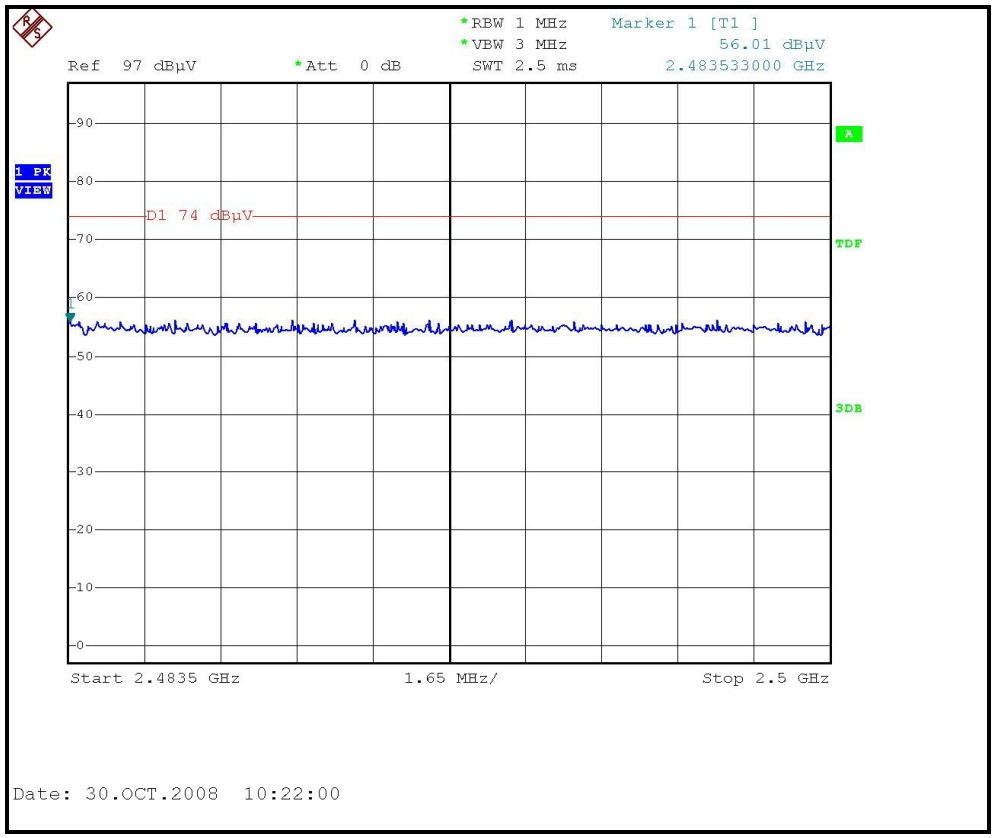
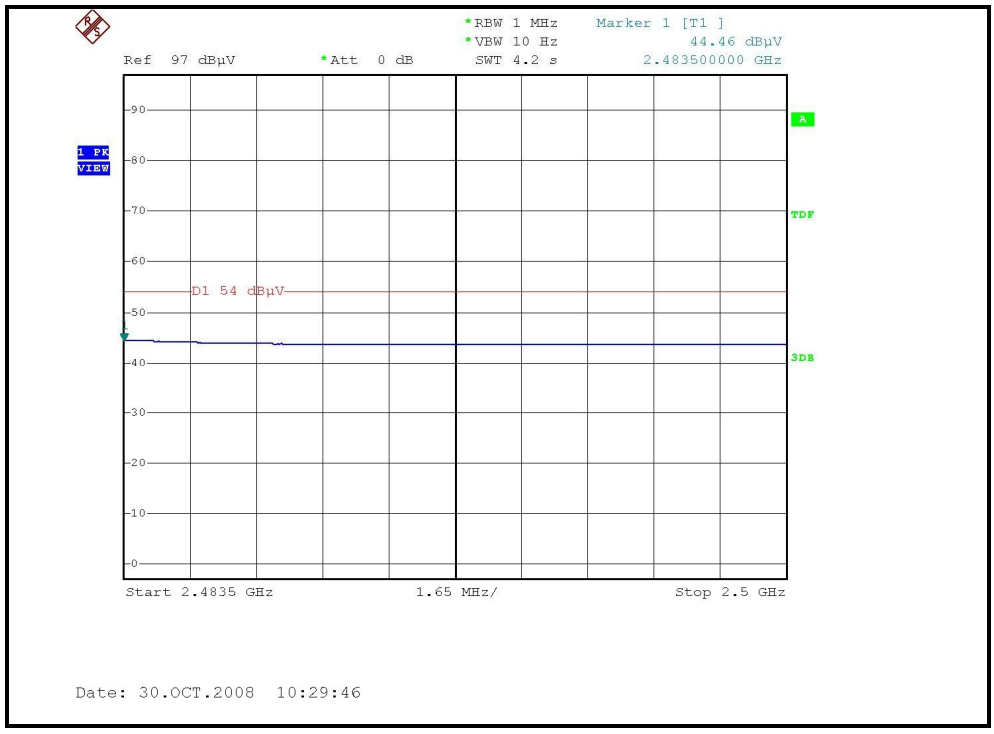
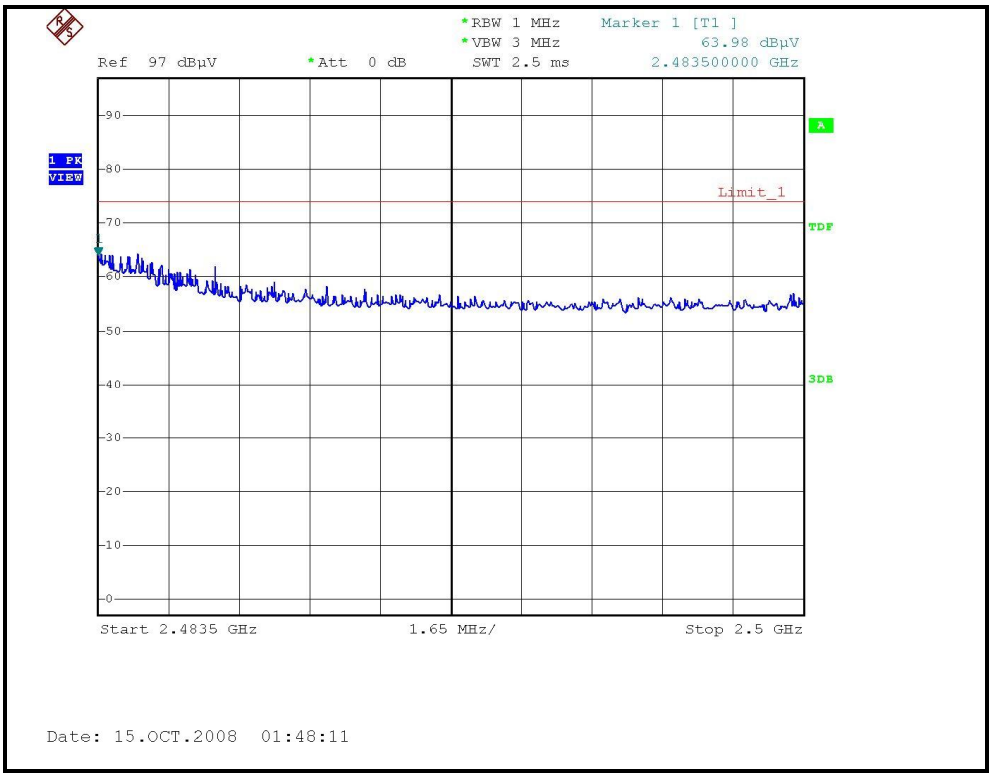
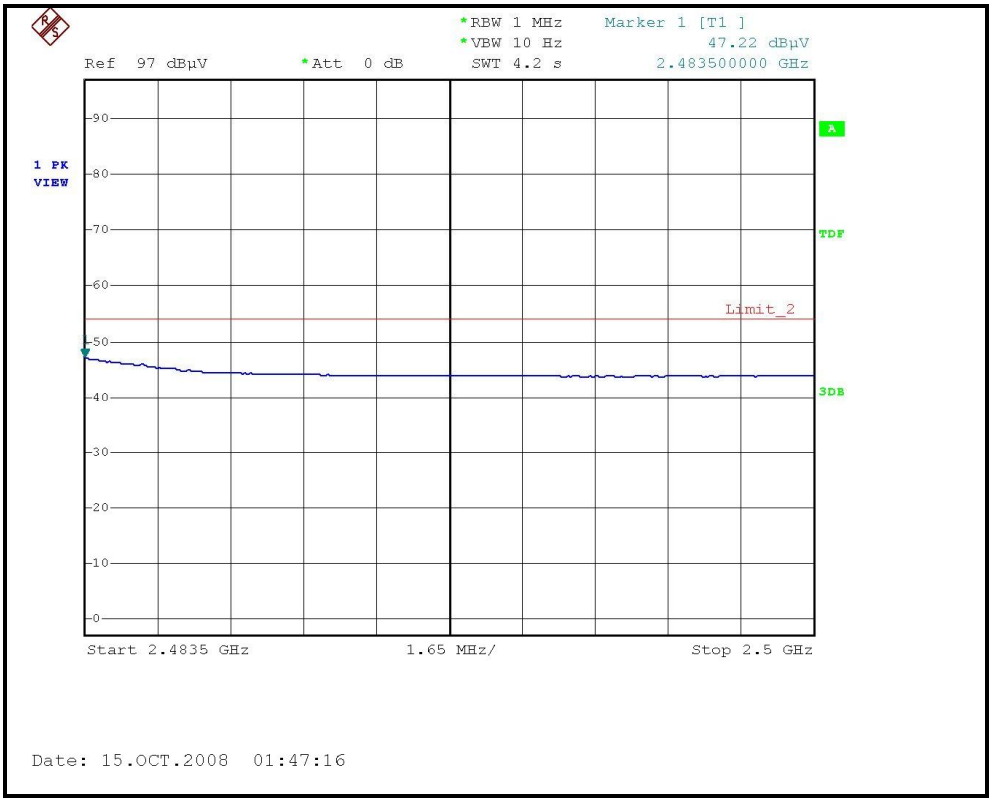
RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 55%RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.74 PK	74.00	-17.26	1.99 H	215	26.68	30.06
2	2390.00	43.84 AV	54.00	-10.16	1.99 H	215	13.78	30.06
3	*2412.00	99.24 PK			1.98 H	212	69.09	30.15
4	*2412.00	90.95 AV			1.98 H	212	60.80	30.15
5	4824.00	48.19 PK	74.00	-25.81	1.98 H	346	12.73	35.46
6	4824.00	34.62 AV	54.00	-19.38	1.98 H	346	-0.84	35.46
7	#7236.00	52.48 PK	79.24	-26.76	2.00 H	259	10.63	41.85
8	#7236.00	38.50 AV	70.95	-32.45	2.00 H	259	-3.35	41.85
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.86 PK	74.00	-7.14	1.00 V	86	36.80	30.06
2	2390.00	48.77 AV	54.00	-5.23	1.00 V	86	18.71	30.06
3	*2412.00	104.80 PK			1.00 V	86	74.65	30.15
4	*2412.00	94.60 AV			1.00 V	86	64.45	30.15
5	4824.00	45.17 PK	74.00	-28.83	1.01 V	87	9.71	35.46
6	4824.00	33.58 AV	54.00	-20.42	1.01 V	87	-1.88	35.46
7	#7236.00	50.98 PK	84.80	-33.82	1.00 V	62	9.13	41.85
8	#7236.00	39.65 AV	74.60	-34.95	1.00 V	62	-2.20	41.85

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 55%RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	103.51 PK			1.99 H	298	73.27	30.24
2	*2437.00	92.98 AV			1.99 H	298	62.74	30.24
3	4874.00	47.62 PK	74.00	-26.38	2.00 H	62	12.07	35.55
4	4874.00	33.99 AV	54.00	-20.01	2.00 H	62	-1.56	35.55
5	7311.00	57.64 PK	74.00	-16.36	2.01 H	78	15.60	42.04
6	7311.00	38.72 AV	54.00	-15.28	2.01 H	78	-3.32	42.04
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	105.73 PK			1.01 V	78	75.49	30.24
2	*2437.00	96.87 AV			1.01 V	78	66.63	30.24
3	4874.00	46.83 PK	74.00	-27.17	1.00 V	111	11.28	35.55
4	4874.00	33.79 AV	54.00	-20.21	1.00 V	111	-1.76	35.55
5	7311.00	51.40 PK	74.00	-22.60	1.00 V	8	9.36	42.04
6	7311.00	38.43 AV	54.00	-15.57	1.00 V	8	-3.61	42.04

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 55%RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.71 PK			2.00 H	304	71.37	30.34
2	*2462.00	90.33 AV			2.00 H	304	59.99	30.34
3	2483.50	57.73 PK	74.00	-16.27	1.78 H	298	27.30	30.43
4	2483.50	44.46 AV	54.00	-9.54	1.78 H	298	14.03	30.43
5	4924.00	48.17 PK	74.00	-25.83	1.99 H	250	12.54	35.63
6	4924.00	34.86 AV	54.00	-19.14	1.99 H	250	-0.77	35.63
7	7386.00	59.04 PK	74.00	-14.96	2.00 H	279	16.81	42.23
8	7386.00	38.94 AV	54.00	-15.06	2.00 H	279	-3.29	42.23
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.80 PK			1.00 V	79	75.46	30.34
2	*2462.00	95.10 AV			1.00 V	79	64.76	30.34
3	2483.50	68.27 PK	74.00	-5.73	1.00 V	100	37.84	30.43
4	2483.50	53.05 AV	54.00	-0.95	1.00 V	100	22.62	30.43
5	4924.00	45.76 PK	74.00	-28.24	1.00 V	89	10.13	35.63
6	4924.00	33.18 AV	54.00	-20.82	1.00 V	89	-2.45	35.63
7	7386.00	51.50 PK	74.00	-22.50	1.01 V	129	9.27	42.23
8	7386.00	38.54 AV	54.00	-15.46	1.01 V	129	-3.69	42.23

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

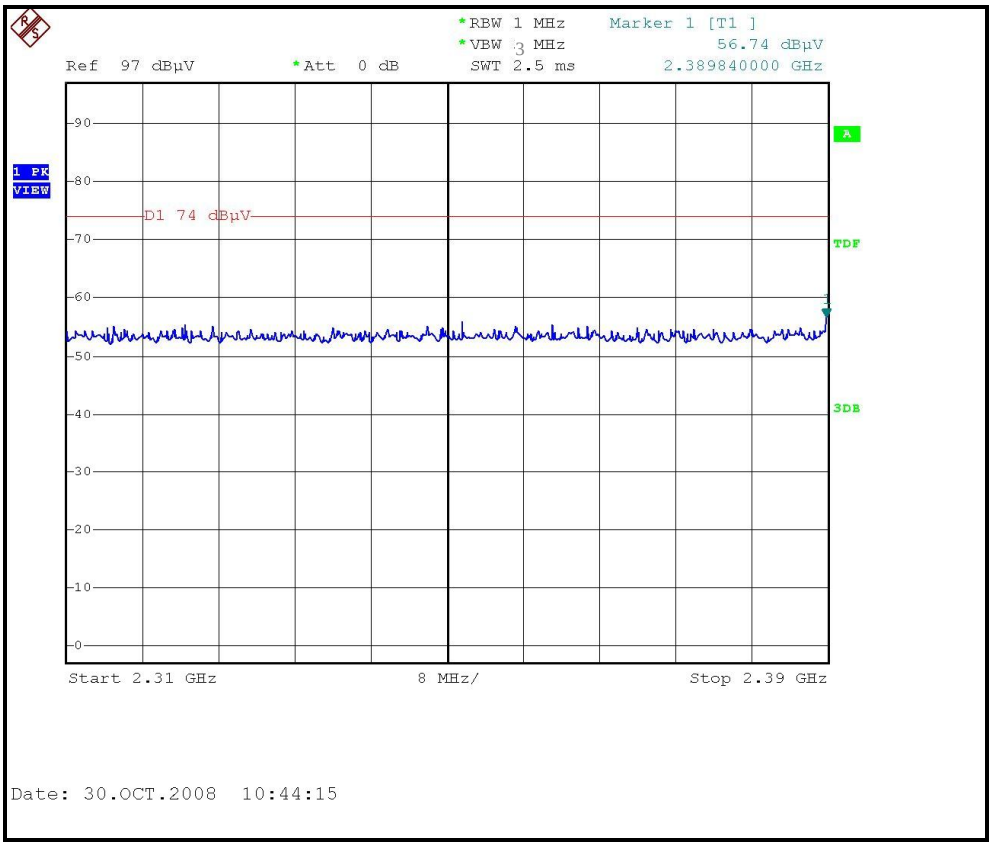
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

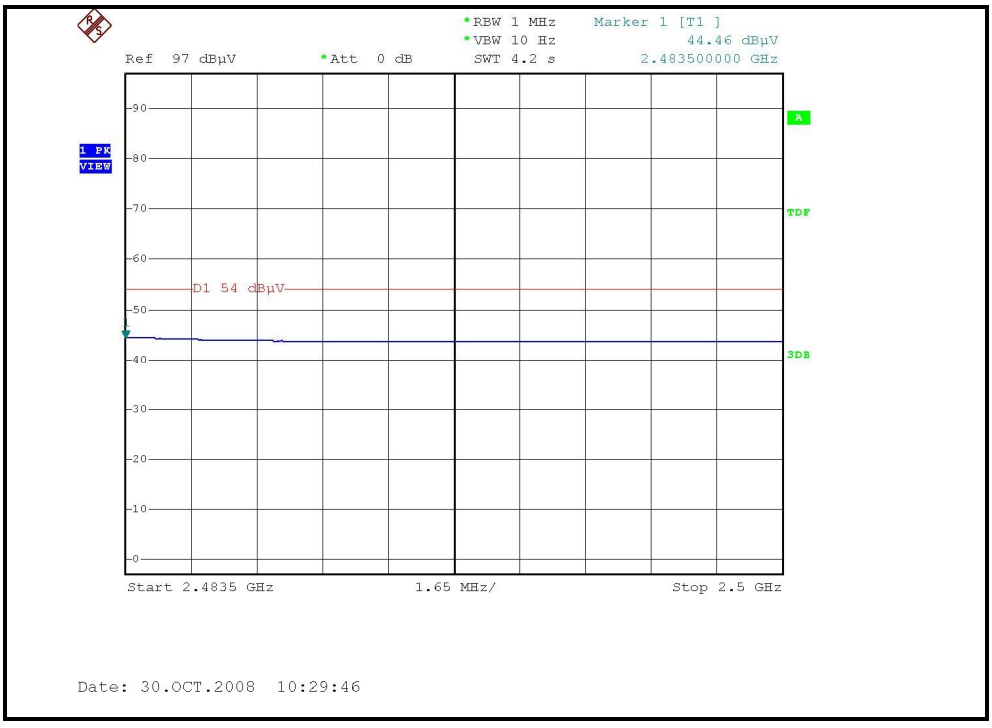
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

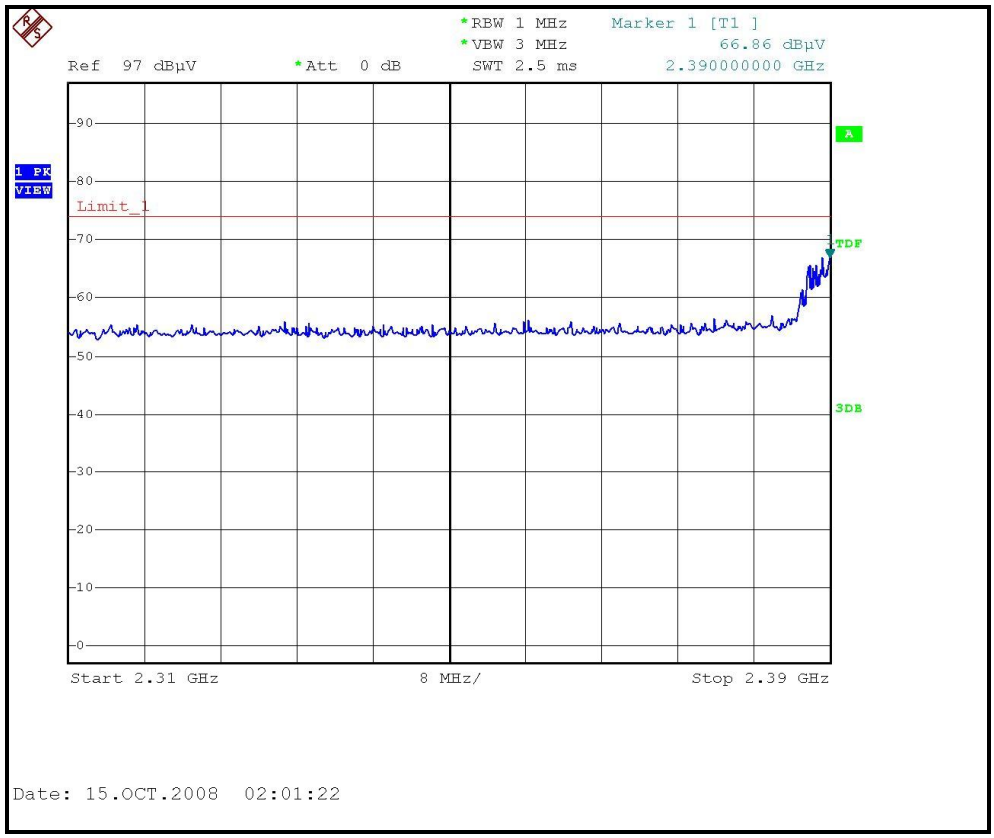
5. " * ": Fundamental frequency.

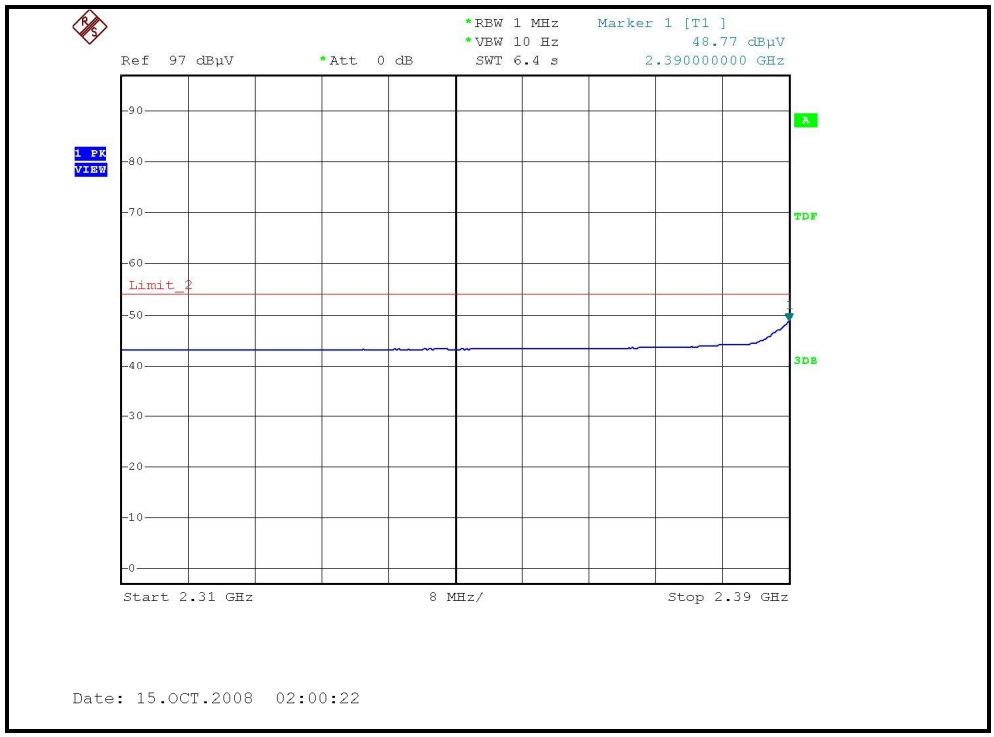
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, HORIZONTAL)



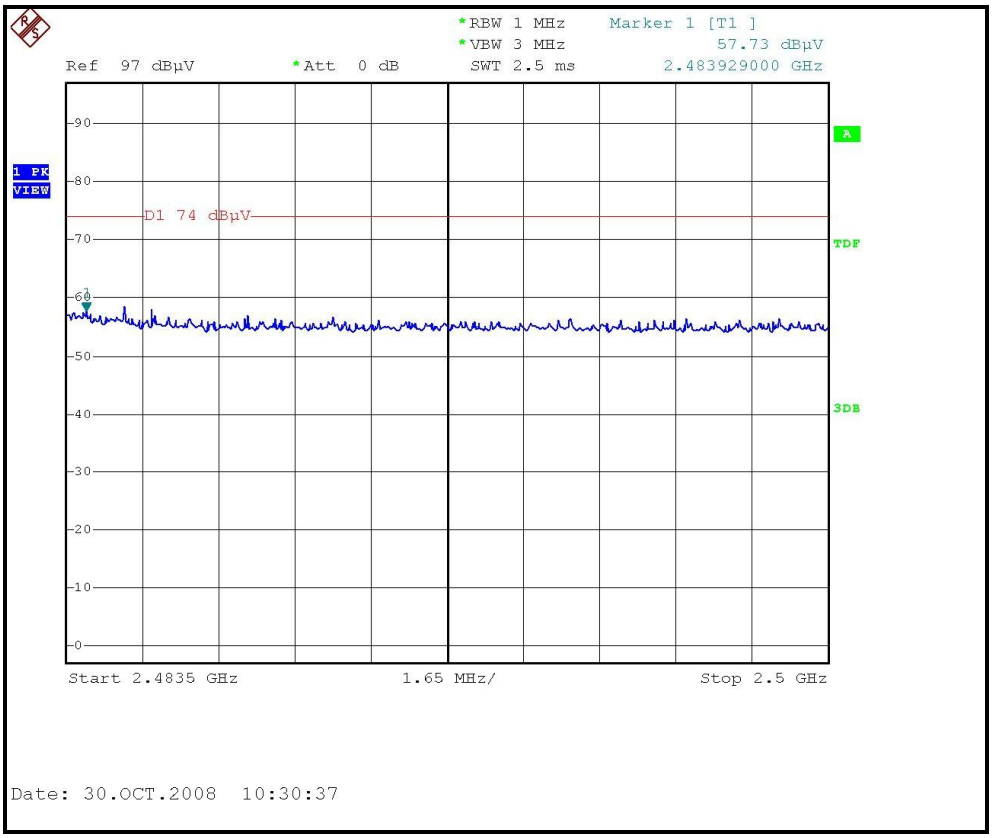


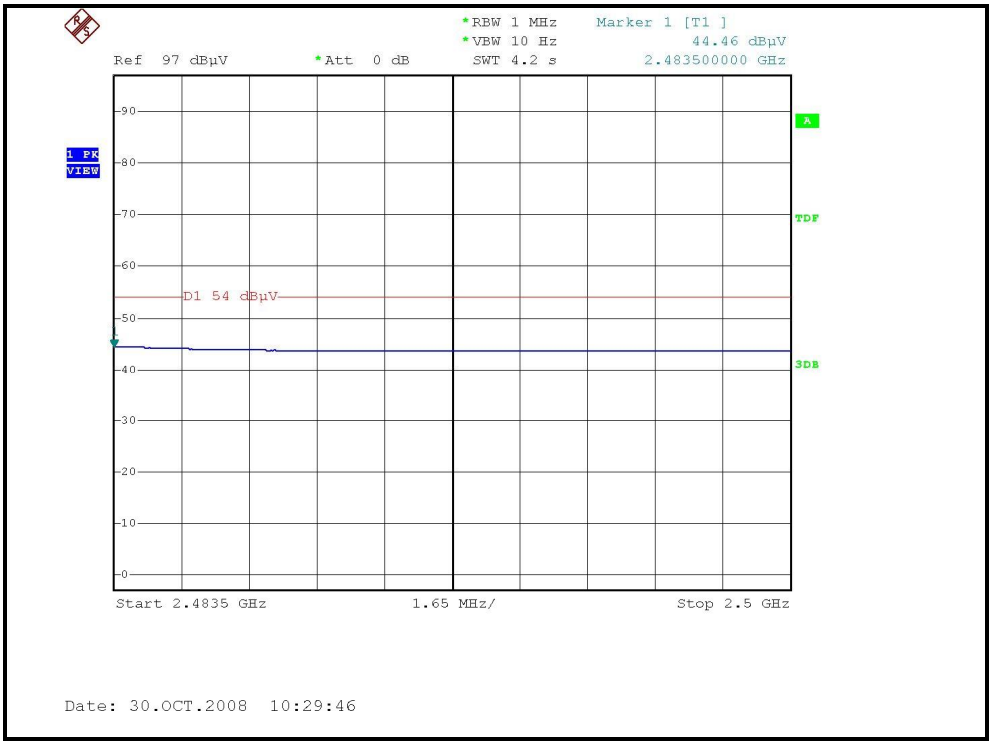
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, VERTICAL)



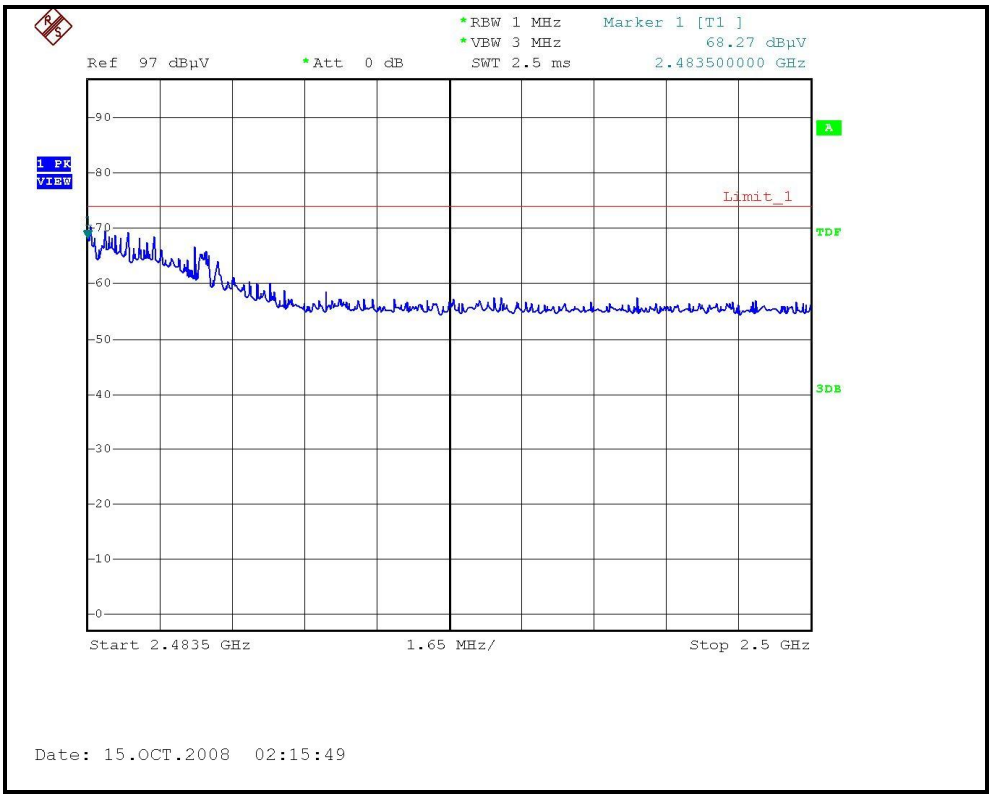


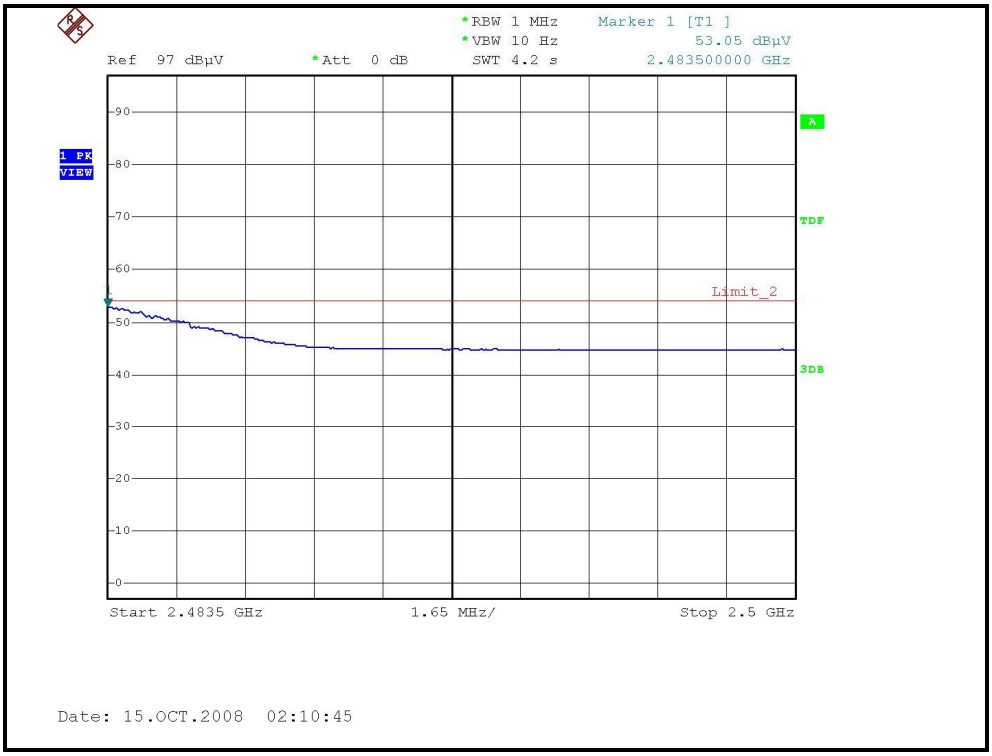
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH11, VERTICAL)





DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 55%RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.42 PK	74.00	-17.58	1.99 H	127	26.36	30.06
2	2390.00	43.70 AV	54.00	-10.30	1.99 H	127	13.64	30.06
3	*2422.00	94.62 PK			1.99 H	127	64.43	30.19
4	*2422.00	81.34 AV			1.99 H	127	51.15	30.19
5	4844.00	49.71 PK	74.00	-24.29	2.00 H	299	14.21	35.50
6	4844.00	34.58 AV	54.00	-19.42	2.00 H	299	-0.92	35.50
7	7266.00	51.72 PK	74.00	-22.28	1.93 H	200	9.79	41.93
8	7266.00	38.00 AV	54.00	-16.00	1.93 H	200	-3.93	41.93
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	2390.00	63.47 PK	74.00	-10.53	1.00 V	109	33.41	30.06
2	2390.00	46.29 AV	54.00	-7.71	1.00 V	109	16.23	30.06
3	*2422.00	99.00 PK			1.00 V	108	68.81	30.19
4	*2422.00	85.20 AV			1.00 V	108	55.01	30.19
5	4844.00	47.29 PK	74.00	-26.71	1.00 V	8	11.79	35.50
6	4844.00	32.11 AV	54.00	-21.89	1.00 V	8	-3.39	35.50
7	7266.00	53.11 PK	74.00	-20.89	1.00 V	71	11.18	41.93
8	7266.00	38.06 AV	54.00	-15.94	1.00 V	71	-3.87	41.93

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 55%RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	94.73 PK			2.00 H	130	64.49	30.24
2	*2437.00	81.69 AV			2.00 H	130	51.45	30.24
3	4874.00	48.43 PK	74.00	-25.57	2.04 H	130	12.88	35.55
4	4874.00	35.02 AV	54.00	-18.98	2.04 H	130	-0.53	35.55
5	7311.00	52.43 PK	74.00	-21.57	1.90 H	189	10.39	42.04
6	7311.00	39.63 AV	54.00	-14.37	1.90 H	189	-2.41	42.04
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	99.30 PK			1.00 V	101	69.06	30.24
2	*2437.00	85.81 AV			1.00 V	101	55.57	30.24
3	4874.00	48.62 PK	74.00	-25.38	1.01 V	50	13.07	35.55
4	4874.00	33.58 AV	54.00	-20.42	1.01 V	50	-1.97	35.55
5	7311.00	52.04 PK	74.00	-21.96	1.00 V	89	10.00	42.04
6	7311.00	38.52 AV	54.00	-15.48	1.00 V	89	-3.52	42.04

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 55%RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	95.00 PK			2.01 H	139	64.70	30.30
2	*2452.00	82.01 AV			2.01 H	139	51.71	30.30
3	2483.50	62.34 PK	74.00	-11.66	2.01 H	139	31.91	30.43
4	2483.50	46.70 AV	54.00	-7.30	2.01 H	139	16.27	30.43
5	4904.00	49.63 PK	74.00	-24.37	1.91 H	288	14.03	35.60
6	4904.00	35.70 AV	54.00	-18.30	1.91 H	288	0.10	35.60
7	7356.00	52.70 PK	74.00	-21.30	2.00 H	62	10.54	42.16
8	7356.00	38.43 AV	54.00	-15.57	2.00 H	62	-3.73	42.16
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	*2452.00	99.70 PK			1.00 V	100	69.40	30.30
2	*2452.00	85.90 AV			1.00 V	100	55.60	30.30
3	2483.50	66.36 PK	74.00	-7.64	1.00 V	99	35.93	30.43
4	2483.50	50.20 AV	54.00	-3.80	1.00 V	99	19.77	30.43
5	4904.00	48.63 PK	74.00	-25.37	1.00 V	92	13.03	35.60
6	4904.00	33.72 AV	54.00	-20.28	1.00 V	92	-1.88	35.60
7	7356.00	51.78 PK	74.00	-22.22	1.00 V	84	9.62	42.16
8	7356.00	39.63 AV	54.00	-14.37	1.00 V	84	-2.53	42.16

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

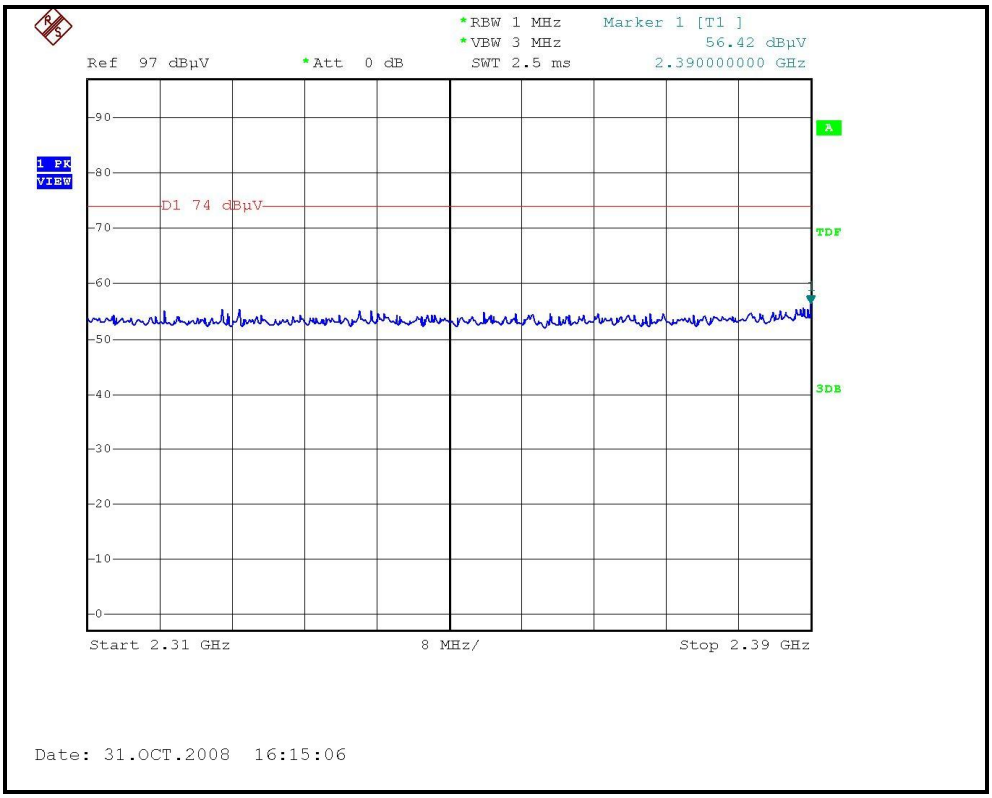
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

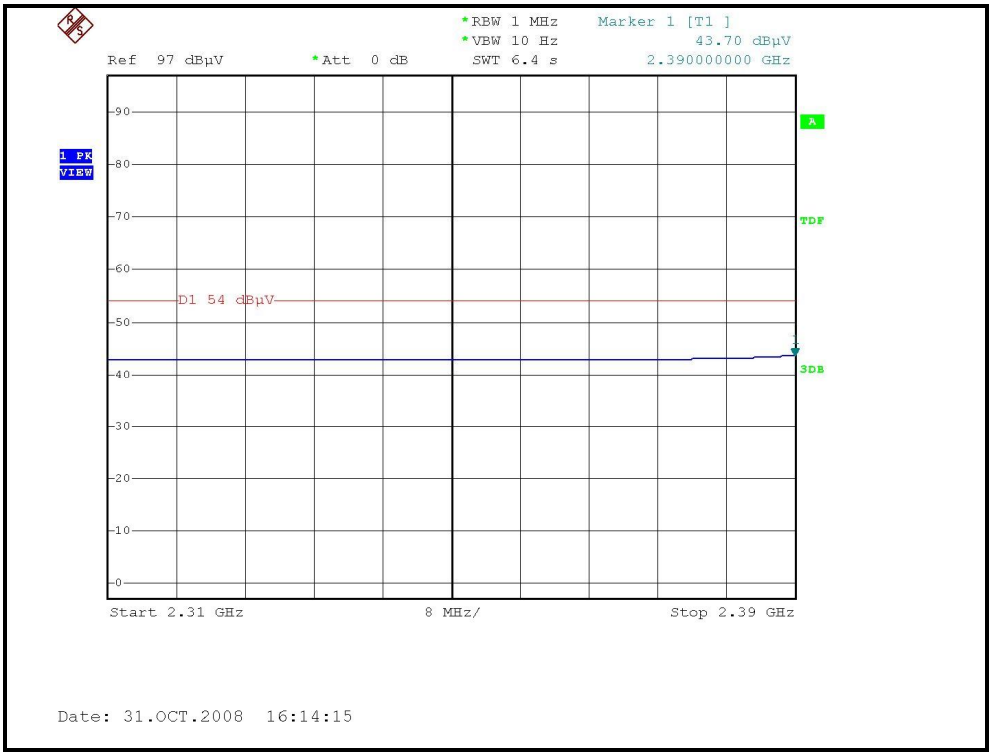
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

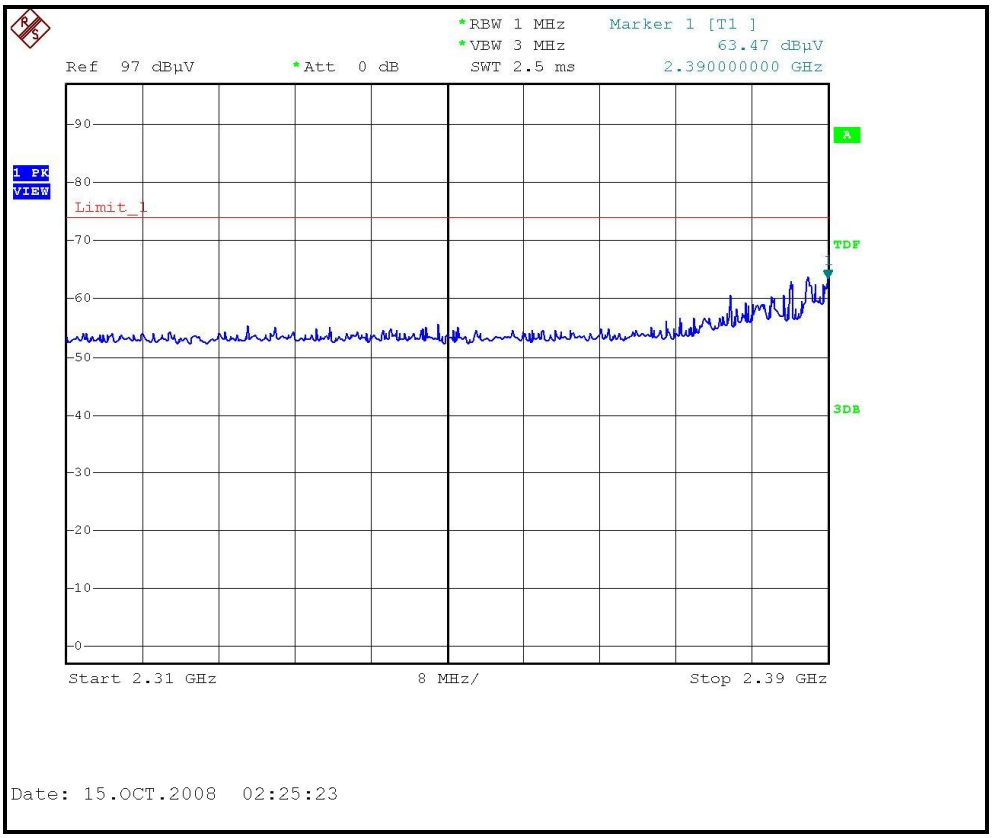
5. " * ": Fundamental frequency.

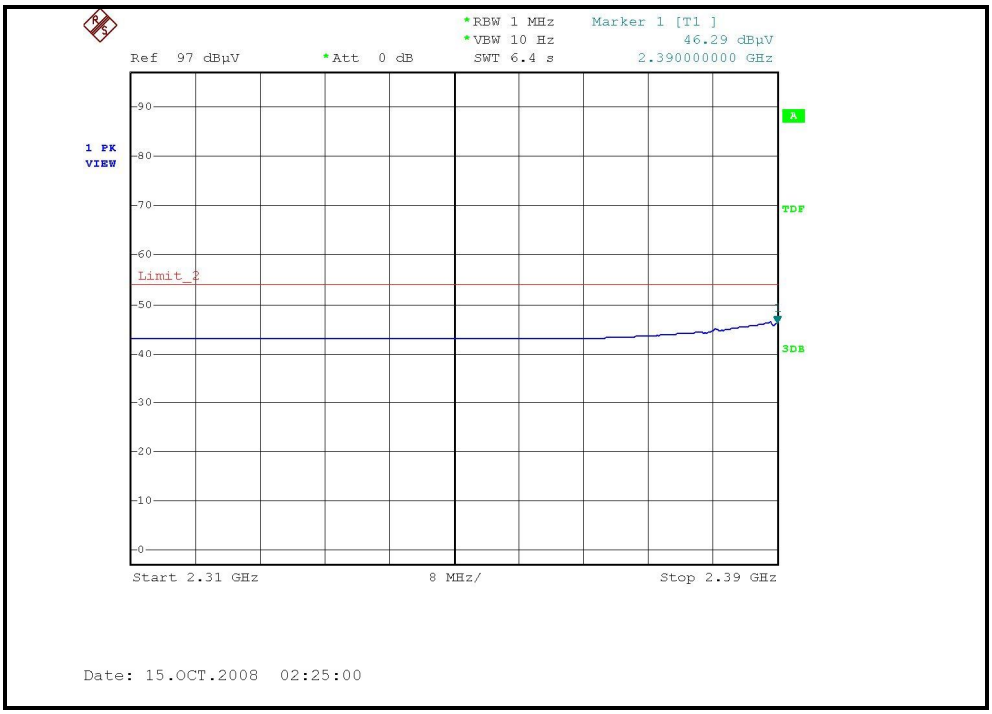
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, HORIZONTAL)



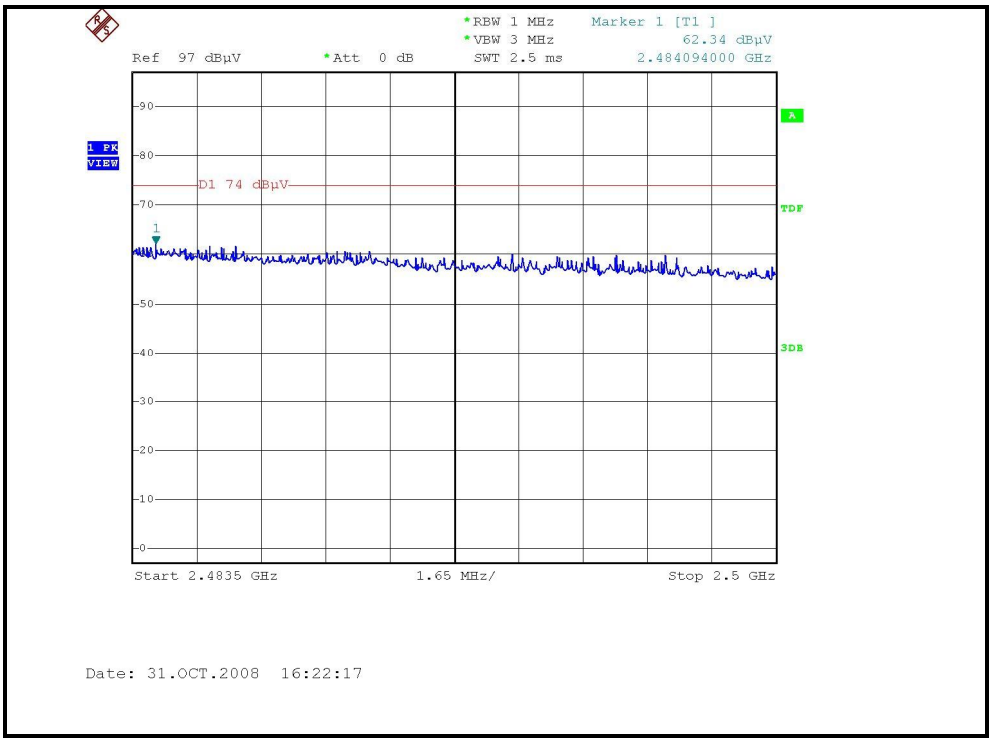


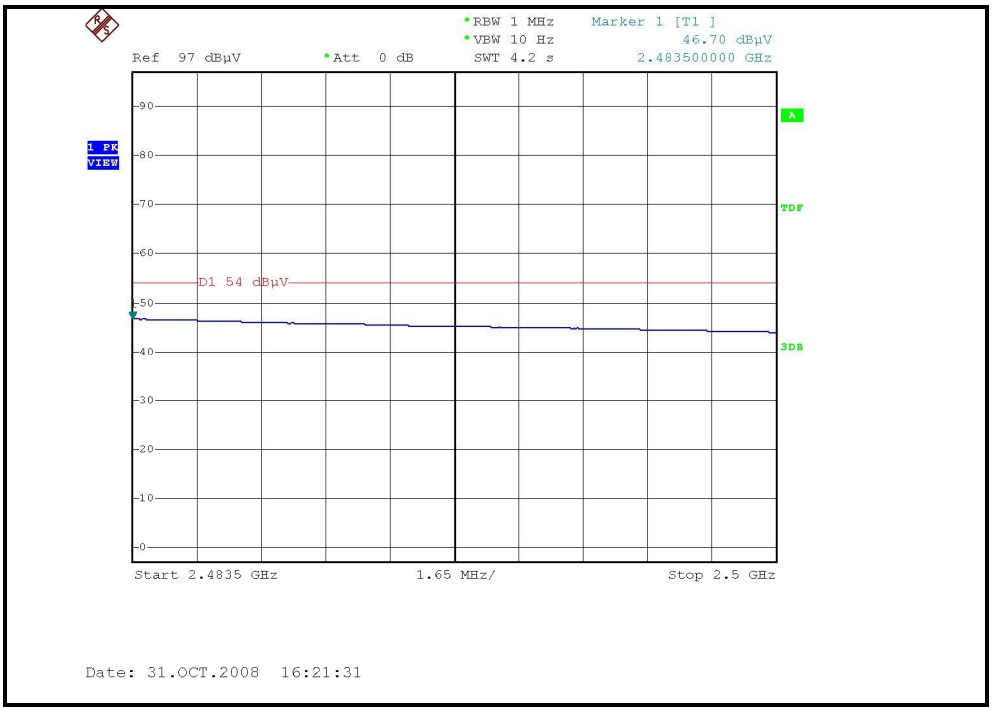
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, VERTICAL)



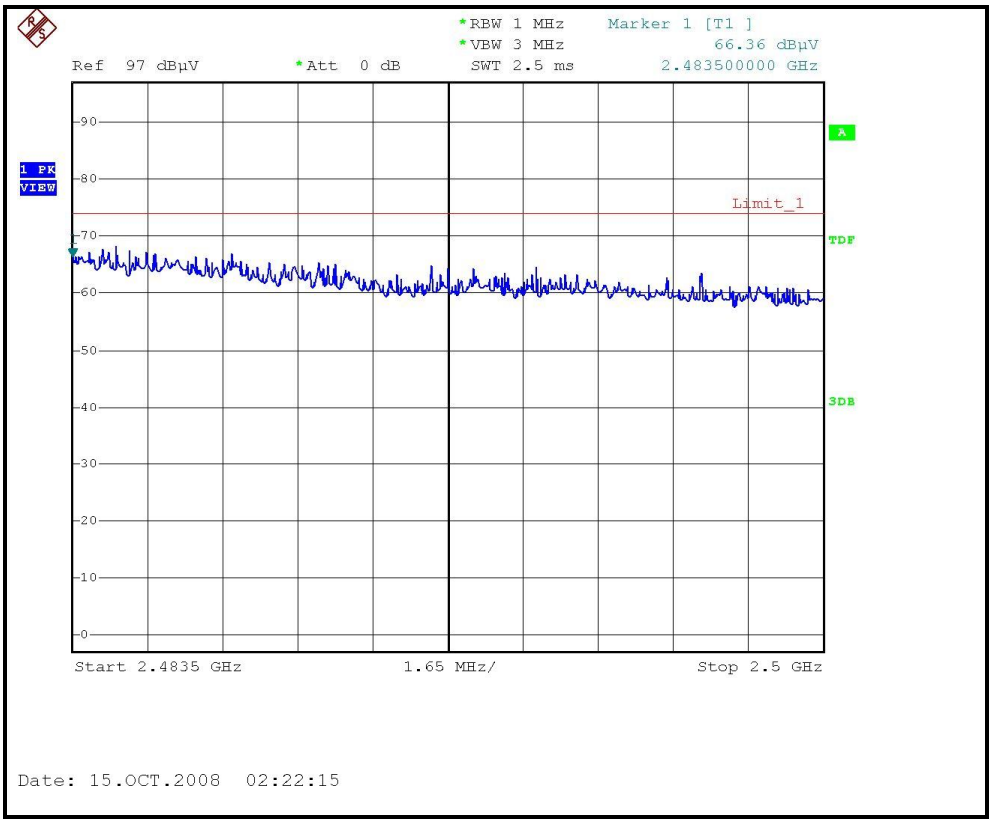


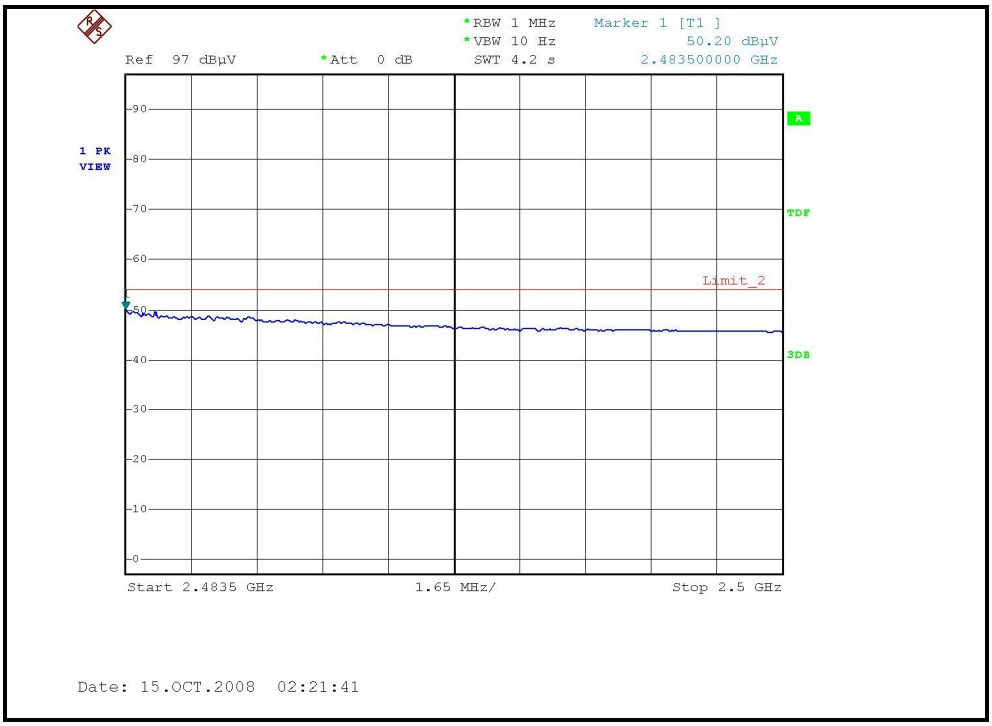
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH7, HORIZONTAL)





RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH7, VERTICAL)





4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED 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.

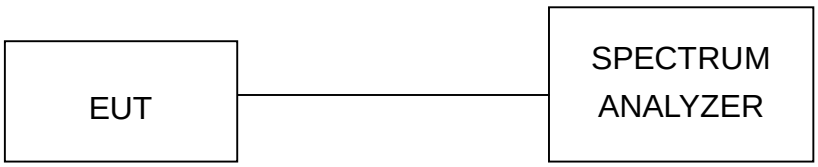
4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

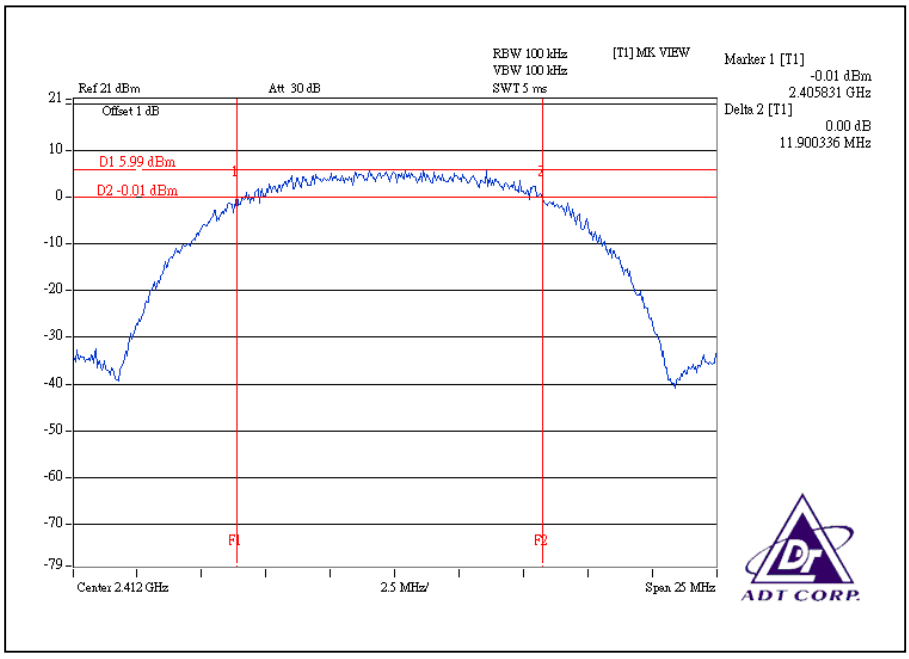
4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

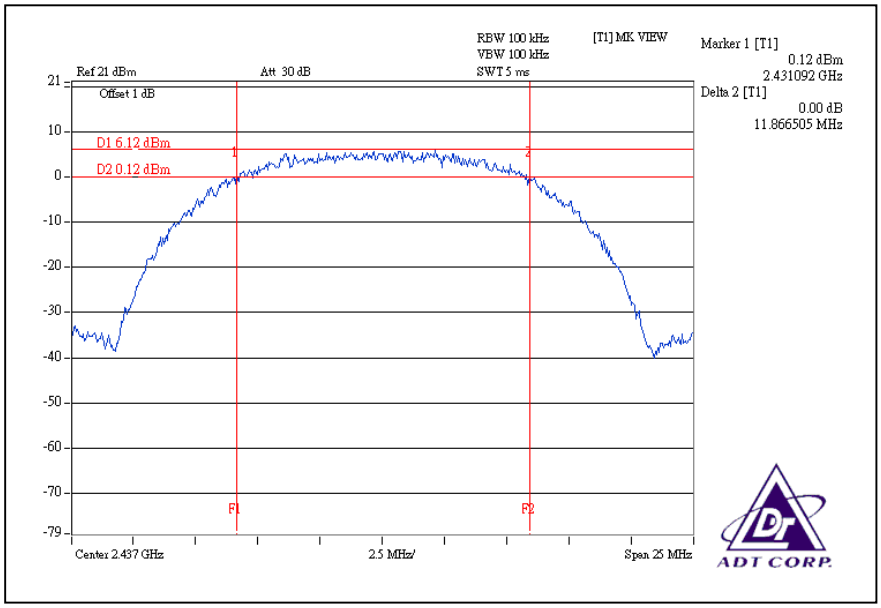
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.90	0.5	PASS
6	2437	11.87	0.5	PASS
11	2462	11.85	0.5	PASS

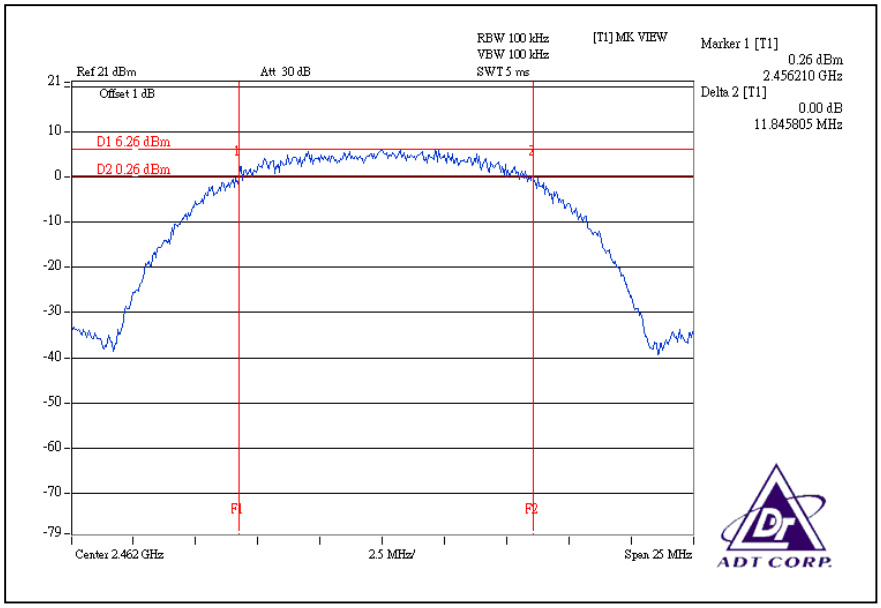
CH1



CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
0.12 dBm
2.431092 GHz
Delta 2 [T1]
0.00 dB
11.866505 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 6.12 dBm
D2 0.12 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

CH11

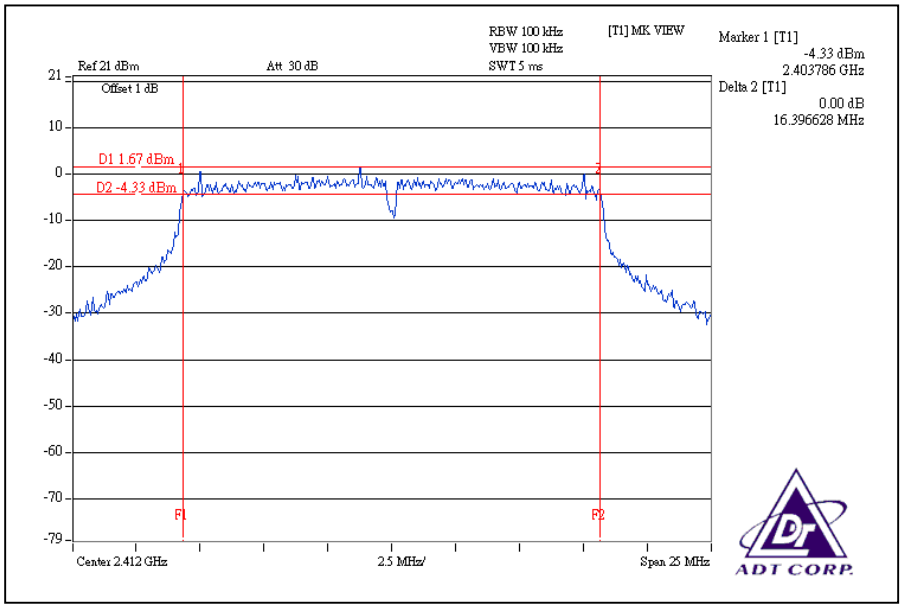

RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
0.26 dBm
2.456210 GHz
Delta 2 [T1]
0.00 dB
11.845805 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 6.26 dBm
D2 0.26 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

802.11g OFDM MODULATION:

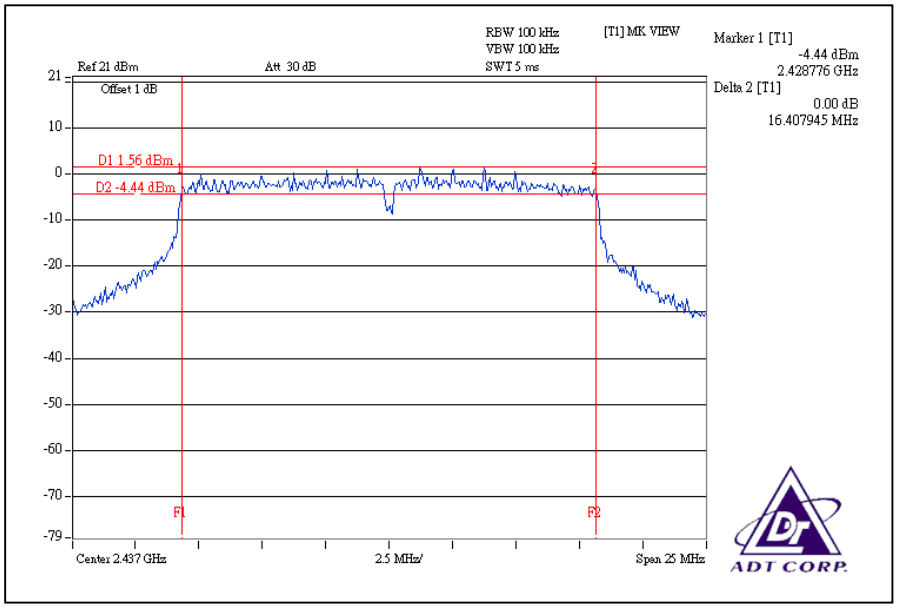
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.40	0.5	PASS
6	2437	16.41	0.5	PASS
11	2462	16.41	0.5	PASS

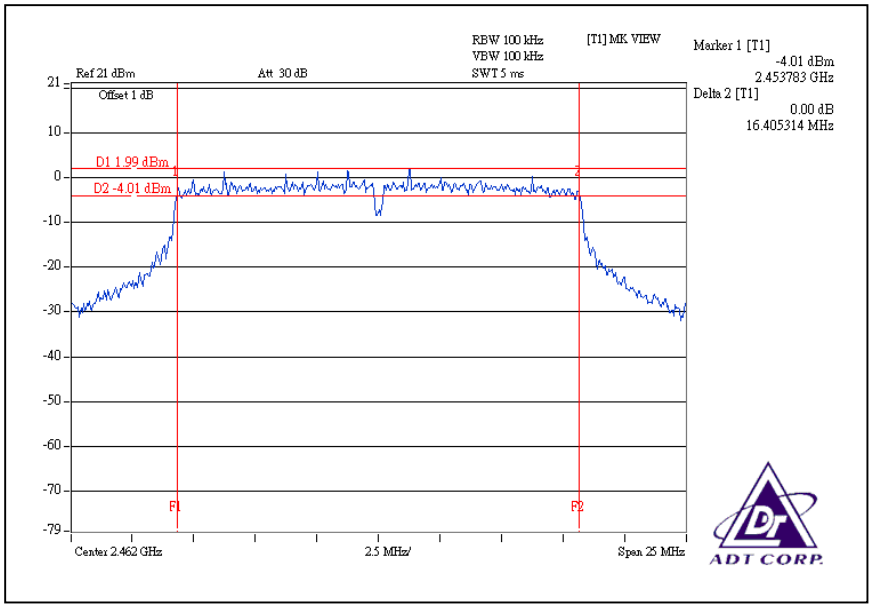
CH1



CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-4.44 dBm
2.428776 GHz
Delta 2 [T1]
0.00 dB
16.407945 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 1.56 dBm
D2 -4.44 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

CH11


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-4.01 dBm
2.453783 GHz
Delta 2 [T1]
0.00 dB
16.405314 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 1.99 dBm
D2 -4.01 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

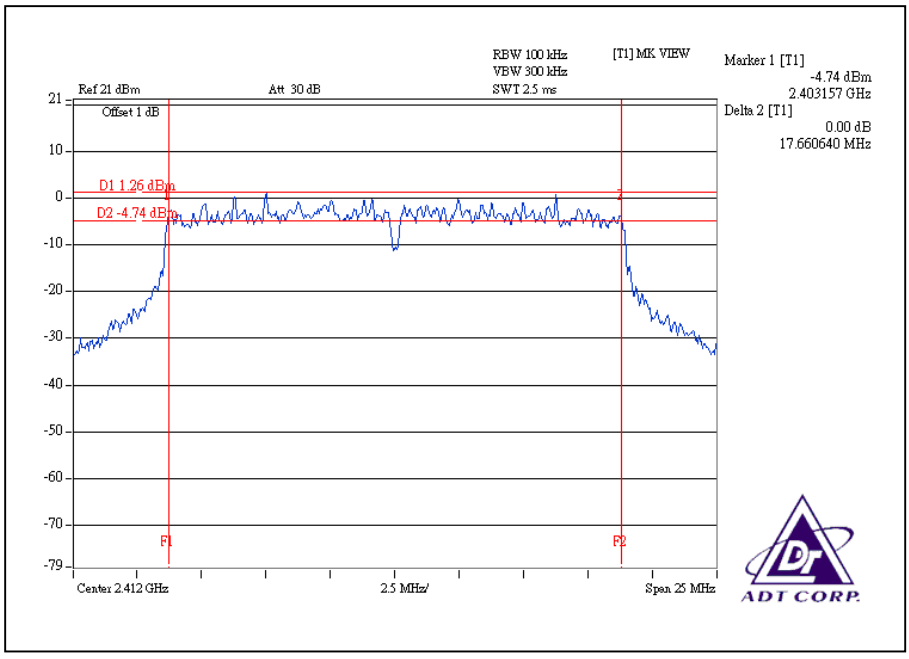
DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

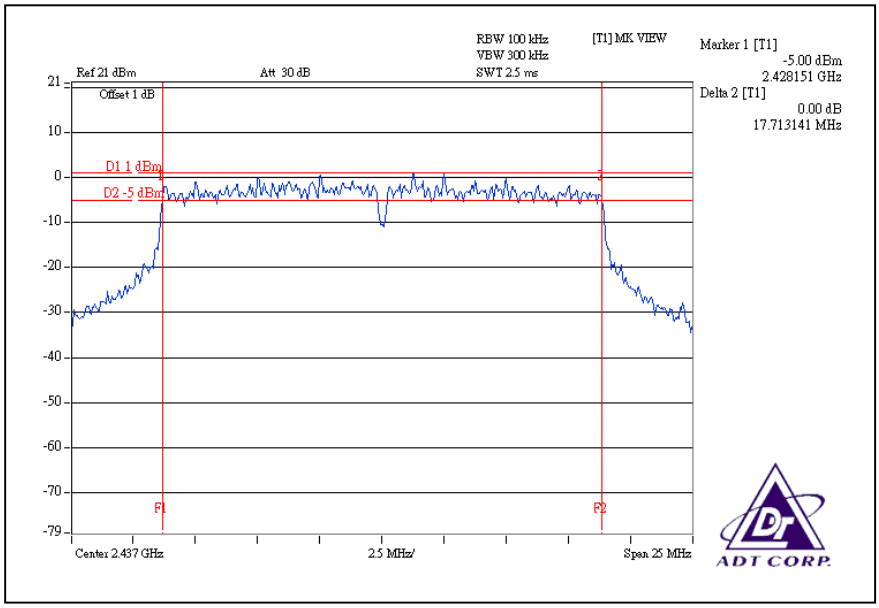
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	2412	17.66	17.68	17.64	0.5	PASS
6	2437	17.71	17.40	16.81	0.5	PASS
11	2462	17.63	17.71	17.61	0.5	PASS

Chain 0

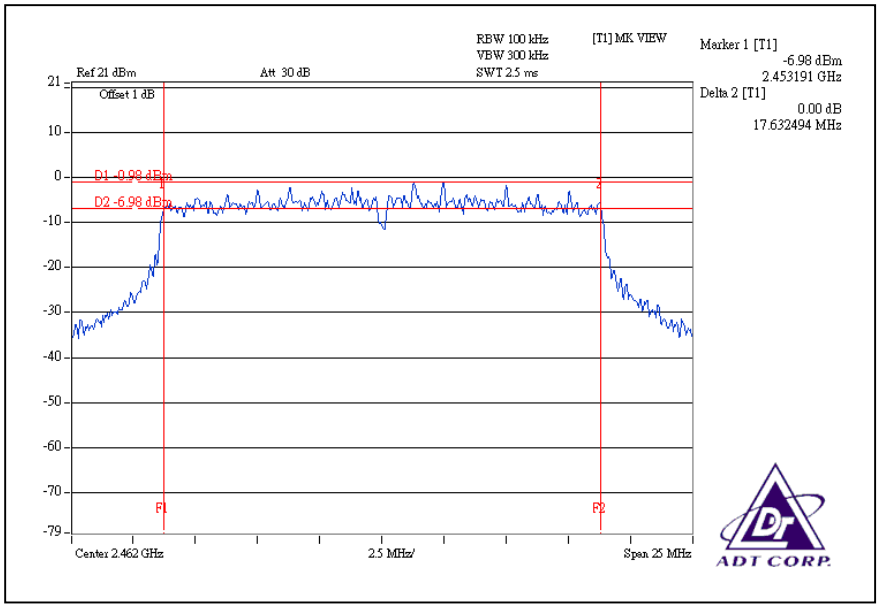
CH1



CH6

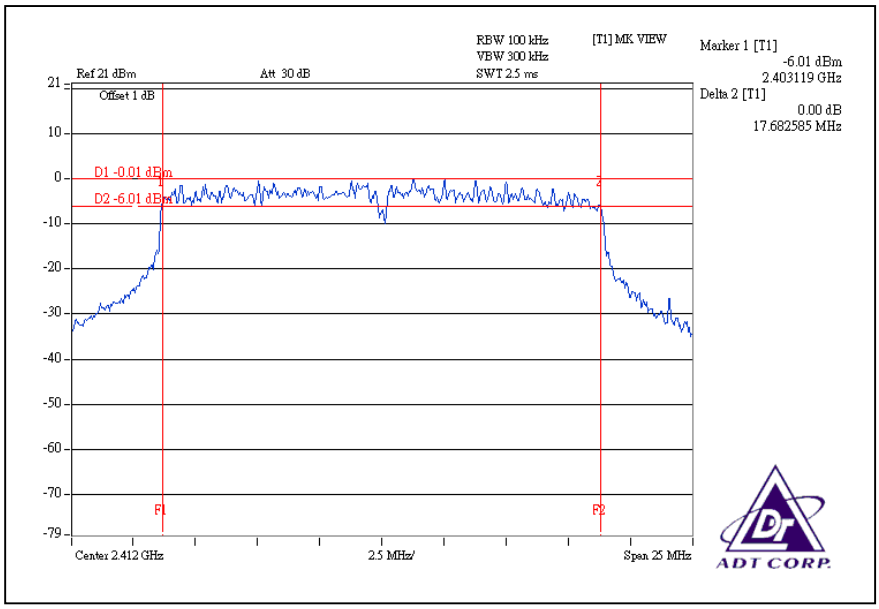

RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-5.00 dBm
2.428151 GHz
Delta 2 [T1]
0.00 dB
17.713141 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 1 dBm
D2 -5 dBm
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

CH11

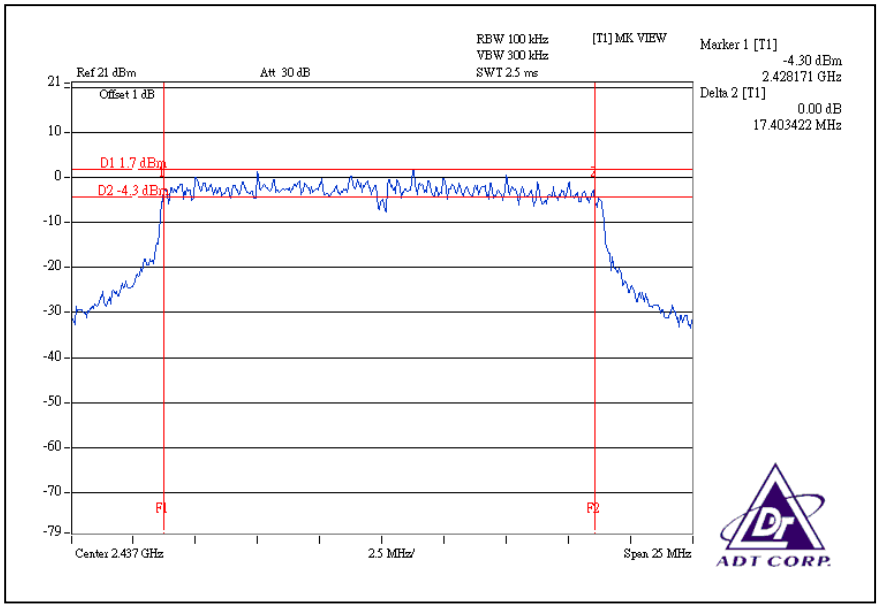

RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-6.98 dBm
2.453191 GHz
Delta 2 [T1]
0.00 dB
17.632494 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -0.98 dBm
D2 -6.98 dBm
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

Chain 1

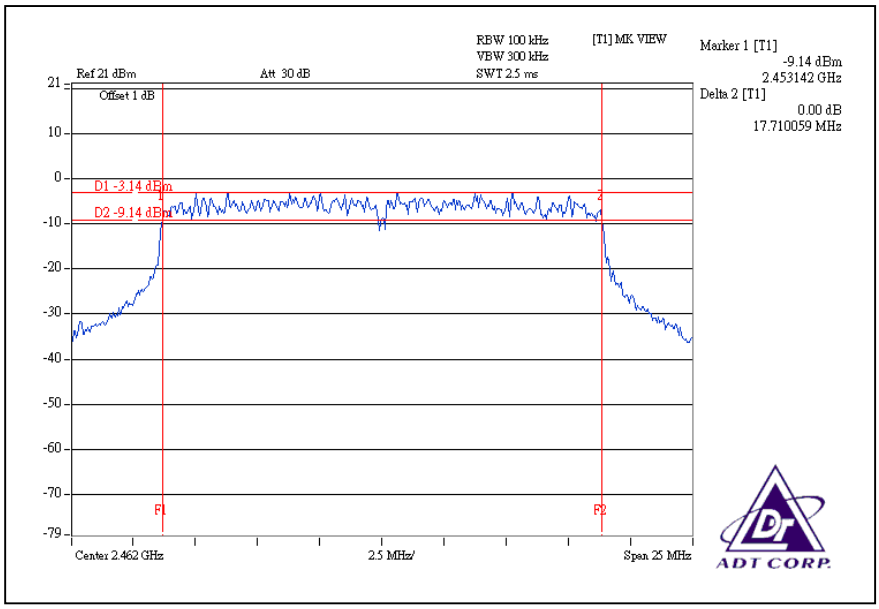
CH1



CH6

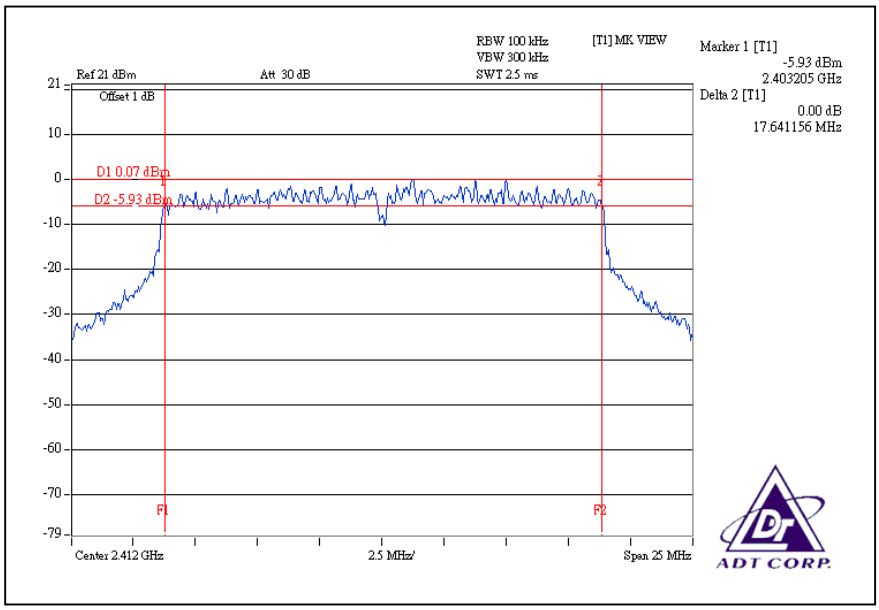


CH11

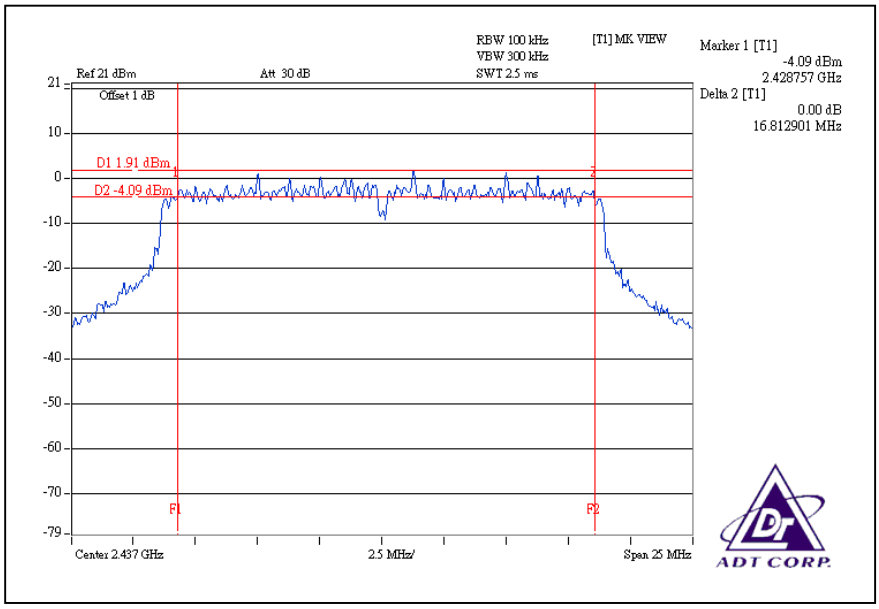

RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-9.14 dBm
2.453142 GHz
Delta 2 [T1]
0.00 dB
17.710059 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -3.14 dBm
D2 -9.14 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

Chain 2

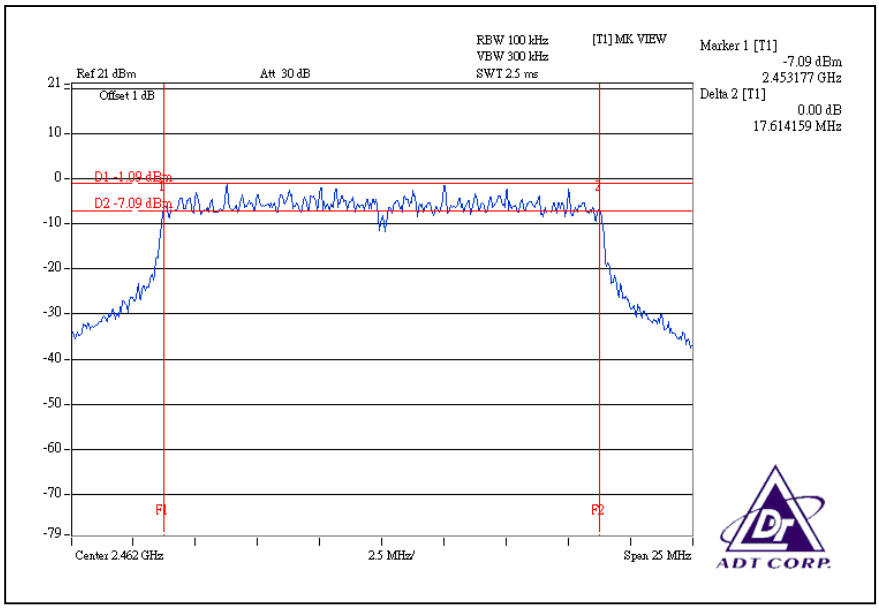
CH1



CH6



CH11


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-7.09 dBm
2.453177 GHz
Delta 2 [T1]
0.00 dB
17.614159 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -1.09 dBm
D2 -7.09 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

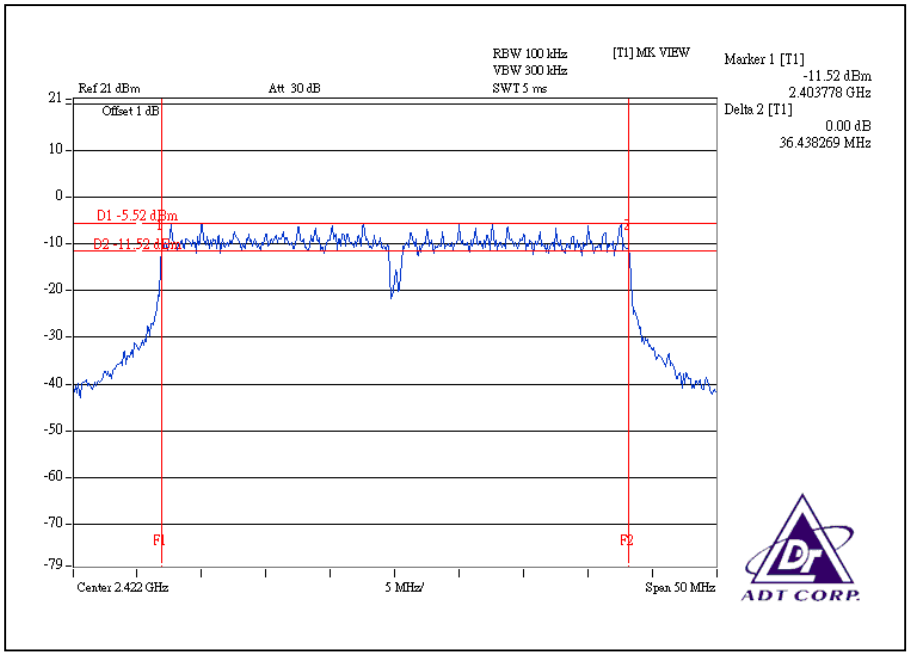
DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

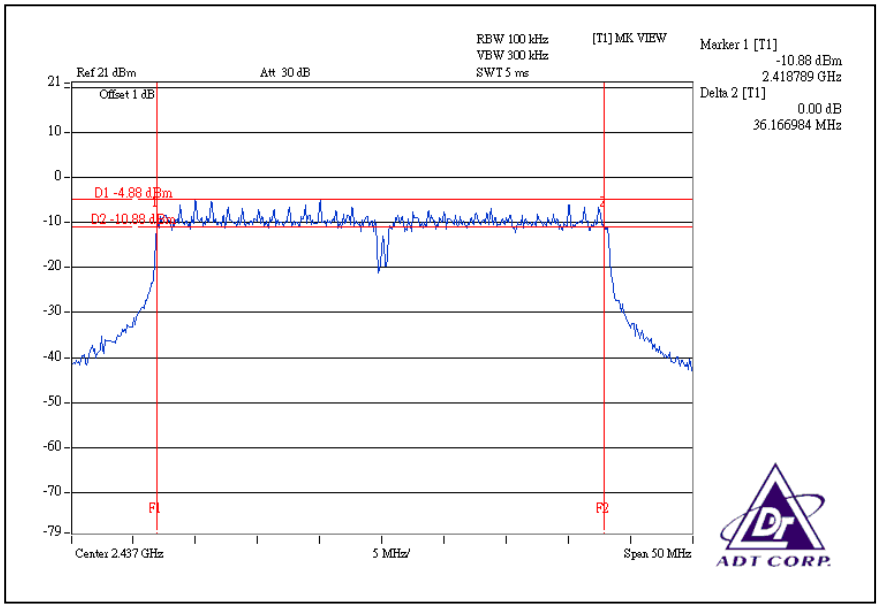
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	2422	36.44	36.52	36.52	0.5	PASS
4	2437	36.17	36.54	36.49	0.5	PASS
7	2452	36.18	36.56	36.52	0.5	PASS

Chain 0

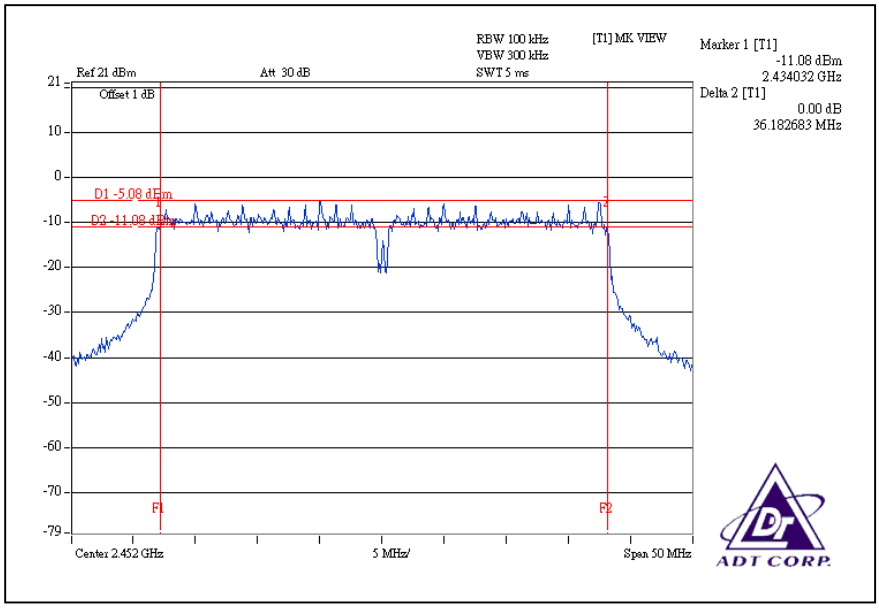
CH1



CH4

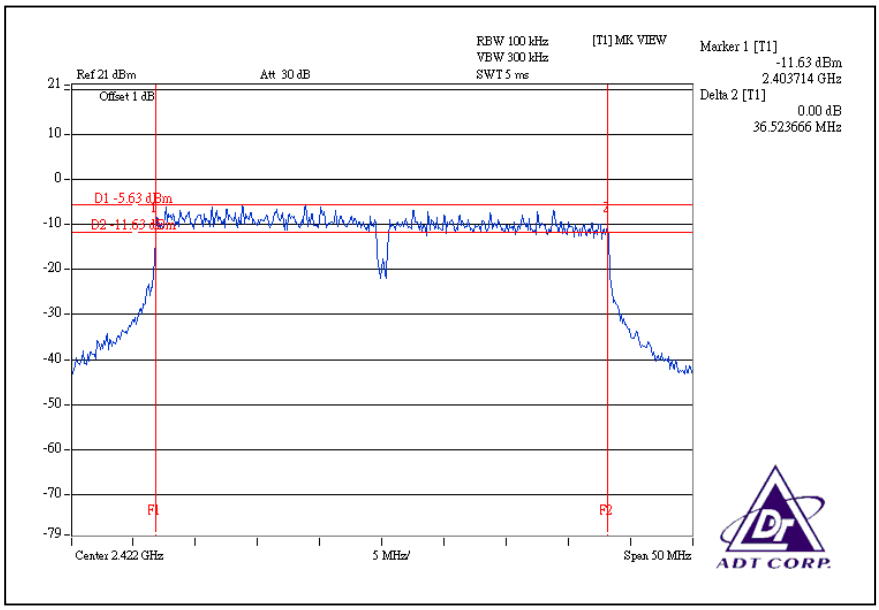

RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-10.88 dBm
2.418789 GHz
Delta 2 [T1]
0.00 dB
36.166984 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -4.88 dBm
D2 -10.88 dBm
F1
F2
Center 2.437 GHz
5 MHz/
Span 50 MHz
ADT CORP.

CH7

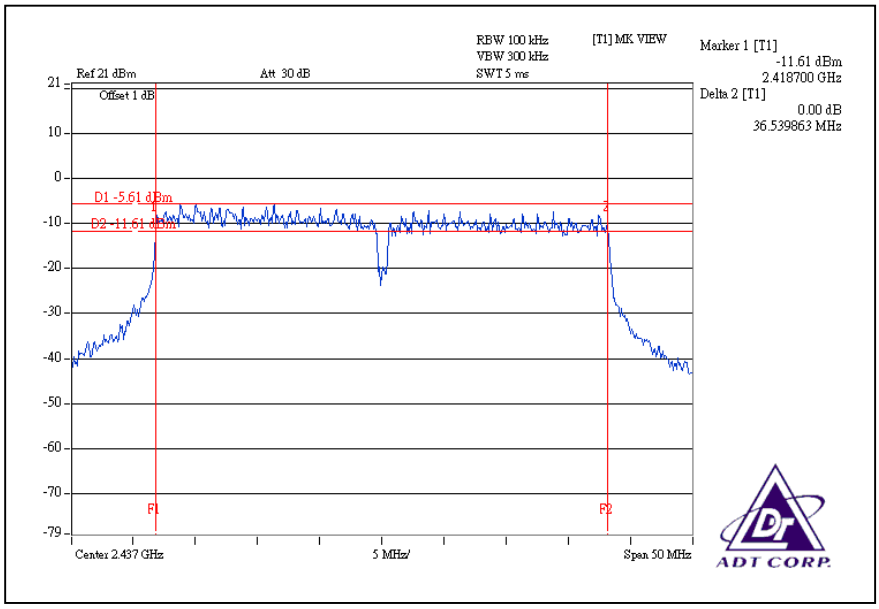

RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-11.08 dBm
2.434032 GHz
Delta 2 [T1]
0.00 dB
36.182683 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -5.08 dBm
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz
ADT CORP.

Chain 1

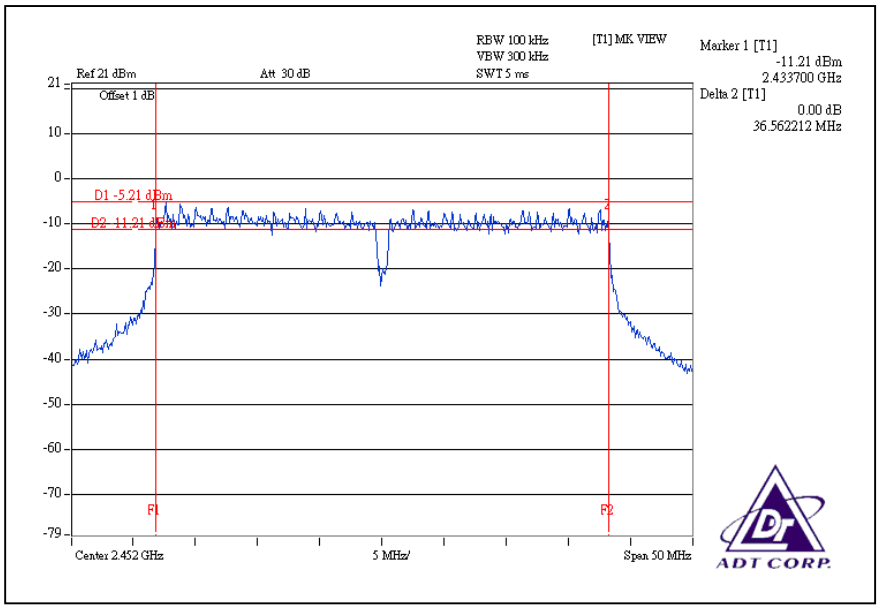
CH1



CH4

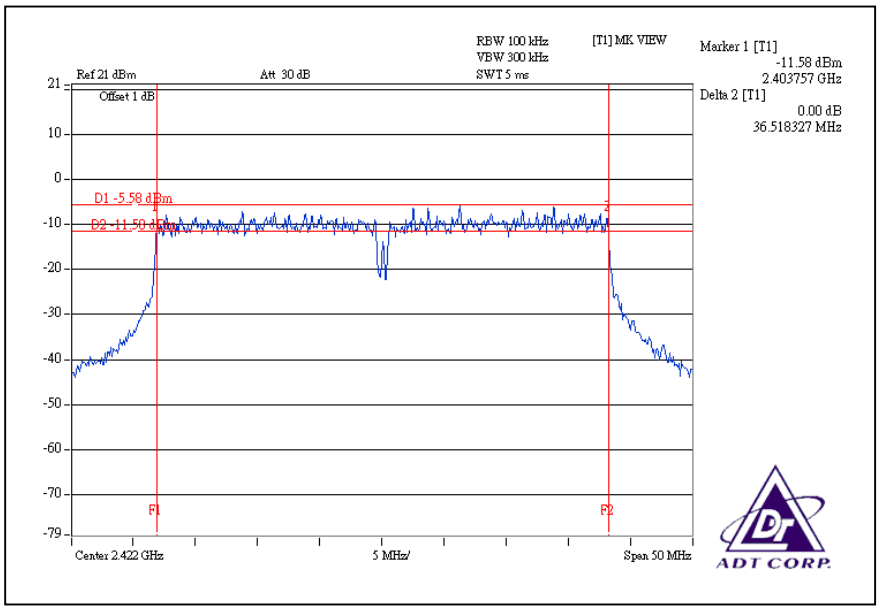


CH7

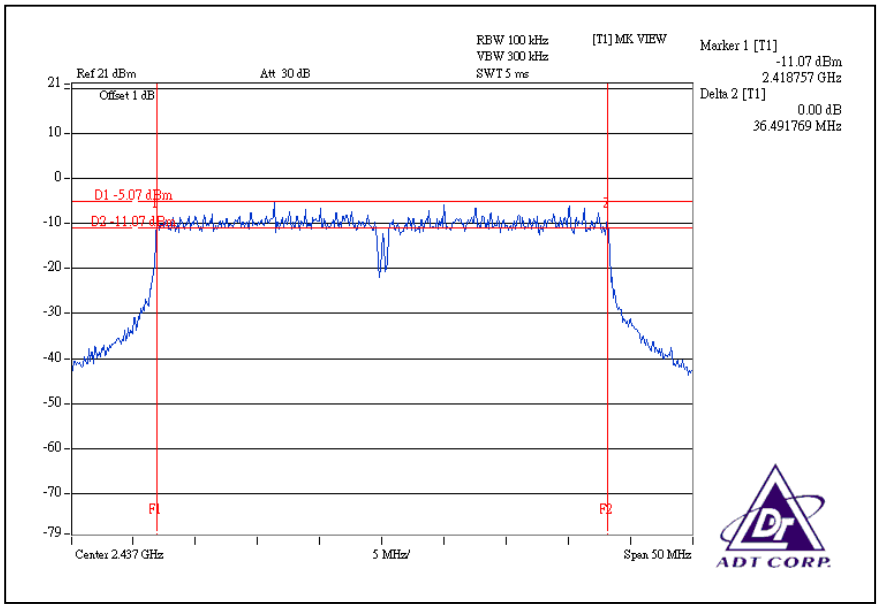

RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-11.21 dBm
2.433700 GHz
Delta 2 [T1]
0.00 dB
36.562212 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -5.21 dBm
D2 -11.21 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz
ADT CORP.

Chain 2

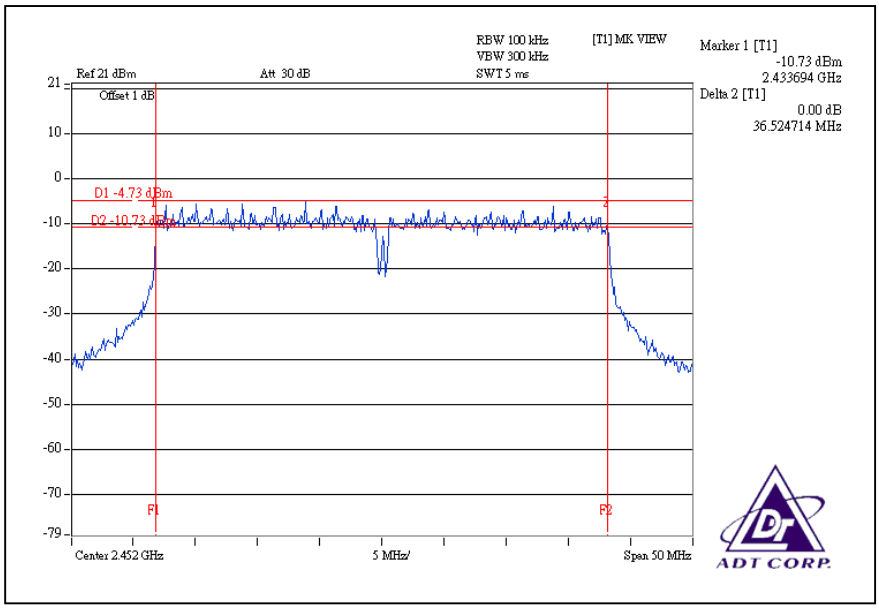
CH1



CH4



CH7


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-10.73 dBm
2.433694 GHz
Delta 2 [T1]
0.00 dB
36.524714 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -4.73 dBm
D2 -10.73 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz
ADT CORP.

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 13, 2008	Aug. 12, 2009
Agilent SIGNAL GENERATOR	E8257C	MY43320668	Dec. 26, 2007	Dec. 25, 2008
Anritsu Power Meter	ML2495A	0824006	NA	NA
Pulse Power Sensor	MA2411B	0738172	NA	NA

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

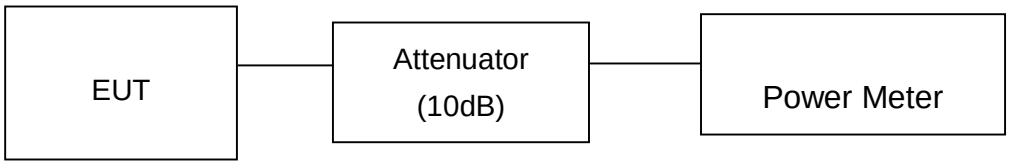
4.4.3 TEST PROCEDURES

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.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

802.11b DSSS MODULATION:

MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	19.27	84.528	30	PASS
6	2437	19.70	93.325	30	PASS
11	2462	19.90	97.724	30	PASS

802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	22.94	196.789	30	PASS
6	2437	22.93	183.231	30	PASS
11	2462	22.81	190.985	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	14.444Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			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	20.82	20.75	21.05	120.781	118.850	127.350	366.981	25.646	30	PASS
6	2437	21.20	21.64	21.10	131.826	145.881	128.825	406.532	26.091	30	PASS
11	2462	18.63	18.70	19.00	72.946	74.131	79.433	226.510	23.551	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	30Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			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	20.70	20.30	20.06	117.490	107.152	101.391	326.033	25.133	30	PASS
4	2437	21.00	20.50	20.10	125.893	112.202	102.329	340.424	25.320	30	PASS
7	2452	20.60	20.20	20.40	114.815	104.713	109.648	329.176	25.174	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 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.

4.5.3 TEST PROCEDURE

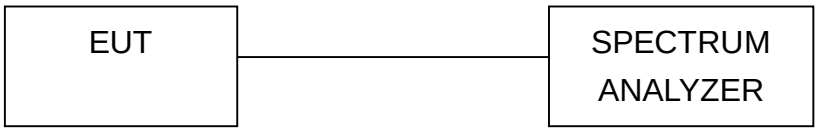
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

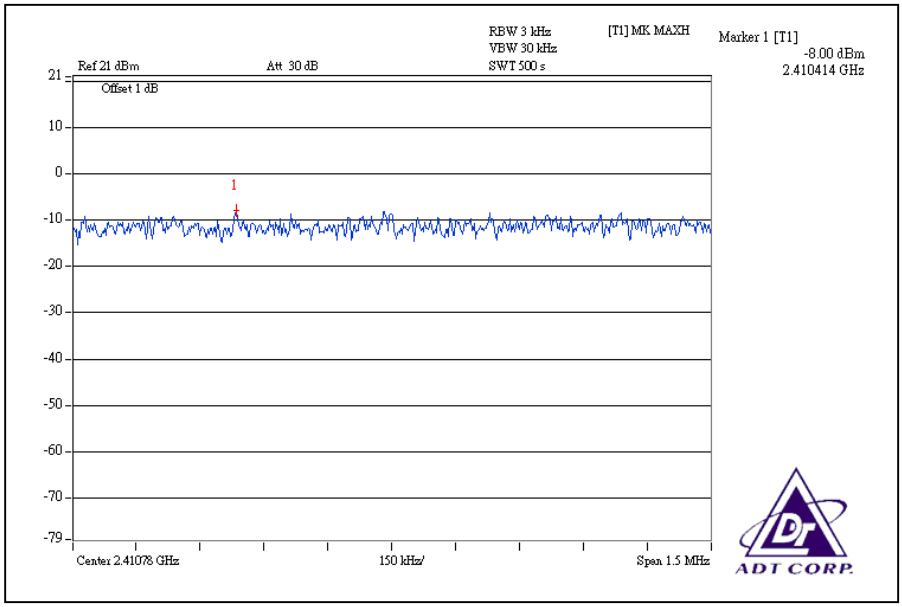
4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

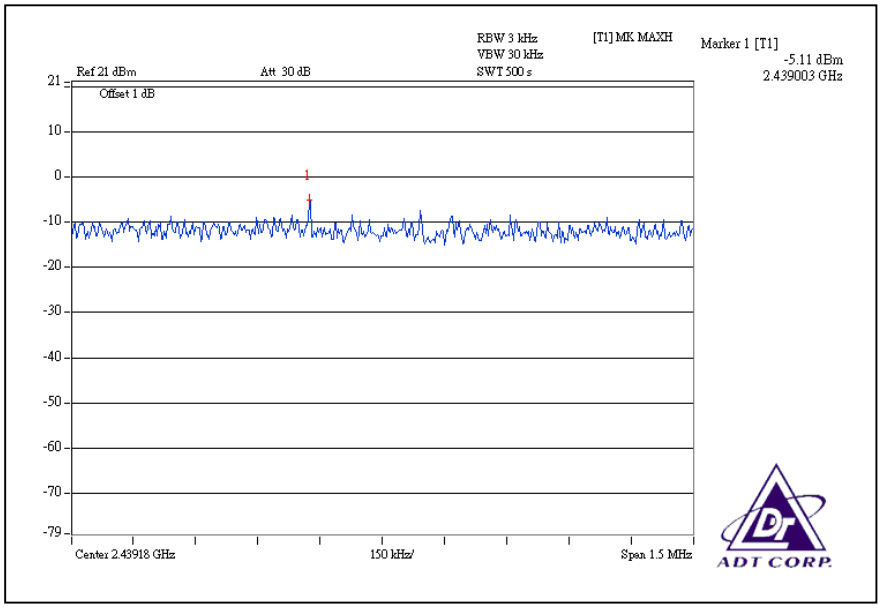
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-8.00	8	PASS
6	2437	-5.11	8	PASS
11	2462	-5.45	8	PASS

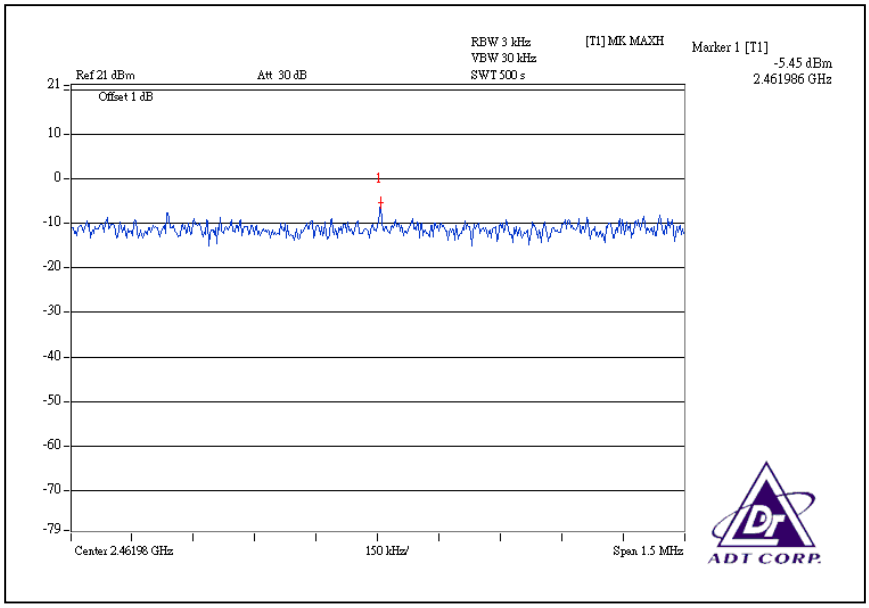
CH1



CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-5.11 dBm
2.439003 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 2.43918 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH11

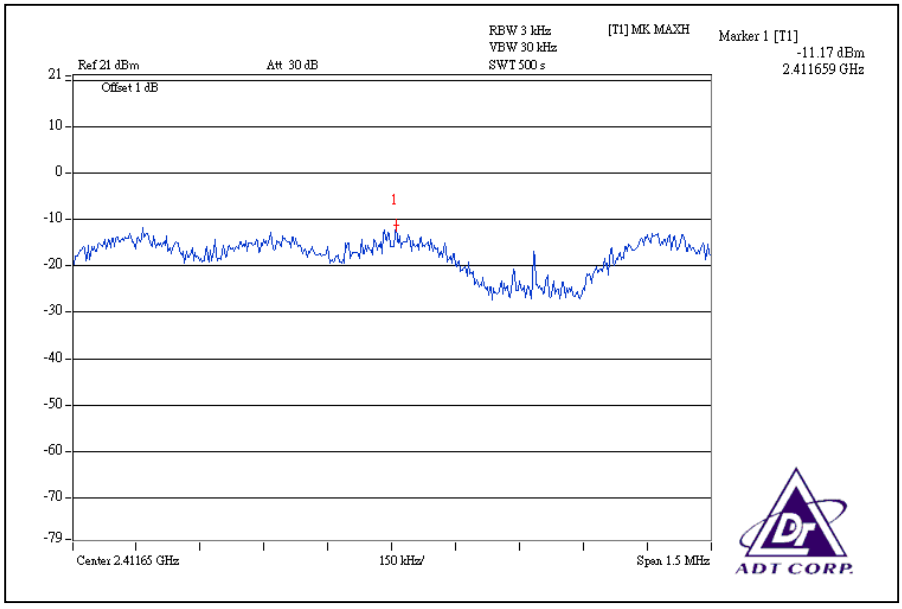

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-5.45 dBm
2.461986 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 2.46198 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

802.11g OFDM MODULATION:

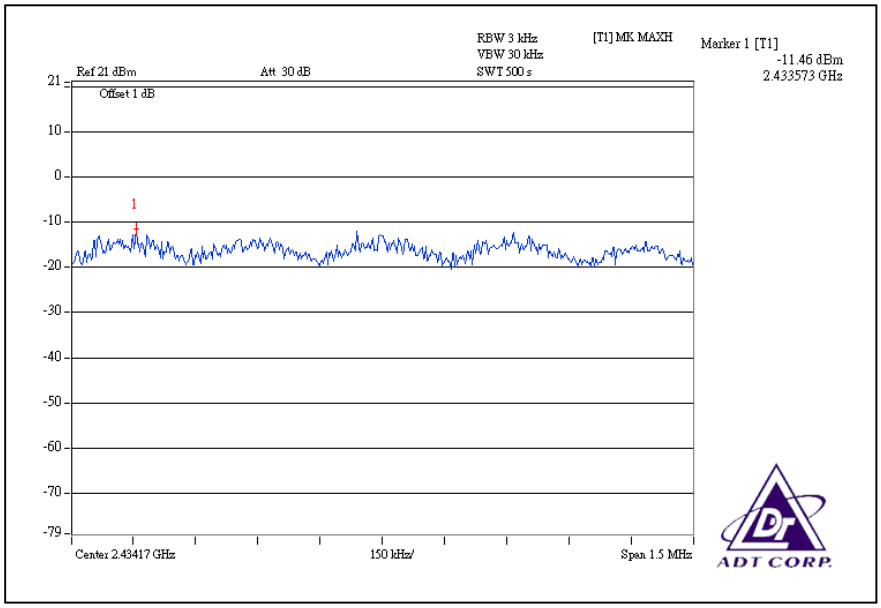
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-11.17	8	PASS
6	2437	-11.46	8	PASS
11	2462	-11.01	8	PASS

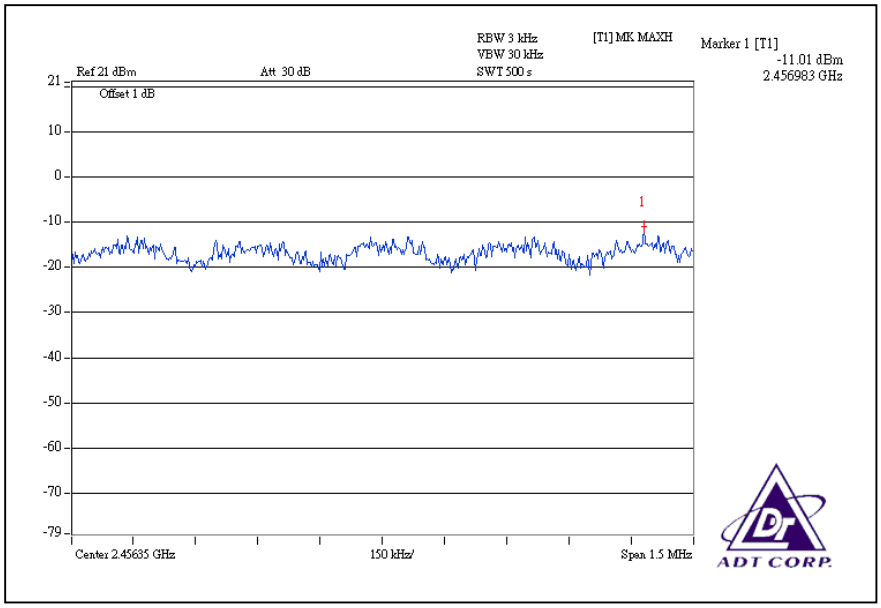
CH1



CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.46 dBm
2.433573 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 2.43417 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH11

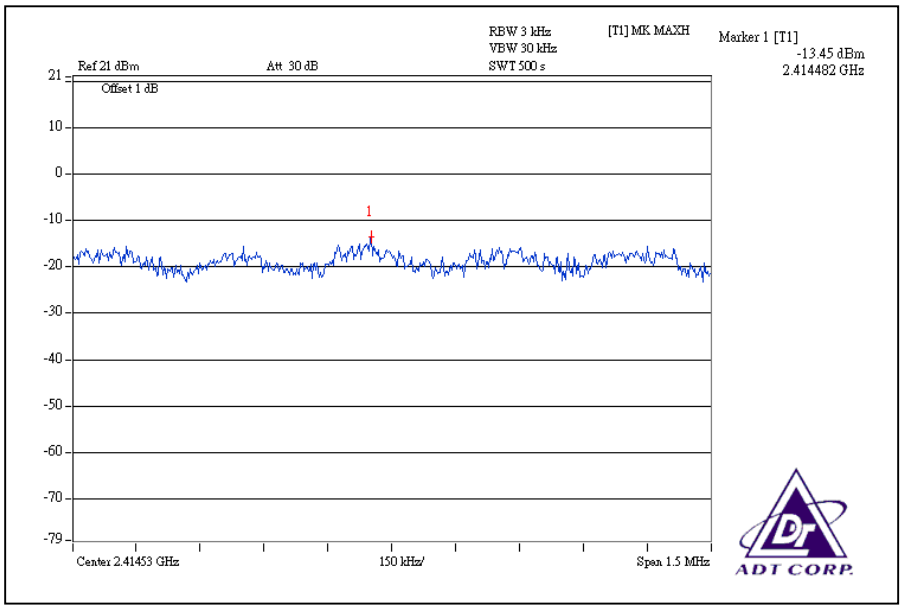

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.01 dBm
2.456983 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 2.45635 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

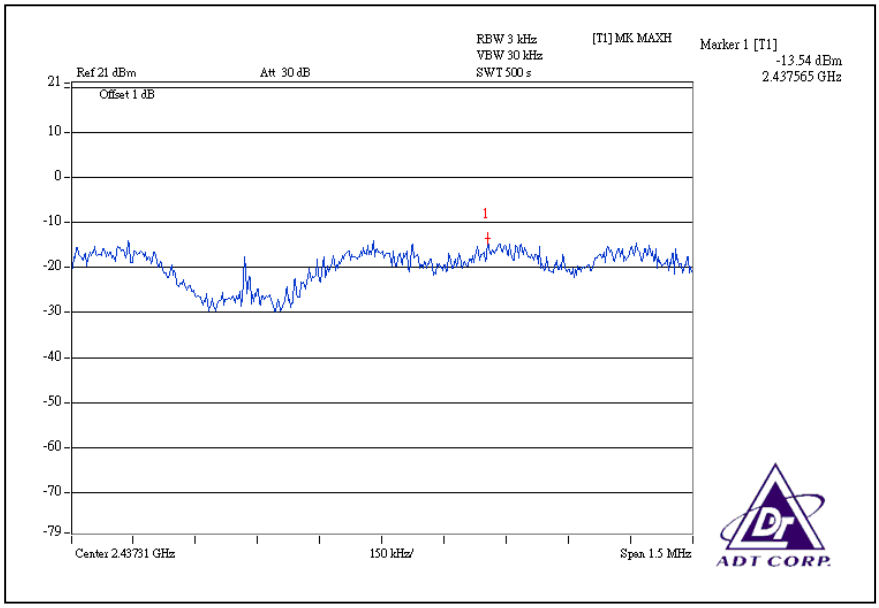
MODULATION TYPE	BPSK	**TRANSFER RATE**	14.444Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25 deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

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	0.045	0.061	0.044	-13.45	-12.17	-13.54	0.150	-8.239	8	PASS
6	2437	0.044	0.127	0.059	-13.54	-8.96	-12.28	0.230	-6.383	8	PASS
11	2462	0.037	0.054	0.023	-14.32	-12.65	-16.32	0.114	-9.431	8	PASS

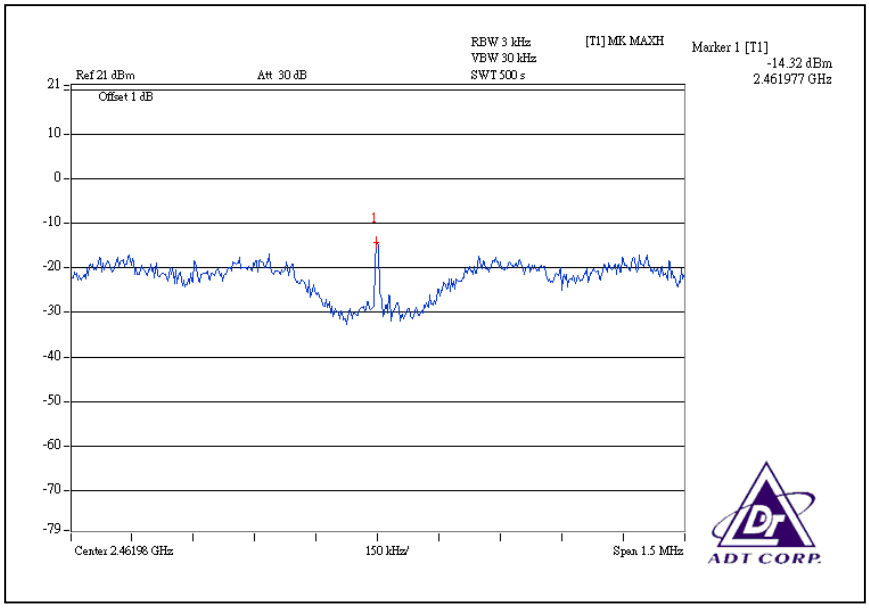
Chain 0
CH1



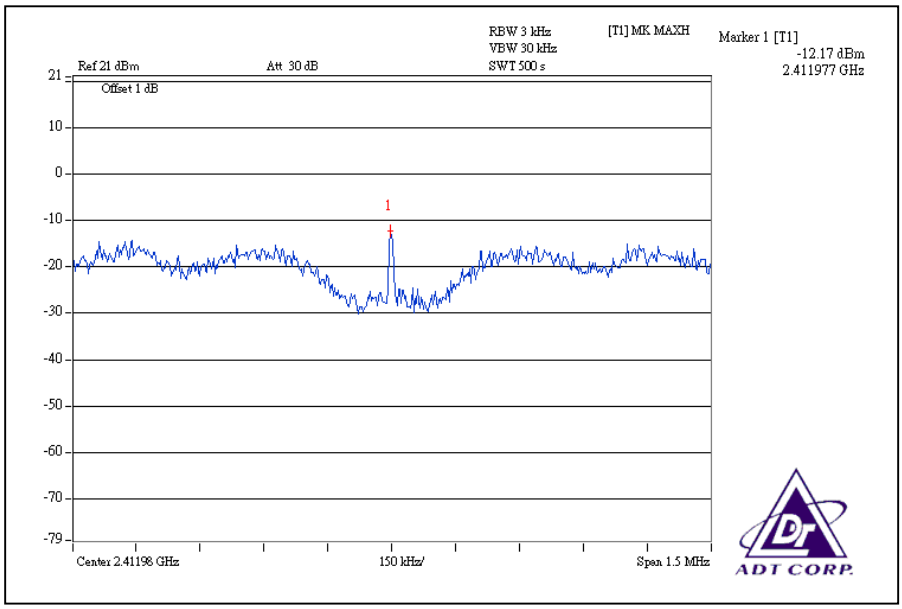
CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-13.54 dBm
2.437565 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 2.43731 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

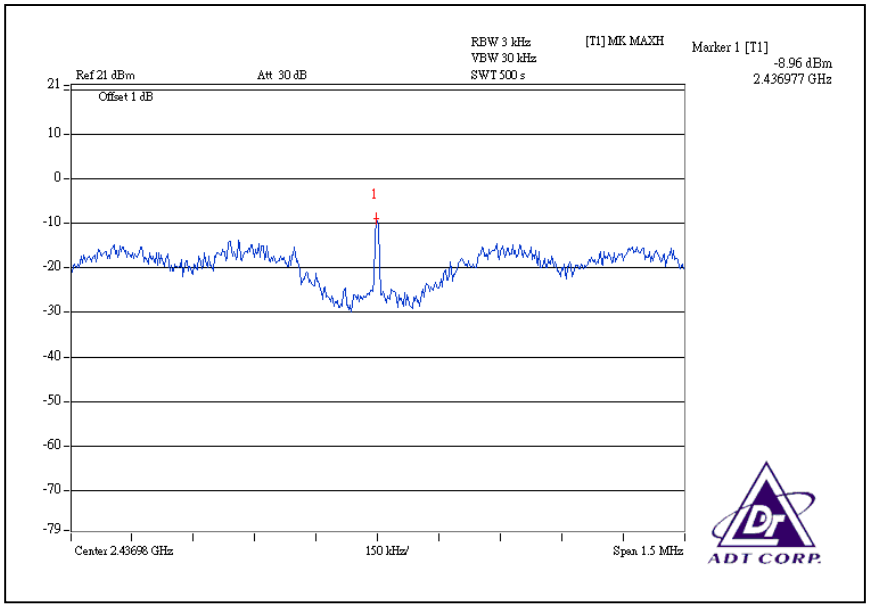
CH11


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.32 dBm
2.461977 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 2.46198 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

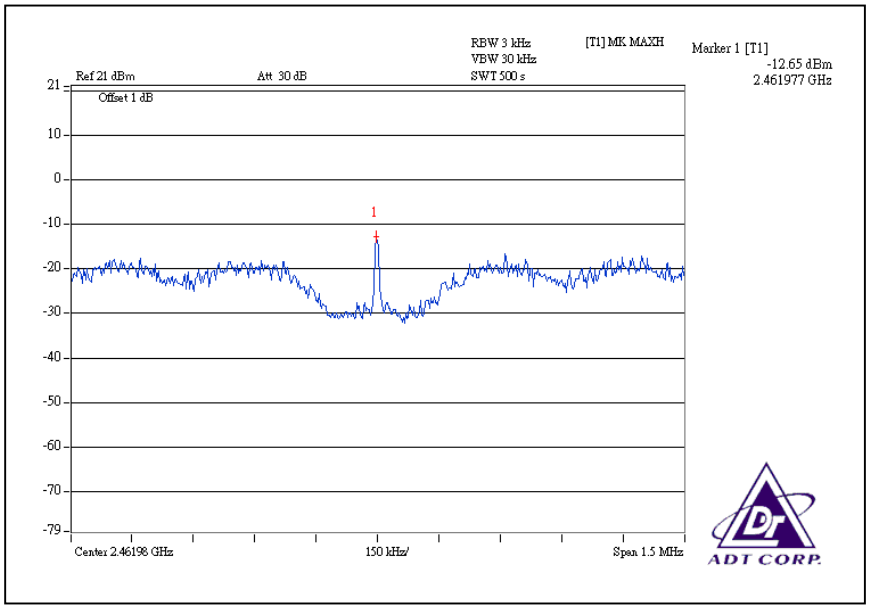
Chain 1
CH1



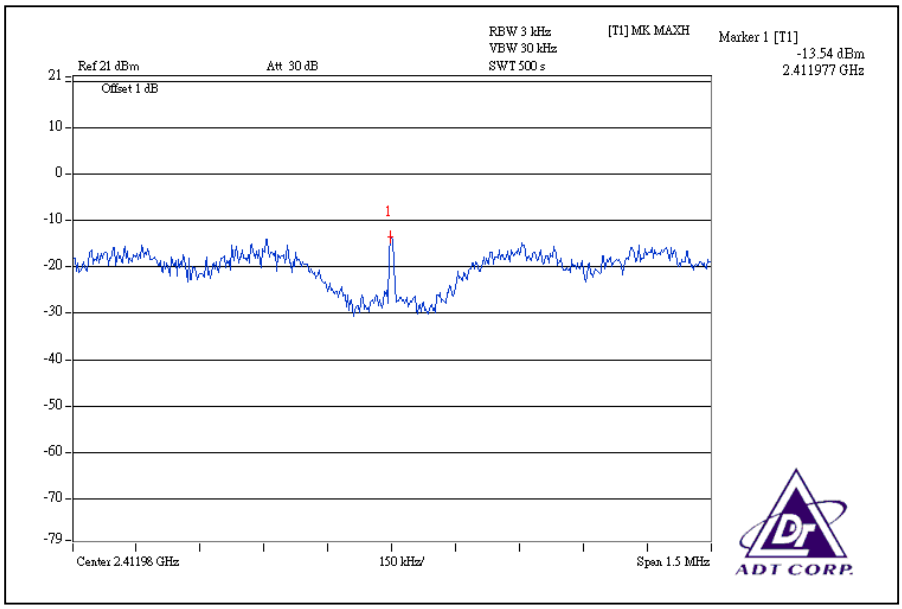
CH6



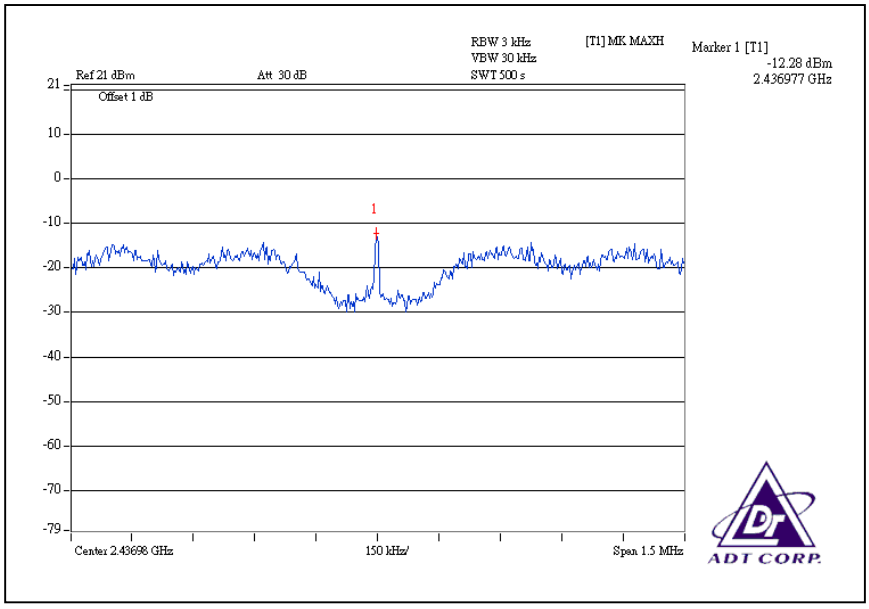
CH11


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-12.65 dBm
2.461977 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
1
Center 2.46198 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

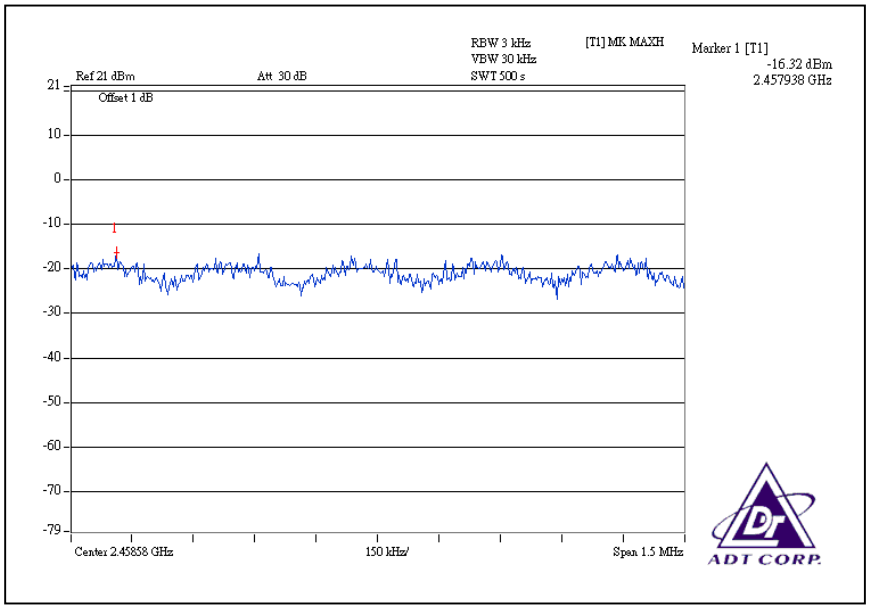
Chain 2
CH1



CH6



CH11

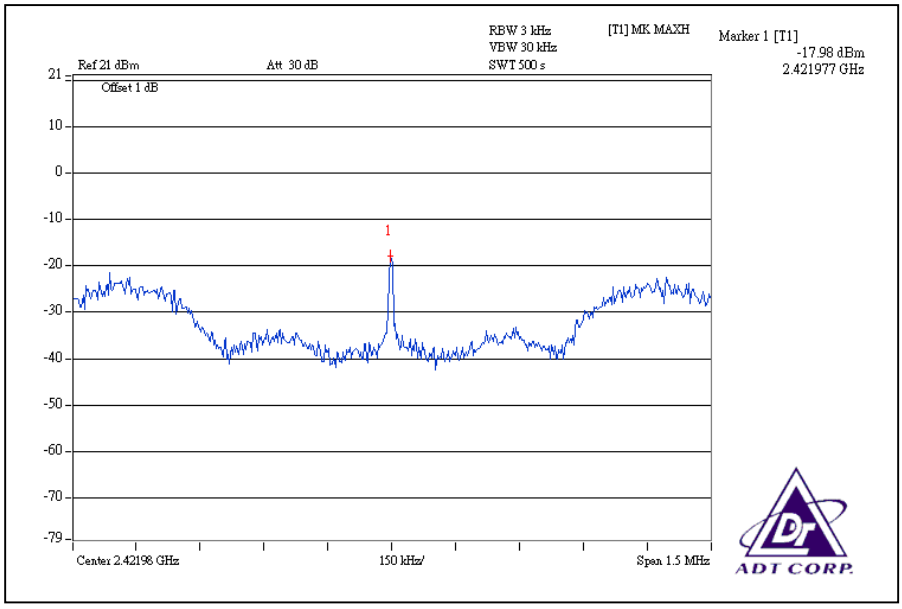

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-16.32 dBm
2.457938 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 2.45858 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

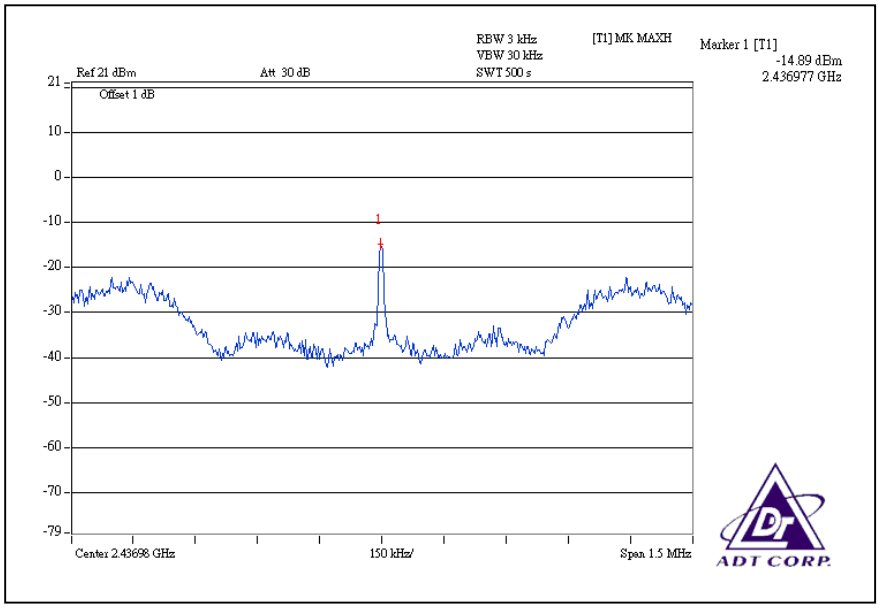
MODULATION TYPE	BPSK	**TRANSFER RATE**	30Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

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	0.016	0.012	0.008	-17.98	-19.39	-21.15	0.036	-14.437	8	PASS
4	2437	0.032	0.008	0.037	-14.89	-20.96	-14.31	0.077	-11.135	8	PASS
7	2452	0.017	0.010	0.034	-17.61	-20.12	-14.63	0.061	-12.147	8	PASS

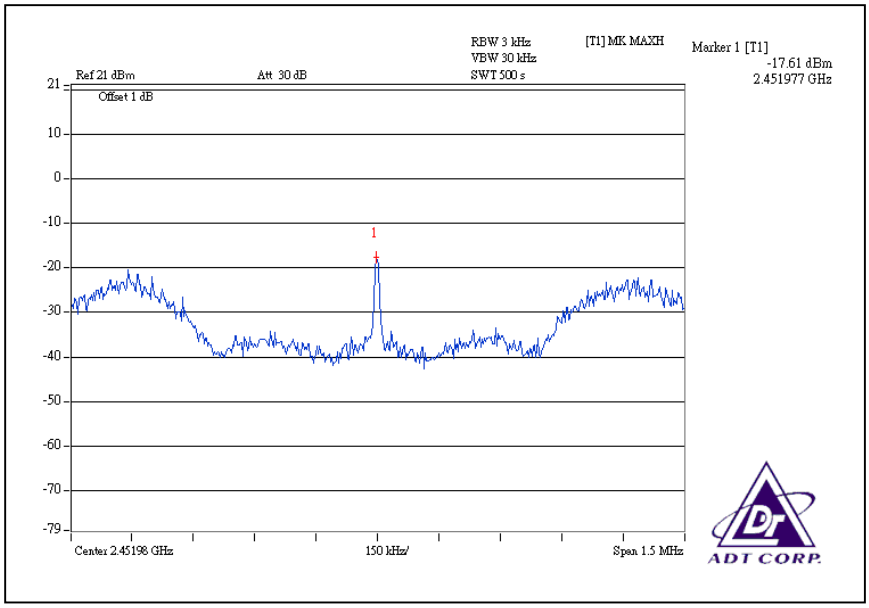
Chain 0
CH1



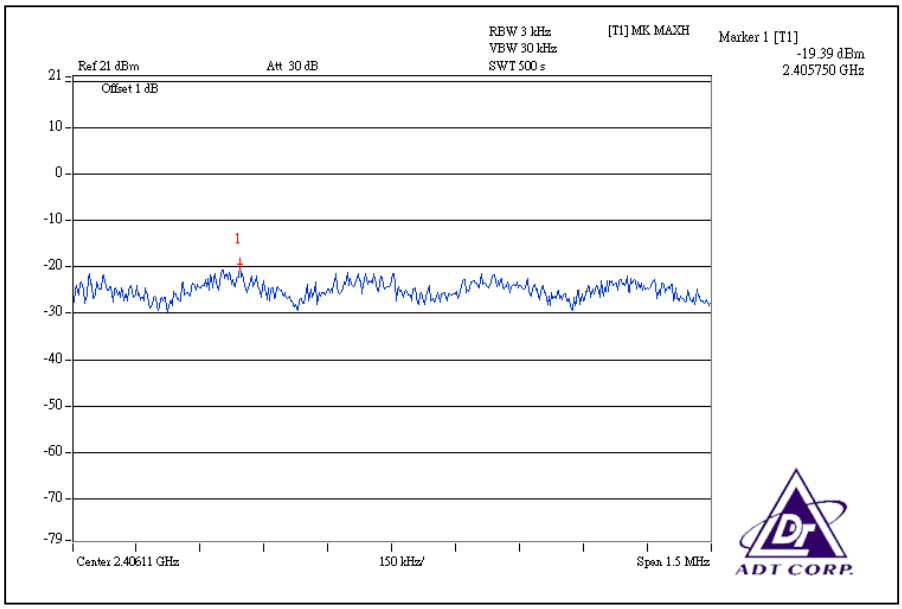
CH4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.89 dBm
2.436977 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 2.43698 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

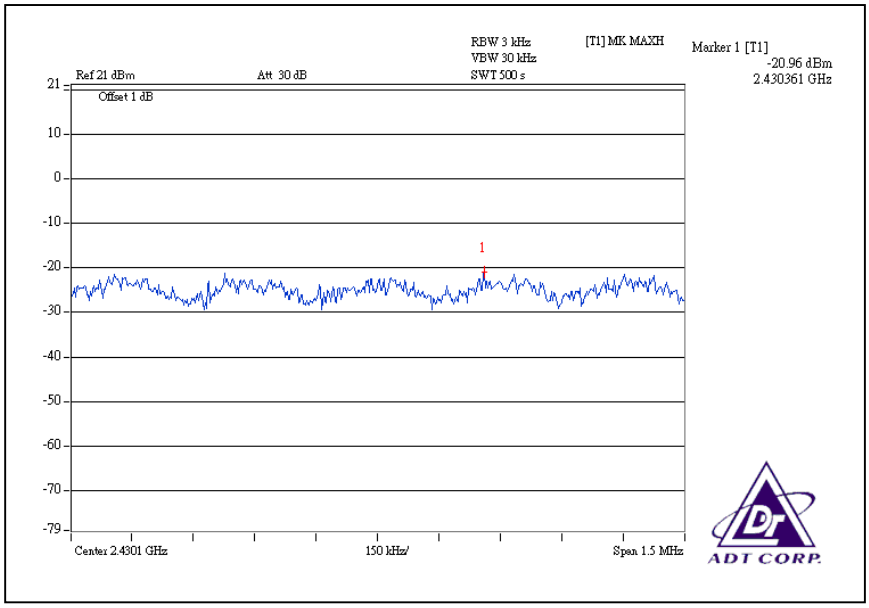
CH7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-17.61 dBm
2.451977 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 2.45198 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

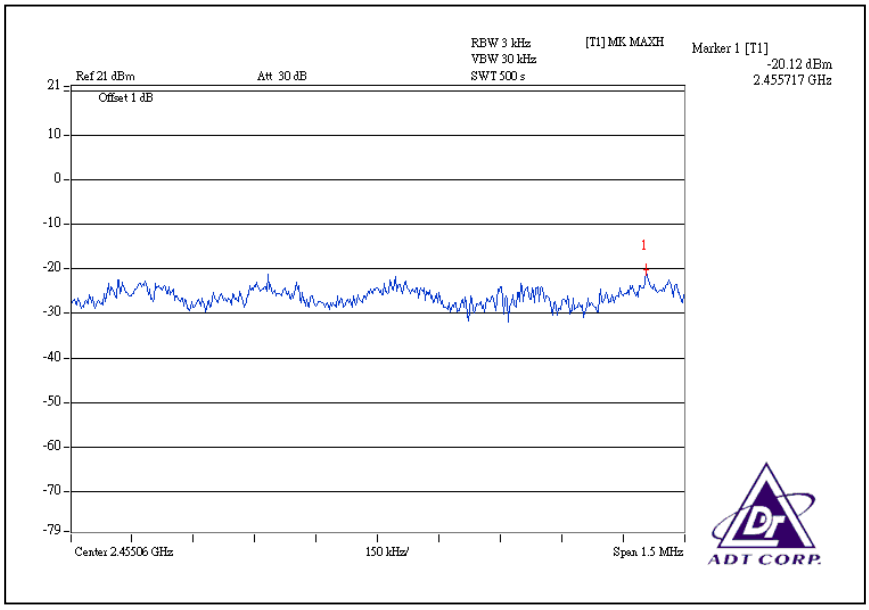
Chain 1
CH1



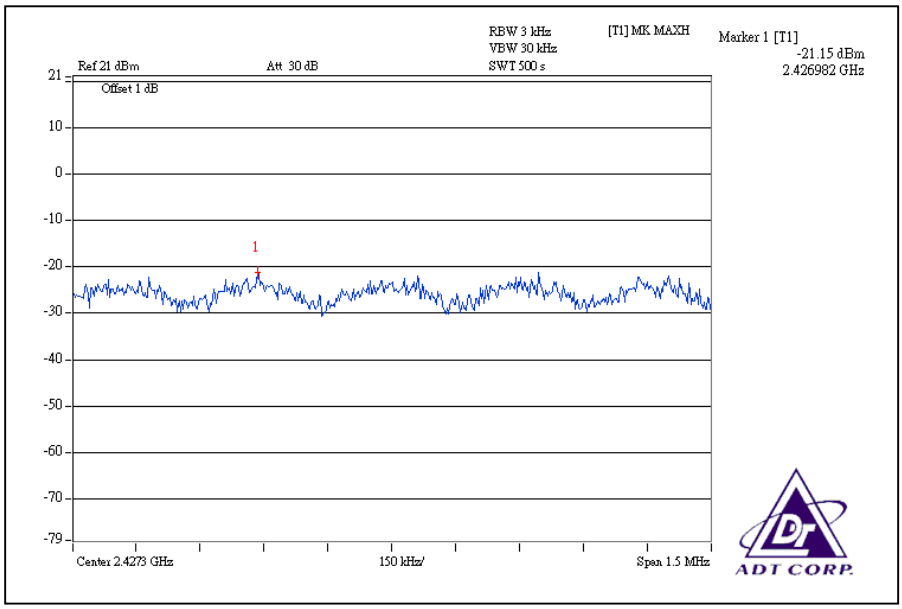
CH4



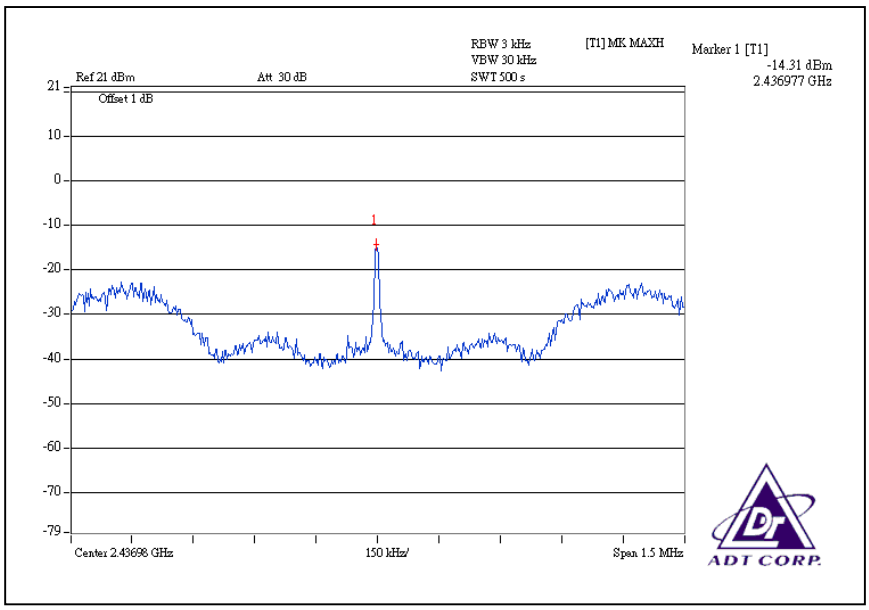
CH7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-20.12 dBm
2.455717 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
1
Center 2.45506 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

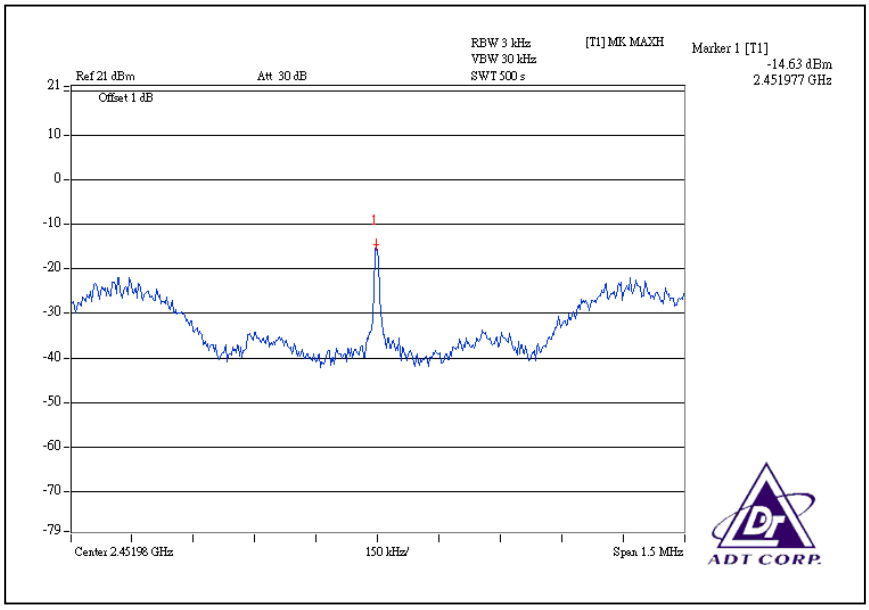
Chain 2
CH1



CH4



CH7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.63 dBm
2.451977 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 2.45198 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

4.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION 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 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.

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose 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

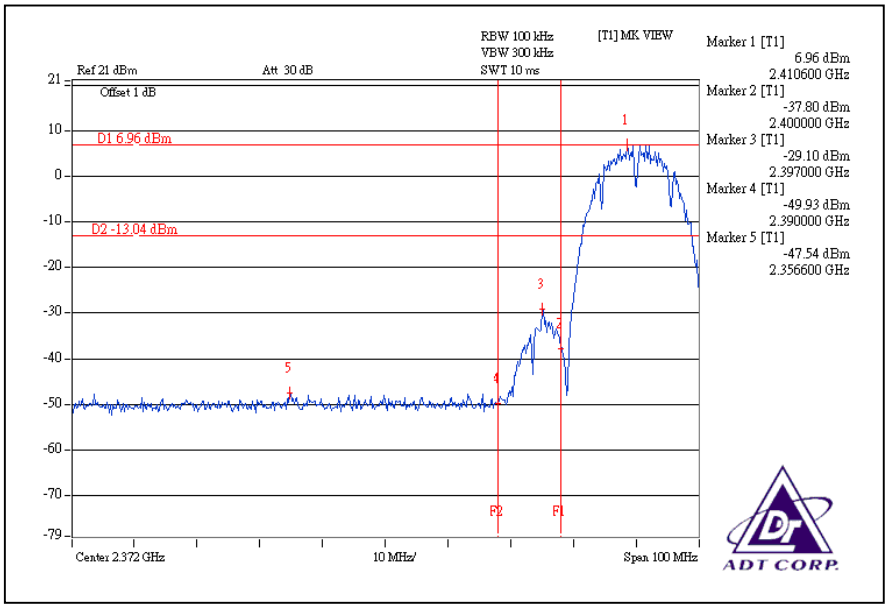
Same as Item 4.3.6

4.6.6 TEST RESULTS

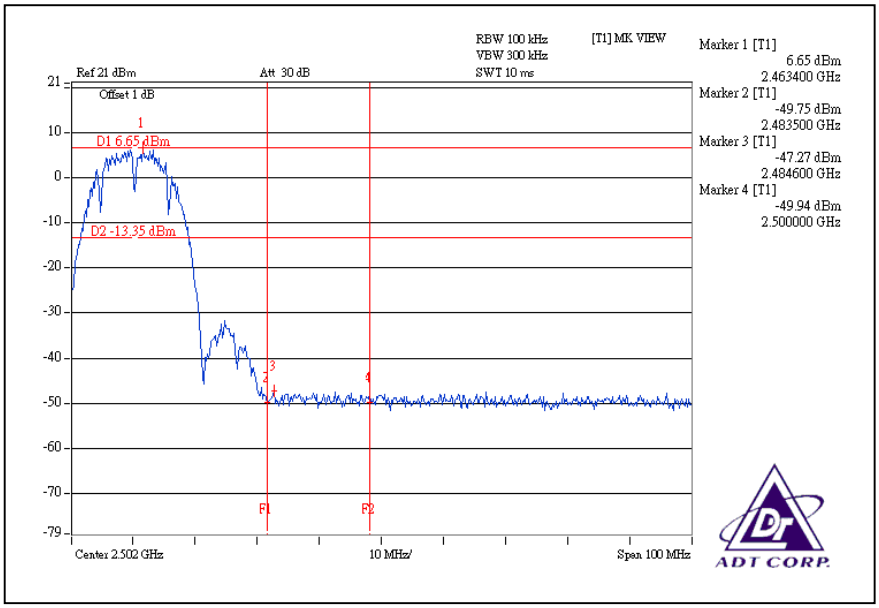
The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b DSSS MODULATION:

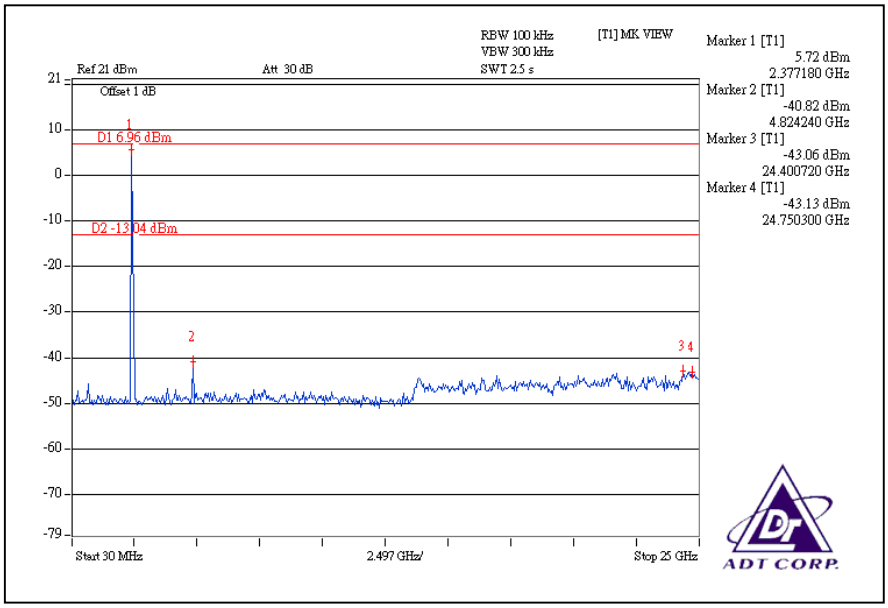
CH1



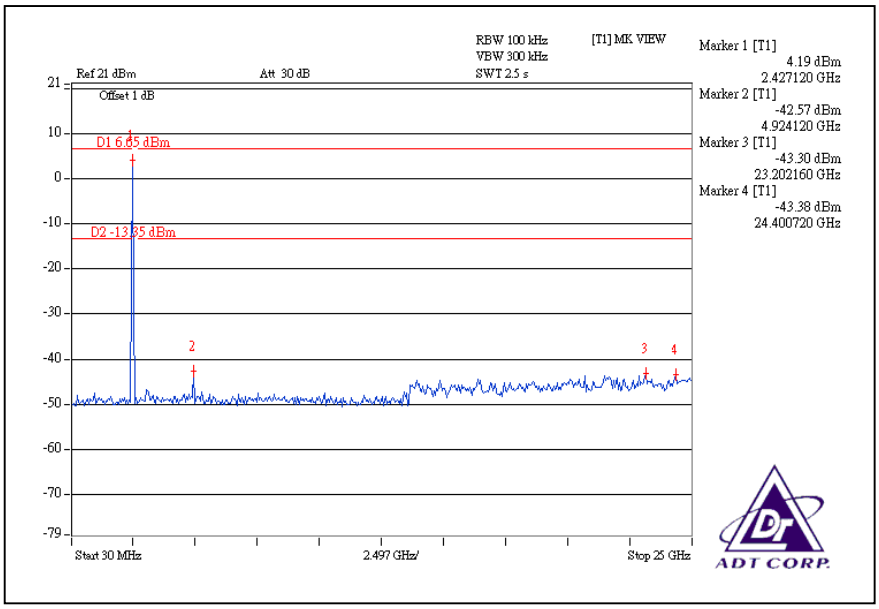
CH11



CH1

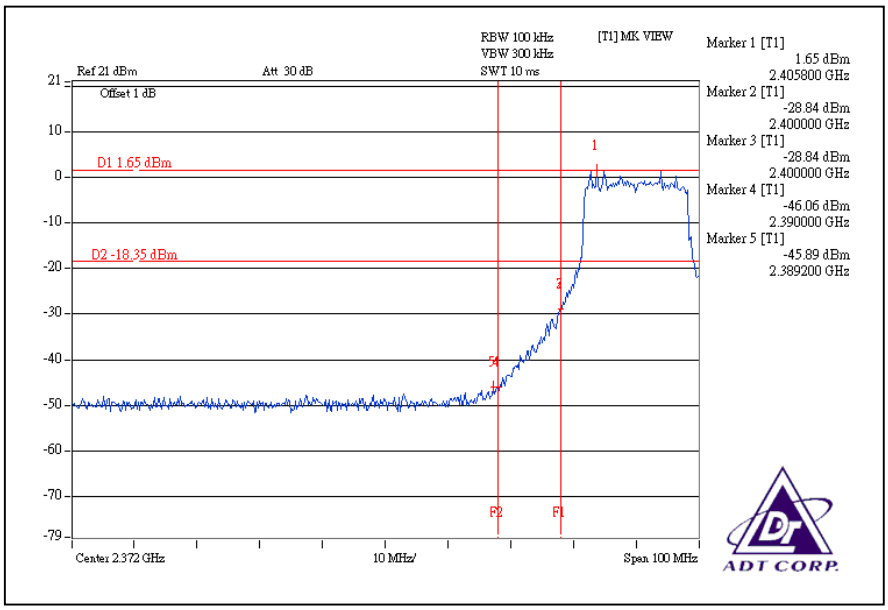

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 6.96 dBm
D2 -13.04 dBm
Marker 1 [T1]
5.72 dBm
2.377180 GHz
Marker 2 [T1]
-40.82 dBm
4.824240 GHz
Marker 3 [T1]
-43.06 dBm
24.400720 GHz
Marker 4 [T1]
-43.13 dBm
24.750300 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

CH11

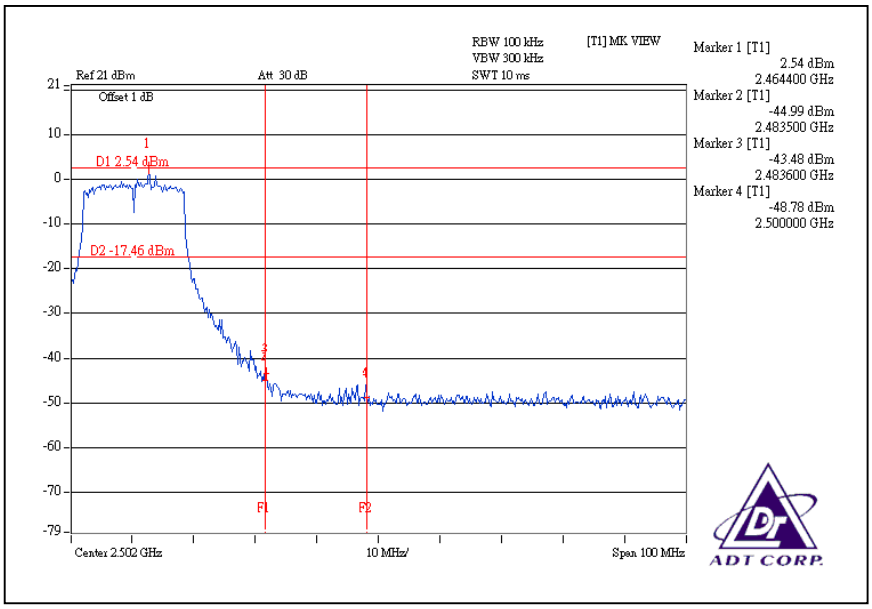

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 6.65 dBm
D2 -13.35 dBm
Marker 1 [T1]
4.19 dBm
2.427120 GHz
Marker 2 [T1]
-42.57 dBm
4.924120 GHz
Marker 3 [T1]
-43.30 dBm
23.202160 GHz
Marker 4 [T1]
-43.38 dBm
24.400720 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

802.11g OFDM MODULATION:

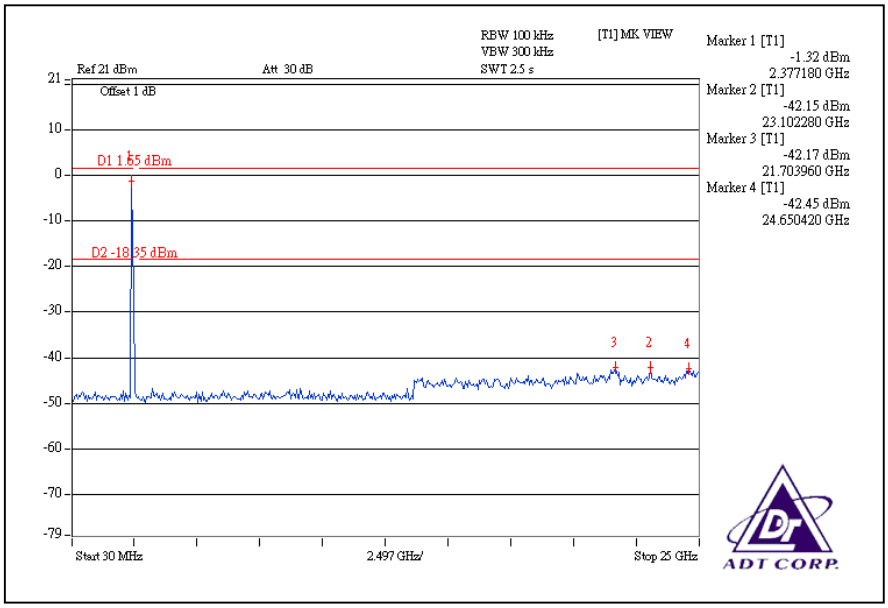
CH1



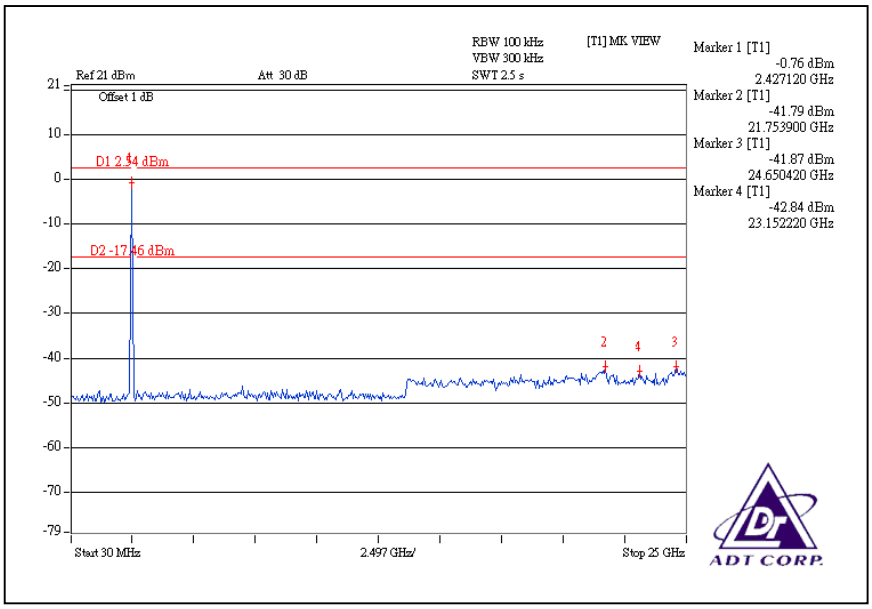
CH11



CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 1.65 dBm
D2 -18.35 dBm
Marker 1 [T1]
-1.32 dBm
2.377180 GHz
Marker 2 [T1]
-42.15 dBm
23.102280 GHz
Marker 3 [T1]
-42.17 dBm
21.703960 GHz
Marker 4 [T1]
-42.45 dBm
24.650420 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

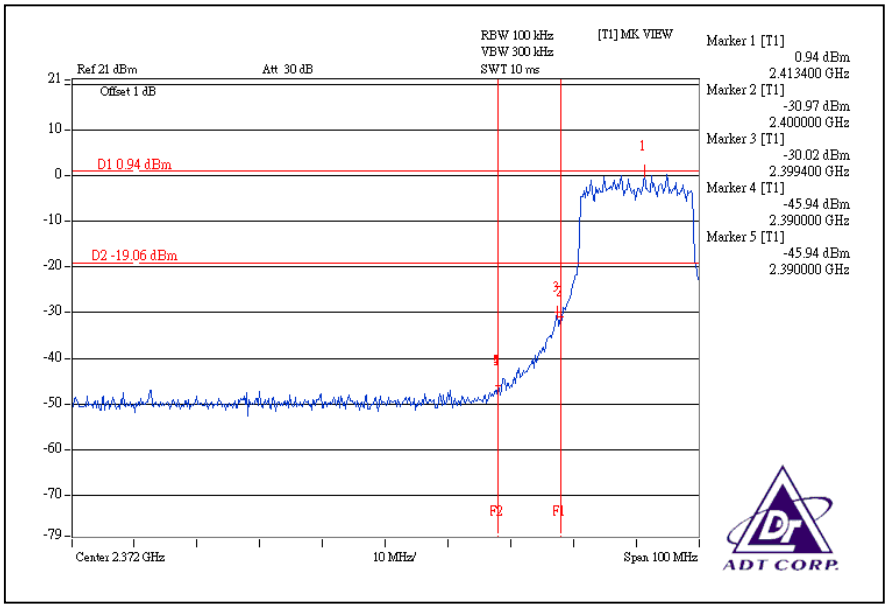
CH11


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 2.34 dBm
D2 -17.66 dBm
Marker 1 [T1]
-0.76 dBm
2.427120 GHz
Marker 2 [T1]
-41.79 dBm
21.753900 GHz
Marker 3 [T1]
-41.87 dBm
24.650420 GHz
Marker 4 [T1]
-42.84 dBm
23.152220 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

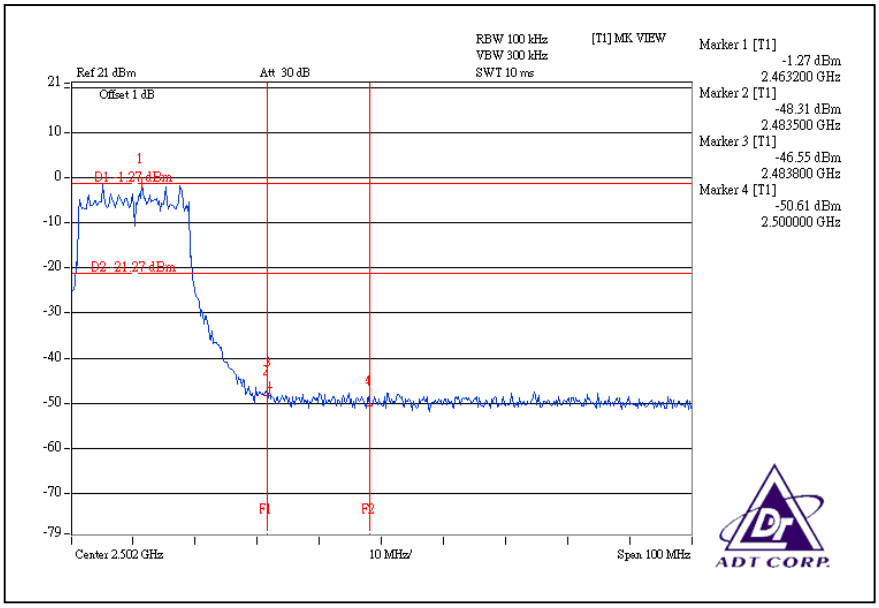
DRAFT 802.11n (20MHz) OFDM MODULATION:

Chain 0

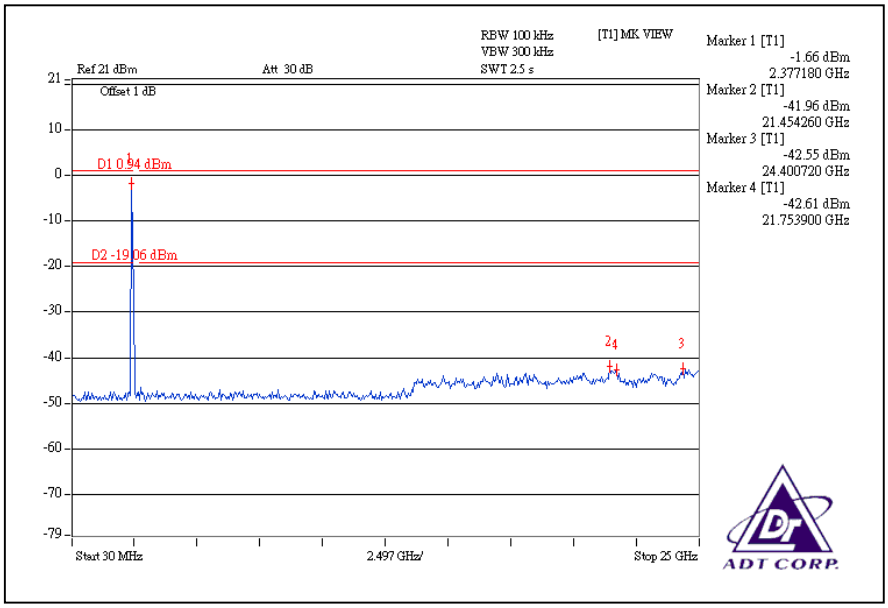
CH1



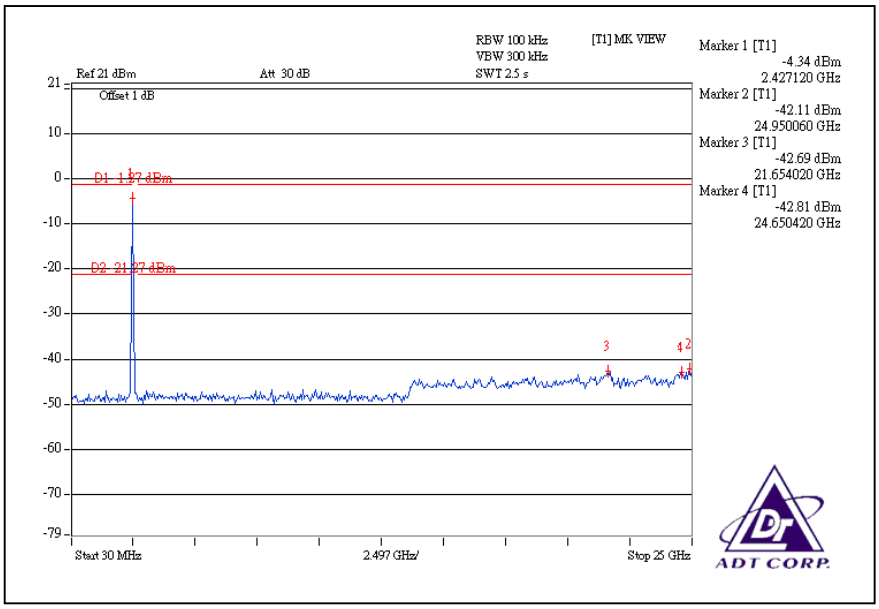
CH11



CH1

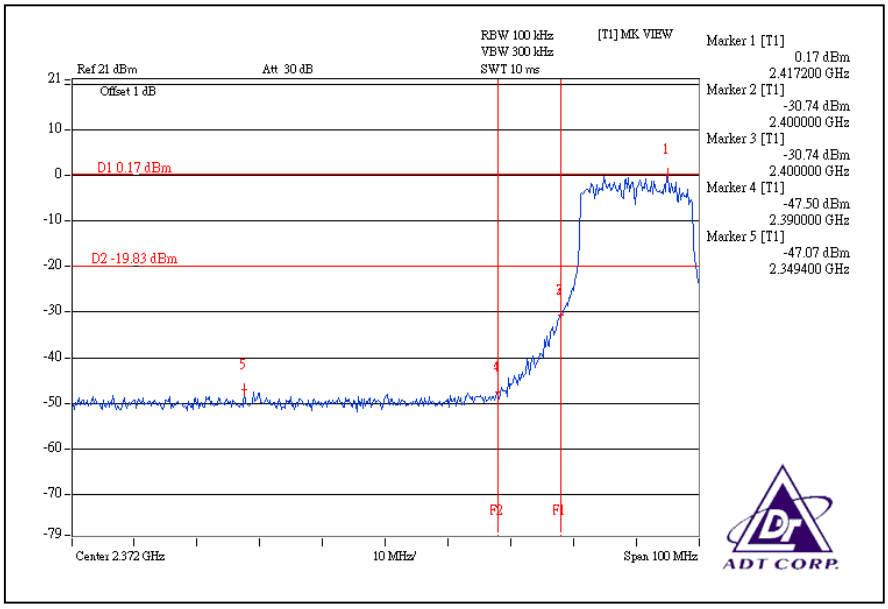

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 0.94 dBm
D2 -19.06 dBm
Marker 1 [T1]
-1.66 dBm
2.377180 GHz
Marker 2 [T1]
-41.96 dBm
21.454260 GHz
Marker 3 [T1]
-42.55 dBm
24.400720 GHz
Marker 4 [T1]
-42.61 dBm
21.753900 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

CH11

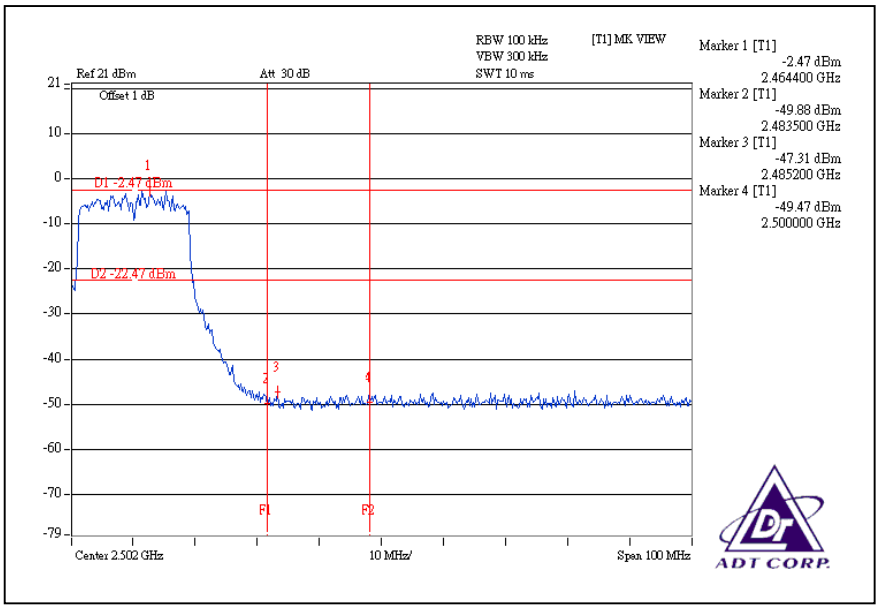

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 1.27 dBm
D2 -21.27 dBm
Marker 1 [T1]
-4.34 dBm
2.427120 GHz
Marker 2 [T1]
-42.11 dBm
24.950060 GHz
Marker 3 [T1]
-42.69 dBm
21.654020 GHz
Marker 4 [T1]
-42.81 dBm
24.650420 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

Chain 1

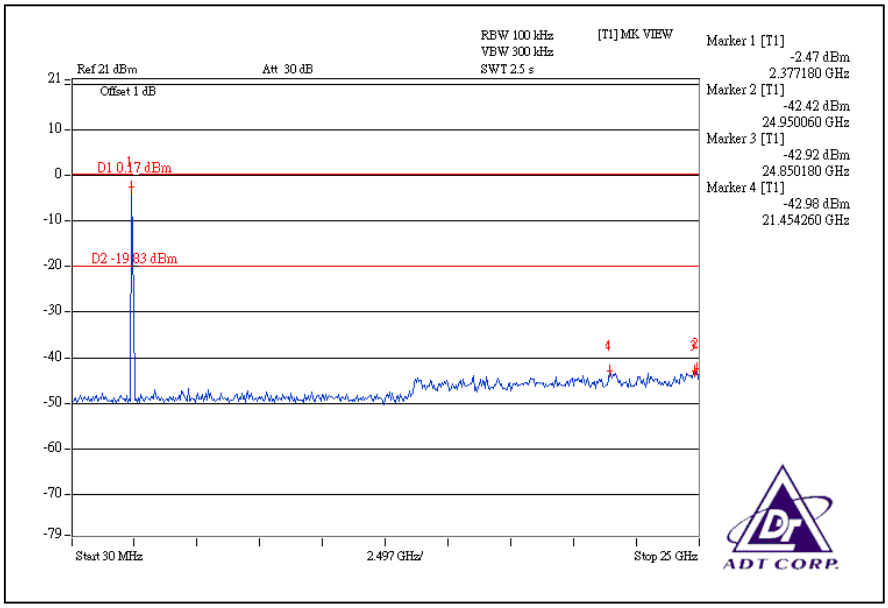
CH1



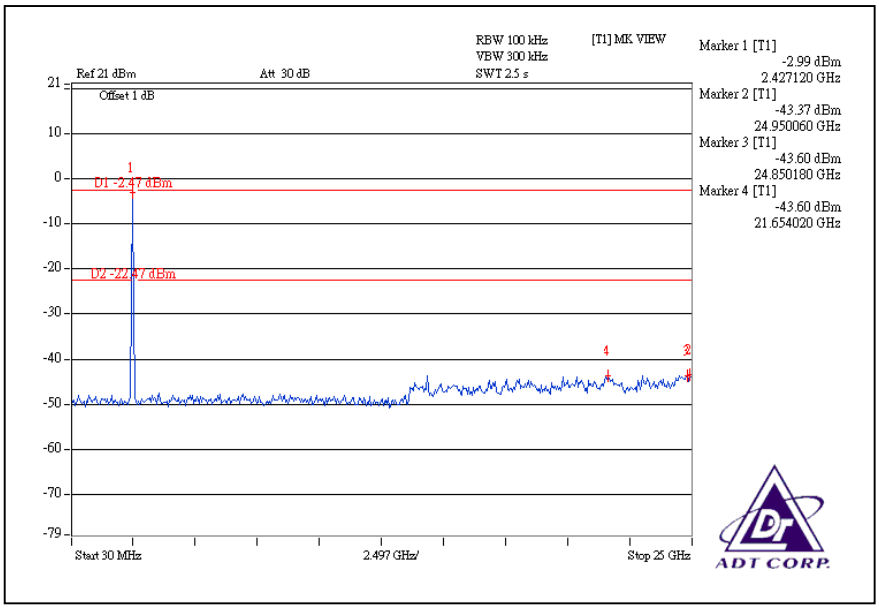
CH11



CH1

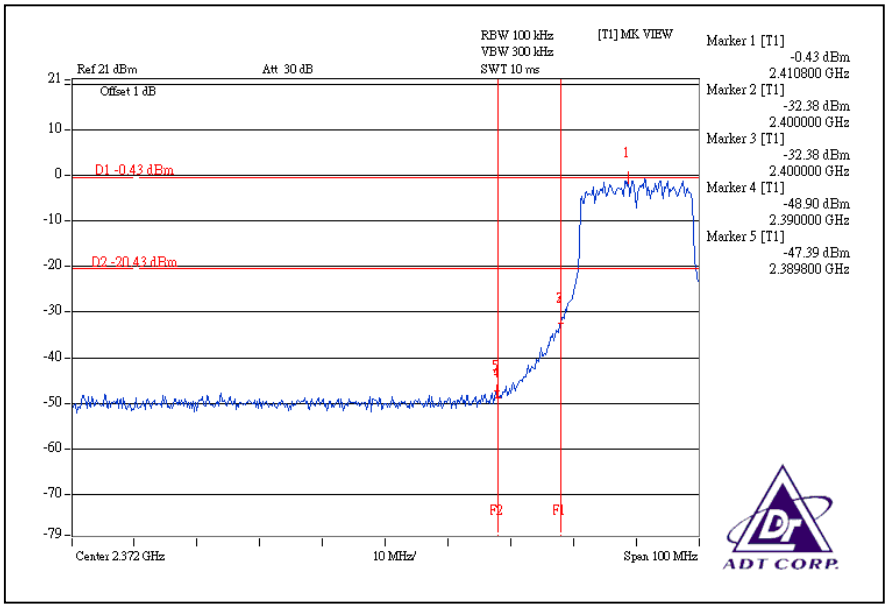

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 0.17 dBm
D2 -19.83 dBm
Marker 1 [T1]
-2.47 dBm
2.377180 GHz
Marker 2 [T1]
-42.42 dBm
24.950060 GHz
Marker 3 [T1]
-42.92 dBm
24.850180 GHz
Marker 4 [T1]
-42.98 dBm
21.454260 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

CH11

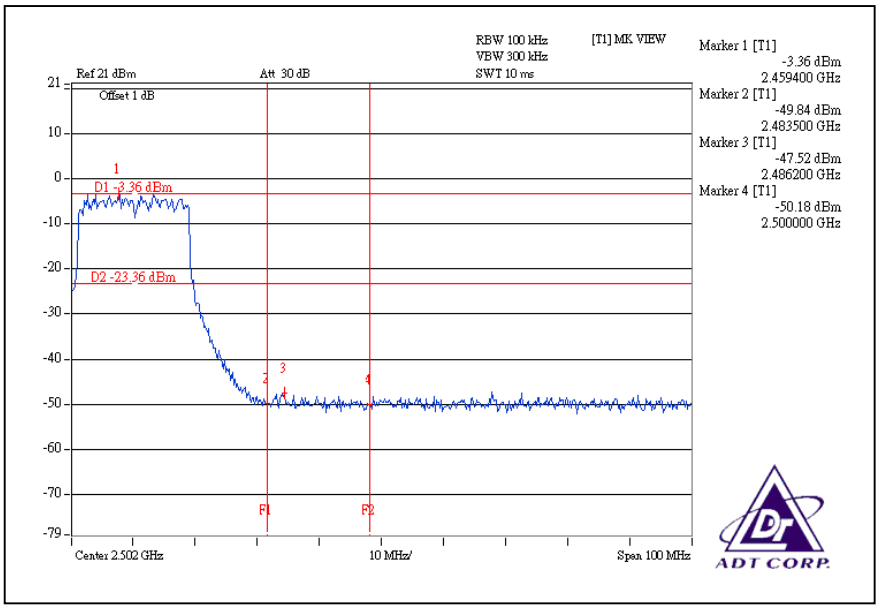

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -2.47 dBm
D2 -22.47 dBm
Marker 1 [T1]
-2.99 dBm
2.427120 GHz
Marker 2 [T1]
-43.37 dBm
24.950060 GHz
Marker 3 [T1]
-43.60 dBm
24.850180 GHz
Marker 4 [T1]
-43.60 dBm
21.654020 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

Chain 2

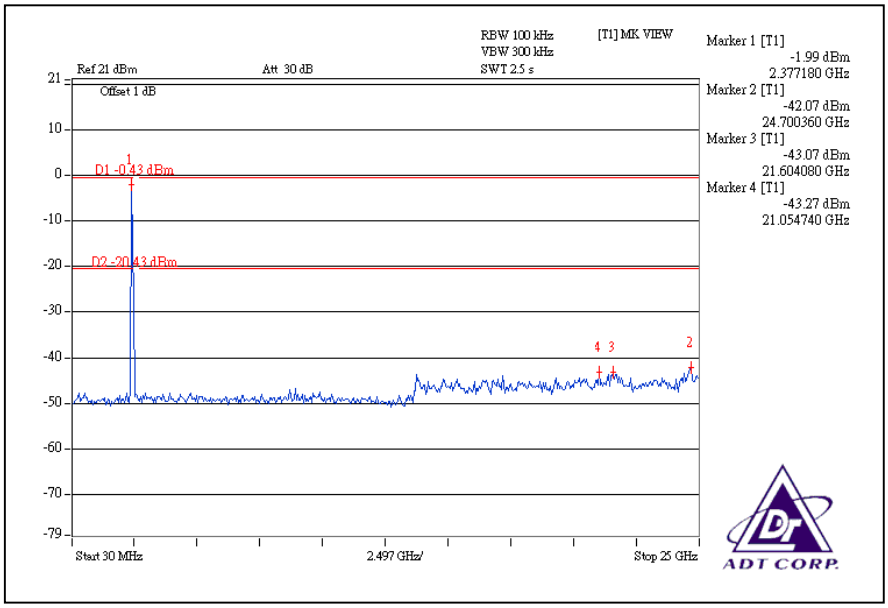
CH1



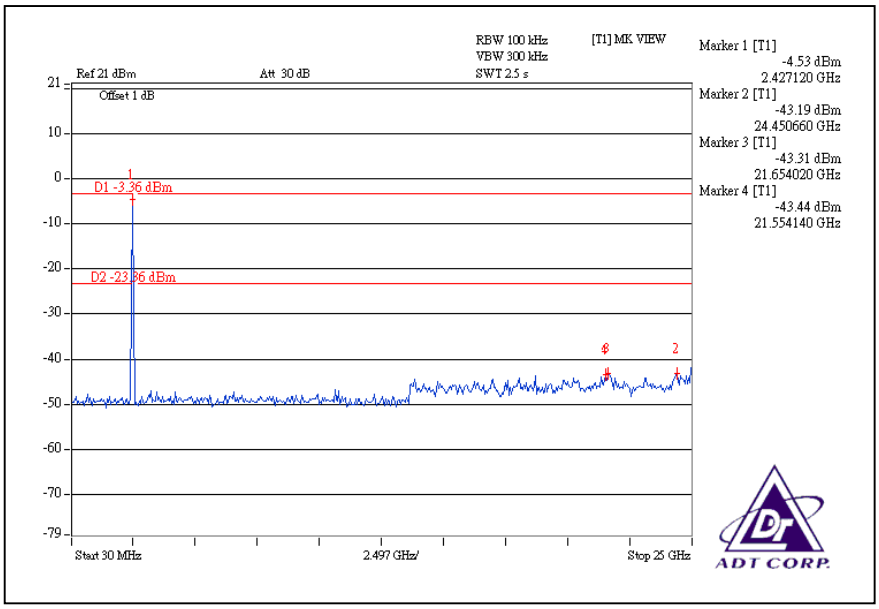
CH11



CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -0.43 dBm
D2 -20.43 dBm
Marker 1 [T1]
-1.99 dBm
2.377180 GHz
Marker 2 [T1]
-42.07 dBm
24.700360 GHz
Marker 3 [T1]
-43.07 dBm
21.604080 GHz
Marker 4 [T1]
-43.27 dBm
21.054740 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

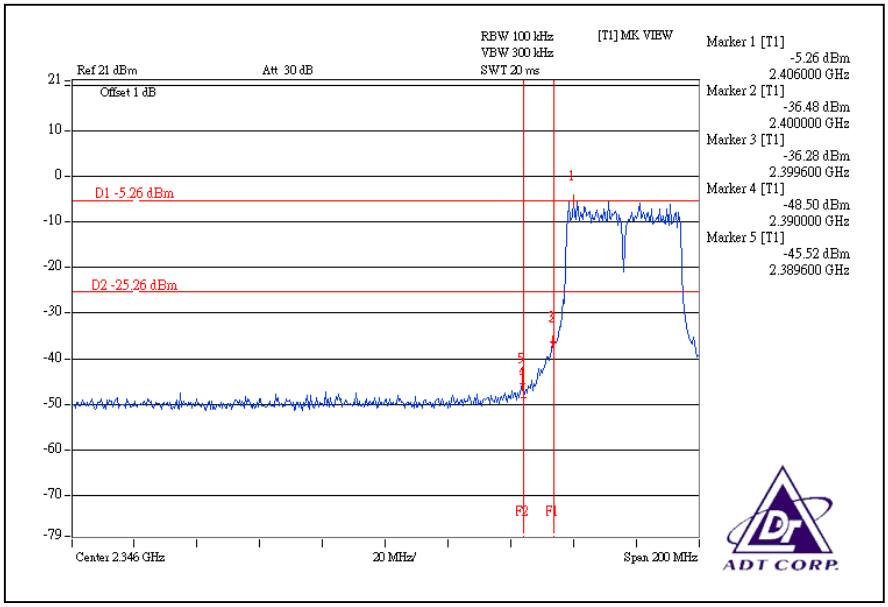
CH11


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -3.36 dBm
D2 -23.36 dBm
Marker 1 [T1]
-4.53 dBm
2.427120 GHz
Marker 2 [T1]
-43.19 dBm
24.450660 GHz
Marker 3 [T1]
-43.31 dBm
21.654020 GHz
Marker 4 [T1]
-43.44 dBm
21.554140 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

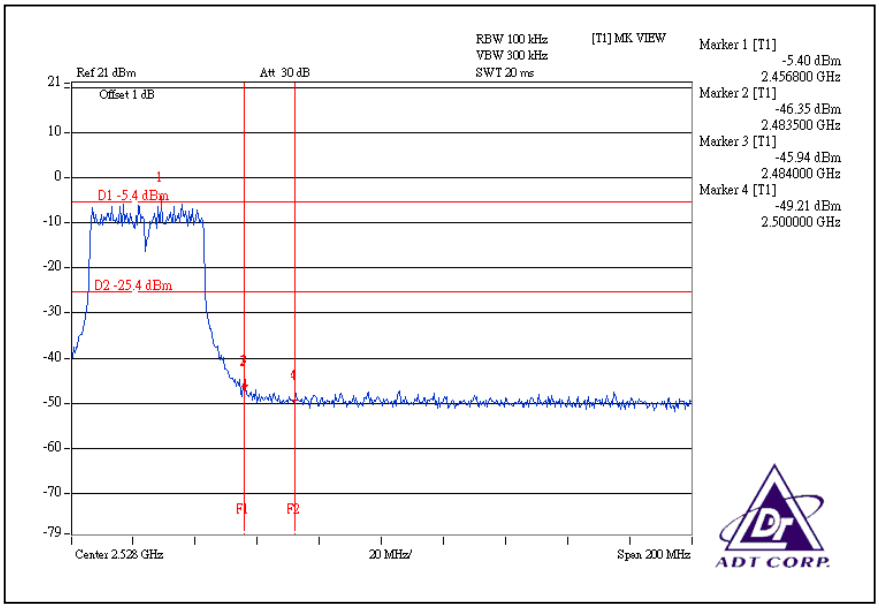
DRAFT 802.11n (40MHz) OFDM MODULATION:

Chain 0

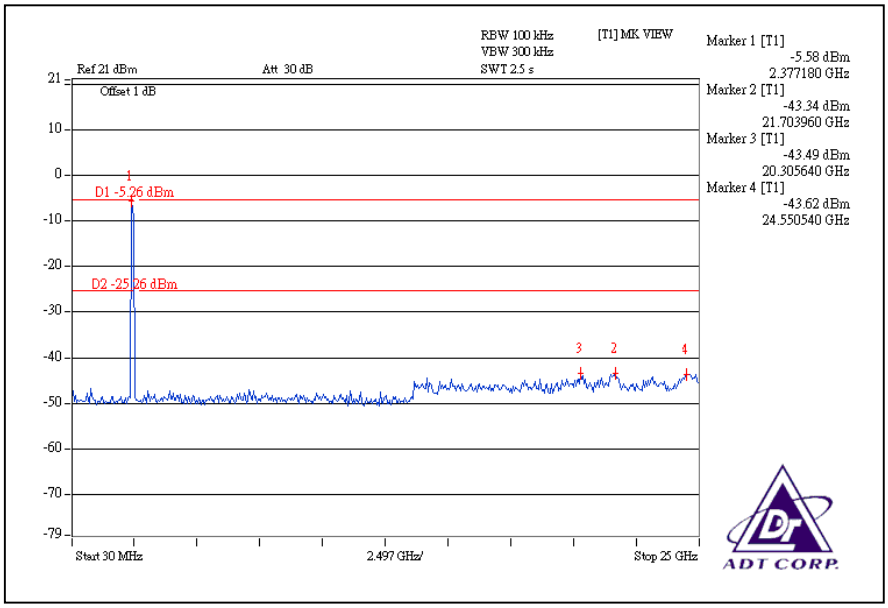
CH1



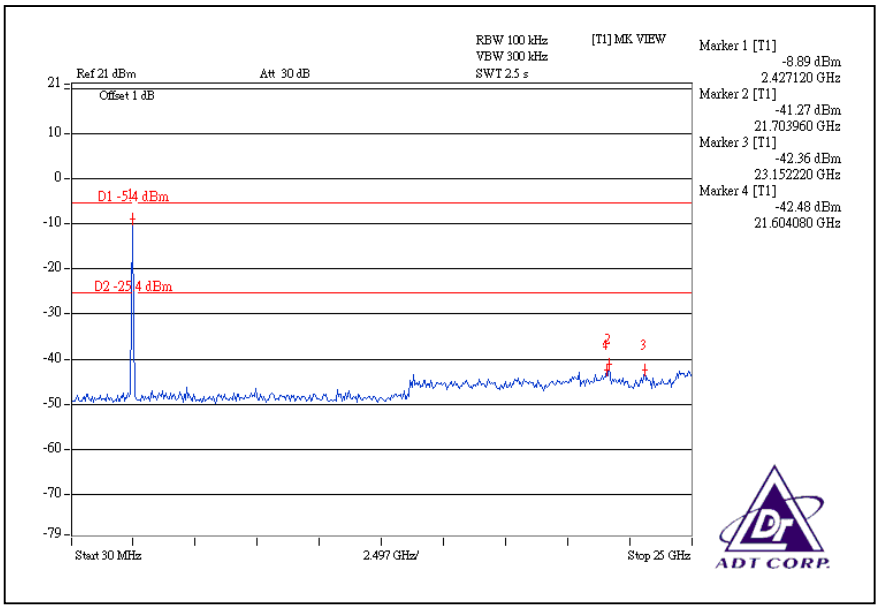
CH7



CH1

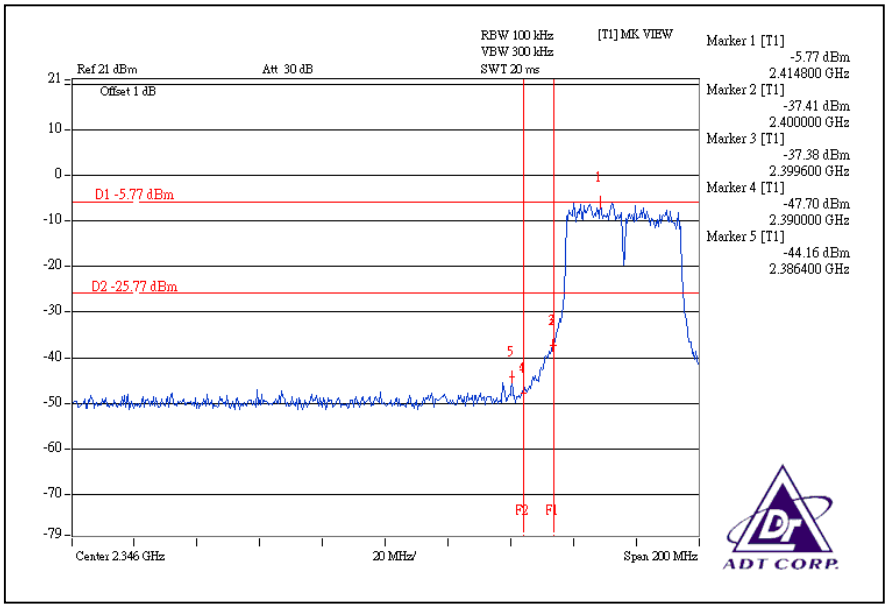

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -5.26 dBm
D2 -25.26 dBm
Marker 1 [T1]
-5.58 dBm
2.377180 GHz
Marker 2 [T1]
-43.34 dBm
21.703960 GHz
Marker 3 [T1]
-43.49 dBm
20.305640 GHz
Marker 4 [T1]
-43.62 dBm
24.550540 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

CH7

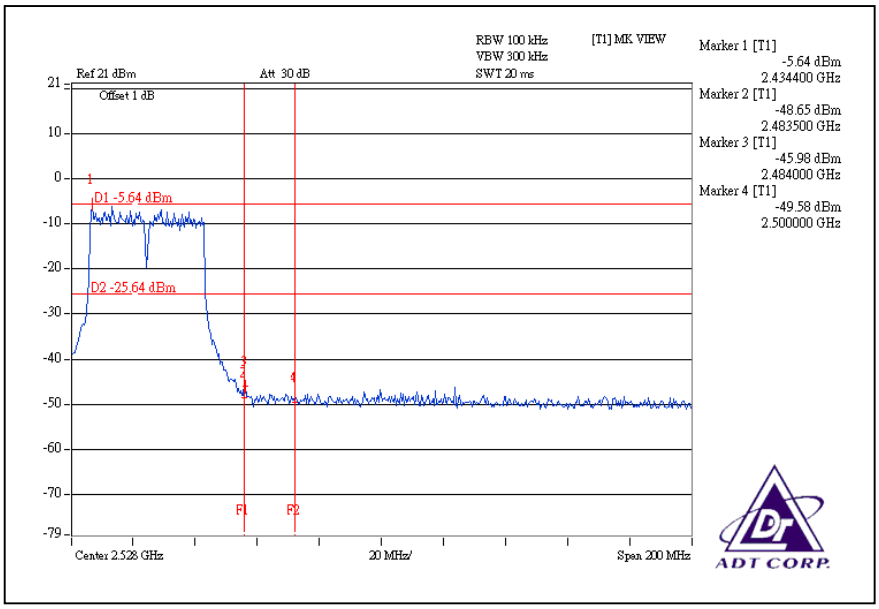

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -5.14 dBm
D2 -25.14 dBm
Marker 1 [T1]
-8.89 dBm
2.427120 GHz
Marker 2 [T1]
-41.27 dBm
21.703960 GHz
Marker 3 [T1]
-42.36 dBm
23.152220 GHz
Marker 4 [T1]
-42.48 dBm
21.604080 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

Chain 1

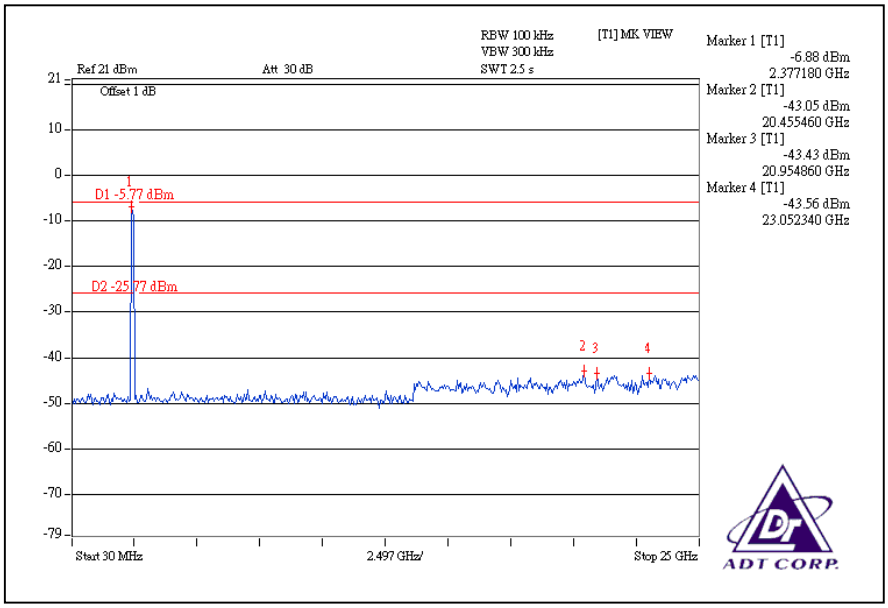
CH1



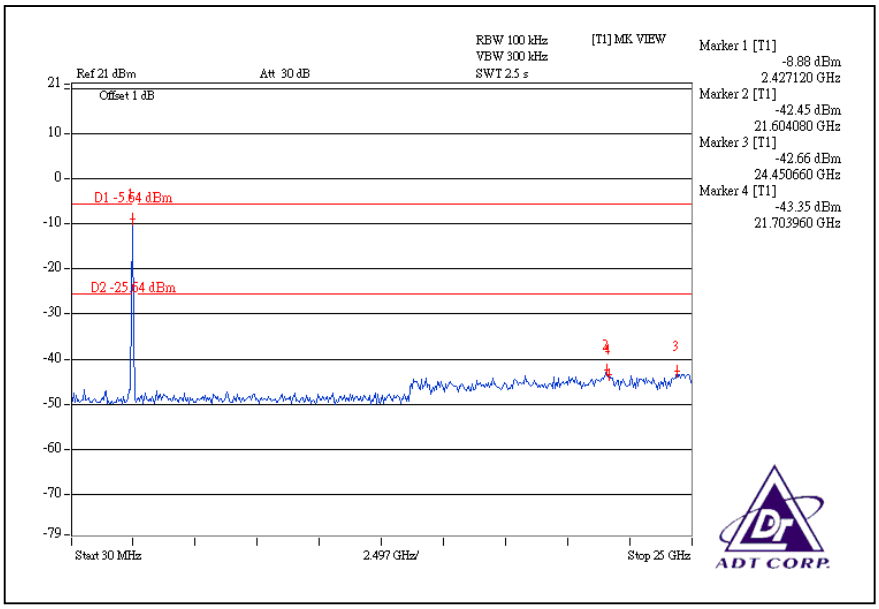
CH7



CH1

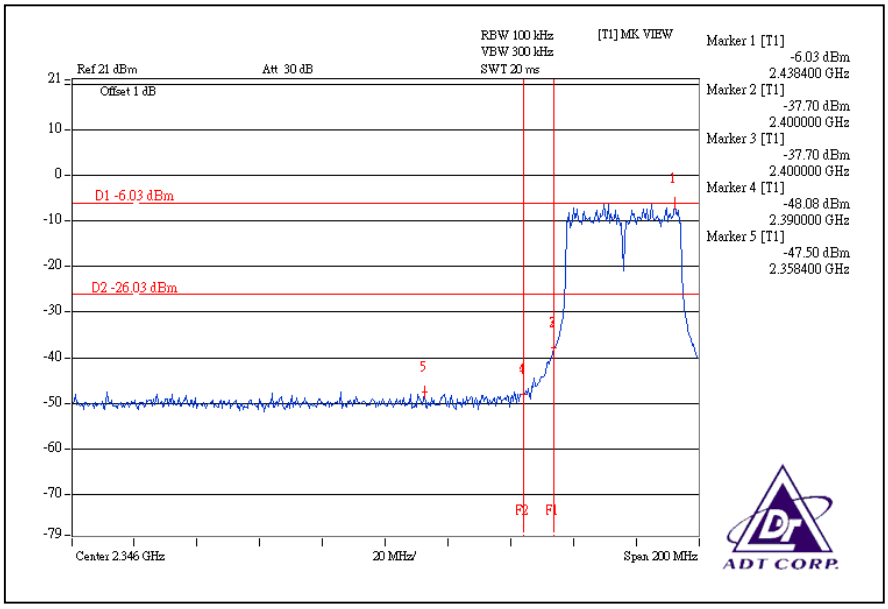

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -5.77 dBm
D2 -25.77 dBm
Marker 1 [T1]
-6.88 dBm
2.377180 GHz
Marker 2 [T1]
-43.05 dBm
20.455460 GHz
Marker 3 [T1]
-43.43 dBm
20.954860 GHz
Marker 4 [T1]
-43.56 dBm
23.052340 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

CH7

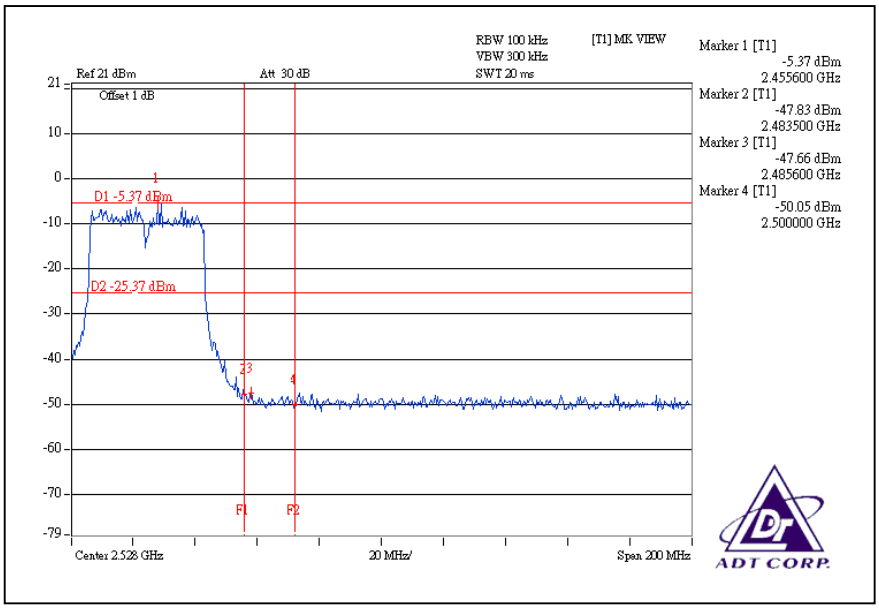

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -5.64 dBm
D2 -25.64 dBm
Marker 1 [T1]
-8.88 dBm
2.427120 GHz
Marker 2 [T1]
-42.45 dBm
21.604080 GHz
Marker 3 [T1]
-42.66 dBm
24.450660 GHz
Marker 4 [T1]
-43.35 dBm
21.703960 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

Chain 2

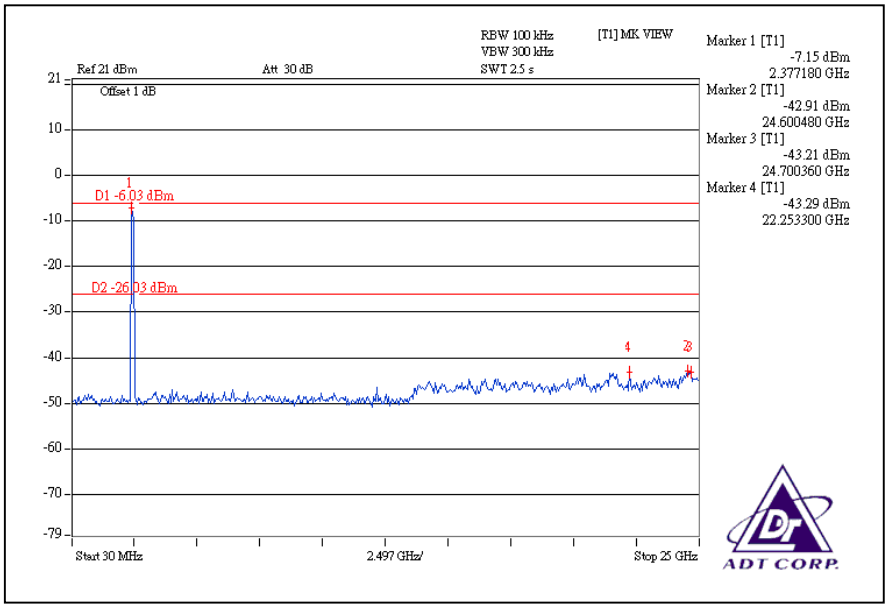
CH1



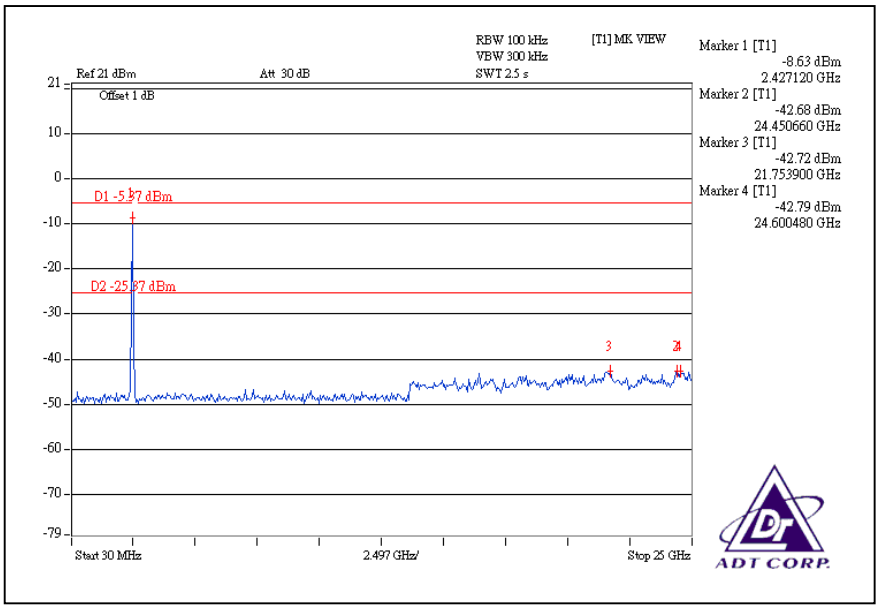
CH7



CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -6.03 dBm
D2 -26.03 dBm
Marker 1 [T1]
-7.15 dBm
2.377180 GHz
Marker 2 [T1]
-42.91 dBm
24.600480 GHz
Marker 3 [T1]
-43.21 dBm
24.700360 GHz
Marker 4 [T1]
-43.29 dBm
22.253300 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

CH7


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -5.37 dBm
D2 -25.37 dBm
Marker 1 [T1]
-8.63 dBm
2.427120 GHz
Marker 2 [T1]
-42.68 dBm
24.450660 GHz
Marker 3 [T1]
-42.72 dBm
21.753900 GHz
Marker 4 [T1]
-42.79 dBm
24.600480 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

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	C034-510656-A (SSR-72241)	Gain (dBi)	3.66	2.61	2.91	Dipole	SMA Plug Reverse
		Cable Loss (dB)	1.18	2.06	2.56		
		Net Gain (dB)	2.48	0.55	0.35		
2	N2480-100C	Gain (dBi)	6.00	5.10	8.00	Monopoles with reflectors	I-PEX
		Cable Loss (dB)	1.00	1.00	1.00		
		Net Gain (dB)	5.00	4.10	7.00		

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 0.5-5 5-30	66 to 56 56 60	56 to 46 46 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
Test Receiver	ESCS 30	847124/029	Feb. 29, 2008	Feb. 28, 2009
Line-Impedance Stabilization Network(for EUT)	ENV-216	100071	Nov. 27, 2007	Nov. 26, 2008
Line-Impedance Stabilization Network(for Peripheral)	ESH3-Z5	848773/004	Nov. 08, 2008	Nov. 07, 2009
RF Cable (JYEBAO)	5DFB	COBCAB-001	July 24, 2008	July 23, 2009
50 ohms Terminator	50	3	Nov. 15, 2008	Nov. 14, 2009
Software	BV ADT_Cond_V7.3.6	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 test was performed in ADT Shielded Room No. B.
3 The VCCI Con B Registration No. is C-2193.

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.

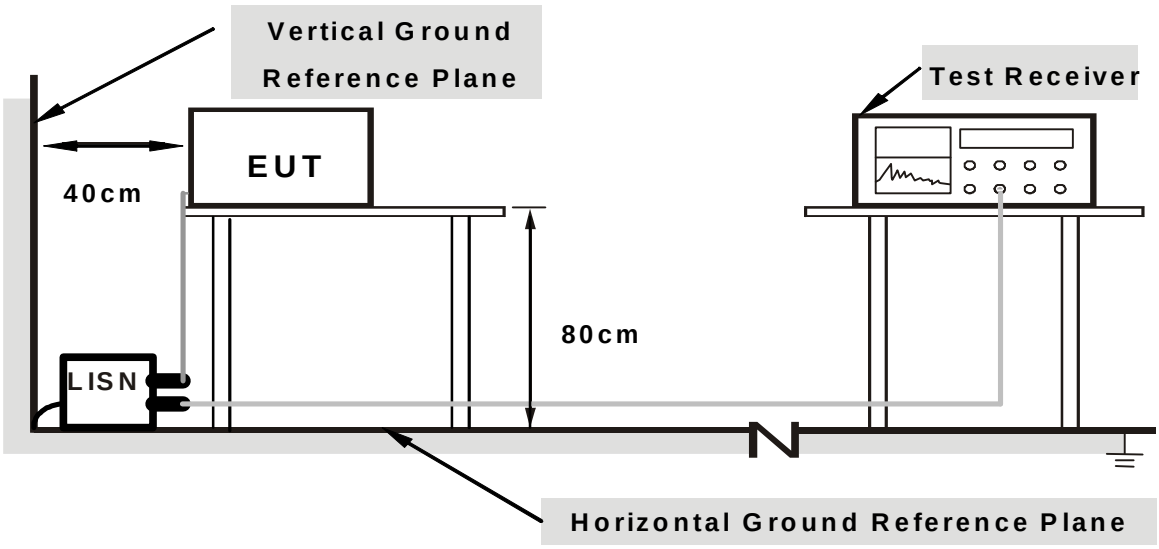
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

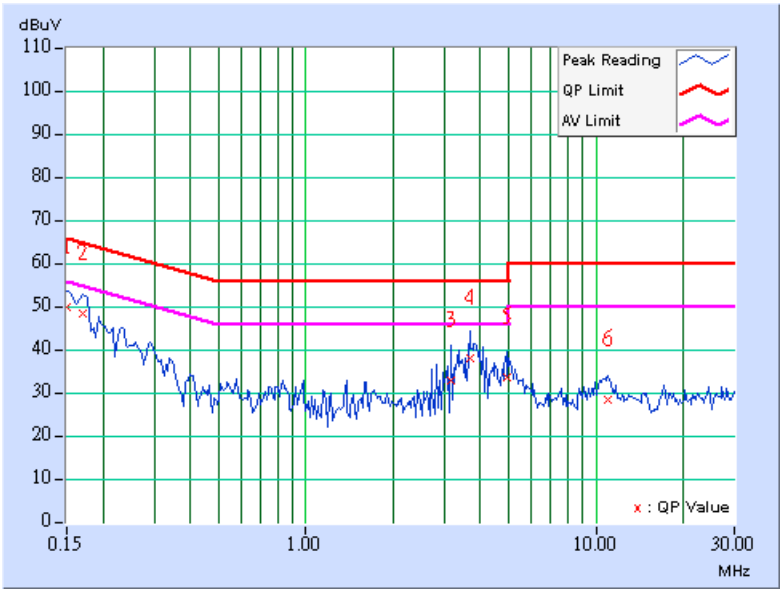
5.1.7 TEST RESULTS

802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	**PHASE**	Line (L)
MODULATION TYPE	BPSK	**6dB BANDWIDTH**	9 kHz
TRANSFER RATE	6Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 965hPa	**TESTED BY**	Phoenix Huang

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	9.67	40.28	-	49.95	-	66.00	56.00	-16.05	-
2	0.170	9.68	38.63	-	48.31	-	64.98	54.98	-16.67	-
3	3.172	9.74	23.21	-	32.95	-	56.00	46.00	-23.05	-
4	3.695	9.75	28.24	-	37.99	-	56.00	46.00	-18.01	-
5	4.938	9.77	23.84	-	33.61	-	56.00	46.00	-22.39	-
6	11.020	9.86	18.68	-	28.54	-	60.00	50.00	-31.46	-

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.



...ON		MEASUREMENT DETAIL	
	Channel 1	**PHASE**	Neutral (N)
MODULATION TYPE	BPSK	**6dB BANDWIDTH**	9 kHz
TRANSFER RATE	6Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 965hPa	**TESTED BY**	Phoenix Huang

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	9.67	40.08	-	49.75	-	66.00	56.00	-16.25	-
2	**0.173**	**9.68**	**40.07**	**-**	**49.75**	**-**	**64.79**	**54.79**	**-15.04**	**-**

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 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. 17, 2007	Dec. 16, 2008
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 28, 2008	Jan. 27, 2009
R&S Loop Antenna	HFH2-Z2	100070	Jan. 14, 2008	Jan. 13, 2009
RF Switches	EMH-011	08009	Oct. 07, 2008	Oct. 06, 2009
RF CABLE (Chaintek)	SF102	22054-2	Dec. 07, 2007	Dec. 06, 2008
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 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 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 3 meter semi-anechoic camber. 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.

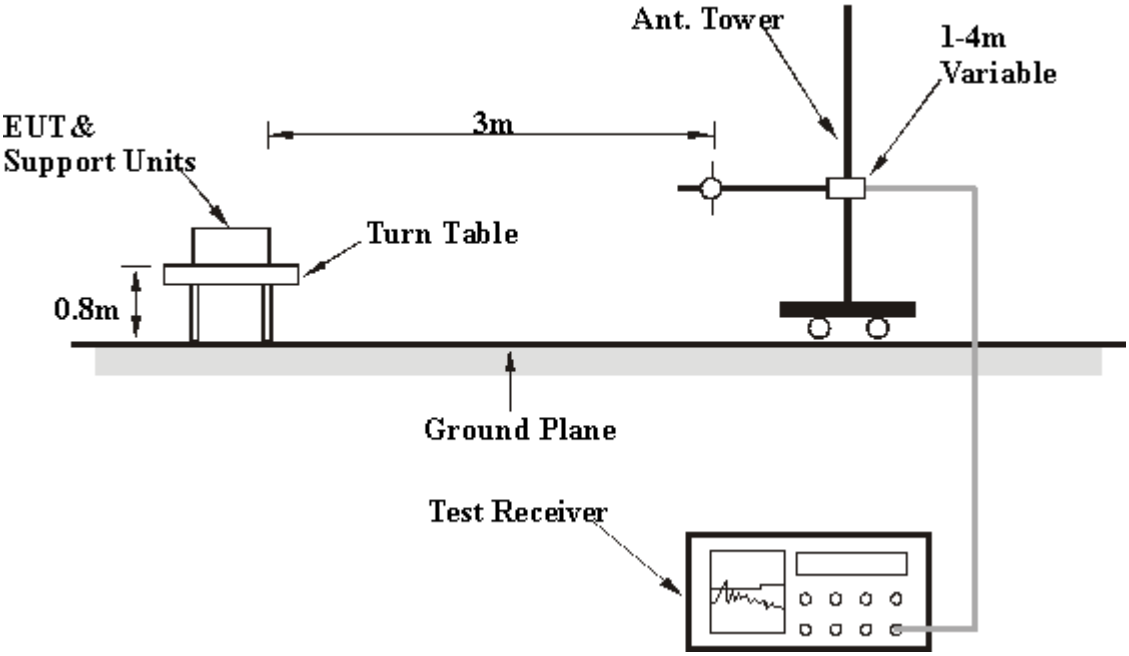
NOTE:

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 – DIPOLE ANTENNA

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	25deg. C, 65%RH 965hPa	TESTED BY	Eric Lin

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	133.32	34.06 QP	43.50	-9.44	1.08 H	236	19.46	14.60
2	**166.52**	**40.10 QP**	**43.50**	**-3.40**	**1.46 H**	**346**	**24.69**	**15.41**
3	266.32	41.99 QP	46.00	-4.01	1.85 H	236	26.03	15.96
4	298.92	41.99 QP	46.00	-4.01	1.47 H	258	25.00	16.99
5	333.01	39.23 QP	46.00	-6.77	1.02 H	323	20.86	18.37
6	399.68	34.86 QP	46.00	-11.14	1.64 H	95	13.73	21.13
7	433.03	29.36 QP	46.00	-16.64	1.63 H	326	7.72	21.64
8	499.99	28.64 QP	46.00	-17.36	1.00 H	19	5.98	22.66
9	651.52	35.20 QP	46.00	-10.80	2.00 H	23	9.26	25.94

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	133.62	33.08 QP	43.50	-10.42	1.87 V	352	18.47	14.61
2	166.62	31.65 QP	43.50	-11.85	1.11 V	62	16.25	15.40
3	199.94	27.51 QP	43.50	-15.99	1.19 V	63	14.53	12.98
4	213.74	27.41 QP	43.50	-16.09	1.46 V	321	13.76	13.65
5	233.48	37.86 QP	46.00	-8.14	1.00 V	249	23.25	14.61
6	267.01	36.30 QP	46.00	-9.70	1.66 V	112	20.32	15.98
7	333.02	35.60 QP	46.00	-10.40	1.63 V	332	17.23	18.37
8	396.68	34.69 QP	46.00	-11.31	1.63 V	333	13.69	21.00
9	401.02	31.82 QP	46.00	-14.18	1.85 V	23	10.66	21.16

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 –DIPOLE ANTENNA

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, %RH 965hPa	TESTED BY	Frank Liu

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	100.50 PK			1.82 H	233	63.29	37.21
2	*5745.00	88.50 AV			1.82 H	233	51.29	37.21
3	7660.00	51.30 PK	74.00	-22.70	1.33 H	172	8.54	42.76
4	7660.00	38.20 AV	54.00	-15.80	1.33 H	172	-4.56	42.76
5	11490.00	57.20 PK	74.00	-16.80	1.43 H	165	10.17	47.03
6	11490.00	43.70 AV	54.00	-10.30	1.43 H	165	-3.33	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	113.50 PK			1.32 V	3	76.29	37.21
2	*5745.00	102.00 AV			1.32 V	3	64.79	37.21
3	7660.00	53.40 PK	74.00	-20.60	1.00 V	166	10.64	42.76
4	7660.00	40.30 AV	54.00	-13.70	1.00 V	166	-2.46	42.76
5	11490.00	57.40 PK	74.00	-16.60	1.31 V	152	10.37	47.03
6	11490.00	43.20 AV	54.00	-10.80	1.31 V	152	-3.83	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.

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, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	100.70 PK			1.86 H	239	63.39	37.31
2	*5785.00	88.70 AV			1.86 H	239	51.39	37.31
3	7713.00	51.60 PK	74.00	-22.40	1.32 H	163	8.76	42.84
4	7713.00	39.20 AV	54.00	-14.80	1.32 H	163	-3.64	42.84
5	11570.00	56.30 PK	74.00	-17.70	1.44 H	167	9.33	46.97
6	11570.00	42.70 AV	54.00	-11.30	1.44 H	167	-4.27	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	113.70 PK			1.36 V	5	76.39	37.31
2	*5785.00	102.60 AV			1.36 V	5	65.29	37.31
3	7713.00	52.30 PK	74.00	-21.70	1.33 V	159	9.46	42.84
4	7713.00	41.40 AV	54.00	-12.60	1.33 V	159	-1.44	42.84
5	11570.00	57.80 PK	74.00	-16.20	1.32 V	139	10.83	46.97
6	11570.00	43.60 AV	54.00	-10.40	1.32 V	139	-3.37	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.

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, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	100.30 PK			1.87 H	242	62.88	37.42
2	*5825.00	88.30 AV			1.87 H	242	50.88	37.42
3	#7766.00	51.40 PK	80.30	-28.90	1.31 H	166	8.48	42.92
4	#7766.00	37.10 AV	68.30	-31.20	1.31 H	166	-5.82	42.92
5	11650.00	56.50 PK	74.00	-17.50	1.42 H	166	9.60	46.90
6	11650.00	42.10 AV	54.00	-11.90	1.42 H	166	-4.80	46.90
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	113.80 PK			1.34 V	3	76.38	37.42
2	*5825.00	102.40 AV			1.34 V	3	64.98	37.42
3	#7766.00	51.60 PK	93.80	-42.20	1.17 V	166	8.68	42.92
4	#7766.00	38.30 AV	82.40	-44.10	1.17 V	166	-4.62	42.92
5	11650.00	57.50 PK	74.00	-16.50	1.41 V	177	10.60	46.90
6	11650.00	42.80 AV	54.00	-11.20	1.41 V	177	-4.10	46.90

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

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

DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 55%RH 965hPa	TESTED BY	Frank Liu

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	102.60 PK			1.62 H	131	65.39	37.21
2	*5745.00	88.30 AV			1.62 H	131	51.09	37.21
3	7660.00	51.10 PK	74.00	-22.90	1.84 H	178	8.34	42.76
4	7660.00	38.00 AV	54.00	-16.00	1.84 H	178	-4.76	42.76
5	11490.00	57.40 PK	74.00	-16.60	1.62 H	133	10.37	47.03
6	11490.00	43.80 AV	54.00	-10.20	1.62 H	133	-3.23	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	119.30 PK			1.13 V	60	82.09	37.21
2	*5745.00	105.60 AV			1.13 V	60	68.39	37.21
3	7660.00	52.90 PK	74.00	-21.10	1.51 V	17	10.14	42.76
4	7660.00	42.40 AV	54.00	-11.60	1.51 V	17	-0.36	42.76
5	11490.00	56.60 PK	74.00	-17.40	1.14 V	121	9.57	47.03
6	11490.00	42.30 AV	54.00	-11.70	1.14 V	121	-4.73	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.

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, 55%RH 965hPa	TESTED BY	Frank Liu

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	103.40 PK			1.59 H	137	66.09	37.31
2	*5785.00	88.60 AV			1.59 H	137	51.29	37.31
3	7713.00	51.70 PK	74.00	-22.30	1.85 H	190	8.86	42.84
4	7713.00	38.50 AV	54.00	-15.50	1.85 H	190	-4.34	42.84
5	11570.00	57.10 PK	74.00	-16.90	1.62 H	164	10.13	46.97
6	11570.00	43.60 AV	54.00	-10.40	1.62 H	164	-3.37	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	*5785.00	119.10 PK			1.14 V	73	81.79	37.31
2	*5785.00	105.40 AV			1.14 V	73	68.09	37.31
3	7713.00	52.30 PK	74.00	-21.70	1.52 V	160	9.46	42.84
4	7713.00	41.60 AV	54.00	-12.40	1.52 V	160	-1.24	42.84
5	11570.00	57.20 PK	74.00	-16.80	1.09 V	126	10.23	46.97
6	11570.00	43.40 AV	54.00	-10.60	1.09 V	126	-3.57	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.

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, 55%RH 965hPa	TESTED BY	Frank Liu

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	4644.00	52.60 PK	74.00	-21.40	1.85 H	190	17.44	35.16
2	4644.00	39.30 AV	54.00	-14.70	1.85 H	190	4.14	35.16
3	*5825.00	103.60 PK			1.58 H	136	66.18	37.42
4	*5825.00	88.90 AV			1.58 H	136	51.48	37.42
5	11650.00	57.20 PK	74.00	-16.80	1.65 H	166	10.30	46.90
6	11650.00	43.30 AV	54.00	-10.70	1.65 H	166	-3.60	46.90
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	120.20 PK			1.16 V	82	82.78	37.42
2	*5825.00	105.90 AV			1.16 V	82	68.48	37.42
3	#7766.00	51.80 PK	100.20	-48.40	1.03 V	357	8.88	42.92
4	#7766.00	39.80 AV	85.90	-46.10	1.03 V	357	-3.12	42.92
5	11650.00	57.60 PK	74.00	-16.40	1.08 V	124	10.70	46.90
6	11650.00	44.20 AV	54.00	-9.80	1.08 V	124	-2.70	46.90

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

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

DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 55%RH 965hPa	TESTED BY	Frank Liu

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	98.20 PK			1.46 H	148	60.97	37.23
2	*5755.00	85.30 AV			1.46 H	148	48.07	37.23
3	7673.00	51.10 PK	74.00	-22.90	1.78 H	189	8.32	42.78
4	7673.00	38.10 AV	54.00	-15.90	1.78 H	189	-4.68	42.78
5	11510.00	56.30 PK	74.00	-17.70	1.65 H	117	9.28	47.02
6	11510.00	43.70 AV	54.00	-10.30	1.65 H	117	-3.32	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	115.70 PK			1.26 V	116	78.47	37.23
2	*5755.00	101.10 AV			1.26 V	116	63.87	37.23
3	7673.00	52.90 PK	74.00	-21.10	1.00 V	2	10.12	42.78
4	7673.00	42.30 AV	54.00	-11.70	1.00 V	2	-0.48	42.78
5	11510.00	55.80 PK	74.00	-18.20	1.34 V	156	8.78	47.02
6	11510.00	42.50 AV	54.00	-11.50	1.34 V	156	-4.52	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.

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, 55%RH 965hPa	TESTED BY	Frank Liu

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	4636.00	51.00 PK	74.00	-23.00	1.84 H	190	15.85	35.15
2	4636.00	39.00 AV	54.00	-15.00	1.84 H	190	3.85	35.15
3	*5795.00	98.10 PK			1.39 H	144	60.76	37.34
4	*5795.00	85.20 AV			1.39 H	144	47.86	37.34
5	11590.00	56.20 PK	74.00	-17.80	1.66 H	112	9.25	46.95
6	11590.00	43.60 AV	54.00	-10.40	1.66 H	112	-3.35	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	4636.00	53.60 PK	74.00	-20.40	1.04 V	3	18.45	35.15
2	4636.00	44.60 AV	54.00	-9.40	1.04 V	3	9.45	35.15
3	*5795.00	115.90 PK			1.27 V	114	78.56	37.34
4	*5795.00	101.40 AV			1.27 V	114	64.06	37.34
5	11590.00	56.40 PK	74.00	-17.60	1.37 V	162	9.45	46.95
6	11590.00	42.80 AV	54.00	-11.20	1.37 V	162	-4.15	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.

Below 1GHz Test Data

5.2.9 TEST RESULTS – MONOPOLES WITH REFLECTORS ANTENNA

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	25deg. C, 65%RH 965hPa	TESTED BY	Eric Lin

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	133.35	34.10 QP	43.50	-9.40	1.20 H	123	19.50	14.60
2	166.54	39.60 QP	43.50	-3.90	1.28 H	62	24.19	15.41
3	266.33	42.65 QP	46.00	-3.35	1.72 H	154	26.69	15.96
4	298.86	42.61 QP	46.00	-3.39	1.00 H	5	25.62	16.99
5	333.00	40.26 QP	46.00	-5.74	2.10 H	221	21.89	18.37
6	399.76	36.64 QP	46.00	-9.36	2.00 H	54	15.51	21.13
7	433.03	28.34 QP	46.00	-17.66	1.24 H	152	6.70	21.64
8	500.01	29.60 QP	46.00	-16.40	1.88 H	95	6.94	22.66
9	651.51	36.20 QP	46.00	-9.80	1.63 H	333	10.26	25.94
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	133.52	33.26 QP	43.50	-10.24	1.86 V	326	18.65	14.61
2	166.58	31.62 QP	43.50	-11.88	1.63 V	321	16.22	15.40
3	199.94	28.25 QP	43.50	-15.25	1.14 V	215	15.27	12.98
4	213.82	26.33 QP	43.50	-17.17	2.00 V	92	12.68	13.65
5	233.53	27.24 QP	46.00	-18.76	2.00 V	202	12.62	14.62
6	266.98	37.53 QP	46.00	-8.47	1.80 V	326	21.55	15.98
7	333.12	26.30 QP	46.00	-19.70	1.66 V	198	7.93	18.37
8	396.65	34.90 QP	46.00	-11.10	1.63 V	32	13.90	21.00
9	401.02	32.50 QP	46.00	-13.50	1.09 V	360	11.34	21.16

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

5.2.10 TEST RESULTS –MONOPOLES WITH REFLECTORS ANTENNA

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, 55%RH 965hPa	TESTED BY	Frank Liu

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	107.55 PK			1.85 H	144	70.34	37.21
2	*5745.00	96.37 AV			1.85 H	144	59.16	37.21
3	7660.00	53.48 PK	74.00	-20.52	1.63 H	254	10.72	42.76
4	7660.00	41.98 AV	54.00	-12.02	1.63 H	254	-0.78	42.76
5	11490.00	55.43 PK	74.00	-18.57	1.40 H	148	8.40	47.03
6	11490.00	41.62 AV	54.00	-12.38	1.40 H	148	-5.41	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	111.20 PK			1.67 V	38	73.99	37.21
2	*5745.00	99.70 AV			1.67 V	38	62.49	37.21
3	7660.00	52.60 PK	74.00	-21.40	1.84 V	300	9.84	42.76
4	7660.00	41.00 AV	54.00	-13.00	1.84 V	300	-1.76	42.76
5	11490.00	59.10 PK	74.00	-14.90	1.28 V	289	12.07	47.03
6	11490.00	44.80 AV	54.00	-9.20	1.28 V	289	-2.23	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.

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, 55%RH 965hPa	TESTED BY	Frank Liu

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	108.09 PK			1.83 H	153	70.78	37.31
2	*5785.00	97.01 AV			1.83 H	153	59.70	37.31
3	7713.00	52.73 PK	74.00	-21.27	1.60 H	198	9.89	42.84
4	7713.00	40.63 AV	54.00	-13.37	1.60 H	198	-2.21	42.84
5	11570.00	56.82 PK	74.00	-17.18	1.51 H	209	9.85	46.97
6	11570.00	41.98 AV	54.00	-12.02	1.51 H	209	-4.99	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	111.40 PK			1.65 V	34	74.09	37.31
2	*5785.00	99.80 AV			1.65 V	34	62.49	37.31
3	7713.00	52.40 PK	74.00	-21.60	1.79 V	284	9.56	42.84
4	7713.00	40.80 AV	54.00	-13.20	1.79 V	284	-2.04	42.84
5	11570.00	58.50 PK	74.00	-15.50	1.24 V	273	11.53	46.97
6	11570.00	44.10 AV	54.00	-9.90	1.24 V	273	-2.87	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.

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, 55%RH 965hPa	TESTED BY	Frank Liu

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	109.23 PK			1.79 H	160	71.81	37.42
2	*5825.00	97.58 AV			1.79 H	160	60.16	37.42
3	#7766.00	57.83 PK	89.23	-31.40	1.57 H	93	14.91	42.92
4	#7766.00	42.01 AV	77.58	-35.57	1.57 H	93	-0.91	42.92
5	11650.00	55.69 PK	74.00	-18.31	1.63 H	79	8.79	46.90
6	11650.00	41.43 AV	54.00	-12.57	1.63 H	79	-5.47	46.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	111.60 PK			1.66 V	26	74.18	37.42
2	*5825.00	100.00 AV			1.66 V	26	62.58	37.42
3	#7766.00	51.90 PK	91.60	-39.70	1.87 V	294	8.98	42.92
4	#7766.00	38.40 AV	80.00	-41.60	1.87 V	294	-4.52	42.92
5	11650.00	57.40 PK	74.00	-16.60	1.41 V	172	10.50	46.90
6	11650.00	43.20 AV	54.00	-10.80	1.41 V	172	-3.70	46.90

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

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

DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 55%RH 965hPa	TESTED BY	Frank Liu

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	109.84 PK			1.58 H	183	72.63	37.21
2	*5745.00	98.23 AV			1.58 H	183	61.02	37.21
3	7660.00	51.94 PK	74.00	-22.06	1.50 H	166	9.18	42.76
4	7660.00	42.65 AV	54.00	-11.35	1.50 H	166	-0.11	42.76
5	11490.00	49.63 PK	74.00	-24.37	1.41 H	89	2.60	47.03
6	11490.00	39.64 AV	54.00	-14.36	1.41 H	89	-7.39	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	113.80 PK			1.23 V	141	76.59	37.21
2	*5745.00	100.10 AV			1.23 V	141	62.89	37.21
3	7660.00	54.80 PK	74.00	-19.20	1.19 V	54	12.04	42.76
4	7660.00	47.80 AV	54.00	-6.20	1.19 V	54	5.04	42.76
5	11490.00	55.90 PK	74.00	-18.10	1.36 V	257	8.87	47.03
6	11490.00	42.40 AV	54.00	-11.60	1.36 V	257	-4.63	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.

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, 55%RH 965hPa	TESTED BY	Frank Liu

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	109.35 PK			1.53 H	178	72.04	37.31
2	*5785.00	98.54 AV			1.53 H	178	61.23	37.31
3	7713.00	50.45 PK	74.00	-23.55	1.58 H	172	7.61	42.84
4	7713.00	41.84 AV	54.00	-12.16	1.58 H	172	-1.00	42.84
5	11570.00	53.29 PK	74.00	-20.71	1.50 H	298	6.32	46.97
6	11570.00	40.65 AV	54.00	-13.35	1.50 H	298	-6.32	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	114.30 PK			1.43 V	111	76.99	37.31
2	*5785.00	100.30 AV			1.43 V	111	62.99	37.31
3	7713.00	55.00 PK	74.00	-19.00	1.38 V	61	12.16	42.84
4	7713.00	47.80 AV	54.00	-6.20	1.38 V	61	4.96	42.84
5	11570.00	56.40 PK	74.00	-17.60	1.35 V	251	9.43	46.97
6	11570.00	43.70 AV	54.00	-10.30	1.35 V	251	-3.27	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.

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, 55%RH 965hPa	TESTED BY	Frank Liu

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	110.94 PK			1.47 H	132	73.52	37.42
2	*5825.00	99.24 AV			1.47 H	132	61.82	37.42
3	#7766.00	52.01 PK	90.94	-38.93	1.61 H	204	9.09	42.92
4	#7766.00	41.73 AV	79.24	-37.51	1.61 H	204	-1.19	42.92
5	11650.00	52.45 PK	74.00	-21.55	1.42 H	84	5.55	46.90
6	11650.00	41.24 AV	54.00	-12.76	1.42 H	84	-5.66	46.90
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	115.20 PK			1.42 V	119	77.78	37.42
2	*5825.00	101.20 AV			1.42 V	119	63.78	37.42
3	#7766.00	54.20 PK	95.20	-41.00	1.35 V	63	11.28	42.92
4	#7766.00	46.30 AV	81.20	-34.90	1.35 V	63	3.38	42.92
5	11650.00	57.20 PK	74.00	-16.80	1.31 V	252	10.30	46.90
6	11650.00	44.60 AV	54.00	-9.40	1.31 V	252	-2.30	46.90

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

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

DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 55%RH 965hPa	TESTED BY	Frank Liu

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	106.53 PK			1.58 H	82	69.30	37.23
2	*5755.00	92.98 AV			1.58 H	82	55.75	37.23
3	7673.00	48.64 PK	74.00	-25.36	1.72 H	301	5.86	42.78
4	7673.00	42.48 AV	54.00	-11.52	1.72 H	301	-0.30	42.78
5	11510.00	51.49 PK	74.00	-22.51	1.62 H	98	4.47	47.02
6	11510.00	39.09 AV	54.00	-14.91	1.62 H	98	-7.93	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	109.60 PK			1.43 V	121	72.37	37.23
2	*5755.00	95.10 AV			1.43 V	121	57.87	37.23
3	7673.00	54.80 PK	74.00	-19.20	1.36 V	53	12.02	42.78
4	7673.00	47.60 AV	54.00	-6.40	1.36 V	53	4.82	42.78
5	11510.00	57.20 PK	74.00	-16.80	1.34 V	257	10.18	47.02
6	11510.00	43.50 AV	54.00	-10.50	1.34 V	257	-3.52	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.

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, 55%RH 965hPa	TESTED BY	Frank Liu

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	106.84 PK			1.61 H	100	69.50	37.34
2	*5795.00	93.02 AV			1.61 H	100	55.68	37.34
3	7726.00	48.77 PK	74.00	-25.23	1.83 H	69	5.91	42.86
4	7726.00	41.64 AV	54.00	-12.36	1.83 H	69	-1.22	42.86
5	11590.00	53.04 PK	74.00	-20.96	1.59 H	273	6.09	46.95
6	11590.00	40.65 AV	54.00	-13.35	1.59 H	273	-6.30	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	109.80 PK			1.52 V	126	72.46	37.34
2	*5795.00	95.30 AV			1.52 V	126	57.96	37.34
3	7726.00	55.50 PK	74.00	-18.50	1.21 V	56	12.64	42.86
4	7726.00	48.50 AV	54.00	-5.50	1.21 V	56	5.64	42.86
5	11590.00	57.90 PK	74.00	-16.10	1.36 V	266	10.95	46.95
6	11590.00	43.70 AV	54.00	-10.30	1.36 V	266	-3.25	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.

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.

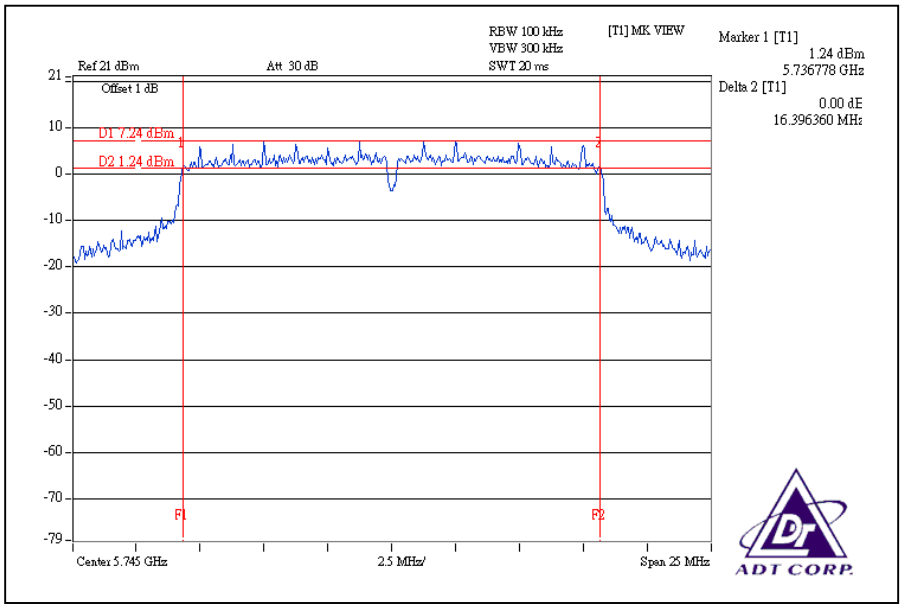
5.3.7 TEST RESULTS

802.11a OFDM MODULATION:

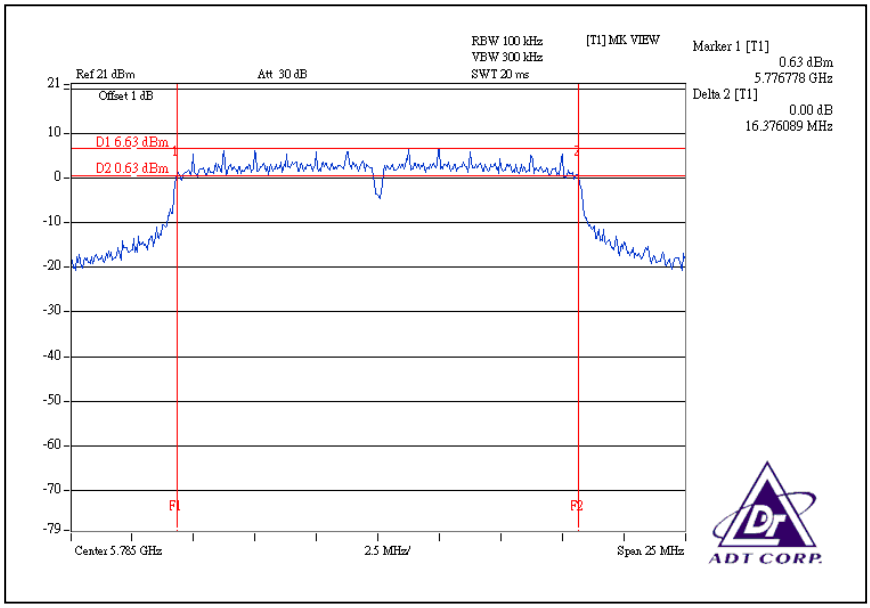
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	5745	16.40	0.5	PASS
3	5785	16.38	0.5	PASS
5	5825	16.41	0.5	PASS

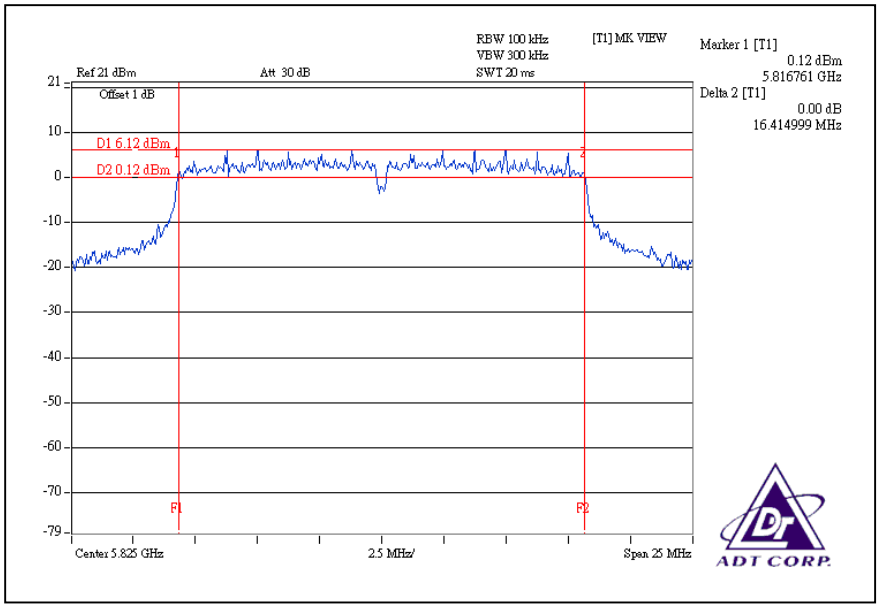
CH1



CH3


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
0.63 dBm
5.776778 GHz
Delta 2 [T1]
0.00 dB
16.376089 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 6.63 dBm
D2 0.63 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 5.785 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

CH5


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
0.12 dBm
5.816761 GHz
Delta 2 [T1]
0.00 dB
16.414999 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 6.12 dBm
D2 0.12 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 5.825 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

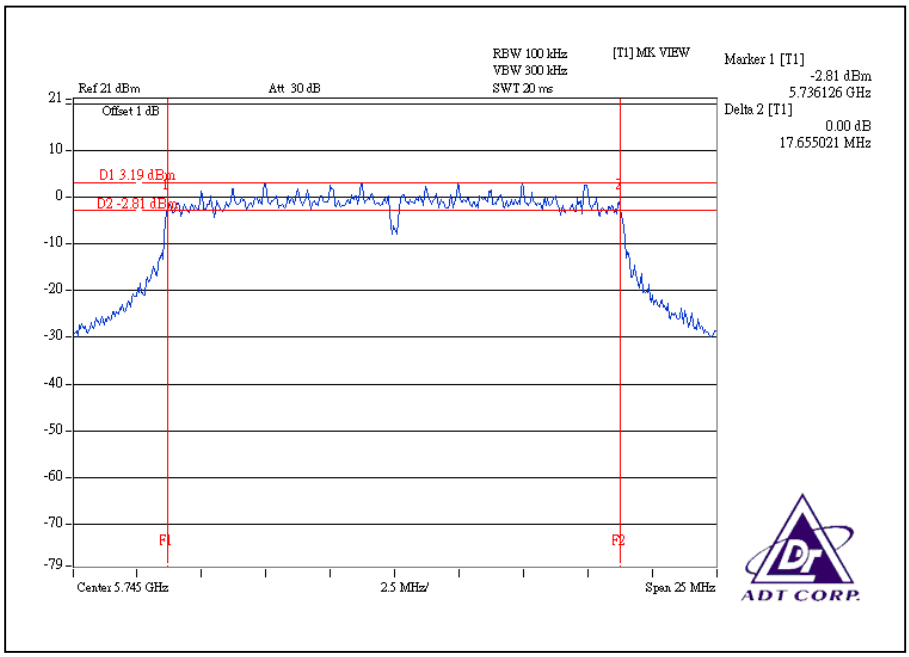
DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	14.444Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	20deg.C, 60%RH, 960hPa
TESTED BY	Rex Huang		

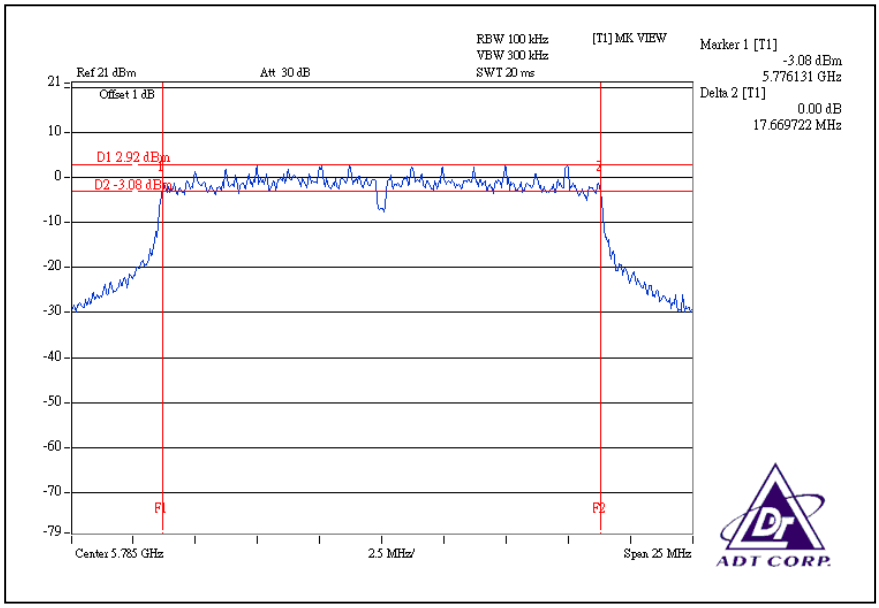
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	5745	17.66	17.65	17.61	0.5	PASS
3	5785	17.67	17.64	17.59	0.5	PASS
5	5825	17.61	17.64	17.61	0.5	PASS

Chain 0

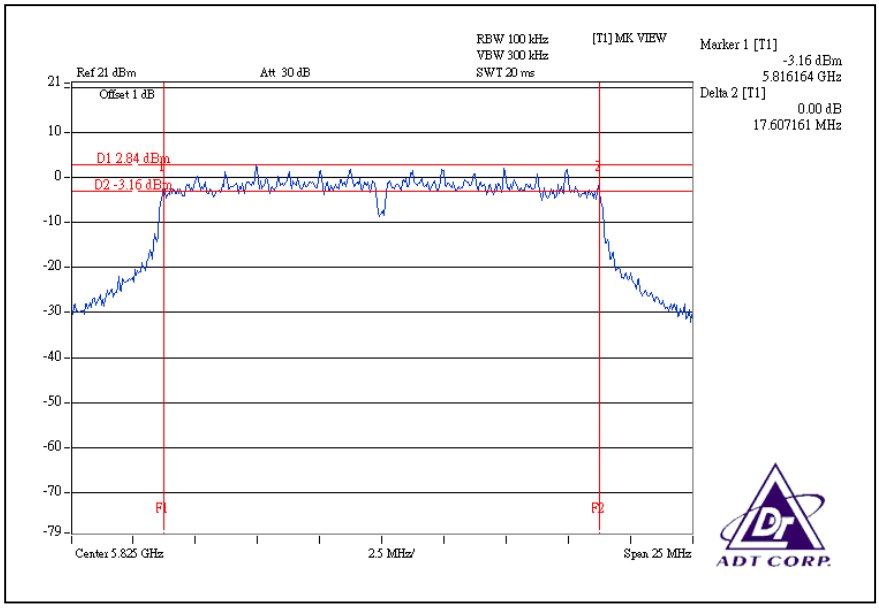
CH1



CH3

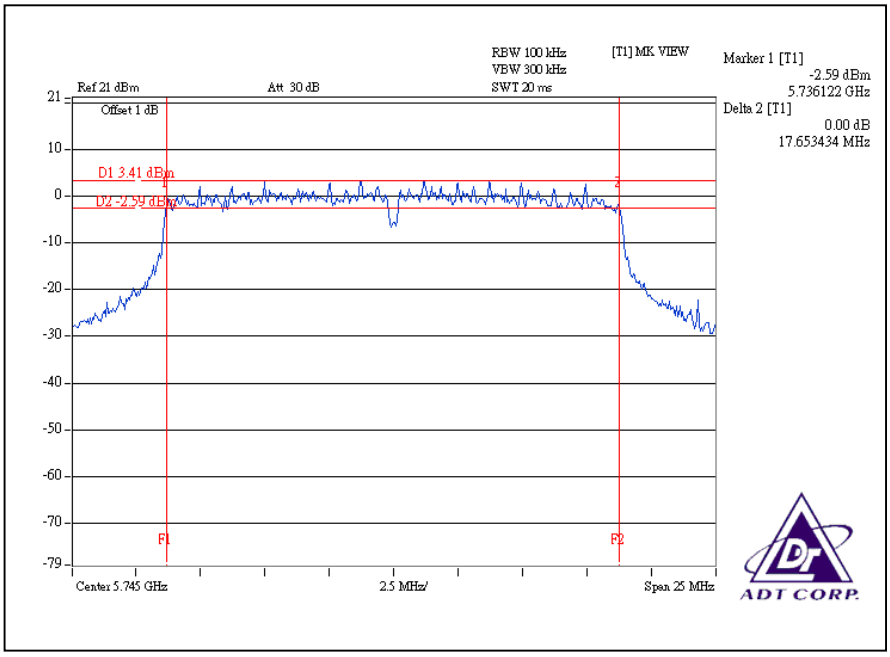

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-3.08 dBm
5.776131 GHz
Delta 2 [T1]
0.00 dB
17.669722 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 2.92 dBm
D2 -3.08 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 5.785 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

CH5

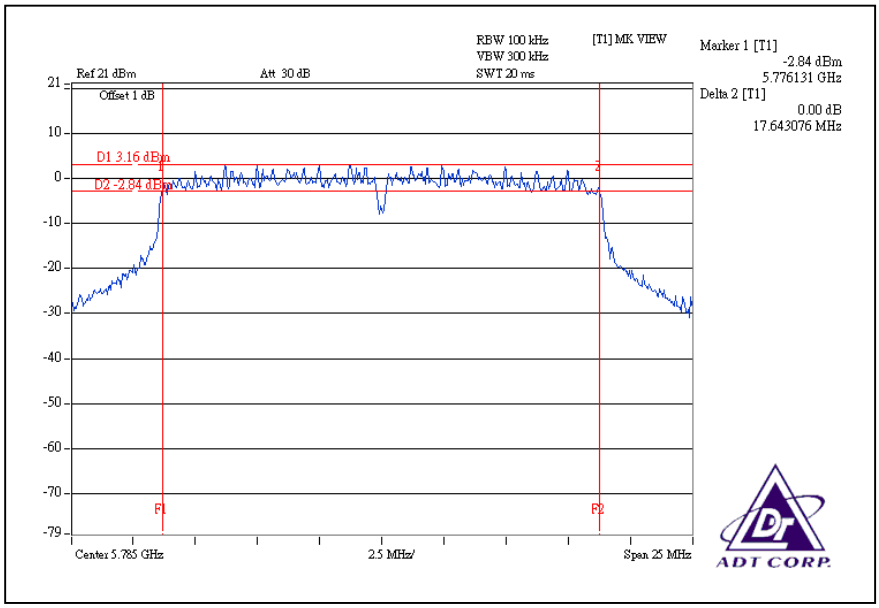

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-3.16 dBm
5.816164 GHz
Delta 2 [T1]
0.00 dB
17.607161 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 2.84 dBm
D2 -3.16 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 5.825 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

Chain 1

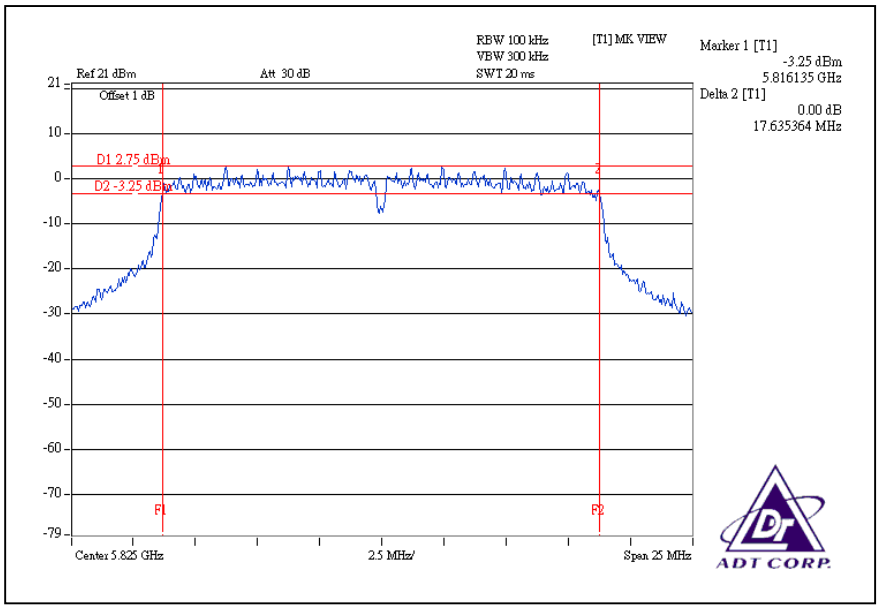
CH1



CH3

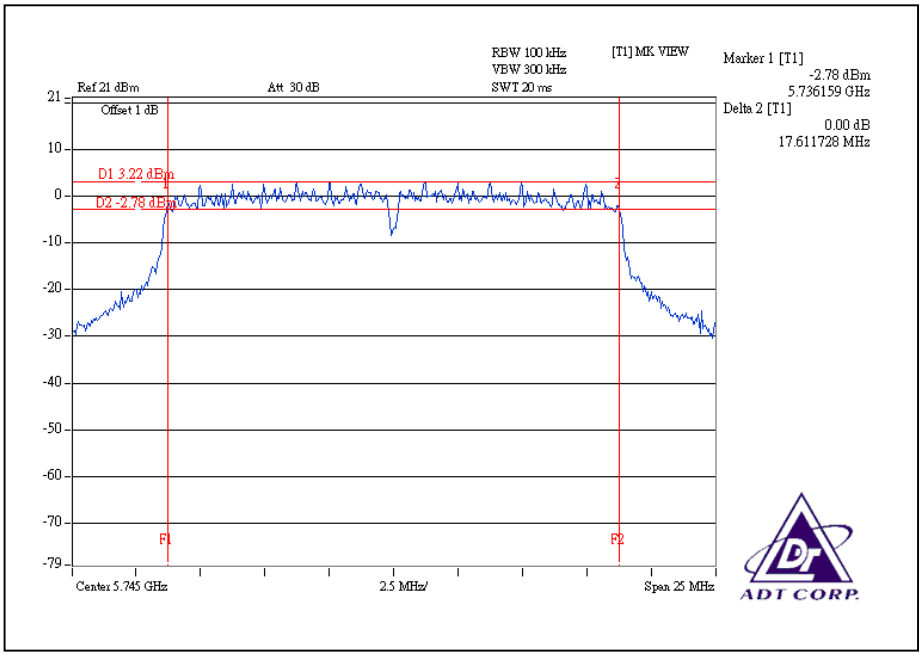


CH5

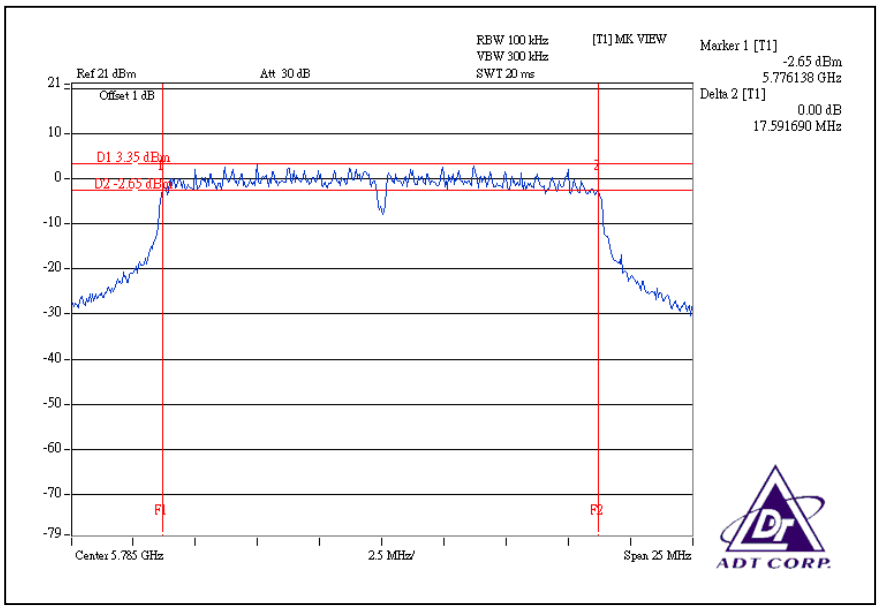

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-3.25 dBm
5.816135 GHz
Delta 2 [T1]
0.00 dB
17.635364 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 2.75 dBm
D2 -3.25 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 5.825 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

Chain 2

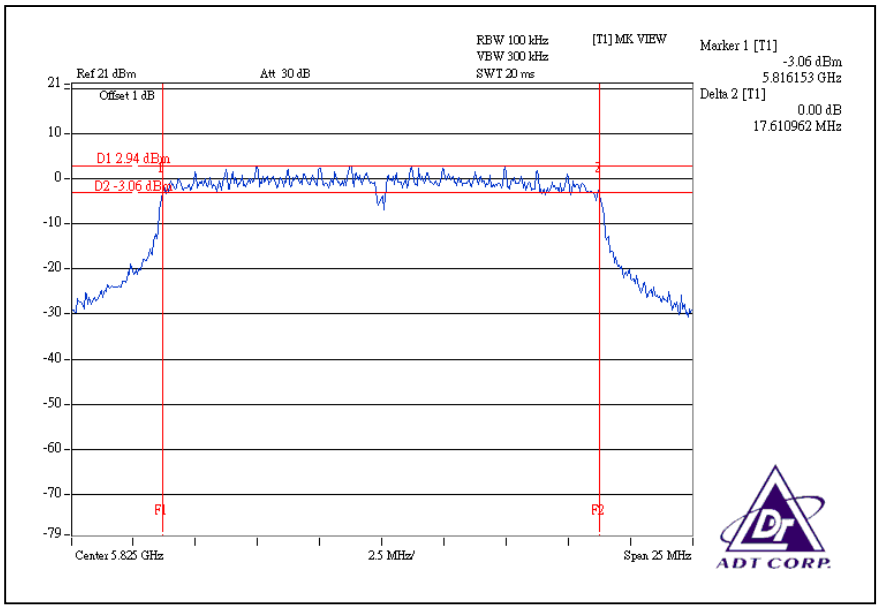
CH1



CH3



CH5


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-3.06 dBm
5.816153 GHz
Delta 2 [T1]
0.00 dB
17.610962 MHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 2.94 dBm
D2 -3.06 dBm
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
F1
F2
Center 5.825 GHz
2.5 MHz/
Span 25 MHz
ADT CORP.

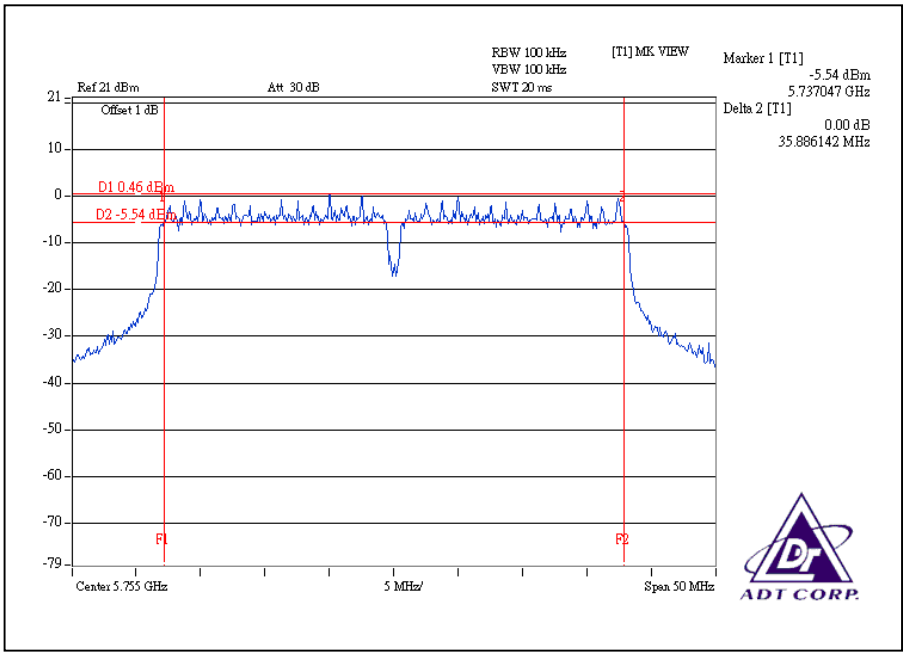
DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	30Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg. C, 60%RH, 965hPa
TESTED BY	Rex Huang		

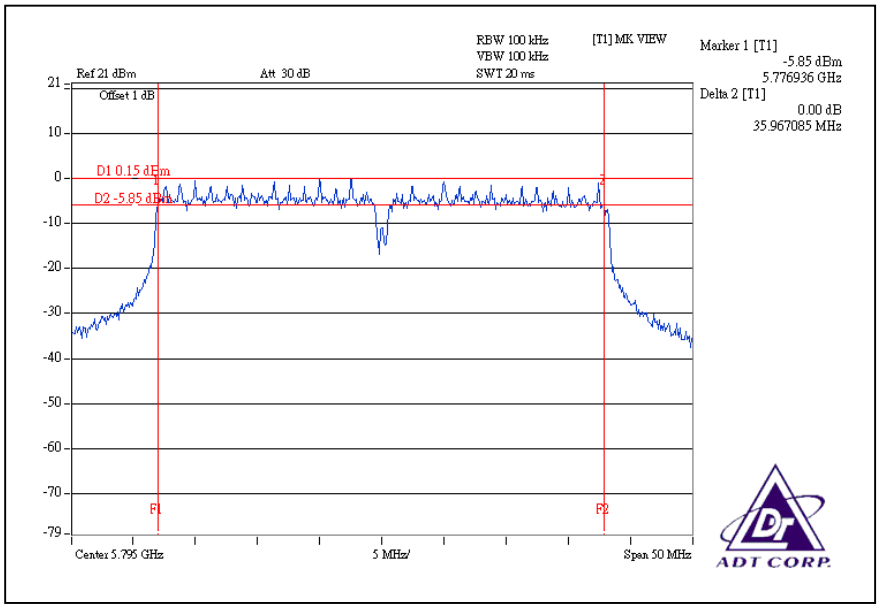
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	5755	35.89	36.60	36.56	0.5	PASS
3	5795	35.97	36.53	36.52	0.5	PASS

Chain 0

CH1

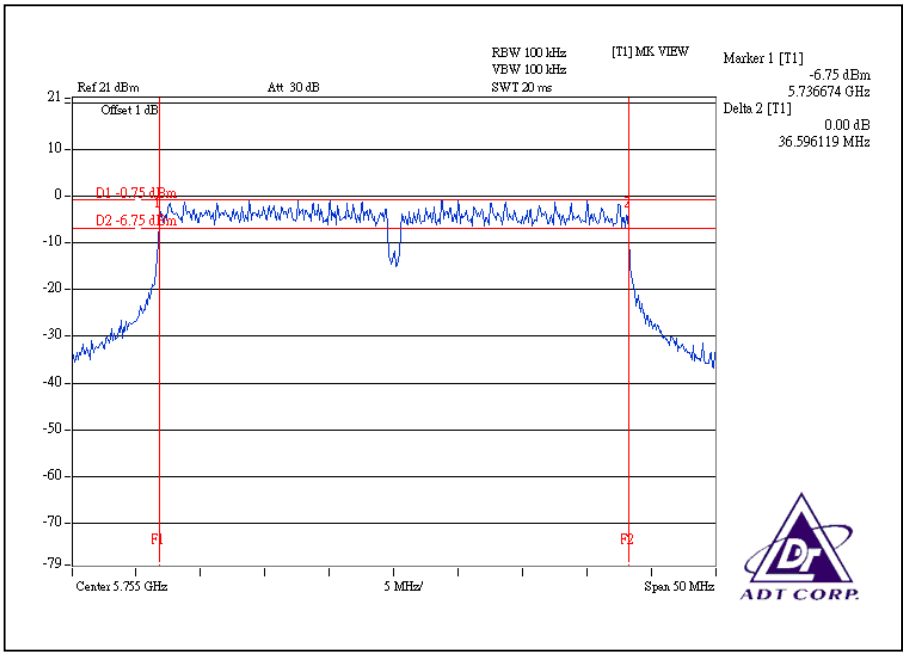


CH2

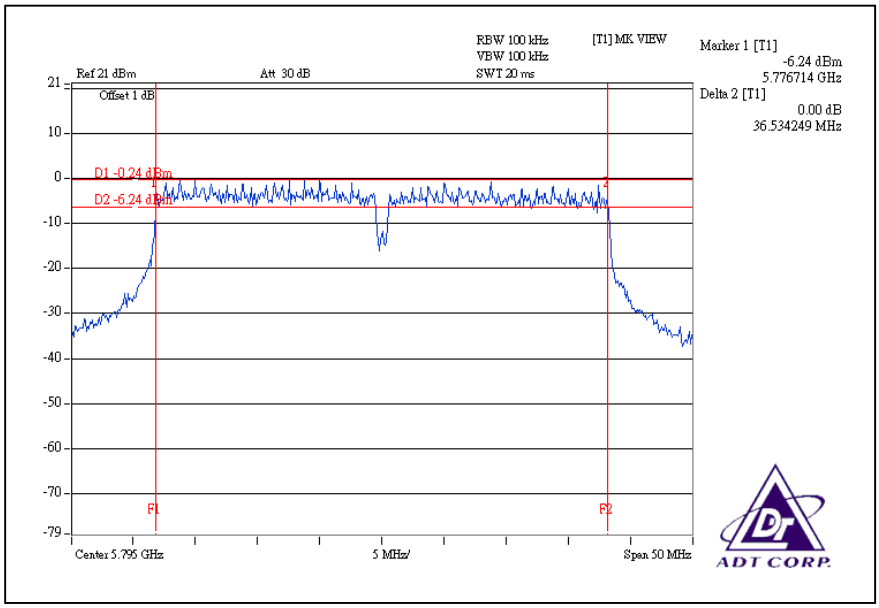


Chain 1

CH1

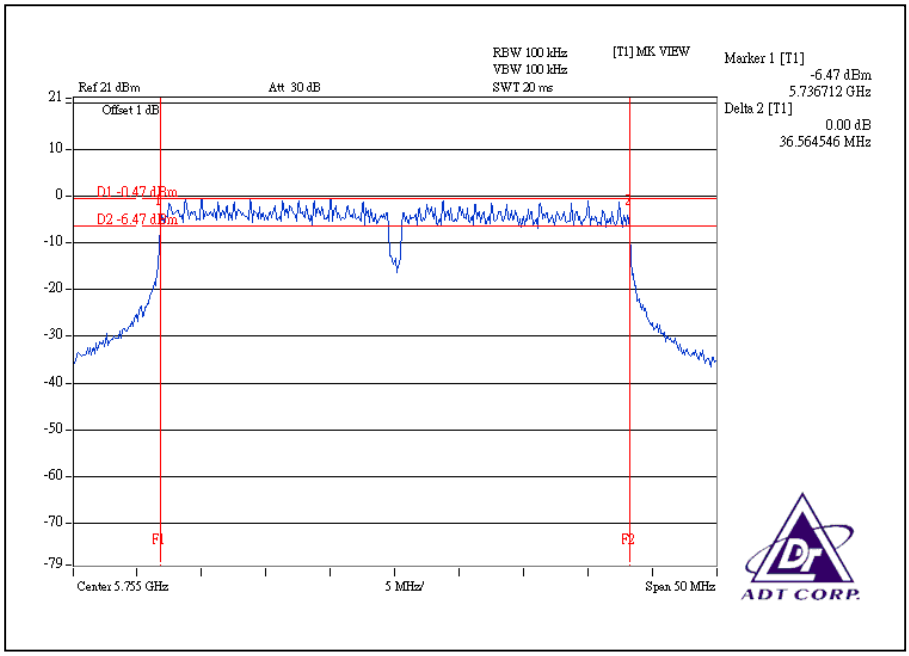


CH2

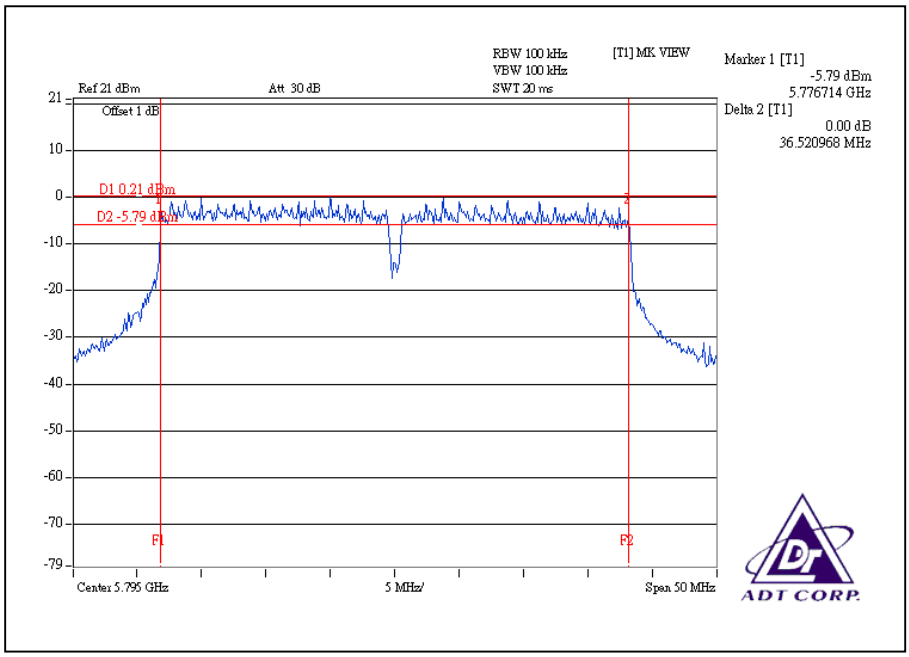


Chain 2

CH1



CH2



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. 26, 2007	Dec. 25, 2008
Anritsu Power Meter	ML2495A	0824006	NA	NA
Pulse Power Sensor	MA2411B	0738172	NA	NA

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

5.4.3 TEST PROCEDURES

3. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
4. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
5. 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

Antenna 1
802.11a OFDM modulation

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	5745	27.62	578.096	30	PASS
3	5785	27.43	553.350	30	PASS
5	5825	27.38	547.016	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	14.444Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			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	20.800	22.400	22.400	120.226	173.780	173.780	467.786	26.700	30	PASS
3	5785	20.800	22.400	22.800	120.226	173.780	190.546	484.552	26.853	30	PASS
5	5825	20.700	22.400	22.600	117.490	173.780	181.970	473.240	26.751	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	30Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg. C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			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	21.300	22.900	22.300	134.896	194.984	169.824	499.704	26.987	30	PASS
2	5795	21.200	23.200	23.000	131.826	208.930	199.526	540.282	27.326	30	PASS

Antenna 2
802.11a OFDM modulation

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	5745	27.62	578.096	29	PASS
3	5785	27.43	553.350	29	PASS
5	5825	27.38	547.016	29	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	14.444Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			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	20.800	22.400	22.400	120.226	173.780	173.780	467.786	26.700	29	PASS
3	5785	20.800	22.400	22.800	120.226	173.780	190.546	484.552	26.853	29	PASS
5	5825	20.700	22.400	22.600	117.490	173.780	181.970	473.240	26.751	29	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	30Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			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	21.300	22.900	22.300	134.896	194.984	169.824	499.704	26.987	29	PASS
2	5795	21.200	23.200	23.000	131.826	208.930	199.526	540.282	27.326	29	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.

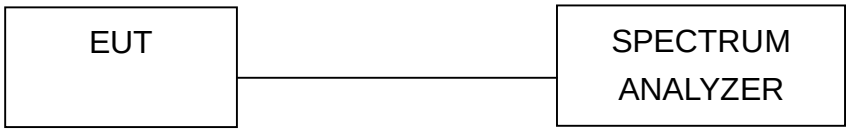
5.5.3 TEST PROCEDURE

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

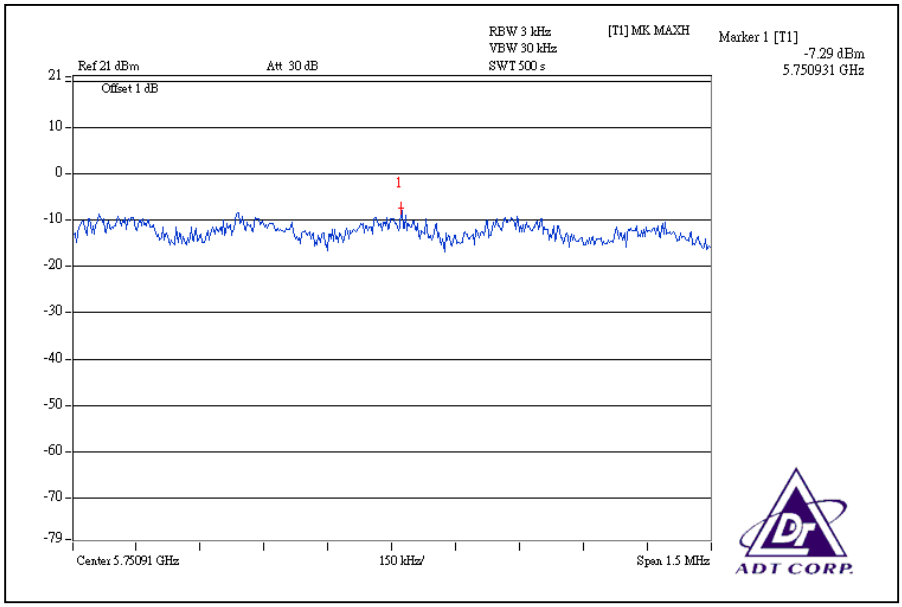
5.5.7 TEST RESULTS

802.11a OFDM modulation

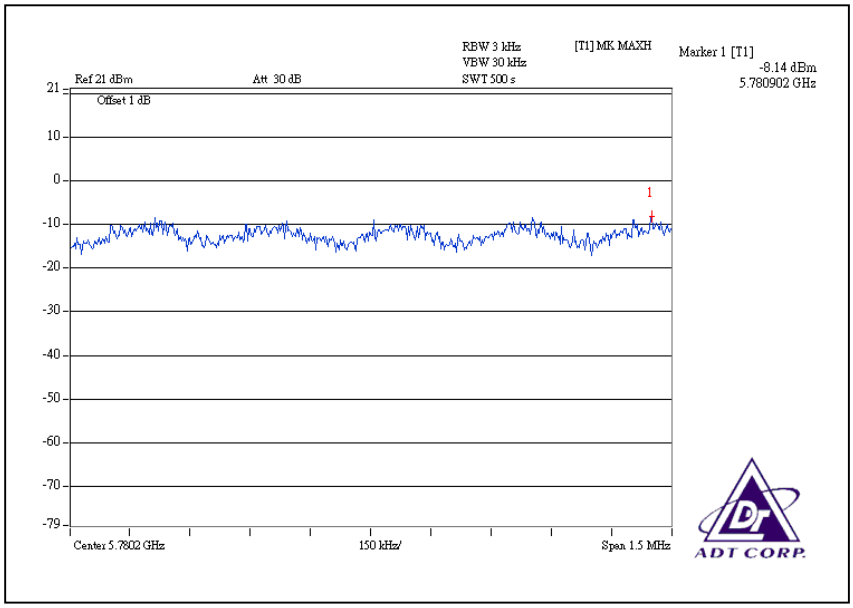
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	5745	-7.29	8	PASS
3	5785	-8.14	8	PASS
5	5825	-7.01	8	PASS

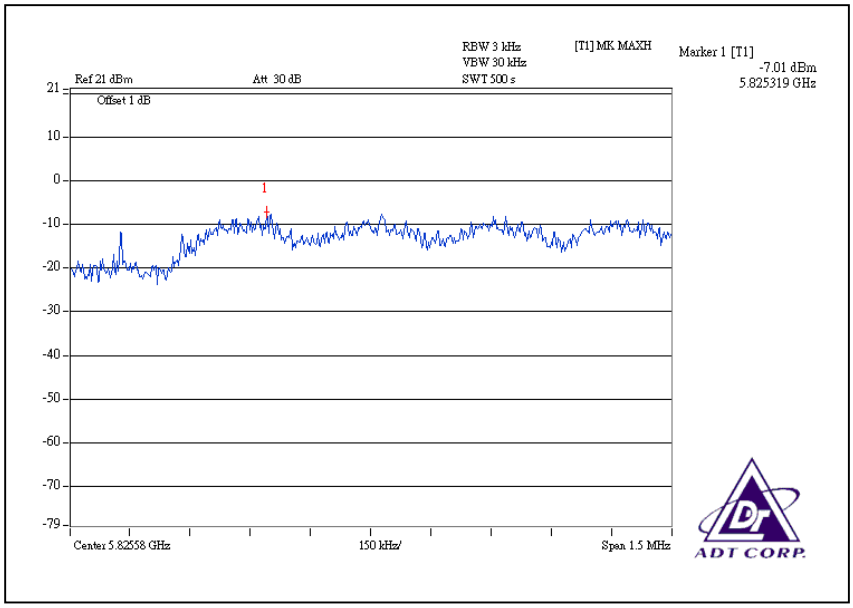
CH1



CH3


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-8.14 dBm
5.780902 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 5.7802 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH5

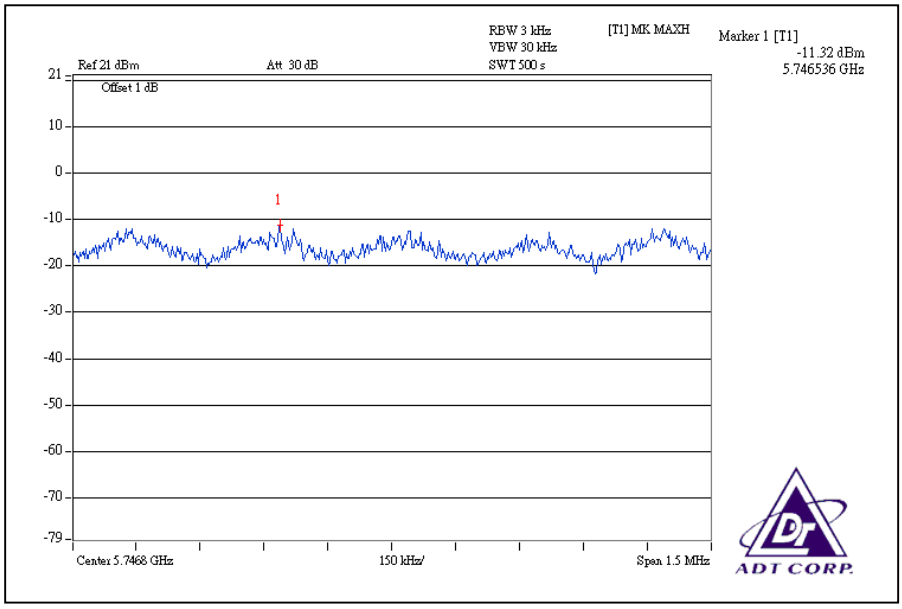

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-7.01 dBm
5.825319 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Center 5.82558 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

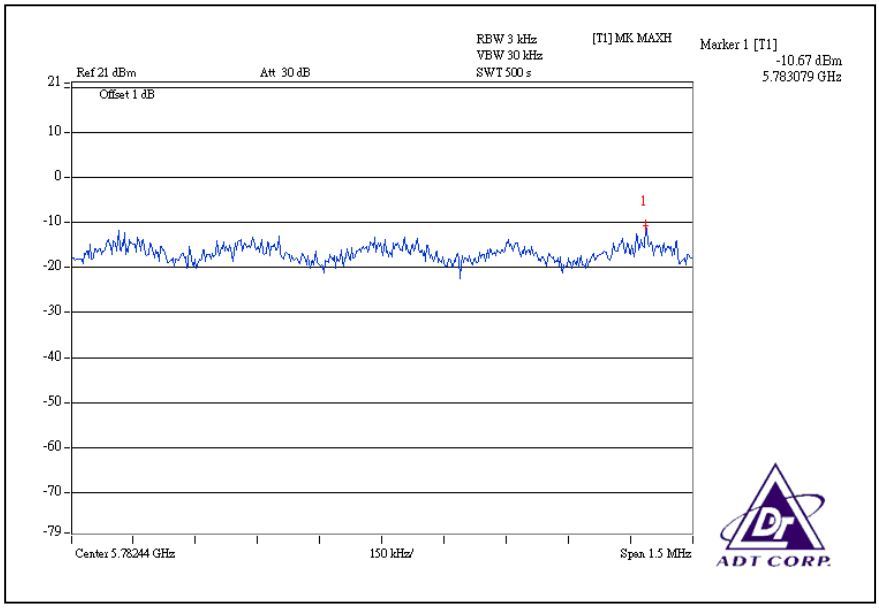
MODULATION TYPE	BPSK	**TRANSFER RATE**	14.444Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

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	0.074	0.062	0.070	-11.32	-12.11	-11.57	0.206	-6.861	8	PASS
3	5785	0.086	0.065	0.072	-10.67	-11.86	-11.40	0.223	-6.517	8	PASS
5	5825	0.068	0.069	0.069	-11.68	-11.61	-11.61	0.206	-6.861	8	PASS

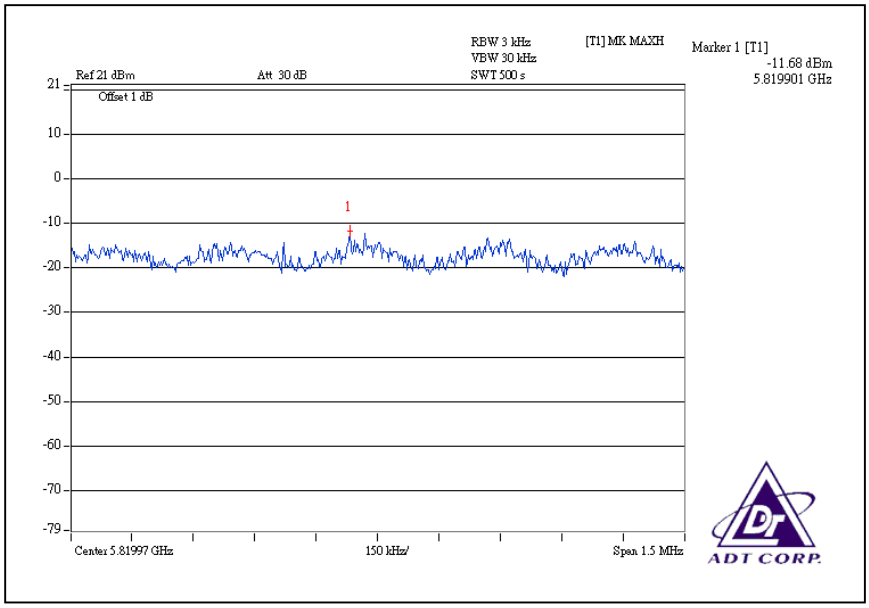
Chain 0
CH1



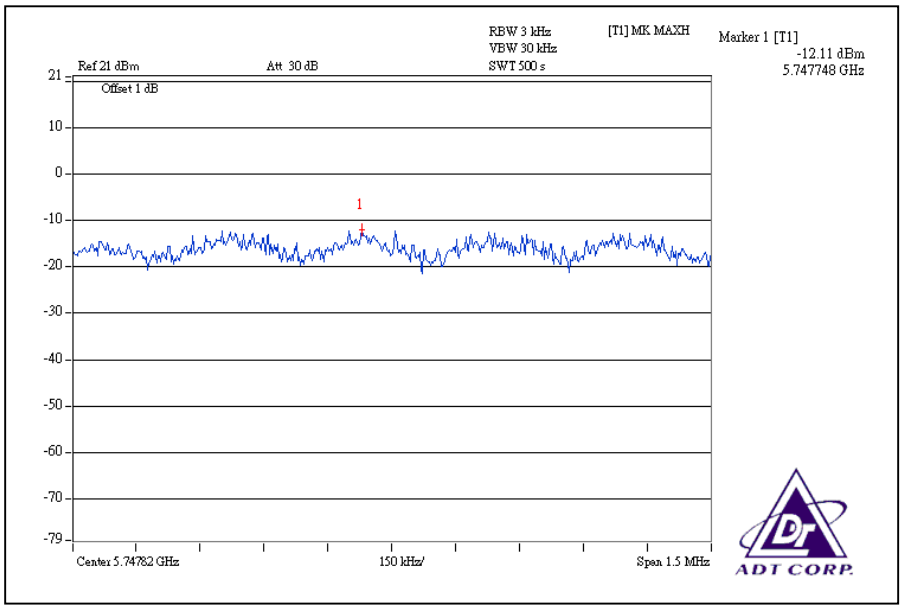
CH3


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-10.67 dBm
5.783079 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
1
Center 5.78244 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

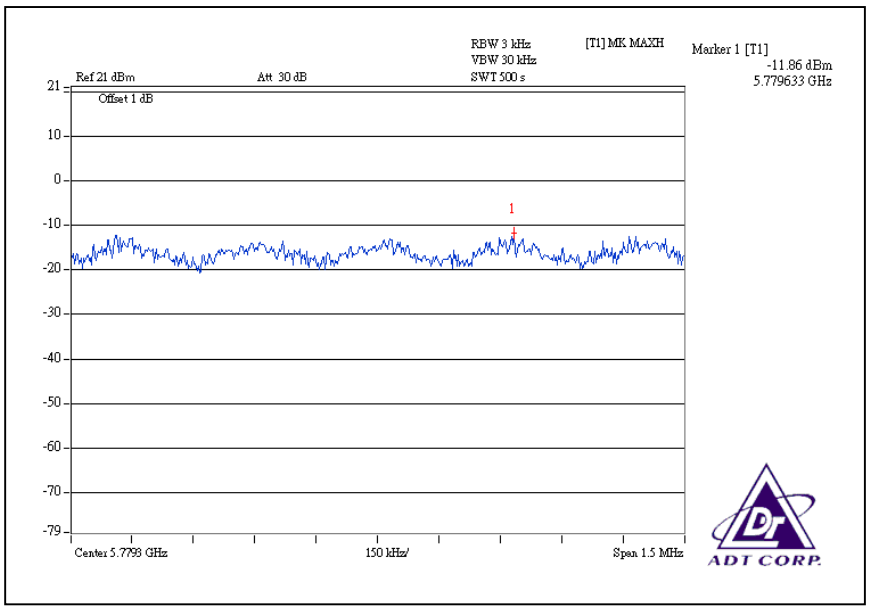
CH5


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.68 dBm
5.819901 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
1
Center 5.81997 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

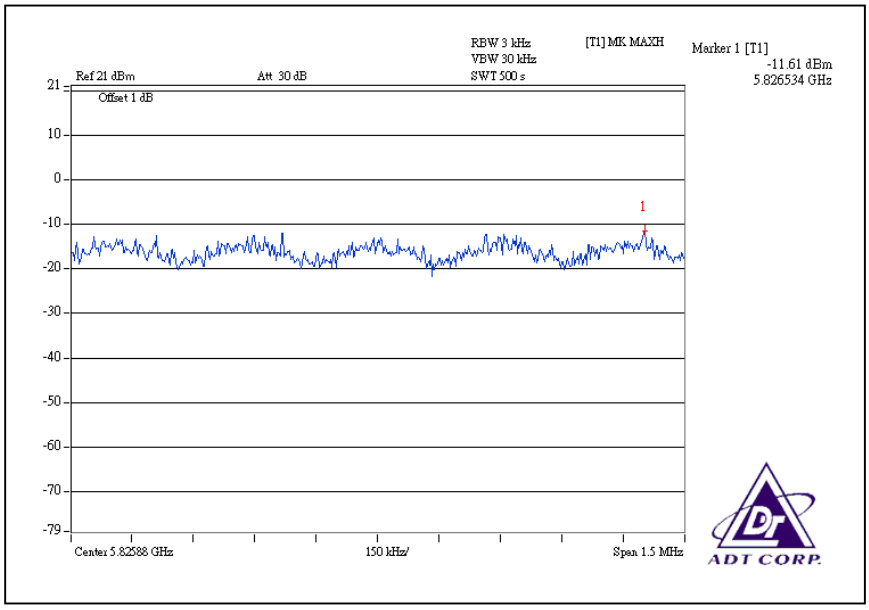
Chain 1
CH1



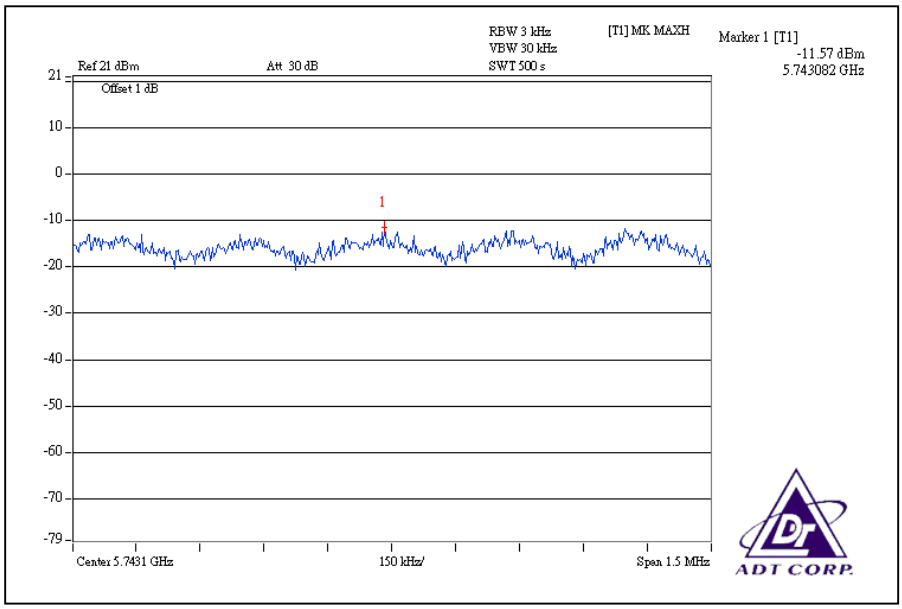
CH3



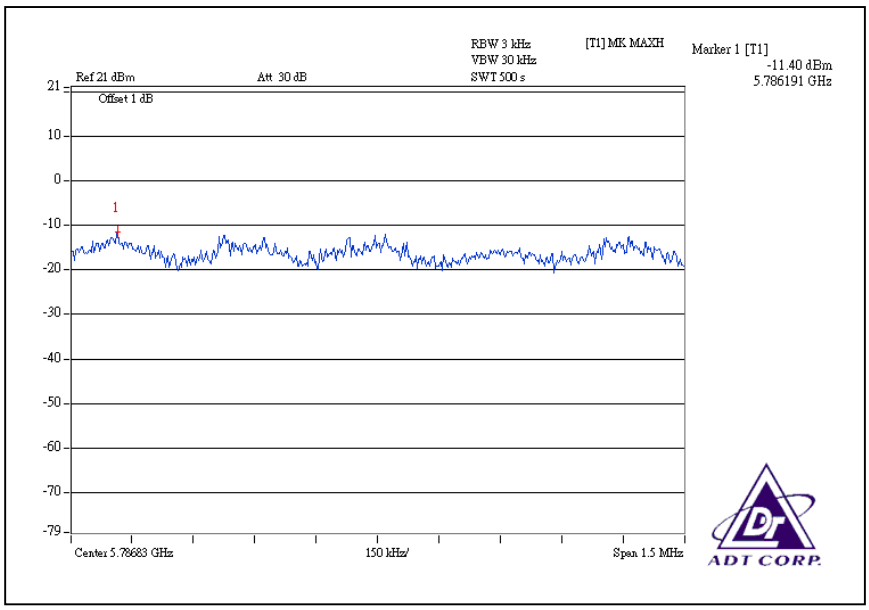
CH5


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.61 dBm
5.826534 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
1
Center 5.82588 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

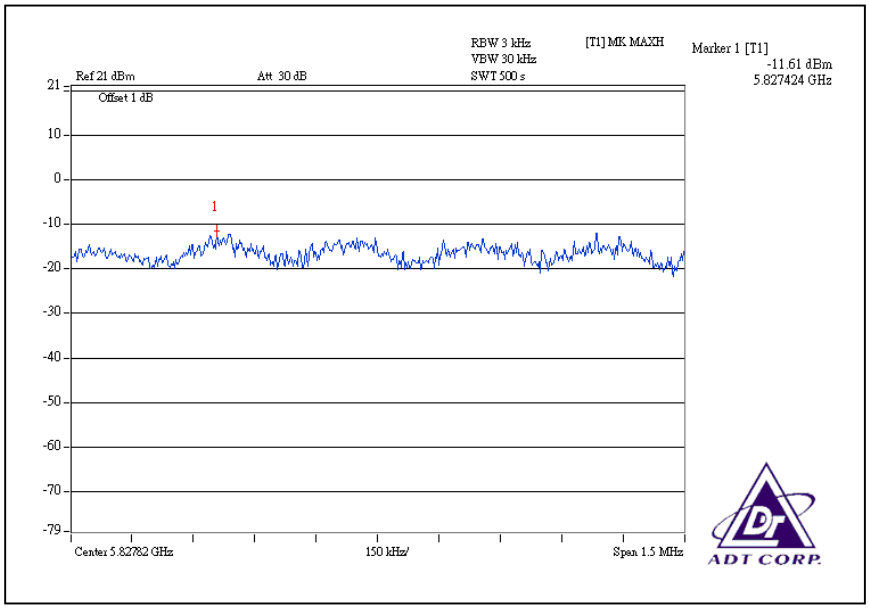
Chain 2
CH1



CH3



CH5

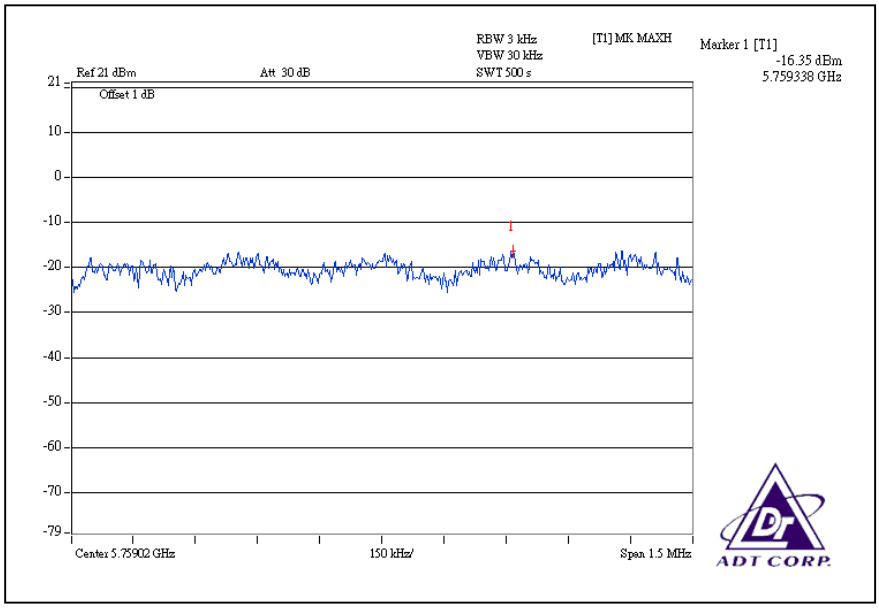

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.61 dBm
5.827424 GHz
Ref 21 dBm
Att 30 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
1
Center 5.82782 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

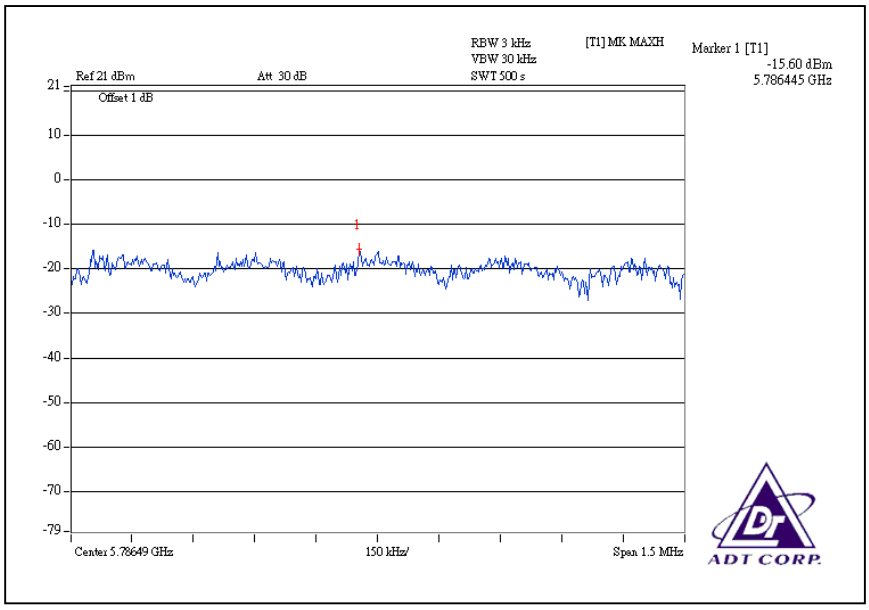
MODULATION TYPE	BPSK	**TRANSFER RATE**	30Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

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	0.023	0.030	0.026	-16.35	-15.22	-15.77	0.079	-11.024	8	PASS
2	5795	0.028	0.036	0.027	-15.60	-14.46	-15.62	0.091	-10.410	8	PASS

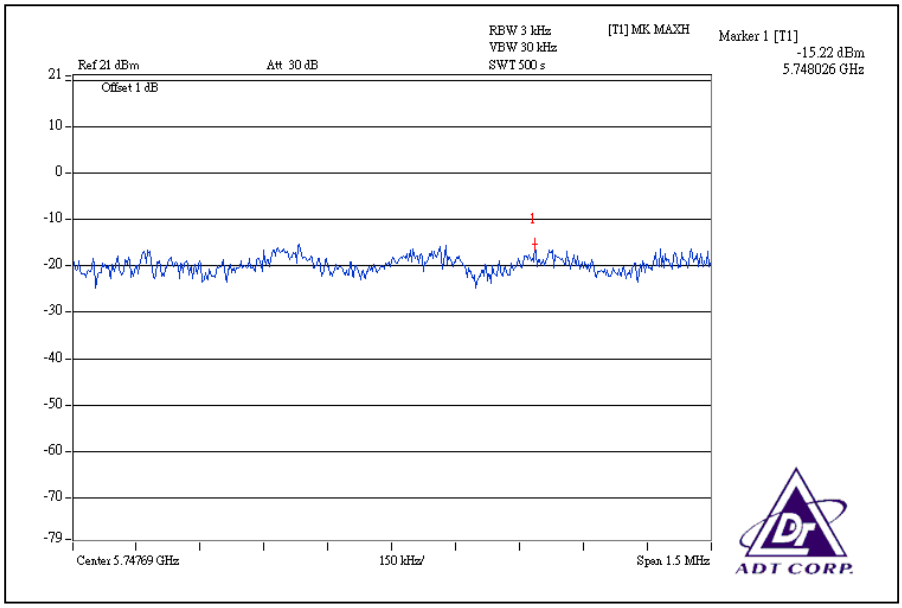
Chain 0
CH1



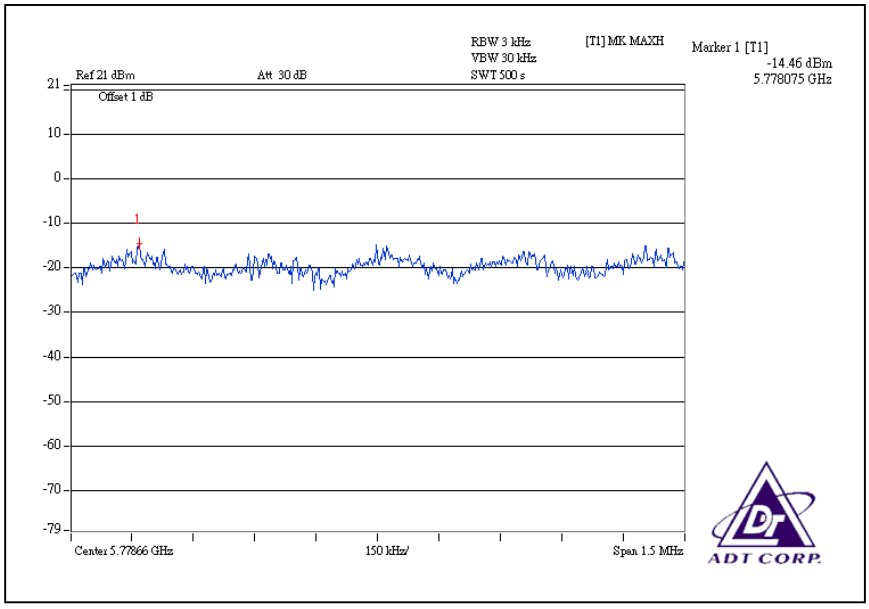
CH2



Chain 1
CH1

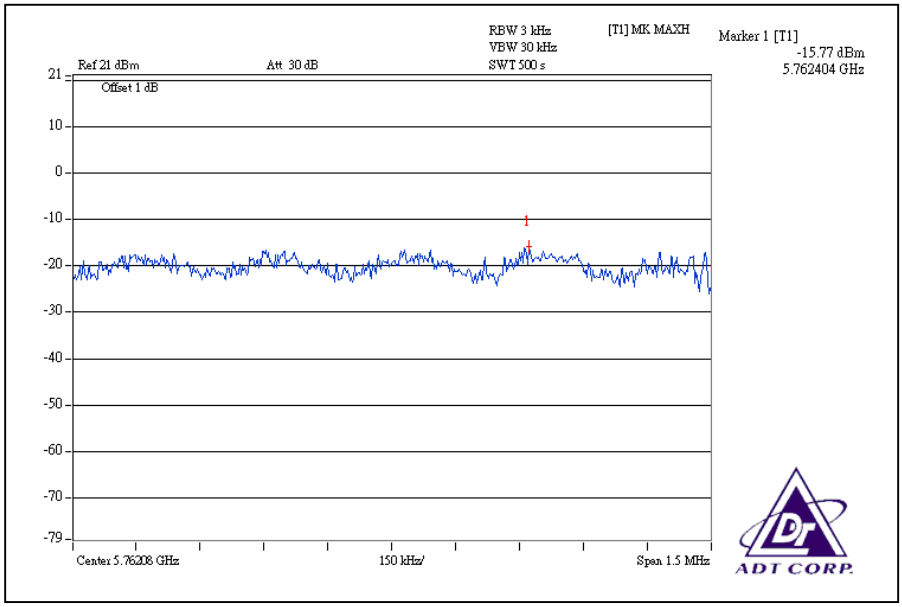


CH2

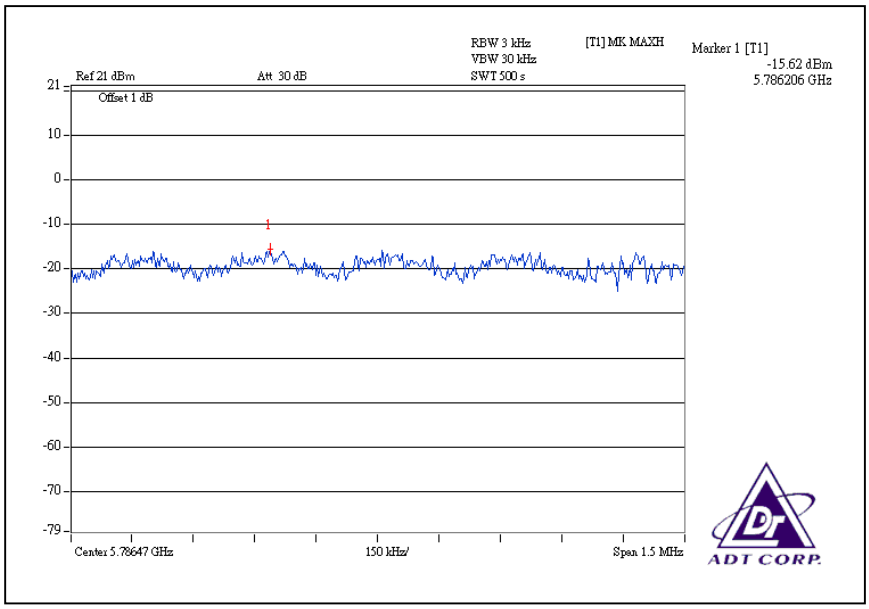


Chain 2

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 +/- 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.

5.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose 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

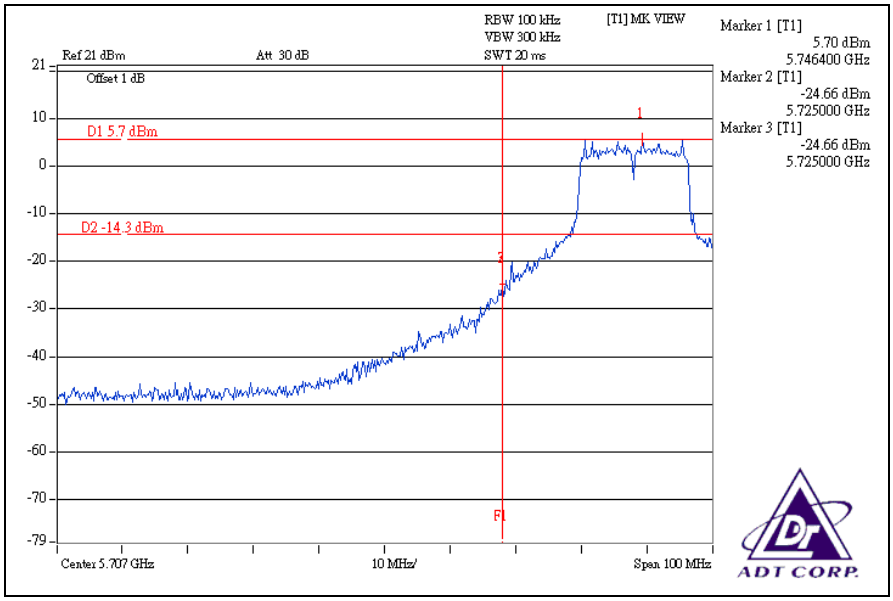
Same as Item 4.3.6

5.6.6 TEST RESULTS

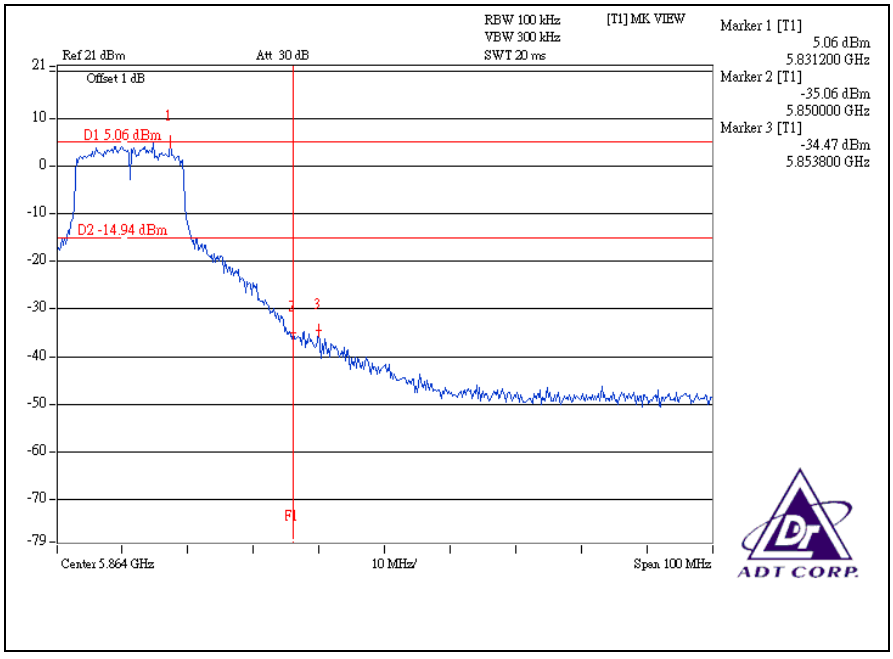
The spectrum plots are attached on the following pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(d).

802.11a OFDM modulation

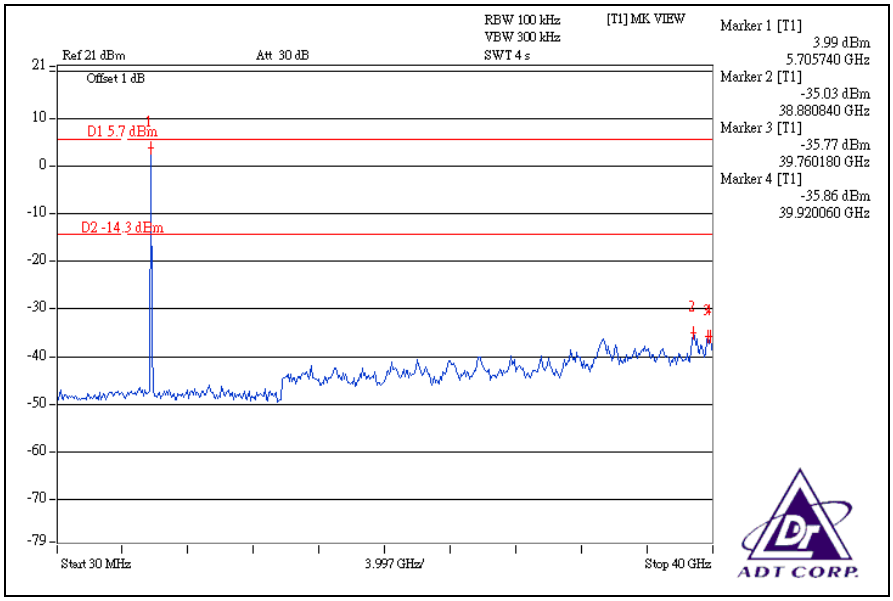
CH1



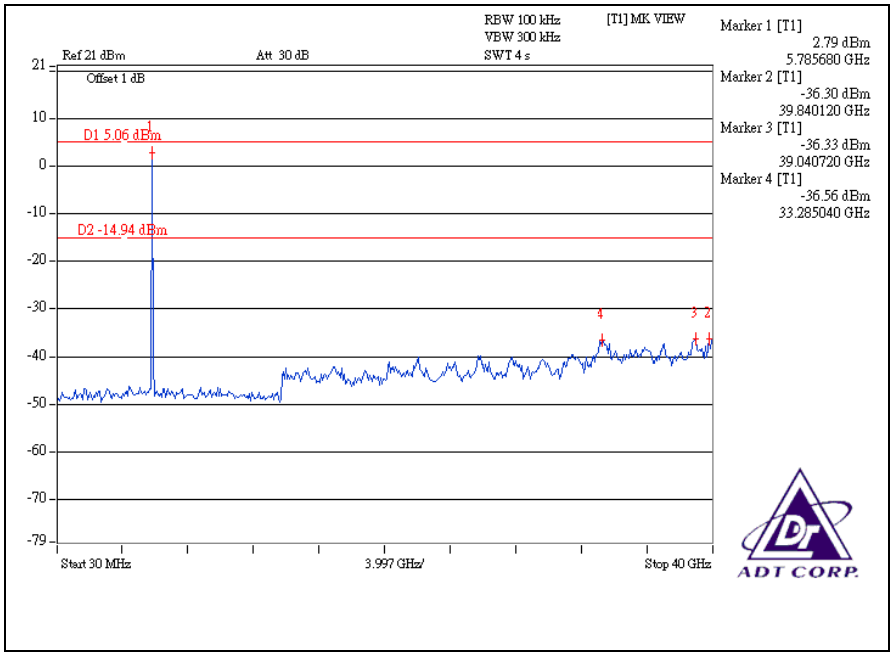
CH5



CH1

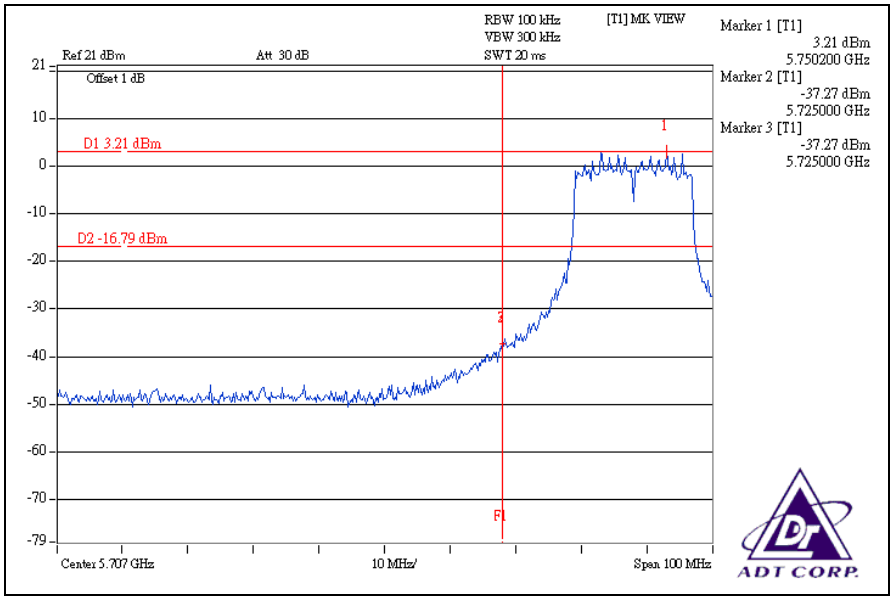

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 5.7 dBm
D2 -14.3 dBm
Marker 1 [T1]
3.99 dBm
5.705740 GHz
Marker 2 [T1]
-35.03 dBm
38.880840 GHz
Marker 3 [T1]
-35.77 dBm
39.760180 GHz
Marker 4 [T1]
-35.86 dBm
39.920060 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

CH5

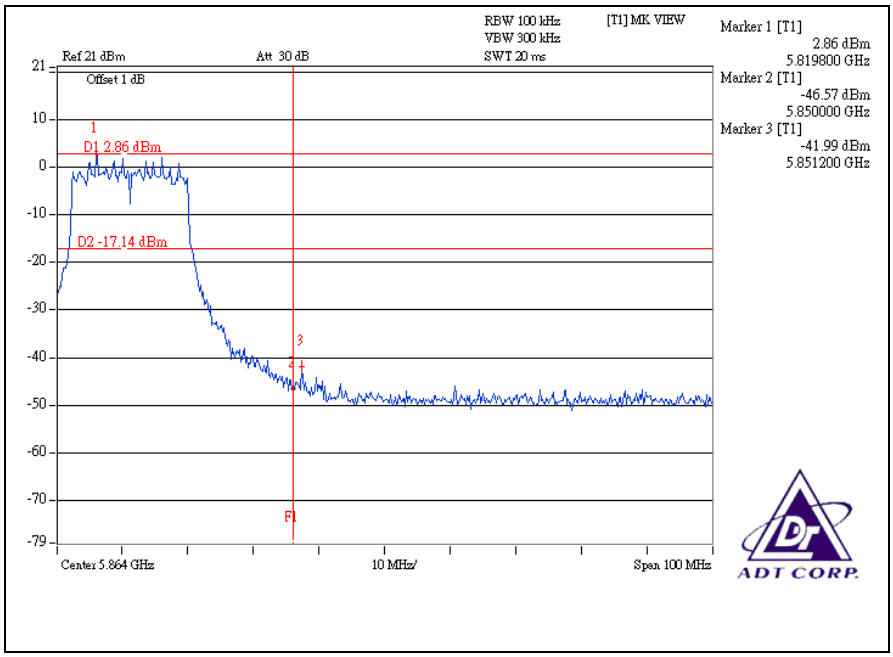

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 5.06 dBm
D2 -14.94 dBm
Marker 1 [T1]
2.79 dBm
5.785680 GHz
Marker 2 [T1]
-36.30 dBm
39.840120 GHz
Marker 3 [T1]
-36.33 dBm
39.040720 GHz
Marker 4 [T1]
-36.56 dBm
33.285040 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

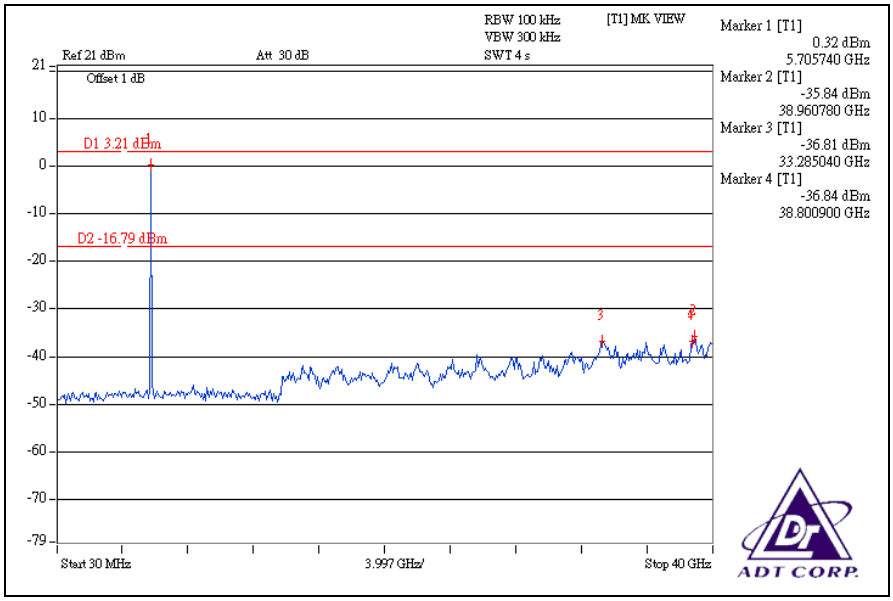
For chain (0) :CH1



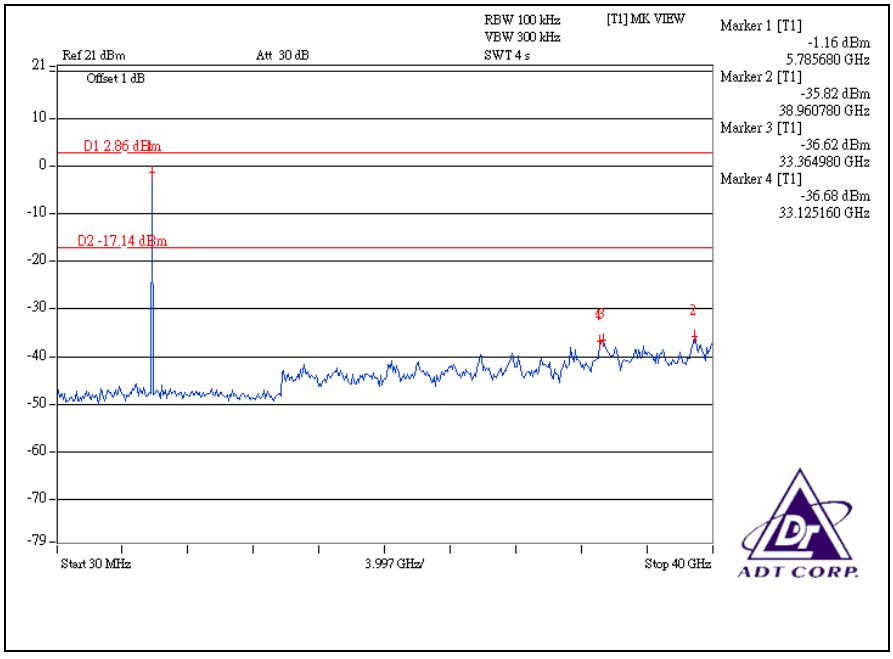
CH5



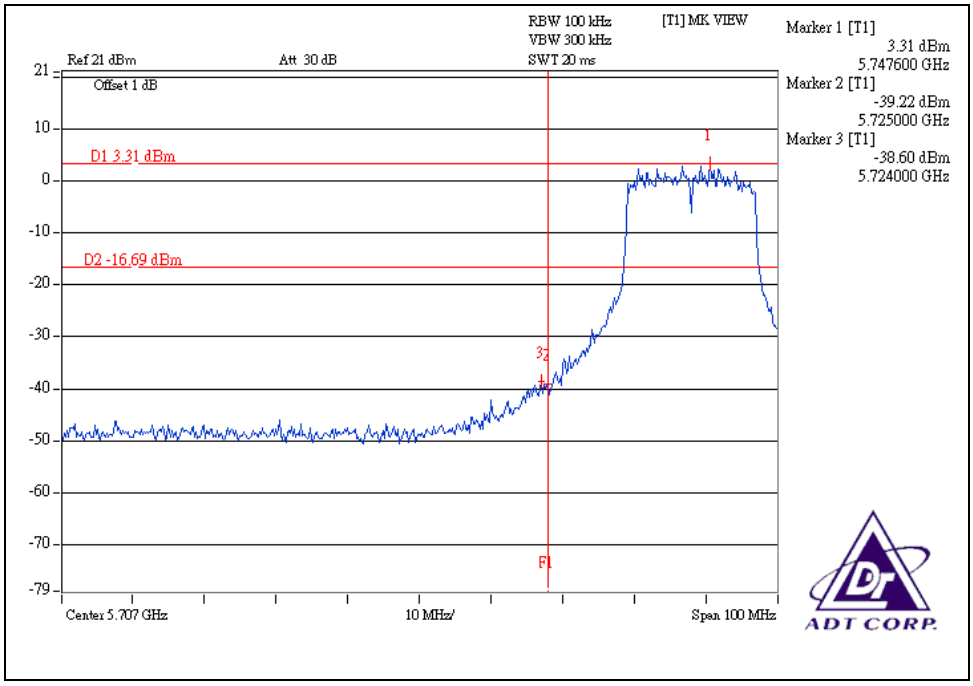
CH1


RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 3.21 dBm
D2 -16.79 dBm
Marker 1 [T1]
0.32 dBm
5.705740 GHz
Marker 2 [T1]
-35.84 dBm
38.960780 GHz
Marker 3 [T1]
-36.81 dBm
33.285040 GHz
Marker 4 [T1]
-36.84 dBm
38.800900 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

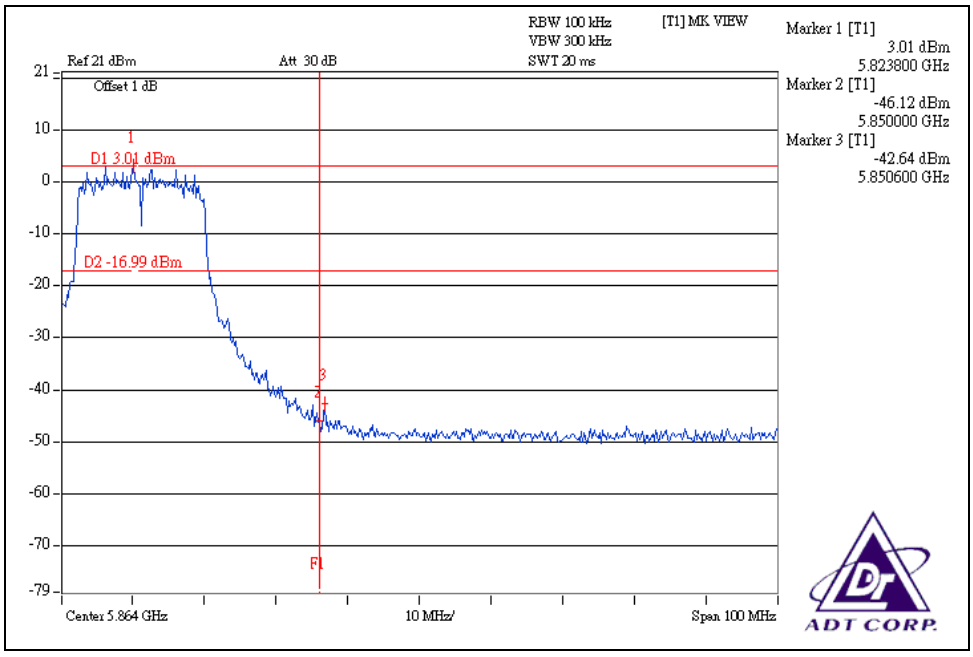
CH5


RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 2.86 dBm
D2 -17.14 dBm
Marker 1 [T1]
-1.16 dBm
5.785680 GHz
Marker 2 [T1]
-35.82 dBm
38.960780 GHz
Marker 3 [T1]
-36.62 dBm
33.364980 GHz
Marker 4 [T1]
-36.68 dBm
33.125160 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

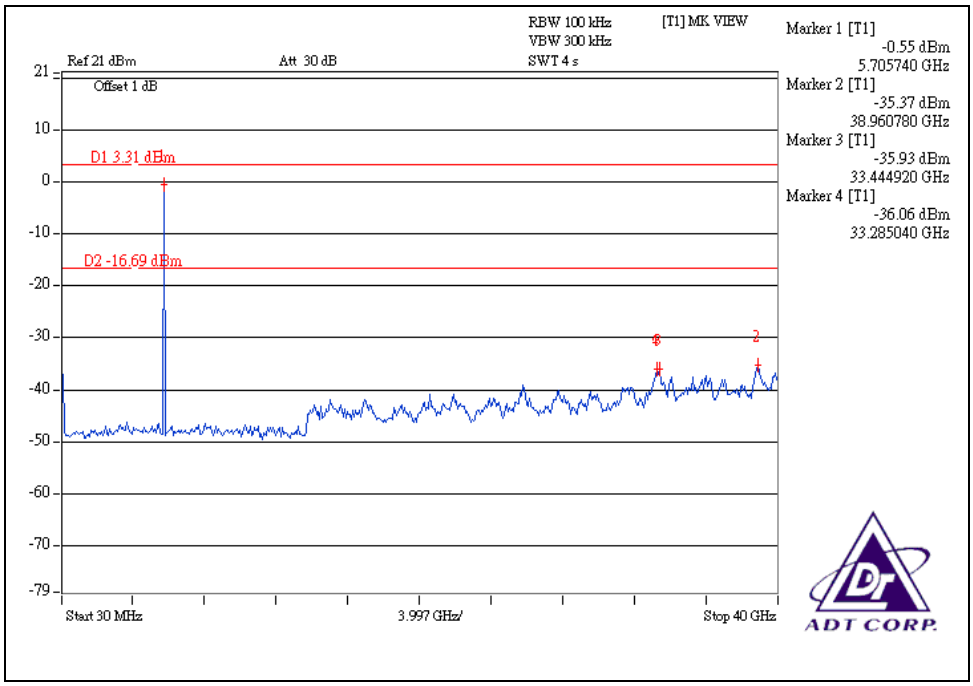
For chain (1):CH1



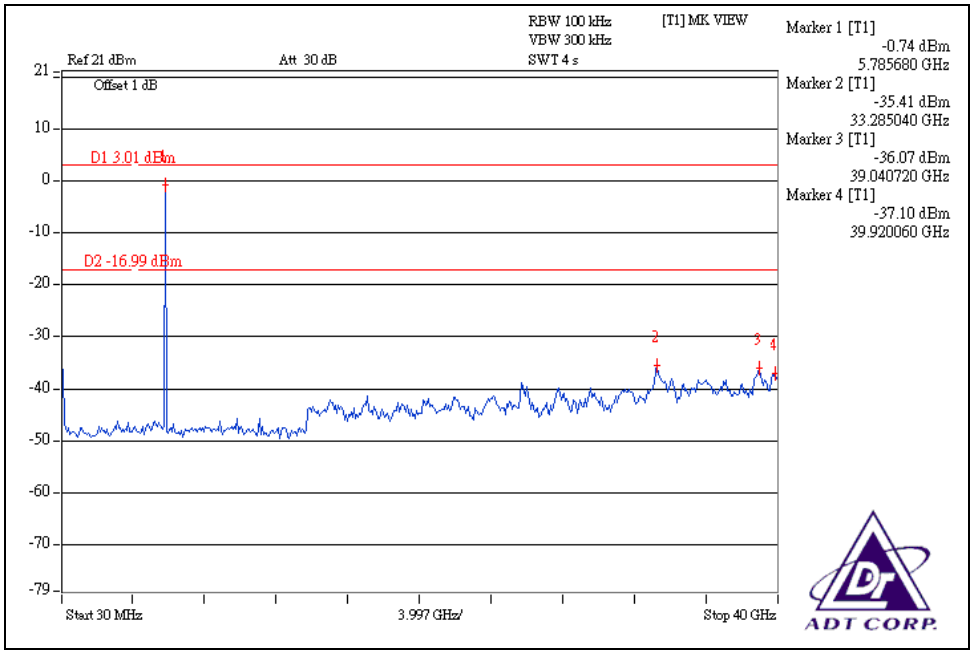
CH5



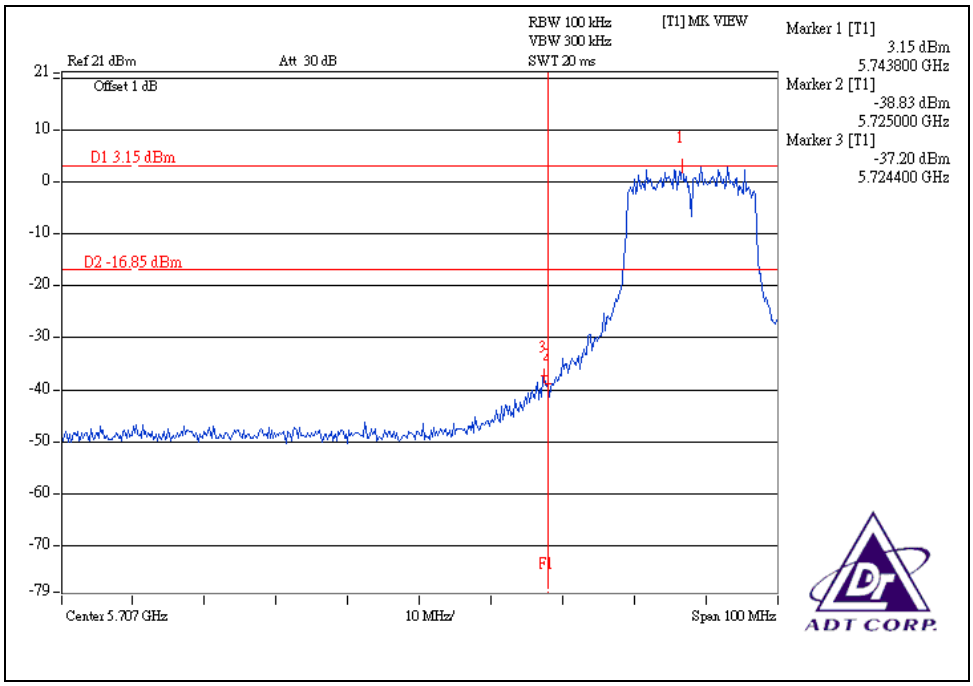
CH1


RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 3.31 dBm
D2 -16.69 dBm
Marker 1 [T1]
-0.55 dBm
5.705740 GHz
Marker 2 [T1]
-35.37 dBm
38.960780 GHz
Marker 3 [T1]
-35.93 dBm
33.444920 GHz
Marker 4 [T1]
-36.06 dBm
33.285040 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

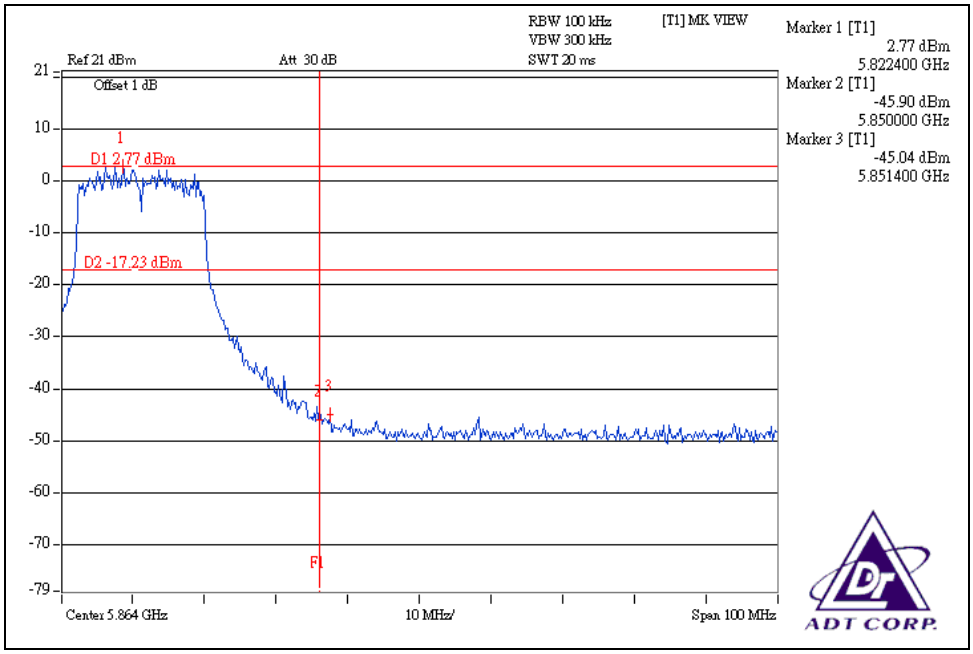
CH5


RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 3.01 dBm
D2 -16.99 dBm
Marker 1 [T1]
-0.74 dBm
5.785680 GHz
Marker 2 [T1]
-35.41 dBm
33.285040 GHz
Marker 3 [T1]
-36.07 dBm
39.040720 GHz
Marker 4 [T1]
-37.10 dBm
39.920060 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

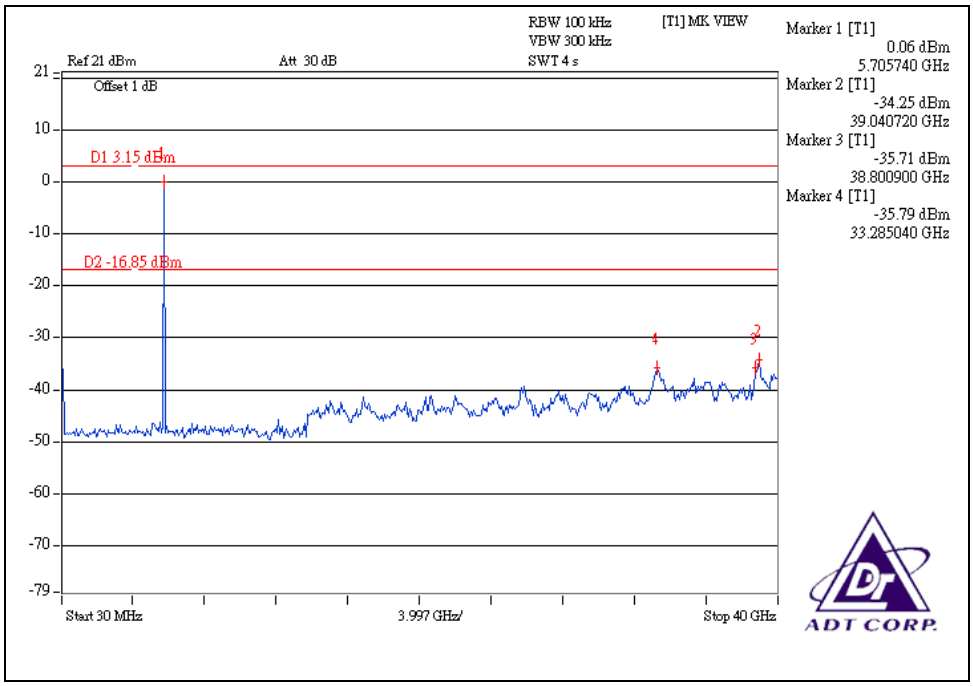
For chain (2):CH1



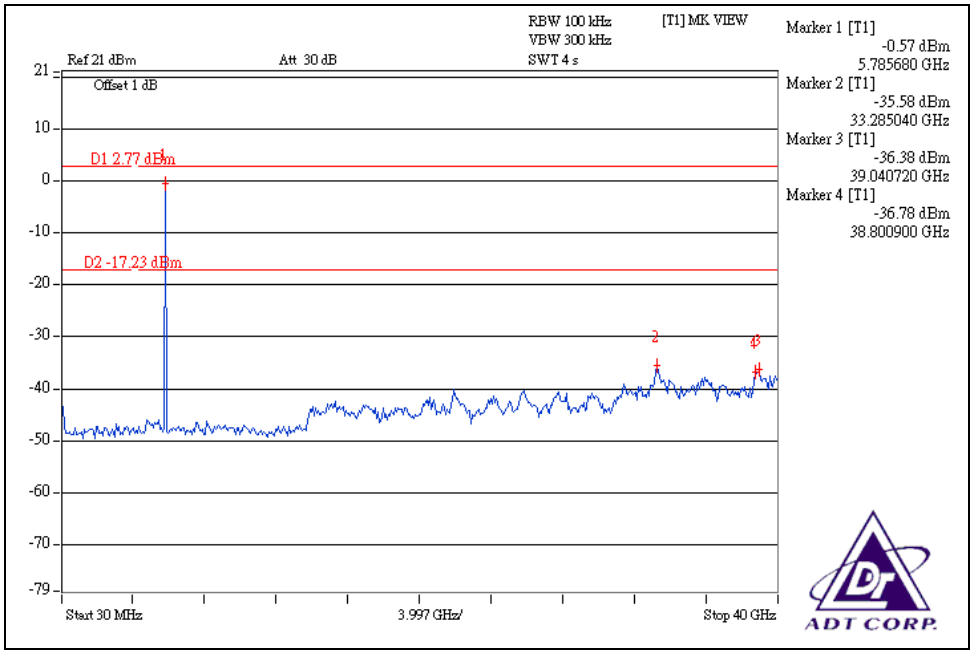
CH5



CH1

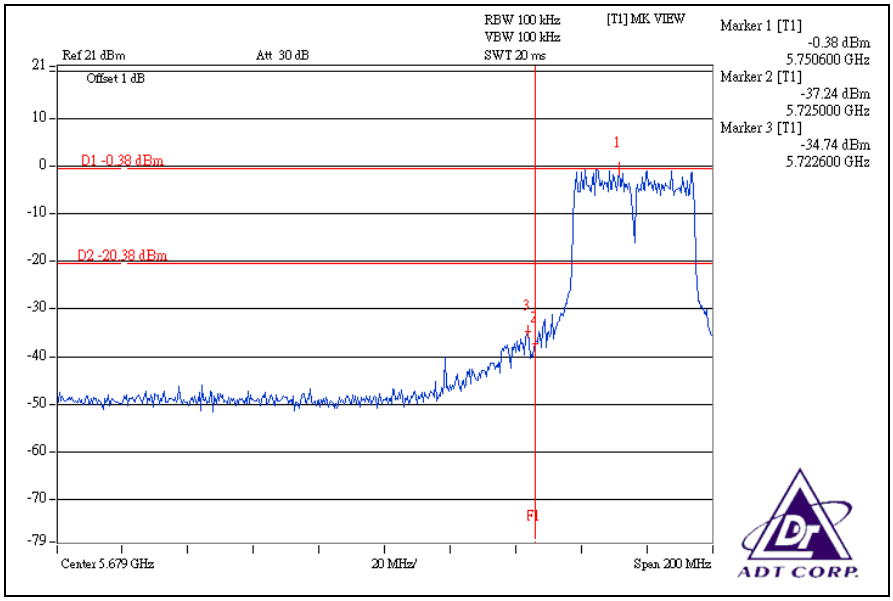

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 3.15 dBm
D2 -16.85 dBm
Marker 1 [T1]
0.06 dBm
5.705740 GHz
Marker 2 [T1]
-34.25 dBm
39.040720 GHz
Marker 3 [T1]
-35.71 dBm
38.800900 GHz
Marker 4 [T1]
-35.79 dBm
33.285040 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

CH5

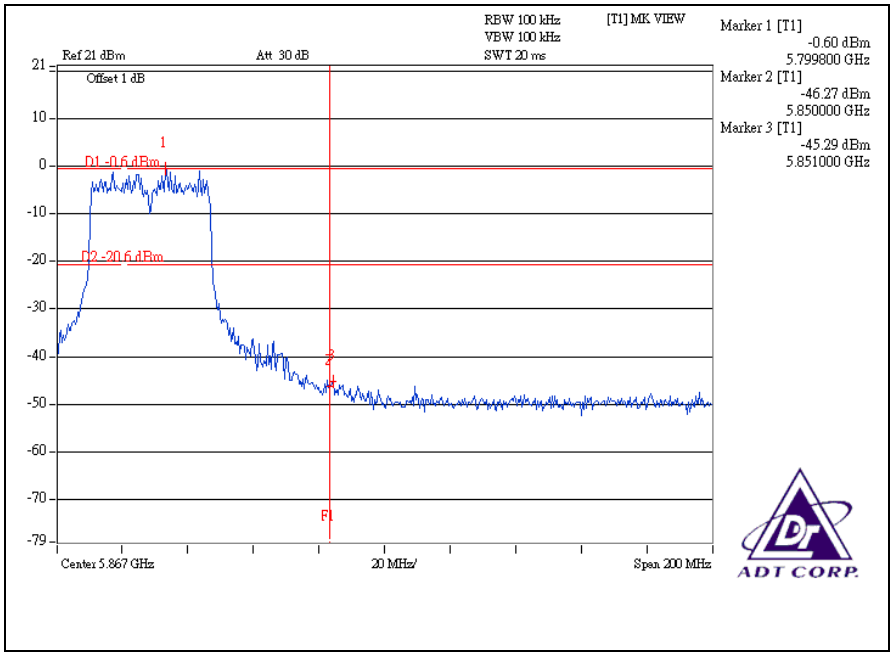

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 2.77 dBm
D2 -17.23 dBm
Marker 1 [T1]
-0.57 dBm
5.785680 GHz
Marker 2 [T1]
-35.58 dBm
33.285040 GHz
Marker 3 [T1]
-36.38 dBm
39.040720 GHz
Marker 4 [T1]
-36.78 dBm
38.800900 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

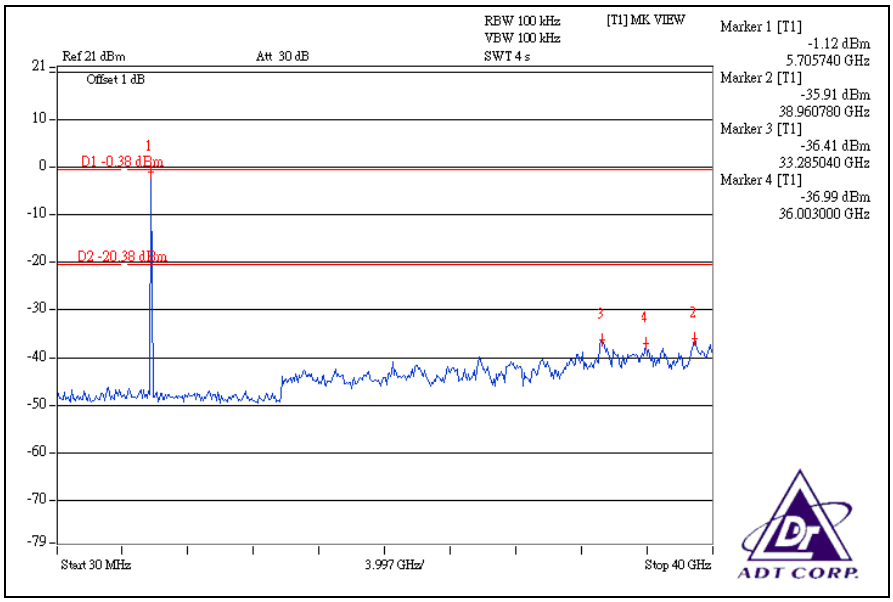
For chain (0) :CH1



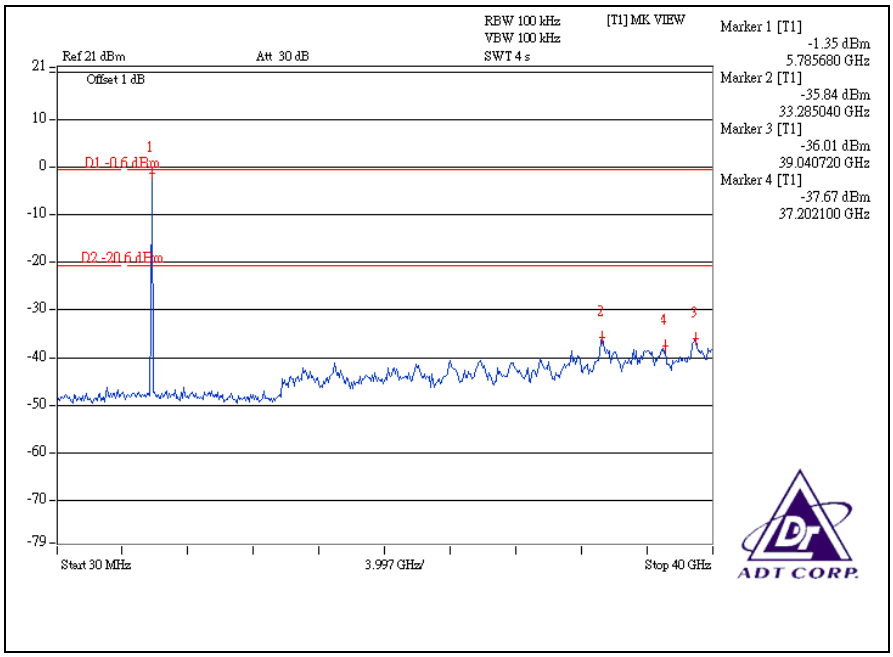
CH2



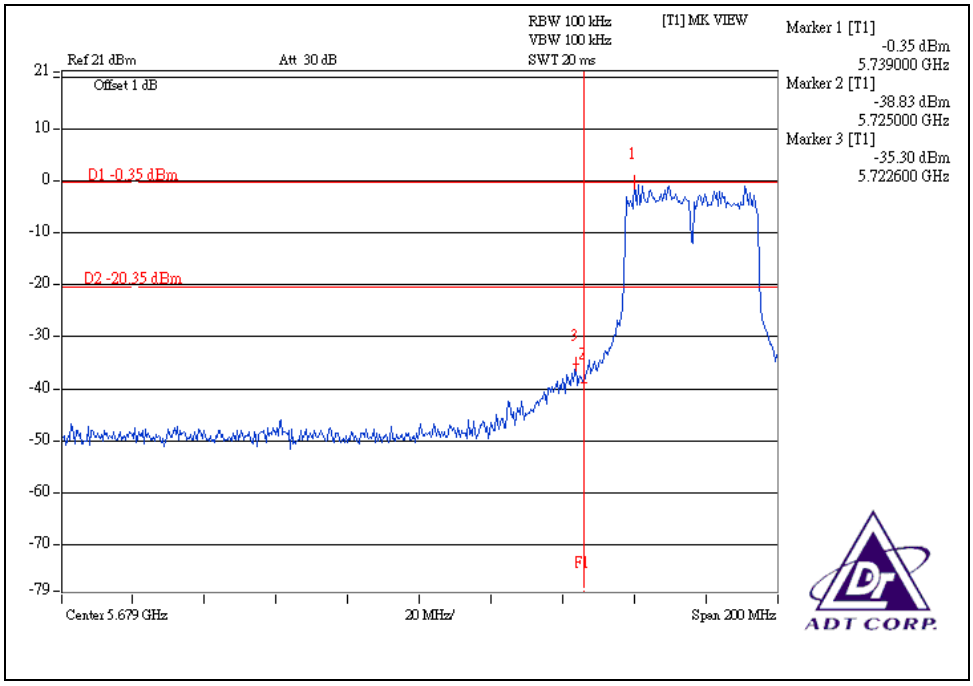
CH1


RBW 100 kHz
VBW 100 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -0.38 dBm
D2 -20.38 dBm
Marker 1 [T1]
-1.12 dBm
5.705740 GHz
Marker 2 [T1]
-35.91 dBm
38.960780 GHz
Marker 3 [T1]
-36.41 dBm
33.285040 GHz
Marker 4 [T1]
-36.99 dBm
36.003000 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

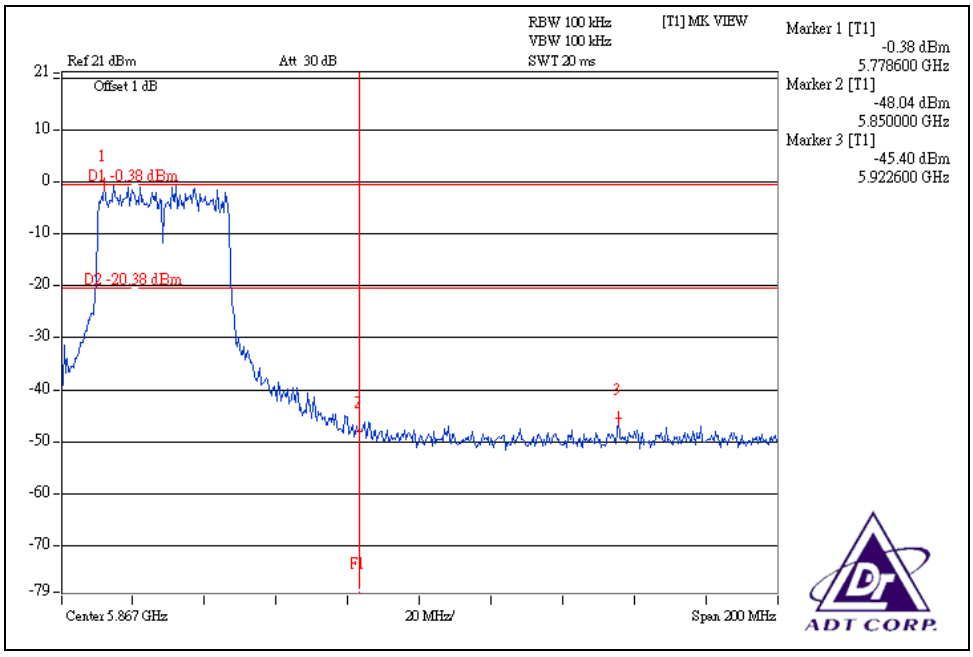
CH2


RBW 100 kHz
VBW 100 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
Marker 1 [T1]
-1.35 dBm
5.785680 GHz
Marker 2 [T1]
-35.84 dBm
33.285040 GHz
Marker 3 [T1]
-36.01 dBm
39.040720 GHz
Marker 4 [T1]
-37.67 dBm
37.202100 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

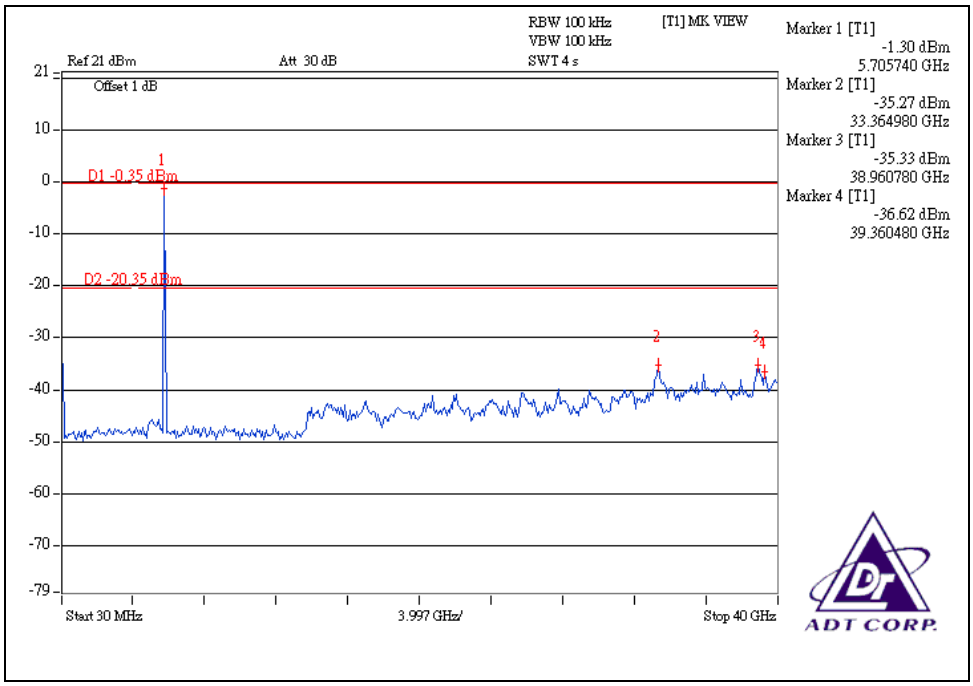
For chain (1) :CH1



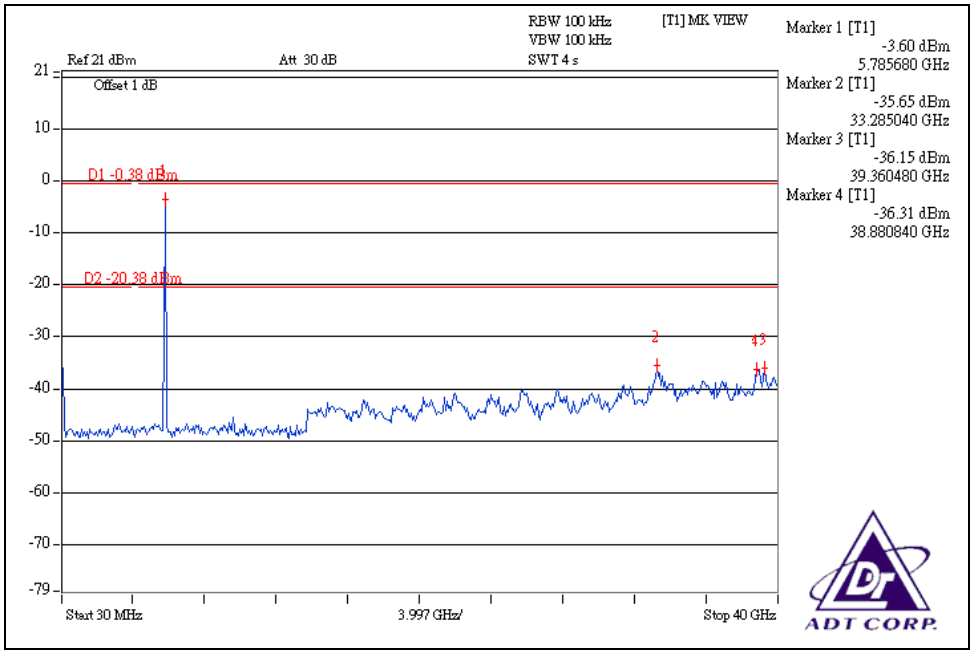
CH2



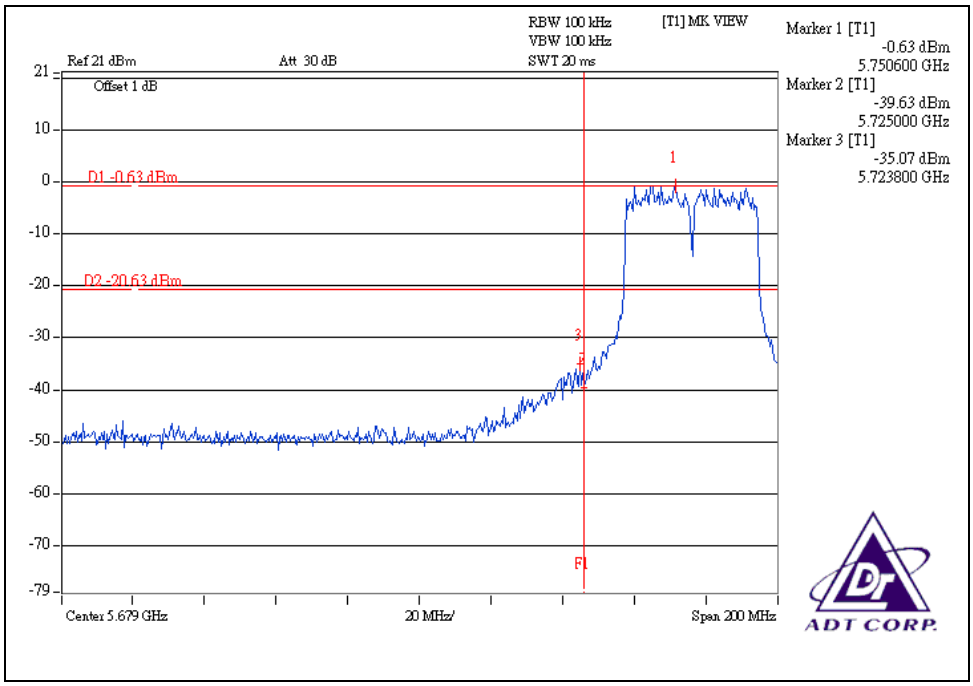
CH1


RBW 100 kHz
VBW 100 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -0.35 dBm
D2 -20.35 dBm
Marker 1 [T1]
-1.30 dBm
5.705740 GHz
Marker 2 [T1]
-35.27 dBm
33.364980 GHz
Marker 3 [T1]
-35.33 dBm
38.960780 GHz
Marker 4 [T1]
-36.62 dBm
39.360480 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

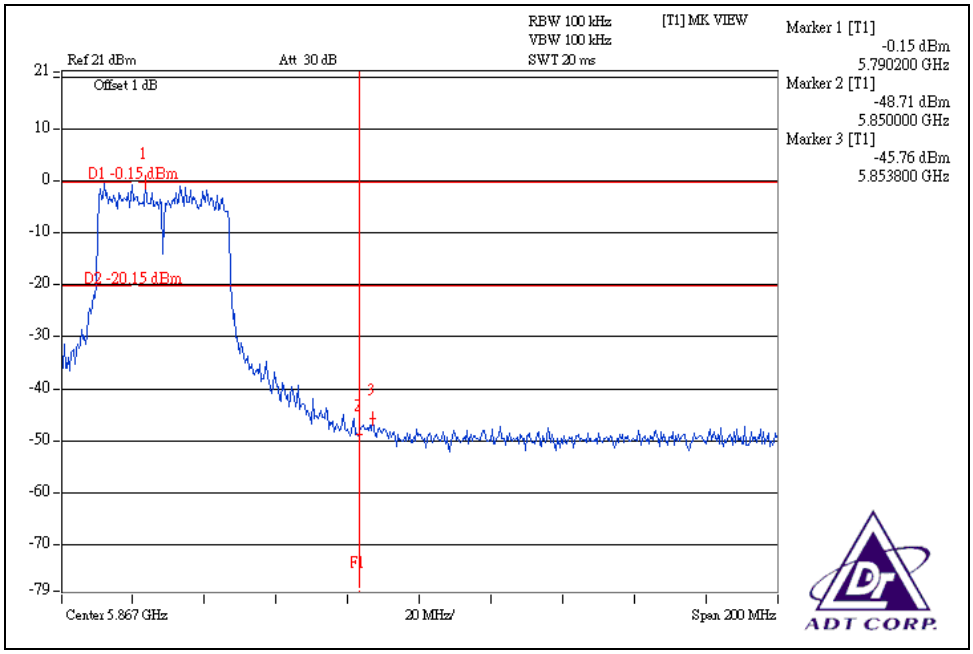
CH2


RBW 100 kHz
VBW 100 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -0.38 dBm
D2 -20.38 dBm
Marker 1 [T1]
-3.60 dBm
5.785680 GHz
Marker 2 [T1]
-35.65 dBm
33.285040 GHz
Marker 3 [T1]
-36.15 dBm
39.360480 GHz
Marker 4 [T1]
-36.31 dBm
38.880840 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

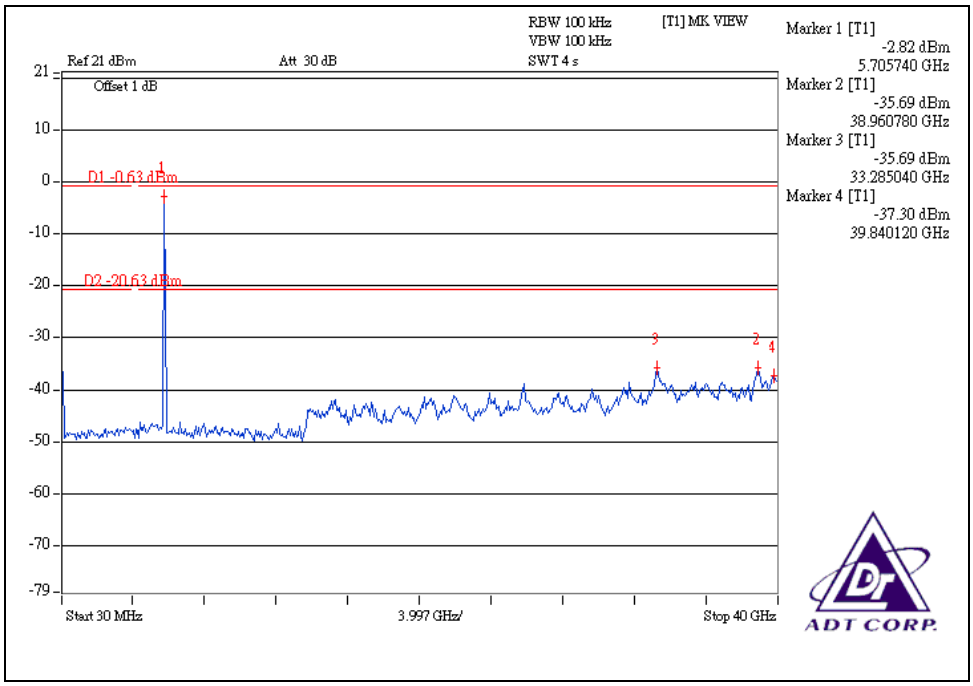
For chain (2) :CH1



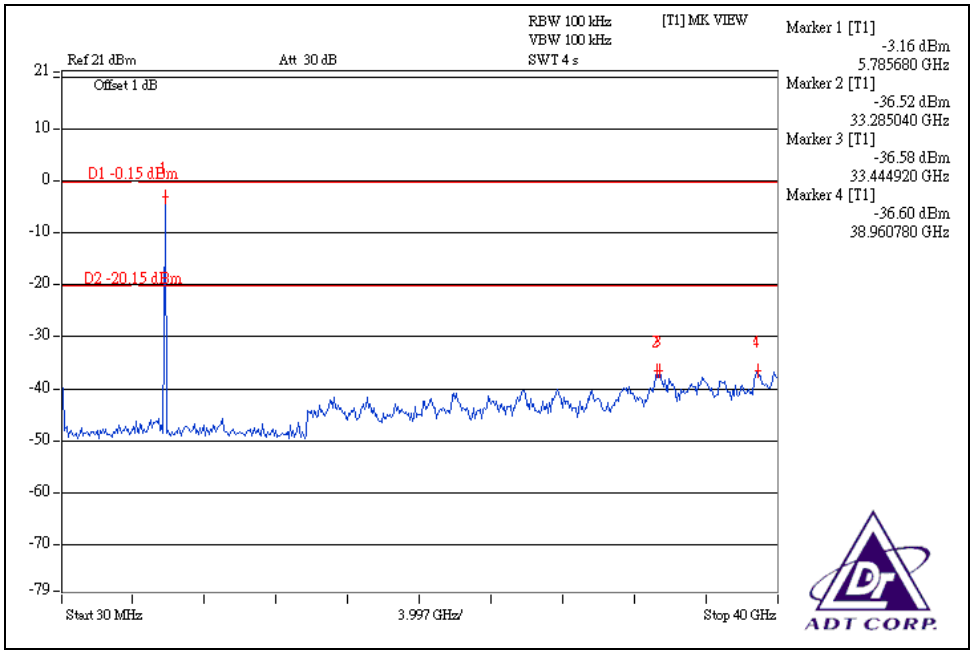
CH2



CH1


RBW 100 kHz
VBW 100 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -0.63 dBm
D2 -20.63 dBm
Marker 1 [T1]
-2.82 dBm
5.705740 GHz
Marker 2 [T1]
-35.69 dBm
38.960780 GHz
Marker 3 [T1]
-35.69 dBm
33.285040 GHz
Marker 4 [T1]
-37.30 dBm
39.840120 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

CH2


RBW 100 kHz
VBW 100 kHz
SWT 4 s
[T1] MK VIEW
Ref 21 dBm
Att 30 dB
Offset 1 dB
D1 -0.15 dBm
D2 -20.15 dBm
Marker 1 [T1]
-3.16 dBm
5.785680 GHz
Marker 2 [T1]
-36.52 dBm
33.285040 GHz
Marker 3 [T1]
-36.58 dBm
33.444920 GHz
Marker 4 [T1]
-36.60 dBm
38.960780 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

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	C034-510656-A (SSR-72241)	Gain (dBi)	3.66	2.61	2.91	Dipole	SMA Plug Reverse
		Cable Loss (dB)	1.18	2.06	2.56		
		Net Gain (dB)	2.48	0.55	0.35		
2	N2480-100C	Gain (dBi)	6.00	5.10	8.00	Monopoles with reflectors	I-PEX
		Cable Loss (dB)	1.00	1.00	1.00		
		Net Gain (dB)	5.00	4.10	7.00		

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, UL, 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

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---