



FCC TEST REPORT (15.407)

REPORT NO.: RF951114L02-2

MODEL NO.: WPC600N

RECEIVED: Nov. 14, 2006

TESTED: Nov. 14, 2006 ~ Jul. 12, 2007

ISSUED: Jul. 16, 2007

APPLICANT: Cisco-Linksys LLC

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1. CERTIFICATION

PRODUCT: Dual Band Wireless-N Notebook Adapter

MODEL: WPC600N

BRAND: Linksys

APPLICANT: Cisco-Linksys LLC

TEST SAMPLE: ENGINEERING SAMPLE

TESTED: Nov. 14, 2006 ~ Jul. 12, 2007

STANDARDS: FCC Part 15, Subpart E (Section 15.407)

ANSI C63.4-2003

The above equipment (Model: WPC600N) 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 : Rennie Wang , **DATE:** Jul. 16, 2007
Rennie Wang / Senior Specialist

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

APPROVED BY : Gary Chang , **DATE:** Jul. 16, 2007
Gary Chang / Assistant Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -11.36dB at 0.170MHz.
15.407(b)(1/2/3) (b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit. Minimum passing margin is -1.03dB at 331.26MHz.
15.407(a)(1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	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:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	2.44dB
Radiated emissions	30MHz ~ 200MHz	3.62dB
	200MHz ~ 1000MHz	3.64dB
	1GHz ~ 18GHz	2.26dB
	18GHz ~ 40GHz	1.94dB

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



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Dual Band Wireless-N Notebook Adapter
MODEL NO.	WPC600N
FCC ID	Q87-WPC600NV11
POWER SUPPLY	3.3Vdc from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps Draft 802.11n (20MHz): 130.0/ 117.0/ 104.0/ 78.0/ 52.0/ 39.0/ 26.0/ 13.0/ 65.0/ 58.5/ 52.0/ 29.0/ 26.0/ 19.5/ 13.0/ 6.5Mbps Draft 802.11n (40MHz): 270.0/ 243.0/ 216.0/ 162.0/ 108.0/ 81.0/ 54.0/ 27.0 /135.0/ 121.5/ 108.0/ 81.0/ 54.0/ 40.5/ 27.0/ 13.5Mbps
FREQUENCY RANGE	2.4GHz: 2400 ~ 2483.5MHz 5.0GHz: 5150 ~ 5350MHz, 5470 ~ 5725MHz, 5725 ~ 5850MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz) 5.0GHz: 5150 ~ 5350MHz, 5470 ~ 5725MHz: 19 for 802.11a, draft 802.11n (20MHz) 9 for draft 802.11n (40MHz) 5725 ~ 5850MHz: 5 for 802.11a, draft 802.11n (20MHz) 2 for draft 802.11n (40MHz)
OUTPUT POWER	162.192mW for 2400 ~ 2483.5MHz 47.909mW for 5150 ~ 5350MHz 45.186mW for 5470 ~ 5725MHz 81.731mW for 5725 ~ 5850MHz
ANTENNA TYPE	2.4GHz: PIFA antenna with 2.7dBi gain 5.0GHz: PIFA antenna with 1.2dBi gain
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. This report only covered frequency range: 5150 ~ 5350MHz, 5470 ~ 5725MHz. Frequency range: 2400 ~ 2483.5MHz and 5725 ~ 5850MHz showed in another report, which report no. is RF951114L02.
2. The EUT incorporates a MIMO function. Physically, the card provides two completed transmitters and three receivers.
3. The EUT is 2 * 3 spatial MIMO (2Tx & 3Rx) without beam forming function.
4. When the EUT operating in 802.11b, 802.11g, 802.11a, the software operation, which is defined by manufacturer, only set single Tx.
5. When the EUT operating in draft 802.11n, the software operation, which is defined by manufacturer, only set 0 ~ 15 of "MCS" (MCS: Modulation and Coding Schemes) for dual Tx.
6. The EUT complies with draft 802.11n standards and backwards compatible with 802.11b, 802.11g, 802.11a products.
7. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 270Mbps.
8. 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

Operated in 5150 ~ 5350MHz and 5470 ~ 5725MHz band.

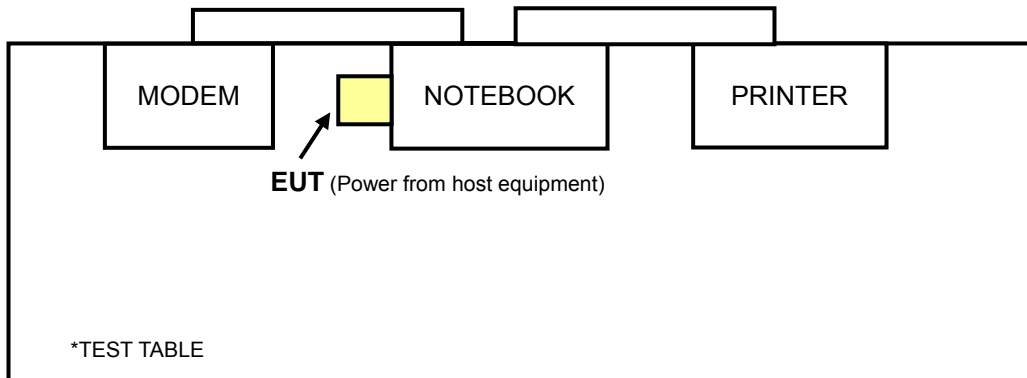
19 channels are provided for 802.11a, draft 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	5180 MHz	11	5540 MHz
2	5200 MHz	12	5560 MHz
3	5220 MHz	13	5580 MHz
4	5240 MHz	14	5600 MHz
5	5260 MHz	15	5620 MHz
6	5280 MHz	16	5640 MHz
7	5300 MHz	17	5660 MHz
8	5320 MHz	18	5680 MHz
9	5500 MHz	19	5700 MHz
10	5520 MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	5190 MHz	6	5550 MHz
2	5230 MHz	7	5590 MHz
3	5270 MHz	8	5630 MHz
4	5310 MHz	9	5670 MHz
5	5510 MHz		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

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

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 19	1	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 19	1	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 9	1	OFDM	BPSK	13.5

RADIATED EMISSION TEST (BELOW 1GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 19	1	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 19	1	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 9	1	OFDM	BPSK	13.5

RADIATED EMISSION TEST (ABOVE 1GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 19	1, 4, 5, 8, 9, 14, 19	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 19	1, 4, 5, 8, 9, 14, 19	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 9	1, 2, 3, 4, 5, 7, 9	OFDM	BPSK	13.5

BANDEDGE MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 19	1, 8, 9, 19	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 19	1, 8, 9, 19	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 9	1, 4, 5, 9	OFDM	BPSK	13.5

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 19	1, 4, 5, 8, 9, 14, 19	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 19	1, 4, 5, 8, 9, 14, 19	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 9	1, 2, 3, 4, 5, 7, 9	OFDM	BPSK	13.5



3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)

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	PRINTER	EPSON	LQ-300+	DCGY054147	FCC DoC Approved
3	MODEM	ACEEX	1414V/3	0401008269	IFAXDM1414

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.8 m shielded cable without core
3	1.8 m shielded cable without core

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

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 25, 2007
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 06, 2008
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 08, 2008
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jan. 16, 2008
Software ADT	ADT_Cond_V3	NA	NA

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

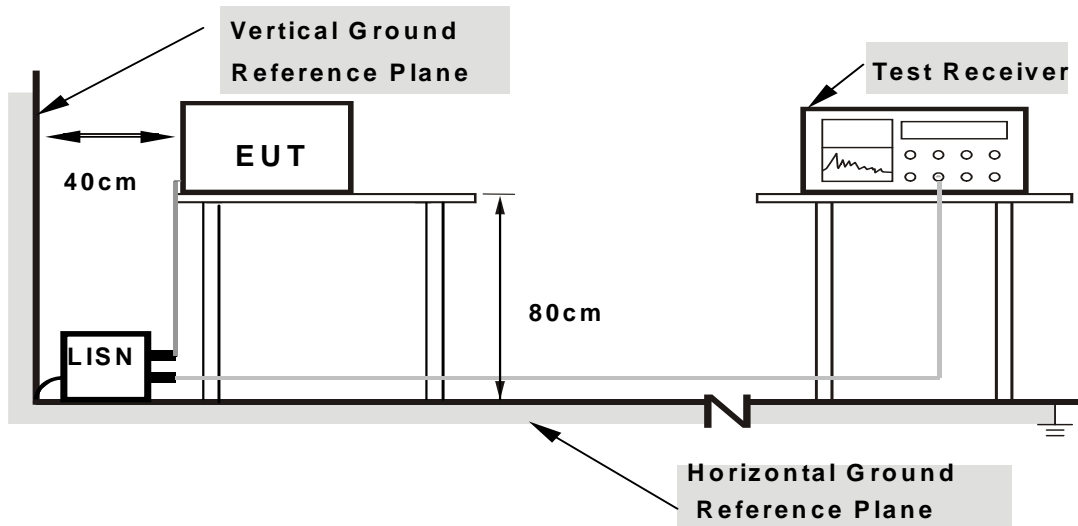
4.1.3 TEST PROCEDURES

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

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

4.1.6 EUT OPERATING CONDITIONS

- a. Plugged the EUT into a notebook and placed on a testing table.
- b. The notebook ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- c. The necessary accessories enable the system in full functions.

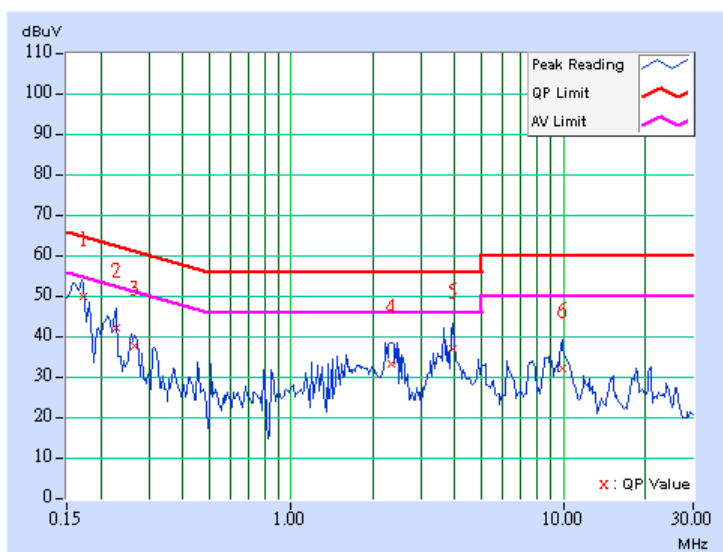
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui

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	0.171	0.10	49.57	-	49.67	-	64.89	54.89	-15.22	-
2	0.229	0.10	41.98	-	42.08	-	62.50	52.50	-20.42	-
3	0.267	0.10	37.53	-	37.63	-	61.20	51.20	-23.57	-
4	2.325	0.23	32.96	-	33.19	-	56.00	46.00	-22.81	-
5	3.921	0.28	36.62	-	36.90	-	56.00	46.00	-19.10	-
6	9.884	0.33	31.99	-	32.32	-	60.00	50.00	-27.68	-

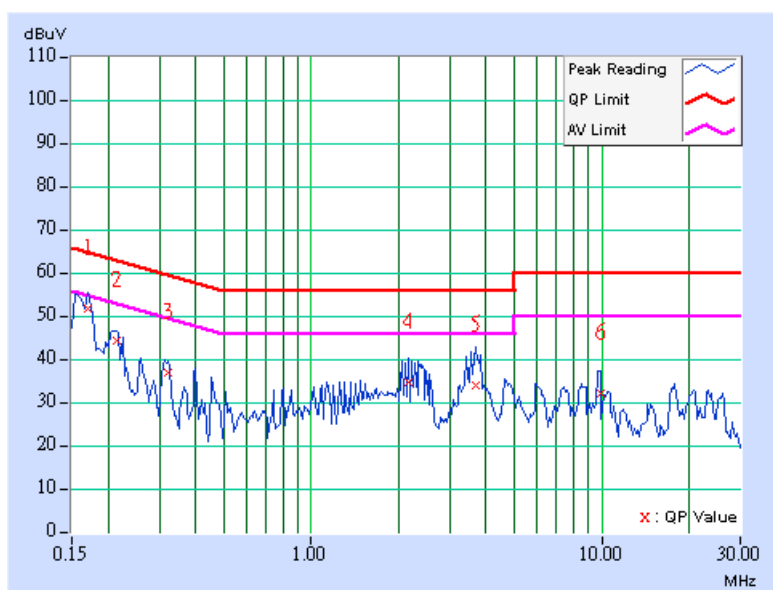
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui

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	0.170	0.10	51.36	-	51.46	-	64.97	54.97	-13.51	-
2	0.213	0.10	43.88	-	43.98	-	63.09	53.09	-19.11	-
3	0.320	0.10	36.74	-	36.84	-	59.70	49.70	-22.86	-
4	2.162	0.22	34.27	-	34.49	-	56.00	46.00	-21.51	-
5	3.695	0.27	33.52	-	33.79	-	56.00	46.00	-22.21	-
6	9.900	0.43	31.87	-	32.30	-	60.00	50.00	-27.70	-

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

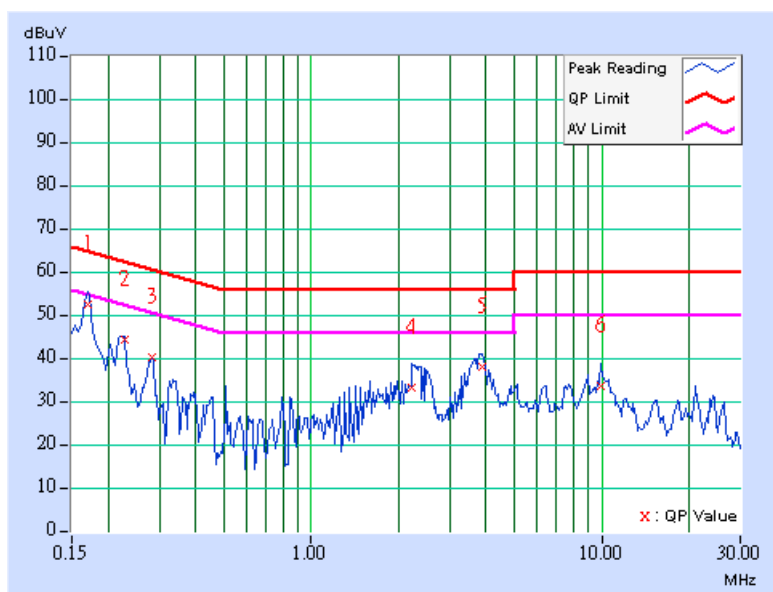


DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui

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	0.170	0.10	52.38	-	52.48	-	64.98	54.98	-12.50	-
2	0.228	0.10	43.96	-	44.06	-	62.52	52.52	-18.46	-
3	0.283	0.10	40.07	-	40.17	-	60.73	50.73	-20.56	-
4	2.215	0.23	33.04	-	33.27	-	56.00	46.00	-22.73	-
5	3.855	0.28	37.95	-	38.23	-	56.00	46.00	-17.77	-
6	9.930	0.33	33.39	-	33.72	-	60.00	50.00	-26.28	-

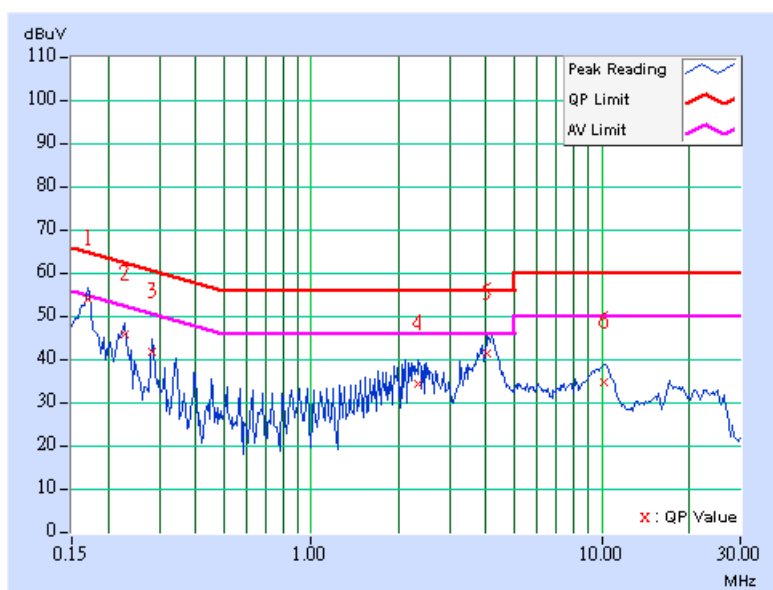
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui

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	0.170	0.10	53.52	-	53.62	-	64.98	54.98	-11.36	-
2	0.228	0.10	45.47	-	45.57	-	62.52	52.52	-16.95	-
3	0.283	0.10	41.30	-	41.40	-	60.73	50.73	-19.33	-
4	2.328	0.23	34.11	-	34.34	-	56.00	46.00	-21.66	-
5	4.031	0.28	41.02	-	41.30	-	56.00	46.00	-14.70	-
6	10.159	0.43	34.35	-	34.78	-	60.00	50.00	-25.22	-

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

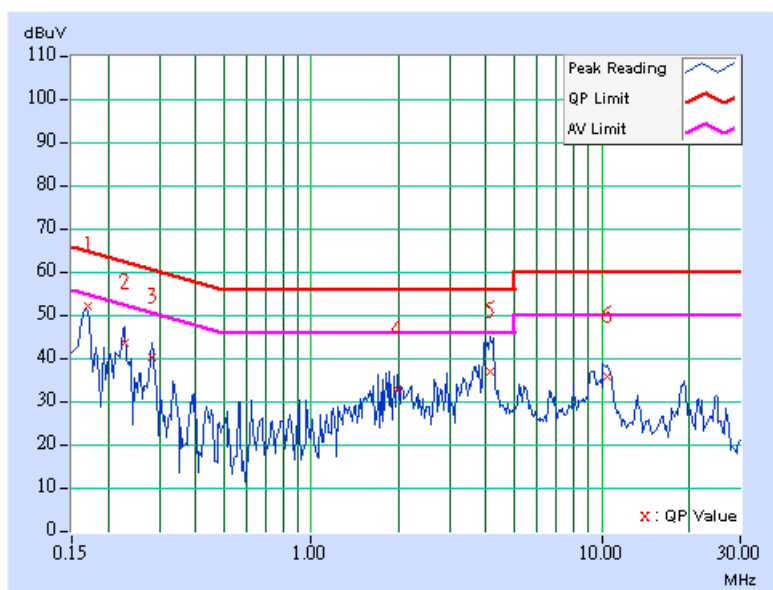


DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	13.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui

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	0.170	0.10	51.77	-	51.87	-	64.98	54.98	-13.11	-
2	0.228	0.10	43.49	-	43.59	-	62.52	52.52	-18.93	-
3	0.284	0.10	39.86	-	39.96	-	60.71	50.71	-20.75	-
4	1.985	0.22	32.62	-	32.84	-	56.00	46.00	-23.16	-
5	4.137	0.28	36.85	-	37.13	-	56.00	46.00	-18.87	-
6	10.422	0.34	35.68	-	36.02	-	60.00	50.00	-23.98	-

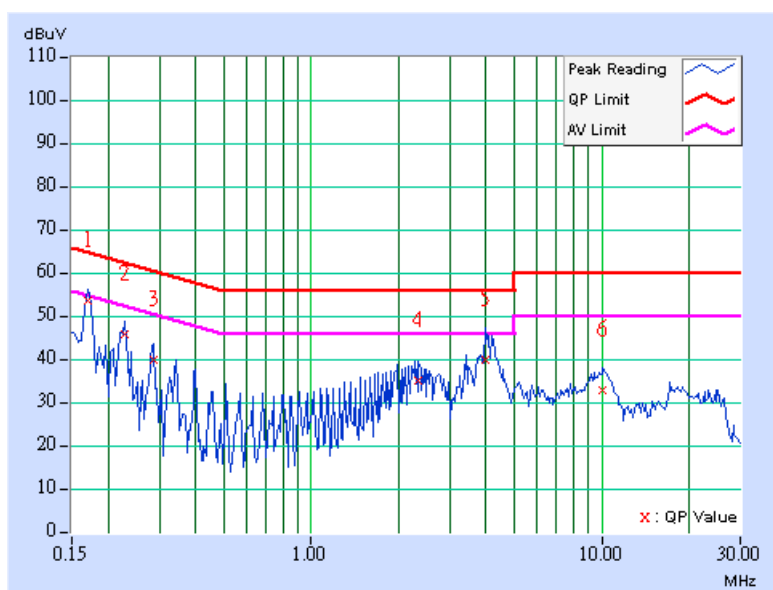
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	13.5Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TESTED BY	Match Tsui

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	0.170	0.10	53.16	-	53.26	-	64.97	54.97	-11.71	-
2	0.228	0.10	45.49	-	45.59	-	62.51	52.51	-16.92	-
3	0.287	0.10	39.50	-	39.60	-	60.60	50.60	-21.00	-
4	2.328	0.23	34.57	-	34.80	-	56.00	46.00	-21.20	-
5	3.977	0.28	39.63	-	39.91	-	56.00	46.00	-16.09	-
6	10.110	0.43	32.61	-	33.04	-	60.00	50.00	-26.96	-

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

FREQUENCIES (MHz)	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m) *NOTE 3
5150 ~ 5250	-27	68.3
5250 ~ 5350	-27	68.3
5470 ~ 5725	-27	68.3

NOTE:

1. For frequencies 10MHz or greater above or below the band edge.
2. All emissions within the frequency range from the band edge to 10MHz above or below the band edge.
3. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$

4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESI7	838496/016	Dec. 29, 2007
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Dec. 01, 2007
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Jan. 04, 2008
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-405	Dec. 18, 2007
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 16, 2008
Preamplifier Agilent	8449B	3008A1960	Oct. 30, 2007
Preamplifier Agilent	8447D	2944A10631	Oct. 30, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	230128/4	Nov. 14, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	233233/4	Nov. 14, 2007
Software ADT.	ADT_Radiated_V7.6	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA
Turn Table ADT.	TT100.	TT93021704	NA
Turn Table Controller ADT.	SC100.	SC93021704	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 4.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The IC Site Registration No. is IC3789B-4.

4.2.4 TEST PROCEDURES

- 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. 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 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

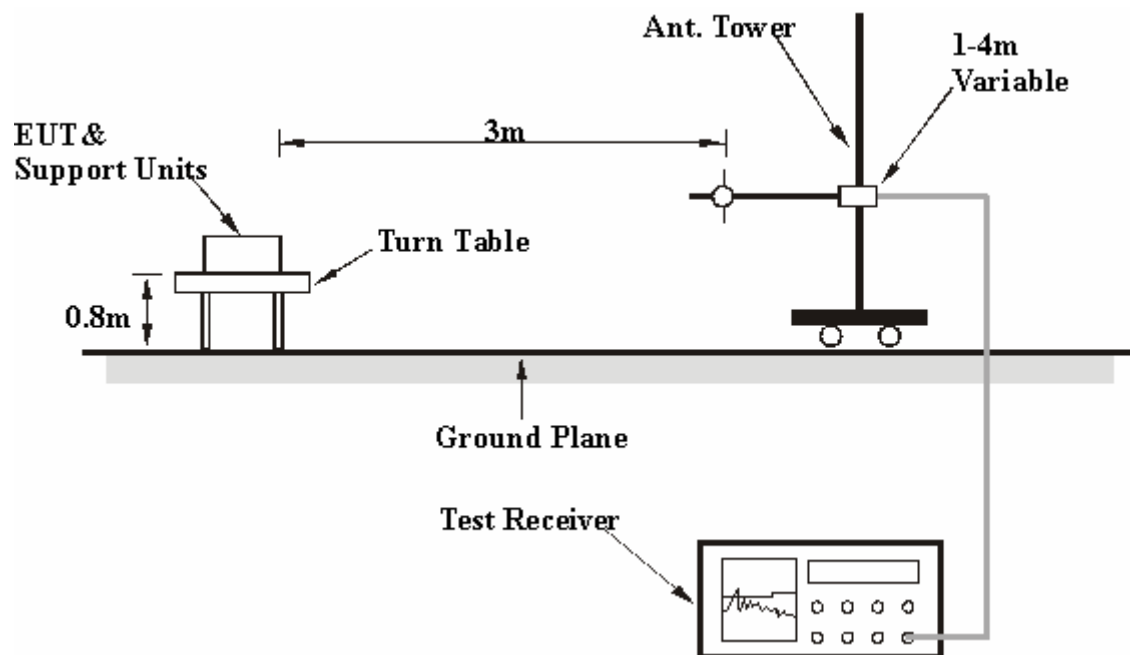
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.

4.2.5 DEVIATION FROM TEST STANDARD

No deviation

4.2.6 TEST SETUP



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

4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

4.2.8 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 70%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	125.17	34.02 QP	43.50	-9.48	2.00 H	115	22.26	11.76
2	199.05	33.67 QP	43.50	-9.83	1.00 H	178	23.27	10.40
3	265.16	44.39 QP	46.00	-1.61	1.00 H	229	31.60	12.79
4	331.26	44.97 QP	46.00	-1.03	1.00 H	58	30.86	14.11
5	366.26	34.38 QP	46.00	-11.62	1.00 H	142	19.44	14.93
6	399.31	36.71 QP	46.00	-9.29	2.00 H	244	21.02	15.69
7	465.42	42.90 QP	46.00	-3.10	2.00 H	226	25.21	17.69
8	597.63	32.00 QP	46.00	-14.00	1.50 H	121	10.96	21.04
9	665.68	36.70 QP	46.00	-9.30	1.00 H	226	15.01	21.69
10	731.79	35.14 QP	46.00	-10.86	1.00 H	310	12.38	22.76
11	864.00	34.99 QP	46.00	-11.01	1.00 H	343	10.02	24.98

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	232.11	28.79 QP	46.00	-17.21	2.00 V	322	17.04	11.75
2	265.16	39.19 QP	46.00	-6.81	2.00 V	160	26.41	12.79
3	331.26	43.47 QP	46.00	-2.53	2.00 V	352	29.36	14.11
4	399.31	31.43 QP	46.00	-14.57	1.00 V	229	15.74	15.69
5	465.42	31.63 QP	46.00	-14.37	2.00 V	145	13.94	17.69
6	543.19	29.36 QP	46.00	-16.64	1.00 V	52	9.59	19.77
7	597.63	31.69 QP	46.00	-14.31	1.00 V	112	10.65	21.04
8	731.79	30.27 QP	46.00	-15.73	2.00 V	103	7.51	22.76
9	947.60	32.70 QP	46.00	-13.30	1.00 V	73	7.00	25.71

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

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

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

4. Margin value = Emission level – Limit value.

DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 70%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	199.05	31.88 QP	43.50	-11.62	1.50 H	10	21.48	10.40
2	267.10	44.73 QP	46.00	-1.27	1.50 H	25	31.91	12.82
3	298.21	41.16 QP	46.00	-4.84	1.00 H	148	27.84	13.32
4	331.26	44.70 QP	46.00	-1.30	1.00 H	61	30.59	14.11
5	364.32	34.04 QP	46.00	-11.96	1.00 H	85	19.15	14.89
6	543.19	25.71 QP	46.00	-20.29	1.00 H	10	5.94	19.77
7	729.84	31.68 QP	46.00	-14.32	1.00 H	52	8.97	22.71
8	797.89	30.26 QP	46.00	-15.74	1.00 H	31	5.95	24.32

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	125.17	27.16 QP	43.50	-16.34	1.00 V	160	15.41	11.76
2	298.21	34.17 QP	46.00	-11.83	1.00 V	127	20.85	13.32
3	333.21	43.20 QP	46.00	-2.80	1.00 V	295	29.04	14.16
4	364.32	28.00 QP	46.00	-18.00	1.50 V	277	13.11	14.89
5	465.42	28.83 QP	46.00	-17.17	1.50 V	196	11.14	17.69
6	564.58	30.54 QP	46.00	-15.46	1.00 V	34	10.27	20.27
7	733.73	26.83 QP	46.00	-19.17	1.00 V	109	4.03	22.80
8	949.55	32.01 QP	46.00	-13.99	1.00 V	82	6.29	25.72

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.

DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 70%RH, 991hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	265.16	44.11 QP	46.00	-1.89	1.50 H	4	31.32	12.79
2	300.16	43.25 QP	46.00	-2.75	1.00 H	10	29.89	13.36
3	331.26	44.23 QP	46.00	-1.77	1.00 H	37	30.12	14.11
4	399.31	33.28 QP	46.00	-12.72	2.50 H	55	17.58	15.69
5	451.81	25.69 QP	46.00	-20.31	2.00 H	289	8.42	17.27
6	564.58	31.09 QP	46.00	-14.91	1.50 H	289	10.82	20.27
7	597.63	31.97 QP	46.00	-14.03	2.00 H	34	10.93	21.04
8	665.68	30.94 QP	46.00	-15.06	1.00 H	217	9.25	21.69
9	904.83	34.80 QP	46.00	-11.20	2.00 H	127	9.44	25.36

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	125.17	28.46 QP	43.50	-15.04	1.00 V	175	16.70	11.76
2	232.11	27.98 QP	46.00	-18.02	2.50 V	151	16.23	11.75
3	265.16	39.57 QP	46.00	-6.43	2.00 V	145	26.78	12.79
4	331.26	41.87 QP	46.00	-4.13	2.00 V	349	27.76	14.11
5	399.31	33.27 QP	46.00	-12.73	1.50 V	340	17.58	15.69
6	465.42	29.22 QP	46.00	-16.78	1.50 V	157	11.53	17.69
7	564.58	29.99 QP	46.00	-16.01	1.00 V	1	9.72	20.27
8	731.79	31.61 QP	46.00	-14.39	1.50 V	82	8.85	22.76

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

ABOVE 1GHz DATA: 802.11a OFDM MODULATION:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3453.00	47.35 PK	68.30	-20.95	1.02 H	338	12.70	34.65
2	#5150.00	68.84 PK	74.00	-5.16	1.49 H	331	29.56	39.28
3	#5150.00	50.71 AV	54.00	-3.29	1.49 H	331	11.43	39.28
4	*5180.00	109.99 PK			1.22 H	329	70.68	39.31
5	*5180.00	97.29 AV			1.22 H	329	57.98	39.31
6	10360.00	61.12 PK	68.30	-7.18	1.04 H	263	10.85	50.27

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3453.00	49.04 PK	68.30	-19.26	1.00 V	233	14.39	34.65
2	#5150.00	71.58 PK	74.00	-2.42	1.47 V	101	32.30	39.28
3	#5150.00	52.20 AV	54.00	-1.80	1.47 V	101	12.92	39.28
4	*5180.00	112.57 PK			1.47 V	97	73.26	39.31
5	*5180.00	99.90 AV			1.47 V	97	60.59	39.31
6	10360.00	61.45 PK	68.30	-6.85	1.06 V	223	11.18	50.27

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3493.00	47.83 PK	68.30	-20.47	1.22 H	106	13.07	34.76
2	*5240.00	109.31 PK			1.08 H	323	69.98	39.33
3	*5240.00	96.86 AV			1.08 H	323	57.53	39.33
4	10480.00	61.69 PK	68.30	-6.61	1.04 H	89	11.67	50.02

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3493.00	49.18 PK	68.30	-19.12	1.13 V	82	14.34	34.84
2	*5240.00	112.82 PK			1.36 V	114	73.53	39.29
3	*5240.00	99.93 AV			1.36 V	114	60.64	39.29
4	10480.00	61.26 PK	68.30	-7.04	1.11 V	257	11.22	50.04

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3506.00	48.12 PK	68.30	-20.18	1.17 H	193	13.25	34.87
2	*5260.00	110.46 PK			1.25 H	186	71.16	39.30
3	*5260.00	97.41 AV			1.25 H	186	58.11	39.30
4	10520.00	61.54 PK	68.30	-6.76	1.28 H	133	11.40	50.14

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3506.00	50.02 PK	68.30	-18.28	1.21 V	138	15.15	34.87
2	*5260.00	113.12 PK			1.17 V	106	73.82	39.30
3	*5260.00	100.08 AV			1.17 V	106	60.78	39.30
4	10520.00	61.95 PK	68.30	-6.35	1.11 V	257	11.81	50.14

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 8	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3546.00	47.13 PK	68.30	-21.17	1.24 H	135	12.29	34.84
2	*5320.00	109.21 PK			1.15 H	126	69.78	39.43
3	*5320.00	96.35 AV			1.15 H	126	56.92	39.43
4	#5350.00	62.03 PK	74.00	-11.97	1.00 H	151	22.57	39.46
5	#5350.00	43.66 AV	54.00	-10.34	1.00 H	151	4.20	39.46
6	#10640.00	61.01 PK	74.00	-12.99	1.27 H	173	10.01	50.99
7	#10640.00	50.02 AV	54.00	-3.98	1.27 H	173	-0.97	50.99

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3546.00	49.32 PK	68.30	-18.98	1.13 V	227	14.48	34.84
2	*5320.00	112.06 PK			1.02 V	192	72.63	39.43
3	*5320.00	99.27 AV			1.02 V	192	59.84	39.43
4	#5350.00	65.39 PK	74.00	-8.61	1.00 V	183	25.93	39.46
5	#5350.00	45.88 AV	54.00	-8.12	1.00 V	183	6.42	39.46
6	#10640.00	61.58 PK	74.00	-12.42	1.39 V	89	10.59	50.99
7	#10640.00	50.47 AV	54.00	-3.53	1.39 V	89	-0.52	50.99

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	#3666.00	48.98 PK	74.00	-25.02	1.06 H	85	13.70	35.27
2	#3666.00	44.20 AV	54.00	-9.80	1.06 H	85	8.92	35.27
3	#5460.00	60.90 PK	74.00	-13.10	1.00 H	5	21.43	39.47
4	#5460.00	40.39 AV	54.00	-13.61	1.00 H	5	0.92	39.47
5	5470.00	63.30 PK	68.30	-5.00	1.00 H	5	23.81	39.49
6	*5500.00	104.19 PK			1.05 H	7	64.64	39.55
7	*5500.00	93.20 AV			1.05 H	7	53.65	39.55
8	#11000.00	59.79 PK	74.00	-14.21	1.18 H	124	8.80	50.99
9	#11000.00	45.98 AV	54.00	-8.02	1.18 H	124	-5.01	50.99

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	#3666.00	49.35 PK	74.00	-24.65	1.21 V	300	14.08	35.27
2	#3666.00	44.26 AV	54.00	-9.74	1.21 V	300	8.99	35.27
3	#5460.00	67.59 PK	74.00	-6.41	1.26 V	277	28.12	39.47
4	#5460.00	47.49 AV	54.00	-6.51	1.26 V	277	8.02	39.47
5	5470.00	66.79 PK	68.30	-1.51	1.26 V	273	27.30	39.49
6	*5500.00	111.43 PK			1.51 V	275	71.88	39.55
7	*5500.00	100.56 AV			1.51 V	275	61.01	39.55
8	#11000.00	59.60 PK	74.00	-14.40	1.21 V	68	8.61	50.99
9	#11000.00	46.24 AV	54.00	-7.76	1.21 V	68	-4.75	50.99

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 14	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	#3733.00	48.43 PK	74.00	-25.57	1.13 H	109	12.96	35.47
2	#3733.00	43.89 AV	54.00	-10.11	1.13 H	109	8.42	35.47
3	*5600.00	103.76 PK			1.11 H	186	63.99	39.77
4	*5600.00	92.74 AV			1.11 H	186	52.97	39.77
5	#11200.00	59.23 PK	74.00	-14.77	1.37 H	81	8.21	51.02
6	#11200.00	45.14 AV	54.00	-8.86	1.37 H	81	-5.88	51.02

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	#3733.00	48.93 PK	74.00	-25.07	1.42 V	235	13.46	35.47
2	#3733.00	43.71 AV	54.00	-10.29	1.42 V	235	8.24	35.47
3	*5600.00	110.76 PK			1.32 V	127	70.99	39.77
4	*5600.00	99.62 AV			1.32 V	127	59.85	39.77
5	#11200.00	59.05 PK	74.00	-14.95	1.06 V	197	8.03	51.02
6	#11200.00	45.68 AV	54.00	-8.32	1.06 V	197	-5.34	51.02

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 19	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	#3800.00	48.26 PK	74.00	-25.74	1.27 H	164	12.60	35.66
2	#3800.00	43.75 AV	54.00	-10.25	1.27 H	164	8.09	35.66
3	*5700.00	103.69 PK			1.16 H	173	63.74	39.95
4	*5700.00	92.74 AV			1.16 H	137	52.79	39.95
5	5725.00	66.28 PK	68.30	-2.02	1.38 H	178	26.30	39.98
6	#11400.00	59.46 PK	74.00	-14.54	1.46 H	36	8.28	51.18
7	#11400.00	45.22 AV	54.00	-8.78	1.46 H	36	-5.96	51.18

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	#3800.00	48.78 PK	74.00	-25.22	1.34 V	93	13.12	35.66
2	#3800.00	43.53 AV	54.00	-10.47	1.34 V	93	7.87	35.66
3	*5700.00	110.26 PK			1.28 V	201	70.31	39.95
4	*5700.00	99.83 AV			1.28 V	201	59.88	39.95
5	5725.00	67.11 PK	68.30	-1.19	1.32 V	280	27.12	39.98
6	#11400.00	58.73 PK	74.00	-15.27	1.33 V	326	7.55	51.18
7	#11400.00	45.31 AV	54.00	-8.69	1.33 V	326	-5.87	51.18

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

DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3453.00	47.56 PK	68.30	-20.74	1.12 H	86	12.91	34.65
2	#5150.00	66.34 PK	74.00	-7.66	1.20 H	334	27.06	39.28
3	#5150.00	47.61 AV	54.00	-6.39	1.20 H	334	8.33	39.28
4	*5180.00	107.89 PK			1.20 H	334	68.58	39.31
5	*5180.00	96.10 AV			1.20 H	334	56.79	39.31
6	10360.00	61.04 PK	68.30	-7.26	1.24 H	58	10.77	50.27

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3453.00	49.62 PK	68.30	-18.68	1.08 V	234	14.97	34.65
2	#5150.00	68.56 PK	74.00	-5.44	1.19 V	20	29.28	39.28
3	#5150.00	49.82 AV	54.00	-4.18	1.19 V	20	10.54	39.28
4	*5180.00	109.88 PK			1.18 V	20	70.57	39.31
5	*5180.00	98.09 AV			1.18 V	20	58.78	39.31
6	10360.00	61.69 PK	68.30	-6.61	1.01 V	154	11.42	50.27

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3493.00	47.95 PK	68.30	-20.35	1.10 H	79	13.25	34.70
2	*5240.00	107.51 PK			1.20 H	336	68.15	39.36
3	*5240.00	94.85 AV			1.20 H	336	55.49	39.36
4	10480.00	61.95 PK	68.30	-6.35	1.02 H	66	11.37	50.58

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3493.00	49.89 PK	68.30	-18.41	1.03 V	46	15.19	34.70
2	*5240.00	110.03 PK			1.40 V	105	70.67	39.36
3	*5240.00	97.41 AV			1.40 V	105	58.05	39.36
4	10480.00	61.97 PK	68.30	-6.33	1.13 V	28	11.39	50.58

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3506.00	47.24 PK	68.30	-21.06	1.27 H	163	12.51	34.73
2	*5260.00	107.18 PK			1.15 H	247	67.80	39.38
3	*5260.00	94.61 AV			1.15 H	247	55.23	39.38
4	10520.00	61.74 PK	68.30	-6.56	1.39 H	235	11.04	50.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3506.00	49.36 PK	68.30	-18.94	1.12 V	89	14.63	34.73
2	*5260.00	110.35 PK			1.31 V	159	70.97	39.38
3	*5260.00	97.93 AV			1.31 V	159	58.55	39.38
4	10520.00	62.33 PK	68.30	-5.97	1.26 V	105	11.63	50.70

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 8	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3546.00	47.27 PK	68.30	-21.03	1.24 H	169	12.43	34.84
2	*5320.00	107.18 PK			1.14 H	207	67.75	39.43
3	*5320.00	94.24 AV			1.14 H	207	54.81	39.43
4	#5350.00	53.71 PK	74.00	-20.29	1.19 H	261	14.25	39.46
5	#5350.00	40.24 AV	54.00	-13.76	1.19 H	261	0.78	39.46
6	#10640.00	61.58 PK	74.00	-12.42	1.13 H	107	10.59	50.99
7	#10640.00	50.47 AV	54.00	-3.53	1.13 H	107	-0.52	50.99

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3546.00	49.46 PK	68.30	-18.84	1.38 V	112	14.62	34.84
2	*5320.00	109.75 PK			1.29 V	256	70.32	39.43
3	*5320.00	96.97 AV			1.29 V	256	57.54	39.43
4	#5350.00	55.63 PK	74.00	-18.37	1.24 V	204	16.17	39.46
5	#5350.00	40.97 AV	54.00	-13.03	1.24 V	204	1.51	39.46
6	#10640.00	61.23 PK	74.00	-12.77	1.24 V	204	10.24	50.99
7	#10640.00	50.64 AV	54.00	-3.36	1.24 V	204	-0.35	50.99

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	#3666.00	50.00 PK	74.00	-24.00	1.07 H	85	14.73	35.27
2	#3666.00	45.97 AV	54.00	-8.03	1.07 H	85	10.70	35.27
3	#5460.00	50.71 PK	74.00	-23.29	1.06 H	192	11.24	39.47
4	#5460.00	39.45 AV	54.00	-14.55	1.06 H	192	-0.02	39.47
5	5470.00	56.27 PK	68.30	-12.03	1.08 H	197	16.78	39.49
6	*5500.00	101.18 PK			1.07 H	194	61.63	39.55
7	*5500.00	91.06 AV			1.07 H	194	51.51	39.55
8	#11000.00	58.90 PK	74.00	-15.10	1.03 H	263	7.91	50.99
9	#11000.00	45.79 AV	54.00	-8.21	1.03 H	263	-5.20	50.99

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	#3666.00	49.77 PK	74.00	-24.23	1.00 V	84	14.50	35.27
2	#3666.00	44.77 AV	54.00	-9.23	1.00 V	84	9.50	35.27
3	#5460.00	54.14 PK	74.00	-19.86	1.08 V	32	14.67	39.47
4	#5460.00	40.29 AV	54.00	-13.71	1.08 V	32	0.82	39.47
5	5470.00	59.57 PK	68.30	-8.73	1.06 V	33	20.08	39.49
6	*5500.00	106.57 PK			1.07 V	33	67.02	39.55
7	*5500.00	95.06 AV			1.07 V	33	55.51	39.55
8	#11000.00	59.45 PK	74.00	-14.55	1.12 V	127	8.46	50.99
9	#11000.00	45.67 AV	54.00	-8.33	1.12 V	127	-5.32	50.99

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 14	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	#3733.00	49.62 PK	74.00	-24.38	1.16 H	62	14.15	35.47
2	#3733.00	45.31 AV	54.00	-8.69	1.16 H	62	9.84	35.47
3	*5600.00	104.82 PK			1.16 H	295	65.05	39.77
4	*5600.00	93.69 AV			1.16 H	295	53.92	39.77
5	#11200.00	58.33 PK	74.00	-15.67	1.38 H	125	7.31	51.02
6	#11200.00	45.10 AV	54.00	-8.90	1.38 H	125	-5.92	51.02

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	#3733.00	49.41 PK	74.00	-24.59	1.05 V	199	13.94	35.47
2	#3733.00	44.11 AV	54.00	-9.89	1.05 V	199	8.64	35.47
3	*5600.00	105.98 PK			1.07 V	164	66.21	39.77
4	*5600.00	94.74 AV			1.07 V	164	54.97	39.77
5	#11200.00	58.96 PK	74.00	-15.04	1.21 V	109	7.94	51.02
6	#11200.00	45.04 AV	54.00	-8.96	1.21 V	109	-5.98	51.02

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 19	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	#3800.00	49.68 PK	74.00	-24.32	1.41 H	83	14.02	35.66
2	#3800.00	45.57 AV	54.00	-8.43	1.41 H	83	9.91	35.66
3	*5700.00	104.63 PK			1.03 H	217	64.68	39.95
4	*5700.00	93.79 AV			1.03 H	217	53.84	39.95
5	5725.00	61.43 PK	68.30	-6.87	1.01 H	224	21.44	39.98
6	#11400.00	58.28 PK	74.00	-15.72	1.21 H	252	7.10	51.18
7	#11400.00	45.13 AV	54.00	-8.87	1.21 H	252	-6.05	51.18

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	#3800.00	49.13 PK	74.00	-24.87	1.27 V	182	13.47	35.66
2	#3800.00	44.06 AV	54.00	-9.94	1.27 V	182	8.40	35.66
3	*5700.00	107.29 PK			1.44 V	106	67.34	39.95
4	*5700.00	96.95 AV			1.44 V	106	57.00	39.95
5	5725.00	65.56 PK	68.30	-2.74	1.44 V	104	25.57	39.98
6	#11400.00	58.28 PK	74.00	-15.72	1.06 V	304	7.58	51.18
7	#11400.00	45.13 AV	54.00	-8.87	1.06 V	304	-6.33	51.18

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

DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3460.00	47.83 PK	68.30	-20.47	1.09 H	109	13.17	34.66
2	#5150.00	59.46 PK	74.00	-14.54	1.55 H	11	20.18	39.28
3	#5150.00	43.95 AV	54.00	-10.05	1.55 H	11	4.67	39.28
4	*5190.00	100.18 PK			1.55 H	11	60.86	39.32
5	*5190.00	88.42 AV			1.55 H	11	49.10	39.32
6	10380.00	61.26 PK	68.30	-7.04	1.18 H	79	10.96	50.30

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3460.00	49.85 PK	68.30	-18.45	1.11 V	63	15.19	34.66
2	#5150.00	64.30 PK	74.00	-9.70	1.50 V	99	25.02	39.28
3	#5150.00	48.81 AV	54.00	-5.19	1.50 V	99	9.53	39.28
4	*5190.00	105.68 PK			1.22 V	98	66.36	39.32
5	*5190.00	93.15 AV			1.22 V	98	53.83	39.32
6	10380.00	59.45 PK	68.30	-8.85	1.00 V	14	9.15	50.30

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 2	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3487.00	47.95 PK	68.30	-20.35	1.12 H	238	13.26	34.69
2	*5230.00	100.29 PK			1.52 H	19	60.94	39.35
3	*5230.00	88.54 AV			1.52 H	19	49.19	39.35
4	#5350.00	57.86 PK	74.00	-16.14	1.08 H	79	18.40	39.46
5	#5350.00	40.68 AV	54.00	-13.32	1.08 H	79	1.22	39.46
6	10460.00	61.08 PK	68.30	-7.22	1.13 H	94	10.56	50.52

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3487.00	49.51 PK	68.30	-18.79	1.08 V	227	14.82	34.69
2	*5230.00	105.83 PK			1.20 V	104	66.48	39.35
3	*5230.00	93.29 AV			1.20 V	104	53.94	39.35
4	#5350.00	62.18 PK	74.00	-11.82	1.15 V	136	22.72	39.46
5	#5350.00	45.92 AV	54.00	-8.08	1.15 V	136	6.46	39.46
6	10460.00	60.36 PK	68.30	-7.94	1.12 V	54	9.84	50.52

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3513.00	49.25 PK	68.30	-19.05	1.05 H	86	14.44	34.81
2	*5270.00	100.14 PK			1.48 H	26	60.75	39.39
3	*5270.00	88.45 AV			1.48 H	26	49.06	39.39
4	10540.00	60.38 PK	68.30	-7.92	1.10 H	43	10.28	50.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3513.00	50.39 PK	68.30	-17.91	1.10 V	24	15.58	34.81
2	*5270.00	105.11 PK			1.20 V	81	65.72	39.39
3	*5270.00	92.86 AV			1.20 V	81	53.47	39.39
4	10540.00	59.84 PK	68.30	-8.46	1.13 V	21	9.74	50.10

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	3460.00	48.11 PK	68.30	-20.19	1.02 H	39	13.39	34.72
2	*5310.00	100.03 PK			1.50 H	20	60.58	39.45
3	*5310.00	88.32 AV			1.50 H	20	48.87	39.45
4	#5350.00	59.10 PK	74.00	-14.90	1.50 H	20	19.69	39.41
5	#5350.00	45.58 AV	54.00	-8.42	1.50 H	20	6.17	39.41
6	#10620.00	61.16 PK	74.00	-12.84	1.06 H	222	10.93	50.23
7	#10620.00	47.86 AV	54.00	-6.14	1.06 H	222	-2.37	50.23

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	3460.00	50.21 PK	68.30	-18.09	1.01 V	211	15.49	34.72
2	*5310.00	105.26 PK			1.22 V	84	65.81	39.45
3	*5310.00	93.01 AV			1.22 V	84	53.56	39.45
4	#5350.00	64.07 PK	74.00	-9.93	1.21 V	87	24.66	39.41
5	#5350.00	50.61 AV	54.00	-3.39	1.21 V	87	11.20	39.41
6	#10620.00	60.23 PK	74.00	-13.77	1.11 V	29	10.00	50.23
7	#10620.00	49.56 AV	54.00	-4.44	1.11 V	29	-0.67	50.23

- 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 falling in the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	#3673.00	49.86 PK	74.00	-24.14	1.26 H	127	14.57	35.29
2	#3673.00	46.07 AV	54.00	-7.93	1.26 H	127	10.78	35.29
3	#5460.00	57.24 PK	74.00	-16.76	1.09 H	81	17.77	39.47
4	#5460.00	42.49 AV	54.00	-11.51	1.09 H	81	3.02	39.47
5	5470.00	64.94 PK	68.30	-3.36	1.29 H	97	25.45	39.49
6	*5510.00	99.89 PK			1.20 H	102	60.32	39.57
7	*5510.00	87.92 AV			1.20 H	102	48.35	39.57
8	#11000.00	59.08 PK	74.00	-14.92	1.38 H	245	8.09	50.99
9	#11000.00	46.11 AV	54.00	-7.89	1.38 H	245	-4.88	50.99

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	#3673.00	50.78 PK	74.00	-23.22	1.02 V	311	15.48	35.29
2	#3673.00	46.82 AV	54.00	-7.18	1.02 V	311	11.52	35.29
3	#5460.00	57.83 PK	74.00	-16.17	1.26 V	105	18.36	39.47
4	#5460.00	43.11 AV	54.00	-10.89	1.26 V	105	3.64	39.47
5	5470.00	65.53 PK	68.30	-2.77	1.26 V	105	26.04	39.49
6	*5510.00	104.97 PK			1.36 V	107	65.40	39.57
7	*5510.00	92.61 AV			1.36 V	107	53.04	39.57
8	#11000.00	58.81 PK	74.00	-15.19	1.12 V	305	7.82	50.99
9	#11000.00	45.78 AV	54.00	-8.22	1.12 V	305	-5.21	50.99

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	#3726.00	49.67 PK	74.00	-24.33	1.27 H	209	14.22	35.45
2	#3726.00	45.96 AV	54.00	-8.04	1.27 H	209	10.51	35.45
3	*5590.00	99.58 PK			1.33 H	216	59.83	39.75
4	*5590.00	87.65 AV			1.33 H	216	47.90	39.75
5	#11340.00	58.92 PK	74.00	-15.08	1.47 H	232	7.78	51.14
6	#11340.00	46.02 AV	54.00	-7.98	1.47 H	232	-5.12	51.14

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	#3726.00	49.83 PK	74.00	-24.17	1.04 V	86	14.38	35.45
2	#3726.00	46.22 AV	54.00	-7.78	1.04 V	86	10.77	35.45
3	*5590.00	104.62 PK			1.21 V	187	64.87	39.75
4	*5590.00	92.18 AV			1.21 V	187	52.43	39.75
5	#11340.00	58.47 PK	74.00	-15.53	1.14 V	69	7.33	51.14
6	#11340.00	45.17 AV	54.00	-8.83	1.14 V	69	-5.97	51.14

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH, 991hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
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	#3780.00	49.34 PK	74.00	-24.66	1.16 H	154	13.74	35.60
2	#3780.00	45.72 AV	54.00	-8.28	1.16 H	154	10.12	35.60
3	*5670.00	99.37 PK			1.06 H	29	59.47	39.90
4	*5670.00	87.48 AV			1.06 H	29	47.58	39.90
5	5725.00	53.62 PK	68.30	-14.68	1.05 H	42	13.63	39.98
6	#11340.00	58.79 PK	74.00	-15.21	1.17 H	122	7.65	51.14
7	#11340.00	45.84 AV	54.00	-8.16	1.17 H	122	-5.30	51.14

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
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	#3780.00	50.21 PK	74.00	-23.79	1.32 V	297	14.61	35.60
2	#3780.00	46.17 AV	54.00	-7.83	1.32 V	297	10.57	35.60
3	*5670.00	104.48 PK			1.21 V	198	64.58	39.90
4	*5670.00	92.13 AV			1.21 V	198	52.23	39.90
5	5725.00	58.34 PK	68.30	-9.96	1.08 V	206	18.35	39.98
6	#11340.00	58.42 PK	74.00	-15.58	1.36 V	249	7.28	51.14
7	#11340.00	45.35 AV	54.00	-8.65	1.36 V	249	-5.79	51.14

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

4.3 PEAK TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

NOTE: Where B is the 26dB emission bandwidth in 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

1. The transmitter output was connected to the spectrum analyzer.
2. Set span to encompass the entire emission bandwidth of the signal.
3. Set RBW to 1MHz, VBW to 300kHz.
4. Using the spectrum analyzer's channel power measurement function to measure the output power.

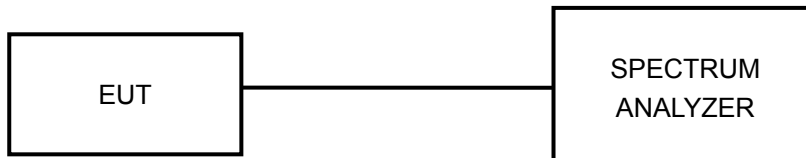
NOTE: The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

The transmitter output operates continuously therefore Method # 1 is used.

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 specific channel frequencies individually.

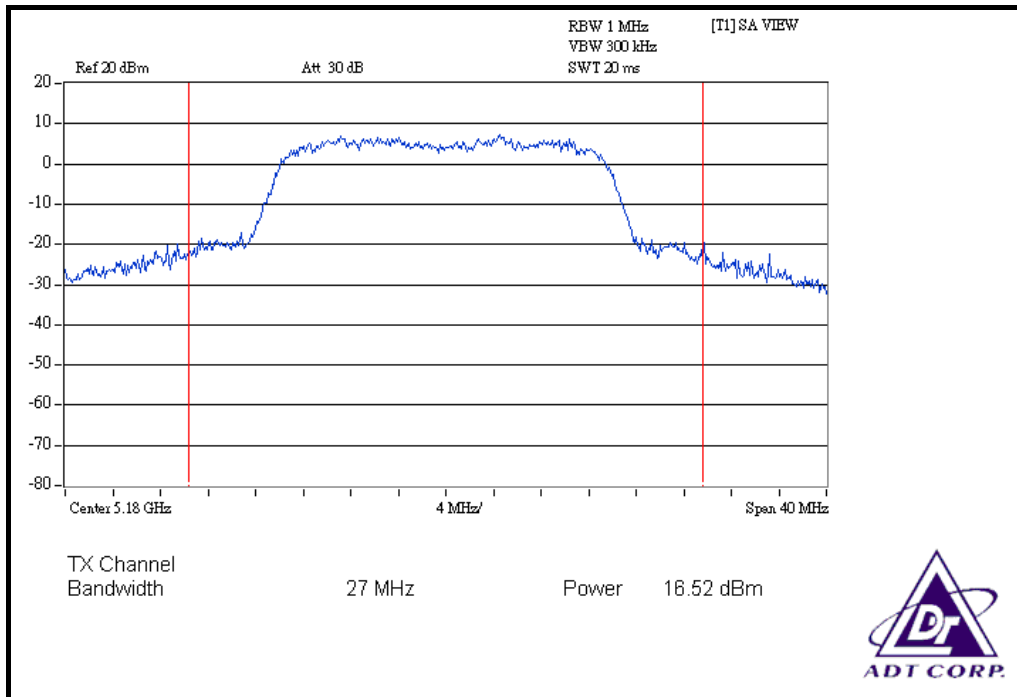
4.3.7 TEST RESULTS

PEAK POWER OUTPUT: 802.11a OFDM MODULATION:

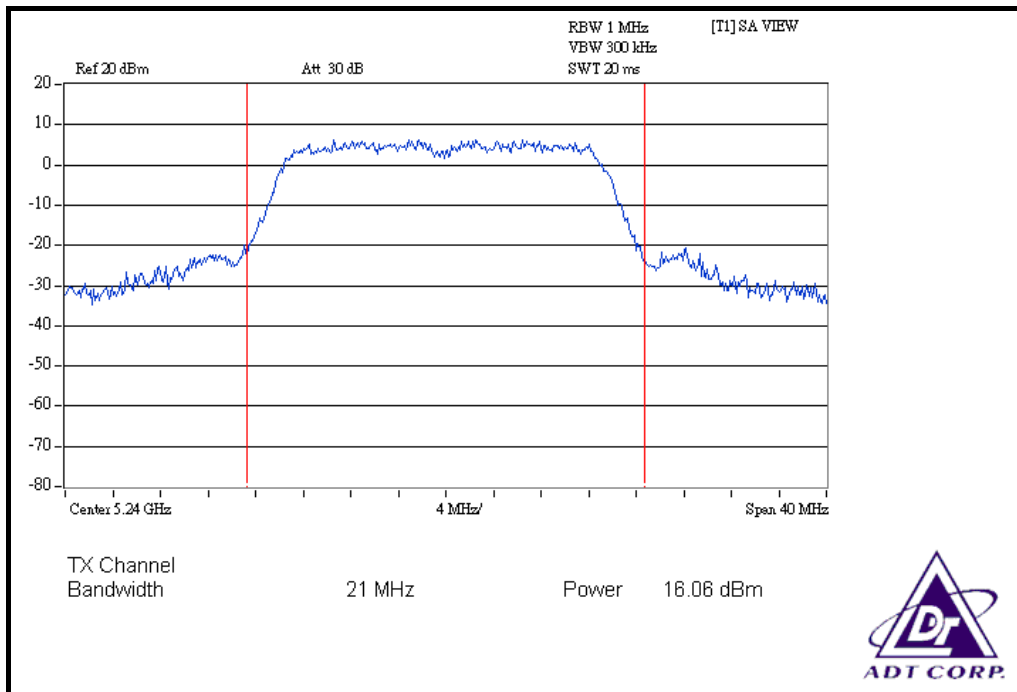
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	5180	44.875	16.52	17.00	PASS
4	5240	40.365	16.06	17.00	PASS
5	5260	45.290	16.56	24.00	PASS
8	5320	45.499	16.58	24.00	PASS
9	5500	45.186	16.55	24.00	PASS
14	5600	45.082	16.54	24.00	PASS
19	5700	44.771	16.51	24.00	PASS

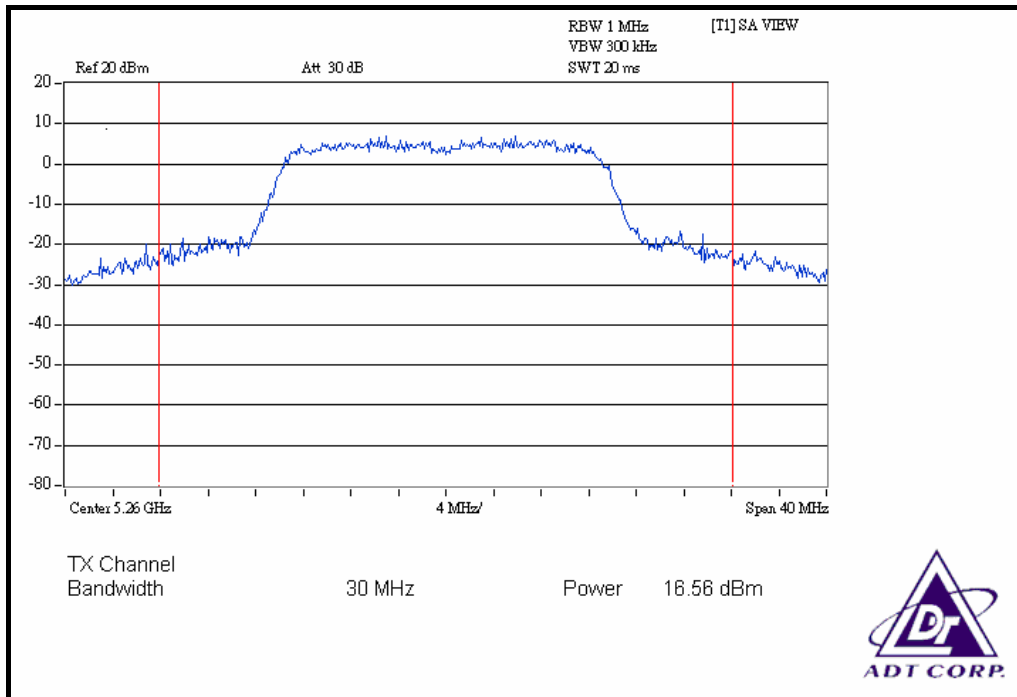
CH 1



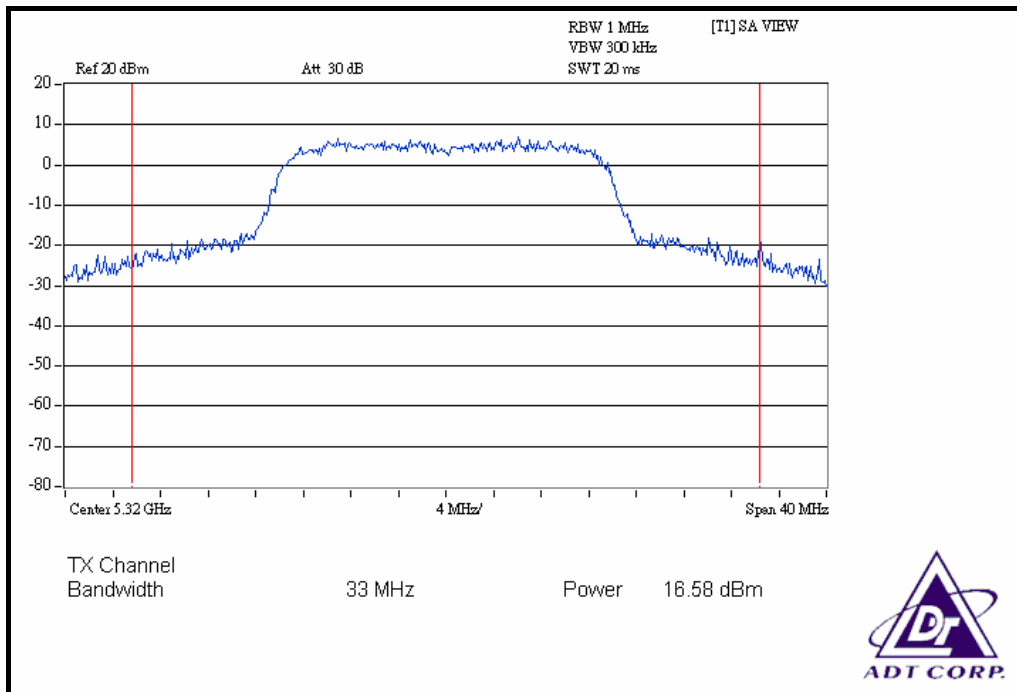
CH 4



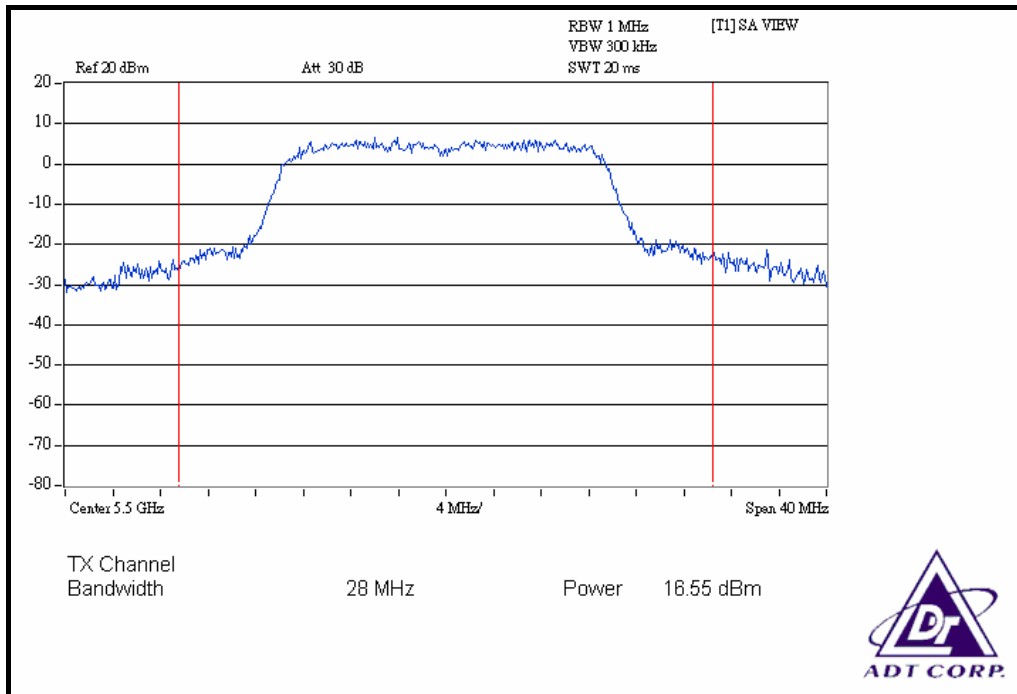
CH 5



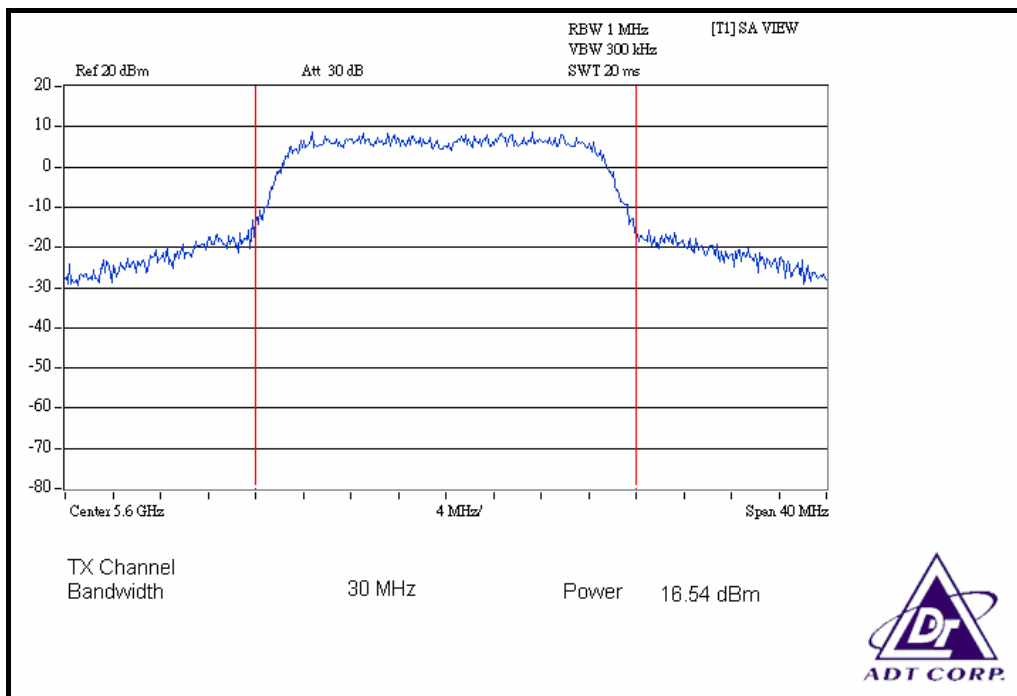
CH 8



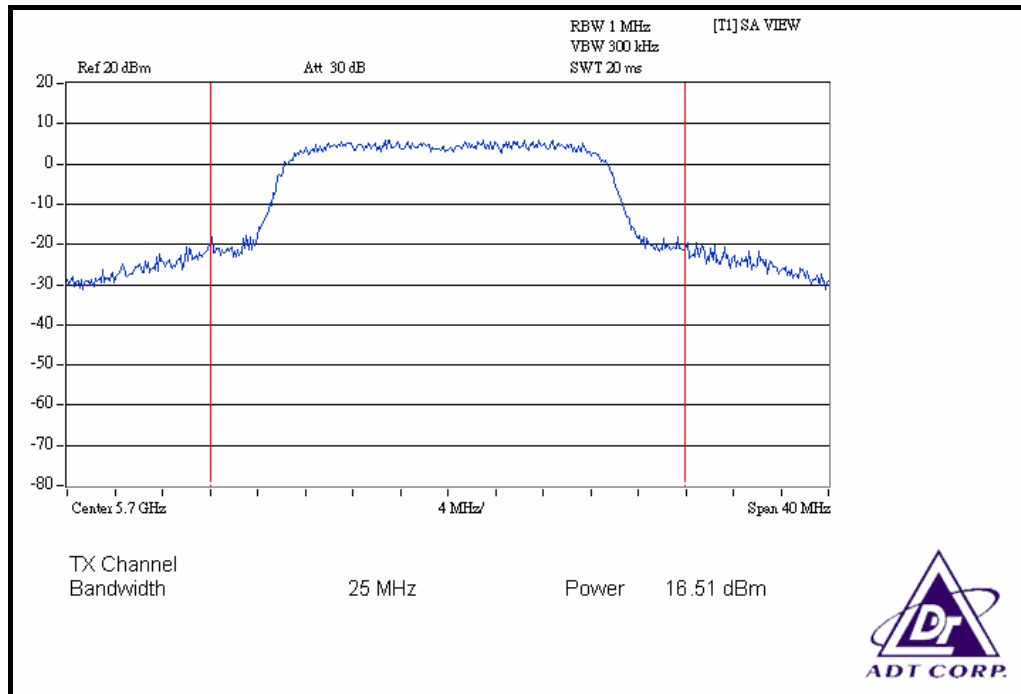
CH 9



CH 14



CH 19



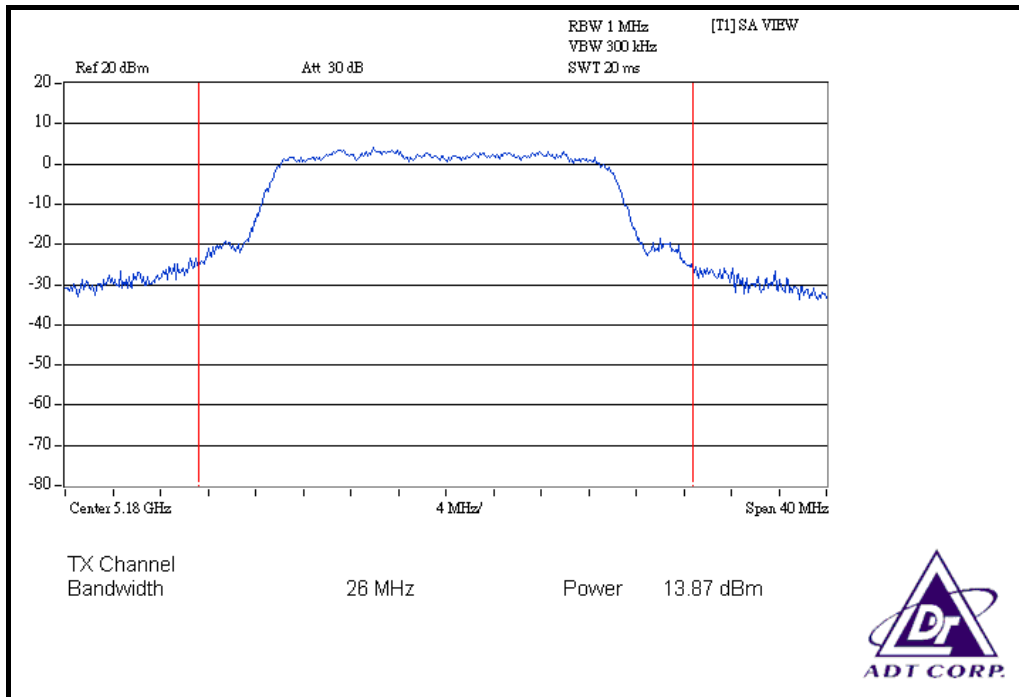


DRAFT 802.11n (20MHz) OFDM MODULATION:

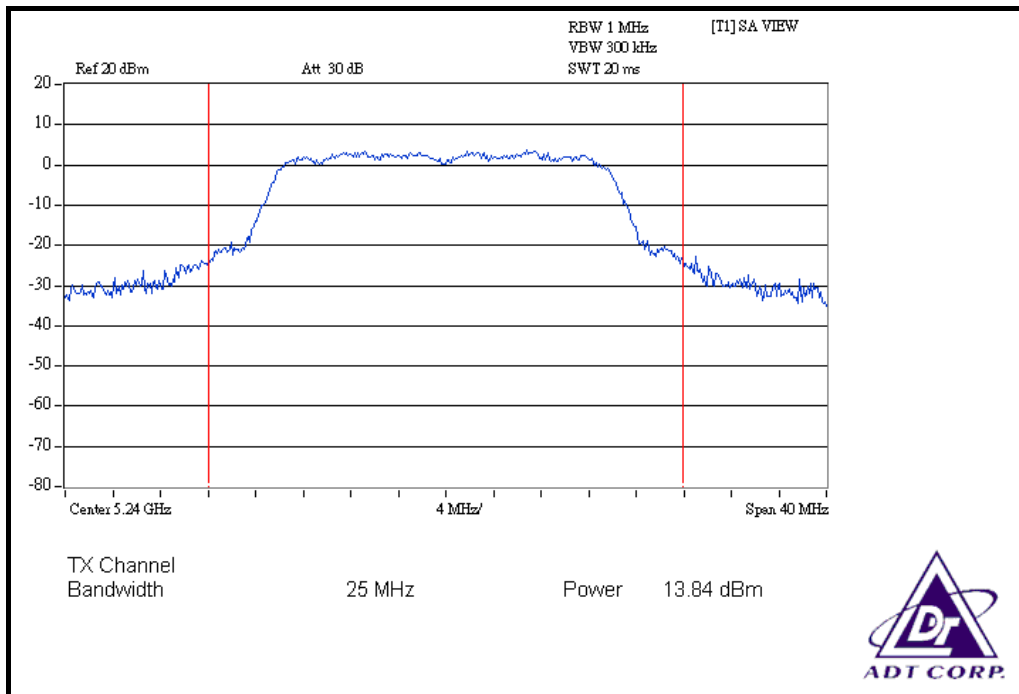
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	5180	24.378	22.439	13.87	13.51	47.817	16.80	17.00	PASS
4	5240	24.210	22.699	13.84	13.56	47.909	16.80	17.00	PASS
5	5260	22.439	22.594	13.51	13.54	45.033	16.54	24.00	PASS
8	5320	22.646	22.751	13.55	13.57	45.397	16.57	24.00	PASS
9	5500	17.824	17.947	12.51	12.54	35.771	15.54	24.00	PASS
14	5600	18.072	18.155	12.57	12.59	36.227	15.59	24.00	PASS
19	5700	17.824	17.824	12.51	12.51	35.648	15.52	24.00	PASS

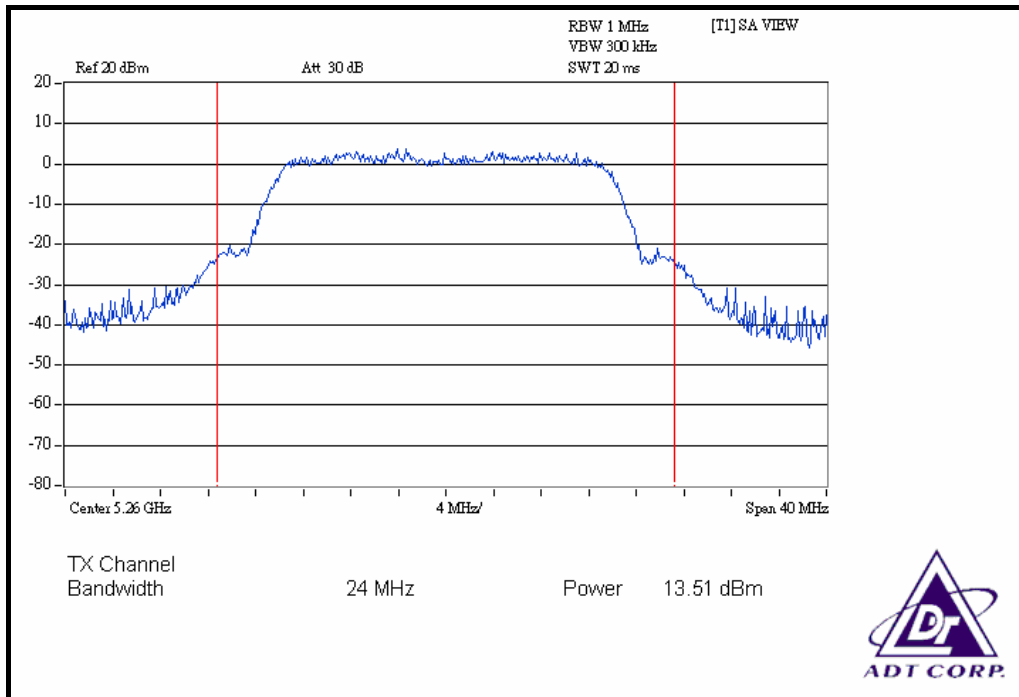
FOR CHAIN 0: CH 1



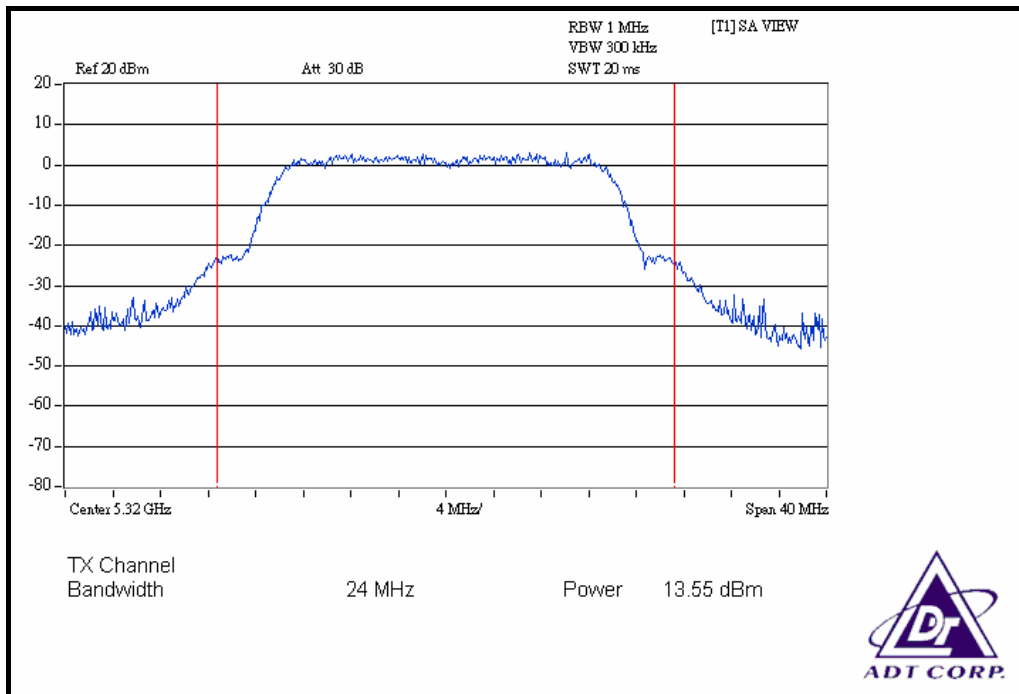
CH 4



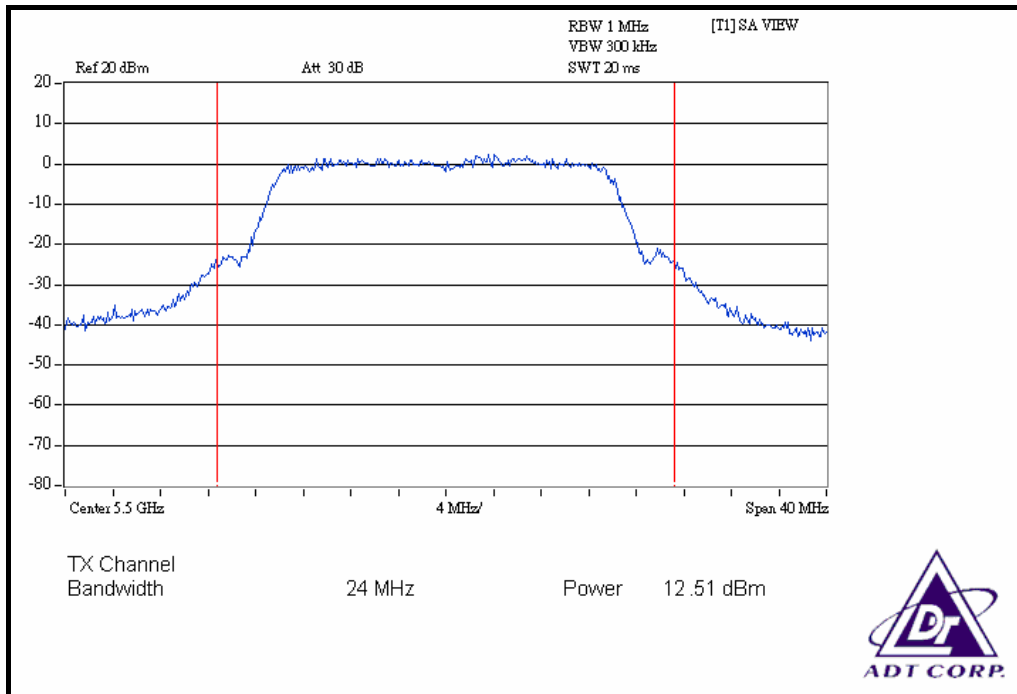
CH 5



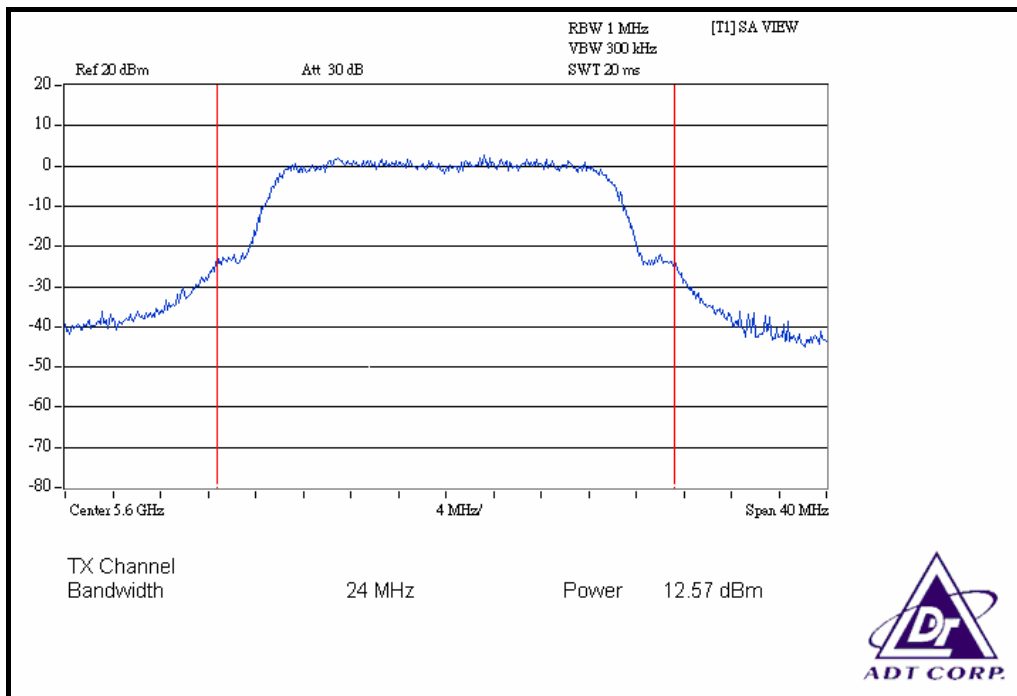
CH 8



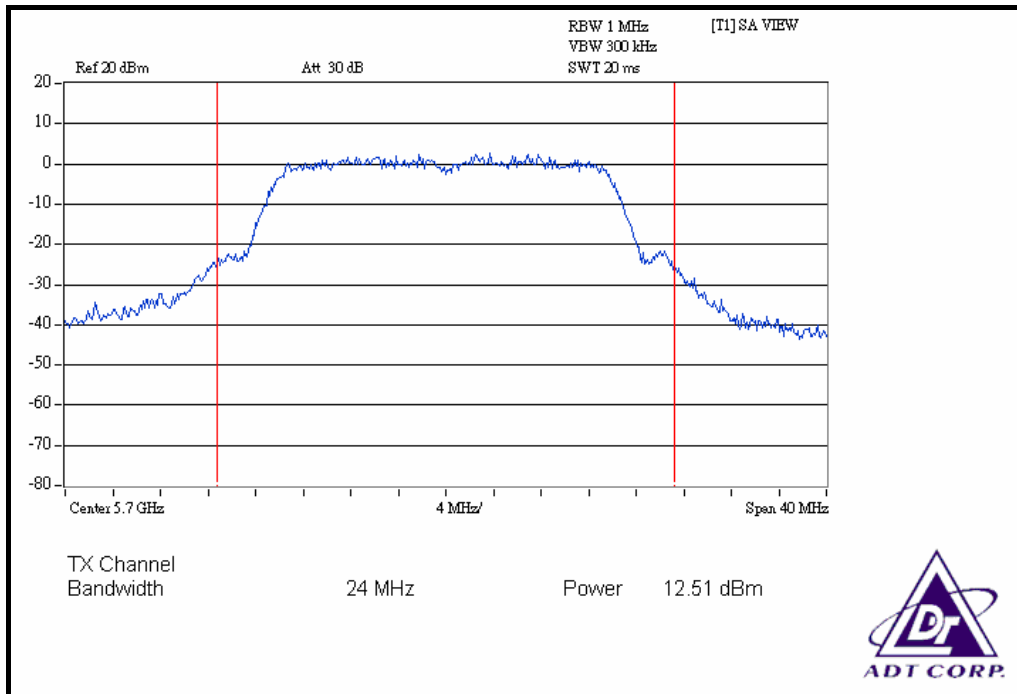
CH 9



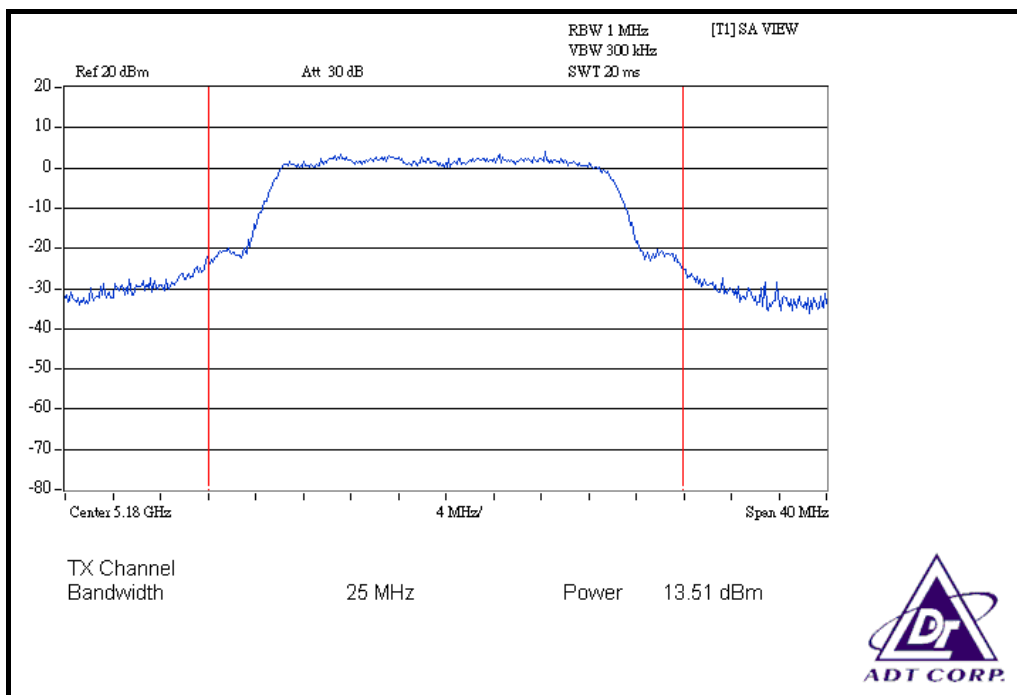
CH 14



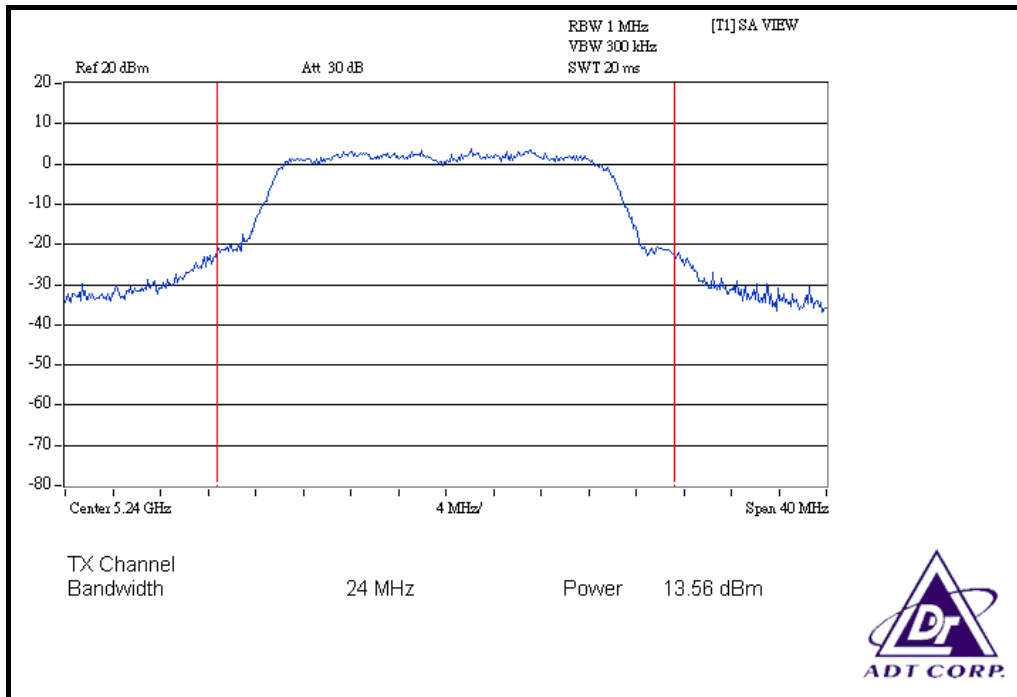
CH 19



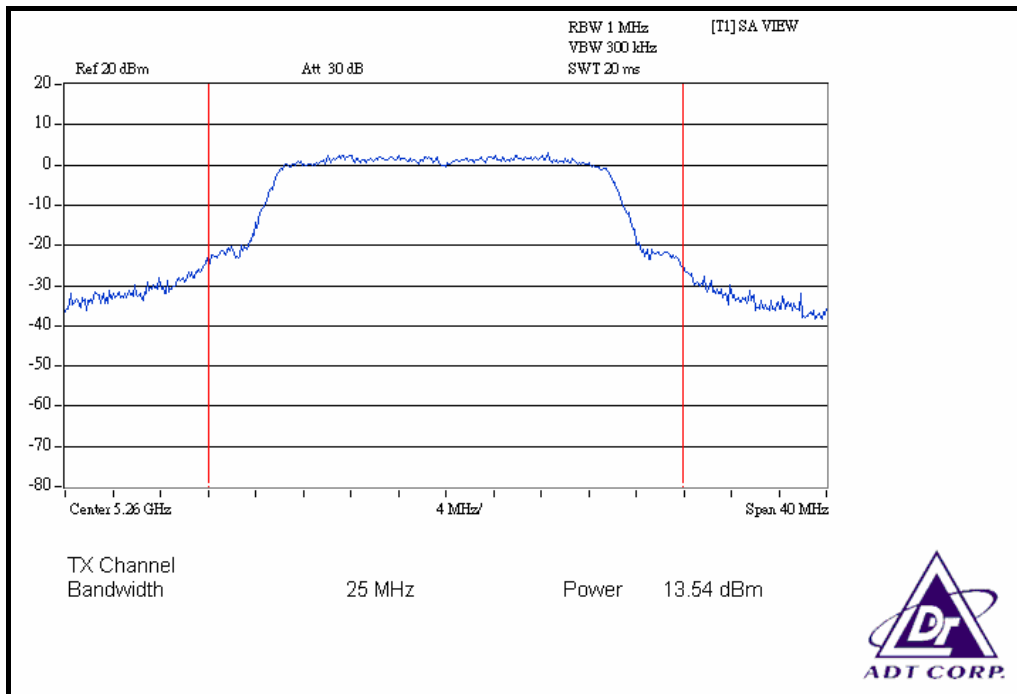
FOR CHAIN 1: CH 1



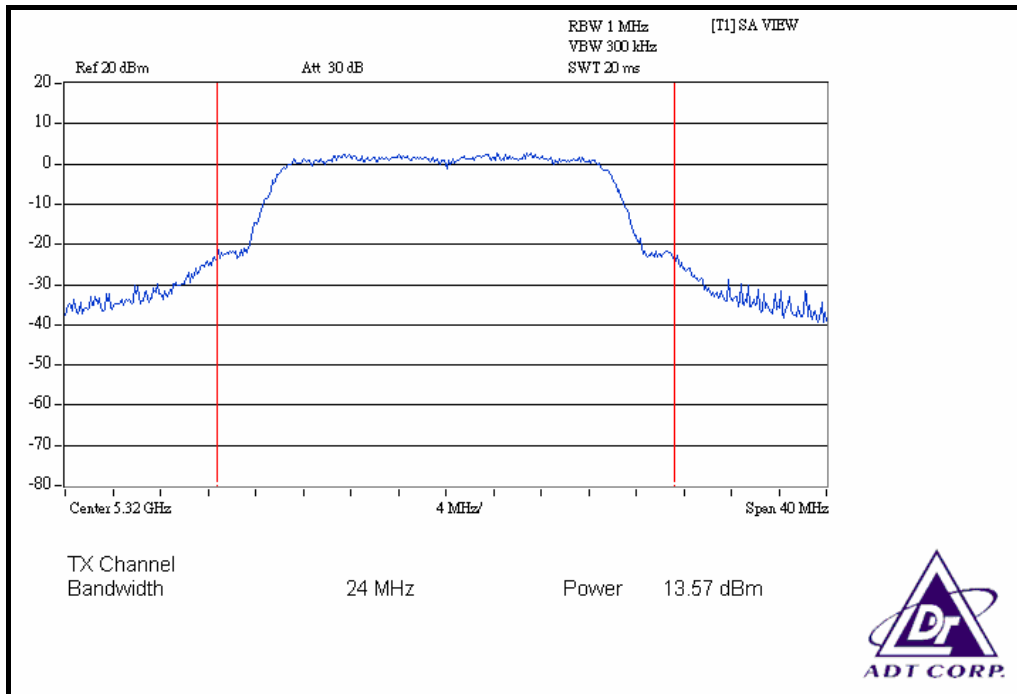
CH 4



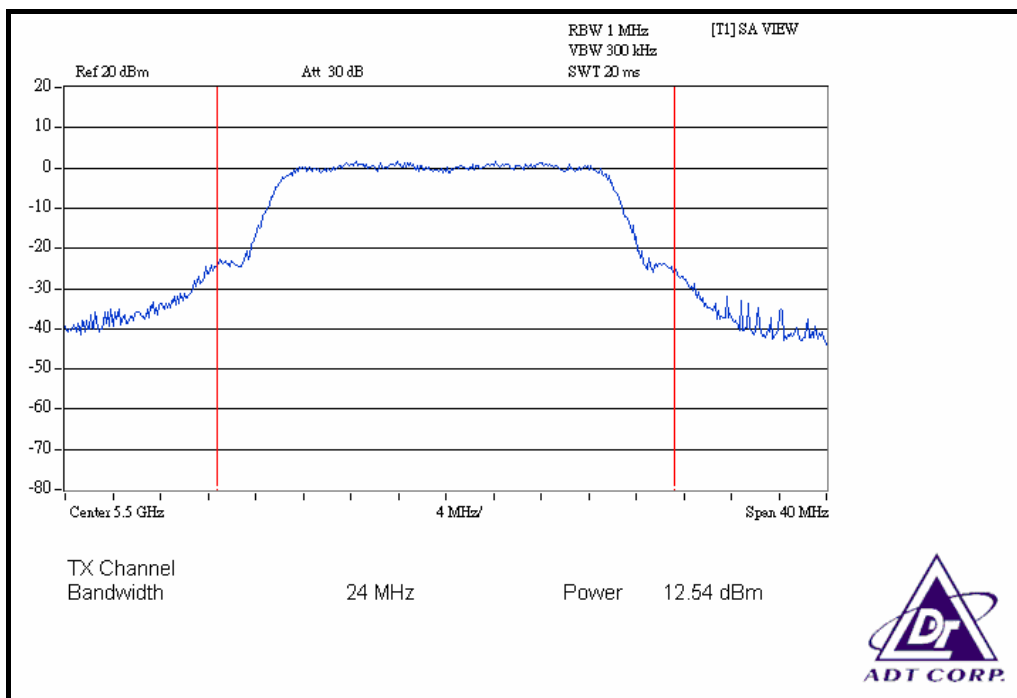
CH 5



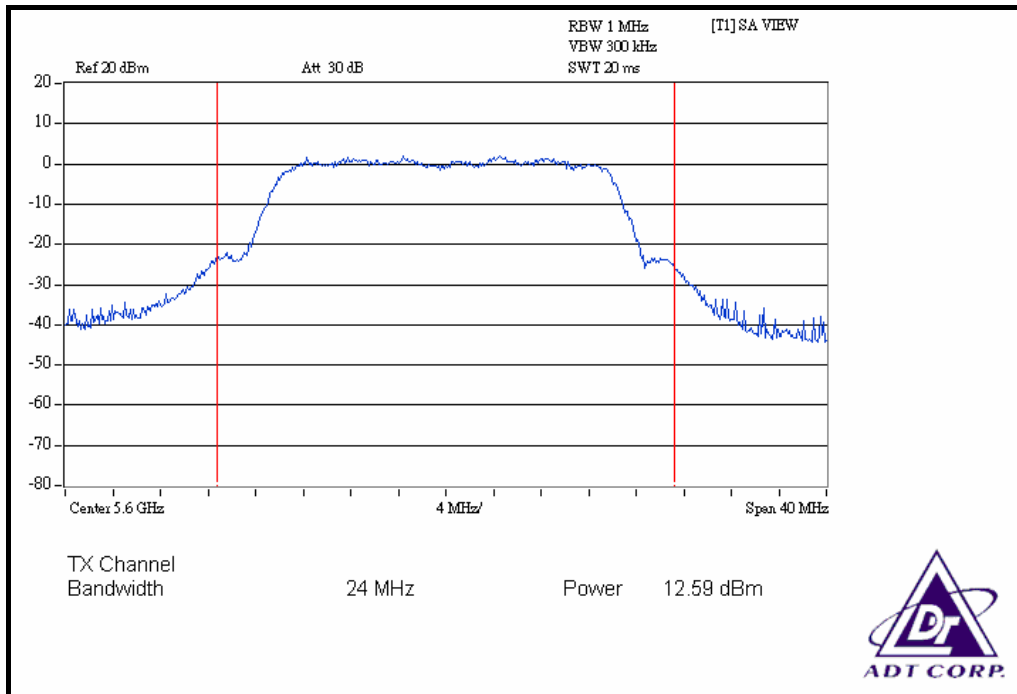
CH 8



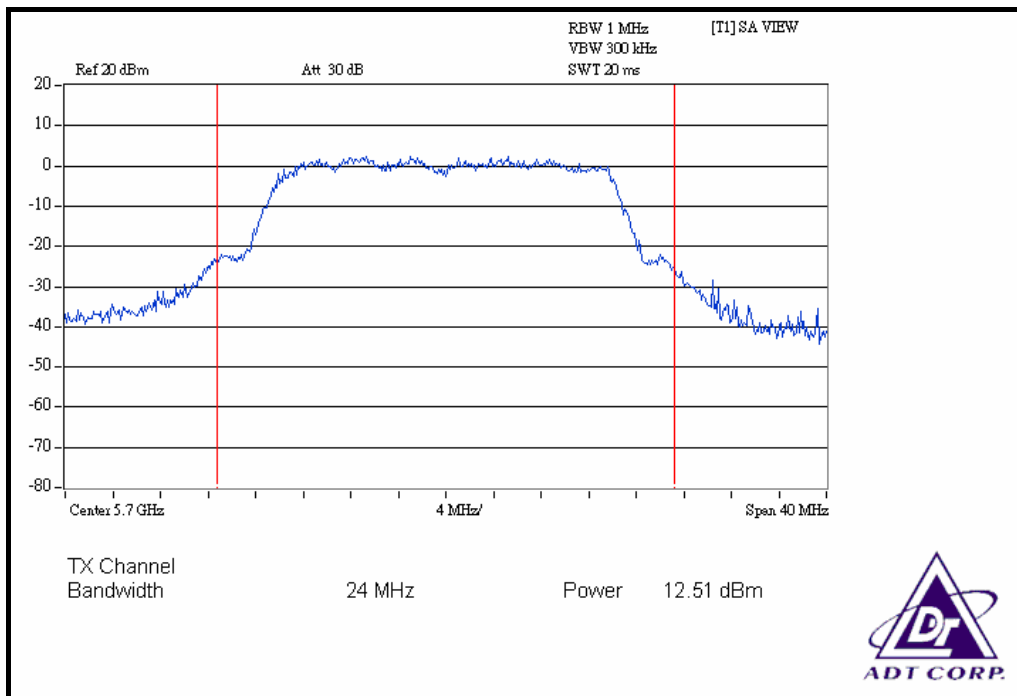
CH 9



CH 14



CH 19



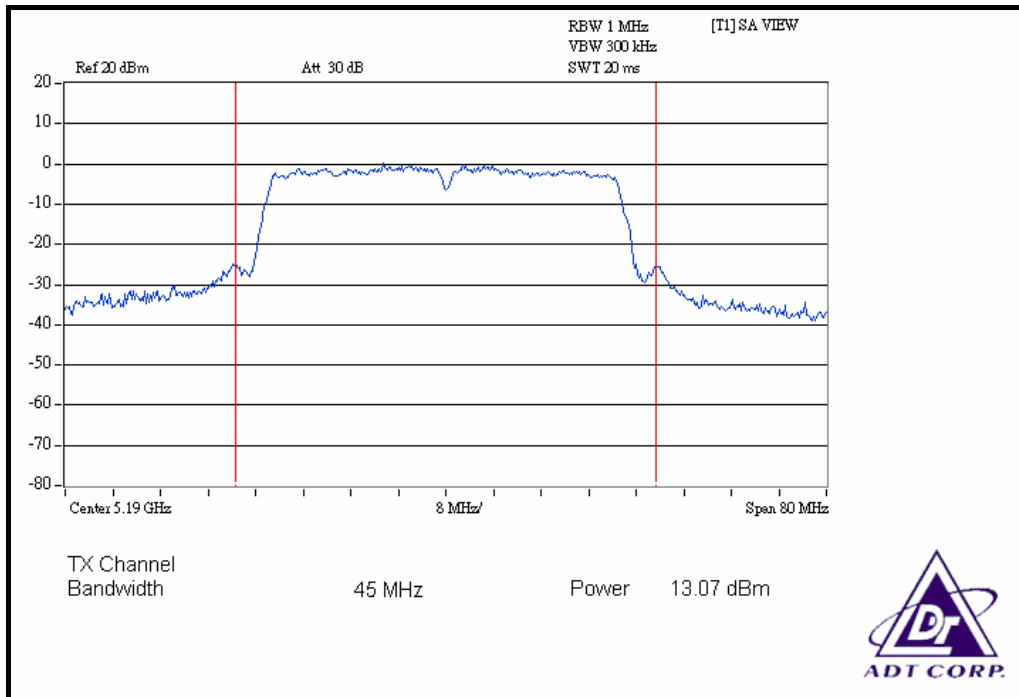


DRAFT 802.11n (40MHz) OFDM MODULATION:

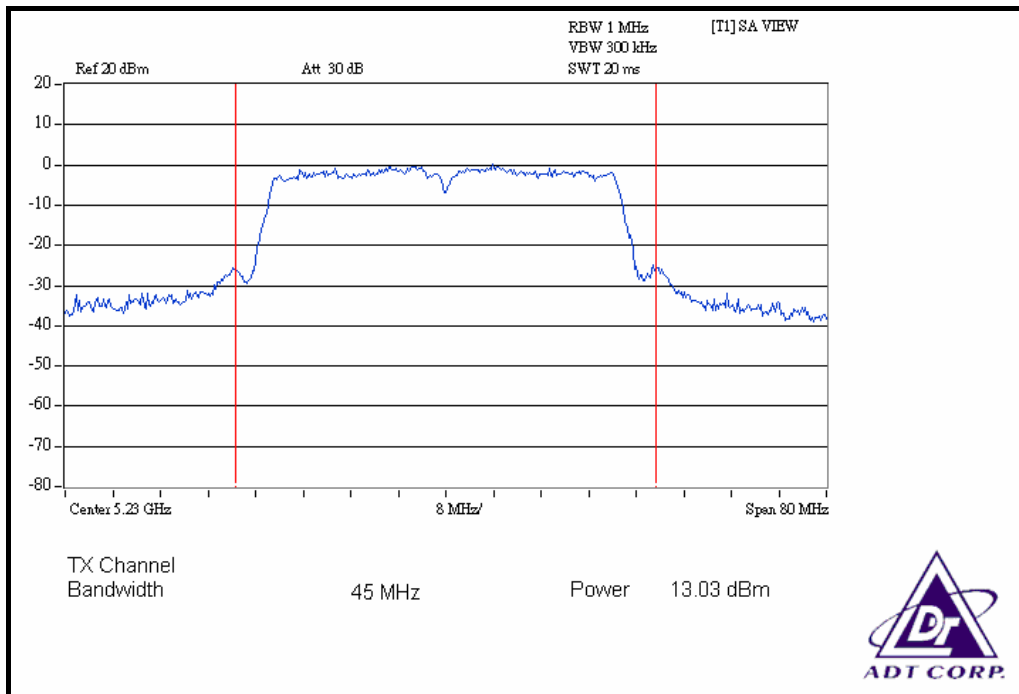
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	5190	20.277	20.370	13.07	13.09	41.647	16.20	17.00	PASS
2	5230	20.091	20.137	13.03	13.04	41.228	16.15	17.00	PASS
3	5270	17.906	17.989	12.53	12.55	35.895	15.55	24.00	PASS
4	5310	18.113	17.824	12.58	12.51	35.937	15.56	24.00	PASS
5	5510	17.783	17.989	12.50	12.55	35.772	15.54	24.00	PASS
7	5590	17.989	18.072	12.55	12.57	36.060	15.57	24.00	PASS
9	5670	17.824	18.030	12.51	12.56	35.854	15.55	24.00	PASS

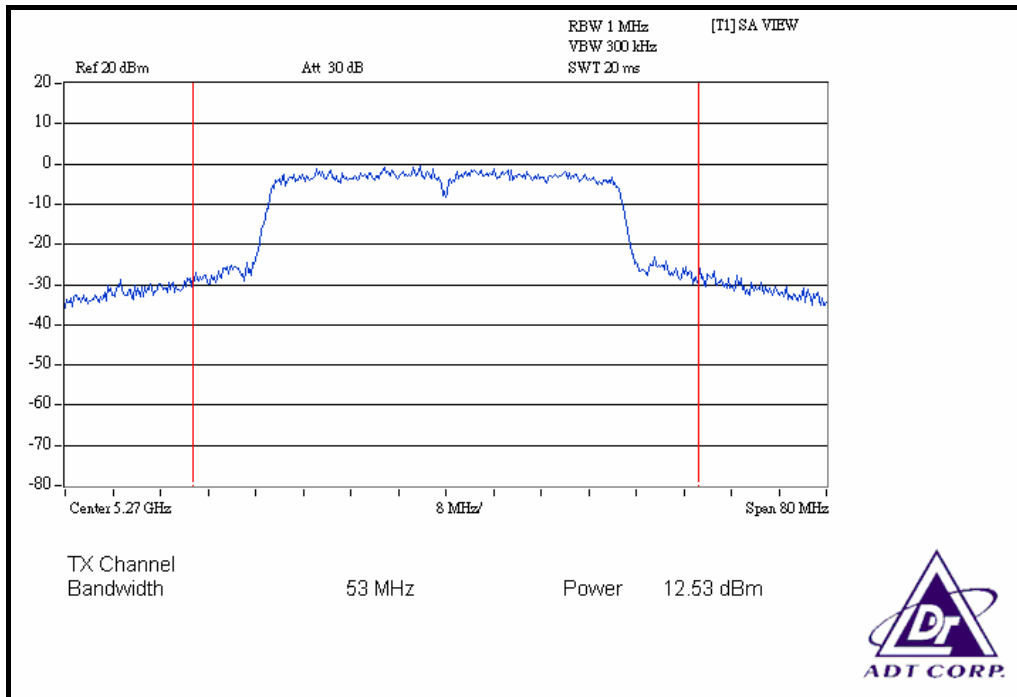
FOR CHAIN 0: CH 1



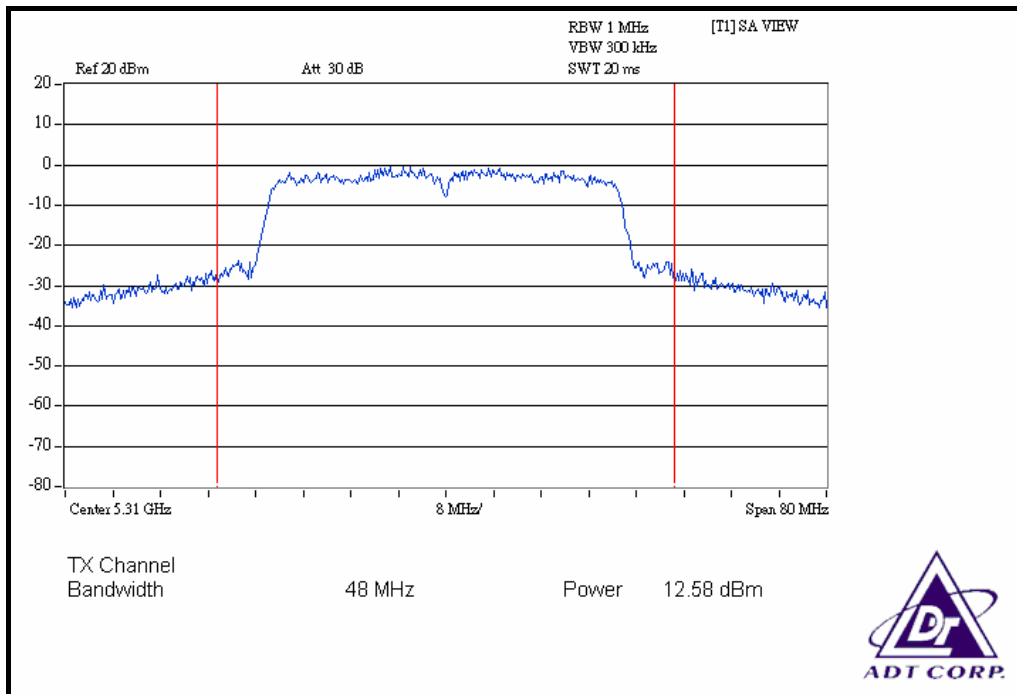
CH 2



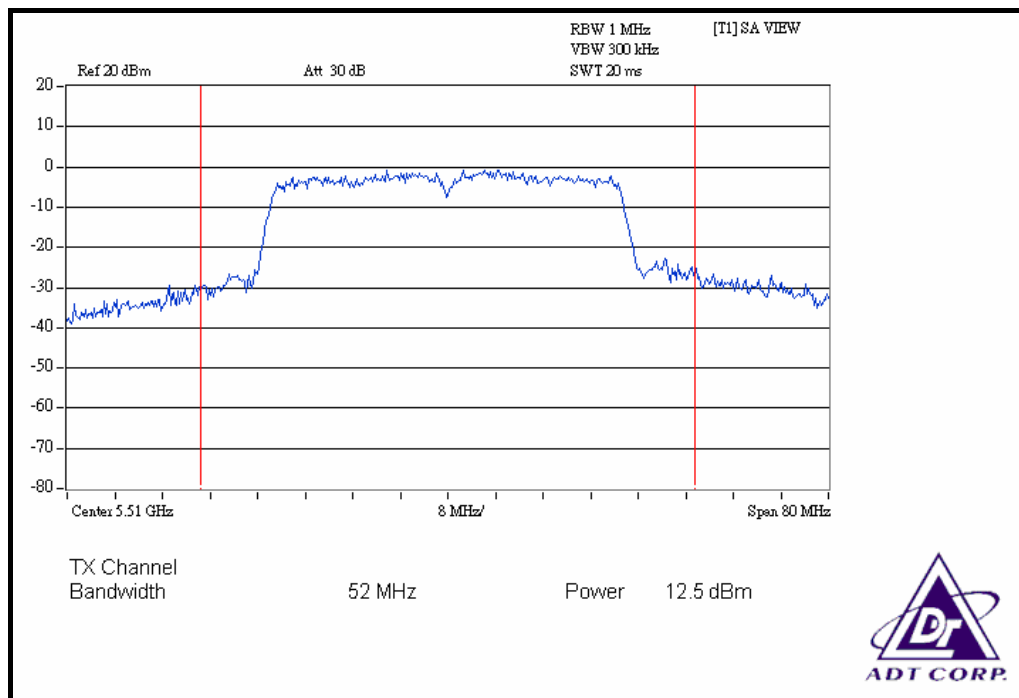
CH 3



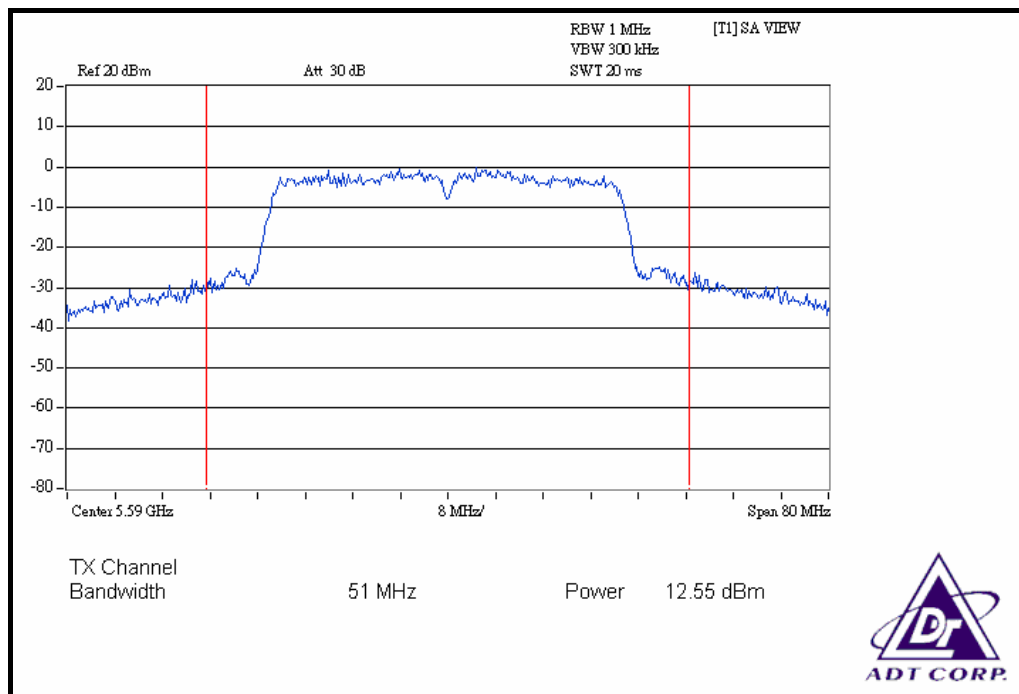
CH 4



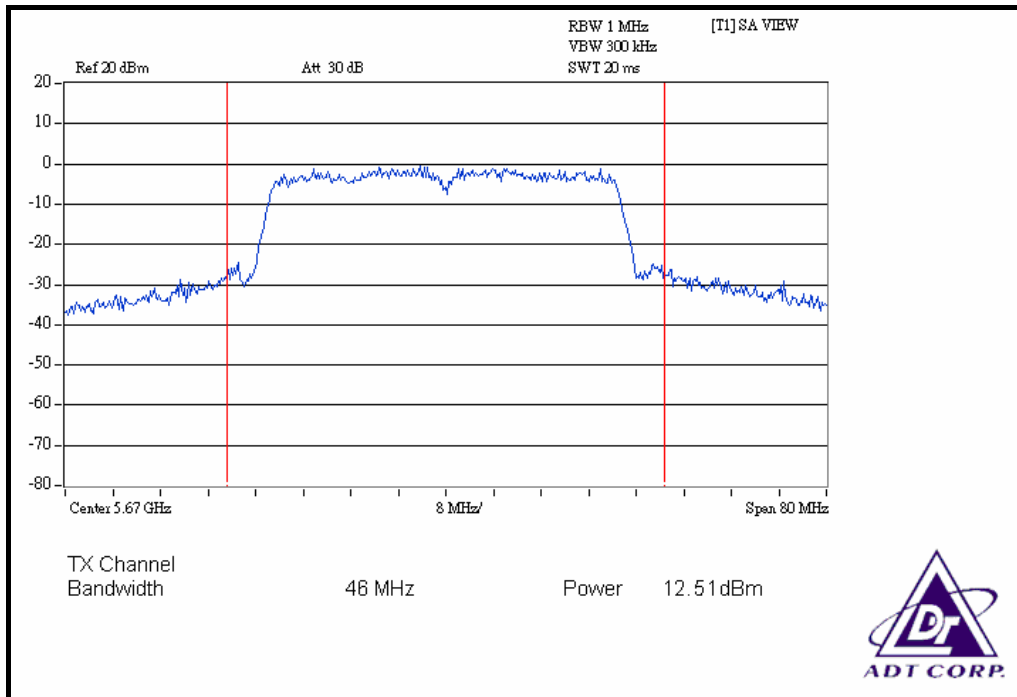
CH 5



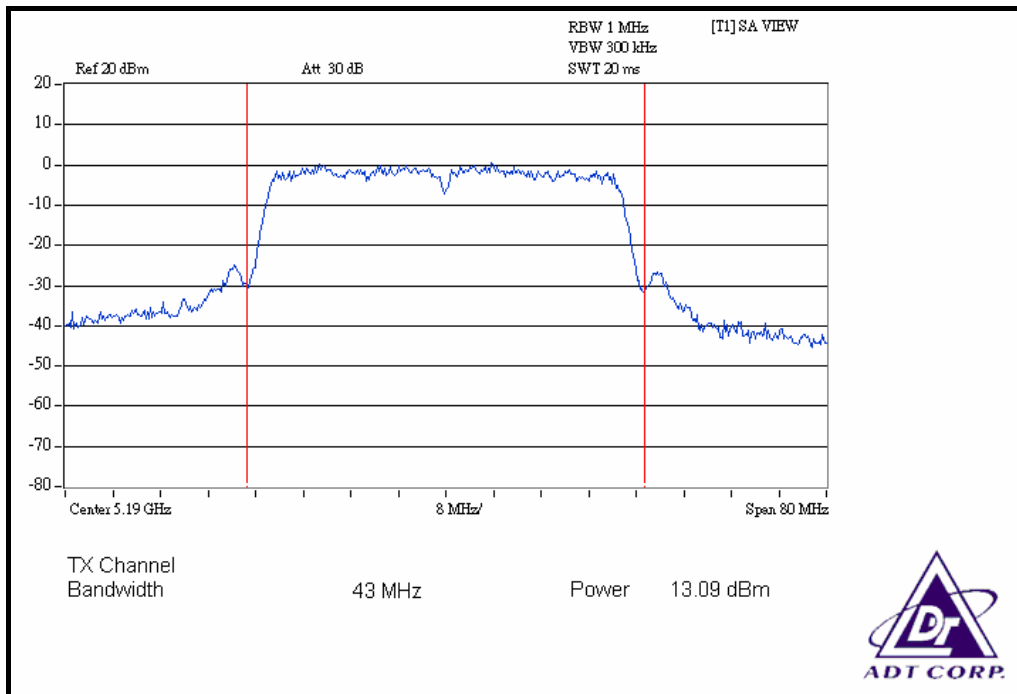
CH 7



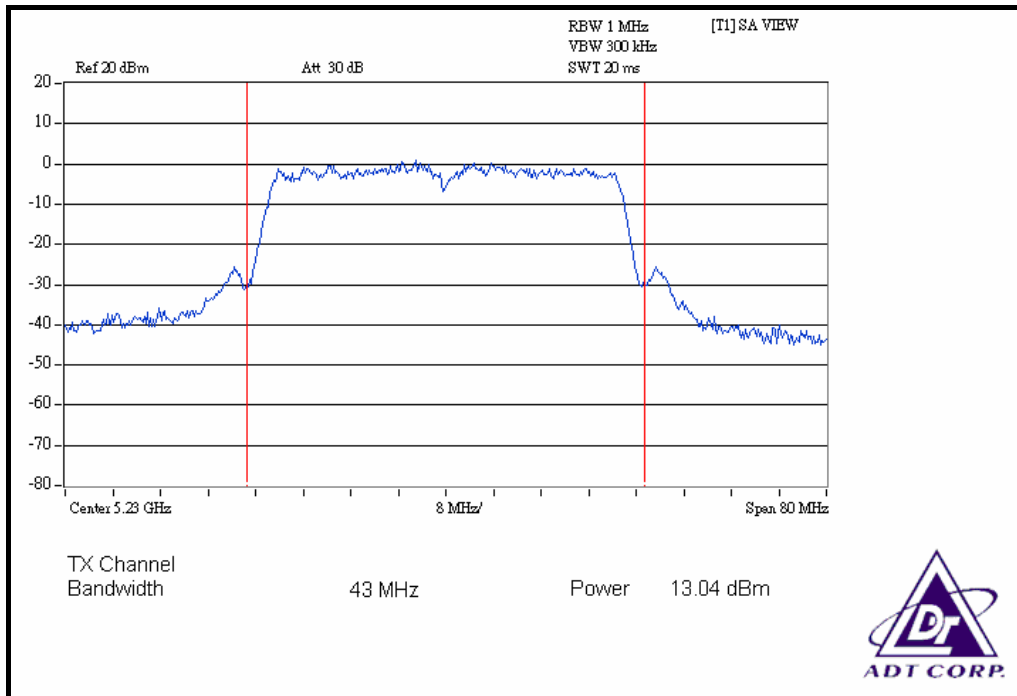
CH 9



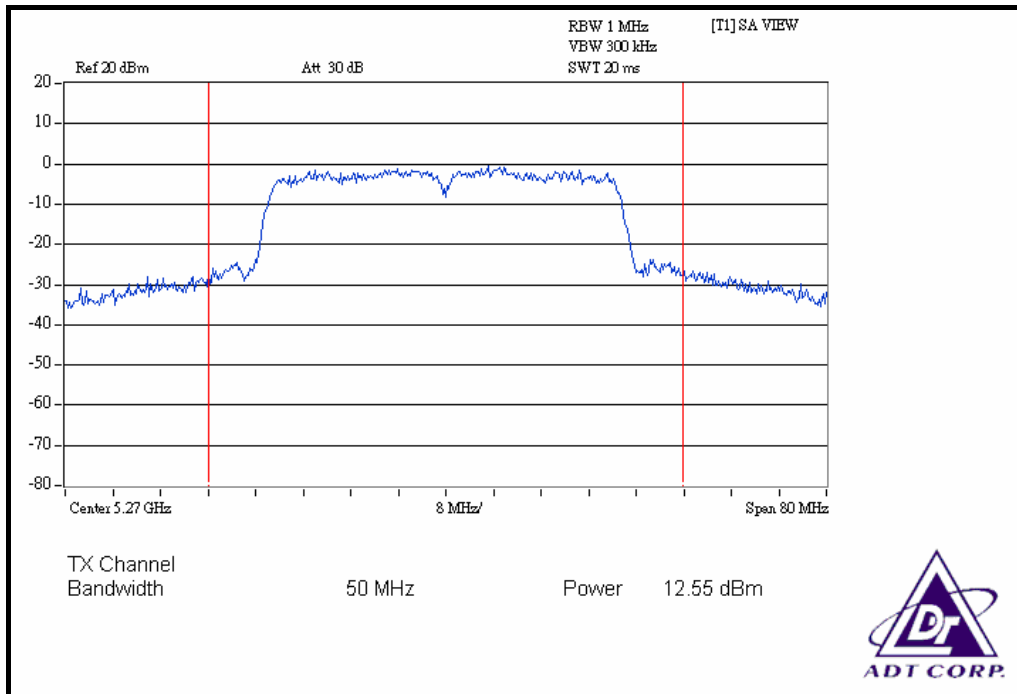
FOR CHAIN 1: CH 1



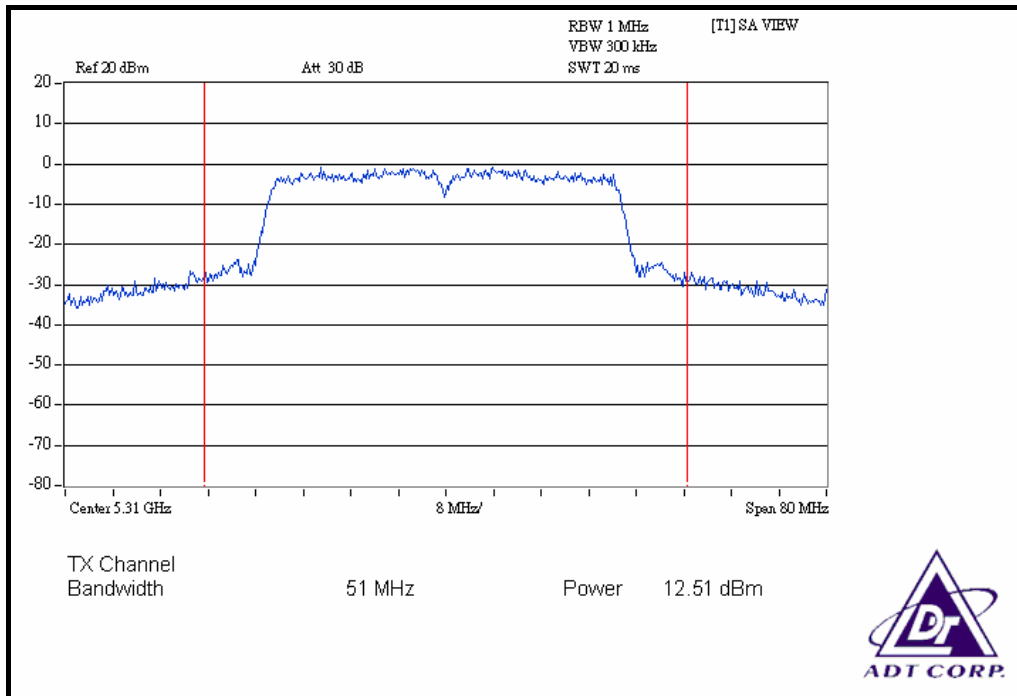
CH 2



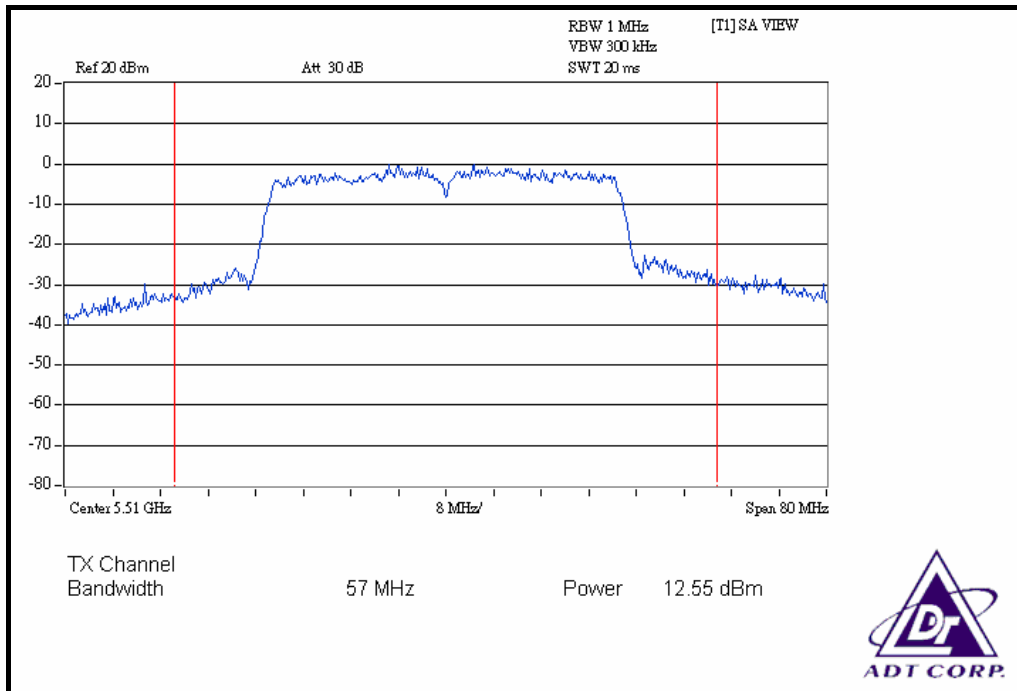
CH 3



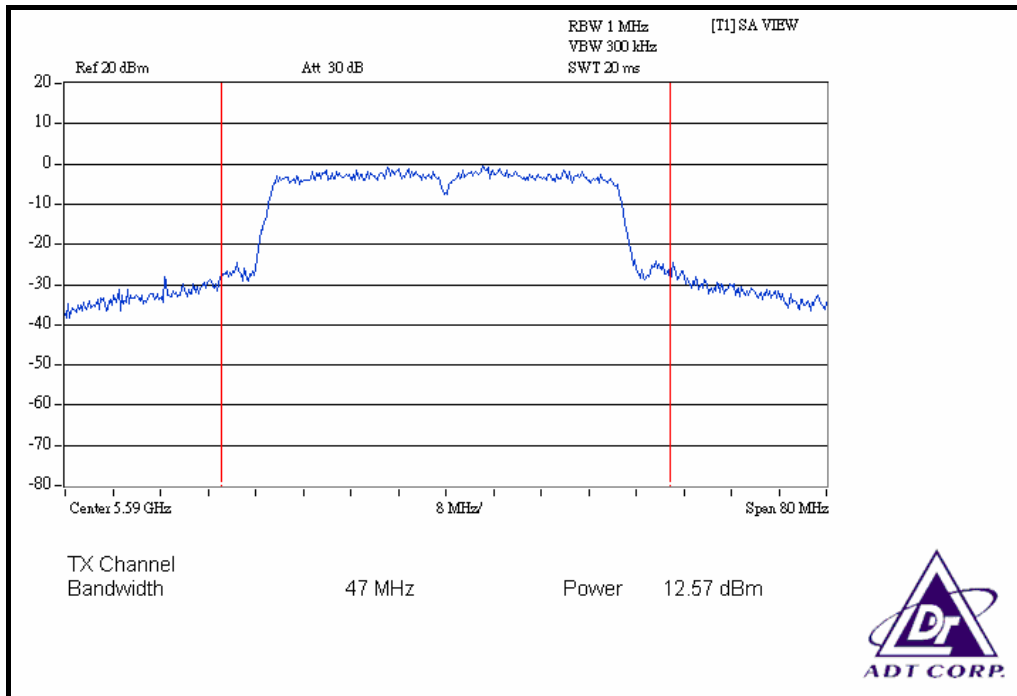
CH 4



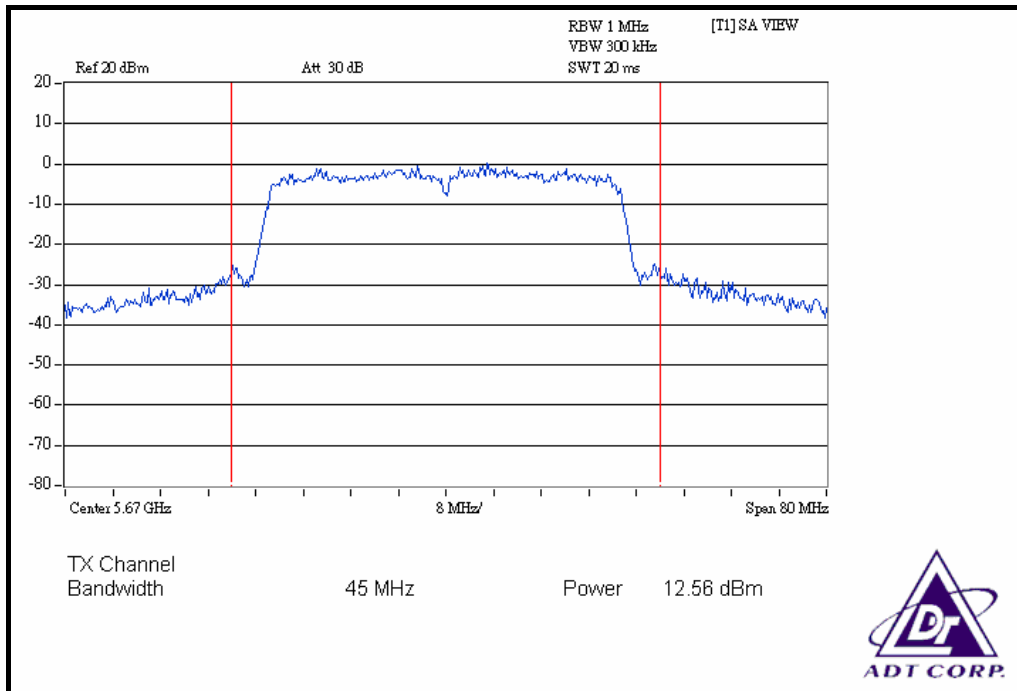
CH 5



CH 7



CH 9



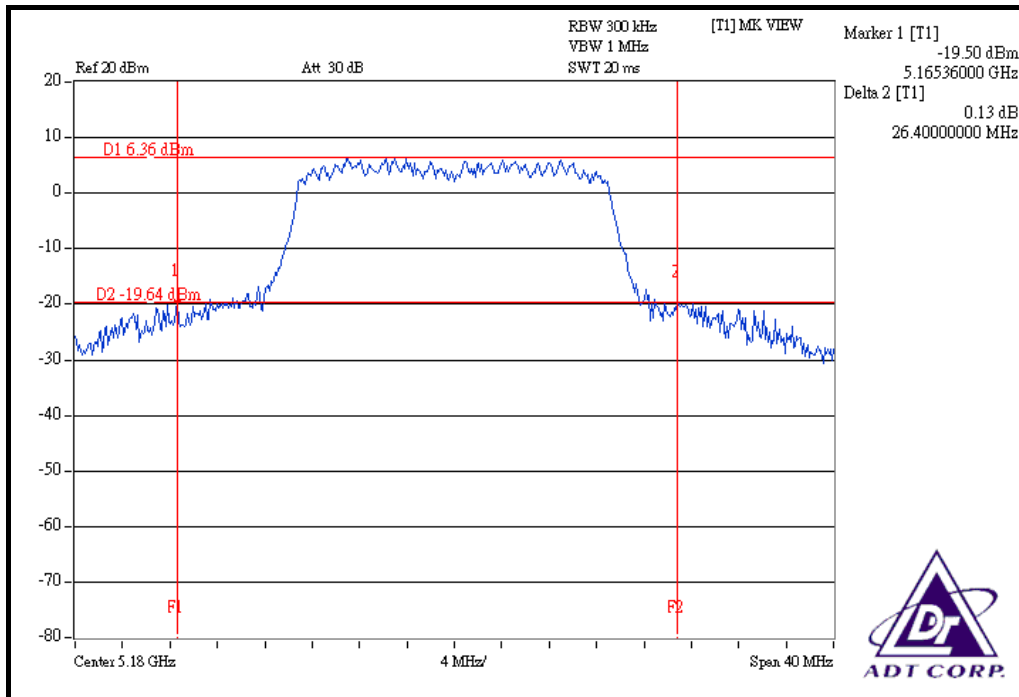


26dB OCCUPIED BANDWIDTH: 802.11a OFDM MODULATION:

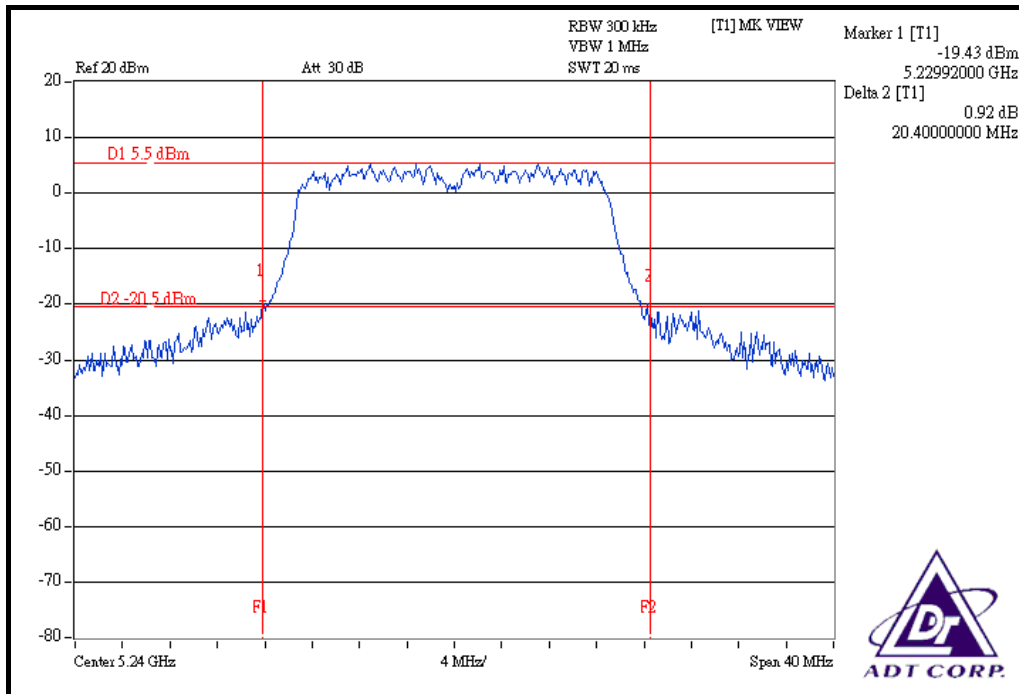
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
1	5180	26.40	PASS
4	5240	20.40	PASS
5	5260	29.20	PASS
8	5320	32.56	PASS
9	5500	27.20	PASS
14	5600	29.20	PASS
19	5700	24.80	PASS

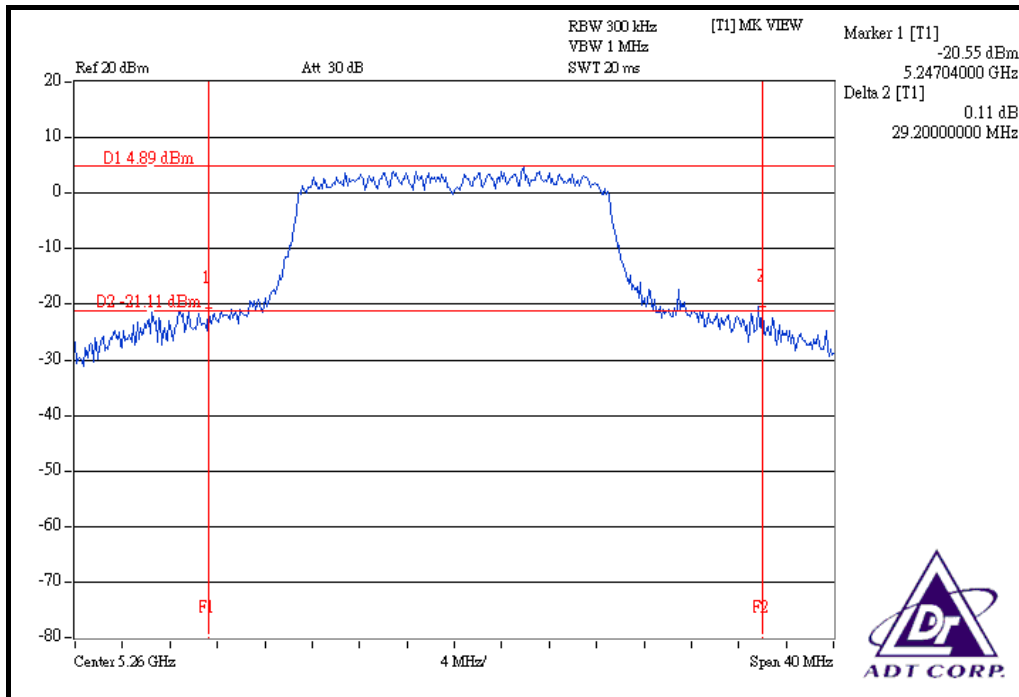
CH 1



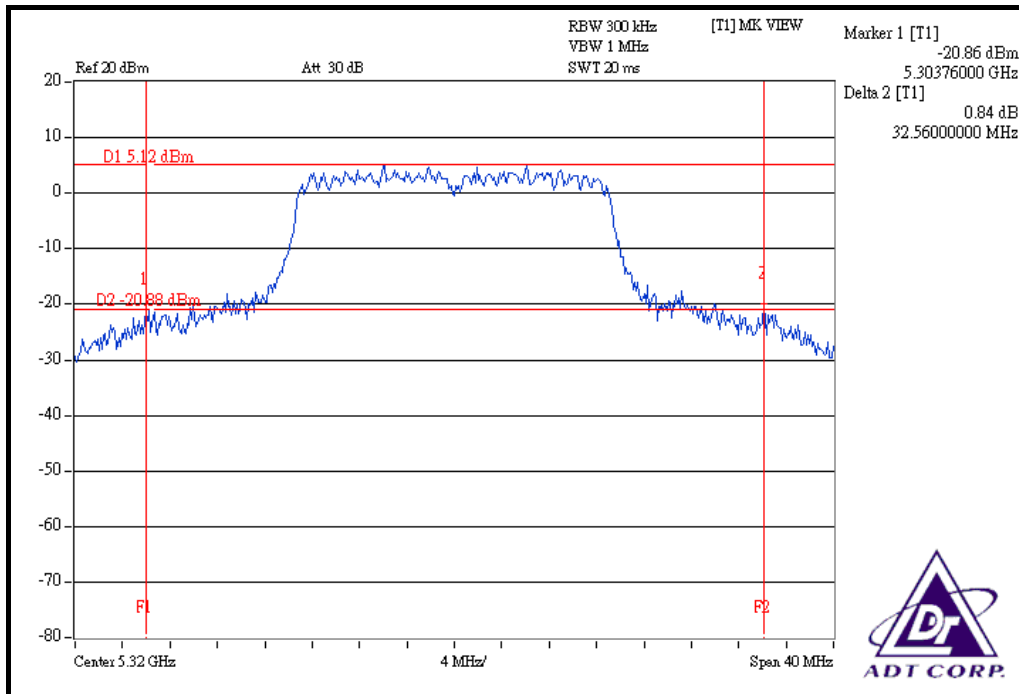
CH 4



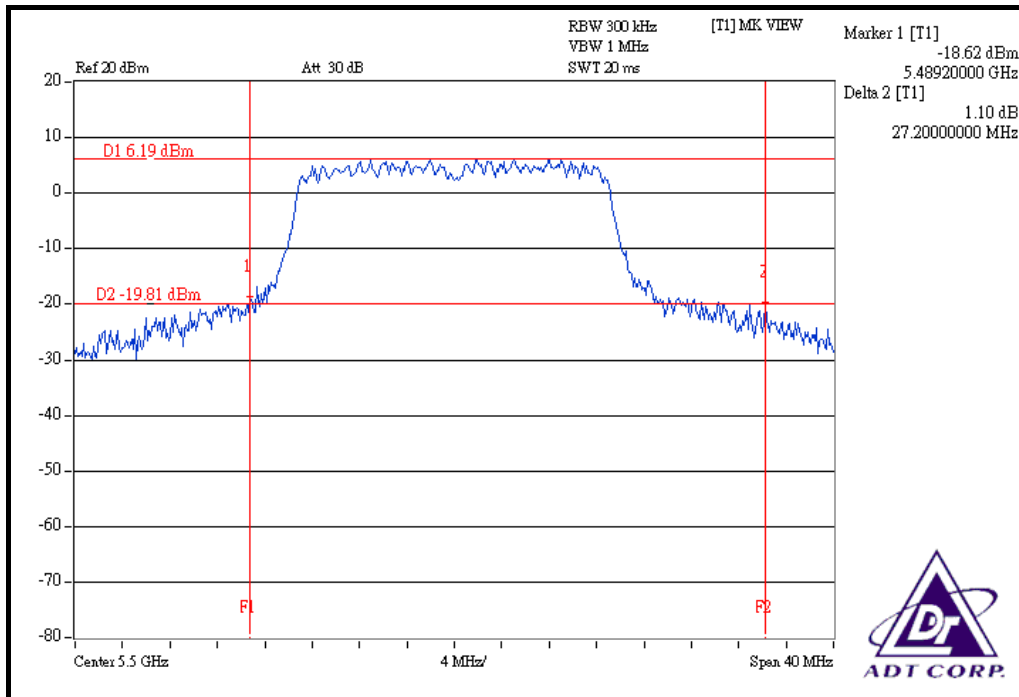
CH 5



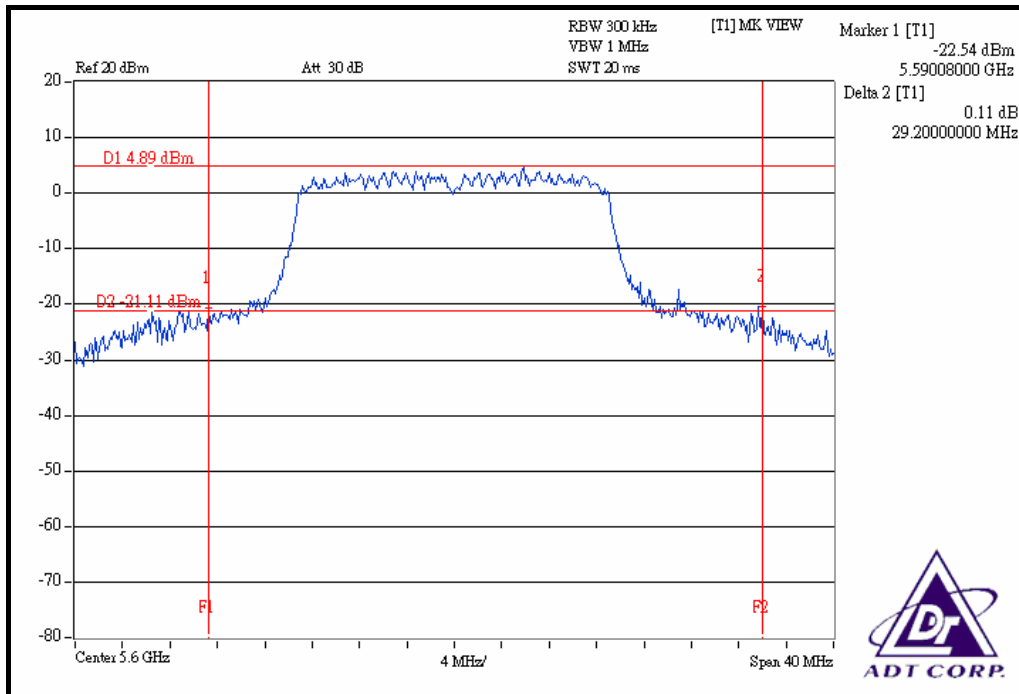
CH 8



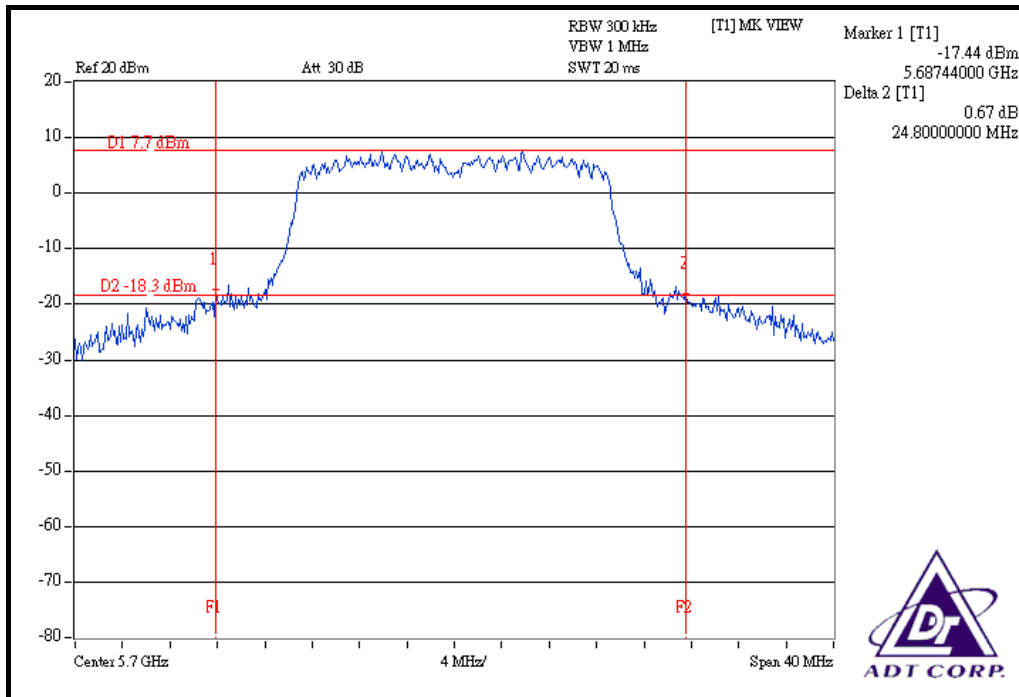
CH 9



CH 14



CH 19



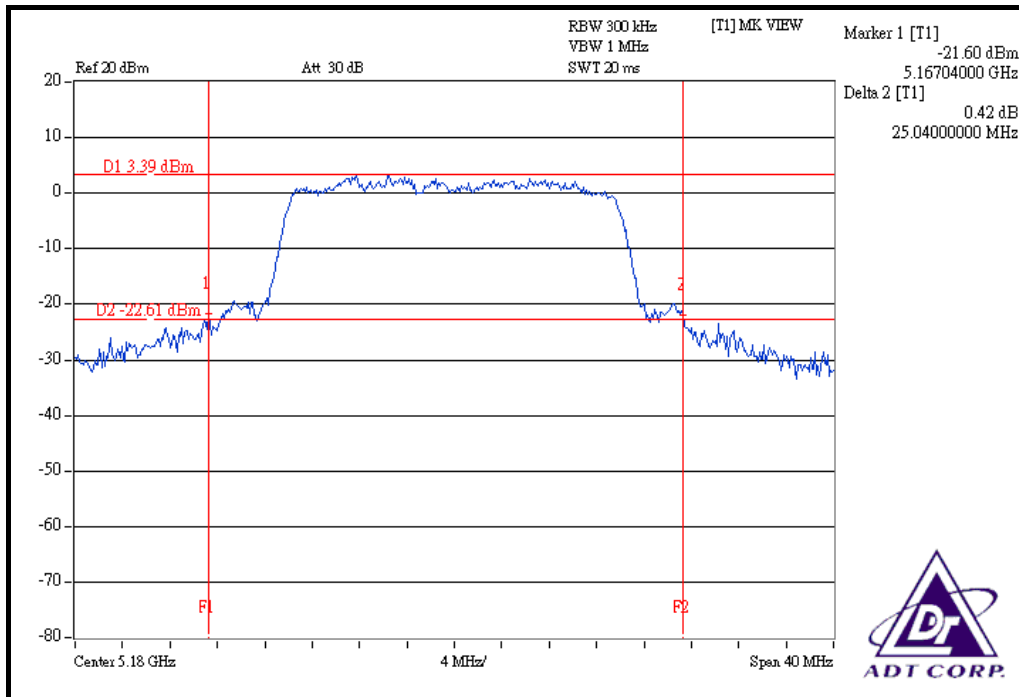


DRAFT 802.11n (20MHz) OFDM MODULATION:

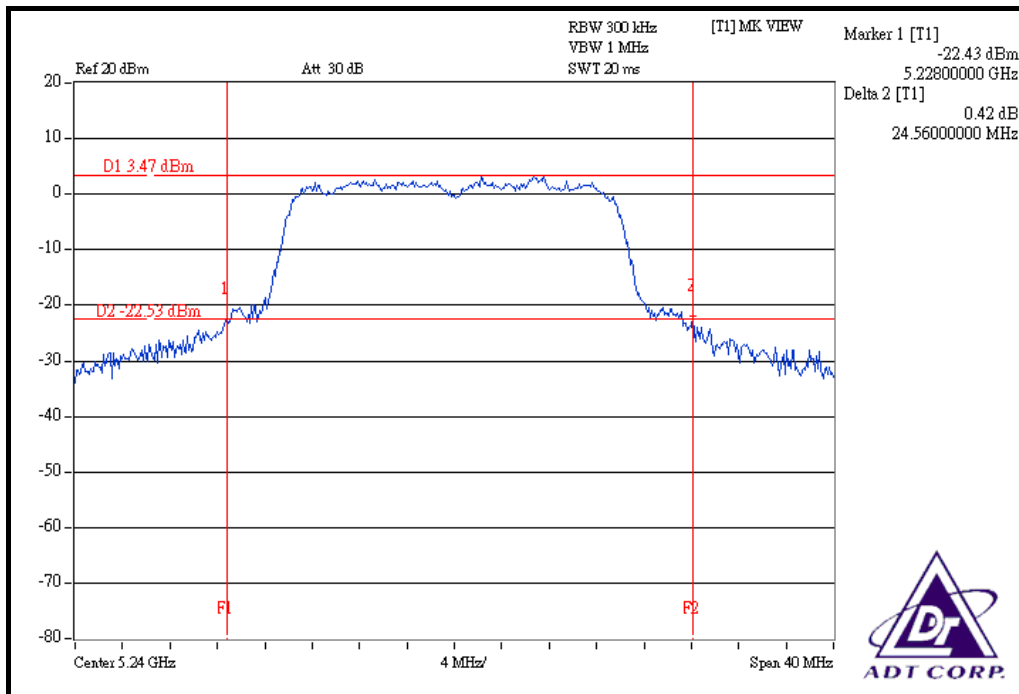
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
1	5180	25.04	24.32	PASS
4	5240	24.56	23.92	PASS
5	5260	23.52	24.32	PASS
8	5320	23.60	24.00	PASS
9	5500	23.68	23.52	PASS
14	5600	23.36	23.76	PASS
19	5700	23.68	23.84	PASS

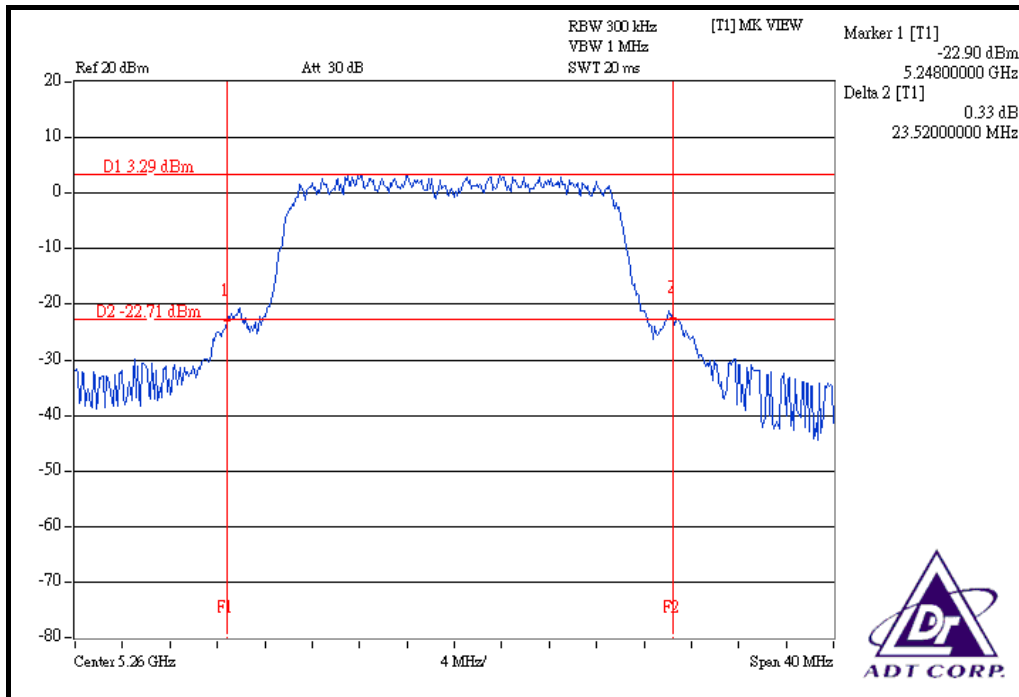
FOR CHAIN 0: CH 1



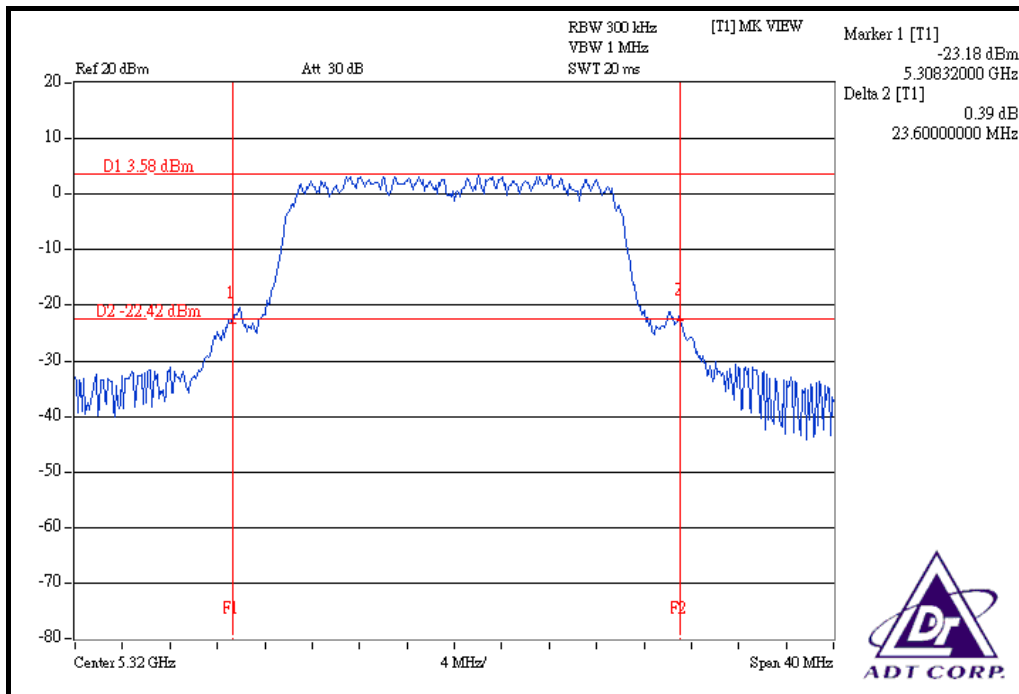
CH 4



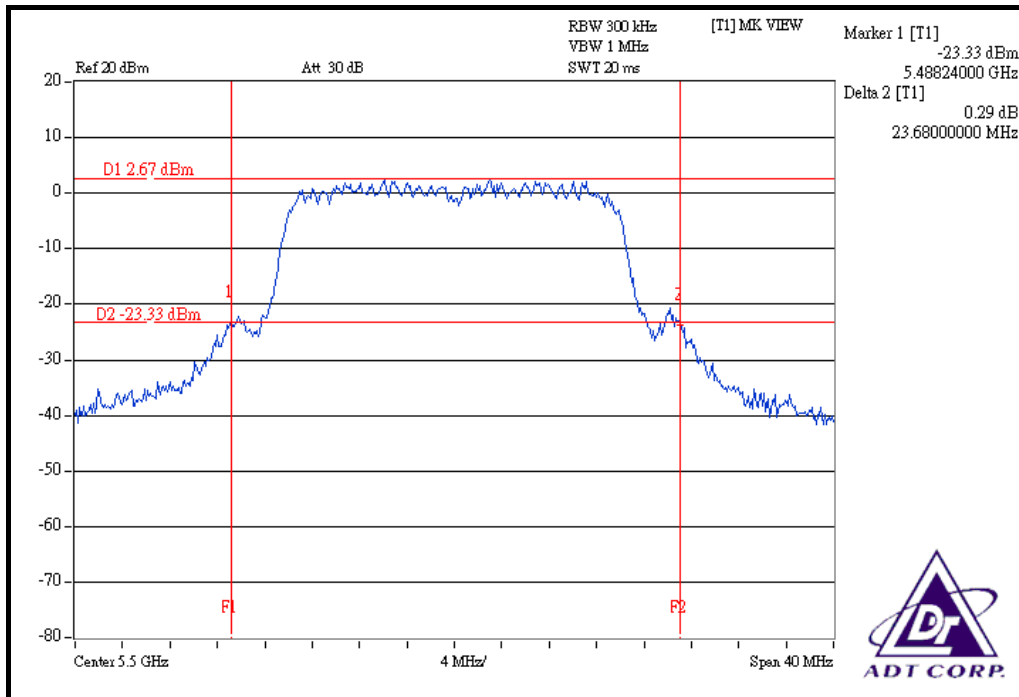
CH 5



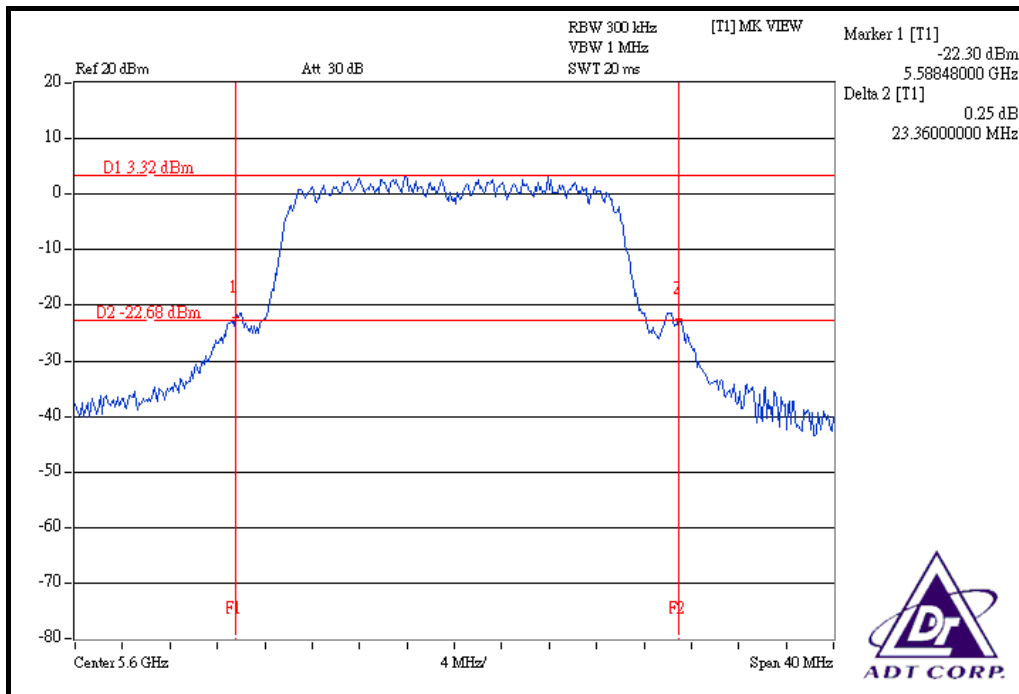
CH 8



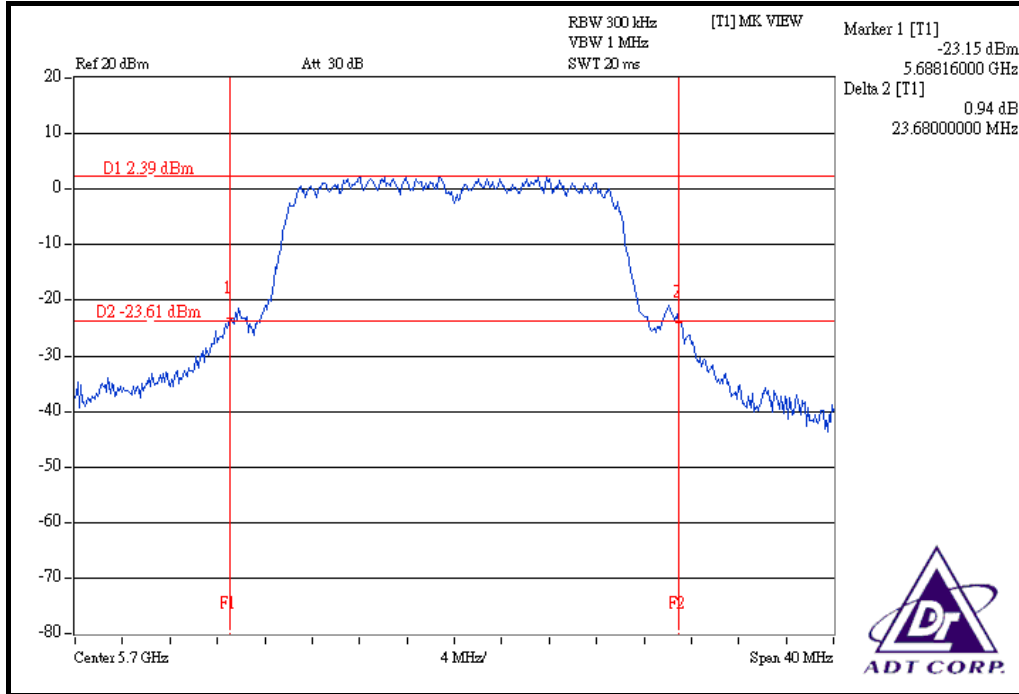
CH 9



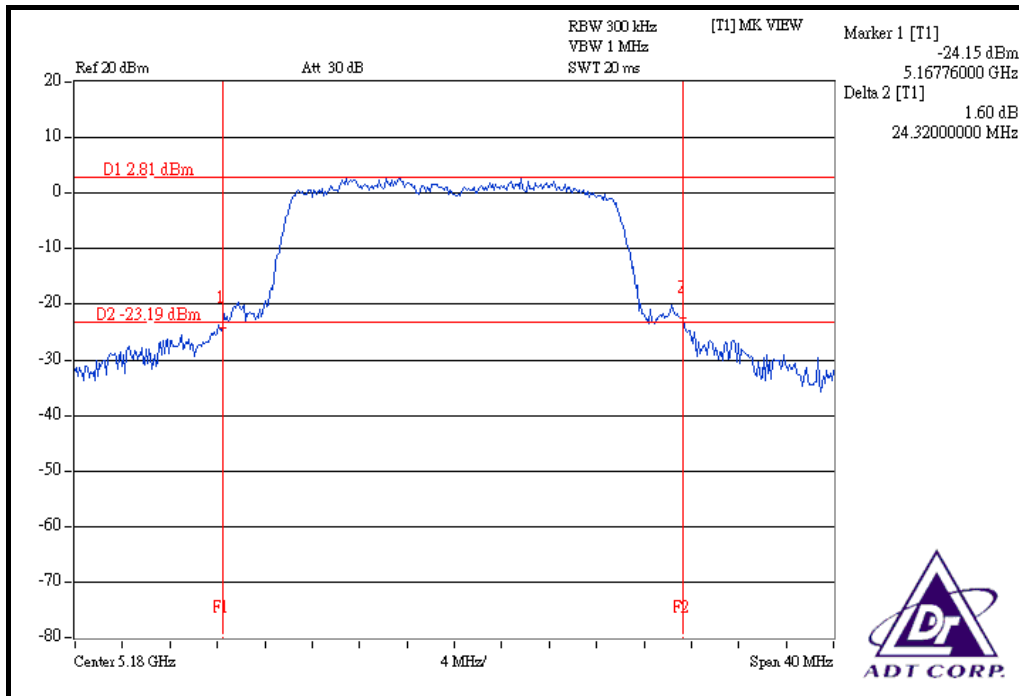
CH 14



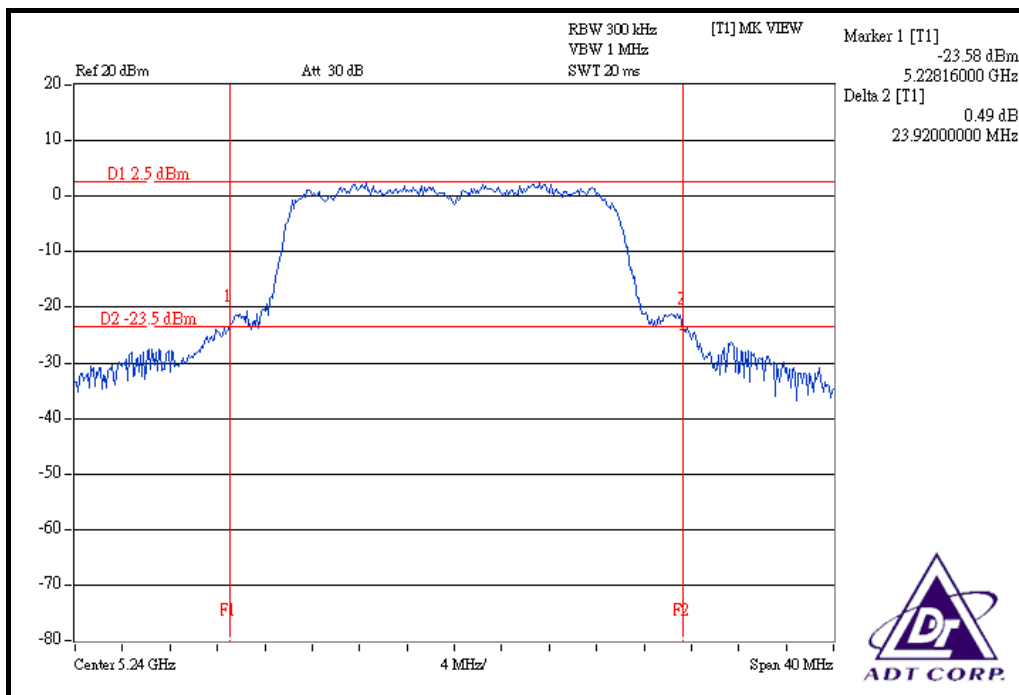
CH 19



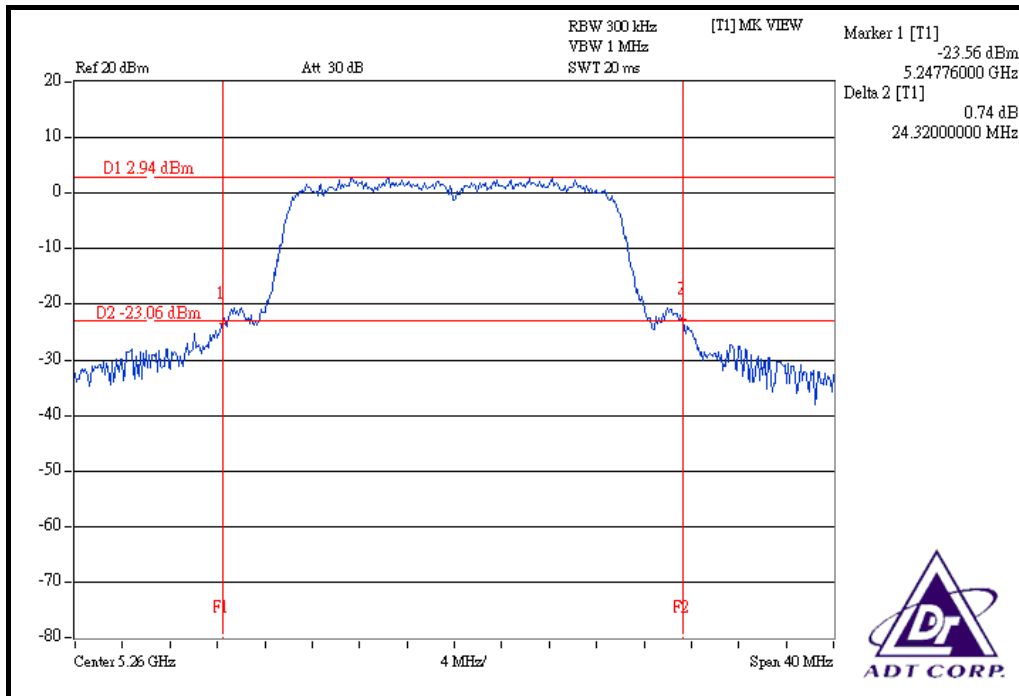
FOR CHAIN 1: CH 1



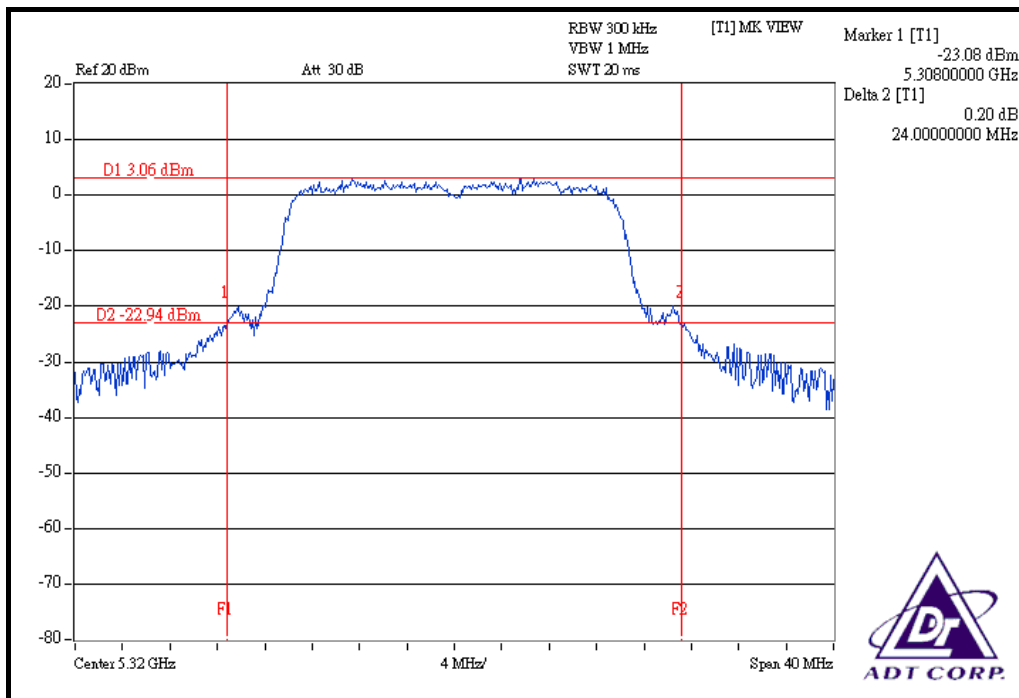
CH 4



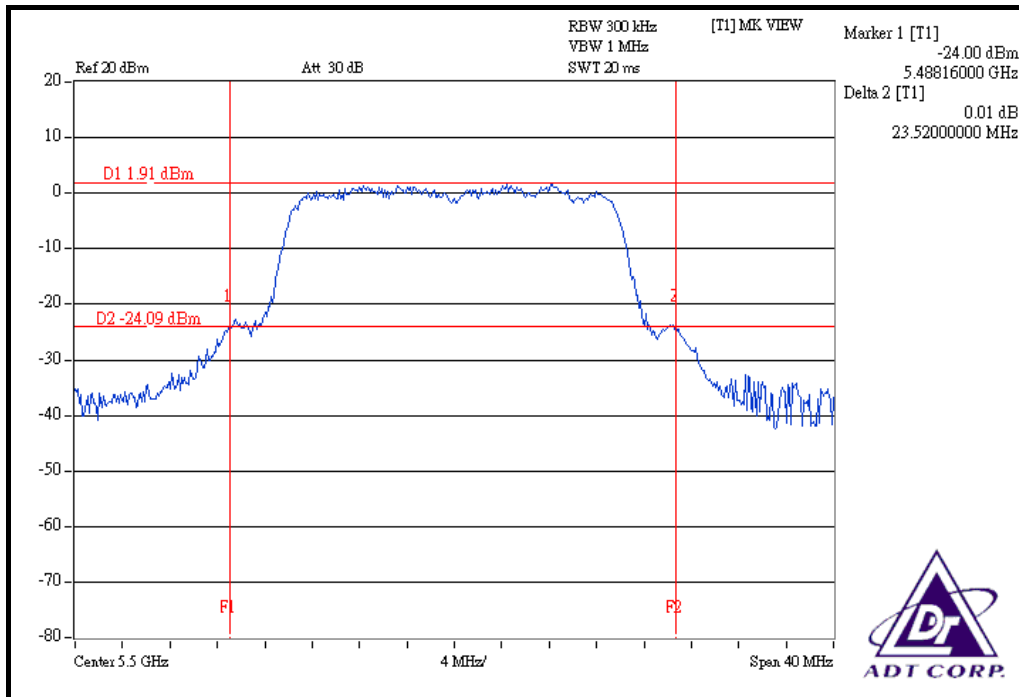
CH 5



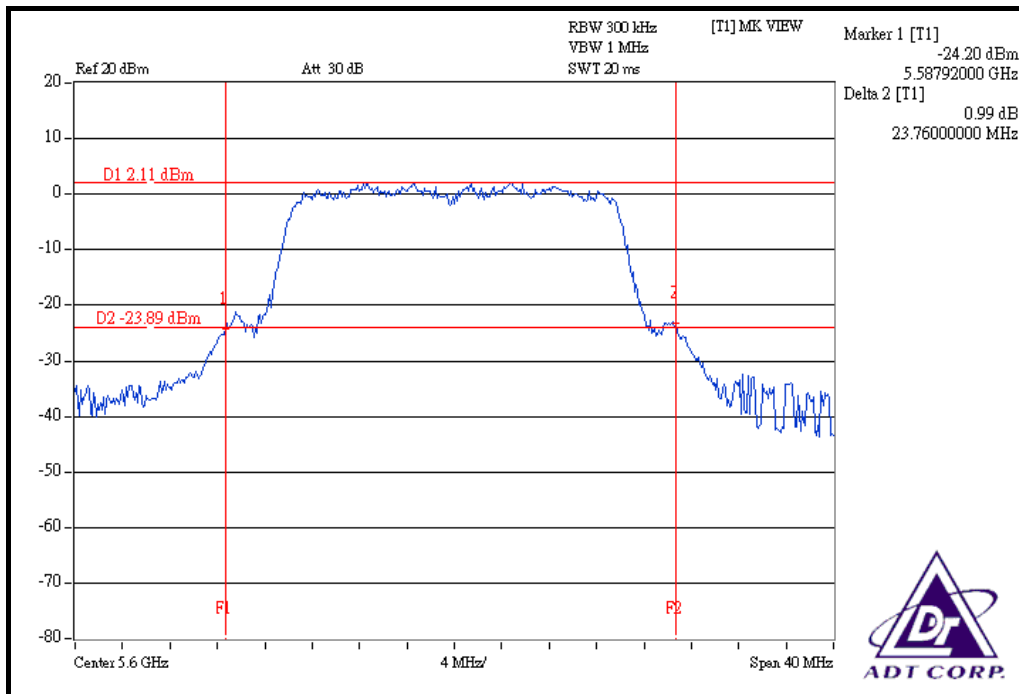
CH 8



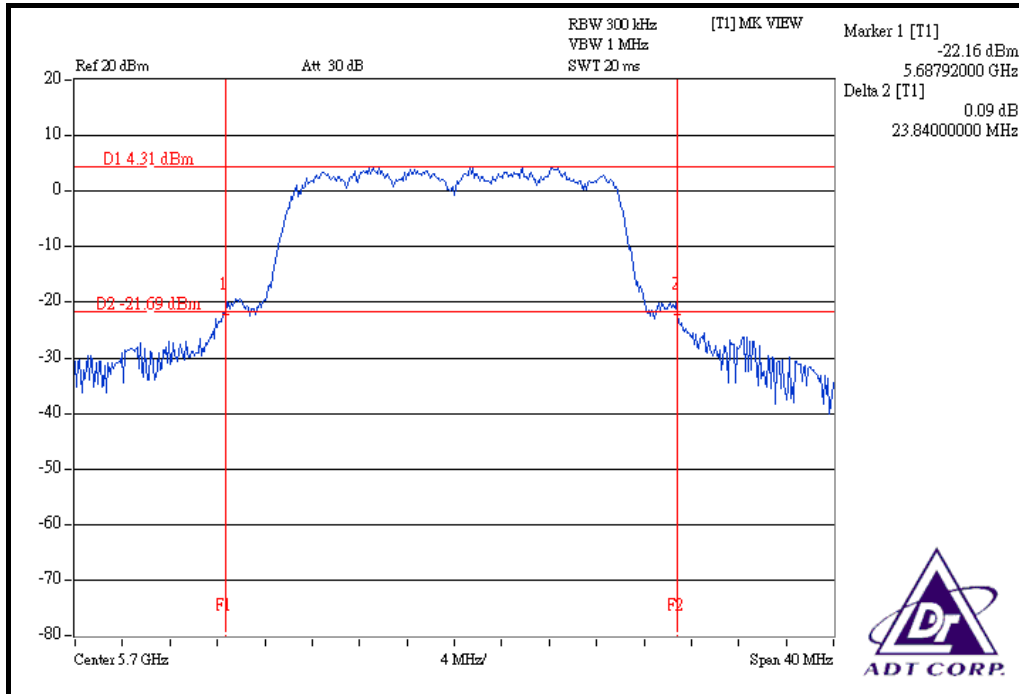
CH 9



CH 14



CH 19



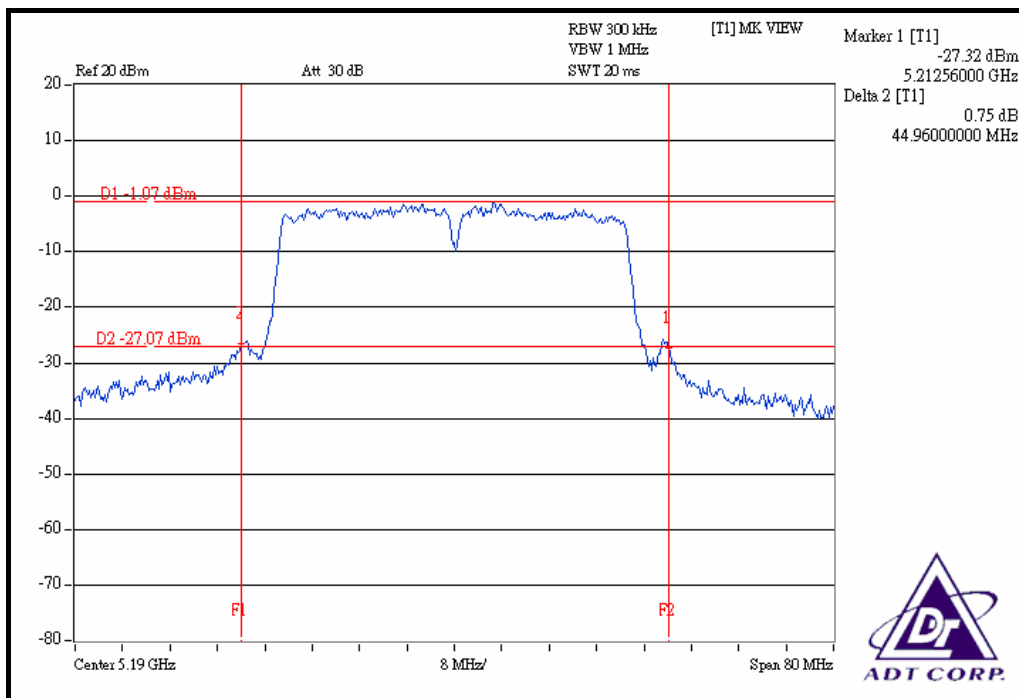


DRAFT 802.11n (40MHz) OFDM MODULATION:

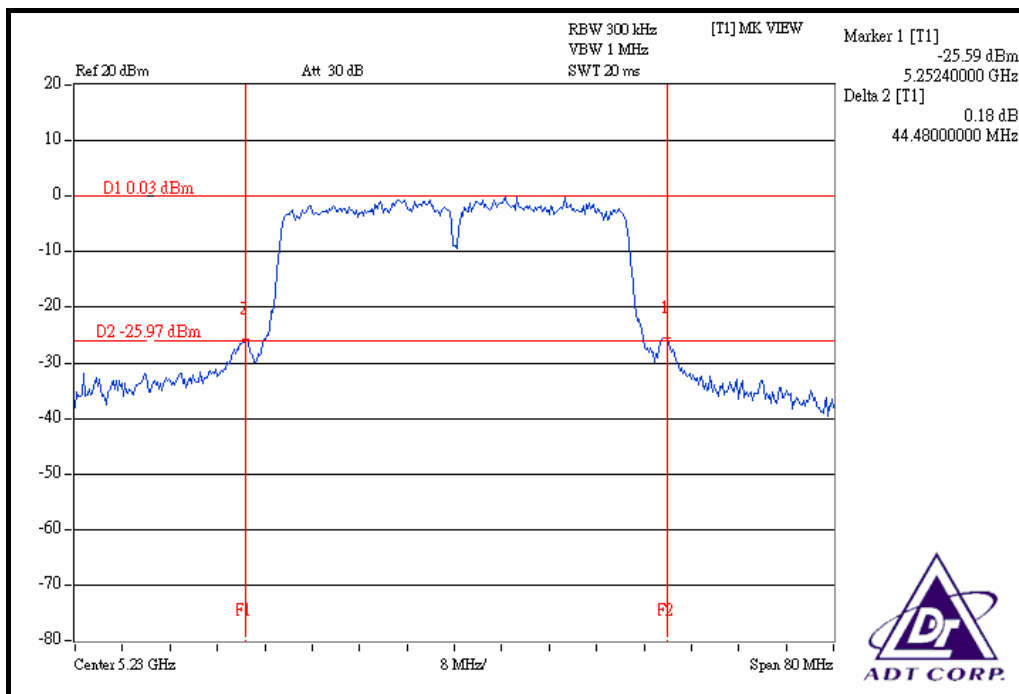
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
1	5190	44.96	42.08	PASS
2	5230	44.48	42.40	PASS
3	5270	52.80	49.12	PASS
4	5310	47.36	50.72	PASS
5	5510	51.04	56.16	PASS
7	5590	50.56	46.56	PASS
9	5670	45.76	44.80	PASS

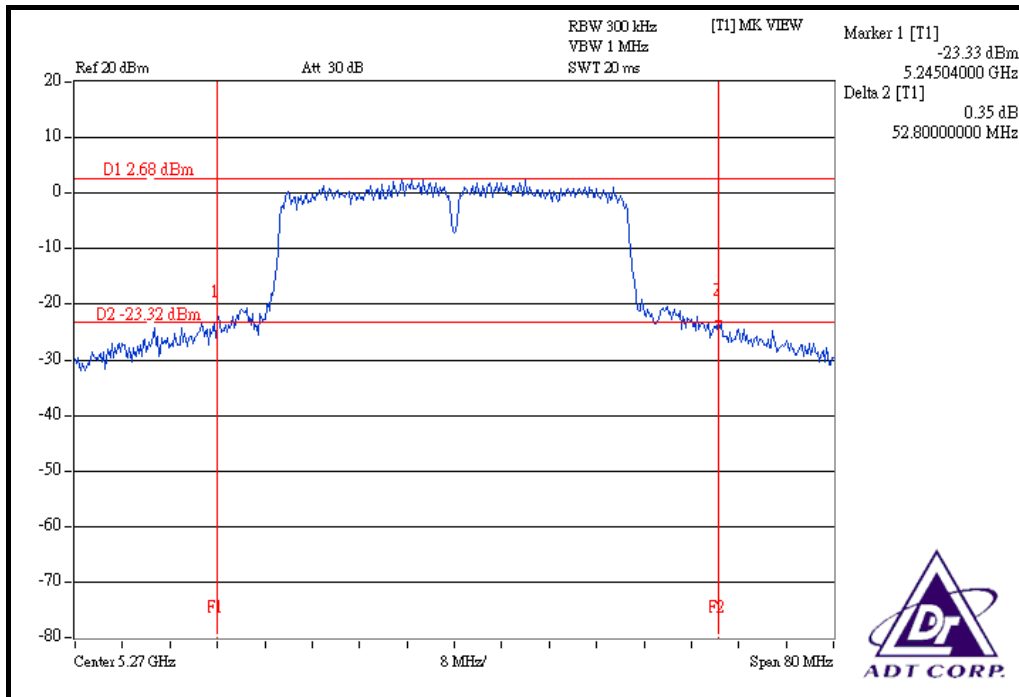
FOR CHAIN 0: CH 1



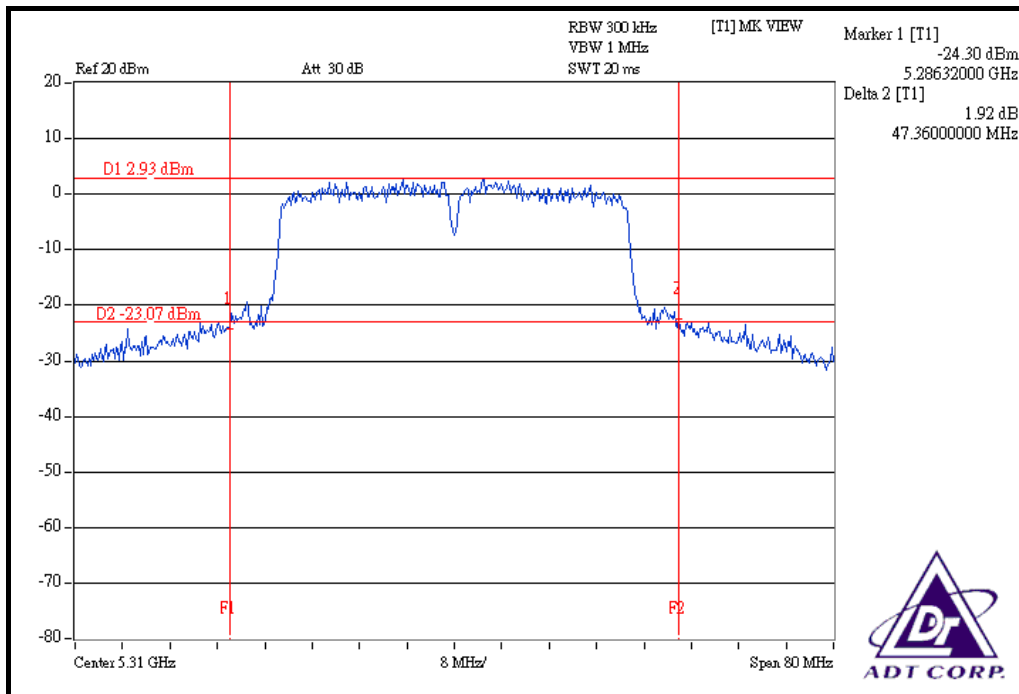
CH 2



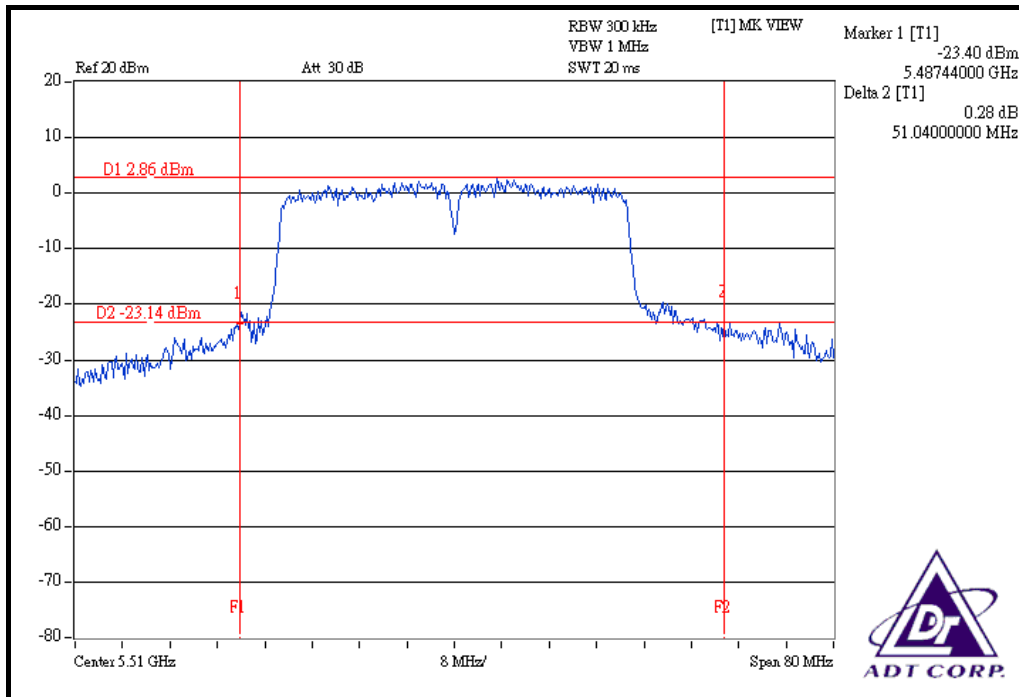
CH 3



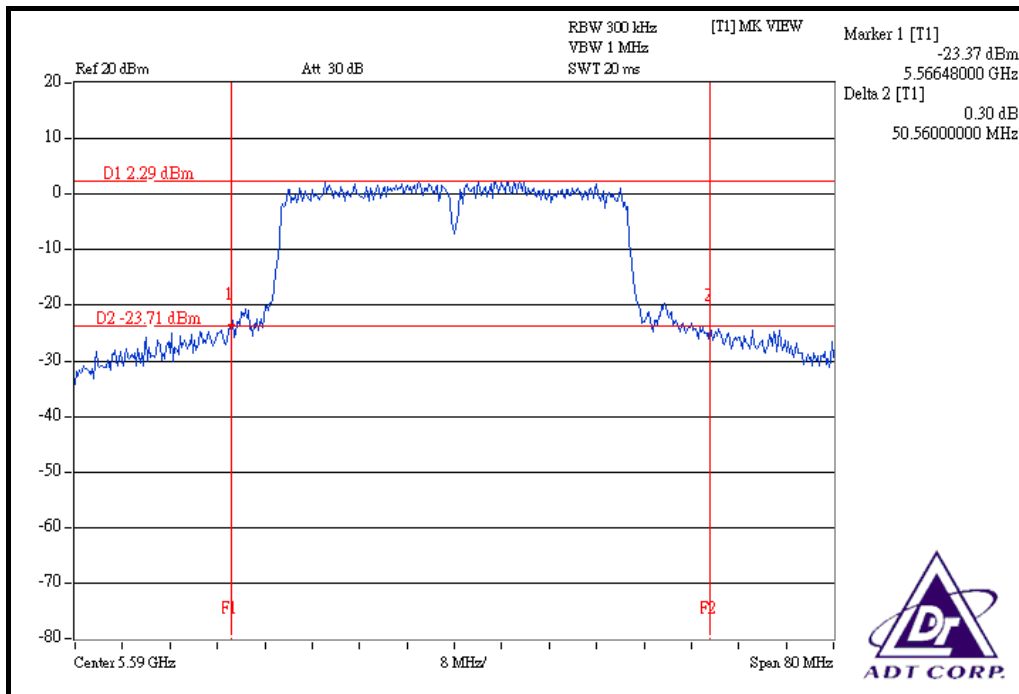
CH 4



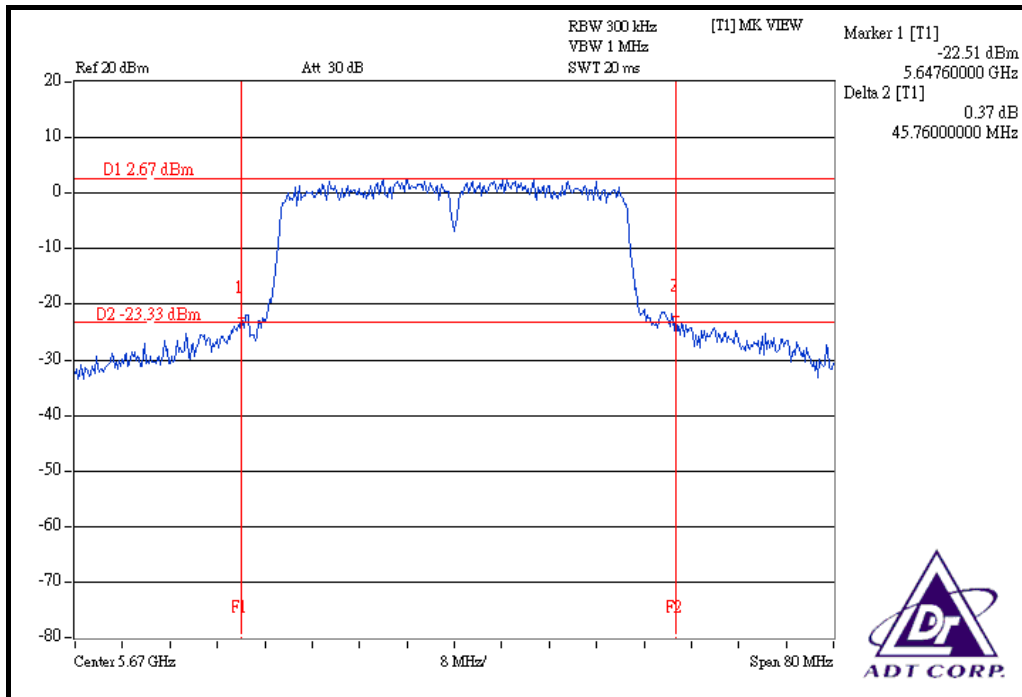
CH 5



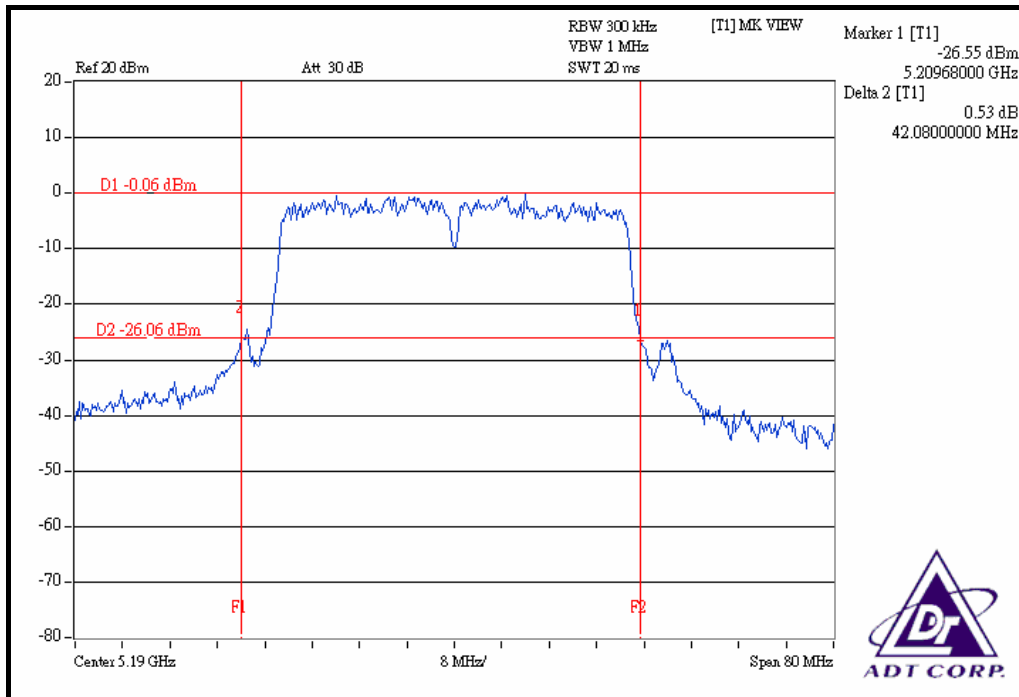
CH 7



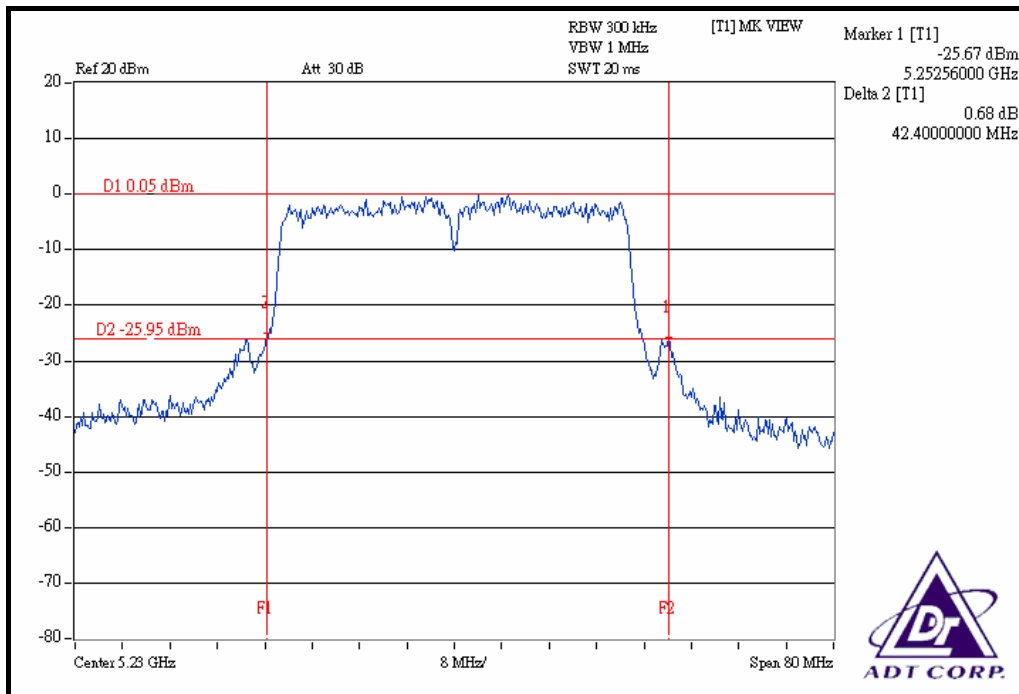
CH 9



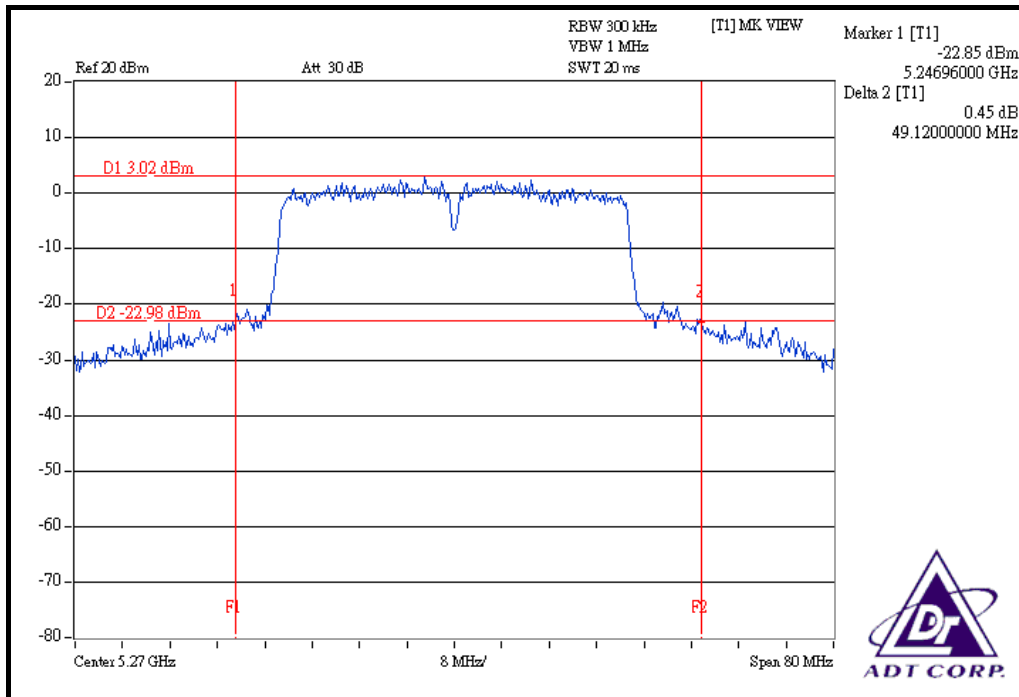
FOR CHAIN 1: CH 1



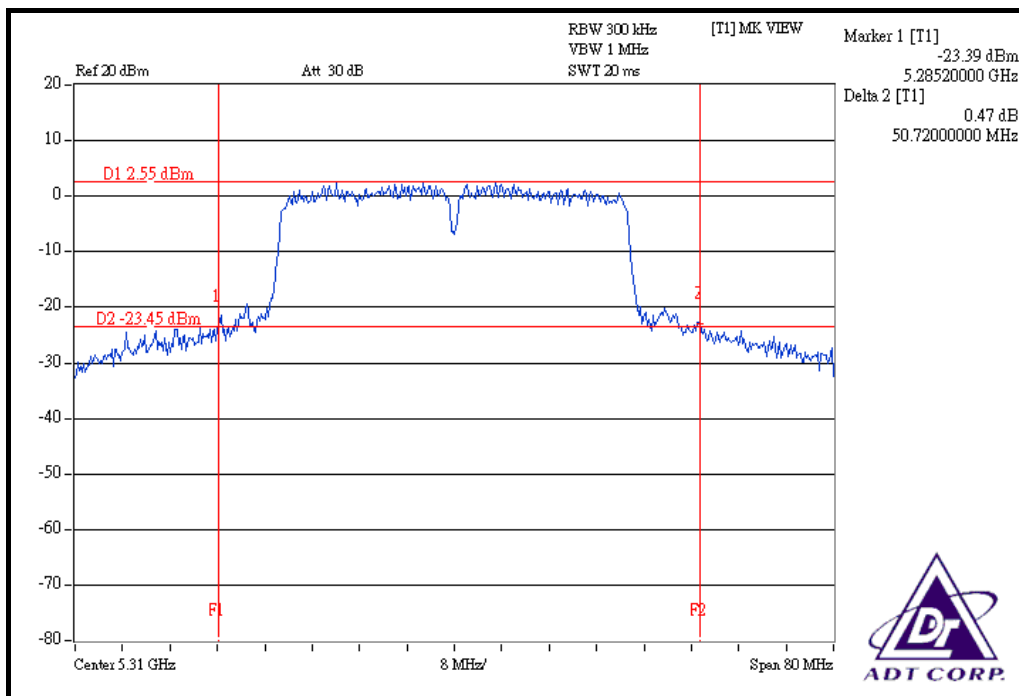
CH 2



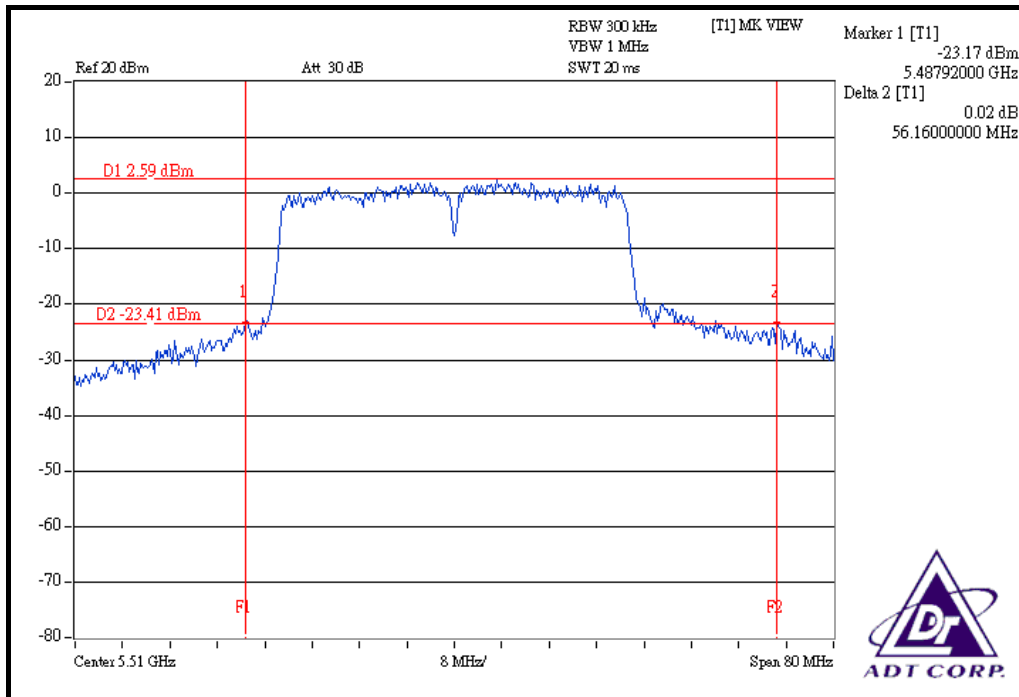
CH 3



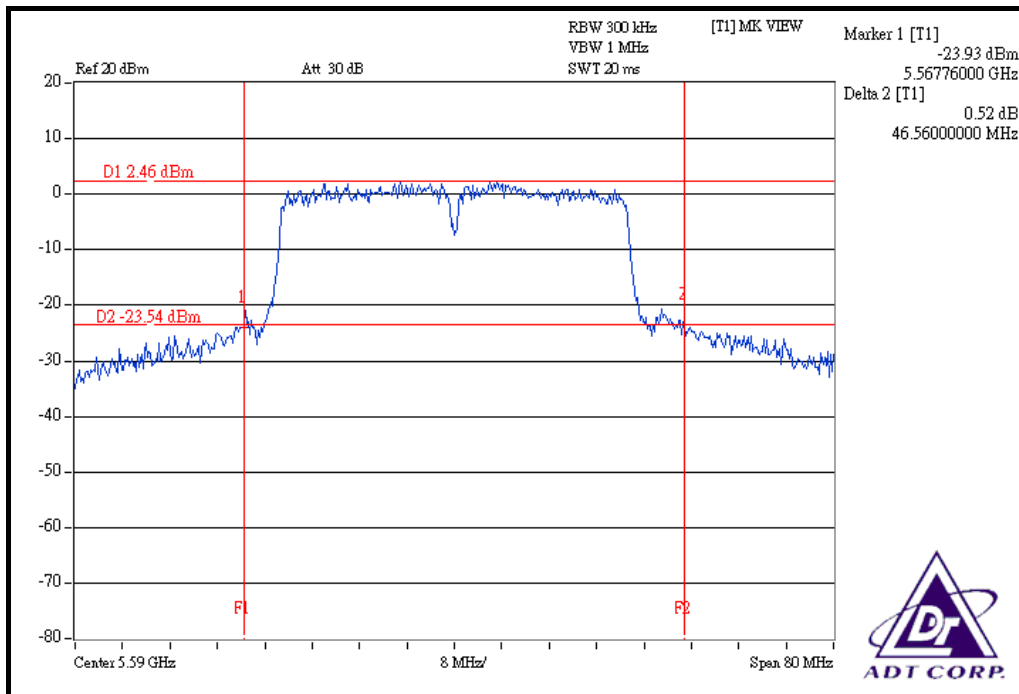
CH 4



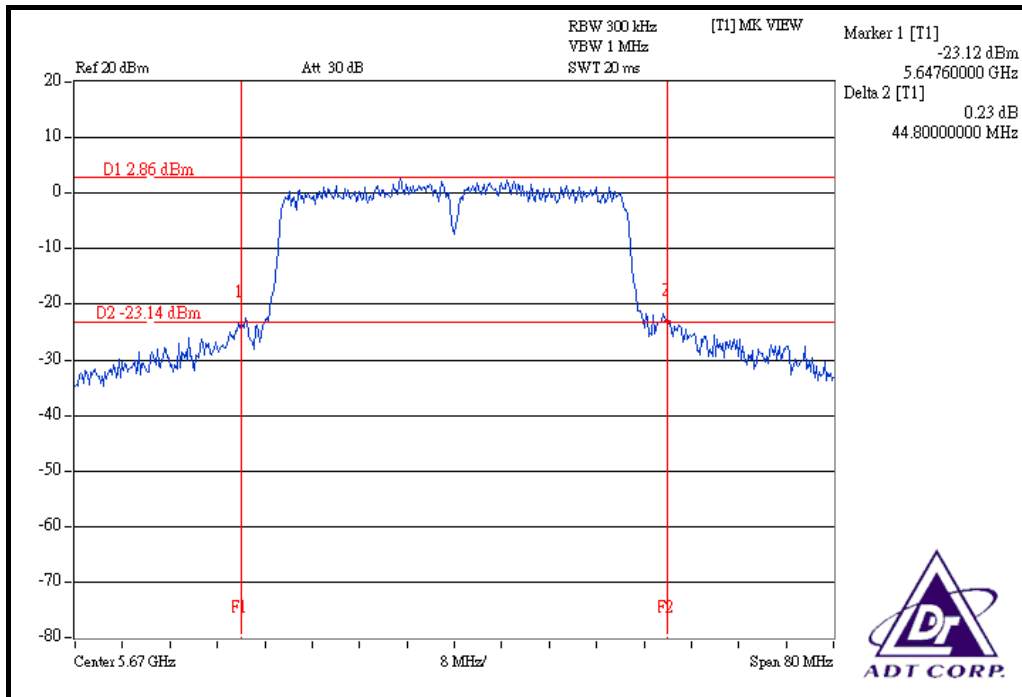
CH 5



CH 7



CH 9



4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	13dB
5.250 ~ 5.350GHz	13dB
5.470 ~ 5.725GHz	13dB

4.4.2 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.

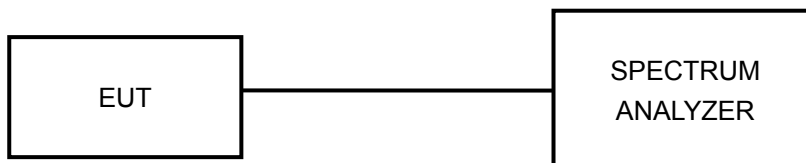
4.4.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set the spectrum bandwidth span to view the entire spectrum.
3. Using peak detector and Max-hold function for Trace 1 (RB = 1MHz, VB = 3MHz) and 2 (RB = 1MHz, VB = 300kHz).
4. The largest difference between Trace 1 and Trace 2 in any 1MHz band on any frequency was recorded.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.



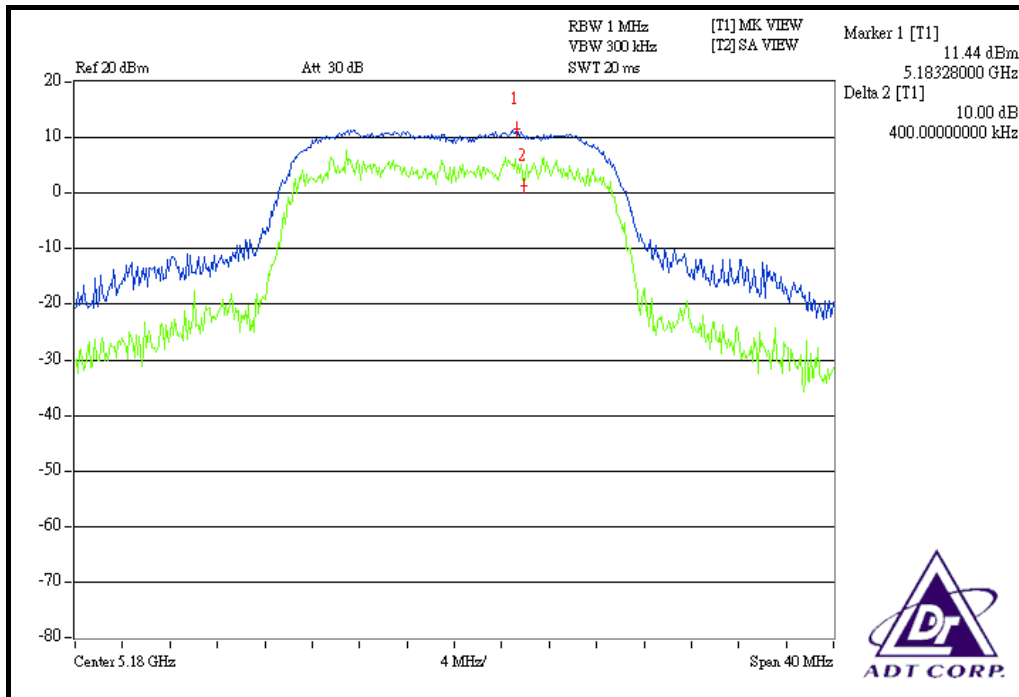
4.4.7 TEST RESULTS

802.11a OFDM MODULATION:

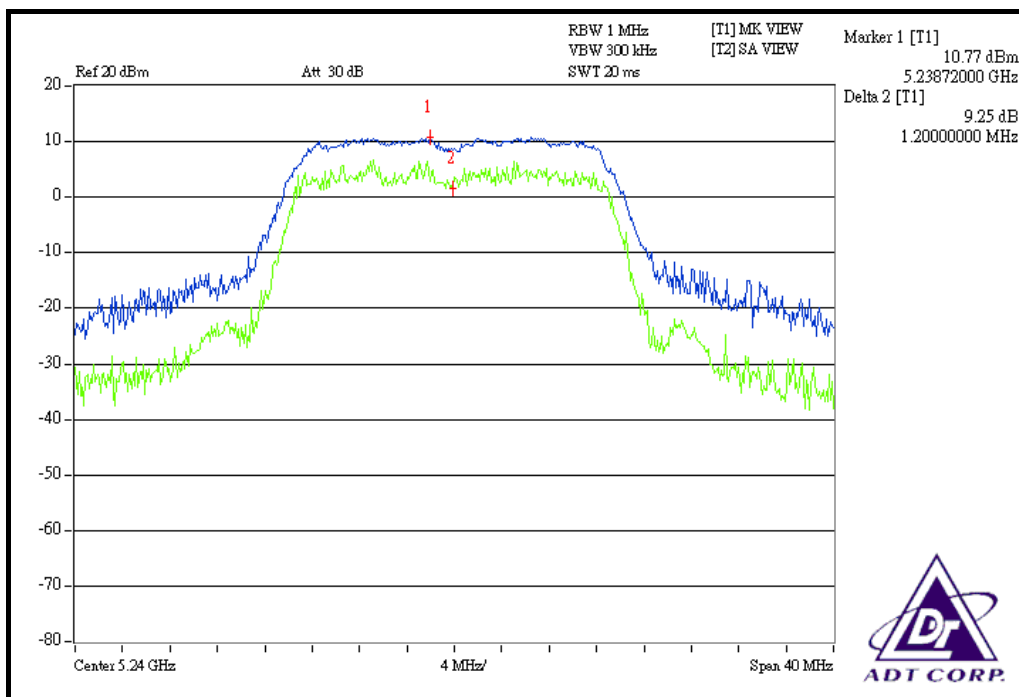
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK TO AVERAGE EXCURSION LIMIT (dB)	PASS / FAIL
1	5180	10.00	13	PASS
4	5240	9.25	13	PASS
5	5260	9.69	13	PASS
8	5320	9.76	13	PASS
9	5500	9.60	13	PASS
14	5600	9.53	13	PASS
19	5700	8.93	13	PASS

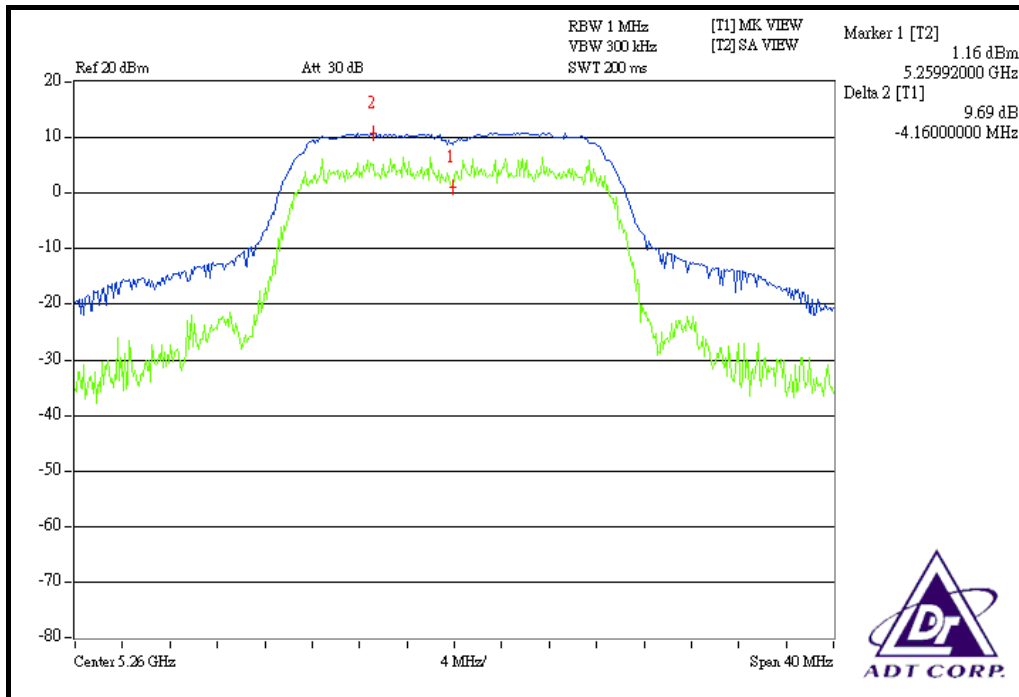
CH 1



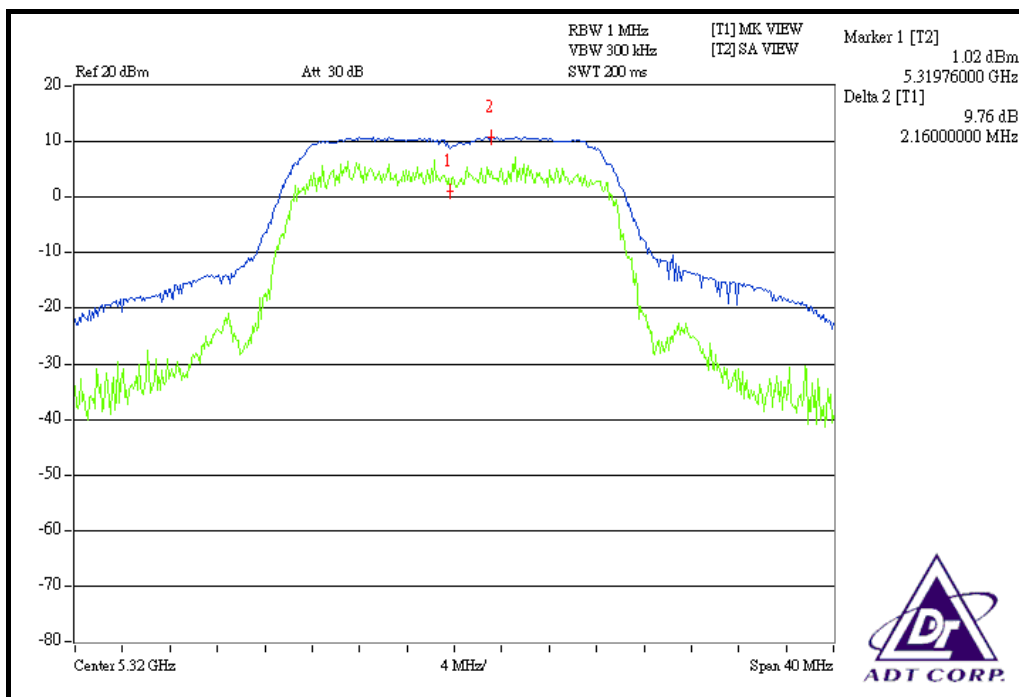
CH 4



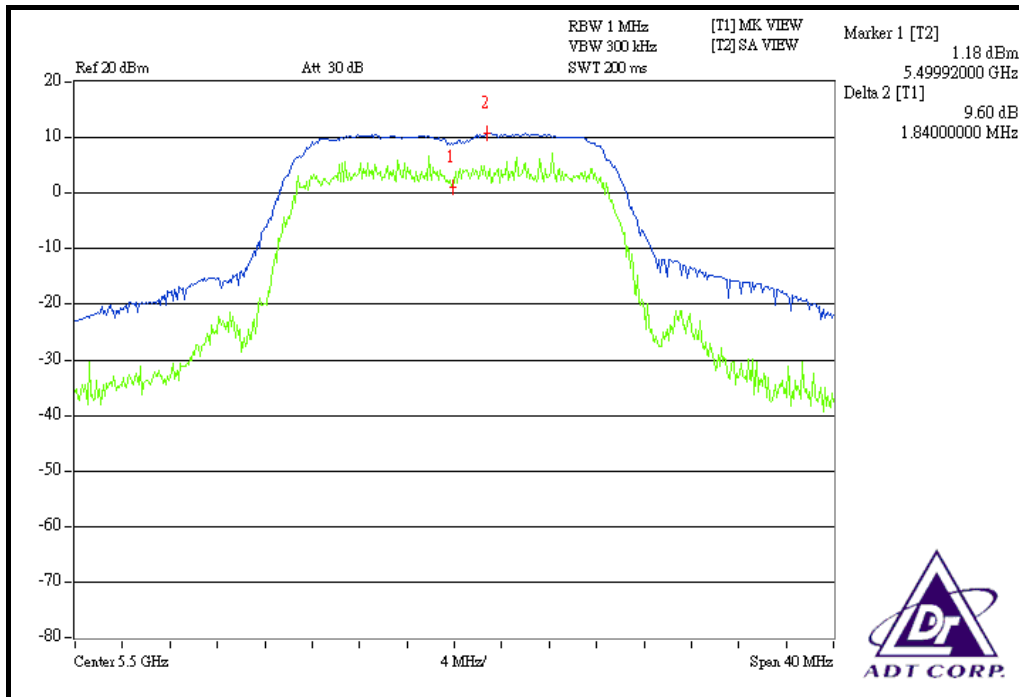
CH 5



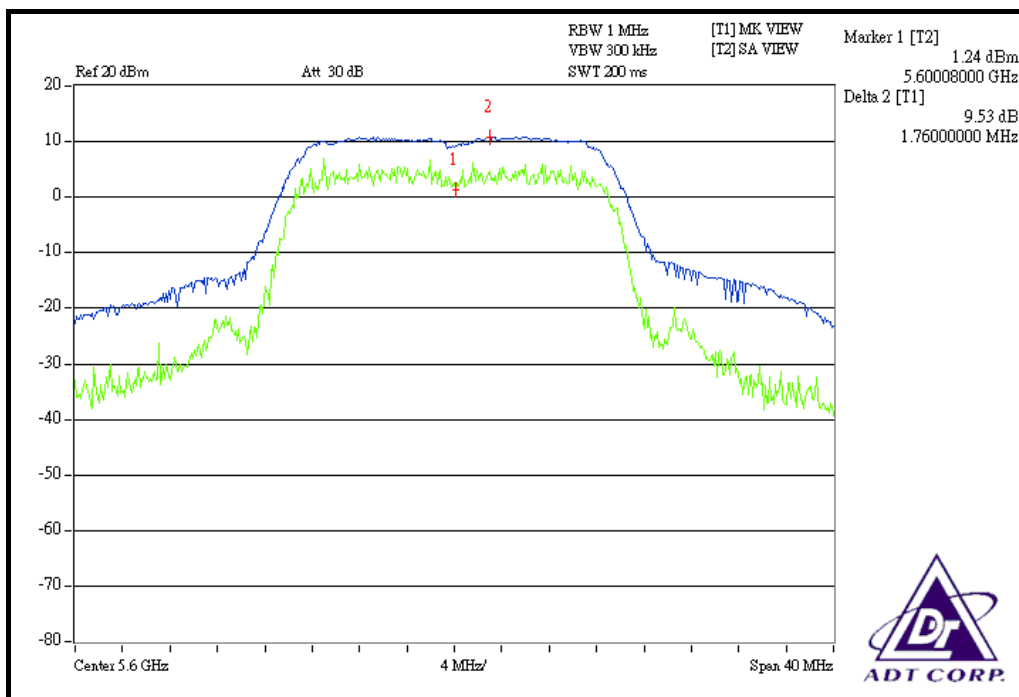
CH 8



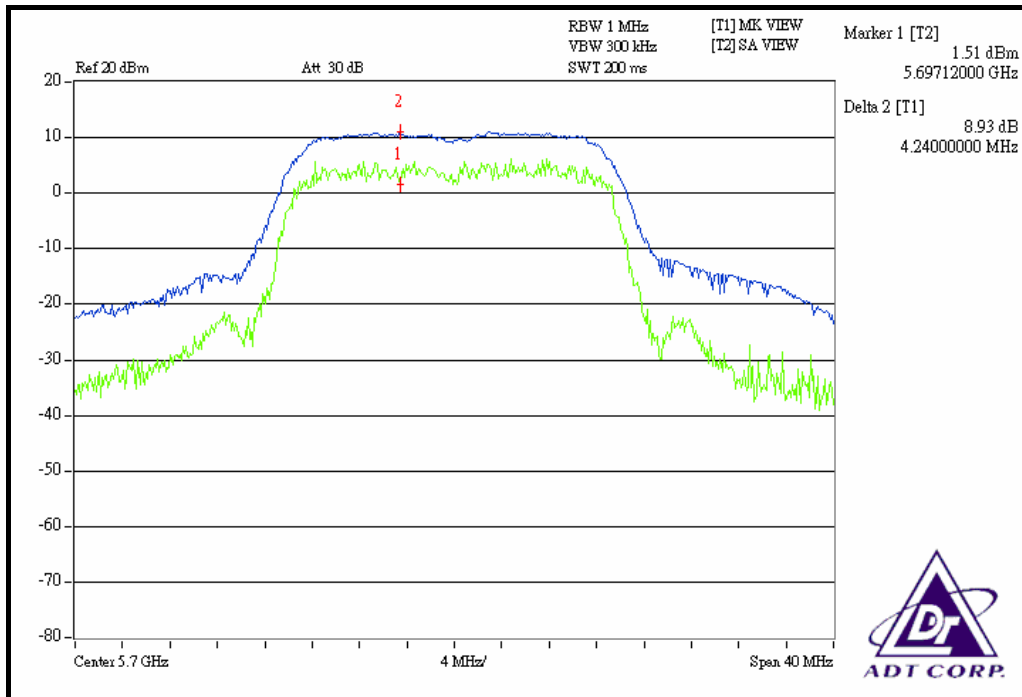
CH 9



CH 14



CH 19





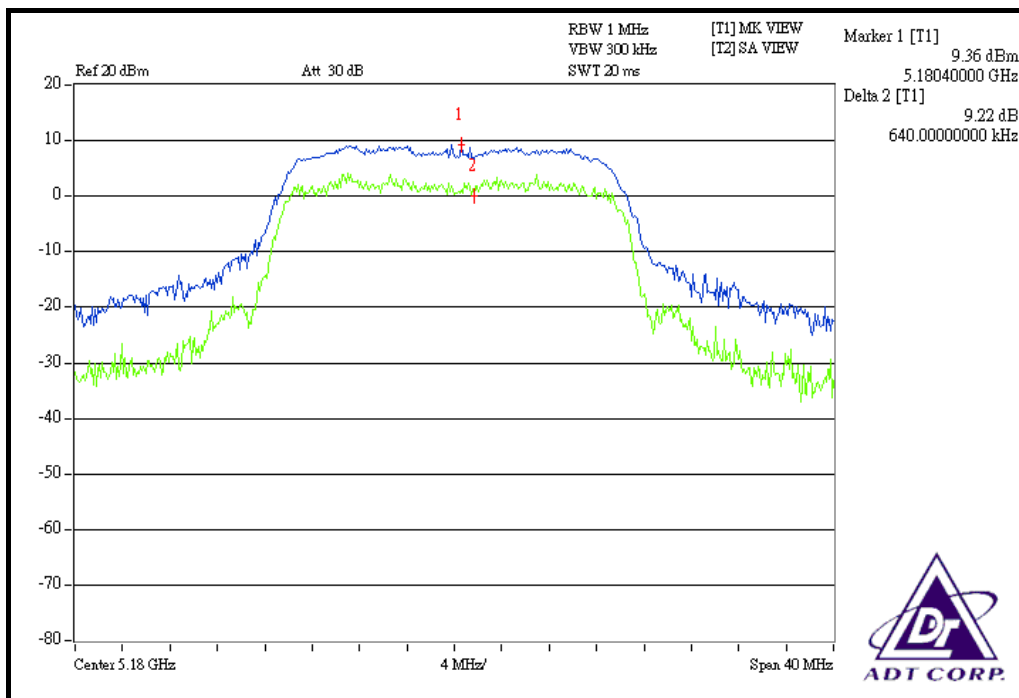
DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

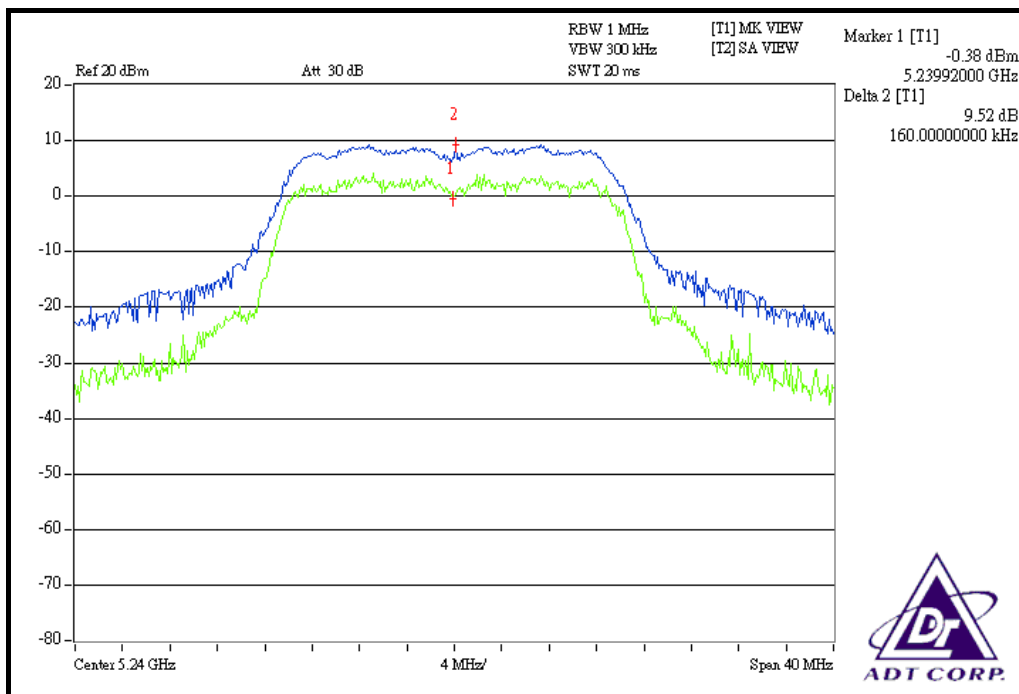
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1		
1	5180	9.22	10.18	13	PASS
4	5240	9.52	9.69	13	PASS
5	5260	8.81	9.10	13	PASS
8	5320	9.33	9.31	13	PASS
9	5500	8.81	8.32	13	PASS
14	5600	8.93	8.69	13	PASS
19	5700	9.15	10.02	13	PASS



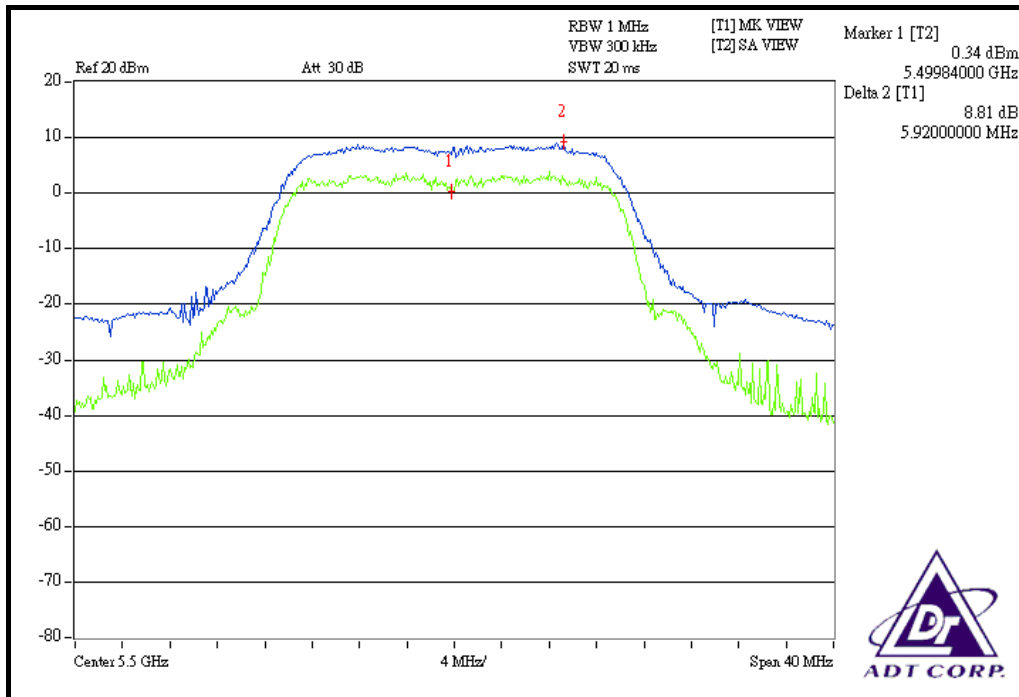
FOR CHAIN 0: CH 1



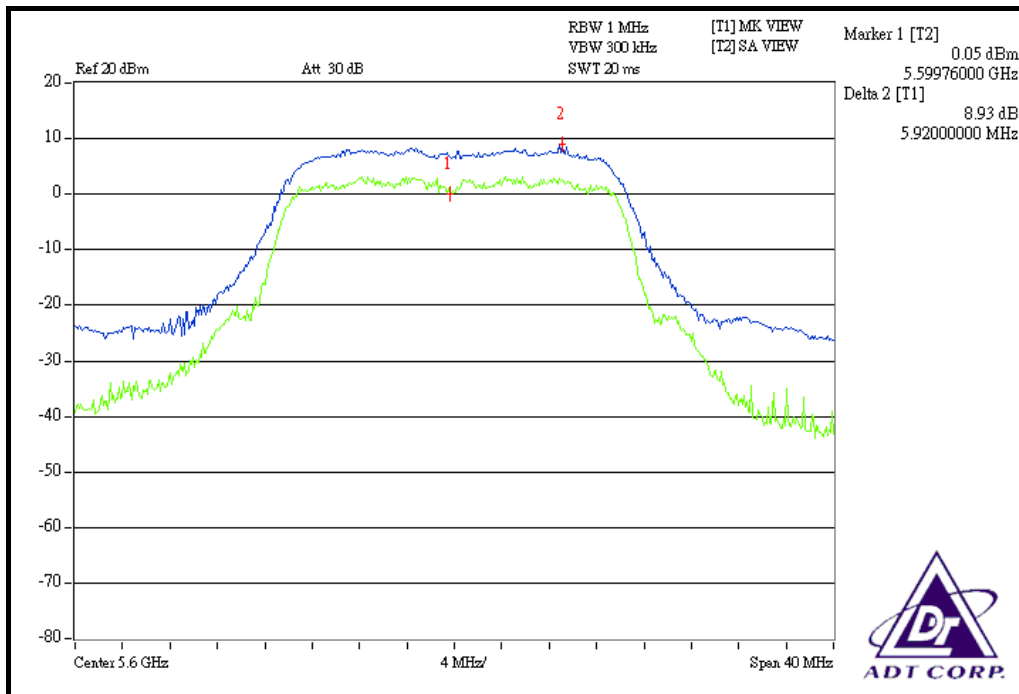
CH 4



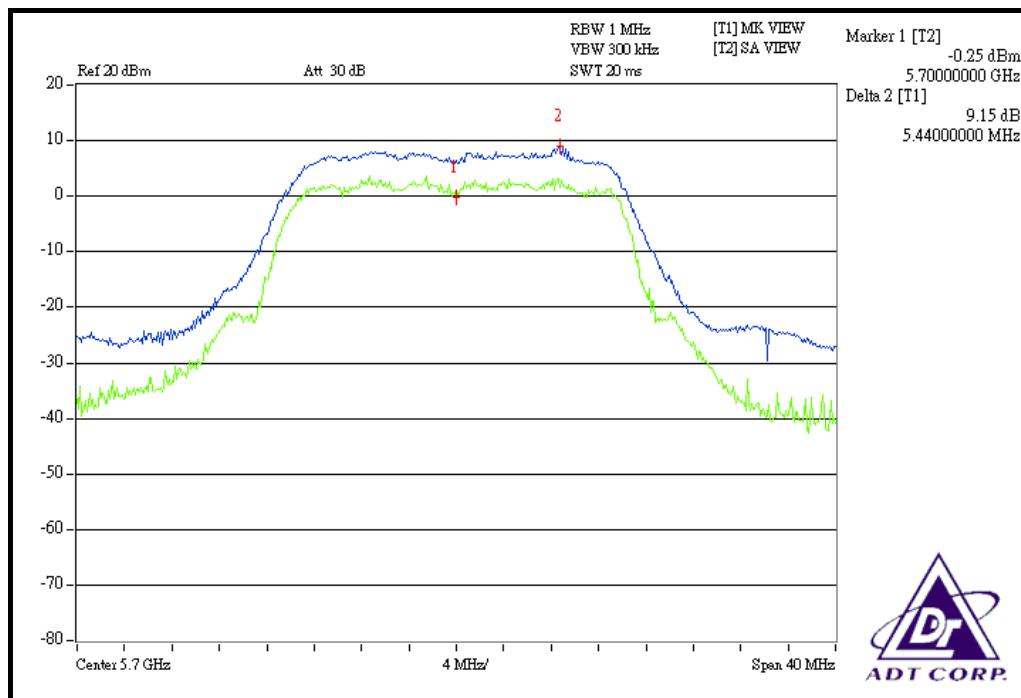
CH 9



CH 14

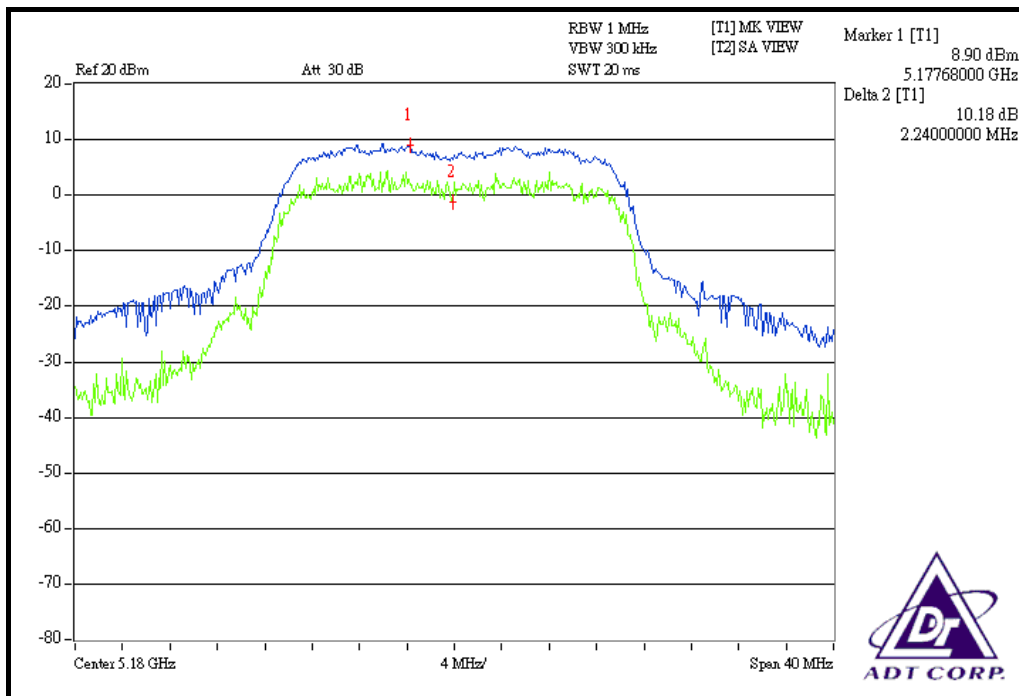


CH 19

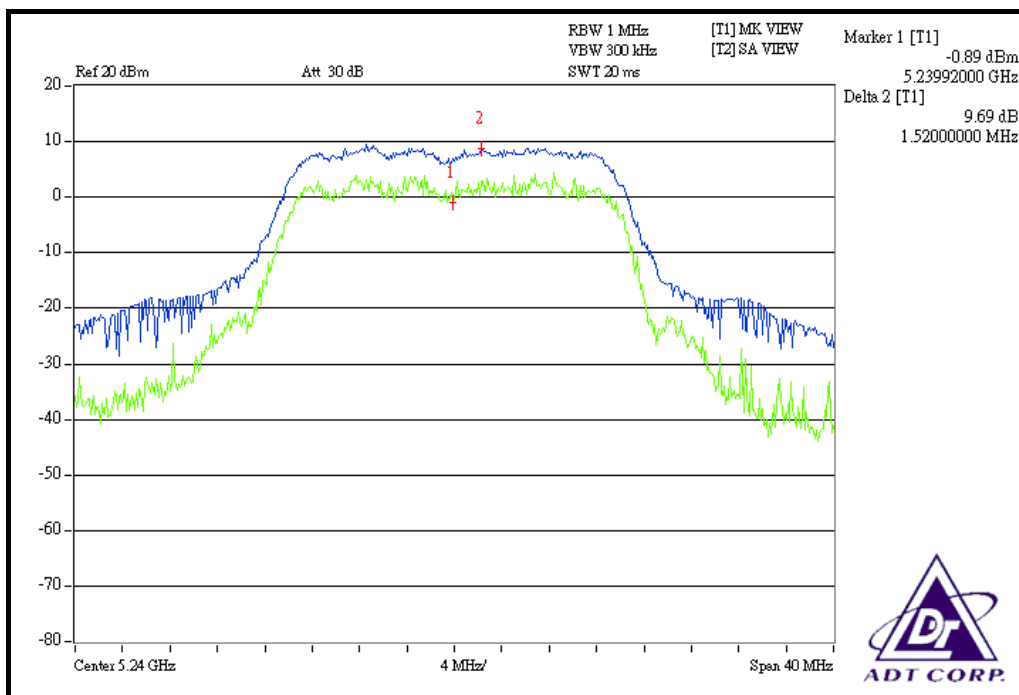




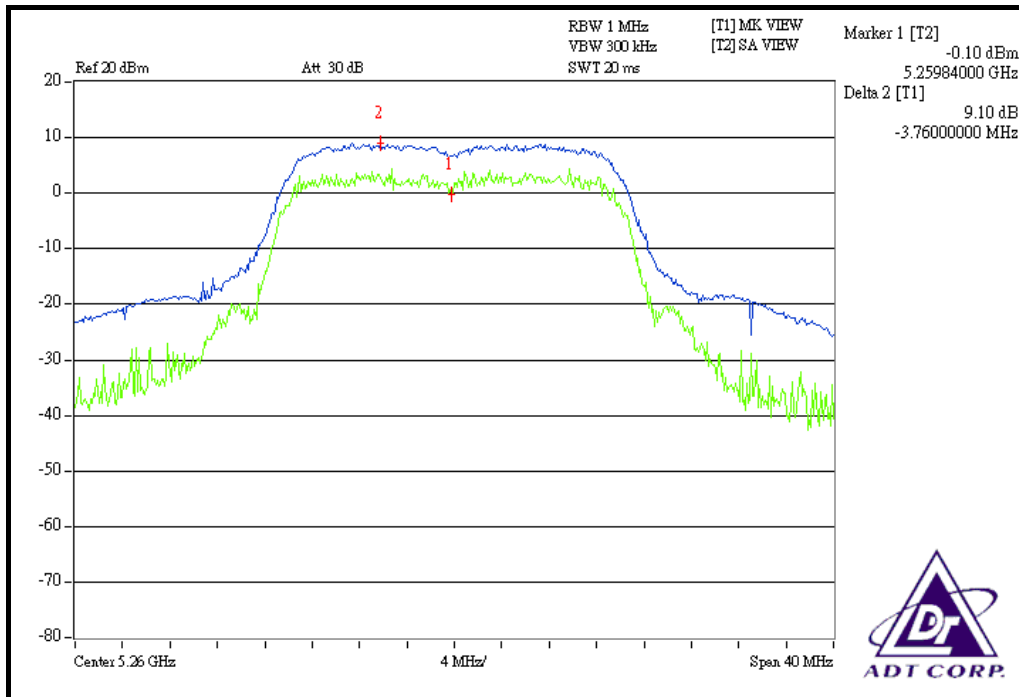
FOR CHAIN 1: CH 1



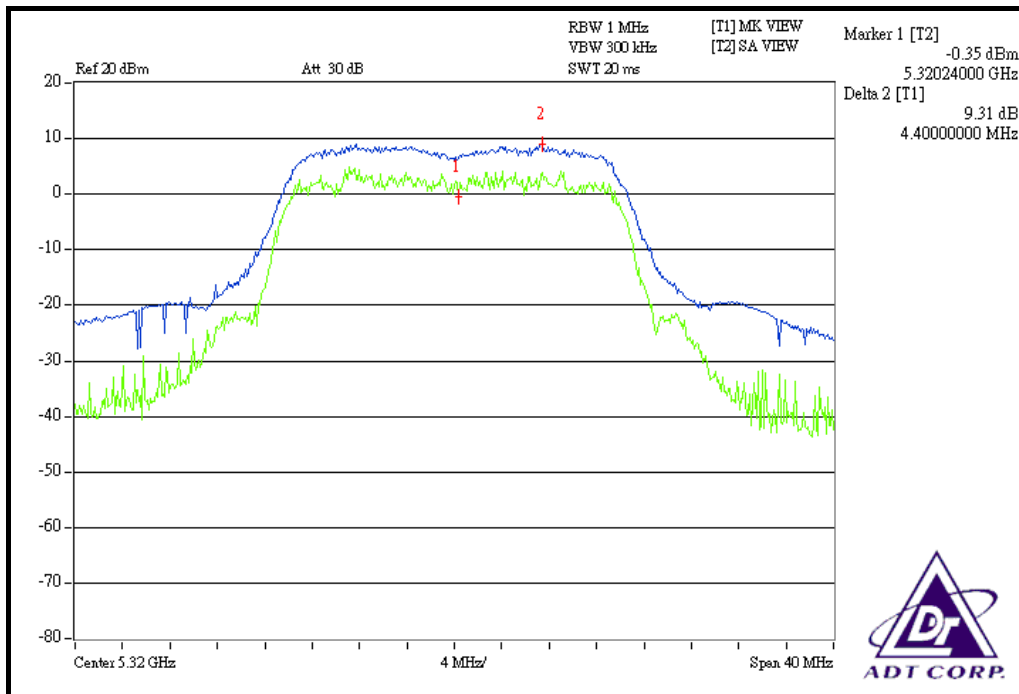
CH 4



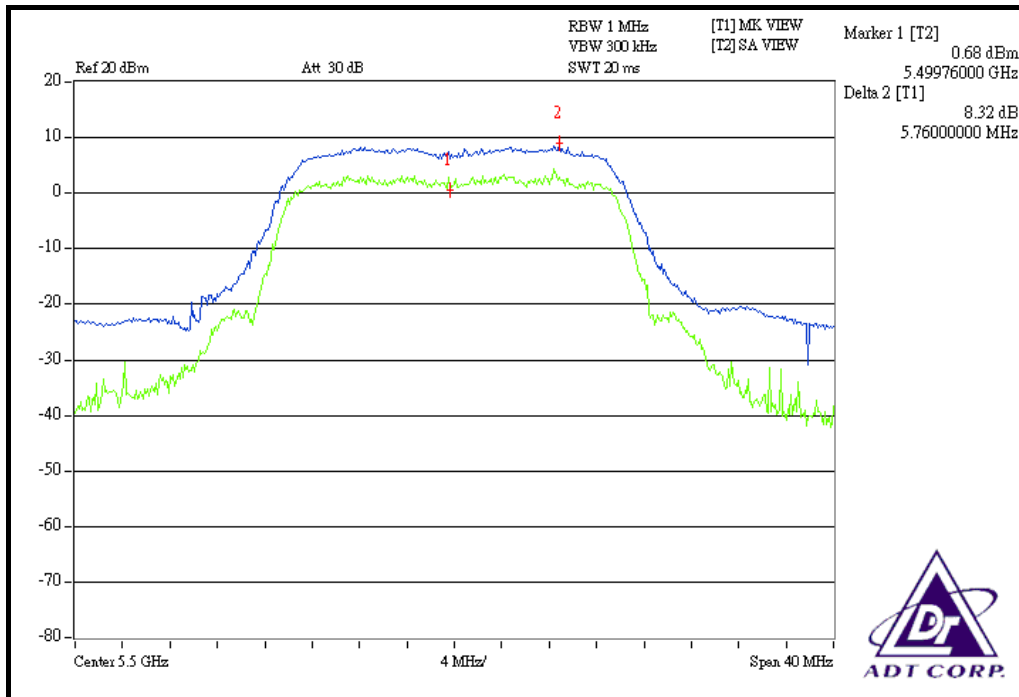
CH 5



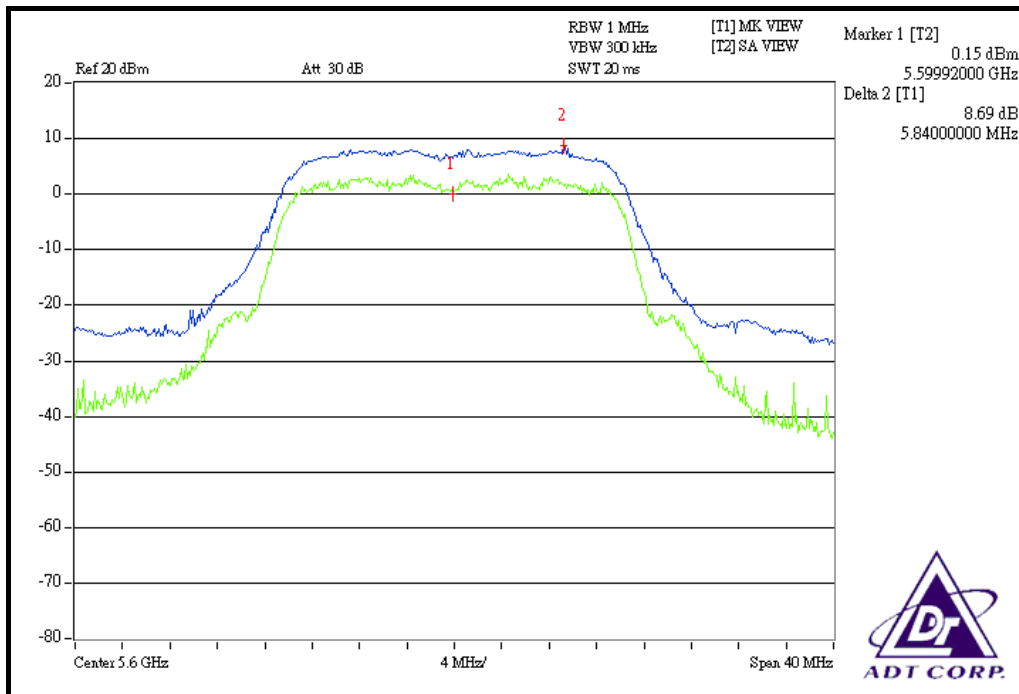
CH 8



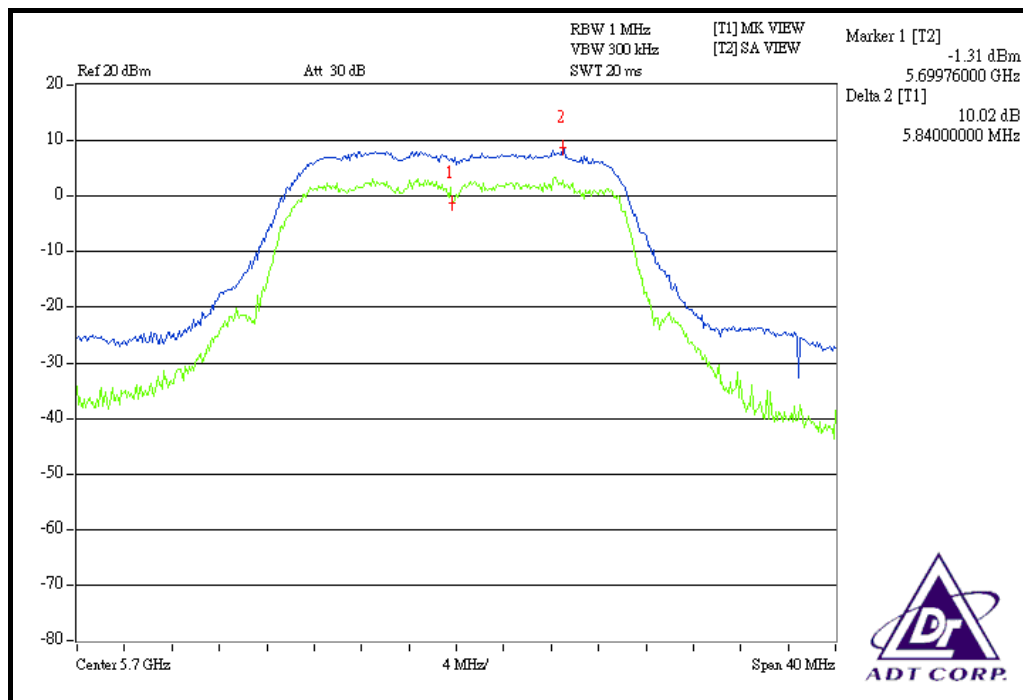
CH 9



CH 14



CH 19



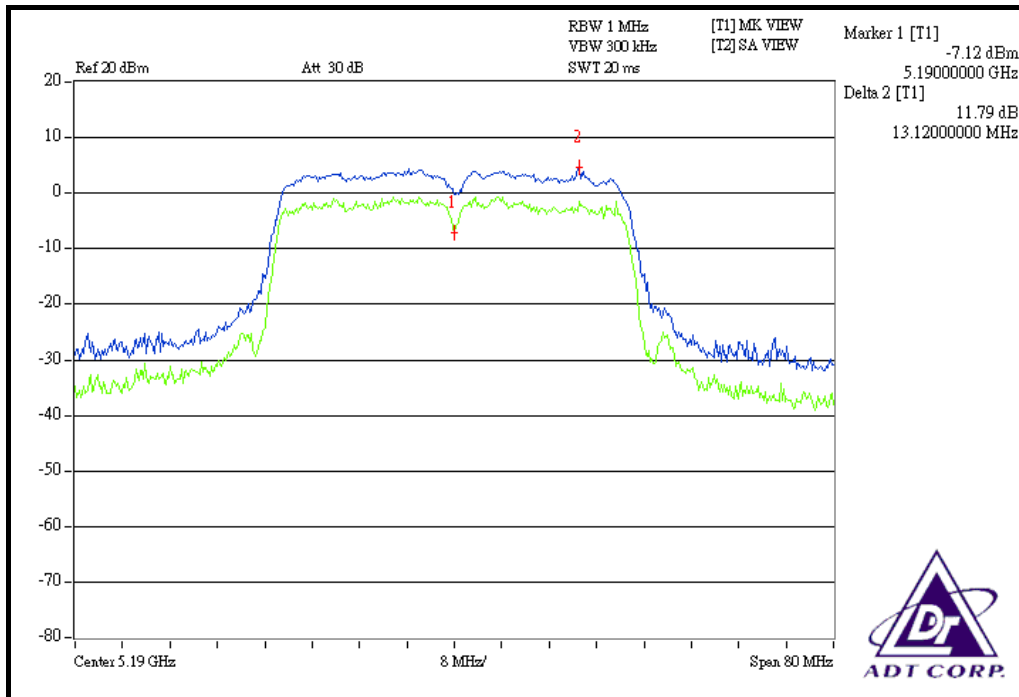


DRAFT 802.11n (40MHz) OFDM MODULATION:

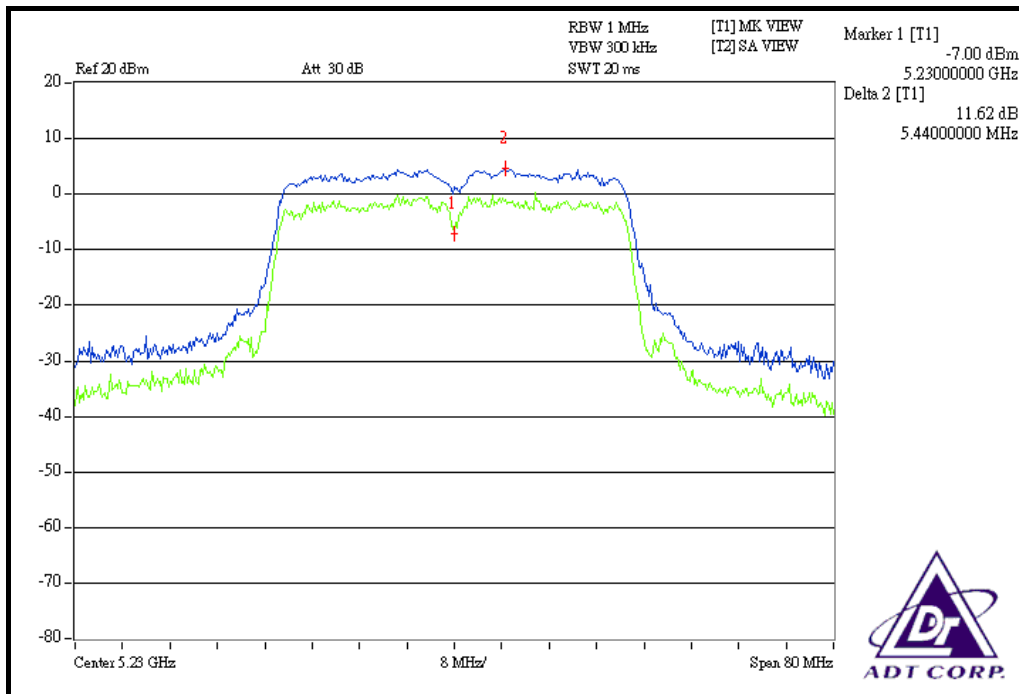
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1		
1	5190	11.79	11.08	13	PASS
2	5230	11.62	11.43	13	PASS
3	5270	11.54	11.50	13	PASS
4	5310	11.75	12.19	13	PASS
5	5510	11.94	11.43	13	PASS
7	5590	11.64	11.11	13	PASS
9	5670	11.93	12.23	13	PASS

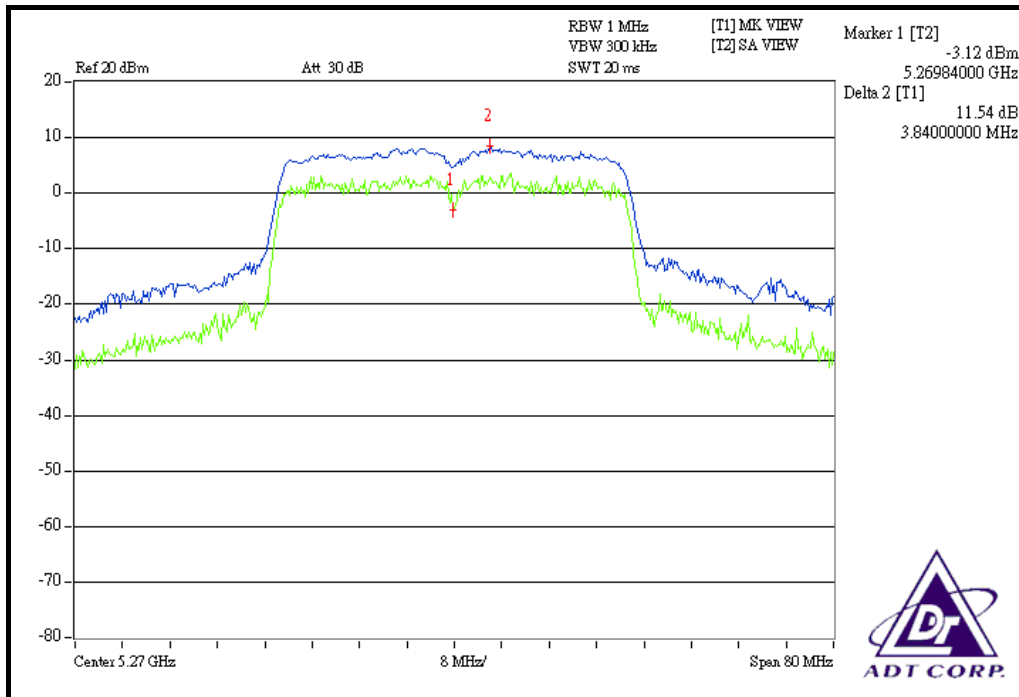
FOR CHAIN 0: CH 1



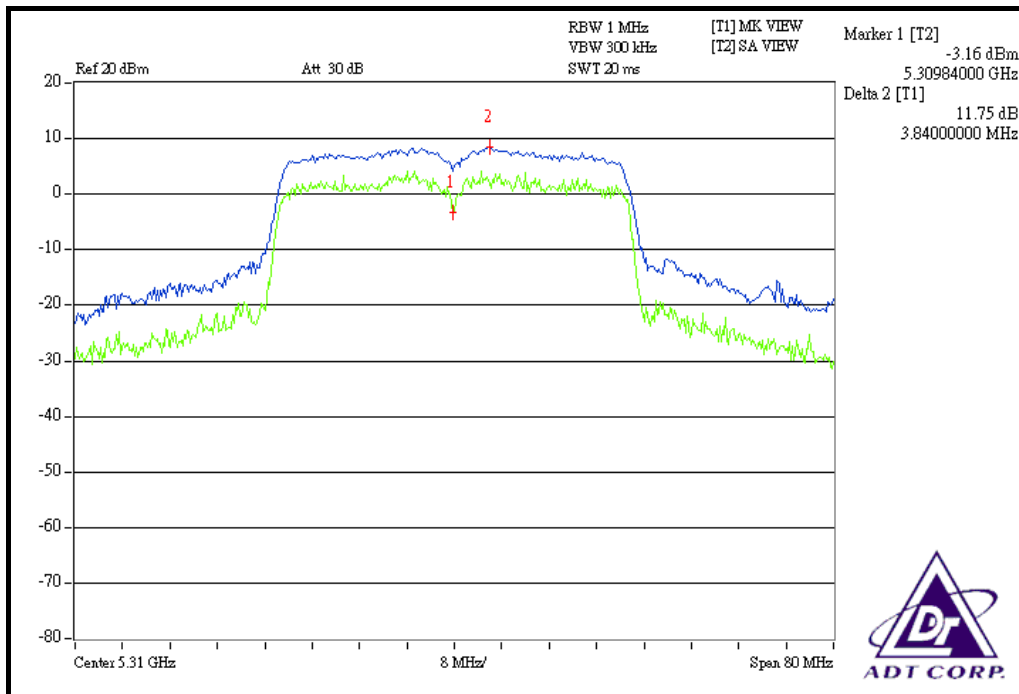
CH 2



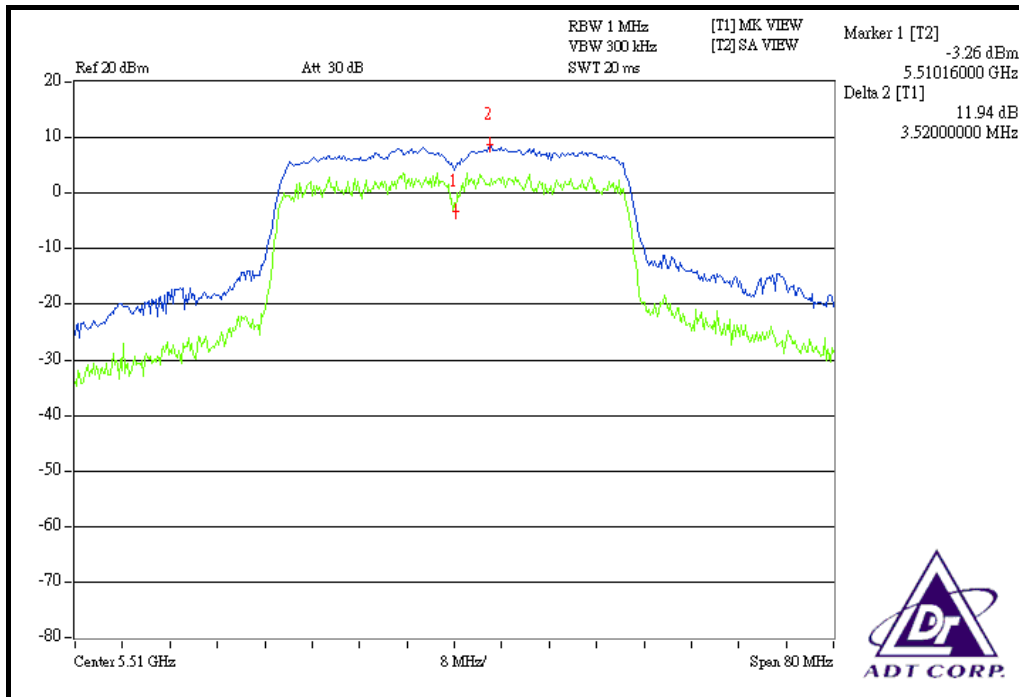
CH 3



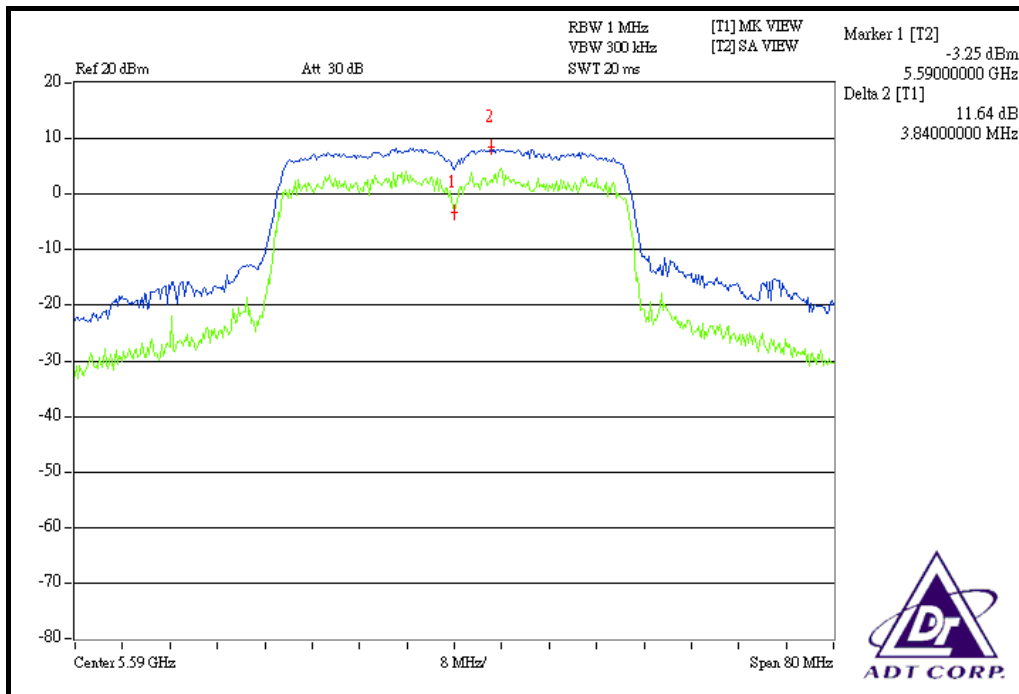
CH 4



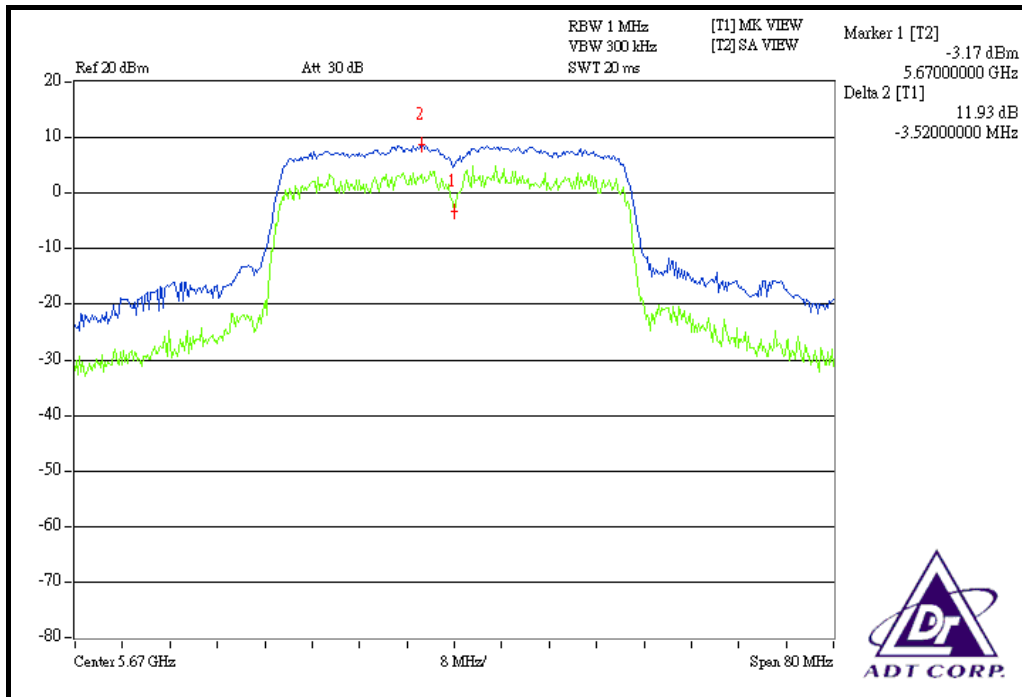
CH 5



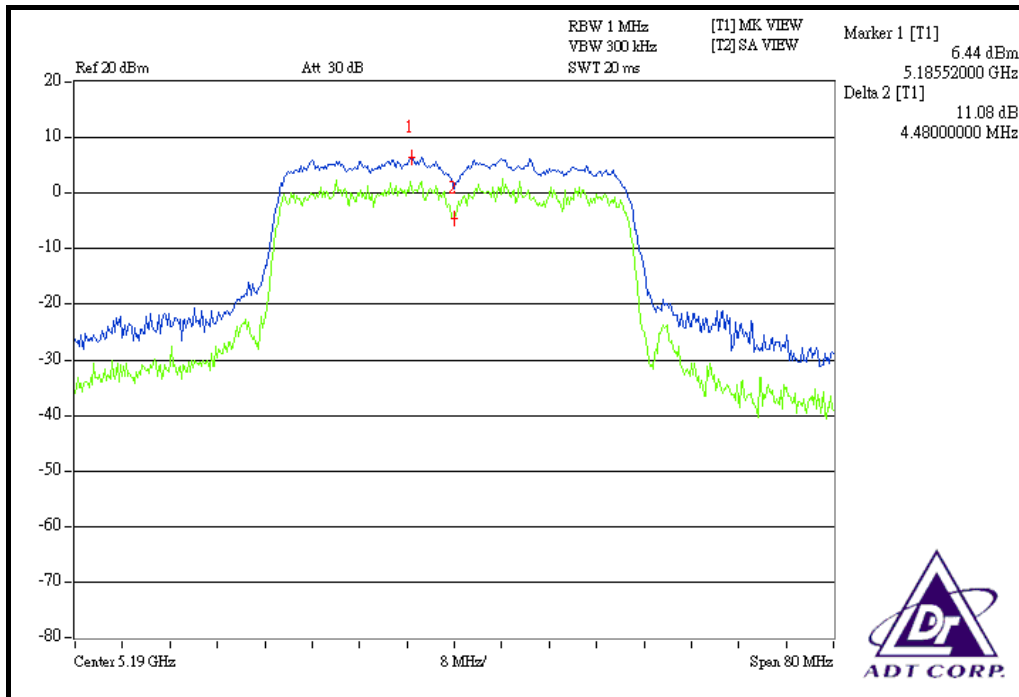
CH 7



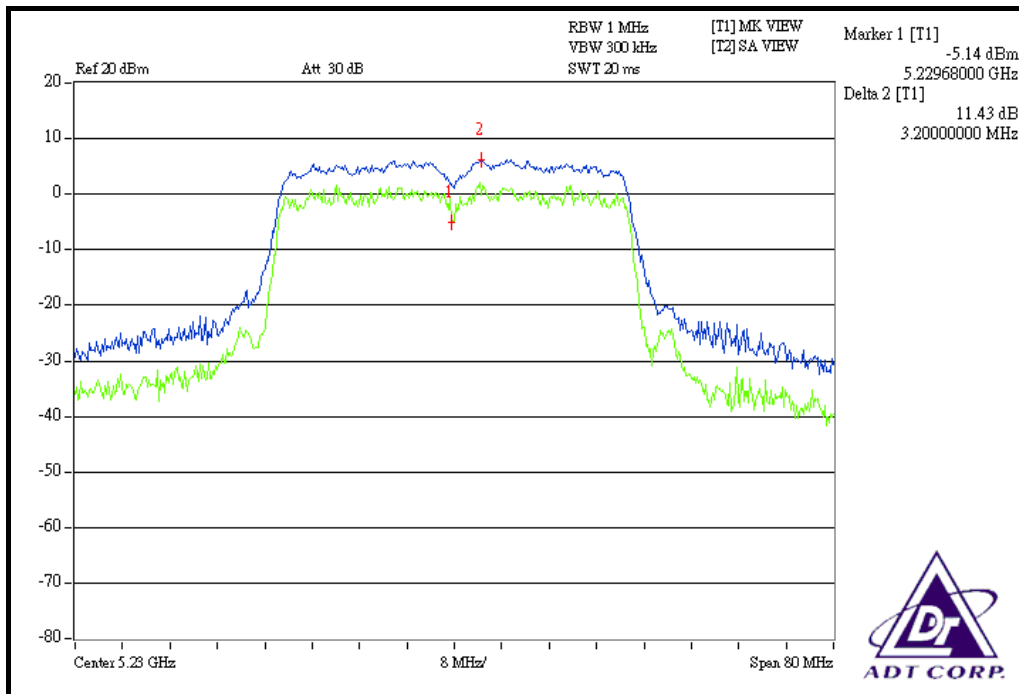
CH 9



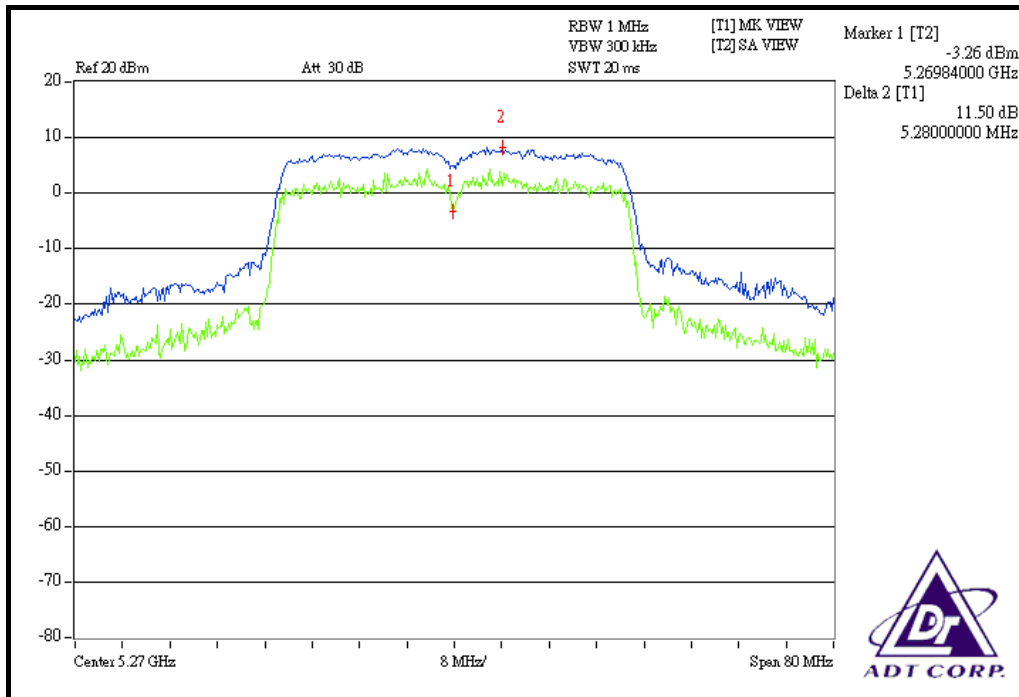
FOR CHAIN 1: CH 1



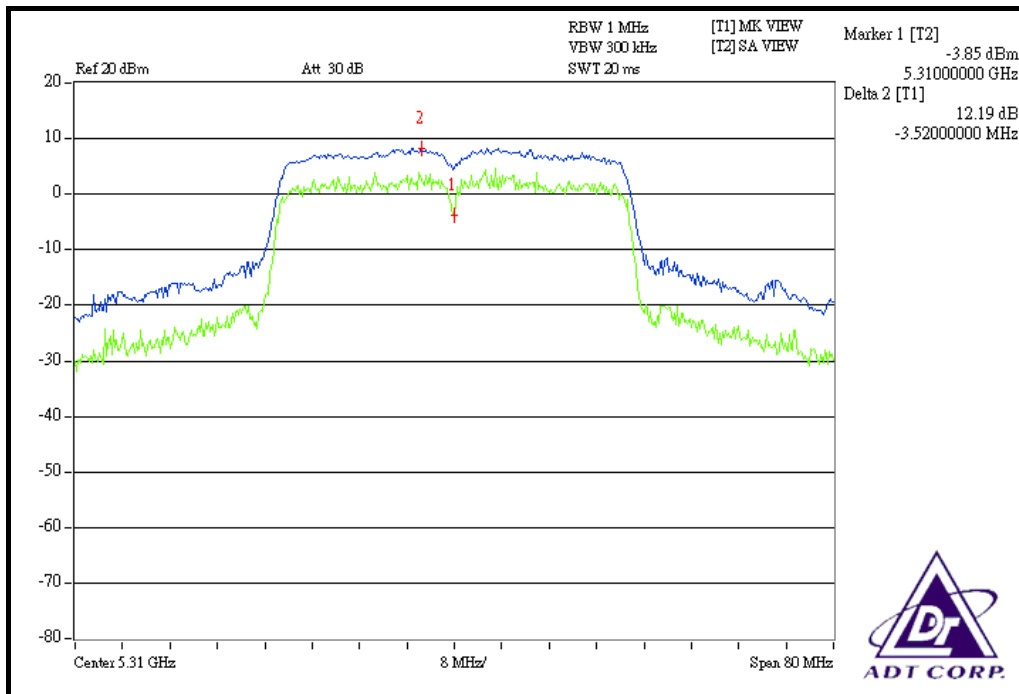
CH 2



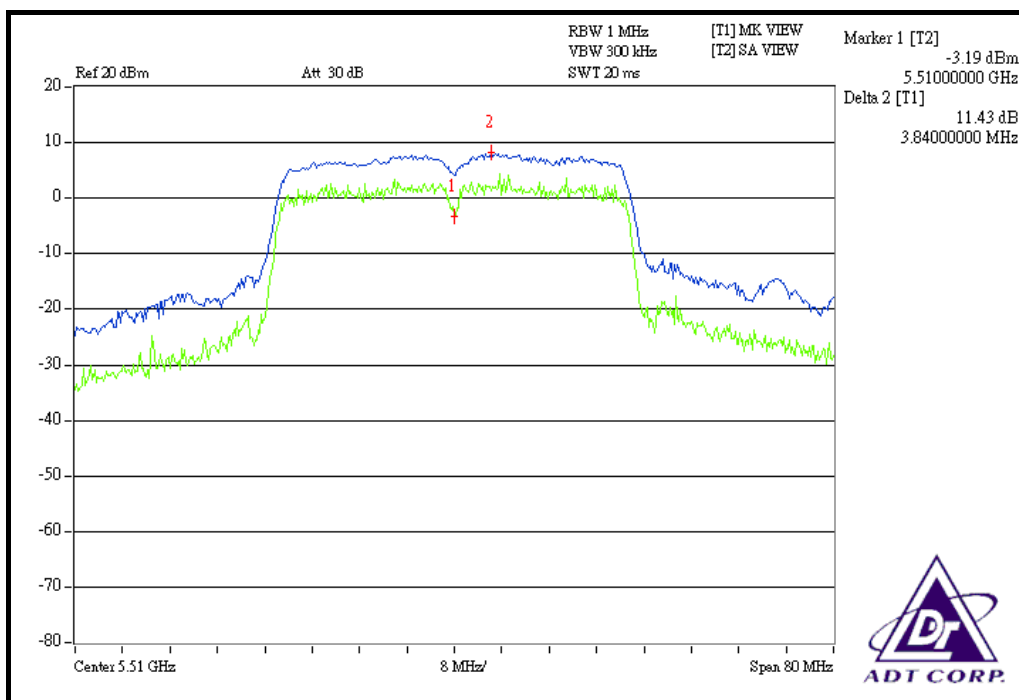
CH 3



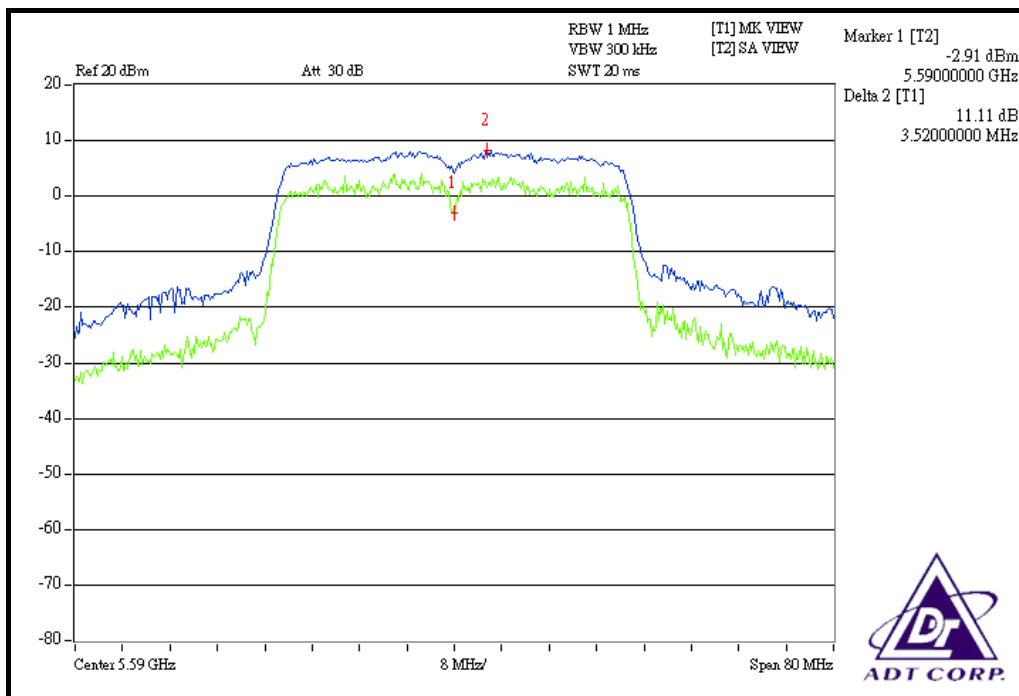
CH 4



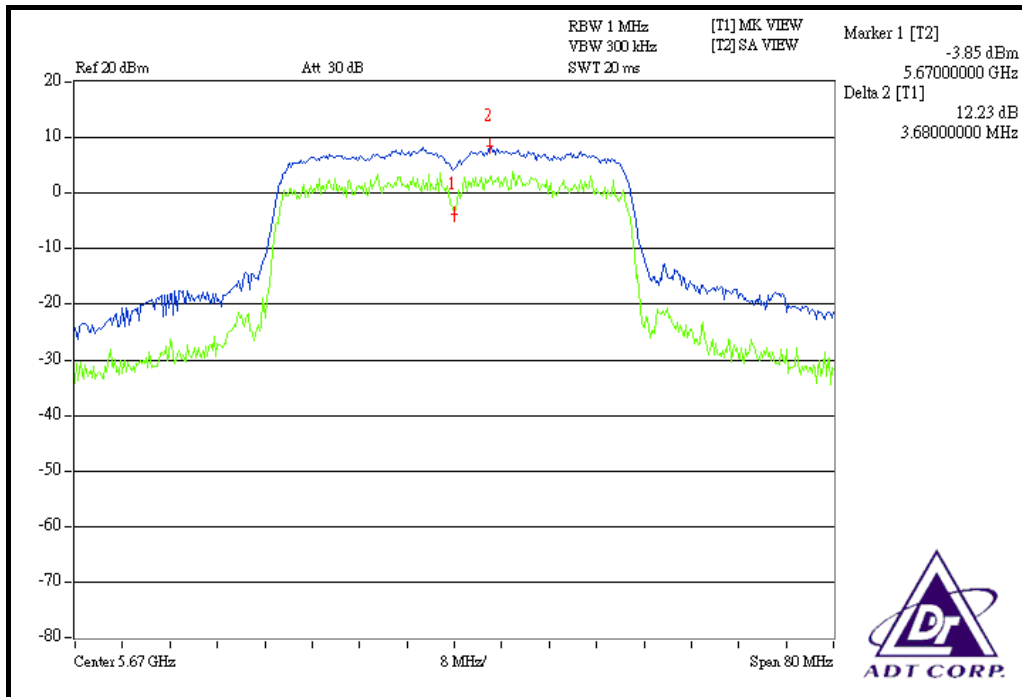
CH 5



CH 7



CH 9



4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	4dBm
5.250 ~ 5.350GHz	11dBm
5.470 ~ 5.725GHz	11dBm

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.

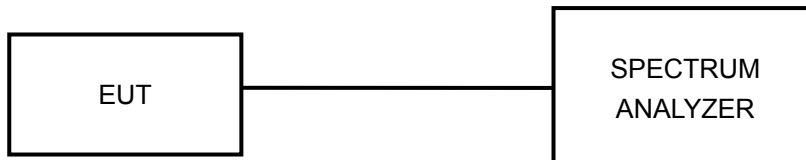
4.5.3 TEST PROCEDURES

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW = 1MHz, VBW = 3MHz. The PPSD is the highest level found across the emission in any 1MHz band.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

Same as 5.3.6



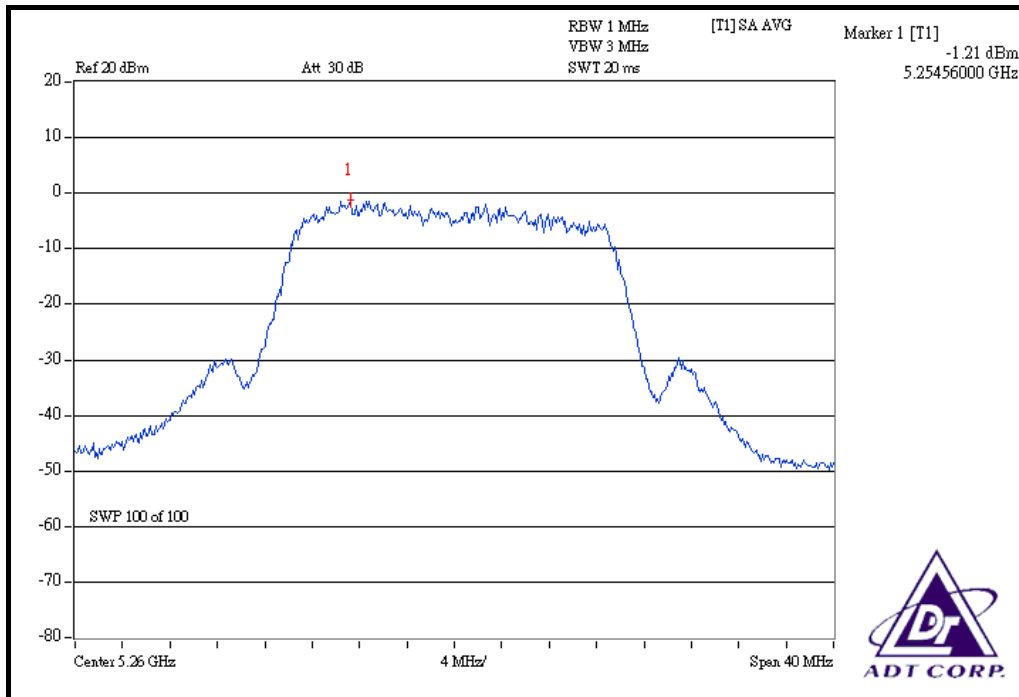
4.5.7 TEST RESULTS

802.11a OFDM MODULATION:

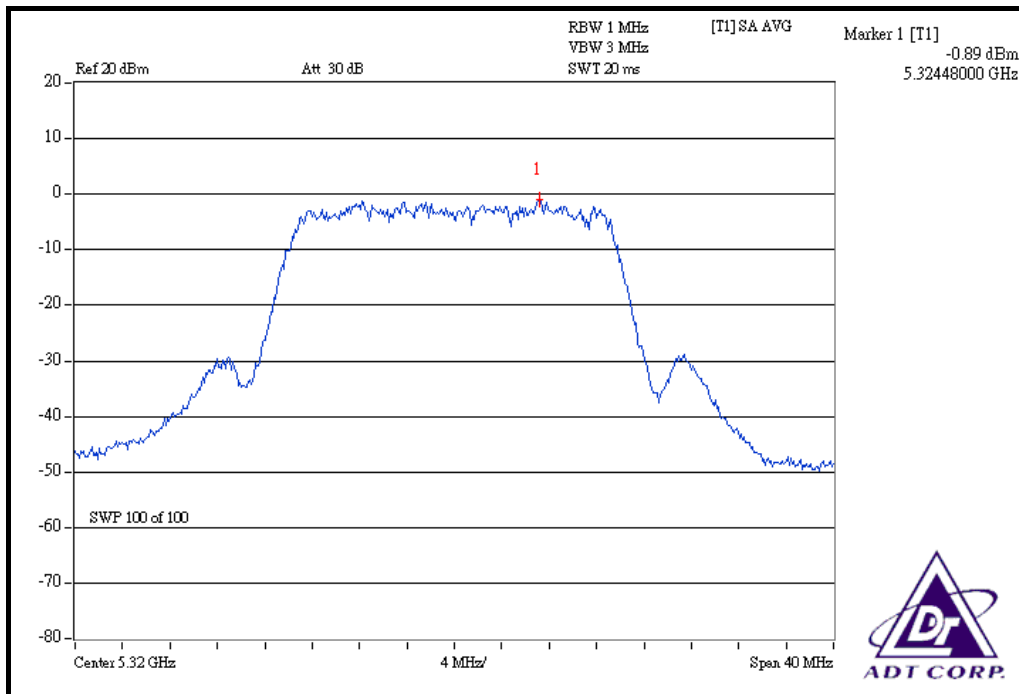
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	5180	-0.04	4	PASS
4	5240	-0.30	4	PASS
5	5260	-1.21	11	PASS
8	5320	-0.89	11	PASS
9	5500	-1.04	11	PASS
14	5600	-1.17	11	PASS
19	5700	-1.18	11	PASS

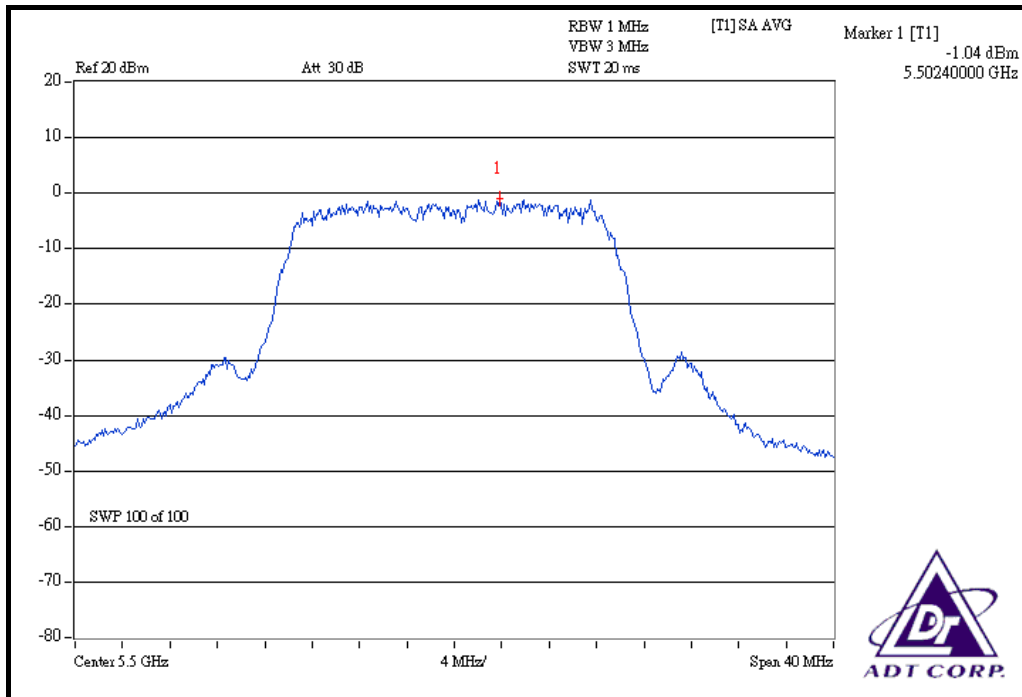
CH 5



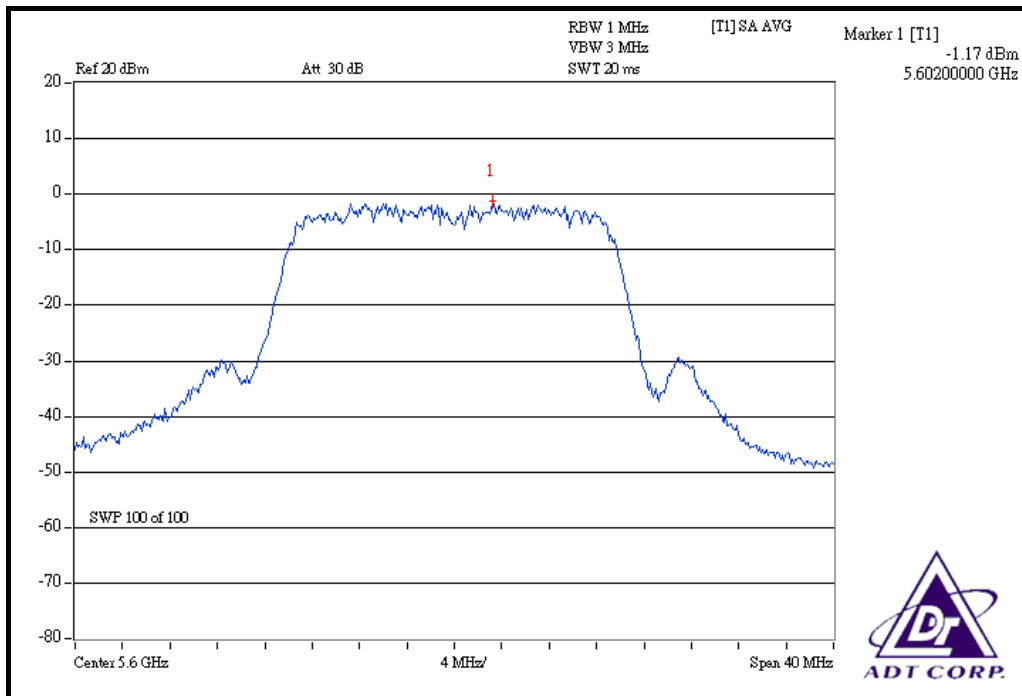
CH 8



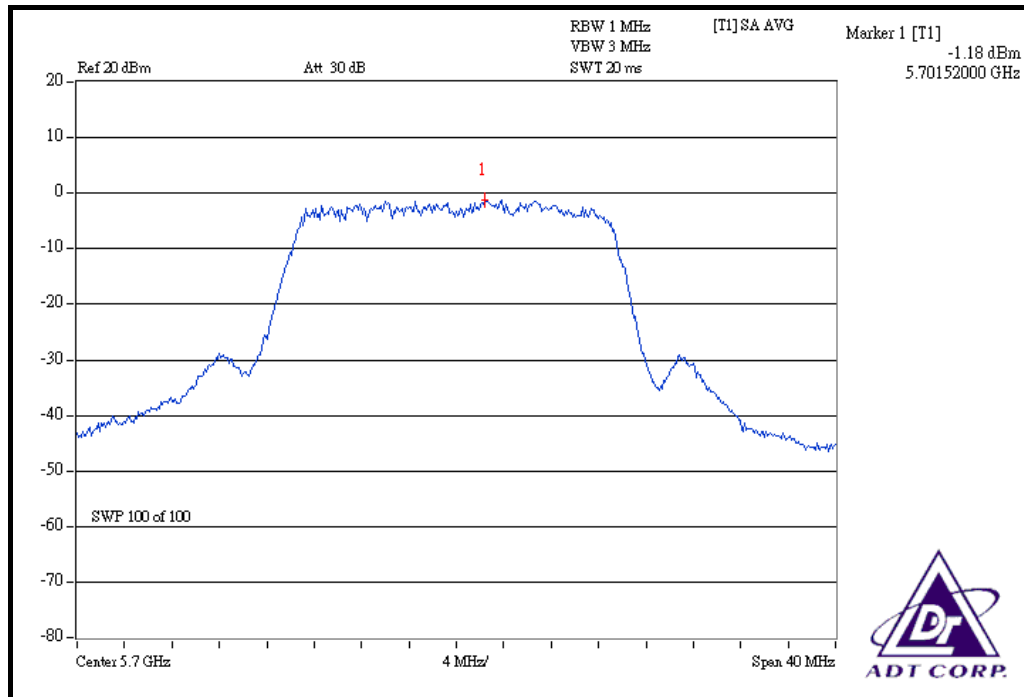
CH 9



CH 14



CH 19



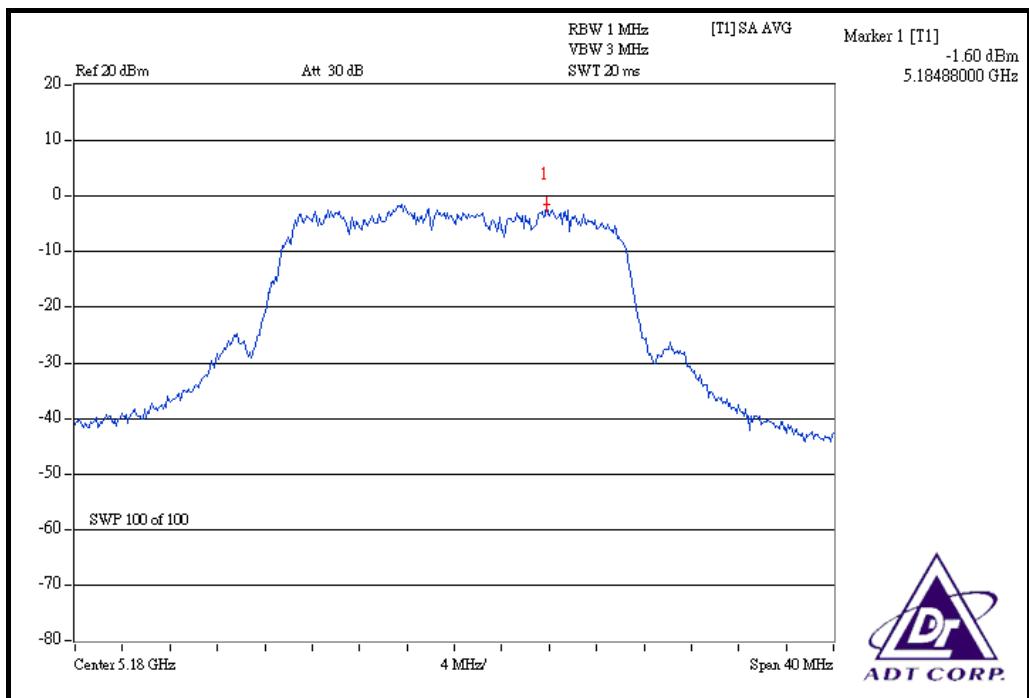


DRAFT 802.11n (20MHz) OFDM MODULATION:

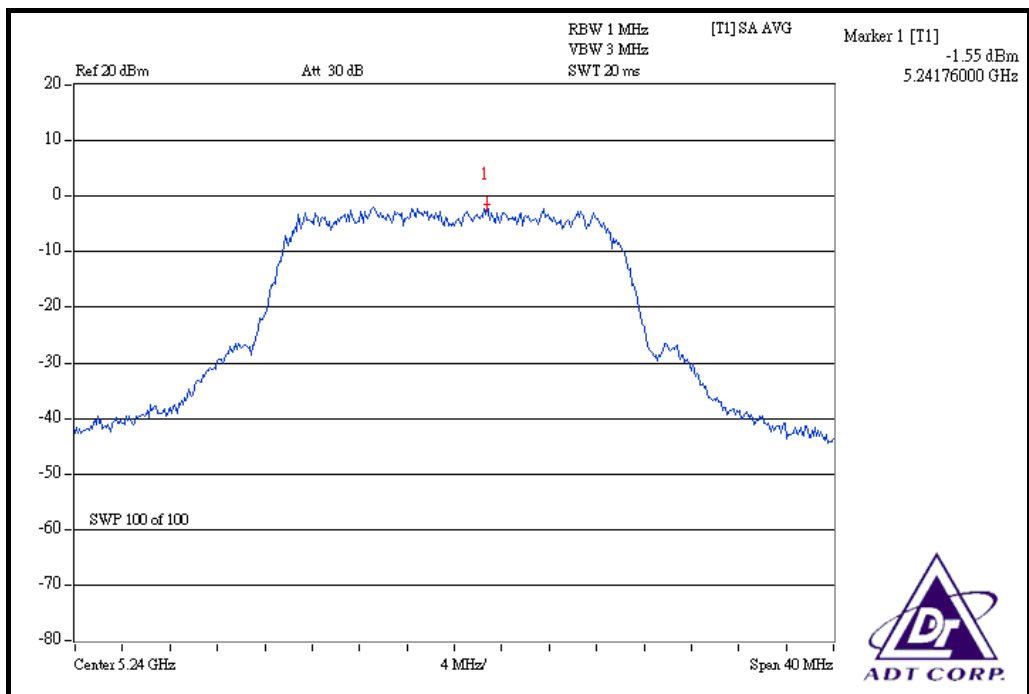
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (mW)		RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	5180	0.692	0.511	-1.60	-2.92	1.203	0.80	4	PASS
4	5240	0.700	0.522	-1.55	-2.82	1.222	0.87	4	PASS
5	5260	0.615	0.583	-2.11	-2.34	1.198	0.79	11	PASS
8	5320	0.631	0.600	-2.00	-2.22	1.231	0.90	11	PASS
9	5500	0.465	0.466	-3.33	-3.32	0.931	-0.31	11	PASS
14	5600	0.494	0.472	-3.06	-3.26	0.966	-0.15	11	PASS
19	5700	0.455	0.484	-3.42	-3.15	0.939	-0.27	11	PASS

FOR CHAIN 0: CH 1

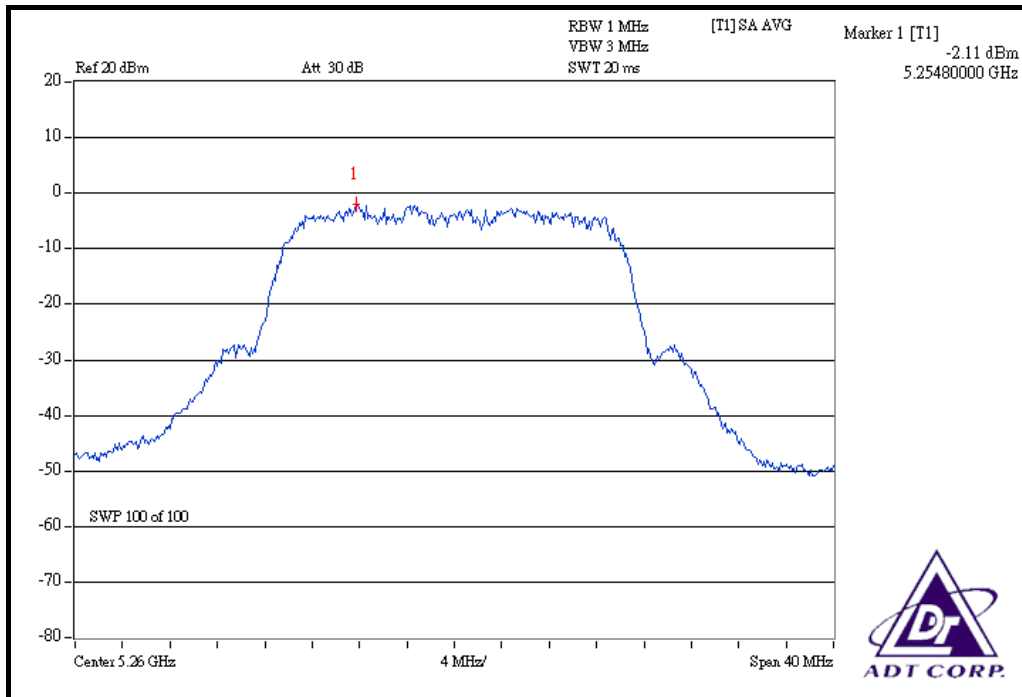


CH 4

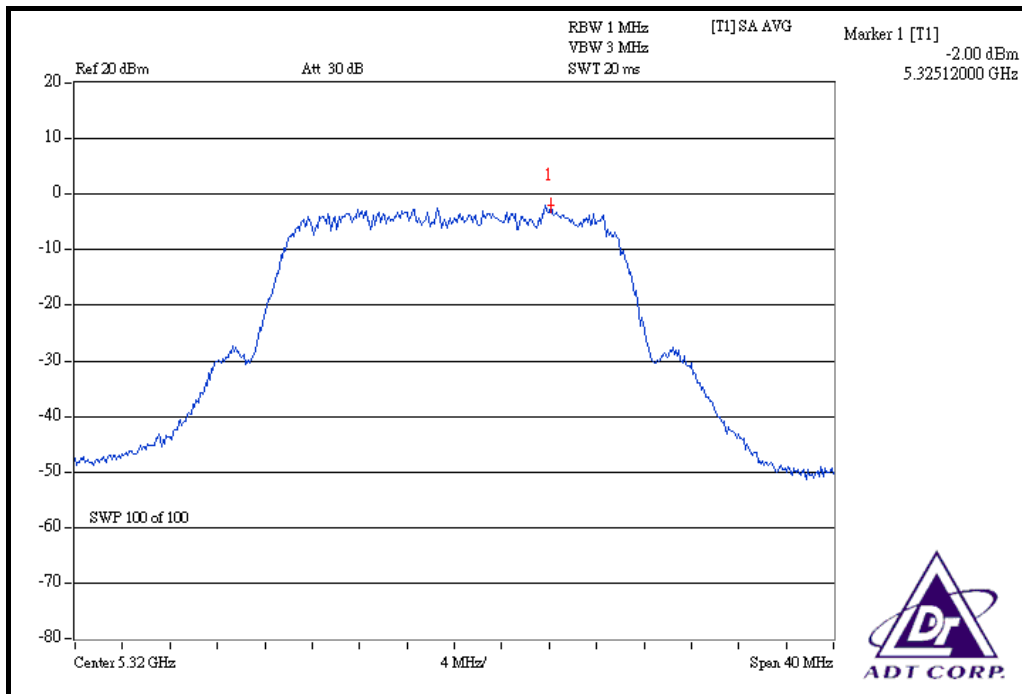




CH 5

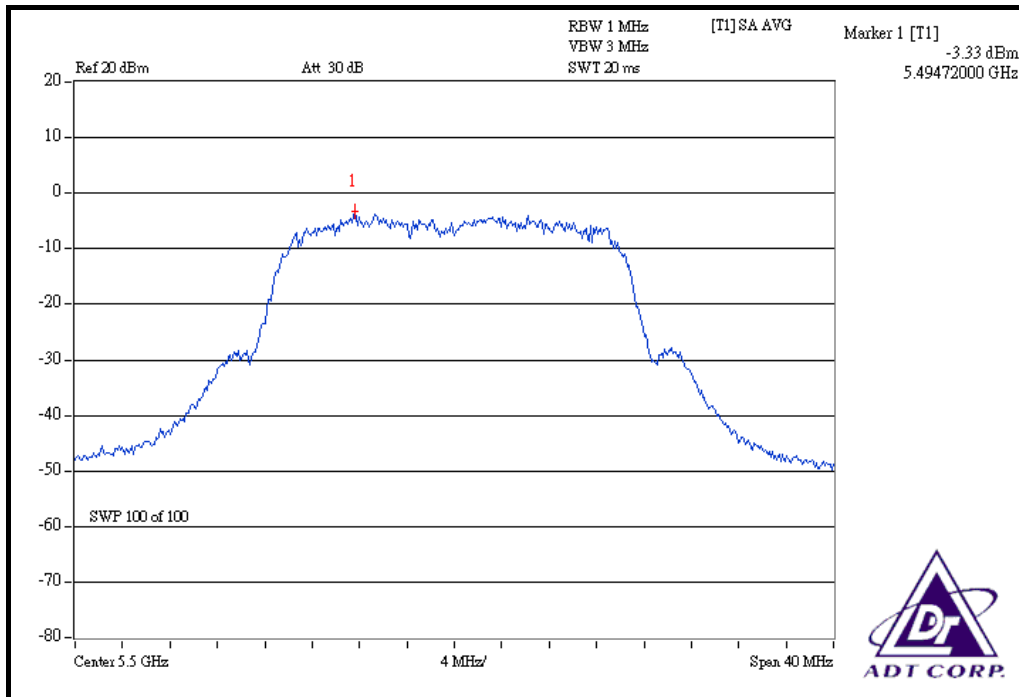


CH 8

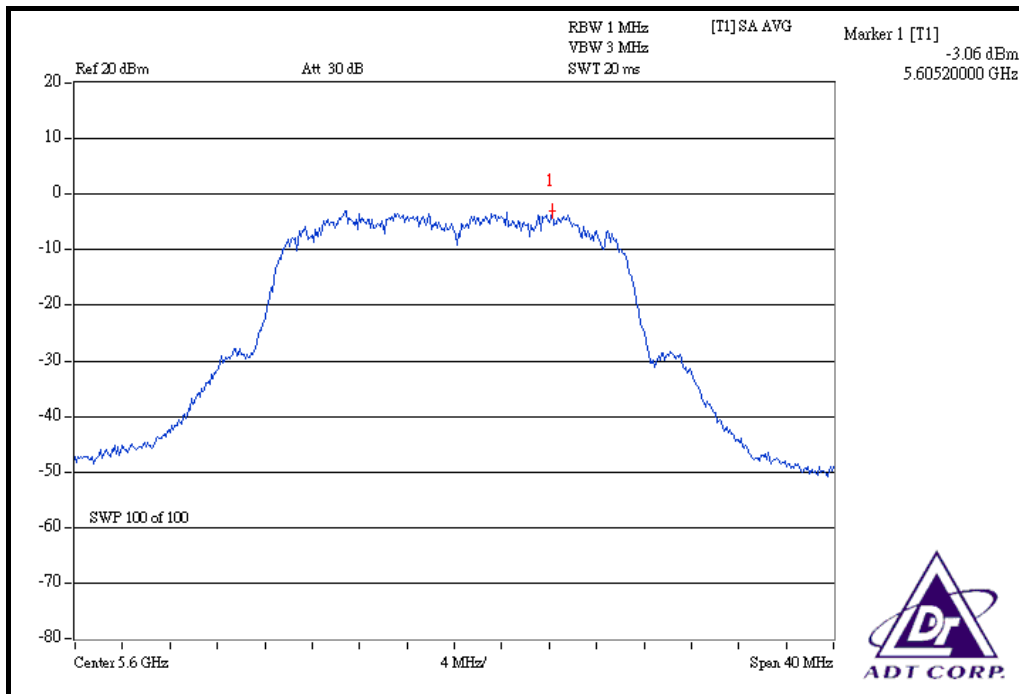




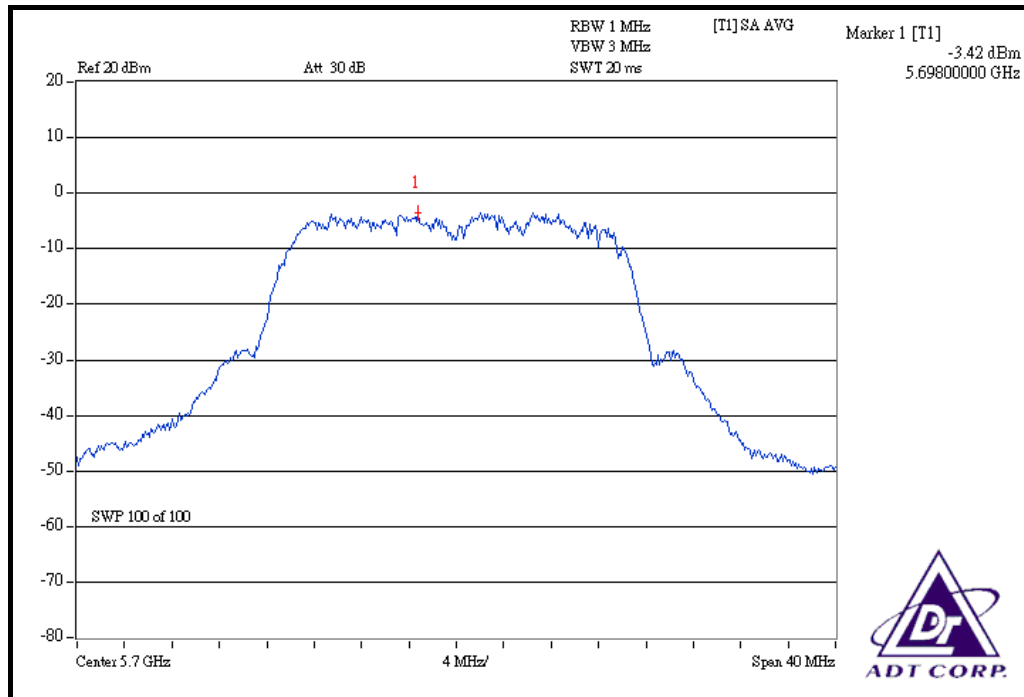
CH 9



CH 14

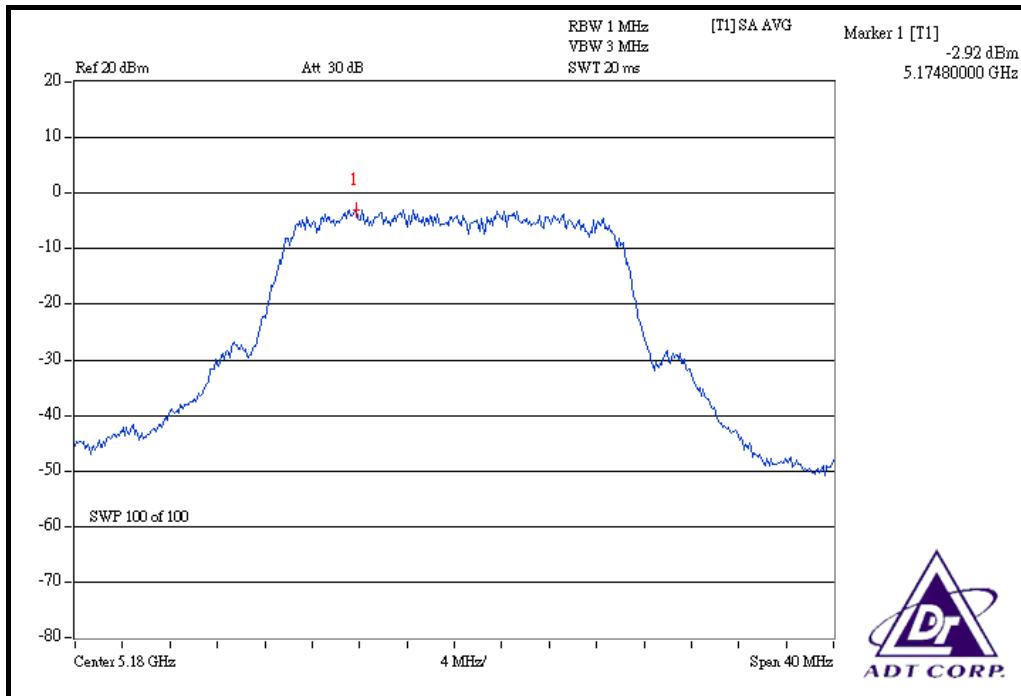


CH 19

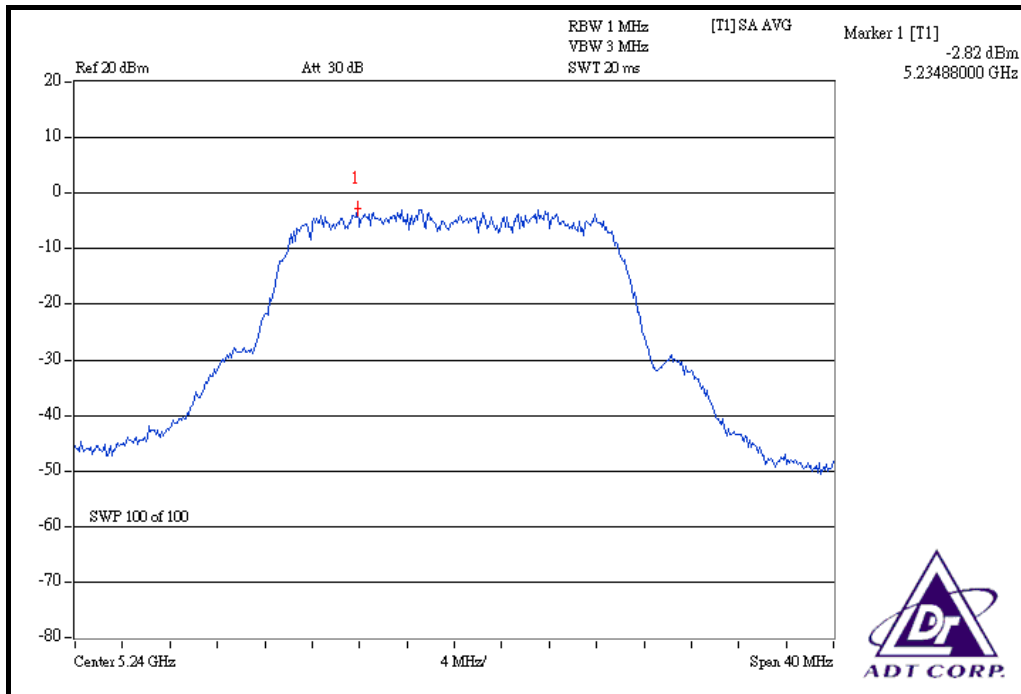




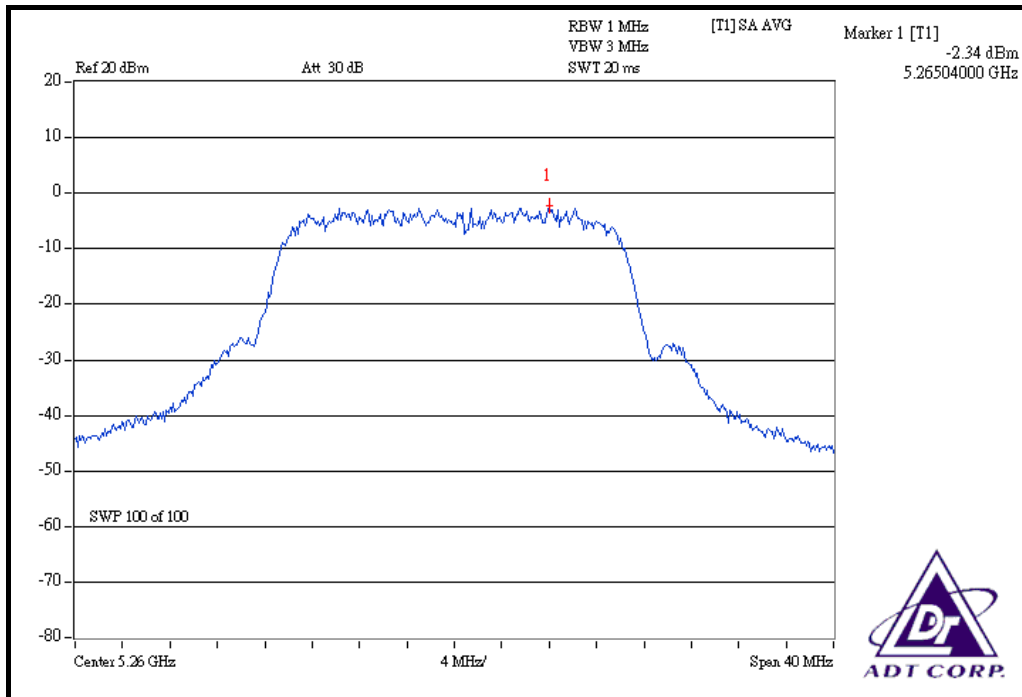
FOR CHAIN 1: CH 1



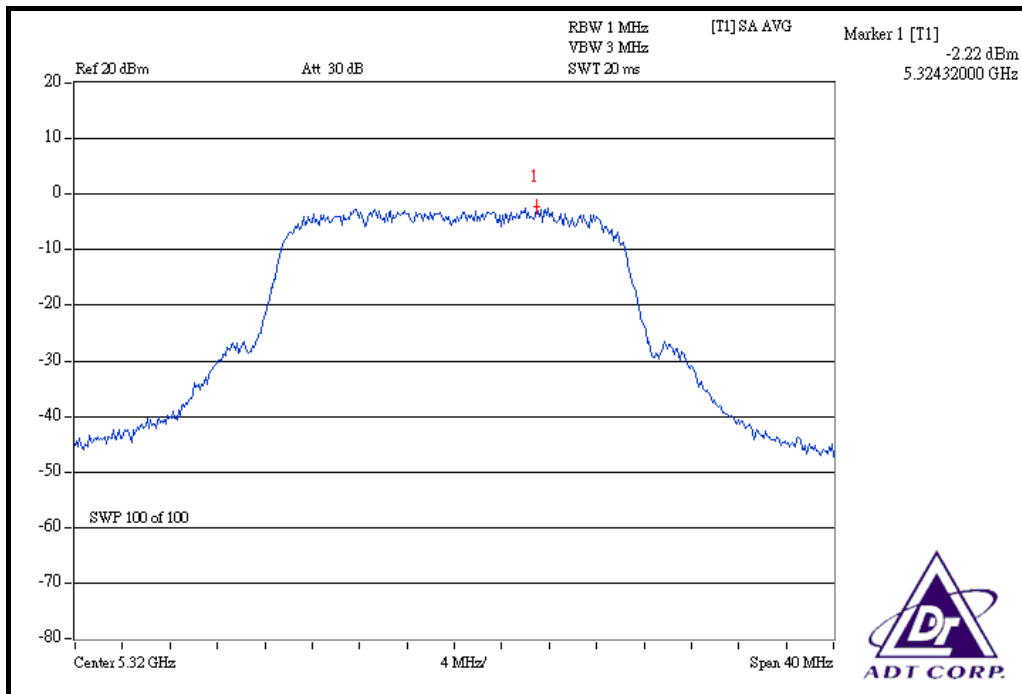
CH 4



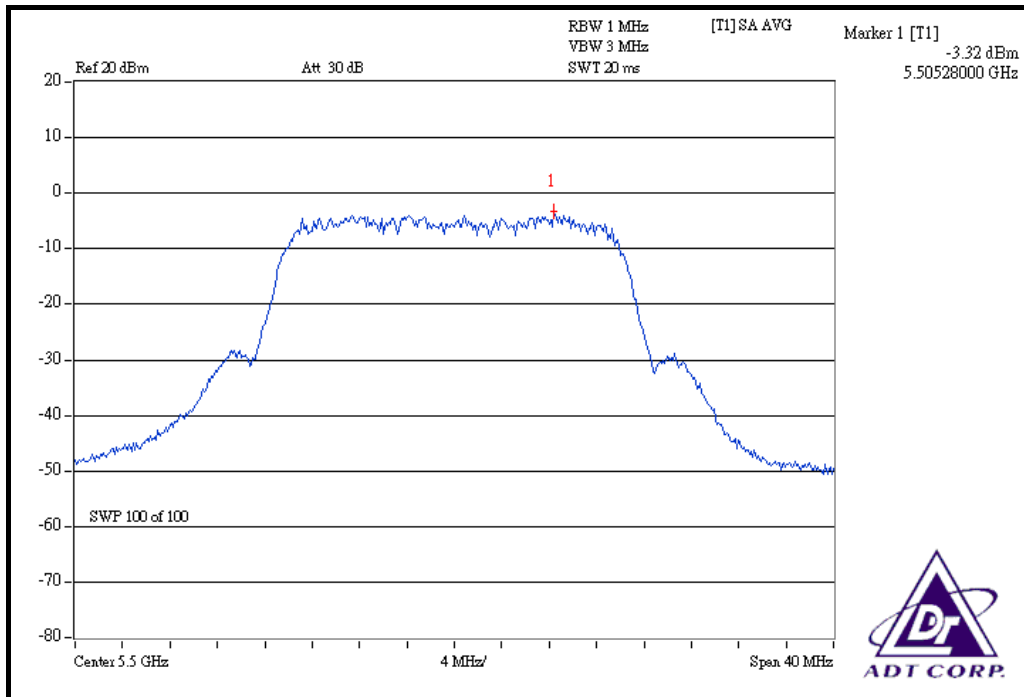
CH 5



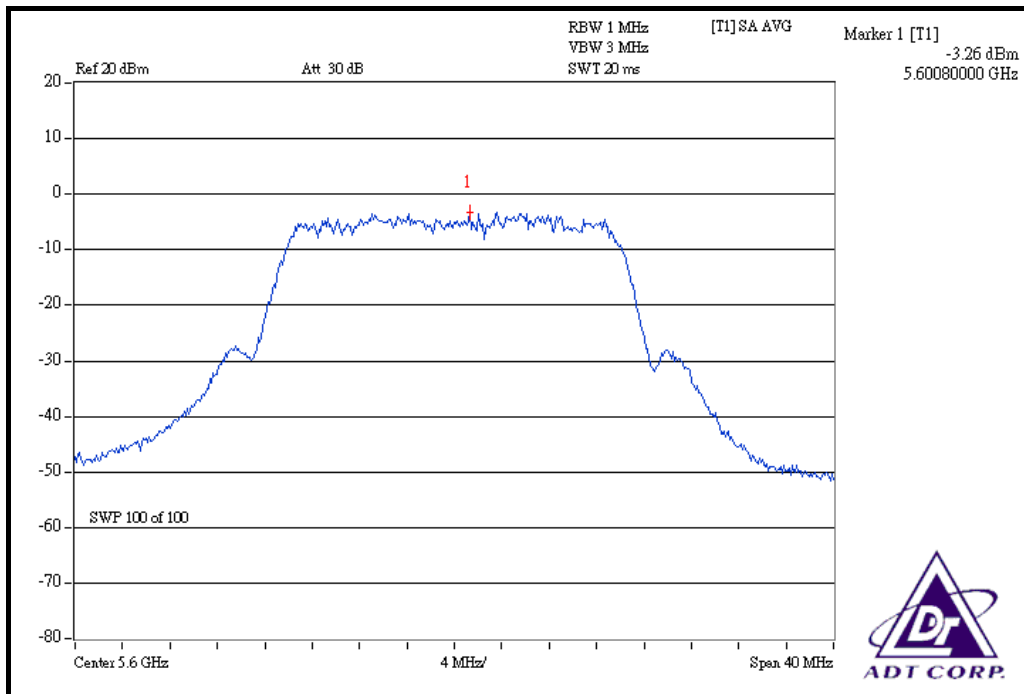
CH 8



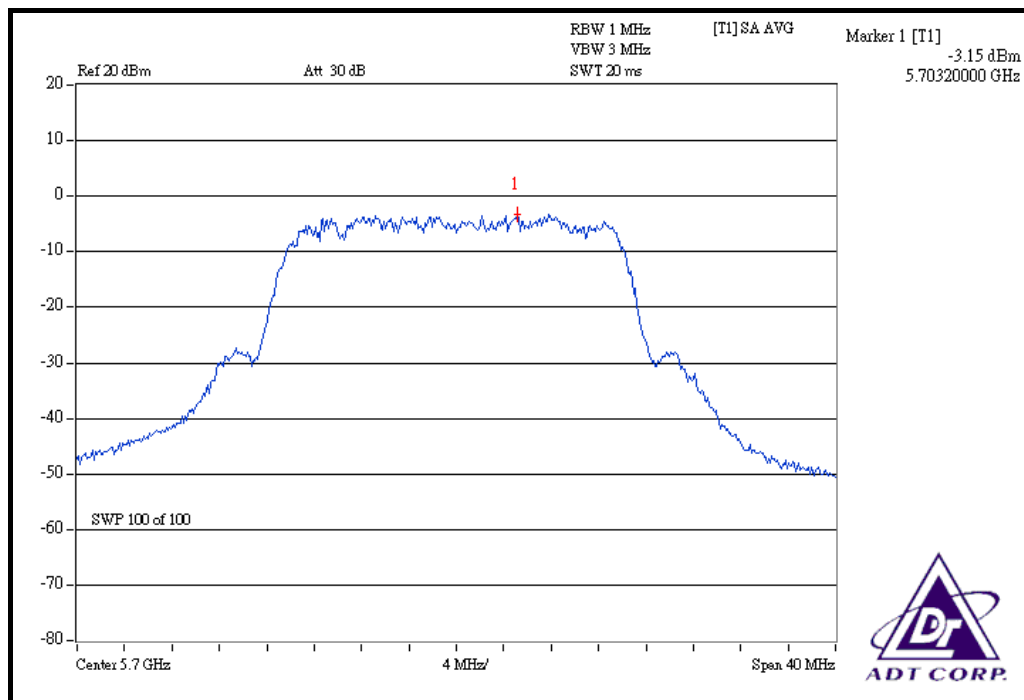
CH 9



CH 14



CH 19



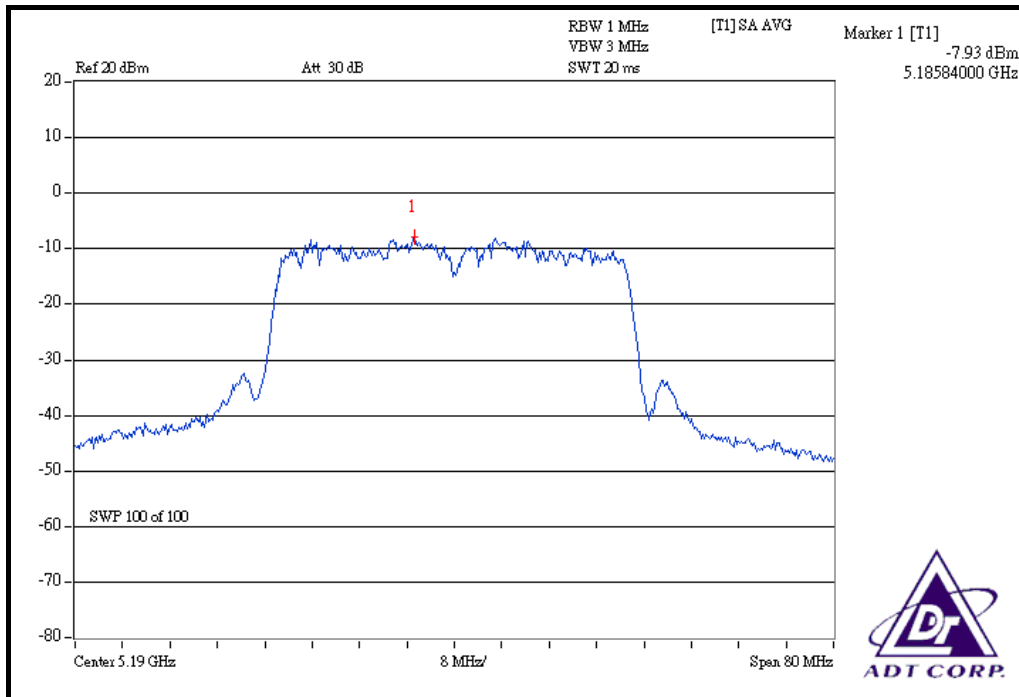


DRAFT 802.11n (40MHz) OFDM MODULATION:

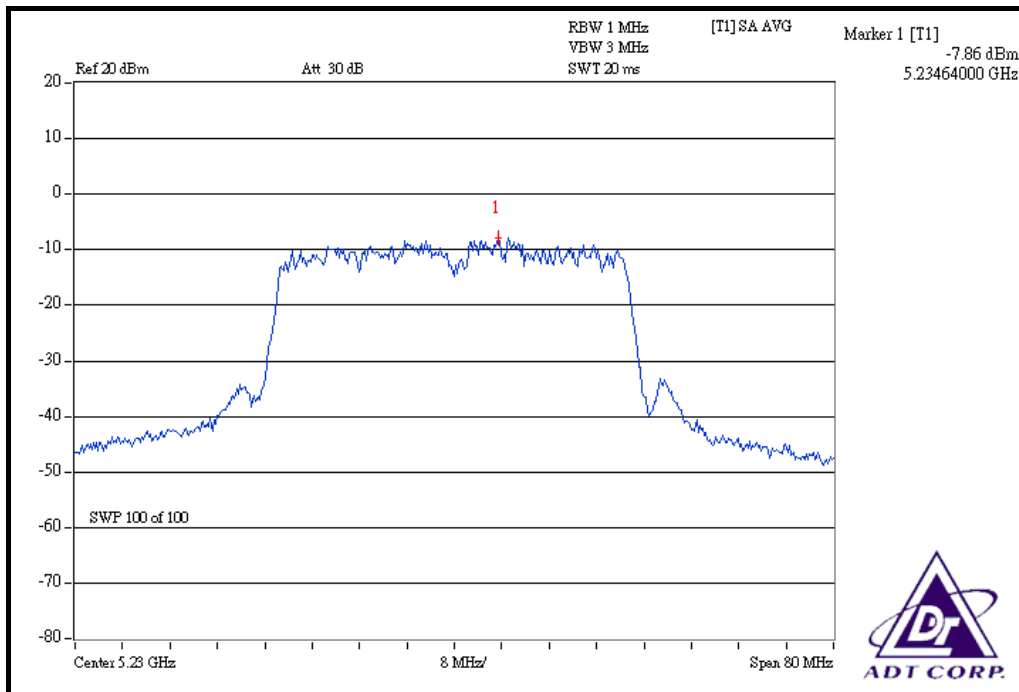
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (mW)		RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	5190	0.161	0.155	-7.93	-8.11	0.316	-5.00	4	PASS
2	5230	0.164	0.160	-7.86	-7.97	0.324	-4.89	4	PASS
3	5270	0.147	0.143	-8.33	-8.46	0.290	-5.38	11	PASS
4	5310	0.151	0.148	-8.22	-8.31	0.299	-5.25	11	PASS
5	5510	0.425	0.361	-3.72	-4.43	0.786	-1.05	11	PASS
7	5590	0.418	0.344	-3.79	-4.64	0.762	-1.18	11	PASS
9	5670	0.419	0.378	-3.78	-4.23	0.797	-0.99	11	PASS

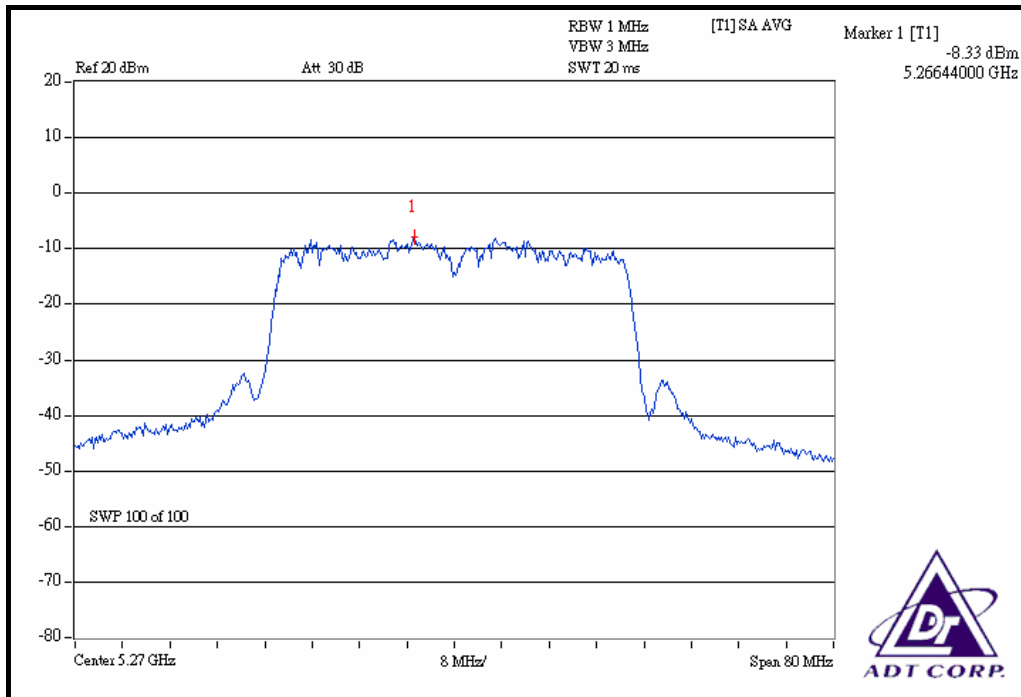
FOR CHAIN 0: CH 1



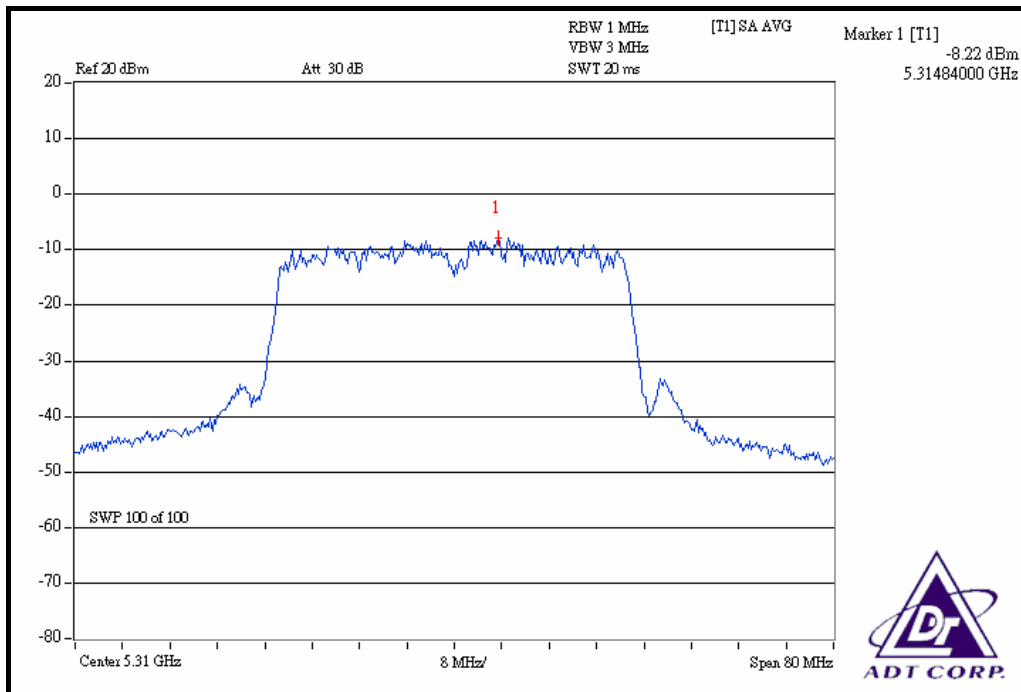
CH 2



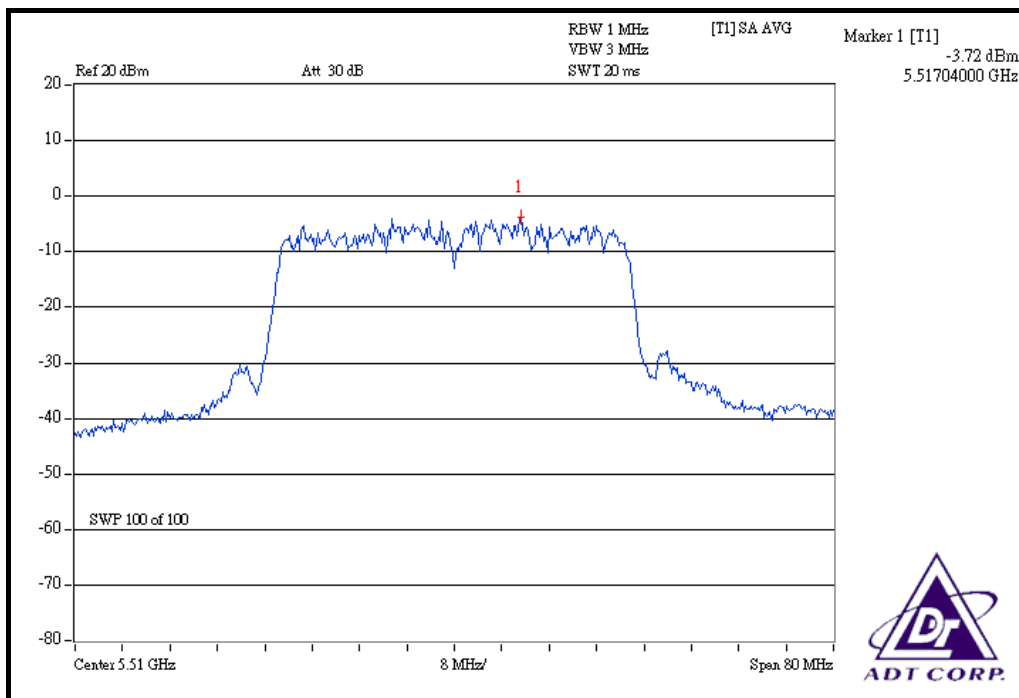
CH 3



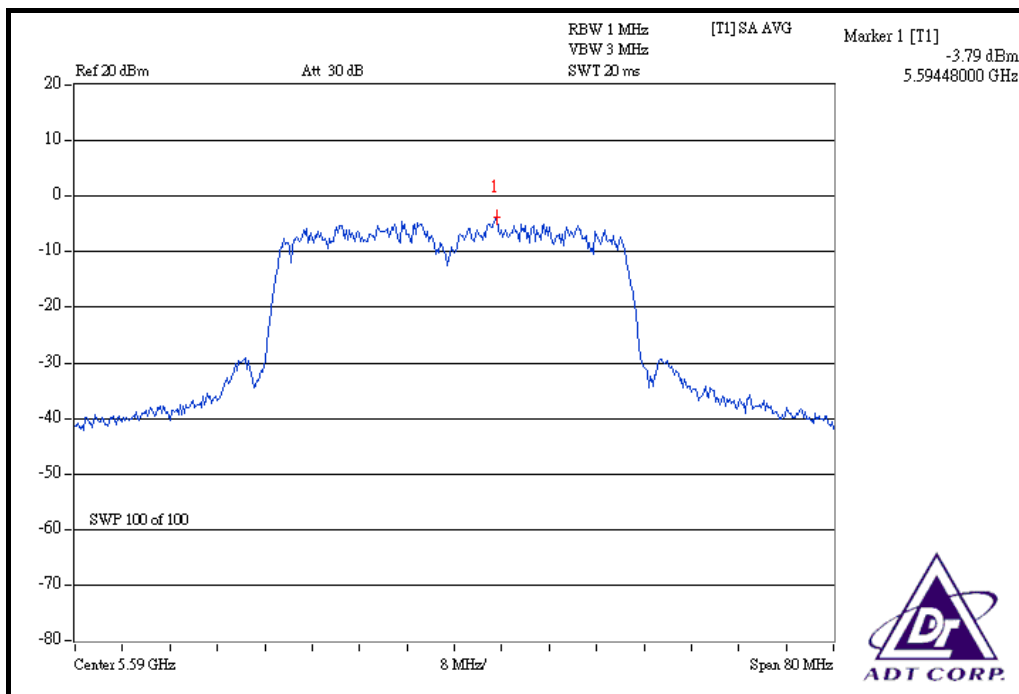
CH 4



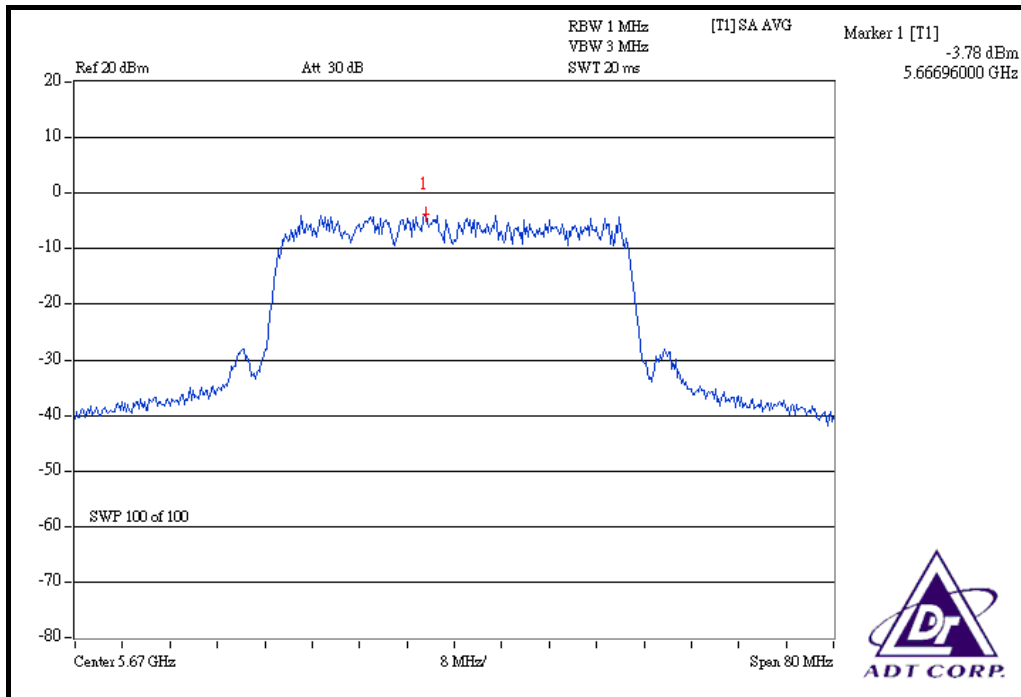
CH 5



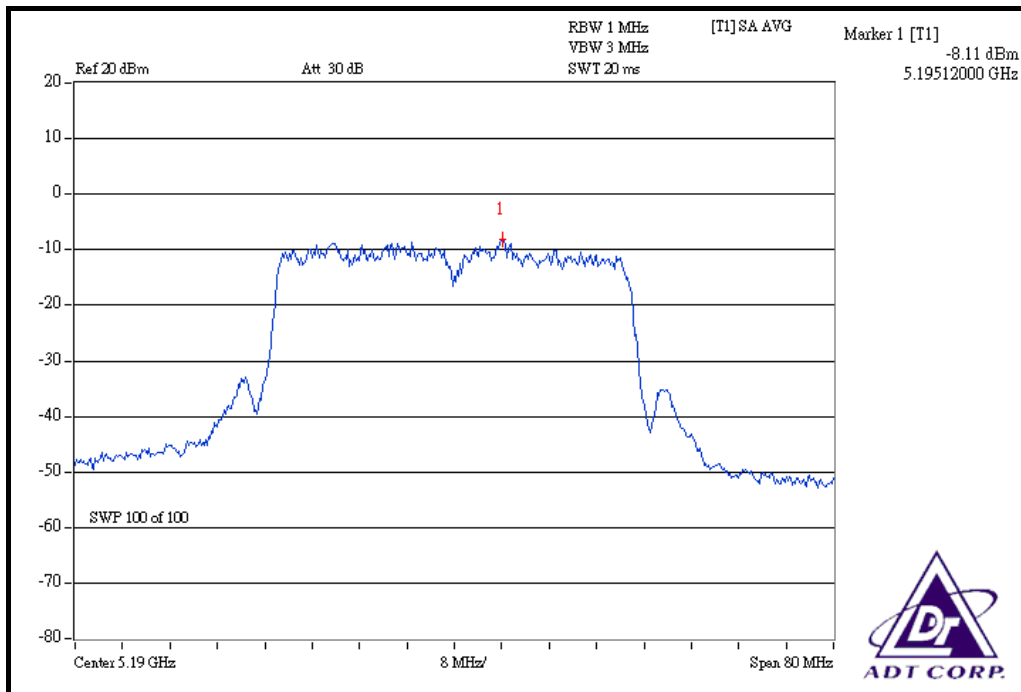
CH 7



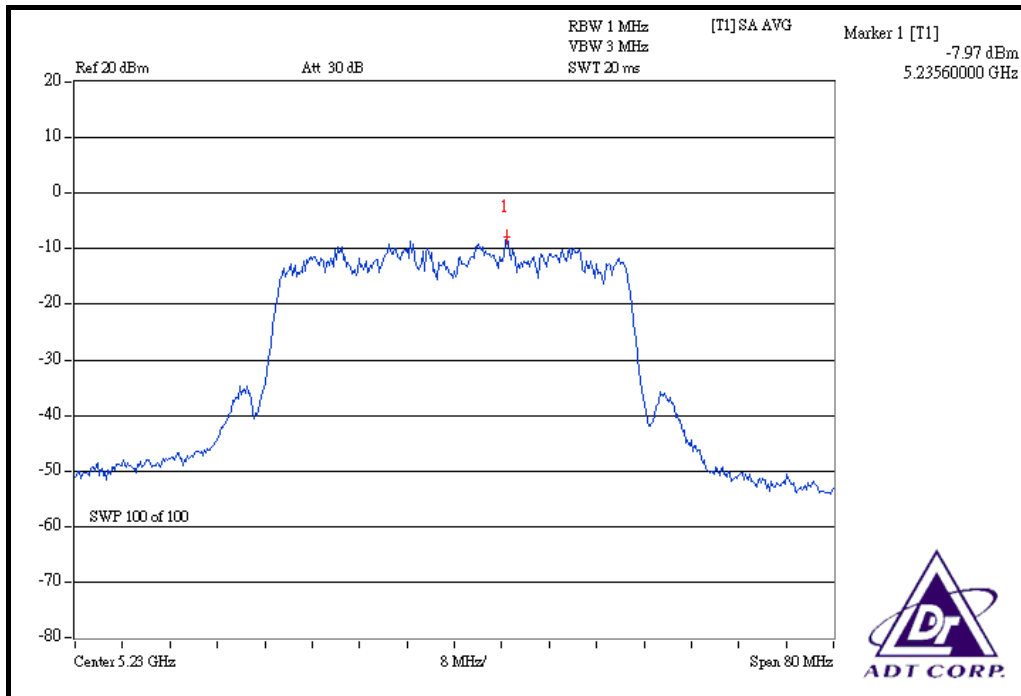
CH 9



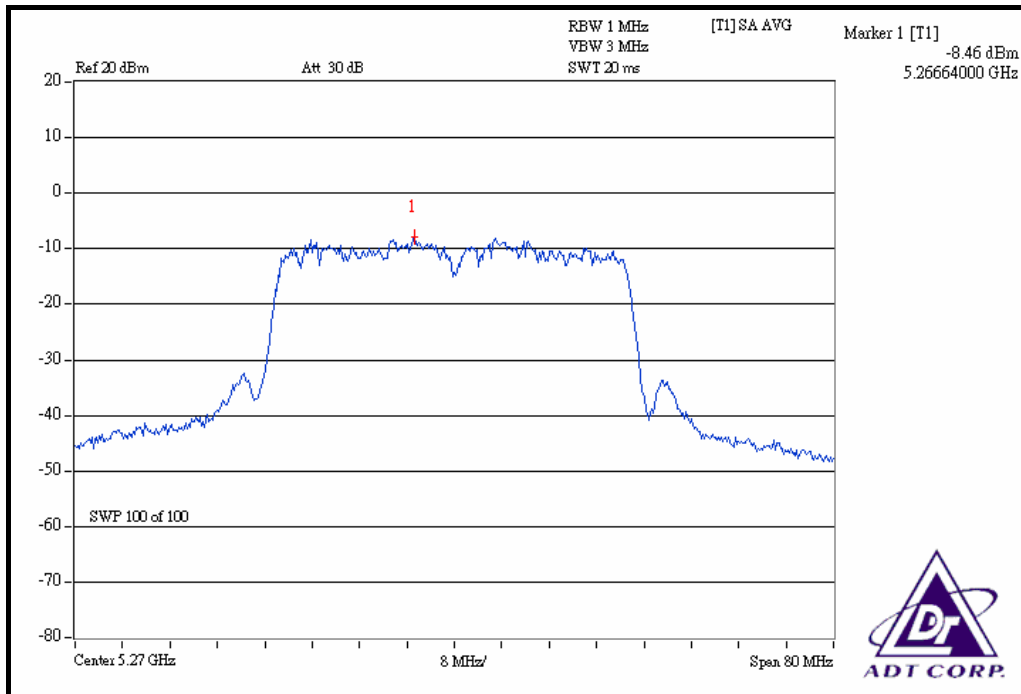
FOR CHAIN 0: CH 1



CH 2

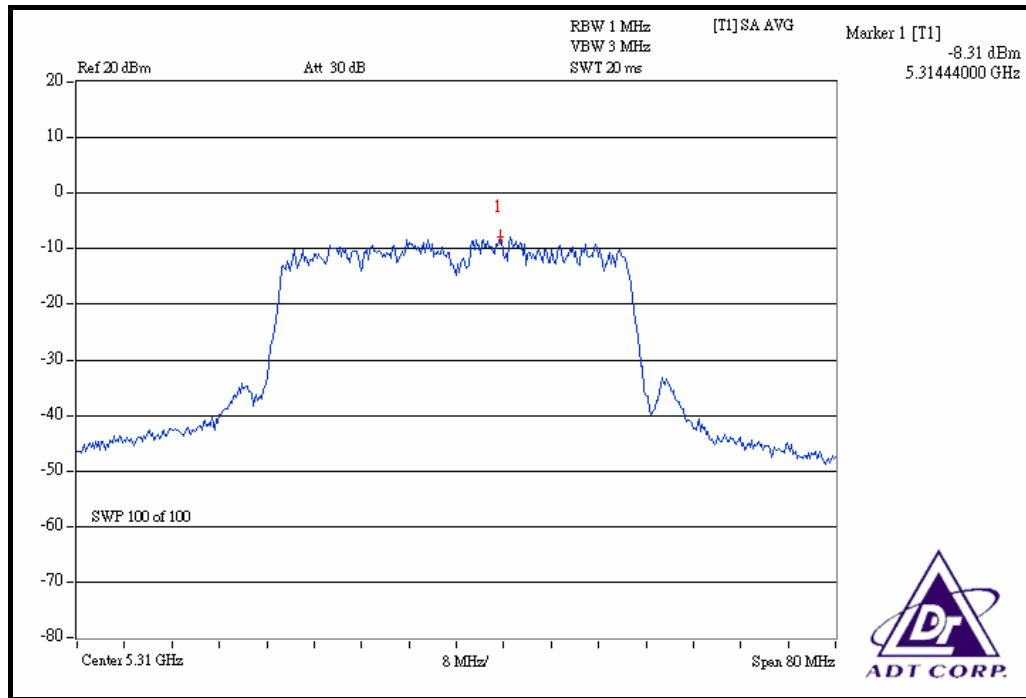


CH 3

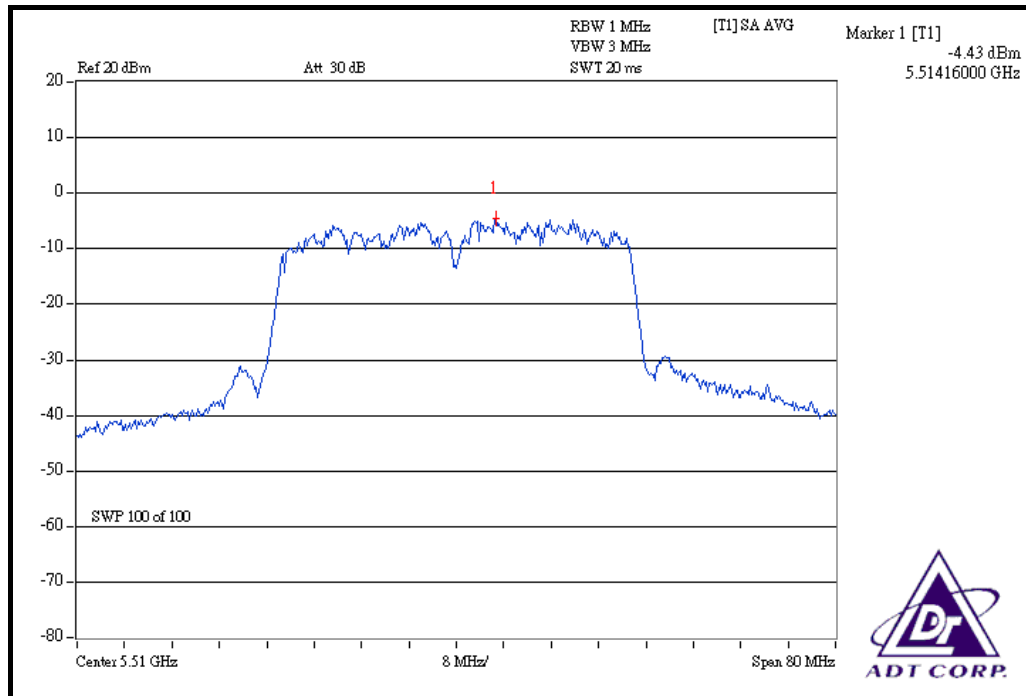




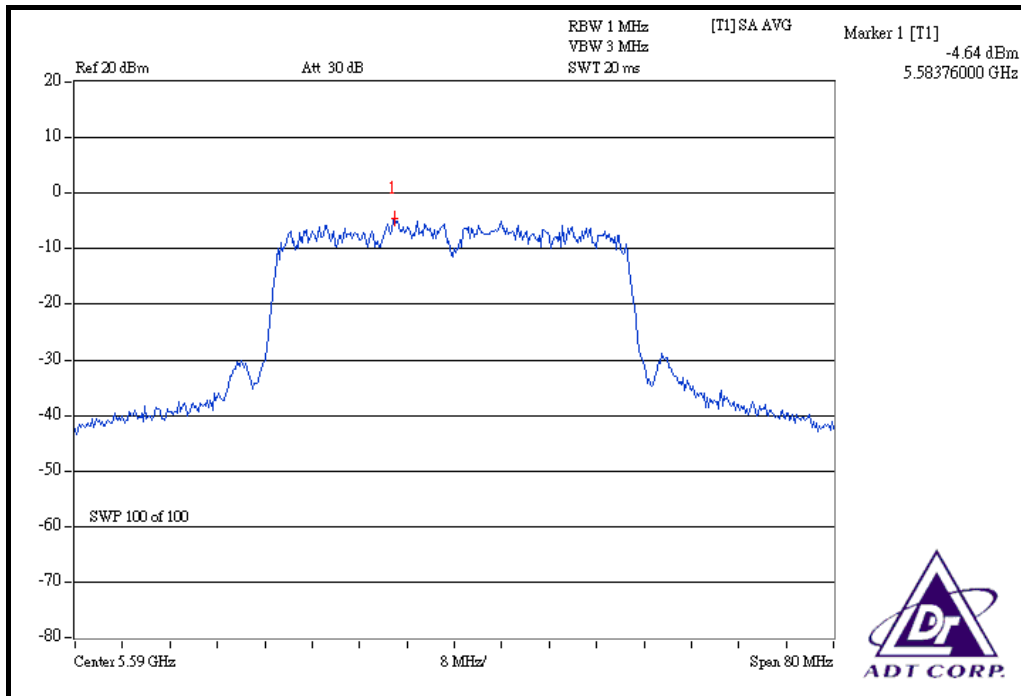
CH 4



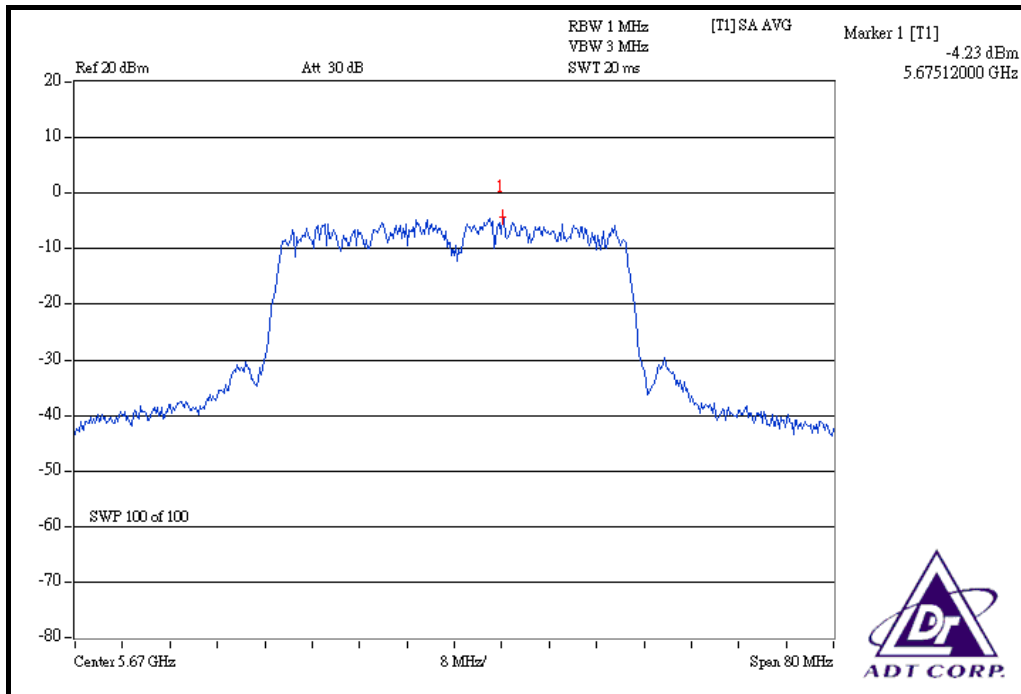
CH 5



CH 7



CH 9





4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/- 0.02% of the operating frequency over a temperature variation of -30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ANRITSU SPECTRUM ANALYZER	MS2667C	M10281	Mar. 07, 2008
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W981030	Jun. 28, 2008

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

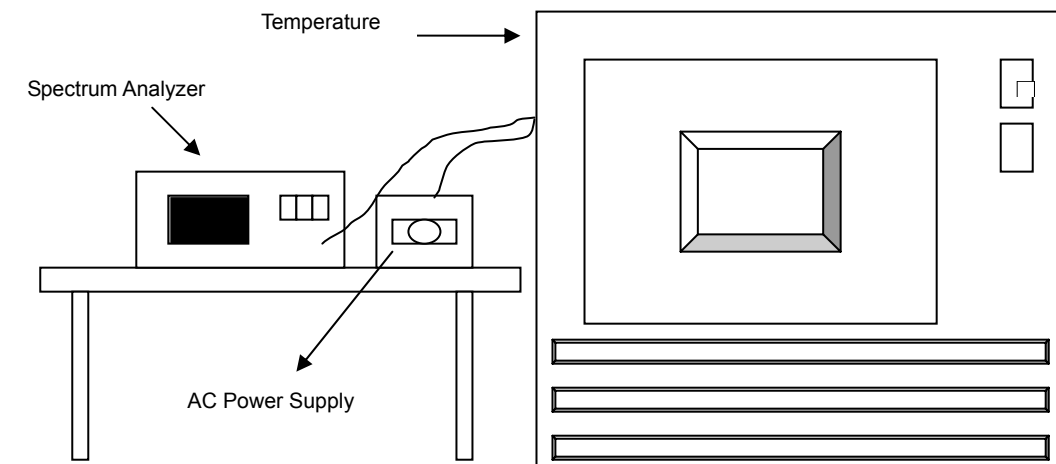
4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

Same as Item 4.1.6



4.6.7 TEST RESULTS

OPERATING FREQUENCY: 5200MHz						LIMIT: ± 0.01%			
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	126.5	5199.9723	-0.0005327	5199.9734	-0.0005115	5199.9757	-0.0004673	5199.9760	-0.0004615
	110.0	5199.9783	-0.0004173	5199.9784	-0.0004154	5199.9792	-0.0004000	5199.9820	-0.0003462
	93.5	5199.9811	-0.0003635	5199.9828	-0.0003308	5199.9833	-0.0003212	5199.9846	-0.0002962
40	126.5	5199.9834	-0.0003192	5199.9836	-0.0003154	5199.9838	-0.0003115	5199.9842	-0.0003038
	110.0	5199.9896	-0.0002000	5199.9900	-0.0001923	5199.9912	-0.0001692	5199.9934	-0.0001269
	93.5	5199.9912	-0.0001692	5199.9920	-0.0001538	5199.9926	-0.0001423	5199.9935	-0.0001250
30	126.5	5199.9957	-0.0000823	5199.9962	-0.0000726	5199.9968	-0.0000615	5199.9977	-0.0000433
	110.0	5199.9995	-0.0000105	5199.9999	-0.0000019	5200.0001	0.0000016	5200.0012	0.0000233
	93.5	5200.0032	0.0000613	5200.0036	0.0000688	5200.0036	0.0000690	5200.0047	0.0000900
20	126.5	5200.0069	0.0001331	5200.0072	0.0001394	5200.0071	0.0001363	5200.0081	0.0001566
	110.0	5200.0107	0.0002049	5200.0109	0.0002101	5200.0106	0.0002036	5200.0116	0.0002233
	93.5	5200.0144	0.0002768	5200.0146	0.0002807	5200.0141	0.0002709	5200.0151	0.0002899
10	126.5	5200.0181	0.0003486	5200.0183	0.0003514	5200.0176	0.0003382	5200.0185	0.0003566
	110.0	5200.0219	0.0004204	5200.0219	0.0004221	5200.0211	0.0004055	5200.0220	0.0004232
	93.5	5200.0256	0.0004922	5200.0256	0.0004927	5200.0246	0.0004728	5200.0255	0.0004899
0	126.5	5200.0293	0.0005640	5200.0293	0.0005634	5200.0281	0.0005401	5200.0289	0.0005565
	110.0	5200.0331	0.0006358	5200.0330	0.0006340	5200.0316	0.0006074	5200.0324	0.0006232
	93.5	5200.0368	0.0007076	5200.0366	0.0007047	5200.0351	0.0006747	5200.0359	0.0006898
-10	126.5	5200.0405	0.0007795	5200.0403	0.0007753	5200.0386	0.0007420	5200.0393	0.0007564
	110.0	5200.0443	0.0008513	5200.0440	0.0008460	5200.0421	0.0008093	5200.0428	0.0008231
	93.5	5200.0480	0.0009231	5200.0477	0.0009167	5200.0456	0.0008766	5200.0463	0.0008897
-20	126.5	5200.0517	0.0009949	5200.0513	0.0009873	5200.0491	0.0009440	5200.0497	0.0009564
	110.0	5200.0555	0.0010667	5200.0550	0.0010580	5200.0526	0.0010113	5200.0532	0.0010230
	93.5	5200.0592	0.0011385	5200.0587	0.0011286	5200.0561	0.0010786	5200.0567	0.0010897
-30	126.5	5200.0629	0.0012103	5200.0624	0.0011993	5200.0596	0.0011459	5200.0601	0.0011563
	110.0	5200.0667	0.0012821	5200.0660	0.0012700	5200.0631	0.0012132	5200.0636	0.0012230
	93.5	5200.0704	0.0013540	5200.0697	0.0013406	5200.0666	0.0012805	5200.0671	0.0012896



4.7 BAND EDGES MEASUREMENT

4.7.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
802.11a:			
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008
DRAFT 802.11n (20MHz), DRAFT 802.11n (40MHz):			
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Dec. 01, 2007
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Jan. 04, 2008
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-405	Dec. 18, 2007
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 16, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	230128/4	Nov. 14, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	233233/4	Nov. 14, 2007
Software ADT.	ADT_Radiated_V7.6	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA
Turn Table ADT.	TT100.	TT93021704	NA
Turn Table Controller ADT.	SC100.	SC93021704	NA

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

4.7.2 TEST PROCEDURE

802.11a:

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set both RBW and VBW of spectrum analyzer to 1MHz / 3MHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

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

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. Set both RBW and VBW of spectrum analyzer to 1MHz / 3MHz 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

4.7.3 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.7.4 TEST RESULTS

For signals in the restricted bands above and below the 5.15 to 5.35GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak field strength of the intentional signal made on the OATS to calculate the field strength of the unintentional signals.

The spectrum plots (Peak RBW = 1MHz, VBW = 3MHz) are attached on the following pages.

802.11a OFDM MODULATION:

FOR FREQUENCY BAND: 5.150 ~ 5.350GHz

Channel 1 (5180MHz)

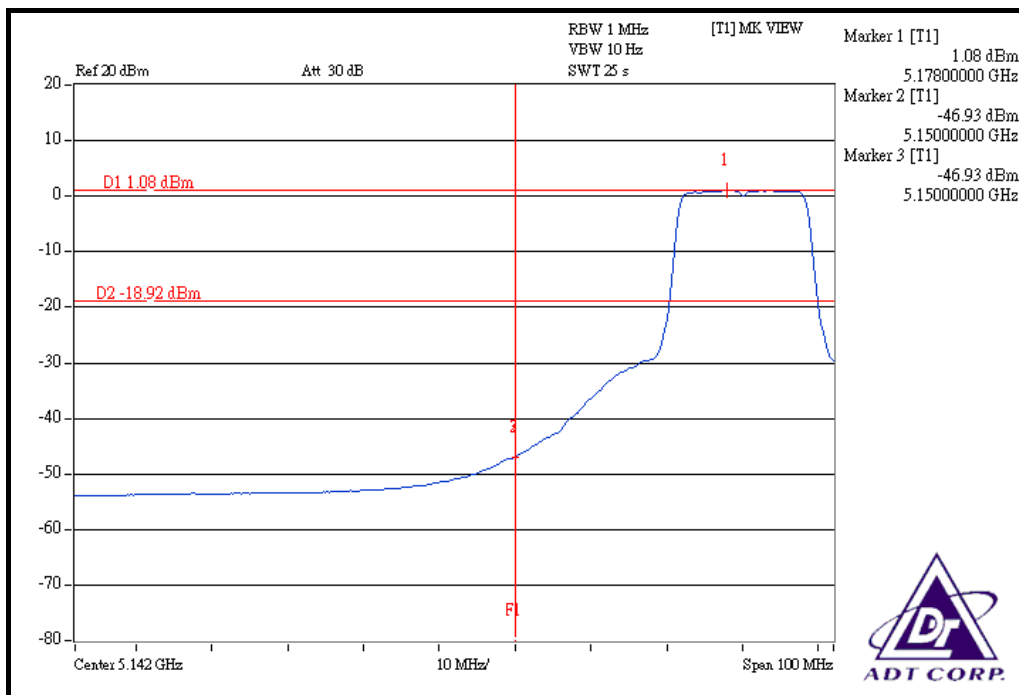
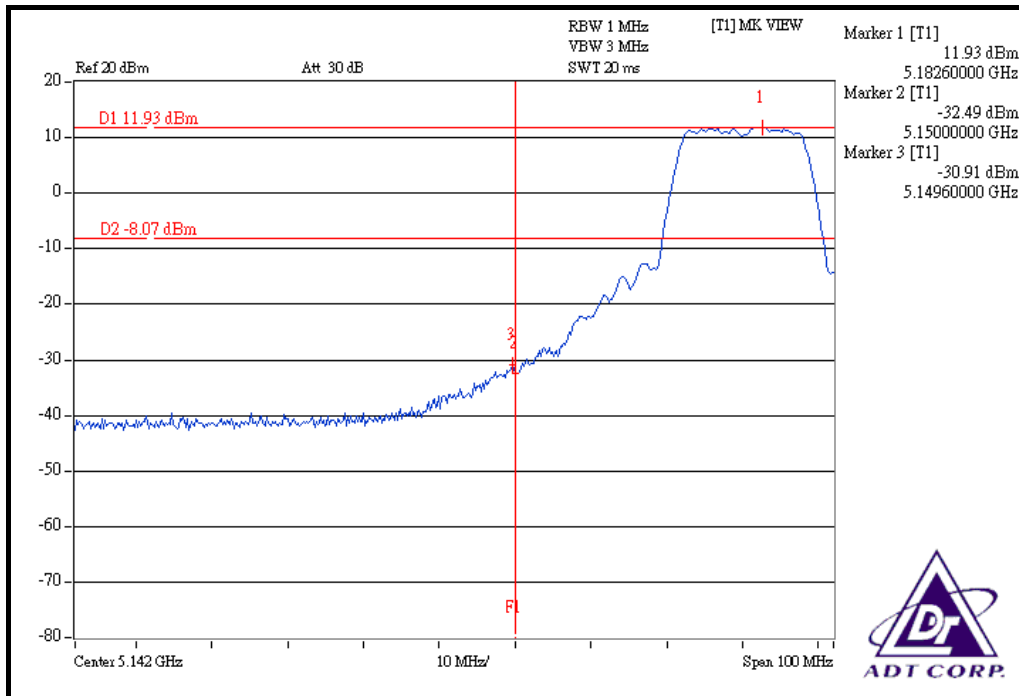
The band edge emission plot on the next page shows 42.84dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 112.57dBuV/m (Peak), so the maximum field strength in restrict band is $112.57 - 42.84 = 69.73$ dBuV/m which is under 74dBuV/m limit.

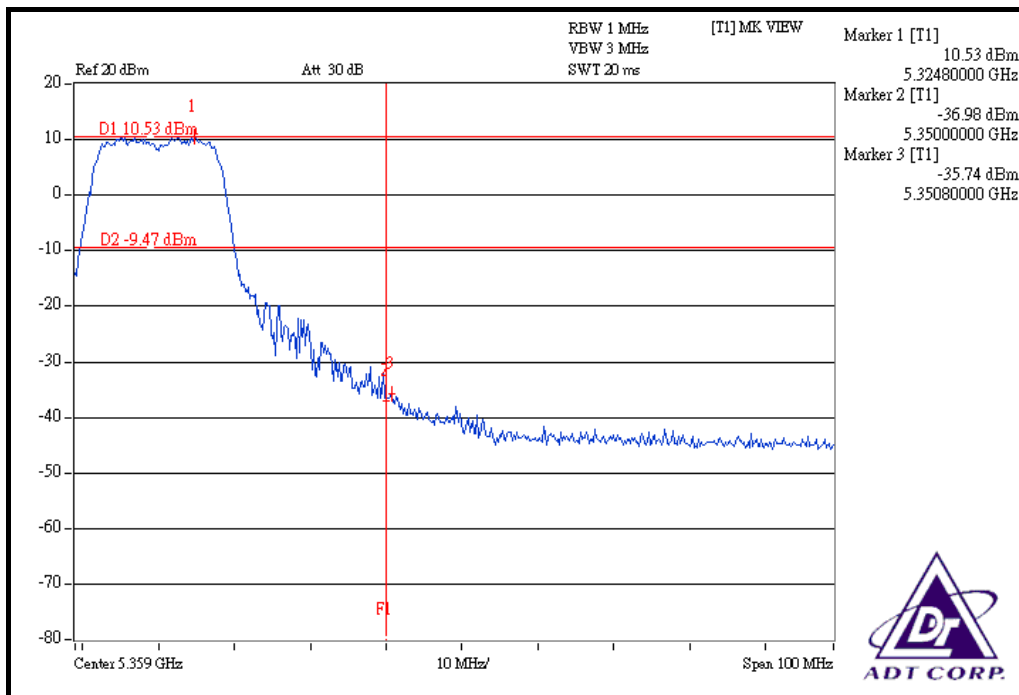
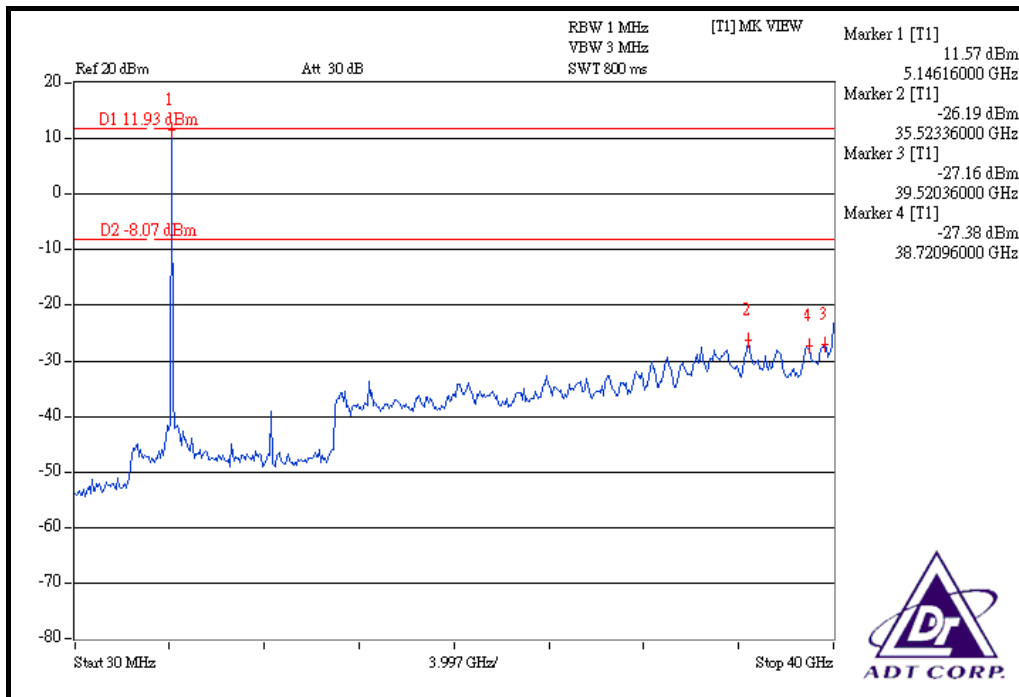
The band edge emission plot on the next page shows 48.01dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 99.90dBuV/m (Average), so the maximum field strength in restrict band is $99.90 - 48.01 = 51.89$ dBuV/m which is under 54dBuV/m limit.

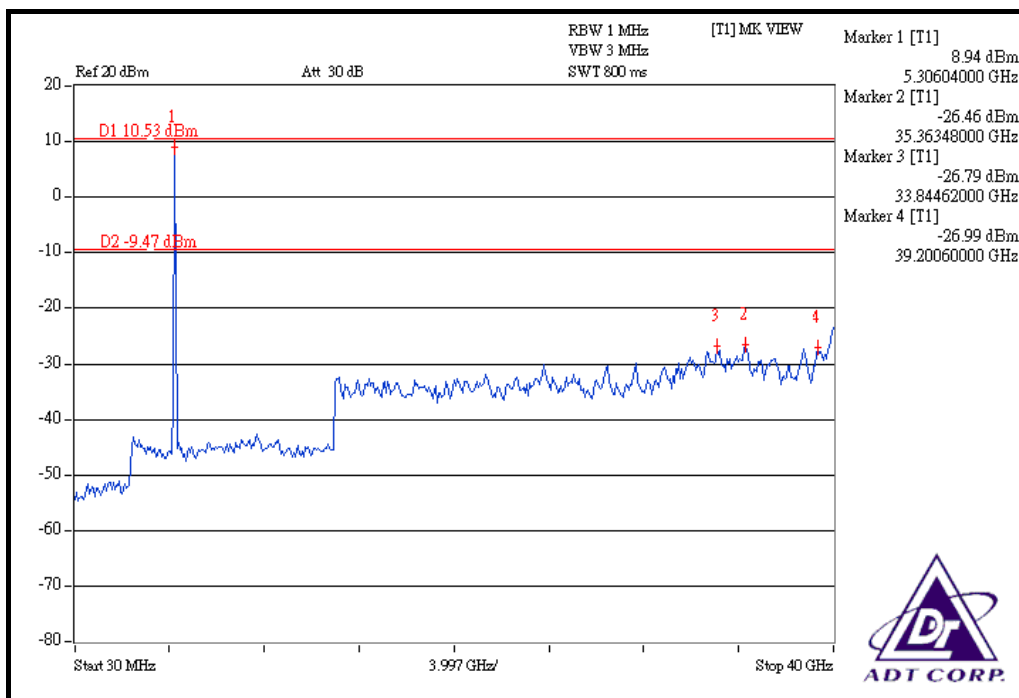
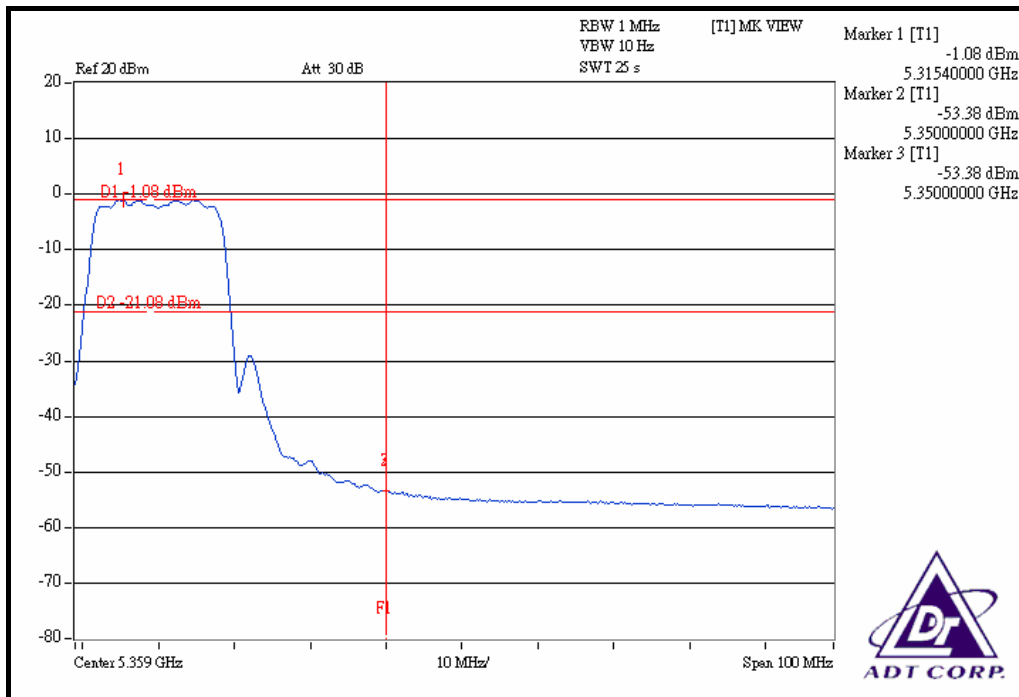
Channel 8 (5320MHz)

The band edge emission plot on the next second page shows 46.27dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 112.06dBuV/m (Peak), so the maximum field strength in restrict band is $112.06 - 46.27 = 65.79$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 52.30dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 99.27dBuV/m (Average), so the maximum field strength in restrict band is $99.27 - 52.30 = 46.97$ dBuV/m which is under 54dBuV/m limit.







FOR FREQUENCY BAND: 5.470 ~ 5.725GHz

Channel 9 (5500MHz)

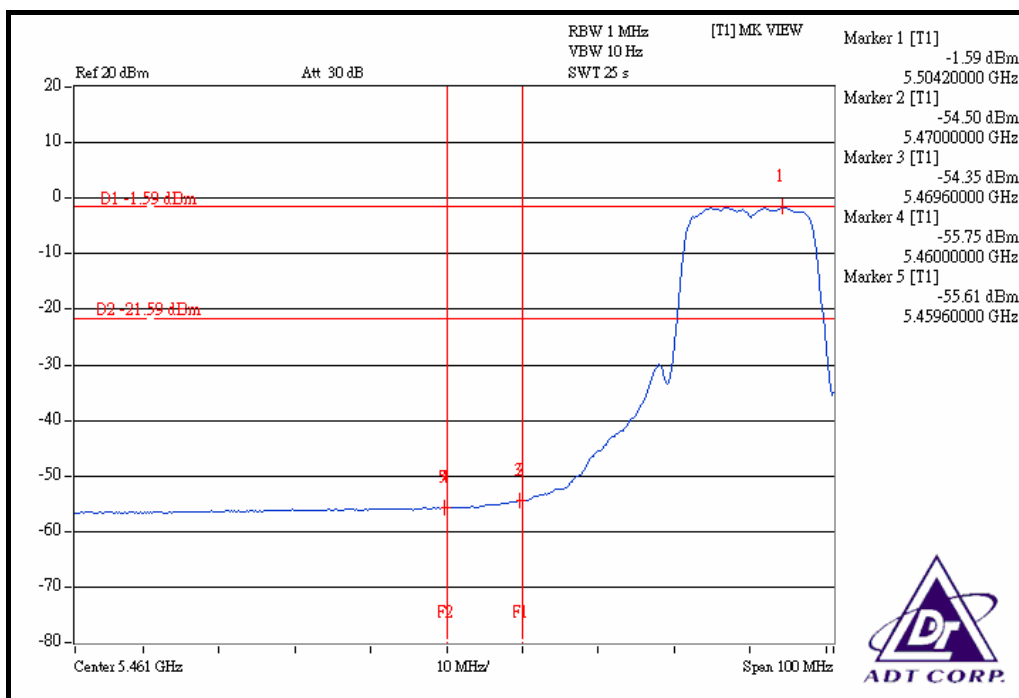
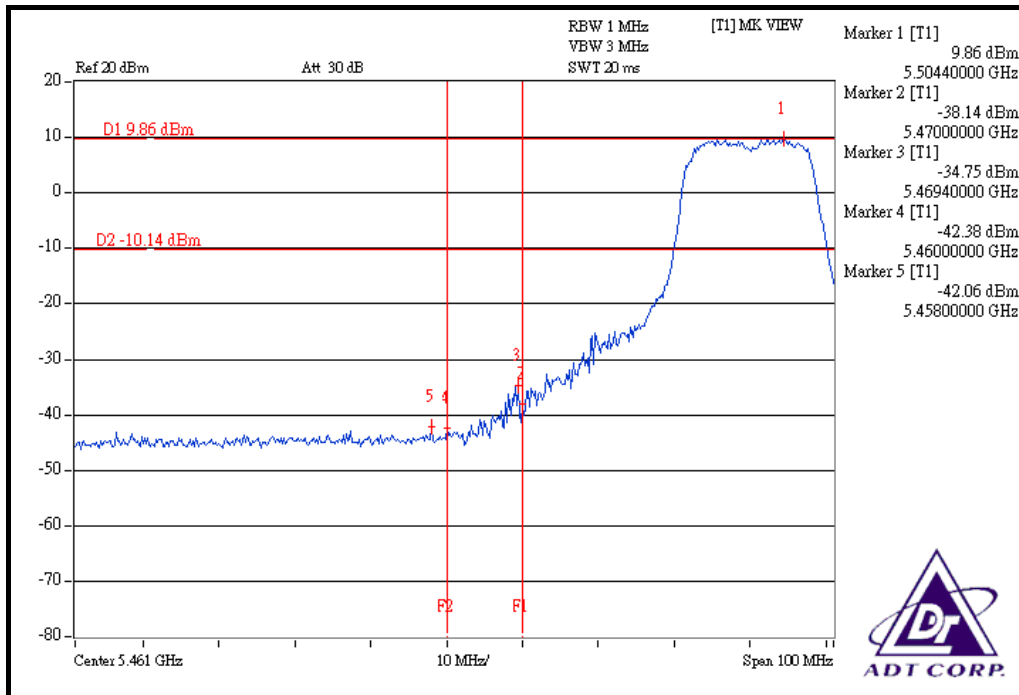
The band edge emission plot (5.470GHz) on the next page shows 44.61dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 9 is 111.43dBuV/m (Peak), so the maximum field strength out of band emission is $111.43 - 44.61 = 66.82$ dBuV/m which is under 68.3dBuV/m limit.

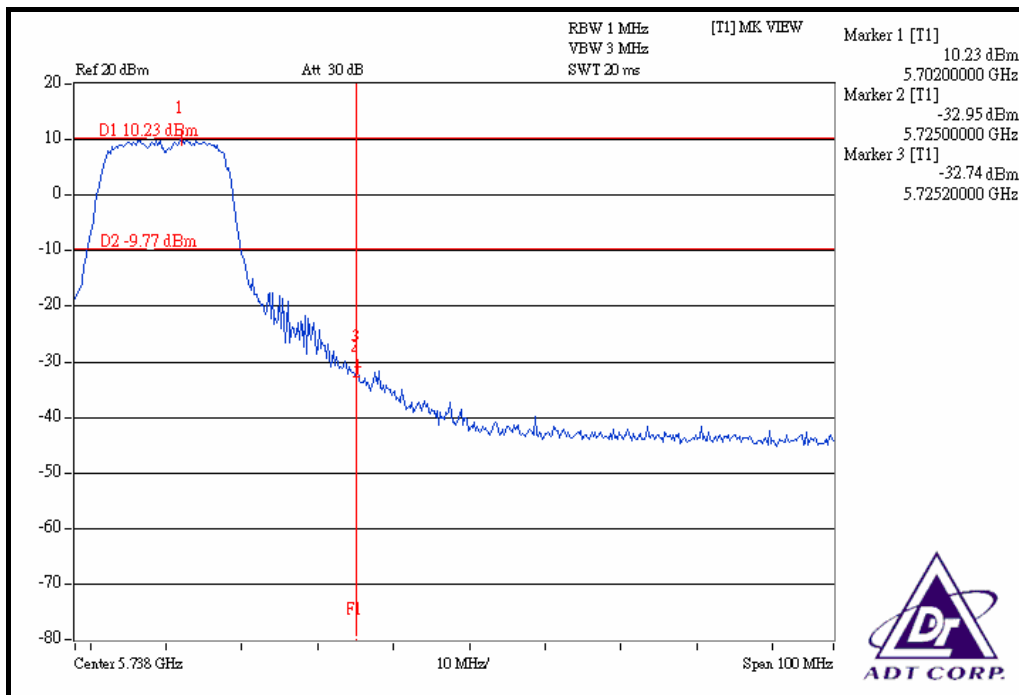
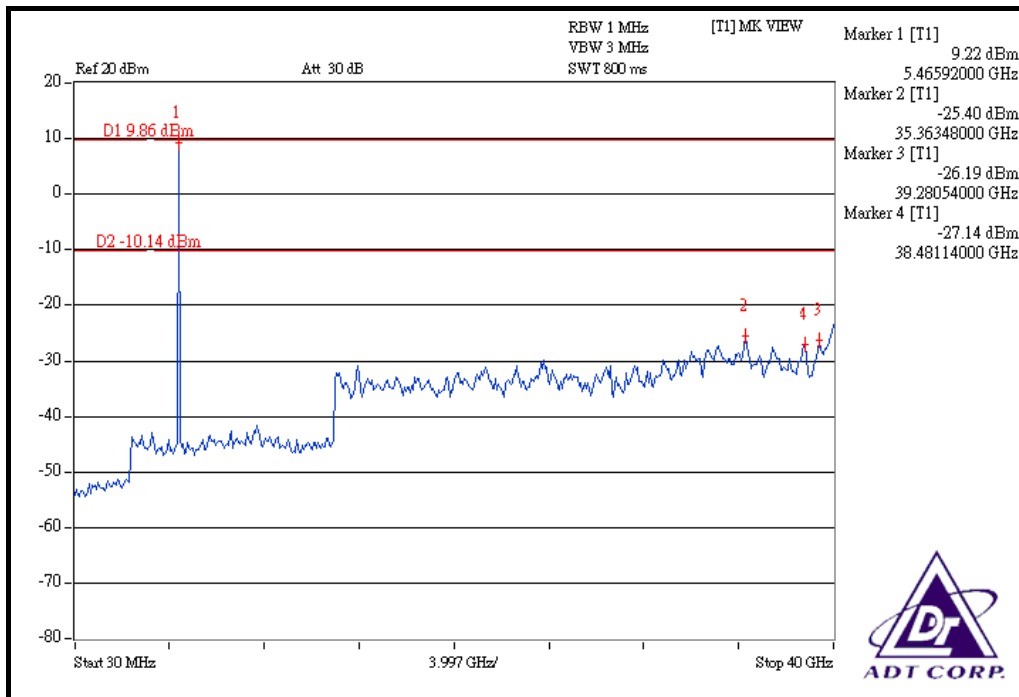
The band edge emission plot (5.460GHz) on the next page shows 51.92dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 9 is 111.43dBuV/m (Peak), so the maximum field strength in restrict band is $111.43 - 51.92 = 59.51$ dBuV/m which is under 74dBuV/m limit.

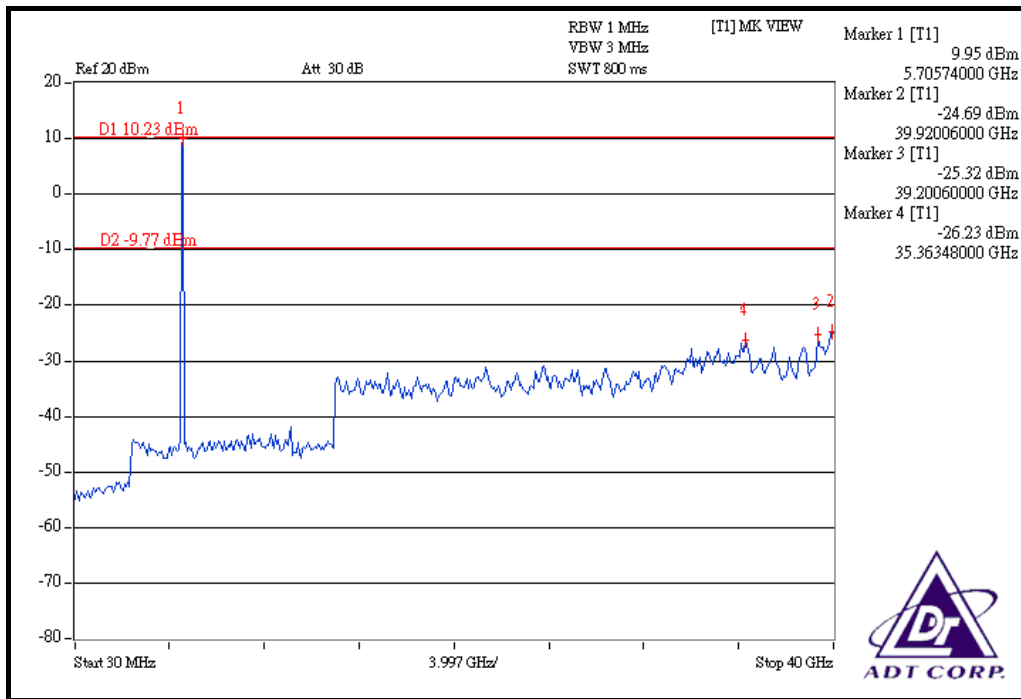
The band edge emission plot (5.460GHz) on the next page shows 54.02dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 9 is 100.56dBuV/m (Average), so the maximum field strength in restrict band is $100.56 - 54.02 = 46.54$ dBuV/m which is under 54dBuV/m limit.

Channel 19 (5700MHz)

The band edge emission plot on the next second page shows 42.97dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 19 is 110.26dBuV/m (Peak), so the maximum field strength out of band emission is $110.26 - 42.97 = 67.29$ dBuV/m which is under 68.3dBuV/m limit.







DRAFT 802.11n (20MHz) OFDM MODULATION:

FOR FREQUENCY BAND: 5.150 ~ 5.350GHz

Channel 1 (5180MHz)

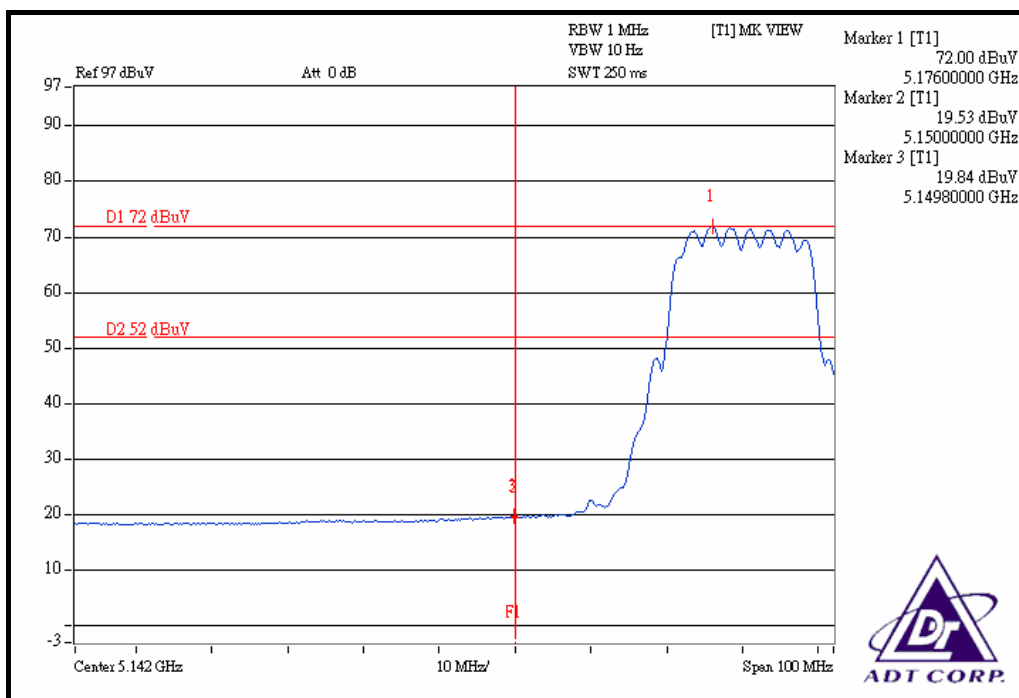
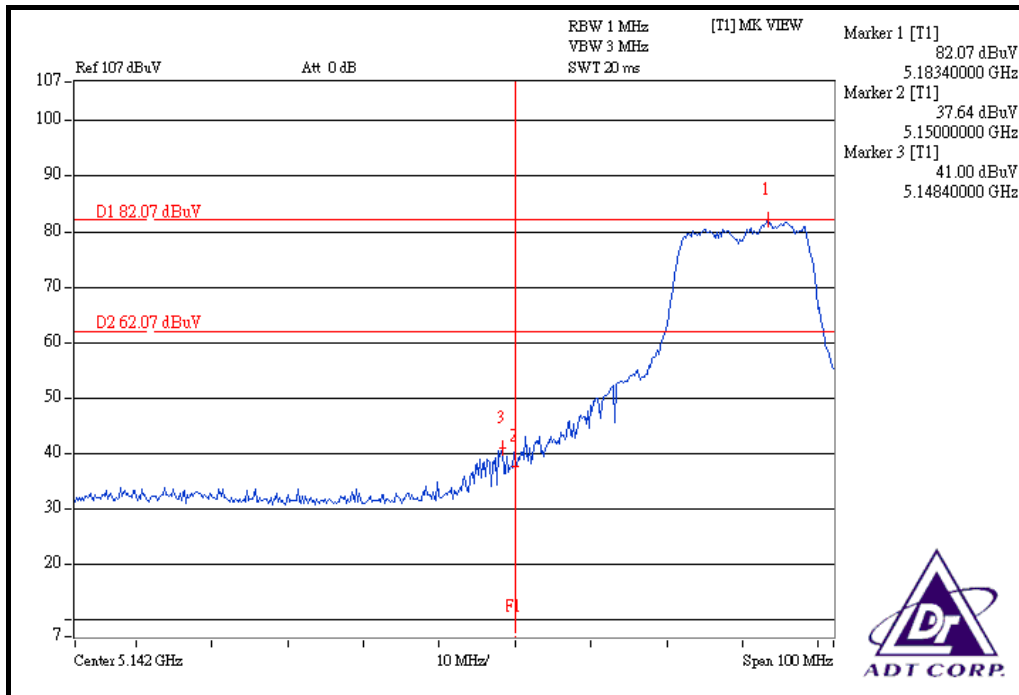
The band edge emission plot on the next page shows 41.07dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 109.88dBuV/m (Peak), so the maximum field strength in restrict band is $109.88 - 41.07 = 68.81$ dBuV/m which is under 74dBuV/m limit.

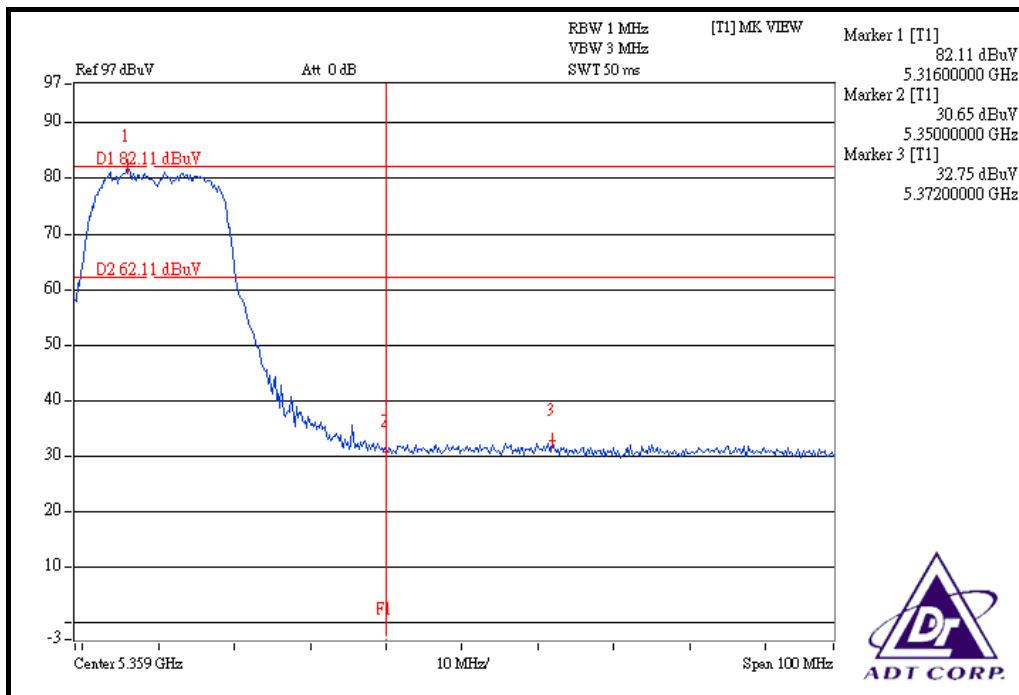
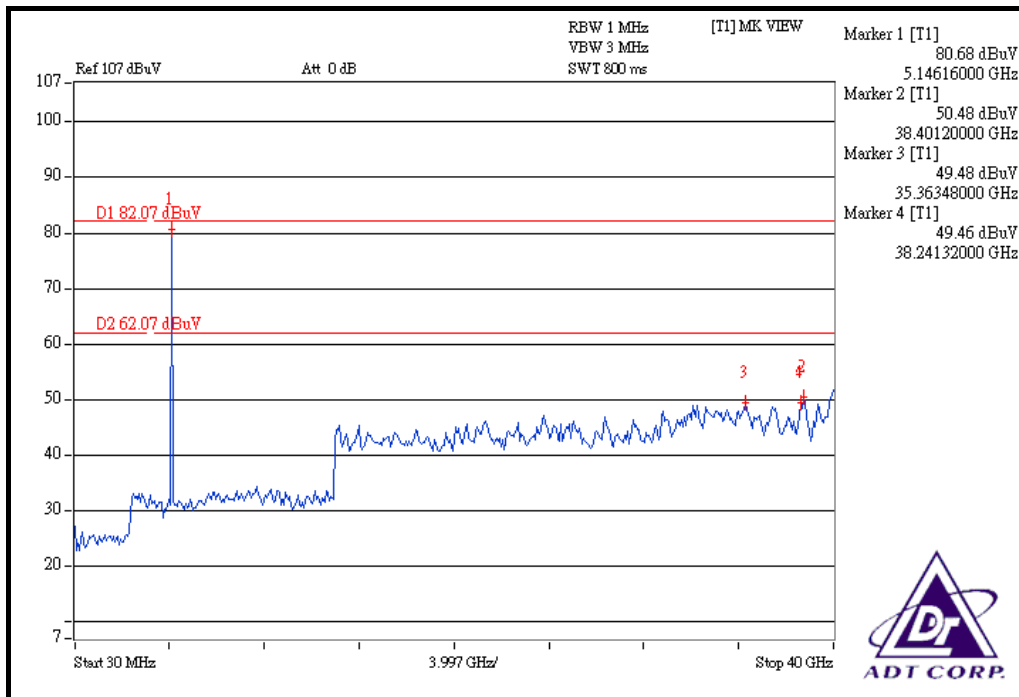
The band edge emission plot on the next page shows 52.16dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 98.09dBuV/m (Average), so the maximum field strength in restrict band is $98.09 - 52.16 = 45.93$ dBuV/m which is under 54dBuV/m limit.

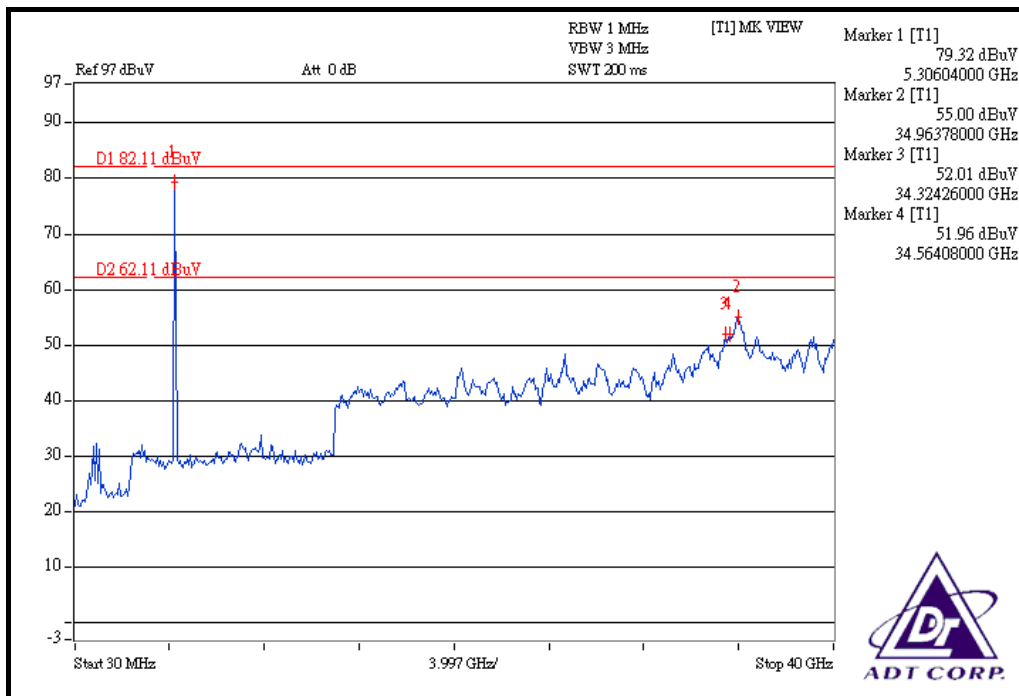
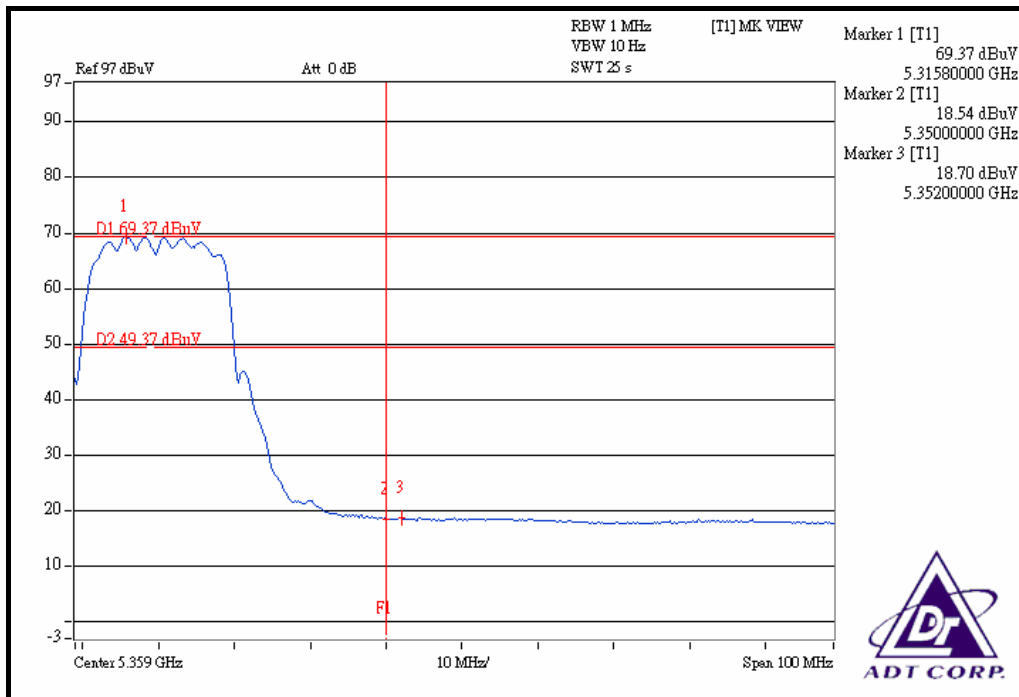
Channel 8 (5320MHz)

The band edge emission plot on the next second page shows 49.36dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 109.75dBuV/m (Peak), so the maximum field strength in restrict band is $109.75 - 49.36 = 60.39$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 50.67dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 96.97dBuV/m (Average), so the maximum field strength in restrict band is $96.97 - 50.67 = 46.30$ dBuV/m which is under 54dBuV/m limit.







FOR FREQUENCY BAND: 5.470 ~ 5.725GHz

Channel 9 (5500MHz)

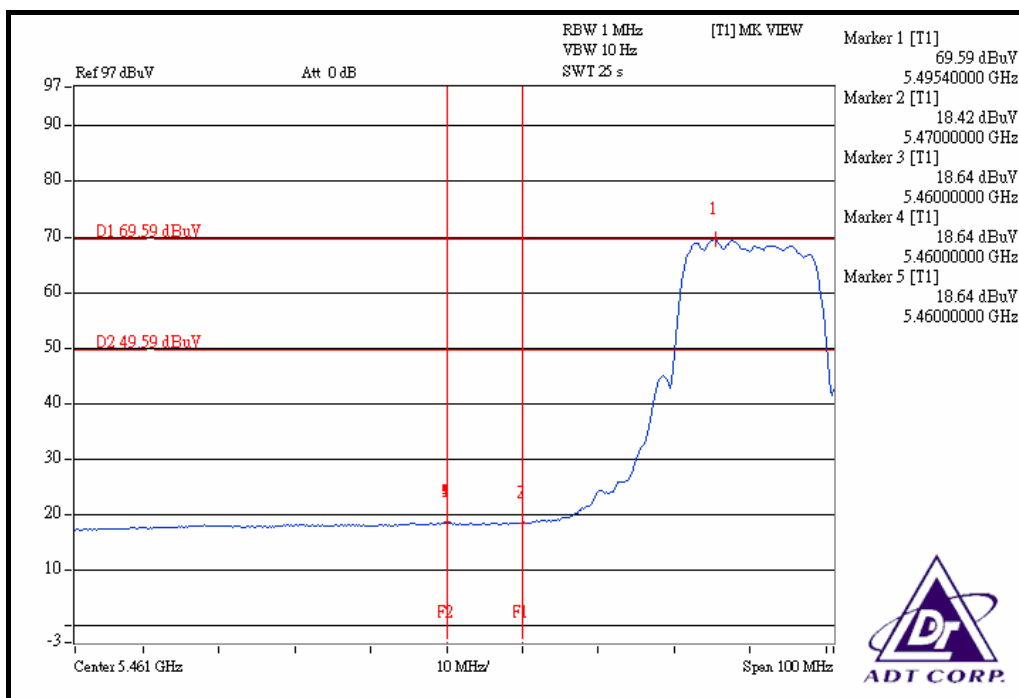
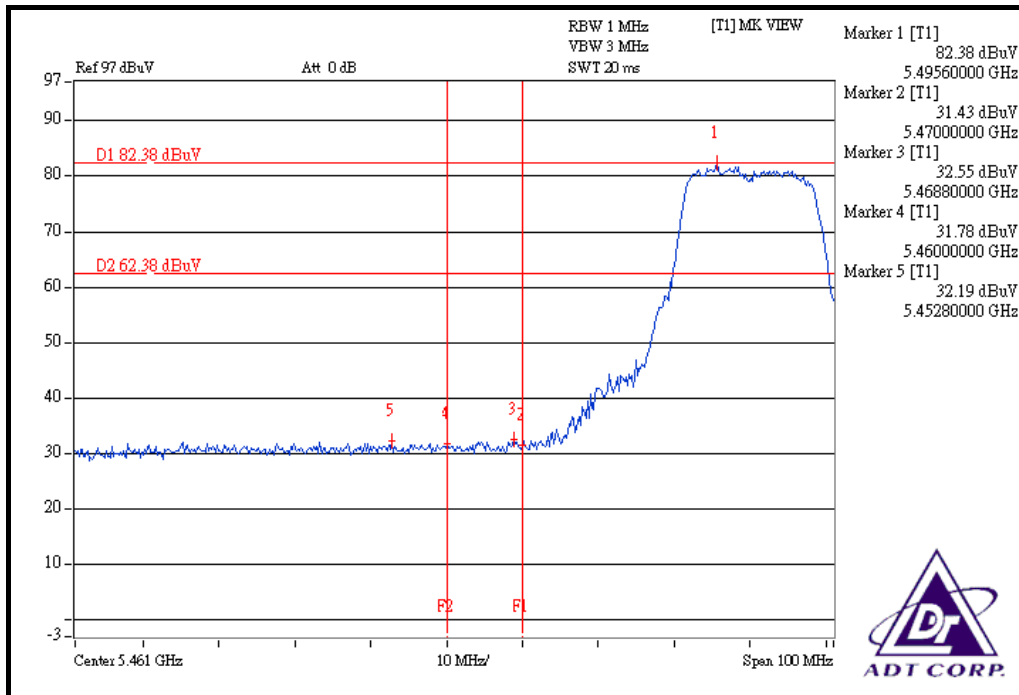
The band edge emission plot (5.470GHz) on the next page shows 49.83dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 9 is 106.57dBuV/m (Peak), so the maximum field strength out of band emission is $106.57 - 49.83 = 56.74$ dBuV/m which is under 68.3dBuV/m limit.

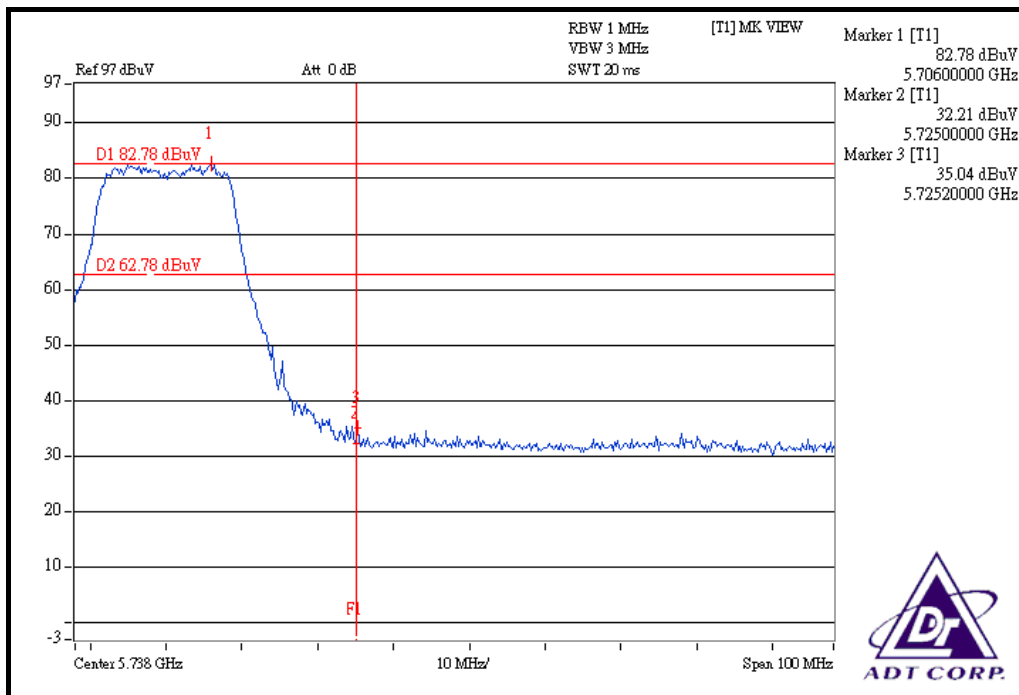
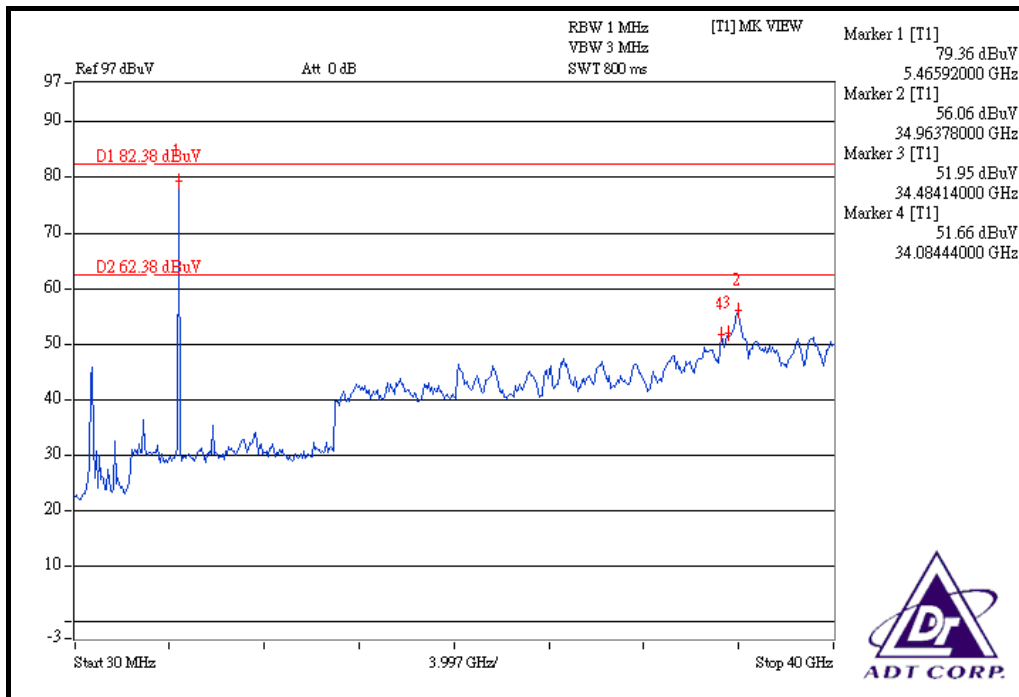
The band edge emission plot (5.460GHz) on the next page shows 50.19dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 9 is 106.57dBuV/m (Peak), so the maximum field strength in restrict band is $106.57 - 50.19 = 56.38$ dBuV/m which is under 74dBuV/m limit.

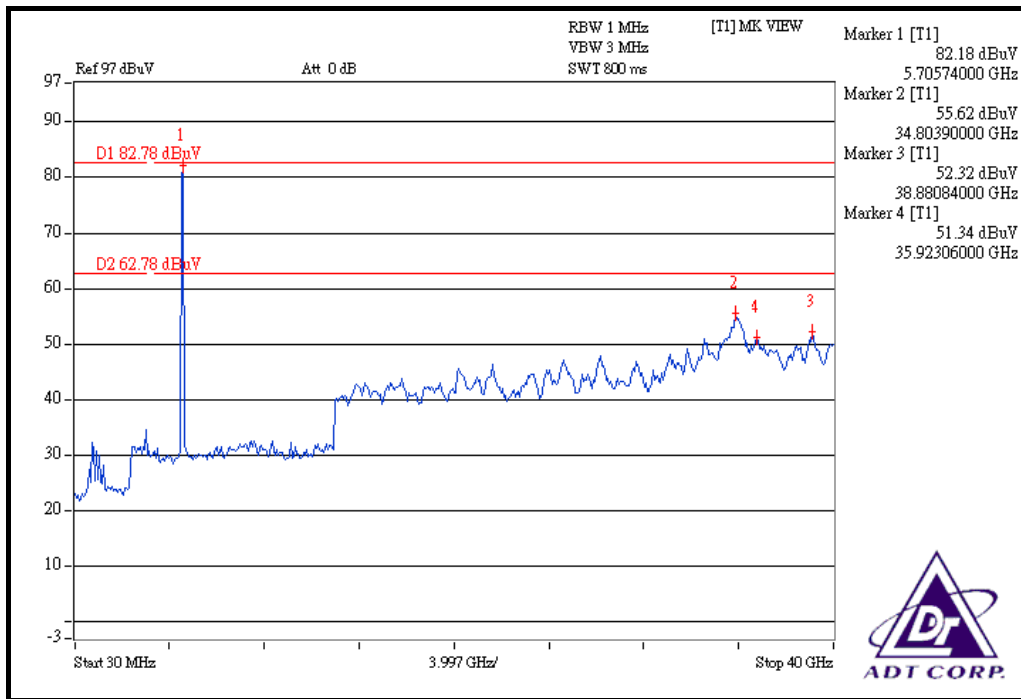
The band edge emission plot (5.460GHz) on the next page shows 50.95dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 9 is 95.06dBuV/m (Average), so the maximum field strength in restrict band is $95.06 - 50.95 = 44.11$ dBuV/m which is under 54dBuV/m limit.

Channel 19 (5700MHz)

The band edge emission plot on the next second page shows 47.74dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 19 is 107.29dBuV/m (Peak), so the maximum field strength out of band emission is $107.29 - 47.74 = 59.55$ dBuV/m which is under 68.3dBuV/m limit.







DRAFT 802.11n (40MHz) OFDM MODULATION:

FOR FREQUENCY BAND: 5.150 ~ 5.350GHz

Channel 1 (5190MHz)

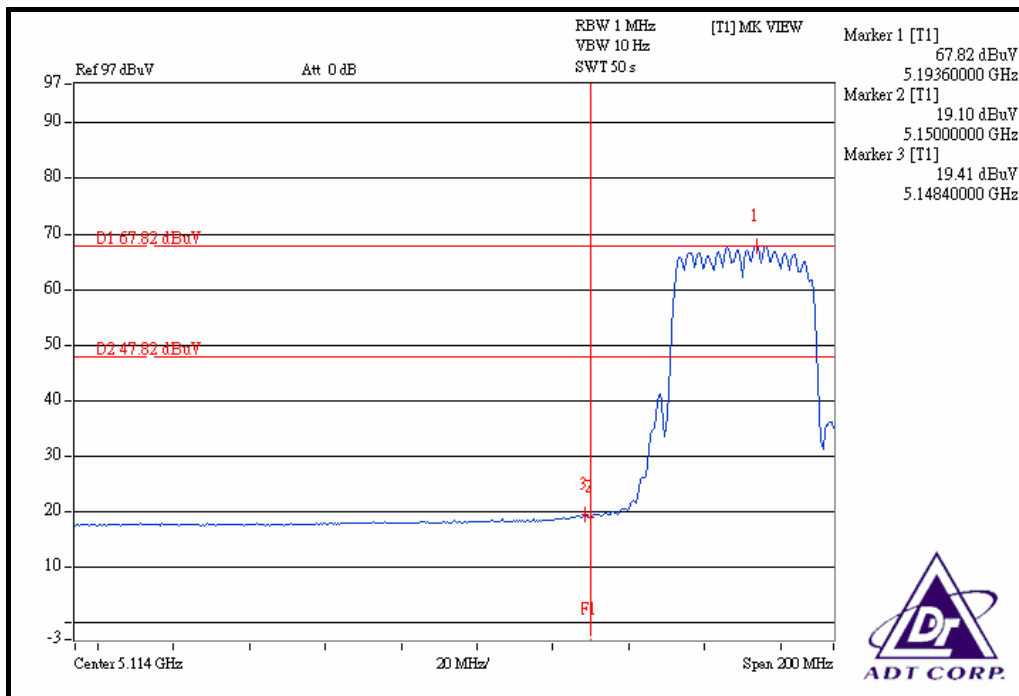
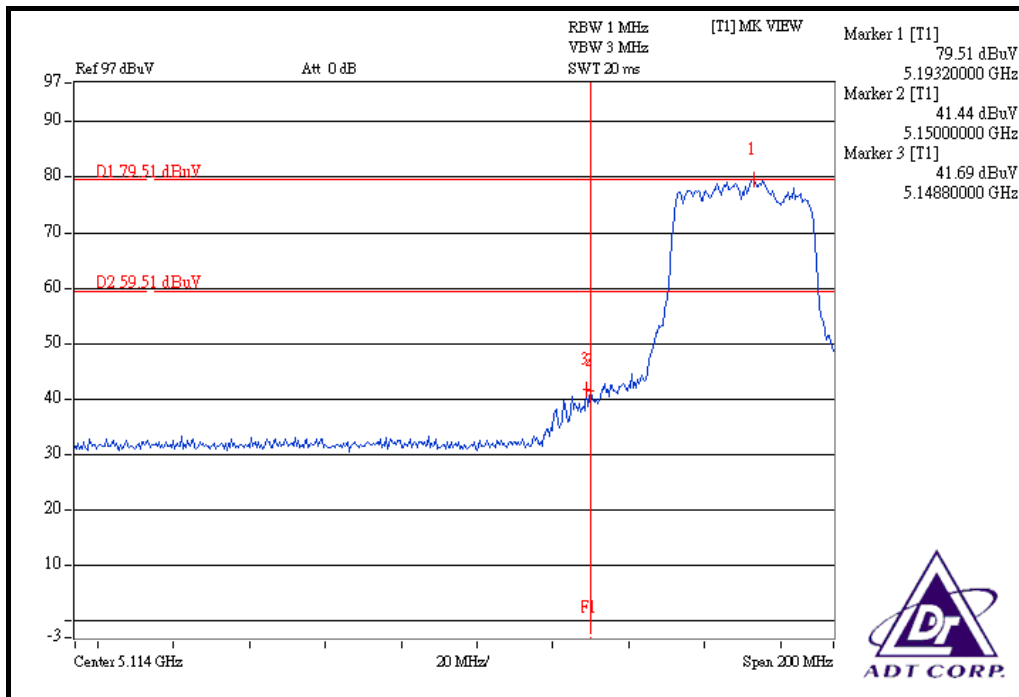
The band edge emission plot on the next page shows 37.82dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 105.68dBuV/m (Peak), so the maximum field strength in restrict band is $105.68 - 37.82 = 67.86$ dBuV/m which is under 74dBuV/m limit.

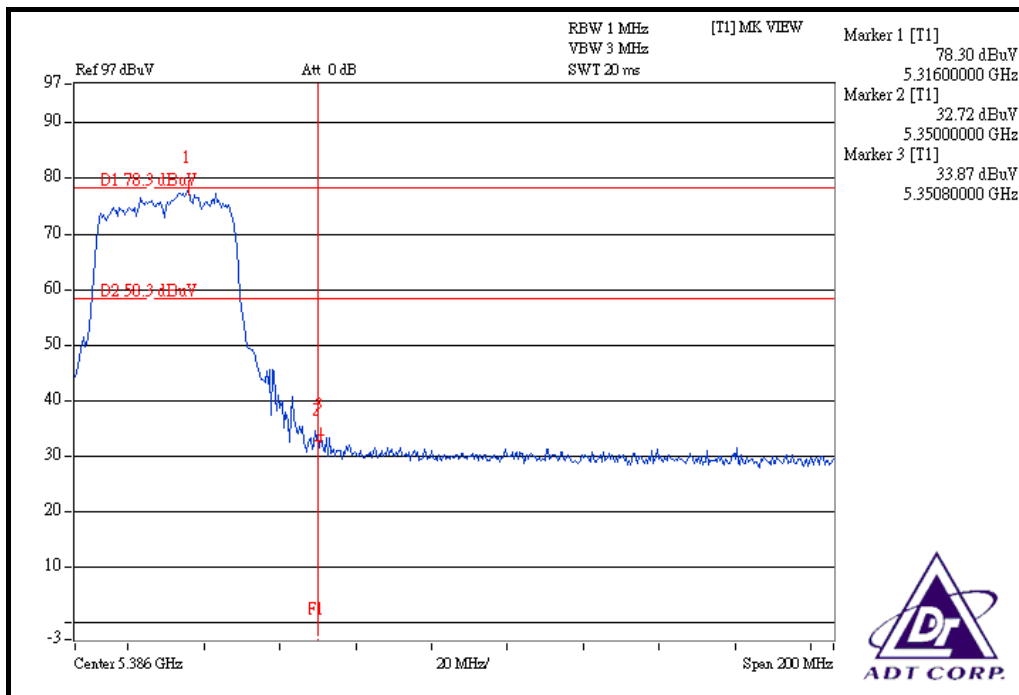
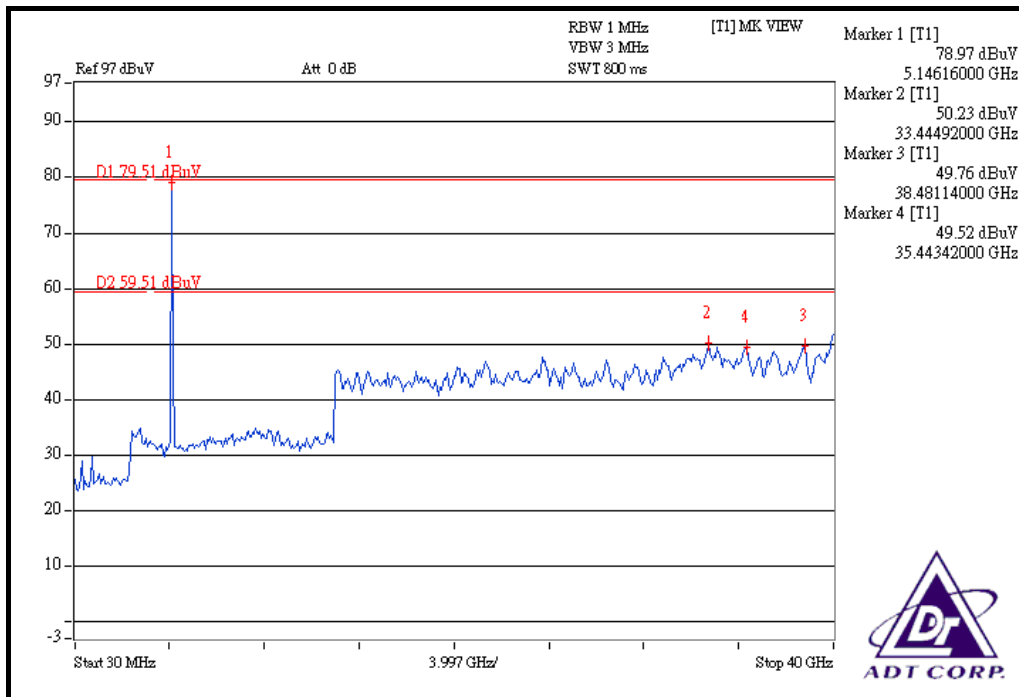
The band edge emission plot on the next page shows 48.41dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 93.15dBuV/m (Average), so the maximum field strength in restrict band is $93.15 - 48.41 = 44.74$ dBuV/m which is under 54dBuV/m limit.

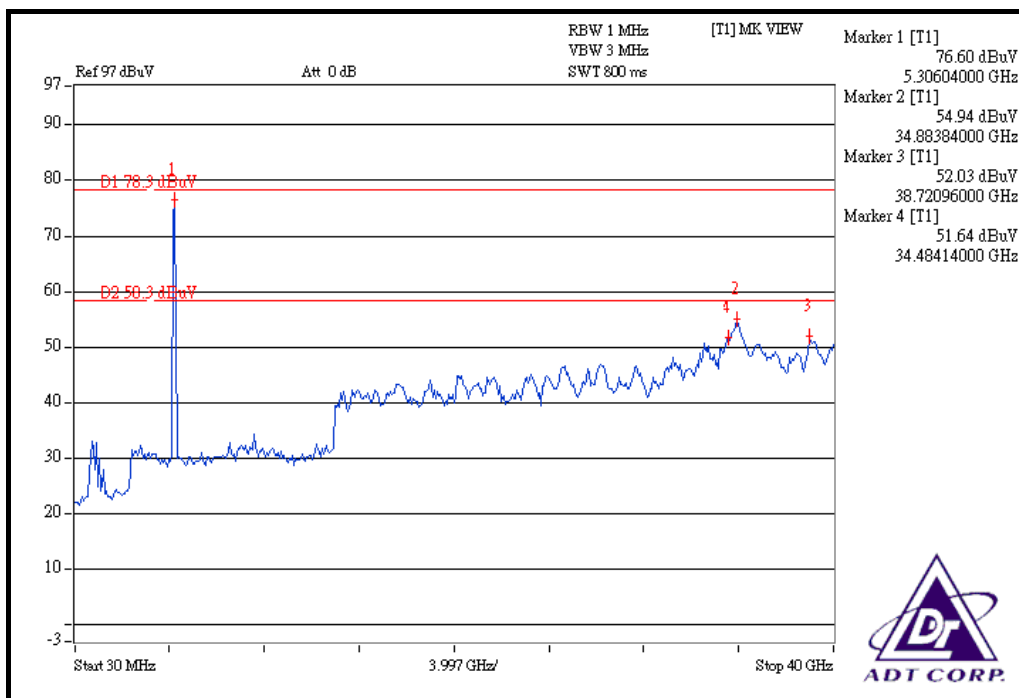
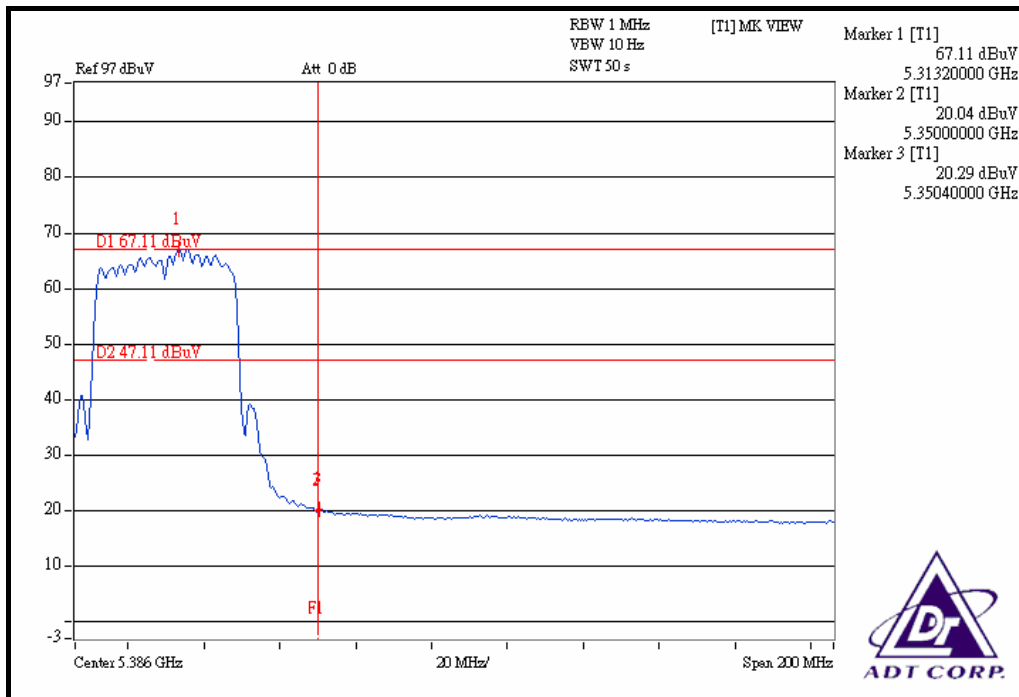
Channel 4 (5310MHz)

The band edge emission plot on the next second page shows 44.43dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 4 is 105.26dBuV/m (Peak), so the maximum field strength in restrict band is $105.26 - 44.43 = 60.83$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 46.82dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 4 is 93.01dBuV/m (Average), so the maximum field strength in restrict band is $93.01 - 46.82 = 46.19$ dBuV/m which is under 54dBuV/m limit.







FOR FREQUENCY BAND: 5.470 ~ 5.725GHz

Channel 5 (5510MHz)

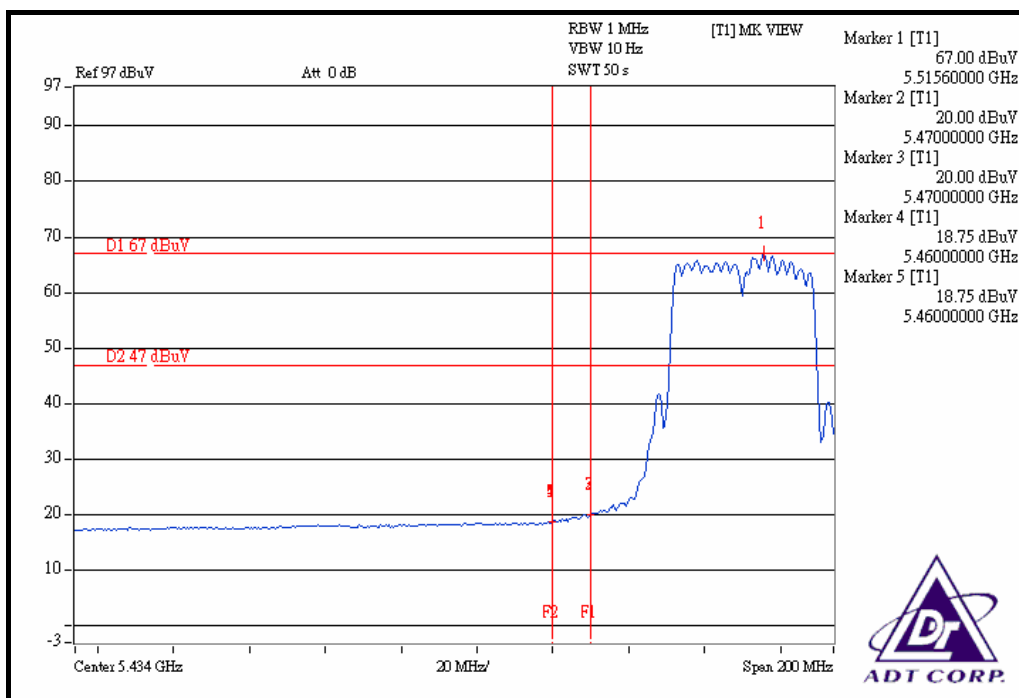
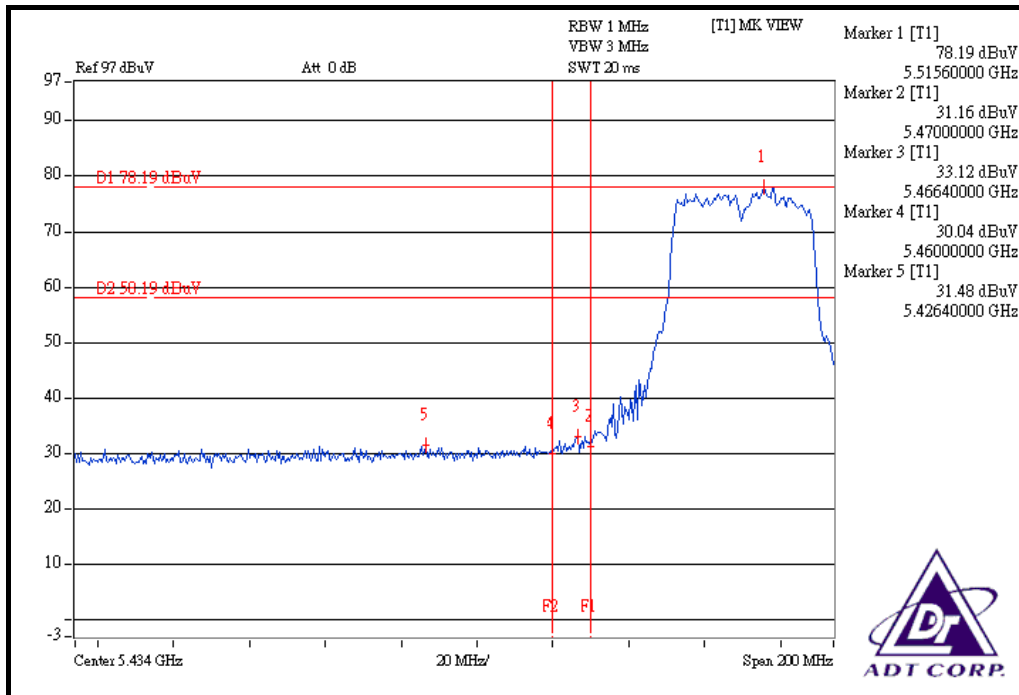
The band edge emission plot (5.470GHz) on the next page shows 45.07dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 5 is 104.97dBuV/m (Peak), so the maximum field strength out of band emission is $104.97 - 45.07 = 59.90$ dBuV/m which is under 68.3dBuV/m limit.

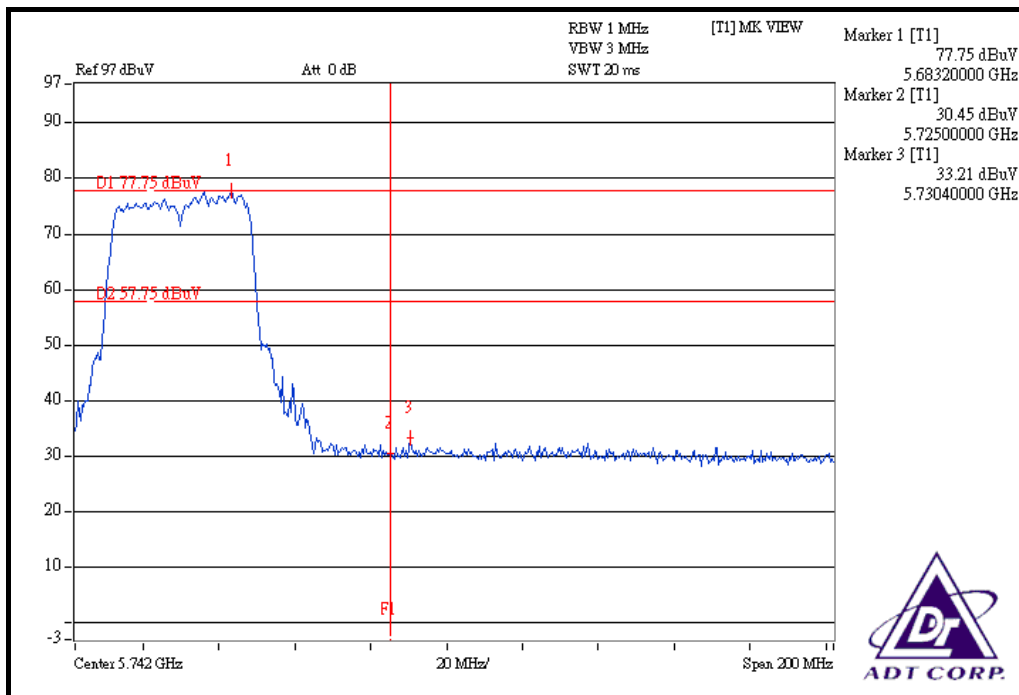
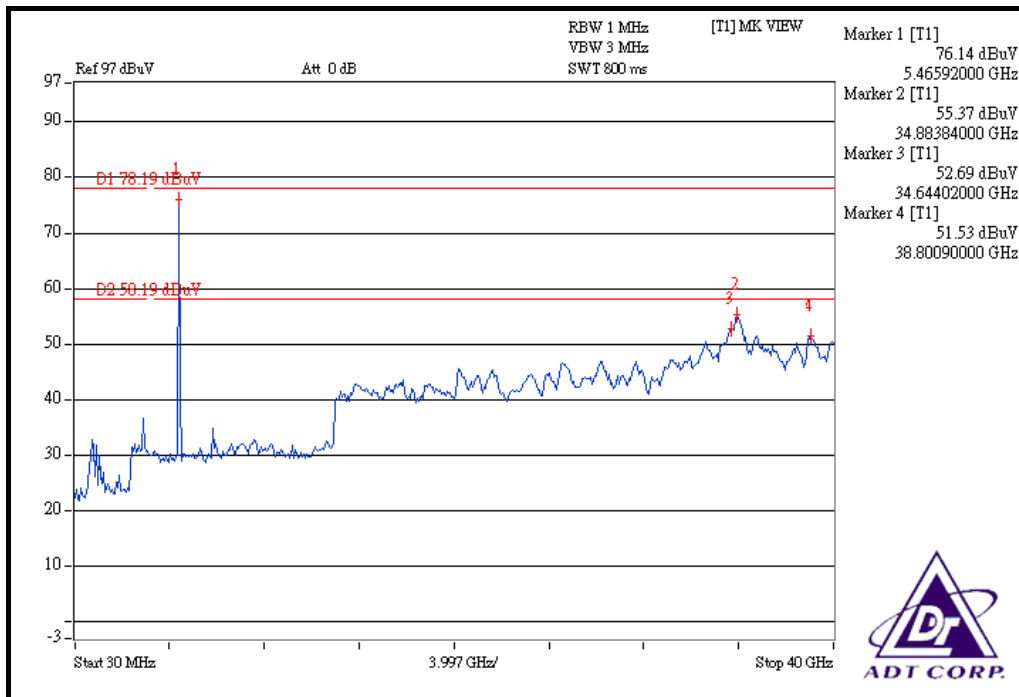
The band edge emission plot (5.460GHz) on the next page shows 46.71dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 5 is 104.97dBuV/m (Peak), so the maximum field strength in restrict band is $104.97 - 46.71 = 58.26$ dBuV/m which is under 74dBuV/m limit.

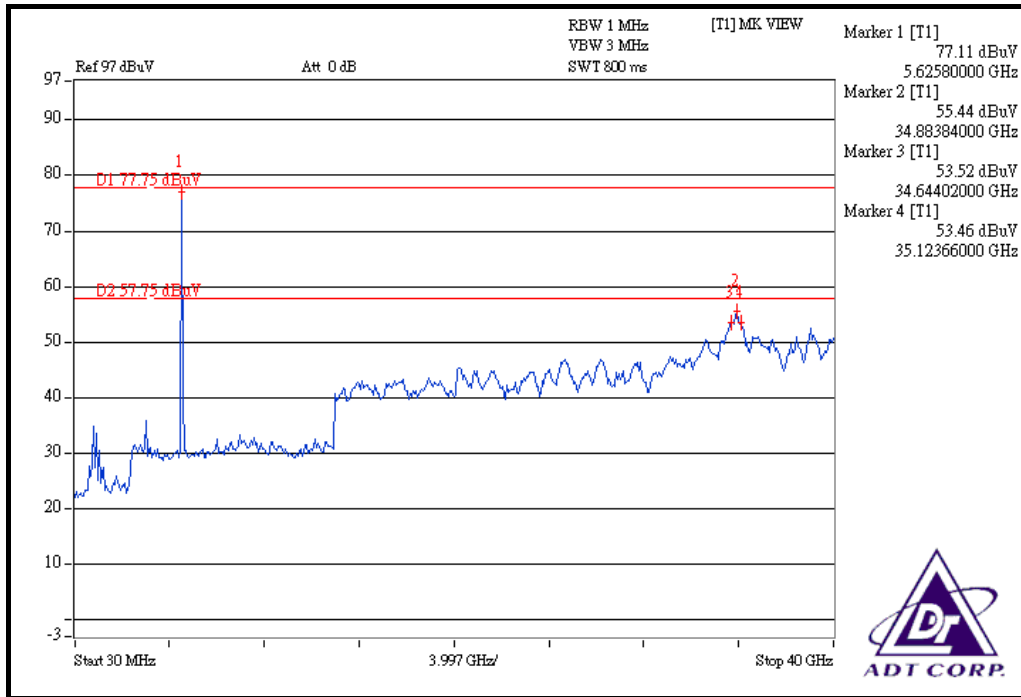
The band edge emission plot (5.460GHz) on the next page shows 48.25dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 5 is 92.61dBuV/m (Average), so the maximum field strength in restrict band is $92.61 - 48.25 = 44.36$ dBuV/m which is under 54dBuV/m limit.

Channel 9 (5670MHz)

The band edge emission plot on the next second page shows 44.54dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 9 is 104.48dBuV/m (Peak), so the maximum field strength out of band emission is $104.48 - 44.54 = 59.94$ dBuV/m which is under 68.3dBuV/m limit.







4.8 ANTENNA REQUIREMENT

4.8.1 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 15.407(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.

4.8.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is PIFA antenna without connector. The maximum Gain of the antenna is 1.2dBi.



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



6. INFORMATION ON THE TESTING LABORATORIES

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

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

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

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

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

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

Web Site: www.adt.com.tw

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

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

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