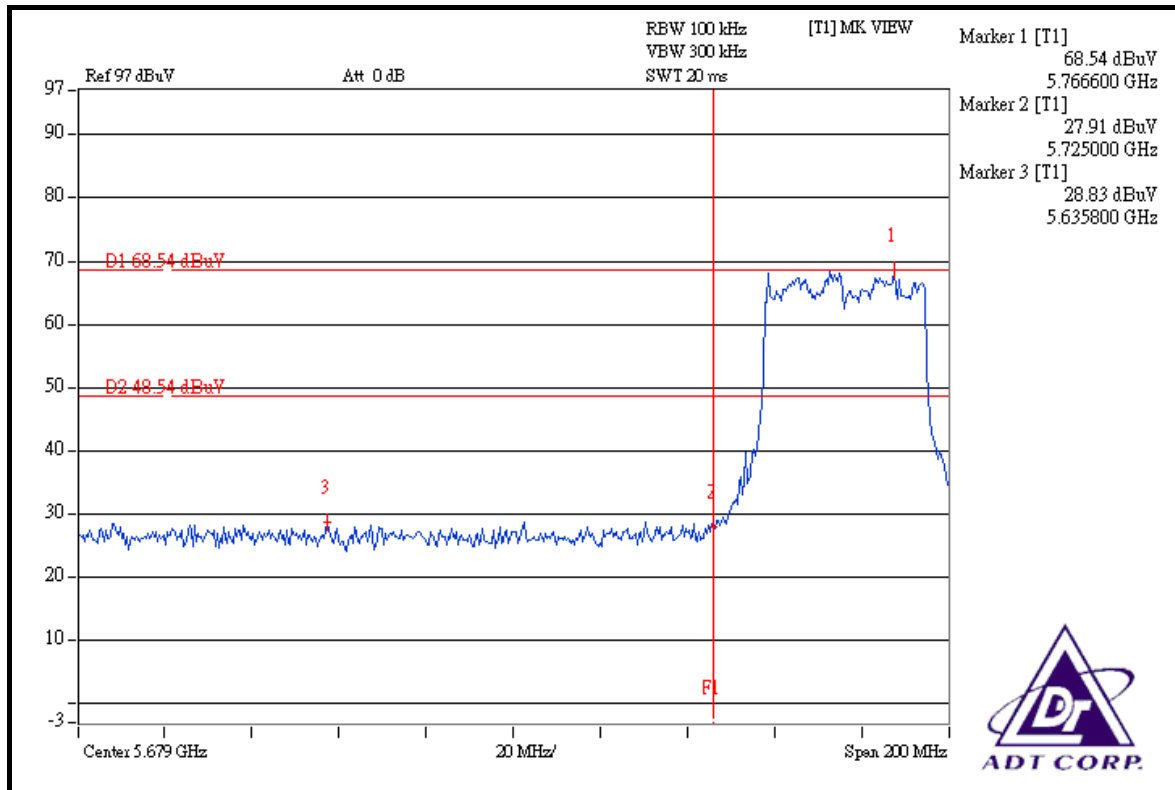


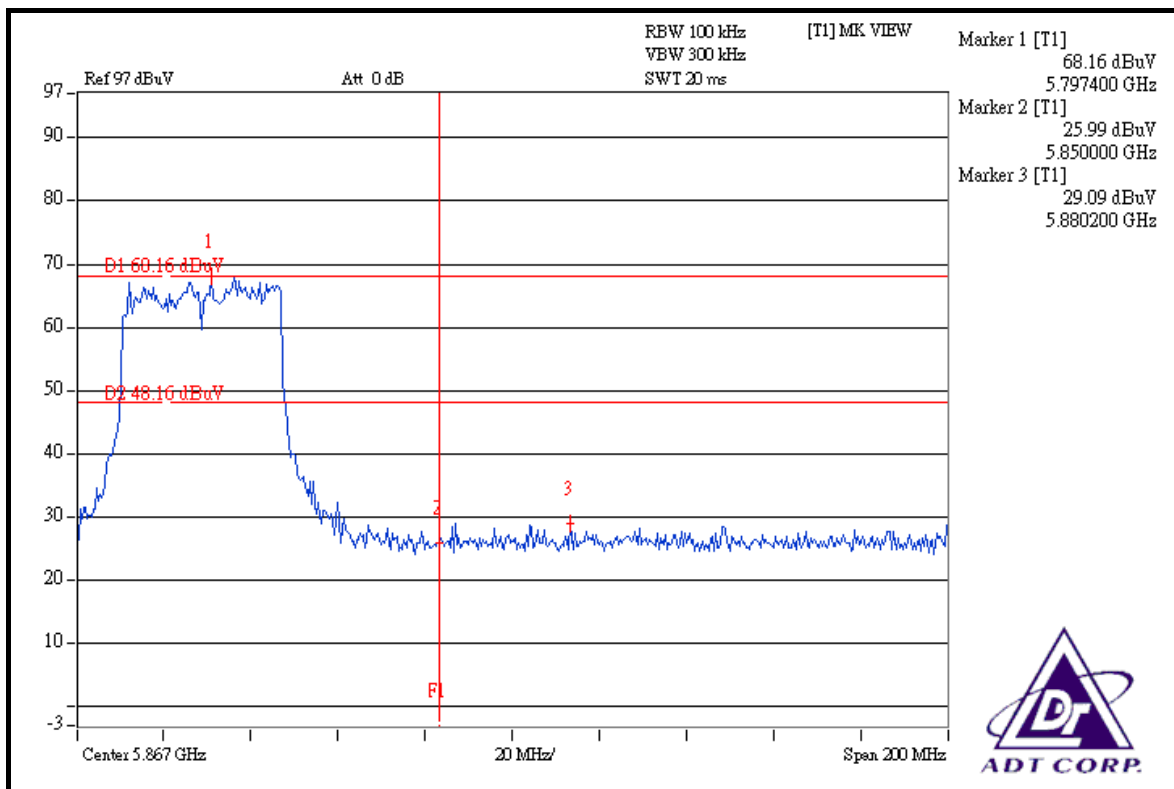
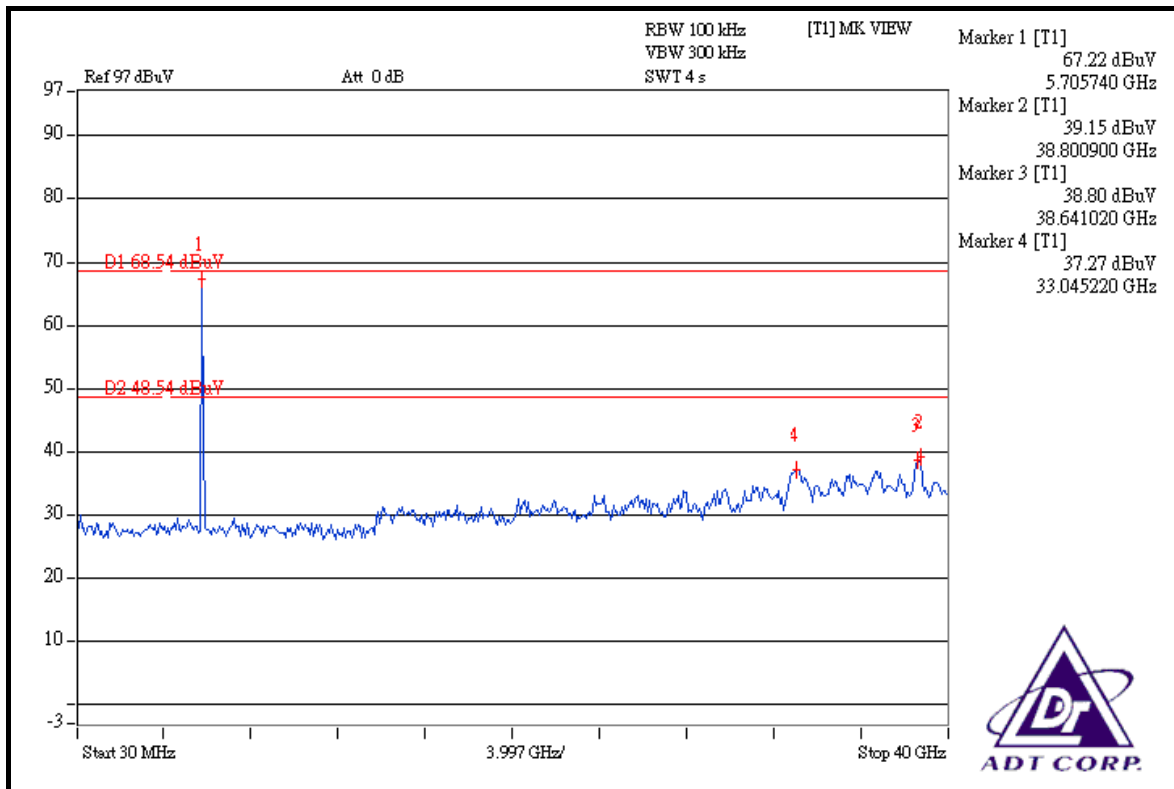


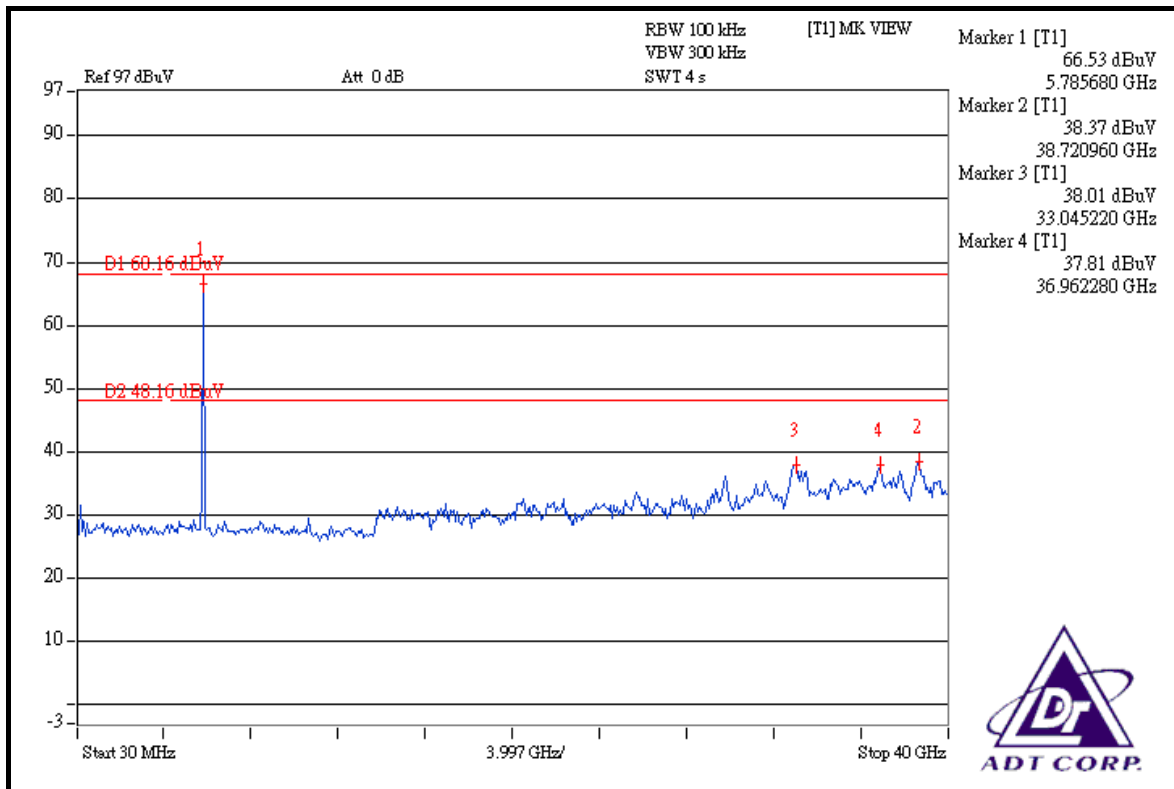
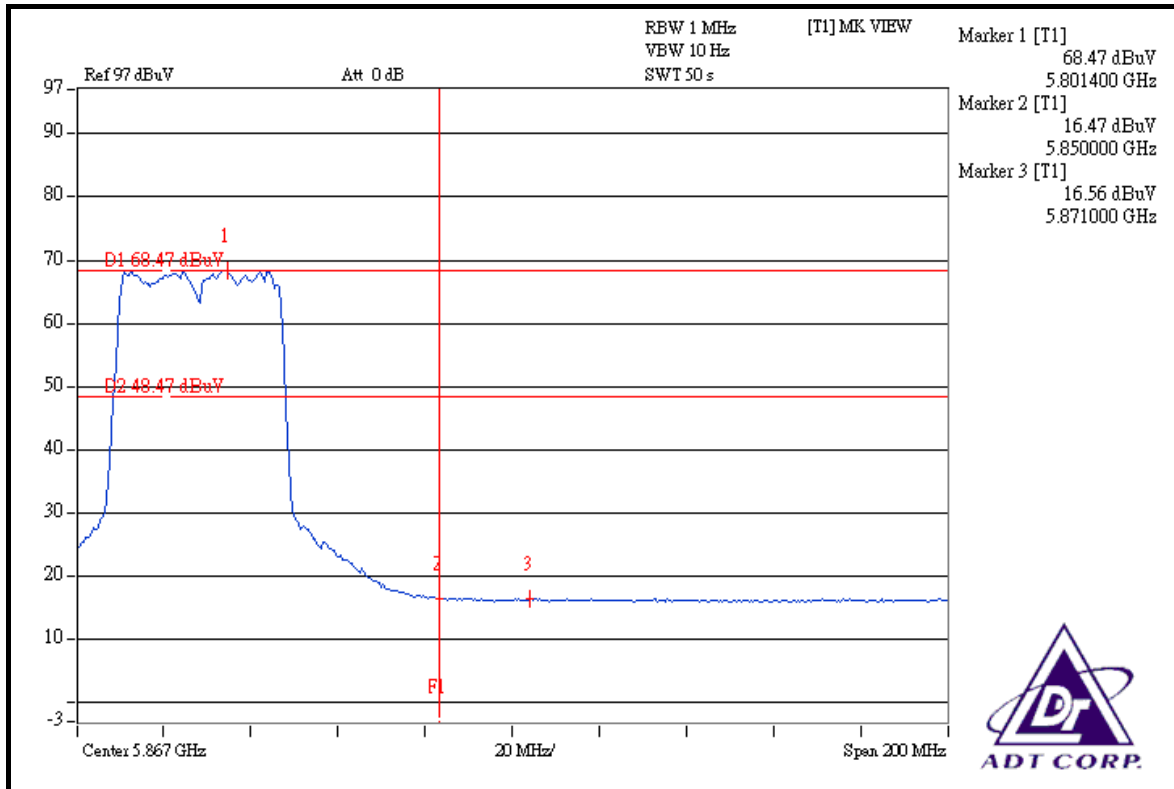




DRAFT 802.11n (40MHz) OFDM MODULATION







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 R-SMA connector. The maximum Gain of the antenna is 2dBi.



6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



7. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	FCC, UL, A2LA
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	TAF, BSMI, NCC
Netherlands	Telefication
Singapore	GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:
www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Web Site: www.adt.com.tw

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

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

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