FCC TEST REPORT (15.247)

REPORT NO.: RF960905L09

MODEL NO.: DGL-4500

RECEIVED: Sep. 06, 2007

TESTED: Sep. 12 ~ Sep. 19, 2007

ISSUED: Sep. 20, 2007

APPLICANT: D-Link Corporation

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

ISSUED BY: Advance Data Technology Corporation

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

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

Testing Laboratory 0528

ACCREDITED No.: 2177-01

TABLE OF CONTENTS

1. CERTIFICATION

PRODUCT: Xtreme N GAMING ROUTER
MODEL: DGL-4500
BRAND: D-Link
APPLICANT: D-Link Corporation
TEST SAMPLE: ENGINEERING SAMPLE
TESTED: Sep. 12 ~ Sep. 19, 2007
STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
ANSI C63.4-2003

The above equipment (Model: DGL-4500) has been tested by **Advance Data Technology Corporation,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Rennie Wang , **DATE:** Sep. 20, 2007
Rennie Wang / Senior Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE:** Sep. 20, 2007
Responsible for RF
Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Sep. 20, 2007
Gary Chang / Assistant Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -10.34dB at 0.193MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is –1.04dB at 2390.00MHz
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

2.1 MEASUREMENT UNCERTAINTY

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

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

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Xtreme N GAMING ROUTER
MODEL NO.	DGL-4500
FCC ID	KA2DGL4500A1
POWER SUPPLY	12Vdc from AC adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps Draft 802.11n (20MHz): 144.444/ 130.000/ 115.556/ 86.667/ 57.778/ 43.333/ 28.889/ 14.444/ 72.2/ 65.0/ 57.8/ 43.3/ 28.9/ 21.7/ 14.4/ 7.2Mbps Draft 802.11n (40MHz): 300/ 270/ 240/ 180/ 120/ 90/ 60/ 30/ 150/ 135/ 120/ 90/ 60/ 45/ 30/ 15Mbps
FREQUENCY RANGE	2.4GHz: 2400.0 ~ 2483.5MHz 5.0GHz: 5150.0 ~ 5250.0MHz, 5725.0 ~ 5850.0MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz) 5.0GHz: 9 for 802.11a, draft 802.11n (20MHz) 4 for draft 802.11n (40MHz)
OUTPUT POWER	77.751mW for 2400.0 ~ 2483.5MHz 43.904mW for 5150.0 ~ 5250.0MHz 150.249mW for 5725.0 ~ 5850.0MHz
ANTENNA TYPE	2.4GHz: Dipole antenna with 2.0dBi gain 5.0GHz: Dipole antenna with 2.0dBi gain
DATA CABLE	NA
I/O PORTS	RJ45, USB
ASSOCIATED DEVICES	Adapter

NOTE:

1. This report only covered frequency range: 2400 ~ 2483.5MHz and 5725 ~ 5850MHz. Frequency range: 5150 ~ 5250MHz showed in another report, which report no. is RF960905L09-1.
2. The frequency bands used in this EUT are listed as follows:

Frequency Band (MHz)	2400~2483.5	5150~5250	5725~5850
802.11b	√		
802.11g	√		
802.11a		√	√
Draft 11n(20MHz)	√	√	√
Draft 11n(40MHz)	√	√	√

3. The EUT was powered by the following adapter:

BRAND:	D-Link
MODEL:	AG2412-B
INPUT:	100-240Vac, 50-60Hz, 0.5A
OUTPUT:	12Vdc, 2A
POWER LINE:	1.8m non-shielded cable without core

4. The EUT incorporates a MIMO function. Physically, the card provides three completed transmitters and three receivers.
5. The EUT is 3 * 3 spatial MIMO (3Tx & 3Rx) without beam forming function.
6. When the EUT operating in 802.11b, 802.11g, 802.11a, the software operation, which is defined by manufacturer, only set single Tx.
7. When the EUT operating in draft 802.11n, the software operation, which is defined by manufacturer, only set 0 ~ 15 of “MCS” (MCS: Modulation and Coding Schemes) for triple Tx.
8. The EUT complies with draft 802.11n standards and backwards compatible with 802.11b, 802.11g, 802.11a products.
9. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 300Mbps.
10. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

FOR 2.4GHz:

11 channels are provided for 802.11b, 802.11g, draft 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2422MHz	5	2442MHz
2	2427MHz	6	2447MHz
3	2432MHz	7	2452MHz
4	2437MHz		

FOR 5.0GHz (5725 ~ 5850MHz):

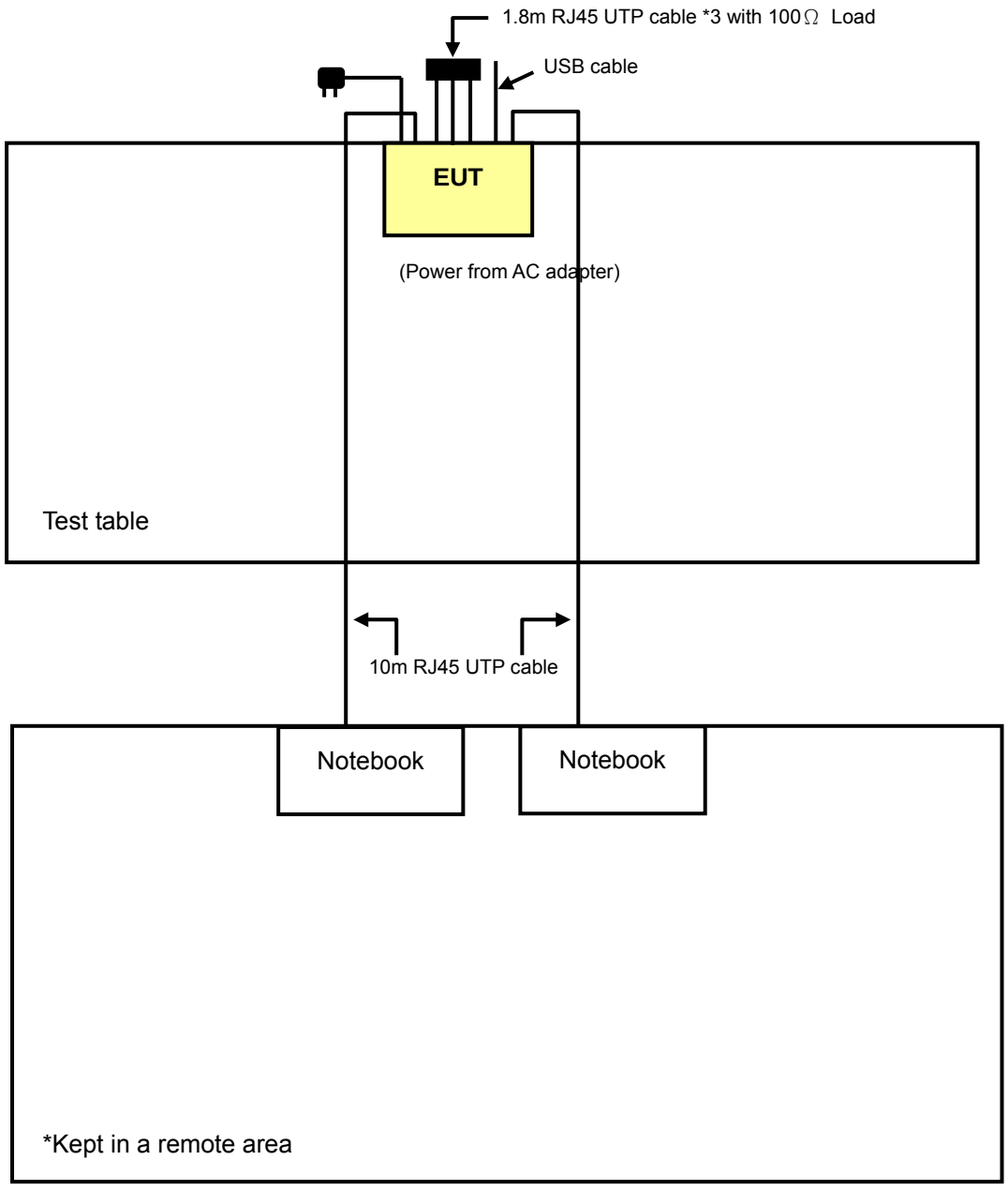
5 channels are provided for 802.11a, draft 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	5745MHz	4	5805MHz
2	5765MHz	5	5825MHz
3	5785MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	5755MHz	2	5795MHz

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

FOR 2.4GHz:

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

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

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15.0

RADIATED EMISSION TEST (BELOW 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	1	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 7	1	OFDM	BPSK	15.0

RADIATED EMISSION TEST (ABOVE 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15.0

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0
802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	15.0

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15.0

FOR 5.0GHz:

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

Where **PLC:** Power Line Conducted Emission **RE<1G:** Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 5	1	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 5	1	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 2	1	OFDM	BPSK	15.0

RADIATED EMISSION TEST (BELOW 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 5	1	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 5	1	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 2	1	OFDM	BPSK	15.0

RADIATED EMISSION TEST (ABOVE 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 5	1, 3, 5	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 5	1, 3, 5	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 2	1, 2	OFDM	BPSK	15.0

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 5	1, 5	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 5	1, 5	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 2	1, 2	OFDM	BPSK	15.0

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	1 to 5	1, 3, 5	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 5	1, 3, 5	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 2	1, 2	OFDM	BPSK	15.0

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C (15.247)
ANSI C63.4-2003

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

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

3.4 DESCRIPTION OF SUPPORT UNITS

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

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

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

NOTE: 1. All power cords of the above support units are non shielded (1.8m).
2. Item 1-2 acted as communication partners to transfer data.

4. TEST TYPES AND RESULTS (FOR 2.4GHz BAND)

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

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

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

4.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

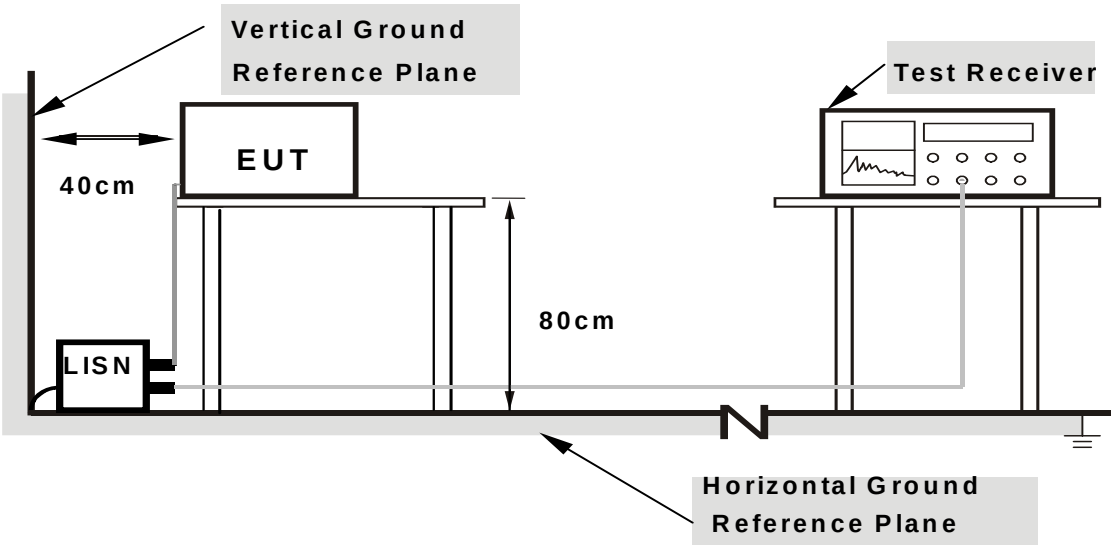
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

a. Placed the EUT on the testing table.
b. Prepared notebook systems to act as a communication partner and placed them outside of testing area.
c. The communication partners connected with EUT via a UTP cable and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The communication partners sent data to EUT by command "PING".

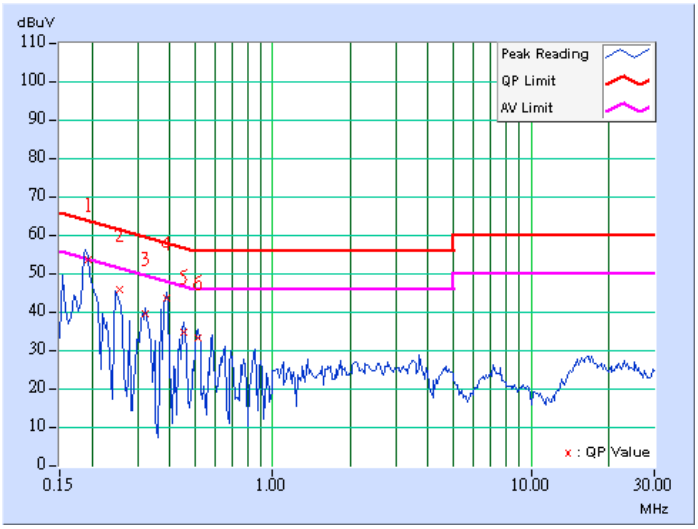
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11g OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	**0.193**	**0.10**	**53.45**	**-**	**53.55**	**-**	**63.89**	**53.89**	**-10.34**	**-**
2	0.257	0.10	45.82	-	45.92	-	61.53	51.53	-15.61	-
3	0.322	0.10	39.49	-	39.59	-	59.66	49.66	-20.07	-
4	0.388	0.10	43.64	-	43.74	-	58.10	48.10	-14.36	-
5	0.451	0.10	34.70	-	34.80	-	56.86	46.86	-22.06	-
6	0.516	0.10	33.22	-	33.32	-	56.00	46.00	-22.68	-

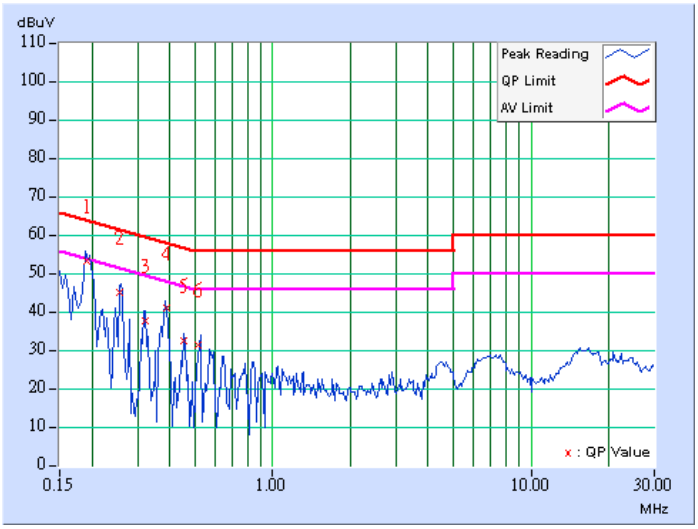
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.192	0.10	53.36	-	53.46	-	63.97	53.97	-10.51	-
2	0.257	0.10	44.97	-	45.07	-	61.53	51.53	-16.46	-
3	0.322	0.10	37.76	-	37.86	-	59.66	49.66	-21.80	-
4	0.387	0.10	40.89	-	40.99	-	58.13	48.13	-17.14	-
5	0.451	0.11	32.30	-	32.41	-	56.86	46.86	-24.45	-
6	0.516	0.12	31.29	-	31.41	-	56.00	46.00	-24.59	-

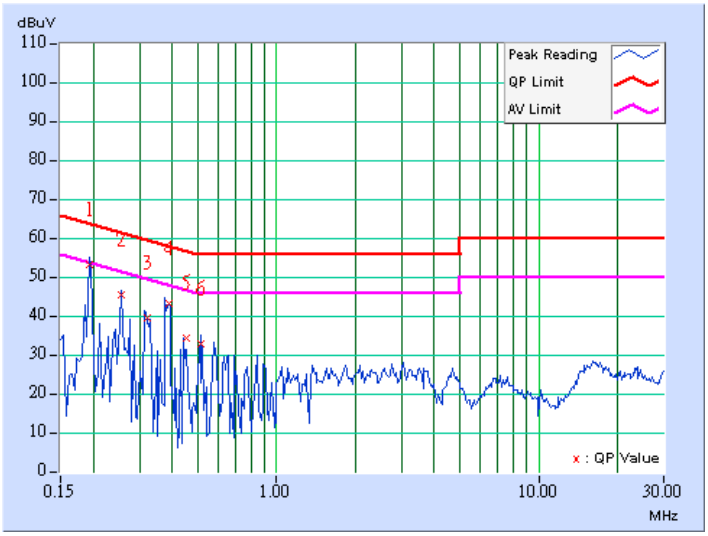
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.193	0.10	53.20	-	53.30	-	63.91	53.91	-10.61	-
2	0.257	0.10	45.61	-	45.71	-	61.53	51.53	-15.82	-
3	0.321	0.10	39.45	-	39.55	-	59.69	49.69	-20.14	-
4	0.388	0.10	43.15	-	43.25	-	58.11	48.11	-14.86	-
5	0.451	0.10	34.19	-	34.29	-	56.86	46.86	-22.57	-
6	0.517	0.10	32.89	-	32.99	-	56.00	46.00	-23.01	-

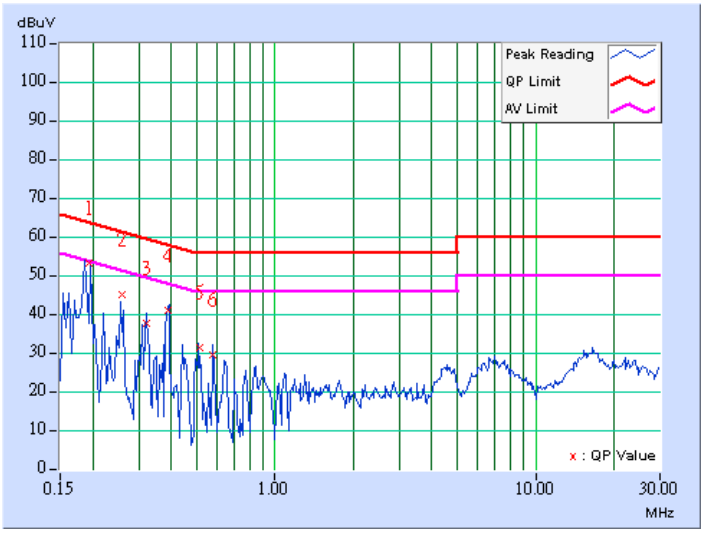
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.194	0.10	53.10	-	53.20	-	63.86	53.86	-10.66	-
2	0.258	0.10	44.97	-	45.07	-	61.49	51.49	-16.42	-
3	0.322	0.10	37.74	-	37.84	-	59.66	49.66	-21.82	-
4	0.387	0.10	40.85	-	40.95	-	58.13	48.13	-17.18	-
5	0.515	0.12	31.21	-	31.33	-	56.00	46.00	-24.67	-
6	0.580	0.13	29.55	-	29.68	-	56.00	46.00	-26.32	-

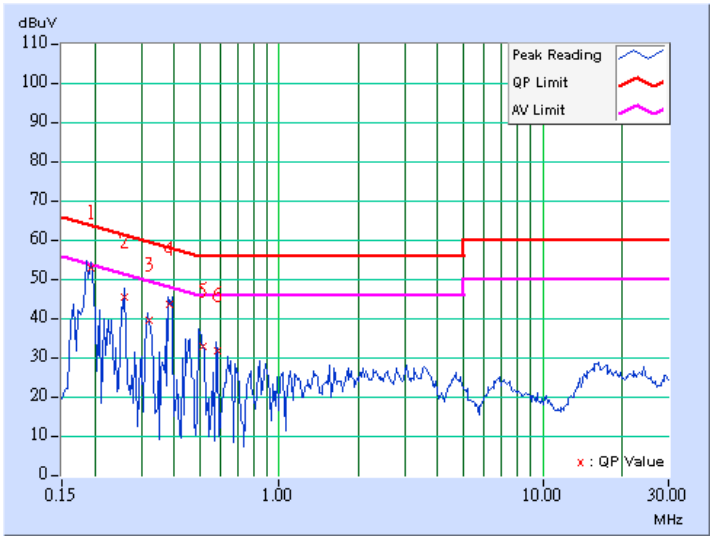
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.194	0.10	52.86	-	52.96	-	63.85	53.85	-10.89	-
2	0.259	0.10	45.61	-	45.71	-	61.45	51.45	-15.74	-
3	0.322	0.10	39.37	-	39.47	-	59.66	49.66	-20.19	-
4	0.386	0.10	43.56	-	43.66	-	58.16	48.16	-14.50	-
5	0.513	0.10	32.71	-	32.81	-	56.00	46.00	-23.19	-
6	0.584	0.10	31.67	-	31.77	-	56.00	46.00	-24.23	-

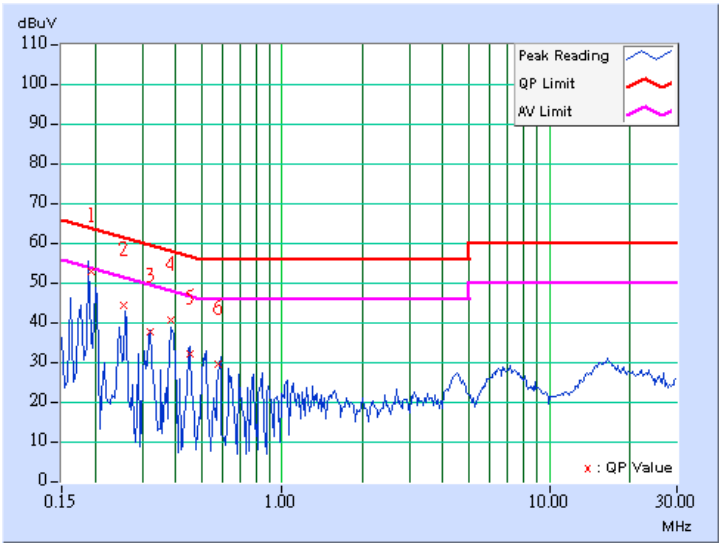
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.194	0.10	52.82	-	52.92	-	63.86	53.86	-10.94	-
2	0.255	0.10	44.35	-	44.45	-	61.58	51.58	-17.13	-
3	0.322	0.10	37.58	-	37.68	-	59.66	49.66	-21.98	-
4	0.384	0.10	40.46	-	40.56	-	58.18	48.18	-17.62	-
5	0.451	0.11	32.22	-	32.33	-	56.86	46.86	-24.53	-
6	0.580	0.13	29.61	-	29.74	-	56.00	46.00	-26.26	-

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

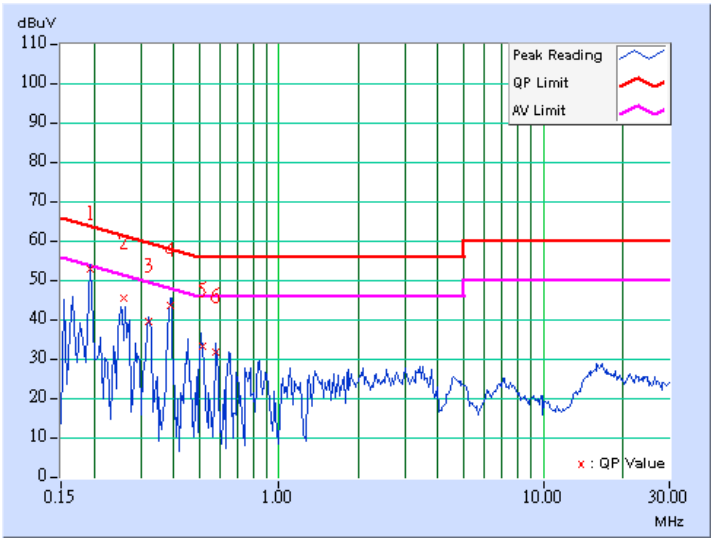


DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.194	0.10	52.88	-	52.98	-	63.85	53.85	-10.87	-
2	0.258	0.10	45.61	-	45.71	-	61.51	51.51	-15.80	-
3	0.322	0.10	39.35	-	39.45	-	59.66	49.66	-20.21	-
4	0.387	0.10	43.74	-	43.84	-	58.13	48.13	-14.29	-
5	0.516	0.10	33.22	-	33.32	-	56.00	46.00	-22.68	-
6	0.580	0.10	31.71	-	31.81	-	56.00	46.00	-24.19	-

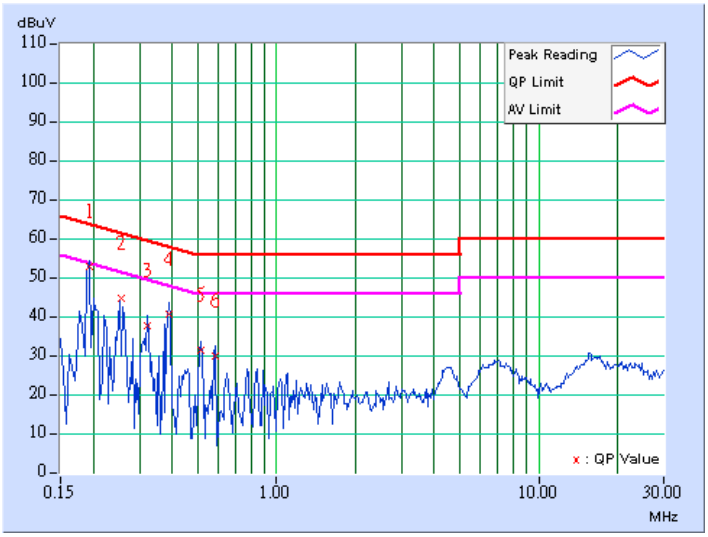
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.193	0.10	52.86	-	52.96	-	63.91	53.91	-10.95	-
2	0.257	0.10	44.59	-	44.69	-	61.54	51.54	-16.85	-
3	0.322	0.10	37.58	-	37.68	-	59.66	49.66	-21.98	-
4	0.388	0.10	40.73	-	40.83	-	58.10	48.10	-17.27	-
5	0.515	0.12	31.21	-	31.33	-	56.00	46.00	-24.67	-
6	0.582	0.13	29.85	-	29.98	-	56.00	46.00	-26.02	-

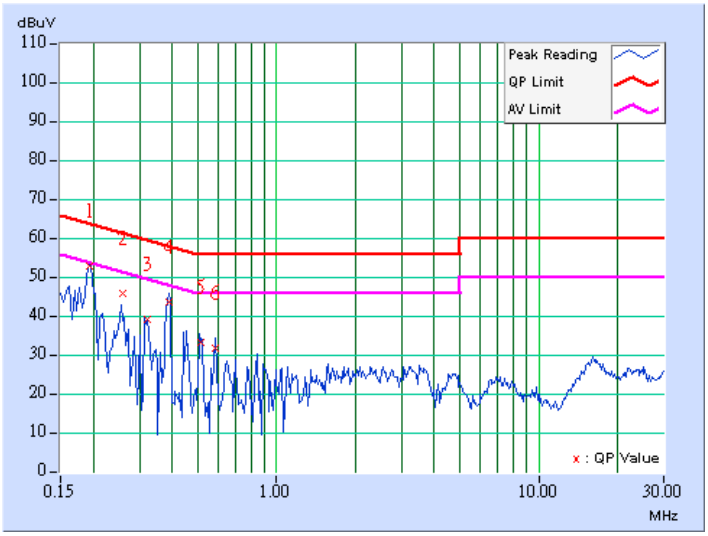
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.193	0.10	52.96	-	53.06	-	63.91	53.91	-10.85	-
2	0.258	0.10	45.65	-	45.75	-	61.49	51.49	-15.74	-
3	0.322	0.10	39.26	-	39.36	-	59.65	49.65	-20.29	-
4	0.388	0.10	43.76	-	43.86	-	58.10	48.10	-14.24	-
5	0.516	0.10	33.18	-	33.28	-	56.00	46.00	-22.72	-
6	0.584	0.10	31.84	-	31.94	-	56.00	46.00	-24.06	-

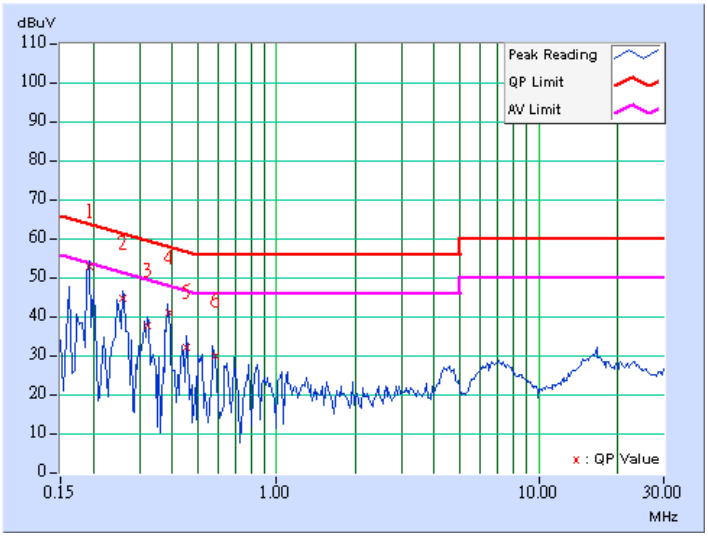
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.193	0.10	52.78	-	52.88	-	63.91	53.91	-11.03	-
2	0.258	0.10	44.71	-	44.81	-	61.49	51.49	-16.68	-
3	0.322	0.10	37.58	-	37.68	-	59.66	49.66	-21.98	-
4	0.388	0.10	40.87	-	40.97	-	58.10	48.10	-17.13	-
5	0.451	0.11	32.26	-	32.37	-	56.86	46.86	-24.49	-
6	0.581	0.13	29.87	-	30.00	-	56.00	46.00	-26.00	-

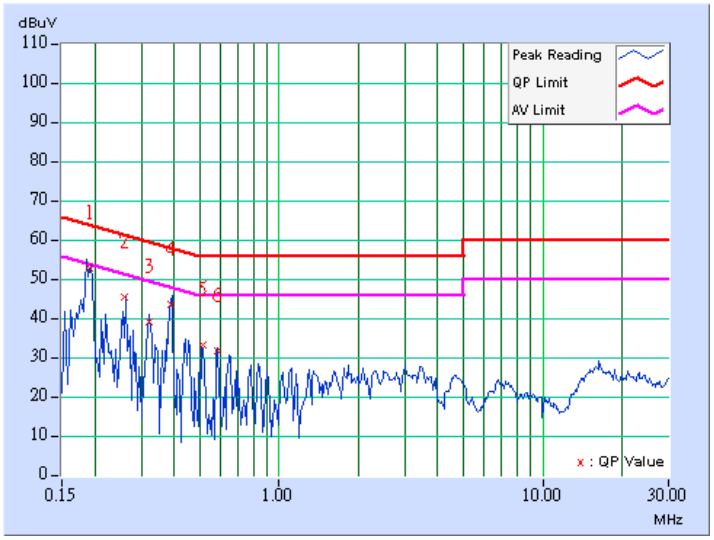
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.192	0.10	52.78	-	52.88	-	63.95	53.95	-11.07	-
2	0.258	0.10	45.55	-	45.65	-	61.51	51.51	-15.86	-
3	0.322	0.10	39.33	-	39.43	-	59.66	49.66	-20.23	-
4	0.388	0.10	43.72	-	43.82	-	58.11	48.11	-14.29	-
5	0.517	0.10	33.18	-	33.28	-	56.00	46.00	-22.72	-
6	0.582	0.10	31.88	-	31.98	-	56.00	46.00	-24.02	-

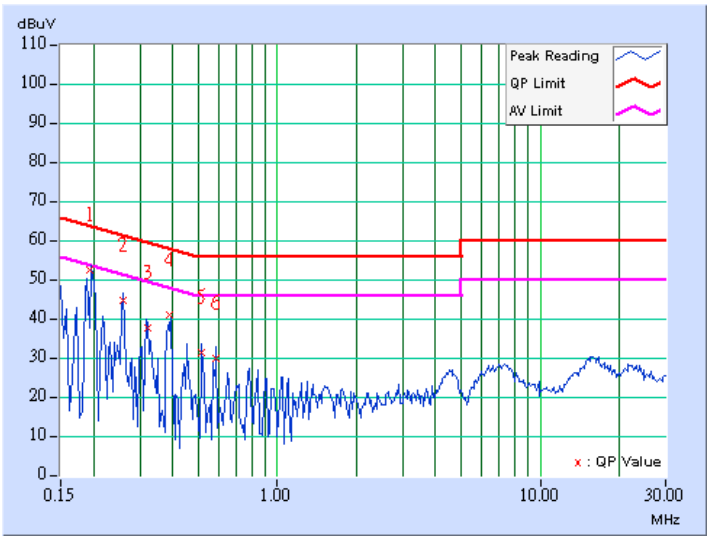
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.194	0.10	52.60	-	52.70	-	63.86	53.86	-11.16	-
2	0.259	0.10	44.57	-	44.67	-	61.45	51.45	-16.78	-
3	0.323	0.10	37.47	-	37.57	-	59.64	49.64	-22.07	-
4	0.388	0.10	40.93	-	41.03	-	58.10	48.10	-17.07	-
5	0.517	0.12	31.39	-	31.51	-	56.00	46.00	-24.49	-
6	0.582	0.13	29.95	-	30.08	-	56.00	46.00	-25.92	-

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

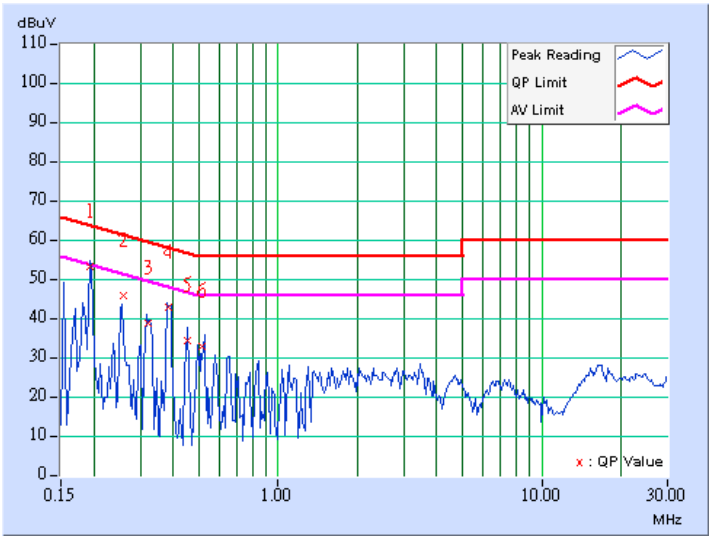


DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	15.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.194	0.10	53.25	-	53.35	-	63.85	53.85	-10.50	-
2	0.259	0.10	45.64	-	45.74	-	61.47	51.47	-15.73	-
3	0.322	0.10	38.69	-	38.79	-	59.66	49.66	-20.87	-
4	0.385	0.10	42.79	-	42.89	-	58.18	48.18	-15.29	-
5	0.452	0.10	34.35	-	34.45	-	56.84	46.84	-22.39	-
6	0.515	0.10	32.69	-	32.79	-	56.00	46.00	-23.21	-

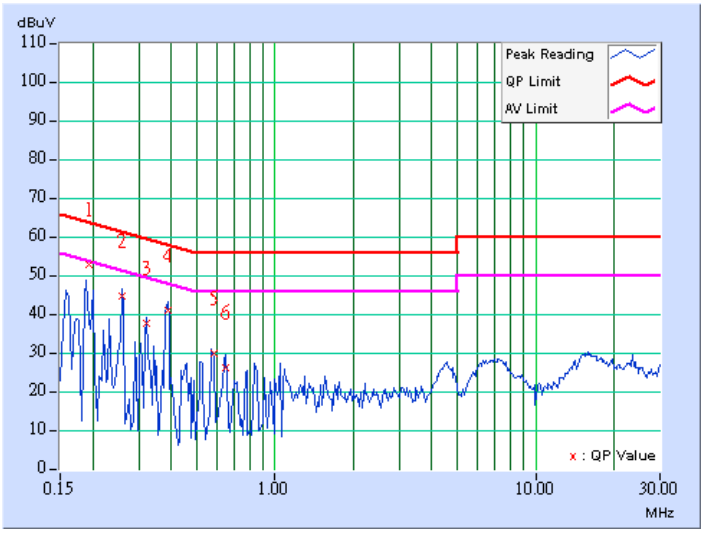
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	15.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.193	0.10	52.82	-	52.92	-	63.91	53.91	-10.99	-
2	0.258	0.10	44.67	-	44.77	-	61.50	51.50	-16.73	-
3	0.322	0.10	37.54	-	37.64	-	59.66	49.66	-22.02	-
4	0.388	0.10	40.89	-	40.99	-	58.10	48.10	-17.11	-
5	0.581	0.13	29.95	-	30.08	-	56.00	46.00	-25.92	-
6	0.647	0.15	26.16	-	26.31	-	56.00	46.00	-29.69	-

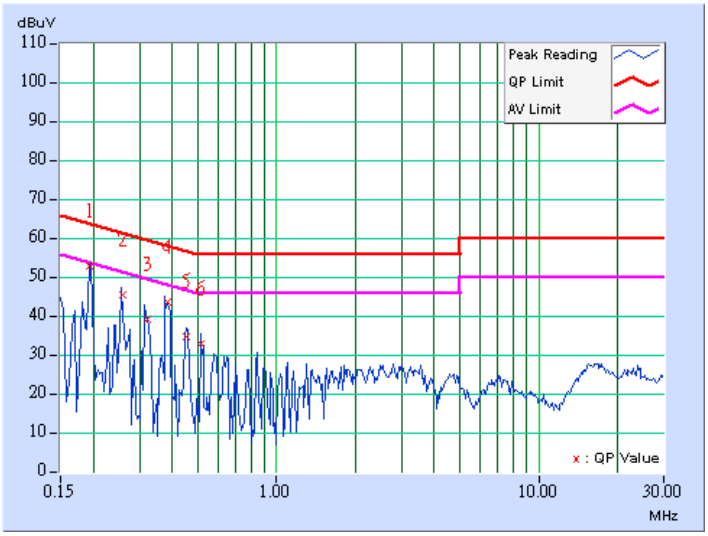
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	15.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.194	0.10	52.76	-	52.86	-	63.88	53.88	-11.02	-
2	0.258	0.10	45.53	-	45.63	-	61.49	51.49	-15.86	-
3	0.322	0.10	39.20	-	39.30	-	59.65	49.65	-20.35	-
4	0.385	0.10	43.56	-	43.66	-	58.16	48.16	-14.50	-
5	0.451	0.10	34.72	-	34.82	-	56.86	46.86	-22.04	-
6	0.515	0.10	33.02	-	33.12	-	56.00	46.00	-22.88	-

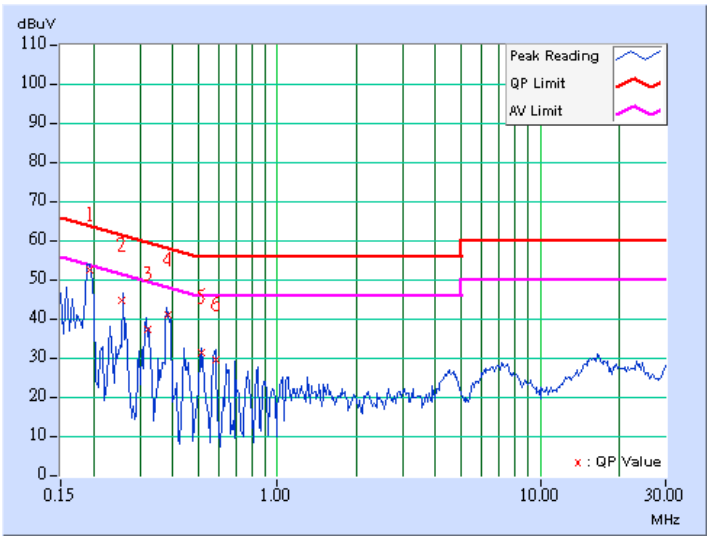
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	15.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.194	0.10	52.48	-	52.58	-	63.86	53.86	-11.28	-
2	0.257	0.10	44.53	-	44.63	-	61.53	51.53	-16.90	-
3	0.323	0.10	37.20	-	37.30	-	59.63	49.63	-22.33	-
4	0.386	0.10	40.89	-	40.99	-	58.15	48.15	-17.16	-
5	0.515	0.12	31.21	-	31.33	-	56.00	46.00	-24.67	-
6	0.584	0.13	29.53	-	29.66	-	56.00	46.00	-26.34	-

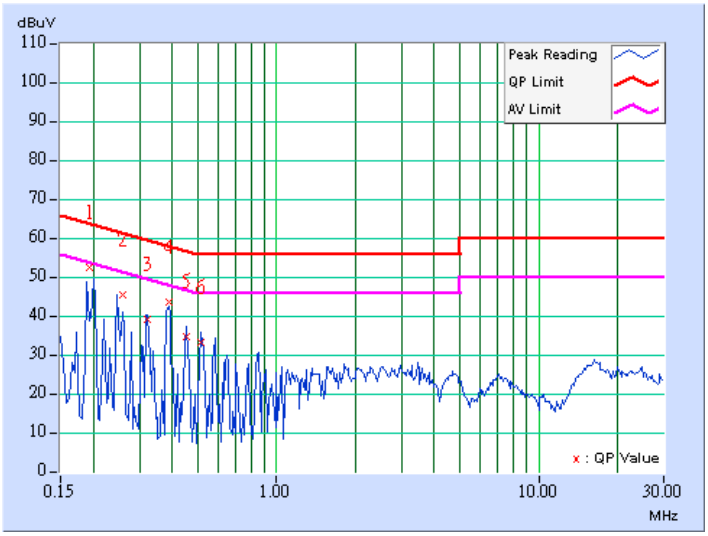
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	15.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.194	0.10	52.62	-	52.72	-	63.86	53.86	-11.14	-
2	0.258	0.10	45.53	-	45.63	-	61.48	51.48	-15.85	-
3	0.322	0.10	39.26	-	39.36	-	59.66	49.66	-20.30	-
4	0.388	0.10	43.70	-	43.80	-	58.10	48.10	-14.30	-
5	0.451	0.10	34.76	-	34.86	-	56.86	46.86	-22.00	-
6	0.517	0.10	33.22	-	33.32	-	56.00	46.00	-22.68	-

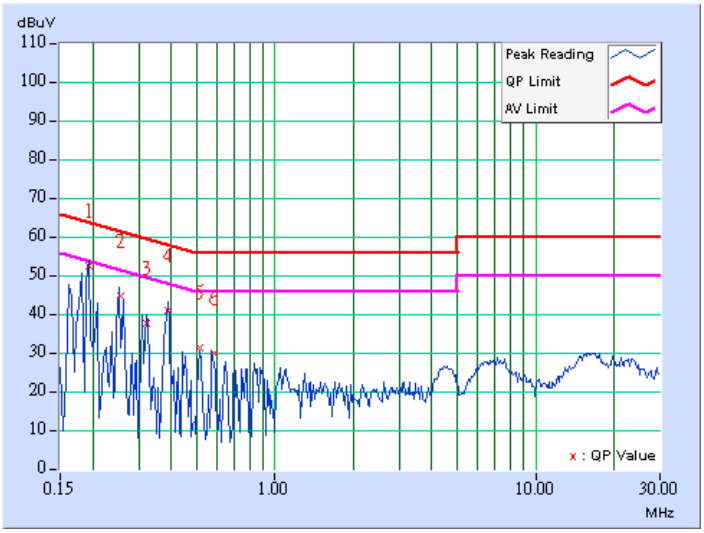
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	15.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH, 982hPa	TESTED BY	Dean Wang

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	0.193	0.10	52.64	-	52.74	-	63.91	53.91	-11.17	-
2	0.257	0.10	44.51	-	44.61	-	61.53	51.53	-16.92	-
3	0.322	0.10	37.50	-	37.60	-	59.66	49.66	-22.06	-
4	0.388	0.10	40.93	-	41.03	-	58.10	48.10	-17.07	-
5	0.517	0.12	31.39	-	31.51	-	56.00	46.00	-24.49	-
6	0.581	0.13	29.78	-	29.91	-	56.00	46.00	-26.09	-

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Jul. 27, 2008
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 04, 2008
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 16, 2008
Preamplifier Agilent	8449B	3008A01910	Sep. 21, 2007
Preamplifier Agilent	8447D	2944A10638	Dec. 20, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218188/218189	Nov. 14, 2007
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA

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

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

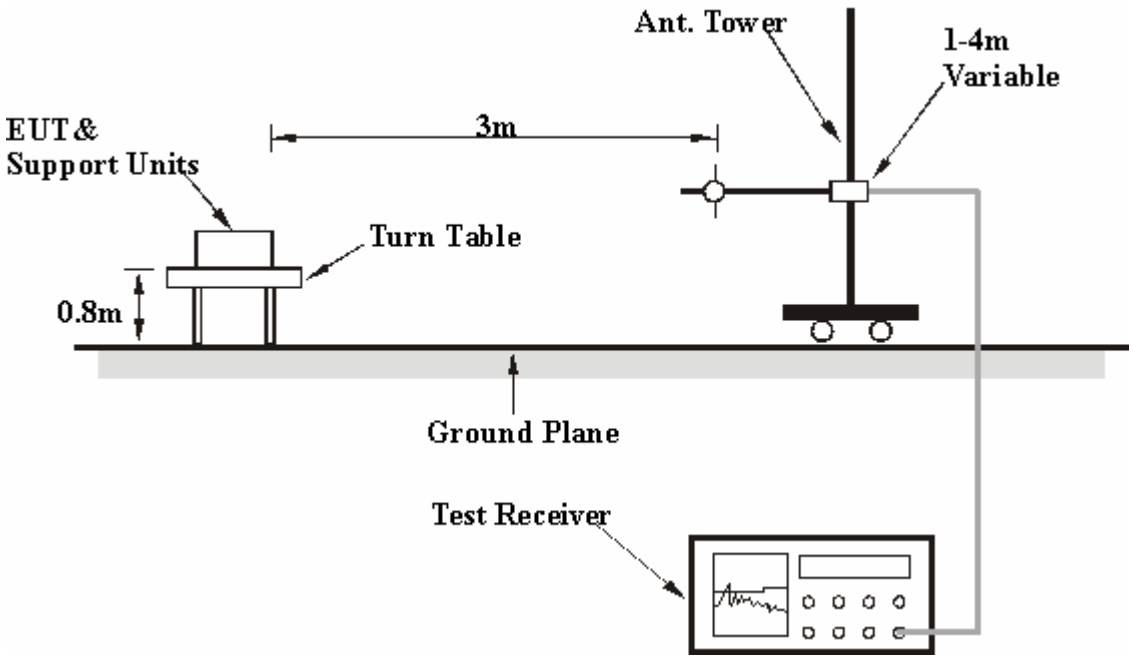
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

4.2.7 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Dean Wang

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	154.33	40.10 QP	43.50	-3.40	2.00 H	256	26.52	13.58
2	181.55	38.70 QP	43.50	-4.80	1.25 H	265	26.80	11.90
3	249.60	44.65 QP	46.00	-1.35	1.00 H	154	32.11	12.54
4	500.42	42.54 QP	46.00	-3.46	1.00 H	211	23.78	18.76
5	626.80	41.41 QP	46.00	-4.59	1.25 H	250	20.07	21.34
6	751.23	44.67 QP	46.00	-1.33	1.00 H	262	21.44	23.22
7	877.61	44.78 QP	46.00	-1.22	1.50 H	310	19.67	25.11

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	49.34	36.16 QP	40.00	-3.84	1.00 V	280	22.65	13.52
2	150.45	39.11 QP	43.50	-4.39	1.00 V	16	25.45	13.66
3	249.60	44.74 QP	46.00	-1.26	1.50 V	193	32.20	12.54
4	300.16	40.18 QP	46.00	-5.82	1.25 V	214	26.82	13.36
5	375.98	40.91 QP	46.00	-5.09	1.25 V	286	25.75	15.16
6	500.42	43.37 QP	46.00	-2.63	1.00 V	358	24.61	18.76
7	626.80	42.71 QP	46.00	-3.29	1.50 V	160	21.37	21.34
8	751.23	41.85 QP	46.00	-4.15	1.25 V	193	18.63	23.22
9	877.61	44.76 QP	46.00	-1.24	1.00 V	260	19.65	25.11

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

DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Dean Wang

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	156.28	40.19 QP	43.50	-3.31	1.50 H	280	26.65	13.54
2	181.55	38.15 QP	43.50	-5.35	1.50 H	250	26.25	11.90
3	249.60	44.65 QP	46.00	-1.35	1.00 H	223	32.11	12.54
4	300.16	39.90 QP	46.00	-6.10	1.00 H	250	26.54	13.36
5	500.42	41.29 QP	46.00	-4.71	1.50 H	142	22.53	18.76
6	626.80	39.91 QP	46.00	-6.09	1.50 H	259	18.57	21.34
7	751.23	43.11 QP	46.00	-2.89	1.00 H	268	19.89	23.22
8	877.61	44.79 QP	46.00	-1.21	1.50 H	307	19.68	25.11

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	49.34	36.73 QP	40.00	-3.27	1.00 V	22	23.22	13.52
2	64.90	34.65 QP	40.00	-5.35	1.00 V	268	22.31	12.34
3	150.45	39.64 QP	43.50	-3.86	1.50 V	190	25.98	13.66
4	249.60	44.79 QP	46.00	-1.21	1.00 V	337	32.25	12.54
5	375.98	40.28 QP	46.00	-5.72	1.50 V	289	25.12	15.16
6	500.42	42.95 QP	46.00	-3.05	1.50 V	4	24.18	18.76
7	626.80	43.05 QP	46.00	-2.95	1.50 V	163	21.71	21.34
8	877.61	44.65 QP	46.00	-1.35	1.00 V	256	19.54	25.11

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

DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Dean Wang

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	156.28	40.40 QP	43.50	-3.10	2.00 H	268	26.86	13.54
2	179.61	38.53 QP	43.50	-4.97	1.50 H	250	26.47	12.06
3	249.60	44.67 QP	46.00	-1.33	1.00 H	142	32.13	12.54
4	500.42	41.71 QP	46.00	-4.29	1.50 H	178	22.94	18.76
5	626.80	40.67 QP	46.00	-5.33	1.50 H	256	19.33	21.34
6	751.23	42.21 QP	46.00	-3.79	1.00 H	226	18.99	23.22
7	877.61	44.60 QP	46.00	-1.40	1.50 H	307	19.49	25.11

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	49.34	37.28 QP	40.00	-2.72	1.00 V	313	23.77	13.52
2	64.90	34.80 QP	40.00	-5.20	1.00 V	235	22.46	12.34
3	152.39	39.96 QP	43.50	-3.54	1.00 V	10	26.34	13.62
4	249.60	44.67 QP	46.00	-1.33	1.50 V	190	32.13	12.54
5	300.16	40.11 QP	46.00	-5.89	1.50 V	232	26.76	13.36
6	375.98	40.14 QP	46.00	-5.86	1.50 V	289	24.98	15.16
7	500.42	42.90 QP	46.00	-3.10	1.00 V	346	24.13	18.76
8	626.80	43.06 QP	46.00	-2.94	2.00 V	166	21.73	21.34
9	877.61	44.68 QP	46.00	-1.32	1.00 V	256	19.57	25.11

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

ABOVE 1GHz DATA: 802.11b DSSS MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.000	56.12 PK	74.00	-17.88	1.02 H	318	23.89	32.23
2	2386.000	46.09 AV	54.00	-7.91	1.02 H	318	13.86	32.23
3	*2412.000	103.13 PK			1.02 H	318	70.81	32.32
4	*2412.000	98.78 AV			1.02 H	318	66.46	32.32
5	4824.000	51.44 PK	74.00	-22.56	1.00 H	325	13.31	38.13
6	4824.000	47.15 AV	54.00	-6.85	1.00 H	325	9.02	38.13

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.000	60.99 PK	74.00	-13.01	1.13 V	14	28.76	32.23
2	2386.000	51.57 AV	54.00	-2.43	1.13 V	14	19.34	32.23
3	*2412.000	112.32 PK			1.12 V	2	80.00	32.32
4	*2412.000	107.87 AV			1.12 V	2	75.55	32.32
5	2500.000	59.84 PK	74.00	-14.16	1.10 V	9	27.23	32.61
6	2500.000	49.44 AV	54.00	-4.56	1.10 V	9	16.83	32.61
7	4824.000	53.65 PK	74.00	-20.35	1.13 V	32	15.52	38.13
8	4824.000	49.35 AV	54.00	-4.65	1.13 V	32	11.22	38.13

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 6	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.000	104.25 PK			1.03 H	315	71.85	32.40
2	*2437.000	99.81 AV			1.03 H	315	67.41	32.40
3	4874.000	51.63 PK	74.00	-22.37	1.00 H	312	13.31	38.32
4	4874.000	47.36 AV	54.00	-6.64	1.00 H	312	9.04	38.32

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.000	59.09 PK	74.00	-14.91	1.15 V	8	26.85	32.24
2	2390.000	49.50 AV	54.00	-4.50	1.15 V	8	17.26	32.24
3	*2437.000	113.58 PK			1.13 V	9	81.18	32.40
4	*2437.000	108.79 AV			1.13 V	9	76.39	32.40
5	2500.000	60.00 PK	74.00	-14.00	1.11 V	5	27.39	32.61
6	2500.000	49.56 AV	54.00	-4.44	1.11 V	5	16.95	32.61
7	4874.000	53.79 PK	74.00	-20.21	1.14 V	15	15.47	38.32
8	4874.000	49.63 AV	54.00	-4.37	1.14 V	15	11.31	38.32

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
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.000	103.25 PK			1.05 H	311	70.77	32.48
2	*2462.000	98.82 AV			1.05 H	311	66.34	32.48
3	2488.000	56.25 PK	74.00	-17.75	1.05 H	302	23.68	32.57
4	2488.000	46.13 AV	54.00	-7.87	1.05 H	302	13.56	32.57
5	4924.000	51.69 PK	74.00	-22.31	1.00 H	318	13.23	38.46
6	4924.000	47.38 AV	54.00	-6.62	1.00 H	318	8.92	38.46

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.000	112.54 PK			1.08 V	8	80.06	32.48
2	*2462.000	107.69 AV			1.08 V	8	75.21	32.48
3	2488.000	61.46 PK	74.00	-12.54	1.08 V	6	28.89	32.57
4	2488.000	51.96 AV	54.00	-2.04	1.08 V	6	19.39	32.57
5	2500.000	61.11 PK	74.00	-12.89	1.05 V	2	28.50	32.61
6	2500.000	51.19 AV	54.00	-2.81	1.05 V	2	18.58	32.61
7	4924.000	53.78 PK	74.00	-20.22	1.15 V	16	15.32	38.46
8	4924.000	49.85 AV	54.00	-4.15	1.15 V	16	11.39	38.46

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.

802.11g OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.000	60.85 PK	74.00	-13.15	1.06 H	151	28.61	32.24
2	2390.000	47.93 AV	54.00	-6.07	1.06 H	151	15.69	32.24
3	*2412.000	104.11 PK			1.06 H	151	71.79	32.32
4	*2412.000	93.81 AV			1.06 H	151	61.49	32.32
5	4824.000	48.85 PK	74.00	-25.15	1.00 H	319	10.72	38.13
6	4824.000	36.77 AV	54.00	-17.23	1.00 H	319	-1.36	38.13

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.000	71.88 PK	74.00	-2.12	1.14 V	6	39.64	32.24
2	2390.000	52.04 AV	54.00	-1.96	1.14 V	6	19.80	32.24
3	*2412.000	112.91 PK			1.11 V	7	80.59	32.32
4	*2412.000	100.84 AV			1.11 V	7	68.52	32.32
5	4824.000	48.51 PK	74.00	-25.49	1.08 V	15	10.38	38.13
6	4824.000	36.98 AV	54.00	-17.02	1.08 V	15	-1.15	38.13

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 6	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.000	61.09 PK	74.00	-12.91	1.08 H	146	28.84	32.24
2	2390.000	48.21 AV	54.00	-5.79	1.08 H	146	15.97	32.24
3	*2437.000	104.45 PK			1.08 H	146	72.05	32.40
4	*2437.000	94.08 AV			1.08 H	146	61.68	32.40
5	4874.000	48.56 PK	74.00	-25.44	1.00 H	325	10.24	38.32
6	4874.000	36.76 AV	54.00	-17.24	1.00 H	325	-1.56	38.32

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.000	64.93 PK	74.00	-9.07	1.12 V	6	32.69	32.24
2	2390.000	52.63 AV	54.00	-1.37	1.12 V	6	20.39	32.24
3	*2437.000	113.23 PK			1.11 V	6	80.83	32.40
4	*2437.000	100.61 AV			1.11 V	6	68.21	32.40
5	4874.000	48.89 PK	74.00	-25.11	1.05 V	8	10.57	38.32
6	4874.000	37.18 AV	54.00	-16.82	1.05 V	8	-1.14	38.32

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
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.000	60.49 PK	74.00	-13.51	1.04 H	145	28.25	32.24
2	2390.000	47.36 AV	54.00	-6.64	1.04 H	145	15.12	32.24
3	*2462.000	105.04 PK			1.04 H	143	72.56	32.48
4	*2462.000	94.78 AV			1.04 H	143	62.30	32.48
5	2483.500	60.12 PK	74.00	-13.88	1.04 H	143	27.56	32.56
6	2483.500	47.06 AV	54.00	-6.94	1.04 H	143	14.50	32.56
7	4924.000	48.10 PK	74.00	-25.90	1.00 H	352	9.64	38.46
8	4924.000	36.34 AV	54.00	-17.66	1.00 H	352	-2.12	38.46

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.000	64.40 PK	74.00	-9.60	1.11 V	7	32.16	32.24
2	**2390.000**	**52.96 AV**	**54.00**	**-1.04**	**1.11 V**	**7**	**20.72**	**32.24**
3	*2462.000	111.49 PK			1.07 V	7	79.01	32.48
4	*2462.000	100.39 AV			1.07 V	7	67.91	32.48
5	2483.500	67.68 PK	74.00	-6.32	1.11 V	7	35.12	32.56
6	2483.500	52.85 AV	54.00	-1.15	1.11 V	7	20.29	32.56
7	4924.000	48.89 PK	74.00	-25.11	1.05 V	13	10.43	38.46
8	4924.000	37.25 AV	54.00	-16.75	1.05 V	13	-1.21	38.46

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.

DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1625.000	45.36 PK	74.00	-28.64	1.11 H	165	14.93	30.43
2	1625.000	38.98 AV	54.00	-15.02	1.11 H	165	8.55	30.43
3	2390.000	58.98 PK	74.00	-15.02	1.05 H	146	26.74	32.24
4	2390.000	47.23 AV	54.00	-6.77	1.05 H	146	14.99	32.24
5	*2412.000	105.35 PK			1.00 H	169	73.03	32.32
6	*2412.000	94.56 AV			1.00 H	169	62.24	32.32
7	3216.000	44.15 PK	74.00	-29.85	1.05 H	350	9.66	34.49
8	3216.000	34.11 AV	54.00	-19.89	1.05 H	350	-0.38	34.49
9	4824.000	47.86 PK	74.00	-26.14	1.11 H	348	9.73	38.13
10	4824.000	35.79 AV	54.00	-18.21	1.11 H	348	-2.34	38.13

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 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1625.000	50.98 PK	74.00	-23.02	1.00 V	88	20.55	30.43
2	1625.000	45.81 AV	54.00	-8.19	1.00 V	88	15.38	30.43
3	2376.000	61.61 PK	74.00	-12.39	1.14 V	0	29.42	32.19
4	2376.000	51.69 AV	54.00	-2.31	1.14 V	0	19.50	32.19
5	2390.000	71.64 PK	74.00	-2.36	1.13 V	0	39.40	32.24
6	2390.000	52.43 AV	54.00	-1.57	1.13 V	0	20.19	32.24
7	*2412.000	115.12 PK			1.14 V	0	82.80	32.32
8	*2412.000	104.81 AV			1.14 V	0	72.49	32.32
9	3216.000	49.86 PK	74.00	-24.14	1.05 V	222	15.37	34.49
10	3216.000	46.23 AV	54.00	-7.77	1.05 V	222	11.74	34.49
11	4824.000	48.15 PK	74.00	-25.85	1.05 V	25	10.02	38.13
12	4824.000	36.35 AV	54.00	-17.65	1.05 V	25	-1.78	38.13

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 6	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.000	105.86 PK			1.00 H	185	73.46	32.40
2	*2437.000	94.90 AV			1.00 H	185	62.50	32.40
3	4874.000	47.98 PK	74.00	-26.02	1.13 H	352	9.66	38.32
4	4874.000	36.10 AV	54.00	-17.90	1.13 H	352	-2.22	38.32

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2376.000	63.87 PK	74.00	-10.13	1.14 V	0	31.68	32.19
2	2376.000	51.84 AV	54.00	-2.16	1.14 V	0	19.65	32.19
3	*2437.000	116.28 PK			1.12 V	3	83.88	32.40
4	*2437.000	105.12 AV			1.12 V	3	72.72	32.40
5	4874.000	48.35 PK	74.00	-25.65	1.02 V	16	10.03	38.32
6	4874.000	36.49 AV	54.00	-17.51	1.02 V	16	-1.83	38.32

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
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.000	105.76 PK			1.00 H	177	73.28	32.48
2	*2462.000	94.76 AV			1.00 H	177	62.28	32.48
3	2483.500	59.13 PK	74.00	-14.87	1.00 H	177	26.57	32.56
4	2483.500	47.53 AV	54.00	-6.47	1.00 H	177	14.97	32.56
5	4924.000	47.96 PK	74.00	-26.04	1.11 H	333	9.50	38.46
6	4924.000	35.98 AV	54.00	-18.02	1.11 H	333	-2.48	38.46

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2376.000	63.98 PK	74.00	-10.02	1.15 V	1	31.79	32.19
2	2376.000	51.98 AV	54.00	-2.02	1.15 V	1	19.79	32.19
3	*2462.000	116.19 PK			1.14 V	5	83.71	32.48
4	*2462.000	105.05 AV			1.14 V	5	72.57	32.48
5	2483.500	64.58 PK	74.00	-9.42	1.14 V	5	32.02	32.56
6	2483.500	52.41 AV	54.00	-1.59	1.14 V	5	19.85	32.56
7	4924.000	48.69 PK	74.00	-25.31	1.08 V	25	10.23	38.46
8	4924.000	36.52 AV	54.00	-17.48	1.08 V	25	-1.94	38.46

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.

DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.000	59.89 PK	74.00	-14.11	1.04 H	136	27.65	32.24
2	2390.000	46.94 AV	54.00	-7.06	1.04 H	136	14.70	32.24
3	*2422.000	99.63 PK			1.04 H	136	67.28	32.35
4	*2422.000	88.42 AV			1.04 H	136	56.07	32.35
5	4824.000	47.58 PK	74.00	-26.42	1.00 H	32	9.45	38.13
6	4824.000	35.98 AV	54.00	-18.02	1.00 H	32	-2.15	38.13

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2376.000	60.94 PK	74.00	-13.06	1.19 V	351	28.75	32.19
2	2376.000	50.86 AV	54.00	-3.14	1.19 V	351	18.67	32.19
3	2390.000	61.48 PK	74.00	-12.52	1.13 V	349	29.24	32.24
4	2390.000	52.48 AV	54.00	-1.52	1.13 V	349	20.24	32.24
5	*2422.000	111.55 PK			1.13 V	351	79.20	32.35
6	*2422.000	100.02 AV			1.13 V	351	67.67	32.35
7	4824.000	48.35 PK	74.00	-25.65	1.07 V	18	10.22	38.13
8	4824.000	36.74 AV	54.00	-17.26	1.07 V	18	-1.39	38.13

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
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.000	99.85 PK			1.08 H	143	67.45	32.40
2	*2437.000	88.62 AV			1.08 H	143	56.22	32.40
3	4874.000	47.63 PK	74.00	-26.37	1.00 H	18	9.31	38.32
4	4874.000	36.05 AV	54.00	-17.95	1.00 H	18	-2.27	38.32

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2376.000	60.58 PK	74.00	-13.42	1.20 V	346	28.39	32.19
2	2376.000	50.68 AV	54.00	-3.32	1.20 V	346	18.49	32.19
3	*2437.000	111.68 PK			1.15 V	356	79.28	32.40
4	*2437.000	100.23 AV			1.15 V	356	67.83	32.40
5	4874.000	48.18 PK	74.00	-25.82	1.08 V	46	9.86	38.32
6	4874.000	36.32 AV	54.00	-17.68	1.08 V	46	-2.00	38.32

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
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 998hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.000	58.98 PK	74.00	-15.02	1.08 H	115	26.74	32.24
2	2390.000	48.16 AV	54.00	-5.84	1.08 H	115	15.92	32.24
3	*2452.000	100.35 PK			1.05 H	118	67.90	32.45
4	*2452.000	89.39 AV			1.05 H	118	56.94	32.45
5	2483.500	60.12 PK	74.00	-13.88	1.04 H	125	27.56	32.56
6	2483.500	49.21 AV	54.00	-4.79	1.04 H	125	16.65	32.56
7	4904.000	47.89 PK	74.00	-26.11	1.00 H	45	9.46	38.43
8	4904.000	36.05 AV	54.00	-17.95	1.00 H	45	-2.38	38.43

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2376.000	62.04 PK	74.00	-11.96	1.19 V	351	29.85	32.19
2	2376.000	52.06 AV	54.00	-1.94	1.19 V	351	19.87	32.19
3	2390.000	64.08 PK	74.00	-9.92	1.13 V	349	31.84	32.24
4	2390.000	52.46 AV	54.00	-1.54	1.13 V	349	20.22	32.24
5	*2452.000	112.14 PK			1.38 V	356	79.69	32.45
6	*2452.000	100.75 AV			1.38 V	356	68.30	32.45
7	2483.500	66.82 PK	74.00	-7.18	1.38 V	356	34.26	32.56
8	2483.500	52.66 AV	54.00	-1.34	1.38 V	356	20.10	32.56
9	2500.000	60.46 PK	74.00	-13.54	1.40 V	357	27.85	32.61
10	2500.000	51.33 AV	54.00	-2.67	1.40 V	357	18.72	32.61
11	4824.000	48.35 PK	74.00	-25.65	1.07 V	18	10.22	38.13
12	4824.000	36.74 AV	54.00	-17.26	1.07 V	18	-1.39	38.13

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.

4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

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

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

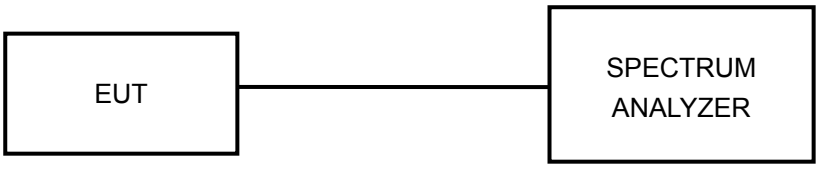
4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

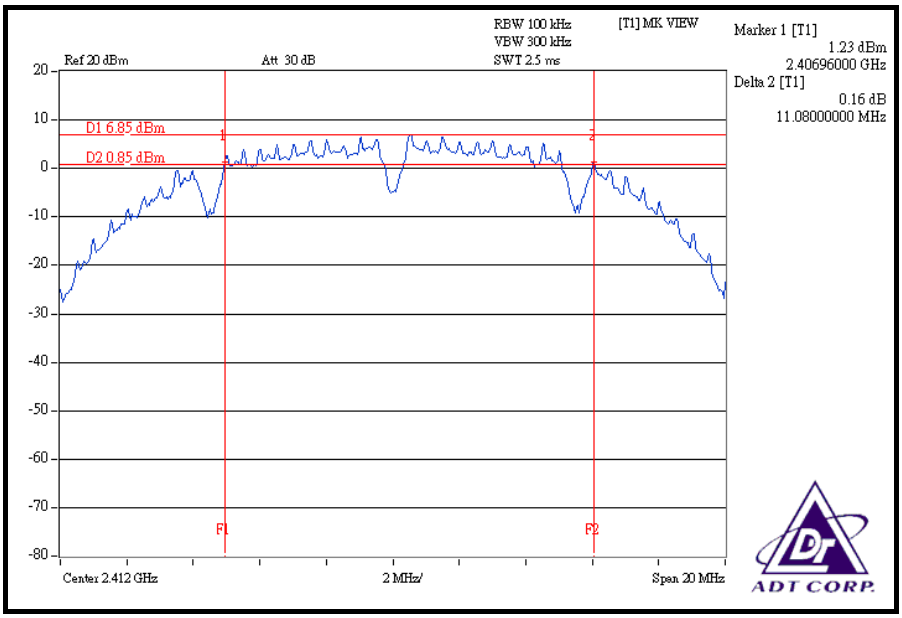
4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

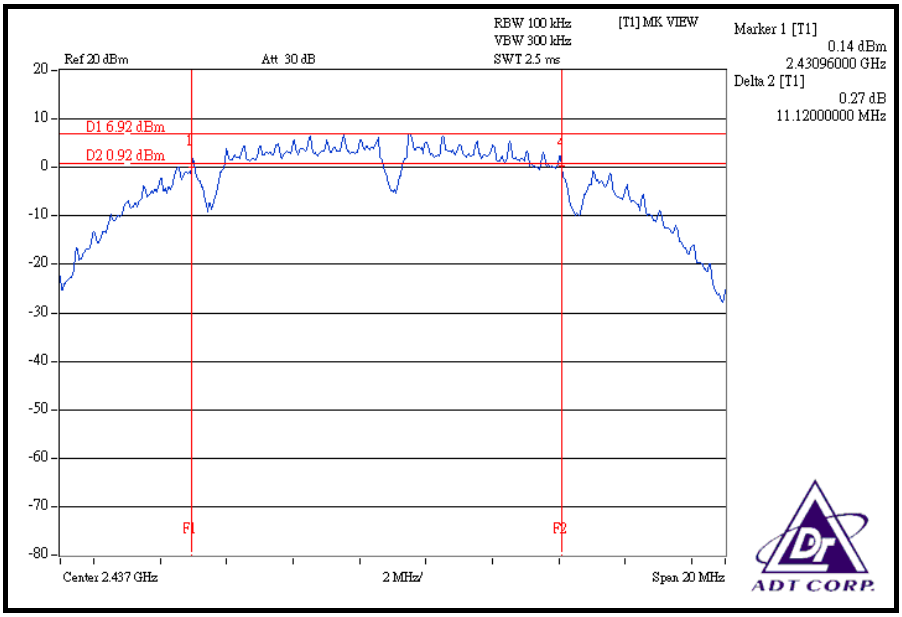
MODULATION TYPE	DBPSK	**TRANSFER RATE**	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.08	0.5	PASS
6	2437	11.12	0.5	PASS
11	2462	11.12	0.5	PASS

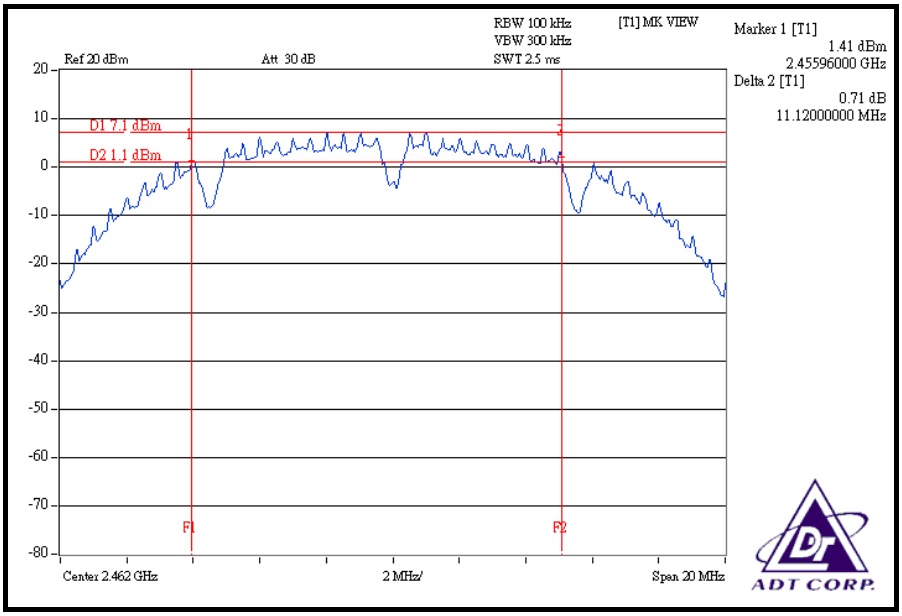
CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
0.14 dBm
2.43096000 GHz
Delta 2 [T1]
0.27 dB
11.12000000 MHz
Ref 20 dBm
Att 30 dB
D1 6.92 dBm
D2 0.92 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH 11

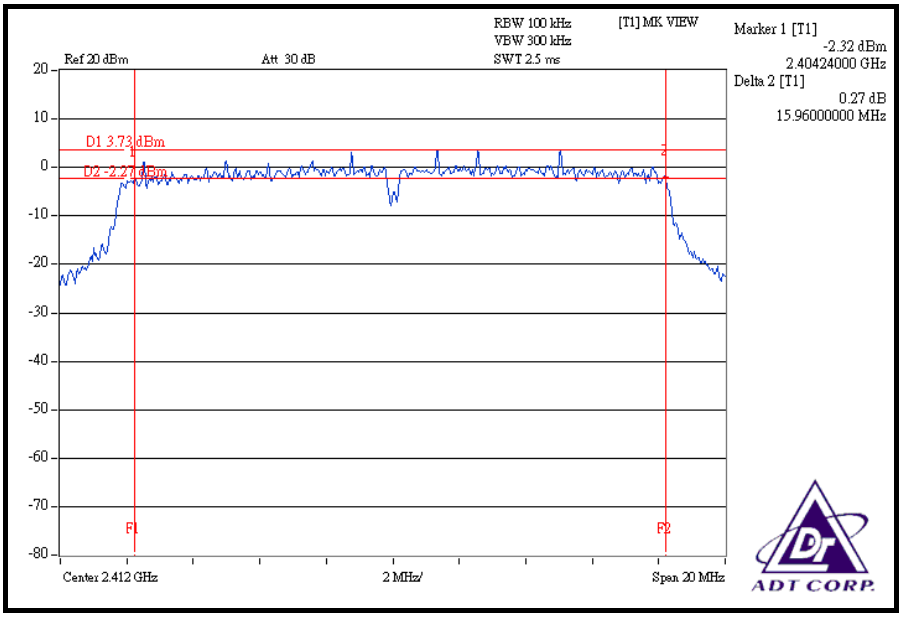

RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
1.41 dBm
2.45596000 GHz
Delta 2 [T1]
0.71 dB
11.12000000 MHz
Ref 20 dBm
Att 30 dB
D1 7.1 dBm
D2 1.1 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

802.11g OFDM MODULATION:

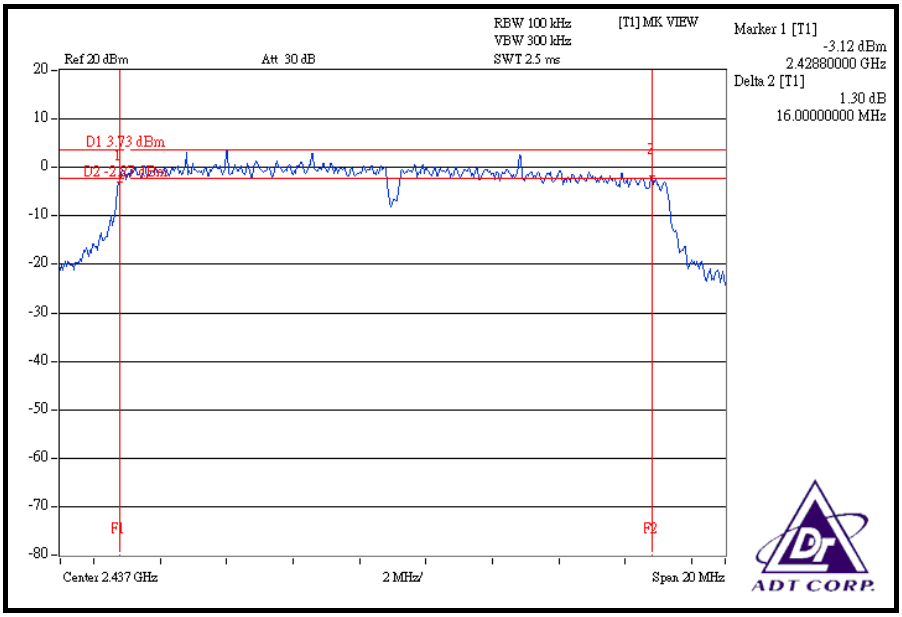
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	15.96	0.5	PASS
6	2437	16.00	0.5	PASS
11	2462	16.40	0.5	PASS

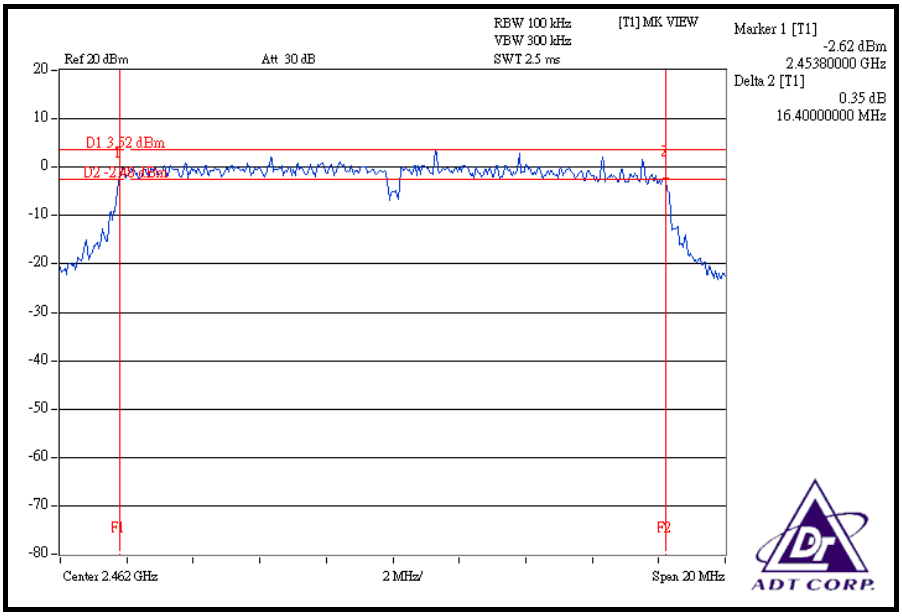
CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-3.12 dBm
2.42880000 GHz
Delta 2 [T1]
1.30 dB
16.00000000 MHz
Ref 20 dBm
Att 30 dB
D1 3.73 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH 11

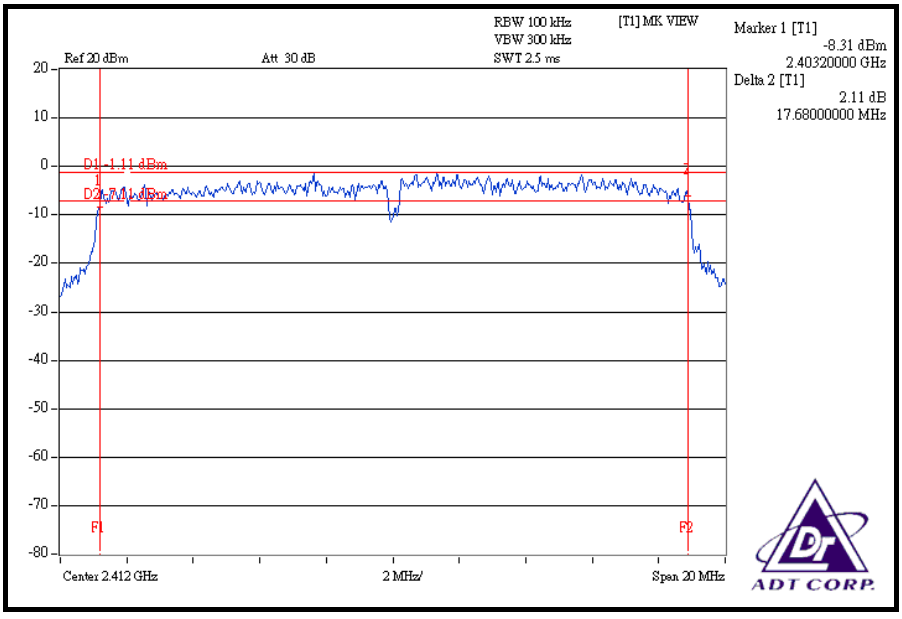

RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-2.62 dBm
2.45380000 GHz
Delta 2 [T1]
0.35 dB
16.40000000 MHz
Ref 20 dBm
Att 30 dB
D1 3.52 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

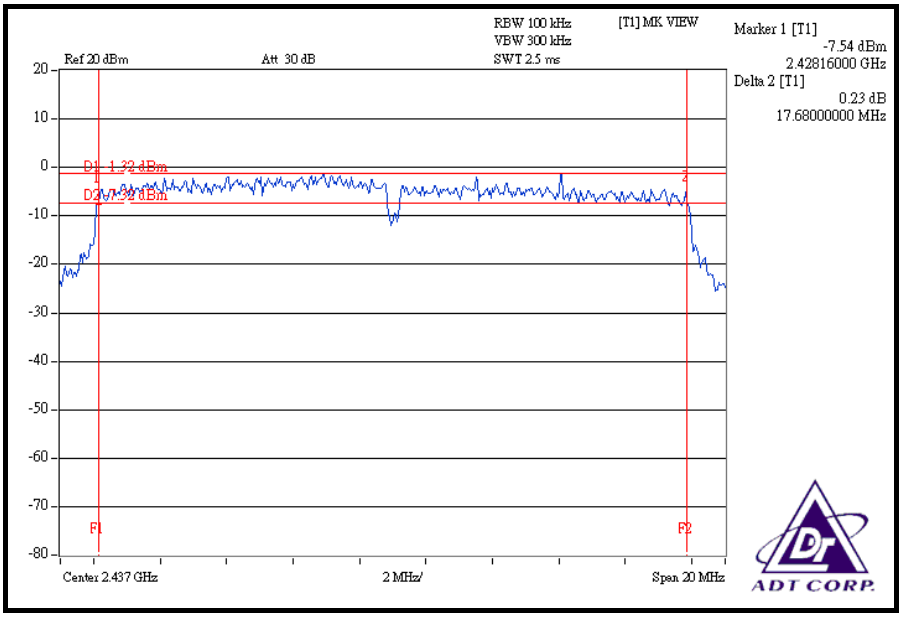
MODULATION TYPE	BPSK	**TRANSFER RATE**	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	2412	17.68	17.68	17.60	0.5	PASS
6	2437	17.68	17.56	17.60	0.5	PASS
11	2462	16.60	17.64	17.64	0.5	PASS

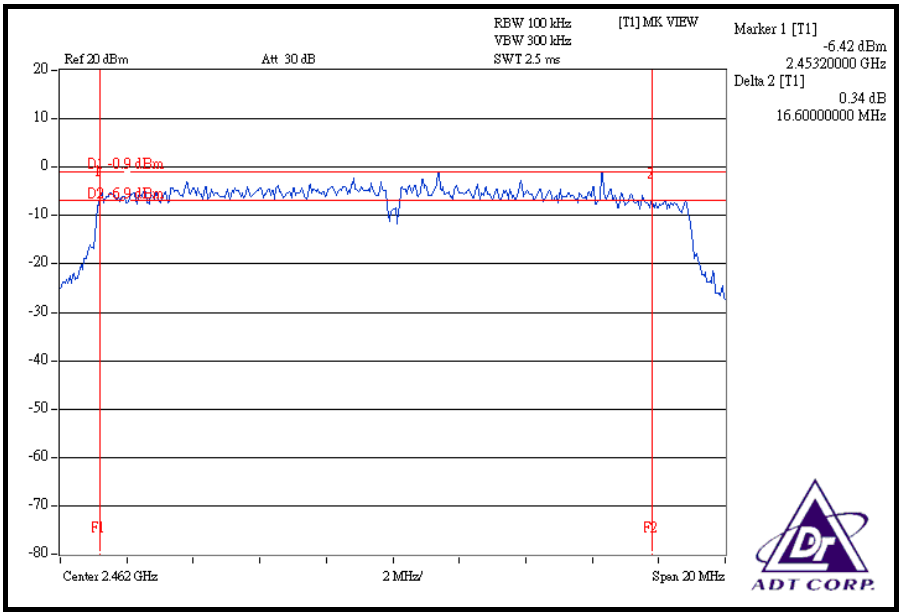
FOR CHAIN 0: CH 1



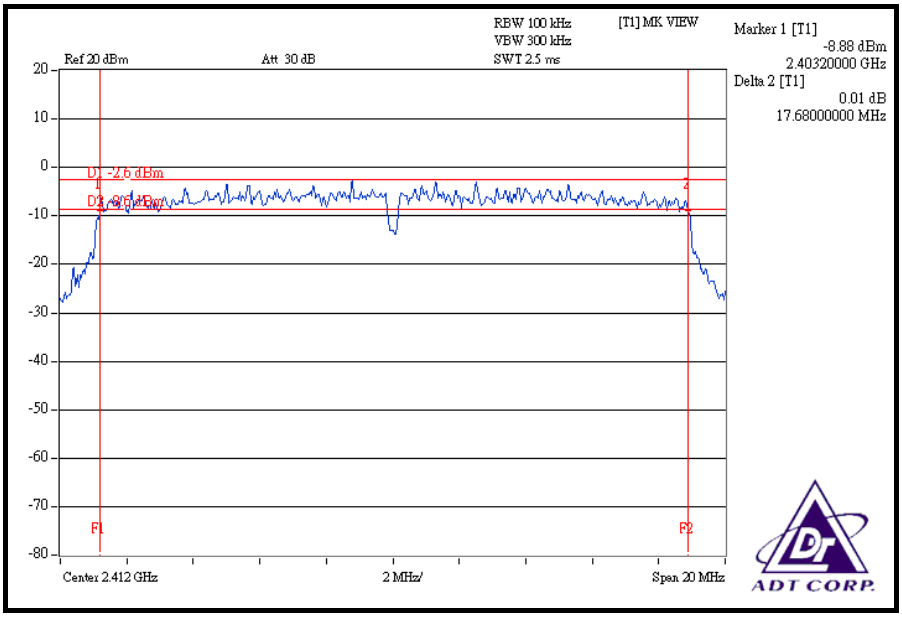
CH 6


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-7.54 dBm
2.42816000 GHz
Delta 2 [T1]
0.23 dB
17.68000000 MHz
Ref 20 dBm
Att 30 dB
D1 1.22 dBm
D2 -7.32 dBm
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

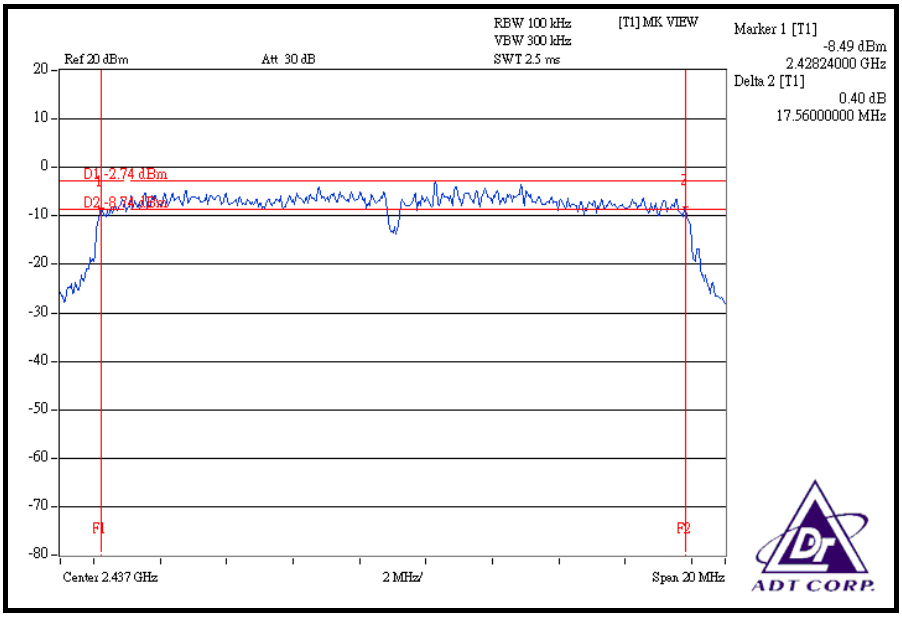
CH 11


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-6.42 dBm
2.45320000 GHz
Delta 2 [T1]
0.34 dB
16.60000000 MHz
Ref 20 dBm
Att 30 dB
D1 -0.9 dBm
D2 -6.9 dBm
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

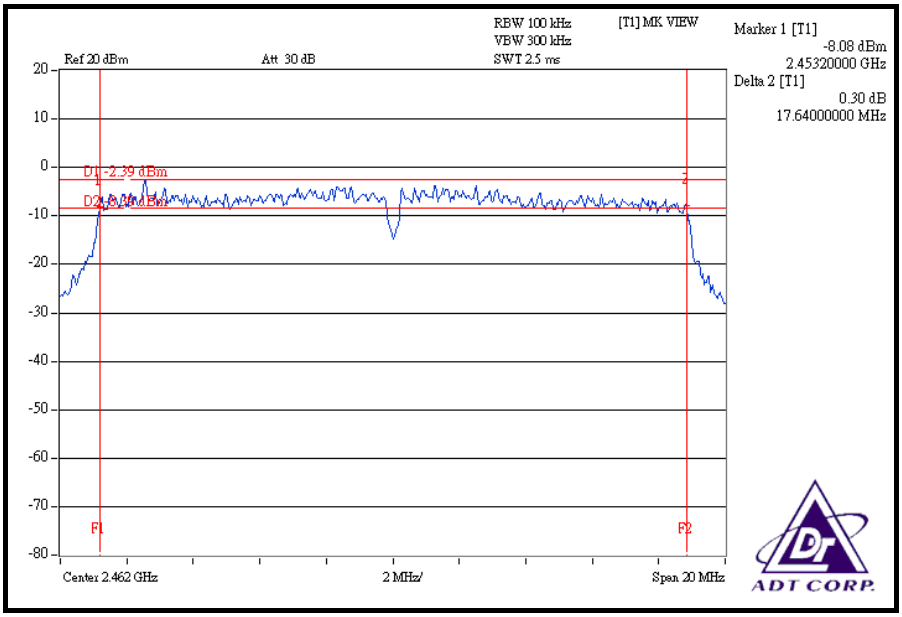
FOR CHAIN 1: CH 1



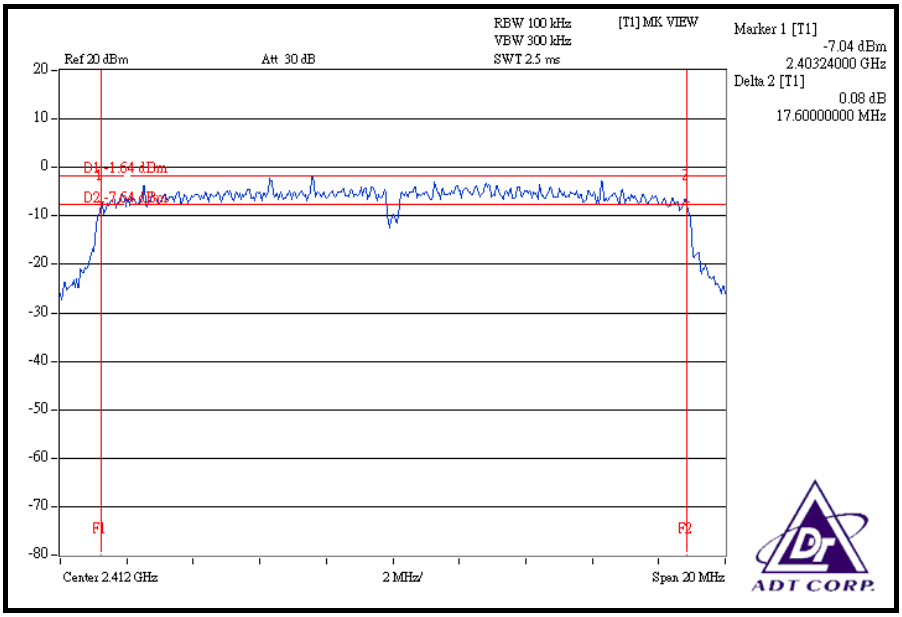
CH 6



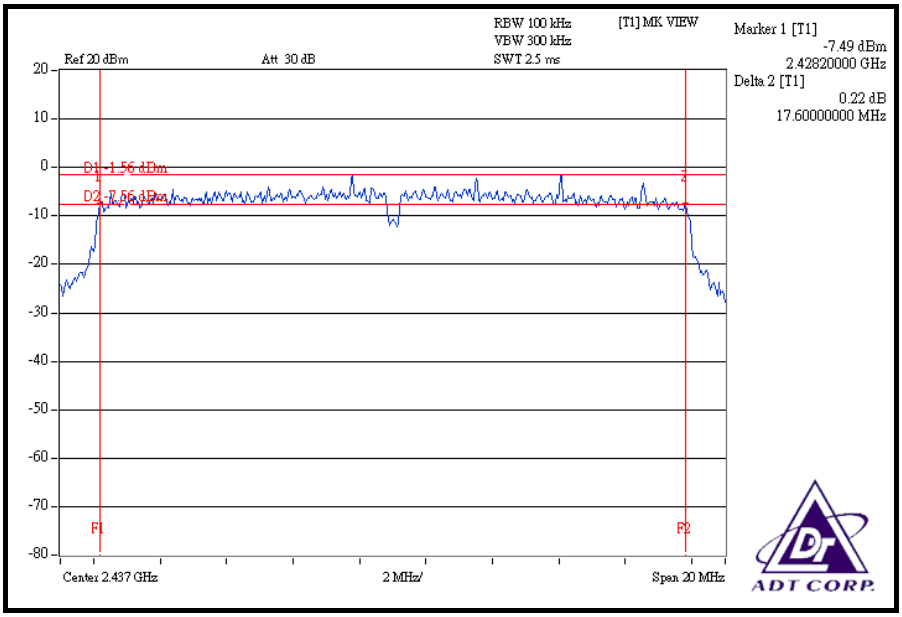
CH 11



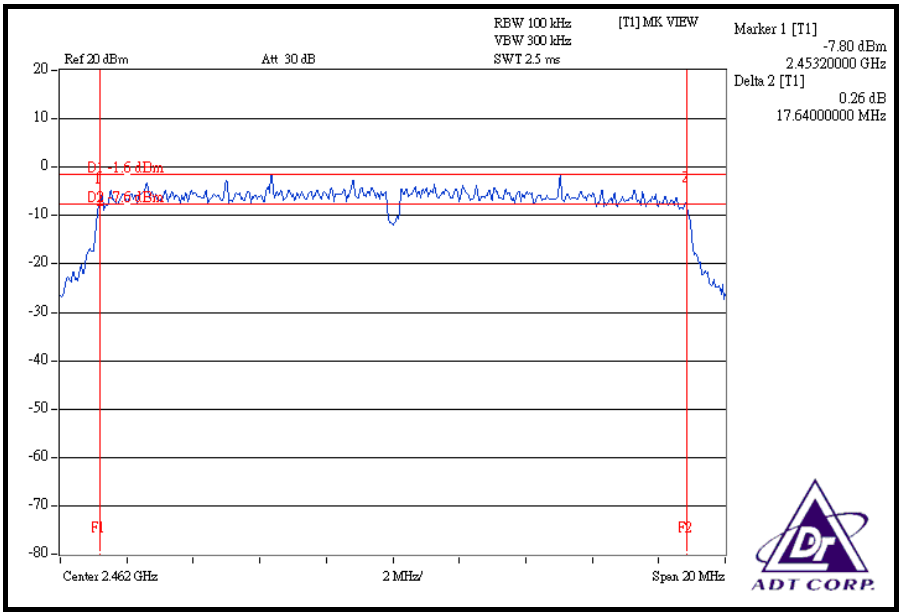
FOR CHAIN 2: CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-7.49 dBm
2.42820000 GHz
Delta 2 [T1]
0.22 dB
17.60000000 MHz
Ref 20 dBm
Att 30 dB
D1 -1.56 dBm
D2 -7.56 dBm
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH 11

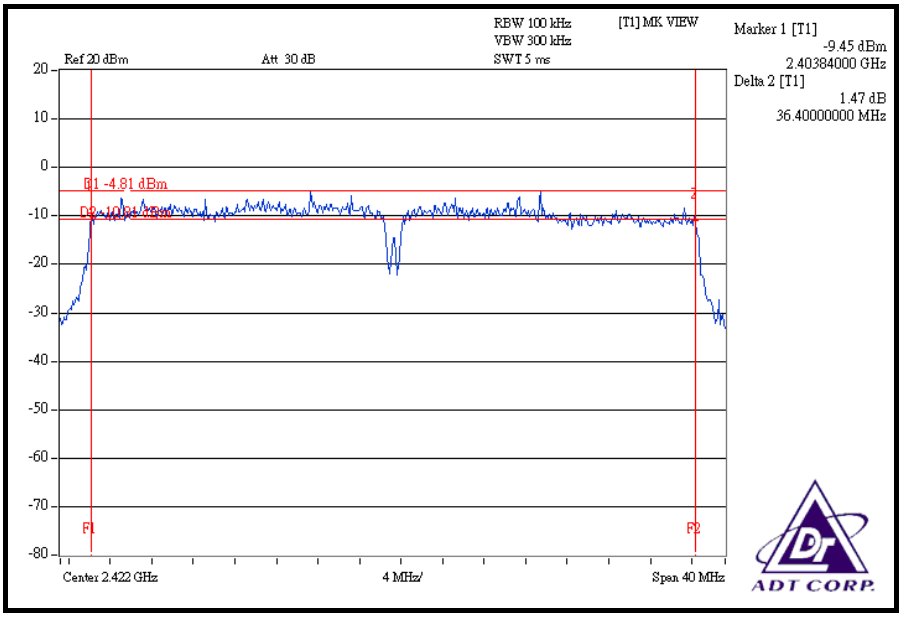

RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-7.80 dBm
2.45320000 GHz
Delta 2 [T1]
0.26 dB
17.64000000 MHz
Ref 20 dBm
Att 30 dB
D1 -1.6 dBm
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

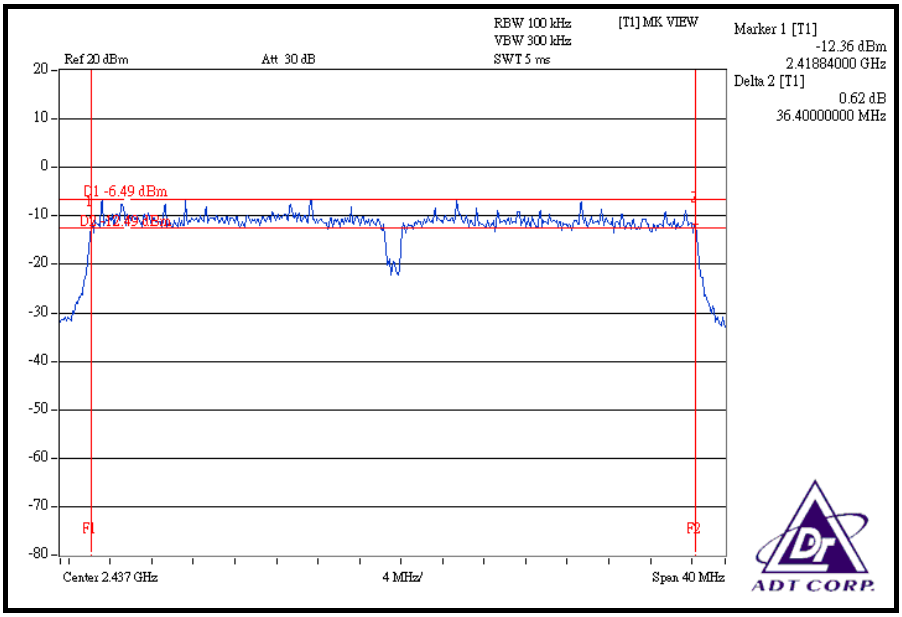
MODULATION TYPE	BPSK	**TRANSFER RATE**	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	2422	36.40	36.32	36.40	0.5	PASS
4	2437	36.40	36.40	36.48	0.5	PASS
7	2452	35.84	36.48	36.48	0.5	PASS

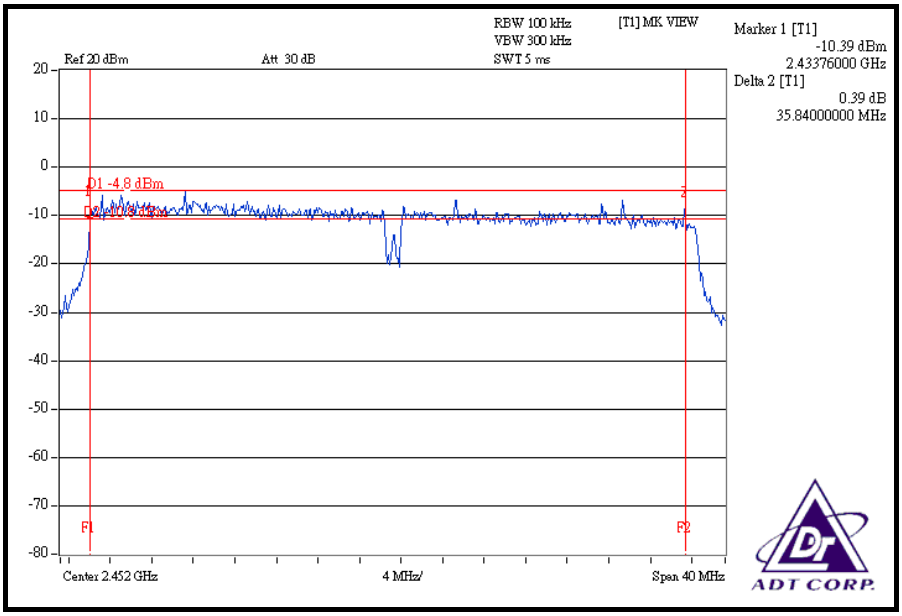
FOR CHAIN 0: CH 1



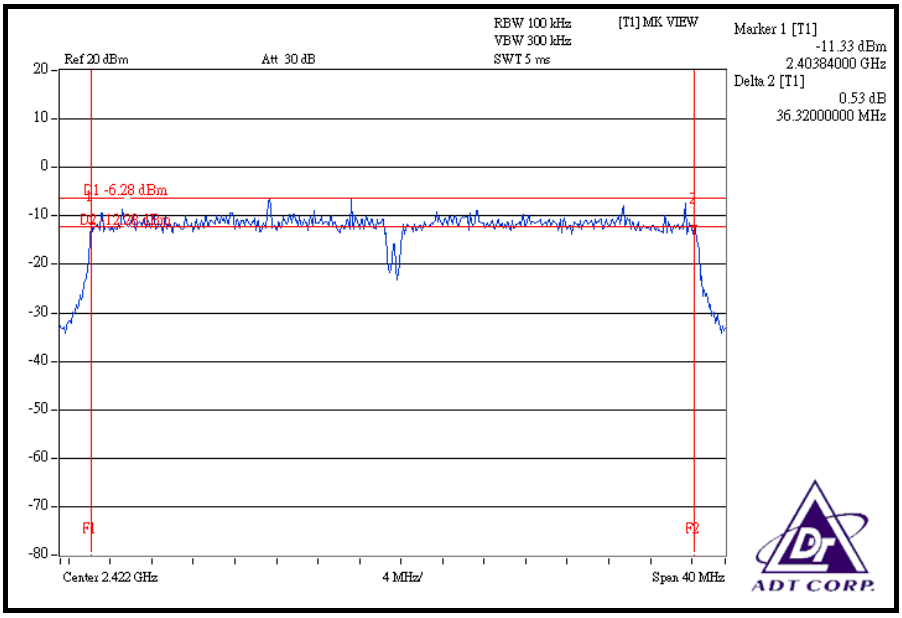
CH 4


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-12.36 dBm
2.41884000 GHz
Delta 2 [T1]
0.62 dB
36.40000000 MHz
Ref 20 dBm
Att 30 dB
D1 -6.49 dBm
F1
F2
Center 2.437 GHz
4 MHz/
Span 40 MHz
ADT CORP.

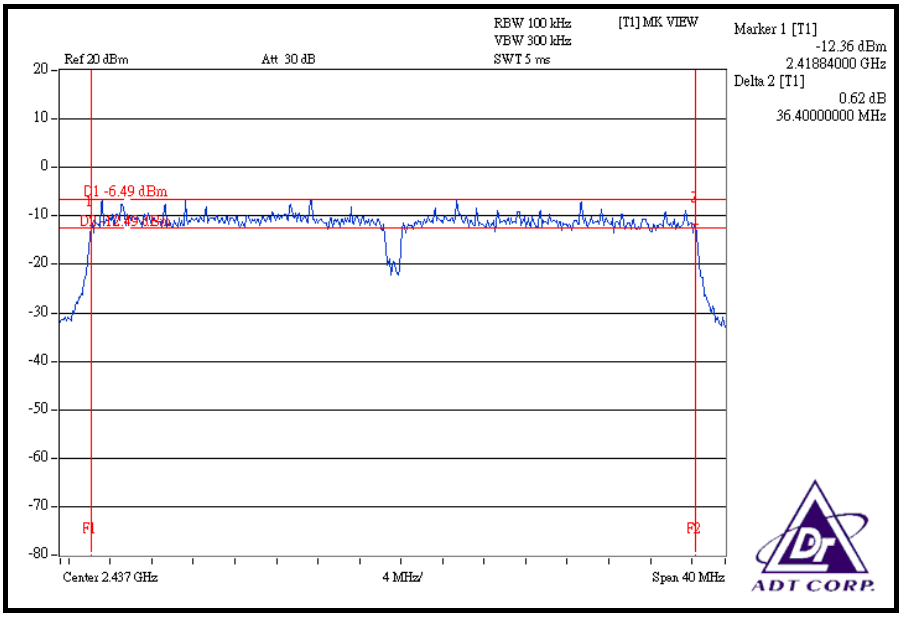
CH 7


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-10.39 dBm
2.43376000 GHz
Delta 2 [T1]
0.39 dB
35.84000000 MHz
Ref 20 dBm
Att 30 dB
D1 -4.8 dBm
F1
F2
Center 2.452 GHz
4 MHz/
Span 40 MHz
ADT CORP.

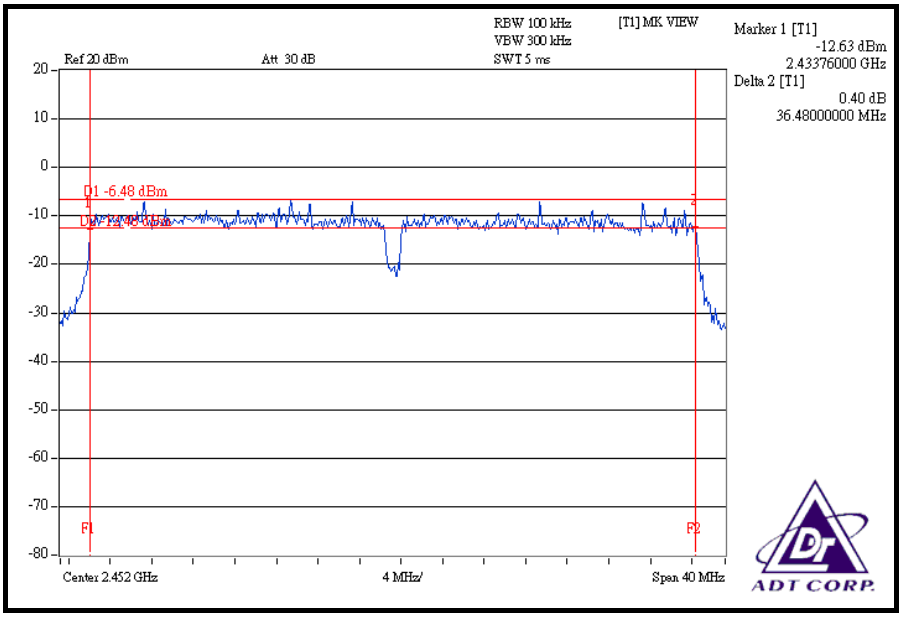
FOR CHAIN 1: CH 1



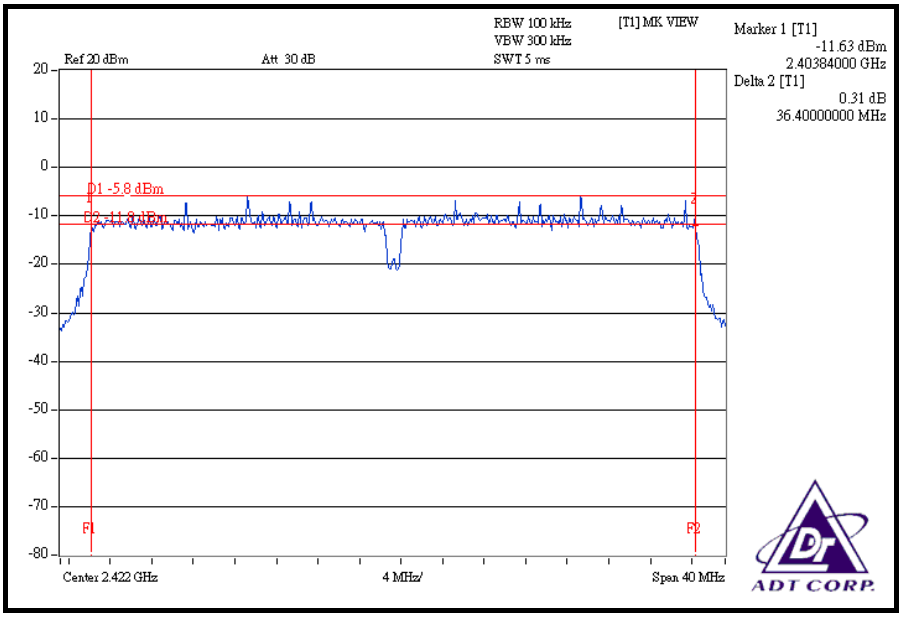
CH 4



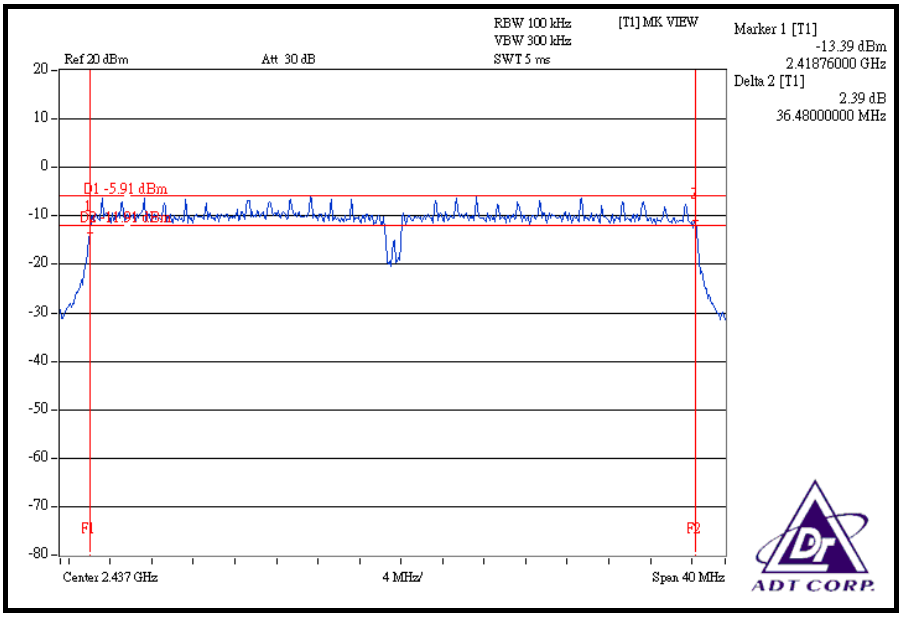
CH 7



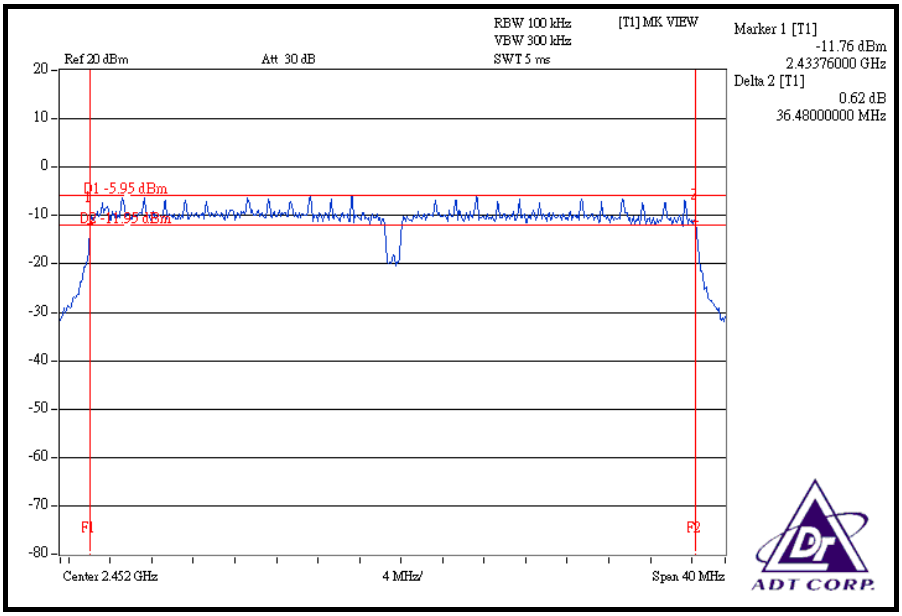
FOR CHAIN 2: CH 1



CH 4


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-13.39 dBm
2.41876000 GHz
Delta 2 [T1]
2.39 dB
36.48000000 MHz
Ref 20 dBm
Att 30 dB
D1 -5.91 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 2.437 GHz
4 MHz/
Span 40 MHz
ADT CORP.

CH 7


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-11.76 dBm
2.43376000 GHz
Delta 2 [T1]
0.62 dB
36.48000000 MHz
Ref 20 dBm
Att 30 dB
D1 -5.95 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 2.452 GHz
4 MHz/
Span 40 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 UNTIL
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 28, 2007
DIGITAL RT OSCILLOSCOPE	TDS1012	C037299	Nov. 27, 2007
NARDA DETECTOR	4503A	FSCM99899	NA

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

4.4.3 TEST PROCEDURES

a. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.

b. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.

c. Adjusted the power to have the same reading on oscilloscope. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

802.11b DSSS MODULATION:

MODULATION TYPE	DBPSK	**TRANSFER RATE**	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	56.754	17.54	30	PASS
6	2437	56.364	17.51	30	PASS
11	2462	56.364	17.51	30	PASS

802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	65.013	18.13	30	PASS
6	2437	63.973	18.06	30	PASS
11	2462	65.163	18.14	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (mW)			PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN0	CHAIN1	CHAIN2	CHAIN0	CHAIN1	CHAIN2				
1	2412	32.509	22.751	22.491	15.12	13.57	13.52	77.751	18.91	30	PASS
6	2437	31.696	22.439	22.594	15.01	13.51	13.54	76.729	18.85	30	PASS
11	2462	32.509	22.387	22.491	15.12	13.50	13.52	77.387	18.89	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (mW)			PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN0	CHAIN1	CHAIN2	CHAIN0	CHAIN1	CHAIN2				
1	2422	16.255	11.402	12.972	12.11	10.57	11.13	40.629	16.09	30	PASS
4	2437	16.181	11.272	12.823	12.09	10.52	11.08	40.276	16.05	30	PASS
7	2452	16.032	11.246	12.912	12.05	10.51	11.11	40.190	16.04	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

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

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

4.5.3 TEST PROCEDURE

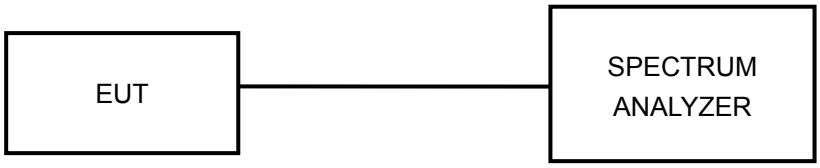
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

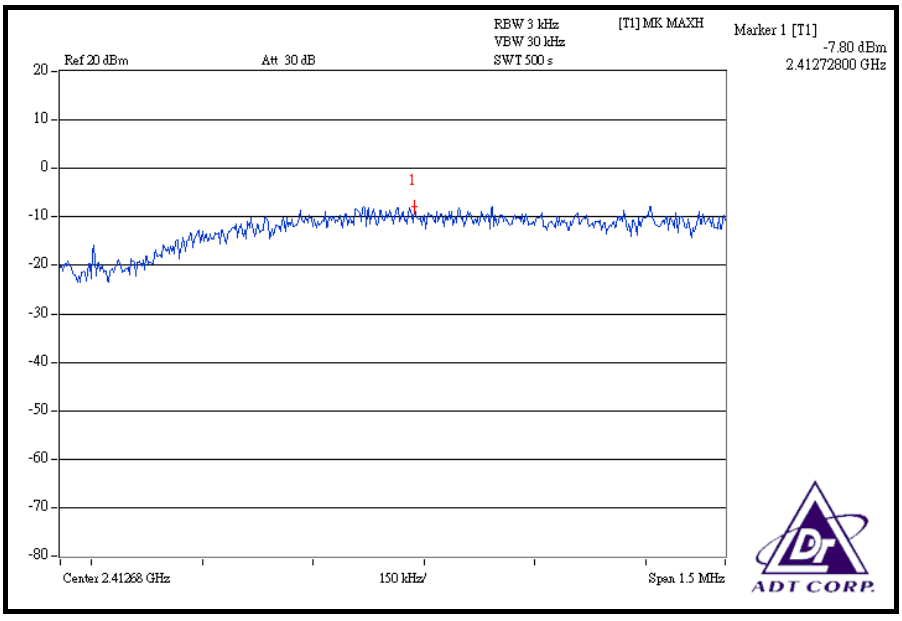
4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

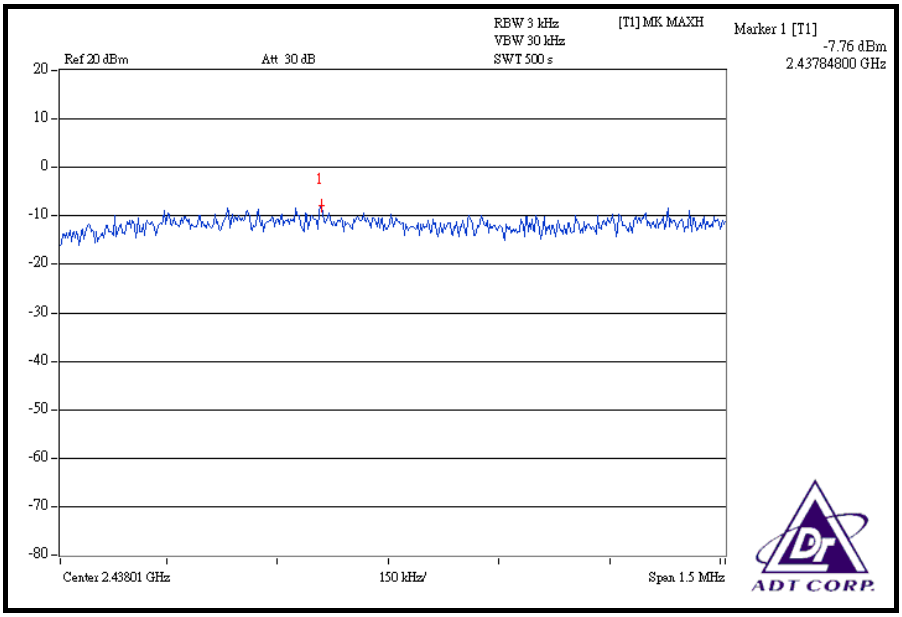
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-7.80	8	PASS
6	2437	-7.76	8	PASS
11	2462	-7.60	8	PASS

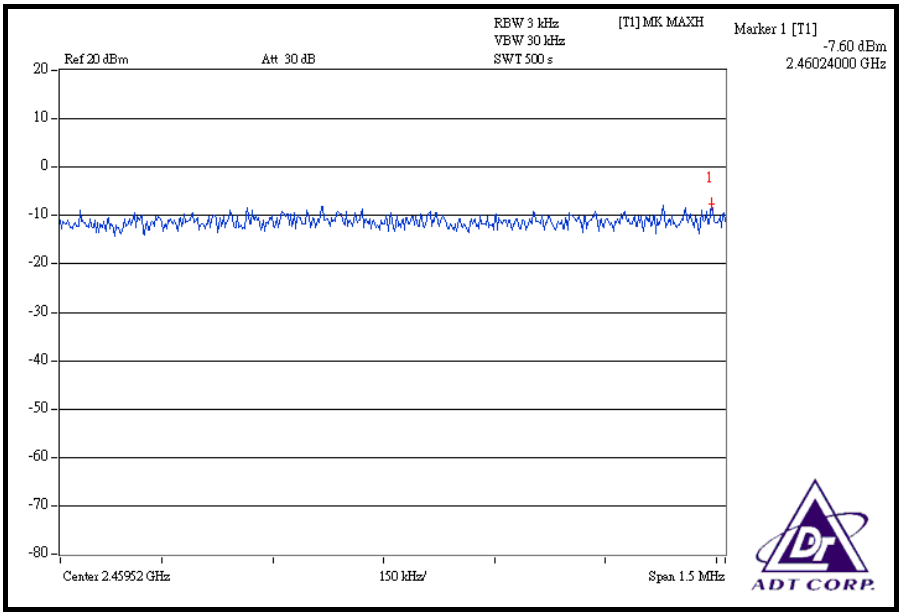
CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-7.76 dBm
2.43784800 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.43801 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH 11

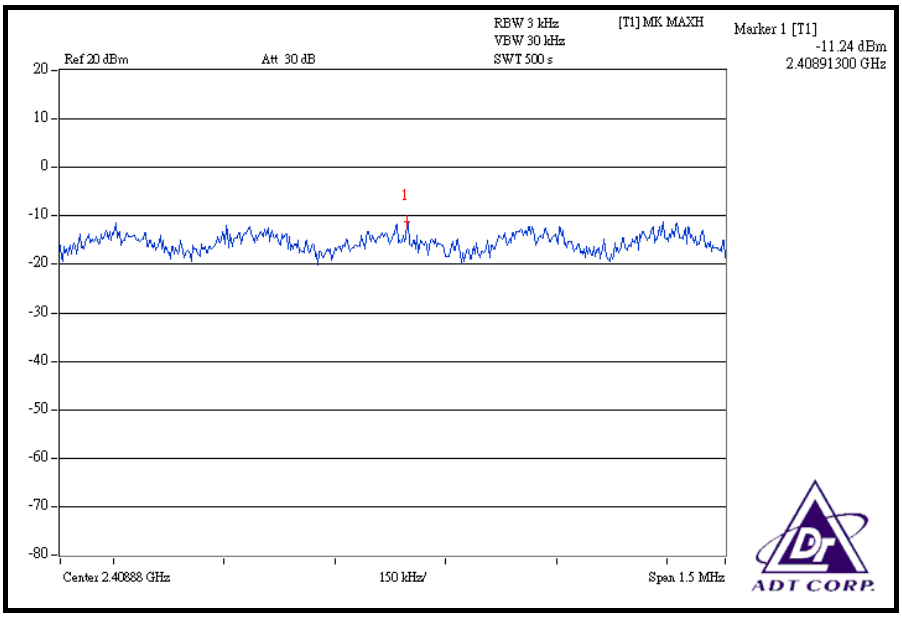

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-7.60 dBm
2.46024000 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.45952 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

802.11g OFDM MODULATION:

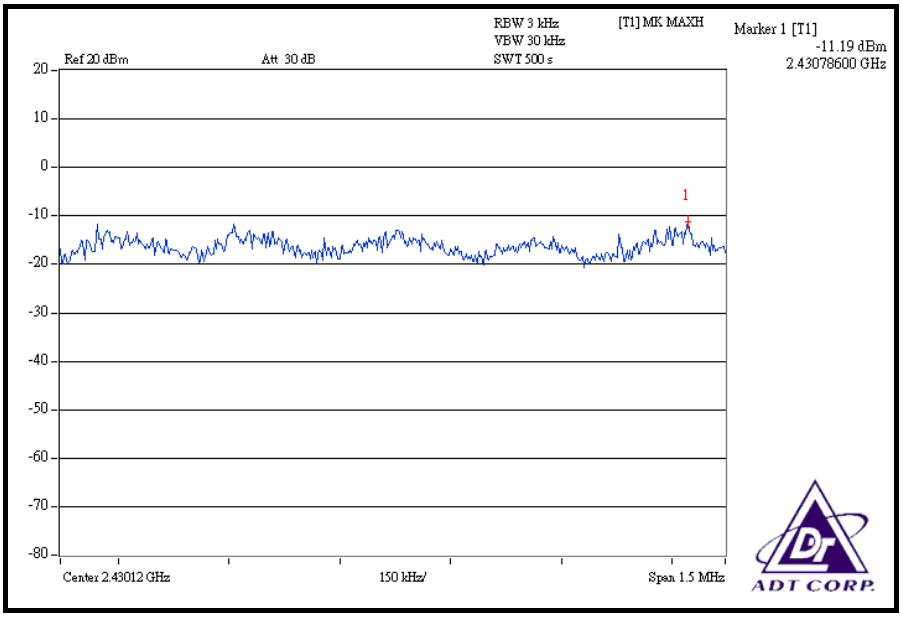
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-11.24	8	PASS
6	2437	-11.19	8	PASS
11	2462	-11.09	8	PASS

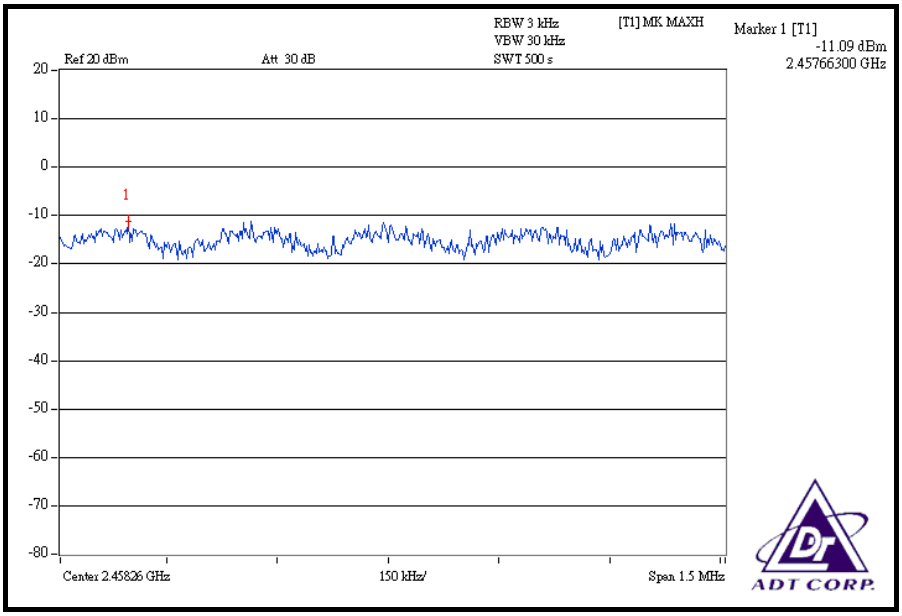
CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.19 dBm
2.43078600 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.43012 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH 11

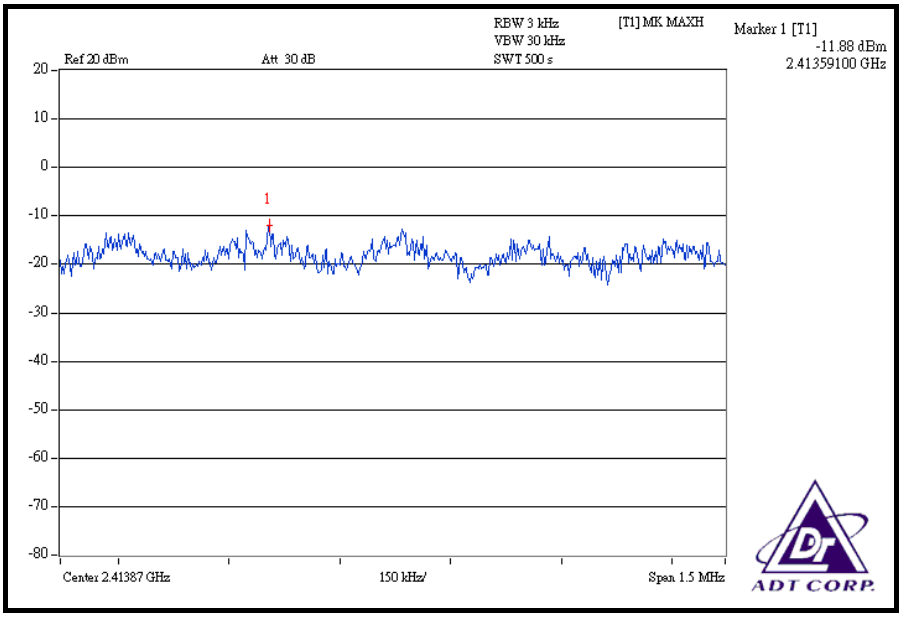

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.09 dBm
2.45766300 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.45826 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

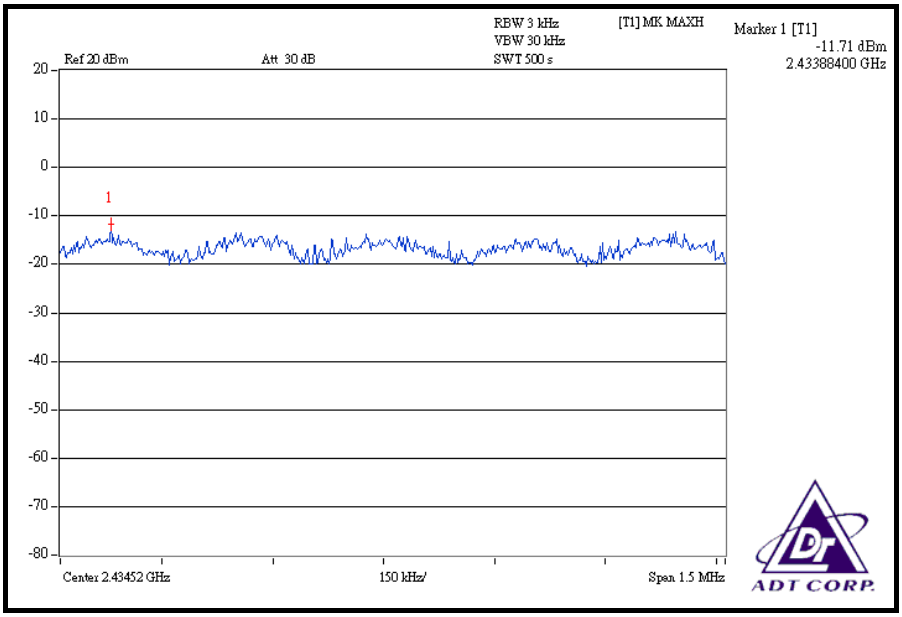
MODULATION TYPE	BPSK	**TRANSFER RATE**	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN0	CHAIN1	CHAIN2	CHAIN0	CHAIN1	CHAIN2				
1	2412	0.065	0.029	0.029	-11.88	-15.40	-15.44	0.123	-9.13	8	PASS
6	2437	0.067	0.028	0.029	-11.71	-15.52	-15.37	0.124	-9.05	8	PASS
11	2462	0.068	0.029	0.030	-11.68	-15.36	-15.24	0.127	-8.96	8	PASS

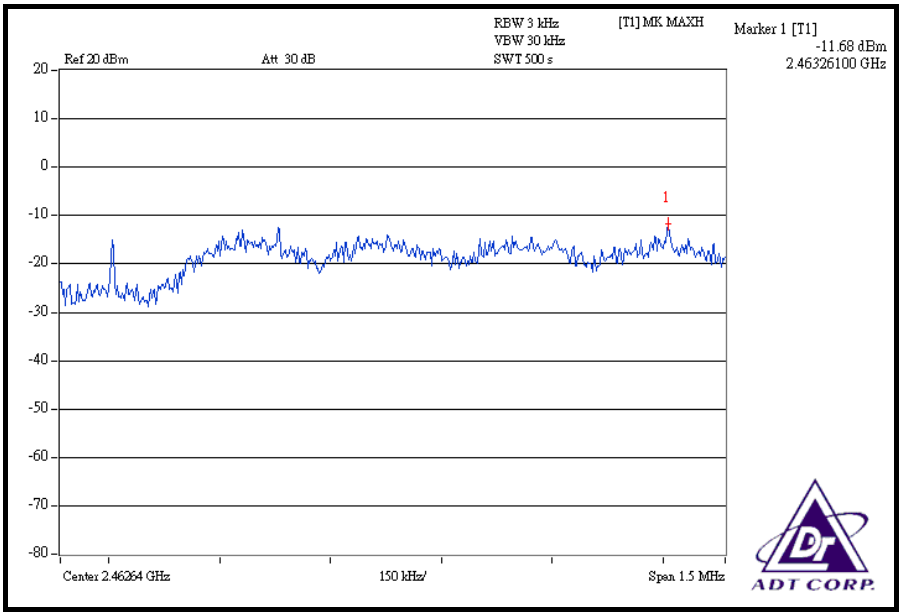
FOR CHAIN 0: CH 1



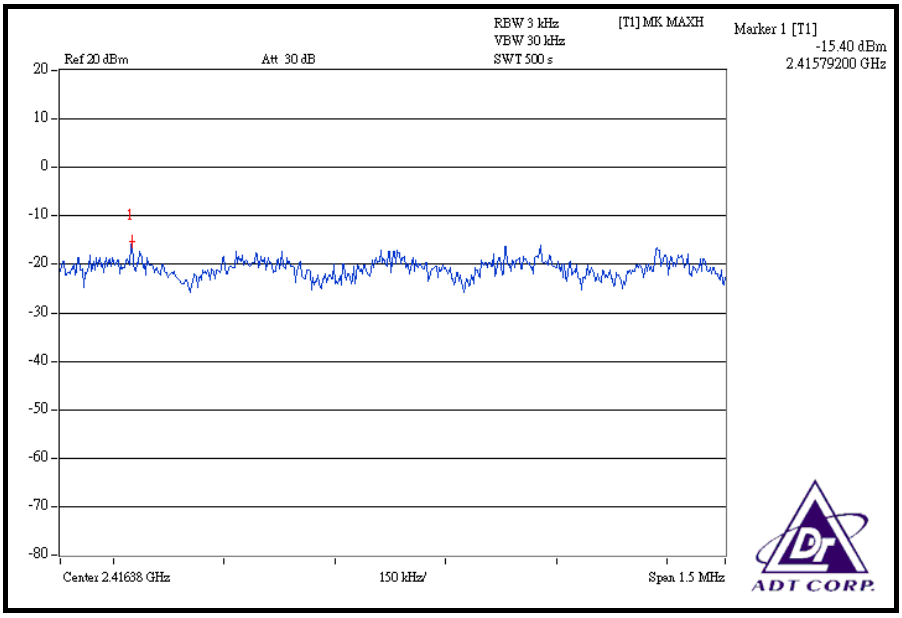
CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.71 dBm
2.43388400 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.43452 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

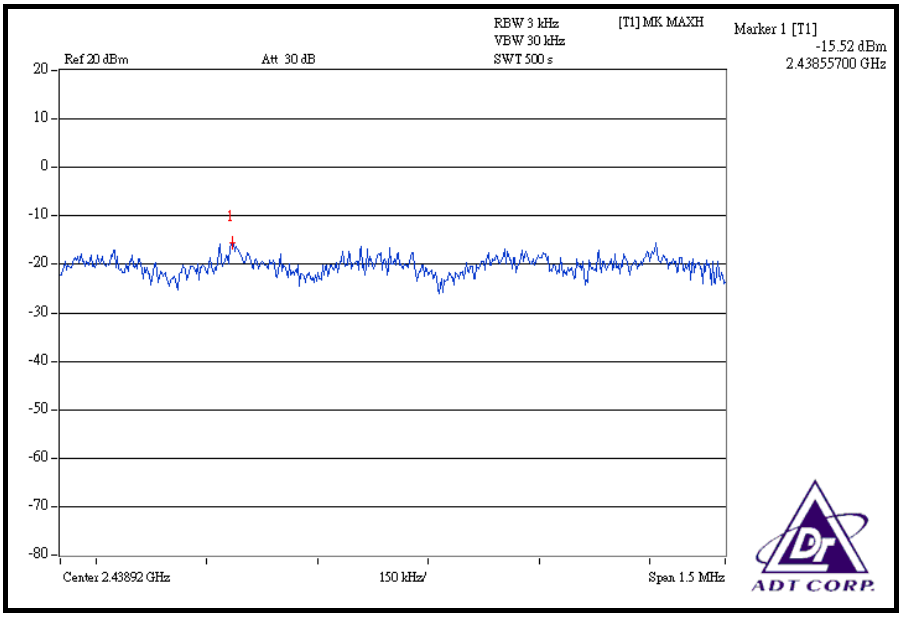
CH 11


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.68 dBm
2.46326100 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.46264 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

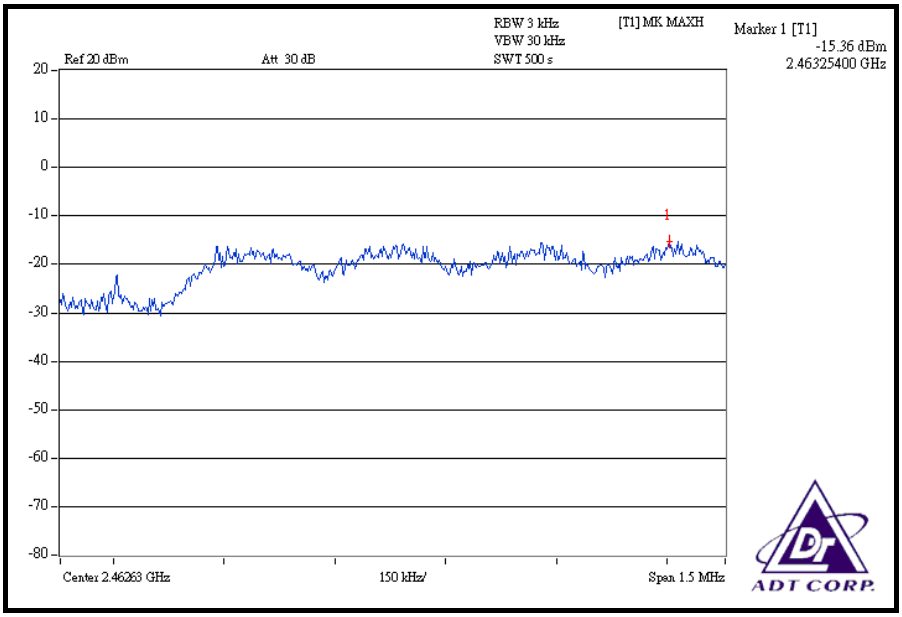
FOR CHAIN 1: CH 1



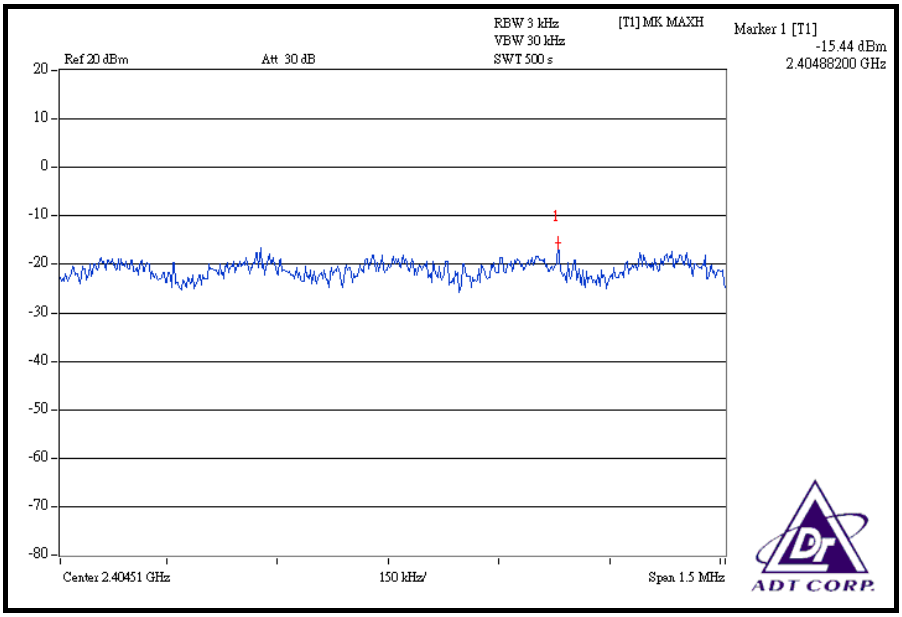
CH 6



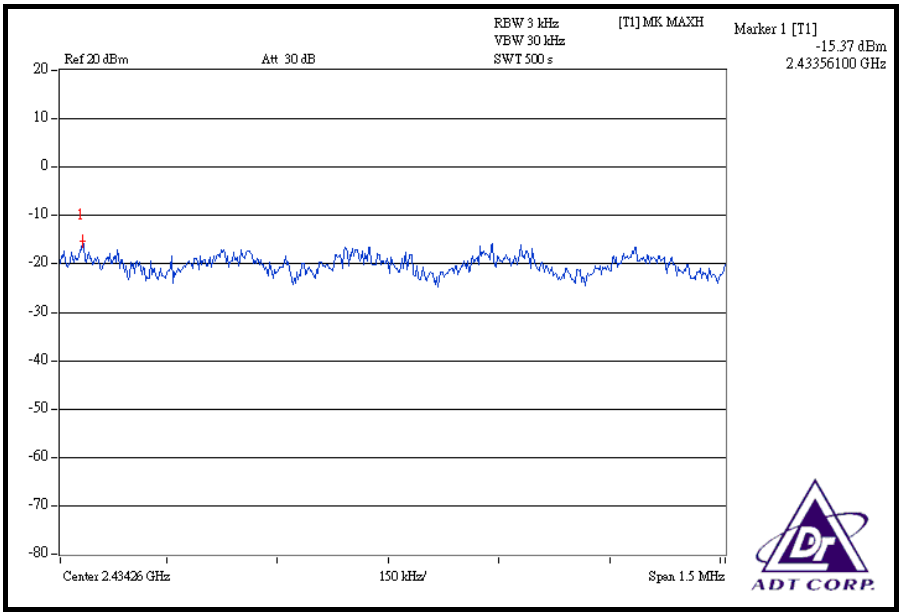
CH 11



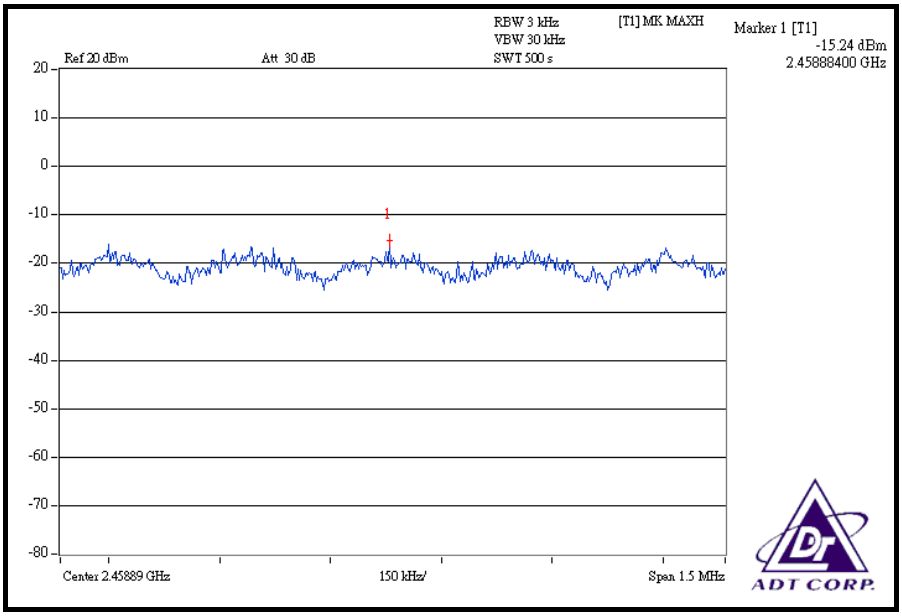
FOR CHAIN 2: CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-15.37 dBm
2.43356100 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.43426 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH 11

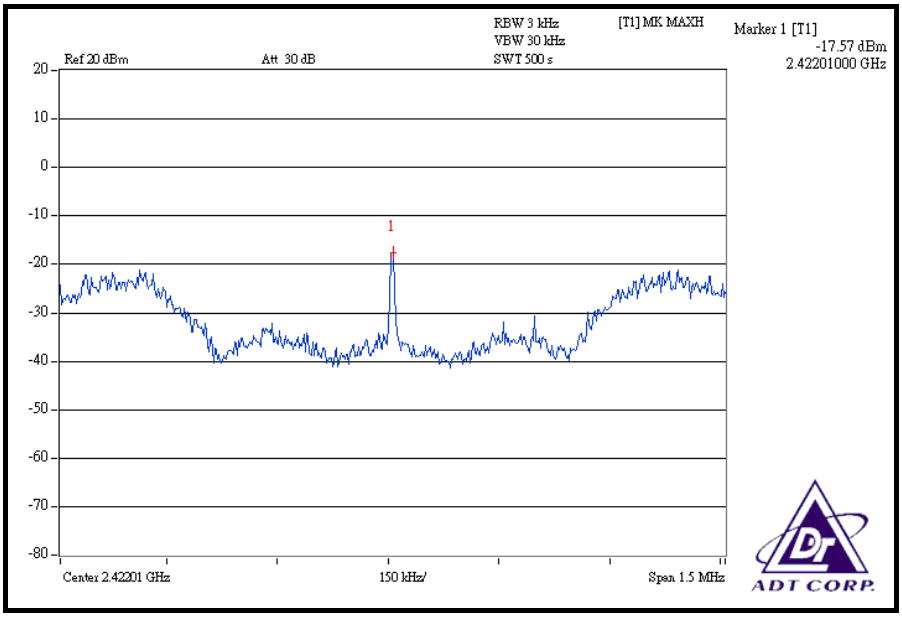

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-15.24 dBm
2.45888400 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.45889 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

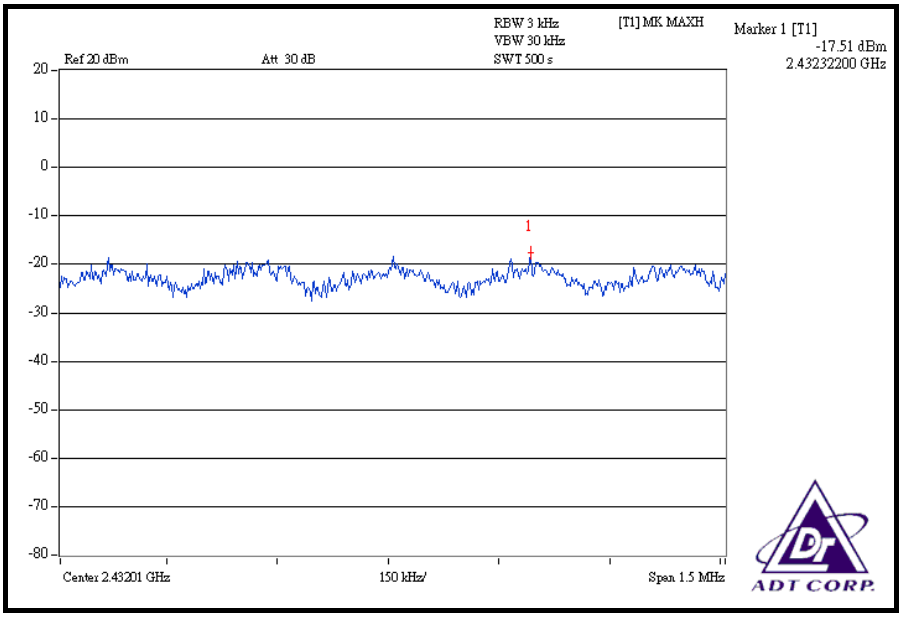
MODULATION TYPE	BPSK	**TRANSFER RATE**	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN0	CHAIN1	CHAIN2	CHAIN0	CHAIN1	CHAIN2				
1	2422	0.017	0.008	0.009	-17.57	-20.96	-20.45	0.035	-14.62	8	PASS
4	2437	0.018	0.008	0.009	-17.51	-20.77	-20.32	0.035	-14.51	8	PASS
7	2452	0.017	0.008	0.009	-17.60	-20.73	-20.38	0.035	-14.56	8	PASS

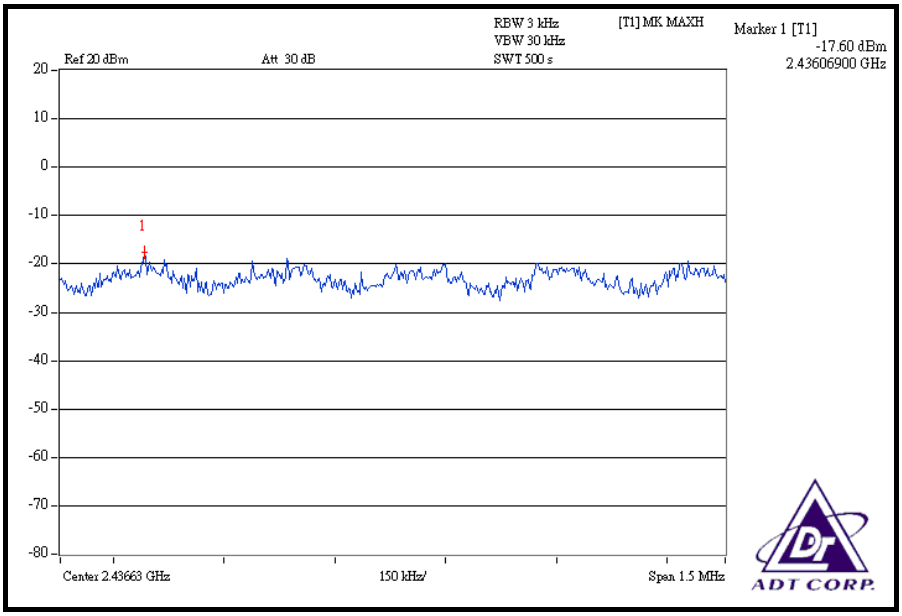
FOR CHAIN 0: CH 1



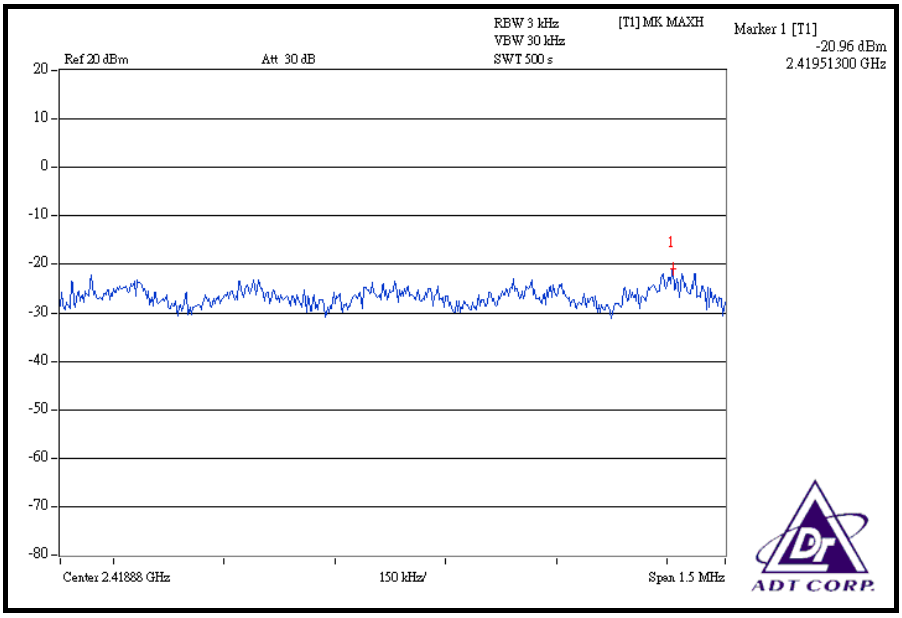
CH 4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-17.51 dBm
2.43232200 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.43201 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

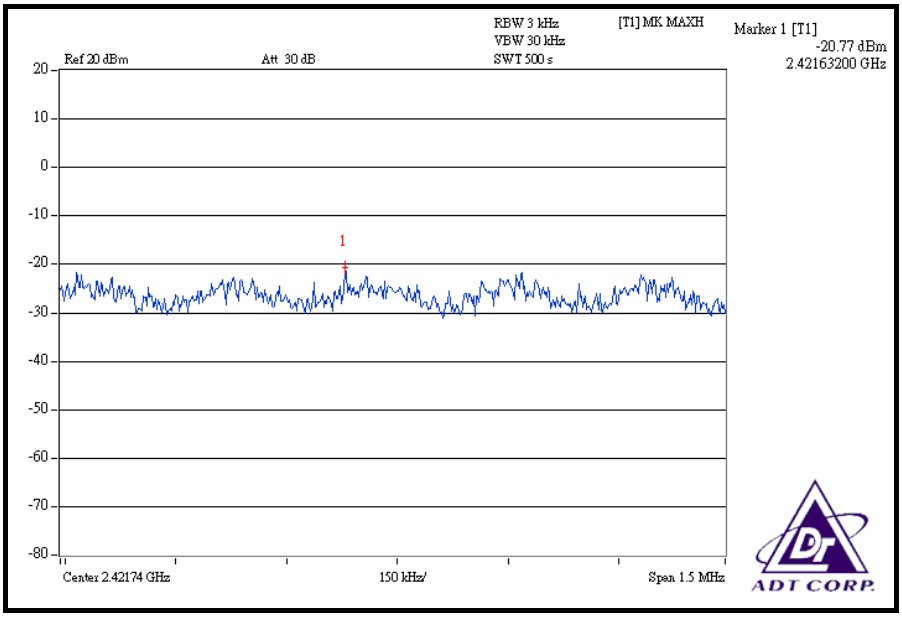
CH 7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-17.60 dBm
2.43606900 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.43663 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

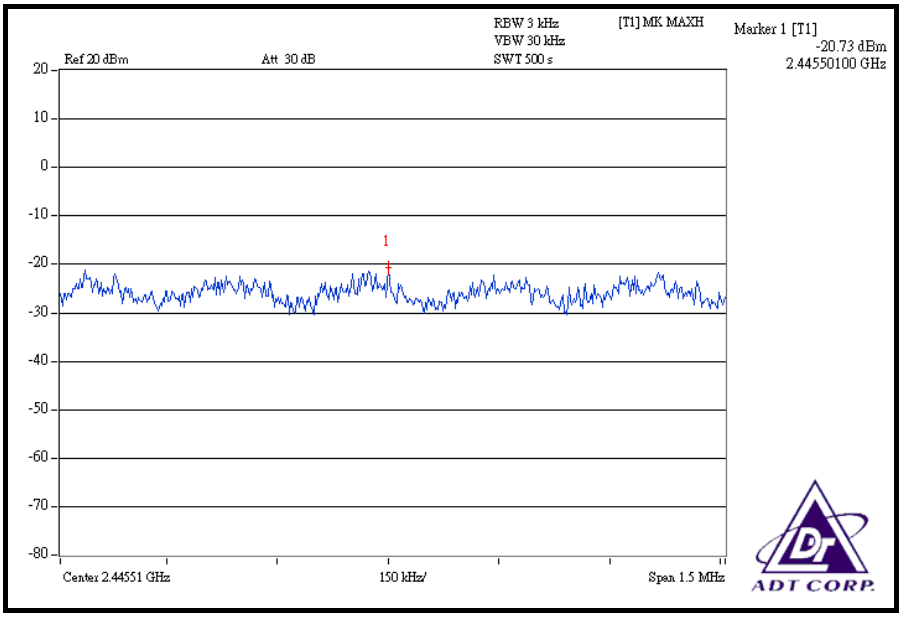
FOR CHAIN 1: CH 1



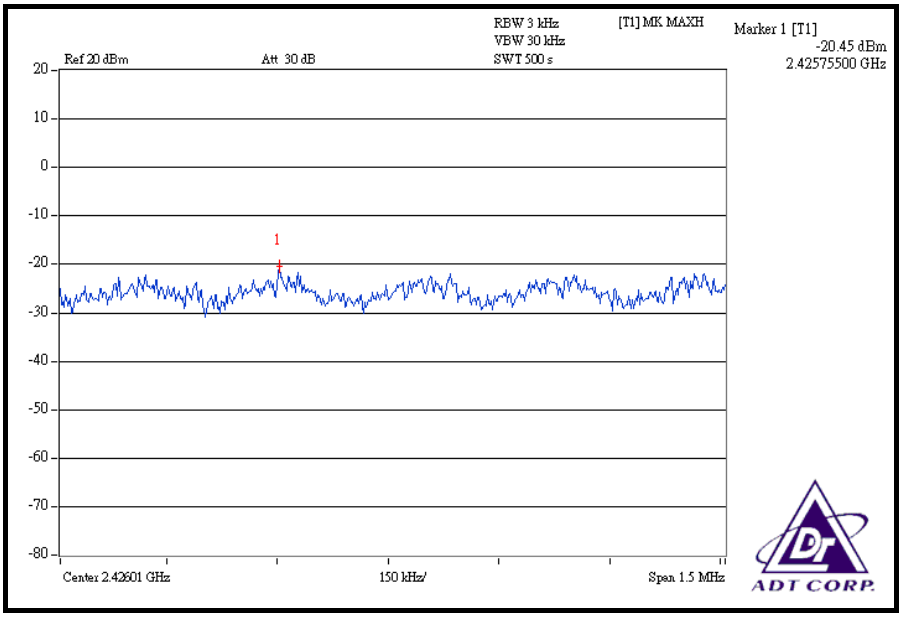
CH 4



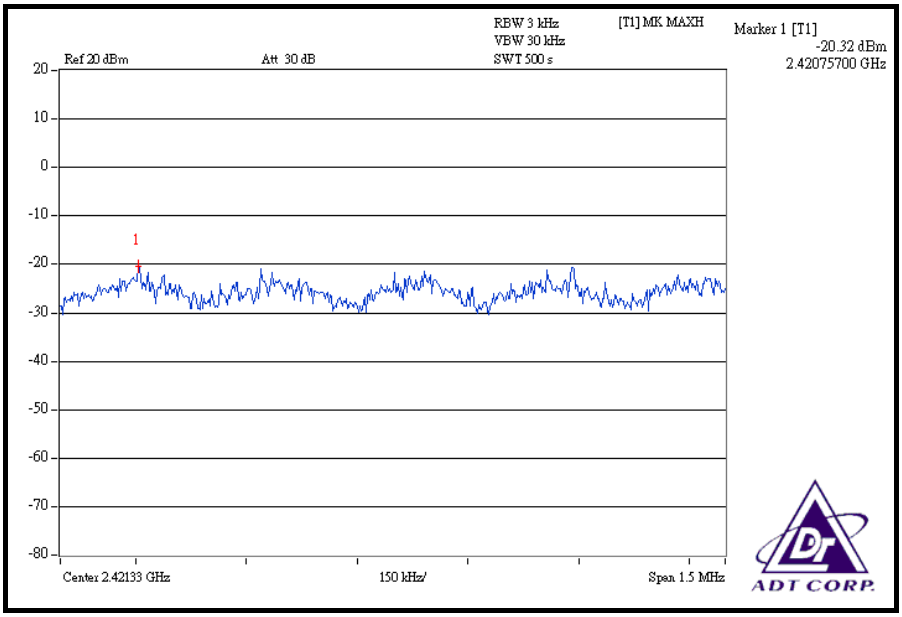
CH 7



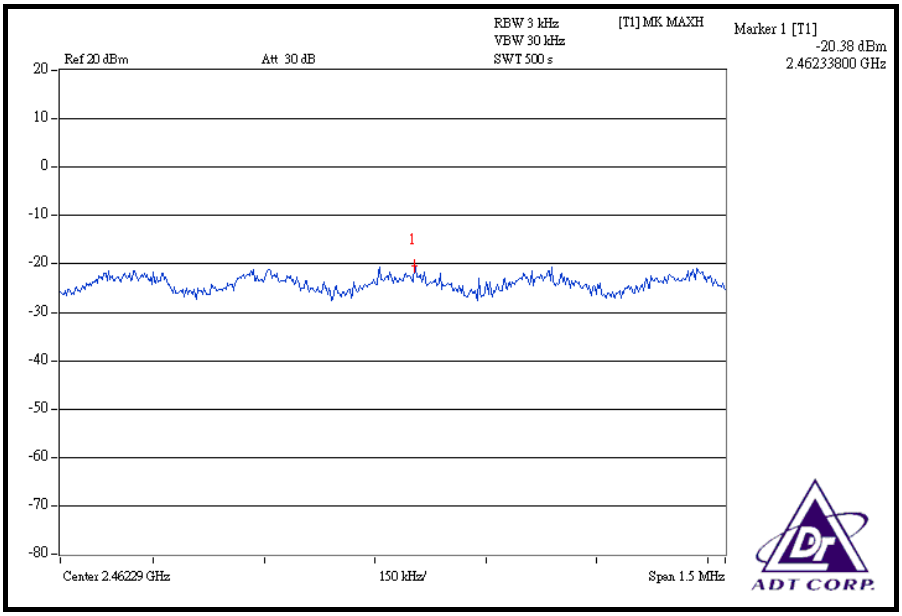
FOR CHAIN 2: CH 1



CH 4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-20.32 dBm
2.42075700 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.42133 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH 7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-20.38 dBm
2.46233800 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.46229 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
802.11b, 802.11g:			
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008
DRAFT 802.11n (20MHz), DRAFT 802.11n (40MHz):			
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Jul. 27, 2008
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 04, 2008
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 16, 2008
Preamplifier Agilent	8449B	3008A01910	Sep. 21, 2007
Preamplifier Agilent	8447D	2944A10638	Dec. 20, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218188/218189	Nov. 14, 2007
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA

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

4.6.3 TEST PROCEDURE

802.11b, 802.11g:

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

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

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

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. Set both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

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

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.6 TEST RESULTS

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

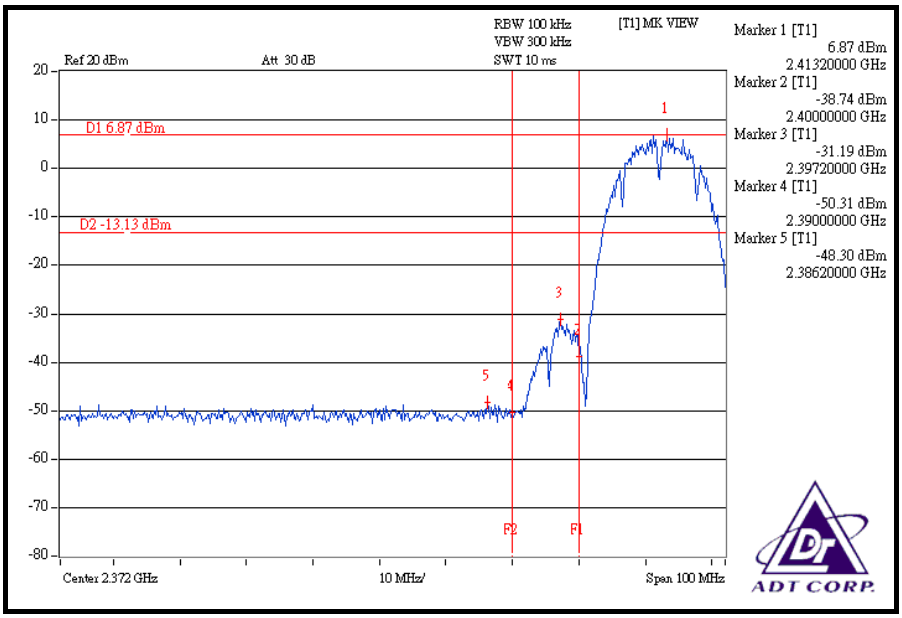
802.11b DSSS MODULATION:

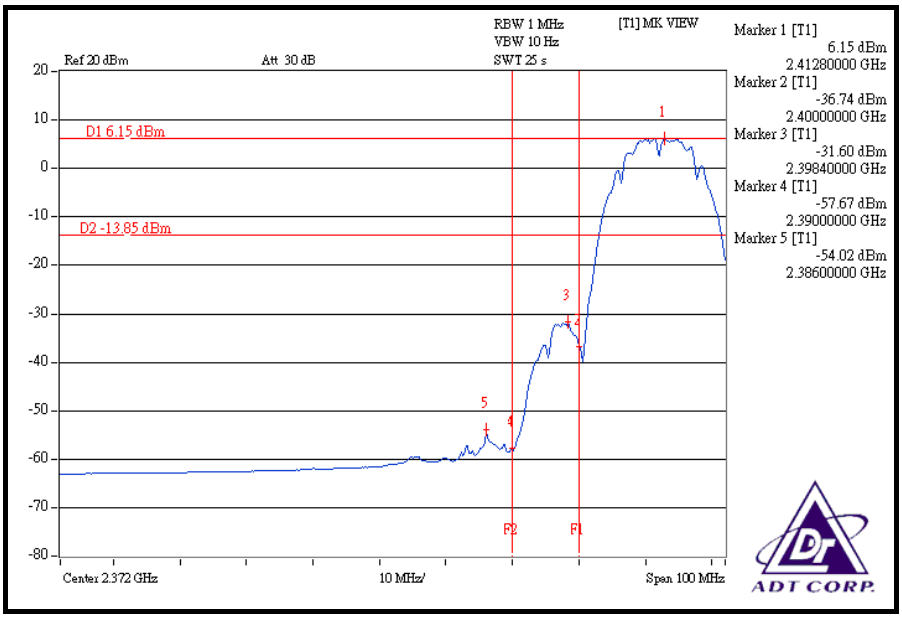
NOTE 1: The band edge emission plot on the next page shows 55.17dBc between carrier maximum power and local maximum emission in restrict band (2.38620GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 112.32dBuV/m (Peak), so the maximum field strength in restrict band is 112.32 – 55.17 = 57.15dBuV/m which is under 74dBuV/m limit.

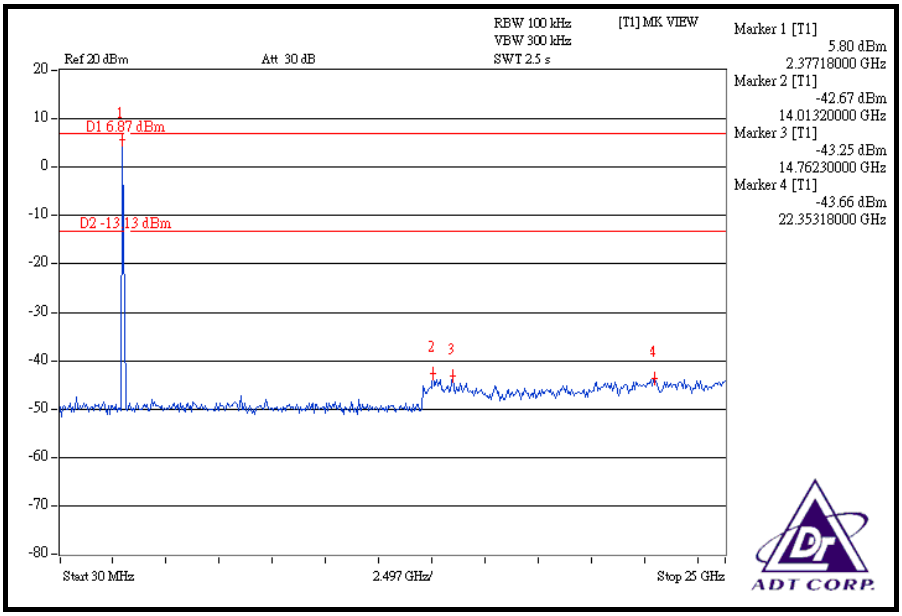
The band edge emission plot of on the next page shows 60.17dBc between carrier maximum power and local maximum emission in restrict band (2.38600GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 107.87dBuV/m (Average), so the maximum field strength in restrict band is 107.87 – 60.17 = 47.70dBuV/m which is under 54dBuV/m limit.

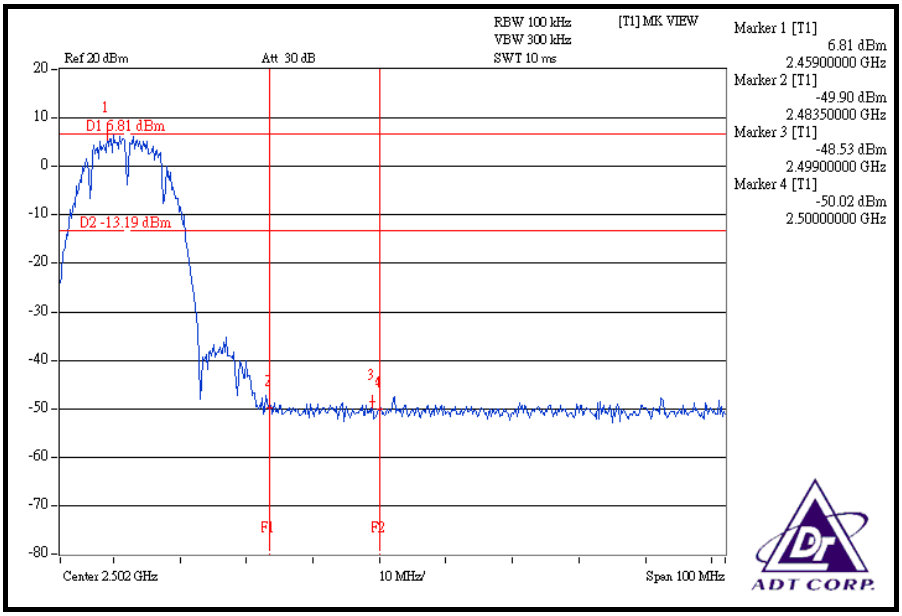
NOTE 2: The band edge emission plot on the next second page shows 55.34dBc between carrier maximum power and local maximum emission in restrict band (2.49900GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 112.54dBuV/m (Peak), so the maximum field strength in restrict band is 112.54 – 55.34 = 57.20dBuV/m which is under 74dBuV/m limit.

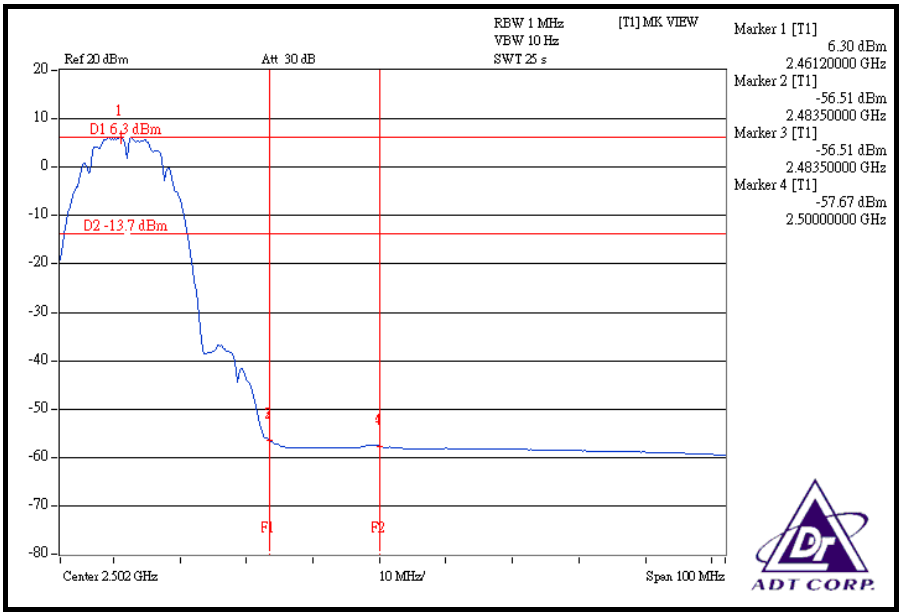
The band edge emission plot on the next third page shows 62.81dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 107.69dBuV/m (Average), so the maximum field strength in restrict band is 107.69 – 62.81 = 44.88dBuV/m which is under 54dBuV/m limit.

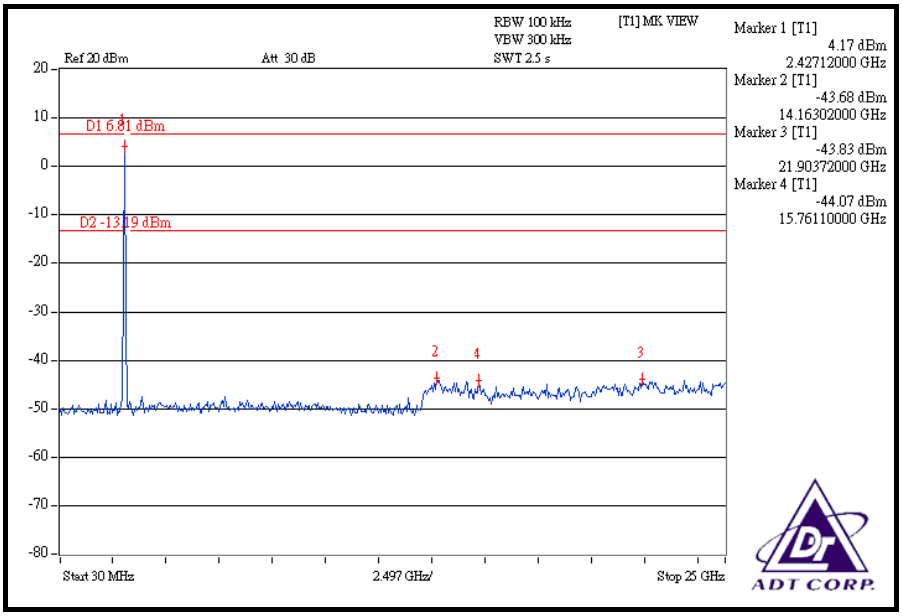

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 6.87 dBm
D2 -13.13 dBm
Marker 1 [T1]
6.87 dBm
2.41320000 GHz
Marker 2 [T1]
-38.74 dBm
2.40000000 GHz
Marker 3 [T1]
-31.19 dBm
2.39720000 GHz
Marker 4 [T1]
-50.31 dBm
2.39000000 GHz
Marker 5 [T1]
-48.30 dBm
2.38620000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 6.15 dBm
D2 -13.85 dBm
Marker 1 [T1]
6.15 dBm
2.41280000 GHz
Marker 2 [T1]
-36.74 dBm
2.40000000 GHz
Marker 3 [T1]
-31.60 dBm
2.39840000 GHz
Marker 4 [T1]
-57.67 dBm
2.39000000 GHz
Marker 5 [T1]
-54.02 dBm
2.38600000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 6.87 dBm
D2 -13.13 dBm
Marker 1 [T1]
5.80 dBm
2.37718000 GHz
Marker 2 [T1]
-42.67 dBm
14.01320000 GHz
Marker 3 [T1]
-43.25 dBm
14.76230000 GHz
Marker 4 [T1]
-43.66 dBm
22.35318000 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 6.81 dBm
D2 -13.19 dBm
Marker 1 [T1]
6.81 dBm
2.45900000 GHz
Marker 2 [T1]
-49.90 dBm
2.48350000 GHz
Marker 3 [T1]
-48.53 dBm
2.49900000 GHz
Marker 4 [T1]
-50.02 dBm
2.50000000 GHz
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 6.3 dBm
D2 -13.7 dBm
Marker 1 [T1]
6.30 dBm
2.46120000 GHz
Marker 2 [T1]
-56.51 dBm
2.48350000 GHz
Marker 3 [T1]
-56.51 dBm
2.48350000 GHz
Marker 4 [T1]
-57.67 dBm
2.50000000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 6.81 dBm
D2 -13.19 dBm
Marker 1 [T1]
4.17 dBm
2.42712000 GHz
Marker 2 [T1]
-43.68 dBm
14.16302000 GHz
Marker 3 [T1]
-43.83 dBm
21.90372000 GHz
Marker 4 [T1]
-44.07 dBm
15.76110000 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

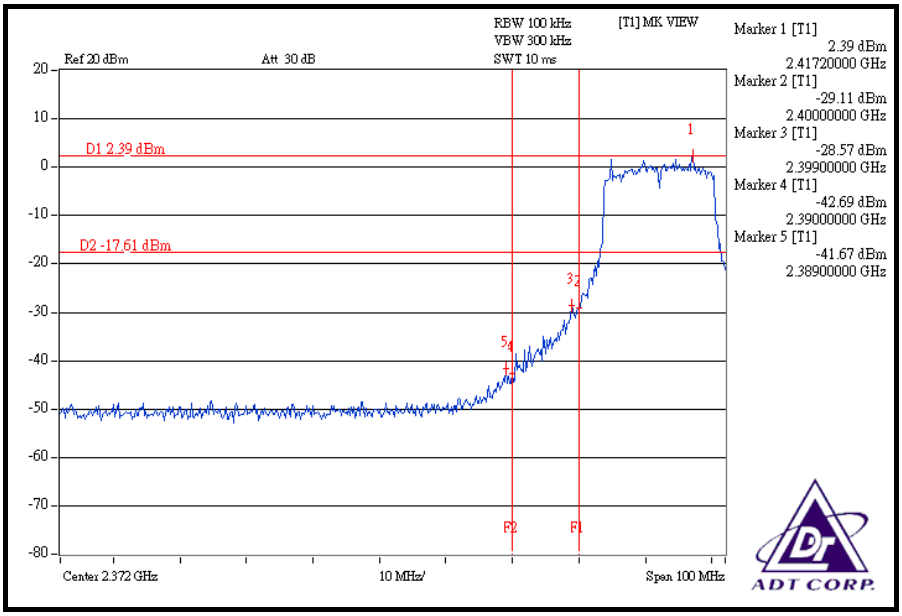
802.11g OFDM MODULATION:

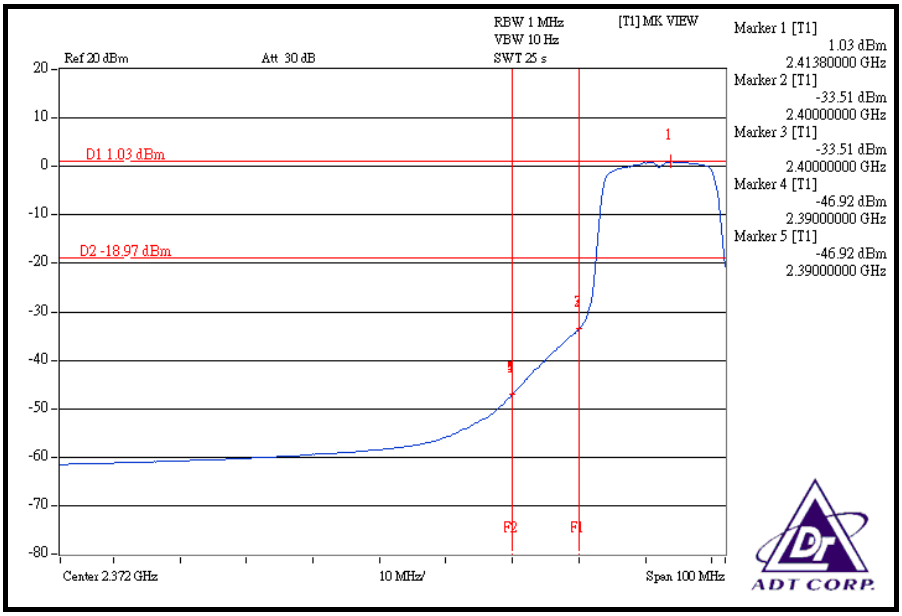
NOTE 1: The band edge emission plot on the next page shows 44.06dBc between carrier maximum power and local maximum emission in restrict band (2.38900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 112.91dBuV/m (Peak), so the maximum field strength in restrict band is 112.91 – 44.06 = 68.85dBuV/m which is under 74dBuV/m limit.

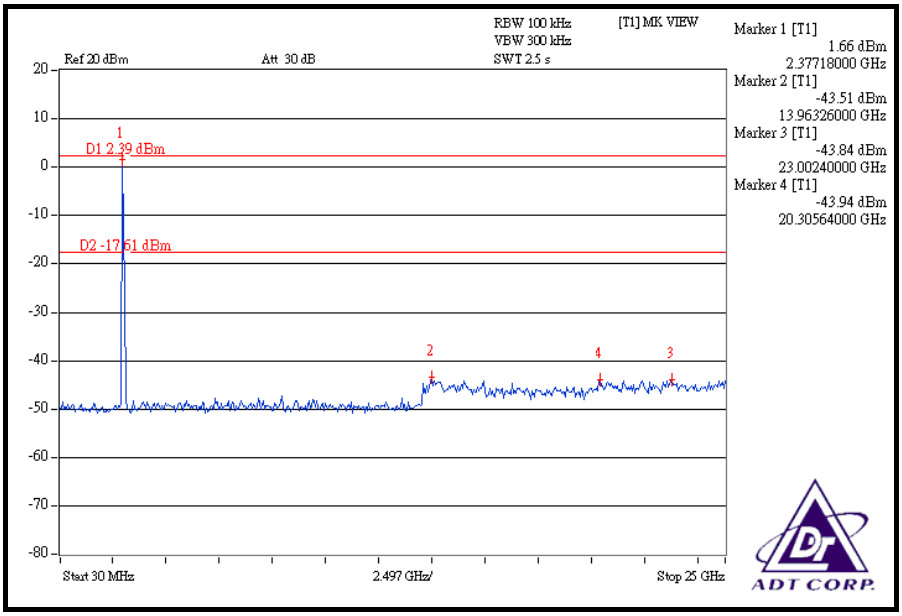
The band edge emission plot of on the next page shows 47.95dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 100.84dBuV/m (Average), so the maximum field strength in restrict band is 100.84 – 47.95 = 52.89dBuV/m which is under 54dBuV/m limit.

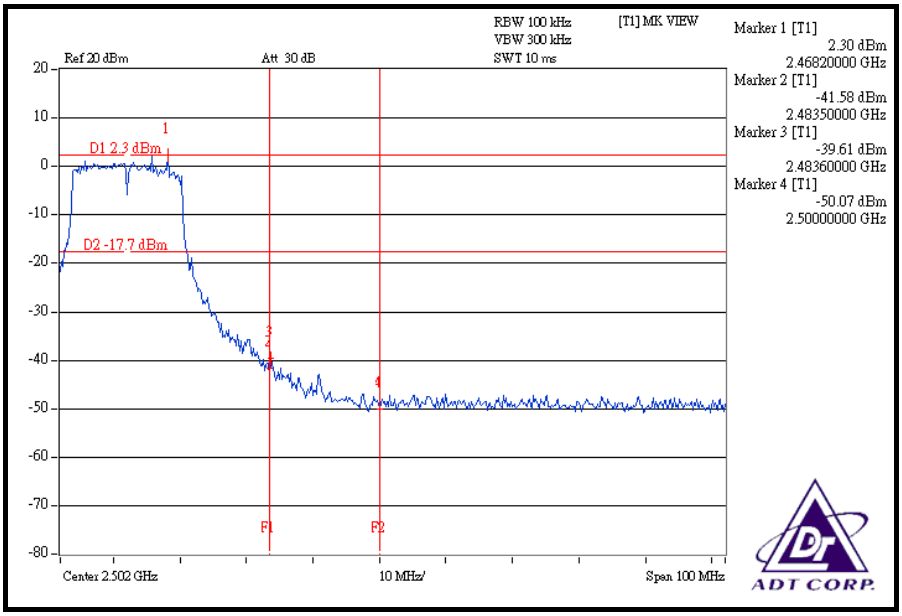
NOTE 2: The band edge emission plot on the next second page shows 41.91dBc between carrier maximum power and local maximum emission in restrict band (2.48360GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 111.49dBuV/m (Peak), so the maximum field strength in restrict band is 111.49 – 41.91 = 69.58dBuV/m which is under 74dBuV/m limit.

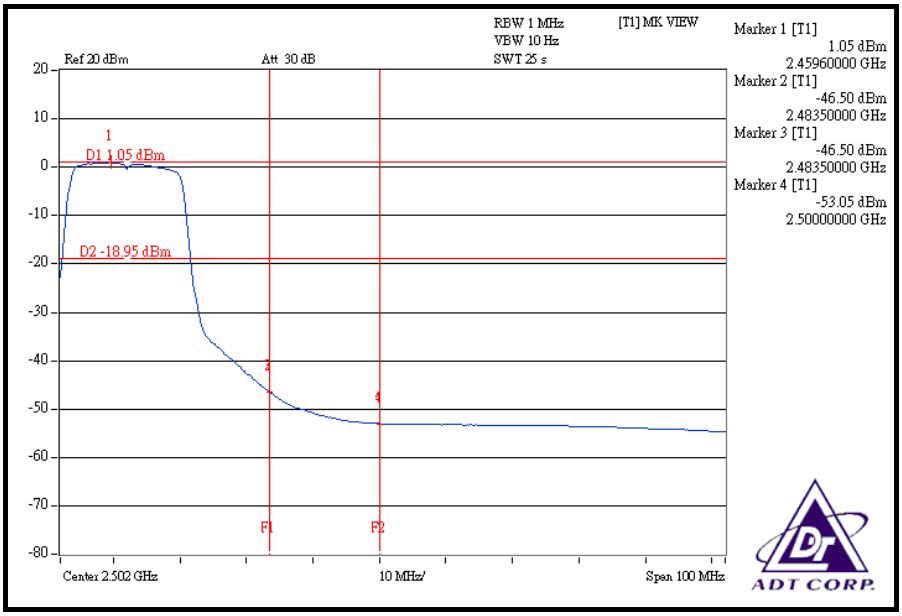
The band edge emission plot on the next third page shows 47.55dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 100.39dBuV/m (Average), so the maximum field strength in restrict band is 100.39 – 47.55 = 52.84dBuV/m which is under 54dBuV/m limit.

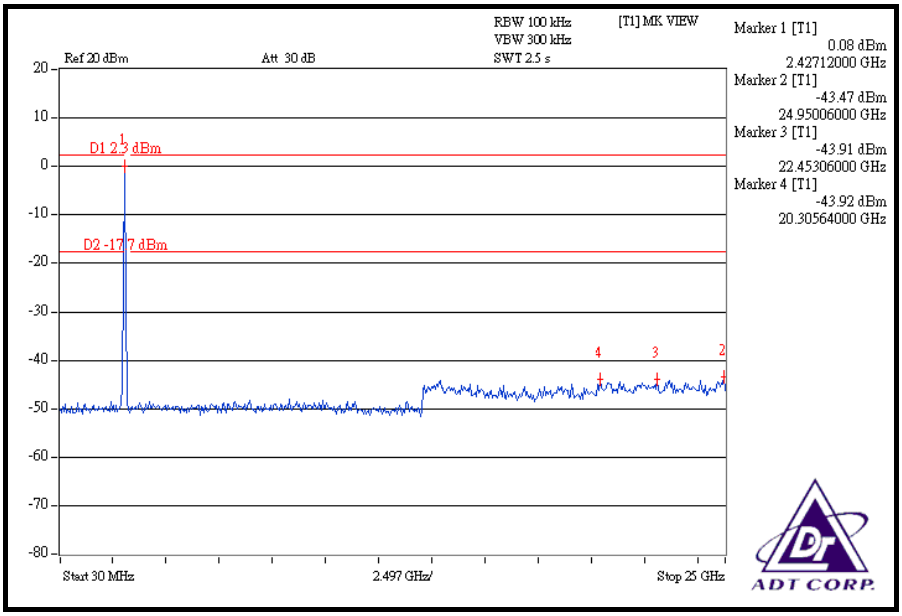

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 2.39 dBm
D2 -17.61 dBm
Marker 1 [T1]
2.39 dBm
2.41720000 GHz
Marker 2 [T1]
-29.11 dBm
2.40000000 GHz
Marker 3 [T1]
-28.57 dBm
2.39900000 GHz
Marker 4 [T1]
-42.69 dBm
2.39000000 GHz
Marker 5 [T1]
-41.67 dBm
2.38900000 GHz
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 1.03 dBm
D2 -18.97 dBm
Marker 1 [T1]
1.03 dBm
2.41380000 GHz
Marker 2 [T1]
-33.51 dBm
2.40000000 GHz
Marker 3 [T1]
-33.51 dBm
2.40000000 GHz
Marker 4 [T1]
-46.92 dBm
2.39000000 GHz
Marker 5 [T1]
-46.92 dBm
2.39000000 GHz
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 2.39 dBm
D2 -17.61 dBm
Marker 1 [T1]
1.66 dBm
2.37718000 GHz
Marker 2 [T1]
-43.51 dBm
13.96326000 GHz
Marker 3 [T1]
-43.84 dBm
23.00240000 GHz
Marker 4 [T1]
-43.94 dBm
20.30564000 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 2.3 dBm
D2 -17.7 dBm
Marker 1 [T1]
2.30 dBm
2.46820000 GHz
Marker 2 [T1]
-41.58 dBm
2.48350000 GHz
Marker 3 [T1]
-39.61 dBm
2.48360000 GHz
Marker 4 [T1]
-50.07 dBm
2.50000000 GHz
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
1.05 dBm
2.45960000 GHz
Marker 2 [T1]
-46.50 dBm
2.48350000 GHz
Marker 3 [T1]
-46.50 dBm
2.48350000 GHz
Marker 4 [T1]
-53.05 dBm
2.50000000 GHz
D1 1.05 dBm
D2 -18.95 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
0.08 dBm
2.42712000 GHz
Marker 2 [T1]
-43.47 dBm
24.95006000 GHz
Marker 3 [T1]
-43.91 dBm
22.45306000 GHz
Marker 4 [T1]
-43.92 dBm
20.30564000 GHz
D1 2.3 dBm
D2 -17.7 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

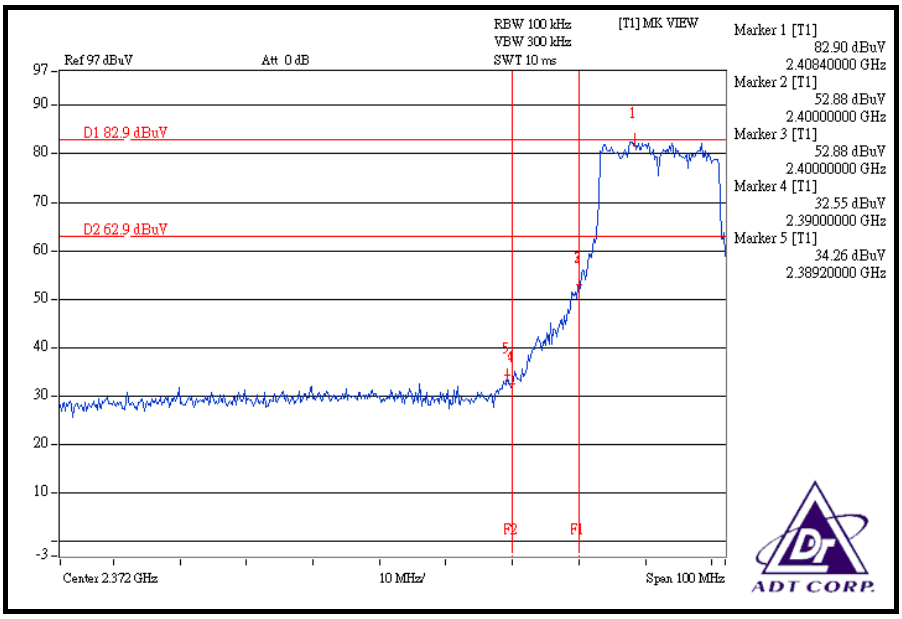
DRAFT 802.11n (20MHz) OFDM MODULATION:

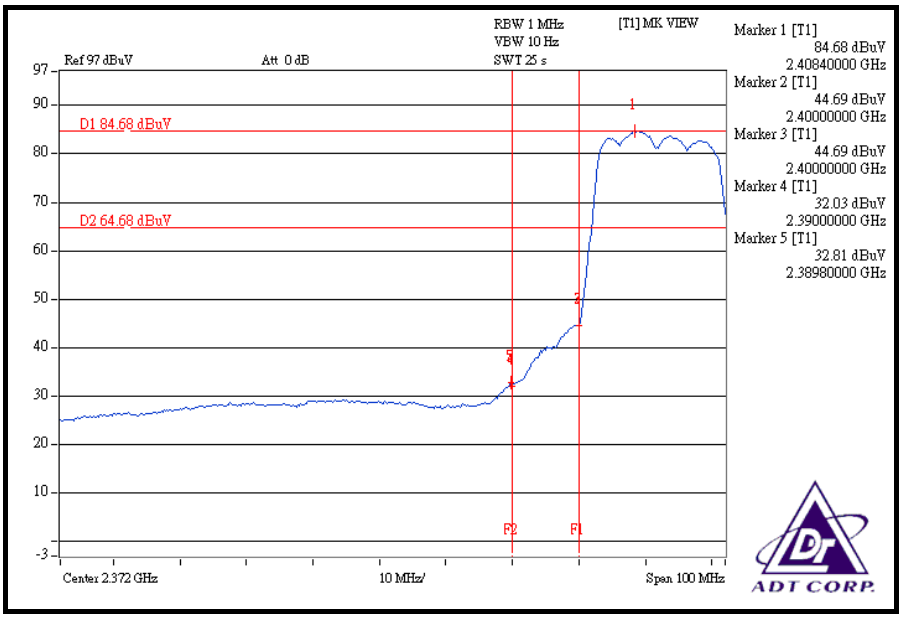
NOTE 1: The band edge emission plot on the next page shows 48.64dBc between carrier maximum power and local maximum emission in restrict band (2.38920GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 115.12dBuV/m (Peak), so the maximum field strength in restrict band is 115.12 – 48.64 = 66.48dBuV/m which is under 74dBuV/m limit.

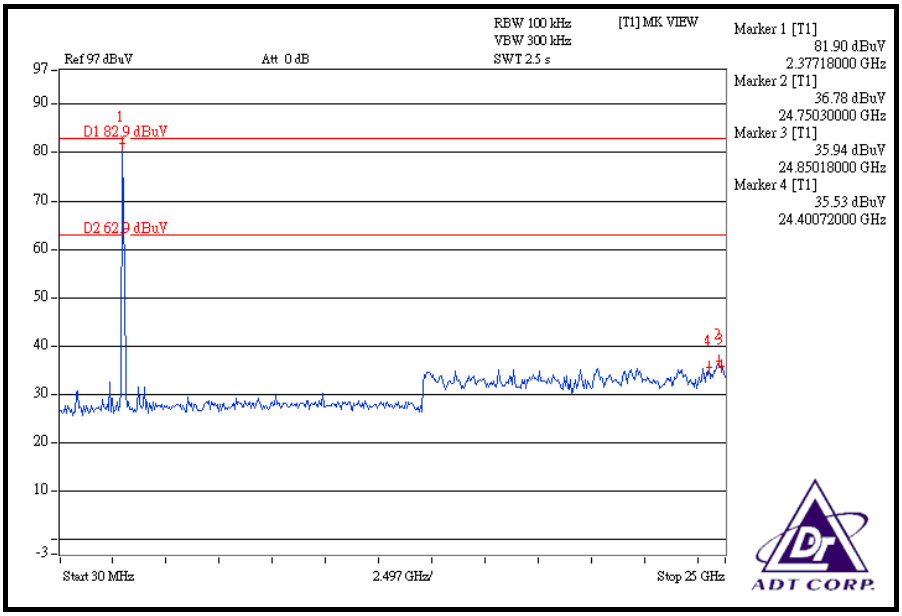
The band edge emission plot of on the next page shows 51.87dBc between carrier maximum power and local maximum emission in restrict band (2.38980GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 104.81dBuV/m (Average), so the maximum field strength in restrict band is 104.81 – 51.87 = 52.94dBuV/m which is under 54dBuV/m limit.

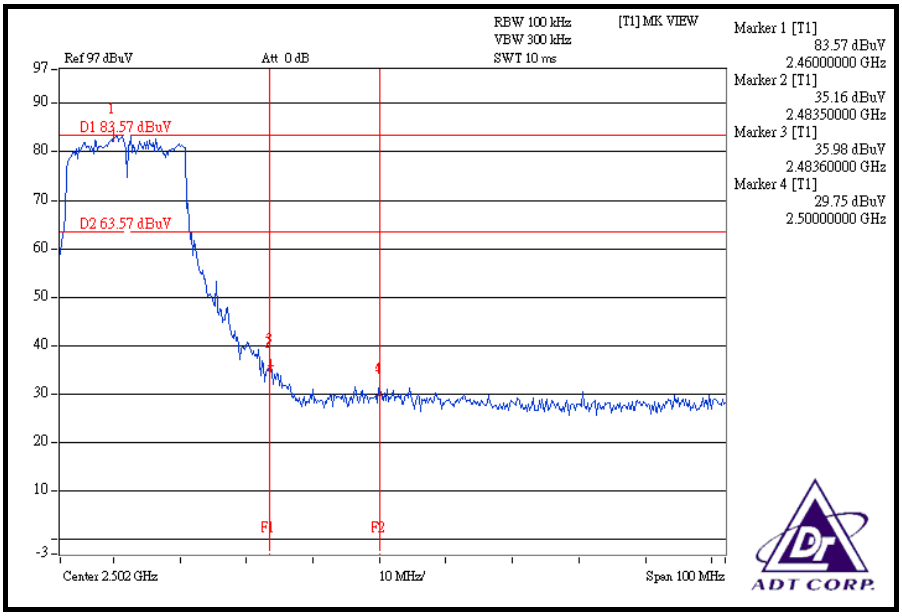
NOTE 2: The band edge emission plot on the next second page shows 47.59dBc between carrier maximum power and local maximum emission in restrict band (2.48360GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 116.19dBuV/m (Peak), so the maximum field strength in restrict band is 116.19 – 47.59 = 68.60dBuV/m which is under 74dBuV/m limit.

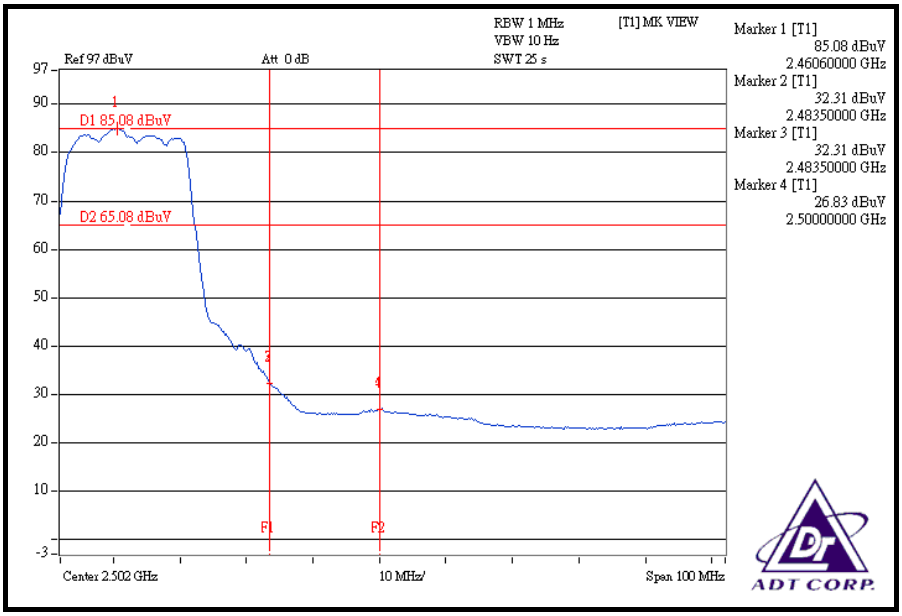
The band edge emission plot on the next third page shows 52.77dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 105.05dBuV/m (Average), so the maximum field strength in restrict band is 105.05 – 52.77 = 52.28dBuV/m which is under 54dBuV/m limit.

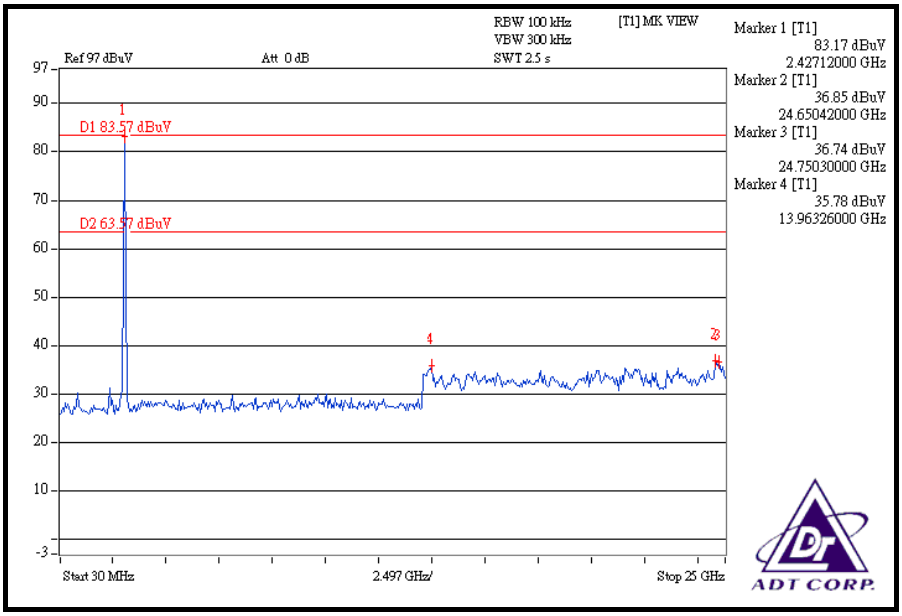

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 82.9 dBuV
D2 62.9 dBuV
Marker 1 [T1]
82.90 dBuV
2.40840000 GHz
Marker 2 [T1]
52.88 dBuV
2.40000000 GHz
Marker 3 [T1]
52.88 dBuV
2.40000000 GHz
Marker 4 [T1]
32.55 dBuV
2.39000000 GHz
Marker 5 [T1]
34.26 dBuV
2.38920000 GHz
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 84.68 dBuV
D2 64.68 dBuV
Marker 1 [T1]
84.68 dBuV
2.40840000 GHz
Marker 2 [T1]
44.69 dBuV
2.40000000 GHz
Marker 3 [T1]
44.69 dBuV
2.40000000 GHz
Marker 4 [T1]
32.03 dBuV
2.39000000 GHz
Marker 5 [T1]
32.81 dBuV
2.38980000 GHz
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 82.9 dBuV
D2 62.9 dBuV
Marker 1 [T1]
81.90 dBuV
2.37718000 GHz
Marker 2 [T1]
36.78 dBuV
24.75030000 GHz
Marker 3 [T1]
35.94 dBuV
24.85018000 GHz
Marker 4 [T1]
35.53 dBuV
24.40072000 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 83.57 dBuV
D2 63.57 dBuV
Marker 1 [T1]
83.57 dBuV
2.46000000 GHz
Marker 2 [T1]
35.16 dBuV
2.48350000 GHz
Marker 3 [T1]
35.98 dBuV
2.48360000 GHz
Marker 4 [T1]
29.75 dBuV
2.50000000 GHz
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 85.08 dBuV
D2 65.08 dBuV
Marker 1 [T1]
85.08 dBuV
2.46060000 GHz
Marker 2 [T1]
32.31 dBuV
2.48350000 GHz
Marker 3 [T1]
32.31 dBuV
2.48350000 GHz
Marker 4 [T1]
26.83 dBuV
2.50000000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 83.57 dBuV
D2 63.57 dBuV
Marker 1 [T1]
83.17 dBuV
2.42712000 GHz
Marker 2 [T1]
36.85 dBuV
24.65042000 GHz
Marker 3 [T1]
36.74 dBuV
24.75030000 GHz
Marker 4 [T1]
35.78 dBuV
13.96326000 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

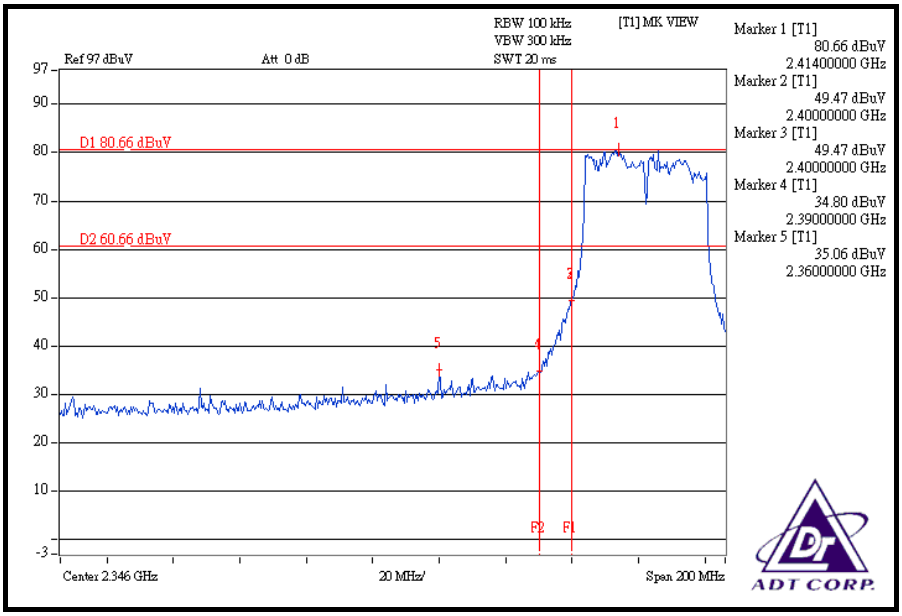
DRAFT 802.11n (40MHz) OFDM MODULATION:

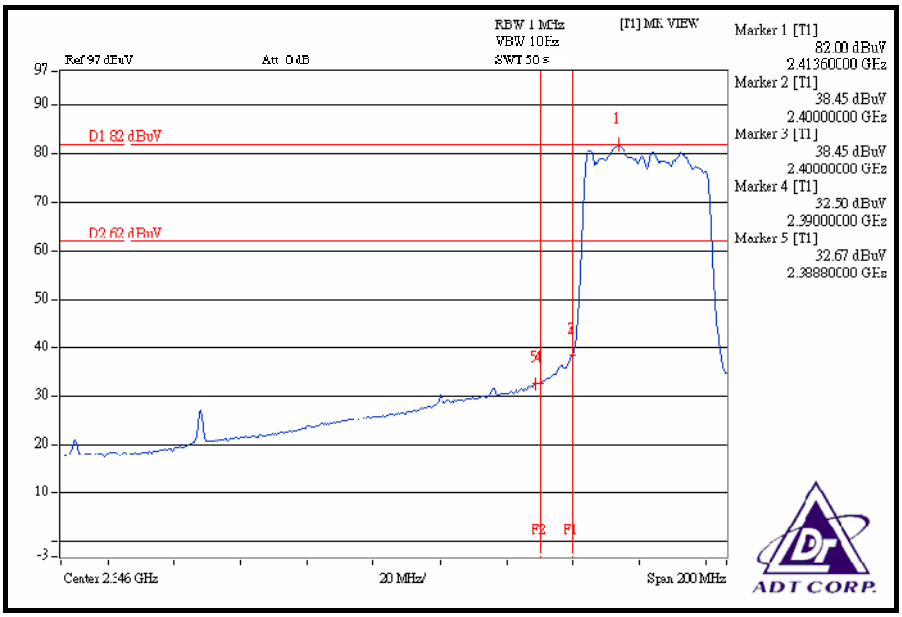
NOTE 1: The band edge emission plot on the next page shows 45.60dBc between carrier maximum power and local maximum emission in restrict band (2.36000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 111.55dBuV/m (Peak), so the maximum field strength in restrict band is 111.55 – 45.60 = 65.95dBuV/m which is under 74dBuV/m limit.

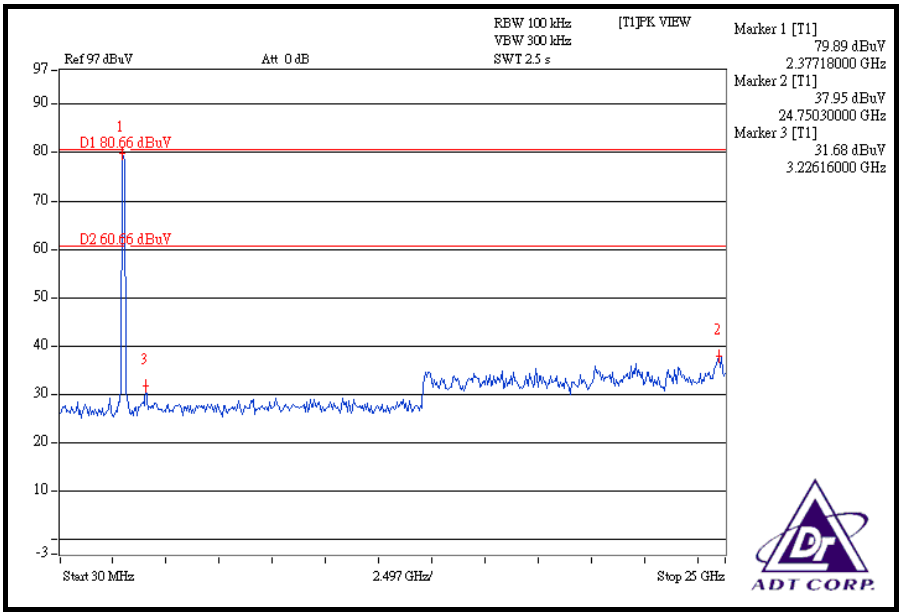
The band edge emission plot of on the next page shows 49.33dBc between carrier maximum power and local maximum emission in restrict band (2.38880GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 100.02dBuV/m (Average), so the maximum field strength in restrict band is 100.02 – 49.33 = 50.69dBuV/m which is under 54dBuV/m limit.

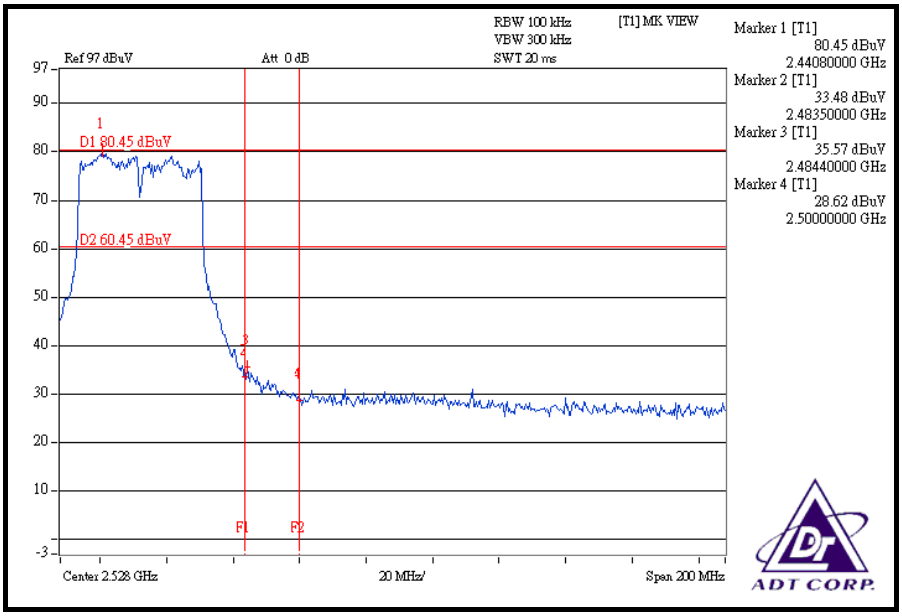
NOTE 2: The band edge emission plot on the next second page shows 44.88dBc between carrier maximum power and local maximum emission in restrict band (2.48440GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 112.14dBuV/m (Peak), so the maximum field strength in restrict band is 112.14 – 44.88 = 67.26dBuV/m which is under 74dBuV/m limit.

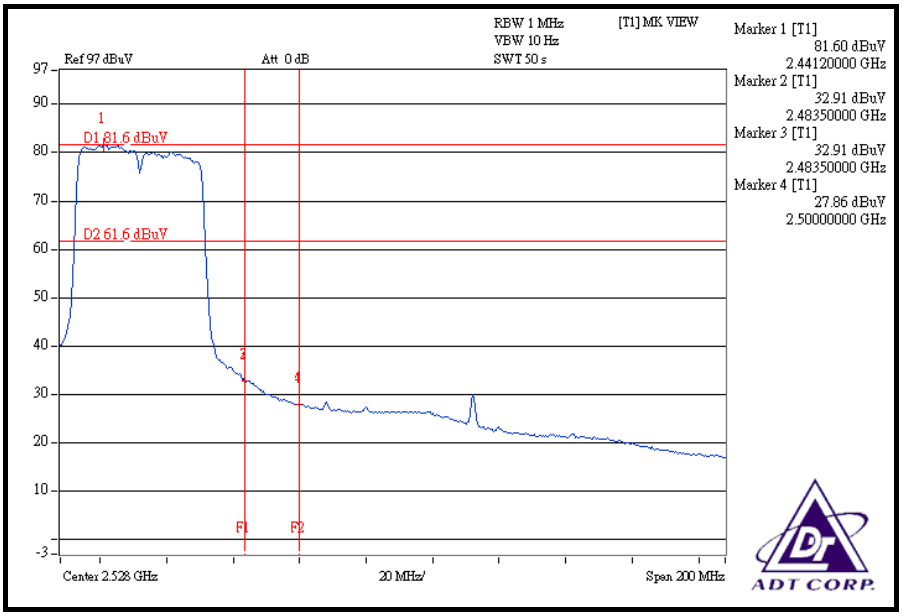
The band edge emission plot on the next third page shows 48.69dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 100.75dBuV/m (Average), so the maximum field strength in restrict band is 100.75 – 48.69 = 52.06dBuV/m which is under 54dBuV/m limit.

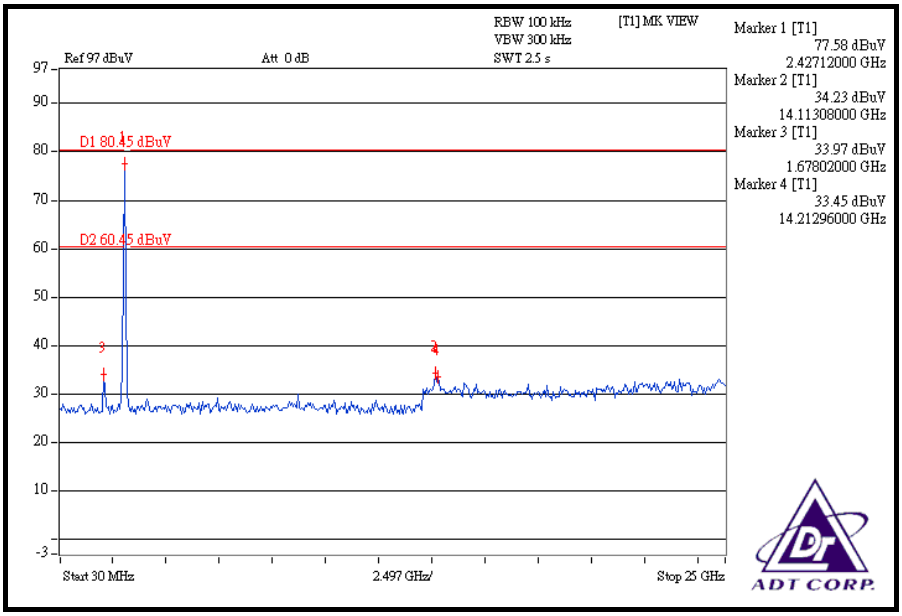

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 80.66 dBuV
D2 60.66 dBuV
Marker 1 [T1]
80.66 dBuV
2.41400000 GHz
Marker 2 [T1]
49.47 dBuV
2.40000000 GHz
Marker 3 [T1]
49.47 dBuV
2.40000000 GHz
Marker 4 [T1]
34.80 dBuV
2.39000000 GHz
Marker 5 [T1]
35.06 dBuV
2.36000000 GHz
Center 2.346 GHz
20 MHz/
Span 200 MHz
ADT CORP.


RBW 1 MHz
VBW 10Hz
SWT 50 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 82 dBuV
D2 62 dBuV
Marker 1 [T1]
82.00 dBuV
2.41360000 GHz
Marker 2 [T1]
38.45 dBuV
2.40000000 GHz
Marker 3 [T1]
38.45 dBuV
2.40000000 GHz
Marker 4 [T1]
32.50 dBuV
2.39000000 GHz
Marker 5 [T1]
32.67 dBuV
2.38880000 GHz
Center 2.346 GHz
20 MHz/
Span 200 MHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1]PK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
79.89 dBuV
2.37718000 GHz
Marker 2 [T1]
37.95 dBuV
24.75030000 GHz
Marker 3 [T1]
31.68 dBuV
3.22616000 GHz
D1 80.66 dBuV
D2 60.66 dBuV
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
80.45 dBuV
2.44080000 GHz
Marker 2 [T1]
33.48 dBuV
2.48350000 GHz
Marker 3 [T1]
35.57 dBuV
2.48440000 GHz
Marker 4 [T1]
28.62 dBuV
2.50000000 GHz
D1 80.45 dBuV
D2 60.45 dBuV
F1
F2
Center 2.528 GHz
20 MHz/
Span 200 MHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 50 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 81.6 dBuV
D2 61.6 dBuV
Marker 1 [T1]
81.60 dBuV
2.44120000 GHz
Marker 2 [T1]
32.91 dBuV
2.48350000 GHz
Marker 3 [T1]
32.91 dBuV
2.48350000 GHz
Marker 4 [T1]
27.86 dBuV
2.50000000 GHz
Center 2.528 GHz
20 MHz/
Span 200 MHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 80.45 dBuV
D2 60.45 dBuV
Marker 1 [T1]
77.58 dBuV
2.42712000 GHz
Marker 2 [T1]
34.23 dBuV
14.11308000 GHz
Marker 3 [T1]
33.97 dBuV
1.67802000 GHz
Marker 4 [T1]
33.45 dBuV
14.21296000 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

The antenna used in this product is Dipole antenna with R-SMA connector. The maximum Gain of the antenna is 2dBi.

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

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

5.1.2 T EST INSTRUMENTS

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

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

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.

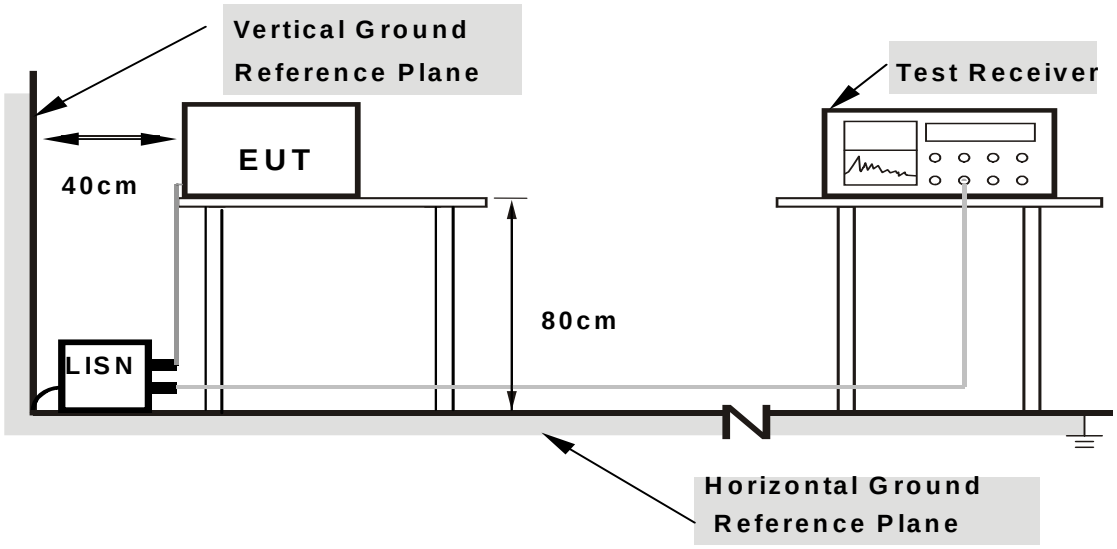
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was 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 attached file (Test Setup Photo).

5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6

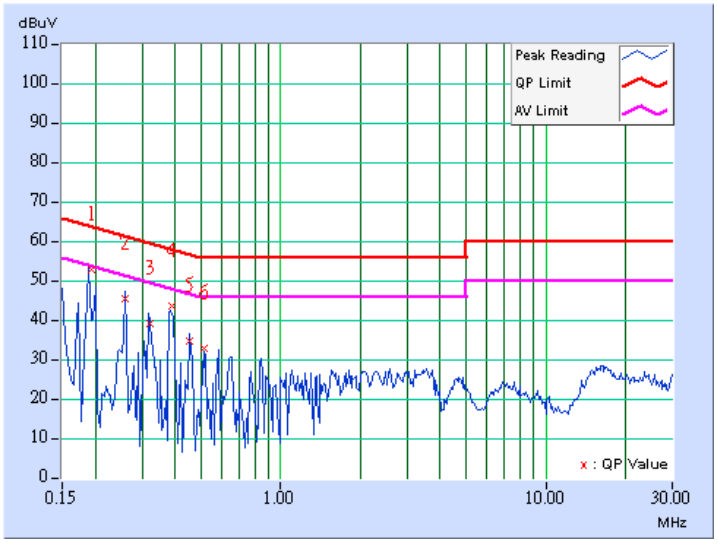
5.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	**PHASE**	Line 1
MODULATION TYPE	BPSK	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	**6dB BANDWIDTH**	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 988hPa	**TESTED BY**	Dean Wang

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	0.193	0.10	52.76	-	52.86	-	63.90	53.90	-11.04	-
2	0.259	0.10	45.37	-	45.47	-	61.45	51.45	-15.98	-
3	0.323	0.10	38.99	-	39.09	-	59.63	49.63	-20.54	-
4	0.387	0.10	43.76	-	43.86	-	58.13	48.13	-14.27	-
5	0.451	0.10	34.72	-	34.82	-	56.86	46.86	-22.04	-
6	0.515	0.10	33.04	-	33.14	-	56.00	46.00	-22.86	-

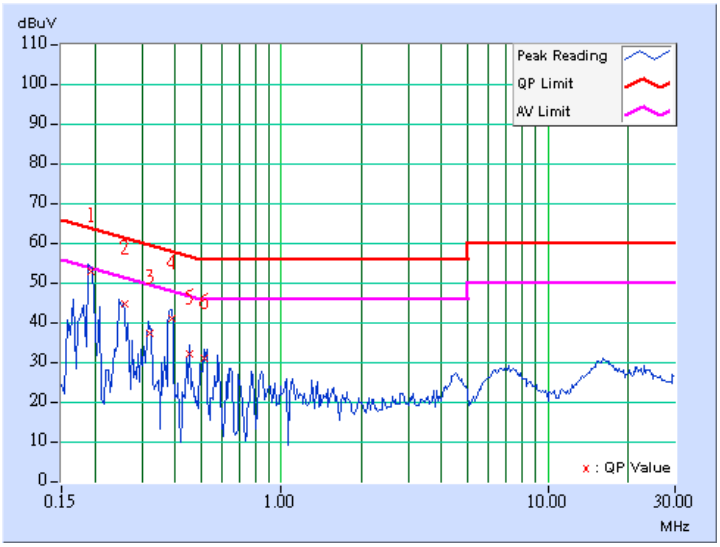
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 988hPa	TESTED BY	Dean Wang

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	0.193	0.10	52.68	-	52.78	-	63.91	53.91	-11.13	-
2	0.258	0.10	44.53	-	44.63	-	61.48	51.48	-16.85	-
3	0.323	0.10	37.24	-	37.34	-	59.63	49.63	-22.29	-
4	0.388	0.10	40.89	-	40.99	-	58.10	48.10	-17.11	-
5	0.451	0.11	32.22	-	32.33	-	56.86	46.86	-24.53	-
6	0.513	0.12	31.04	-	31.16	-	56.00	46.00	-24.84	-

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

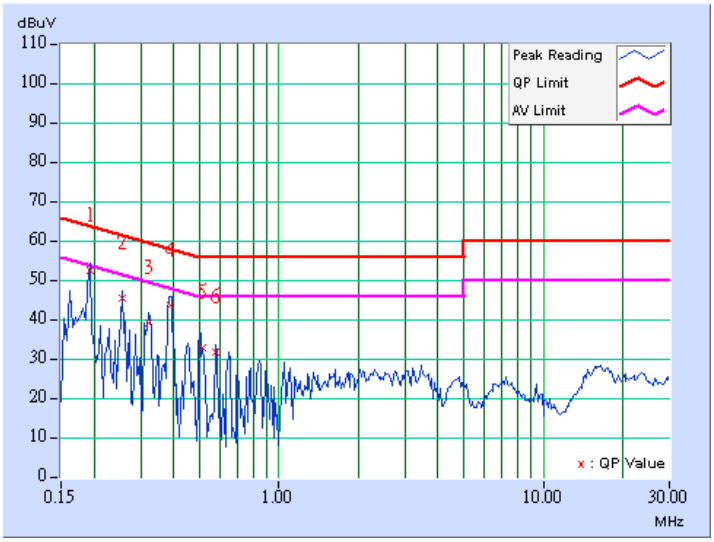


DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 988hPa	TESTED BY	Dean Wang

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	0.194	0.10	52.66	-	52.76	-	63.85	53.85	-11.09	-
2	0.257	0.10	45.33	-	45.43	-	61.54	51.54	-16.11	-
3	0.322	0.10	39.22	-	39.32	-	59.66	49.66	-20.34	-
4	0.387	0.10	43.72	-	43.82	-	58.13	48.13	-14.31	-
5	0.513	0.10	32.83	-	32.93	-	56.00	46.00	-23.07	-
6	0.580	0.10	31.88	-	31.98	-	56.00	46.00	-24.02	-

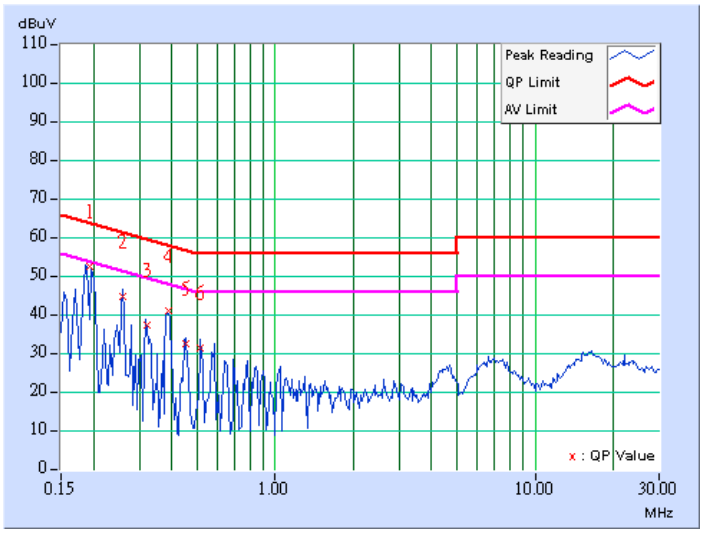
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 988hPa	TESTED BY	Dean Wang

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	0.194	0.10	52.40	-	52.50	-	63.85	53.85	-11.35	-
2	0.258	0.10	44.57	-	44.67	-	61.49	51.49	-16.82	-
3	0.323	0.10	37.20	-	37.30	-	59.63	49.63	-22.33	-
4	0.387	0.10	40.87	-	40.97	-	58.12	48.12	-17.15	-
5	0.451	0.11	32.30	-	32.41	-	56.86	46.86	-24.45	-
6	0.517	0.12	31.35	-	31.47	-	56.00	46.00	-24.53	-

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

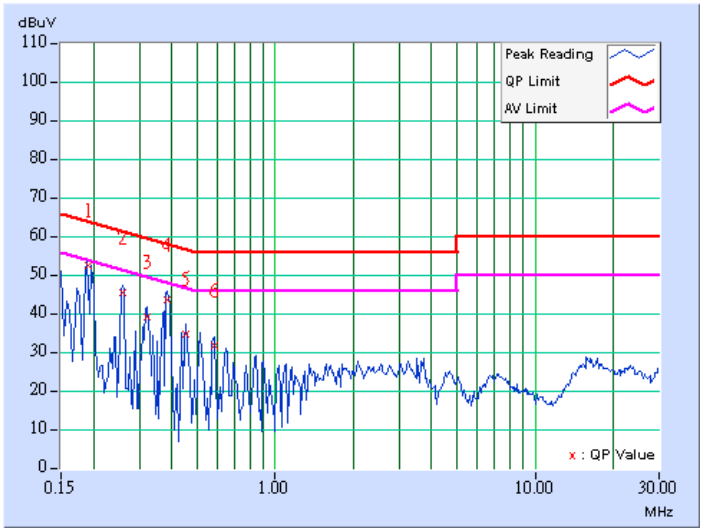


DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	15.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 988hPa	TESTED BY	Dean Wang

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	0.192	0.10	52.58	-	52.68	-	63.97	53.97	-11.29	-
2	0.259	0.10	45.39	-	45.49	-	61.45	51.45	-15.96	-
3	0.322	0.10	39.27	-	39.37	-	59.66	49.66	-20.29	-
4	0.386	0.10	43.64	-	43.74	-	58.15	48.15	-14.41	-
5	0.451	0.10	34.74	-	34.84	-	56.86	46.86	-22.02	-
6	0.584	0.10	31.76	-	31.86	-	56.00	46.00	-24.14	-

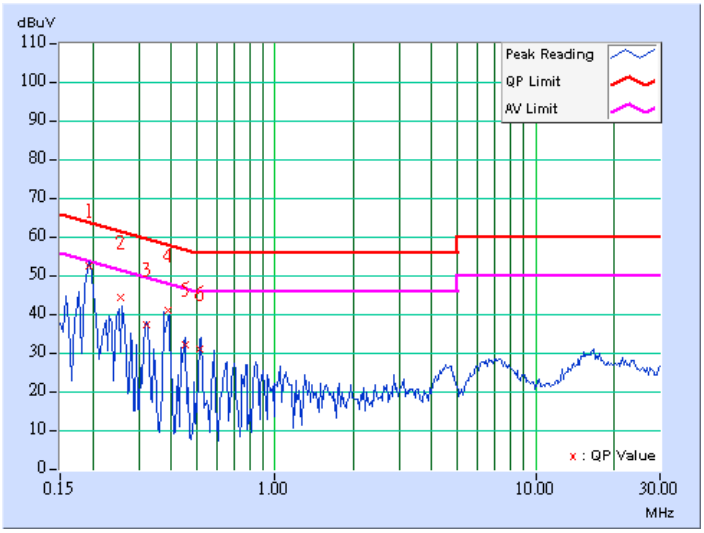
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	15.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 988hPa	TESTED BY	Dean Wang

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	0.193	0.10	52.54	-	52.64	-	63.91	53.91	-11.27	-
2	0.257	0.10	44.45	-	44.55	-	61.54	51.54	-16.99	-
3	0.322	0.10	37.40	-	37.50	-	59.66	49.66	-22.16	-
4	0.387	0.10	40.91	-	41.01	-	58.13	48.13	-17.12	-
5	0.451	0.11	32.24	-	32.35	-	56.86	46.86	-24.51	-
6	0.513	0.12	31.00	-	31.12	-	56.00	46.00	-24.88	-

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



5.2 RADIATED EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Jul. 27, 2008
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 04, 2008
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 16, 2008
Preamplifier Agilent	8449B	3008A01910	Sep. 21, 2007
Preamplifier Agilent	8447D	2944A10638	Dec. 20, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218188/218189	Nov. 14, 2007
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	Apr. 23, 2008

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

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 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

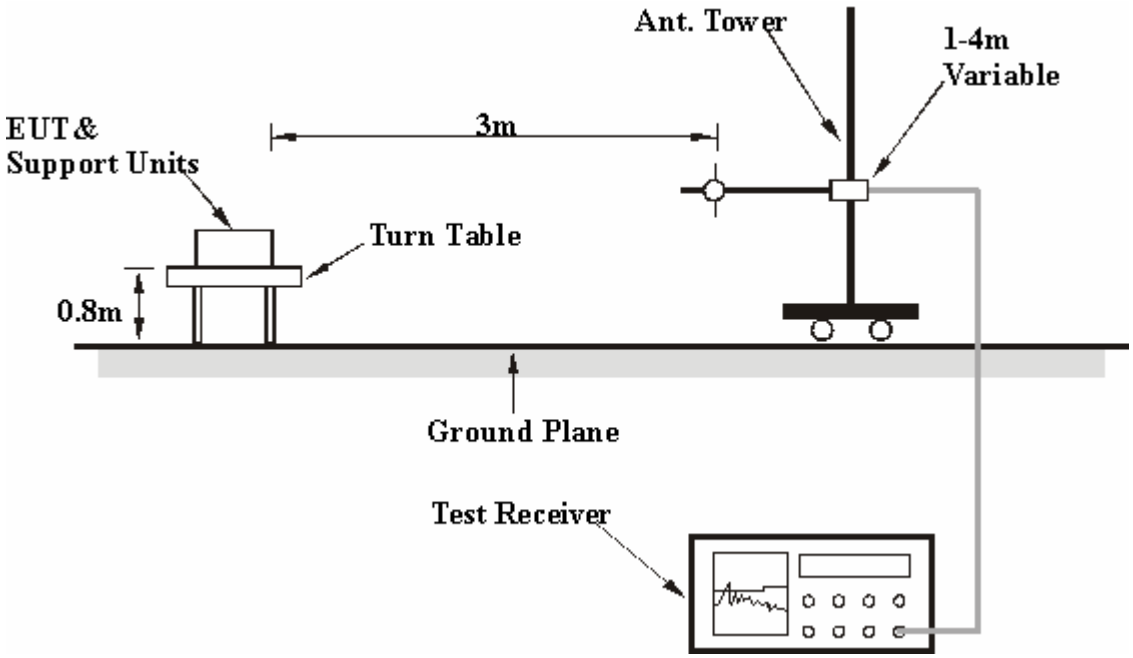
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



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

5.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

5.2.7 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Dean Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	113.50	36.69 QP	43.50	-6.81	1.50 H	277	25.91	10.78
2	156.28	38.93 QP	43.50	-4.57	1.50 H	277	25.39	13.54
3	249.60	44.79 QP	46.00	-1.21	1.00 H	226	32.25	12.54
4	300.16	39.91 QP	46.00	-6.09	1.00 H	244	26.56	13.36
5	500.42	41.73 QP	46.00	-4.27	1.50 H	163	22.97	18.76
6	626.80	40.13 QP	46.00	-5.87	1.50 H	256	18.79	21.34
7	751.23	43.37 QP	46.00	-2.63	1.00 H	226	20.15	23.22
8	877.61	44.68 QP	46.00	-1.32	1.50 H	304	19.57	25.11

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.34	36.38 QP	40.00	-3.62	1.00 V	10	22.87	13.52
2	158.22	39.44 QP	43.50	-4.06	1.00 V	268	25.94	13.50
3	249.60	43.94 QP	46.00	-2.06	1.00 V	334	31.40	12.54
4	500.42	42.83 QP	46.00	-3.17	1.00 V	346	24.07	18.76
5	626.80	43.50 QP	46.00	-2.50	1.50 V	169	22.16	21.34
6	751.23	41.39 QP	46.00	-4.61	1.50 V	292	18.17	23.22
7	877.61	44.64 QP	46.00	-1.36	1.00 V	253	19.53	25.11

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

DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Dean Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	115.45	36.91 QP	43.50	-6.59	1.50 H	268	25.89	11.02
2	160.17	39.20 QP	43.50	-4.30	2.00 H	235	25.75	13.45
3	249.60	44.74 QP	46.00	-1.26	1.00 H	121	32.20	12.54
4	300.16	39.81 QP	46.00	-6.19	1.00 H	244	26.46	13.36
5	500.42	41.79 QP	46.00	-4.21	1.50 H	175	23.03	18.76
6	626.80	40.06 QP	46.00	-5.94	1.00 H	241	18.72	21.34
7	751.23	43.82 QP	46.00	-2.18	1.00 H	265	20.60	23.22
8	877.61	44.79 QP	46.00	-1.21	1.50 H	322	19.69	25.11

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.34	36.50 QP	40.00	-3.50	1.50 V	355	22.98	13.52
2	64.90	34.82 QP	40.00	-5.18	1.00 V	286	22.49	12.34
3	156.28	39.64 QP	43.50	-3.86	1.00 V	10	26.10	13.54
4	249.60	42.91 QP	46.00	-3.09	1.00 V	340	30.38	12.54
5	500.42	43.92 QP	46.00	-2.08	1.00 V	166	25.16	18.76
6	626.80	44.37 QP	46.00	-1.63	2.00 V	172	23.03	21.34
7	751.23	41.88 QP	46.00	-4.12	1.50 V	286	18.66	23.22
8	877.61	44.78 QP	46.00	-1.22	1.00 V	256	19.67	25.11

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

DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Dean Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	113.50	36.75 QP	43.50	-6.75	1.50 H	265	25.97	10.78
2	152.39	39.10 QP	43.50	-4.40	1.50 H	277	25.48	13.62
3	249.60	44.67 QP	46.00	-1.33	1.00 H	148	32.13	12.54
4	300.16	39.30 QP	46.00	-6.70	1.00 H	250	25.94	13.36
5	500.42	41.48 QP	46.00	-4.52	1.50 H	169	22.72	18.76
6	626.80	39.87 QP	46.00	-6.13	1.50 H	232	18.54	21.34
7	751.23	41.91 QP	46.00	-4.09	1.00 H	229	18.69	23.22
8	877.61	44.36 QP	46.00	-1.64	1.50 H	319	19.25	25.11

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.34	36.53 QP	40.00	-3.47	1.50 V	268	23.01	13.52
2	156.28	39.89 QP	43.50	-3.61	1.00 V	34	26.35	13.54
3	249.60	43.73 QP	46.00	-2.27	1.00 V	343	31.19	12.54
4	500.42	43.50 QP	46.00	-2.50	1.00 V	169	24.74	18.76
5	626.80	44.78 QP	46.00	-1.22	2.00 V	166	23.45	21.34
6	751.23	41.96 QP	46.00	-4.04	1.00 V	208	18.74	23.22
7	877.61	44.71 QP	46.00	-1.29	1.00 V	253	19.60	25.11

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

ABOVE 1GHz DATA: 802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 991hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5725.000	73.58 PK	82.23	-8.65	1.00 H	299	33.94	39.64
2	5725.000	54.89 AV	72.05	-17.16	1.00 H	299	15.25	39.64
3	*5745.000	102.23 PK			1.00 H	299	62.56	39.67
4	*5745.000	92.05 AV			1.00 H	299	52.38	39.67
5	#11490.000	58.15 PK	74.00	-15.85	1.05 H	56	8.15	50.00
6	#11490.000	46.43 AV	54.00	-7.57	1.05 H	56	-3.57	50.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5725.000	84.25 PK	91.42	-7.17	1.14 V	121	44.61	39.64
2	5725.000	64.50 AV	81.03	-16.53	1.14 V	121	24.86	39.64
3	*5745.000	111.42 PK			1.14 V	121	71.75	39.67
4	*5745.000	101.03 AV			1.14 V	121	61.36	39.67
5	#11490.000	59.68 PK	74.00	-14.32	1.08 V	100	9.68	50.00
6	#11490.000	47.39 AV	54.00	-6.61	1.08 V	100	-2.61	50.00

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 991hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.000	102.75 PK			1.00 H	305	63.02	39.73
2	*5785.000	92.59 AV			1.00 H	305	52.86	39.73
3	#11570.000	58.63 PK	74.00	-15.37	1.08 H	43	8.75	49.88
4	#11570.000	46.98 AV	54.00	-7.02	1.08 H	43	-2.90	49.88

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.000	111.95 PK			1.15 V	128	72.22	39.73
2	*5785.000	101.59 AV			1.15 V	128	61.86	39.73
3	#11570.000	60.35 PK	74.00	-13.65	1.09 V	113	10.47	49.88
4	#11570.000	47.85 AV	54.00	-6.15	1.09 V	113	-2.03	49.88

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 991hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.000	102.83 PK			1.00 H	302	63.00	39.83
2	*5825.000	92.69 AV			1.00 H	302	52.86	39.83
3	5850.000	60.85 PK	82.83	-21.98	1.00 H	302	20.95	39.90
4	5850.000	45.11 AV	72.69	-27.58	1.00 H	302	5.21	39.90
5	#11650.000	58.76 PK	74.00	-15.24	1.08 H	35	8.95	49.81
6	#11650.000	46.95 AV	54.00	-7.05	1.08 H	35	-2.86	49.81

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.000	111.93 PK			1.15 V	116	72.11	39.83
2	*5825.000	101.65 AV			1.15 V	116	61.83	39.83
3	5850.000	67.85 PK	91.93	-24.08	1.15 V	116	27.95	39.90
4	5850.000	50.69 AV	81.65	-30.96	1.15 V	116	10.79	39.90
5	#11650.000	56.98 PK	74.00	-17.02	1.18 V	202	7.17	49.81
6	#11650.000	44.67 AV	54.00	-9.33	1.18 V	202	-5.14	49.81

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

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

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

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

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

7. The limit value is defined as per 15.247.

DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 991hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5725.000	76.15 PK	84.89	-8.74	1.18 H	158	36.51	39.64
2	5725.000	56.45 AV	73.75	-17.30	1.18 H	158	16.81	39.64
3	*5745.000	104.89 PK			1.18 H	158	65.22	39.67
4	*5745.000	93.75 AV			1.18 H	158	54.08	39.67
5	#11490.000	59.24 PK	74.00	-14.76	1.04 H	113	9.24	50.00
6	#11490.000	47.19 AV	54.00	-6.81	1.04 H	113	-2.81	50.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5725.000	87.04 PK	96.93	-9.89	1.05 V	352	47.40	39.64
2	5725.000	65.99 AV	86.77	-20.78	1.05 V	352	26.35	39.64
3	*5745.000	116.93 PK			1.05 V	352	77.26	39.67
4	*5745.000	106.77 AV			1.05 V	352	67.10	39.67
5	#11490.000	60.56 PK	74.00	-13.44	1.06 V	105	10.56	50.00
6	#11490.000	48.28 AV	54.00	-5.72	1.06 V	105	-1.72	50.00

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 991hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.000	104.75 PK			1.16 H	155	65.02	39.73
2	*5785.000	93.62 AV			1.16 H	155	53.89	39.73
3	#11570.000	59.11 PK	74.00	-14.89	1.01 H	105	9.23	49.88
4	#11570.000	47.05 AV	54.00	-6.95	1.01 H	105	-2.83	49.88

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.000	116.85 PK			1.22 V	226	77.12	39.73
2	*5785.000	106.59 AV			1.22 V	226	66.86	39.73
3	#11570.000	60.46 PK	74.00	-13.54	1.05 V	113	10.58	49.88
4	#11570.000	48.15 AV	54.00	-5.85	1.05 V	113	-1.73	49.88

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 991hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.000	104.65 PK			1.09 H	134	64.83	39.83
2	*5825.000	93.46 AV			1.09 H	134	53.63	39.83
3	5850.000	62.12 PK	84.65	-22.53	1.09 H	134	22.22	39.90
4	5850.000	44.35 AV	73.46	-29.11	1.09 H	134	4.45	39.90
5	#11650.000	58.98 PK	74.00	-15.02	1.08 H	102	9.17	49.81
6	#11650.000	47.02 AV	54.00	-6.98	1.08 H	102	-2.79	49.81

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.000	116.67 PK			1.15 V	166	76.84	39.83
2	*5825.000	106.45 AV			1.15 V	166	66.62	39.83
3	5850.000	70.25 PK	96.67	-26.42	1.15 V	166	30.35	39.90
4	5850.000	51.56 AV	86.45	-34.89	1.15 V	166	11.66	39.90
5	#11650.000	60.59 PK	74.00	-13.41	1.08 V	105	10.78	49.81
6	#11650.000	48.32 AV	54.00	-5.68	1.08 V	105	-1.49	49.81

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

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

DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 991hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5725.000	64.85 PK	77.58	-12.73	1.08 H	288	25.21	39.64
2	5725.000	49.25 AV	67.15	-17.90	1.08 H	288	9.61	39.64
3	*5755.000	97.58 PK			1.08 H	288	57.90	39.68
4	*5755.000	87.15 AV			1.08 H	288	47.47	39.68
5	#11510.000	58.18 PK	74.00	-15.82	1.08 H	13	8.20	49.98
6	#11510.000	45.25 AV	54.00	-8.75	1.08 H	13	-4.73	49.98

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5725.000	77.84 PK	89.75	-11.91	1.06 V	3	38.20	39.64
2	5725.000	57.85 AV	79.46	-21.61	1.06 V	3	18.21	39.64
3	*5755.000	109.75 PK			1.06 V	3	70.07	39.68
4	*5755.000	99.46 AV			1.06 V	3	59.78	39.68
5	#11510.000	59.56 PK	74.00	-14.44	1.00 V	128	9.58	49.98
6	#11510.000	46.55 AV	54.00	-7.45	1.00 V	128	-3.43	49.98

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 2	FREQUENCY RANGE	1 ~ 40GHz
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 991hPa	TESTED BY	Morgan Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.000	97.69 PK			1.05 H	279	57.95	39.74
2	*5795.000	87.27 AV			1.05 H	279	47.53	39.74
3	5850.000	50.45 PK	77.69	-27.24	1.05 H	279	10.55	39.90
4	5850.000	37.79 AV	67.27	-29.48	1.05 H	279	-2.11	39.90
5	#11590.000	57.28 PK	74.00	-16.72	1.05 H	25	7.43	49.85
6	#11590.000	44.43 AV	54.00	-9.57	1.05 H	25	-5.42	49.85

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.000	109.88 PK			1.09 V	5	70.14	39.74
2	*5795.000	99.57 AV			1.09 V	5	59.83	39.74
3	5850.000	53.26 PK	89.88	-36.62	1.06 V	3	13.36	39.90
4	5850.000	39.31 AV	79.57	-40.26	1.06 V	3	-0.59	39.90
5	#11590.000	59.76 PK	74.00	-14.24	1.00 V	135	9.91	49.85
6	#11590.000	46.68 AV	54.00	-7.32	1.00 V	135	-3.17	49.85

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 falling in the restricted band.
7. The limit value is defined as per 15.247.

5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

5.3.2 TEST INSTRUMENTS

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

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

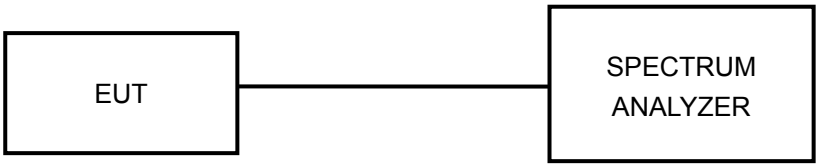
5.3.3 TEST PROCEDURE

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

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

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

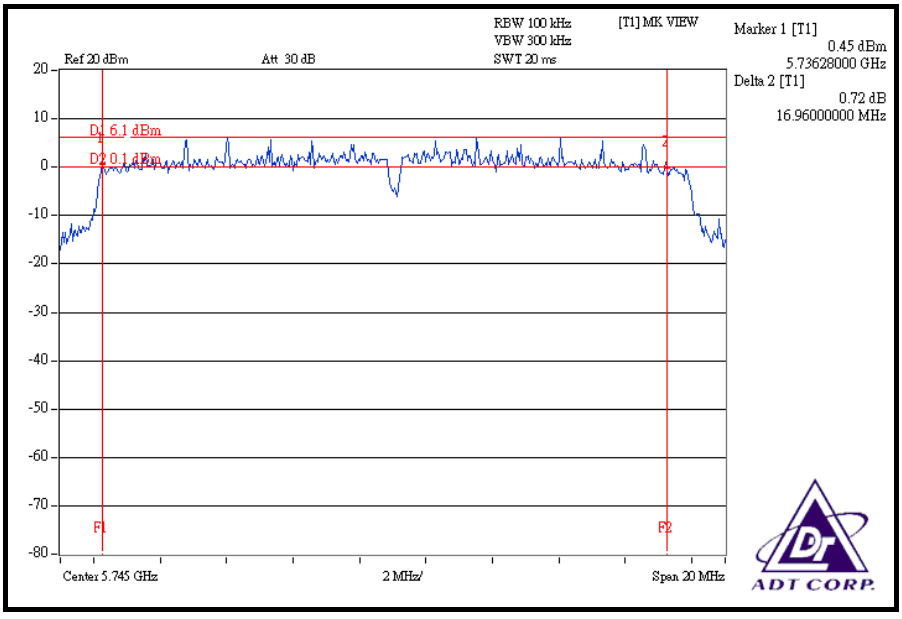
5.3.7 TEST RESULTS

802.11a OFDM MODULATION:

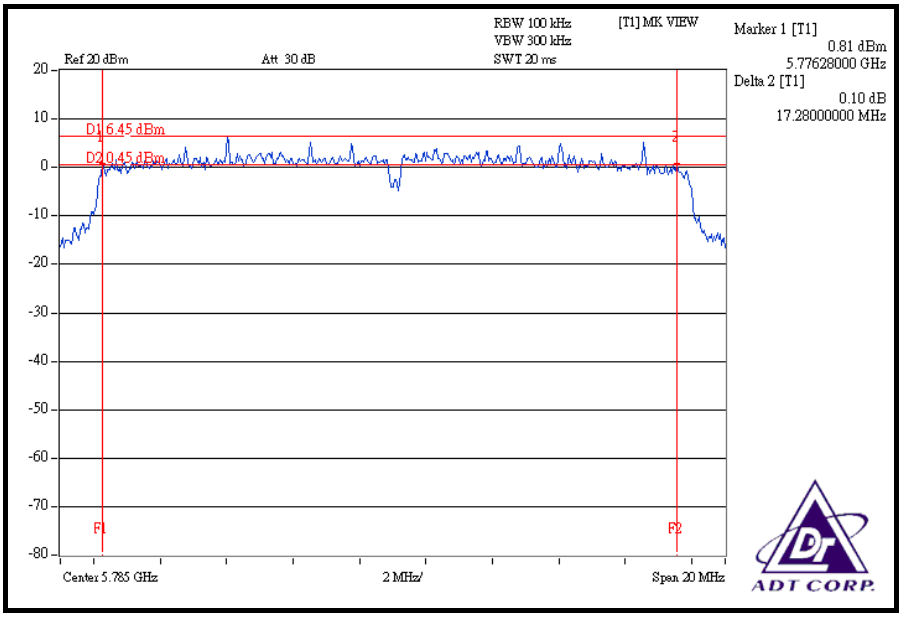
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	5745	16.96	0.5	PASS
3	5785	17.28	0.5	PASS
5	5825	16.96	0.5	PASS

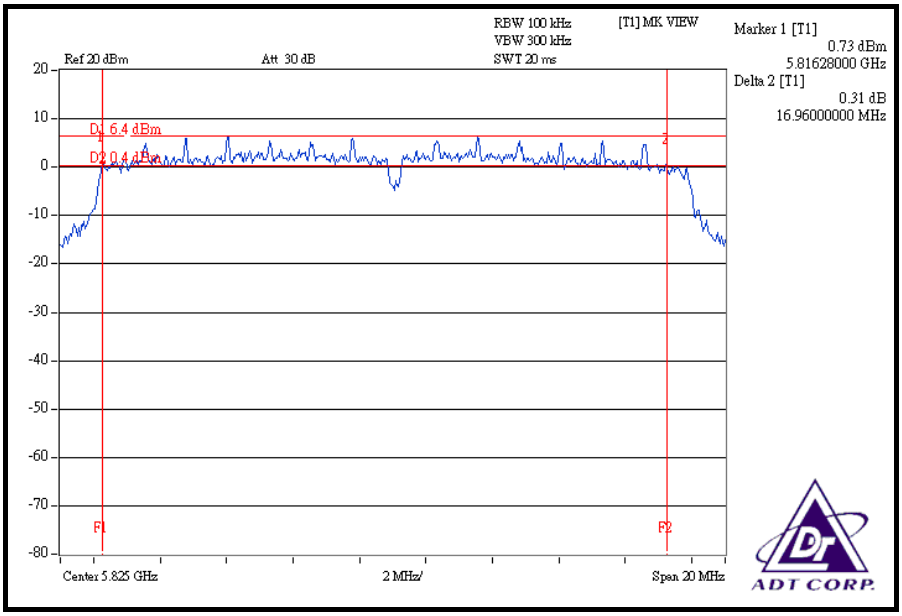
CH 1



CH 3


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
0.81 dBm
5.77628000 GHz
Delta 2 [T1]
0.10 dB
17.28000000 MHz
Ref 20 dBm
Att 30 dB
D1 6.45 dBm
D2 0.45 dBm
F1
F2
Center 5.785 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH 5

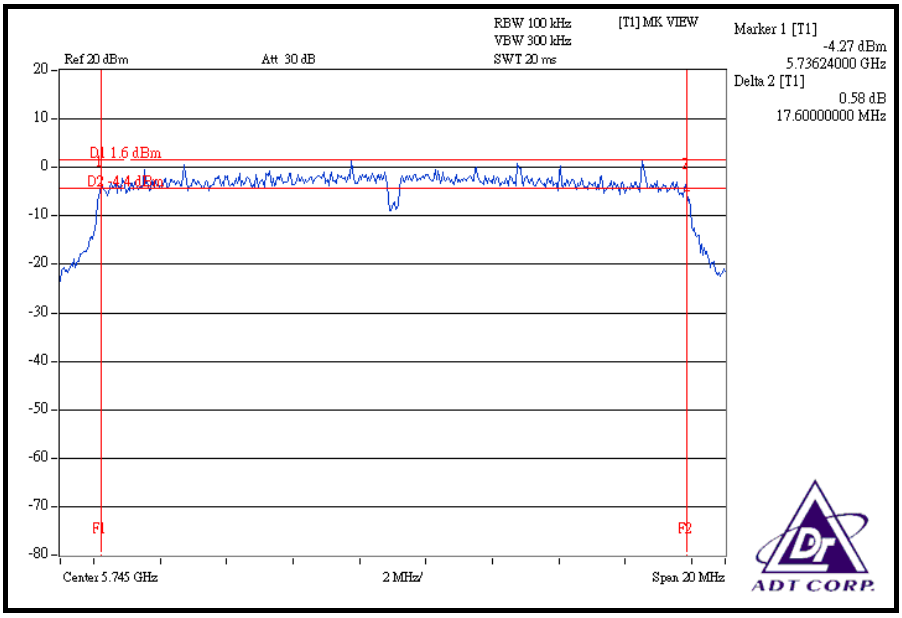

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
0.73 dBm
5.81628000 GHz
Delta 2 [T1]
0.31 dB
16.96000000 MHz
Ref 20 dBm
Att 30 dB
D1 6.4 dBm
D2 0.4 dBm
F1
F2
Center 5.825 GHz
2 MHz/
Span 20 MHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

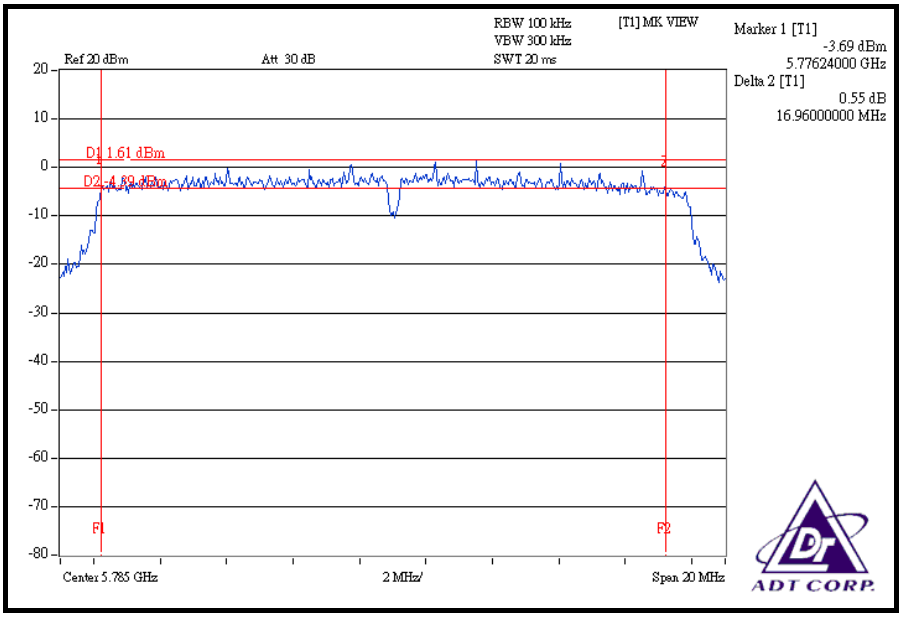
MODULATION TYPE	BPSK	**TRANSFER RATE**	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 1		
1	5745	17.60	17.40	17.08	0.5	PASS
3	5785	16.96	17.32	17.36	0.5	PASS
5	5825	17.56	16.96	17.56	0.5	PASS

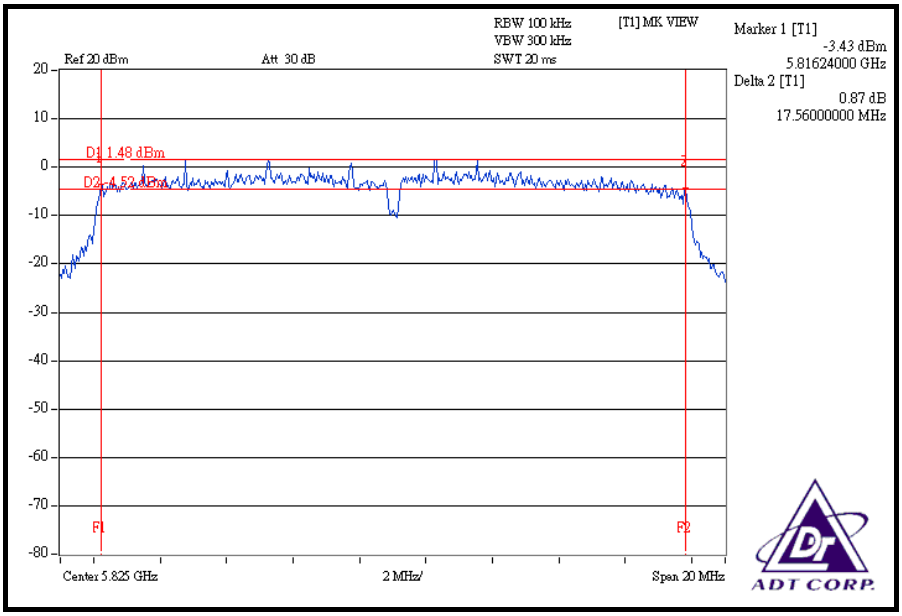
FOR CHAIN 0: CH 1



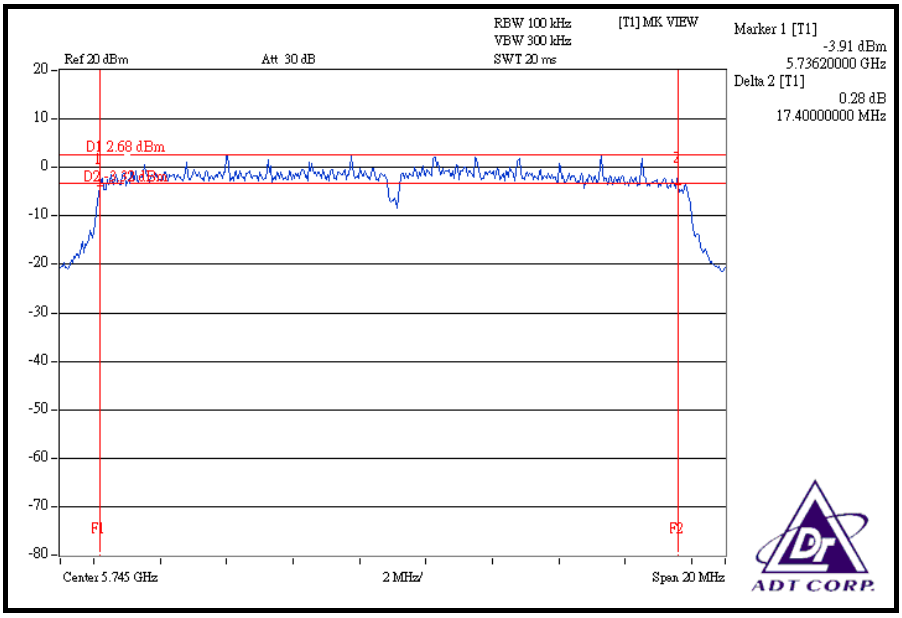
CH 3


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-3.69 dBm
5.77624000 GHz
Delta 2 [T1]
0.55 dB
16.96000000 MHz
Ref 20 dBm
Att 30 dB
D1 1.61 dBm
D2 -4.89 dBm
F1
F2
Center 5.785 GHz
2 MHz/
Span 20 MHz
ADT CORP.

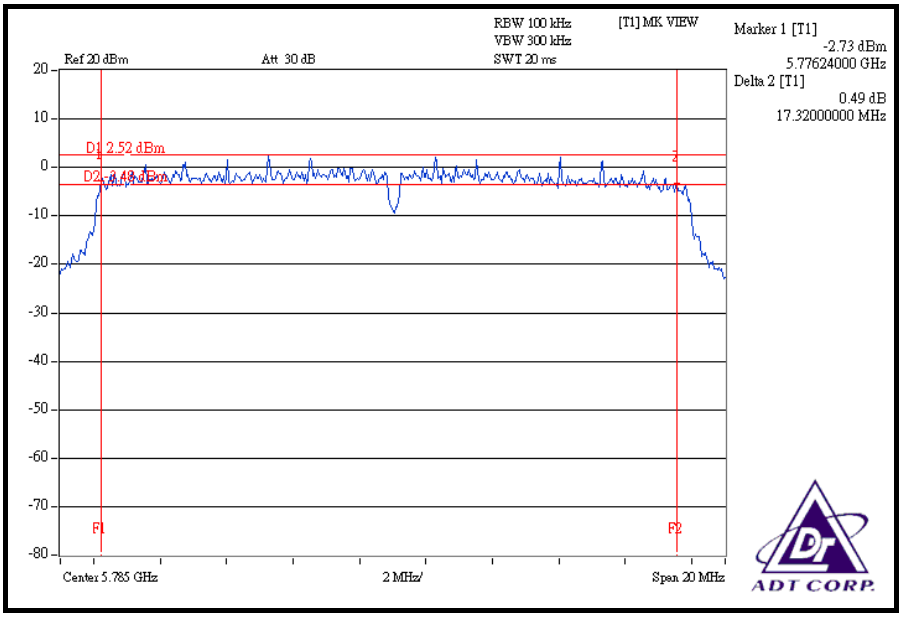
CH 5


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-3.43 dBm
5.81624000 GHz
Delta 2 [T1]
0.87 dB
17.56000000 MHz
Ref 20 dBm
Att 30 dB
D1 1.48 dBm
D2 -4.52 dBm
F1
F2
Center 5.825 GHz
2 MHz/
Span 20 MHz
ADT CORP.

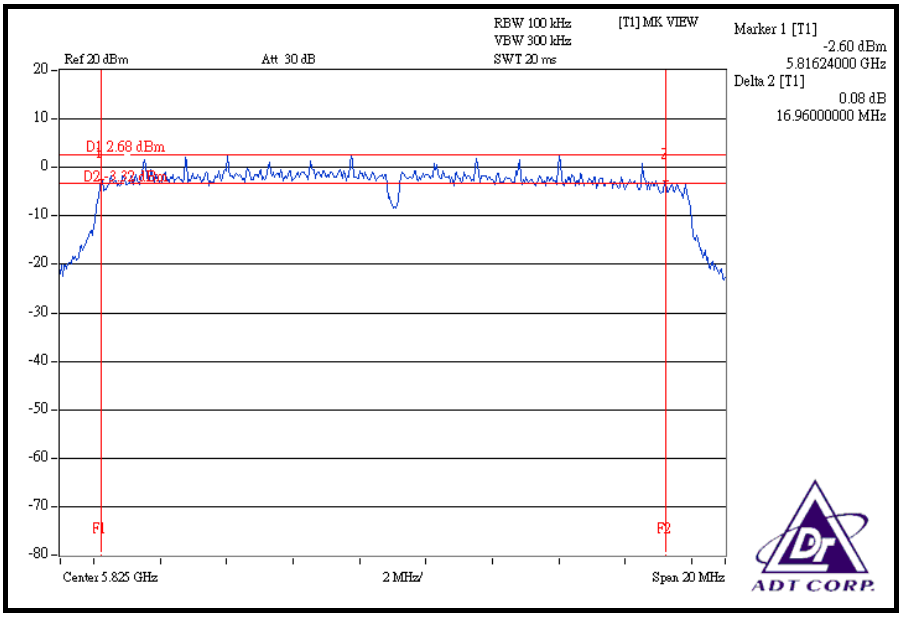
FOR CHAIN 1: CH 1



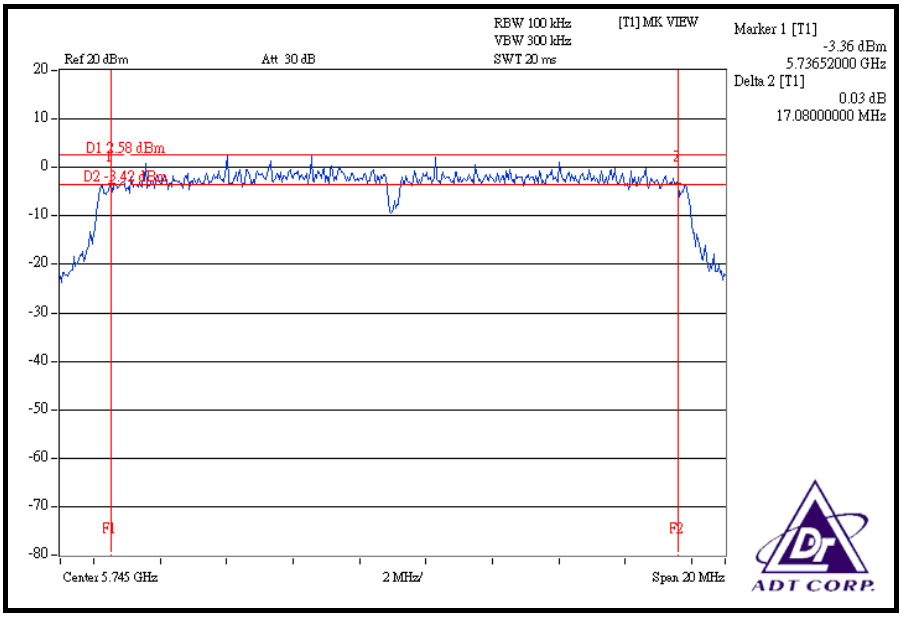
CH 3



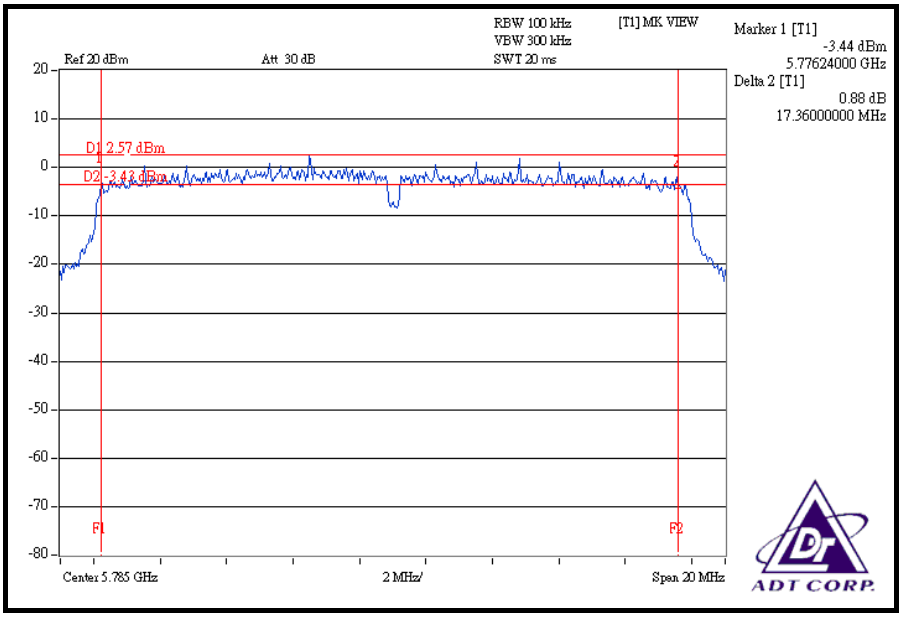
CH 5



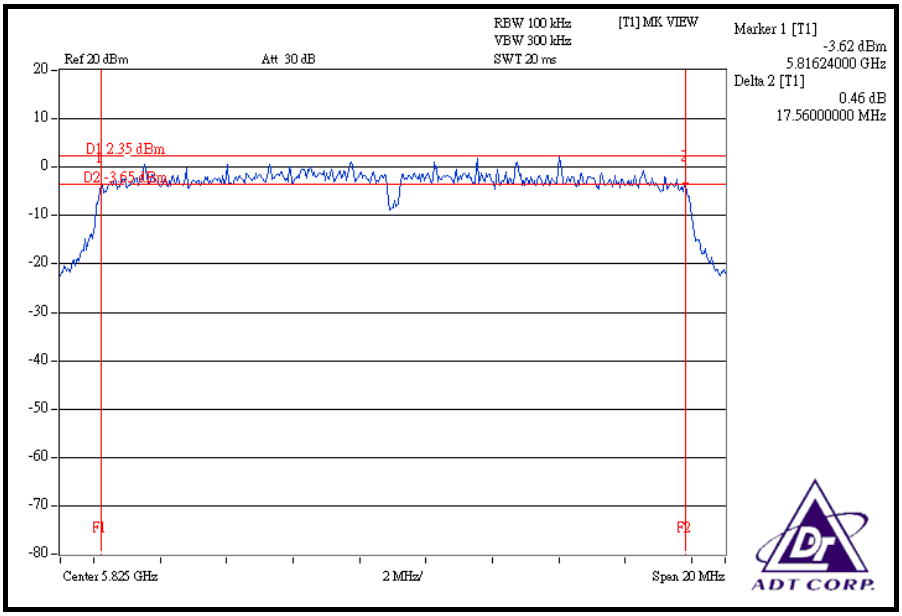
FOR CHAIN 2: CH 1



CH 3


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-3.44 dBm
5.77624000 GHz
Delta 2 [T1]
0.88 dB
17.36000000 MHz
Ref 20 dBm
Att 30 dB
D1 2.57 dBm
D2 -3.43 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.785 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH 5

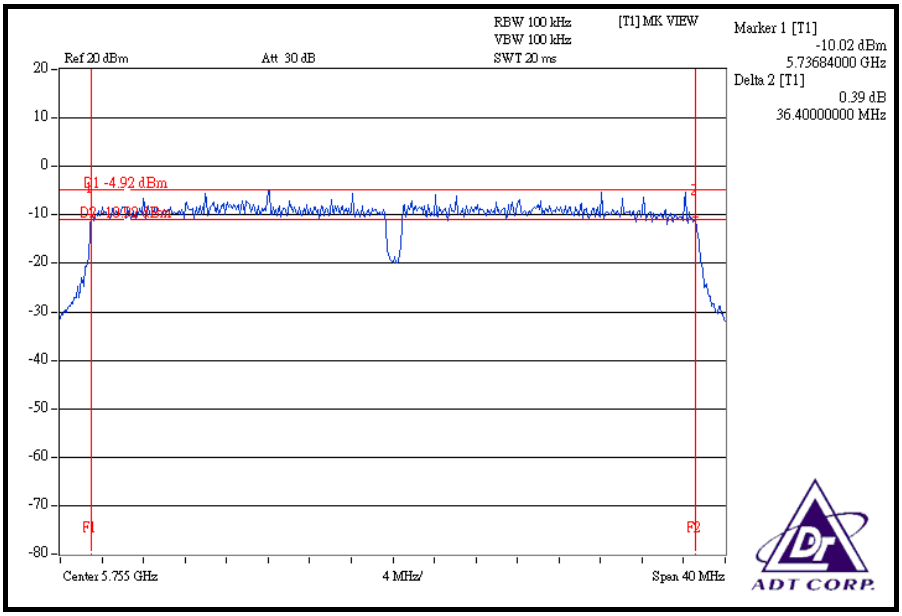

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-3.62 dBm
5.81624000 GHz
Delta 2 [T1]
0.46 dB
17.56000000 MHz
Ref 20 dBm
Att 30 dB
D1 2.35 dBm
D2 -3.65 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.825 GHz
2 MHz/
Span 20 MHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

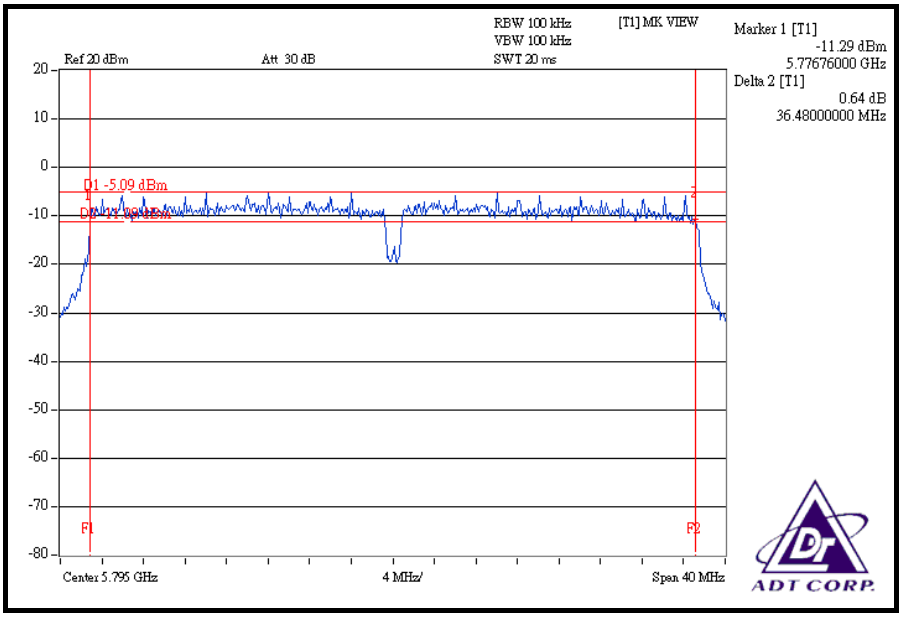
MODULATION TYPE	BPSK	**TRANSFER RATE**	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	5755	36.40	36.08	36.08	0.5	PASS
2	5795	36.48	35.76	36.40	0.5	PASS

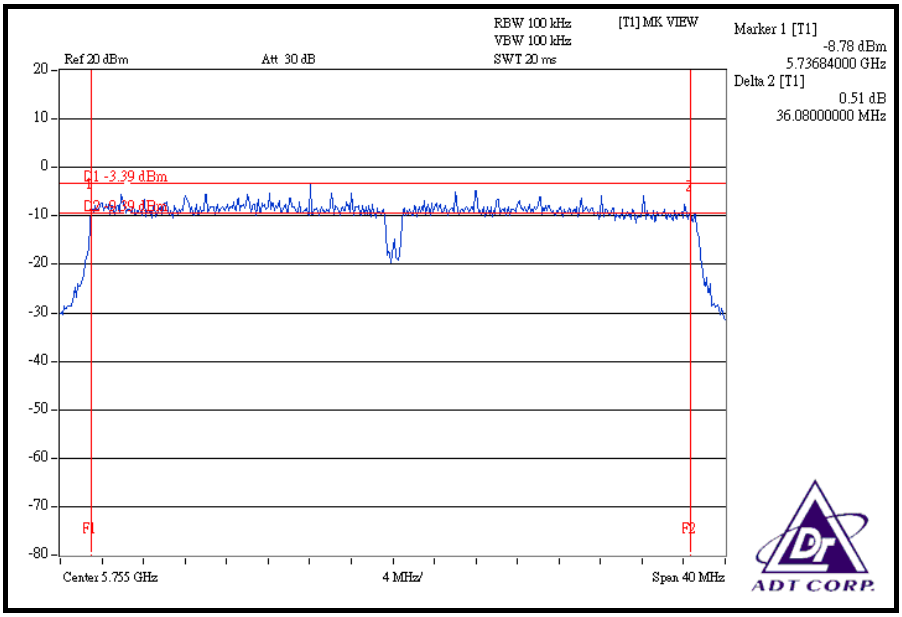
FOR CHAIN 0: CH 1



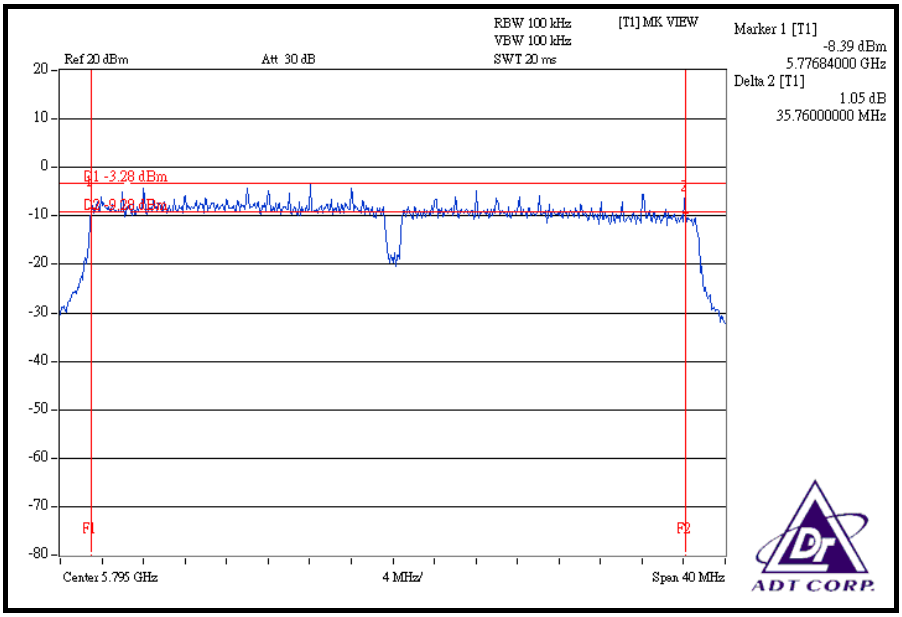
CH 2



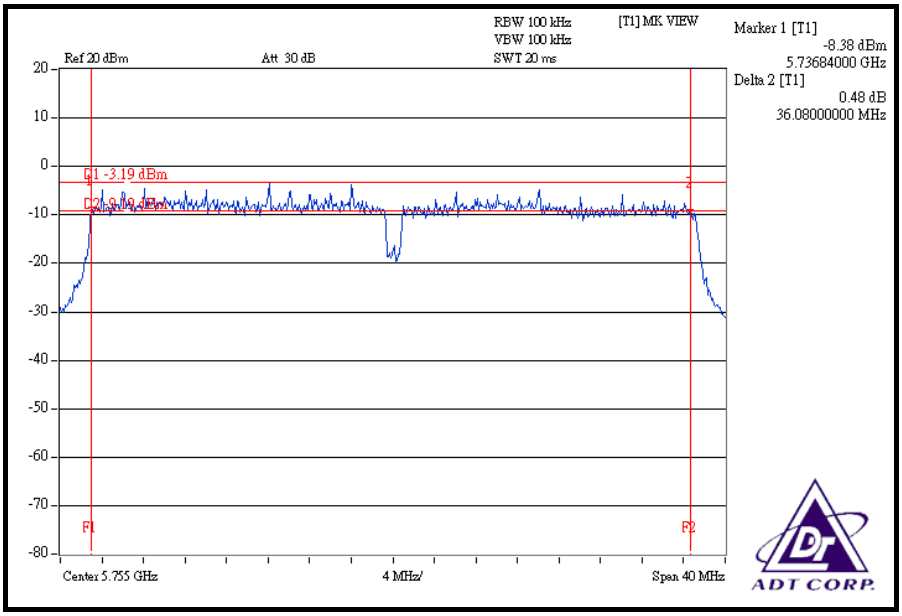
FOR CHAIN 1: CH 1



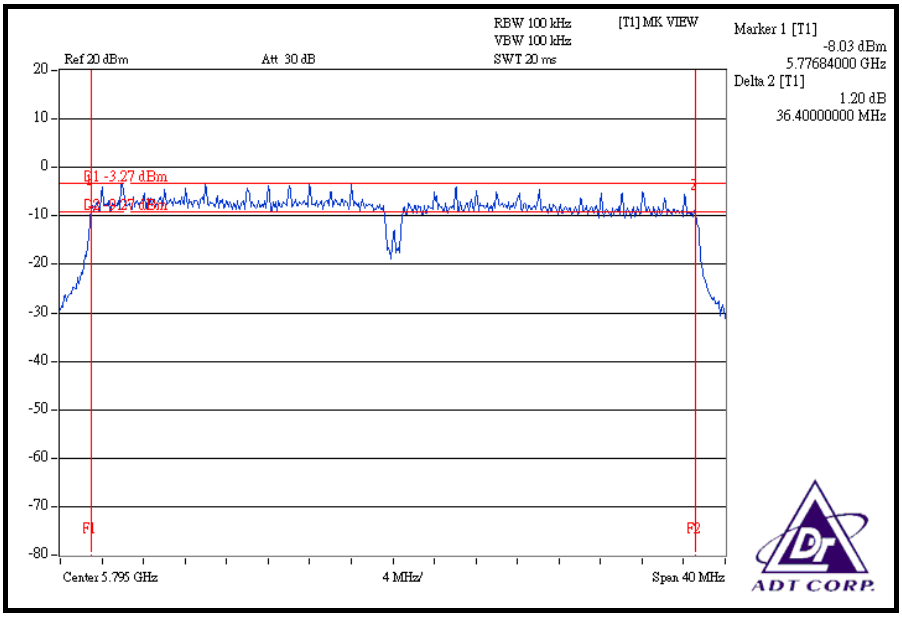
CH 2



FOR CHAIN 2: CH 1



CH 2


RBW 100 kHz
VBW 100 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-8.03 dBm
5.77684000 GHz
Delta 2 [T1]
1.20 dB
36.40000000 MHz
Ref 20 dBm
Att 30 dB
D1 -3.27 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.795 GHz
4 MHz/
Span 40 MHz
ADT CORP.

5.4 MAXIMUM PEAK OUTPUT POWER

5.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

5.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 28, 2007
DIGITAL RT OSCILLOSCOPE	TDS1012	C037299	Nov. 27, 2007
NARDA DETECTOR	4503A	FSCM99899	NA

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

5.4.3 TEST PROCEDURES

a. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.

b. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.

c. Adjusted the power to have the same reading on oscilloscope. Record the power level.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP

5.4.6 EUT OPERATING CONDITIONS

Same as Item 5.3.6

5.4.7 TEST RESULTS

802.11a OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	5745	91.622	19.62	30	PASS
3	5785	101.859	20.08	30	PASS
5	5825	102.094	20.09	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (mW)			PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN0	CHAIN1	CHAIN2	CHAIN0	CHAIN1	CHAIN2				
1	5745	35.727	56.494	56.494	15.53	17.52	17.52	148.715	21.72	30	PASS
3	5785	36.475	56.494	57.280	15.62	17.52	17.58	150.249	21.77	30	PASS
5	5825	35.563	56.364	57.677	15.51	17.51	17.61	149.604	21.75	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (mW)			PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN0	CHAIN1	CHAIN2	CHAIN0	CHAIN1	CHAIN2				
1	5755	18.365	29.040	28.510	12.64	14.63	14.55	75.915	18.80	30	PASS
2	5795	18.323	28.642	28.249	12.63	14.57	14.51	75.214	18.76	30	PASS

5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

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

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

5.5.3 TEST PROCEDURE

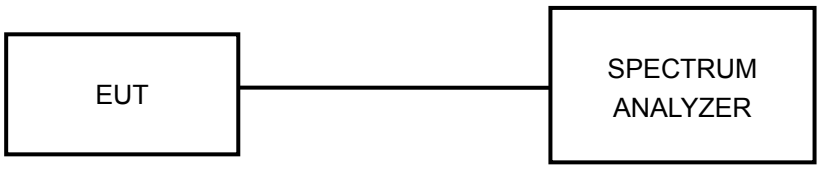
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

Same as Item 5.3.6

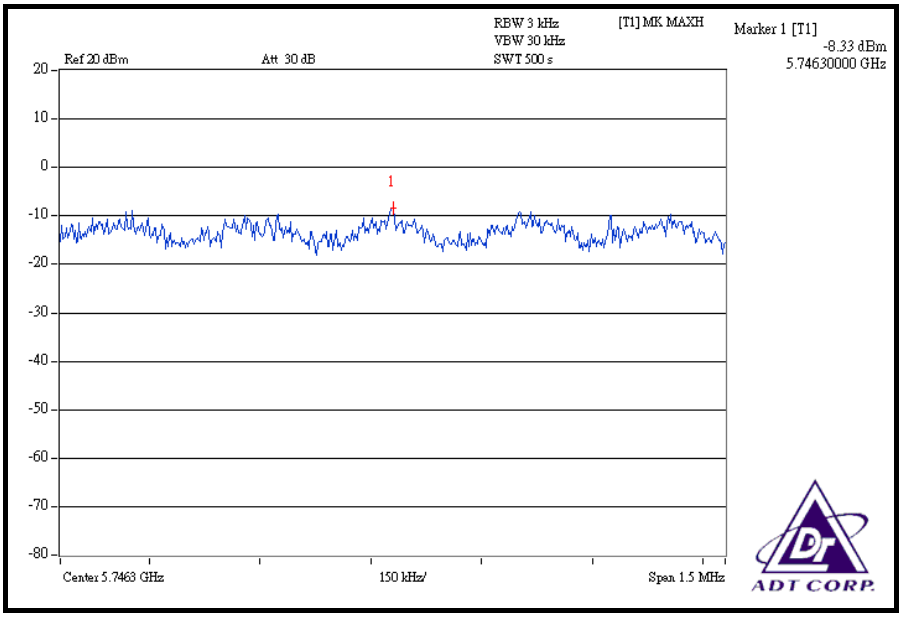
5.5.7 TEST RESULTS

802.11a OFDM MODULATION:

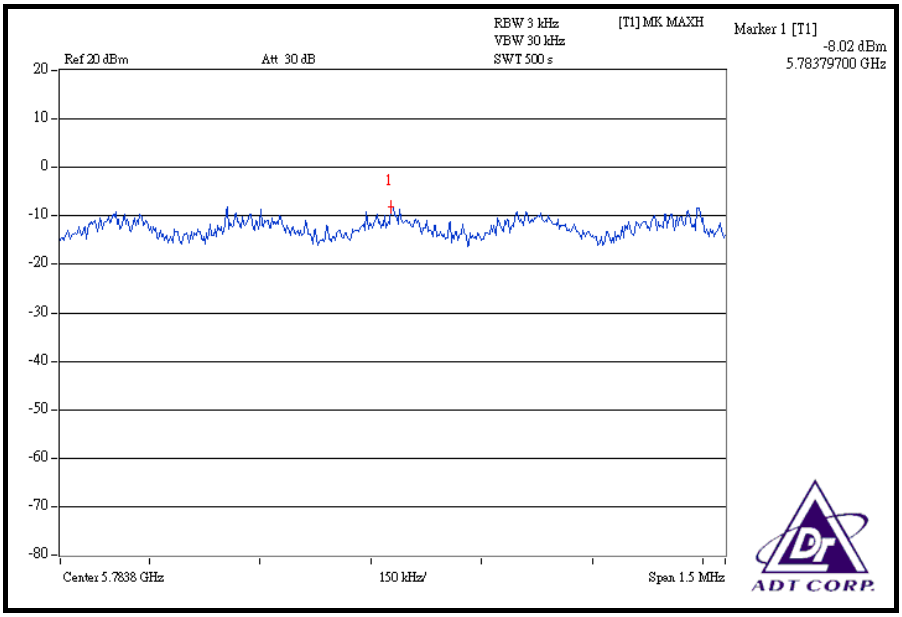
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	5745	-8.33	8	PASS
3	5785	-8.02	8	PASS
5	5825	-7.98	8	PASS

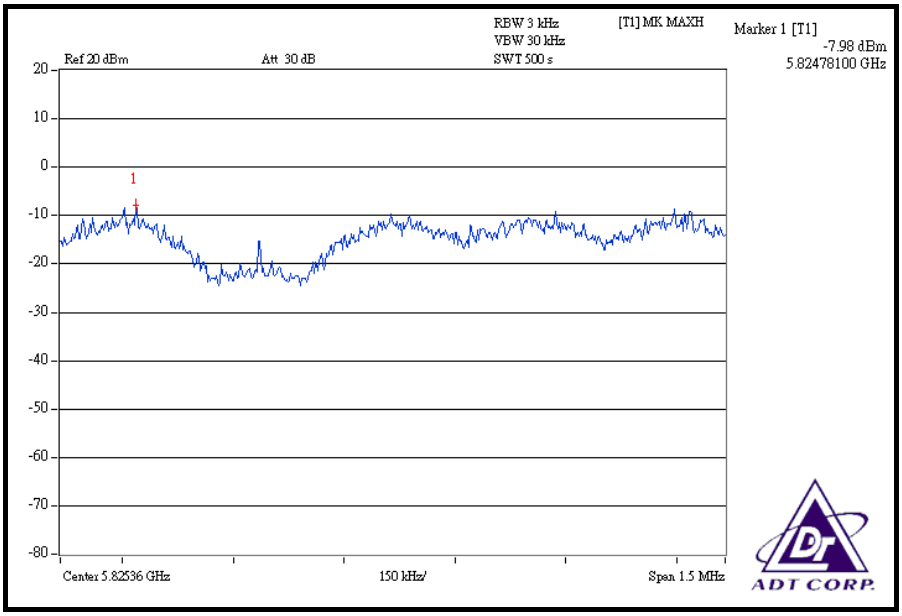
CH 1



CH 3


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-8.02 dBm
5.78379700 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 5.7838 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH 5

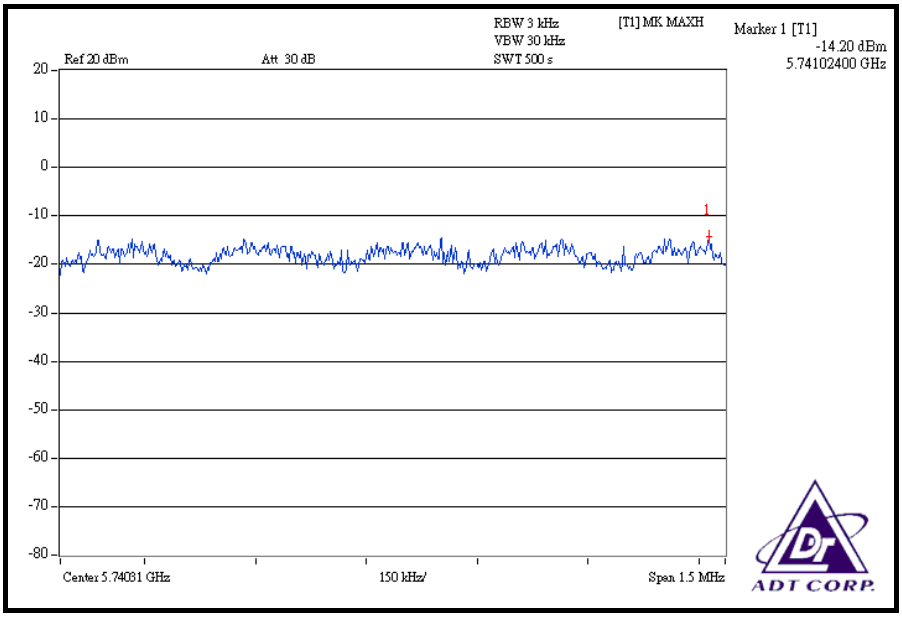

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-7.98 dBm
5.82478100 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 5.82536 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

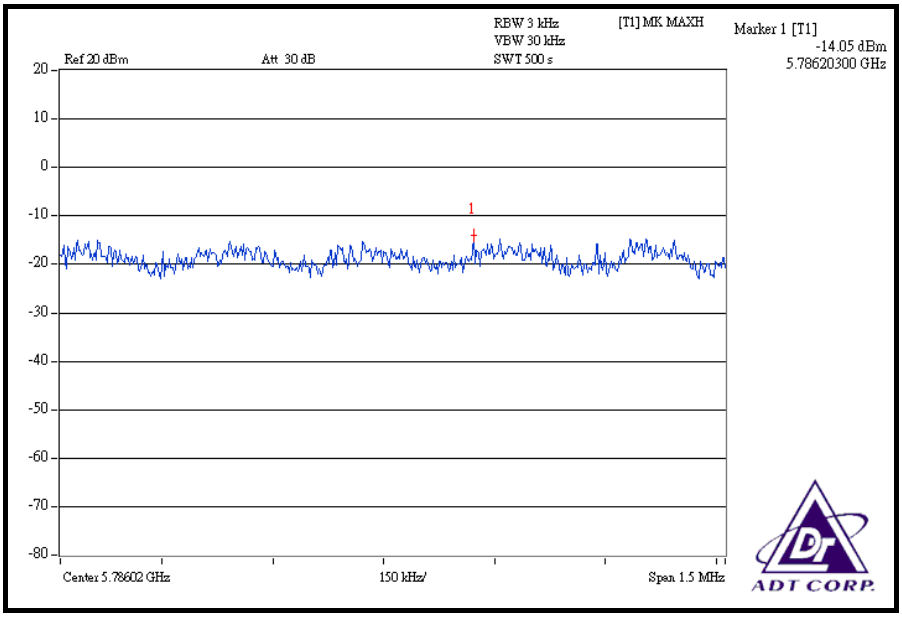
MODULATION TYPE	BPSK	**TRANSFER RATE**	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN0	CHAIN1	CHAIN2	CHAIN0	CHAIN1	CHAIN2				
1	5745	0.038	0.077	0.082	-14.20	-11.15	-10.88	0.197	-7.07	8	PASS
3	5785	0.039	0.076	0.082	-14.05	-11.21	-10.85	0.197	-7.05	8	PASS
5	5825	0.039	0.079	0.079	-14.07	-11.00	-11.00	0.197	-7.03	8	PASS

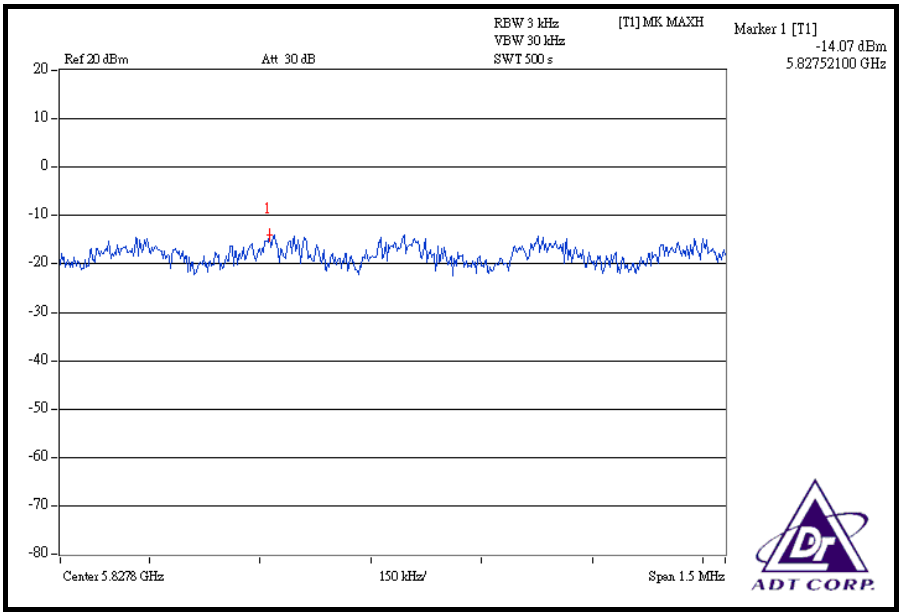
FOR CHAIN 0: CH 1



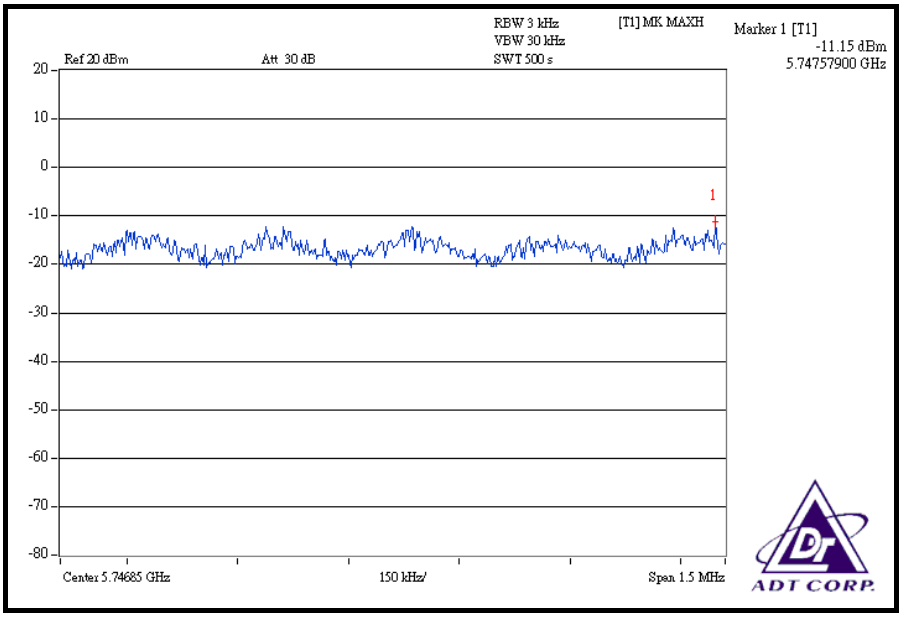
CH 3


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.05 dBm
5.78620300 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 5.78602 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

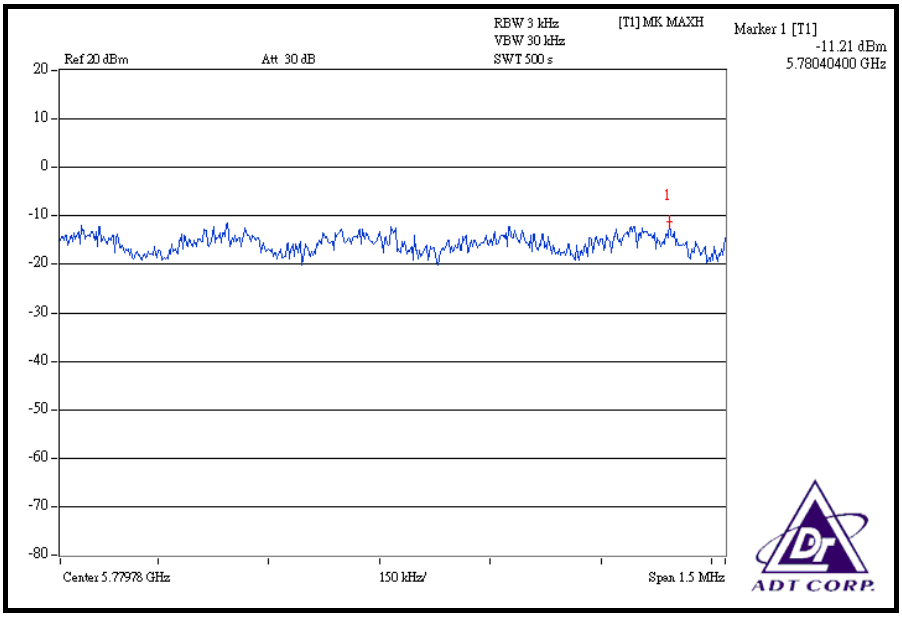
CH 5


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.07 dBm
5.82752100 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 5.8278 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

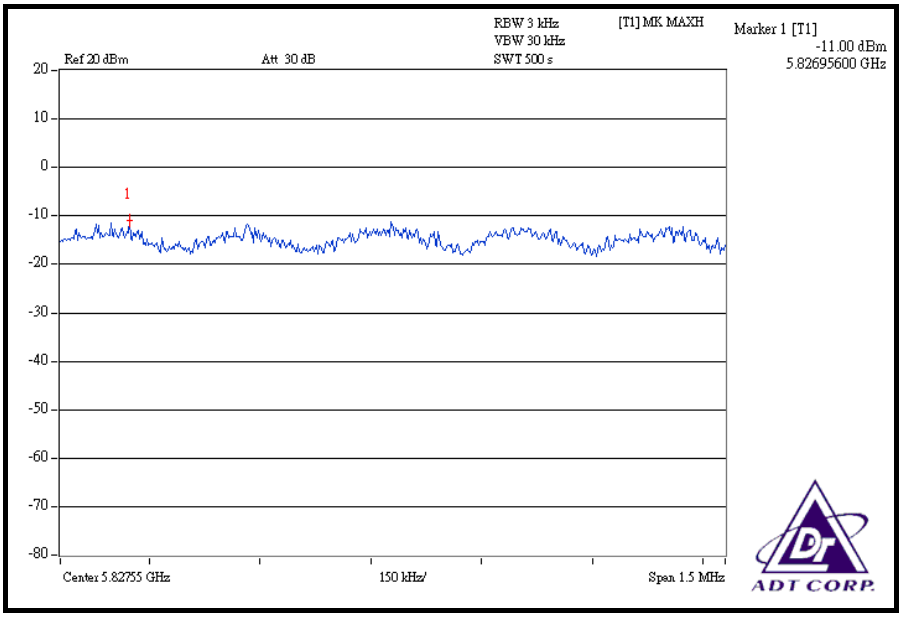
FOR CHAIN 1: CH 1



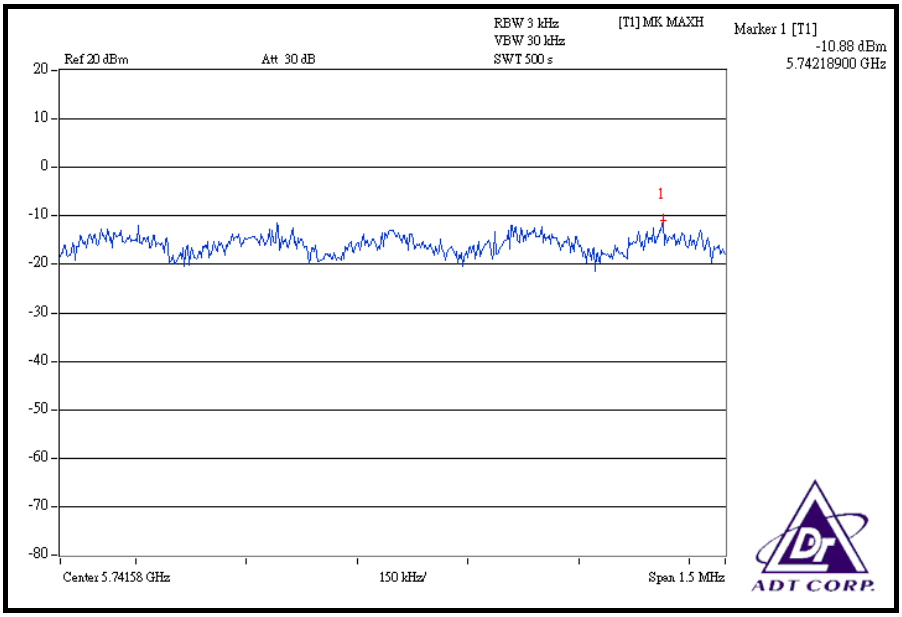
CH 3



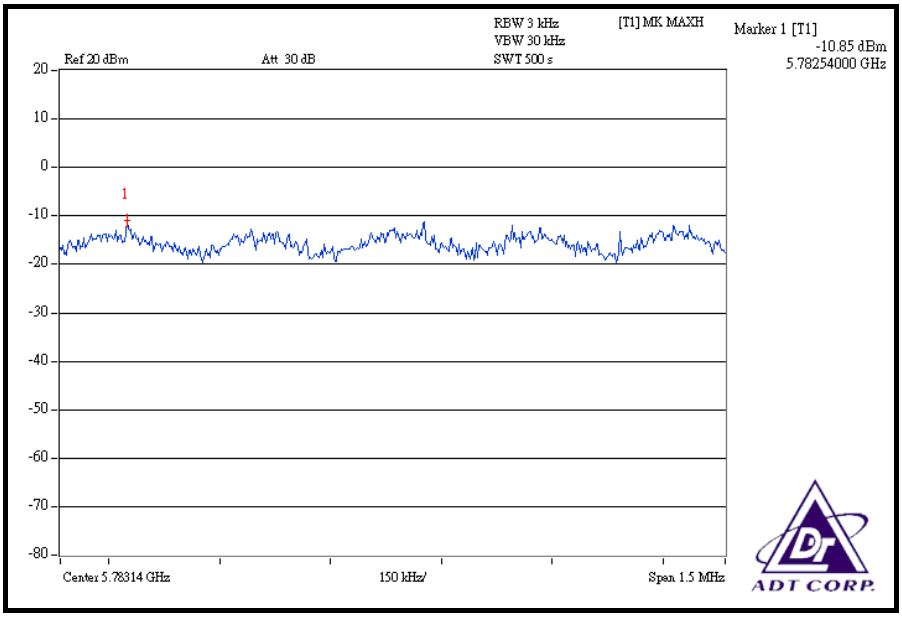
CH 5



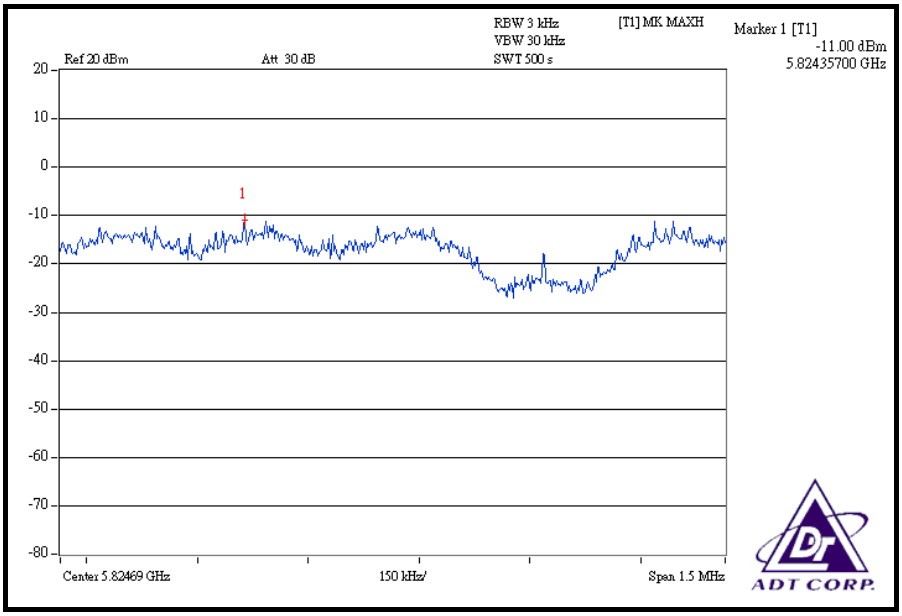
FOR CHAIN 2: CH 1



CH 3


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-10.85 dBm
5.78254000 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 5.78314 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH 5

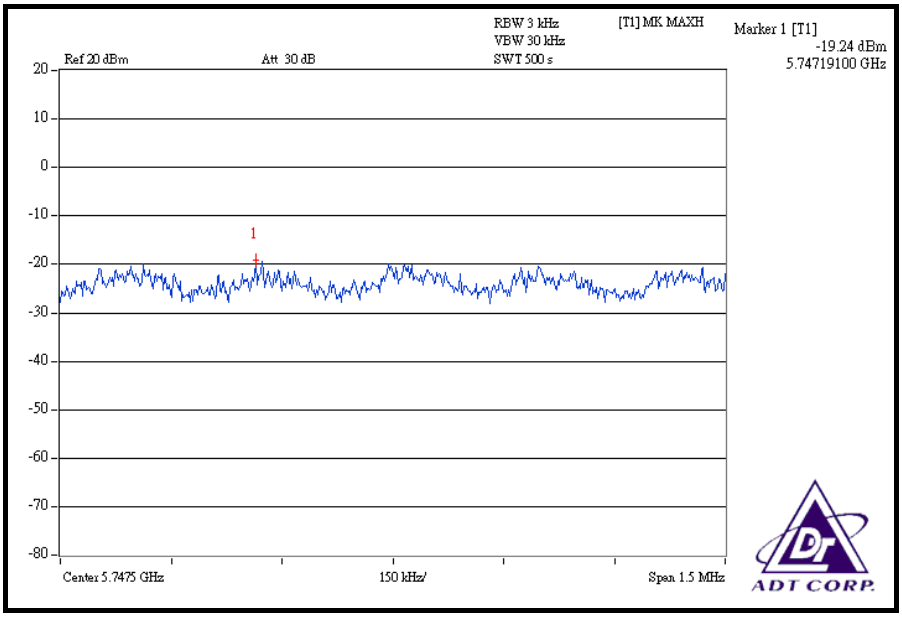

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.00 dBm
5.82435700 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 5.82469 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

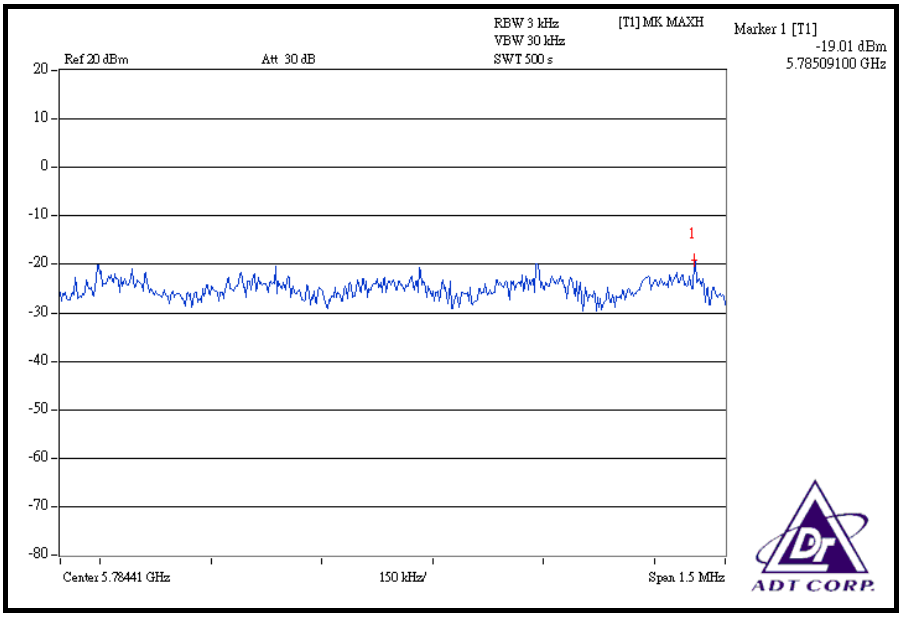
MODULATION TYPE	BPSK	**TRANSFER RATE**	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (mW)			RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN0	CHAIN1	CHAIN2	CHAIN0	CHAIN1	CHAIN2				
1	5755	0.012	0.020	0.020	-19.24	-17.01	-17.00	0.052	-12.86	8	PASS
2	5795	0.013	0.020	0.019	-19.01	-17.02	-17.17	0.052	-12.87	8	PASS

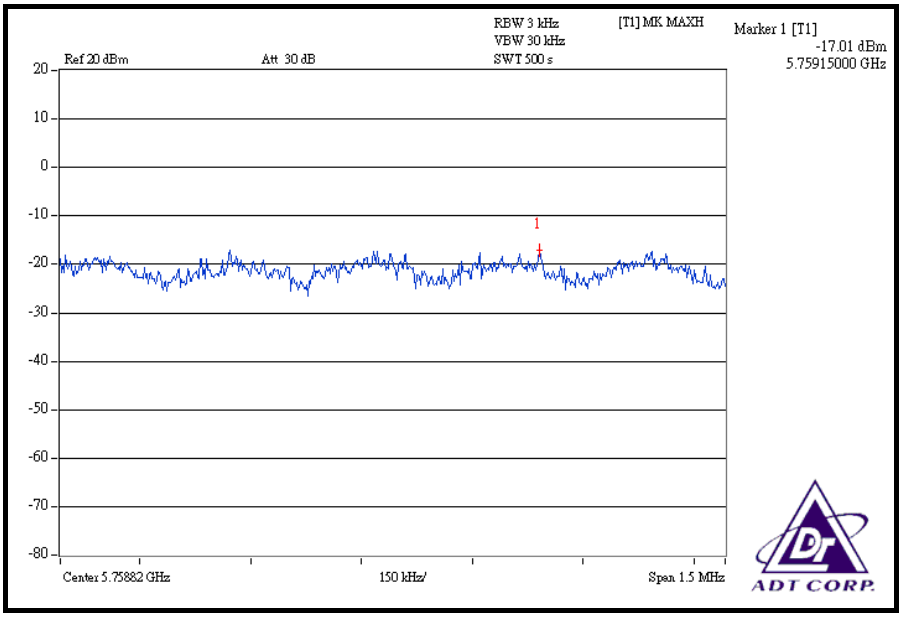
FOR CHAIN 0: CH 1



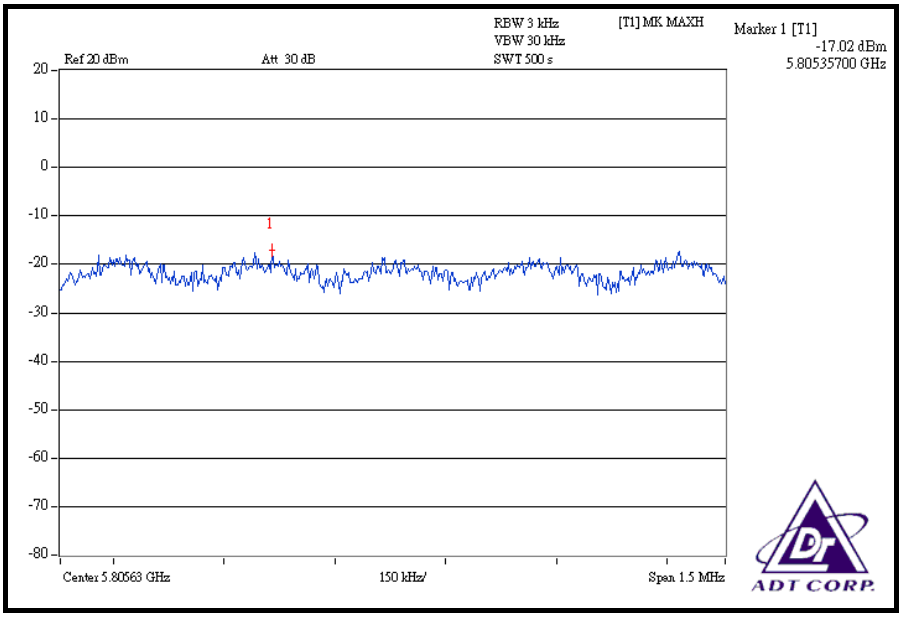
CH 2



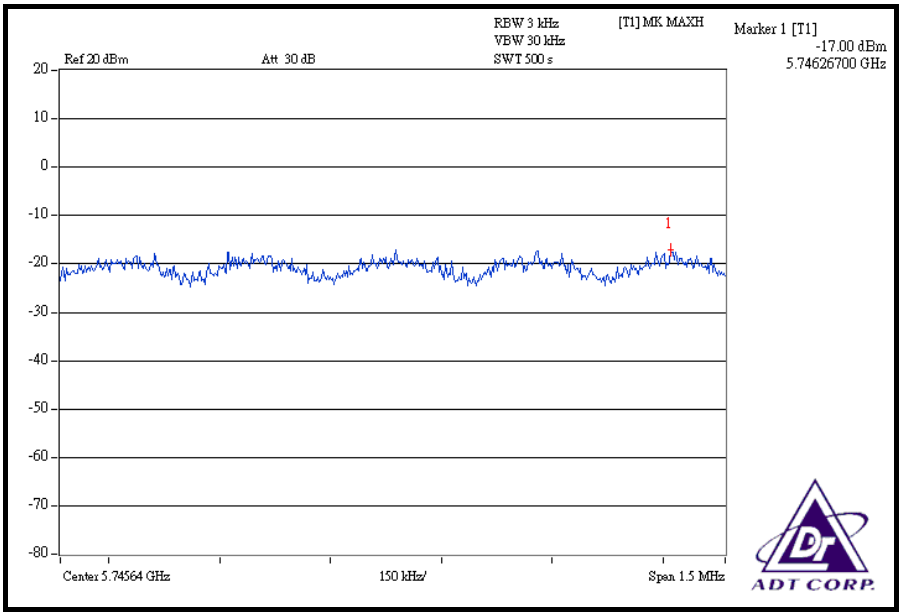
FOR CHAIN 1: CH 1



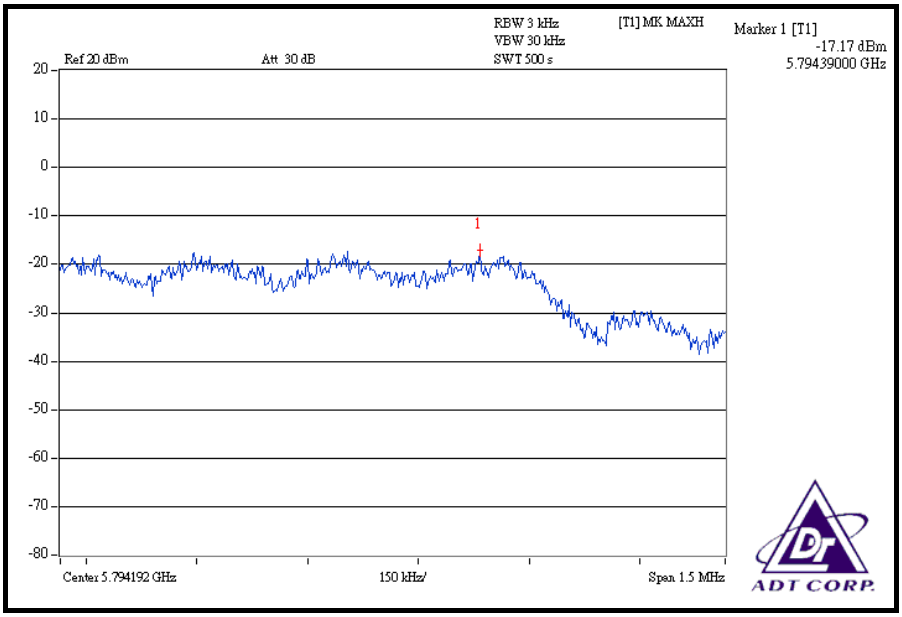
CH 2



FOR CHAIN 2: CH 1



CH 2


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-17.17 dBm
5.79439000 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 5.794192 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

5.6 BAND EDGES MEASUREMENT

5.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

5.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
802.11a:			
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 28, 2008
DRAFT 802.11n (20MHz), DRAFT 802.11n (40MHz):			
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Jul. 27, 2008
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 04, 2008
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 16, 2008
Preamplifier Agilent	8449B	3008A01910	Sep. 21, 2007
Preamplifier Agilent	8447D	2944A10638	Dec. 20, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218188/218189	Nov. 14, 2007
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	Apr. 23, 2008

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

5.6.3 TEST PROCEDURE

802.11a:

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

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

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. Set both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

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

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

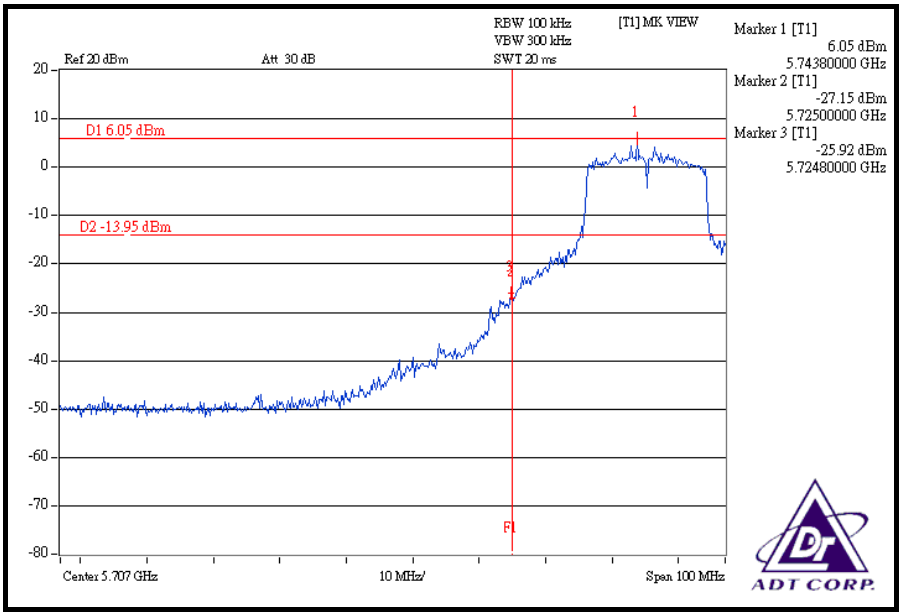
5.6.5 EUT OPERATING CONDITION

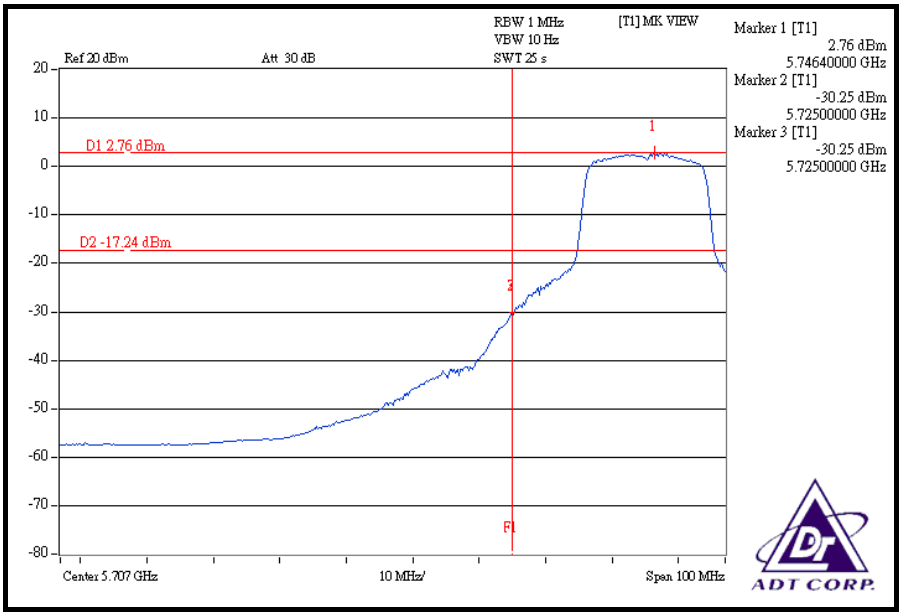
Same as Item 5.3.6

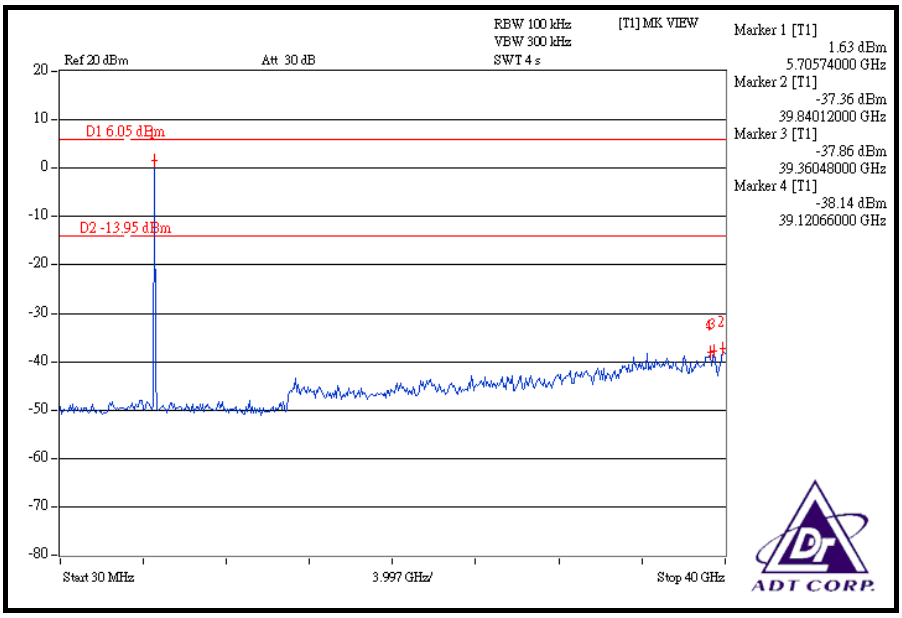
5.6.6 TEST RESULTS

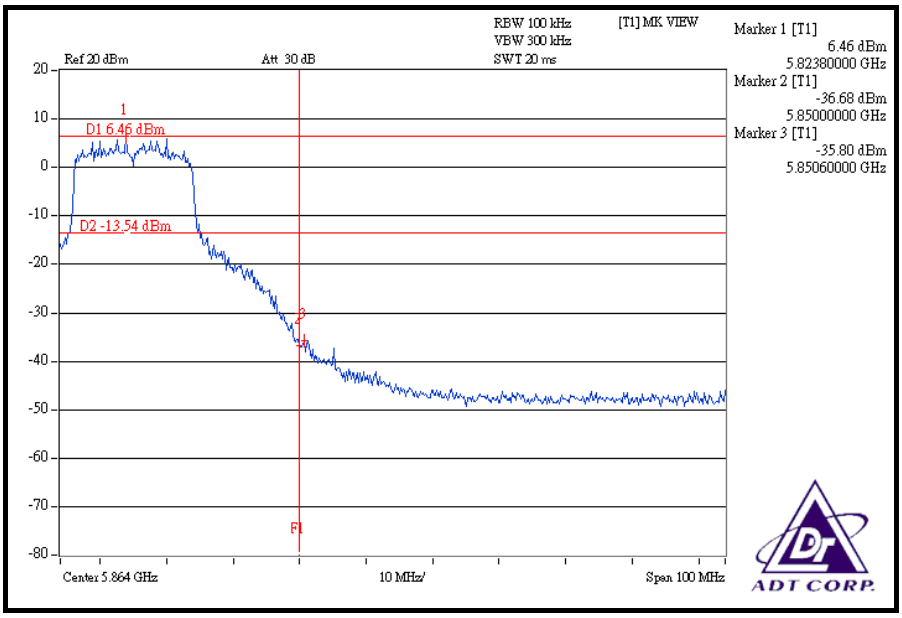
The spectrum plots are attached on the following pages. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

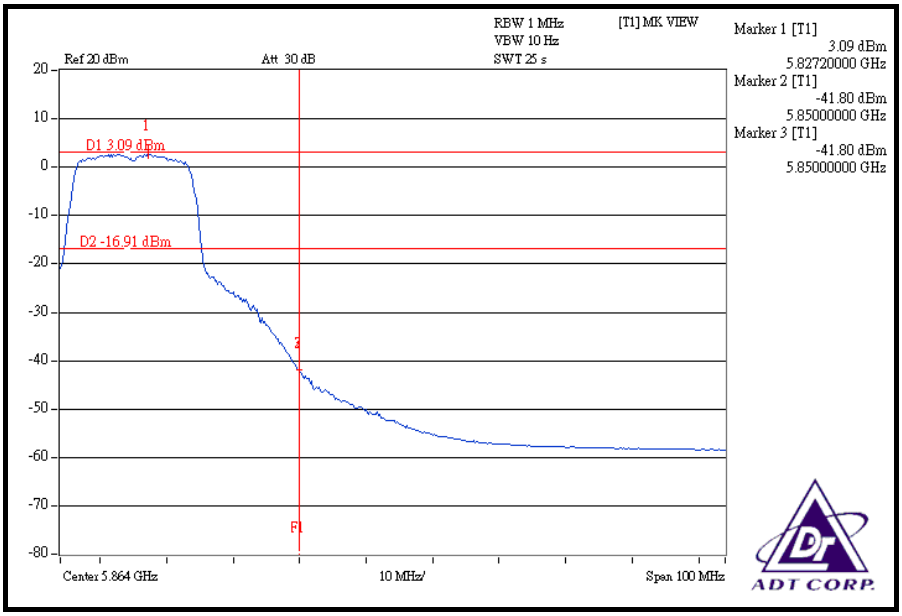
802.11a OFDM MODULATION:

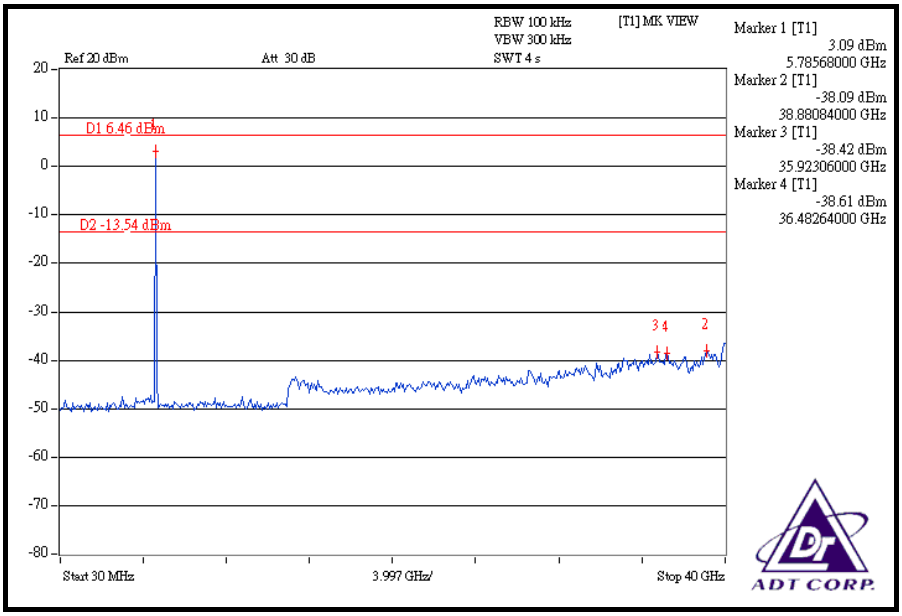




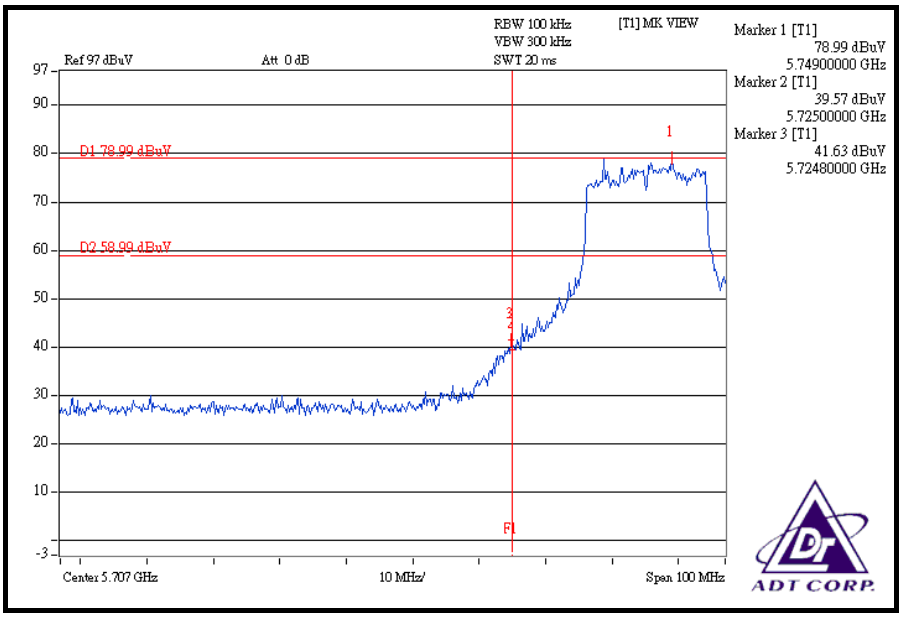

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 6.05 dBm
D2 -13.95 dBm
Marker 1 [T1]
1.63 dBm
5.70574000 GHz
Marker 2 [T1]
-37.36 dBm
39.84012000 GHz
Marker 3 [T1]
-37.86 dBm
39.36048000 GHz
Marker 4 [T1]
-38.14 dBm
39.12066000 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

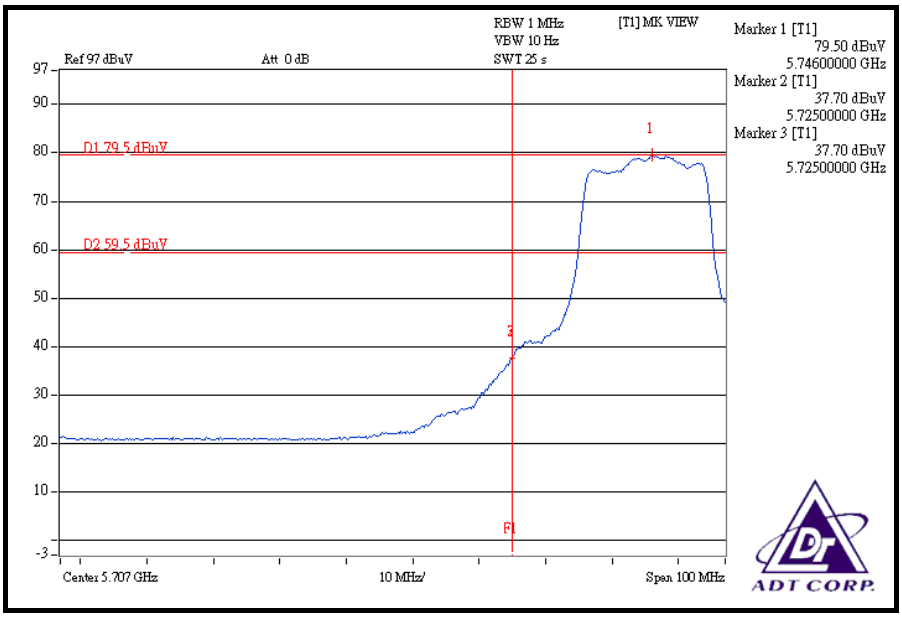

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 6.46 dBm
D2 -13.54 dBm
Marker 1 [T1]
6.46 dBm
5.82380000 GHz
Marker 2 [T1]
-36.68 dBm
5.85000000 GHz
Marker 3 [T1]
-35.80 dBm
5.85060000 GHz
Center 5.864 GHz
10 MHz/
Span 100 MHz
ADT CORP.

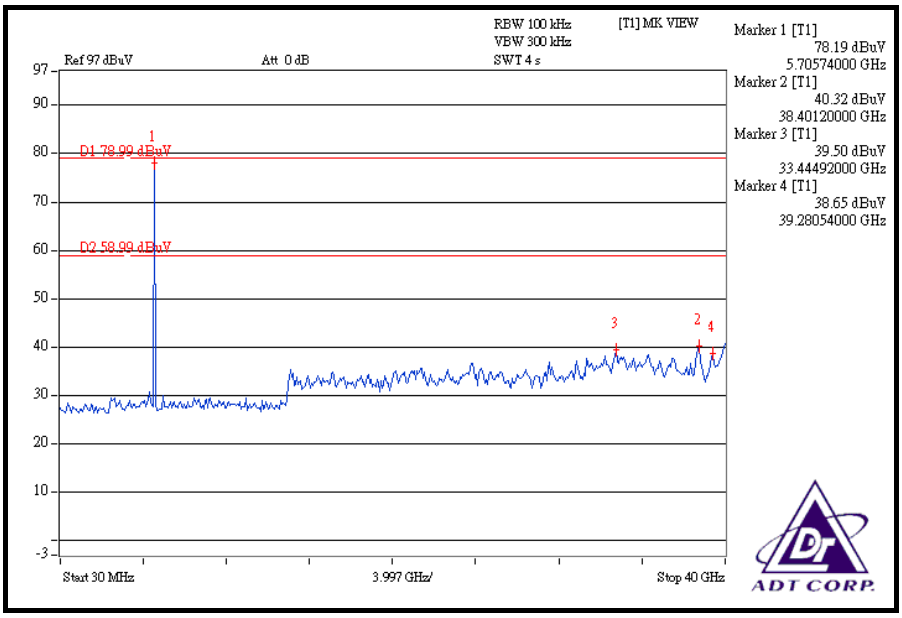

RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
3.09 dBm
5.82720000 GHz
Marker 2 [T1]
-41.80 dBm
5.85000000 GHz
Marker 3 [T1]
-41.80 dBm
5.85000000 GHz
D1 3.09 dBm
D2 -16.91 dBm
Center 5.864 GHz
10 MHz/
Span 100 MHz
ADT CORP.

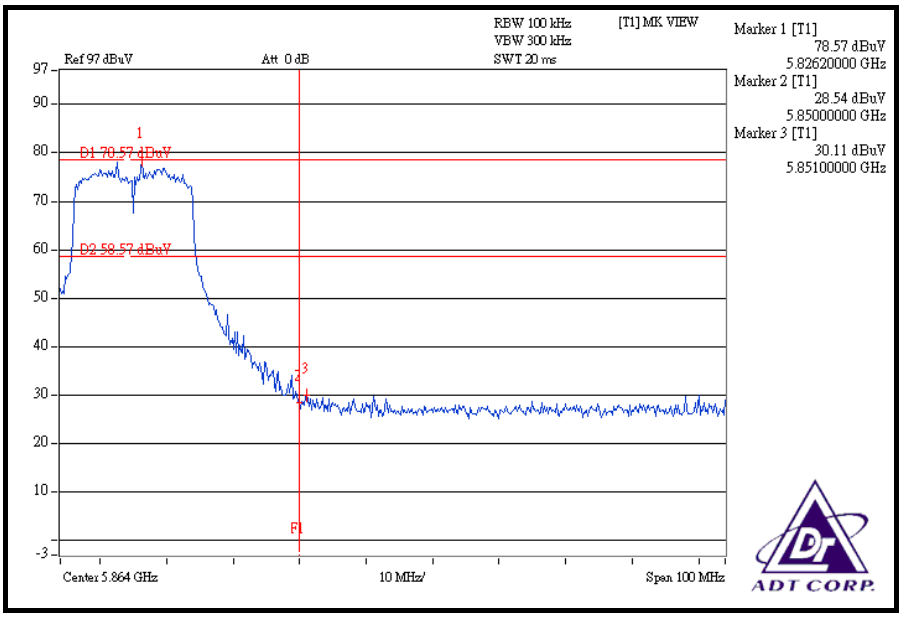

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
3.09 dBm
5.78568000 GHz
Marker 2 [T1]
-38.09 dBm
38.88084000 GHz
Marker 3 [T1]
-38.42 dBm
35.92306000 GHz
Marker 4 [T1]
-38.61 dBm
36.48264000 GHz
D1 6.46 dBm
D2 -13.54 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

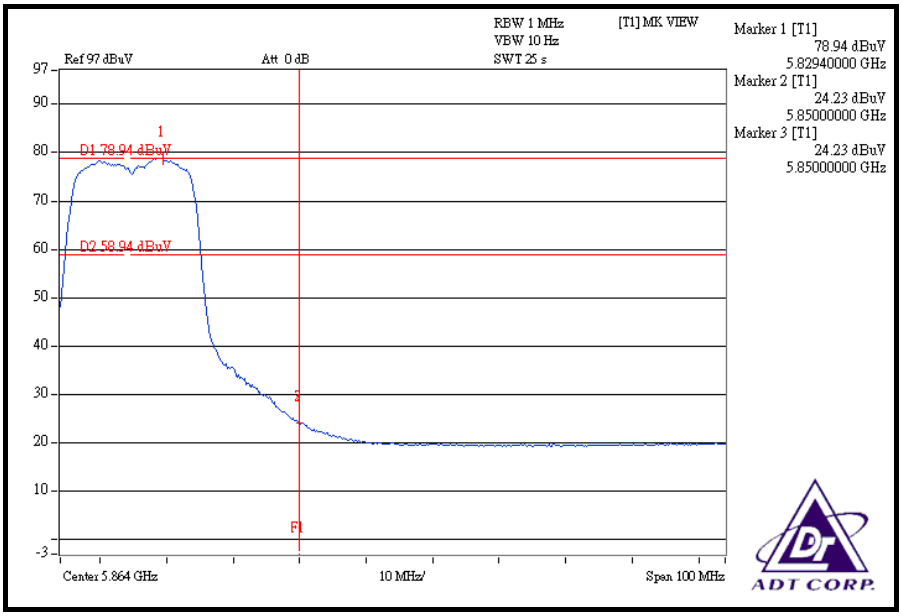
DRAFT 802.11n (20MHz) OFDM MODULATION:

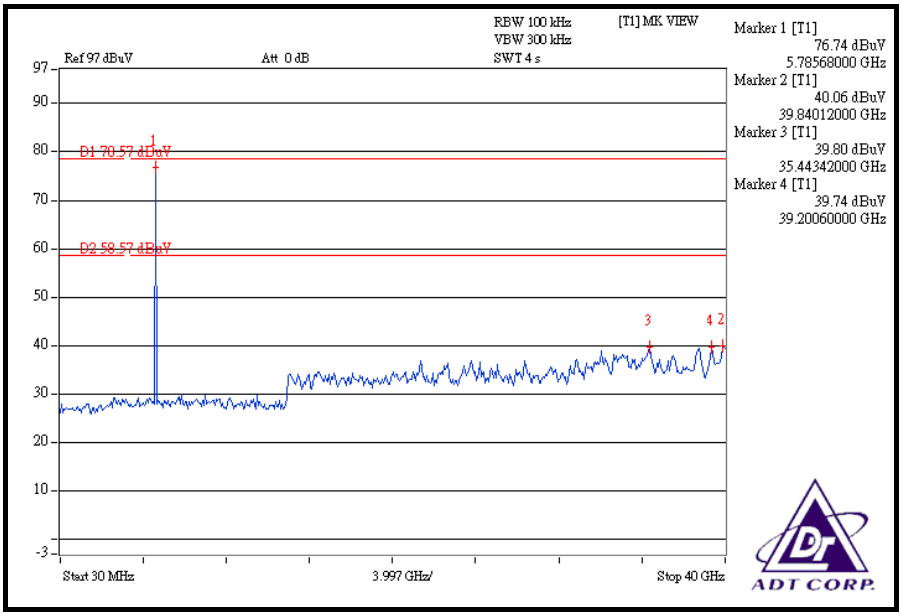




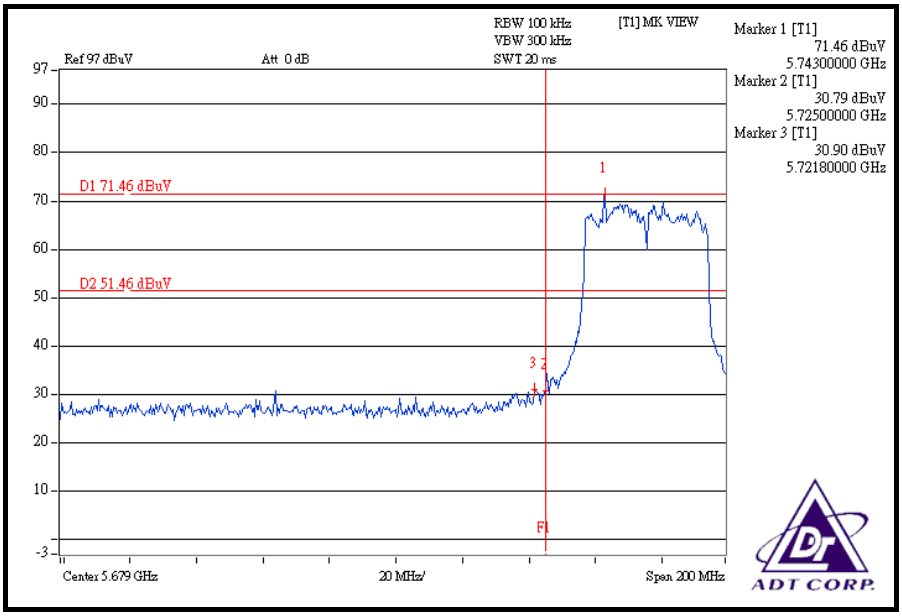

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 78.99 dBuV
D2 58.99 dBuV
Marker 1 [T1]
78.19 dBuV
5.70574000 GHz
Marker 2 [T1]
40.32 dBuV
38.40120000 GHz
Marker 3 [T1]
39.50 dBuV
33.44492000 GHz
Marker 4 [T1]
38.65 dBuV
39.28054000 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

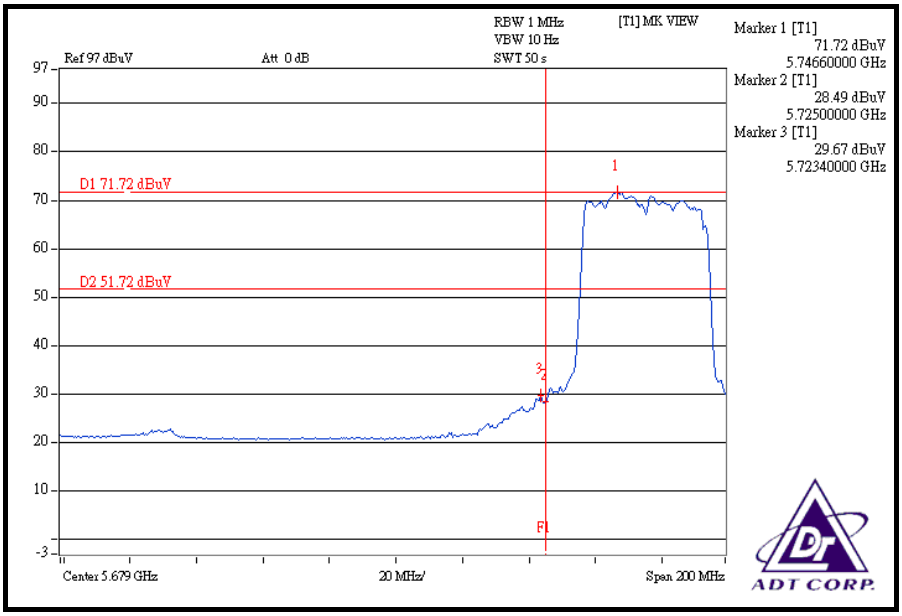

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 70.57 dBuV
D2 58.57 dBuV
Marker 1 [T1]
78.57 dBuV
5.82620000 GHz
Marker 2 [T1]
28.54 dBuV
5.85000000 GHz
Marker 3 [T1]
30.11 dBuV
5.85100000 GHz
Center 5.864 GHz
10 MHz/
Span 100 MHz
ADT CORP.

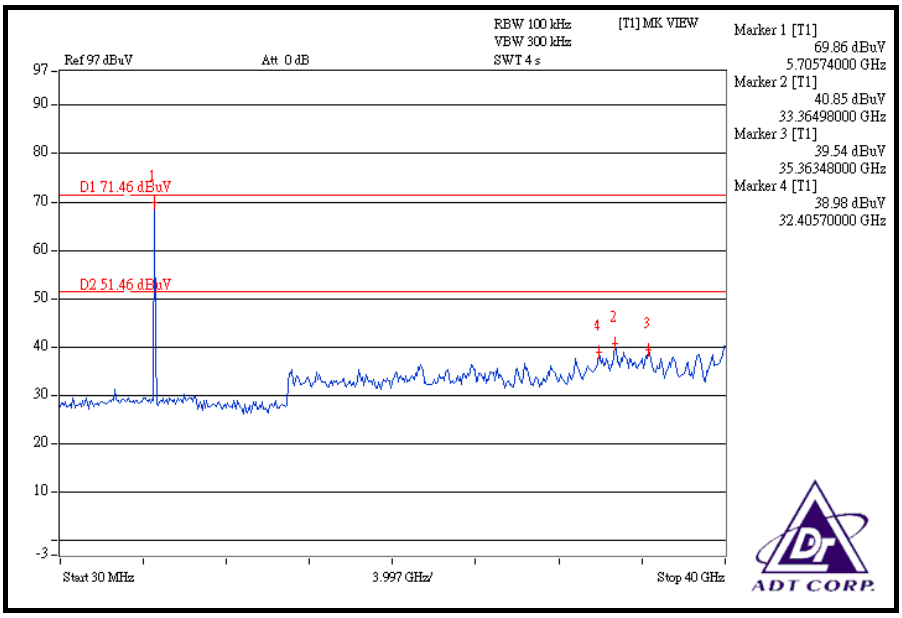

RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Marker 1 [T1]
78.94 dBuV
5.82940000 GHz
Marker 2 [T1]
24.23 dBuV
5.85000000 GHz
Marker 3 [T1]
24.23 dBuV
5.85000000 GHz
Ref 97 dBuV
Att 0 dB
D1 78.94 dBuV
D2 58.94 dBuV
Center 5.864 GHz
10 MHz/
Span 100 MHz
ADT CORP.

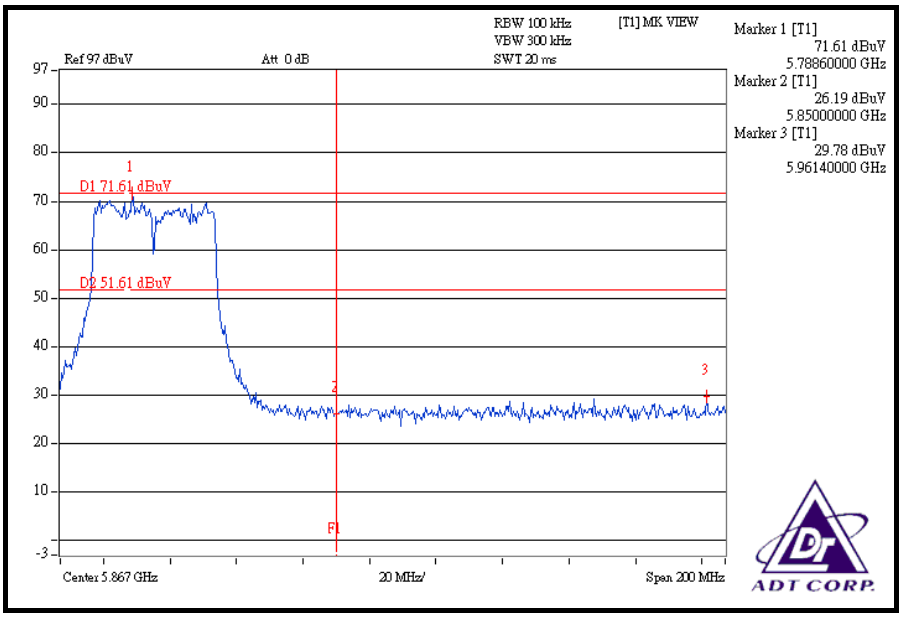

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Marker 1 [T1]
76.74 dBuV
5.78568000 GHz
Marker 2 [T1]
40.06 dBuV
39.84012000 GHz
Marker 3 [T1]
39.80 dBuV
35.44342000 GHz
Marker 4 [T1]
39.74 dBuV
39.20060000 GHz
Ref 97 dBuV
Att 0 dB
D1 70.57 dBuV
D2 58.57 dBuV
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

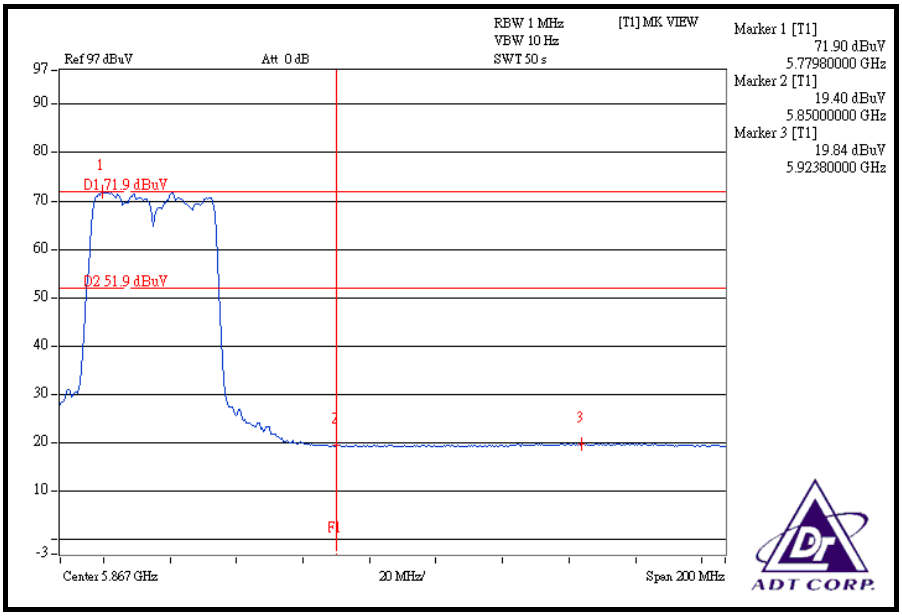
DRAFT 802.11n (40MHz) OFDM MODULATION:

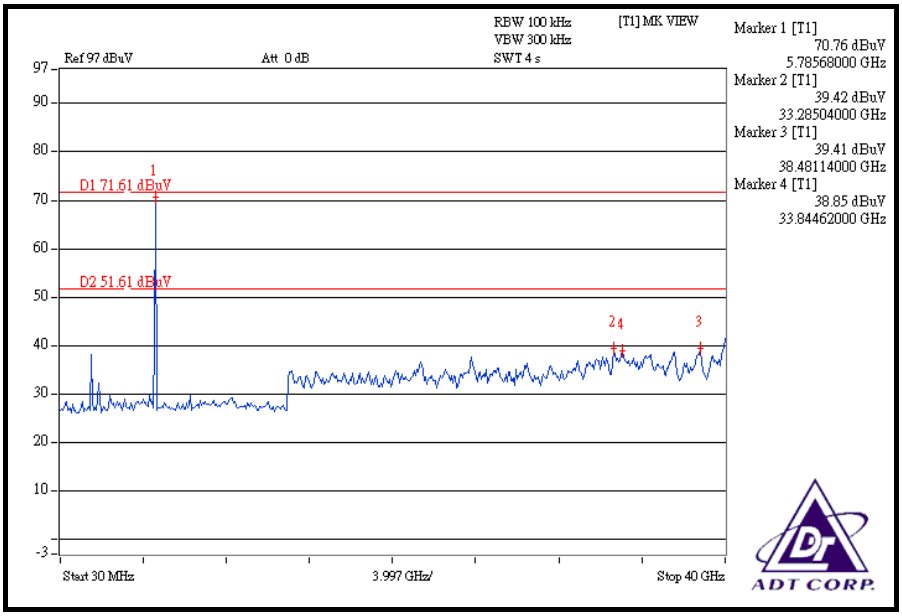





RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
69.86 dBuV
5.70574000 GHz
Marker 2 [T1]
40.85 dBuV
33.36498000 GHz
Marker 3 [T1]
39.54 dBuV
35.36348000 GHz
Marker 4 [T1]
38.98 dBuV
32.40570000 GHz
D1 71.46 dBuV
D2 51.46 dBuV
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
71.61 dBuV
5.78860000 GHz
Marker 2 [T1]
26.19 dBuV
5.85000000 GHz
Marker 3 [T1]
29.78 dBuV
5.96140000 GHz
D1 71.61 dBuV
D2 51.61 dBuV
Center 5.867 GHz
20 MHz/
Span 200 MHz
ADT CORP.


RBW 1 MHz
VBW 10 Hz
SWT 50 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
71.90 dBuV
5.77980000 GHz
Marker 2 [T1]
19.40 dBuV
5.85000000 GHz
Marker 3 [T1]
19.84 dBuV
5.92380000 GHz
D1 71.9 dBuV
D2 51.9 dBuV
Center 5.867 GHz
20 MHz/
Span 200 MHz
ADT CORP.


RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
70.76 dBuV
5.78568000 GHz
Marker 2 [T1]
39.42 dBuV
33.28504000 GHz
Marker 3 [T1]
39.41 dBuV
38.48114000 GHz
Marker 4 [T1]
38.85 dBuV
33.84462000 GHz
D1 71.61 dBuV
D2 51.61 dBuV
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

The antenna used in this product is Dipole antenna with R-SMA connector. The maximum Gain of the antenna is 2dBi.

6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

7. INFORMATION ON THE TESTING LABORATORIES

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

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

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

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

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

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

Web Site: www.adt.com.tw

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

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

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