

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 960hPa
TESTED BY	Rex Huang		

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 2	Chain 0	Chain 1	Chain 2				
1	2412	49.204	58.614	71.450	16.92	17.68	18.54	179.268	22.535	30	PASS
6	2437	68.549	89.536	107.399	18.36	19.52	20.31	265.484	24.240	30	PASS
11	2462	43.853	57.943	52.966	16.42	17.63	17.24	154.762	21.897	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 960hPa
TESTED BY	Rex Huang		

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 2	Chain 0	Chain 1	Chain 2				
1	2422	36.475	42.170	45.499	15.62	16.25	16.58	124.144	20.939	30	PASS
4	2437	43.551	52.602	56.754	16.39	17.21	17.54	152.907	21.844	30	PASS
7	2452	29.242	36.141	31.046	14.66	15.58	14.92	96.429	19.842	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 12, 2008

NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

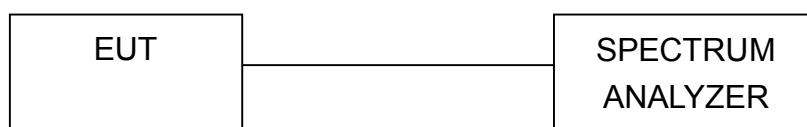
4.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded. The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.5.7 TEST RESULTS

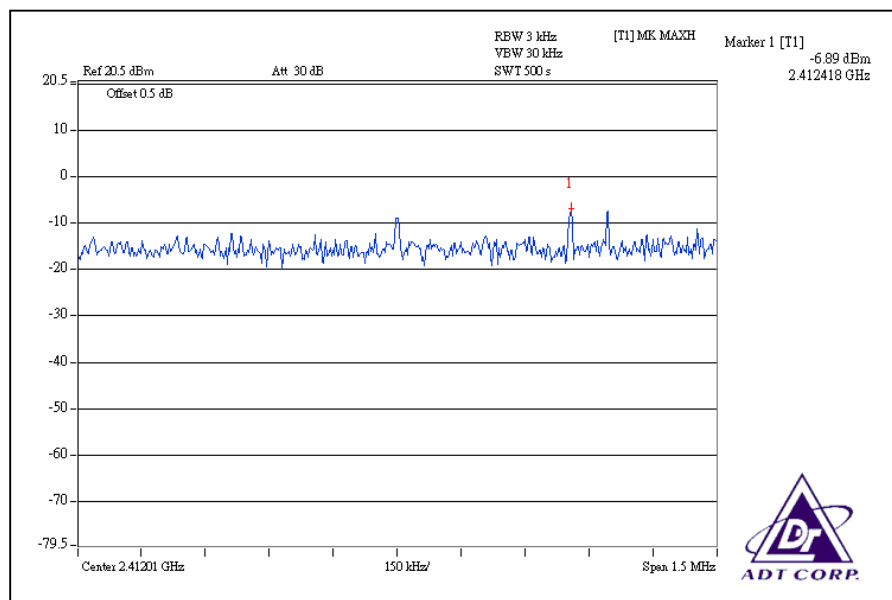
802.11b DSSS MODULATION:

MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 960hPa
TESTED BY	Rex Huang		

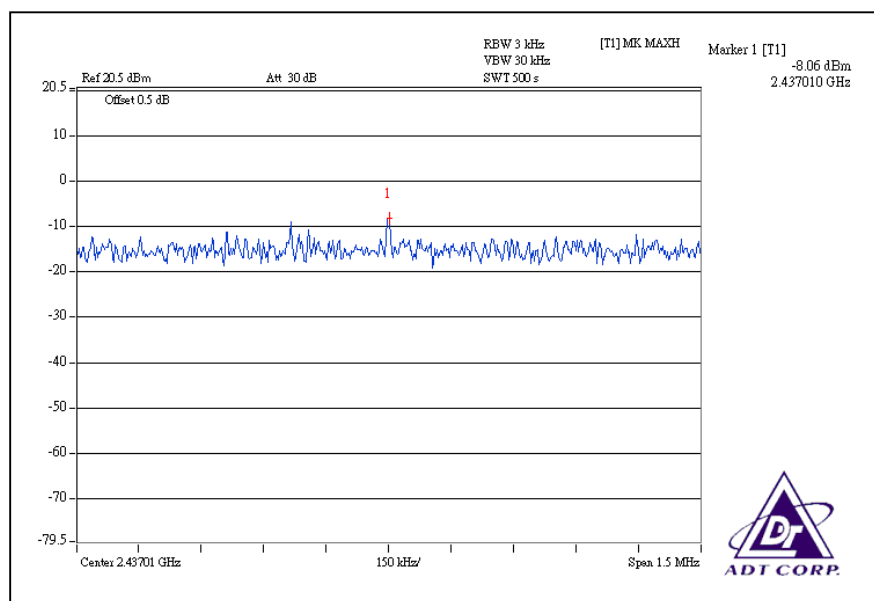
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)			MAXIMUM LIMIT (dBm)	PASS / FAIL
		Chain 0	Chain 1	Chain 2		
1	2412	-6.89	-8.74	-8.83	8	PASS
6	2437	-8.06	-9.37	-9.36	8	PASS
11	2462	-9.83	-6.64	-7.65	8	PASS

Chain 0

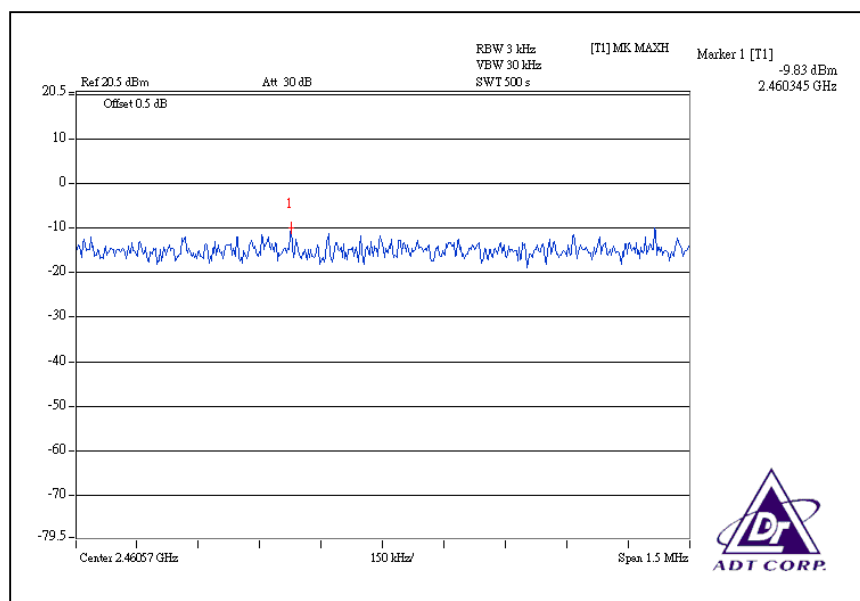
CH1



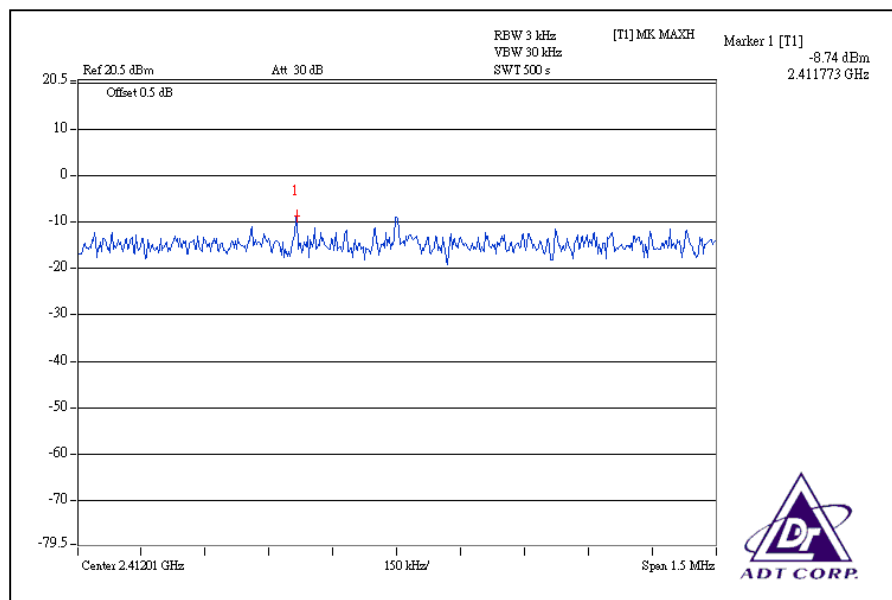
CH6



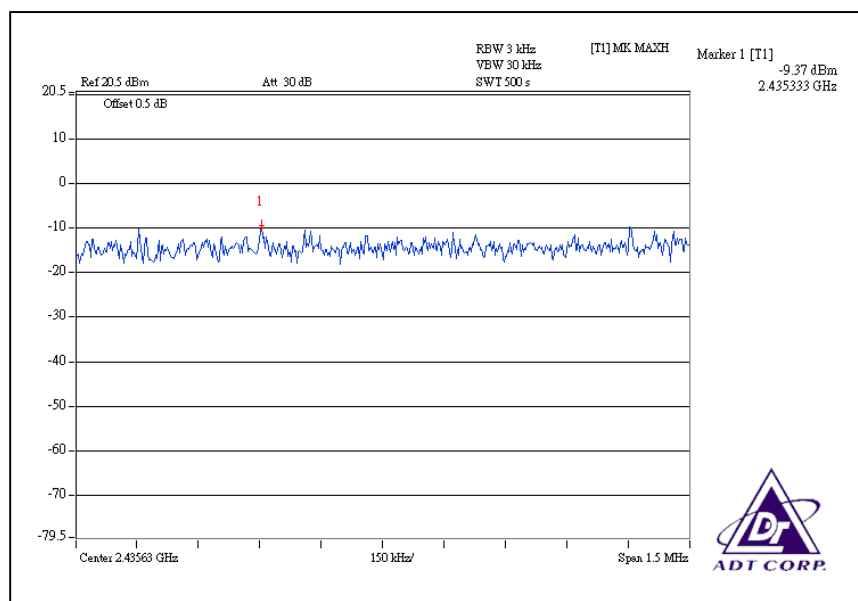
CH11



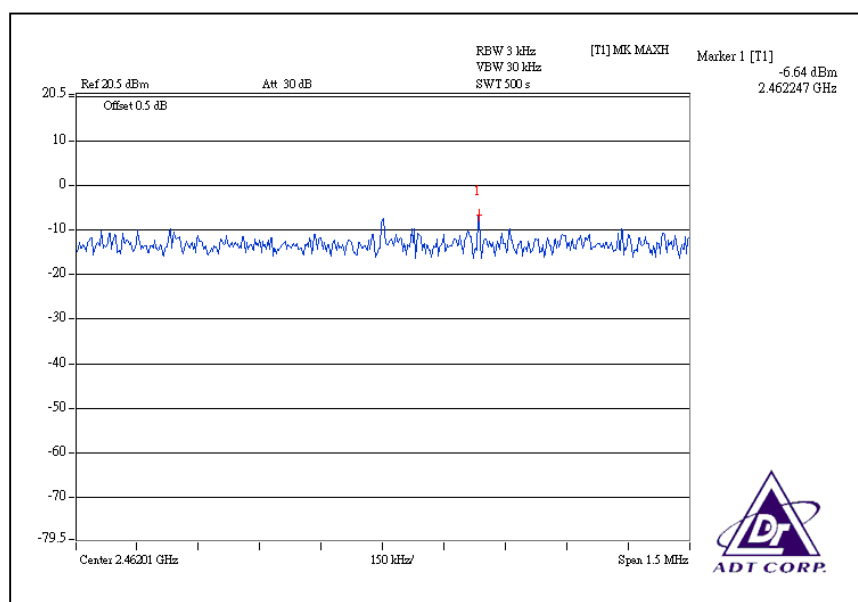
Chain 1 CH1



CH6

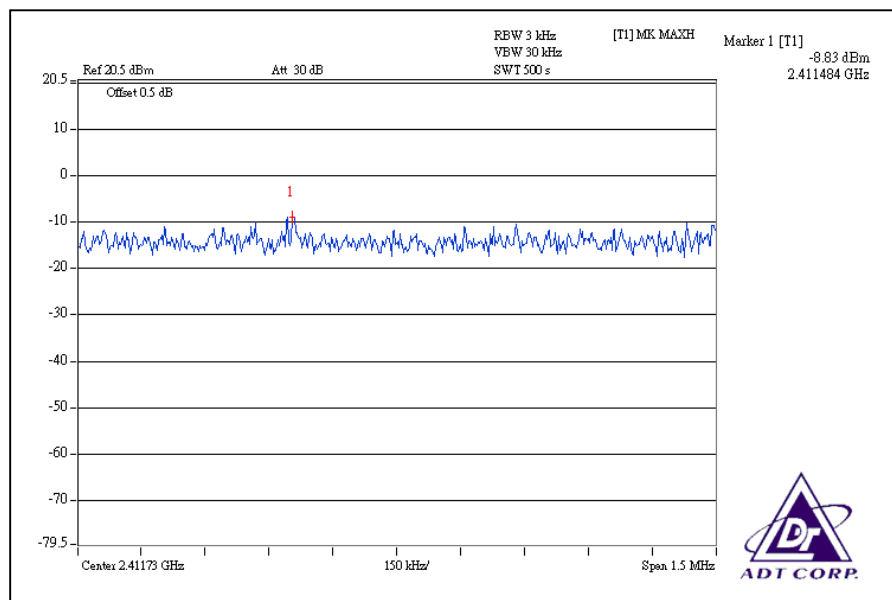


CH11

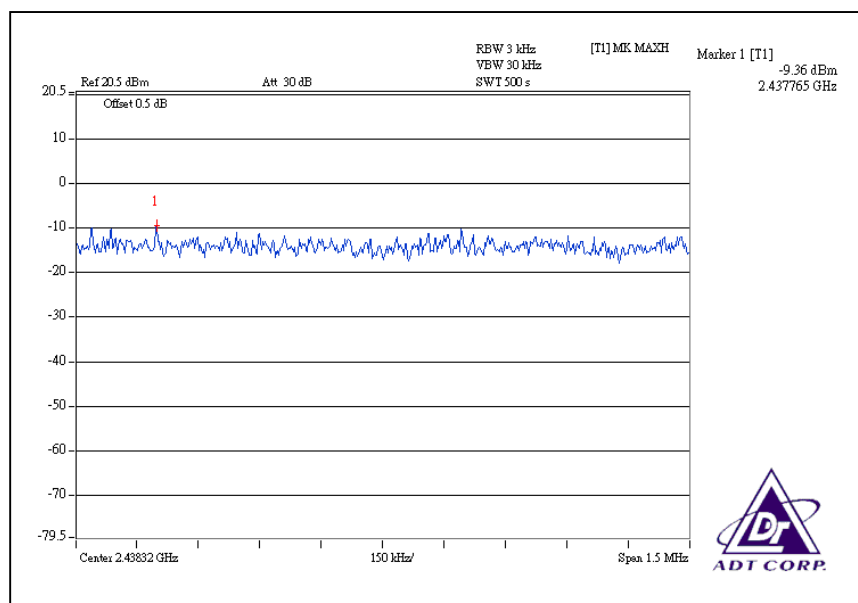


Chain 2

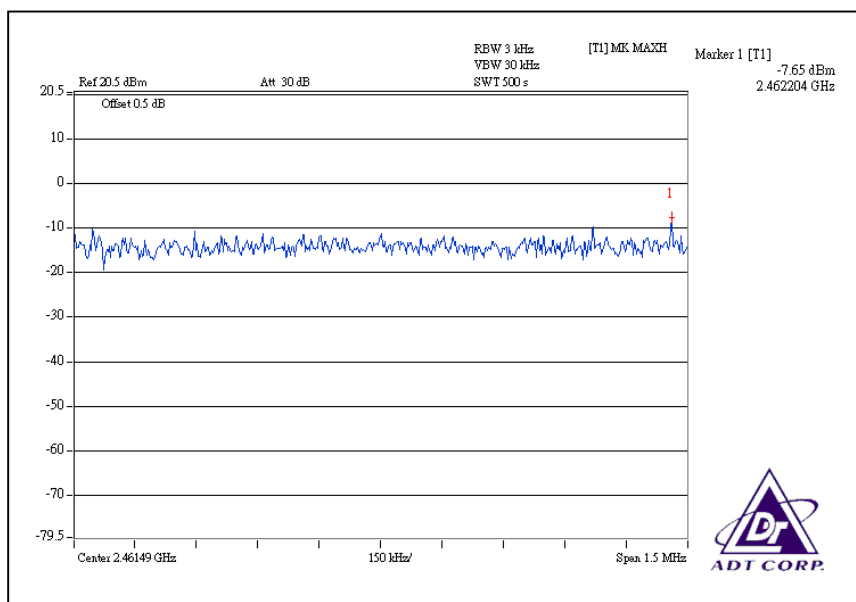
CH1



CH6



CH11

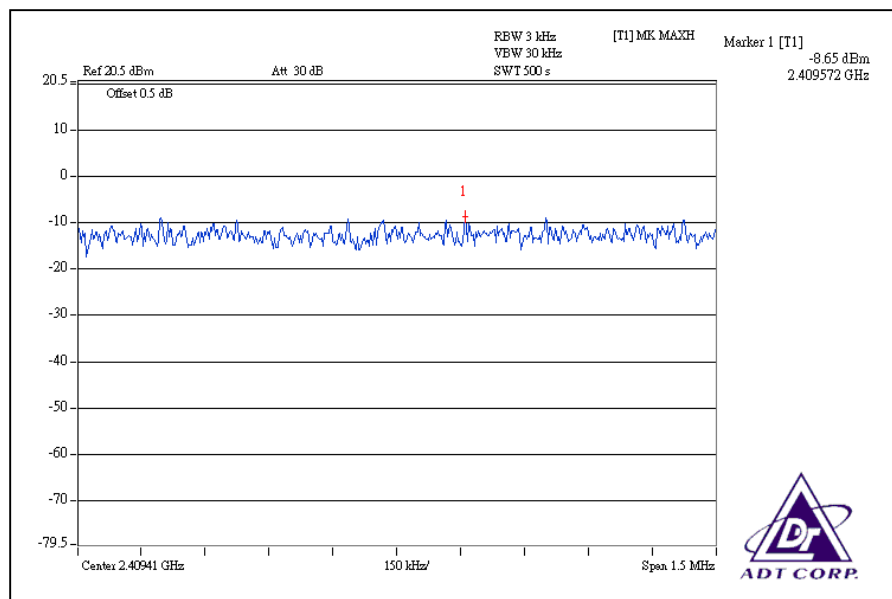


MODULATION TYPE	CCK	TRANSFER RATE	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 960hPa
TESTED BY	Rex Huang		

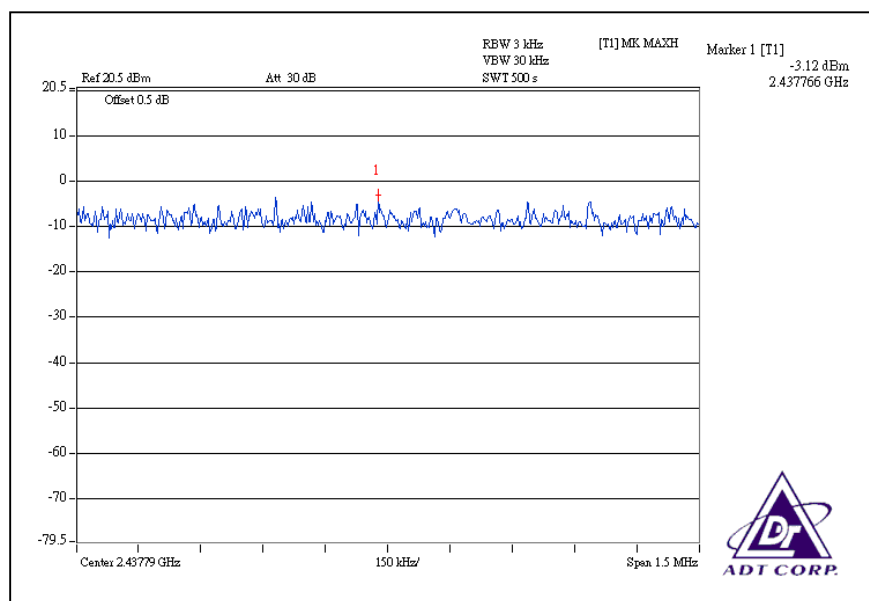
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)			MAXIMUM LIMIT (dBm)	PASS / FAIL
		Chain 0	Chain 1	Chain 2		
1	2412	-8.65	-4.93	-3.62	8	PASS
6	2437	-3.12	-1.93	-3.94	8	PASS
11	2462	-3.29	-4.73	-1.69	8	PASS

Chain 0

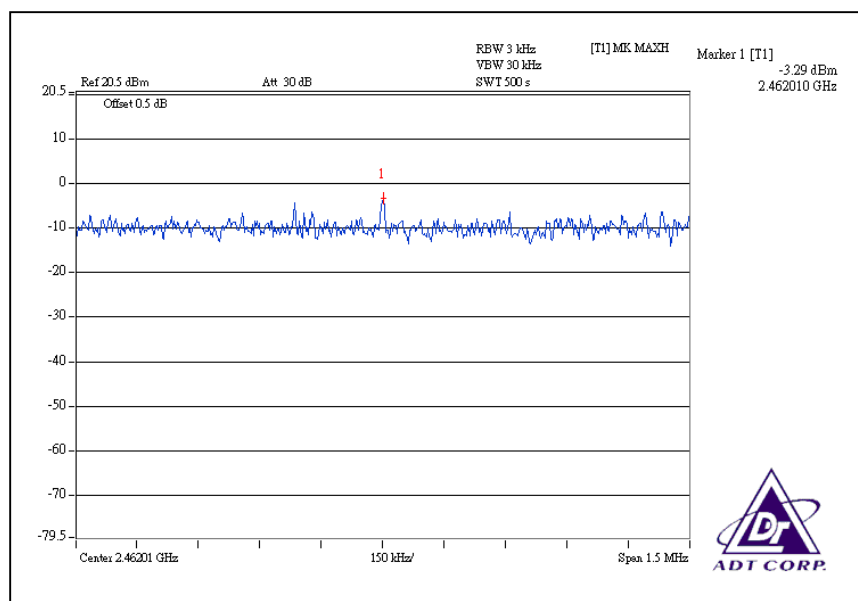
CH1



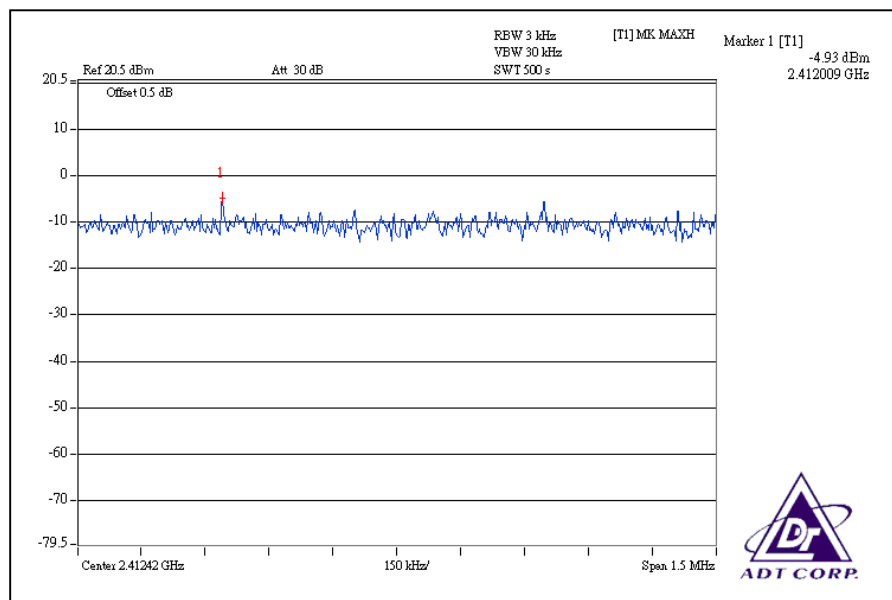
CH6



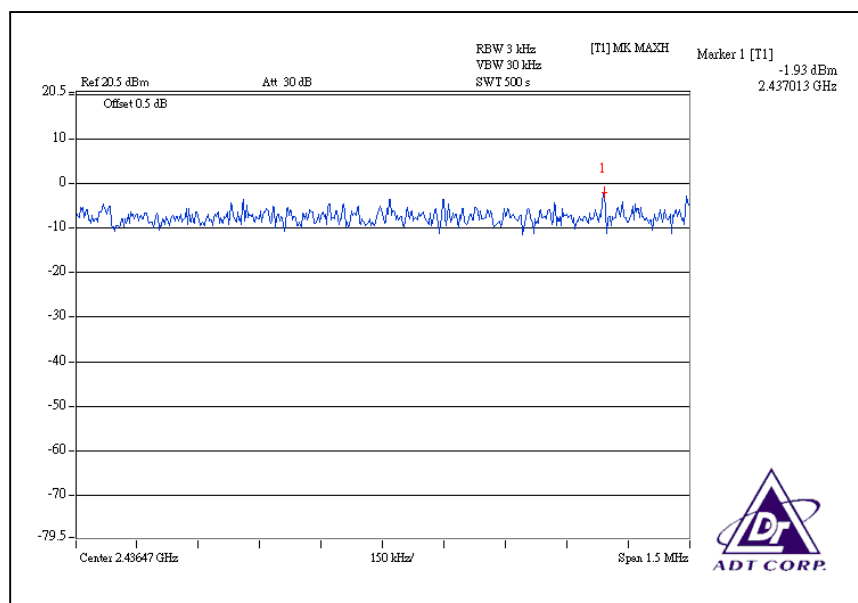
CH11



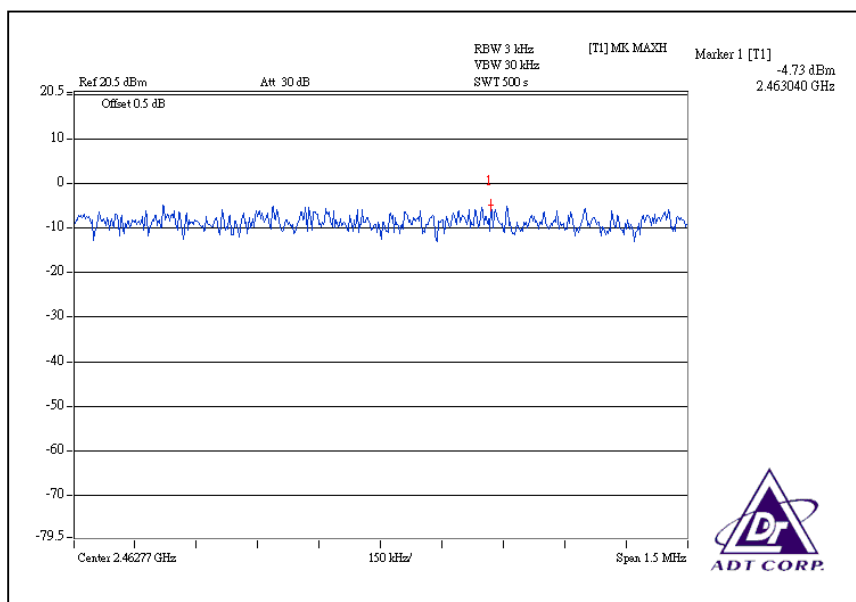
Chain 1 CH1



CH6

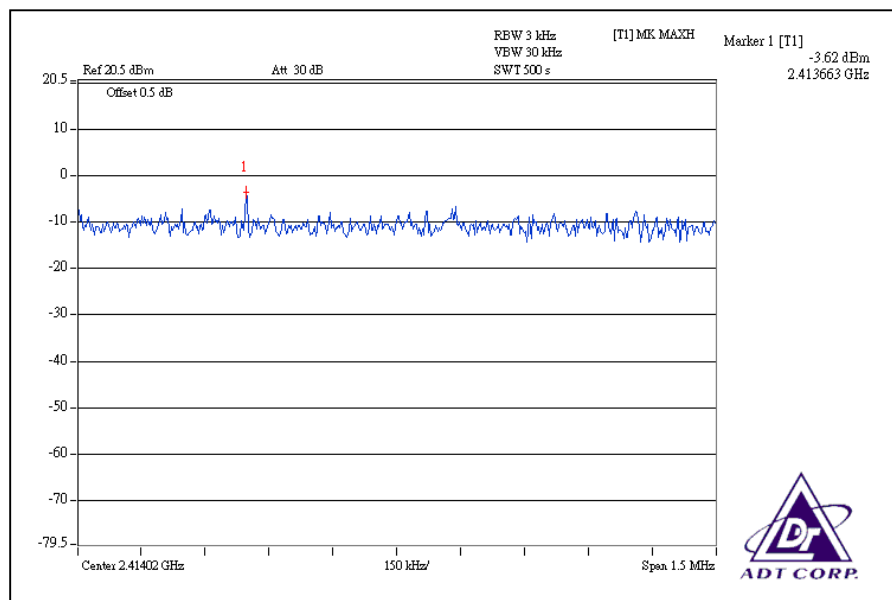


CH11

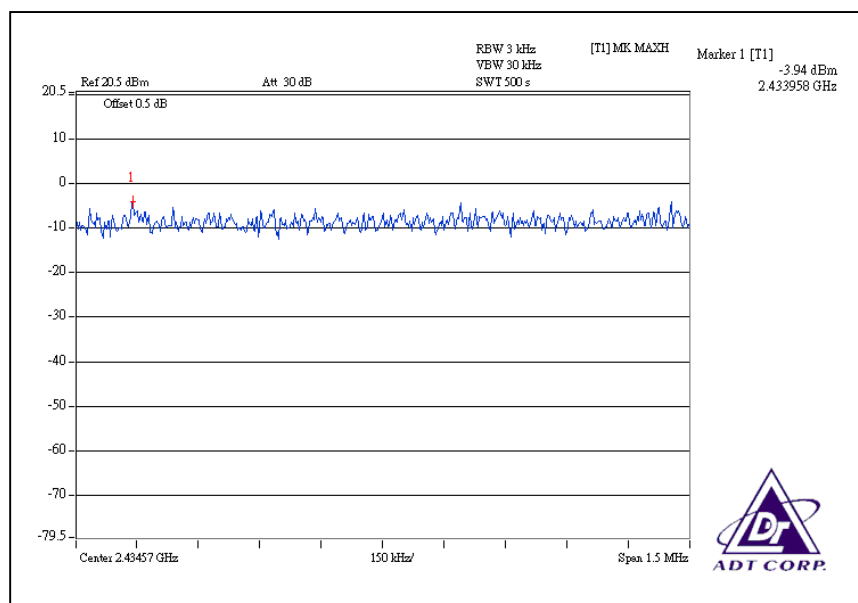


Chain 2

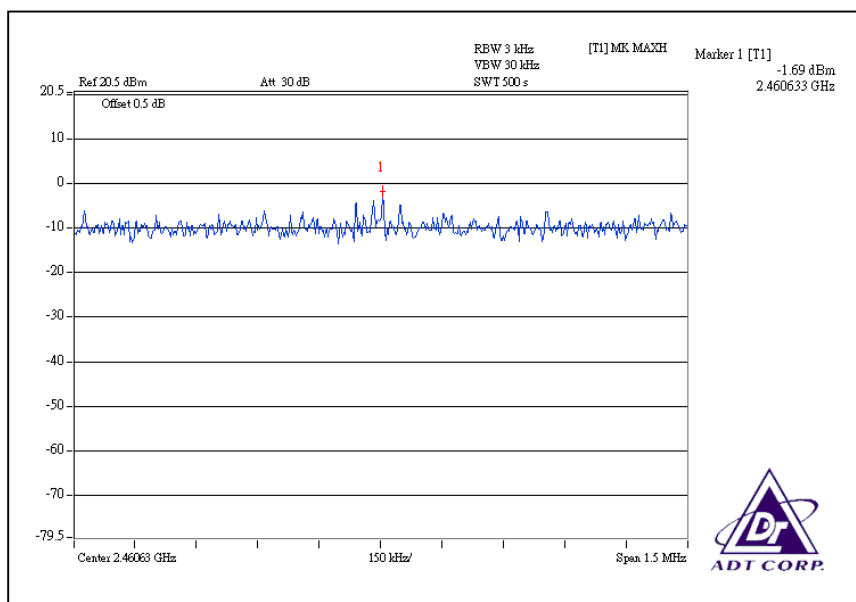
CH1



CH6



CH11



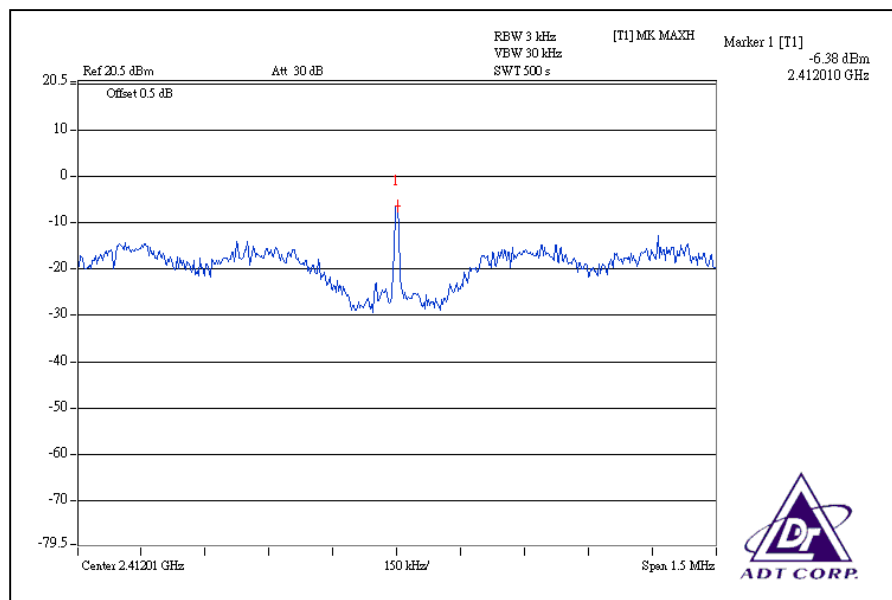
802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 960hPa
TESTED BY	Rex Huang		

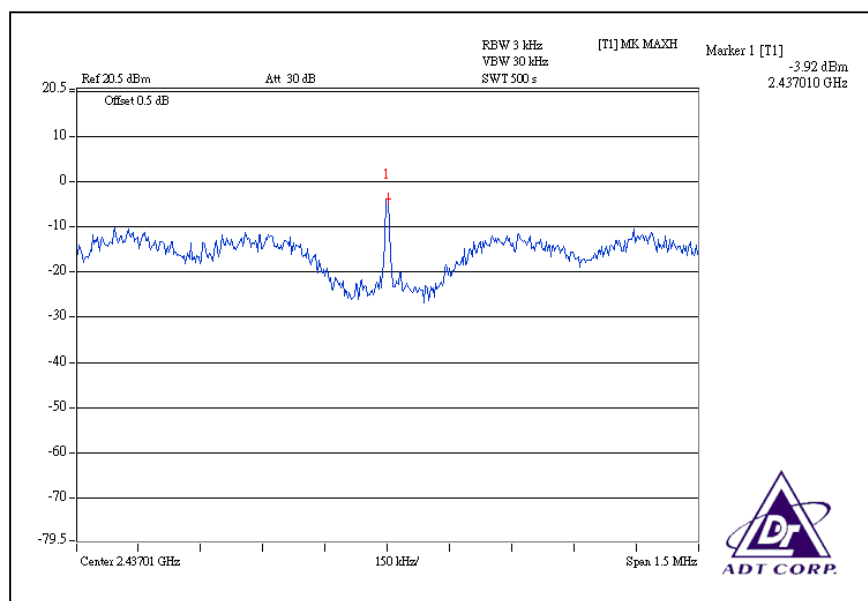
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)			MAXIMUM LIMIT (dBm)	PASS / FAIL
		Chain 0	Chain 1	Chain 2		
1	2412	-6.38	-5.32	-8.39	8	PASS
6	2437	-3.92	-2.03	-5.33	8	PASS
11	2462	-6.07	-5.47	-9.82	8	PASS

Chain 0

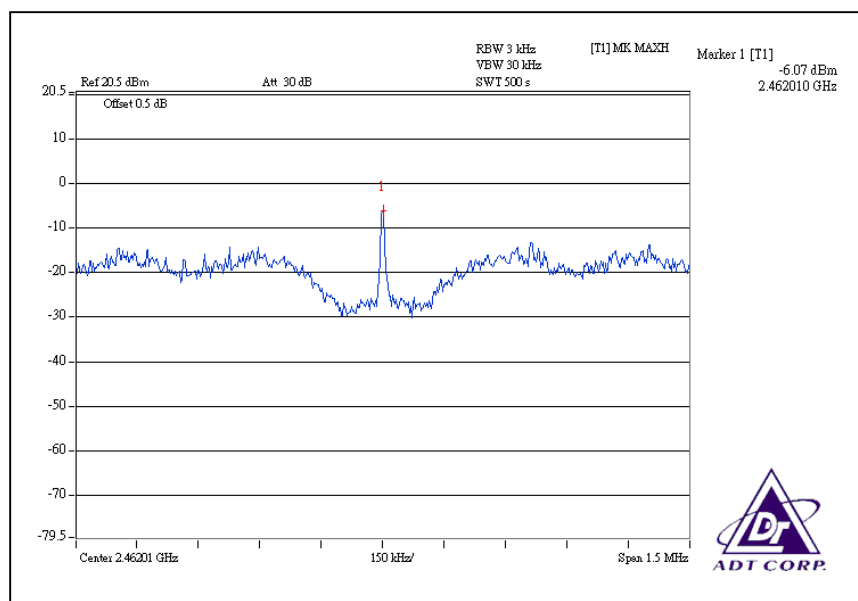
CH1



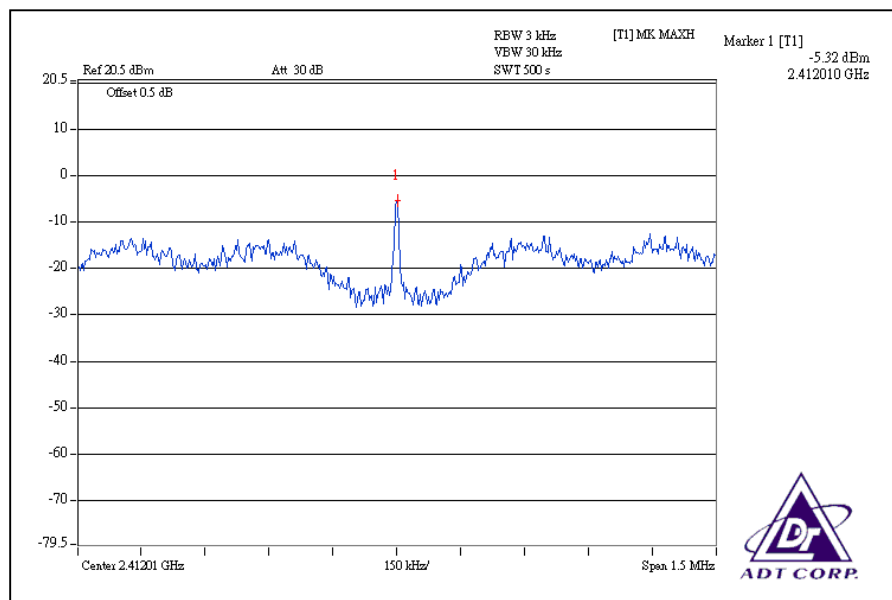
CH6



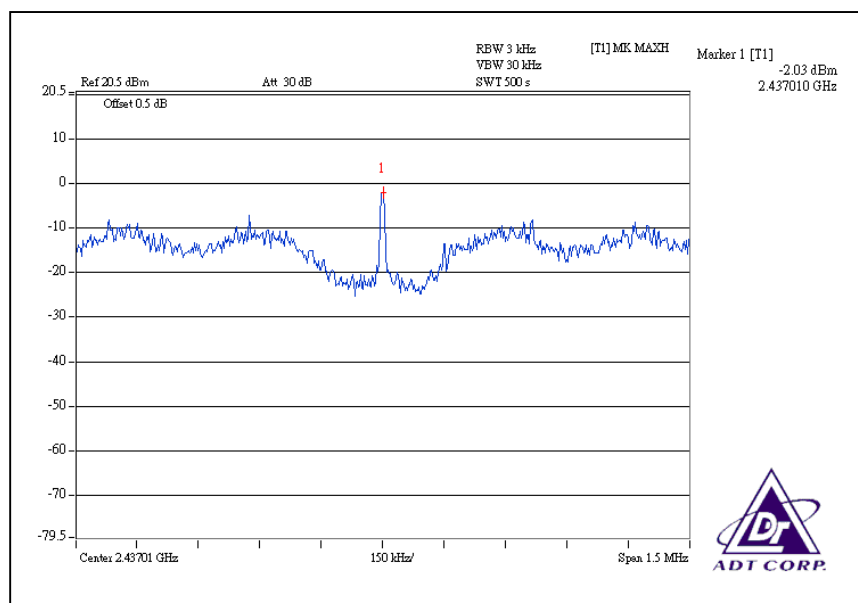
CH11



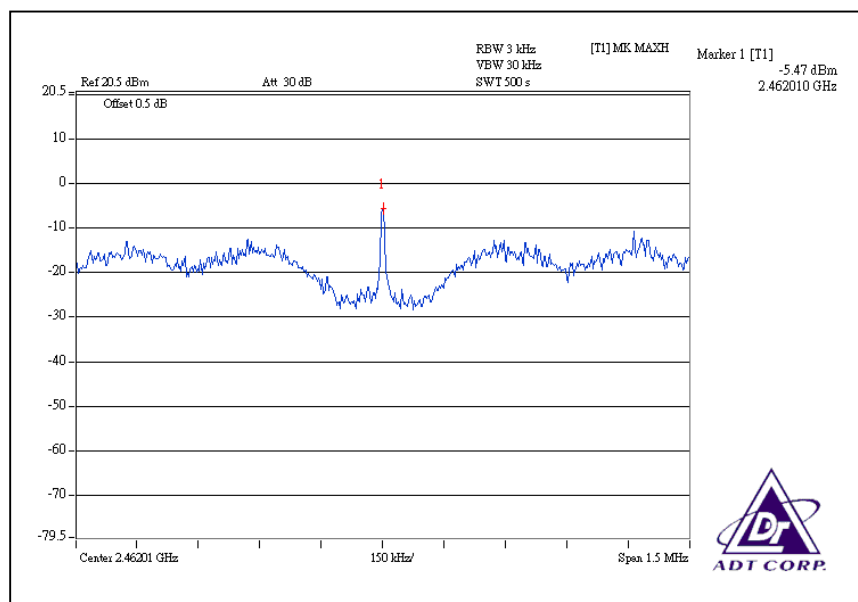
Chain 1 CH1



CH6

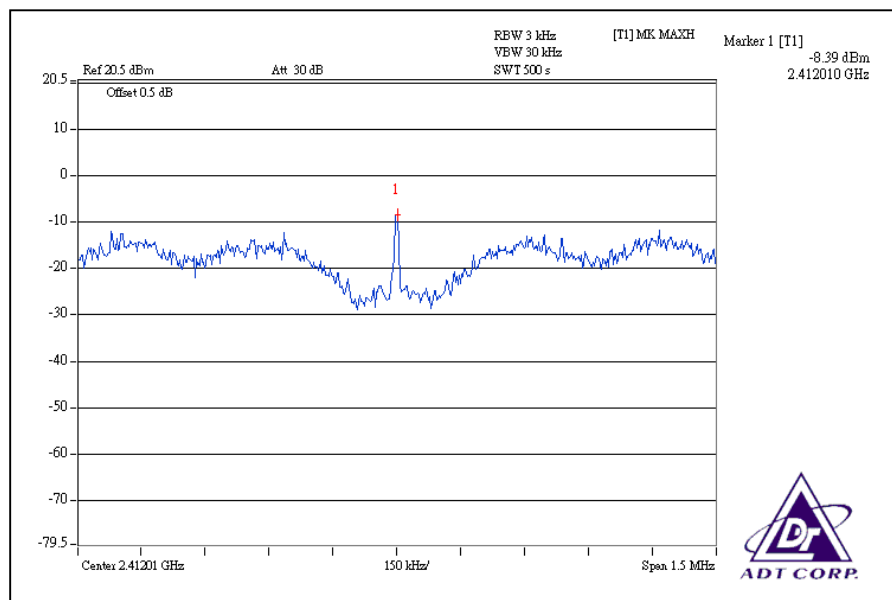


CH11

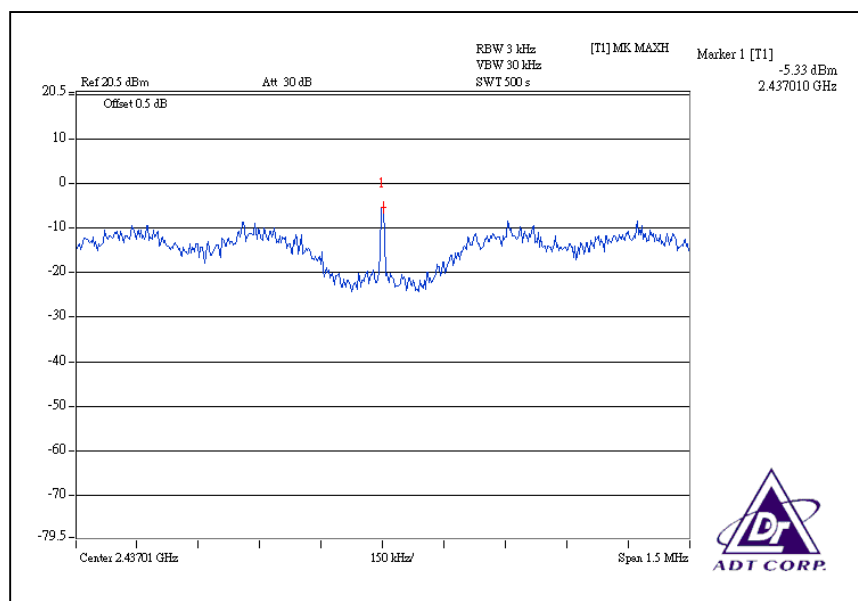


Chain 2

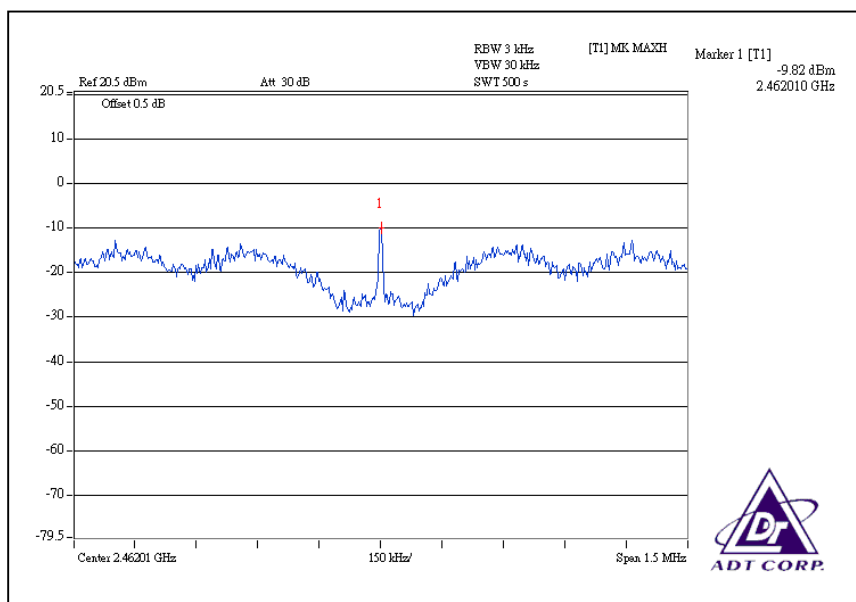
CH1



CH6



CH11

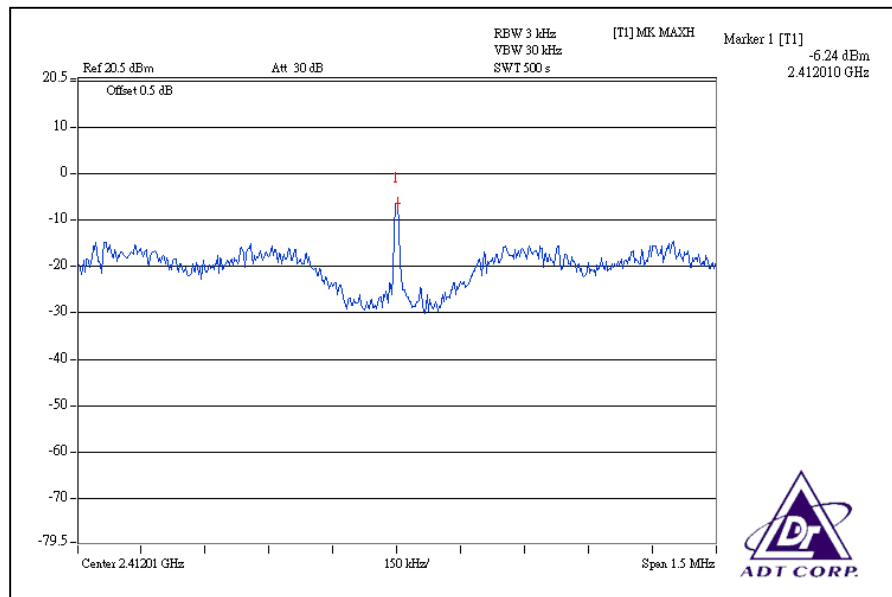


DRAFT 802.11n (20MHz) OFDM MODULATION:

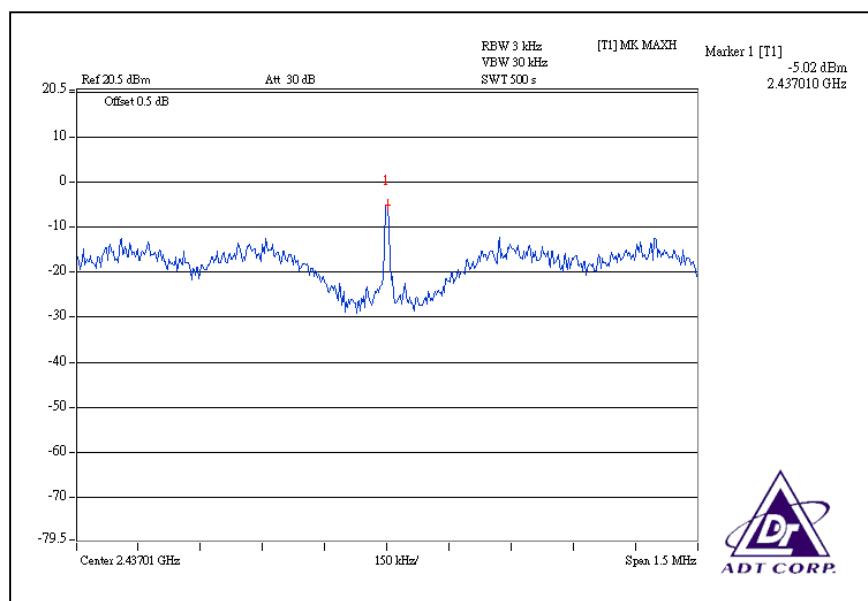
MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20 deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	0.238	0.215	0.061	-6.24	-6.67	-12.15	0.514	-2.89	8	PASS
6	2437	0.315	0.395	0.182	-5.02	-4.03	-7.39	0.892	-0.50	8	PASS
11	2462	0.243	0.240	0.080	-6.15	-6.20	-10.95	0.563	-2.50	8	PASS

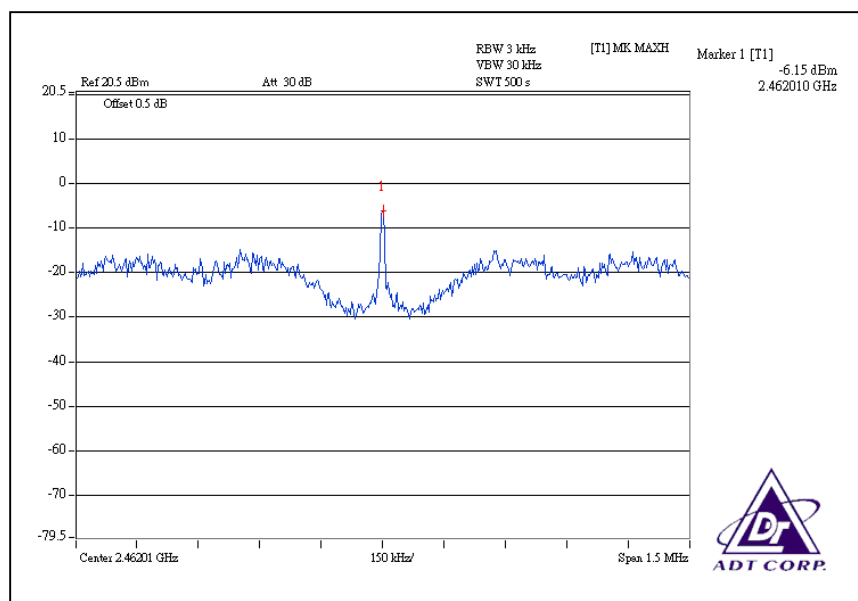
Chain 0
CH1



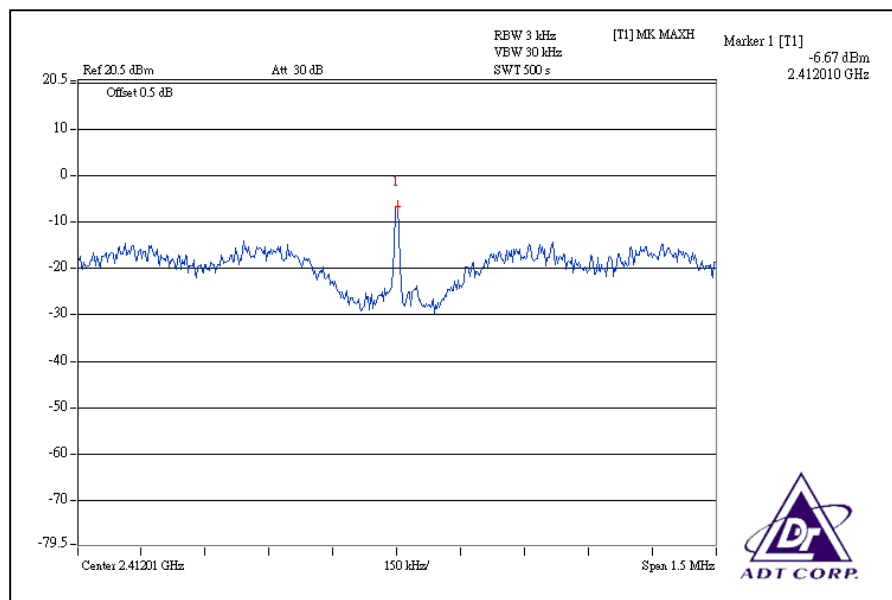
CH6



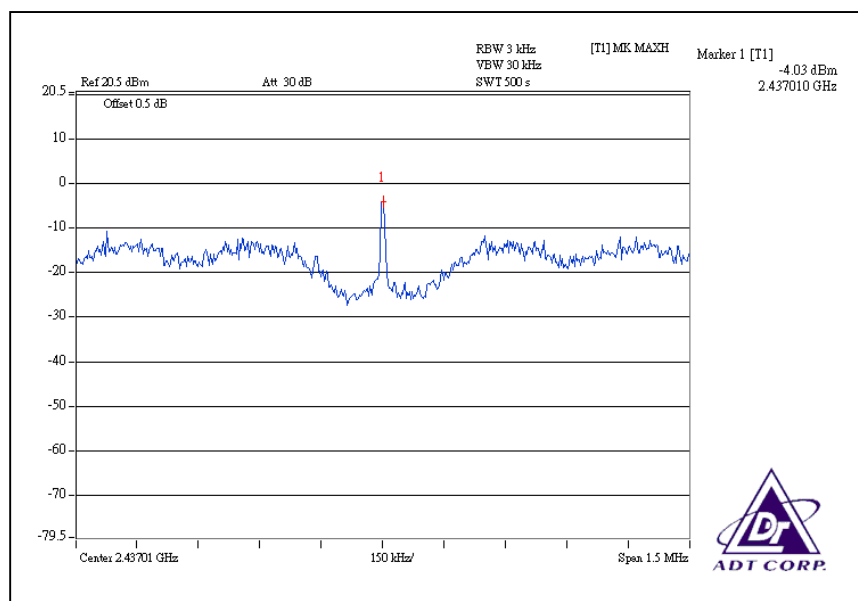
CH11



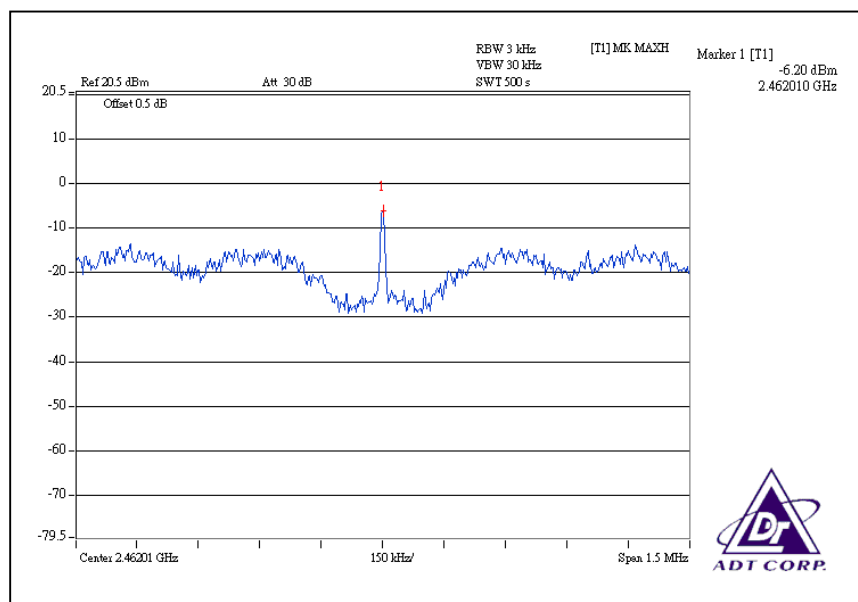
Chain 1 CH1



CH6

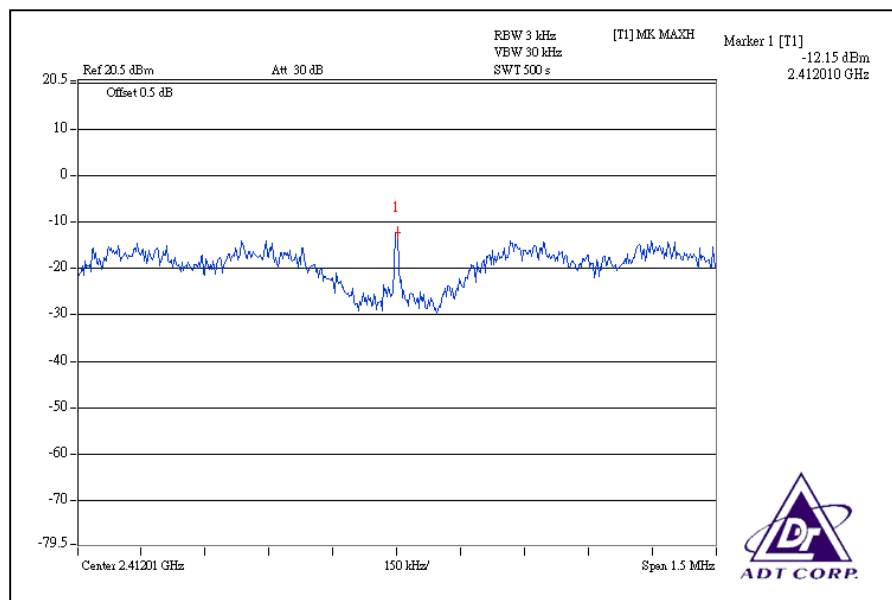


CH11

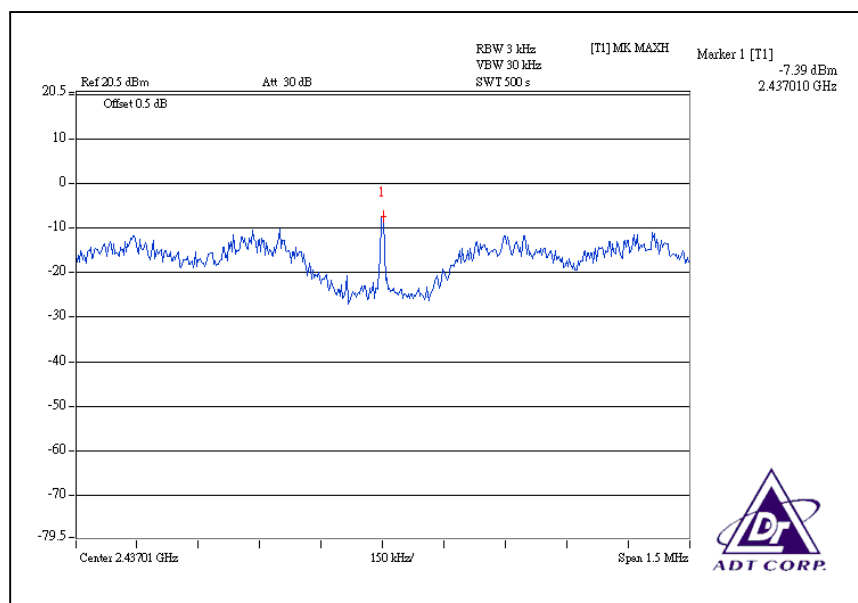


Chain 2

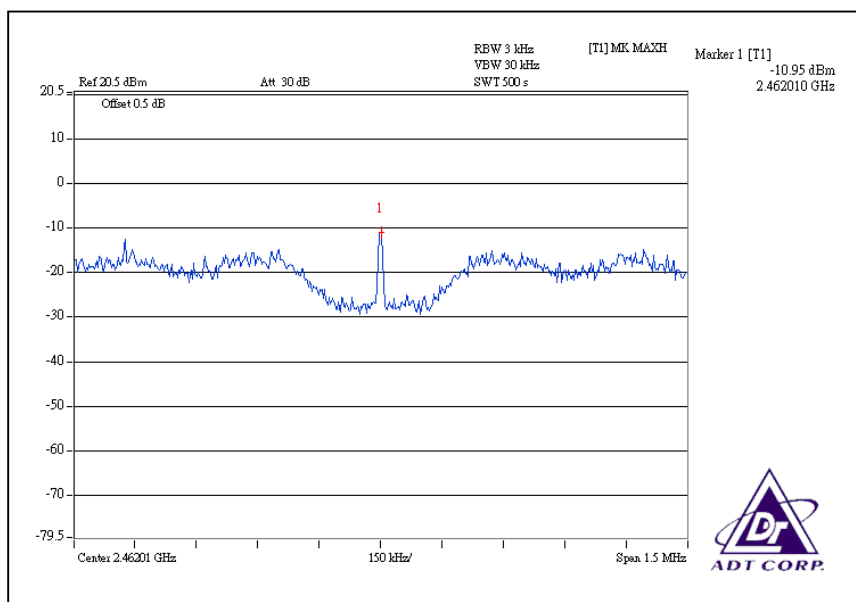
CH1



CH6



CH11

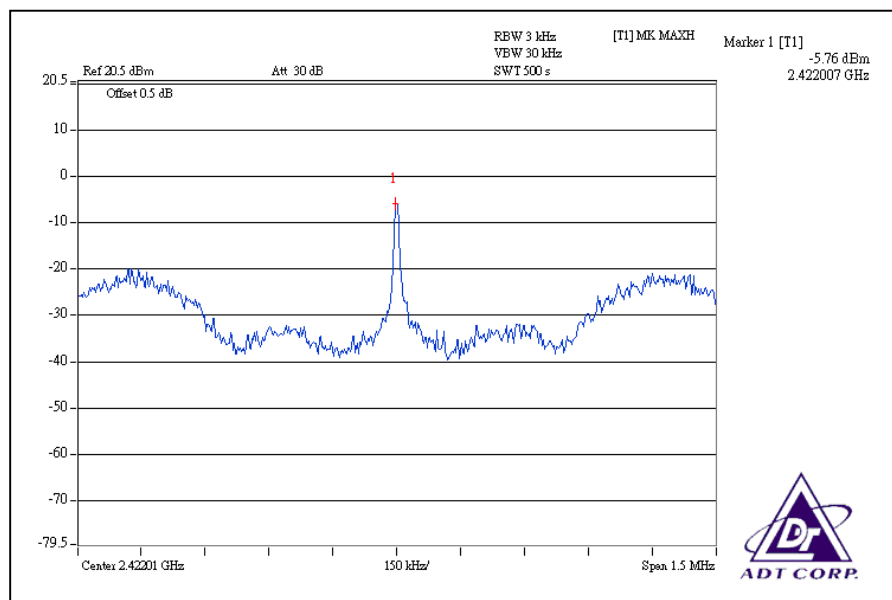


DRAFT 802.11n (40MHz) OFDM MODULATION:

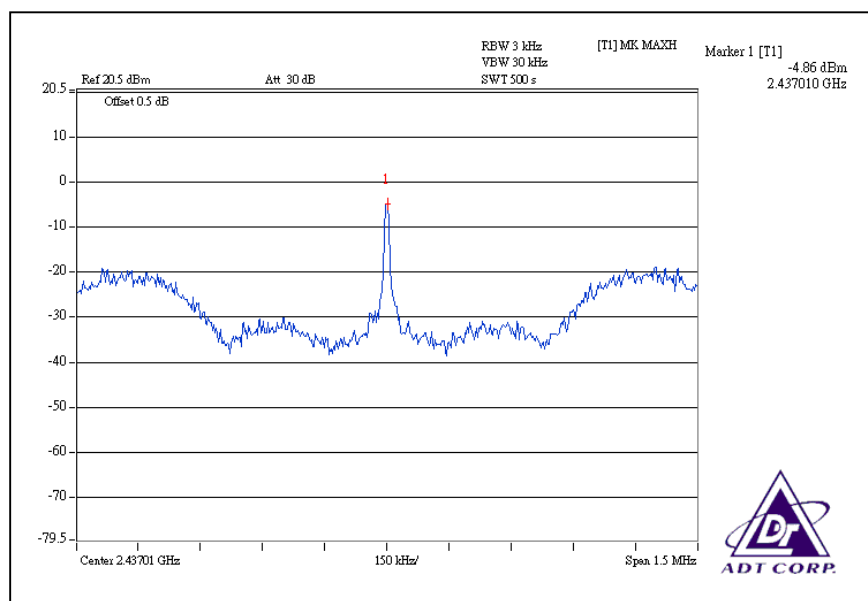
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 960hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	2422	0.265	0.318	0.156	-5.76	-4.98	-8.08	0.739	-1.31	8	PASS
4	2437	0.327	0.392	0.239	-4.86	-4.07	-6.21	0.958	-0.19	8	PASS
7	2452	0.288	0.278	0.162	-5.40	-5.56	-7.91	0.728	-1.38	8	PASS

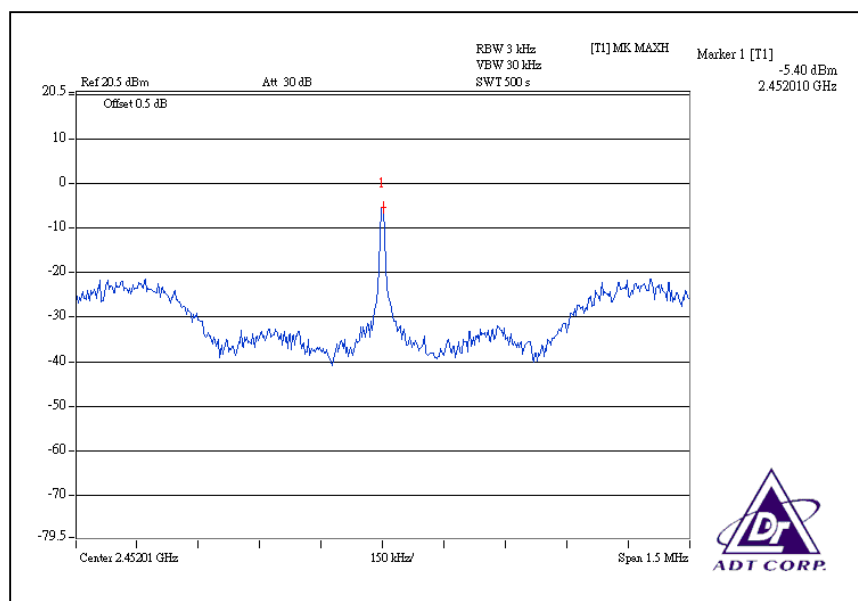
Chain 0
CH1



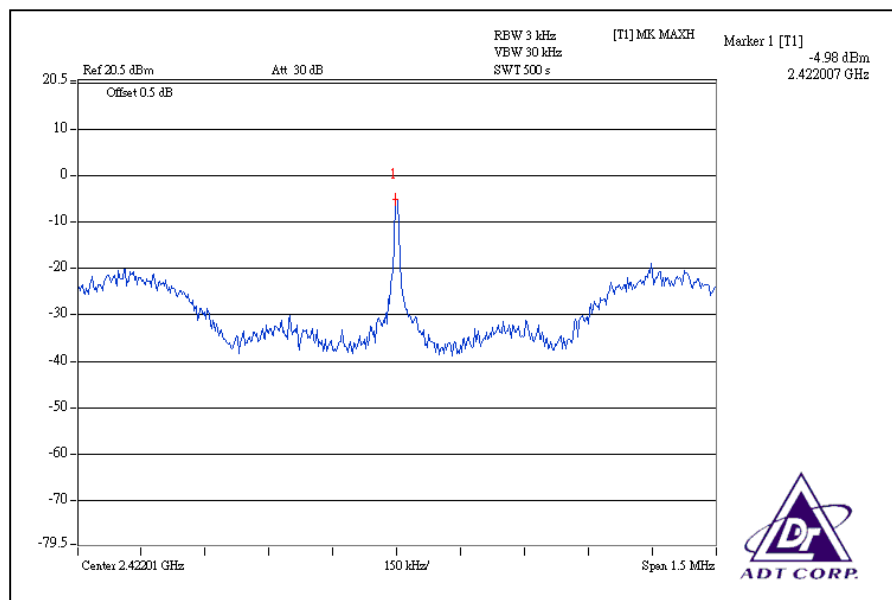
CH4



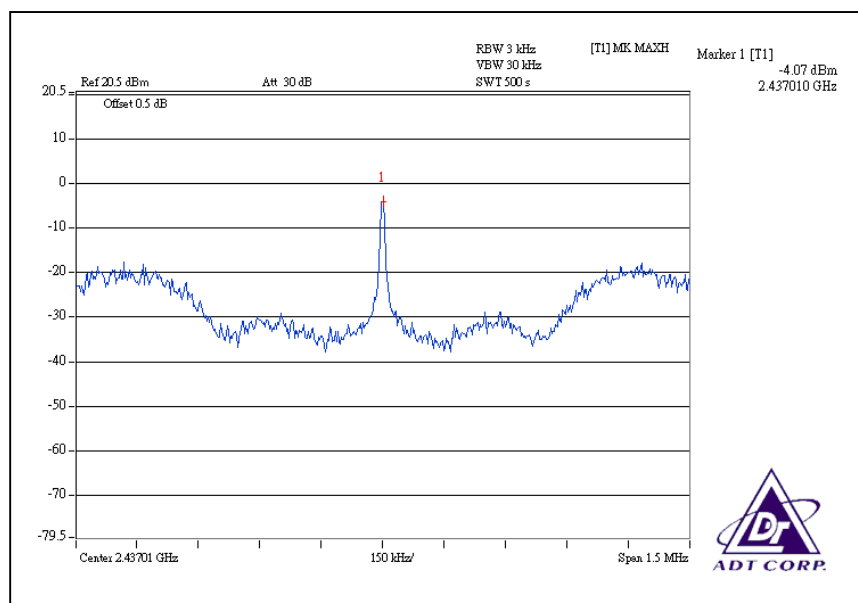
CH7



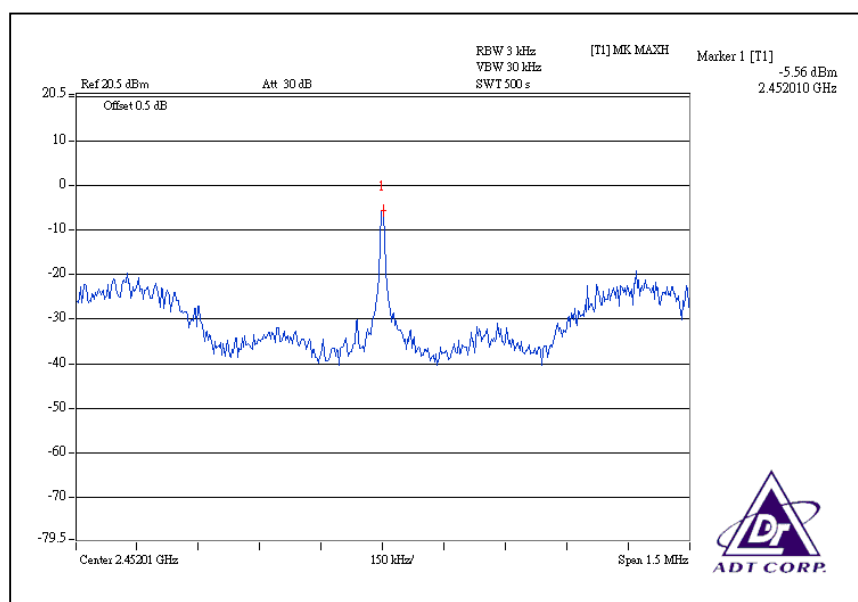
Chain 1 CH1



CH6

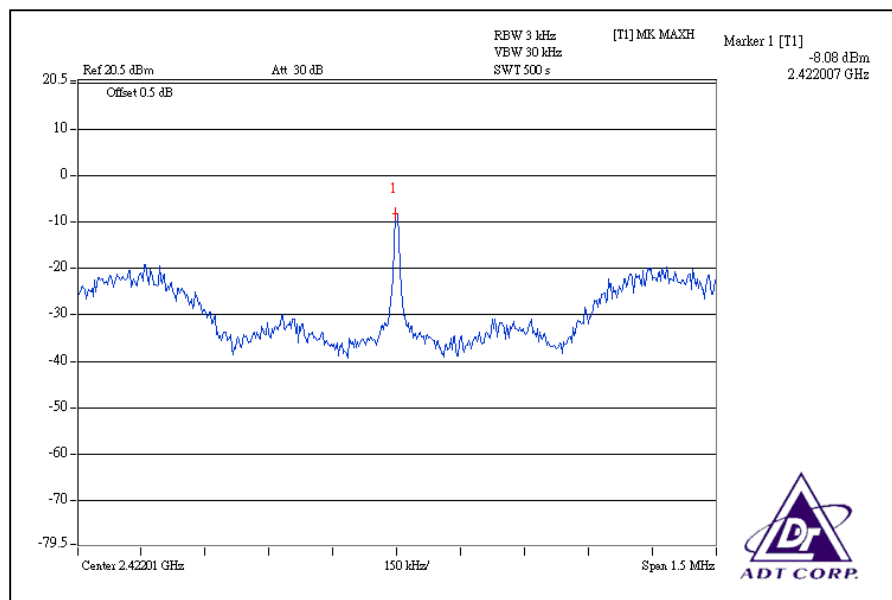


CH11

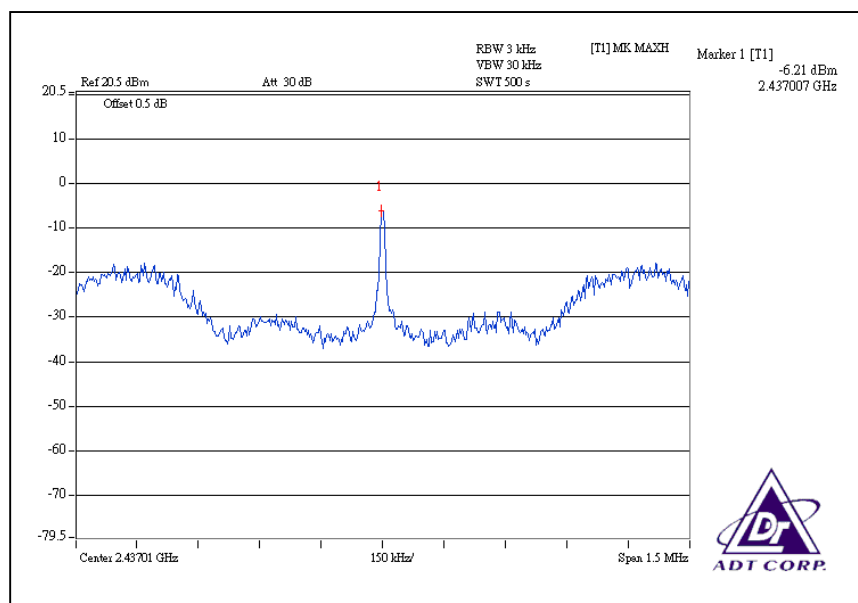


Chain 2

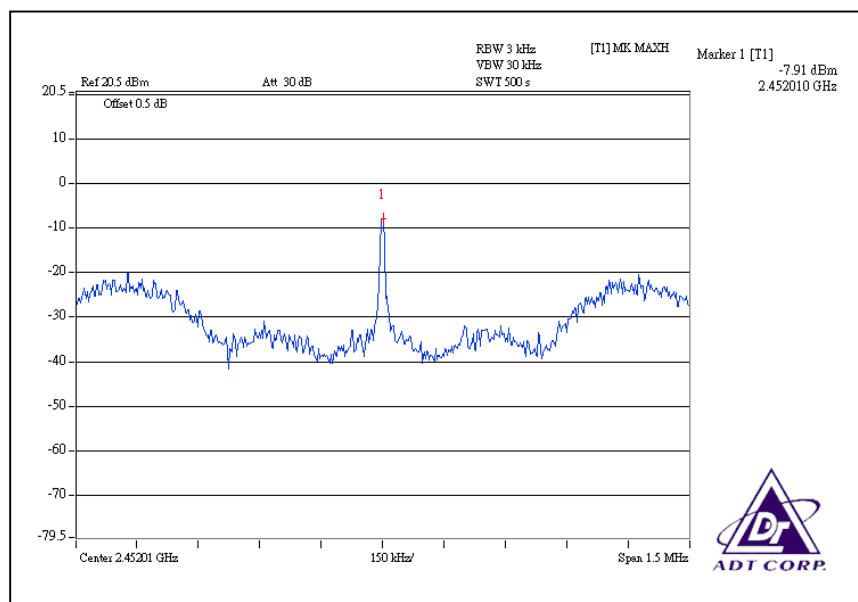
CH1



CH6



CH11



4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100KHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 12, 2008

NOTE:

- 1.The measurement uncertainty is less than $\pm 2.6\text{dB}$, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.6.3 TEST PROCEDURE

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

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

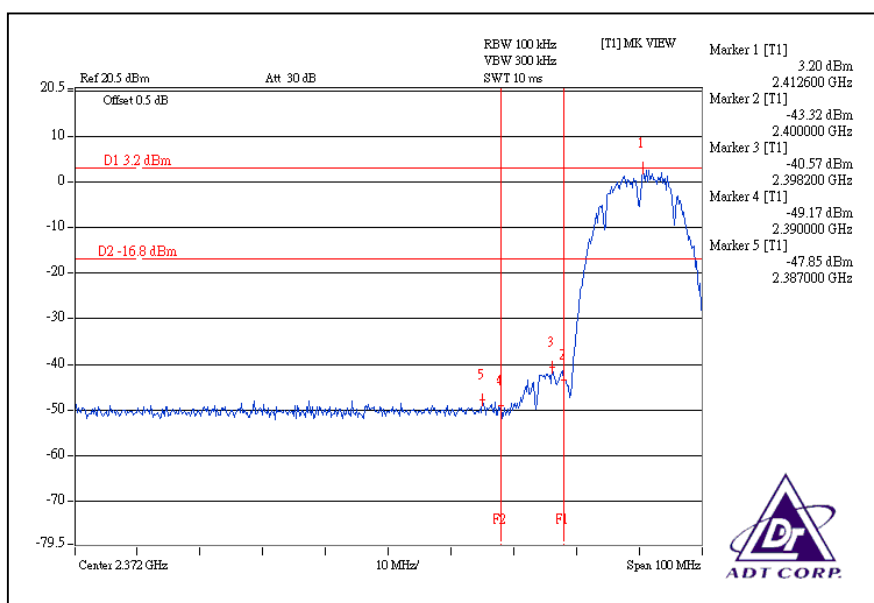
4.6.6 TEST RESULTS

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

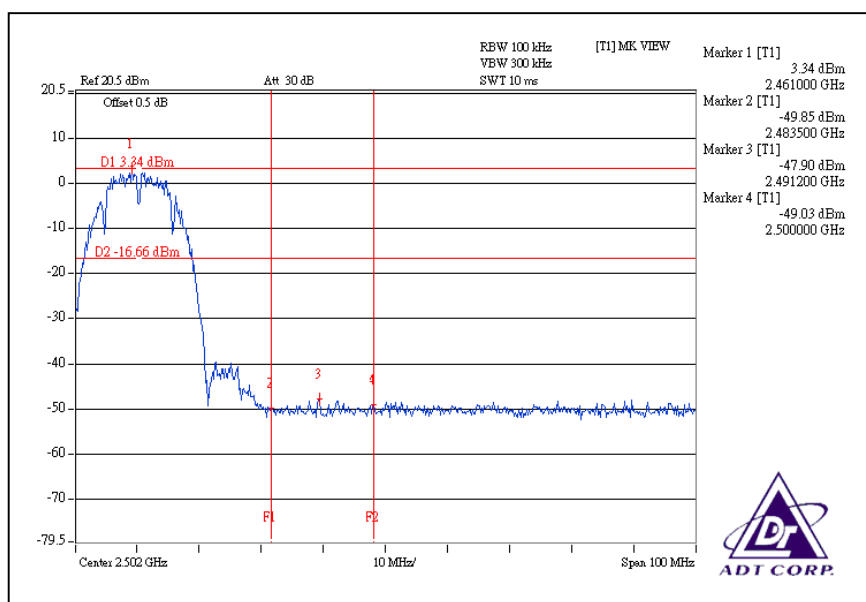
802.11b DSSS MODULATION: FOR TRANSFER RATE: 1Mbps

Chain 0

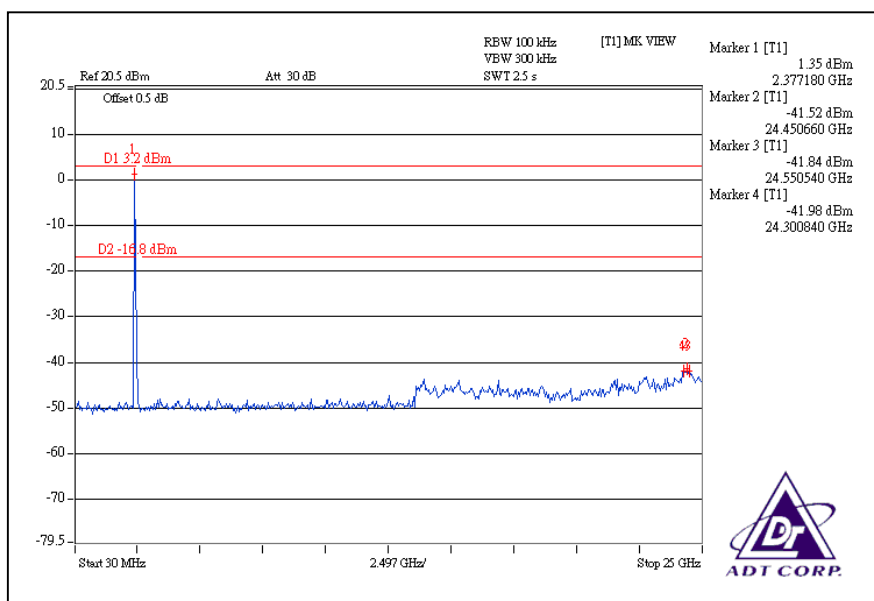
CH1



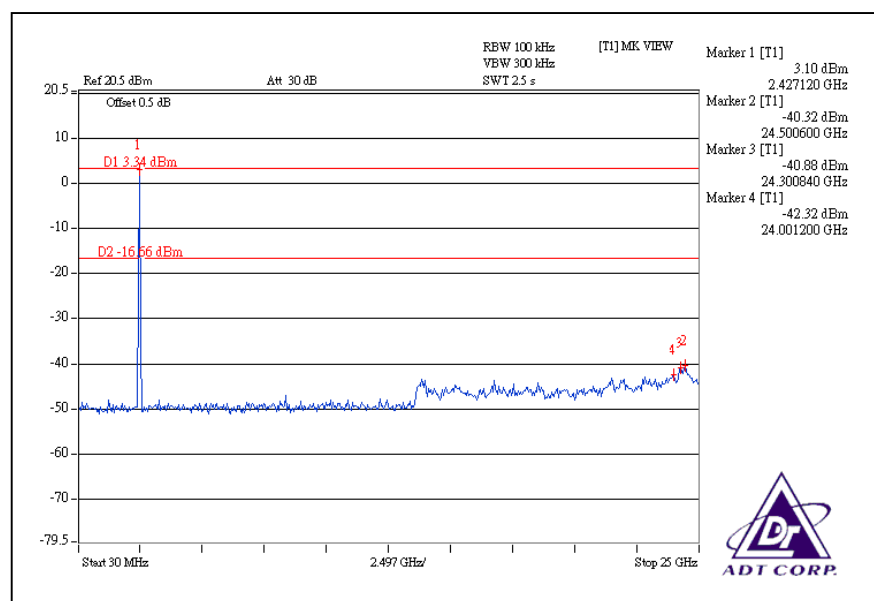
CH11



CH1

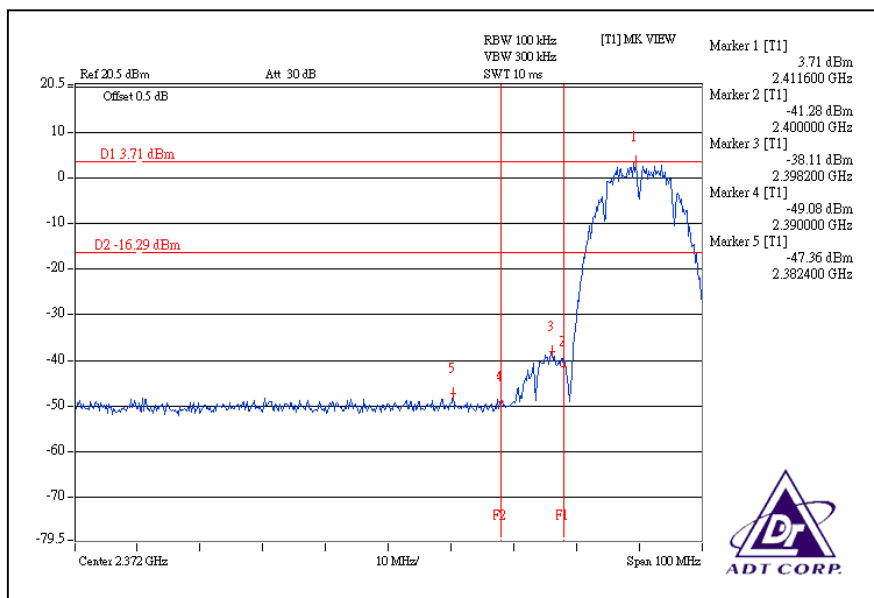


CH11

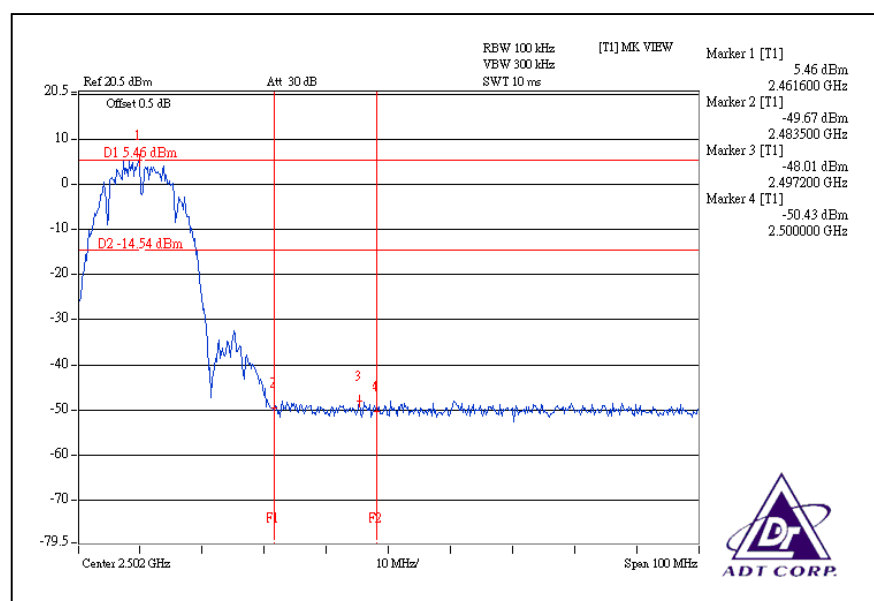


Chain 1

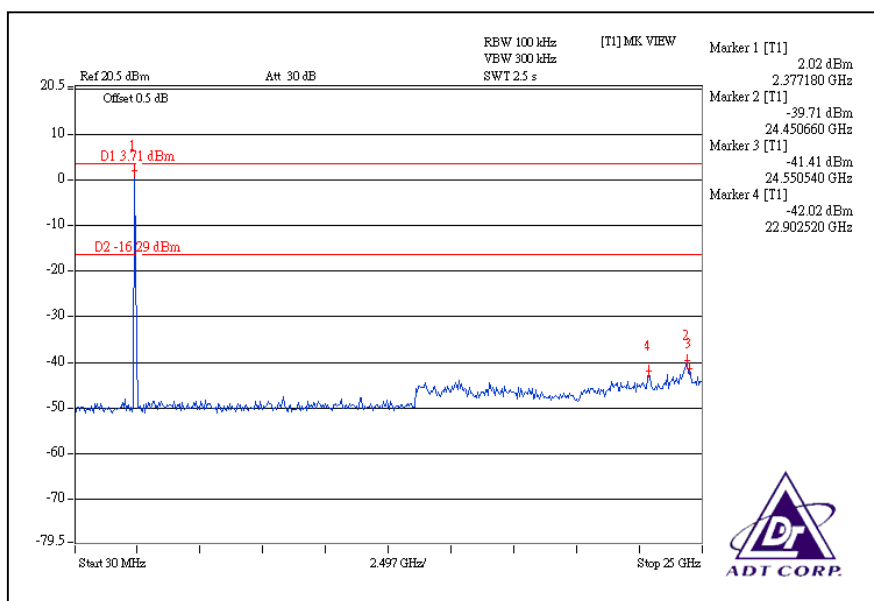
CH1



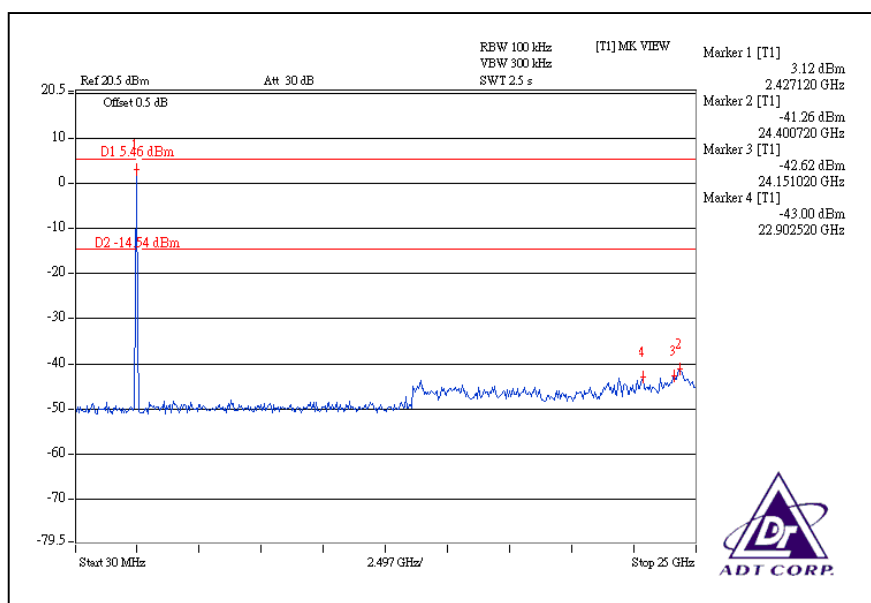
CH11



CH1

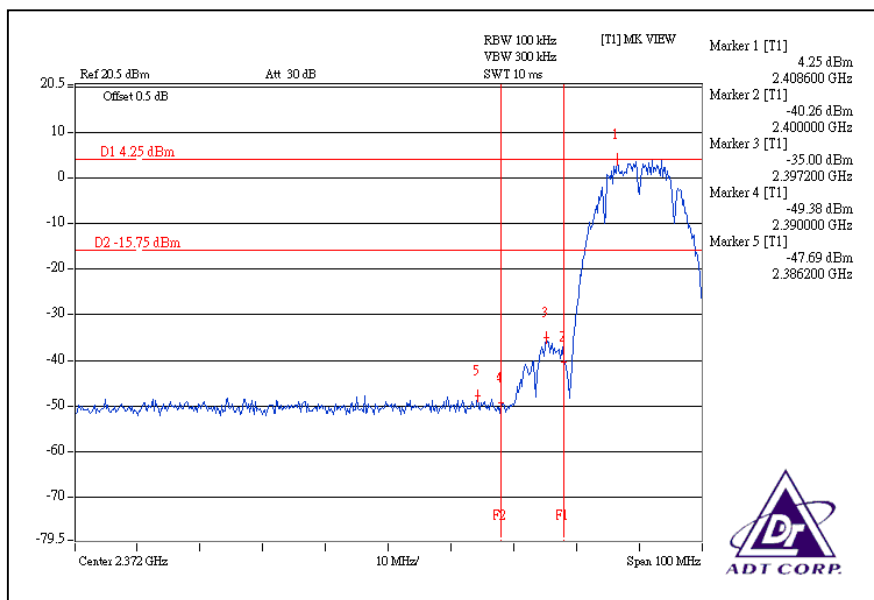


CH11

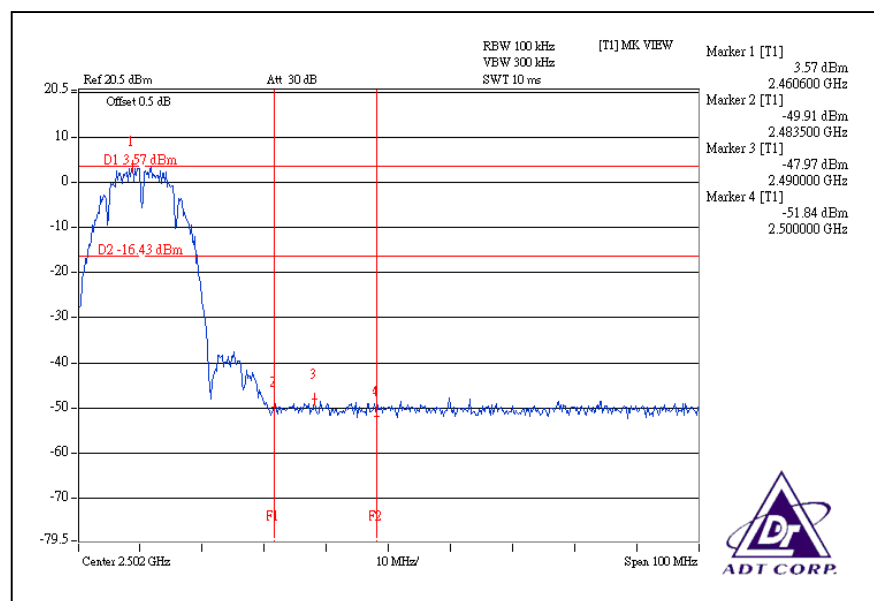


Chain 2

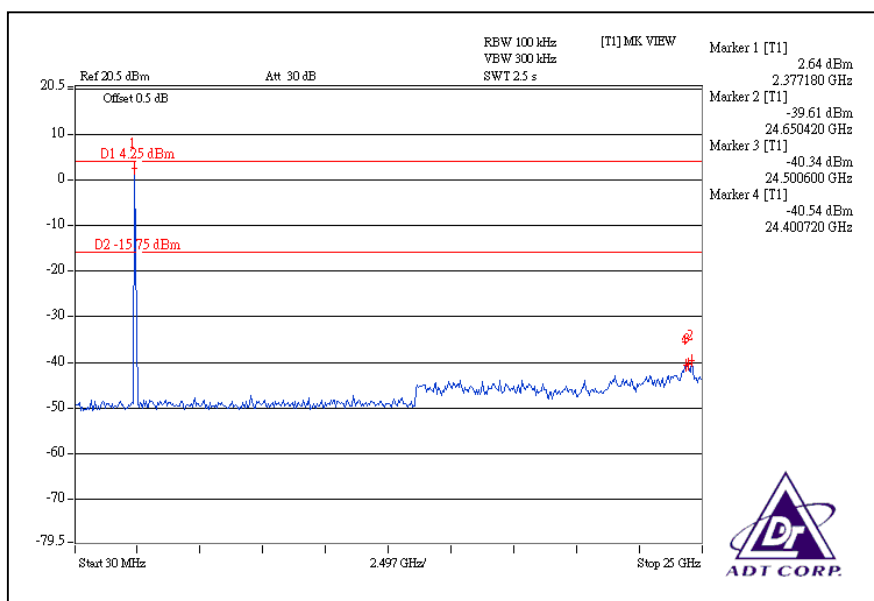
CH1



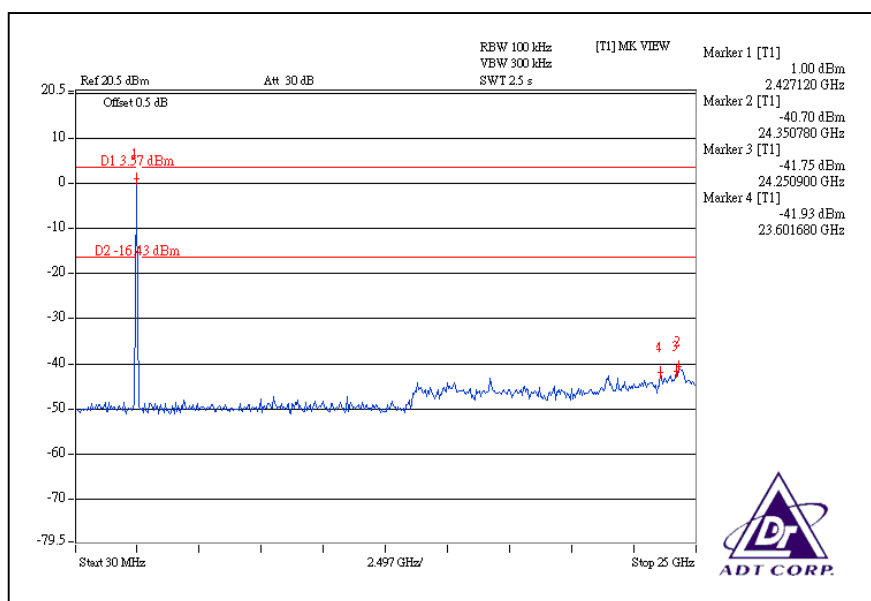
CH11



CH1



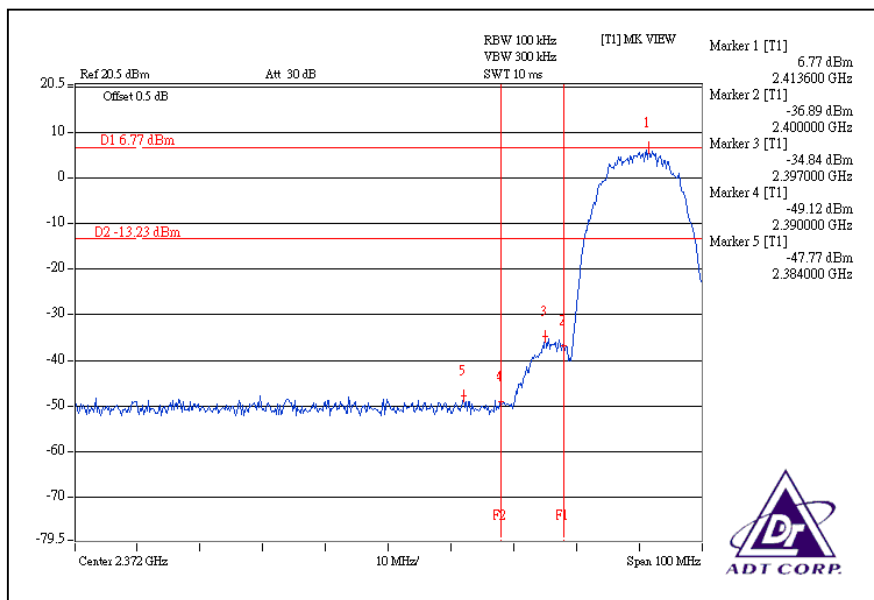
CH11



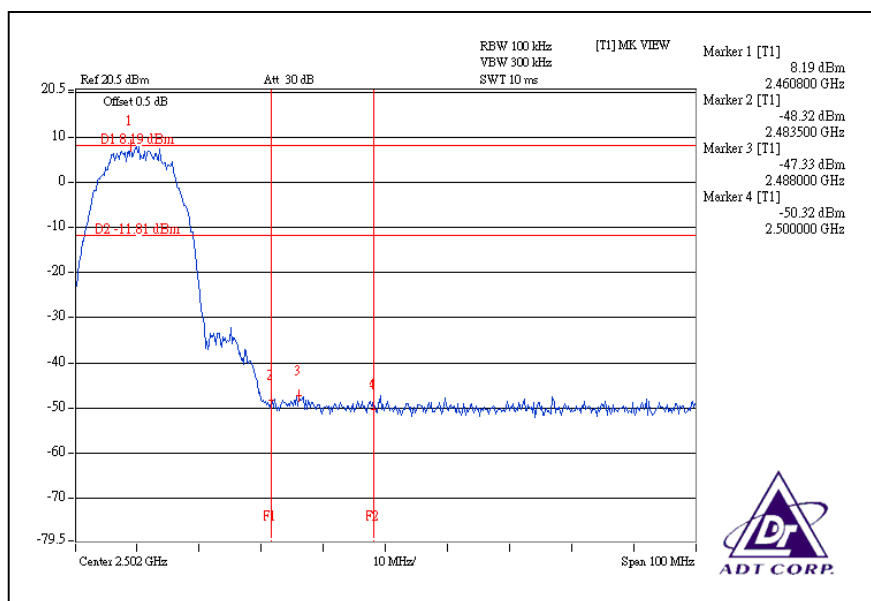
FOR TRANSFER RATE: 11Mbps

Chain 0

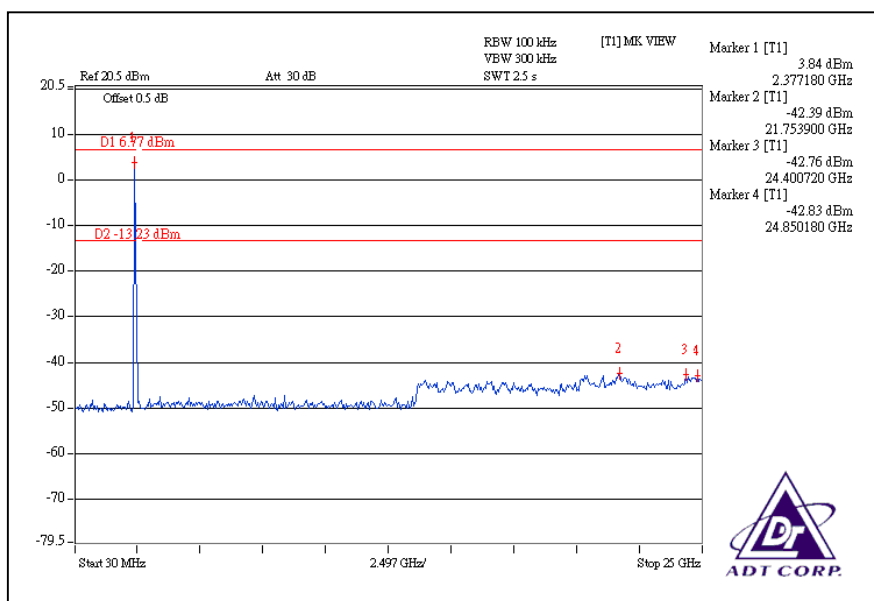
CH1



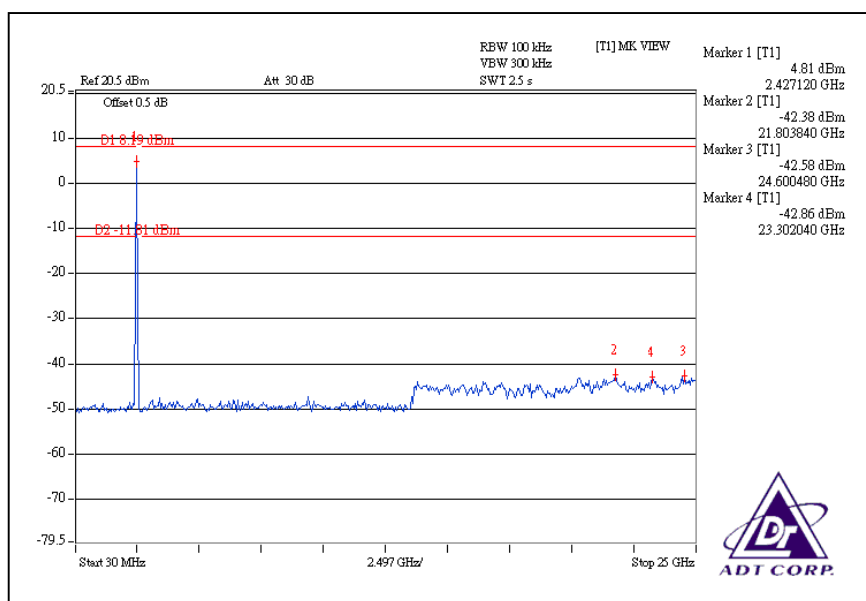
CH11



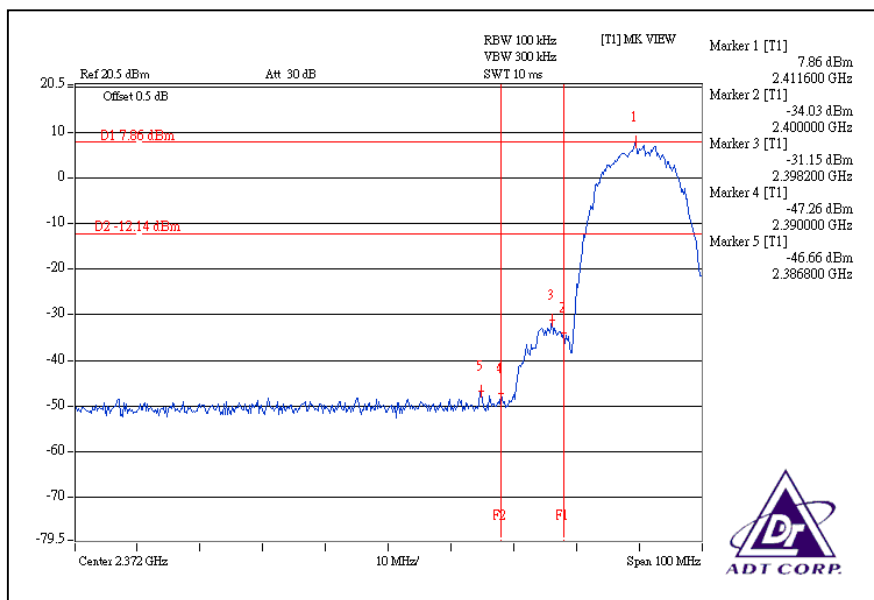
CH1



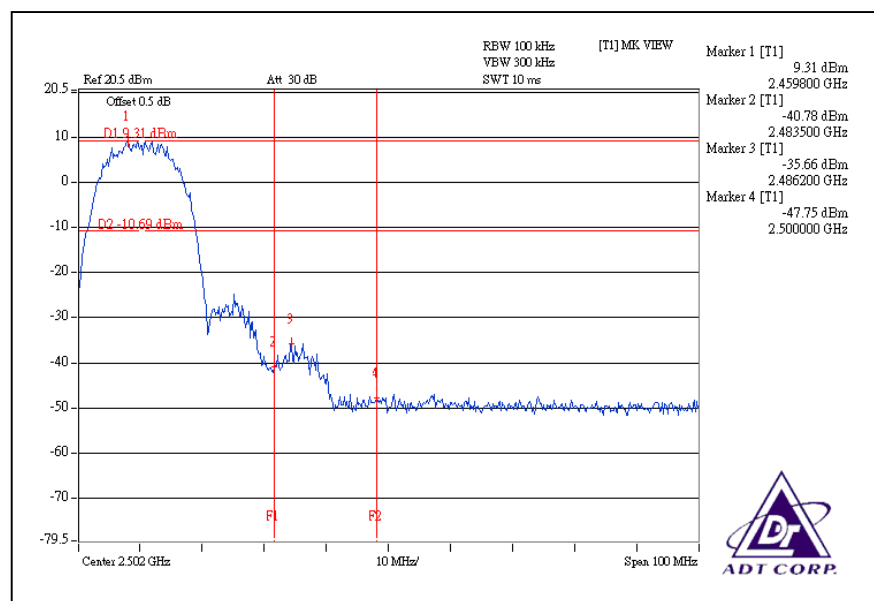
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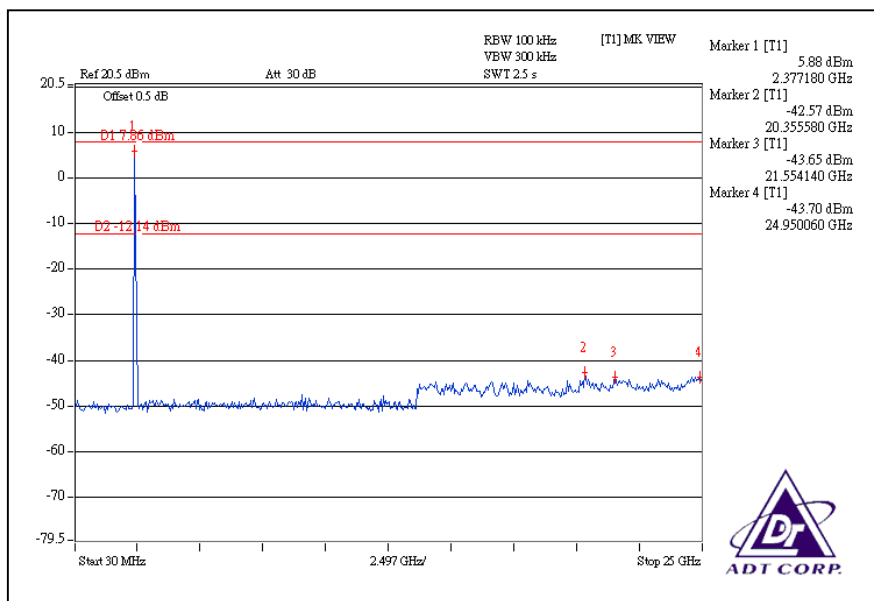
Chain 1 CH1



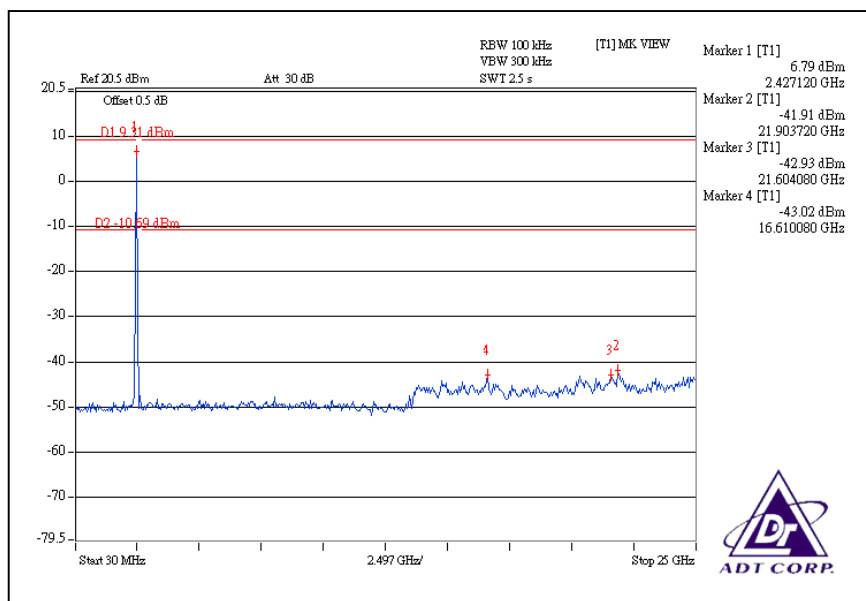
CH11



CH1

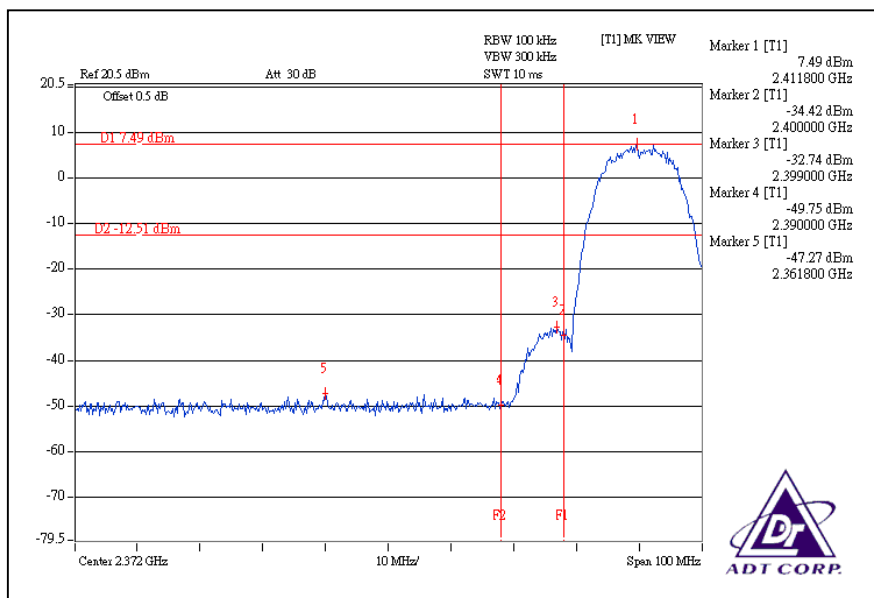


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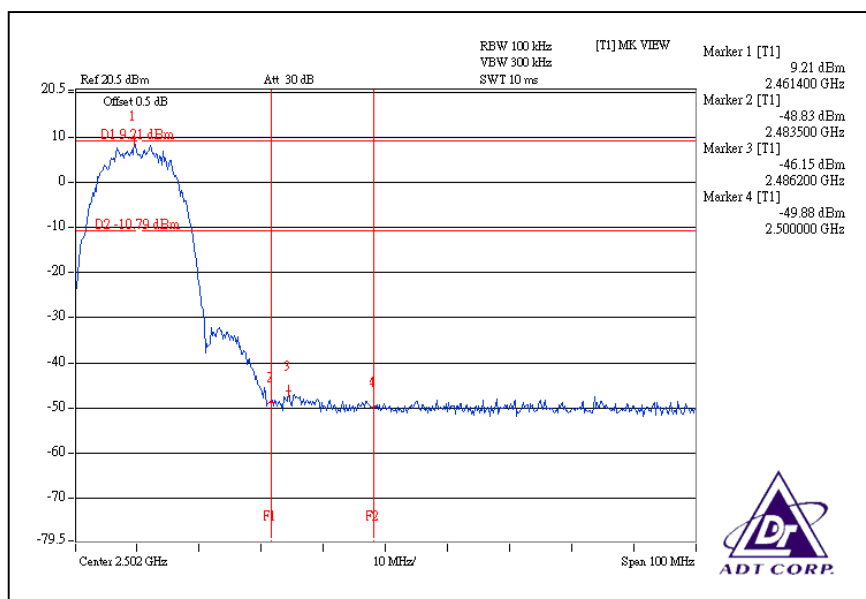


Chain 2

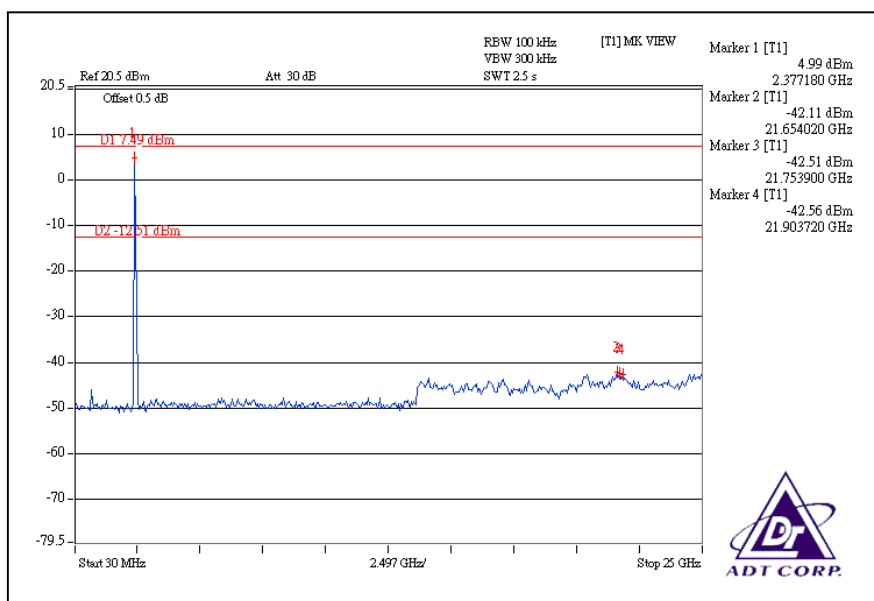
CH1



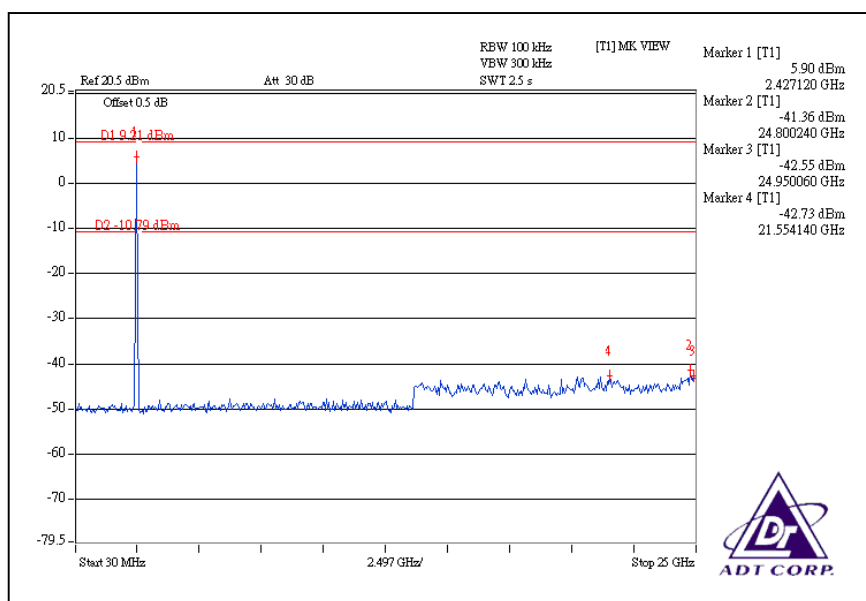
CH11



CH1



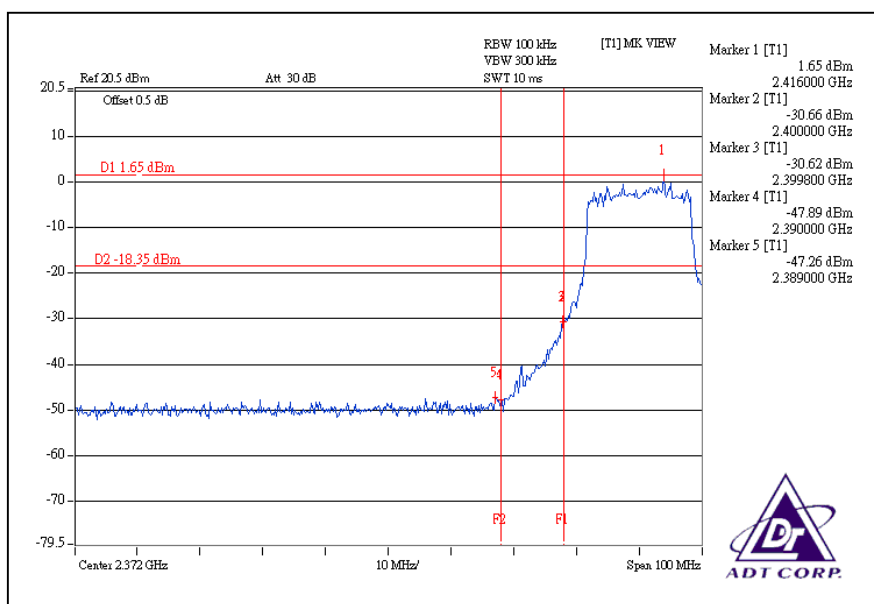
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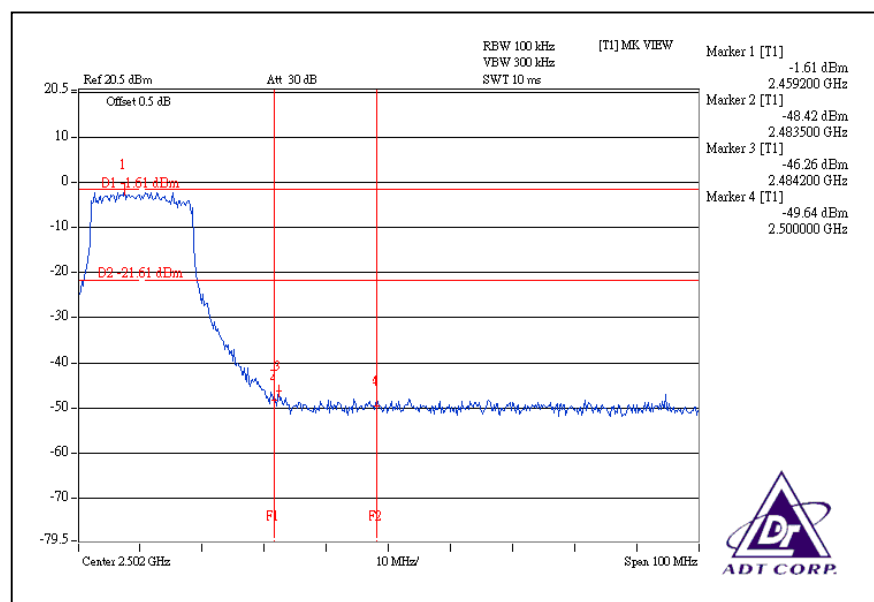
802.11g OFDM MODULATION:

Chain 0

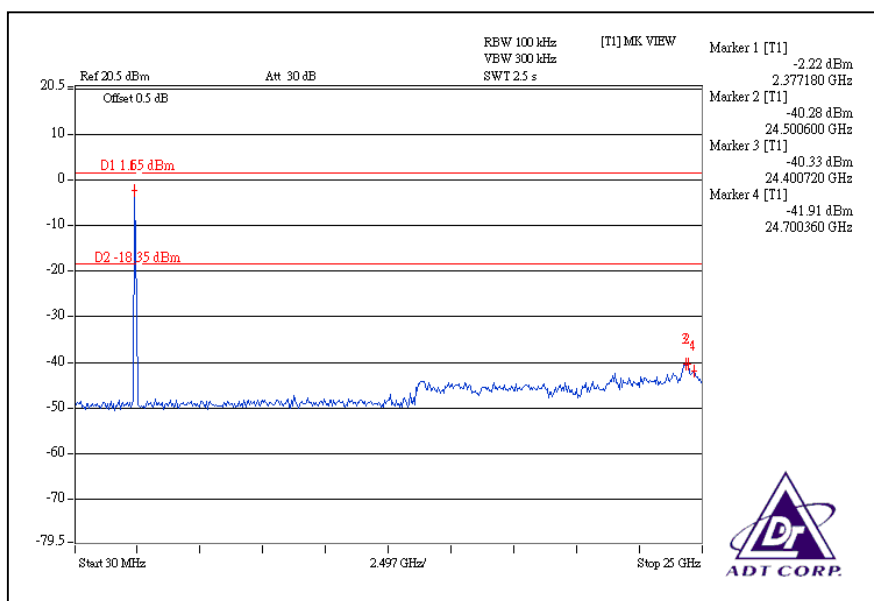
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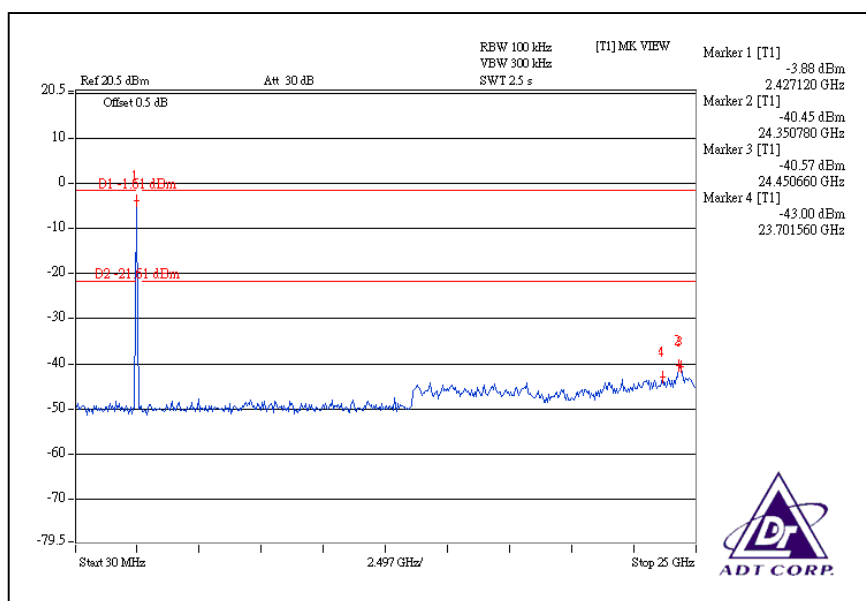
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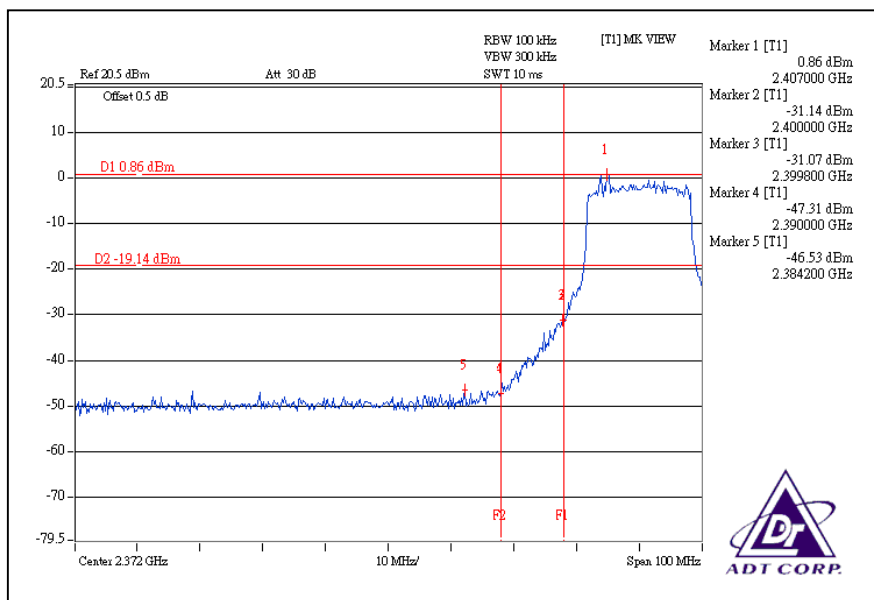
CH1



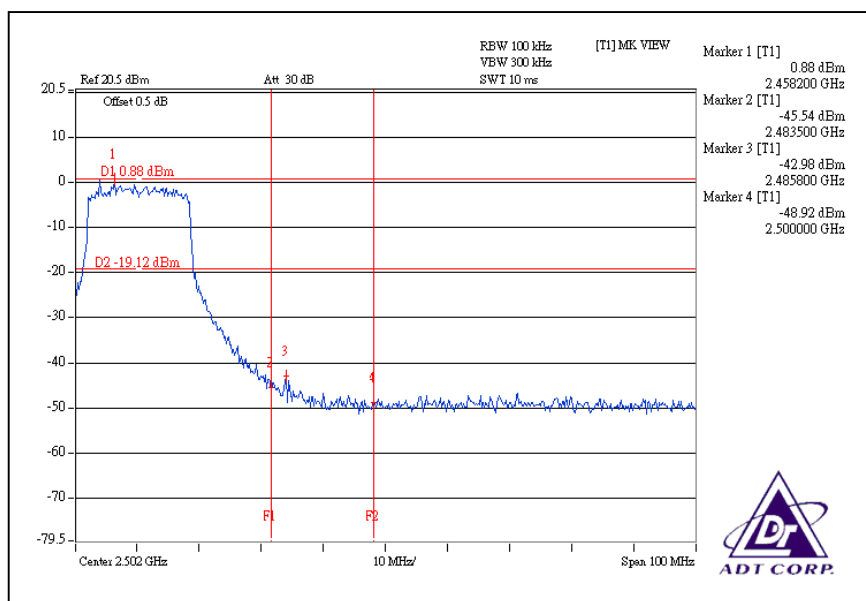
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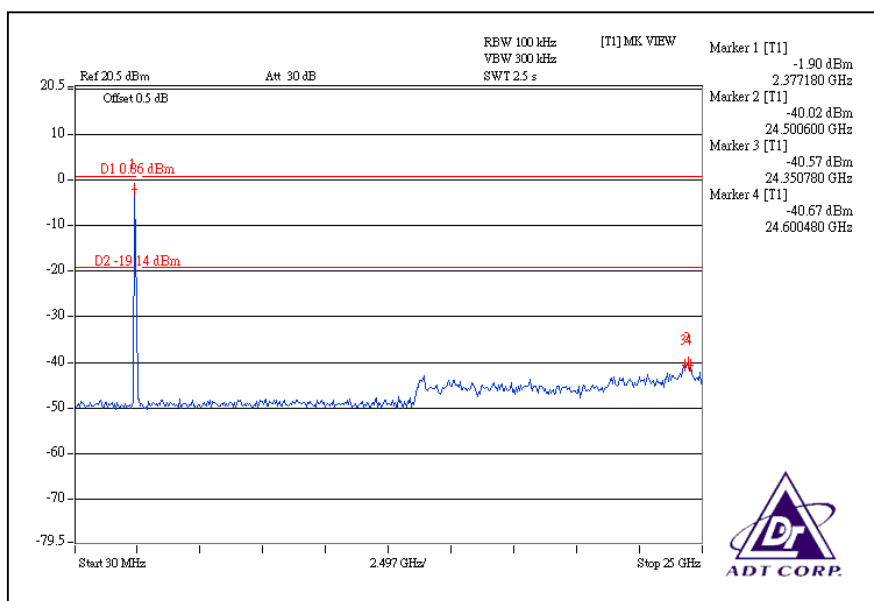
Chain 1 CH1



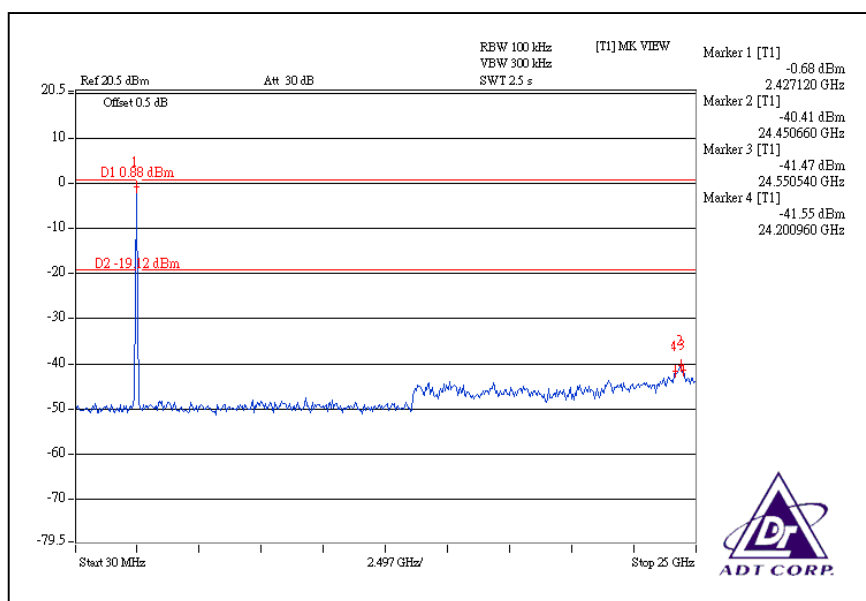
CH11



CH1

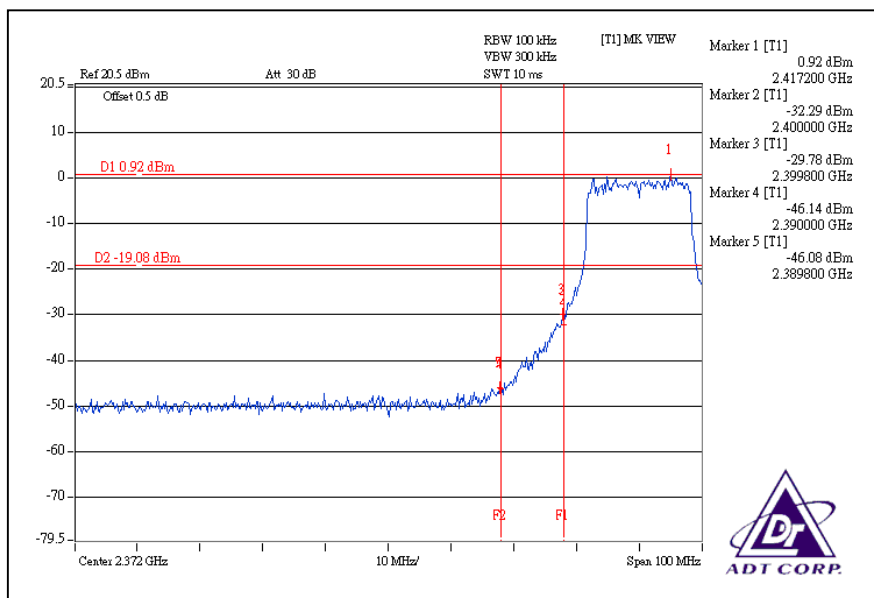


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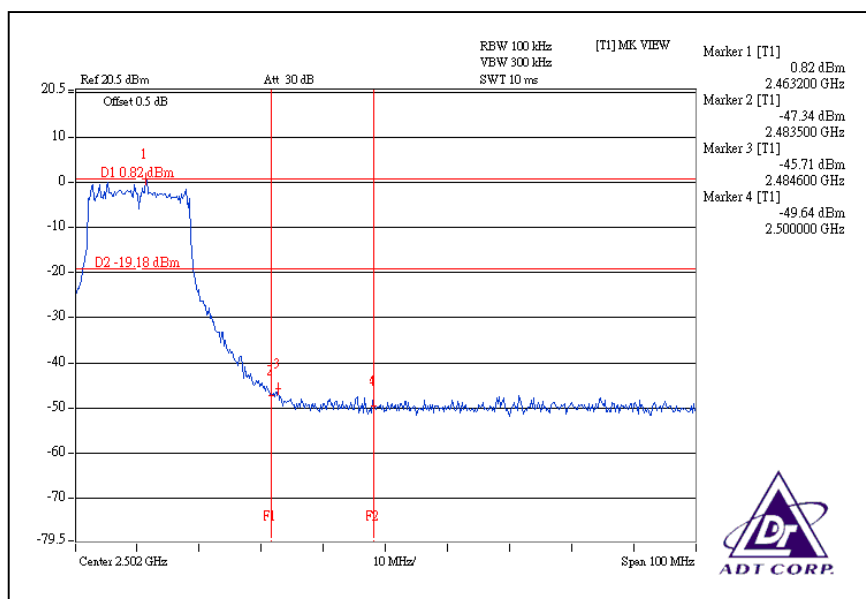


Chain 2

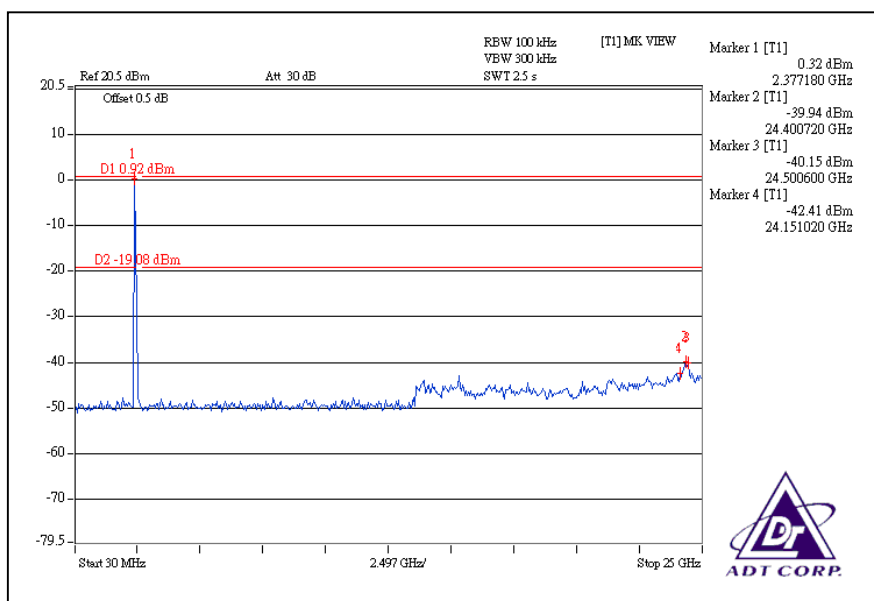
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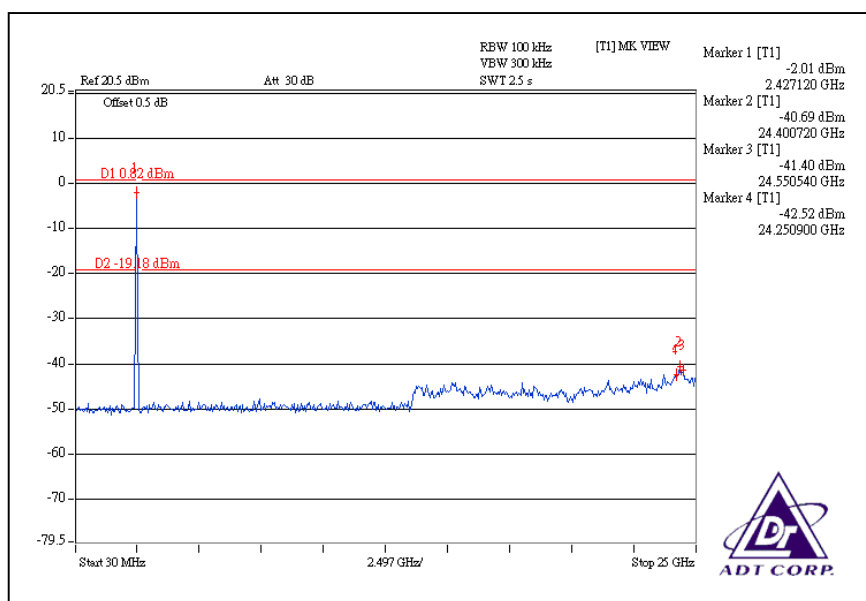
CH11



CH1



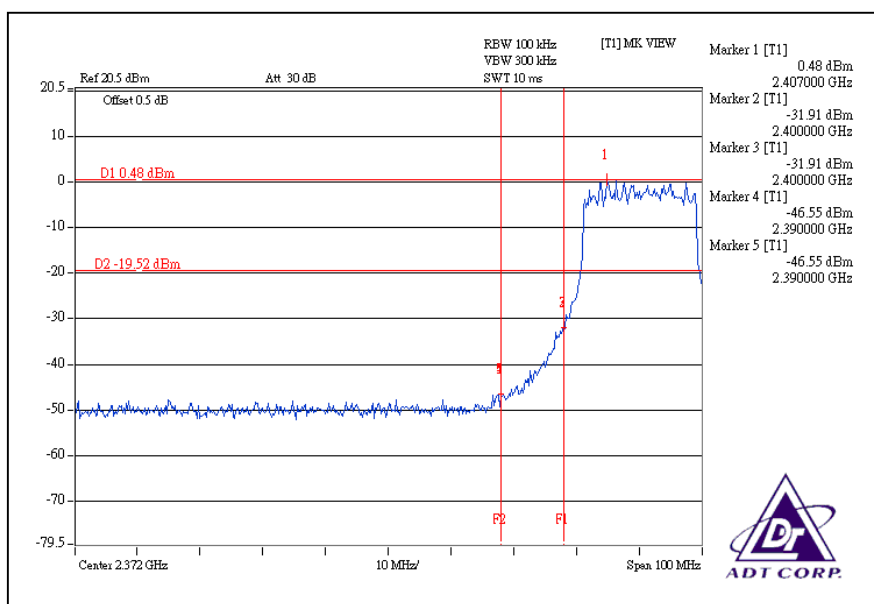
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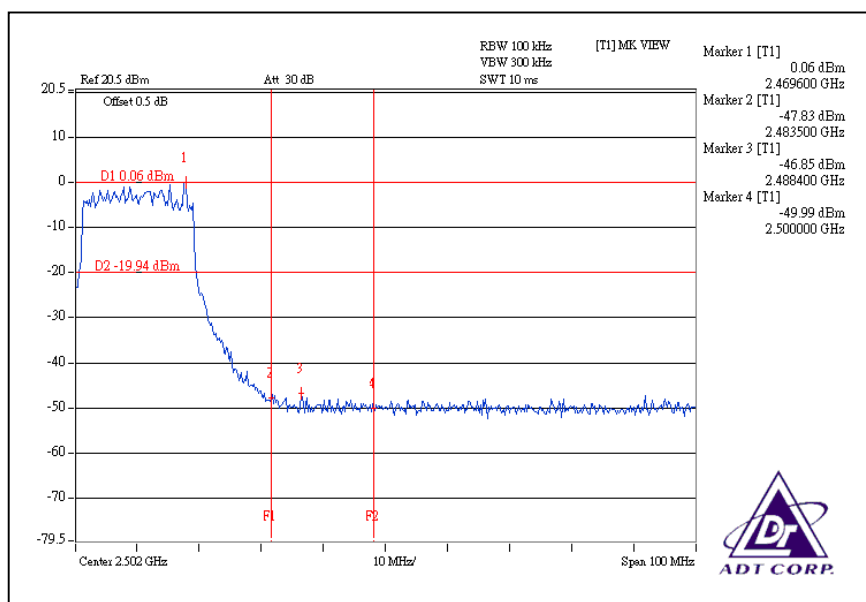
DRAFT 802.11n (20MHz) OFDM MODULATION:

Chain 0

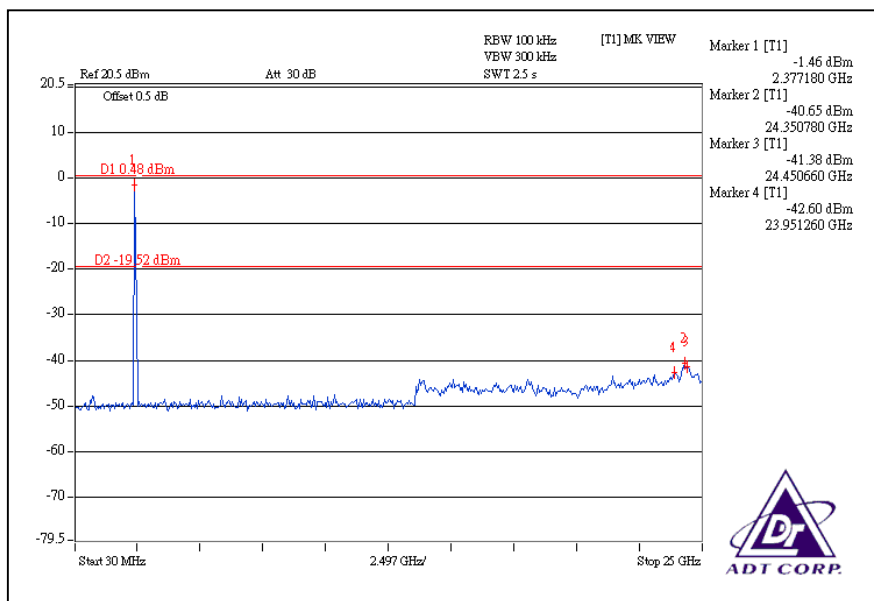
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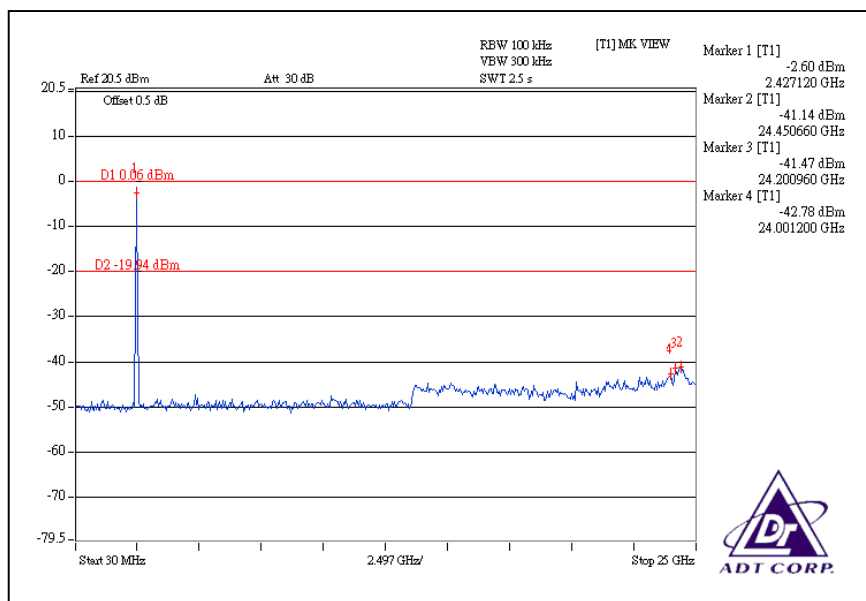
CH11



CH1

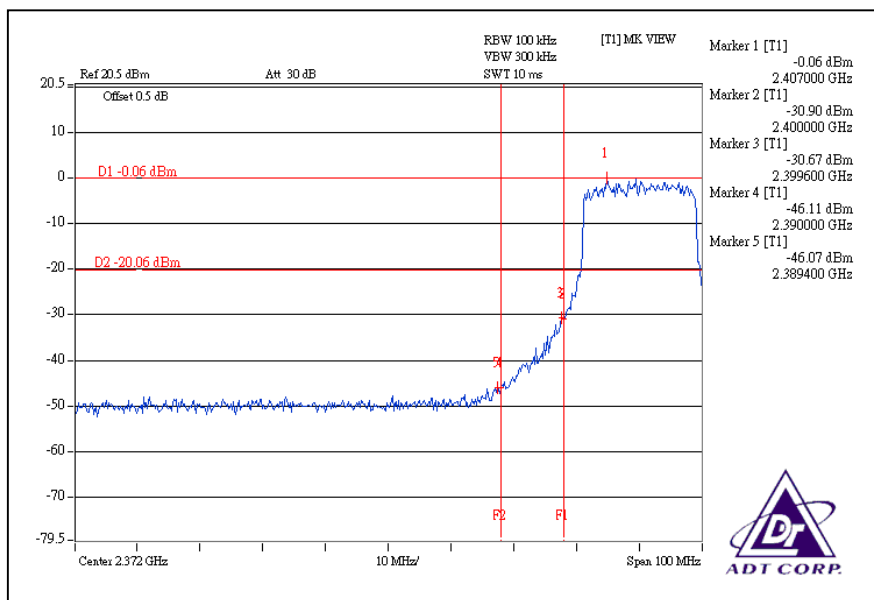


CH11

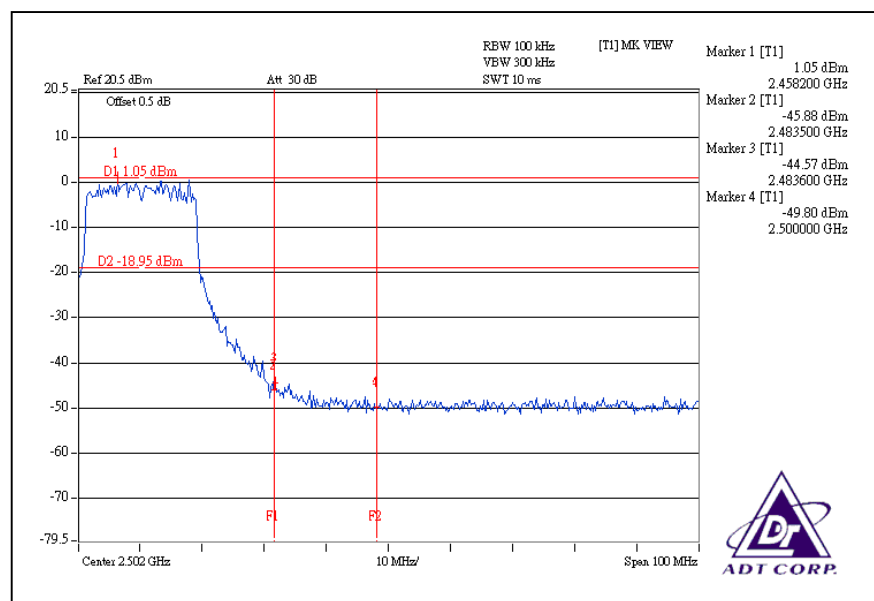


Chain 1

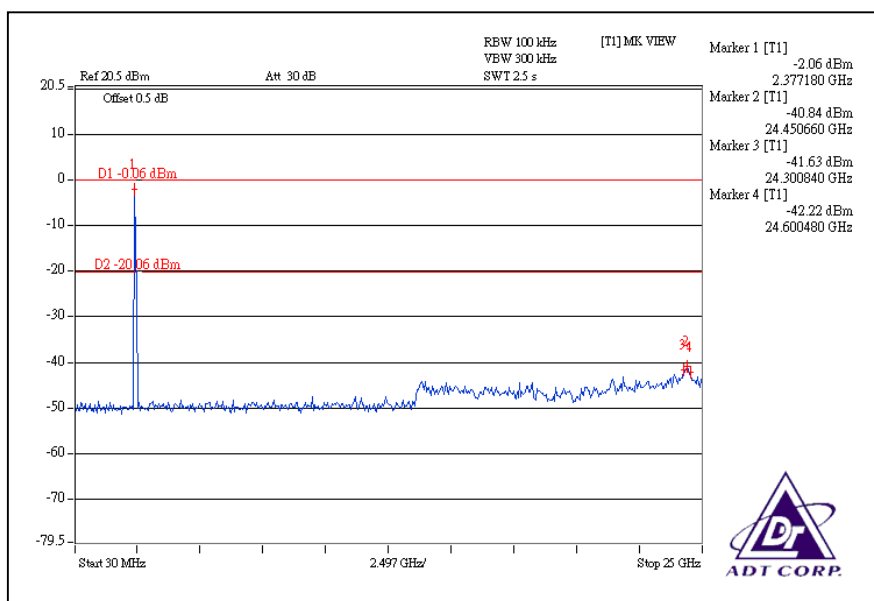
CH1



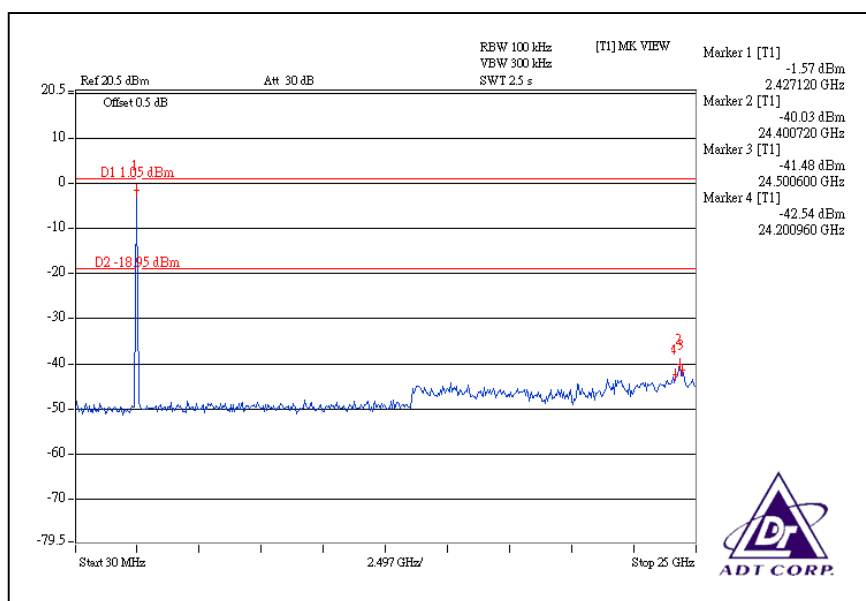
CH11



CH1

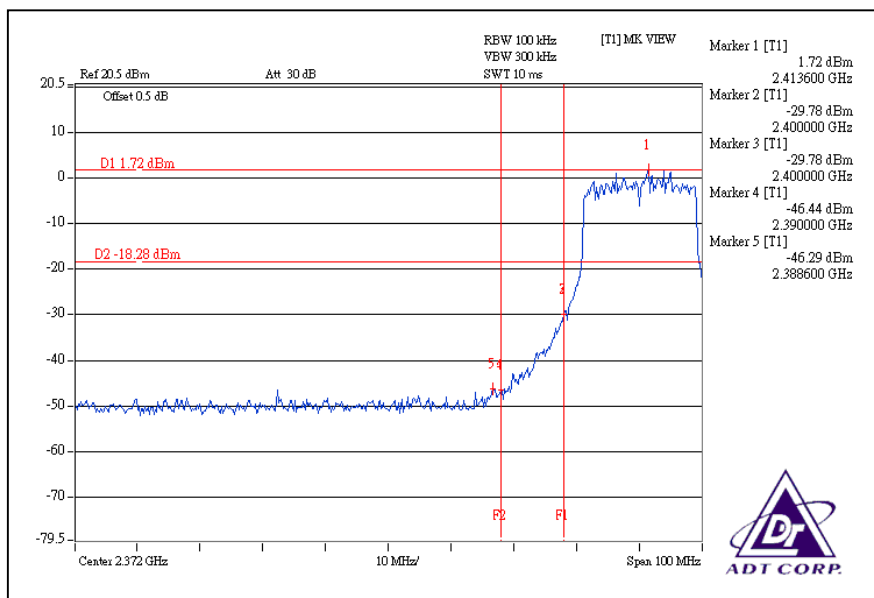


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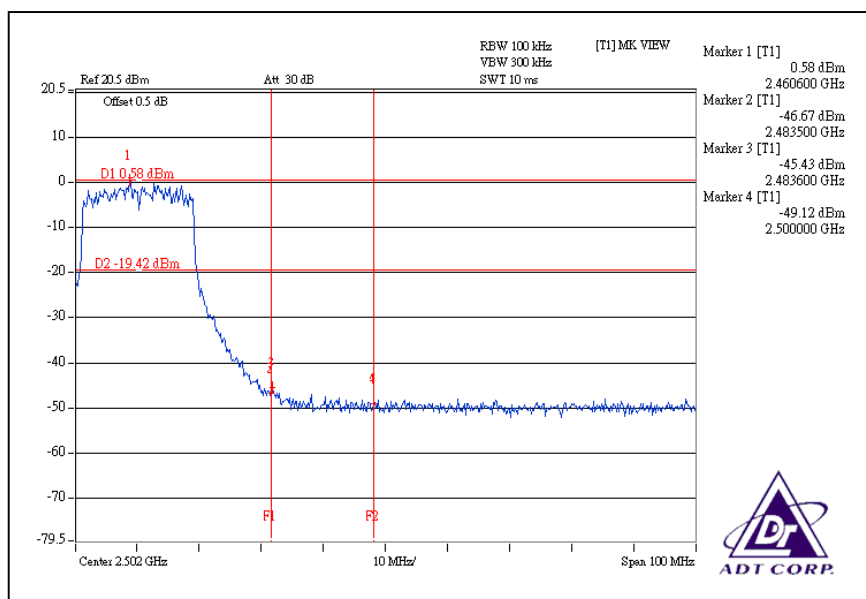


Chain 2

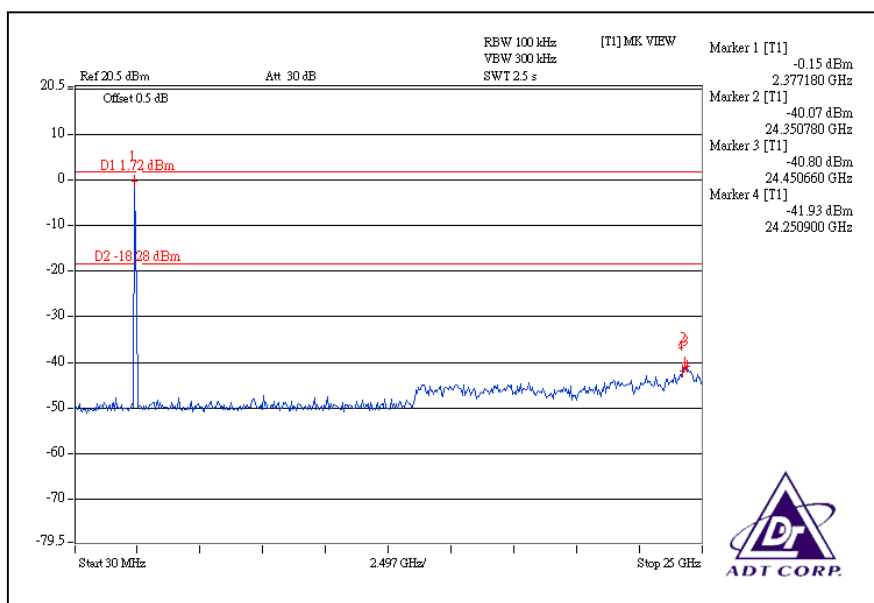
CH1



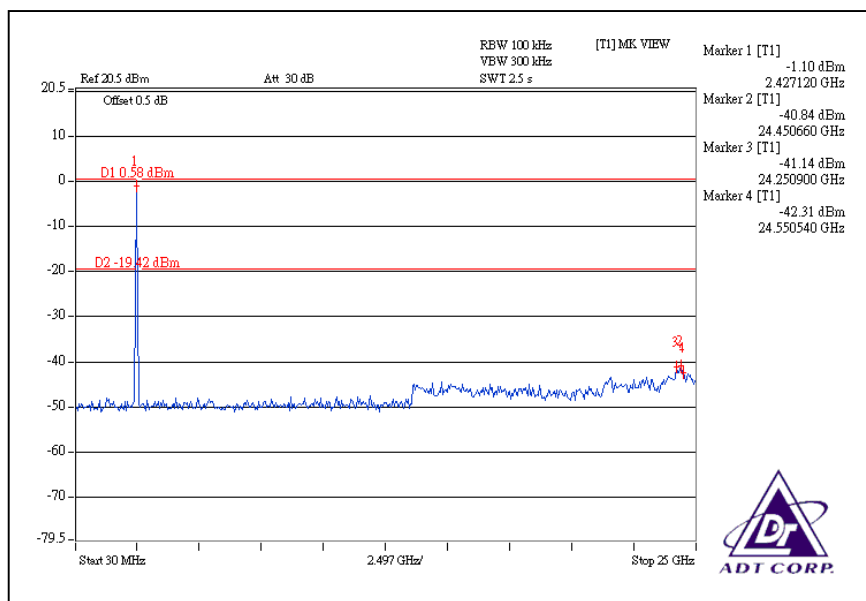
CH11



CH1



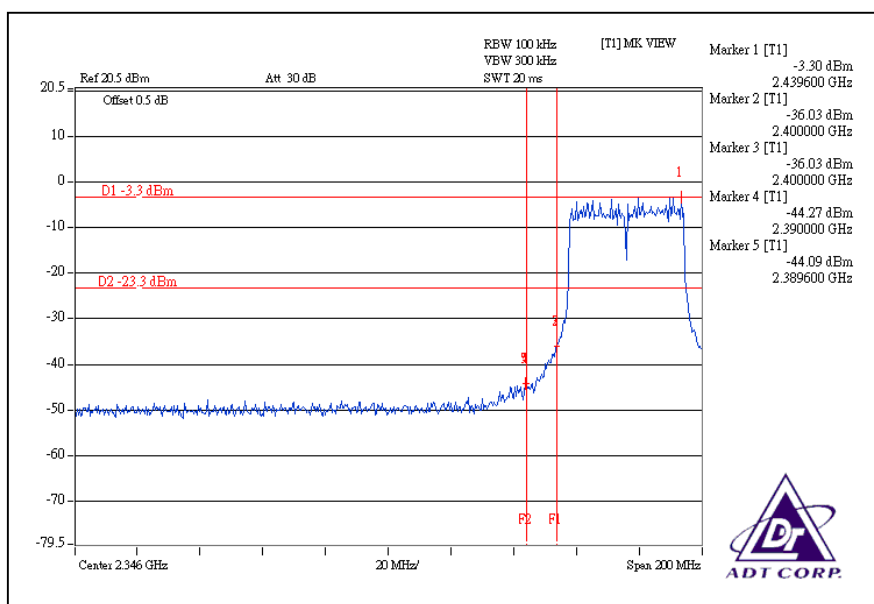
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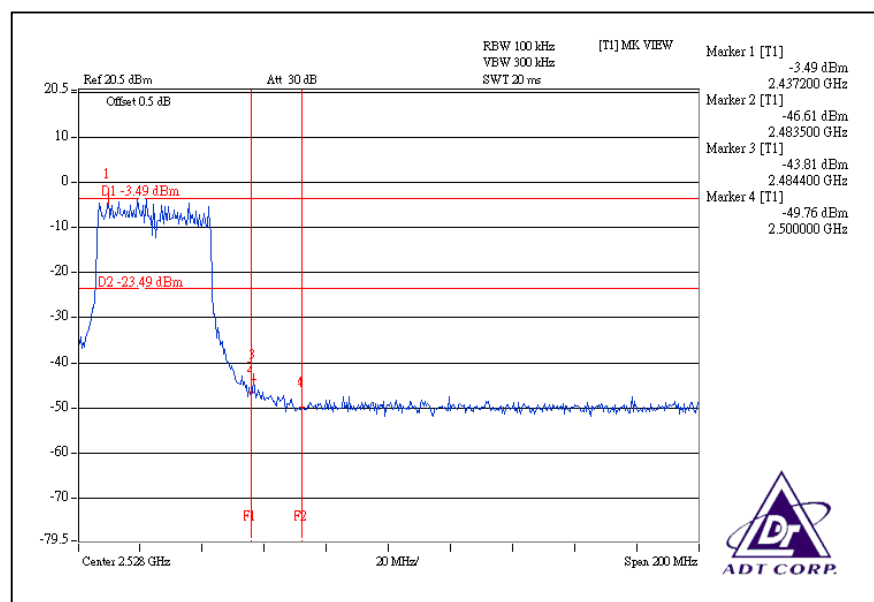
DRAFT 802.11n (40MHz) OFDM MODULATION:

Chain 0

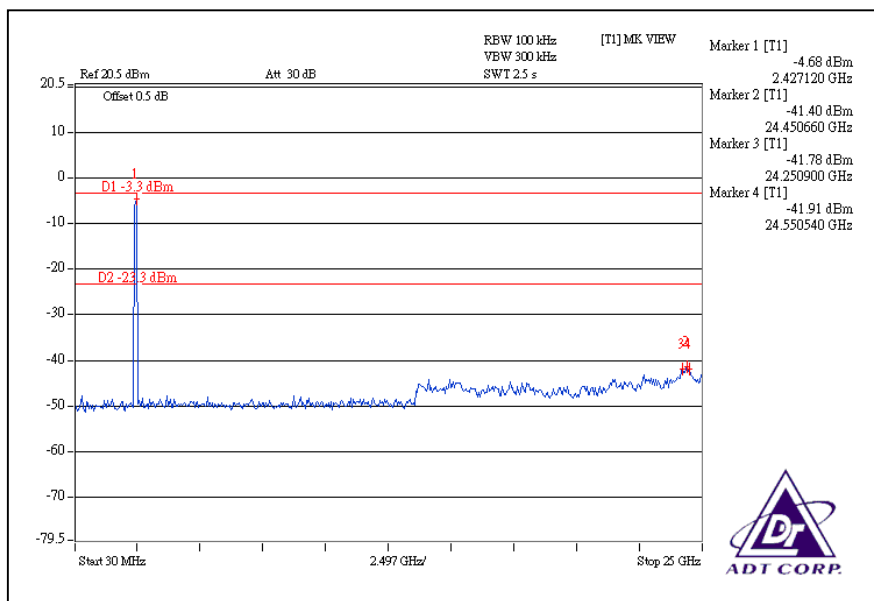
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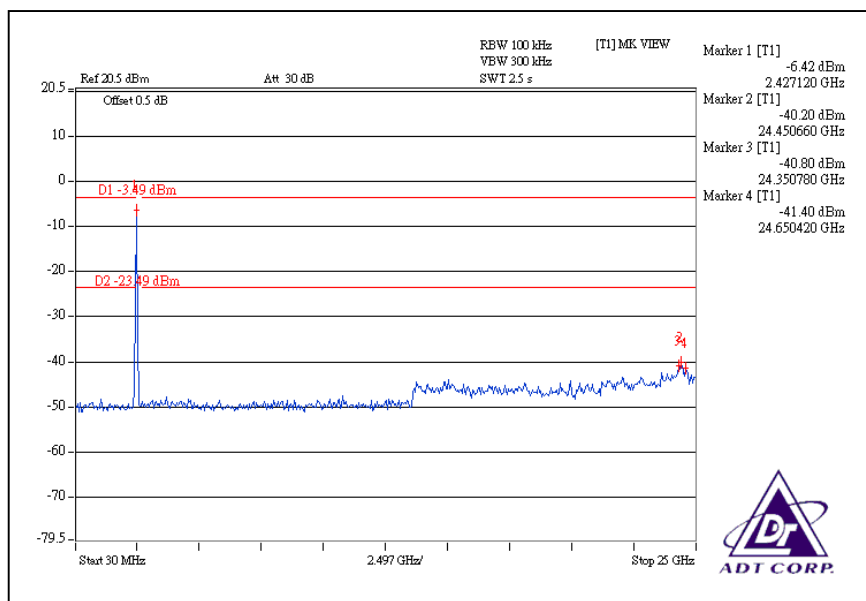
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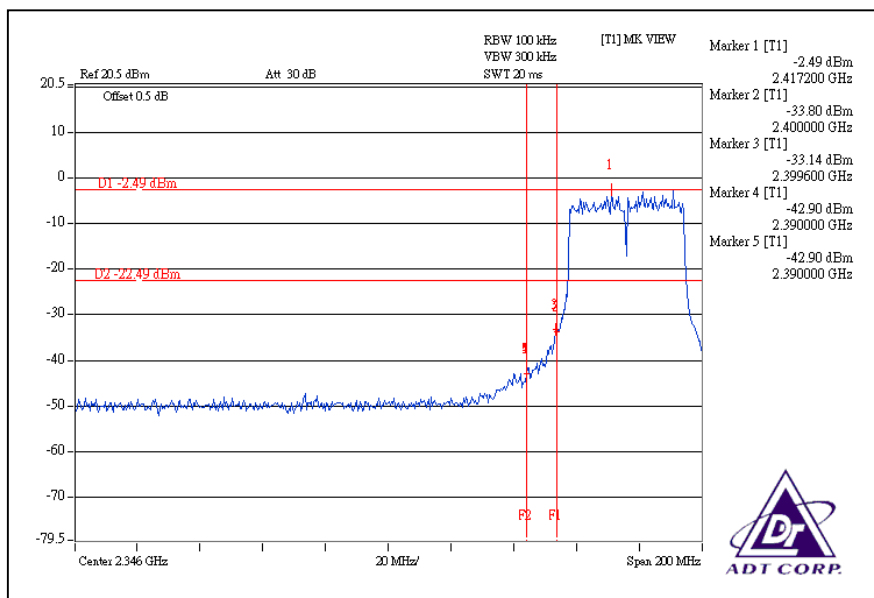
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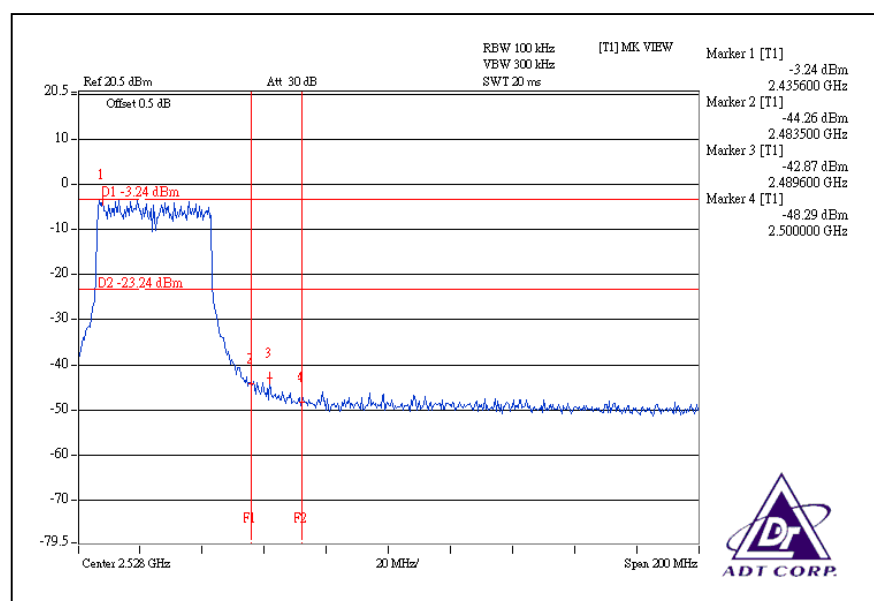
CH11



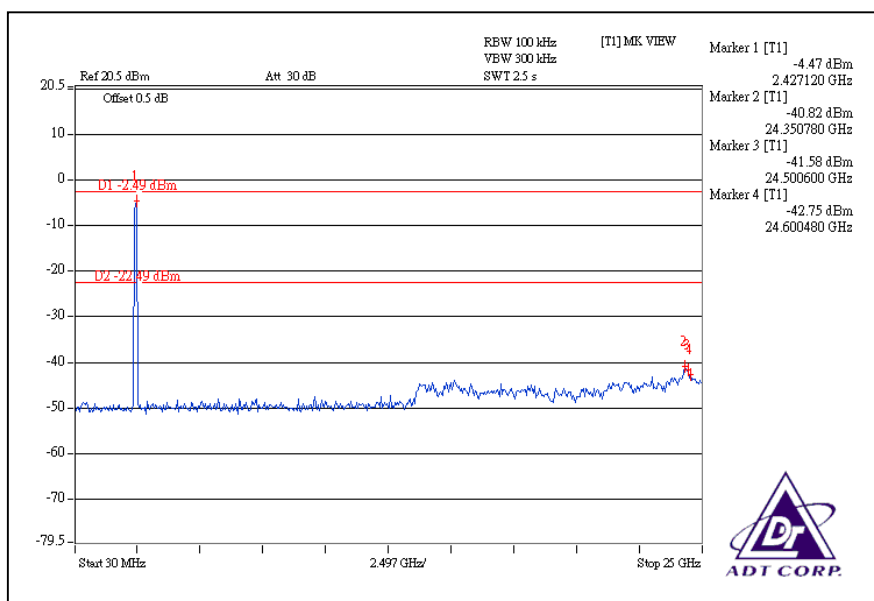
Chain 1 CH1



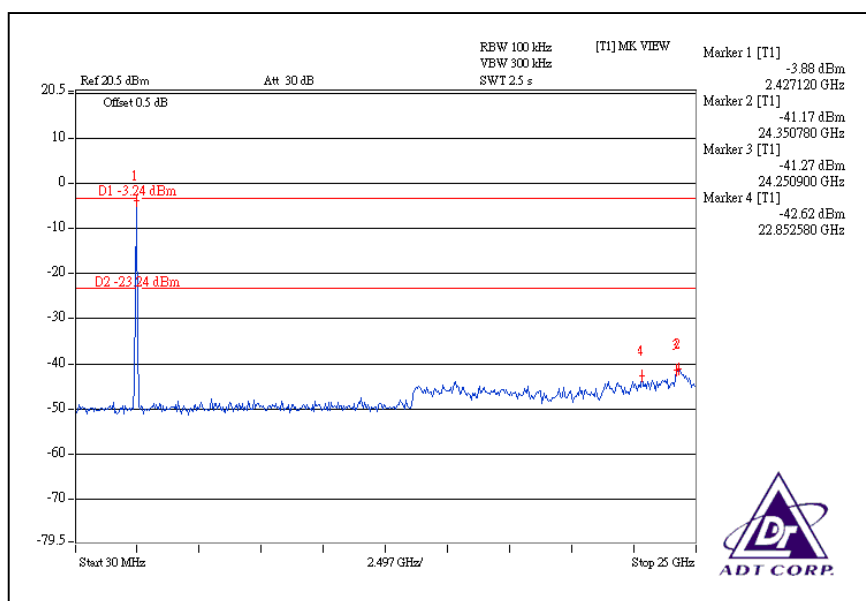
CH11



CH1

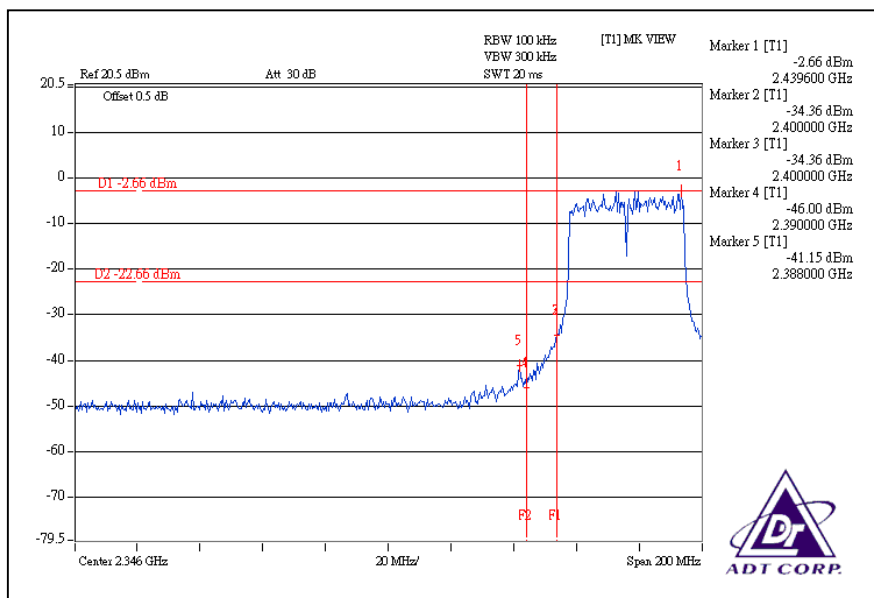


CH11

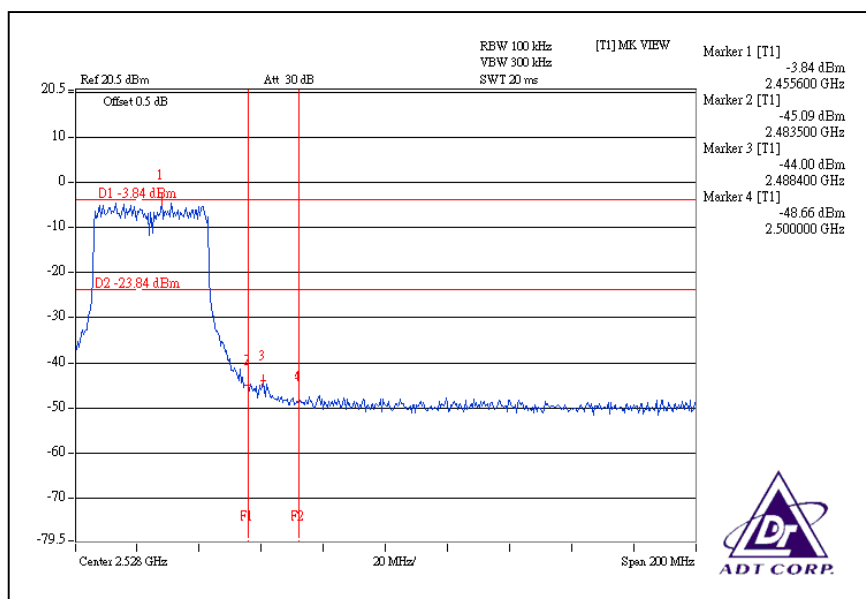


Chain 2

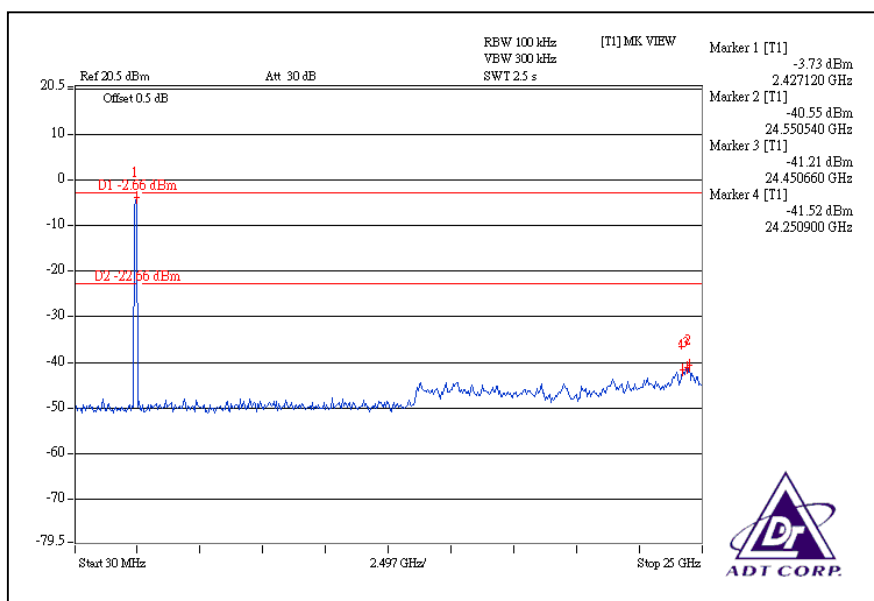
CH1



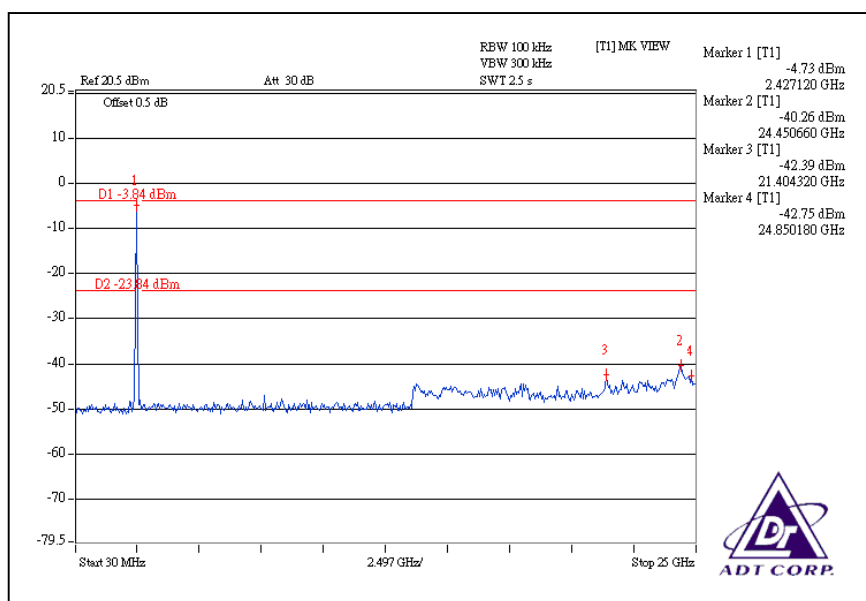
CH11



CH1



CH11



4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

There are two antennas provided to this EUT, please refer to the following table:

No	Model No.	Antenna Gain	For 2.4GHz Gain (dBi)	For 5.15~5.25GHz Gain (dBi)	For 5.725~5.850GHz Gain (dBi)	Antenna Type	Connector
1	DAP-2590	Gain (dBi)	4	6.10	7.12	Dipole	Reverse SMA
		Cable Loss (dB)	0.3		0.6		
		Net Gain (dB)	3.7	5.5	6.52		
2	ALP05-220170	Gain (dBi)	4.83	4.98	6.00	Dipole	RP SMA Plug
		Cable Loss (dB)	0.3		0.6		
		Net Gain (dB)	4.53	4.38	5.4		

5. TEST TYPES AND RESULTS (802.11a, 5725~5850MHz Band)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver	ESCS 30	847124/029	Mar. 28, 2009
Line-Impedance Stabilization Network(for EUT)	ESH3-Z5	848773/004	Nov. 08, 2008
Line-Impedance Stabilization Network(for Peripheral)	ENV-216	100071	Nov. 26, 2008
RF Cable (JETBAO)	RG233/U	Cable_CB_01	Dec. 09, 2008
50 ohms Terminator	50	3	Nov. 15, 2008
Software	ADT_Cond_V7.3.2	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 ADT Shielded Room No. B.
3. The VCCI Con B Registration No. is C-2193.
4. The measurement uncertainty is 2.44 dB, which is calculated as per the document CISPR 16-4. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

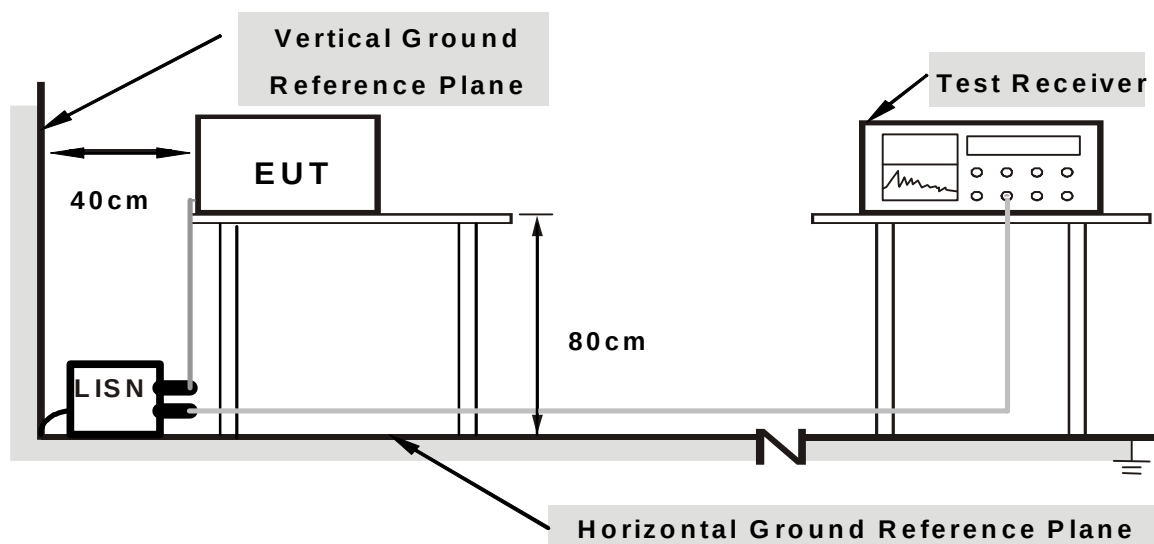
5.1.3 TEST PROCEDURES

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

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



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

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

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

5.1.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

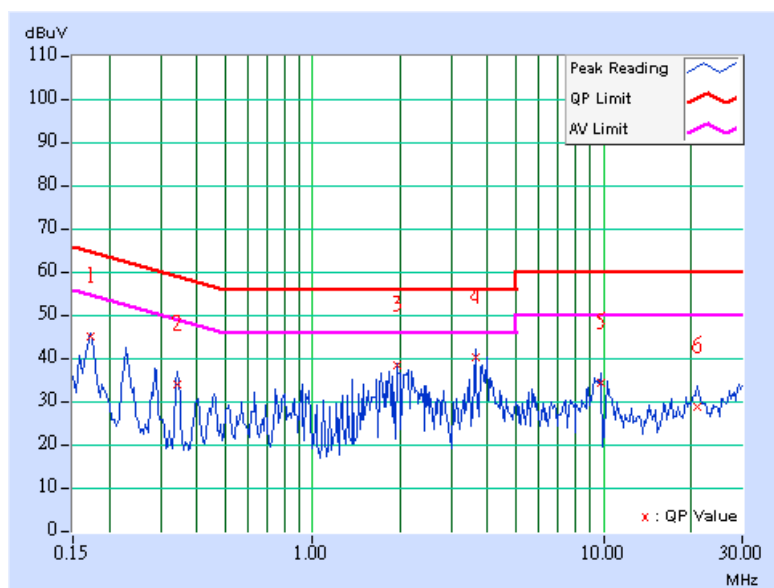
5.1.7 TEST RESULTS

DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	13Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 960hPa	TESTED BY	Rex Huang

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	0.173	9.65	34.82	-	44.47	-	64.79	54.79	-20.33	-
2	0.341	9.66	23.96	-	33.62	-	59.17	49.17	-25.55	-
3	1.953	9.85	28.39	-	38.24	-	56.00	46.00	-17.76	-
4	3.617	9.80	30.29	-	40.09	-	56.00	46.00	-15.91	-
5	9.813	10.13	24.32	-	34.45	-	60.00	50.00	-25.55	-
6	21.004	10.23	18.59	-	28.82	-	60.00	50.00	-31.18	-

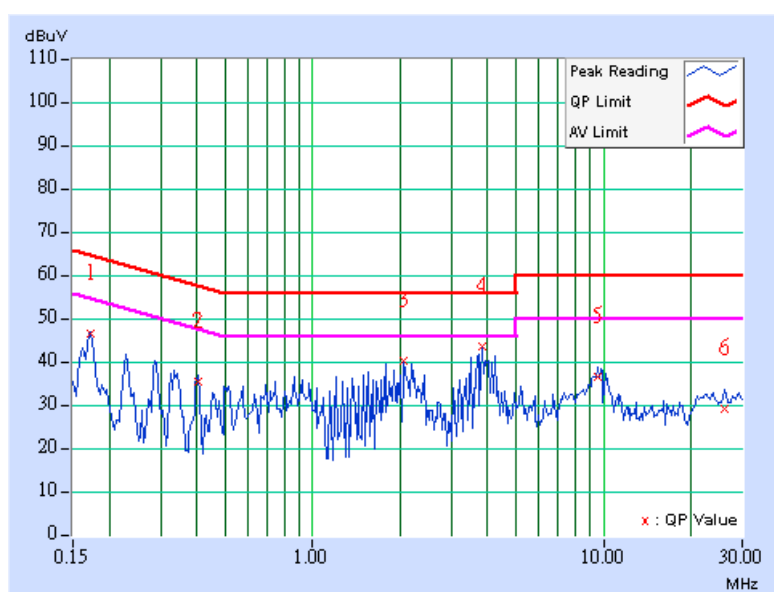
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	27Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 960hPa	TESTED BY	Rex Huang

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	0.173	9.65	36.19	-	45.84	-	64.79	54.79	-18.96	-
2	0.404	9.65	25.24	-	34.89	-	57.77	47.77	-22.88	-
3	2.066	9.86	29.94	-	39.80	-	56.00	46.00	-16.20	-
4	3.844	9.79	33.40	-	43.19	-	56.00	46.00	-12.81	-
5	9.582	10.14	26.33	-	36.47	-	60.00	50.00	-23.53	-
6	25.938	10.39	18.98	-	29.37	-	60.00	50.00	-30.63	-

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



5.2 RADIATED EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

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

5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 15, 2008
HP Pre_Amplifier	8449B	3008A01922	Oct. 04, 2008
ROHDE & SCHWARZ Test Receiver	ESCS30	100375	Mar. 26, 2009
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	July 26, 2008
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 16, 2008
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 27, 2009
R&S Loop Antenna	HFH2-Z2	881058/15	Nov. 29, 2008
RF Switches (ARNITSU)	CS-201	1565157	Aug. 13, 2008
RF CABLE (Chaintek)	SF102	22054-2	Nov. 14, 2008
RF Cable(RICHTEC)	9913-30M N-N Cable	STCCAB-30M-1 GHz	Aug. 13, 2008
Software	ADT_Radiated_V 7.6.15.8	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	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 horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: R3271A) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in ADT Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 3789C-3.

5.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. 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.

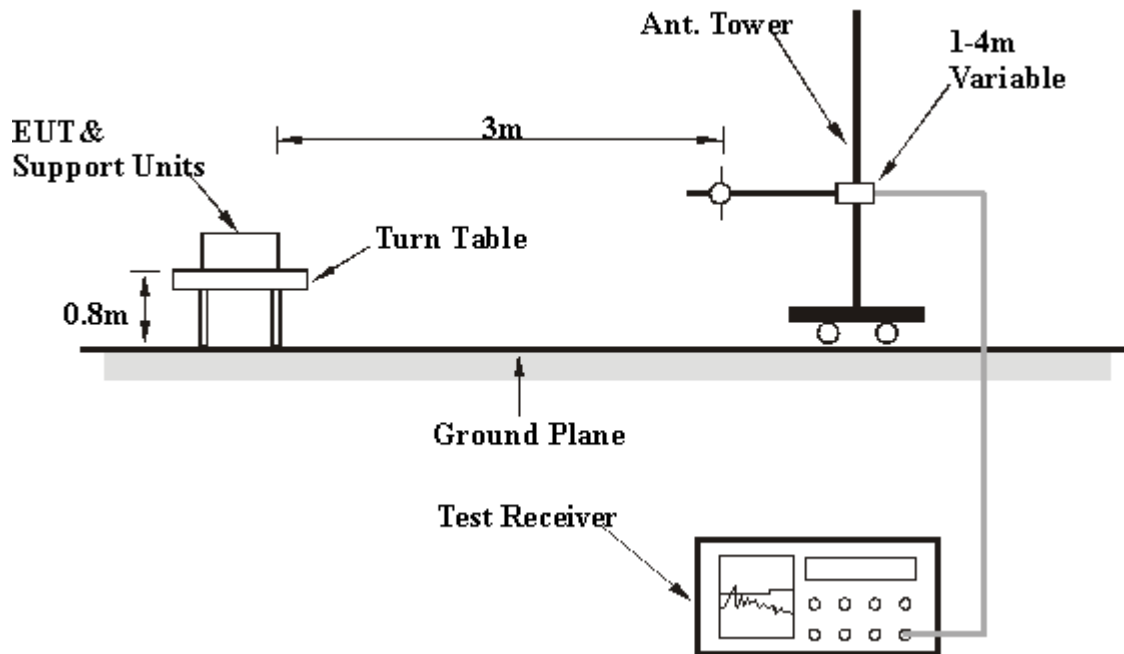
NOTE:

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 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



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

5.2.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

Below 1GHz Test Data

5.2.7 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 72%RH 960hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	133.88	38.46 QP	43.50	-5.04	2.20 H	21	24.59	13.87
2	167.23	43.23 QP	43.50	-0.27	2.20 H	0	28.67	14.56
3	200.10	38.49 QP	43.50	-5.01	1.51 H	243	26.46	12.03
4	233.41	34.59 QP	46.00	-11.41	1.26 H	351	22.03	12.56
5	300.80	29.41 QP	46.00	-16.59	1.06 H	304	12.81	16.60
6	315.00	33.54 QP	46.00	-12.46	1.04 H	21	16.85	16.69
7	390.30	35.45 QP	46.00	-10.55	1.00 H	110	17.62	17.83
8	420.00	33.47 QP	46.00	-12.53	1.00 H	282	14.69	18.78
9	455.18	39.38 QP	46.00	-6.62	2.02 H	275	19.38	20.00
10	600.00	31.29 QP	46.00	-14.71	1.17 H	298	7.75	23.54
11	724.99	36.51 QP	46.00	-9.49	1.16 H	147	10.62	25.89
12	767.67	31.59 QP	46.00	-14.41	1.00 H	34	4.05	27.54
13	835.58	33.54 QP	46.00	-12.46	1.66 H	210	5.19	28.35
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	167.25	35.44 QP	43.50	-8.06	2.00 V	307	20.89	14.55
2	201.20	28.77 QP	43.50	-14.73	1.07 V	309	16.72	12.05
3	334.00	27.38 QP	46.00	-18.62	1.68 V	82	10.57	16.81
4	432.06	27.59 QP	46.00	-18.41	1.60 V	211	8.37	19.22
5	499.96	27.73 QP	46.00	-18.27	1.00 V	179	6.68	21.05
6	600.00	29.42 QP	46.00	-16.58	1.70 V	128	5.88	23.54
7	866.59	29.73 QP	46.00	-16.27	1.81 V	21	0.86	28.87

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 Test Data

5.2.8 TEST RESULTS

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 960hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5112.30	57.20 PK	74.00	-16.80	1.42 H	149	21.01	36.19
2	#5112.30	44.80 AV	54.00	-9.20	1.42 H	149	8.61	36.19
3	#5366.20	57.40 PK	74.00	-16.60	1.51 H	162	20.90	36.50
4	#5366.20	46.20 AV	54.00	-7.80	1.51 H	162	9.70	36.50
5	*5745.00	108.50 PK			1.94 H	260	71.24	37.26
6	*5745.00	94.90 AV			1.94 H	260	57.64	37.26
7	#11490.00	65.70 PK	74.00	-8.30	1.69 H	146	18.68	47.02
8	#11490.00	49.90 AV	54.00	-4.10	1.69 H	146	2.88	47.02
9	17235.00	65.00 PK	88.50	-23.50	1.28 H	153	13.92	51.08
10	17235.00	50.00 AV	74.90	-24.90	1.28 H	153	-1.08	51.08

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5112.30	66.62 PK	74.00	-7.38	1.15 V	82	30.43	36.19
2	#5112.30	52.90 AV	54.00	-1.10	1.15 V	82	16.71	36.19
3	#5366.20	65.47 PK	74.00	-8.53	1.10 V	90	28.97	36.50
4	#5366.20	53.02 AV	54.00	-0.98	1.10 V	90	16.52	36.50
5	*5745.00	127.20 PK			1.07 V	89	89.94	37.26
6	*5745.00	113.90 AV			1.07 V	89	76.64	37.26
7	#11490.00	67.00 PK	74.00	-7.00	1.01 V	252	19.98	47.02
8	#11490.00	52.20 AV	54.00	-1.80	1.01 V	252	5.18	47.02
9	17235.00	60.80 PK	107.20	-46.40	1.06 V	88	9.72	51.08
10	17235.00	46.90 AV	93.90	-47.00	1.06 V	88	-4.18	51.08

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

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

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

4. Margin value = Emission level – Limit value.

5. “ * ”: Fundamental frequency.

6. “ # ”: The radiated frequency falling in the restricted band.

7. The limit value is defined as per 15.247.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 960hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5096.70	57.60 PK	74.00	-16.40	1.44 H	153	21.42	36.18
2	#5096.70	45.10 AV	54.00	-8.90	1.44 H	153	8.92	36.18
3	#5366.20	57.90 PK	74.00	-16.10	1.54 H	159	21.40	36.50
4	#5366.20	46.30 AV	54.00	-7.70	1.54 H	159	9.80	36.50
5	*5785.00	109.30 PK			1.97 H	260	71.94	37.36
6	*5785.00	95.90 AV			1.97 H	260	58.54	37.36
7	#11570.00	64.00 PK	74.00	-10.00	1.50 H	158	17.05	46.95
8	#11570.00	50.20 AV	54.00	-3.80	1.50 H	158	3.25	46.95
9	17355.00	63.00 PK	89.30	-26.30	1.28 H	153	11.53	51.47
10	17355.00	49.10 AV	75.90	-26.80	1.28 H	153	-2.37	51.47
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5096.70	63.76 PK	74.00	-10.24	1.09 V	86	27.58	36.18
2	#5096.70	52.55 AV	54.00	-1.45	1.09 V	86	16.37	36.18
3	#5366.20	65.80 PK	74.00	-8.20	1.10 V	90	29.30	36.50
4	#5366.20	53.12 AV	54.00	-0.88	1.10 V	90	16.62	36.50
5	*5785.00	127.20 PK			1.07 V	89	89.84	37.36
6	*5785.00	113.90 AV			1.07 V	89	76.54	37.36
7	#11570.00	65.00 PK	74.00	-9.00	1.12 V	255	18.05	46.95
8	#11570.00	49.90 AV	54.00	-4.10	1.12 V	255	2.95	46.95
9	17355.00	59.80 PK	107.20	-47.40	1.07 V	66	8.33	51.47
10	17355.00	46.30 AV	93.90	-47.60	1.07 V	66	-5.17	51.47

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 960hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5023.90	57.80 PK	74.00	-16.20	1.39 H	143	21.71	36.09
2	#5023.90	45.30 AV	54.00	-8.70	1.39 H	143	9.21	36.09
3	#5360.00	57.90 PK	74.00	-16.10	1.48 H	164	21.41	36.49
4	#5360.00	46.20 AV	54.00	-7.80	1.48 H	164	9.71	36.49
5	*5825.00	110.80 PK			1.51 H	280	73.35	37.45
6	*5825.00	96.70 AV			1.51 H	280	59.25	37.45
7	#11650.00	63.80 PK	74.00	-10.20	1.53 H	151	16.93	46.87
8	#11650.00	49.80 AV	54.00	-4.20	1.53 H	151	2.93	46.87
9	17475.00	62.60 PK	90.80	-28.20	1.25 H	114	10.73	51.87
10	17475.00	48.00 AV	76.70	-28.70	1.25 H	114	-3.87	51.87
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5023.90	66.22 PK	74.00	-7.78	1.17 V	111	30.13	36.09
2	#5023.90	53.07 AV	54.00	-0.93	1.17 V	111	16.98	36.09
3	#5360.00	64.84 PK	74.00	-9.16	1.14 V	92	28.35	36.49
4	#5360.00	53.08 AV	54.00	-0.92	1.14 V	92	16.59	36.49
5	*5825.00	127.80 PK			1.09 V	105	90.35	37.45
6	*5825.00	113.40 AV			1.09 V	105	75.95	37.45
7	#11650.00	67.00 PK	74.00	-7.00	1.05 V	276	20.13	46.87
8	#11650.00	52.10 AV	54.00	-1.90	1.05 V	276	5.23	46.87
9	17475.00	59.00 PK	107.80	-48.80	1.10 V	100	7.13	51.87
10	17475.00	45.90 AV	93.40	-47.50	1.10 V	100	-5.97	51.87

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

DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 80%RH 960hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5075.10	55.61 PK	74.00	-18.39	1.53 H	141	19.46	36.15
2	#5075.10	44.87 AV	54.00	-9.13	1.53 H	141	8.72	36.15
3	#5363.75	55.87 PK	74.00	-18.13	1.37 H	134	19.37	36.50
4	#5363.75	45.11 AV	54.00	-8.89	1.37 H	134	8.61	36.50
5	*5745.00	108.29 PK			1.63 H	252	71.03	37.26
6	*5745.00	94.50 AV			1.63 H	252	57.24	37.26
7	#7660.00	56.10 PK	74.00	-17.90	1.40 H	147	12.51	43.59
8	#7660.00	45.30 AV	54.00	-8.70	1.40 H	147	1.71	43.59
9	#11490.00	64.20 PK	74.00	-9.80	1.57 H	165	17.18	47.02
10	#11490.00	49.50 AV	54.00	-4.50	1.57 H	165	2.48	47.02
11	17235.00	67.75 PK	88.29	-20.54	1.27 H	159	16.67	51.08
12	17235.00	53.00 AV	74.50	-21.50	1.27 H	159	1.92	51.08

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5073.56	66.81 PK	74.00	-7.19	1.13 V	77	30.66	36.15
2	#5073.56	52.60 AV	54.00	-1.40	1.13 V	77	16.45	36.15
3	#5362.54	67.60 PK	74.00	-6.40	1.18 V	95	31.10	36.50
4	#5362.54	53.50 AV	54.00	-0.50	1.18 V	95	17.00	36.50
5	*5745.00	126.00 PK			1.07 V	100	88.74	37.26
6	*5745.00	112.53 AV			1.07 V	100	75.27	37.26
7	#7660.00	56.75 PK	74.00	-17.25	1.20 V	250	13.16	43.59
8	#7660.00	48.00 AV	54.00	-6.00	1.20 V	250	4.41	43.59
9	#11490.00	62.00 PK	74.00	-12.00	1.49 V	125	14.98	47.02
10	#11490.00	47.49 AV	54.00	-6.51	1.49 V	125	0.47	47.02
11	17235.00	66.13 PK	106.00	-39.87	1.25 V	160	15.05	51.08
12	17235.00	51.10 AV	92.53	-41.43	1.25 V	160	0.02	51.08

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 80%RH 960hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5051.21	56.10 PK	74.00	-17.90	1.43 H	123	19.98	36.12
2	#5051.21	44.90 AV	54.00	-9.10	1.43 H	123	8.78	36.12
3	#5351.35	55.70 PK	74.00	-18.30	1.61 H	137	19.22	36.48
4	#5351.35	45.10 AV	54.00	-8.90	1.61 H	137	8.62	36.48
5	*5785.00	107.83 PK			1.80 H	253	70.47	37.36
6	*5785.00	94.23 AV			1.80 H	253	56.87	37.36
7	#7713.42	55.33 PK	74.00	-18.67	1.42 H	143	11.62	43.71
8	#7713.42	45.00 AV	54.00	-9.00	1.42 H	143	1.29	43.71
9	#11570.00	63.90 PK	74.00	-10.10	1.50 H	153	16.95	46.95
10	#11570.00	50.50 AV	54.00	-3.50	1.50 H	153	3.55	46.95
11	17355.00	65.50 PK	87.83	-22.33	1.39 H	159	14.03	51.47
12	17355.00	51.50 AV	74.23	-22.73	1.39 H	159	0.03	51.47

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5048.50	67.07 PK	74.00	-6.93	1.05 V	87	30.95	36.12
2	#5048.50	53.18 AV	54.00	-0.82	1.05 V	87	17.06	36.12
3	#5351.76	67.36 PK	74.00	-6.64	1.17 V	88	30.88	36.48
4	#5351.76	52.85 AV	54.00	-1.15	1.17 V	88	16.37	36.48
5	*5785.00	125.02 PK			1.09 V	87	87.66	37.36
6	*5785.00	111.38 AV			1.09 V	87	74.02	37.36
7	#7713.42	56.63 PK	74.00	-17.37	1.19 V	278	12.92	43.71
8	#7713.42	47.86 AV	54.00	-6.14	1.19 V	278	4.15	43.71
9	#11570.00	64.83 PK	74.00	-9.17	1.08 V	278	17.88	46.95
10	#11570.00	51.32 AV	54.00	-2.68	1.08 V	278	4.37	46.95
11	17355.00	63.87 PK	105.02	-41.15	1.33 V	153	12.40	51.47
12	17355.00	50.50 AV	91.38	-40.88	1.33 V	153	-0.97	51.47

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 80%RH 960hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5105.21	58.10 PK	74.00	-15.90	1.35 H	112	21.91	36.19
2	#5105.21	48.82 AV	54.00	-5.18	1.35 H	112	12.63	36.19
3	#5362.43	57.20 PK	74.00	-16.80	1.51 H	147	20.71	36.49
4	#5362.43	45.11 AV	54.00	-8.89	1.51 H	147	8.62	36.49
5	*5825.00	106.72 PK			1.73 H	252	69.27	37.45
6	*5825.00	92.72 AV			1.73 H	252	55.27	37.45
7	7766.26	59.12 PK	86.72	-27.60	1.54 H	139	15.29	43.83
8	7766.26	51.53 AV	72.72	-21.19	1.54 H	139	7.70	43.83
9	#11650.00	65.60 PK	74.00	-8.40	1.53 H	162	18.73	46.87
10	#11650.00	51.50 AV	54.00	-2.50	1.53 H	162	4.63	46.87
11	17475.00	65.90 PK	86.72	-20.82	1.29 H	167	14.03	51.87
12	17475.00	52.10 AV	72.72	-20.62	1.29 H	167	0.23	51.87
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5105.00	65.67 PK	74.00	-8.33	1.14 V	77	29.48	36.19
2	#5105.00	53.10 AV	54.00	-0.90	1.14 V	77	16.91	36.19
3	#5362.54	67.70 PK	74.00	-6.30	1.18 V	93	31.20	36.50
4	#5362.54	53.00 AV	54.00	-1.00	1.18 V	93	16.50	36.50
5	*5825.00	121.61 PK			1.06 V	74	84.16	37.45
6	*5825.00	108.00 AV			1.06 V	74	70.55	37.45
7	7766.66	59.00 PK	101.61	-42.61	1.12 V	252	15.17	43.83
8	7766.66	52.50 AV	88.00	-35.50	1.12 V	252	8.67	43.83
9	#11650.00	69.60 PK	74.00	-4.40	1.02 V	243	22.73	46.87
10	#11650.00	52.70 AV	54.00	-1.30	1.02 V	243	5.83	46.87
11	17475.00	65.20 PK	101.61	-36.41	1.25 V	92	13.33	51.87
12	17475.00	50.90 AV	88.00	-37.10	1.25 V	92	-0.97	51.87

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

DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 960hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5755.00	107.40 PK			1.40 H	272	70.12	37.28
2	*5755.00	93.70 AV			1.40 H	272	56.42	37.28
3	#7673.30	55.30 PK	74.00	-18.70	1.04 H	40	11.68	43.62
4	#7673.30	42.20 AV	54.00	-11.80	1.04 H	40	-1.42	43.62
5	#11510.00	59.20 PK	74.00	-14.80	1.65 H	340	12.18	47.02
6	#11510.00	45.50 AV	54.00	-8.50	1.65 H	340	-1.52	47.02
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5755.00	124.20 PK			1.12 V	84	86.92	37.28
2	*5755.00	110.00 AV			1.12 V	84	72.72	37.28
3	#7673.30	56.40 PK	74.00	-17.60	1.20 V	260	12.78	43.62
4	#7673.30	44.80 AV	54.00	-9.20	1.20 V	260	1.18	43.62
5	#11510.00	65.40 PK	74.00	-8.60	1.04 V	254	18.38	47.02
6	#11510.00	49.50 AV	54.00	-4.50	1.04 V	254	2.48	47.02

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.
7. The limit value is defined as per 15.247.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 960hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	107.80 PK			1.45 H	278	70.42	37.38
2	*5795.00	94.00 AV			1.45 H	278	56.62	37.38
3	#7726.60	55.50 PK	74.00	-18.50	1.33 H	166	11.76	43.74
4	#7726.60	44.30 AV	54.00	-9.70	1.33 H	166	0.56	43.74
5	#11590.00	62.40 PK	74.00	-11.60	1.50 H	8	15.47	46.93
6	#11590.00	47.20 AV	54.00	-6.80	1.50 H	8	0.27	46.93
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	124.60 PK			1.10 V	78	87.22	37.38
2	*5795.00	111.20 AV			1.10 V	78	73.82	37.38
3	#7726.60	58.50 PK	74.00	-15.50	1.55 V	168	14.76	43.74
4	#7726.60	51.60 AV	54.00	-2.40	1.55 V	168	7.86	43.74
5	#11590.00	67.60 PK	74.00	-6.40	1.00 V	278	20.67	46.93
6	#11590.00	50.60 AV	54.00	-3.40	1.00 V	278	3.67	46.93

REMARKS:

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

5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 12, 2008

NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

5.3.3 TEST PROCEDURE

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

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

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

5.3.7 TEST RESULTS

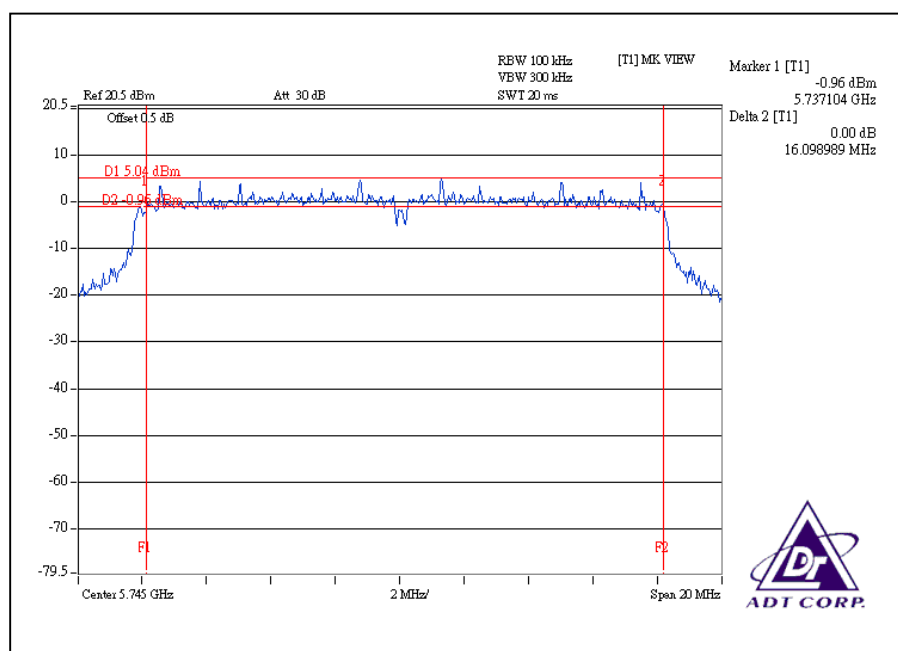
802.11a OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 960hPa
TESTED BY	Rex Huang		

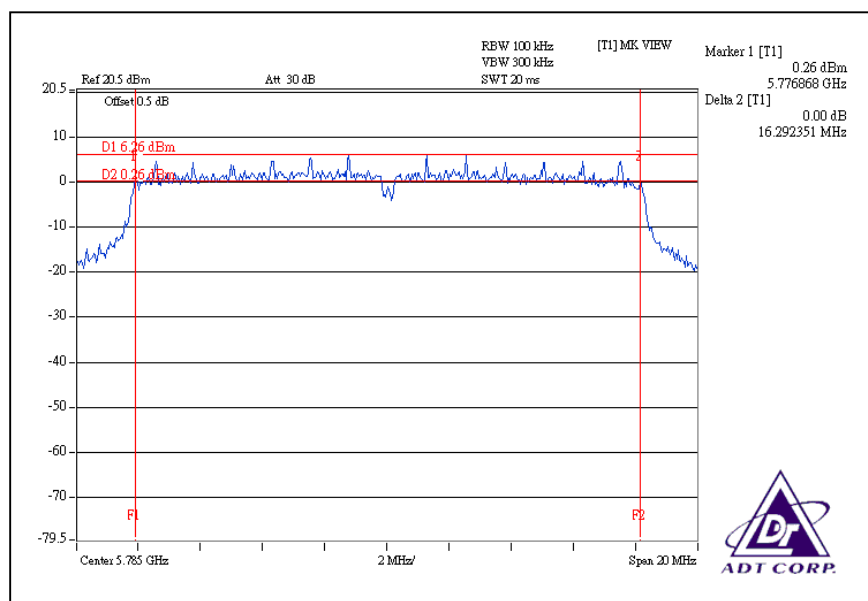
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	5745	16.10	16.37	16.38	0.5	PASS
3	5785	16.29	16.36	16.37	0.5	PASS
5	5825	16.35	16.39	16.33	0.5	PASS

Chain 0

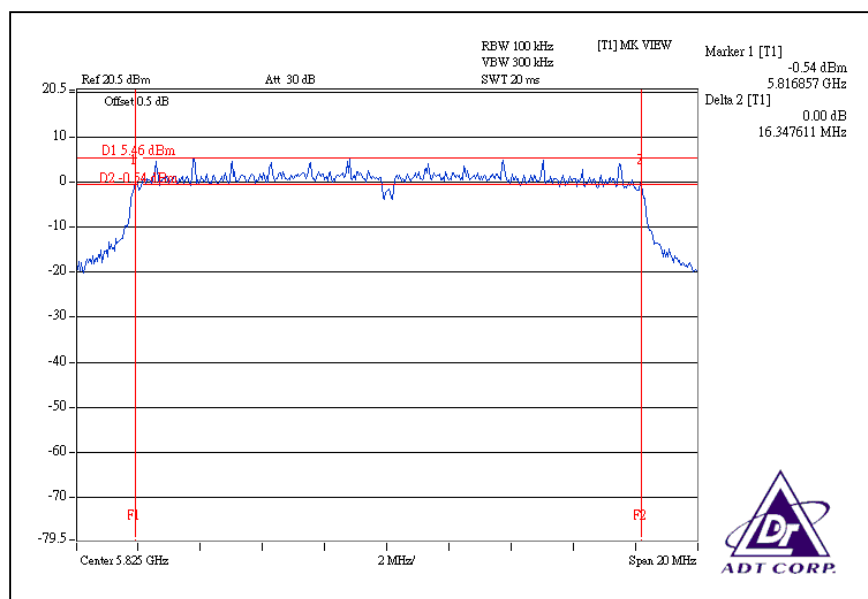
CH1



CH3

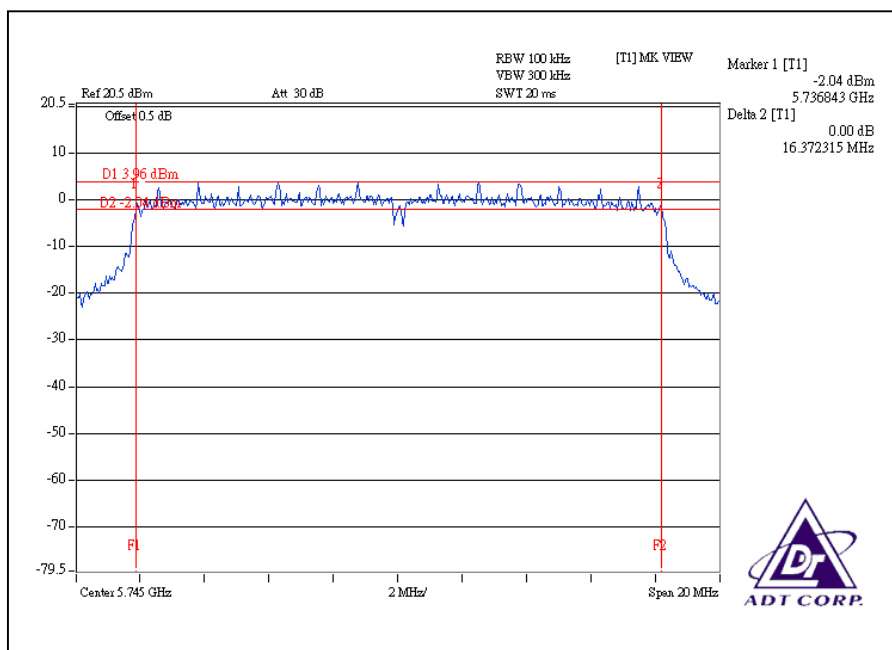


CH5

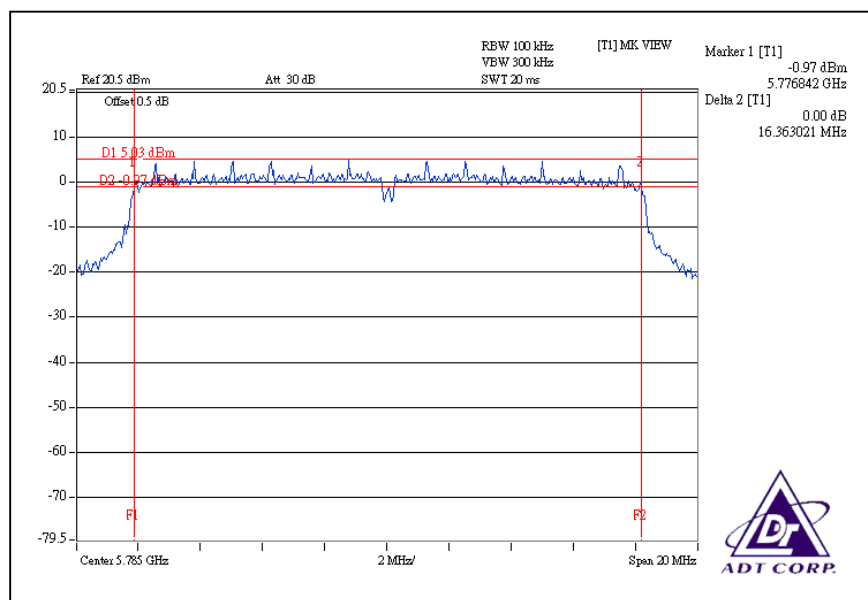


Chain 1

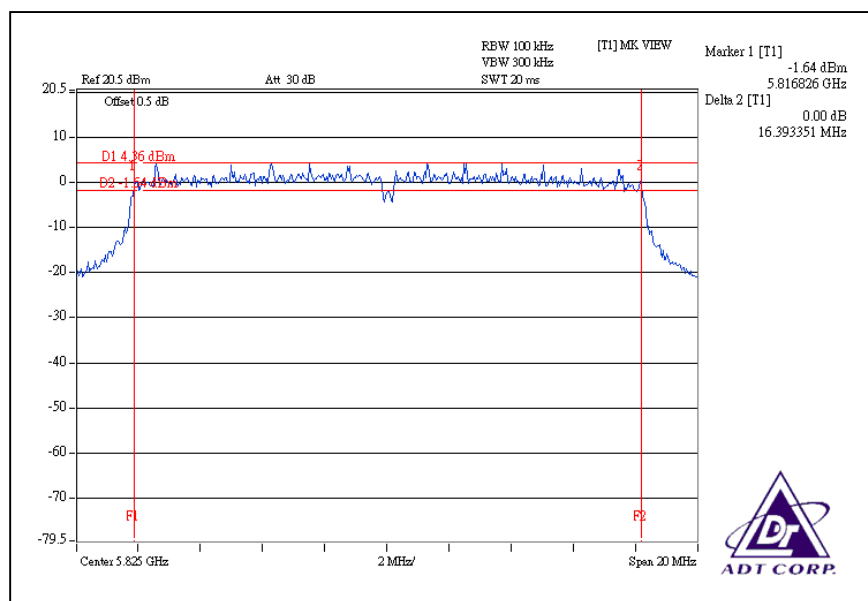
CH1



CH3

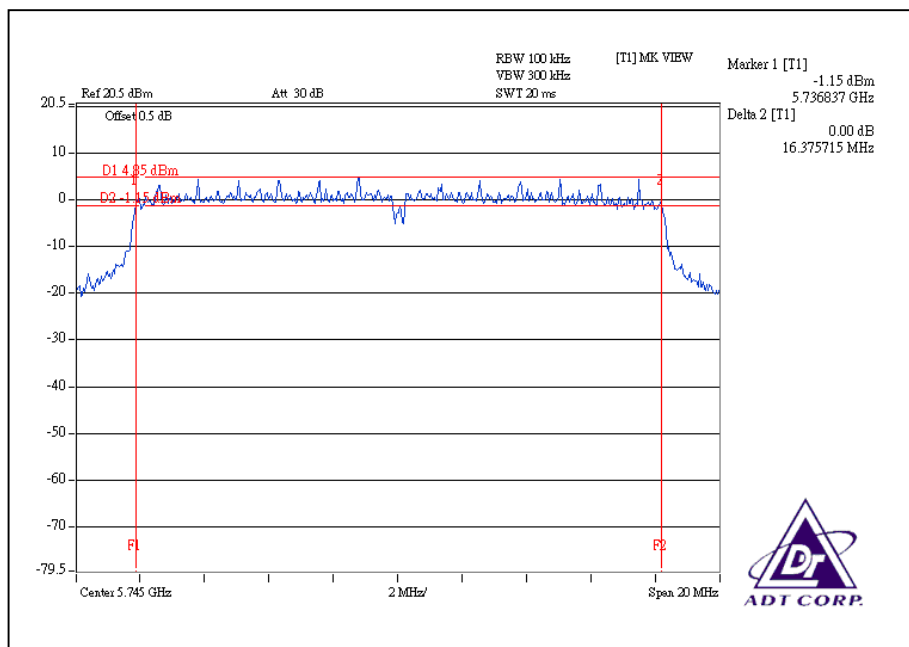


CH5

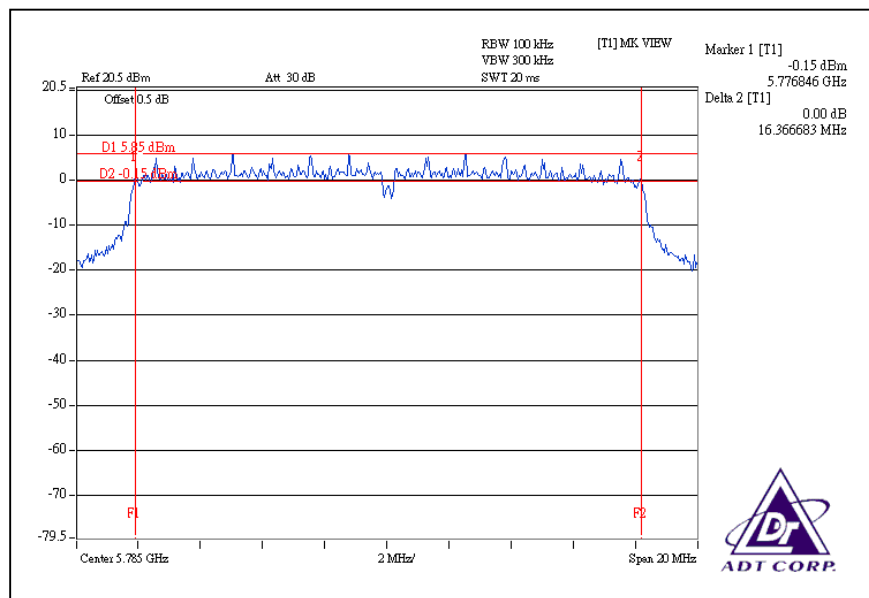


Chain 2

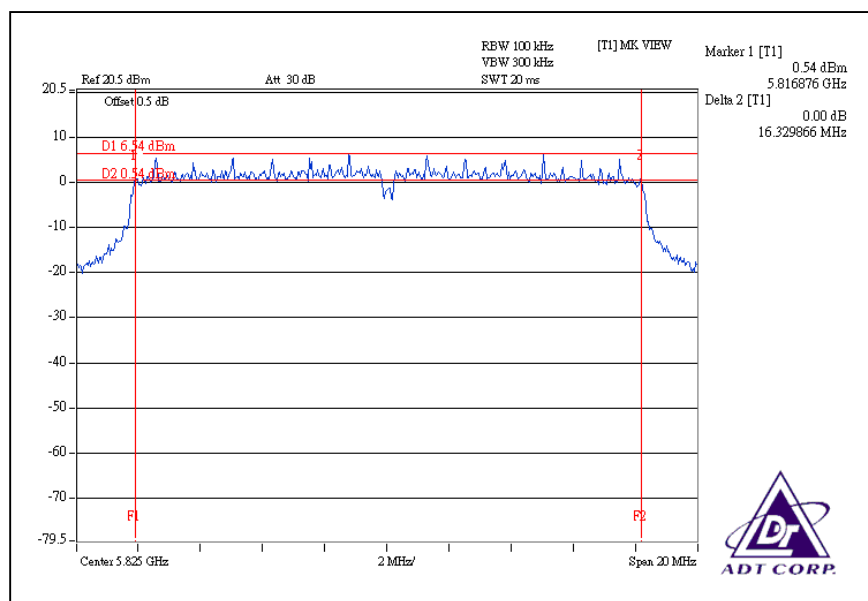
CH1



CH3



CH5



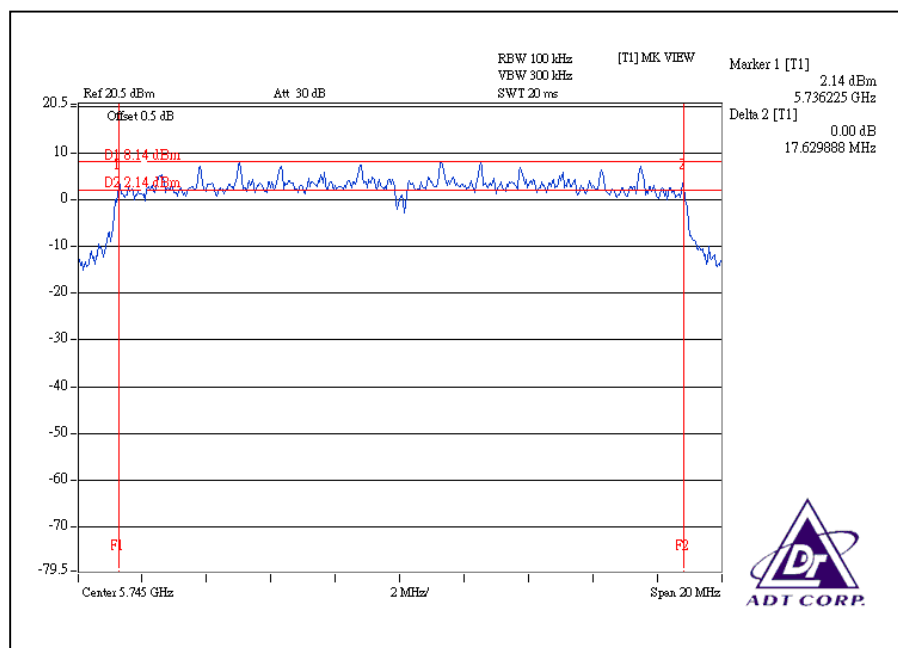
DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 960hPa
TESTED BY	Rex Huang		

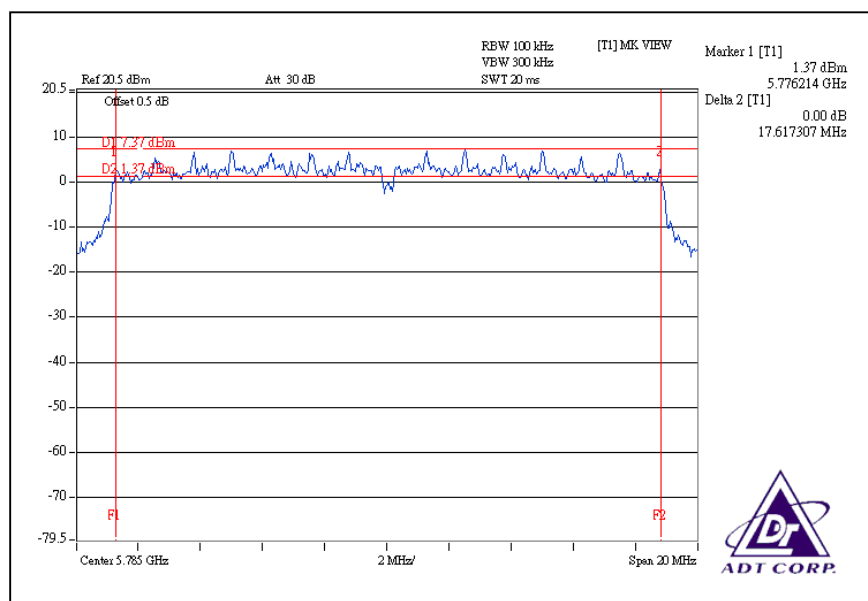
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	5745	17.63	17.60	16.47	0.5	PASS
3	5785	17.62	17.64	17.54	0.5	PASS
5	5825	17.65	17.64	17.64	0.5	PASS

Chain 0

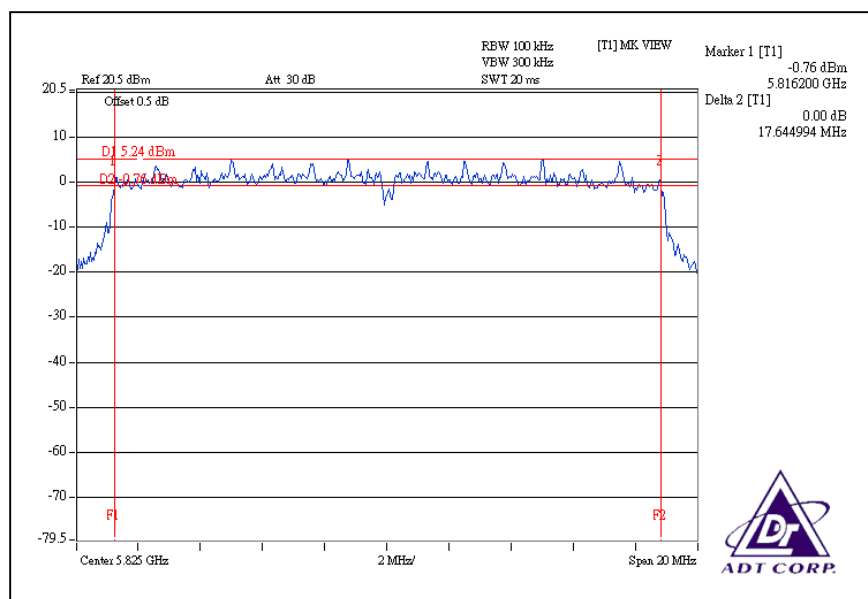
CH1



CH3

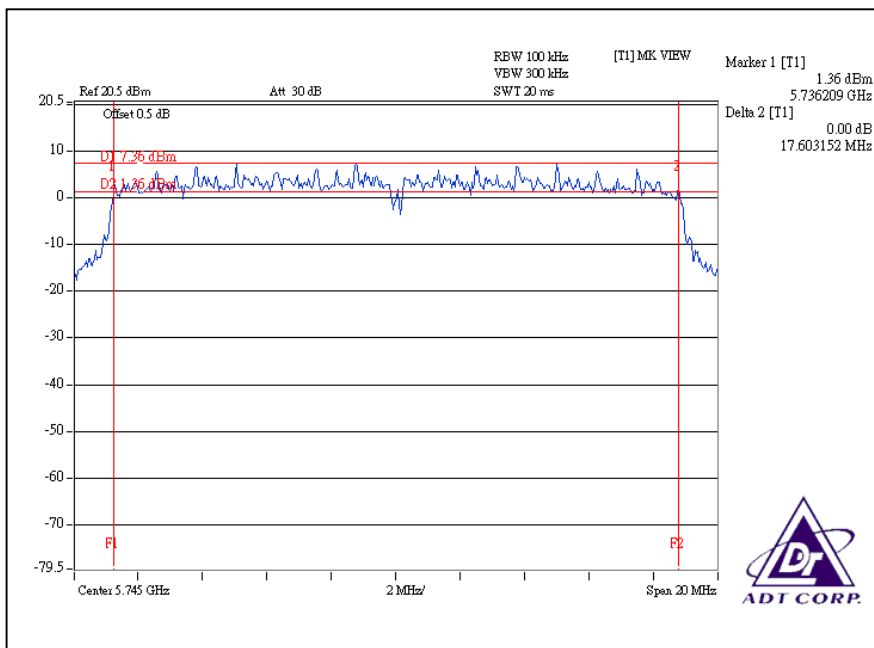


CH5

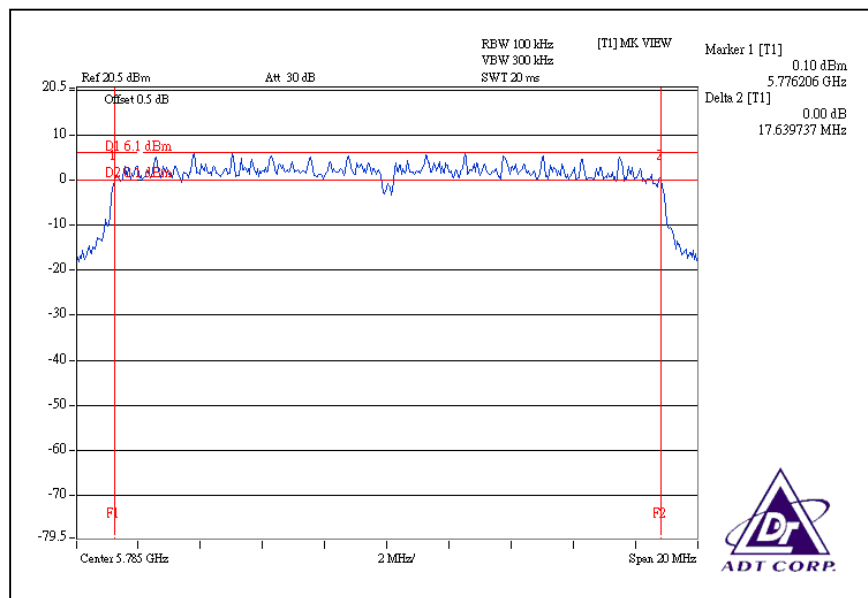


Chain 1

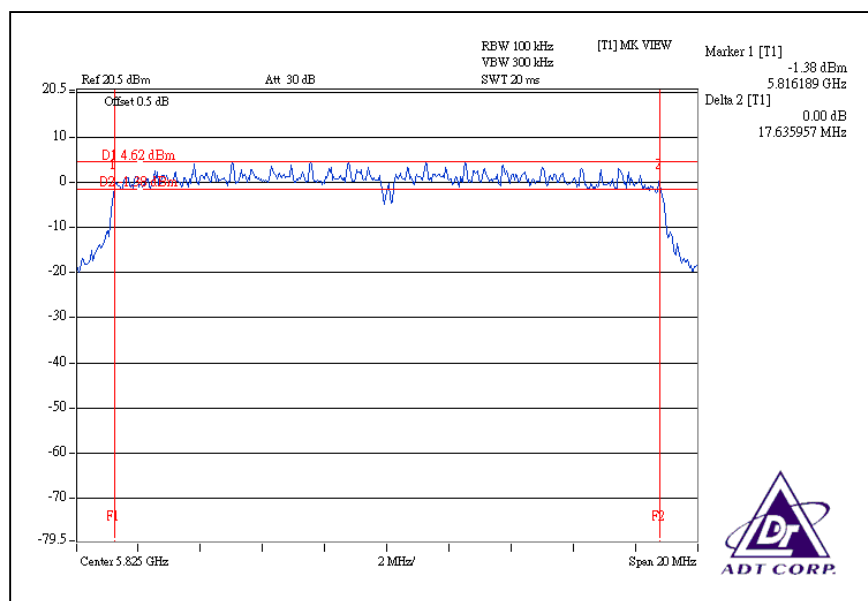
CH1



CH3

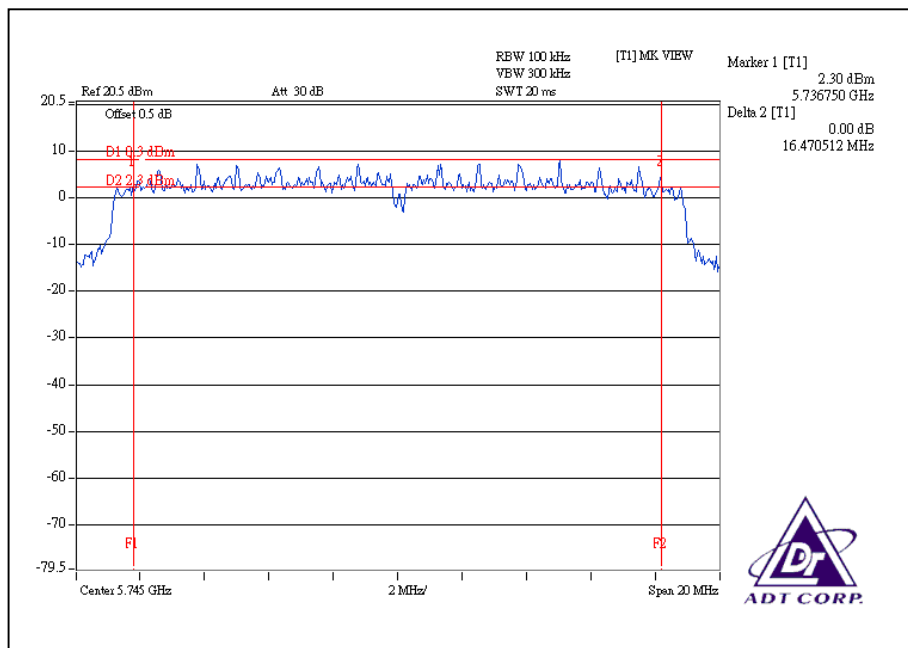


CH5

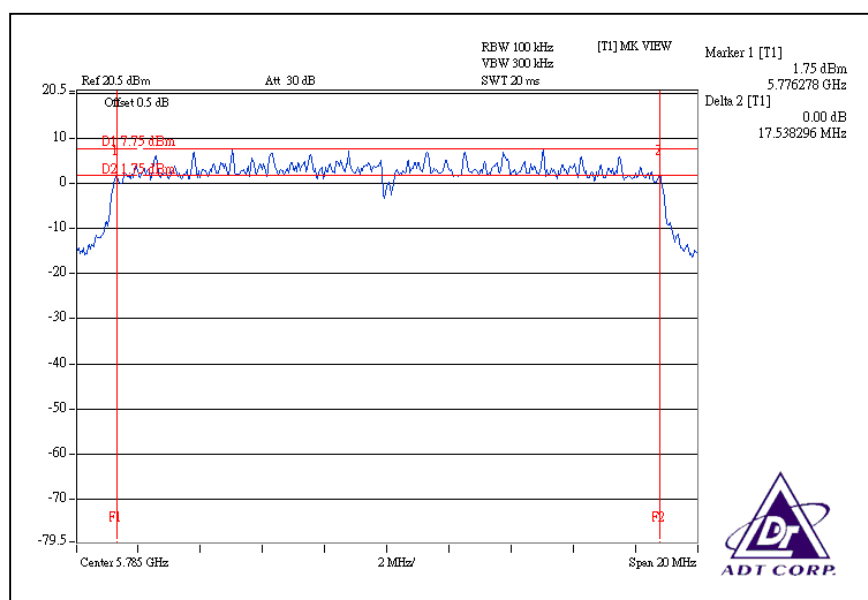


Chain 2

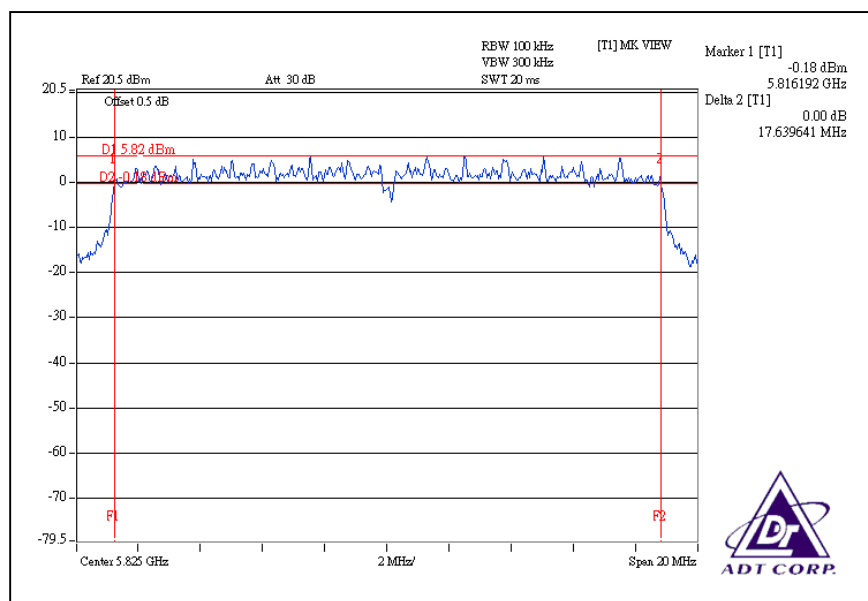
CH1



CH3



CH5

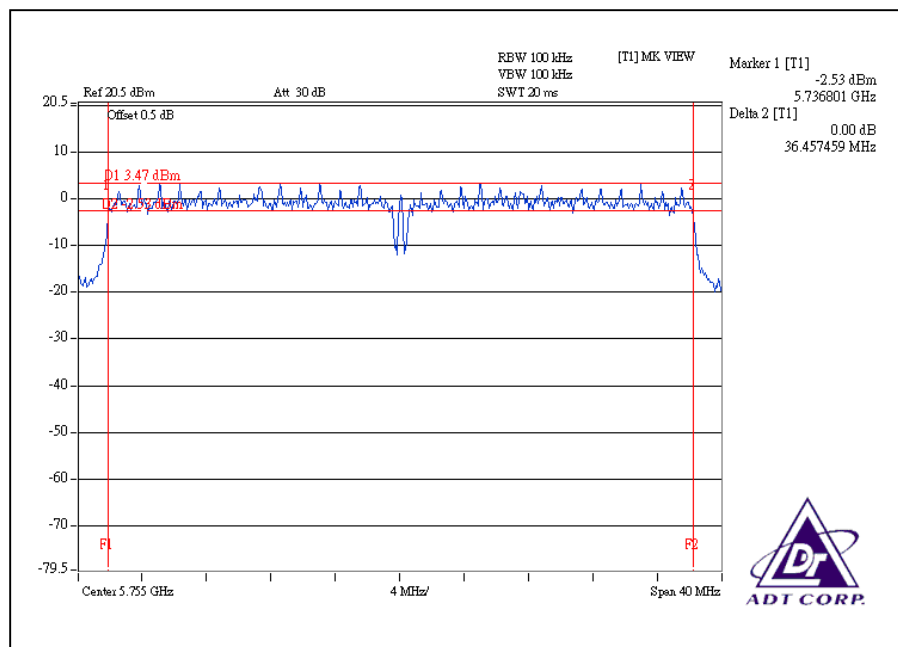


DRAFT 802.11n (40MHz) OFDM MODULATION:

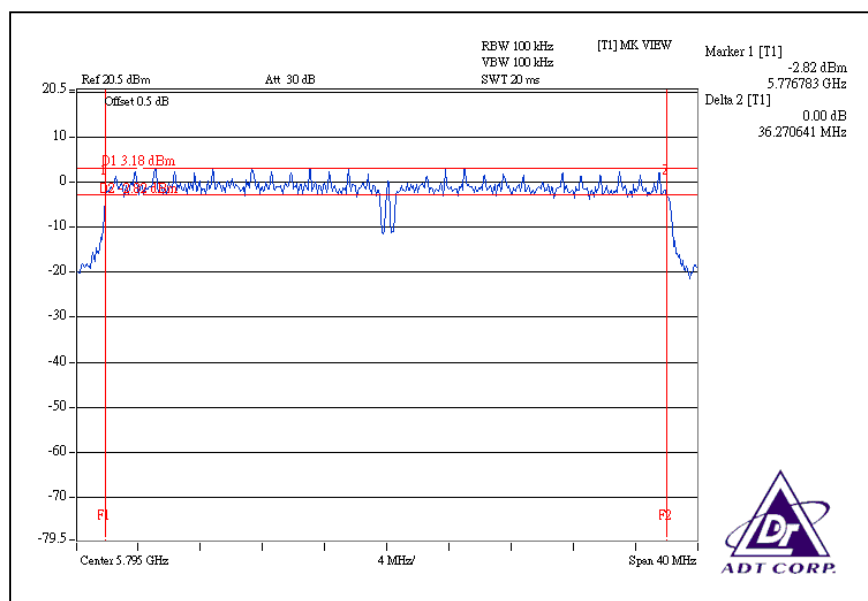
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 972hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	5755	36.46	36.50	36.43	0.5	PASS
3	5795	36.27	36.52	36.50	0.5	PASS

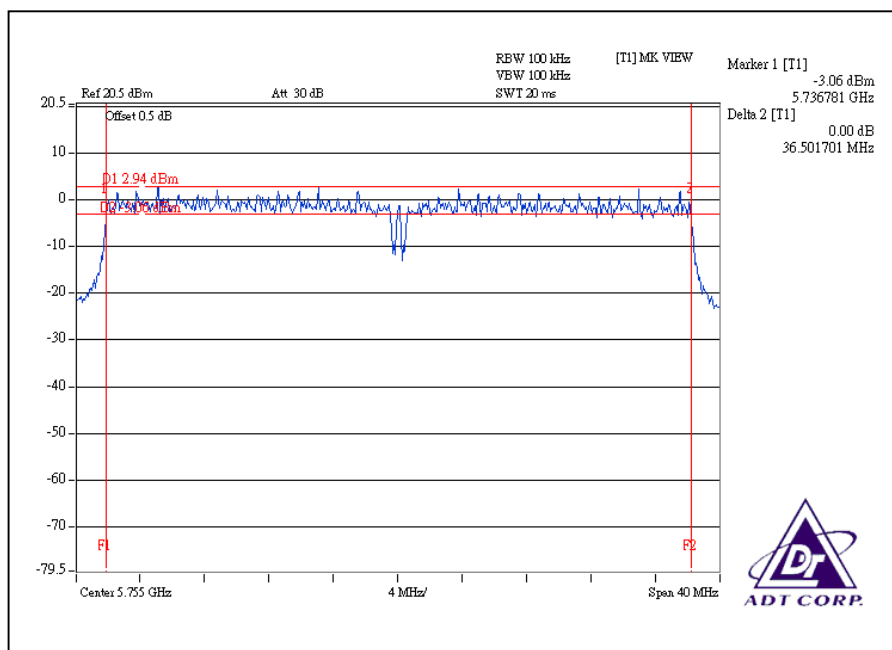
Chain 0
CH1



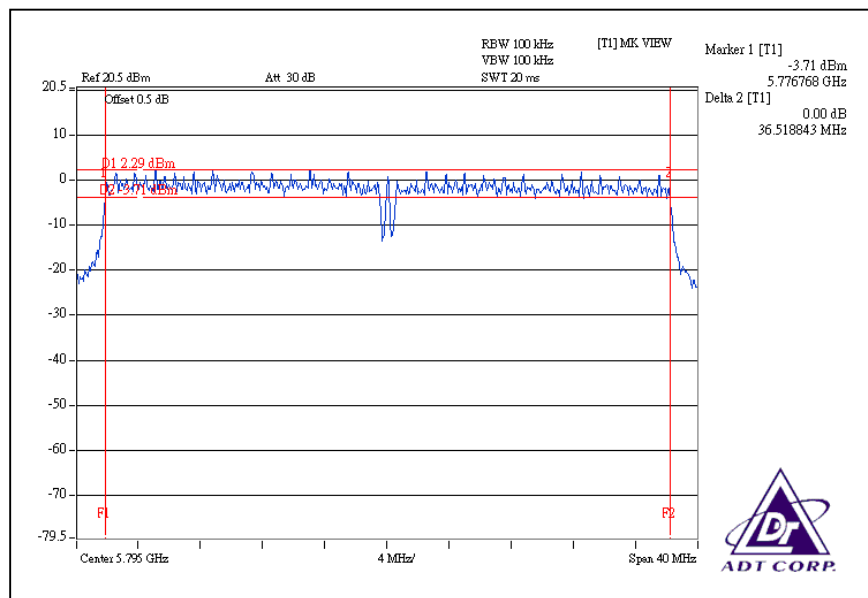
CH3



Chain 1 CH1

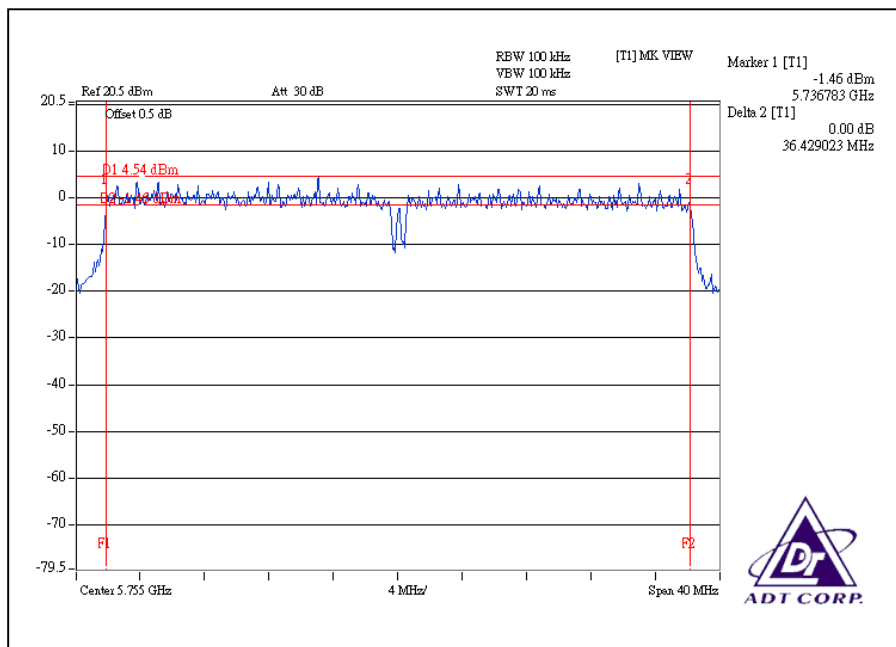


CH3

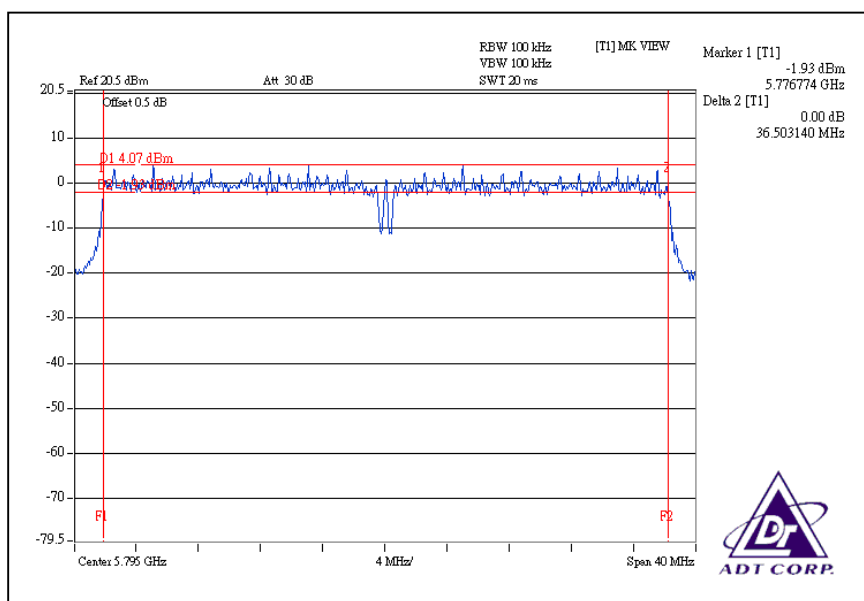


Chain 2

CH1



CH3



5.4 MAXIMUM PEAK OUTPUT POWER

5.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

5.4.2 INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 12, 2008
Agilent SIGNAL GENERATOR	E8257C	MY43320668	Dec. 25, 2008
TEKTRONIX OSCILLOSCOPE	TDS380	B016335	Jul. 15, 2008
NARDA DETECTOR	4503A	FSCM99899	NA

NOTE:

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

5.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP



5.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

5.4.7 TEST RESULTS

802.11a OFDM modulation

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 960hPa
TESTED BY	Rex Huang		

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 2	Chain 0	Chain 1	Chain 2				
1	5745	89.125	83.368	103.753	19.50	19.21	20.16	276.246	24.413	29.48	PASS
3	5785	105.196	100.231	124.165	20.22	20.01	20.94	329.592	25.180	29.48	PASS
5	5825	100.000	95.940	127.644	20.00	19.82	21.06	323.584	25.100	29.48	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 960hPa
TESTED BY	Rex Huang		

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 2	Chain 0	Chain 1	Chain 2				
1	5745	174.985	167.494	172.982	22.43	22.24	22.38	515.461	27.122	29.48	PASS
3	5785	156.315	143.549	172.187	21.94	21.57	22.36	472.051	26.740	29.48	PASS
5	5825	84.333	83.368	103.039	19.26	19.21	20.13	270.740	24.326	29.48	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 960hPa
TESTED BY	Rex Huang		

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 2	Chain 0	Chain 1	Chain 2				
1	5755	107.647	92.045	113.763	20.32	19.64	20.56	313.455	24.962	29.48	PASS
3	5795	100.000	90.573	110.408	20.00	19.57	20.43	300.981	24.785	29.48	PASS

5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 12, 2008

NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

5.5.3 TEST PROCEDURE

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

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

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

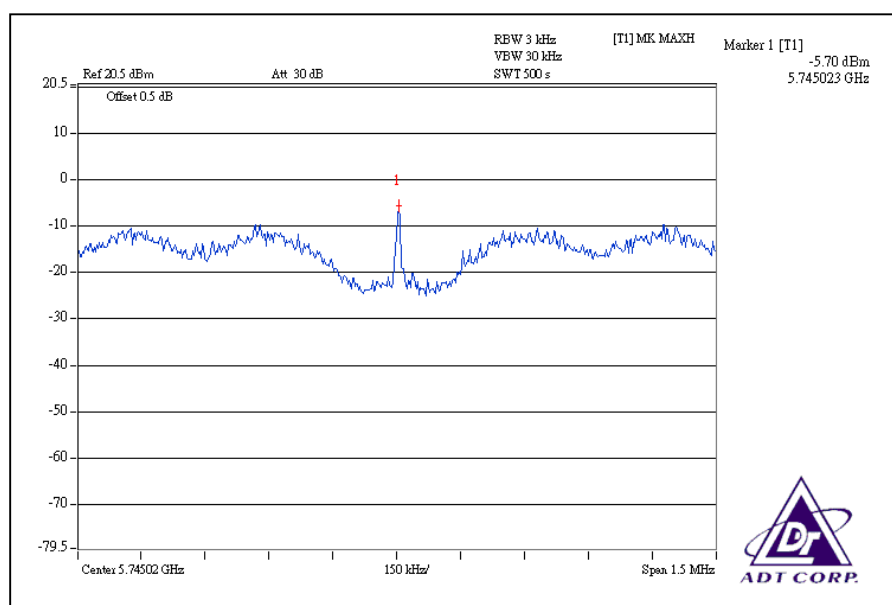
5.5.7 TEST RESULTS

802.11a OFDM modulation

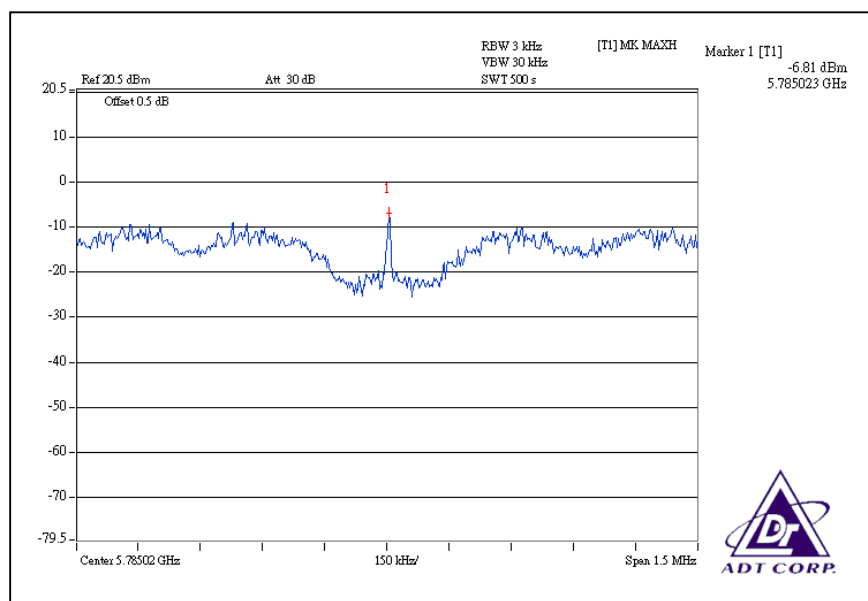
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 960hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	5745	0.269	0.251	0.201	-5.70	-6.00	-6.96	0.721	-1.42	8	PASS
3	5785	0.208	0.198	0.249	-6.81	-7.04	-6.04	0.655	-1.84	8	PASS
5	5825	0.244	0.226	0.275	-6.12	-6.45	-5.60	0.745	-1.28	8	PASS

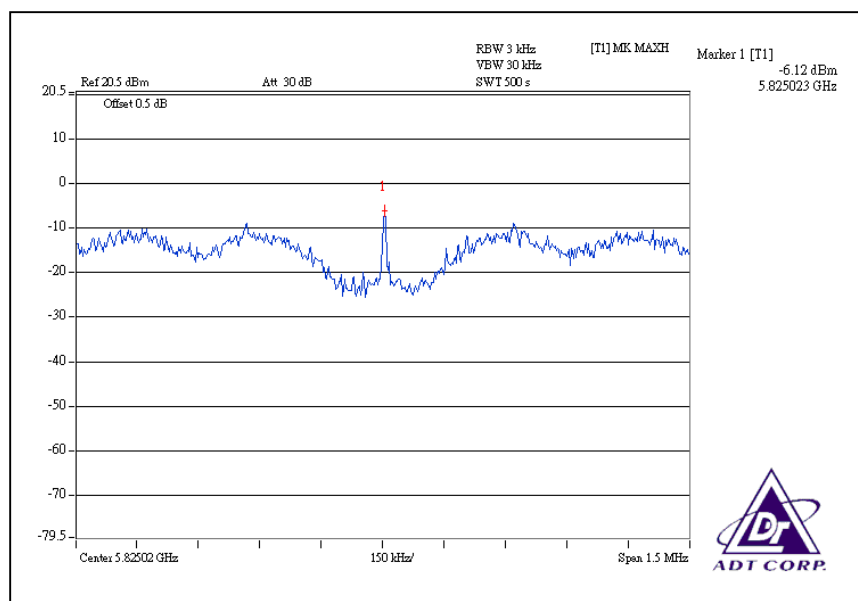
Chain 0
CH1



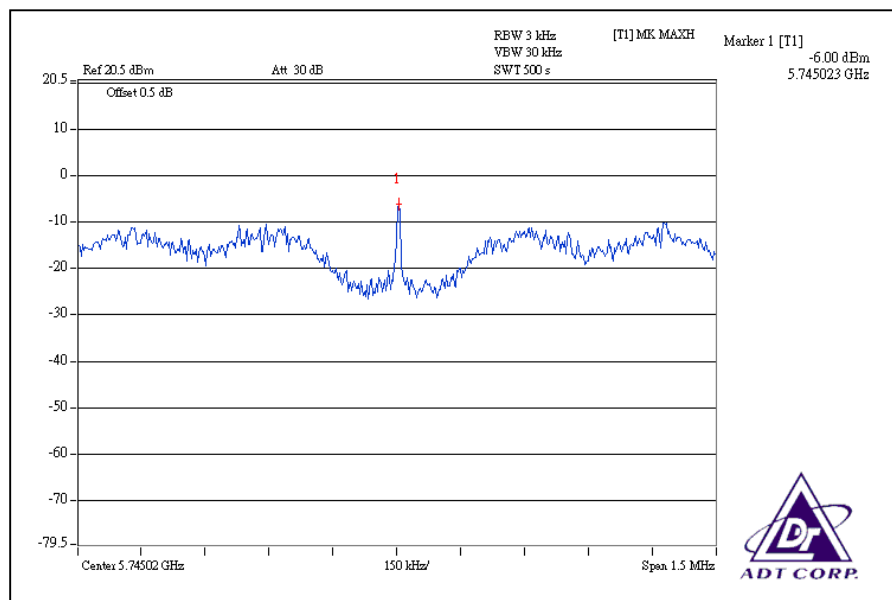
CH3



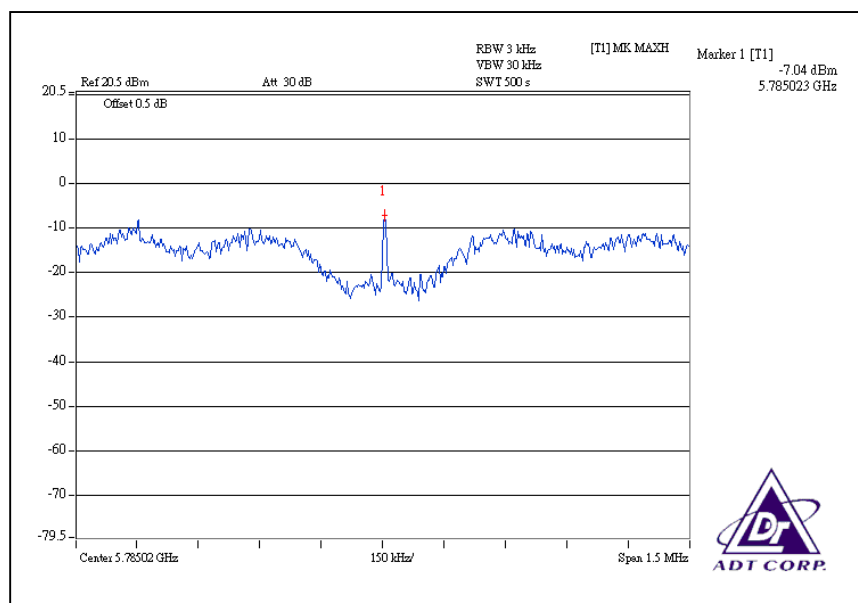
CH5



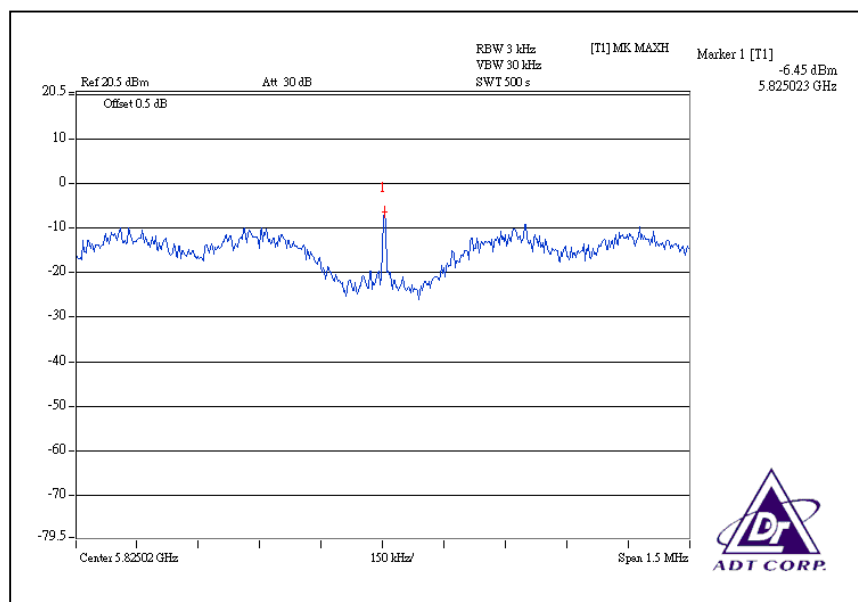
Chain 1 CH1



CH3

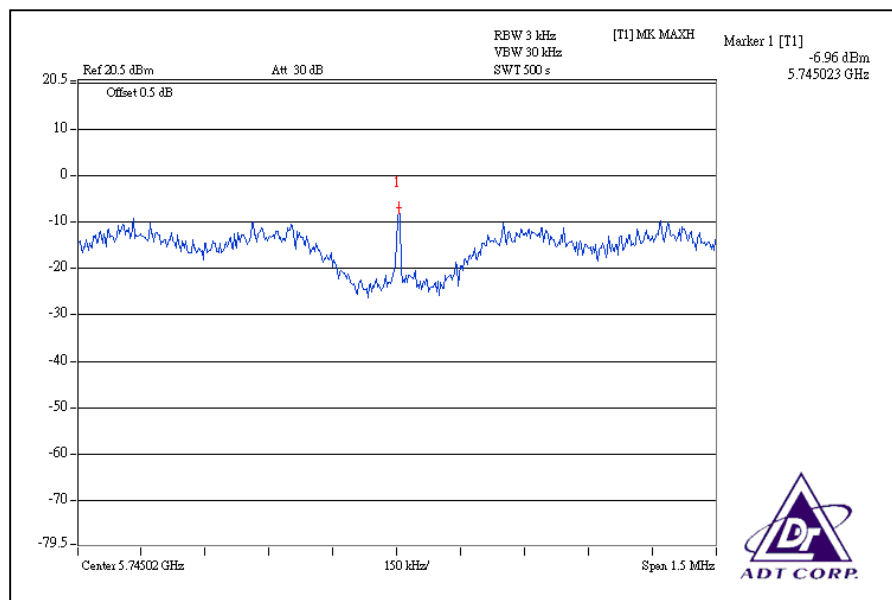


CH5

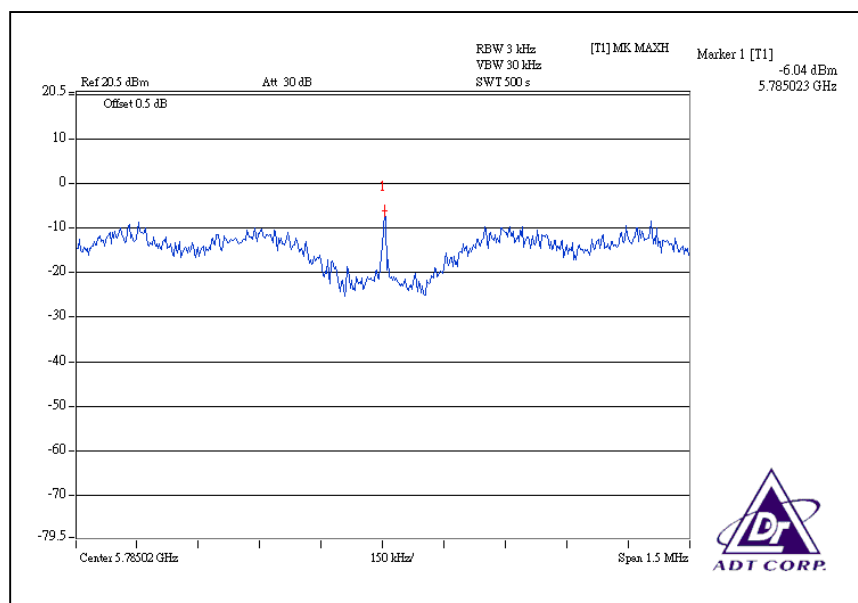


Chain 2

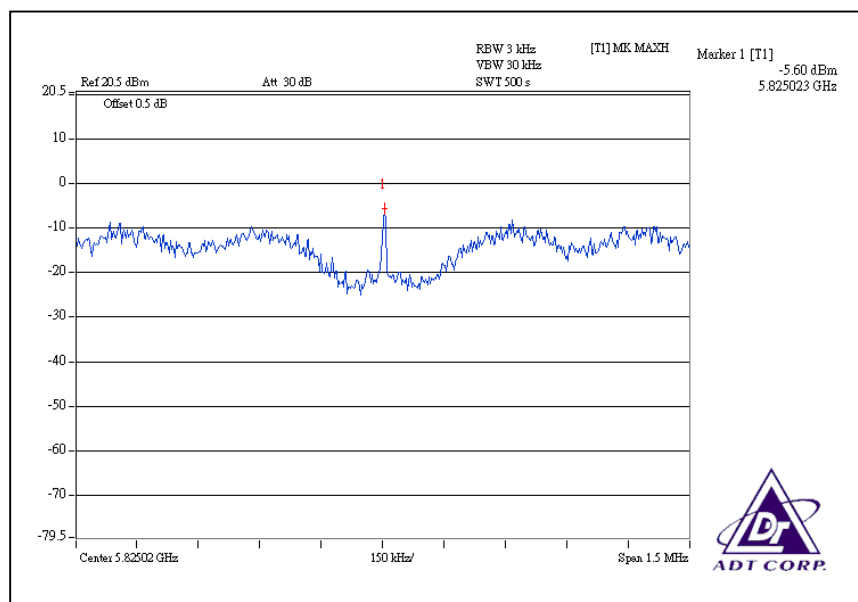
CH1



CH3



CH5

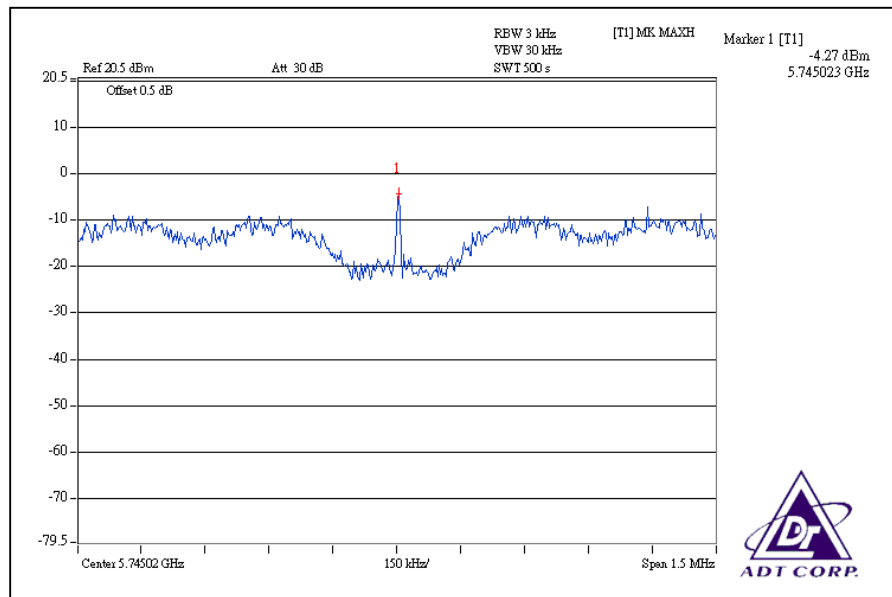


DRAFT 802.11n (20MHz) OFDM MODULATION:

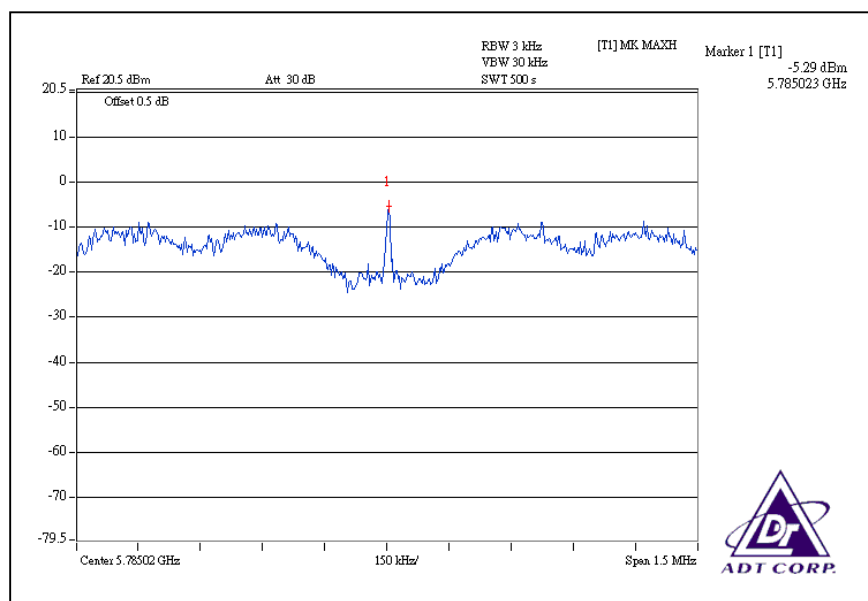
MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	5745	0.374	0.315	0.282	-4.27	-5.02	-5.50	0.971	-0.13	8	PASS
3	5785	0.296	0.269	0.296	-5.29	-5.71	-5.28	0.861	-0.65	8	PASS
5	5825	0.187	0.222	0.254	-7.28	-6.54	-5.95	0.663	-1.79	8	PASS

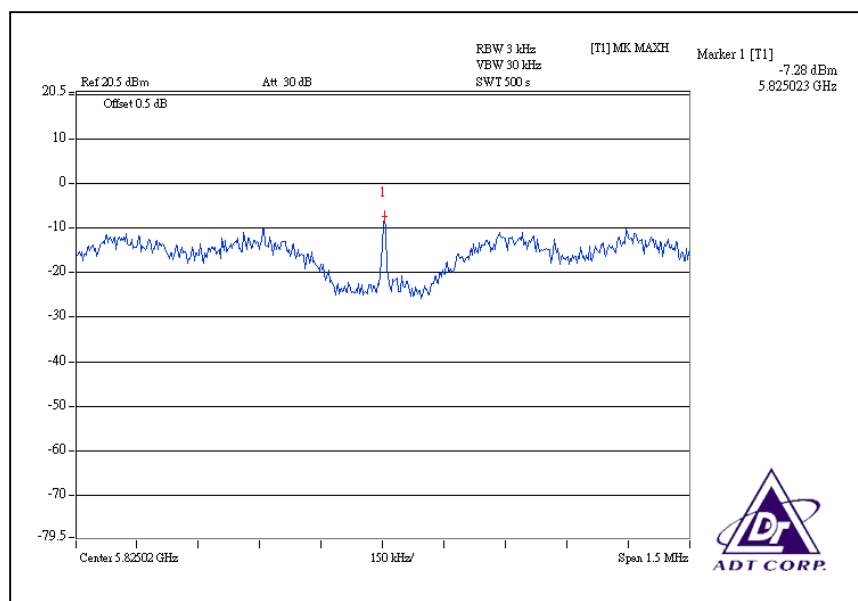
Chain 0
CH1



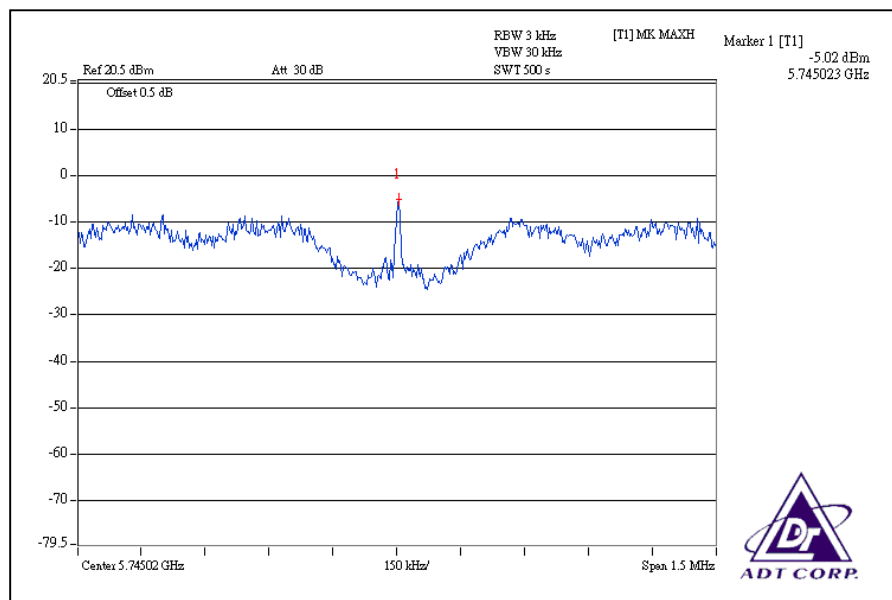
CH3



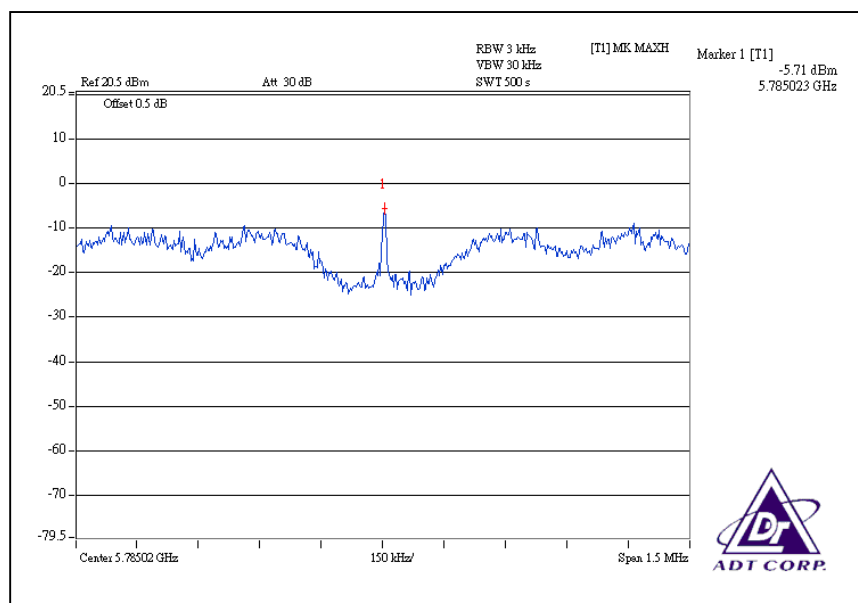
CH5



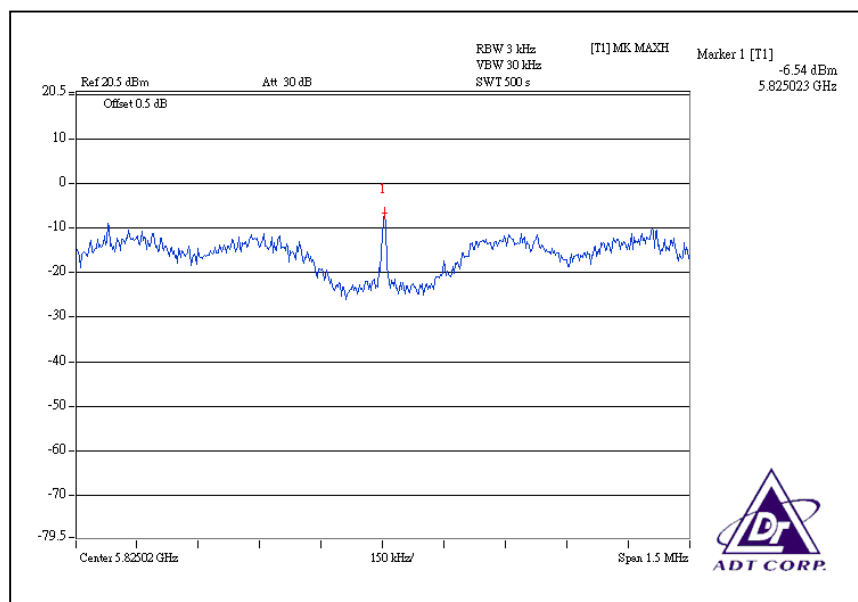
Chain 1 CH1



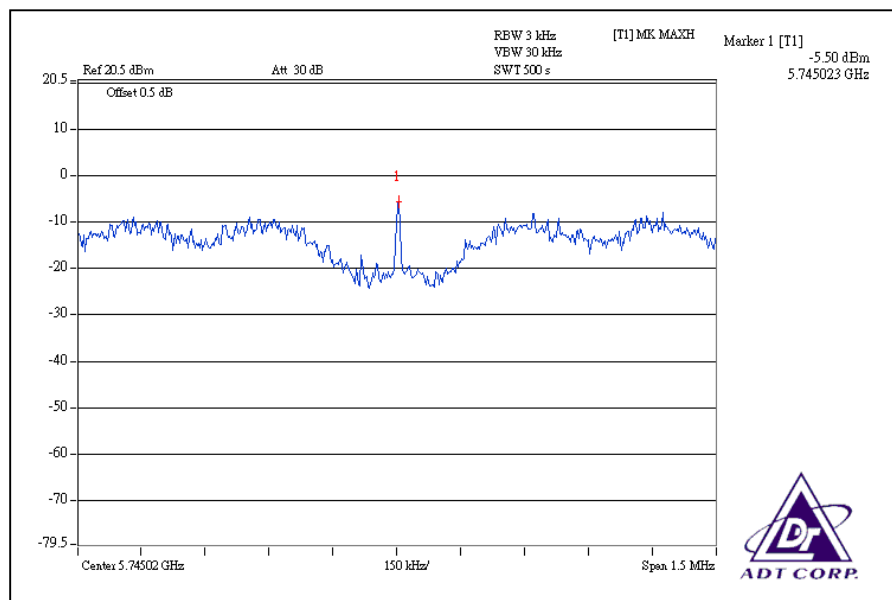
CH3



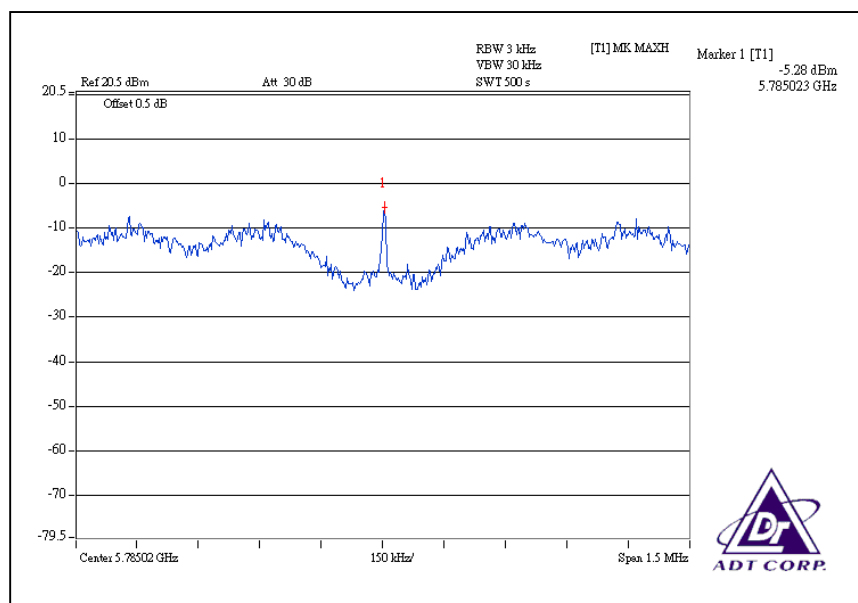
CH5



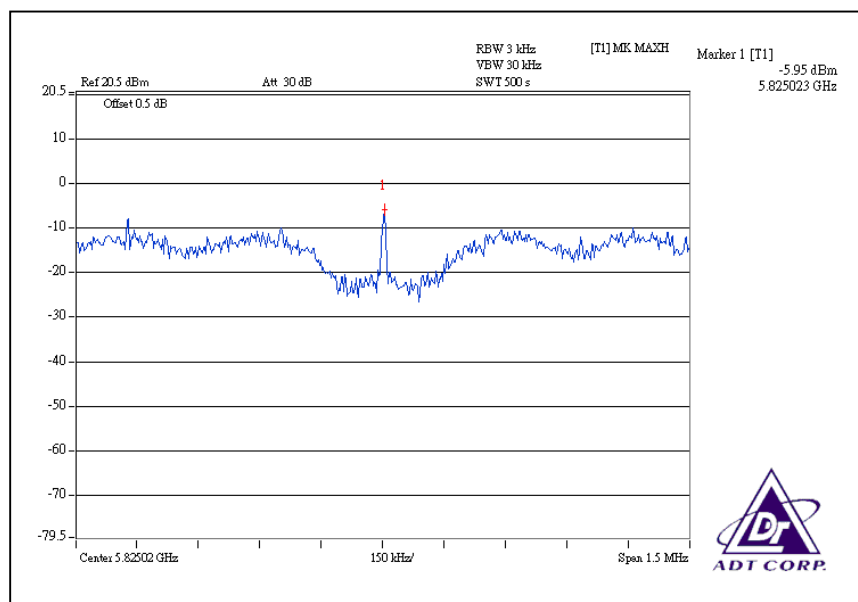
Chain 2 CH1



CH3



CH5

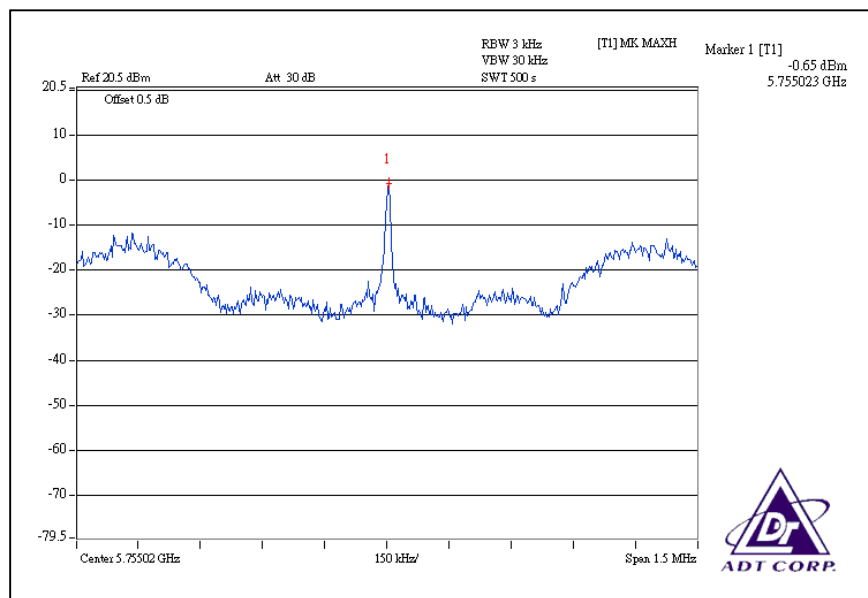


DRAFT 802.11n (40MHz) OFDM MODULATION:

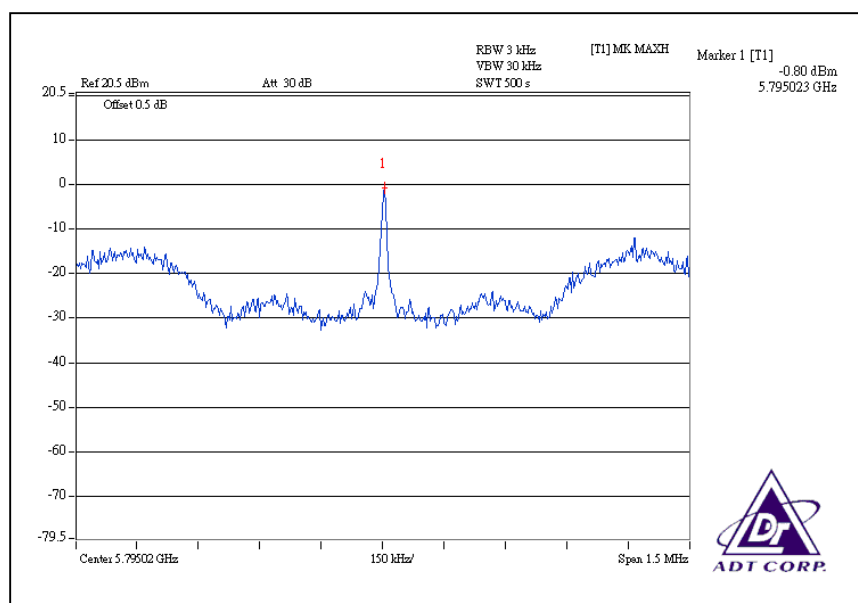
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2				
1	5755	0.861	0.479	0.408	-0.65	-3.20	-3.89	1.748	2.43	8	PASS
3	5795	0.832	0.773	0.760	-0.80	-1.12	-1.19	2.365	3.78	8	PASS

Chain 0 CH1

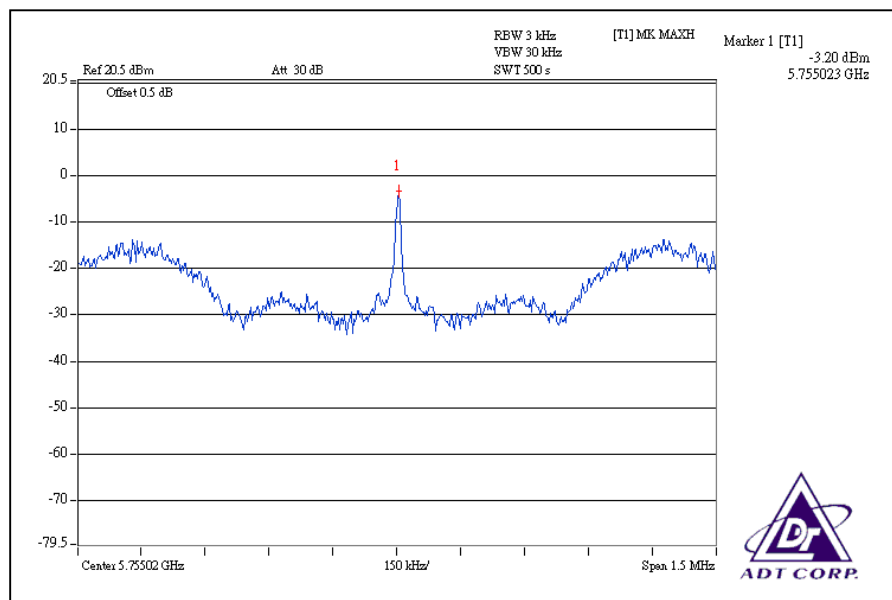


CH3

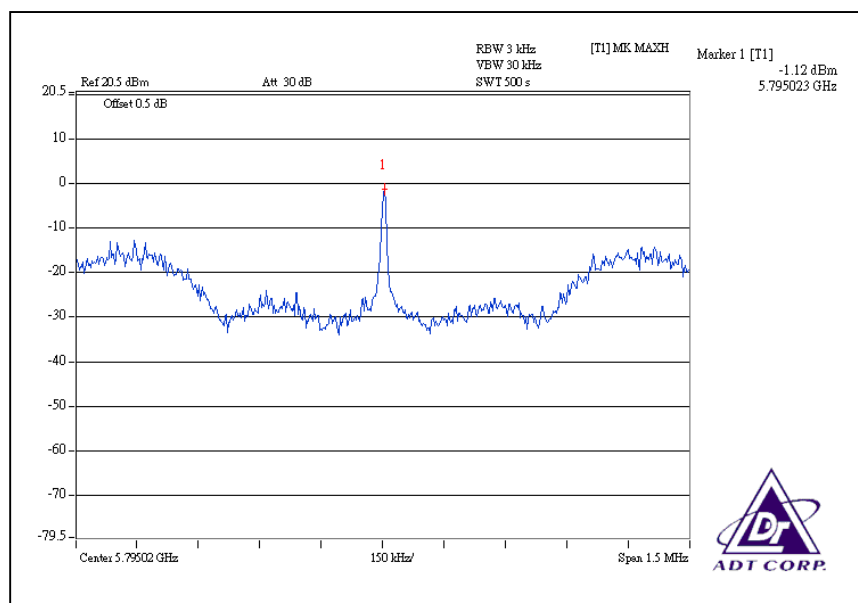


Chain 1

CH1

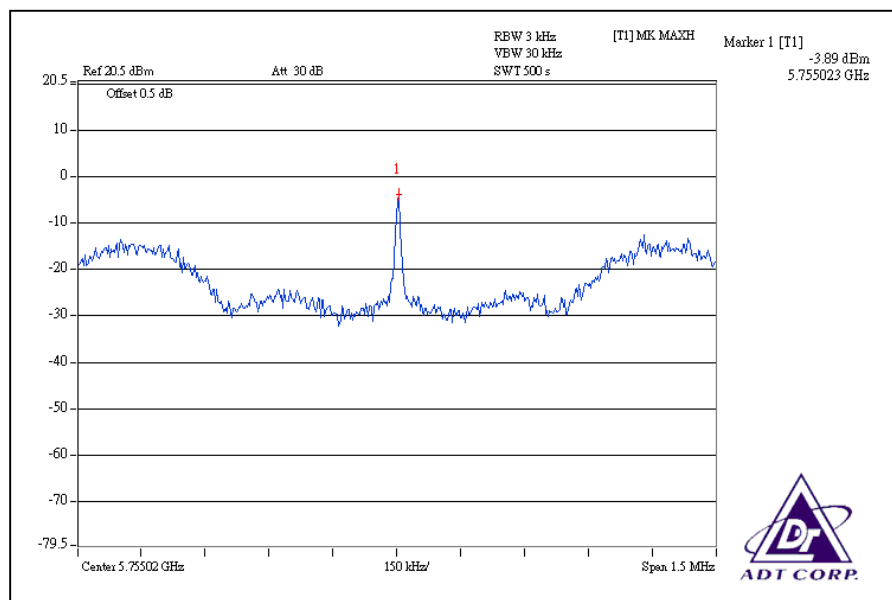


CH3

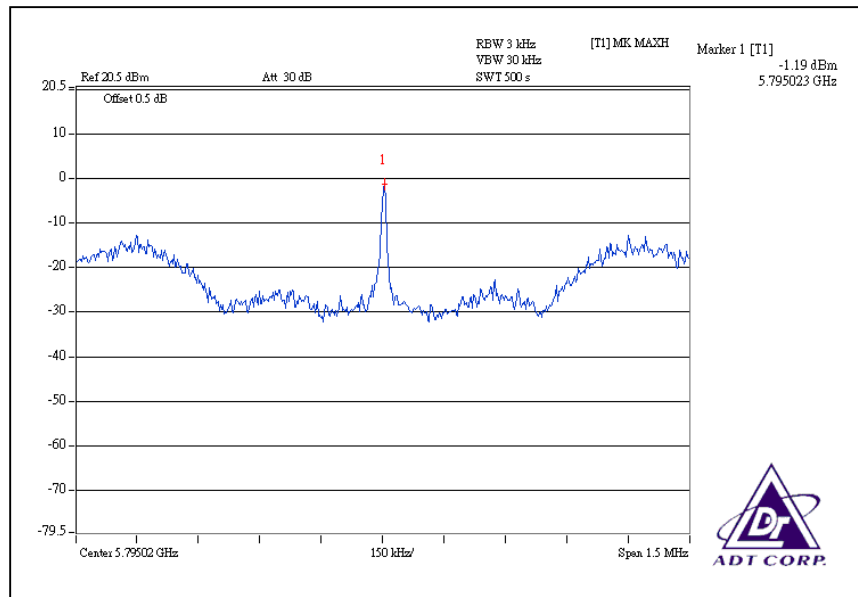


Chain 2

CH1



CH3



5.6 BAND EDGES MEASUREMENT

5.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

5.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 12, 2008

NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

5.6.3 TEST PROCEDURE

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

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

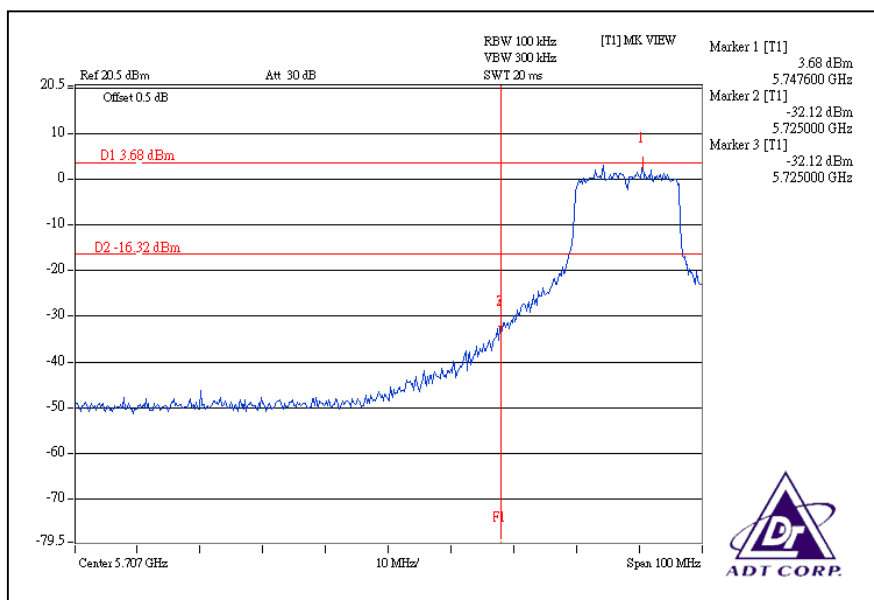
5.6.6 TEST RESULTS

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

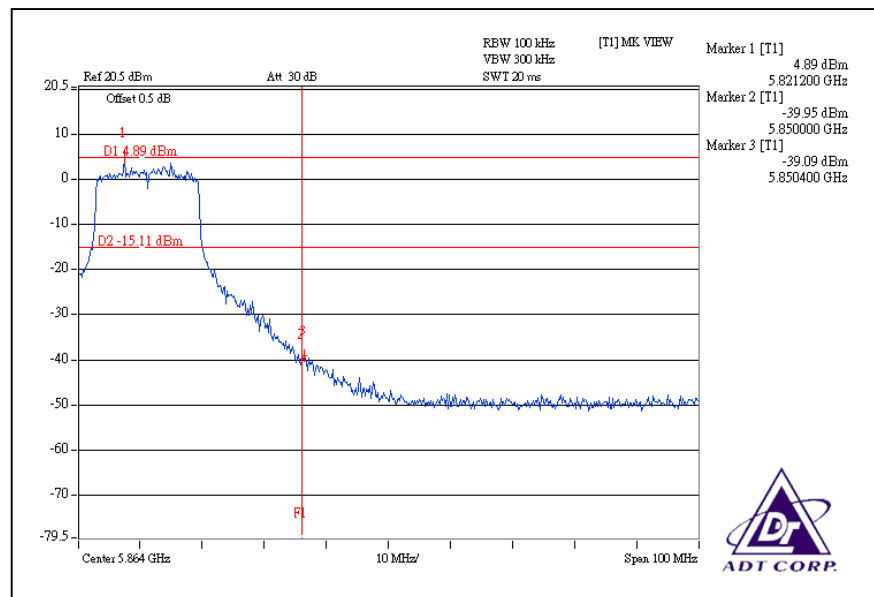
802.11a OFDM modulation

Chain 0

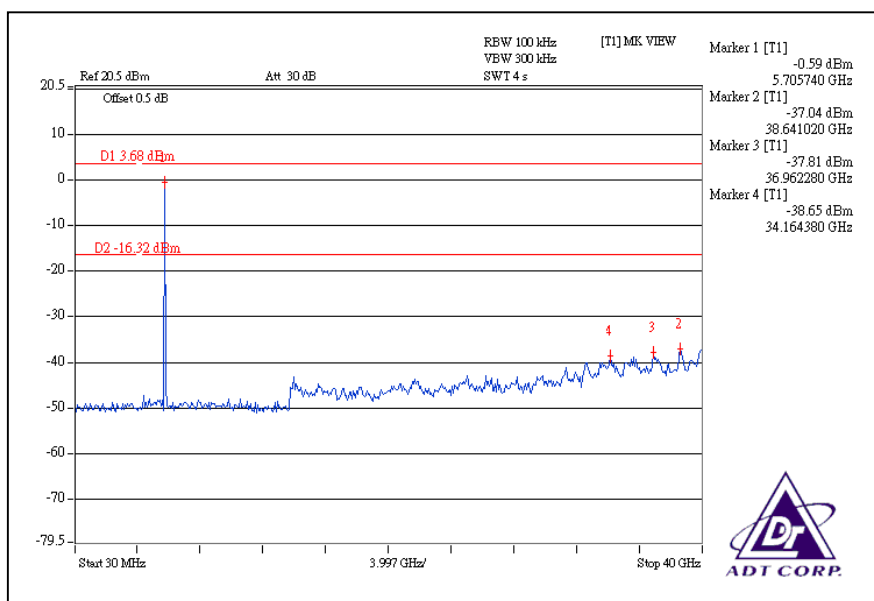
CH1



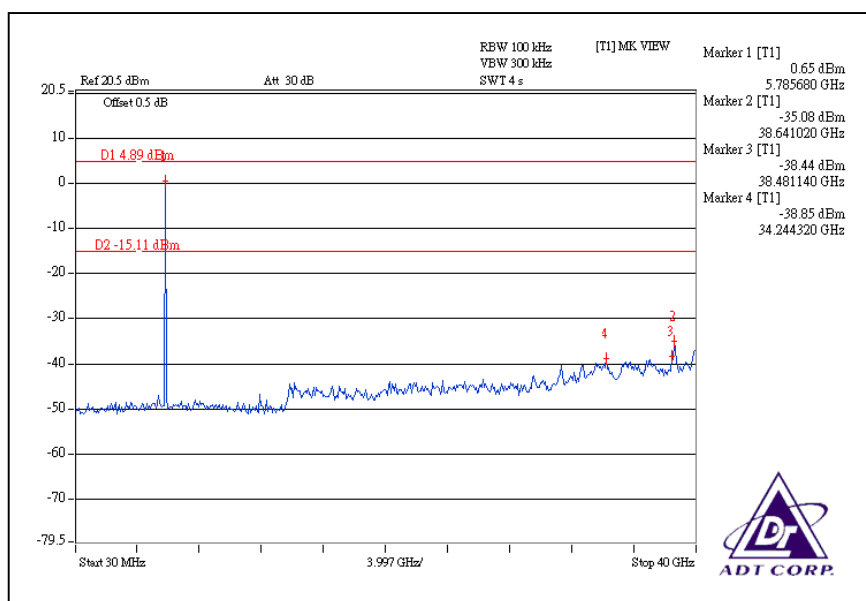
CH5



CH1

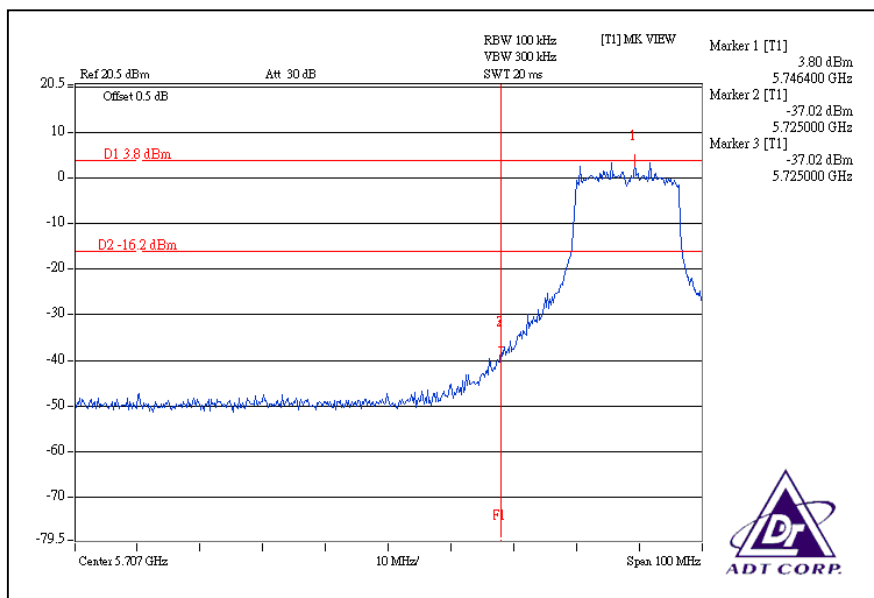


CH5

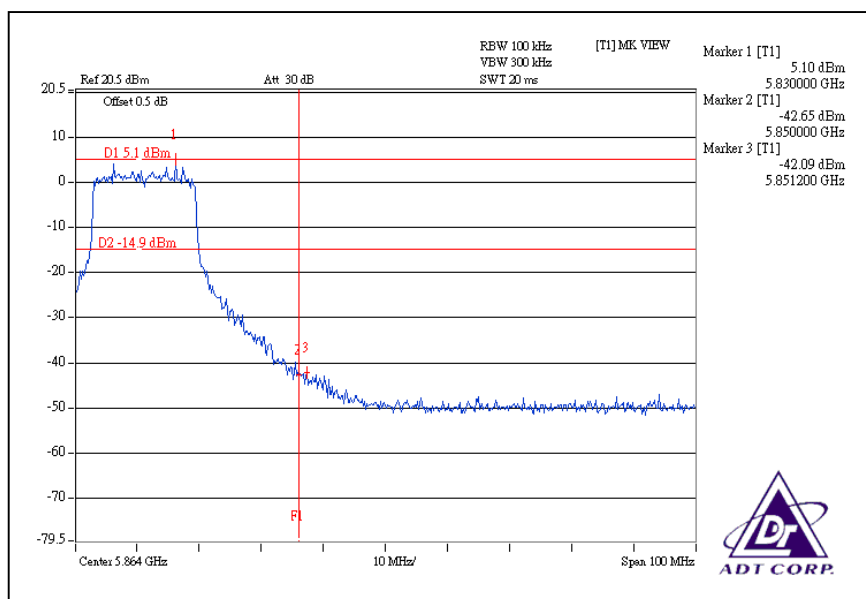


Chain 1

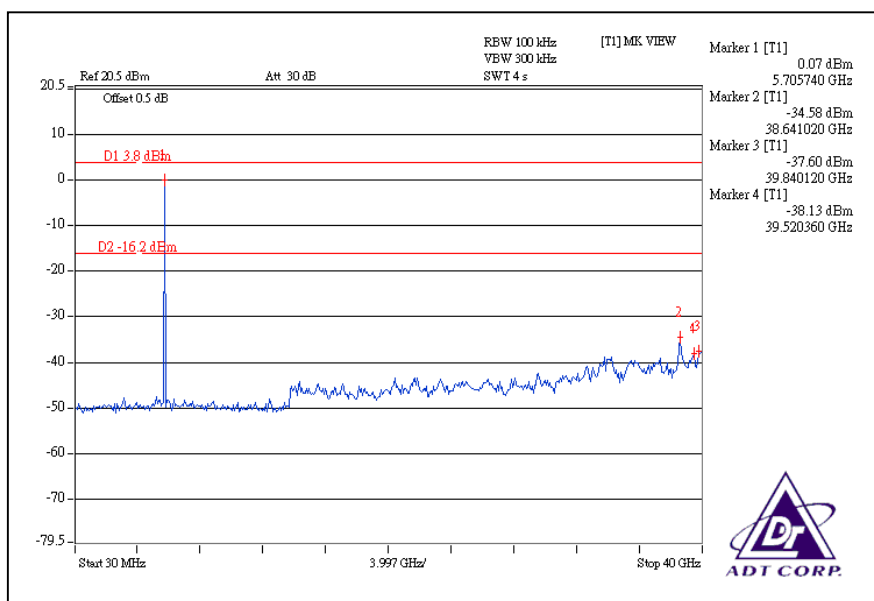
CH1



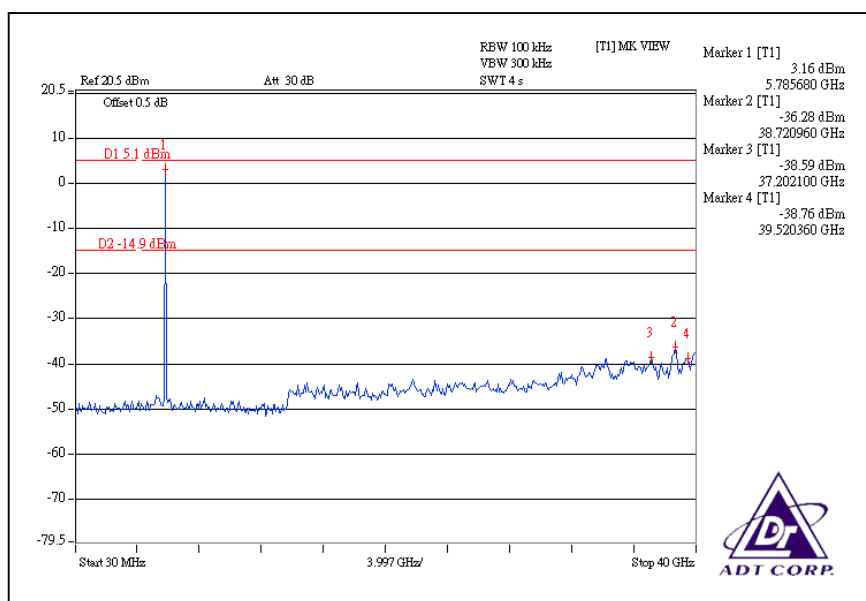
CH5



CH1

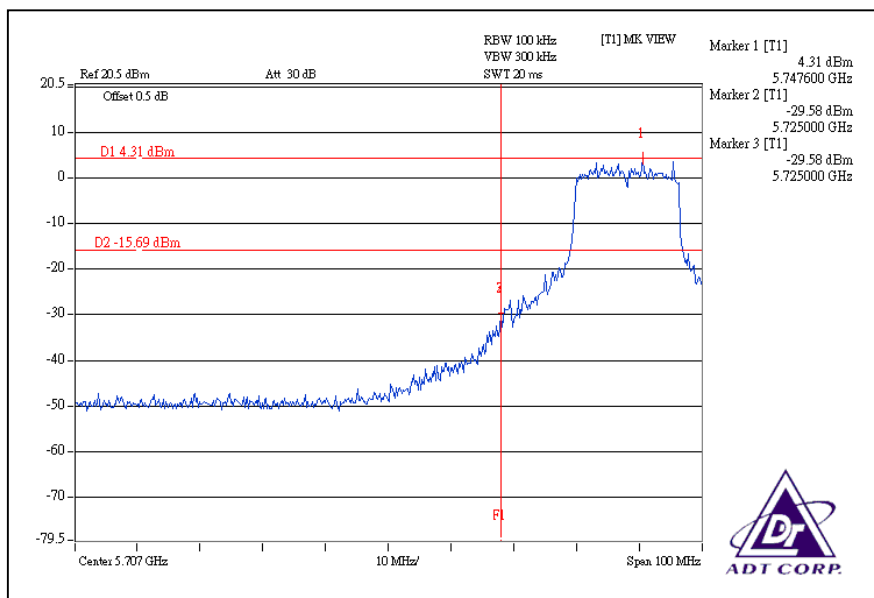


CH5

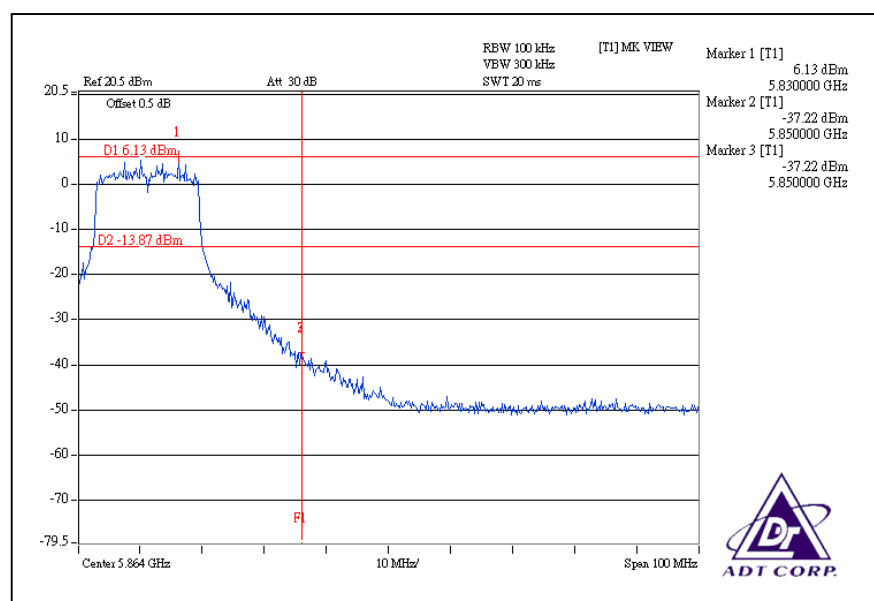


Chain 2

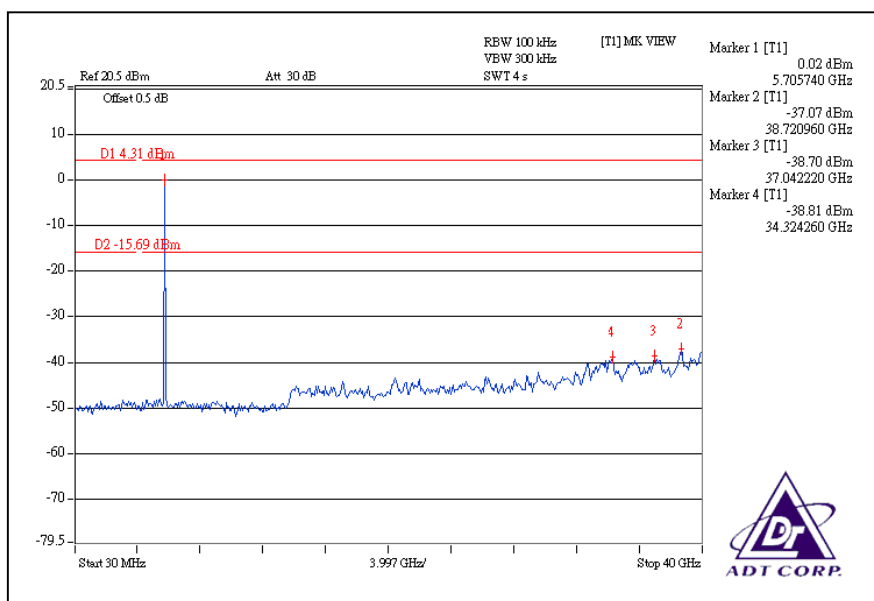
CH1



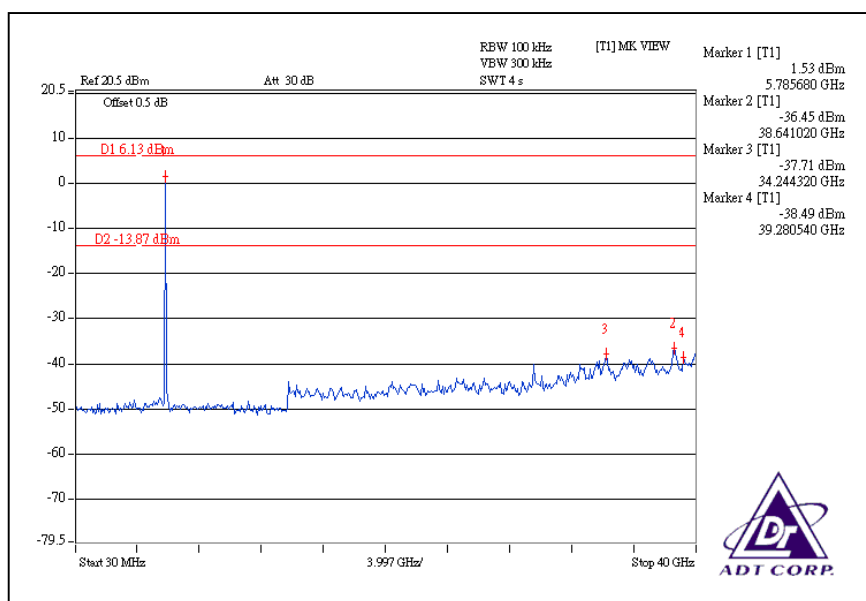
CH5



CH1



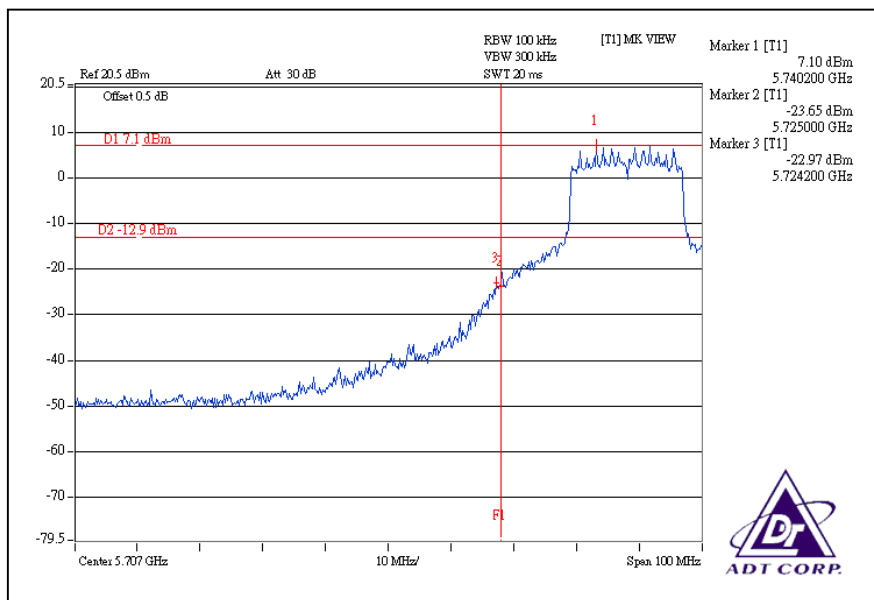
CH5



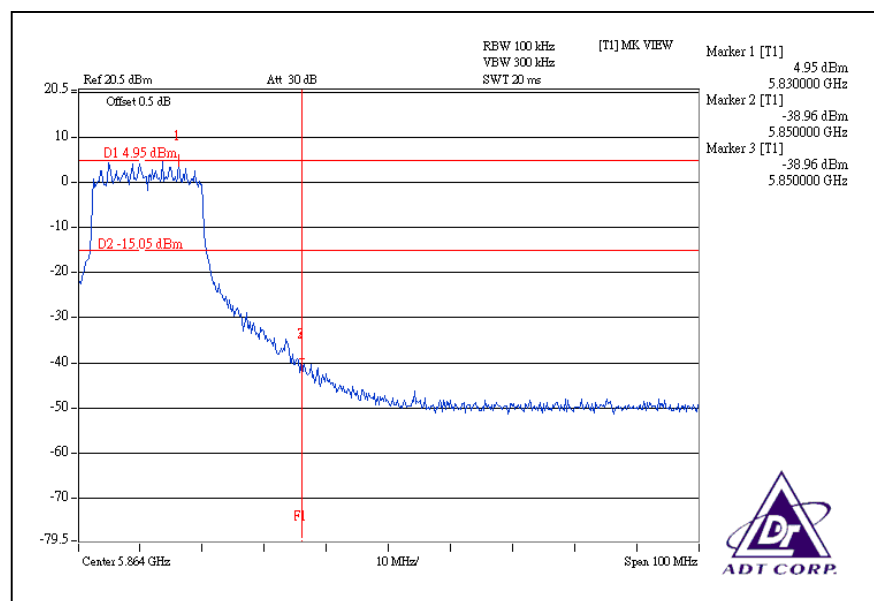
DRAFT 802.11n (20MHz) OFDM MODULATION:

Chain 0

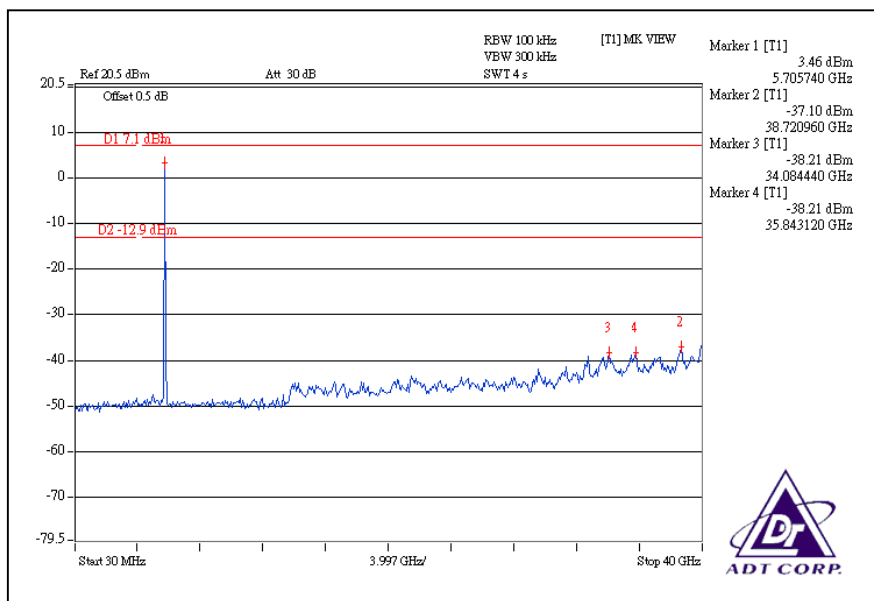
CH1



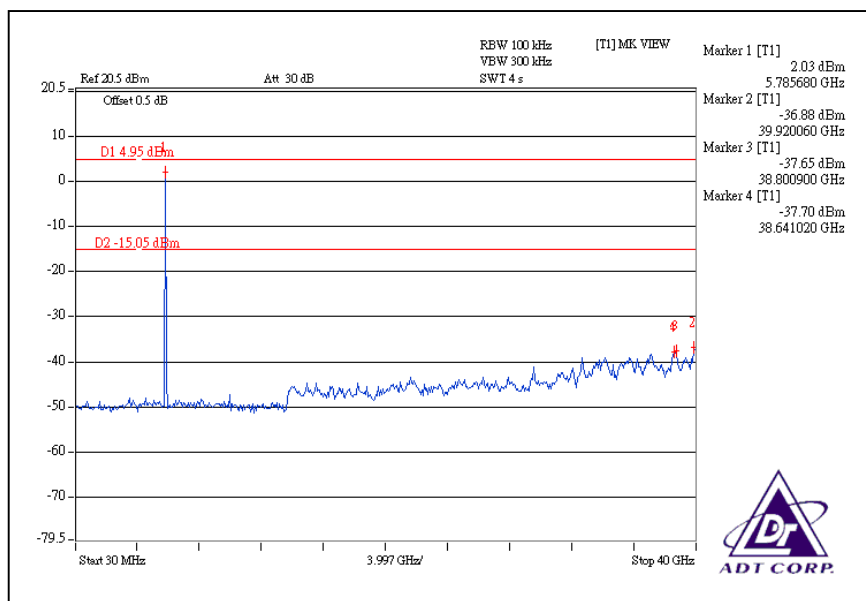
CH5



CH1

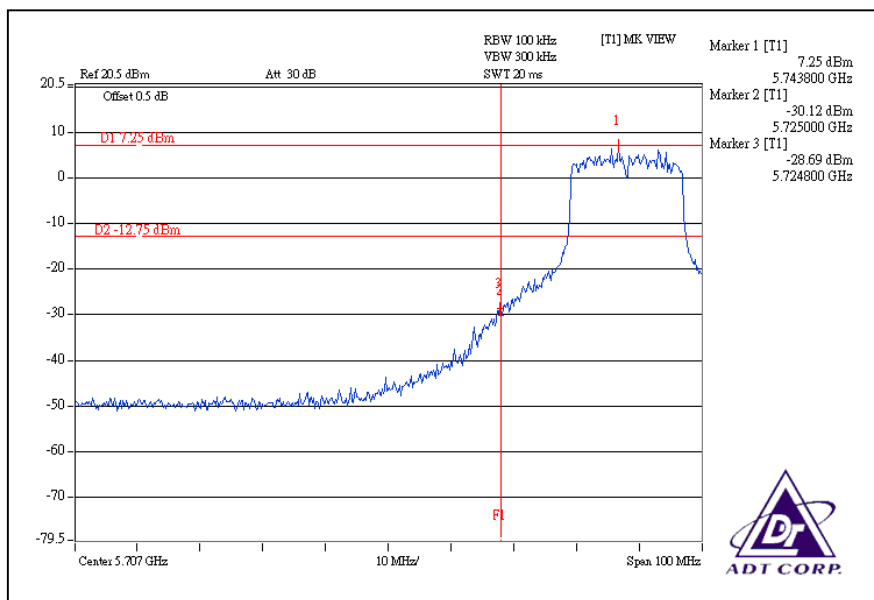


CH5

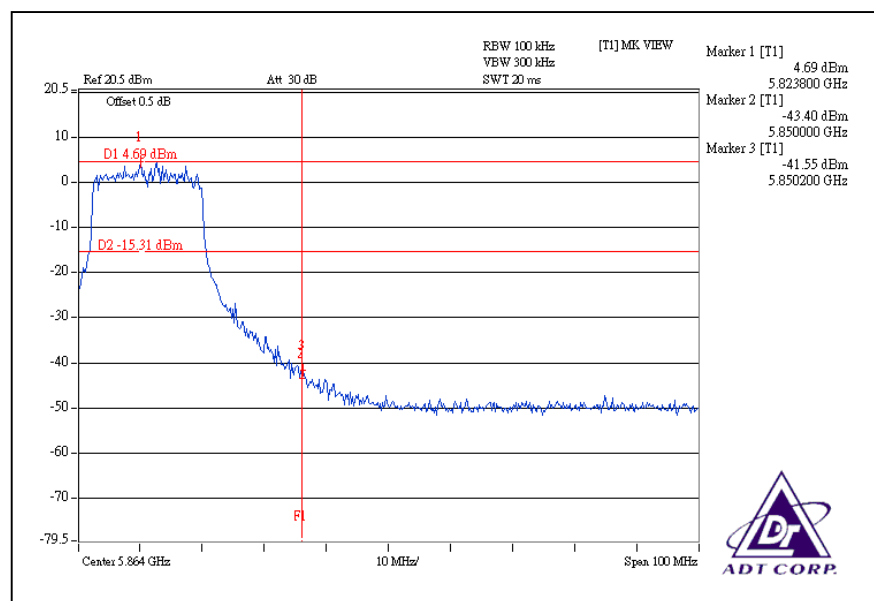


Chain 1

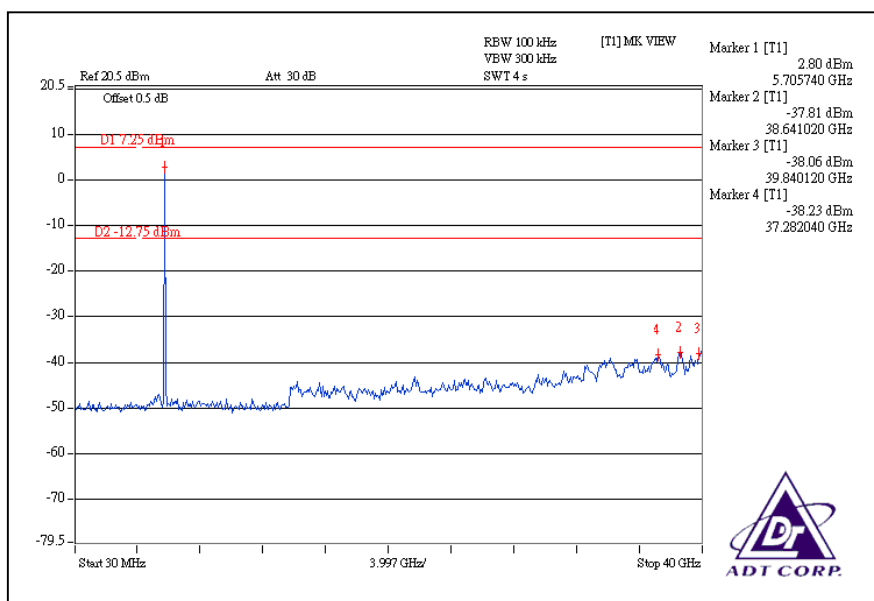
CH1



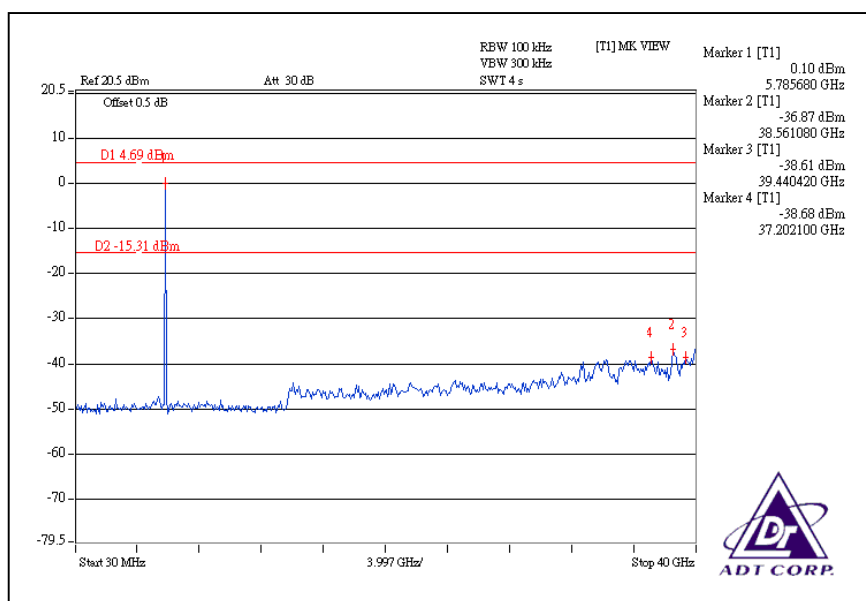
CH5



CH1

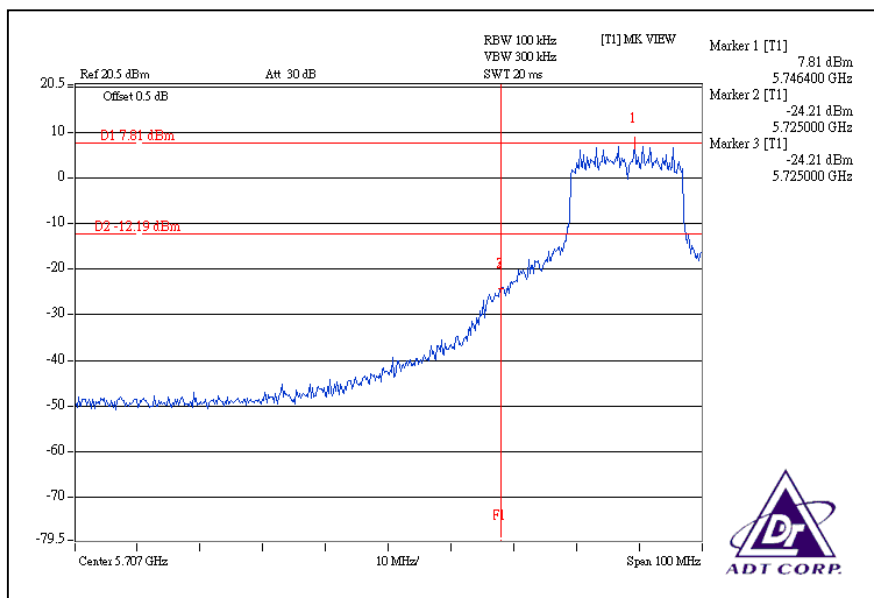


CH5

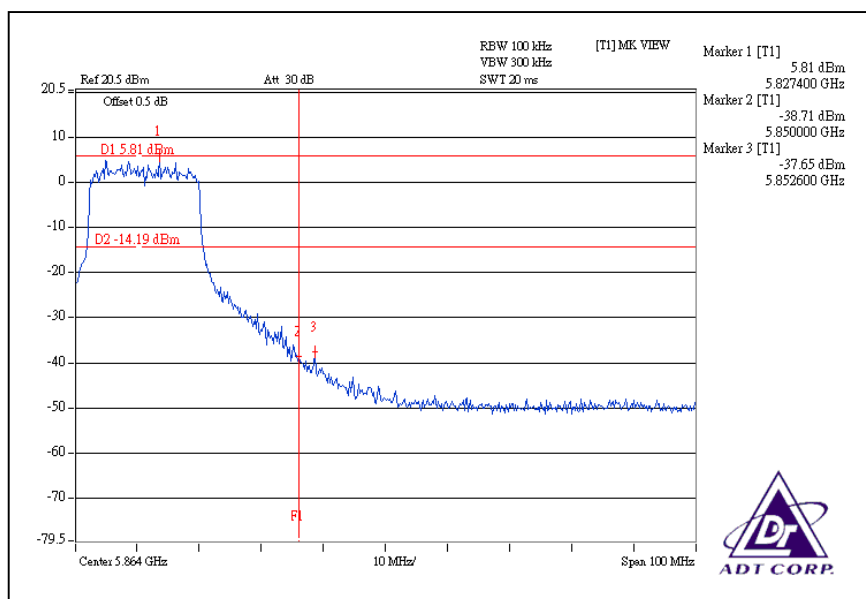


Chain 2

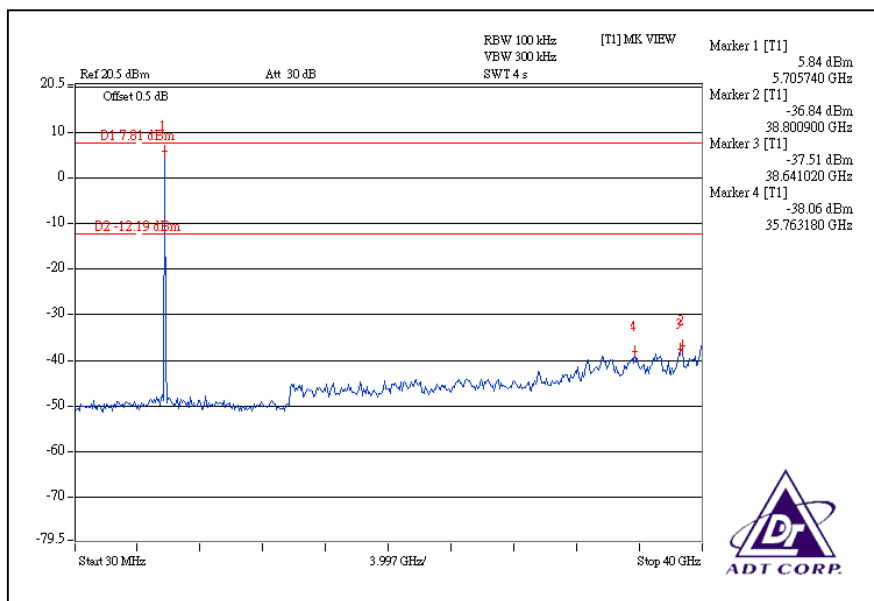
CH1



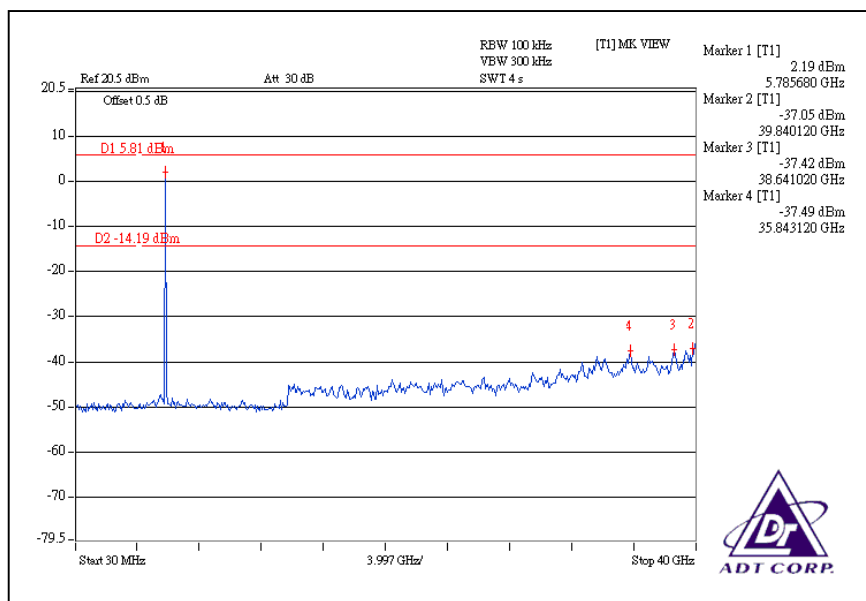
CH5



CH1



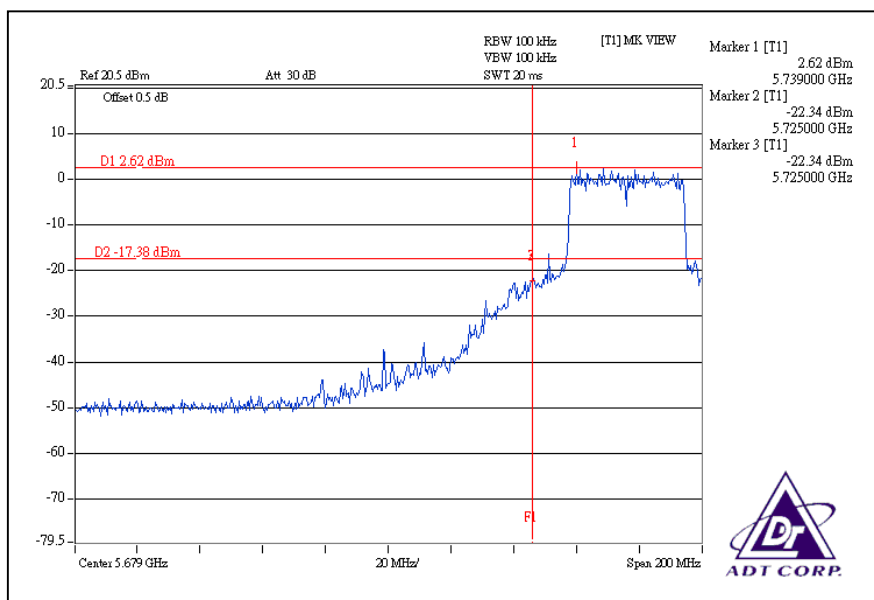
CH5



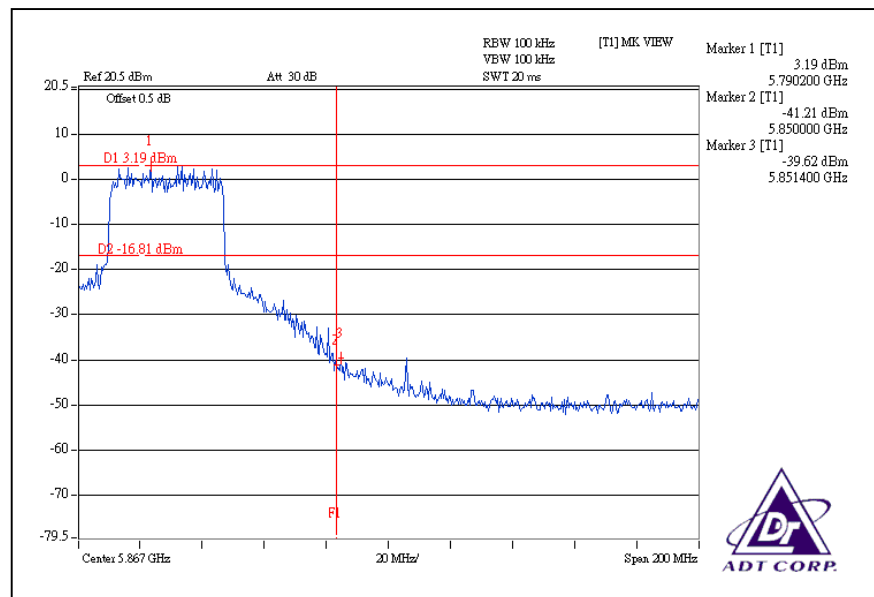
DRAFT 802.11n (40MHz) OFDM MODULATION:

Chain 0

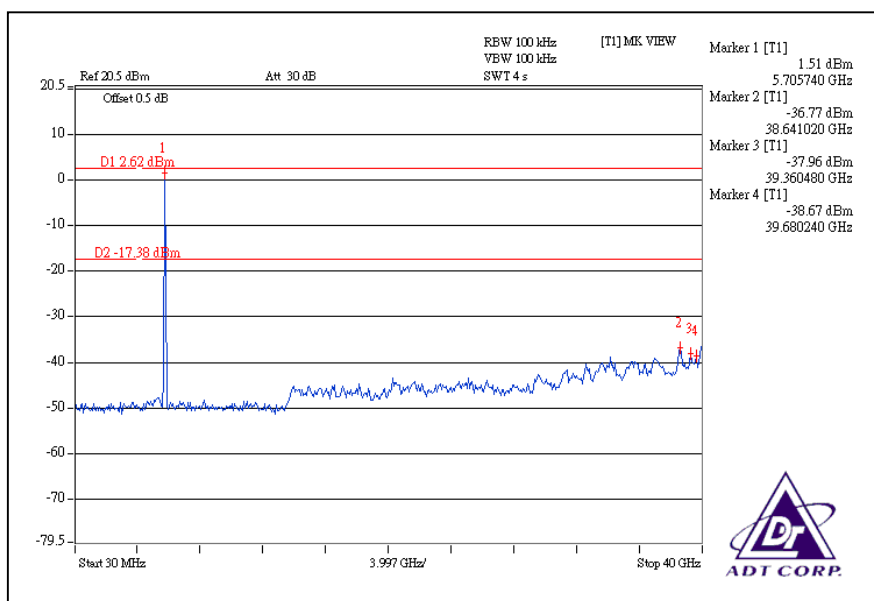
CH1



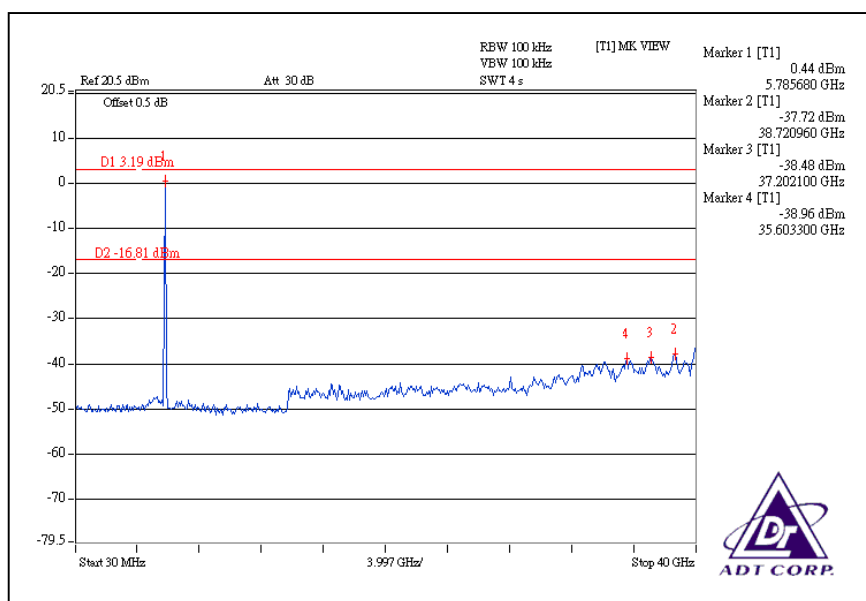
CH3



CH1

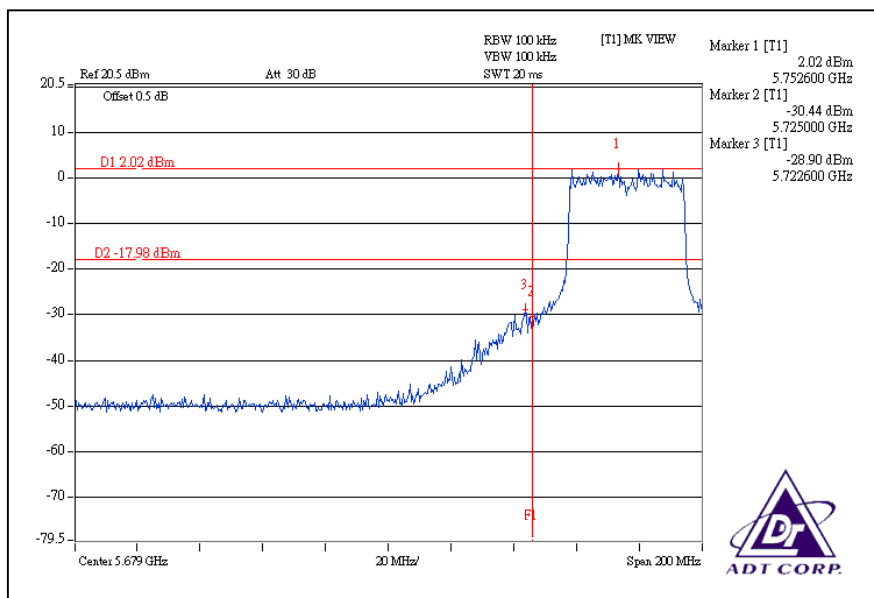


CH3

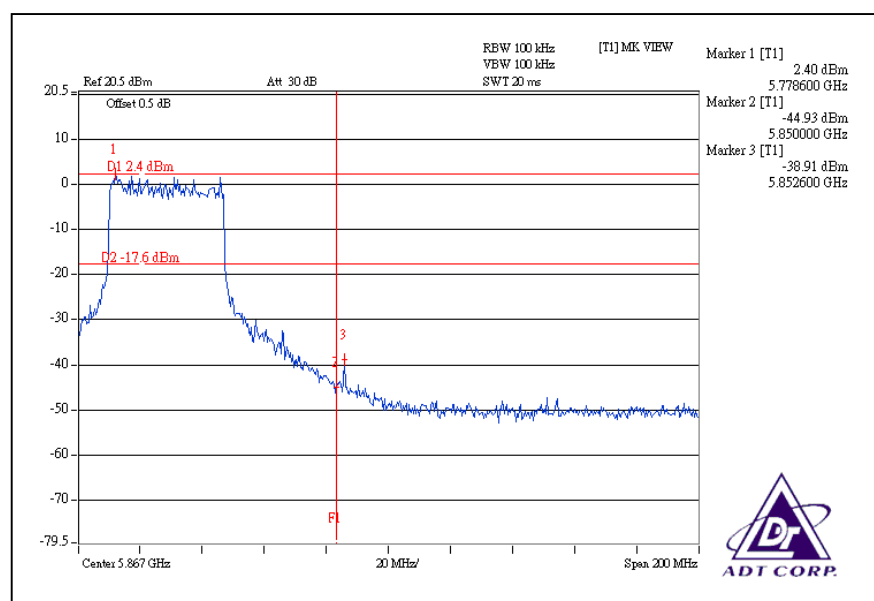


Chain 1

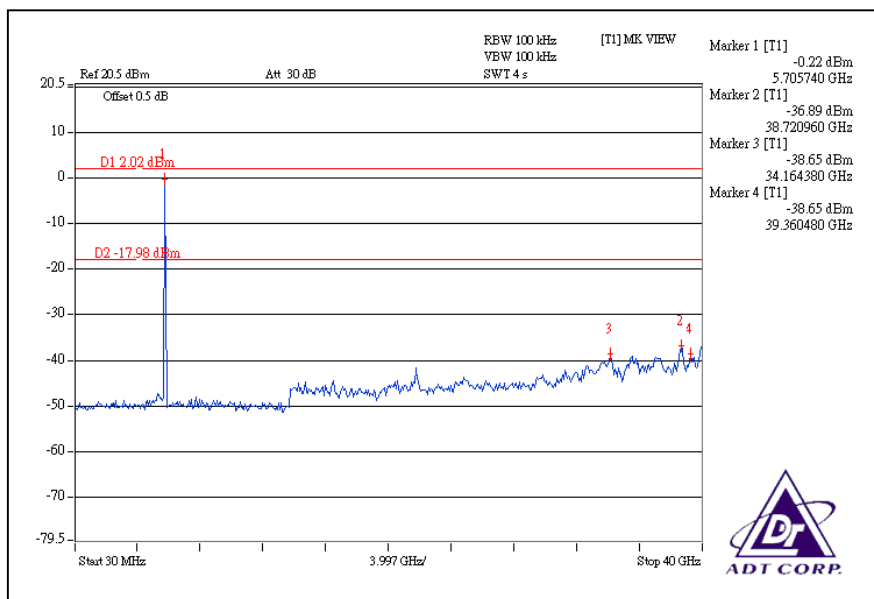
CH1



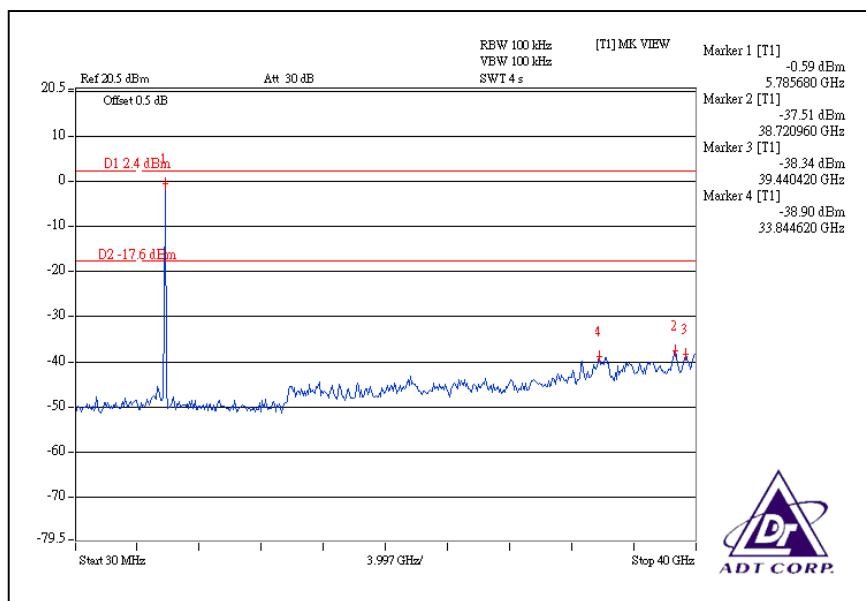
CH3



CH1

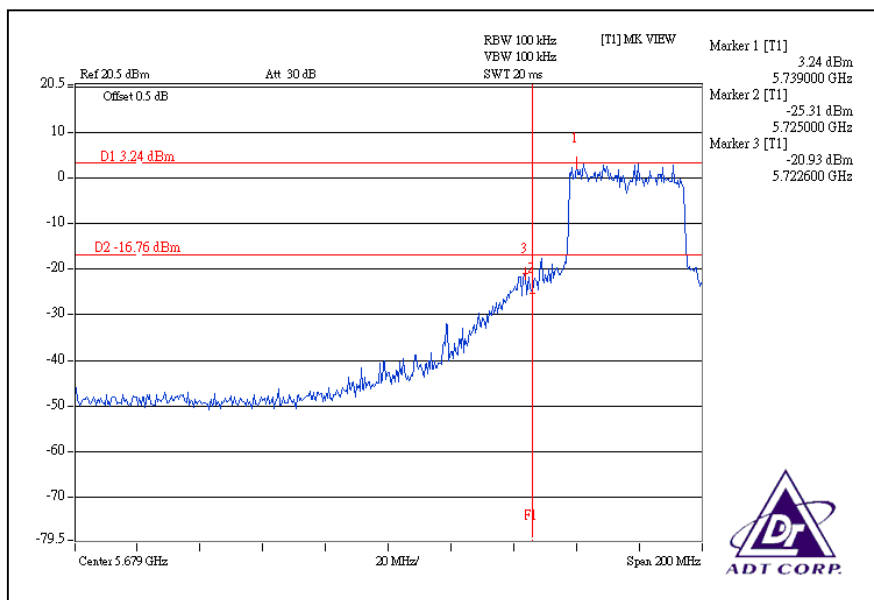


CH3

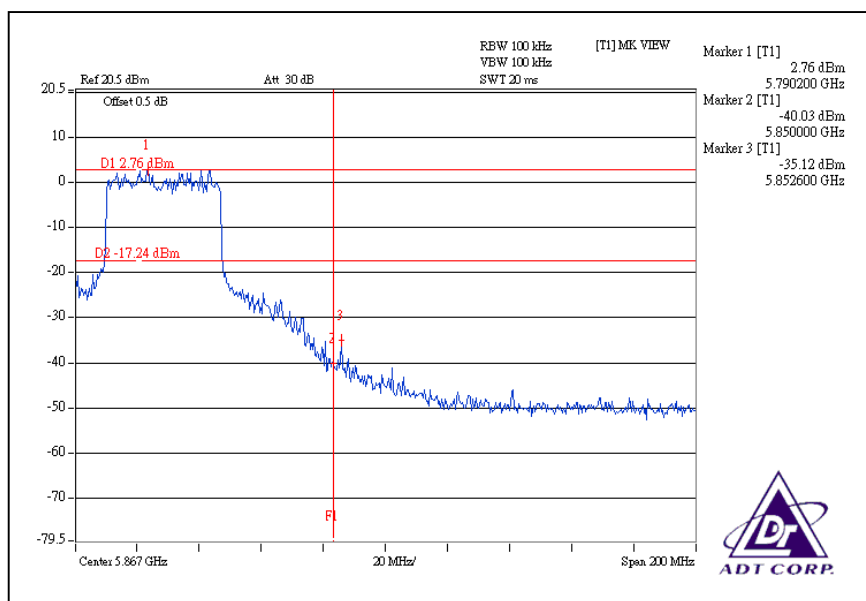


Chain 2

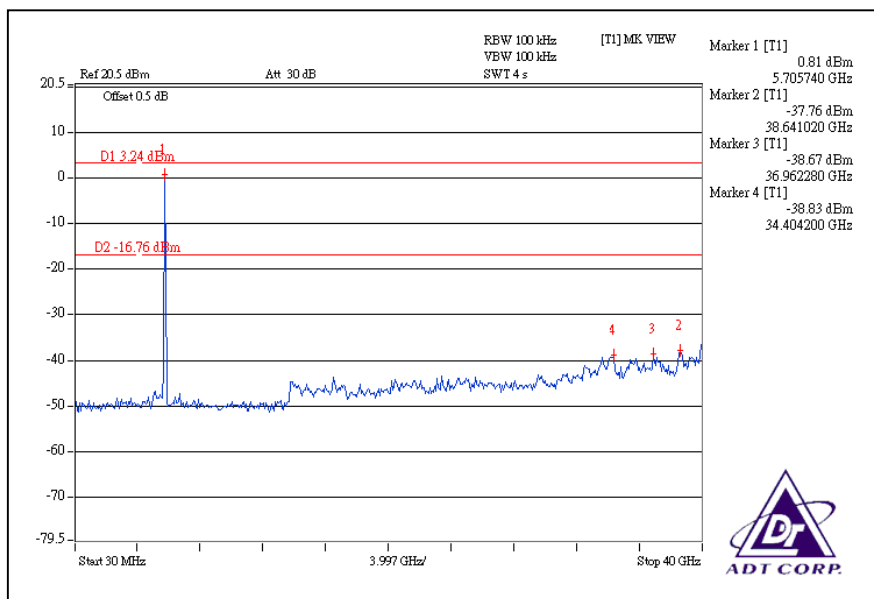
CH1



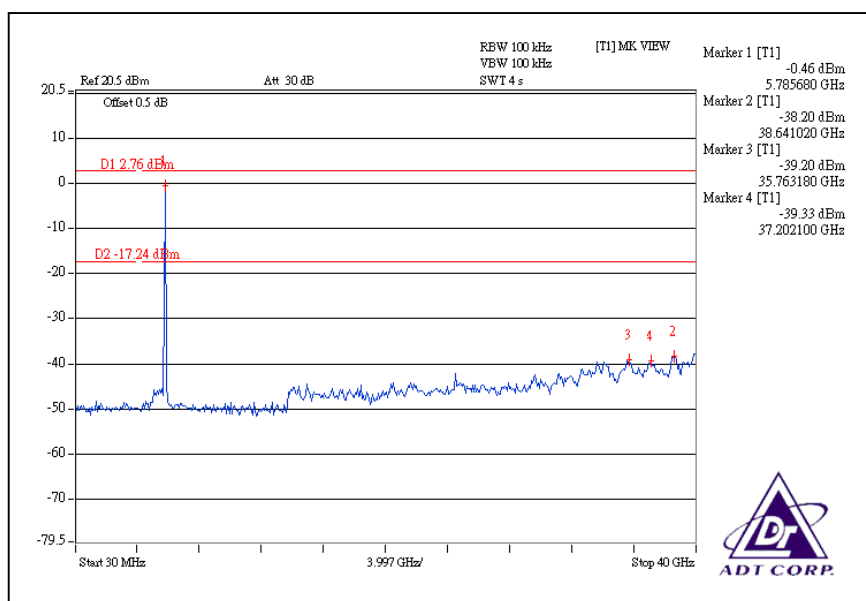
CH3



CH1



CH3



5.7 ANTENNA REQUIREMENT

5.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247(a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

5.7.2 ANTENNA CONNECTED CONSTRUCTION

There are two antennas provided to this EUT, please refer to the following table:

No	Model No.	Antenna Gain	For 2.4GHz Gain (dBi)	For 5.15~5.25GHz Gain (dBi)	For 5.725~5.850GHz Gain (dBi)	Antenna Type	Connector
1	DAP-2590	Gain (dBi)	4	6.10	7.12	Dipole	Reverse SMA
		Cable Loss (dB)	0.3		0.6		
		Net Gain (dB)	3.7	5.5	6.52		
2	ALP05-220170	Gain (dBi)	4.83	4.98	6.00	Dipole	RP SMA Plug
		Cable Loss (dB)	0.3		0.6		
		Net Gain (dB)	4.53	4.38	5.4		

6. INFORMATION ON THE TESTING LABORATORIES

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

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

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26052943

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.