



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 (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 0.50 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 DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100287	March 11, 2008	March 10, 2009
Line-Impedance Stabilization Network(for EUT)	KNW-407	8-1395-12	May 07, 2008	May 06, 2009
Line-Impedance Stabilization Network(for Peripheral)	ENV-216	100072	June 13, 2008	June 12, 2009
RF Cable (JYEBAO)	5DFB	COACAB-0 01	July 24, 2008	July 23, 2009
50 ohms Terminator	50	3	Nov. 16, 2008	Nov. 15, 2009
Software	ADT_Cond_V7. 3.2	NA	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.
 4. The test was performed in Shielded Room No. A.
 5. The VCCI Con A Registration No. is C-817.



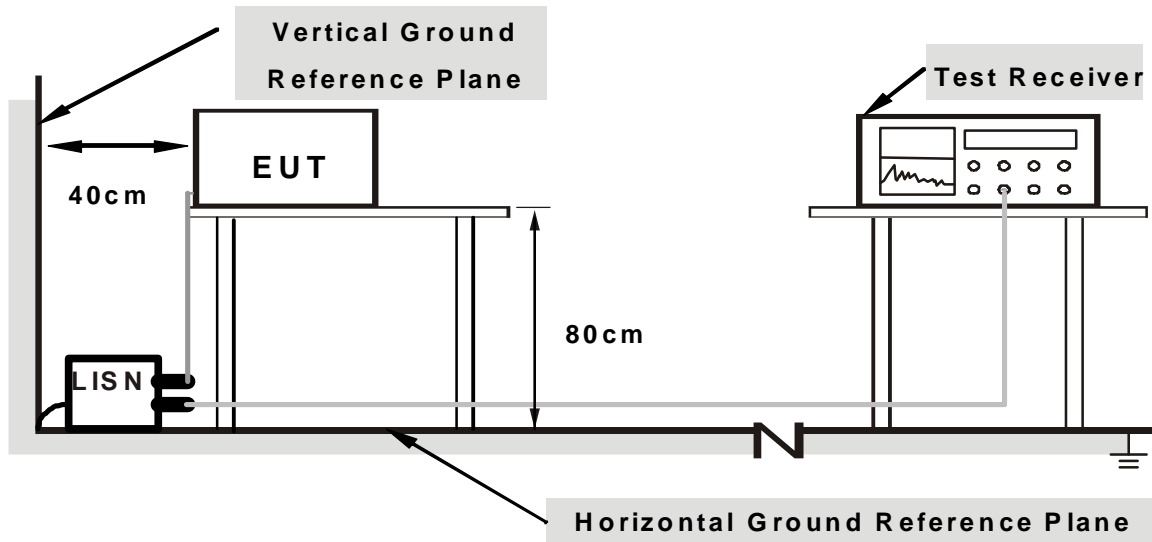
5.1.3 TEST PROCEDURES

- 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



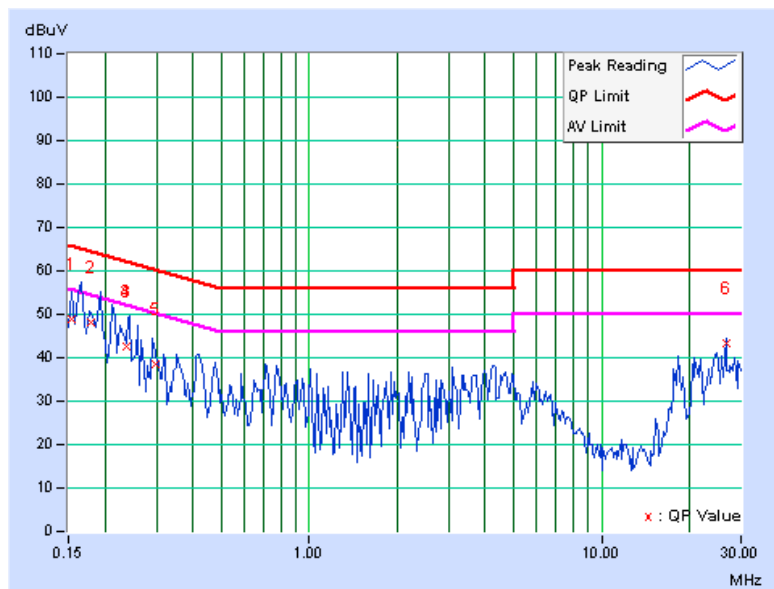
5.1.7 TEST RESULTS

802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	23deg. C, 62%RH, 965hPa	TESTED BY	Moris Lin

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	0.154	0.61	48.15	-	48.76	-	65.79
2	0.179	0.55	47.56	-	48.11	-	64.55	54.55	-16.43	-
3	0.237	0.49	41.92	-	42.41	-	62.21	52.21	-19.80	-
4	0.238	0.49	41.94	-	42.43	-	62.17	52.17	-19.74	-
5	0.297	0.46	38.14	-	38.60	-	60.33	50.33	-21.73	-
6	26.610	0.88	42.37	-	43.25	-	60.00	50.00	-16.75	-

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



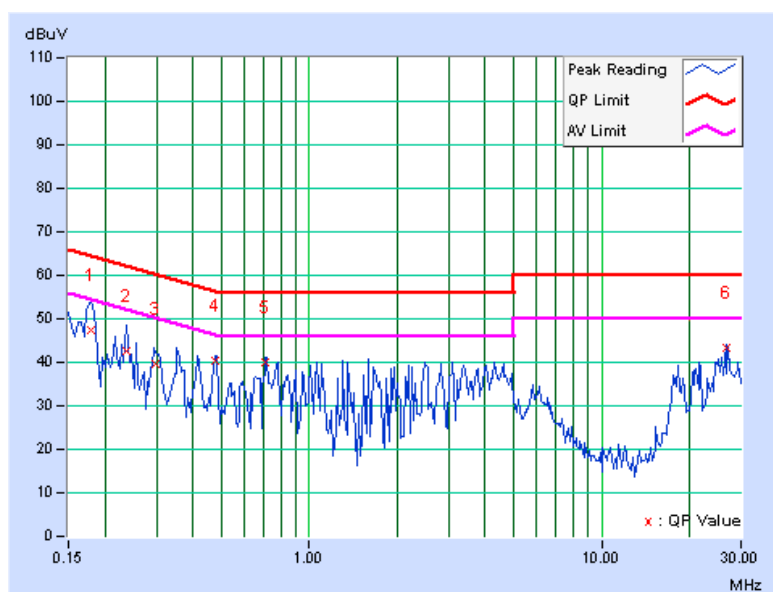


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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	PHASE	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	23deg. C, 62%RH, 965hPa	TESTED BY	Moris Lin

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	0.180	0.30	47.04	-	47.34	-	64.48	54.48	-17.14	-
2	0.237	0.25	42.28	-	42.53	-	62.20	52.20	-19.67	-
3	0.296	0.22	39.49	-	39.71	-	60.35	50.35	-20.63	-
4	0.474	0.18	40.23	-	40.41	-	56.44	46.44	-16.03	-
5	0.711	0.16	39.97	-	40.13	-	56.00	46.00	-15.87	-
6	26.609	0.69	42.53	-	43.22	-	60.00	50.00	-16.78	-

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





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.



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5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 16, 2008	July 15, 2009
HP Pre_Amplifier	8449B	3008A01922	Sep. 25, 2008	Sep. 24, 2009
ROHDE & SCHWARZ Test Receiver	ESCS30	100375	April 01, 2008	Mar. 31, 2009
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	April 30, 2008	April 29, 2009
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 09, 2008	Dec. 08, 2009
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 28, 2008	Jan. 27, 2009
RF Switches	EMH-011	08009	Oct. 07, 2008	Oct. 06, 2009
RF CABLE (Chaintek)	SF102	22054-2	Dec. 06, 2008	Dec. 05, 2009
RF Cable	8DFB	STCCAB-30M-1GHz	Oct. 07, 2008	Oct. 06, 2009
Software	ADT_Radiated_V7.6.15.9.2	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	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 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 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 7450G-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.

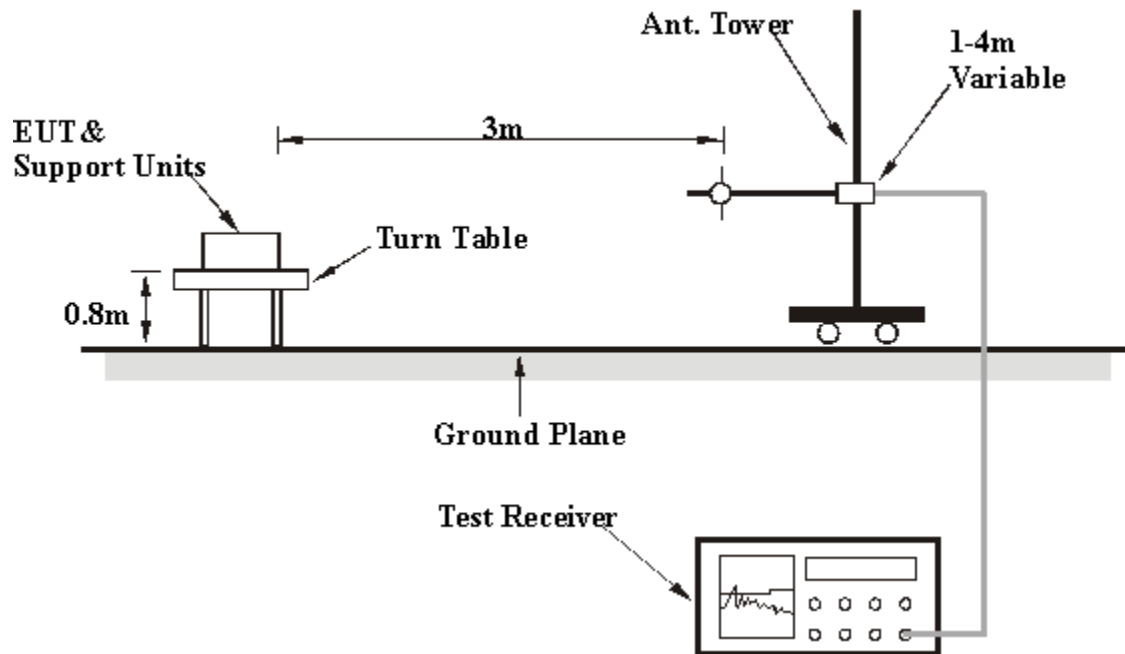
NOTE:

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



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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 5	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	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	73.50	20.05 QP	40.00	-19.95	2.17 H	73	7.47	12.58
2	125.00	25.46 QP	43.50	-18.04	1.79 H	284	11.34	14.12
3	200.00	29.82 QP	43.50	-13.68	1.62 H	257	16.84	12.98
4	250.00	40.36 QP	46.00	-5.64	1.25 H	257	24.94	15.42
5	375.00	33.91 QP	46.00	-12.09	1.06 H	58	13.81	20.10
6	500.00	33.24 QP	46.00	-12.76	1.54 H	23	10.58	22.66
7	625.00	42.11 QP	46.00	-3.89	1.42 H	54	16.77	25.34
8	750.00	31.67 QP	46.00	-14.33	1.04 H	242	3.21	28.46
9	875.00	35.84 QP	46.00	-10.16	1.27 H	51	5.12	30.72

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	73.50	28.32 QP	40.00	-11.68	1.00 V	287	15.74	12.58
2	125.00	29.94 QP	43.50	-13.56	1.00 V	168	15.82	14.12
3	200.00	27.69 QP	43.50	-15.81	1.00 V	201	14.71	12.98
4	250.00	33.44 QP	46.00	-12.56	1.00 V	197	18.02	15.42
5	375.00	35.67 QP	46.00	-10.33	1.00 V	348	15.57	20.10
6	500.00	33.48 QP	46.00	-12.52	1.00 V	81	10.82	22.66
7	625.00	40.28 QP	46.00	-5.72	1.23 V	345	14.94	25.34
8	750.00	29.28 QP	46.00	-16.72	1.21 V	42	0.82	28.46
9	875.00	32.58 QP	46.00	-13.42	1.00 V	341	1.86	30.72

- 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.



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	26deg. C, 65%RH 965hPa	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	*5745.00	123.80 PK			1.04 H	351	86.59	37.21
2	*5745.00	111.60 AV			1.04 H	351	74.39	37.21
3	7660.00	54.60 PK	74.00	-19.40	1.19 H	317	11.84	42.76
4	7660.00	45.70 AV	54.00	-8.30	1.19 H	317	2.94	42.76
5	11490.00	55.70 PK	74.00	-18.30	1.41 H	313	8.67	47.03
6	11490.00	44.40 AV	54.00	-9.60	1.41 H	313	-2.63	47.03
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	*5745.00	124.10 PK			1.00 V	349	86.89	37.21
2	*5745.00	111.70 AV			1.00 V	349	74.49	37.21
3	7660.00	55.10 PK	74.00	-18.90	1.13 V	6	12.34	42.76
4	7660.00	46.00 AV	54.00	-8.00	1.13 V	6	3.24	42.76
5	11490.00	57.60 PK	74.00	-16.40	1.23 V	330	10.57	47.03
6	11490.00	46.50 AV	54.00	-7.50	1.23 V	330	-0.53	47.03

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



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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	26deg. C, 65%RH 965hPa	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	1007.00	56.80 PK	74.00	-17.20	1.37 H	329	29.73	27.07
2	1007.00	46.20 AV	54.00	-7.80	1.37 H	329	19.13	27.07
3	*5785.00	123.60 PK			1.04 H	352	86.29	37.31
4	*5785.00	111.30 AV			1.04 H	352	73.99	37.31
5	7713.00	55.00 PK	74.00	-19.00	1.38 H	308	12.16	42.84
6	7713.00	46.60 AV	54.00	-7.40	1.38 H	308	3.76	42.84
7	11570.00	58.90 PK	74.00	-15.10	1.42 H	327	11.93	46.97
8	11570.00	44.60 AV	54.00	-9.40	1.42 H	327	-2.37	46.97

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	1010.00	58.70 PK	74.00	-15.30	1.16 V	21	31.62	27.08
2	1010.00	47.36 AV	54.00	-6.64	1.16 V	21	20.28	27.08
3	*5785.00	123.60 PK			1.00 V	351	86.29	37.31
4	*5785.00	111.00 AV			1.00 V	351	73.69	37.31
5	7713.00	55.20 PK	74.00	-18.80	1.52 V	357	12.36	42.84
6	7713.00	47.40 AV	54.00	-6.60	1.52 V	357	4.56	42.84
7	11570.00	59.70 PK	74.00	-14.30	1.25 V	1	12.73	46.97
8	11570.00	46.20 AV	54.00	-7.80	1.25 V	1	-0.77	46.97

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



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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	26deg. C, 65%RH 965hPa	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	1007.00	58.30 PK	74.00	-15.70	1.25 H	337	31.23	27.07
2	1007.00	44.60 AV	54.00	-9.40	1.25 H	337	17.53	27.07
3	*5825.00	123.40 PK			1.03 H	348	85.98	37.42
4	*5825.00	111.00 AV			1.03 H	348	73.58	37.42
5	#7766.00	58.30 PK	103.40	-45.10	1.12 H	3	15.38	42.92
6	#7766.00	53.80 AV	91.00	-37.20	1.12 H	3	10.88	42.92
7	11610.00	63.20 PK	74.00	-10.80	1.37 H	324	16.27	46.93
8	11610.00	52.80 AV	54.00	-1.20	1.37 H	324	5.87	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	1010.00	59.46 PK	74.00	-14.54	1.04 V	48	32.38	27.08
2	1010.00	48.30 AV	54.00	-5.70	1.04 V	48	21.22	27.08
3	*5825.00	124.00 PK			1.00 V	348	86.58	37.42
4	*5825.00	111.40 AV			1.00 V	348	73.98	37.42
5	#7766.00	59.10 PK	104.00	-44.90	1.11 V	3	16.18	42.92
6	#7766.00	54.30 AV	91.40	-37.10	1.11 V	3	11.38	42.92
7	11610.00	64.30 PK	74.00	-9.70	1.58 V	333	17.37	46.93
8	11610.00	53.00 AV	54.00	-1.00	1.58 V	333	6.07	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 limit value is defined as per 15.247.
 7. "#":The radiated frequency is out the restricted band.



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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	26deg. C, 65%RH 965hPa	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	*5745.00	120.90 PK			1.02 H	354	83.69	37.21
2	*5745.00	106.70 AV			1.02 H	354	69.49	37.21
3	7660.00	55.30 PK	74.00	-18.70	1.35 H	314	12.54	42.76
4	7660.00	47.80 AV	54.00	-6.20	1.35 H	314	5.04	42.76
5	11490.00	58.50 PK	74.00	-15.50	1.49 H	336	11.47	47.03
6	11490.00	45.20 AV	54.00	-8.80	1.49 H	336	-1.83	47.03

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	*5745.00	123.70 PK			1.06 V	357	86.49	37.21
2	*5745.00	110.10 AV			1.06 V	357	72.89	37.21
3	7660.00	55.50 PK	74.00	-18.50	1.52 V	0	12.74	42.76
4	7660.00	48.30 AV	54.00	-5.70	1.52 V	0	5.54	42.76
5	11490.00	58.30 PK	74.00	-15.70	1.36 V	338	11.27	47.03
6	11490.00	45.30 AV	54.00	-8.70	1.36 V	338	-1.73	47.03

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



A D T

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	26deg. C, 65%RH 965hPa	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	*5785.00	121.30 PK			1.04 H	351	83.99	37.31
2	*5785.00	107.10 AV			1.04 H	351	69.79	37.31
3	7713.00	54.10 PK	74.00	-19.90	1.41 H	316	11.26	42.84
4	7713.00	46.40 AV	54.00	-7.60	1.41 H	316	3.56	42.84
5	11570.00	57.70 PK	74.00	-16.30	1.70 H	314	10.73	46.97
6	11570.00	44.10 AV	54.00	-9.90	1.70 H	314	-2.87	46.97
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	124.10 PK			1.05 V	349	86.79	37.31
2	*5785.00	111.30 AV			1.05 V	349	73.99	37.31
3	7713.00	55.30 PK	74.00	-18.70	1.42 V	1	12.46	42.84
4	7713.00	47.00 AV	54.00	-7.00	1.42 V	1	4.16	42.84
5	11570.00	58.20 PK	74.00	-15.80	1.49 V	336	11.23	46.97
6	11570.00	45.10 AV	54.00	-8.90	1.49 V	336	-1.87	46.97

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



A D T

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	26deg. C, 65%RH 965hPa	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	*5825.00	120.10 PK			1.03 H	349	82.68	37.42
2	*5825.00	106.80 AV			1.03 H	349	69.38	37.42
3	#7766.00	57.70 PK	100.10	-42.40	1.42 H	313	14.78	42.92
4	#7766.00	53.10 AV	86.80	-33.70	1.42 H	313	10.18	42.92
5	11610.00	58.10 PK	74.00	-15.90	1.68 H	318	11.17	46.93
6	11610.00	44.80 AV	54.00	-9.20	1.68 H	318	-2.13	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	*5825.00	123.10 PK			1.04 V	351	85.68	37.42
2	*5825.00	109.80 AV			1.04 V	351	72.38	37.42
3	#7766.00	57.00 PK	103.10	-46.10	1.49 V	0	14.08	42.92
4	#7766.00	53.30 AV	89.80	-36.50	1.49 V	0	10.38	42.92
5	11610.00	59.90 PK	74.00	-14.10	1.28 V	342	12.97	46.93
6	11610.00	46.10 AV	54.00	-7.90	1.28 V	342	-0.83	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 limit value is defined as per 15.247.
 7. "#":The radiated frequency is out the restricted band.



A D T

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	26deg. C, 65%RH 965hPa	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	116.70 PK			1.02 H	358	79.47	37.23
2	*5755.00	102.30 AV			1.02 H	358	65.07	37.23
3	7673.00	53.50 PK	74.00	-20.50	1.43 H	340	10.72	42.78
4	7673.00	43.60 AV	54.00	-10.40	1.43 H	340	0.82	42.78
5	11510.00	57.60 PK	74.00	-16.40	1.24 H	0	10.58	47.02
6	11510.00	43.10 AV	54.00	-10.90	1.24 H	0	-3.92	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	117.30 PK			1.04 V	351	80.07	37.23
2	*5755.00	103.10 AV			1.04 V	351	65.87	37.23
3	7673.00	54.20 PK	74.00	-19.80	1.00 V	338	11.42	42.78
4	7673.00	45.70 AV	54.00	-8.30	1.00 V	338	2.92	42.78
5	11510.00	57.30 PK	74.00	-16.70	1.07 V	342	10.28	47.02
6	11510.00	43.20 AV	54.00	-10.80	1.07 V	342	-3.82	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 limit value is defined as per 15.247.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 2	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 965hPa	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	117.10 PK			1.04 H	357	79.76	37.34
2	*5795.00	103.00 AV			1.04 H	357	65.66	37.34
3	7726.00	57.00 PK	74.00	-17.00	1.30 H	315	14.14	42.86
4	7726.00	51.30 AV	54.00	-2.70	1.30 H	315	8.44	42.86
5	11590.00	57.80 PK	74.00	-16.20	1.21 H	335	10.85	46.95
6	11590.00	43.70 AV	54.00	-10.30	1.21 H	335	-3.25	46.95

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	116.40 PK			1.07 V	356	79.06	37.34
2	*5795.00	102.70 AV			1.07 V	356	65.36	37.34
3	7726.00	56.80 PK	74.00	-17.20	1.05 V	344	13.94	42.86
4	7726.00	50.80 AV	54.00	-3.20	1.05 V	344	7.94	42.86
5	11590.00	58.60 PK	74.00	-15.40	1.11 V	340	11.65	46.95
6	11590.00	44.10 AV	54.00	-9.90	1.11 V	340	-2.85	46.95

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



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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 DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

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.

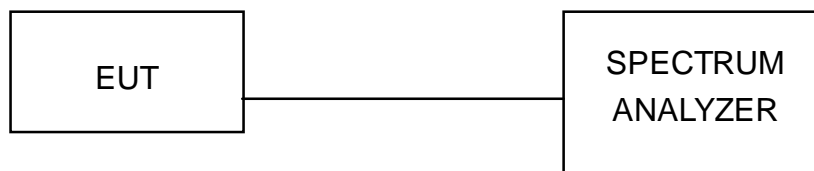
5.3.3 TEST PROCEDURE

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.



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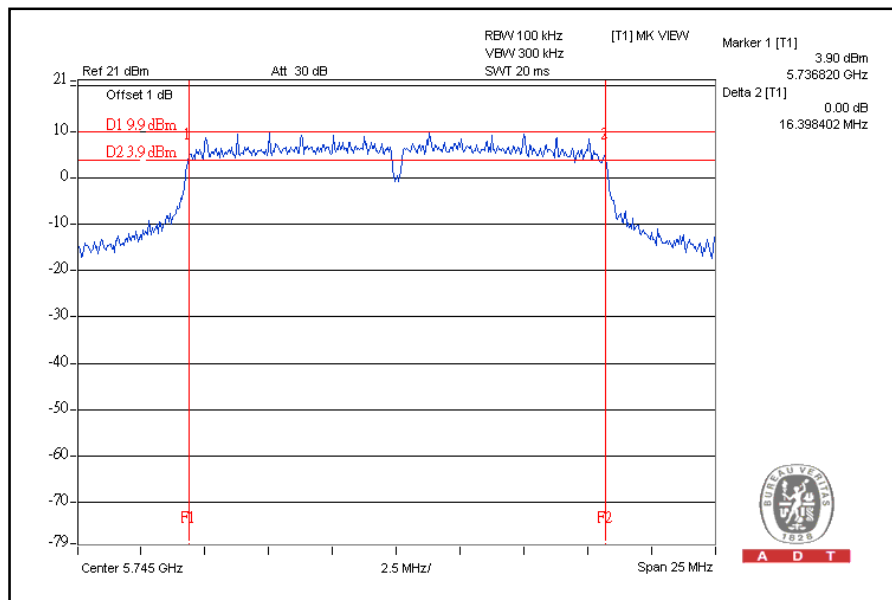
5.3.7 TEST RESULTS

802.11a OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 54%RH, 965hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	5745	16.40	16.41	0.5	PASS
3	5785	16.33	16.35	0.5	PASS
5	5825	16.41	16.41	0.5	PASS

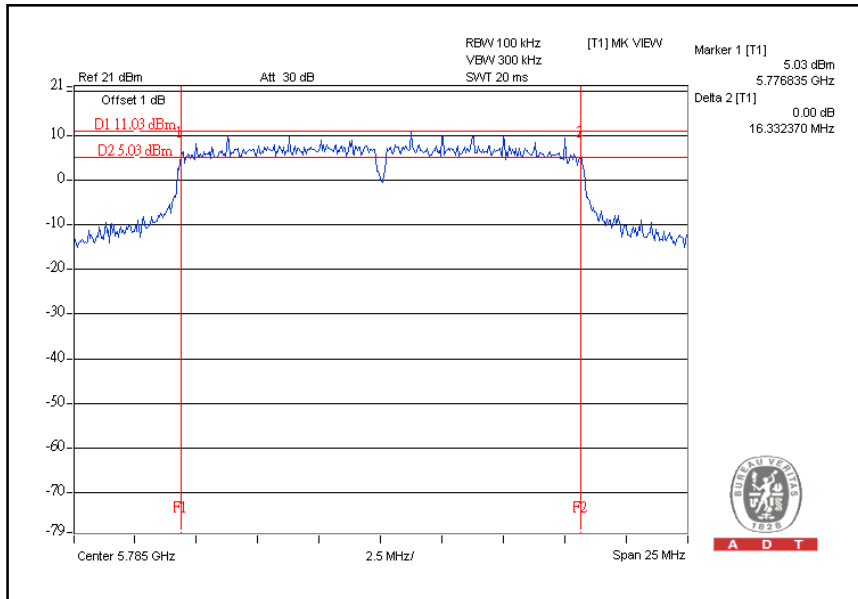
For Chain (0): CH1



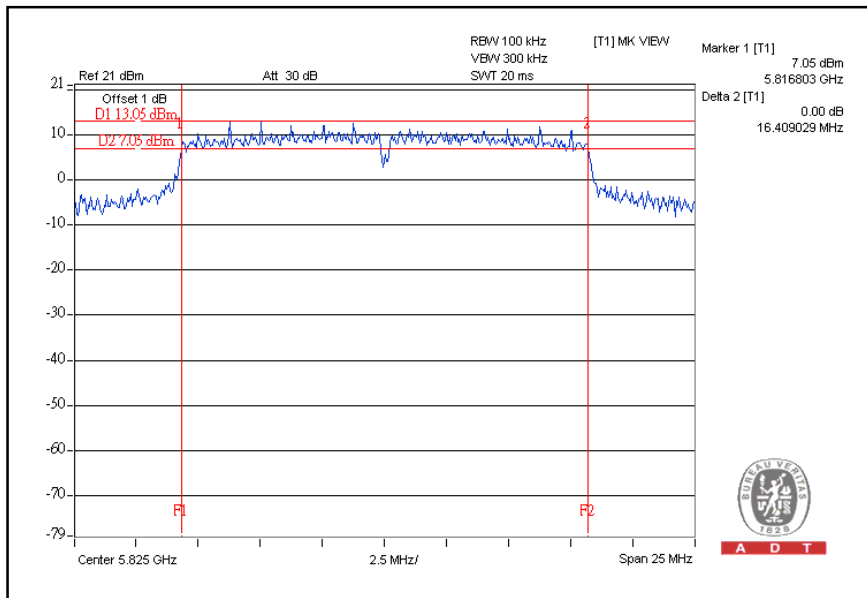


A D T

CH3



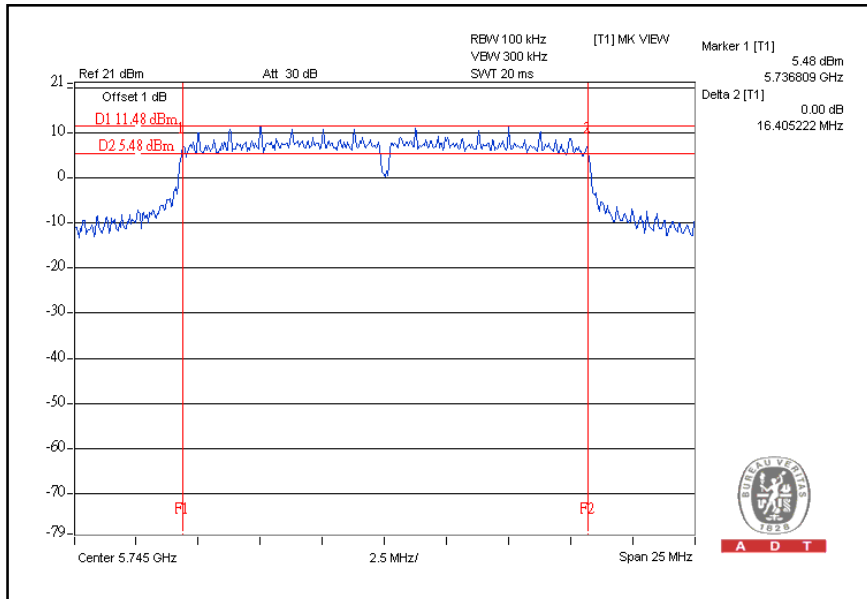
CH5



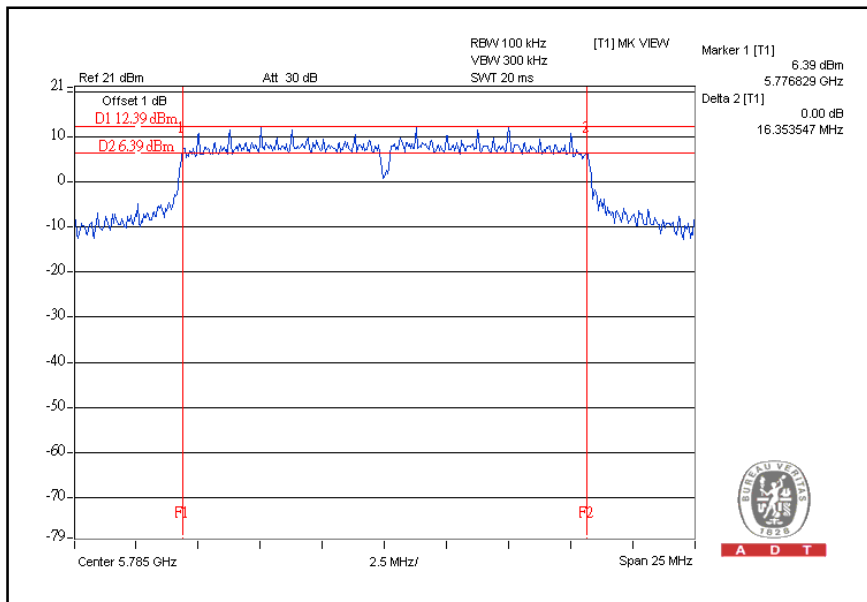


A D T

For Chain (1): CH1



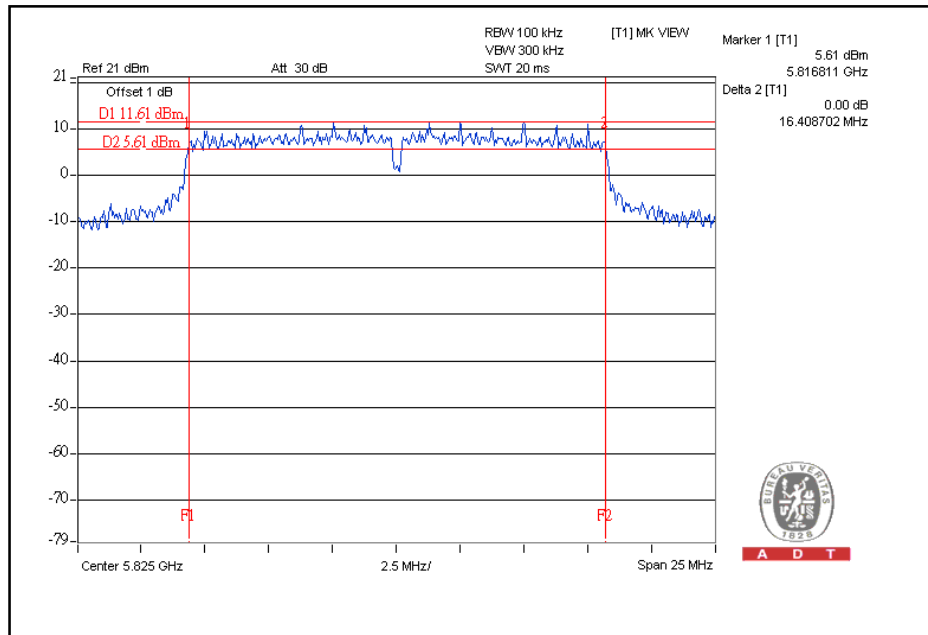
CH3





A D T

CH5





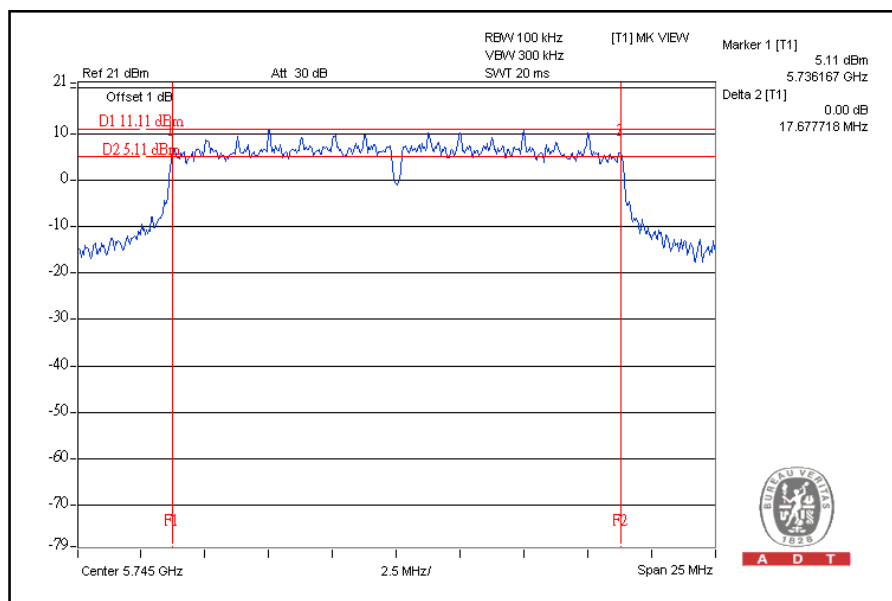
A D T

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 54%RH, 965hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	5745	17.68	17.69	0.5	PASS
3	5785	17.63	17.67	0.5	PASS
5	5825	17.63	17.72	0.5	PASS

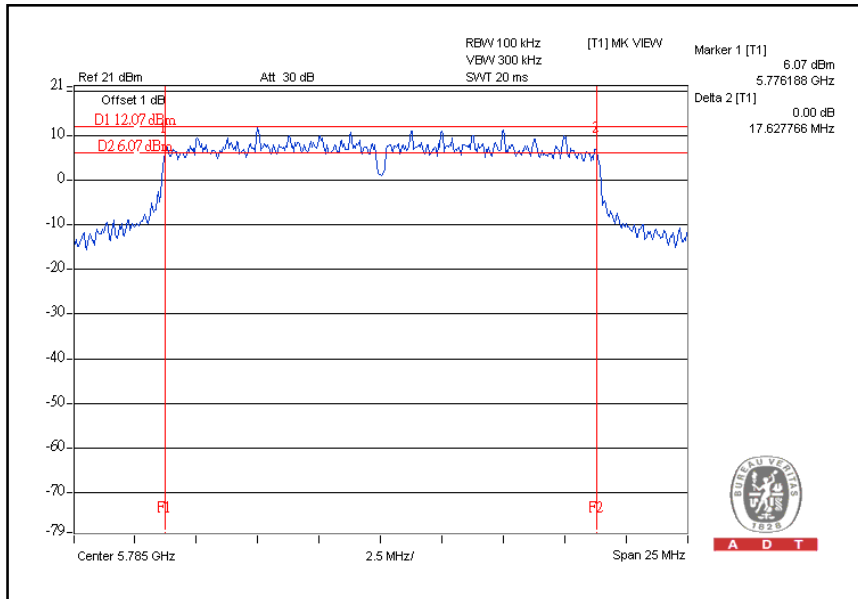
For Chain (0): CH1



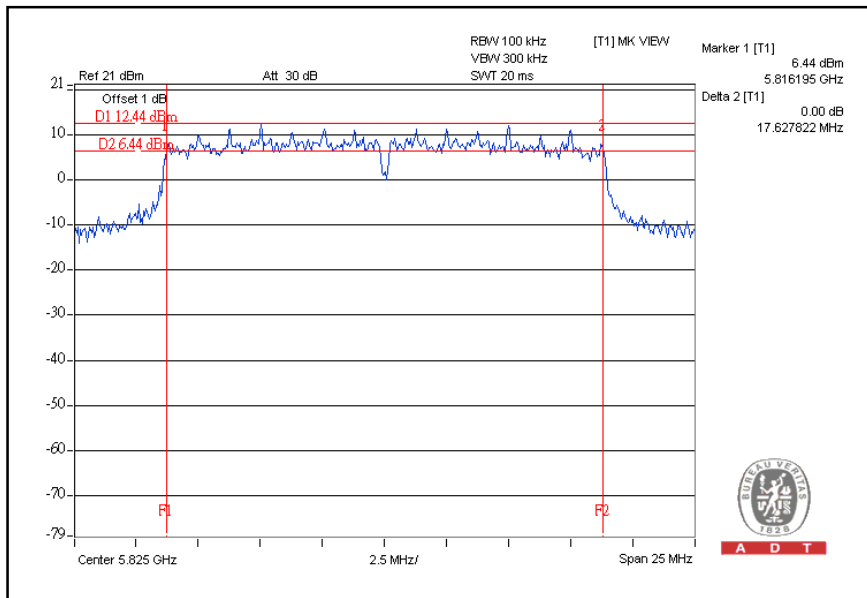


A D T

CH3



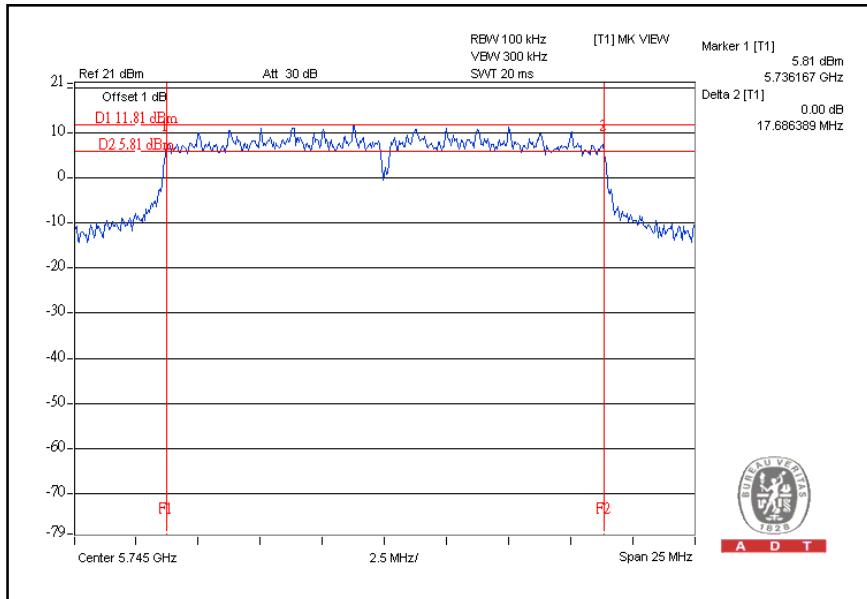
CH5



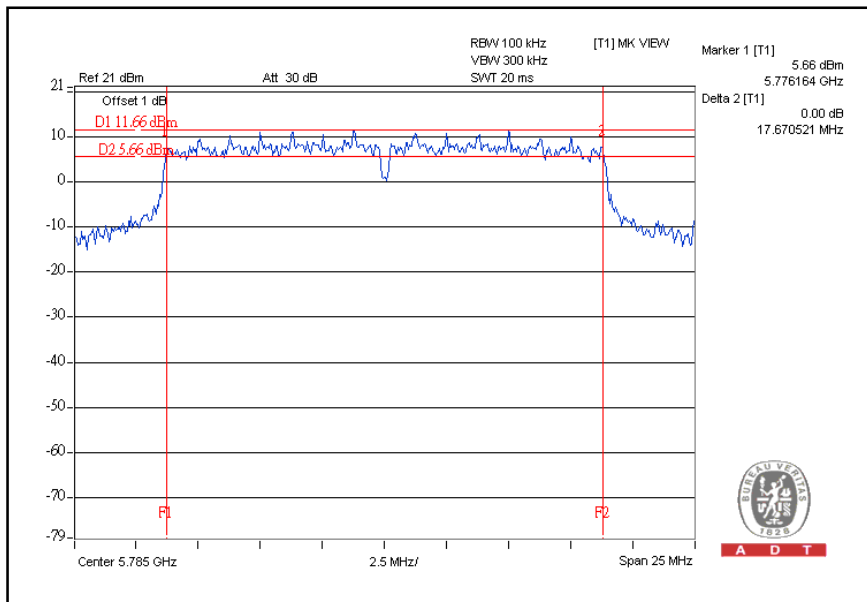


A D T

For Chain (1): CH1



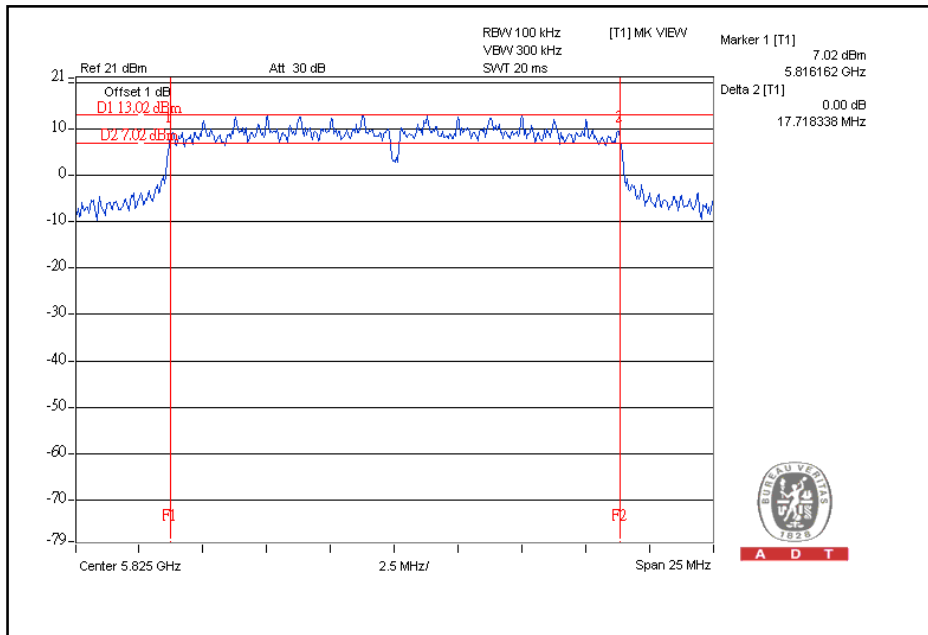
CH3





A D T

CH5





A D T

DRAFT 802.11n (40MHz) OFDM MODULATION:

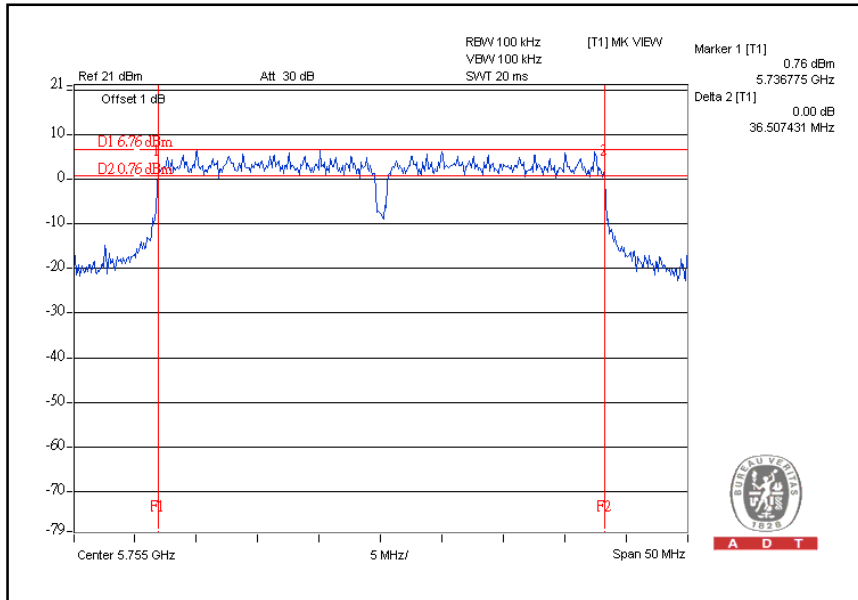
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 54%RH, 965hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	5755	36.51	36.53	0.5	PASS
2	5795	36.48	35.51	0.5	PASS

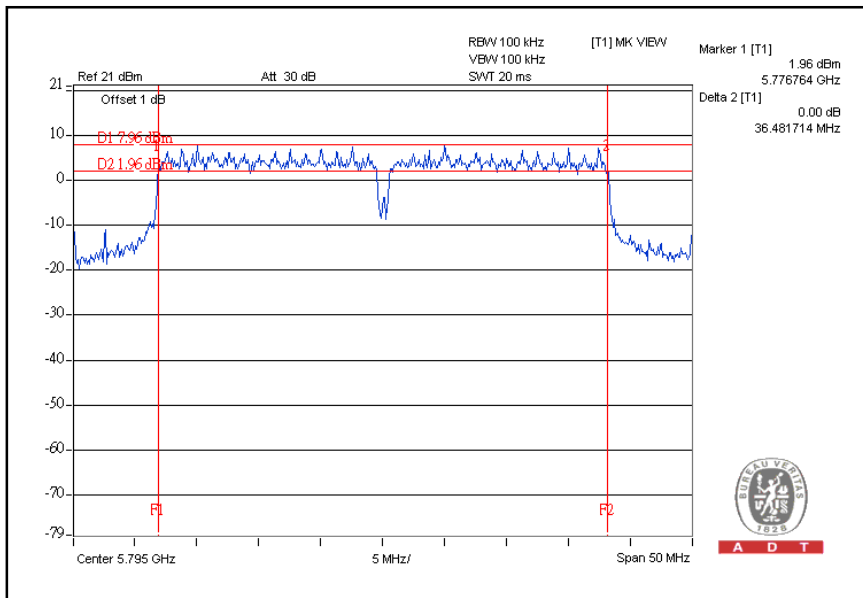


A D T

For Chain (0): CH1



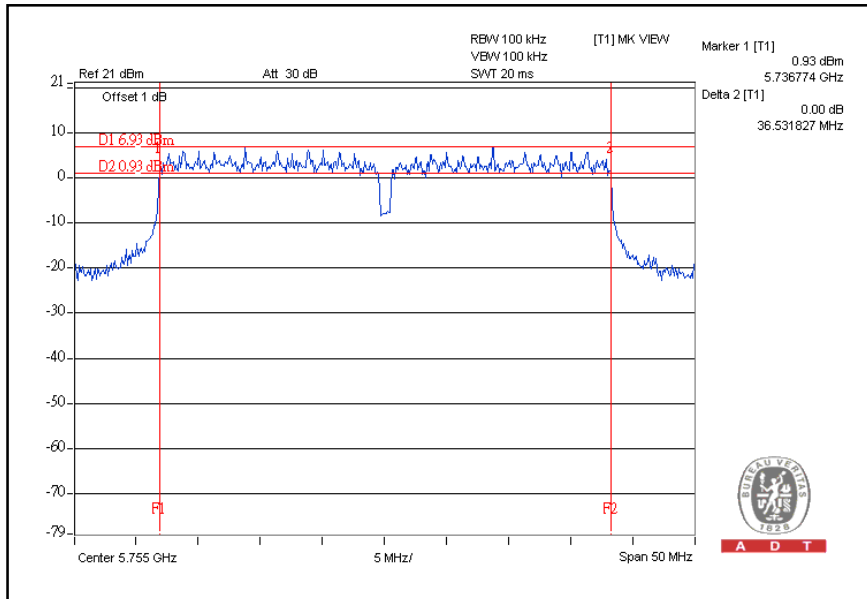
CH2



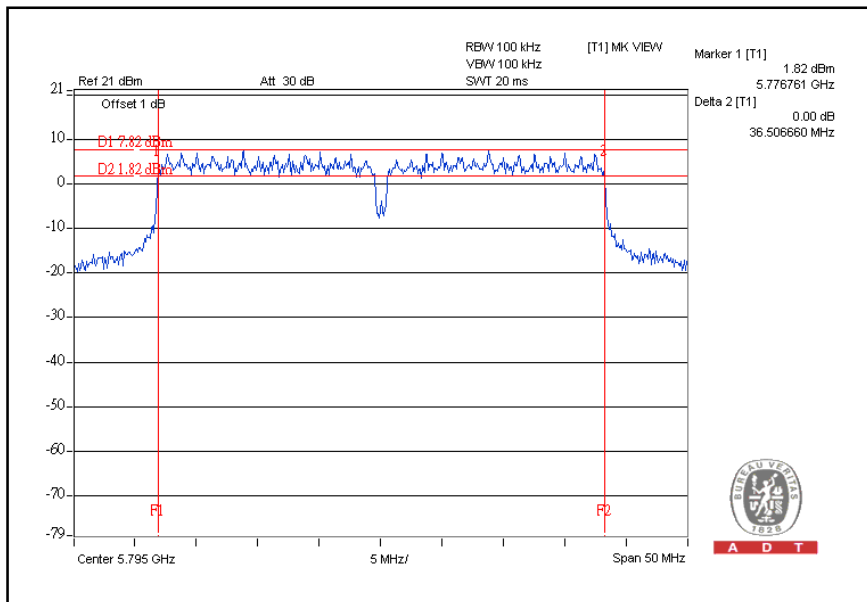


A D T

For Chain (1): CH1



CH2





A D T

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 DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 13, 2008	Aug. 12, 2009
Agilent SIGNAL GENERATOR	E8257C	MY43320668	Dec. 31, 2008	Dec. 30, 2009
Anritsu Power Meter	ML2495A	0824006	June 14, 2008	June 13, 2009
Pulse Power Sensor	MA2411B	0738172	April 17, 2008	April 16, 2009

NOTE:

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

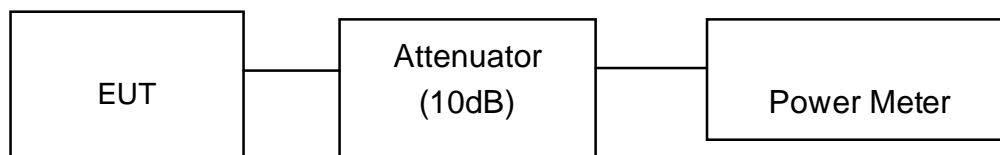
5.4.3 TEST PROCEDURES

1. The transmitter output was connected to the power meter through an attenuator; the bandwidth of the fundamental frequency was measured with the power meter.
2. 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	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 54%RH, 965hPa
TESTED BY	Phoenix 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(0)	CHAIN(1)				
1	5745	114.815	151.356	20.60	21.80	266.171	24.25	26	PASS
3	5785	125.893	158.489	21.00	22.00	284.382	24.54	26	PASS
5	5825	199.526	181.970	23.00	22.60	381.496	25.81	26	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 54%RH, 965hPa
TESTED BY	Phoenix 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(0)	CHAIN(1)				
1	5745	114.815	144.544	20.60	21.60	259.359	24.14	26	PASS
3	5785	123.027	151.356	20.90	21.80	274.383	24.38	26	PASS
5	5825	151.356	190.546	21.80	22.80	341.902	25.34	26	PASS



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DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg. C, 54%RH, 965hPa
TESTED BY	Phoenix 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(0)	CHAIN(1)				
1	5755	125.893	100.000	21.00	20.00	225.893	23.54	26	PASS
2	5795	158.489	125.893	22.00	21.00	284.382	24.54	26	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 DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

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

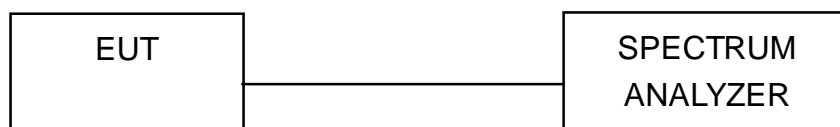
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz. The power spectral density was measured and recorded.

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



A D T

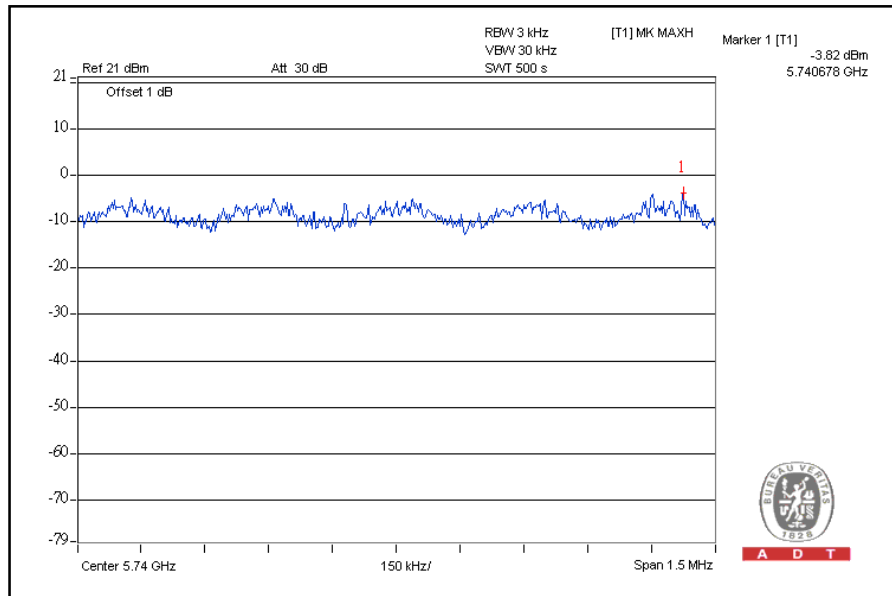
5.5.7 TEST RESULTS

802.11a OFDM modulation

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 54%RH, 965hPa
TESTED BY	Phoenix 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(0)	CHAIN(1)				
1	5745	0.415	0.531	-3.82	-2.75	0.946	-0.24	8	PASS
3	5785	0.426	0.526	-3.71	-2.79	0.952	-0.21	8	PASS
5	5825	0.611	0.565	-2.14	-2.48	1.176	0.70	8	PASS

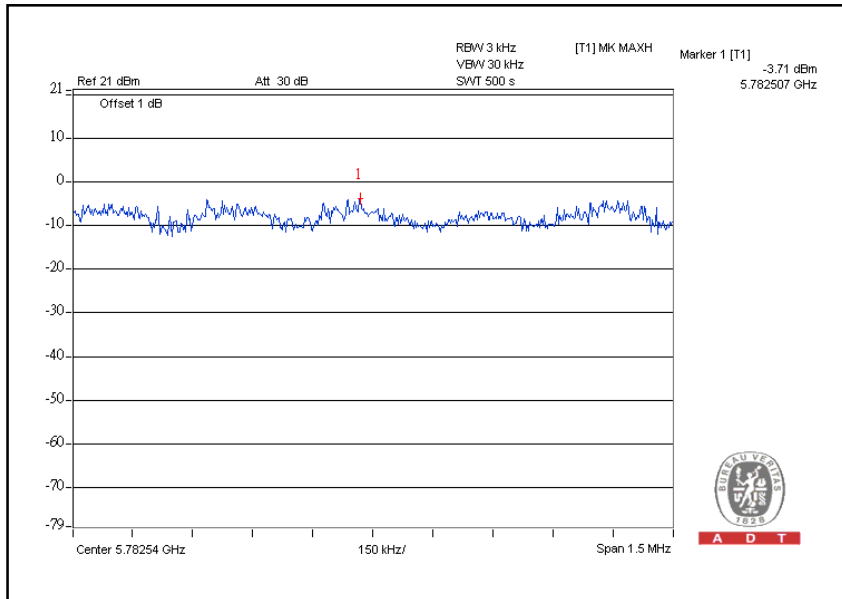
For Chain(0): CH1



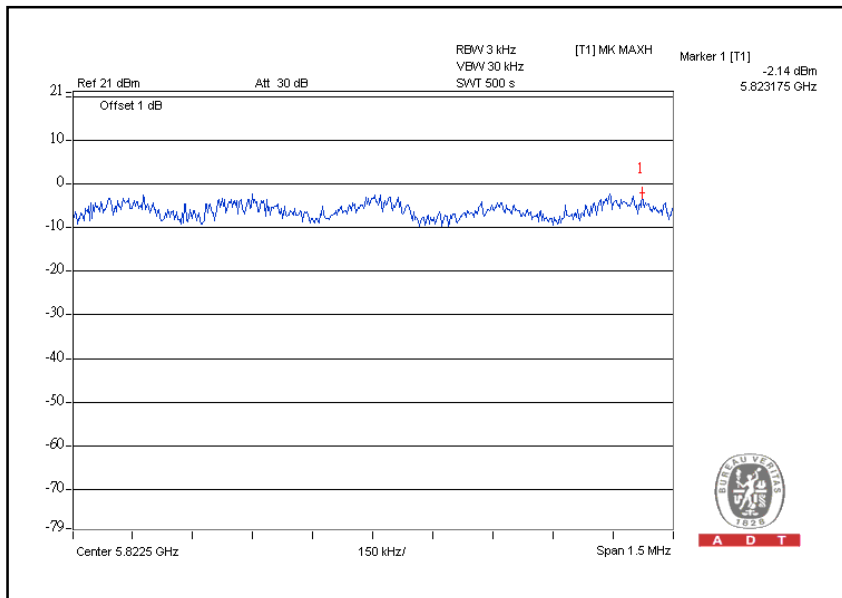


A D T

CH3



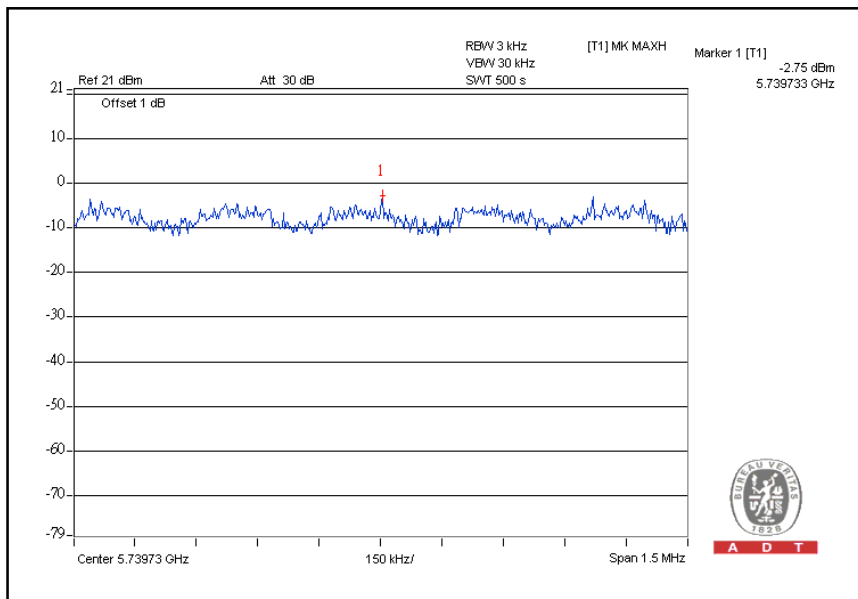
CH5



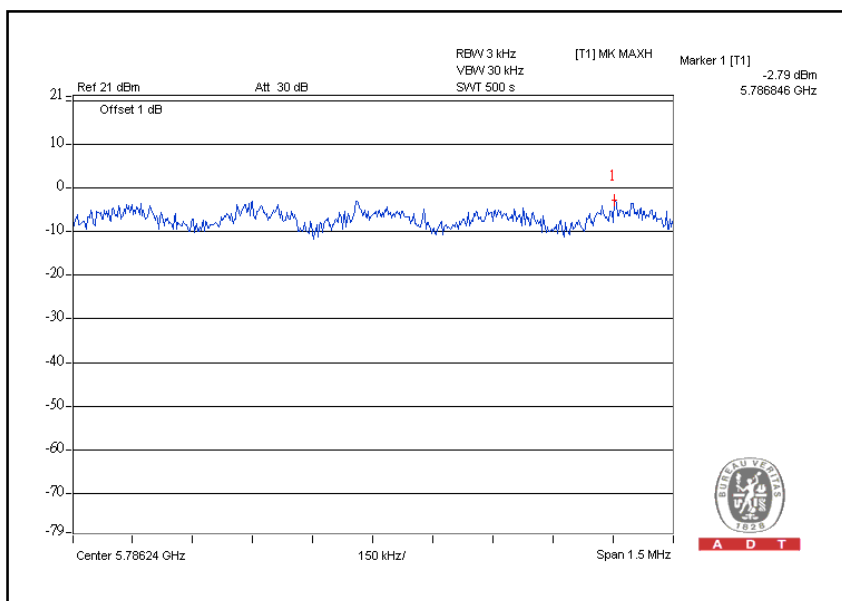


A D T

For Chain (1): CH1



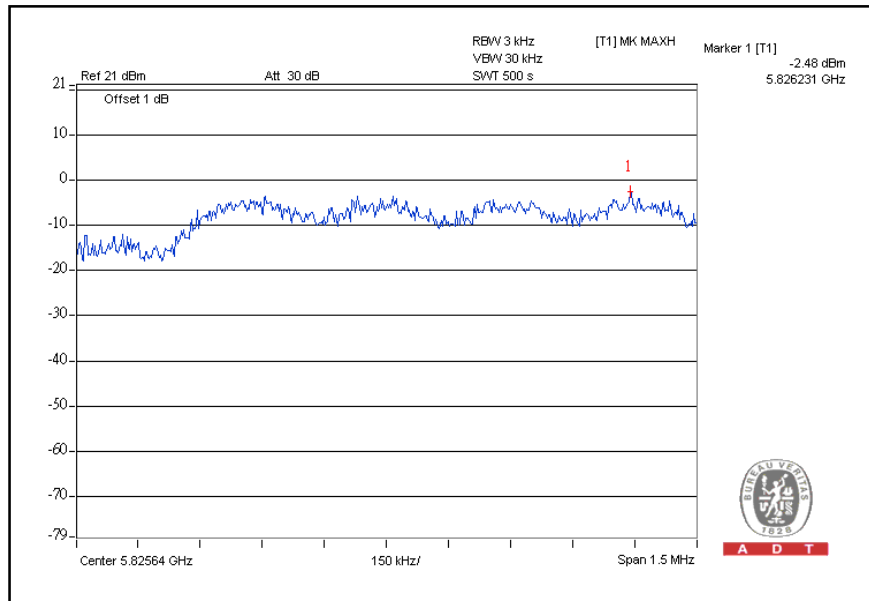
CH3





A D T

CH5





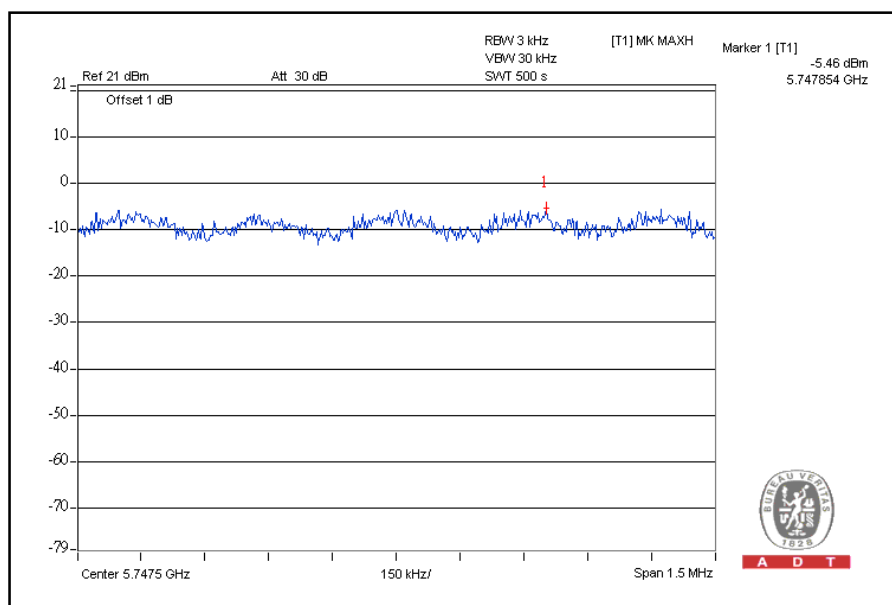
A D T

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 54%RH, 965hPa
TESTED BY	Phoenix 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(0)	CHAIN(1)				
1	5745	0.284	0.466	-5.46	-3.32	0.750	-1.25	8	PASS
3	5785	0.468	0.458	-3.30	-3.39	0.926	-0.33	8	PASS
5	5825	0.395	0.800	-4.03	-0.97	1.195	0.77	8	PASS

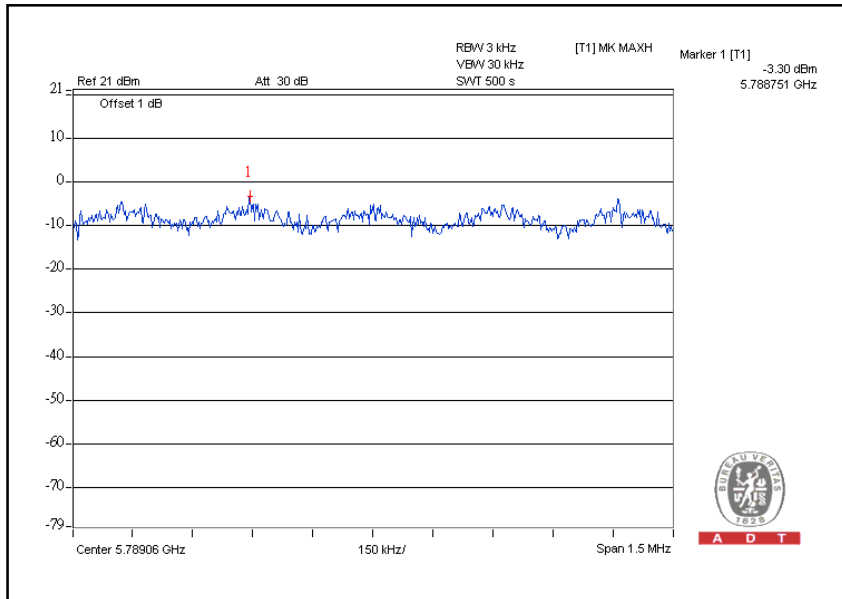
For Chain(0): CH1





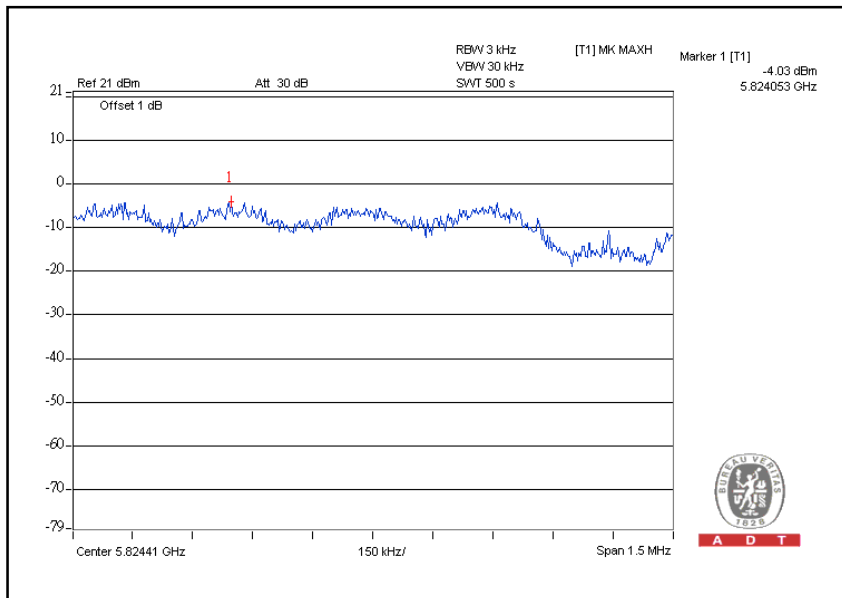
A D T

CH3



A D T

CH5

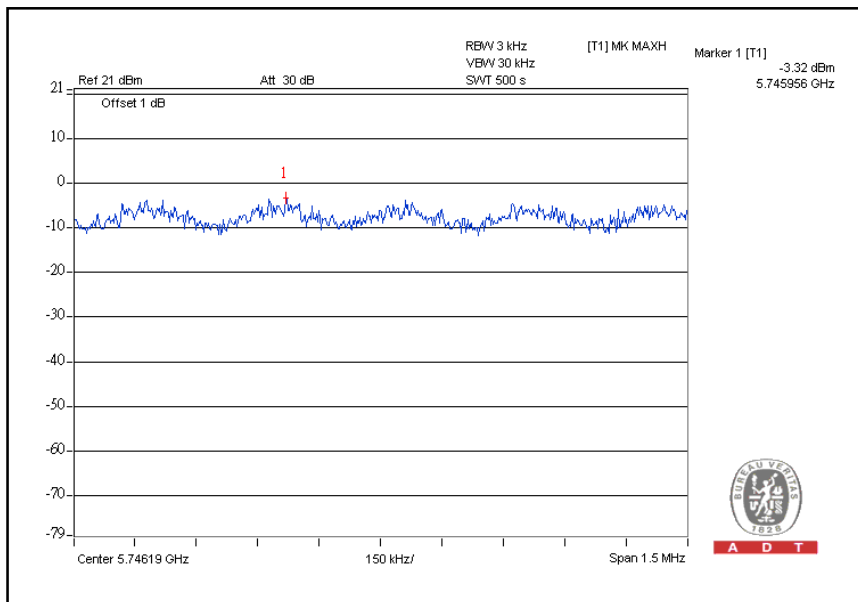


A D T

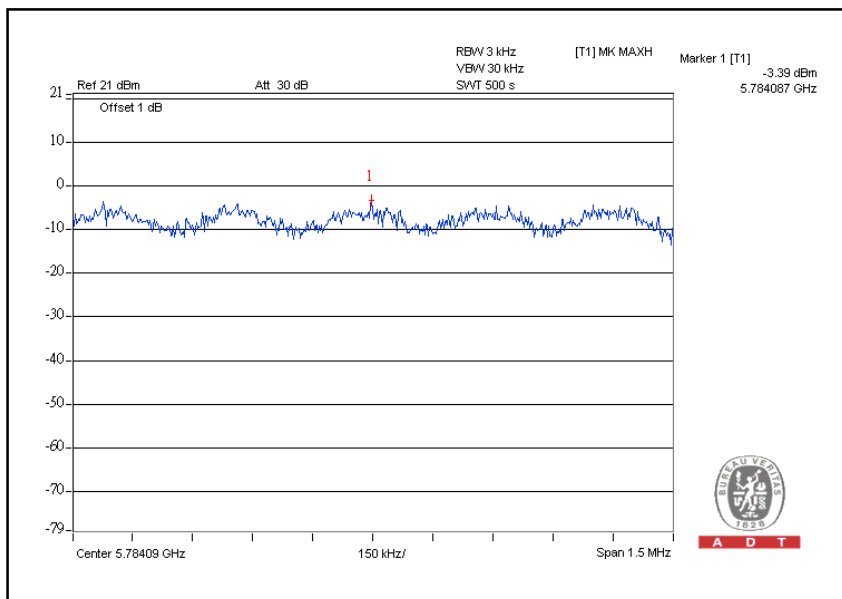


A D T

For Chain (1): CH1



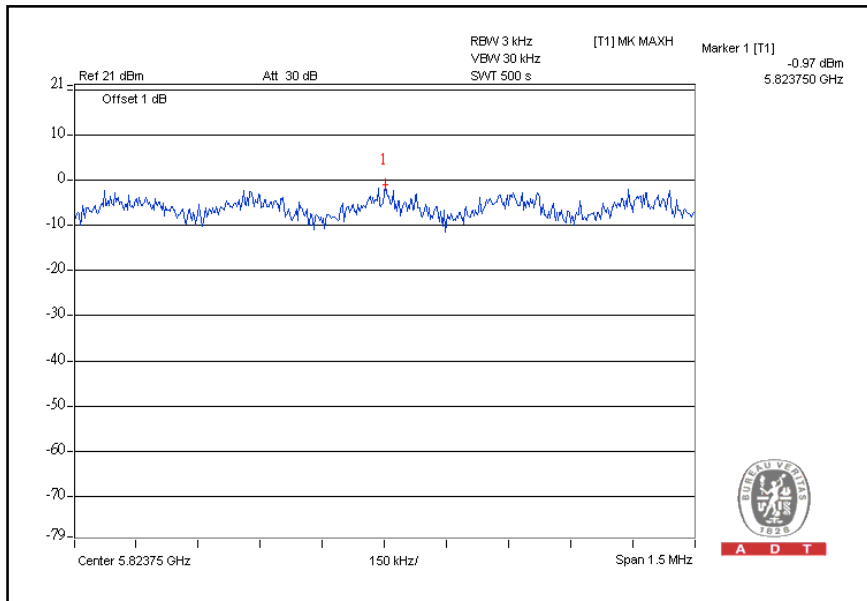
CH3





A D T

CH5





A D T

DRAFT 802.11n (40MHz) OFDM MODULATION:

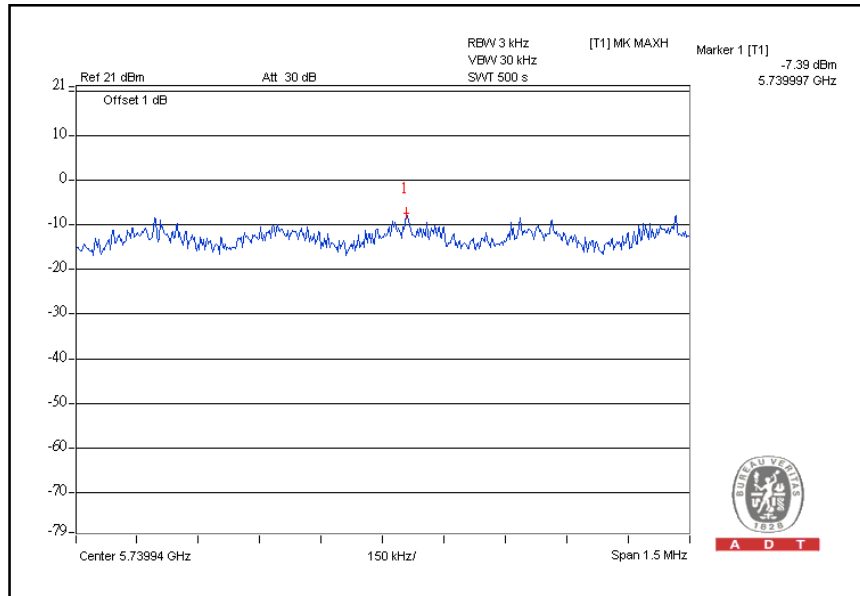
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 54%RH, 965hPa
TESTED BY	Phoenix Huang		

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(0)	CHAIN(1)				
1	5755	0.182	0.153	-7.39	-8.14	0.335	-4.75	8	PASS
2	5795	0.231	0.152	-6.36	-8.19	0.383	-4.17	8	PASS

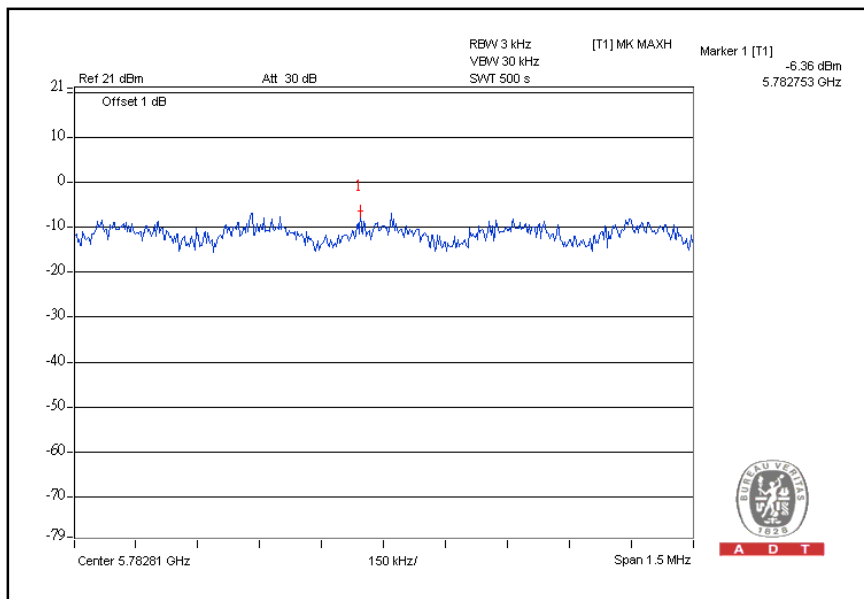


A D T

For Chain(0): CH1



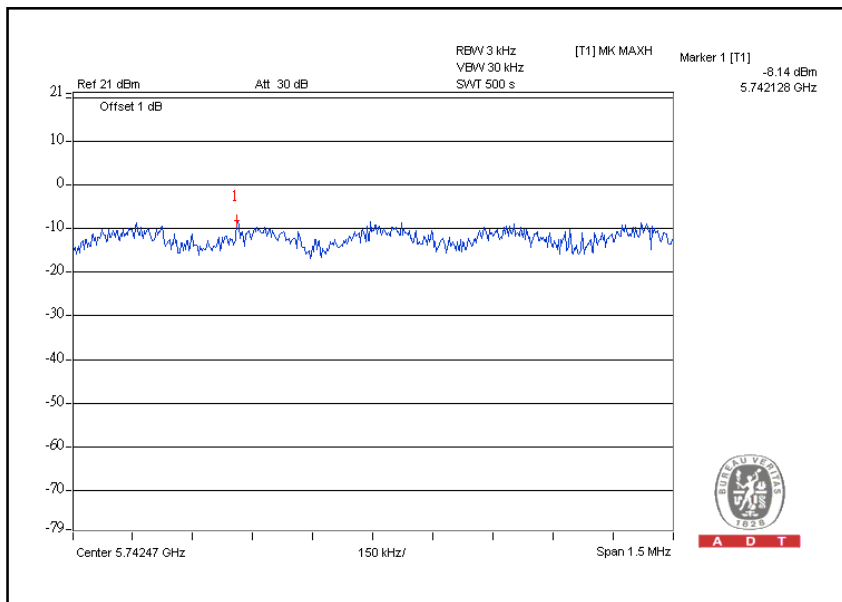
CH2



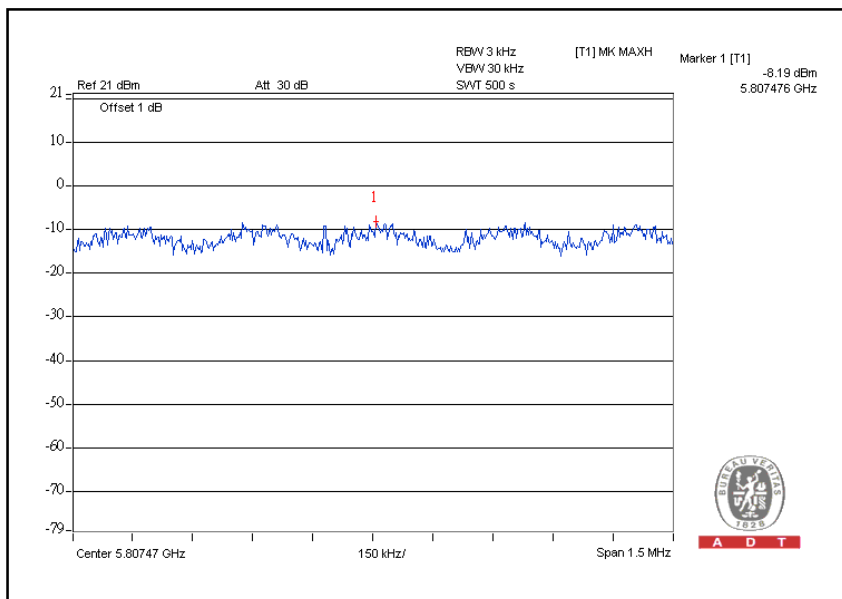


A D T

For Chain (1): CH1



CH2



5.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

5.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION 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 DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

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.

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 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.

5.6.4 DEVIATION FROM TEST STANDARD

No deviation



A D T

5.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

5.6.6 TEST RESULTS

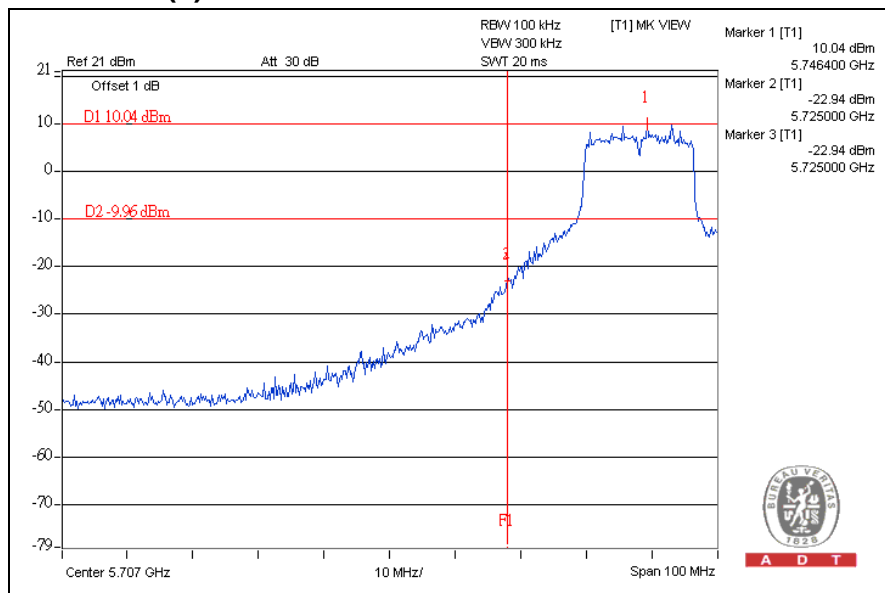
The spectrum plots are attached on the following pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(d).



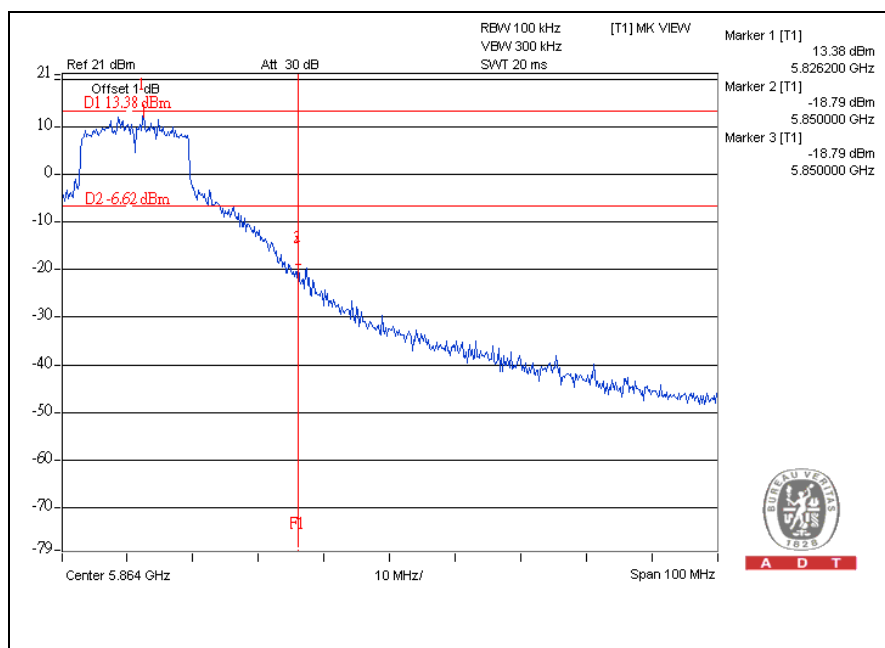
A D T

802.11a OFDM modulation

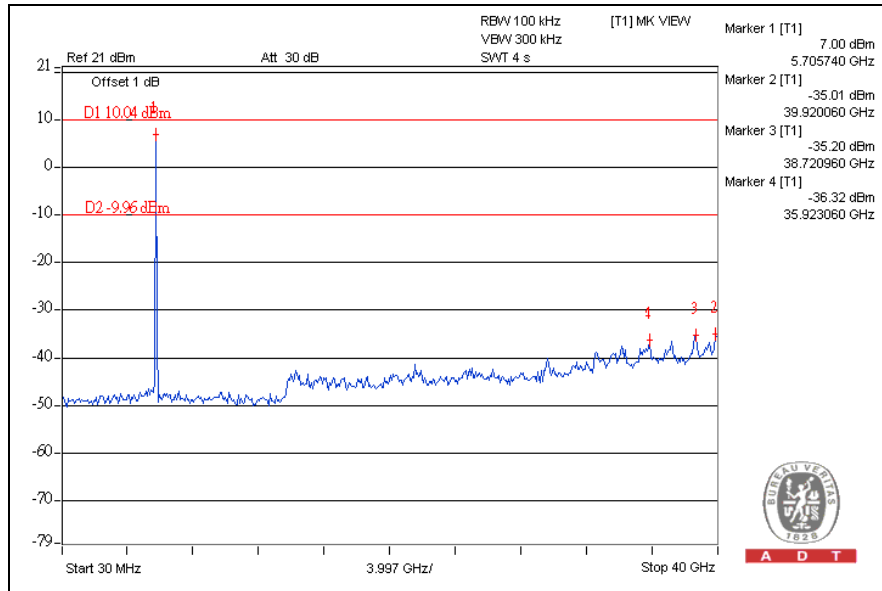
For chain (0) :CH1



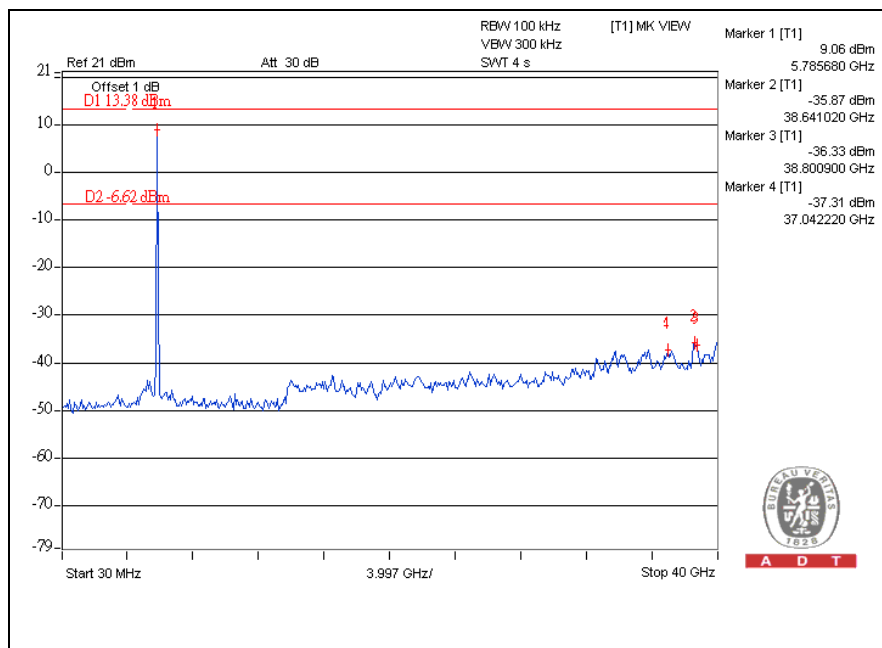
CH5



CH1



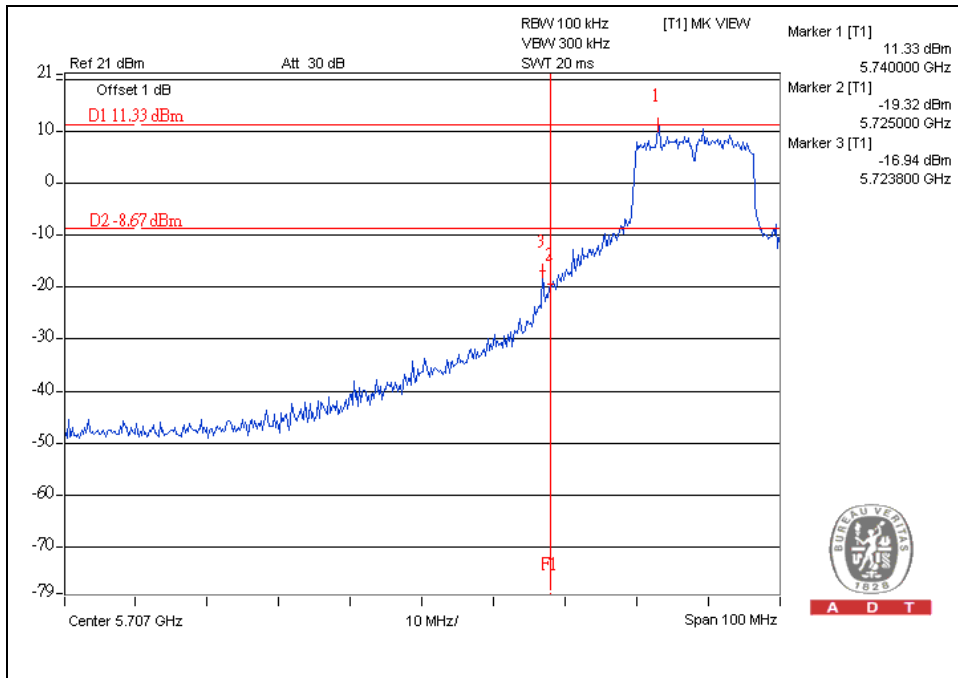
CH5



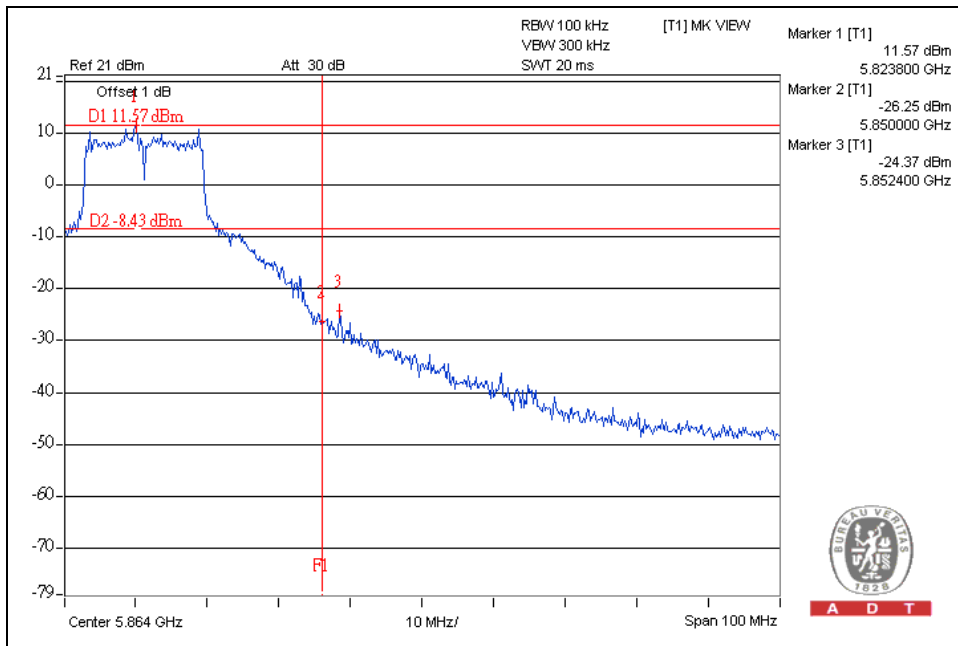


A D T

For chain (1):CH1



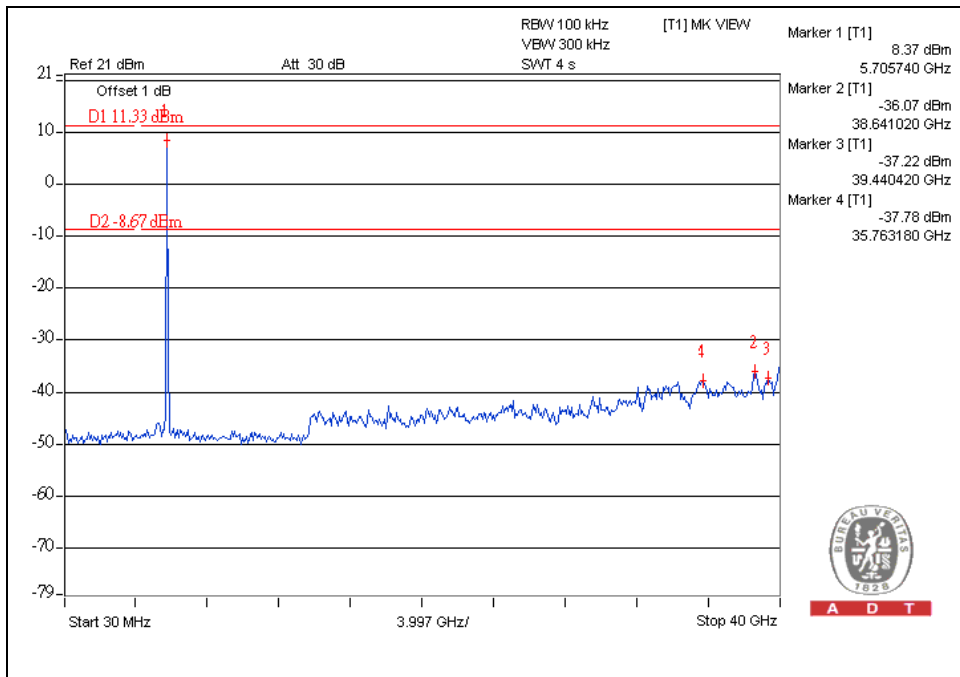
CH5



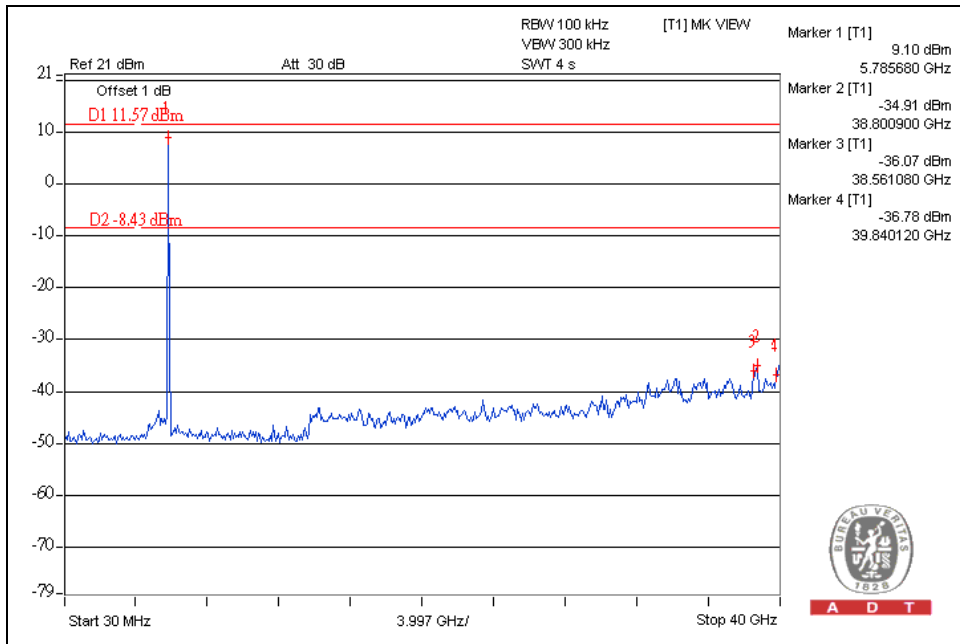


A D T

CH1



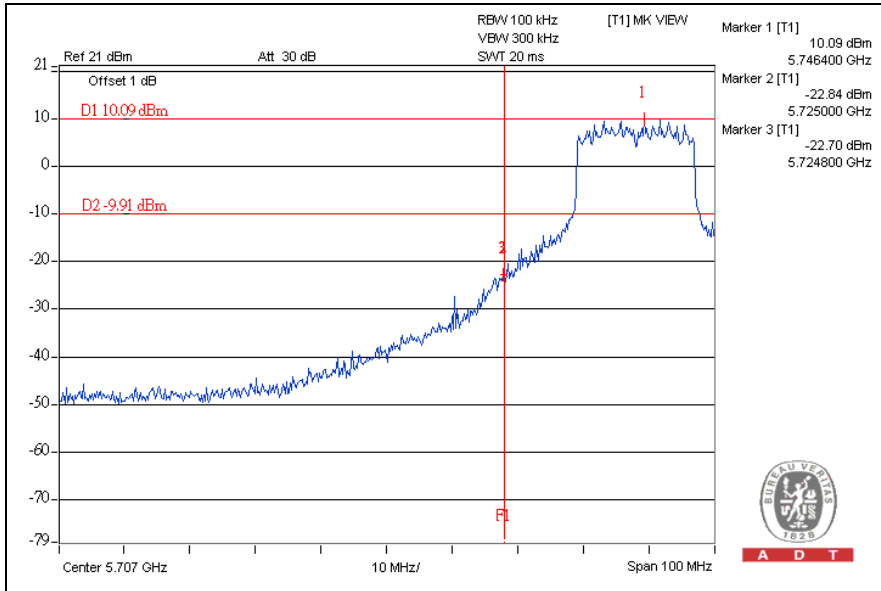
CH5



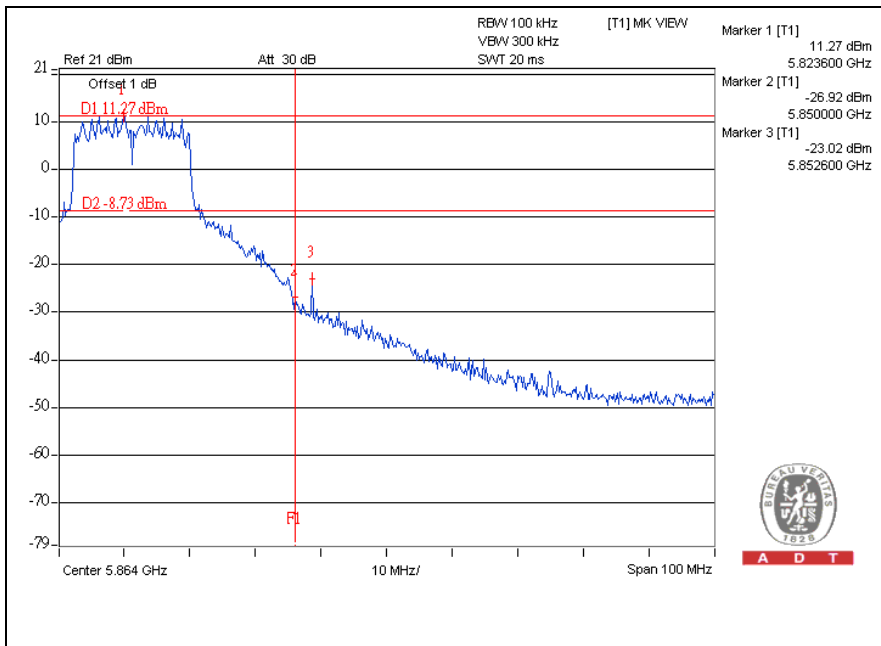


A D T

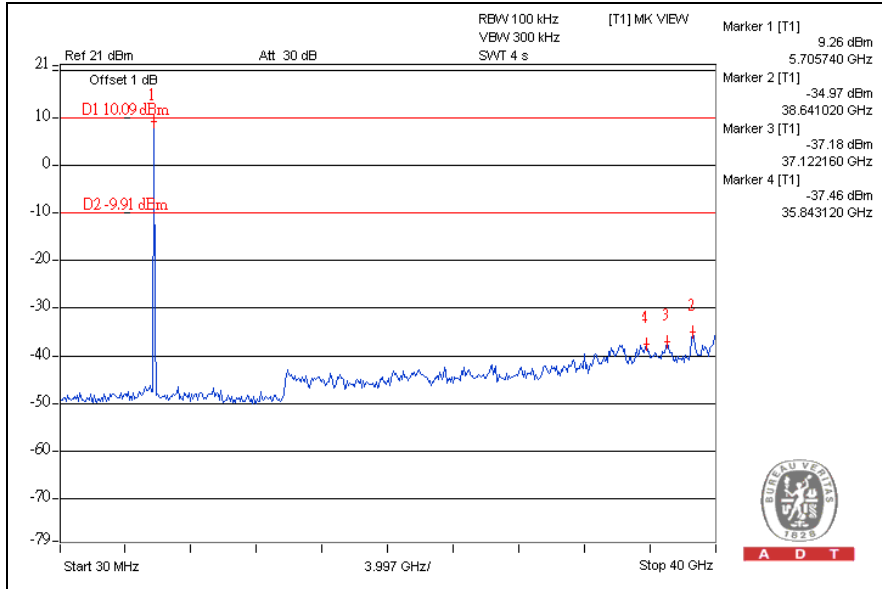
DRAFT 802.11n (20MHz) OFDM MODULATION: For chain (0) :CH1



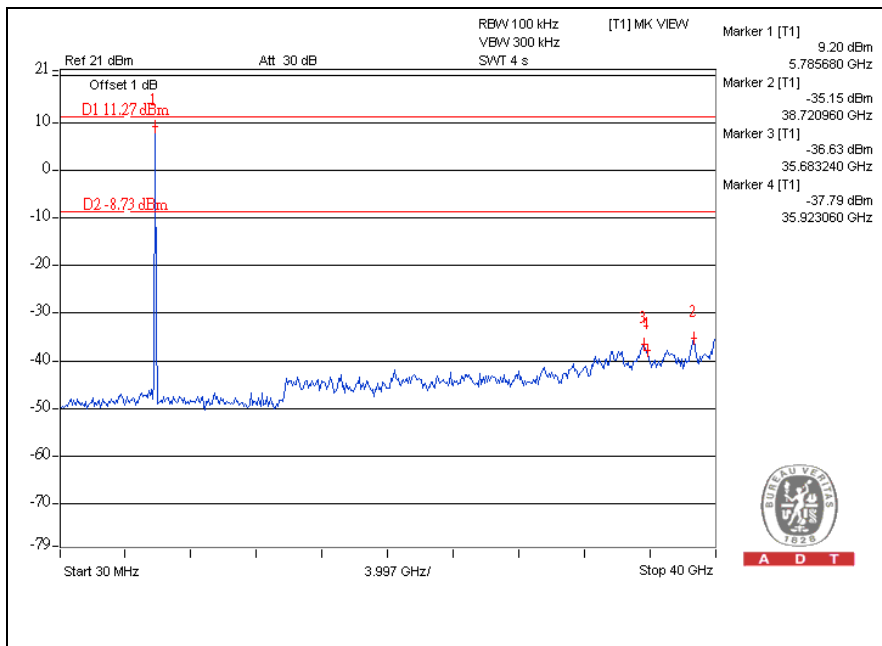
CH5



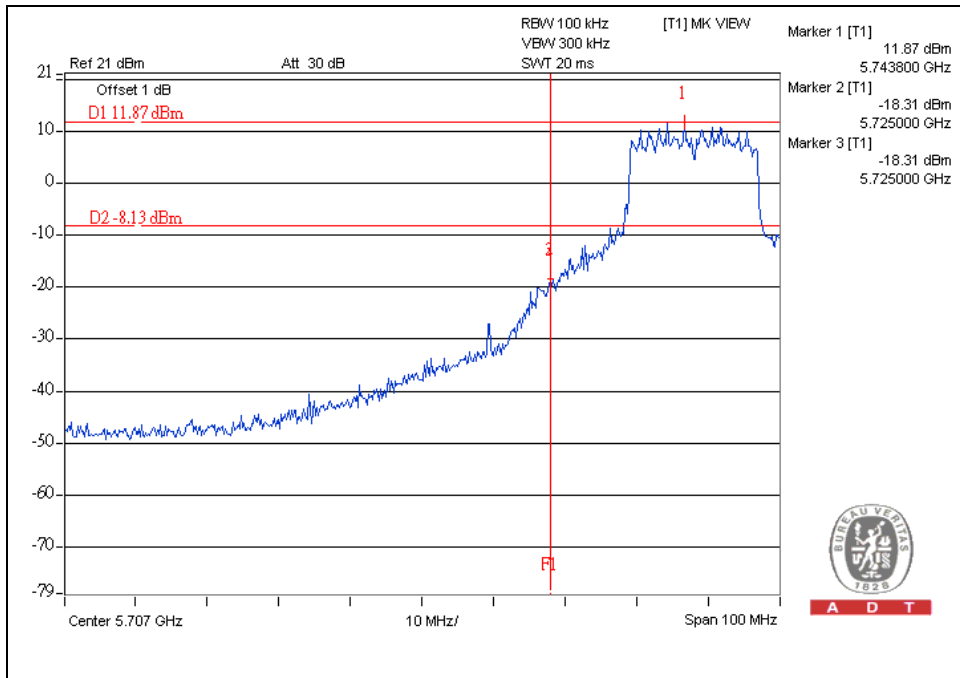
CH1



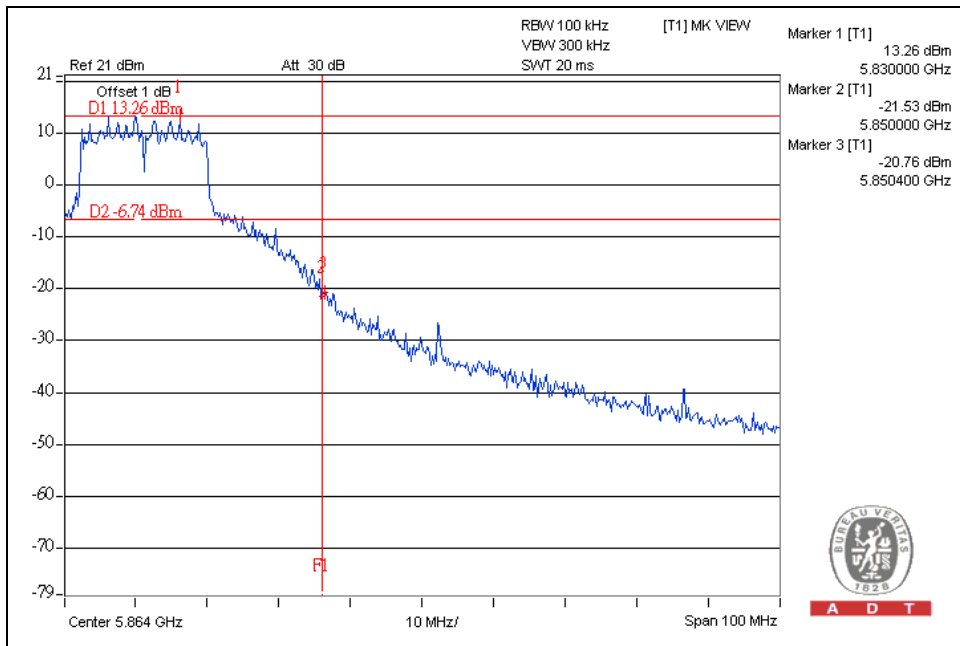
CH5



For chain (1):CH1



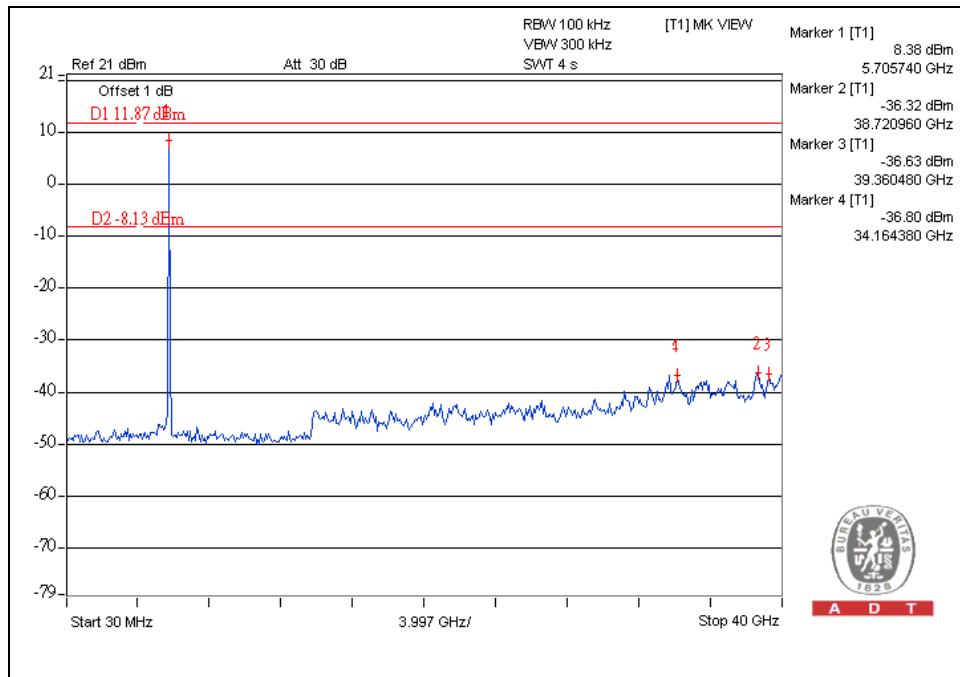
CH5





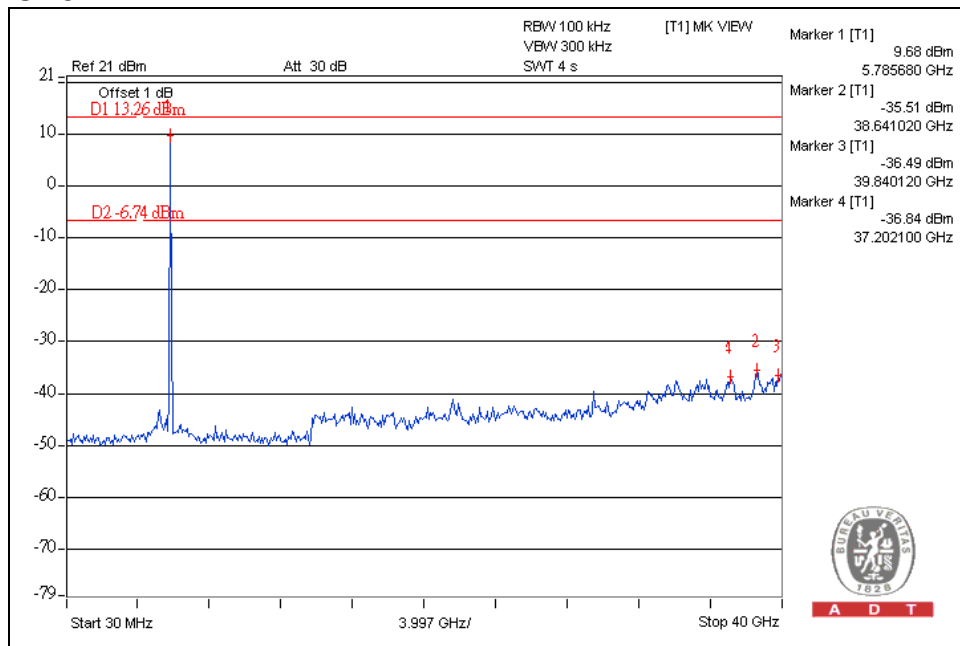
A D T

CH1



A D T

CH5



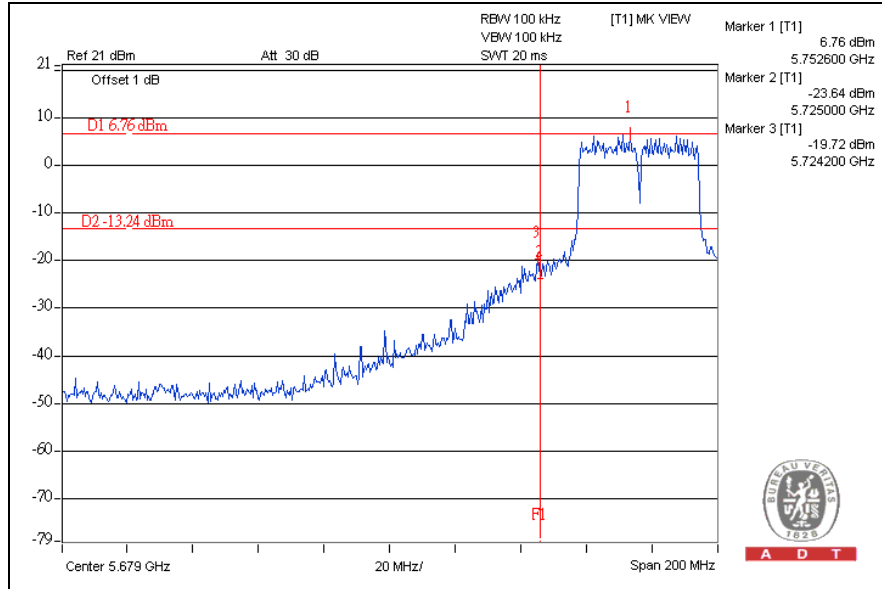
A D T



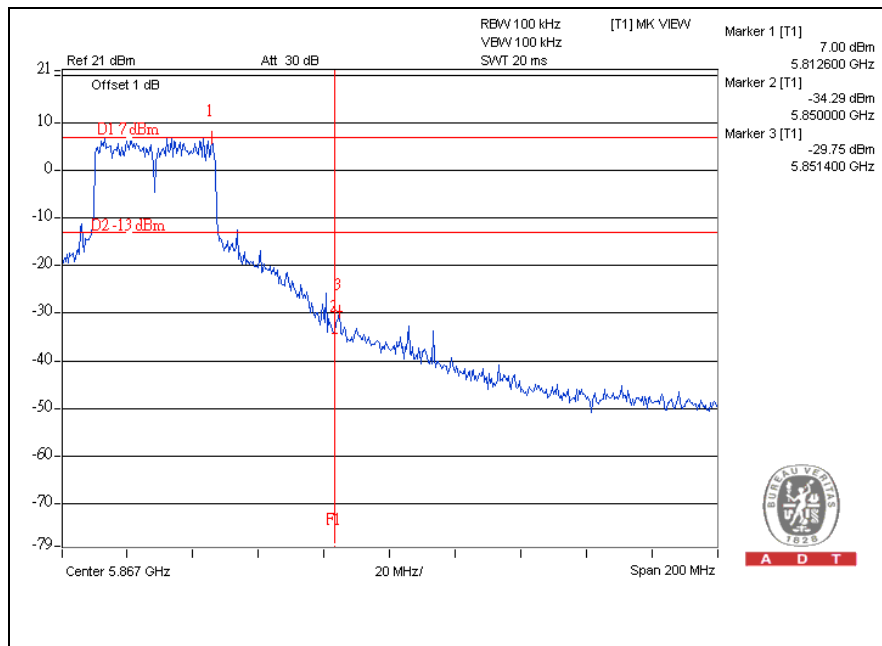
A D T

DRAFT 802.11n (40MHz) OFDM MODULATION:

For chain (0) :CH1



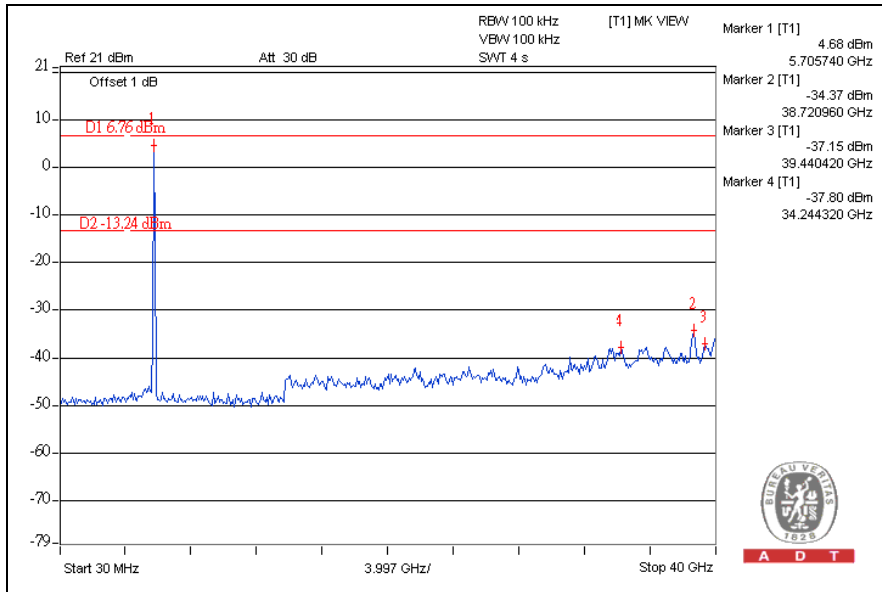
CH2



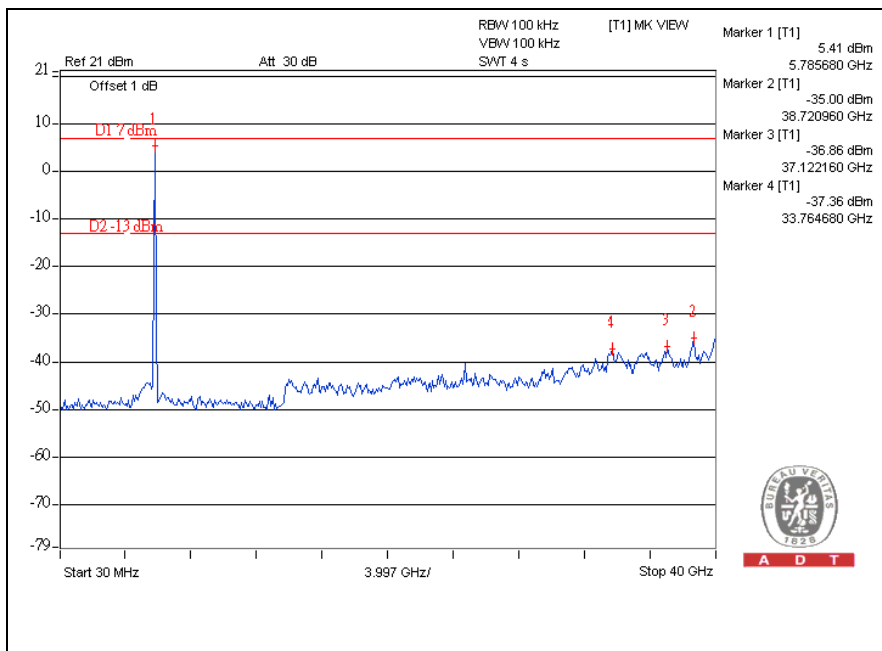


A D T

CH1



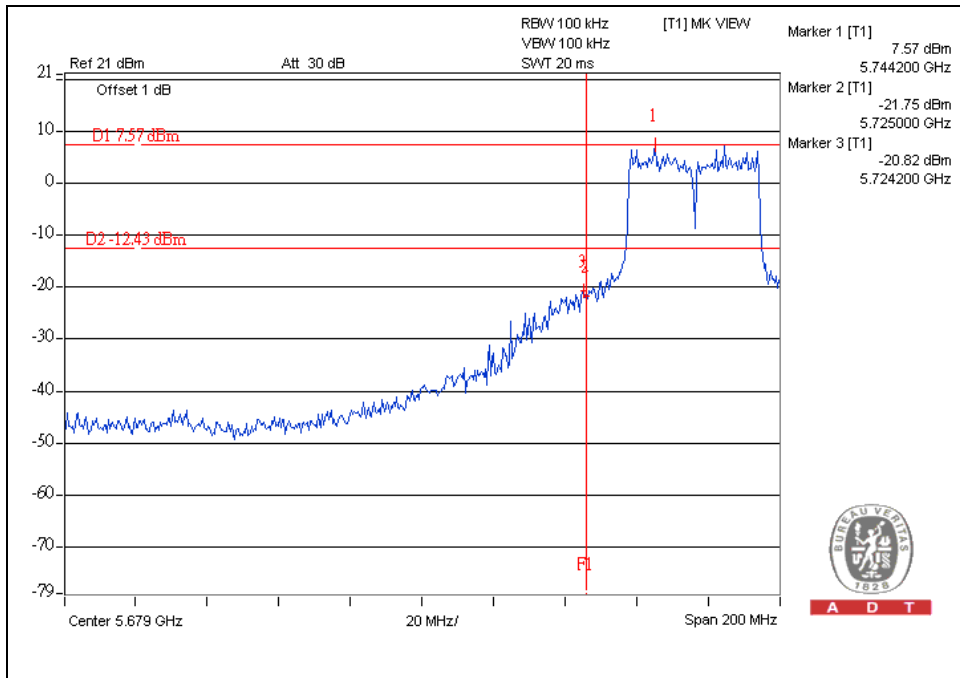
CH2



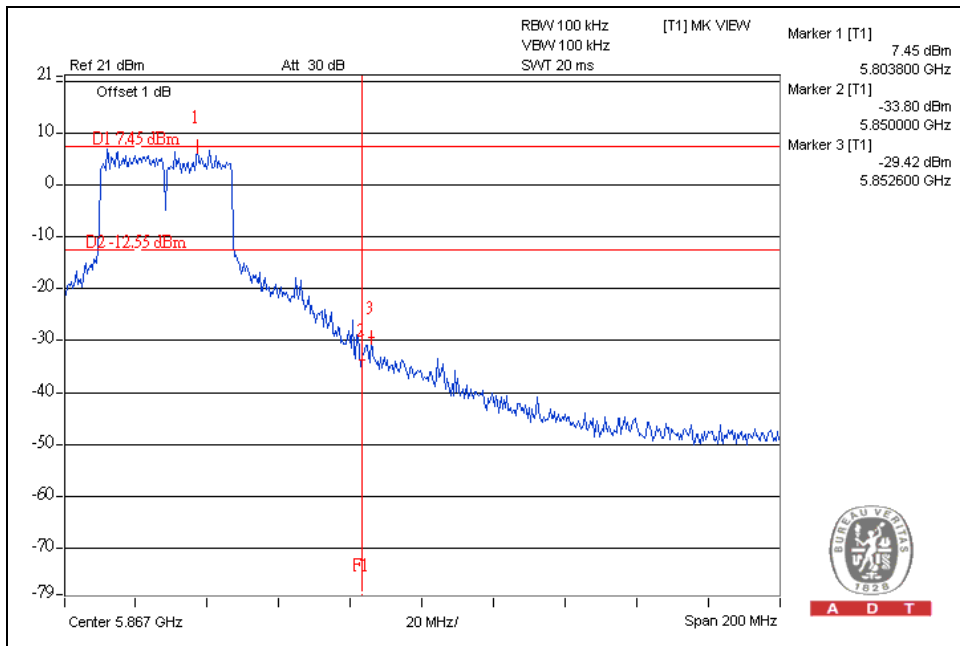


A D T

For chain (1) :CH1



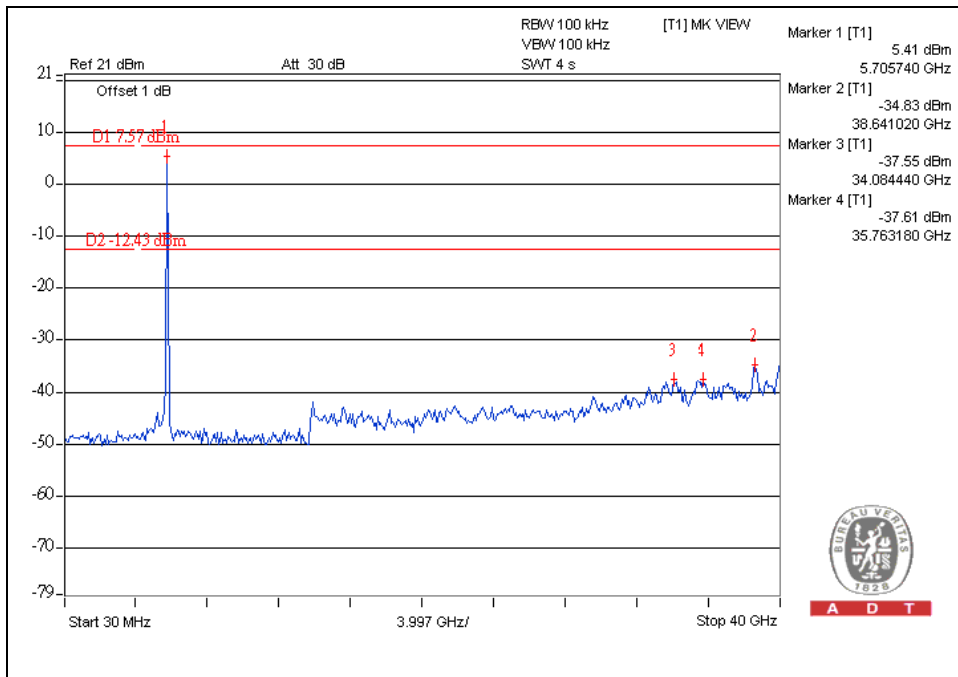
CH2



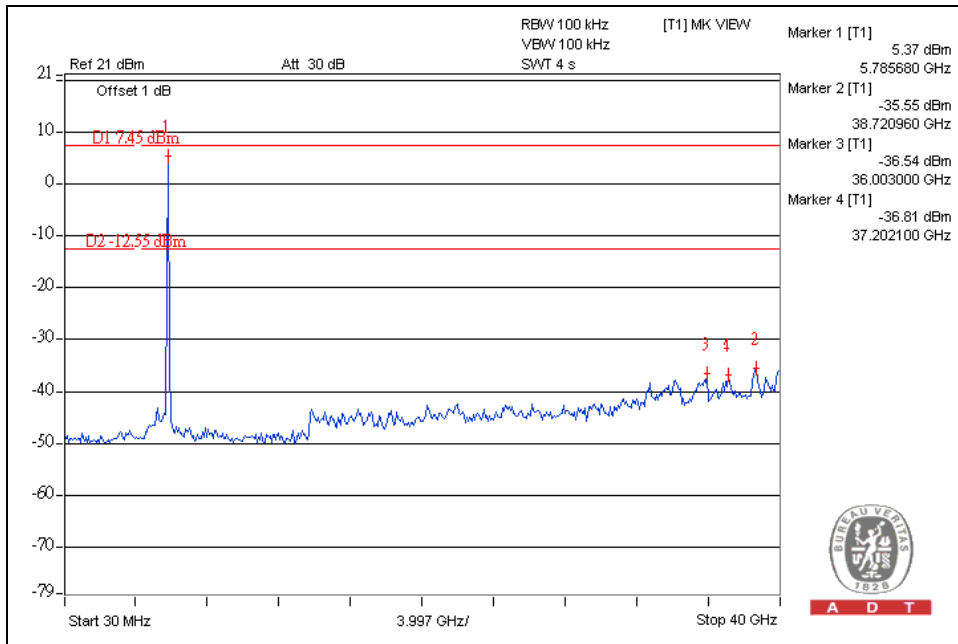


A D T

CH1



CH2





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 set of antennas provided to this EUT, please refer to the following table:

Antenna Set 1 (Internal antenna):						
Transmitter Circuit	Manufacture	Antenna Model	For 2.4GHz Gain (dBi)	For 5GHz Gain (dBi)	Antenna Type	Connector
Chain(0)	SmartAnt Telecom Co., Ltd.	DWL08-220190	8	10	PCB	MMCX R/A plug
Chain (1)	SmartAnt Telecom Co., Ltd.	DWL08-220190	8	10	PCB	MMCX R/A plug
Antenna Set 2 (External antenna):						
Transmitter Circuit	Manufacture	Antenna Model	Antenna Gain	Only 2.4GHz	Antenna Type	Connector
Chain(0)	SmartAnt Telecom Co., Ltd.	ANT24-0800 (DWL07-050660)	Gain (dBi)	8	DIPOLE	N-jack
			Cable Loss (dB)	3		
			Net Gain (dBi)	5		
			Cable length (m)	6		
Chain(1)	SmartAnt Telecom Co., Ltd.	ANT24-0800 (DWL07-050660)	Gain (dBi)	8	DIPOLE	N-jack
			Cable Loss (dB)	3		
			Net Gain (dBi)	5		
			Cable length (m)	6		
Note: While EUT connect with antenna set 2, the function of antenna set 1 were lose.						



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6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, 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, NVLAP
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



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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.

--- END ---