FCC TEST REPORT (15.247)

REPORT NO.:	RF970423H02
MODEL NO.:	WRT610N
RECEIVED:	April 23, 2008
TESTED:	April 30 to May 22, 2008
ISSUED:	June 03, 2008

APPLICANT:	Cisco-Linksys LLC
ADDRESS:	121 Theory Drive Irvine, CA 92617(USA)

ISSUED BY:	Advance Data Technology Corporation
TEST LOCATION:	No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien, Taiwan, R.O.C.

TESTING CERT #2177-01

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1. CERTIFICATION

PRODUCT:	Simultaneous Dual-N Band Wireless Router
BRAND NAME:	Linksys
MODEL NO.:	WRT610N
TEST SAMPLE:	ENGINEERING SAMPLE
TESTED:	April 30 to May 22, 2008
APPLICANT:	Cisco-Linksys LLC
STANDARDS:	FCC Part 15, Subpart C (Section 15.247), ANSI C63.4-2003

The above equipment (Model: WRT610N) 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 : _____ , **DATE:** June 03, 2008
(Midoli Peng, Specialist)

TECHNICAL ACCEPTANCE : _____ , **DATE:** June 03, 2008
Responsible for RF
(Hank Chung, Deputy Manager)

APPROVED BY : _____ , **DATE:** June 03, 2008
(May Chen, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 802.11b & g, 2412~2462MHz Band

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 –2.78dB at 0.195MHz
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 –1.05dB at 72.95MHz
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.

For 802.11a, 5725~5850MHz Band

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 –3.02dB at 0.380MHz
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 –2.89dB at 125.00MHz
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.

NOTE:

1. The EUT was operating in 2.400 ~ 2.483.5GHz, 5.15~5.25GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 2.400 ~ 2.483.5GHz and 5.725 ~ 5.850GHz. For the 5.15~5.25GHz RF parameters was recorded in another test report.

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:

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

Measurement	Value
Conducted emissions	2.44 dB
Radiated emissions (30MHz-1GHz)	3.94 dB
Radiated emissions (1GHz -18GHz)	2.33 dB
Radiated emissions (18GHz -40GHz)	2.55 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Simultaneous Dual-N Band Wireless Router
MODEL NO.	WRT610N
FCC ID	Q87-WRT610N
POWER SUPPLY	DC 12V from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11 / 5.5 / 2 / 1Mbps 802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps 802.11a: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps Draft 802.11n (20MHz): 130 / 117 / 104 / 78 / 65 / 58.5 / 52 / 39 / 26 / 19.5 /13 / 6.5Mbps Draft 802.11n (40MHz): 270 / 243 / 216 / 162 / 135 / 121.5 / 108 / 81 /54 / 40.5 / 27 / 13.5Mbps
FREQUENCY RANGE	For 15.407 802.11a: 5.18 ~ 5.24GHz
	For 15.247 802.11b & 802.11g: 2412 ~ 2462MHz 802.11a: 5.745 ~ 5.805GHz
NUMBER OF CHANNEL	**For 15.407** 4 for 802.11a, draft 802.11n (20MHz) 2 for draft 802.11n (40MHz)
	For 15.247(2.4GHz) 11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz) **For 15.247(5GHz)** 4 for 802.11a, draft 802.11n (20MHz) 3 for draft 802.11n (40MHz)

MAXIMUM OUTPUT POWER	**For 15.407** 802.11a: 29.076mW draft 802.11n (20MHz): 21.611mW draft 802.11n (40MHz): 32.431mW **For 15.247(2.4GHz)** 802.11b: 66.069mW 802.11g: 117.800mW draft 802.11n (20MHz): 117.768mW draft 802.11n (40MHz): 113.778mW **For 15.247(5GHz)** 802.11a: 123.352mW draft 802.11n (20MHz): 77.810mW draft 802.11n (40MHz): 70.267mW
ANTENNA TYPE	Please see note 1
DATA CABLE	NA
I/O PORT	WAN port x 1, LAN port x 4, USB port x 1

NOTE:

1. There three antennas provided to this EUT, please refer to the following table:

Transmitter Circuit	Antenna Type	For 2.4GHz Gain (dBi)	For 5GHz Gain (dBi)	Antenna Connector	Note
Chain(0)	PIFA	0.75	3	NA	TX & RX function
Chain(1)	PIFA	1.5	2.23	NA	TX & RX function
Chain(2)	PIFA	3.5	2.5	NA	Only RX function

2. For radiated test : The EUT was pre-tested in chamber under the following modes:

Test Mode	Description
Mode A	Level-set (Put on tabletop)
Mode B	**Tower-set (Wall-mounted)**

From the above modes, the radiated worst cases were found in **Mode B**. Therefore only the test data of the modes were recorded in this report.

3. The EUT must be supplied with a power adapter and following four different models could be chosen :

Adapter 1	
Brand:	Enertronix
Model No.:	EXA0604UB-1
Input power :	AC 100-240V, 50/60Hz, 0.8A
Output power :	DC 12V, 1.5A Cable:1.8m/unshielded/without core
Adapter 2	
Brand:	FOXLINK
Model No.:	FA-1201500SU
Input power :	AC 100-240V, 50/60Hz, 0.6A
Output power :	DC 12V, 1.5A Cable:1.8m/unshielded/without core
Adapter 3	
Brand:	Hon-Kwang
Model No.:	HK-I118-A12
Input power :	AC 100-240V, 50/60Hz, 0.6A
Output power :	DC 12V, 1.5A Cable:1.8m/unshielded/without core
Adapter 4	
Brand:	LINKSYS
Model No.:	LS120V15ALE
Input power :	AC 100-240V, 50/60Hz, 0.5A Cable:0.5m/unshielded/without core
Output power :	DC 12V, 1.5A Cable:1.8m/unshielded/without core

4. The EUT incorporates a MIMO function with 802.11a, 802.11b, 802.11g, draft 802.11n. Physically, the EUT provides two completed transmit and two completed receivers.

5. The EUT is 2 * 3 spatial MIMO (2Tx & 3Rx) without beam forming function. The antenna configurations are two transmitter antennas and three receiver antennas, as there are 3 PIFA antennas. Spatial multiplexing modes for simultaneous transmission using 2 antennas, and for simultaneous receiver using 3 antennas. The 11b legacy mode is limited to single transmitter only.

6. When the EUT operating in draft 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.

7. The EUT complies with draft 802.11n standards and backwards compatible with 802. 11a, 802.11b, 802.11g products.

8. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

Operated in 2400 ~ 2483.5MHz band:

Eleven 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		

Seven 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		

Operated in 5725 ~ 5850MHz band:

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

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

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

CHANNEL	FREQUENCY
1	5755 MHz
2	5775 MHz
3	5795 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

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

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

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

ANTENNA COMBINATION MODE:

COMBINATION MODE	OPERATION MODE	CHAIN(0) (TX)	CHAIN(1) (TX)
A	802.11a, b, g	√	
B	802.11a, b, g		√
C	802.11a, g	√	√
D	DRAFT 802.11n(20MHz)	√	
E	DRAFT 802.11n(20MHz)		√
F	DRAFT 802.11n(20MHz)	√	√
G	DRAFT 802.11n(40MHz)	√	
H	DRAFT 802.11n(40MHz)		√
I	DRAFT 802.11n(40MHz)	√	√

Note:
1. The above information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
2. Antenna 1 and Antenna 2 are PIFA antennas.
3. From above mode, the different modes were chosen for pretest.
4. Mode B, C, F & I the worst modes, was selected as representative mode for the report.

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)	TX COMBINATION
For 2.4 GHz 802.11g	1 to 11	6	OFDM	BPSK	6	C
For 5 GHz 802.11a	1 to 4	4	OFDM	BPSK	6	C

☒ The EUT was tested as the following test modes:

Test Mode	Description
Mode 1	With Adapter 1
Mode 2	With Adapter 2
Mode 3	With Adapter 3
Mode 4	With Adapter 4

RADIATED EMISSION TEST (BELOW 1 GHz):

☒ 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)	TX COMBINATION
For 2.4 GHz 802.11g	1 to 11	1	OFDM	BPSK	6	C
For 5 GHz 802.11a	1 to 4	1	OFDM	BPSK	6	C

☒ The EUT was Pre-tested as the following test modes:

Test Mode	Description
Mode 1	**With Adapter 1**
Mode 2	With Adapter 2
Mode 3	With Adapter 3
Mode 4	With Adapter 4

Mode 1, the worse case one, was chosen for final test.

RADIATED EMISSION TEST (ABOVE 1 GHz):

☒ 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)	TX COMBINATION
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	B
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	C
For 2.4 GHz Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	13	F
For 2.4 GHz Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	27	I
802.11a	1 to 4	1,3, 4	OFDM	BPSK	6	C
For 5 GHz Draft 802.11n (20MHz)	1 to 4	1, 3, 4	OFDM	BPSK	13	F
For 5 GHz Draft 802.11n (40MHz)	1 to 3	1, 3	OFDM	BPSK	27	I

☒ The EUT was Pre-tested as the following test modes:

Test Mode	Description
Mode 1	**With Adapter 1**
Mode 2	With Adapter 2
Mode 3	With Adapter 3
Mode 4	With Adapter 4

Mode 1, the worse case one, was chosen for final test.

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)	TX COMBINATION
802.11b	1 to 11	1, 11	DSSS	DBPSK	1	B
802.11g	1 to 11	1, 11	OFDM	BPSK	6	C
For 2.4 GHz Draft 802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	13	F
For 2.4 GHz Draft 802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	27	I
802.11a	1 to 4	1, 4	OFDM	BPSK	6	C
For 5 GHz Draft 802.11n (20MHz)	1 to 4	1, 4	OFDM	BPSK	13	F
For 5 GHz Draft 802.11n (40MHz)	1 to 3	1, 3	OFDM	BPSK	27	I

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)	TX COMBINATION
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	B
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	C
For 2.4 GHz Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	13	F
For 2.4 GHz Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	27	I
802.11a	1 to 4	1, 3, 4	OFDM	BPSK	6	C
For 5 GHz Draft 802.11n (20MHz)	1 to 4	1, 3, 4	OFDM	BPSK	13	F
For 5 GHz Draft 802.11n (40MHz)	1 to 3	1, 3	OFDM	BPSK	27	I

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Simultaneous Dual-N Band Wireless Router. 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

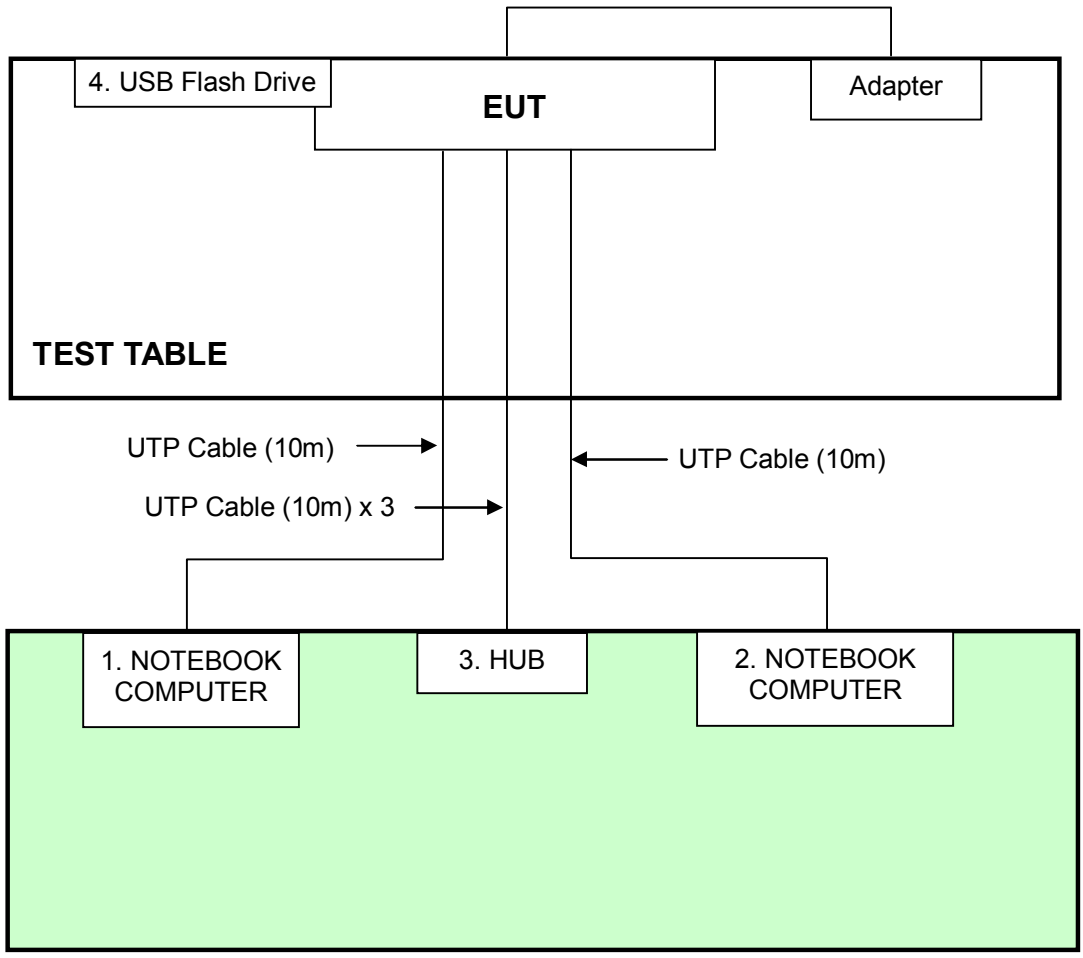
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP18L	6976685584	FCC DoC
2	NOTEBOOK COMPUTER	DELL	PP19L	CN-OHC416-70166-5CA-0448	PIW632500516610
3	HUB	AVSYS	110H8	01-20E-000002	FCC DoC
4	USB Flash Drive	SanDisk	SDCZ2-512-A10	5391912401	FCC DoC

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA
3	NA
4	NA

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4.TEST TYPES AND RESULTS (802.11b & g, 2400 ~ 2483.5MHz 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 0.50 MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100287	Mar. 10, 2009
Line-Impedance Stabilization Network(for EUT)	KNW-407	8-1395-12	Aug. 19, 2008
Line-Impedance Stabilization Network(for Peripheral)	ENV-216	100072	Nov. 08, 2008
RF Cable (JETBAO)	RG5B/U-6m	COACAB-9KHz-30MHz	Aug. 15, 2008
50 ohms Terminator	50	3	Nov. 15, 2008
Software	ADT_Cond_V7.3.2	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in ADT Shielded Room No. A.
3. The VCCI Con A Registration No. is C-817.

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.

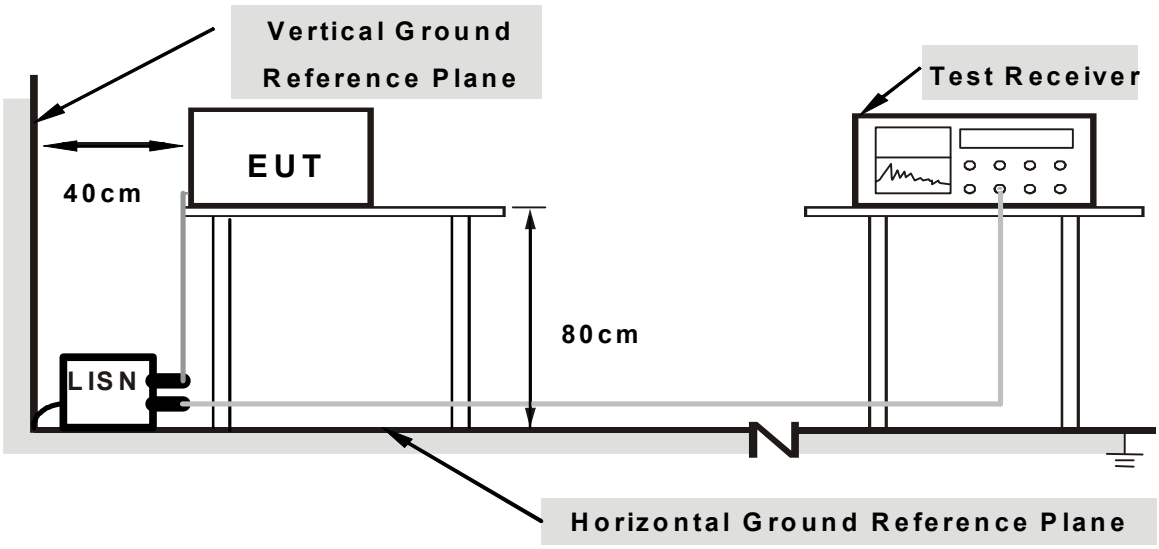
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

a. Placed the EUT on testing table.

b. Prepared other computer systems (support unit 1 ~ 2) to act as communication partners and placed them outside of testing area.

c. The communication partners run test program “MFGTEST .exe” to enable EUT under transmission/receiving condition continuously via wireless transmission.

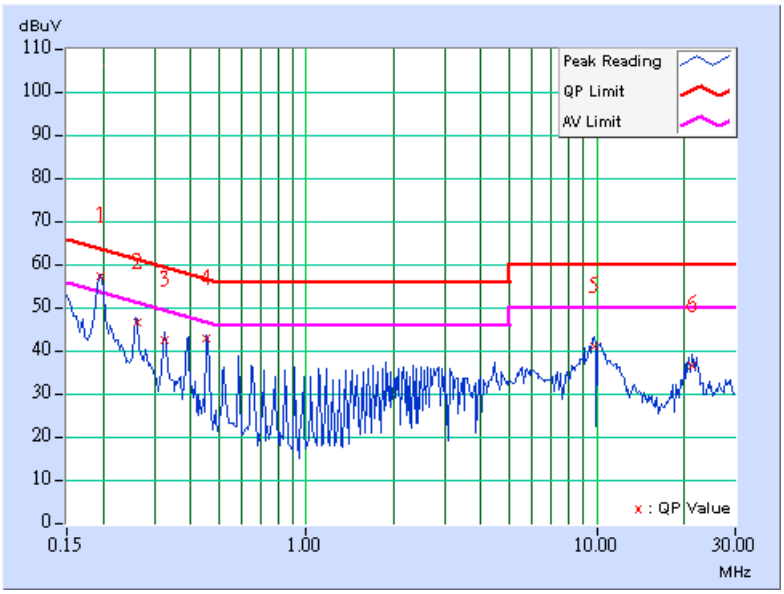
4.1.7 TEST RESULTS - Adapter 1

802.11g OFDM MODULATION :

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH, 971hPa	TESTED BY	Andy Ho

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	0.196	0.34	56.48	48.94	56.82	49.28	63.77	53.77	-6.95	-4.49
2	0.263	0.27	45.83	-	46.10	-	61.35	51.35	-15.26	-
3	0.326	0.19	41.88	-	42.07	-	59.56	49.56	-17.49	-
4	0.455	0.12	41.96	-	42.08	-	56.79	46.79	-14.71	-
5	9.773	0.54	40.24	-	40.78	-	60.00	50.00	-19.22	-
6	21.381	0.90	35.80	-	36.70	-	60.00	50.00	-23.30	-

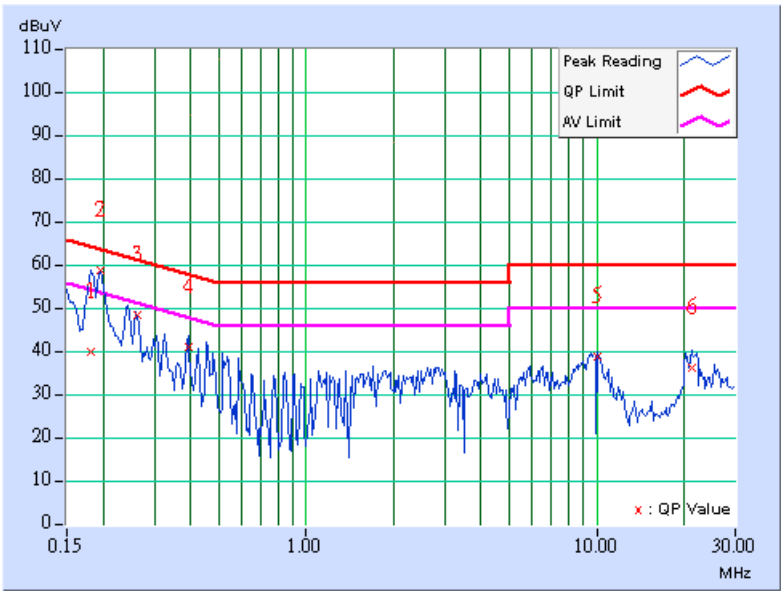
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission 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	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH, 971hPa	TESTED BY	Andy Ho

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	0.181	0.37	38.95	-	39.32	-	64.43	54.43	-25.11	-
2	**0.195**	**0.36**	**57.84**	**50.67**	**58.20**	**51.03**	**63.81**	**53.81**	**-5.61**	**-2.78**
3	0.262	0.28	47.66	-	47.94	-	61.38	51.38	-13.45	-
4	0.392	0.10	40.39	-	40.49	-	58.02	48.02	-17.53	-
5	10.036	0.54	37.95	-	38.49	-	60.00	50.00	-21.51	-
6	21.175	0.89	35.50	-	36.39	-	60.00	50.00	-23.61	-

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.



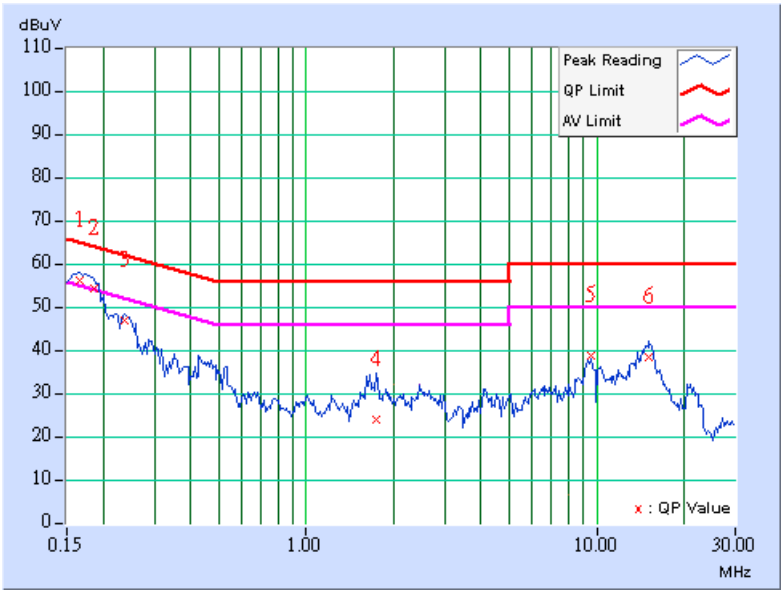
4.1.8 TEST RESULTS - Adapter 2

802.11g OFDM MODULATION :

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH, 971hPa	TESTED BY	Andy Ho

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	0.166	0.22	55.15	38.68	55.37	38.90	65.18	55.18	-9.81	-16.28
2	0.185	0.25	53.38	-	53.63	-	64.25	54.25	-10.62	-
3	0.236	0.25	45.74	-	45.99	-	62.24	52.24	-16.24	-
4	1.740	0.35	22.98	-	23.33	-	56.00	46.00	-32.67	-
5	9.548	0.69	37.65	-	38.34	-	60.00	50.00	-21.66	-
6	15.074	1.15	37.51	-	38.66	-	60.00	50.00	-21.34	-

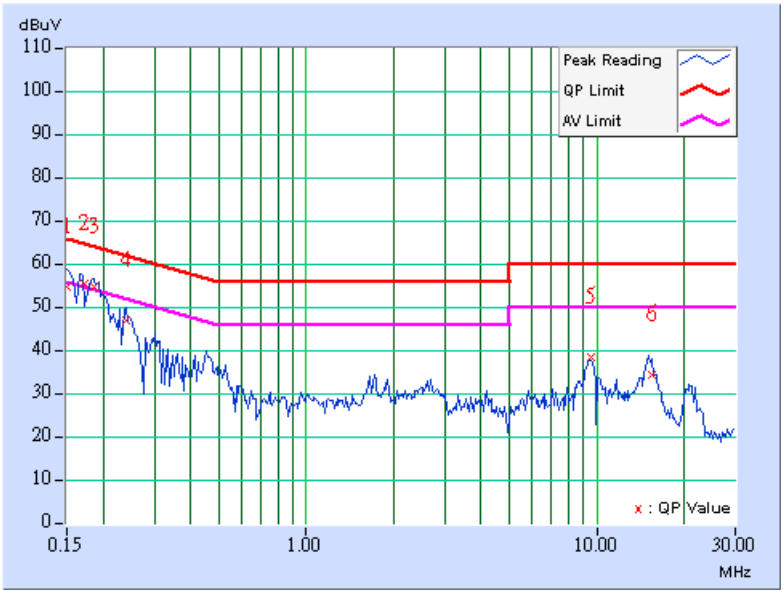
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH, 971hPa	TESTED BY	Andy Ho

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.20	53.72	-	53.92	-	66.00	56.00	-12.08	-
2	0.173	0.23	54.42	-	54.65	-	64.82	54.82	-10.17	-
3	0.185	0.25	53.60	-	53.85	-	64.25	54.25	-10.40	-
4	0.240	0.25	45.84	-	46.09	-	62.10	52.10	-16.01	-
5	9.547	0.79	37.39	-	38.18	-	60.00	50.00	-21.82	-
6	15.504	1.26	33.27	-	34.53	-	60.00	50.00	-25.47	-

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.



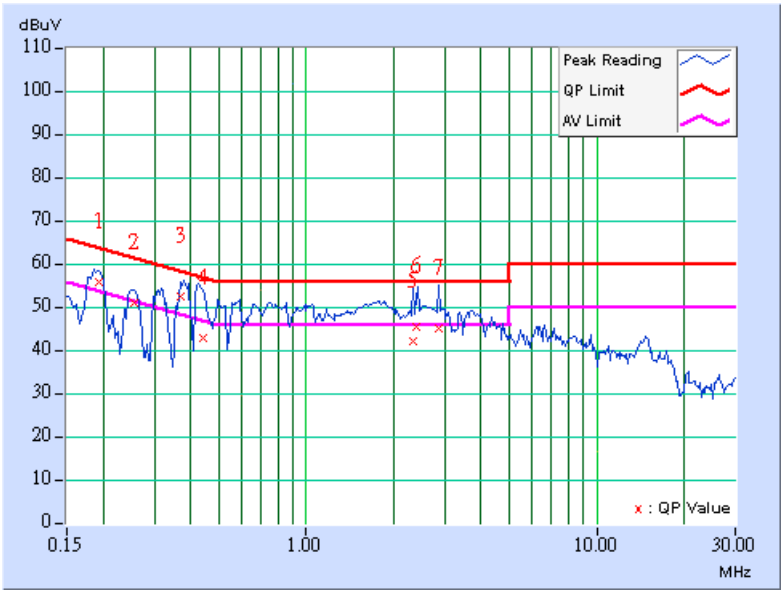
4.1.9 TEST RESULTS - Adapter 3

802.11g OFDM MODULATION :

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH, 971hPa	TESTED BY	Andy Ho

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	0.27	55.51	46.13	55.78	46.40	63.91	53.91	-8.13	-7.51
2	0.255	0.24	50.68	-	50.92	-	61.59	51.59	-10.67	-
3	0.370	0.15	52.39	42.16	52.54	42.31	58.50	48.50	-5.96	-6.19
4	0.440	0.15	42.52	-	42.67	-	57.06	47.06	-14.39	-
5	2.326	0.36	41.99	-	42.35	-	56.00	46.00	-13.65	-
6	2.400	0.36	45.02	-	45.38	-	56.00	46.00	-10.62	-
7	2.841	0.38	44.91	-	45.29	-	56.00	46.00	-10.71	-

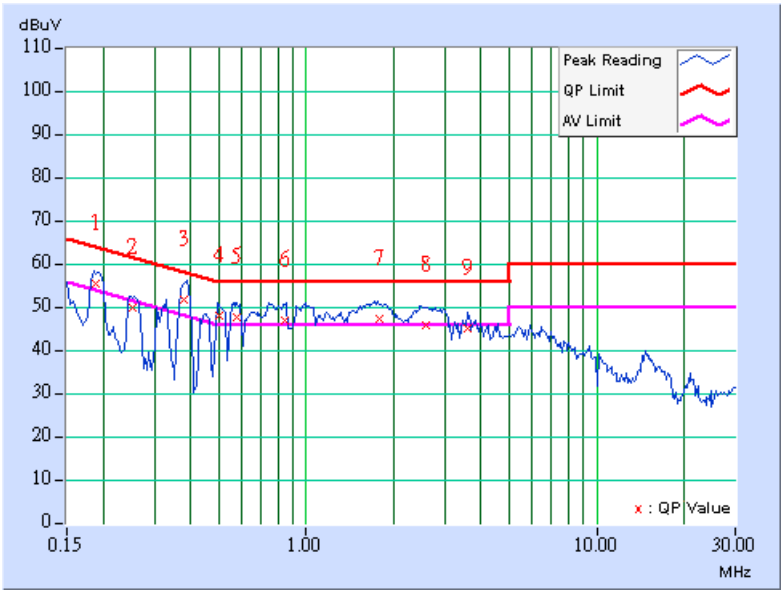
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission 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	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH, 971hPa	TESTED BY	Andy Ho

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	0.189	0.26	54.93	45.17	55.19	45.43	64.07	54.07	-8.88	-8.64
2	0.254	0.24	49.32	-	49.56	-	61.63	51.63	-12.07	-
3	0.379	0.15	51.18	44.58	51.33	44.73	58.30	48.30	-6.97	-3.57
4	0.500	0.17	47.79	39.44	47.96	39.61	56.00	46.00	-8.04	-6.39
5	0.580	0.20	47.35	39.23	47.55	39.43	56.00	46.00	-8.45	-6.57
6	0.849	0.32	46.47	35.03	46.79	35.35	56.00	46.00	-9.21	-10.65
7	1.786	0.35	46.85	36.60	47.20	36.95	56.00	46.00	-8.80	-9.05
8	2.572	0.40	45.53	-	45.93	-	56.00	46.00	-10.07	-
9	3.602	0.50	44.71	-	45.21	-	56.00	46.00	-10.79	-

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.



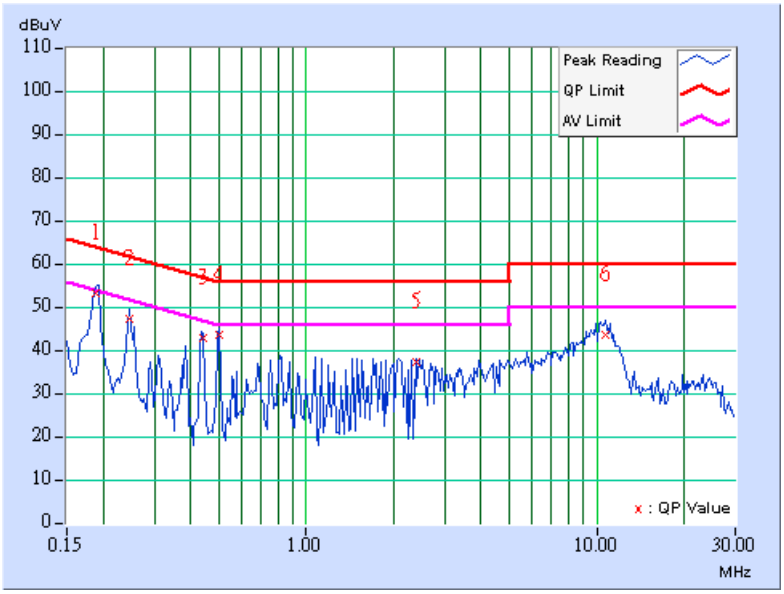
4.1.10 TEST RESULTS - Adapter 4

802.11g OFDM MODULATION :

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 67%RH, 971hPa	TESTED BY	Phoenix Huang

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.187	9.65	43.25	-	52.90	-	64.15	54.15	-11.25	-
2	0.248	9.65	37.17	-	46.82	-	61.84	51.84	-15.01	-
3	0.440	9.67	32.72	-	42.39	-	57.07	47.07	-14.68	-
4	0.502	9.68	33.65	-	43.33	-	56.00	46.00	-12.67	-
5	2.380	9.84	27.34	-	37.18	-	56.00	46.00	-18.82	-
6	10.719	10.15	33.70	-	43.85	-	60.00	50.00	-16.15	-

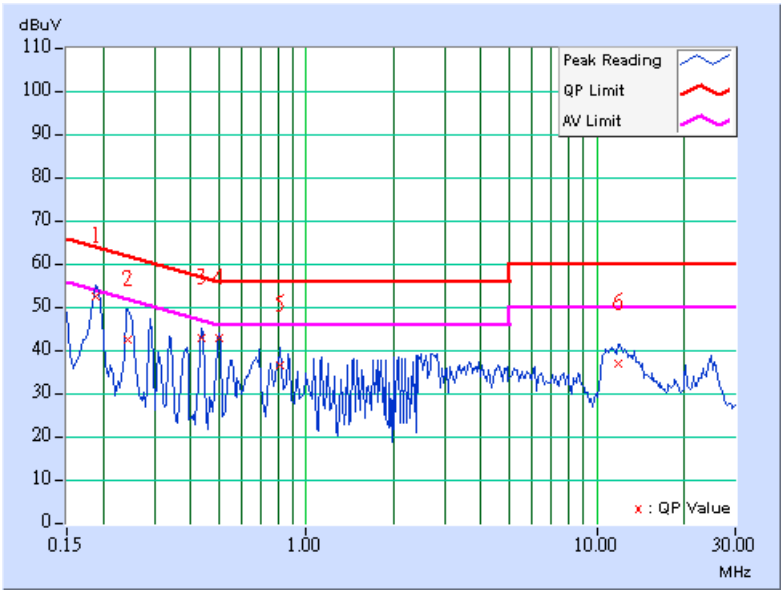
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission 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	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 67%RH, 971hPa	TESTED BY	Phoenix Huang

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	9.65	42.50	-	52.15	-	64.08	54.08	-11.93	-
2	0.244	9.65	32.45	-	42.10	-	61.97	51.97	-19.87	-
3	0.435	9.66	32.58	-	42.24	-	57.15	47.15	-14.92	-
4	0.502	9.67	32.67	-	42.34	-	56.00	46.00	-13.66	-
5	0.818	9.72	26.49	-	36.21	-	56.00	46.00	-19.79	-
6	11.805	10.21	26.84	-	37.05	-	60.00	50.00	-22.95	-

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
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 15, 2008
HP Pre_Amplifier	8449B	3008A01922	Oct. 04, 2008
ROHDE & SCHWARZ Test Receiver	ESCS30	100375	Mar. 31, 2009
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	July 26, 2008
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 16, 2008
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 27, 2009
RF Switches (ARNITSU)	CS-201	1565157	Aug. 13, 2008
RF CABLE (Chaintek)	SF102	22054-2	Dec. 06. 2008
RF Cable(RICHTEC)	9913-30M N-N Cable	STCCAB-30M-1 GHz	Aug. 13, 2008
Software	ADT_Radiated_V 7.6.15.8	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: R3271A) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in ADT Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 3789C-3.

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 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

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

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

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

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

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

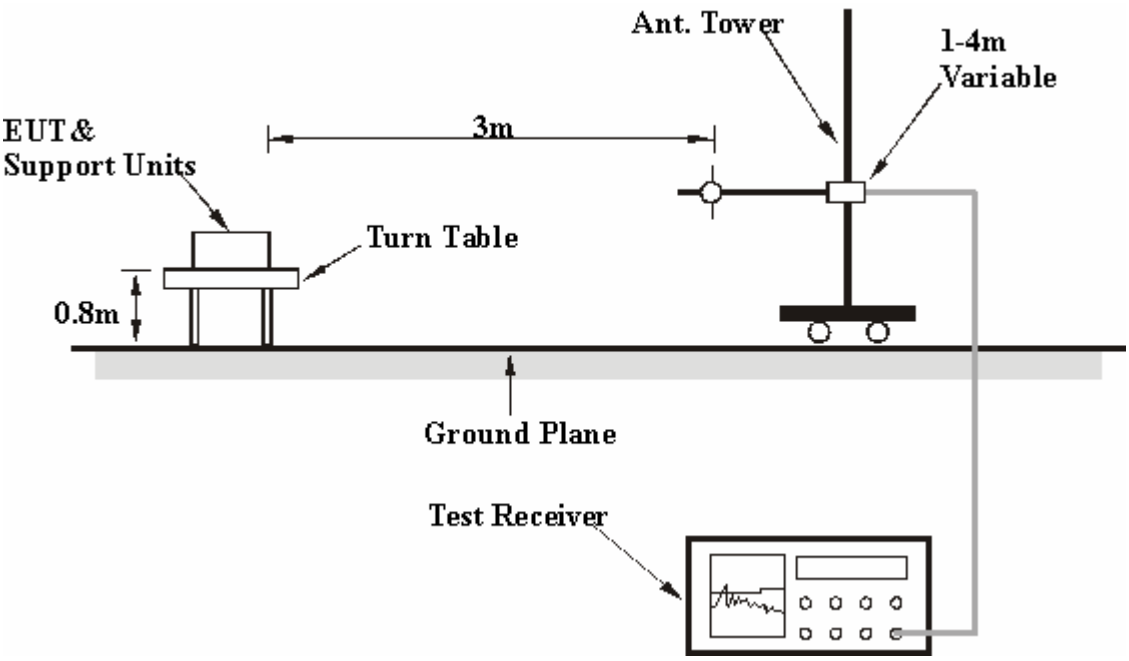
NOTE:

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

Below 1GHz Test Data

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
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	125.00	39.72 QP	43.50	-3.78	1.35 H	85	26.49	13.23
2	201.90	30.33 QP	43.50	-13.17	1.44 H	82	18.27	12.06
3	250.01	35.44 QP	46.00	-10.56	1.00 H	260	22.61	12.83
4	300.00	36.88 QP	46.00	-9.12	1.00 H	282	20.29	16.59
5	375.01	33.87 QP	46.00	-12.13	1.03 H	213	16.39	17.48
6	450.00	32.46 QP	46.00	-13.54	1.82 H	12	12.58	19.88
7	500.00	33.46 QP	46.00	-12.54	1.56 H	190	12.41	21.05
8	625.02	34.42 QP	46.00	-11.58	1.71 H	86	10.42	24.00
9	900.00	35.13 QP	46.00	-10.87	1.80 H	43	5.46	29.67
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	46.49	37.18 QP	40.00	-2.82	1.00 V	34	21.28	15.90
2	125.00	40.35 QP	43.50	-3.15	1.00 V	221	27.12	13.23
3	250.00	33.95 QP	46.00	-12.05	1.00 V	216	21.12	12.83
4	375.00	37.64 QP	46.00	-8.36	1.00 V	327	20.16	17.48
5	384.02	33.92 QP	46.00	-12.08	1.06 V	157	16.23	17.69
6	500.00	34.30 QP	46.00	-11.70	1.00 V	351	13.25	21.05
7	625.00	37.63 QP	46.00	-8.37	1.21 V	347	13.63	24.00
8	750.00	35.40 QP	46.00	-10.60	1.23 V	304	8.14	27.26

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

Above 1GHz Test Data

4.2.8 TEST RESULTS

802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.07 PK	74.00	-13.93	1.73 H	72	29.75	30.32
2	2390.00	49.68 AV	54.00	-4.32	1.73 H	72	19.36	30.32
3	*2412.00	111.30 PK			1.42 H	344	80.89	30.41
4	*2412.00	106.90 AV			1.42 H	344	76.49	30.41
5	4824.00	52.30 PK	74.00	-21.70	1.36 H	298	16.51	35.79
6	4824.00	46.80 AV	54.00	-7.20	1.36 H	298	11.01	35.79
7	7236.00	56.40 PK	74.00	-17.60	1.29 H	290	14.80	41.60
8	7236.00	44.40 AV	54.00	-9.60	1.29 H	290	2.80	41.60
9	14472.00	64.40 PK	74.00	-9.60	1.20 H	108	14.39	50.01
10	14472.00	52.50 AV	54.00	-1.50	1.20 H	108	2.49	50.01
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.55 PK	74.00	-17.45	1.05 V	160	26.23	30.32
2	2390.00	45.52 AV	54.00	-8.48	1.05 V	160	15.20	30.32
3	*2412.00	105.50 PK			1.05 V	160	75.09	30.41
4	*2412.00	100.90 AV			1.05 V	160	70.49	30.41
5	4824.00	49.00 PK	74.00	-25.00	1.03 V	253	13.21	35.79
6	4824.00	40.30 AV	54.00	-13.70	1.03 V	253	4.51	35.79
7	7236.00	53.40 PK	85.50	-32.10	1.00 V	269	11.80	41.60
8	7236.00	39.80 AV	80.90	-41.10	1.00 V	269	-1.80	41.60
9	14472.00	62.90 PK	74.00	-11.10	1.16 V	3	12.89	50.01
10	14472.00	48.20 AV	54.00	-5.80	1.16 V	3	-1.81	50.01

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
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	112.30 PK			1.40 H	346	81.78	30.52
2	*2437.00	107.70 AV			1.40 H	346	77.18	30.52
3	4874.00	50.80 PK	74.00	-23.20	1.22 H	300	14.88	35.92
4	4874.00	45.30 AV	54.00	-8.70	1.22 H	300	9.38	35.92
5	7311.00	55.80 PK	74.00	-18.20	1.42 H	301	13.99	41.81
6	7311.00	44.50 AV	54.00	-9.50	1.42 H	301	2.69	41.81
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	105.20 PK			1.02 V	166	74.68	30.52
2	*2437.00	100.80 AV			1.02 V	166	70.28	30.52
3	4874.00	49.60 PK	74.00	-24.40	1.05 V	220	13.68	35.92
4	4874.00	40.80 AV	54.00	-13.20	1.05 V	220	4.88	35.92
5	7311.00	53.80 PK	74.00	-20.20	1.00 V	185	11.99	41.81
6	7311.00	40.20 AV	54.00	-13.80	1.00 V	185	-1.61	41.81

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.40 PK			1.42 H	341	82.77	30.63
2	*2462.00	108.80 AV			1.42 H	341	78.17	30.63
3	2483.50	61.65 PK	74.00	-12.35	1.49 H	291	30.93	30.72
4	2483.50	50.91 AV	54.00	-3.09	1.49 H	291	20.19	30.72
5	4924.00	51.30 PK	74.00	-22.70	1.40 H	299	15.24	36.06
6	4924.00	44.70 AV	54.00	-9.30	1.40 H	299	8.64	36.06
7	7388.00	55.40 PK	74.00	-18.60	1.34 H	312	13.38	42.02
8	7388.00	43.80 AV	54.00	-10.20	1.34 H	312	1.78	42.02
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	104.20 PK			1.00 V	182	73.57	30.63
2	*2462.00	100.00 AV			1.00 V	182	69.37	30.63
3	2483.50	58.54 PK	74.00	-15.46	1.00 V	182	27.82	30.72
4	2483.50	45.97 AV	54.00	-8.03	1.00 V	182	15.25	30.72
5	4824.00	49.40 PK	74.00	-24.60	1.05 V	202	13.61	35.79
6	4824.00	40.50 AV	54.00	-13.50	1.05 V	202	4.71	35.79
7	7386.00	53.50 PK	74.00	-20.50	1.02 V	175	11.49	42.01
8	7386.00	40.00 AV	54.00	-14.00	1.02 V	175	-2.01	42.01

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

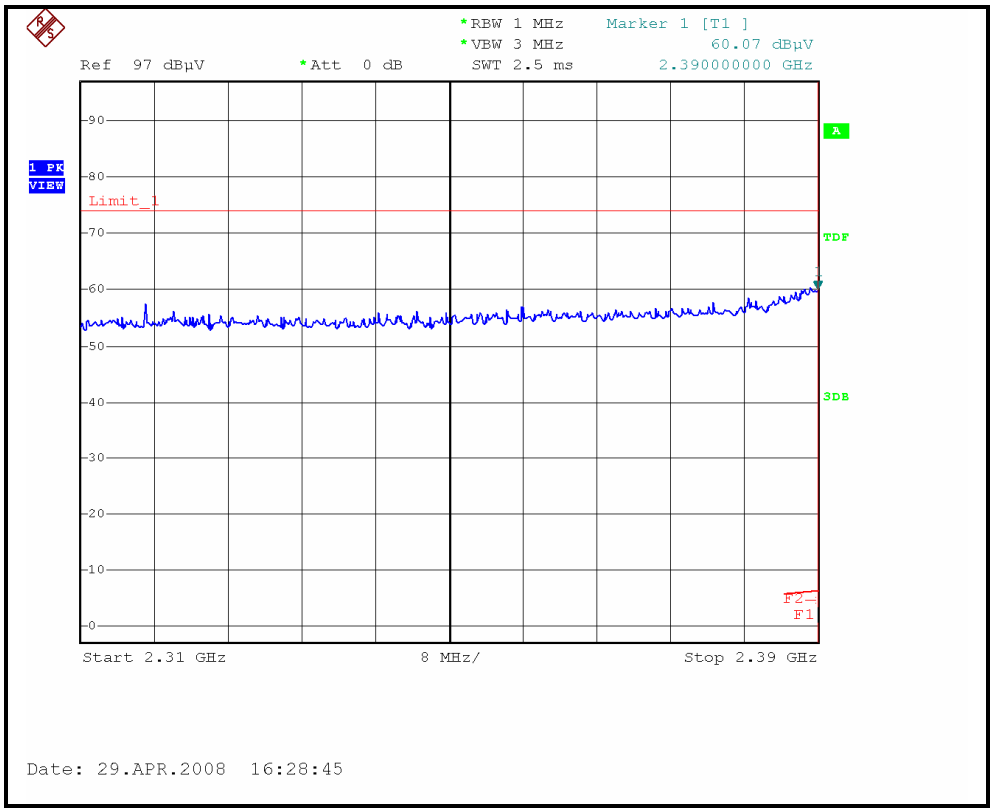
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

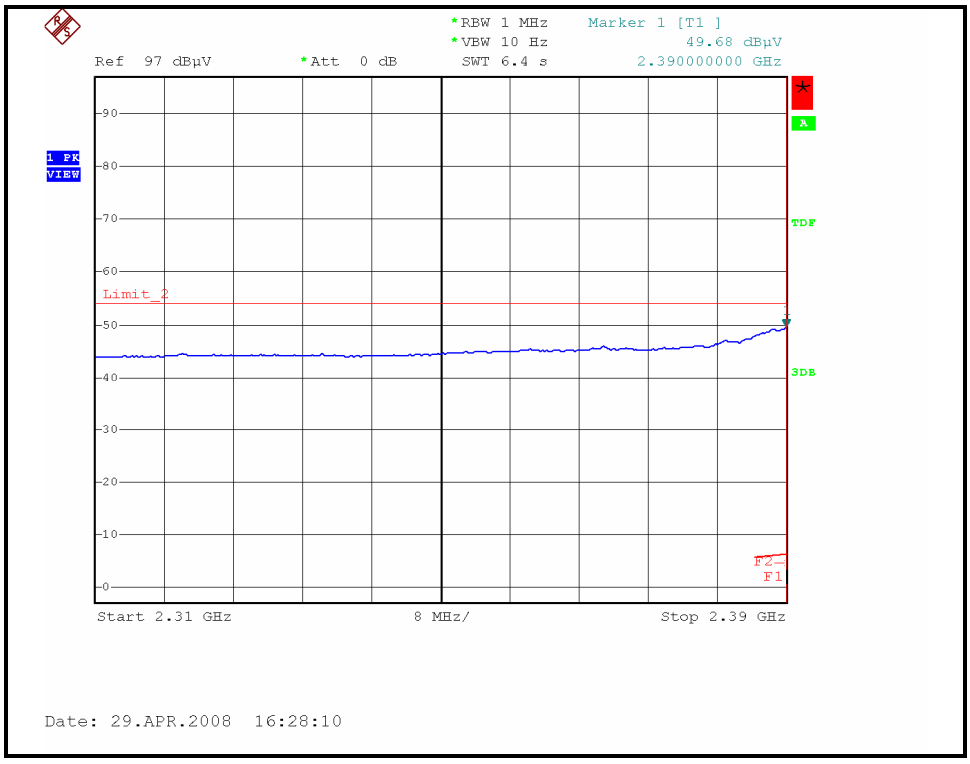
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)





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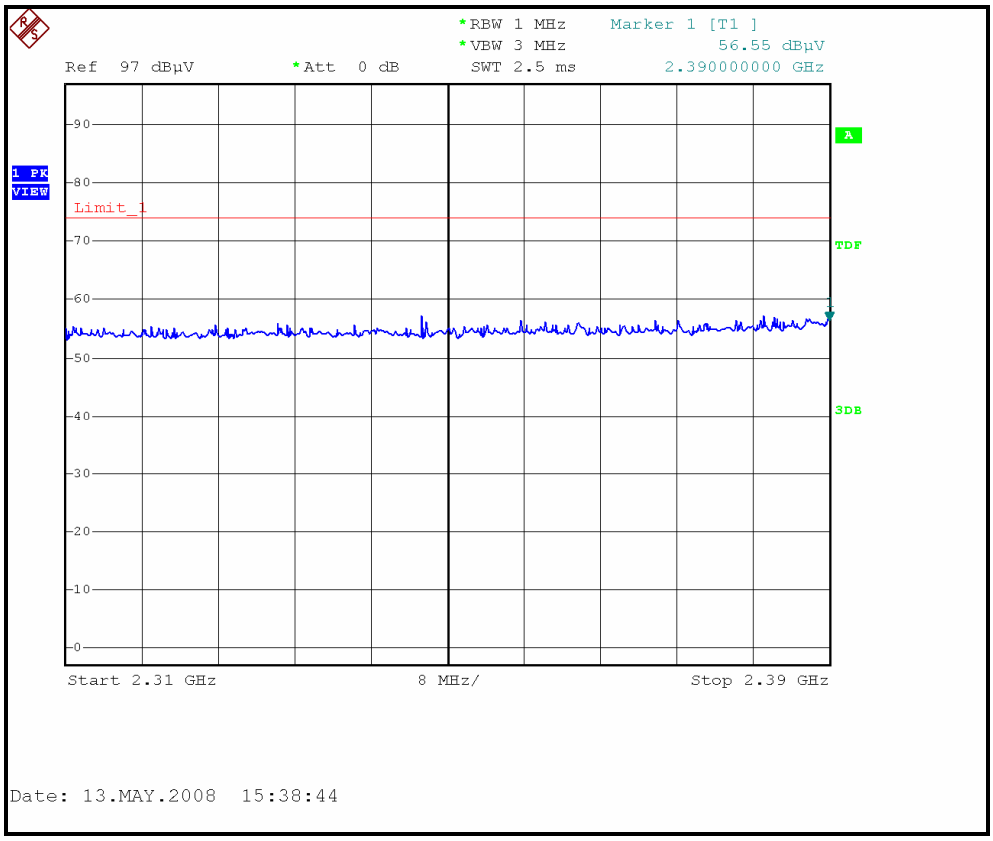
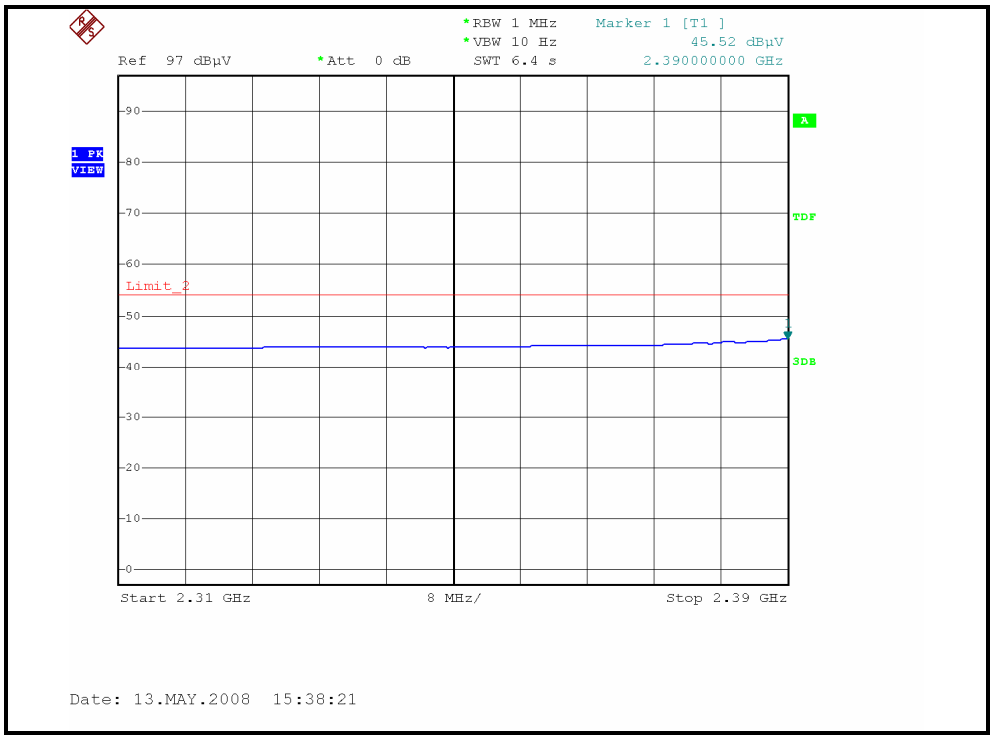
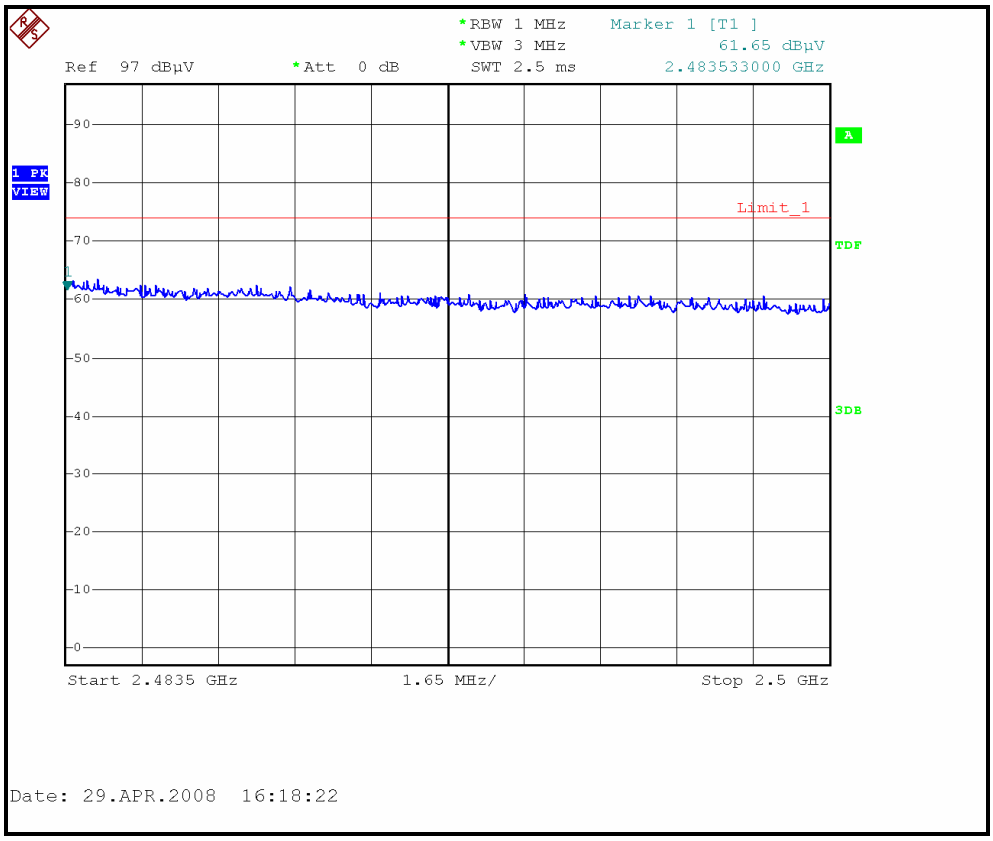
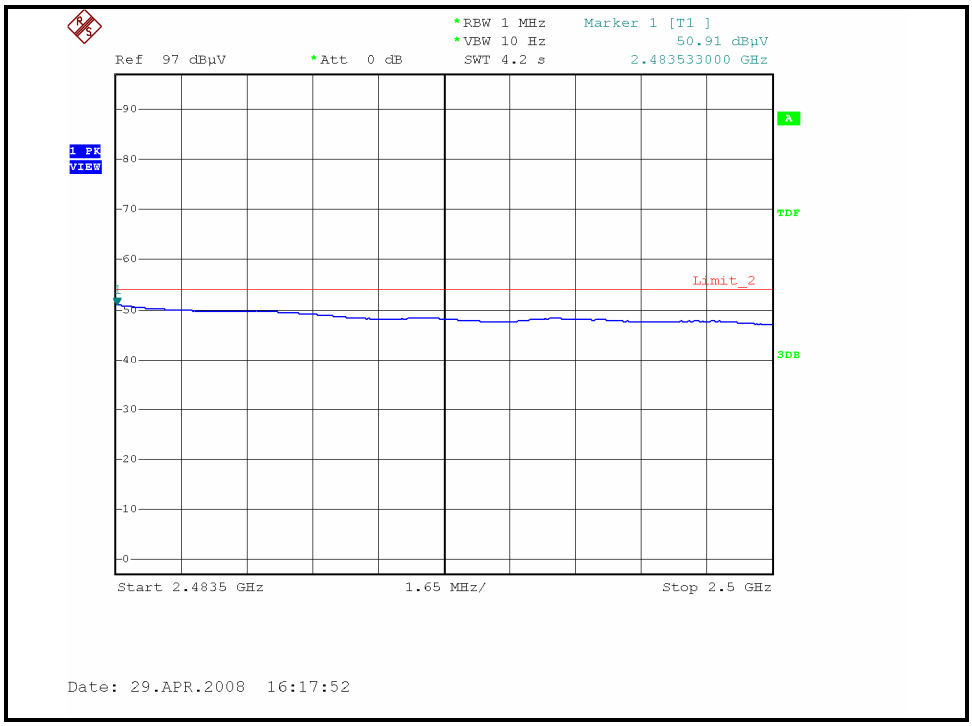


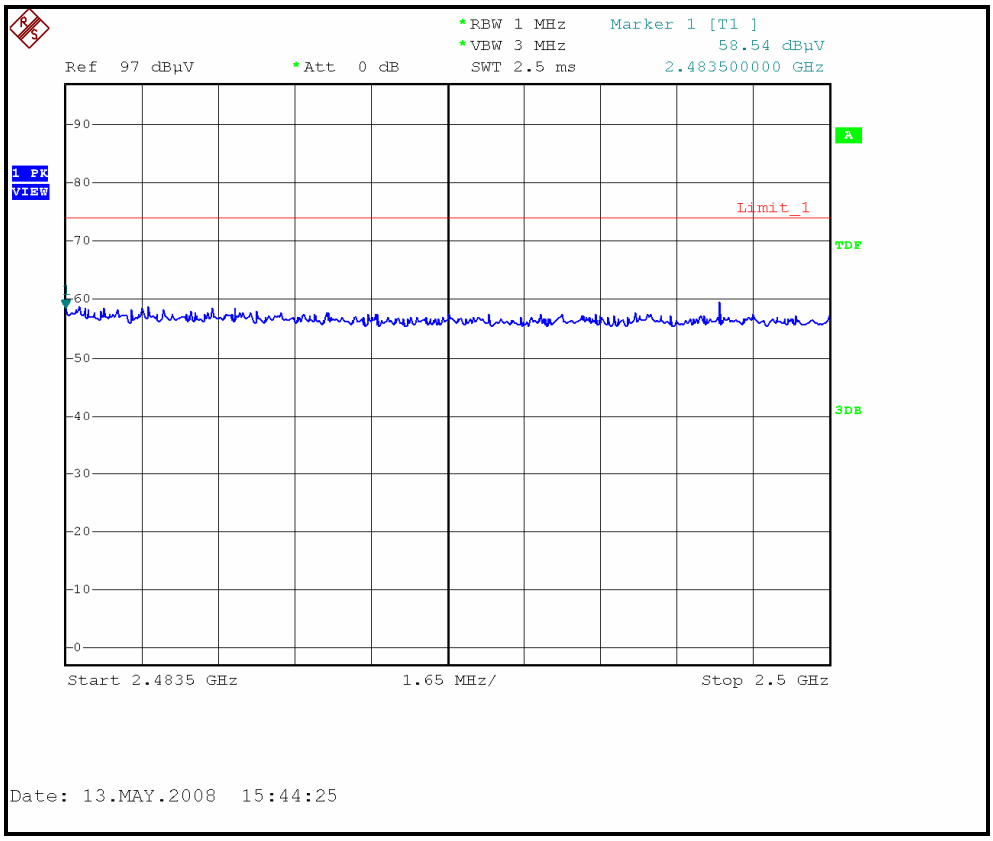


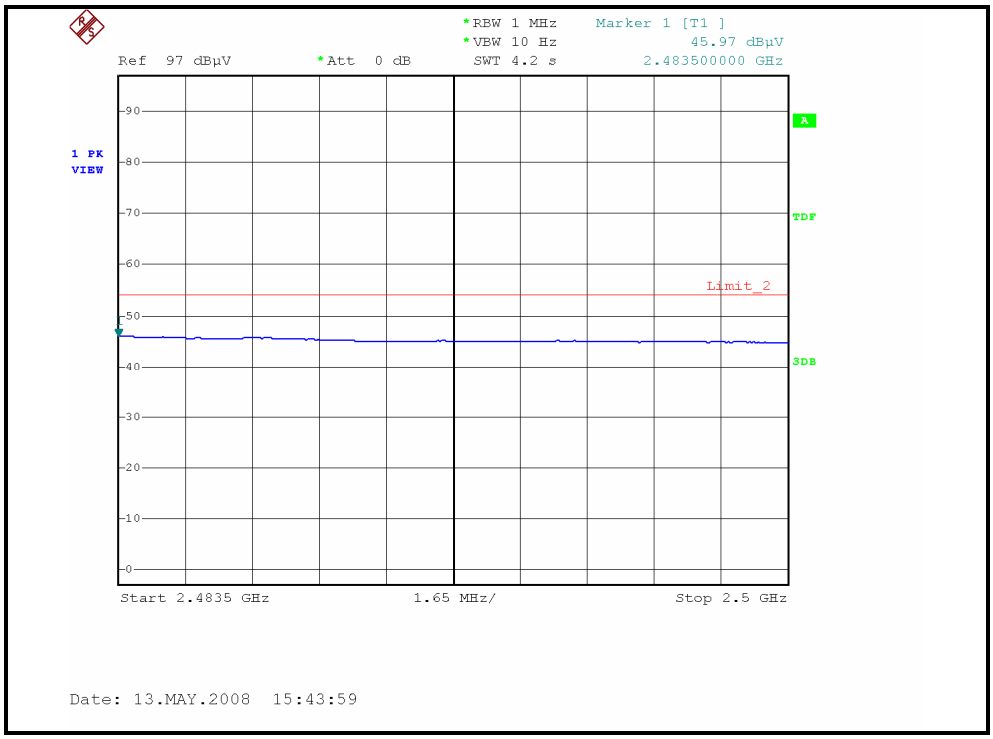
RESTRICTED BANDEDGE (802.11b MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	**2390.00**	**72.95 PK**	**74.00**	**-1.05**	**1.40 H**	**255**	**42.63**	**30.32**
2	2390.00	50.64 AV	54.00	-3.36	1.40 H	255	20.32	30.32
3	*2412.00	114.70 PK			1.72 H	246	84.29	30.41
4	*2412.00	102.70 AV			1.72 H	246	72.29	30.41
5	4824.00	51.20 PK	74.00	-22.80	1.48 H	102	15.41	35.79
6	4824.00	37.20 AV	54.00	-16.80	1.48 H	102	1.41	35.79
7	7236.00	54.20 PK	94.70	-40.50	1.30 H	215	12.60	41.60
8	7236.00	40.80 AV	82.70	-41.90	1.30 H	215	-0.80	41.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.81 PK	74.00	-11.19	1.00 V	2	32.49	30.32
2	2390.00	45.31 AV	54.00	-8.69	1.00 V	2	14.99	30.32
3	*2412.00	106.40 PK			1.00 V	2	75.99	30.41
4	*2412.00	94.70 AV			1.00 V	2	64.29	30.41
5	4824.00	54.20 PK	74.00	-19.80	1.10 V	2	18.41	35.79
6	4824.00	37.80 AV	54.00	-16.20	1.10 V	2	2.01	35.79
7	7236.00	53.00 PK	86.40	-33.40	1.36 V	72	11.40	41.60
8	7236.00	39.50 AV	74.70	-35.20	1.36 V	72	-2.10	41.60

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
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	114.80 PK			1.70 H	244	84.28	30.52
2	*2437.00	102.80 AV			1.70 H	244	72.28	30.52
3	4874.00	51.00 PK	74.00	-23.00	1.44 H	110	15.08	35.92
4	4874.00	37.40 AV	54.00	-16.60	1.44 H	110	1.48	35.92
5	7311.00	53.90 PK	74.00	-20.10	1.32 H	208	12.09	41.81
6	7311.00	40.80 AV	54.00	-13.20	1.32 H	208	-1.01	41.81
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	106.60 PK			1.00 V	0	76.08	30.52
2	*2437.00	94.80 AV			1.00 V	0	64.28	30.52
3	4874.00	54.20 PK	74.00	-19.80	1.13 V	262	18.28	35.92
4	4874.00	37.90 AV	54.00	-16.10	1.13 V	262	1.98	35.92
5	7311.00	53.20 PK	74.00	-20.80	1.48 V	92	11.39	41.81
6	7311.00	39.80 AV	54.00	-14.20	1.48 V	92	-2.01	41.81

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.30 PK			1.44 H	248	82.67	30.63
2	*2462.00	101.80 AV			1.44 H	248	71.17	30.63
3	2483.50	72.83 PK	74.00	-1.17	1.40 H	164	42.11	30.72
4	2483.50	50.64 AV	54.00	-3.36	1.40 H	164	19.92	30.72
5	4924.00	50.50 PK	74.00	-23.50	1.38 H	108	14.44	36.06
6	4924.00	36.80 AV	54.00	-17.20	1.38 H	108	0.74	36.06
7	7386.00	53.20 PK	74.00	-20.80	1.44 H	195	11.19	42.01
8	7386.00	40.20 AV	54.00	-13.80	1.44 H	195	-1.81	42.01
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.00 PK			1.00 V	2	75.37	30.63
2	*2462.00	94.70 AV			1.00 V	2	64.07	30.63
3	2483.50	60.19 PK	74.00	-13.81	1.00 V	2	29.47	30.72
4	2483.50	45.56 AV	54.00	-8.44	1.00 V	2	14.84	30.72
5	4924.00	53.60 PK	74.00	-20.40	1.18 V	250	17.54	36.06
6	4924.00	37.20 AV	54.00	-16.80	1.18 V	250	1.14	36.06
7	7386.00	52.60 PK	74.00	-21.40	1.25 V	83	10.59	42.01
8	7386.00	39.50 AV	54.00	-14.50	1.25 V	83	-2.51	42.01

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

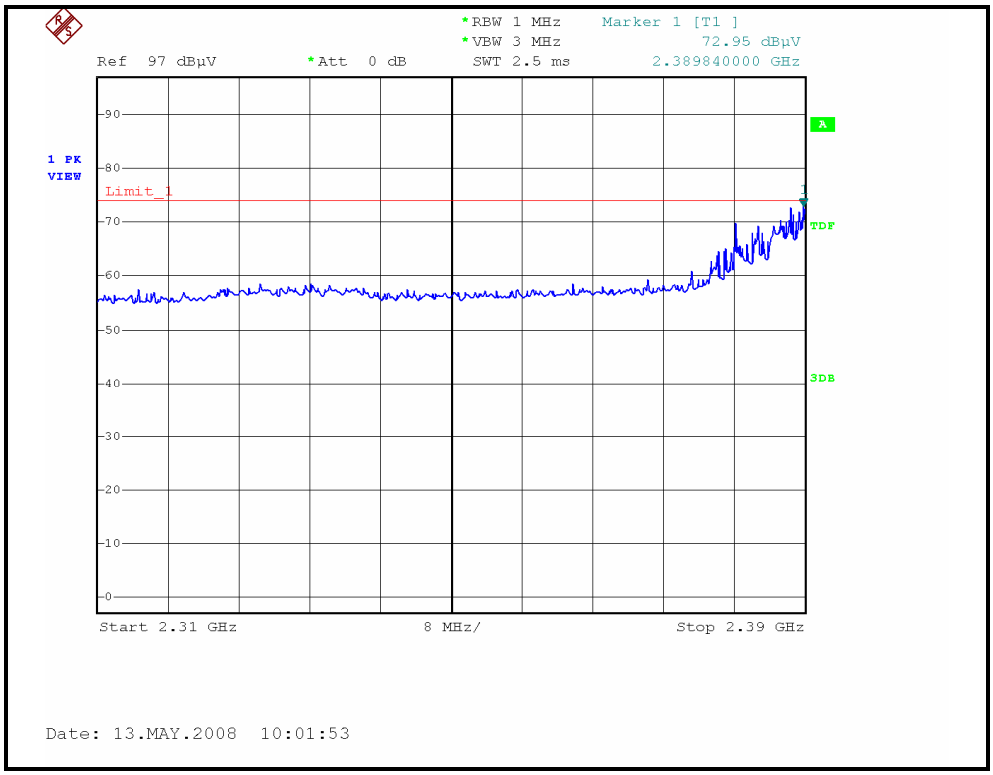
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

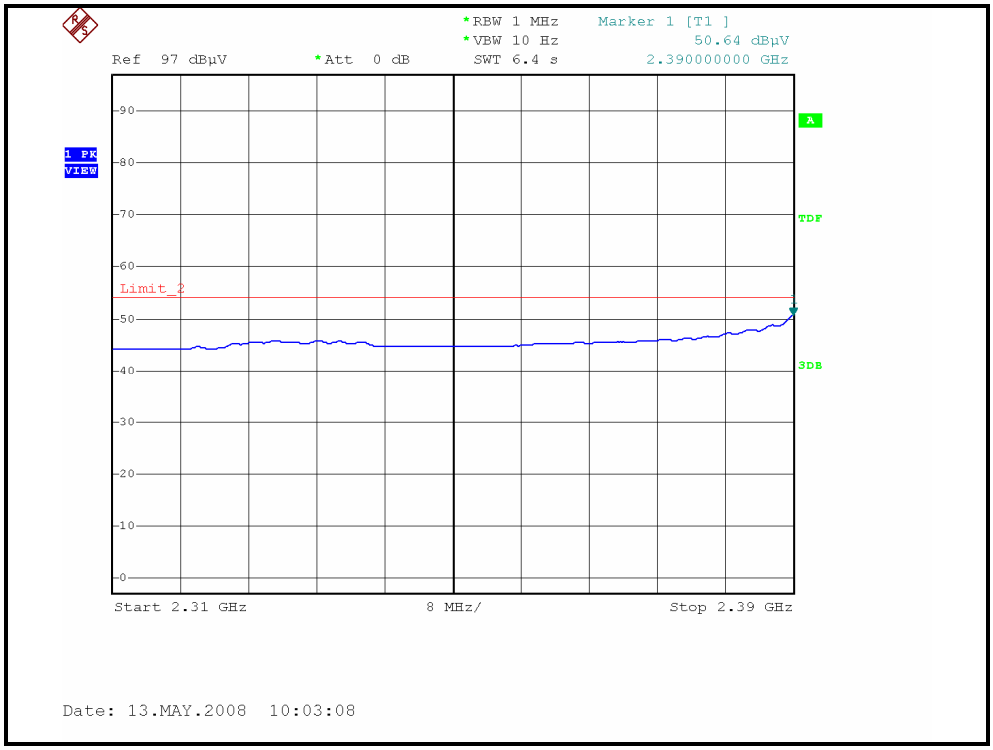
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

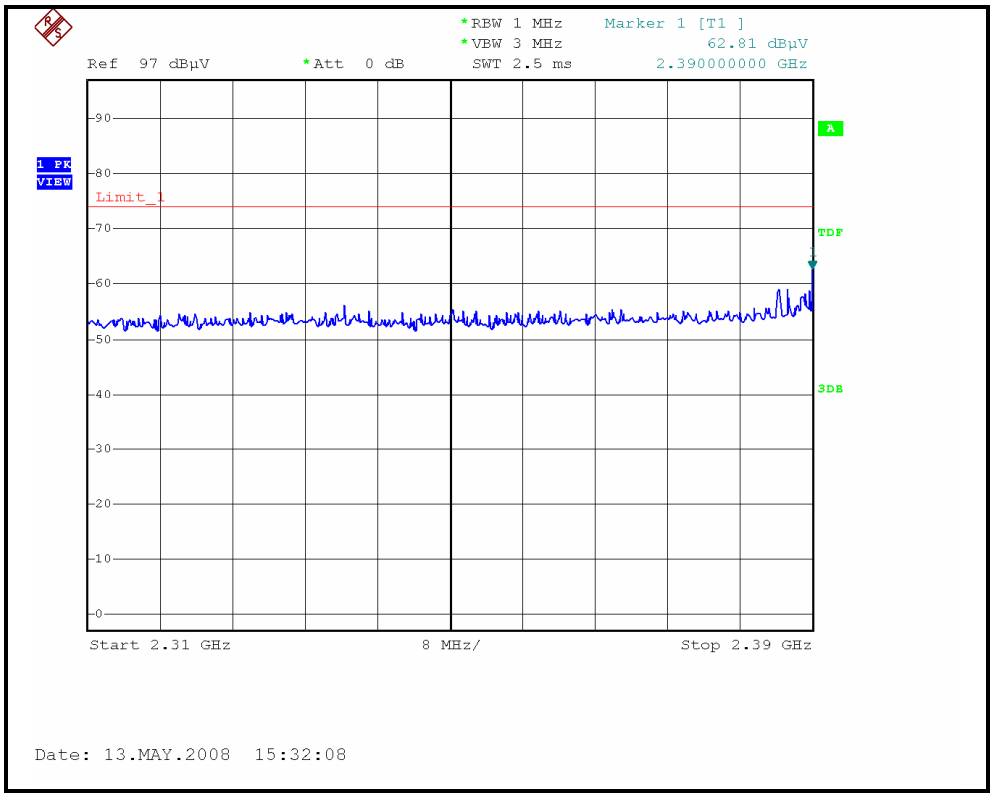
5. " * ": Fundamental frequency.

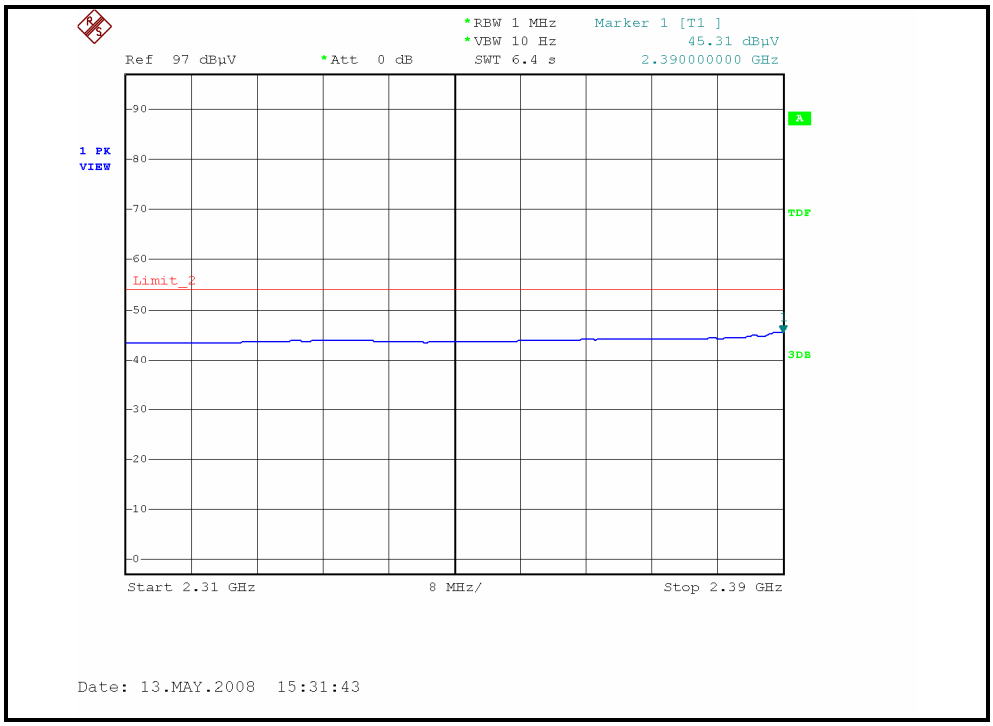
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)



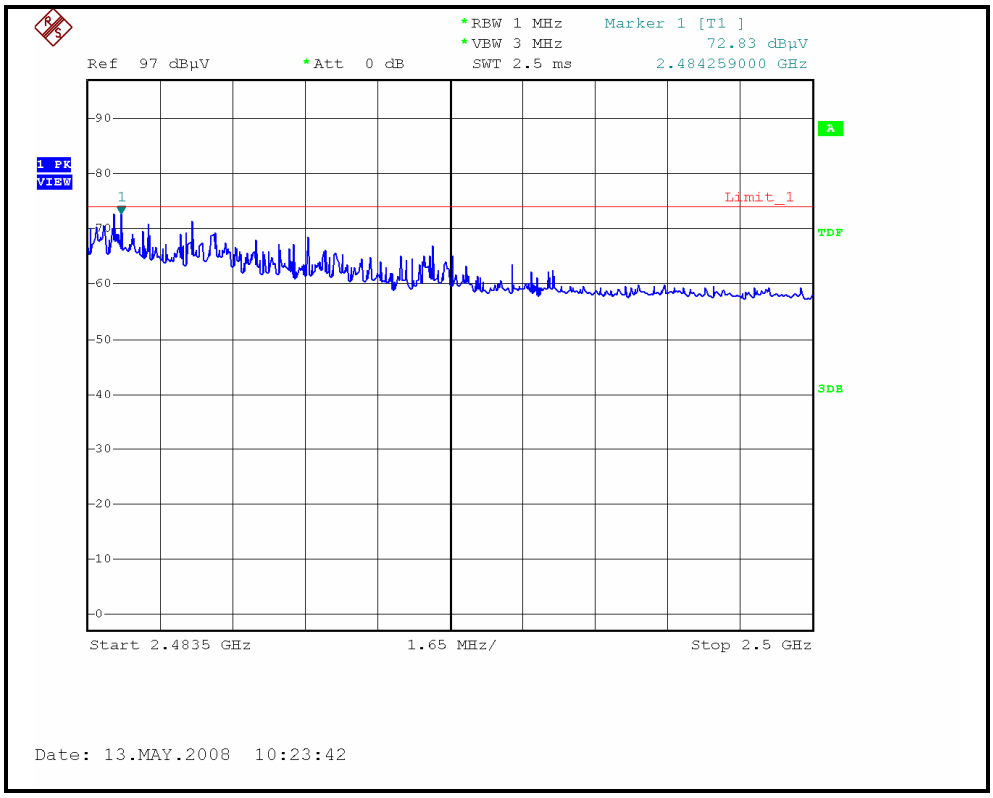


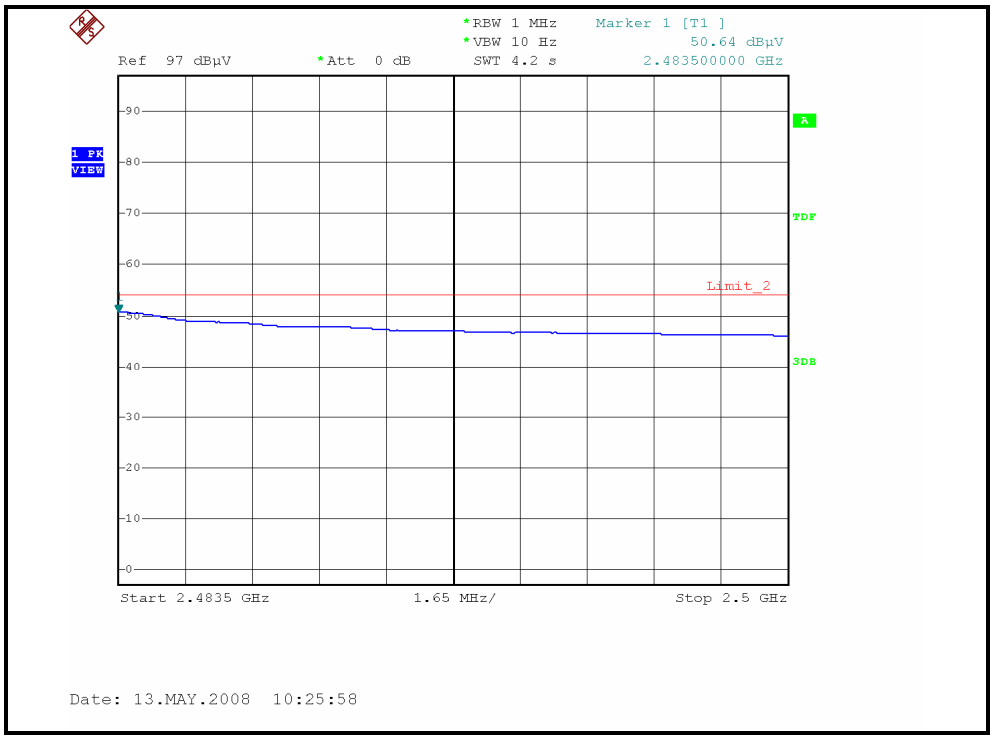
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)



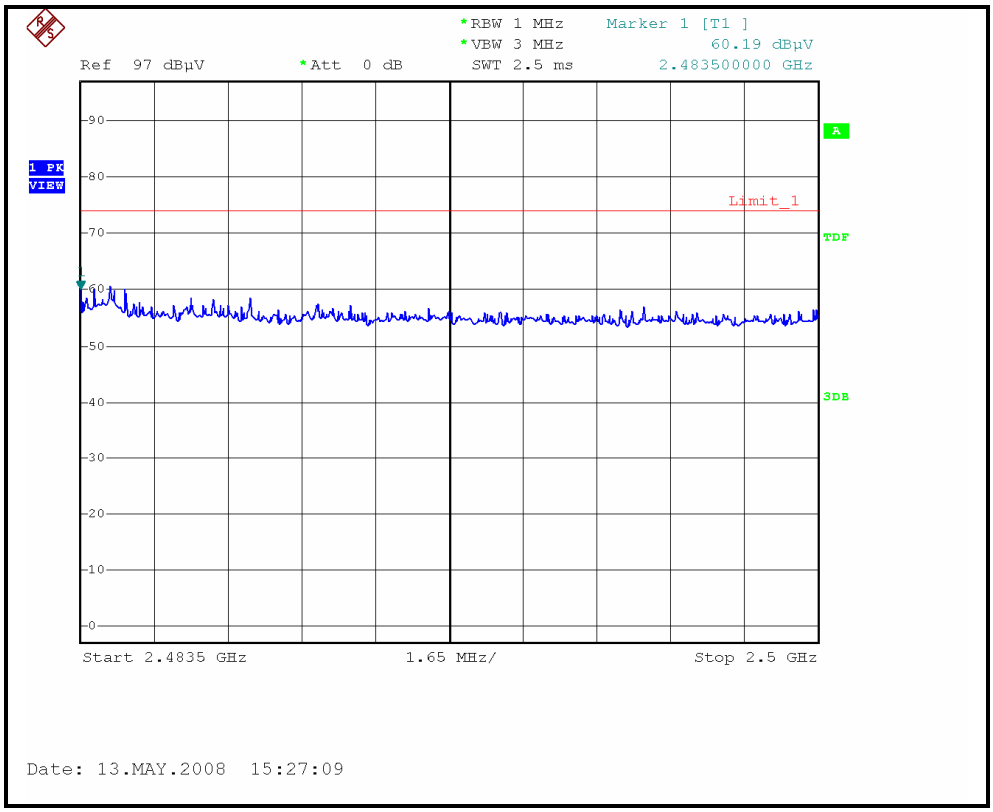


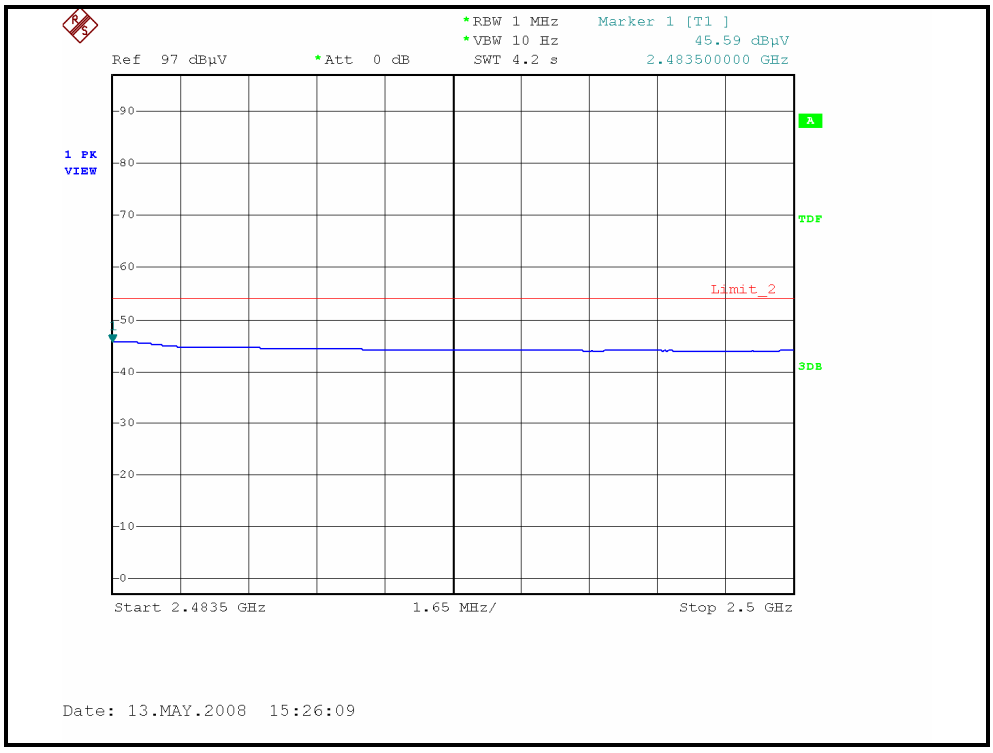
RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.88 PK	74.00	-1.12	1.44 H	70	42.56	30.32
2	2390.00	51.96 AV	54.00	-2.04	1.44 H	70	21.64	30.32
3	*2412.00	114.90 PK			1.42 H	70	84.49	30.41
4	*2412.00	101.40 AV			1.42 H	70	70.99	30.41
5	4824.00	51.40 PK	74.00	-22.60	1.48 H	104	15.61	35.79
6	4824.00	37.20 AV	54.00	-16.80	1.48 H	104	1.41	35.79
7	7236.00	53.40 PK	94.90	-41.50	1.35 H	225	11.80	41.60
8	7236.00	40.40 AV	81.40	-41.00	1.35 H	225	-1.20	41.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.90 PK	74.00	-11.10	1.00 V	208	32.58	30.32
2	2390.00	46.17 AV	54.00	-7.83	1.00 V	208	15.85	30.32
3	*2412.00	106.30 PK			1.00 V	208	75.89	30.41
4	*2412.00	93.50 AV			1.00 V	208	63.09	30.41
5	4824.00	53.60 PK	74.00	-20.40	1.05 V	155	17.81	35.79
6	4824.00	37.40 AV	54.00	-16.60	1.05 V	155	1.61	35.79
7	7236.00	53.20 PK	86.30	-33.10	1.22 V	72	11.60	41.60
8	7236.00	39.80 AV	73.50	-33.70	1.22 V	72	-1.80	41.60

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
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	115.00 PK			1.42 H	70	84.48	30.52
2	*2437.00	101.60 AV			1.42 H	70	71.08	30.52
3	4874.00	51.20 PK	74.00	-22.80	1.50 H	115	15.28	35.92
4	4874.00	37.20 AV	54.00	-16.80	1.50 H	115	1.28	35.92
5	7311.00	53.60 PK	74.00	-20.40	1.33 H	212	11.79	41.81
6	7311.00	40.50 AV	54.00	-13.50	1.33 H	212	-1.31	41.81
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	106.80 PK			1.00 V	2	76.28	30.52
2	*2437.00	93.80 AV			1.00 V	2	63.28	30.52
3	4874.00	54.00 PK	74.00	-20.00	1.10 V	165	18.08	35.92
4	4874.00	37.60 AV	54.00	-16.40	1.10 V	165	1.68	35.92
5	7311.00	53.30 PK	74.00	-20.70	1.38 V	85	11.49	41.81
6	7311.00	39.80 AV	54.00	-14.20	1.38 V	85	-2.01	41.81

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	114.50 PK			1.44 H	68	83.87	30.63
2	*2462.00	101.00 AV			1.44 H	68	70.37	30.63
3	2483.50	72.68 PK	74.00	-1.32	1.42 H	230	41.96	30.72
4	2483.50	51.43 AV	54.00	-2.57	1.42 H	230	20.71	30.72
5	4924.00	50.80 PK	74.00	-23.20	1.52 H	108	14.74	36.06
6	4924.00	36.80 AV	54.00	-17.20	1.52 H	108	0.74	36.06
7	7386.00	53.00 PK	74.00	-21.00	1.36 H	242	10.99	42.01
8	7386.00	40.20 AV	54.00	-13.80	1.36 H	242	-1.81	42.01
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.50 PK			1.00 V	2	74.87	30.63
2	*2462.00	92.40 AV			1.00 V	2	61.77	30.63
3	2483.50	62.67 PK	74.00	-11.33	1.00 V	2	31.95	30.72
4	2483.50	45.67 AV	54.00	-8.33	1.00 V	2	14.95	30.72
5	4924.00	53.20 PK	74.00	-20.80	1.06 V	170	17.14	36.06
6	4924.00	37.00 AV	54.00	-17.00	1.06 V	170	0.94	36.06
7	7386.00	52.60 PK	74.00	-21.40	1.32 V	92	10.59	42.01
8	7386.00	39.20 AV	54.00	-14.80	1.32 V	92	-2.81	42.01

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

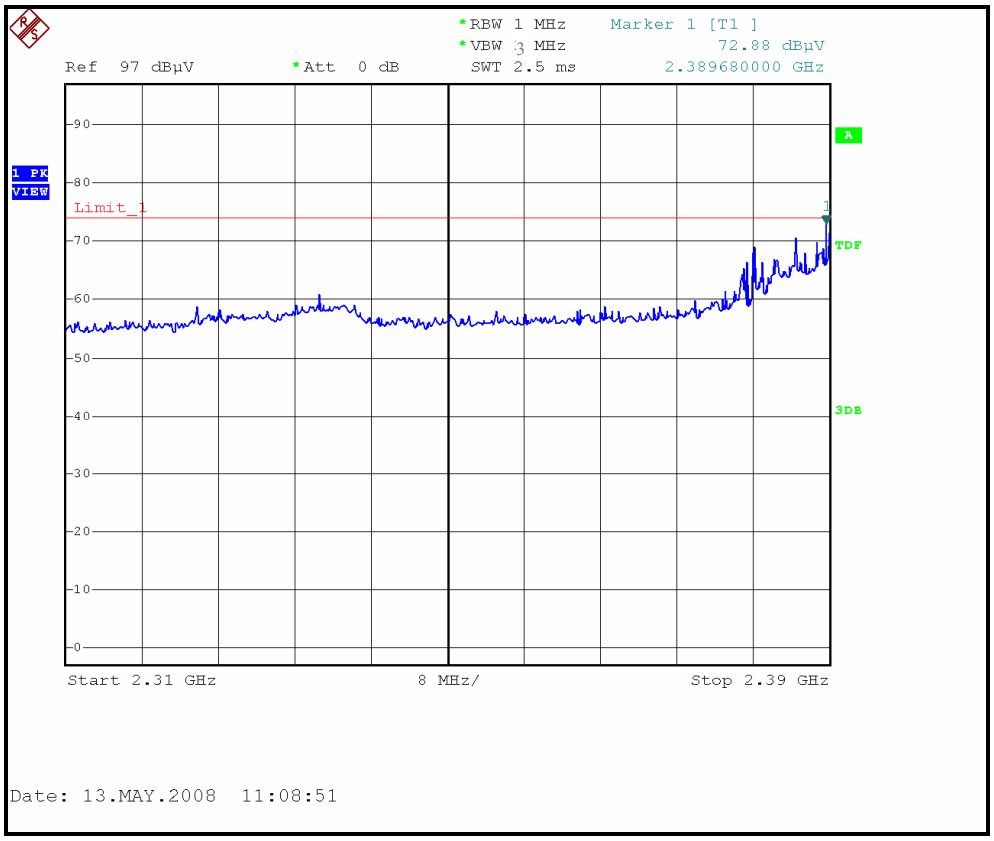
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

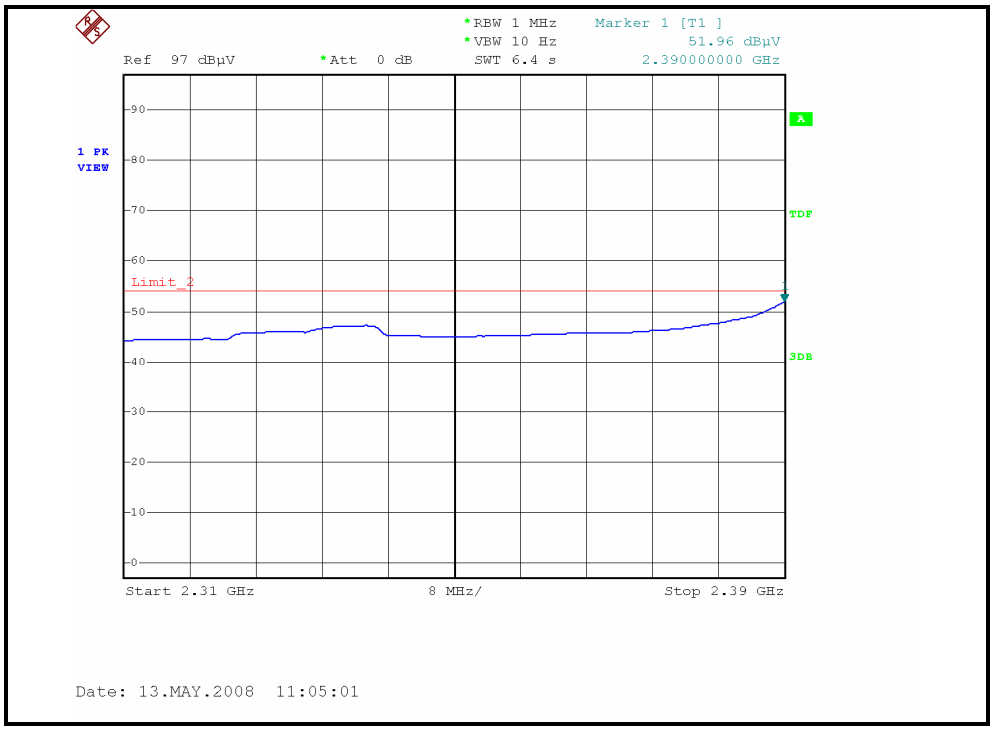
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

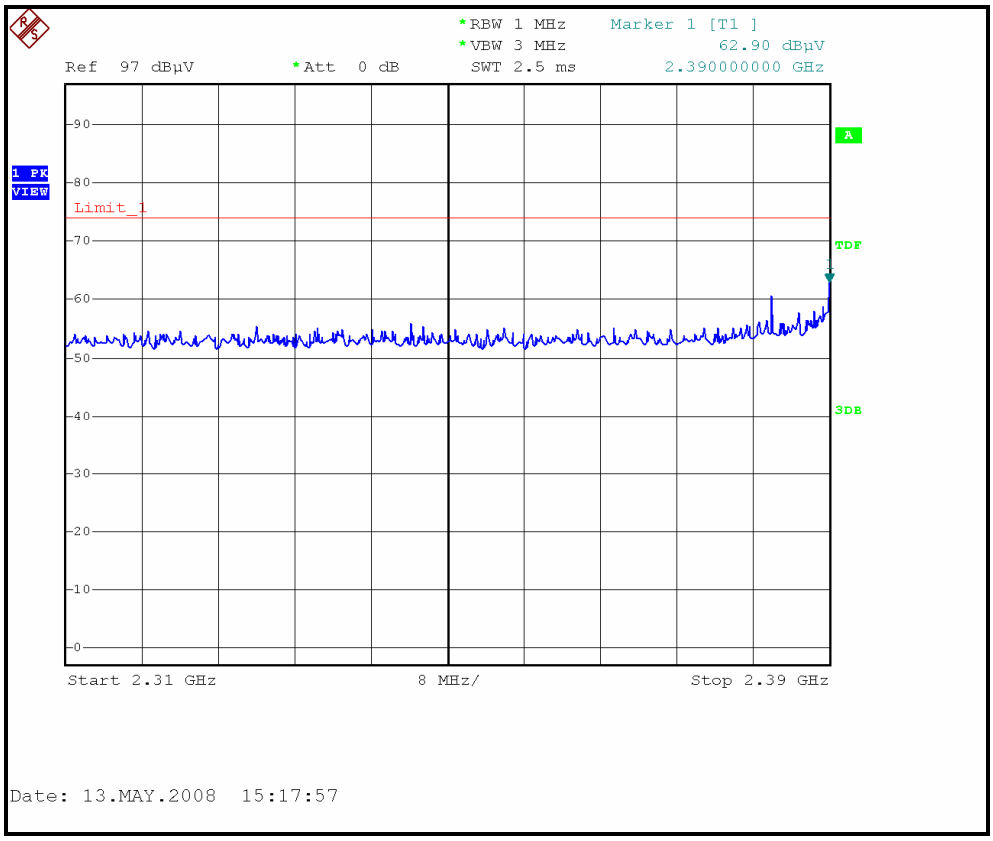
5. " * ": Fundamental frequency.

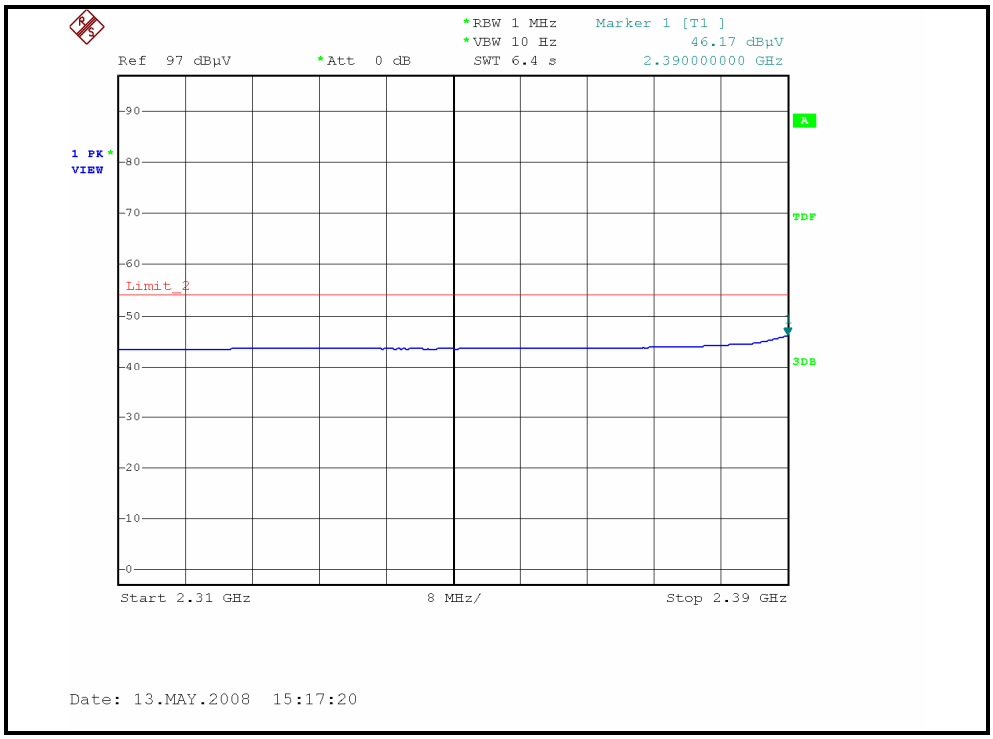
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, HORIZONTAL)



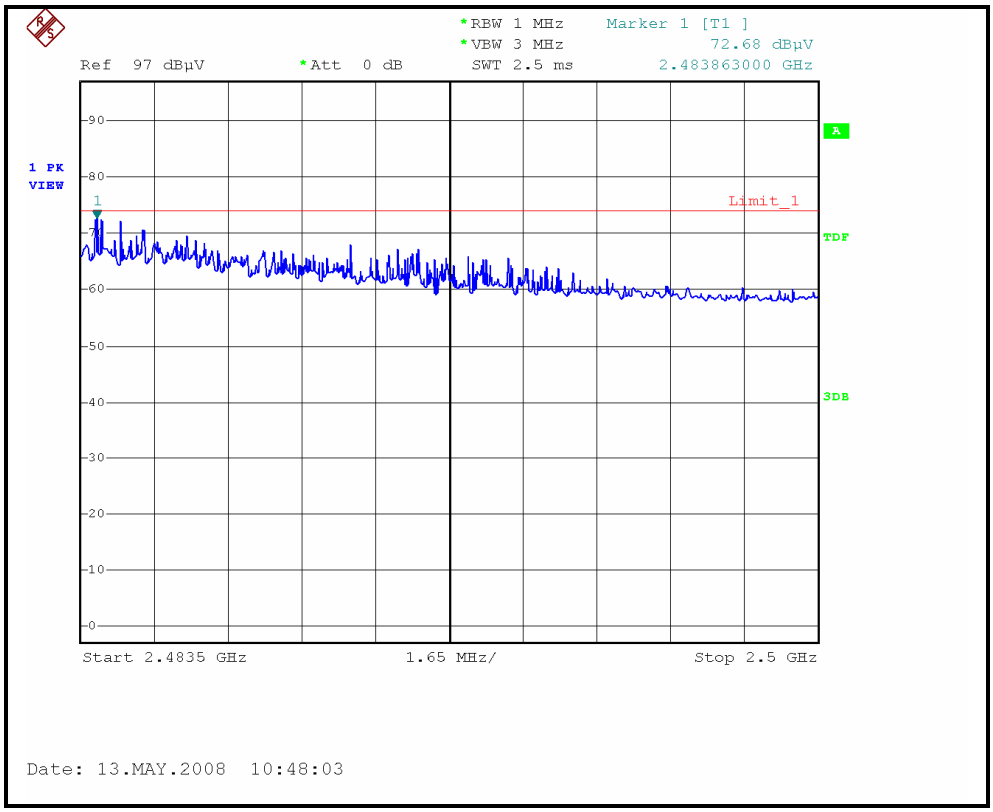


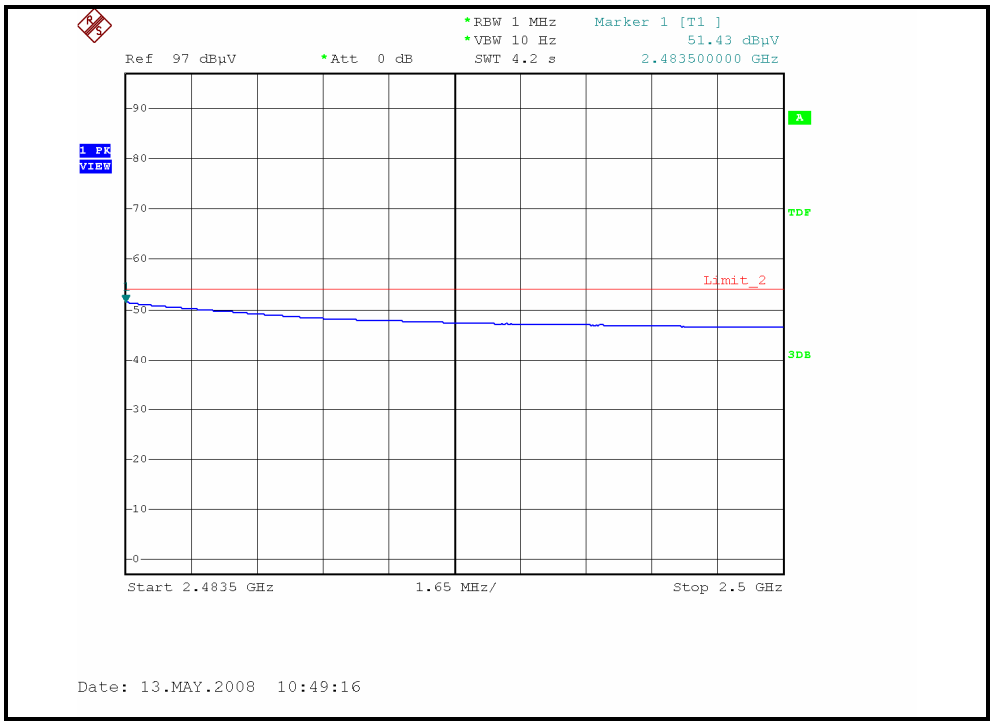
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, VERTICAL)



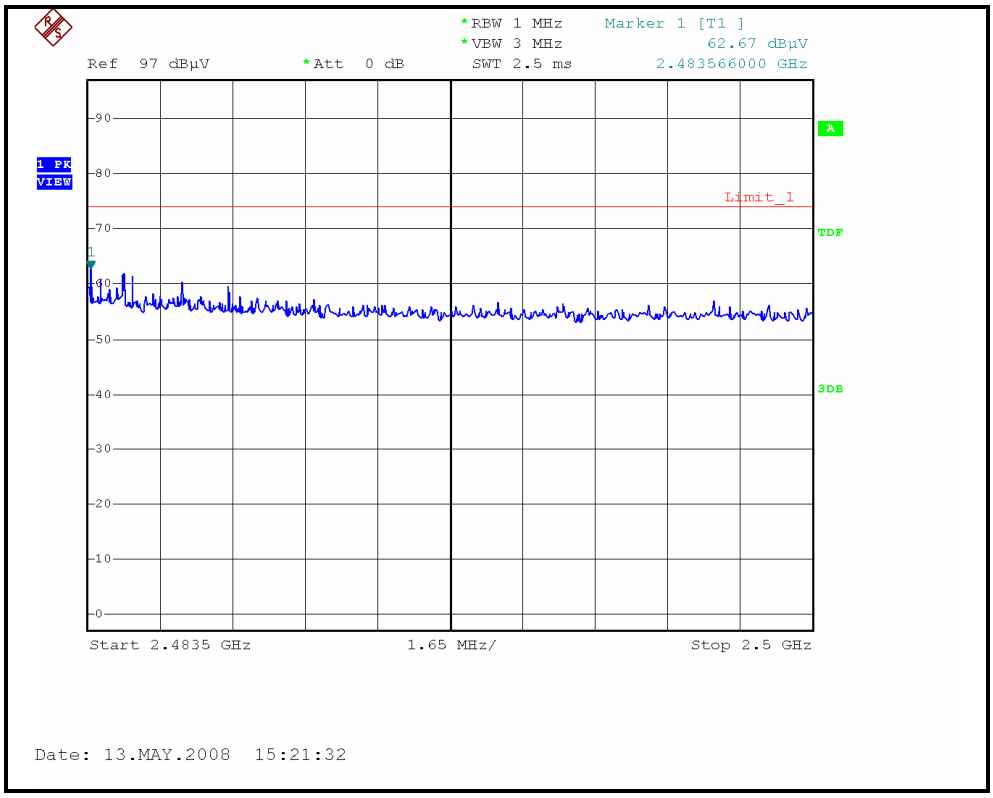


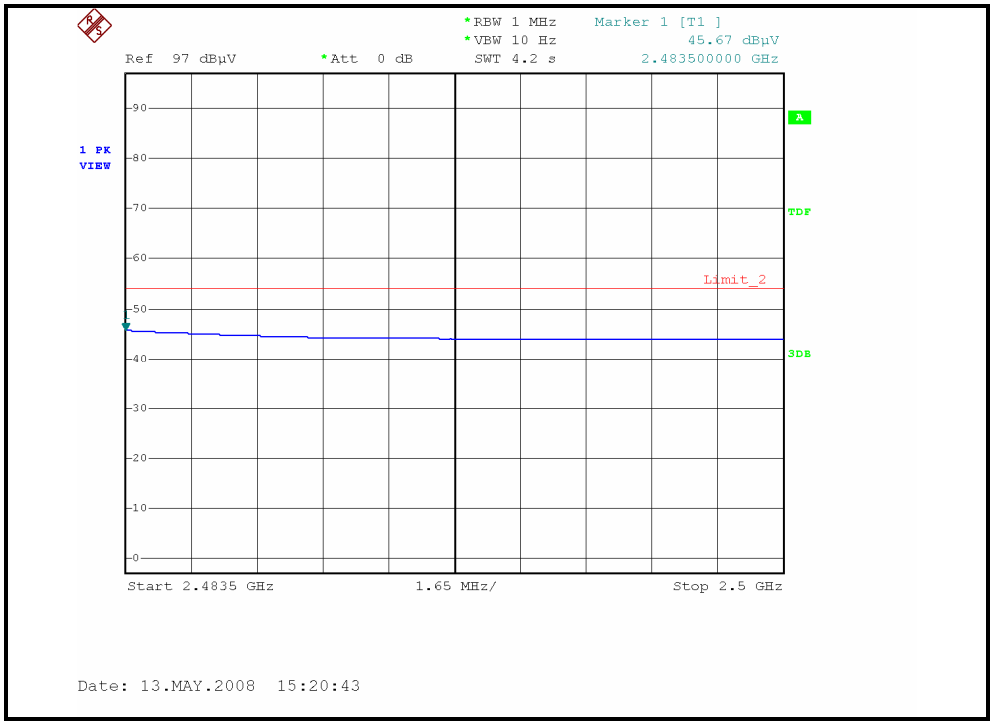
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH11, HORIZONTAL)





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





DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.96 PK	74.00	-7.04	1.42 H	72	36.64	30.32
2	2390.00	52.57 AV	54.00	-1.43	1.42 H	72	22.25	30.32
3	*2422.00	111.10 PK			1.44 H	70	80.65	30.45
4	*2422.00	97.30 AV			1.44 H	70	66.85	30.45
5	4844.00	51.20 PK	74.00	-22.80	1.66 H	125	15.36	35.84
6	4844.00	36.20 AV	54.00	-17.80	1.66 H	125	0.36	35.84
7	7266.00	53.20 PK	74.00	-20.80	1.33 H	115	11.52	41.68
8	7266.00	39.50 AV	54.00	-14.50	1.33 H	115	-2.18	41.68
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.42 PK	74.00	-14.58	1.00 V	0	29.10	30.32
2	2390.00	46.79 AV	54.00	-7.21	1.00 V	0	16.47	30.32
3	*2422.00	102.50 PK			1.00 V	0	72.05	30.45
4	*2422.00	89.90 AV			1.00 V	0	59.45	30.45
5	4844.00	49.20 PK	74.00	-24.80	1.14 V	212	13.36	35.84
6	4844.00	35.00 AV	54.00	-19.00	1.14 V	212	-0.84	35.84
7	7266.00	52.00 PK	74.00	-22.00	1.05 V	36	10.32	41.68
8	7266.00	39.20 AV	54.00	-14.80	1.05 V	36	-2.48	41.68

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	112.70 PK			1.44 H	70	82.18	30.52
2	*2437.00	99.10 AV			1.44 H	70	68.58	30.52
3	4874.00	51.80 PK	74.00	-22.20	1.75 H	110	15.88	35.92
4	4874.00	36.90 AV	54.00	-17.10	1.75 H	110	0.98	35.92
5	7311.00	53.60 PK	74.00	-20.40	1.30 H	110	11.79	41.81
6	7311.00	39.80 AV	54.00	-14.20	1.30 H	110	-2.01	41.81
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.80 PK			1.00 V	2	74.28	30.52
2	*2437.00	91.20 AV			1.00 V	2	60.68	30.52
3	4874.00	49.90 PK	74.00	-24.10	1.16 V	202	13.98	35.92
4	4874.00	35.80 AV	54.00	-18.20	1.16 V	202	-0.12	35.92
5	7311.00	52.80 PK	74.00	-21.20	1.07 V	20	10.99	41.81
6	7311.00	39.50 AV	54.00	-14.50	1.07 V	20	-2.31	41.81

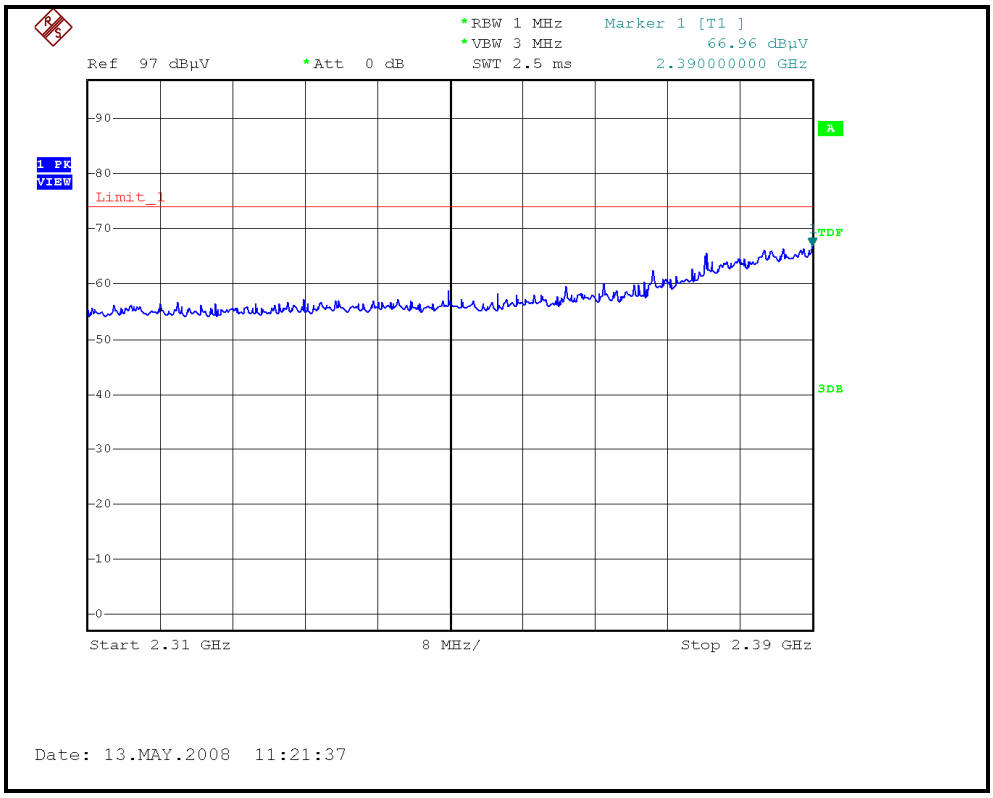
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

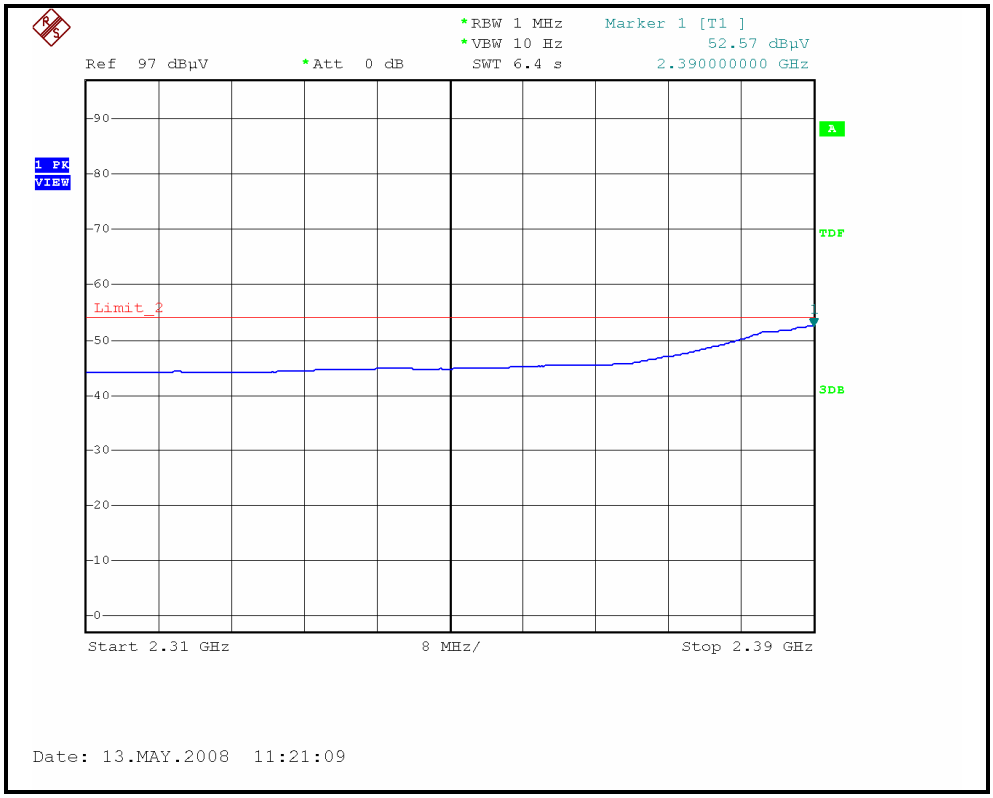
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	111.00 PK			1.42 H	70	80.42	30.58
2	*2452.00	97.40 AV			1.42 H	70	66.82	30.58
3	2483.50	68.90 PK	74.00	-5.10	1.42 H	70	38.18	30.72
4	2483.50	52.29 AV	54.00	-1.71	1.42 H	70	21.57	30.72
5	4904.00	51.20 PK	74.00	-22.80	1.65 H	115	15.20	36.00
6	4904.00	36.20 AV	54.00	-17.80	1.65 H	115	0.20	36.00
7	7356.00	53.00 PK	74.00	-21.00	1.33 H	120	11.07	41.93
8	7356.00	39.20 AV	54.00	-14.80	1.33 H	120	-2.73	41.93
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	102.50 PK			1.00 V	0	71.92	30.58
2	*2452.00	89.80 AV			1.00 V	0	59.22	30.58
3	2483.50	60.58 PK	74.00	-13.42	1.00 V	0	29.86	30.72
4	2483.50	47.61 AV	54.00	-6.39	1.00 V	0	16.89	30.72
5	4904.00	49.00 PK	74.00	-25.00	1.06 V	208	13.00	36.00
6	4904.00	35.20 AV	54.00	-18.80	1.06 V	208	-0.80	36.00
7	7356.00	52.40 PK	74.00	-21.60	1.17 V	25	10.47	41.93
8	7356.00	39.20 AV	54.00	-14.80	1.17 V	25	-2.73	41.93

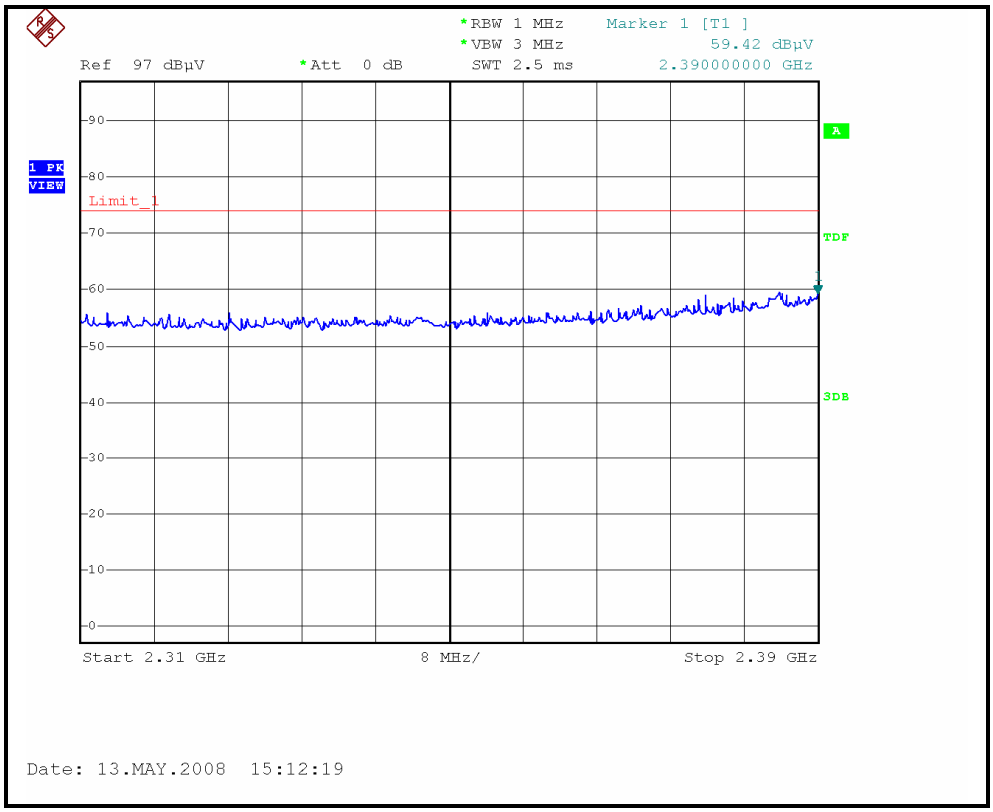
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

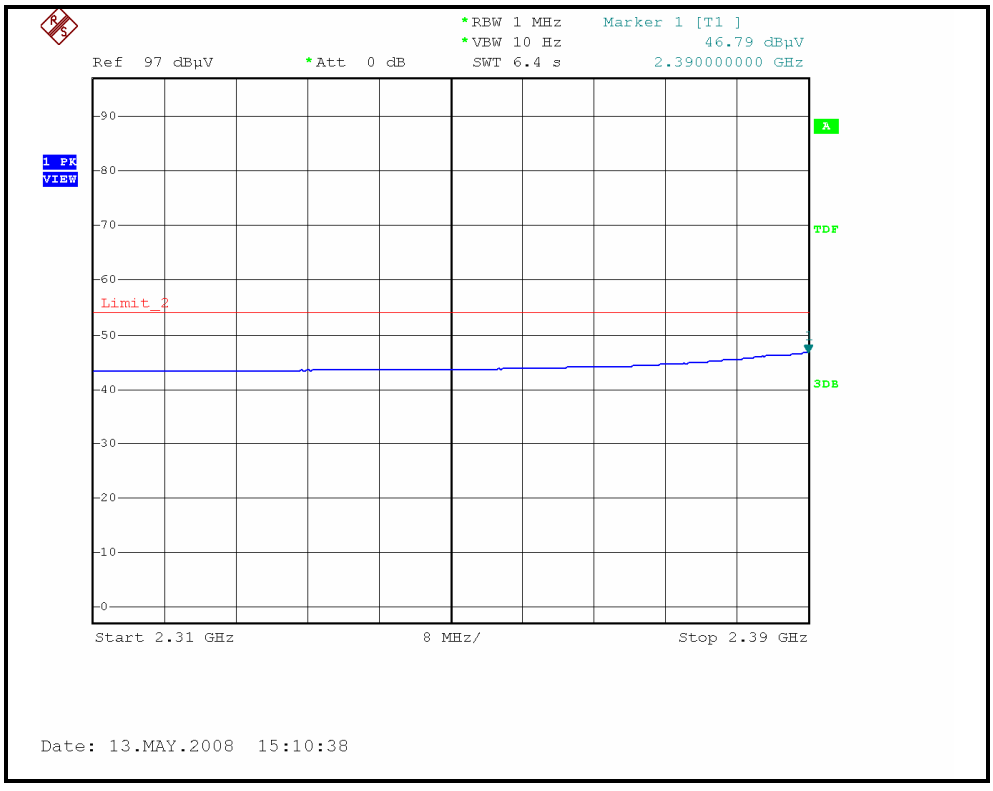
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, HORIZONTAL)



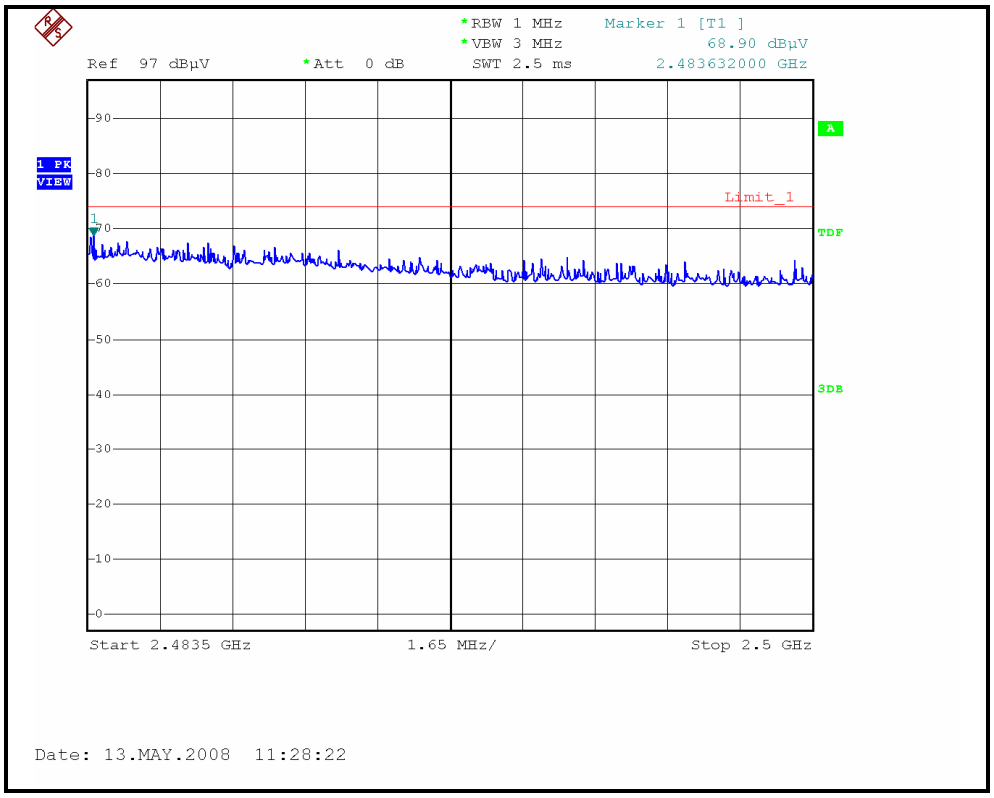


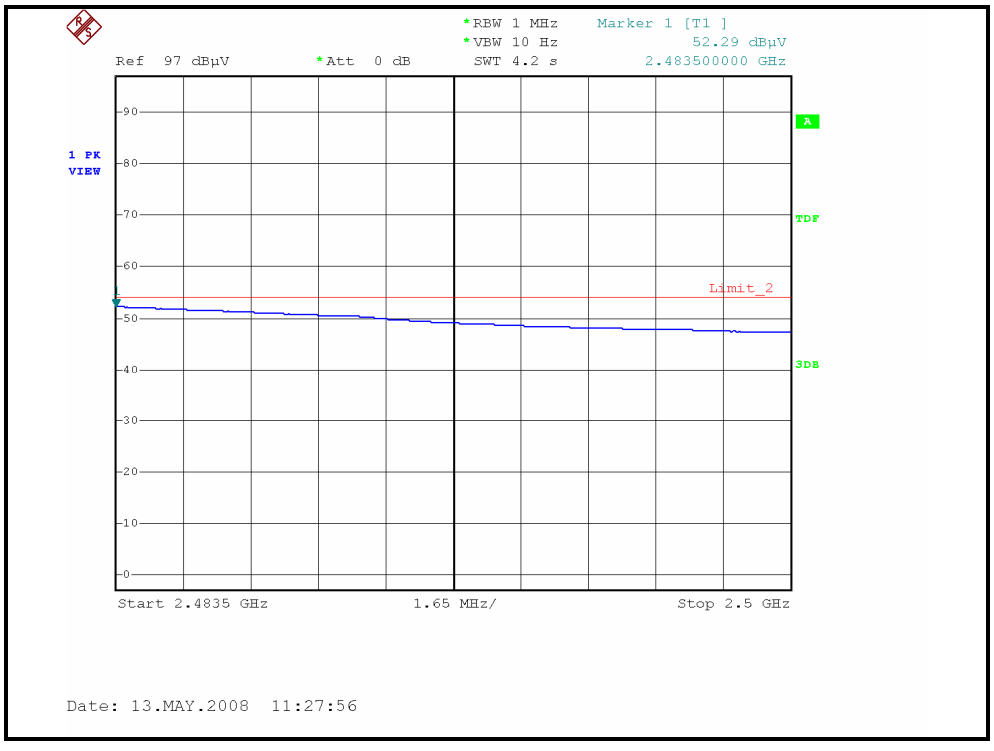
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, VERTICAL)



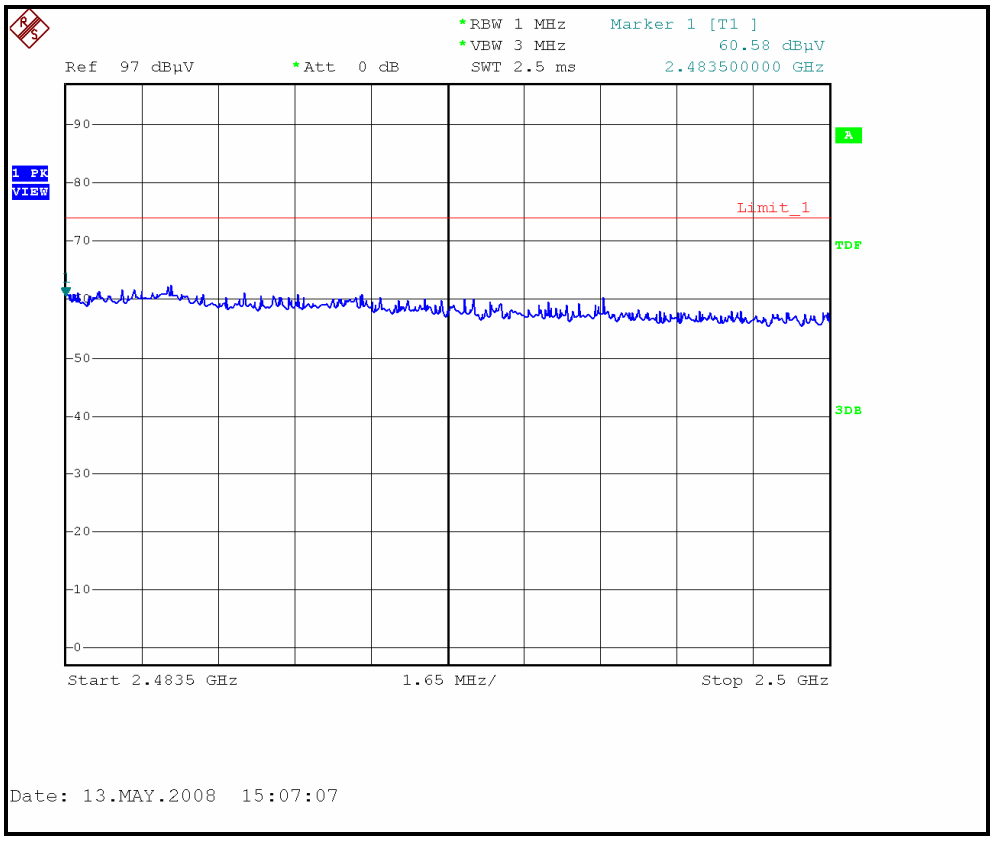


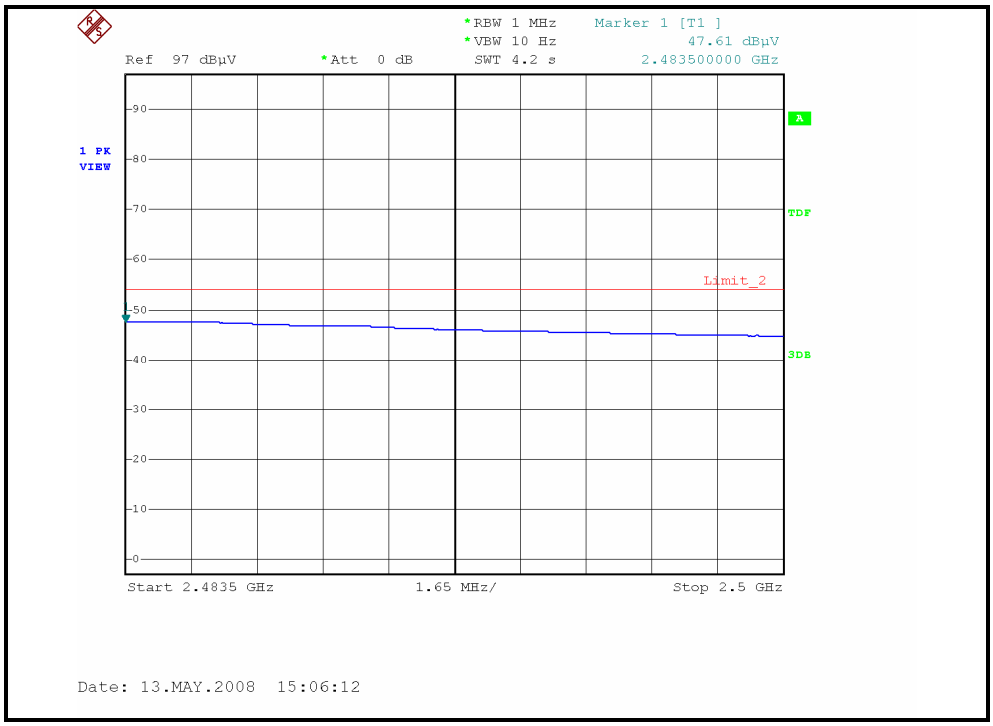
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH7, HORIZONTAL)





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





4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

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

NOTE:

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

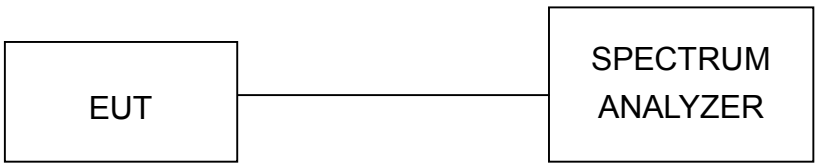
4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

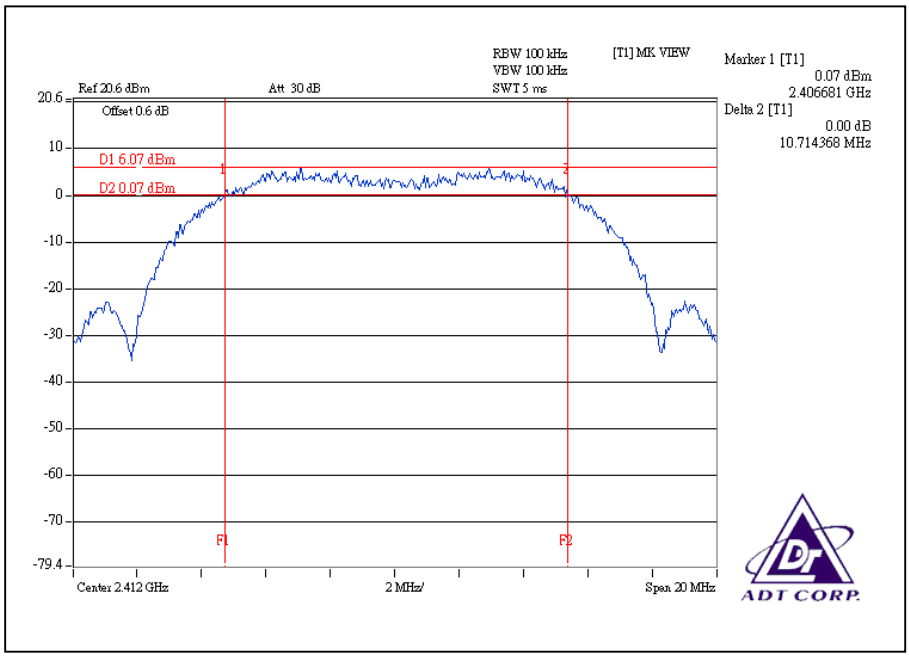
4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

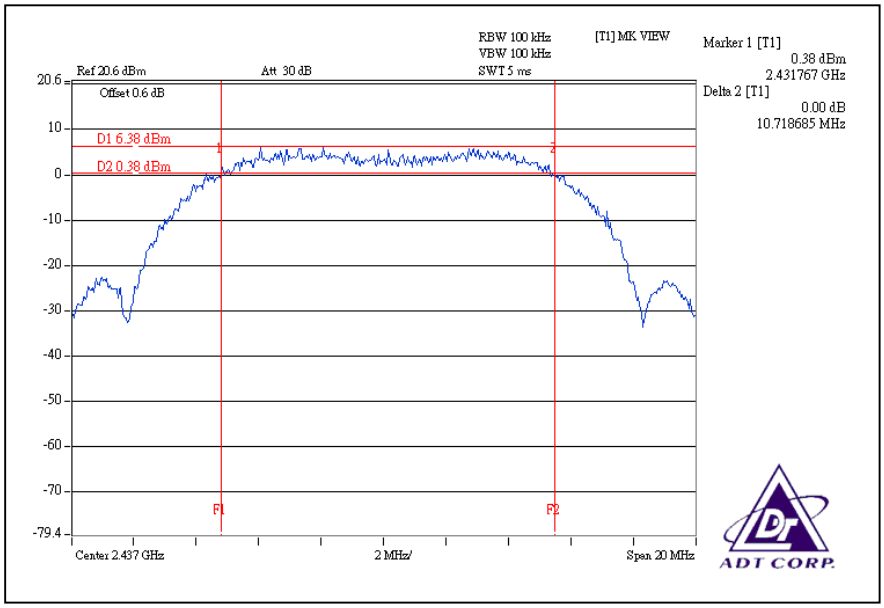
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	10.71	0.5	PASS
6	2437	10.72	0.5	PASS
11	2462	11.48	0.5	PASS

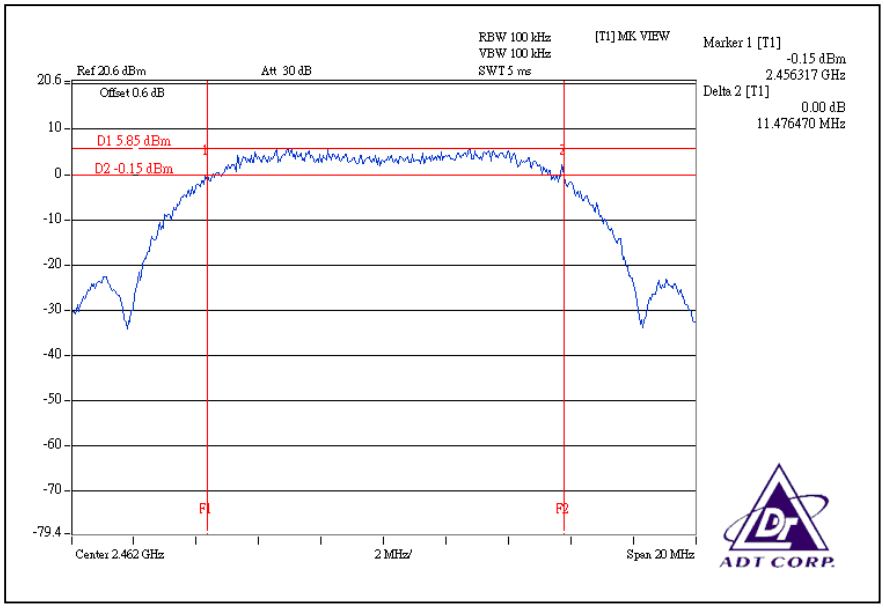
CH1



CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
0.38 dBm
2.431767 GHz
Delta 2 [T1]
0.00 dB
10.718685 MHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 6.38 dBm
D2 0.38 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

CH11

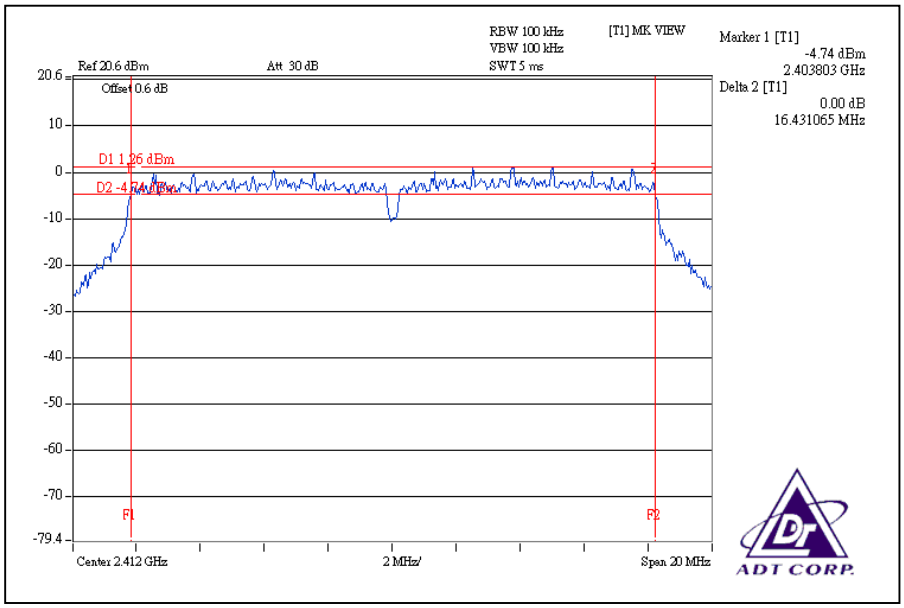

RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-0.15 dBm
2.456317 GHz
Delta 2 [T1]
0.00 dB
11.476470 MHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 5.85 dBm
D2 -0.15 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

802.11g OFDM MODULATION:

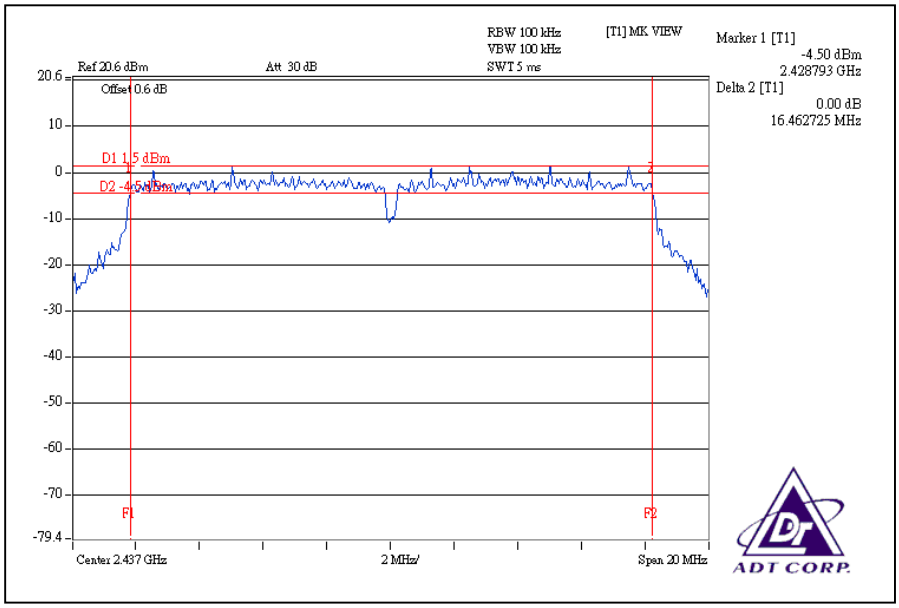
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	16.43	16.44	0.5	PASS
6	2437	16.46	16.49	0.5	PASS
11	2462	16.42	16.45	0.5	PASS

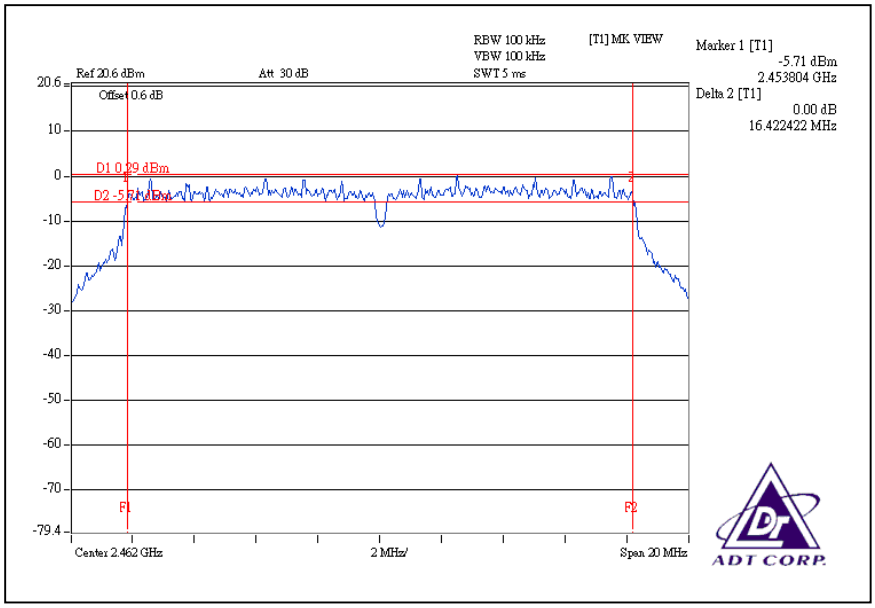
For Chain(0): CH1



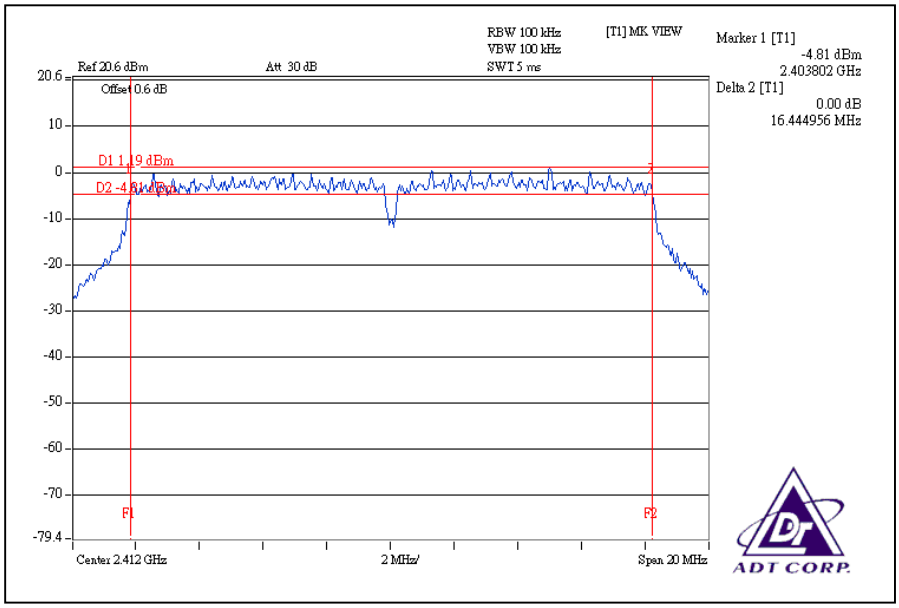
CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-4.50 dBm
2.428793 GHz
Delta 2 [T1]
0.00 dB
16.462725 MHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 1.5 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

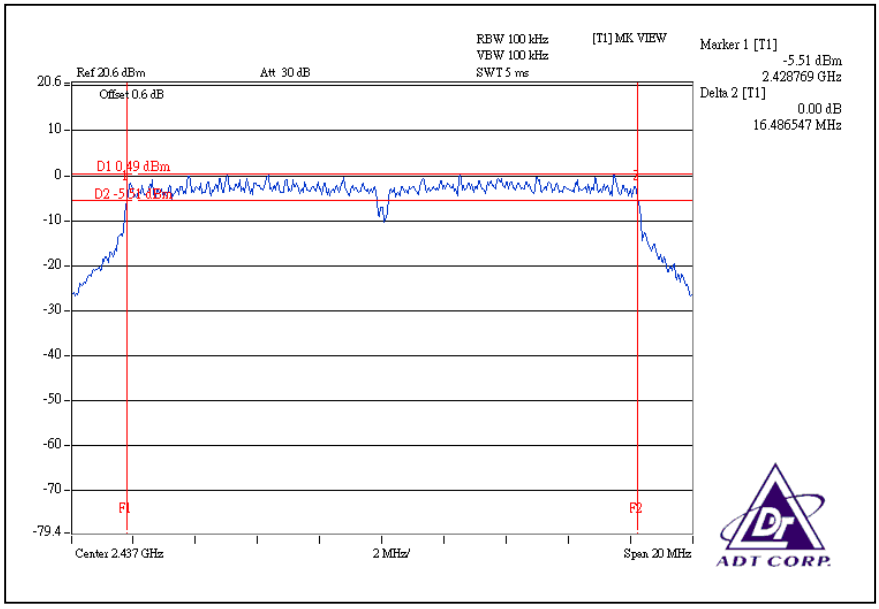
CH11


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-5.71 dBm
2.453804 GHz
Delta 2 [T1]
0.00 dB
16.422422 MHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 0.29 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

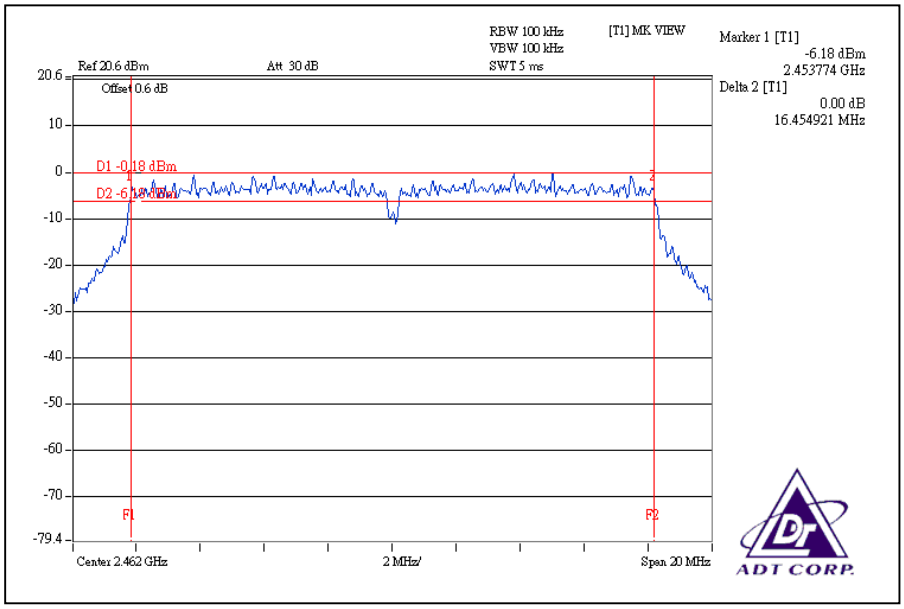
For CHAIN(1): CH1



CH6



CH11

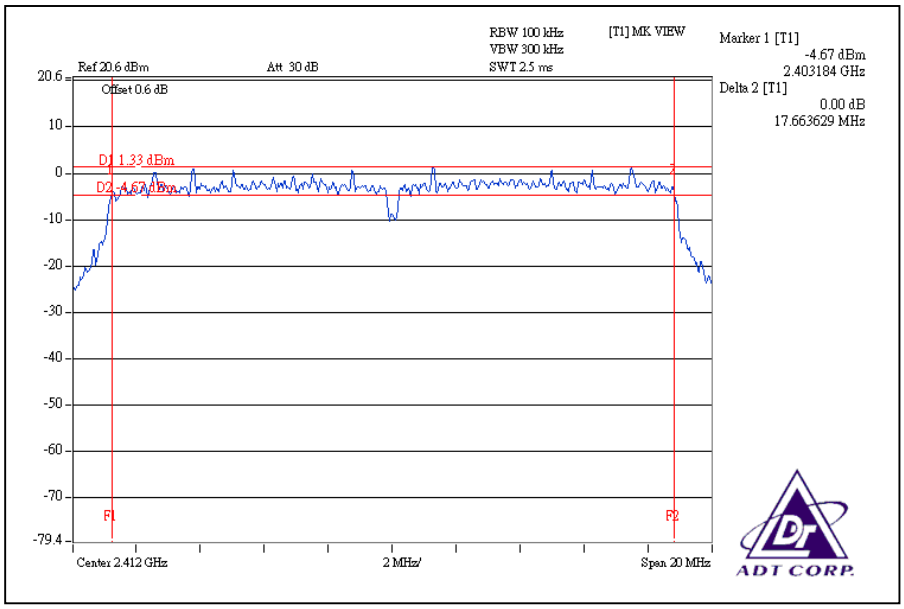

RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-6.18 dBm
2.453774 GHz
Delta 2 [T1]
0.00 dB
16.454921 MHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
D1 -0.18 dBm
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

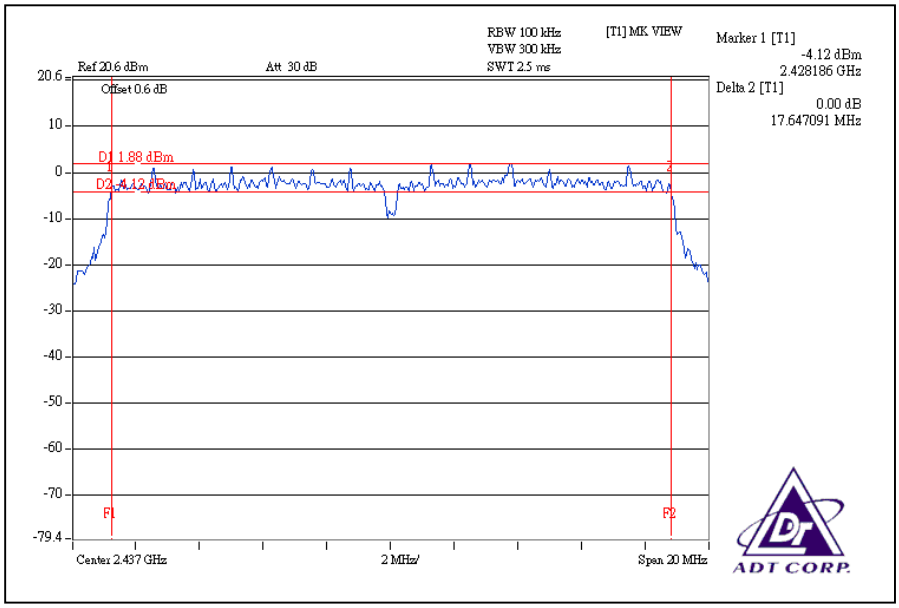
MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	17.66	17.67	0.5	PASS
6	2437	17.65	17.69	0.5	PASS
11	2462	17.66	17.69	0.5	PASS

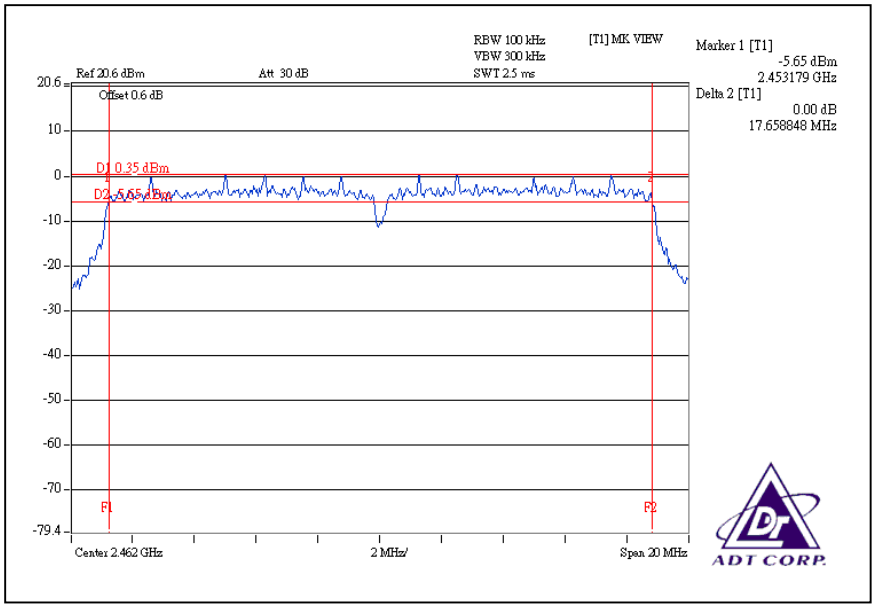
For Chain(0): CH1



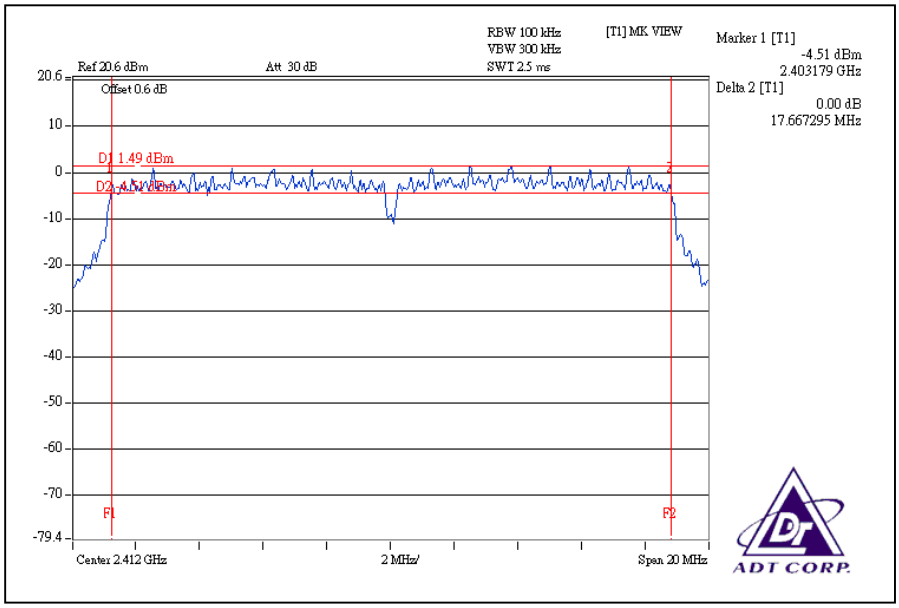
CH6


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-4.12 dBm
2.428186 GHz
Delta 2 [T1]
0.00 dB
17.647091 MHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 1.88 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
ADT CORP.

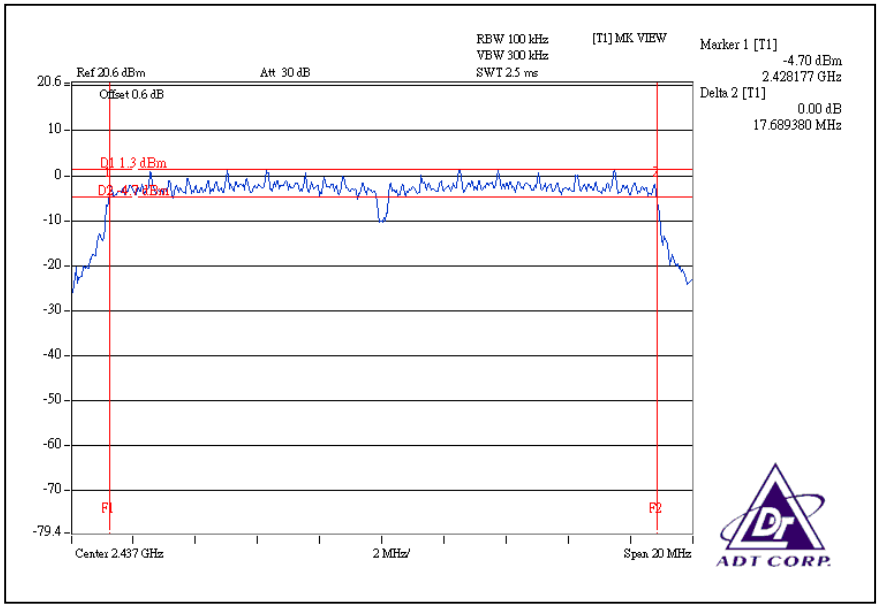
CH11


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-5.65 dBm
2.453179 GHz
Delta 2 [T1]
0.00 dB
17.658848 MHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 0.35 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

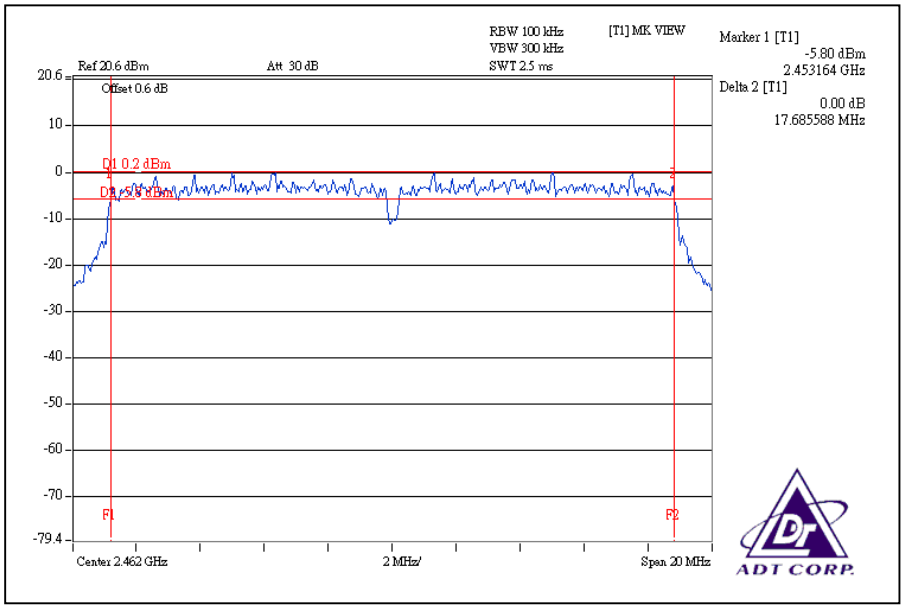
For CHAIN(1): CH1



CH6



CH11

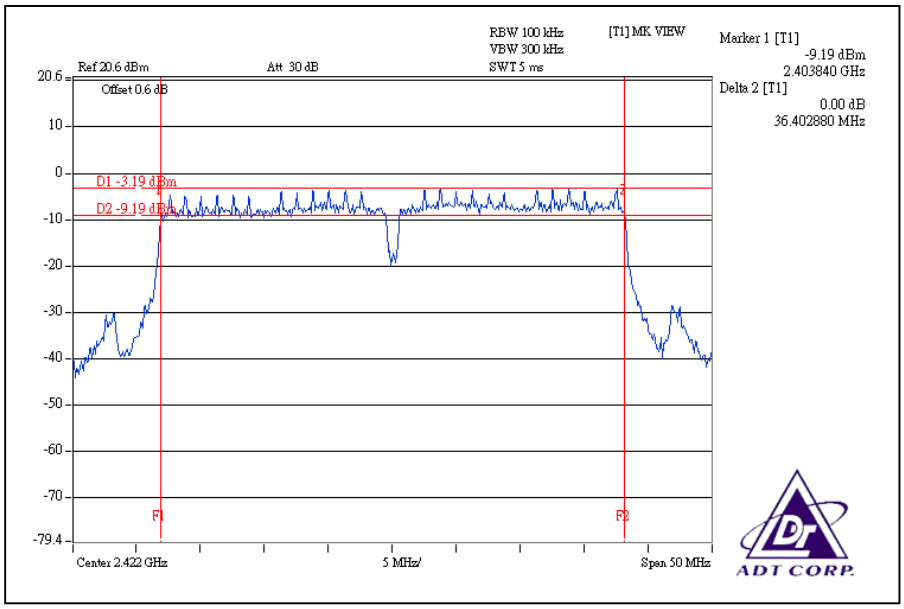

RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-5.80 dBm
2.453164 GHz
Delta 2 [T1]
0.00 dB
17.685588 MHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
D1 0.2 dBm
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

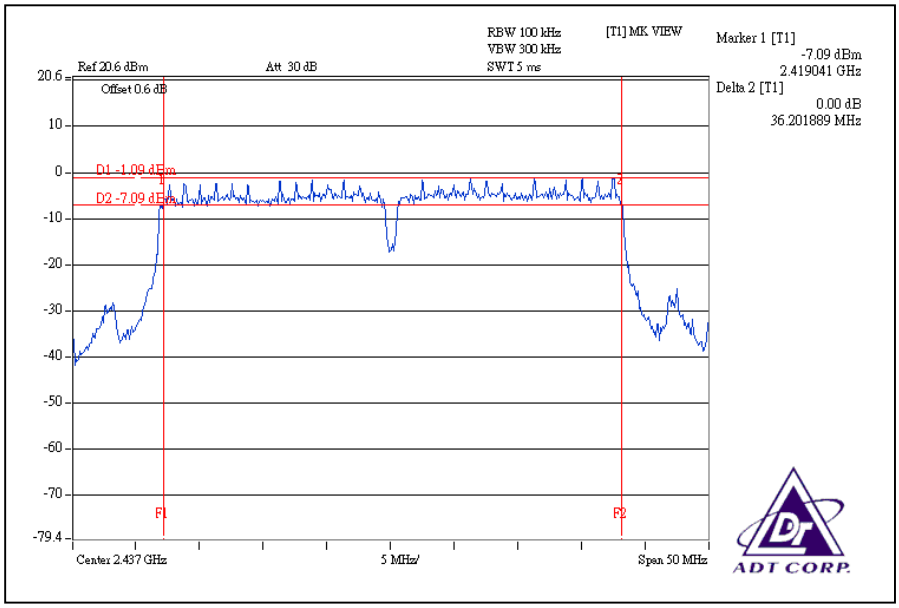
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2422	36.40	36.46	0.5	PASS
4	2437	36.20	36.46	0.5	PASS
7	2452	36.43	36.32	0.5	PASS

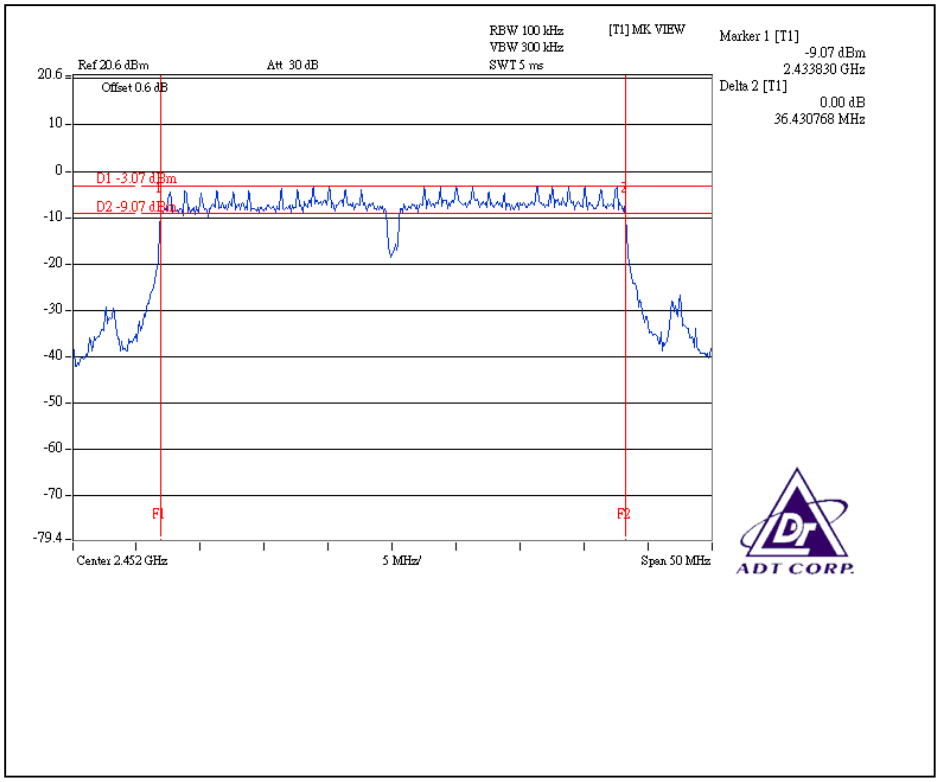
For Chain (0): CH1



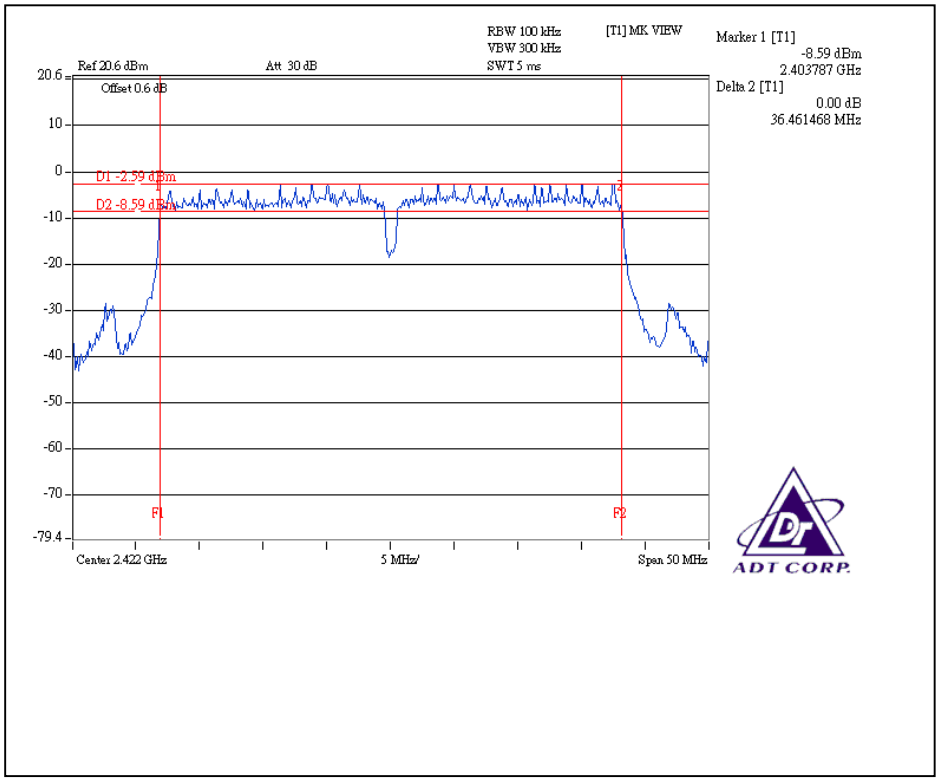
CH4


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-7.09 dBm
2.419041 GHz
Delta 2 [T1]
0.00 dB
36.201889 MHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 -1.09 dBm
D2 -7.09 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
F1
F2
Center 2.437 GHz
5 MHz/
Span 50 MHz
ADT CORP.

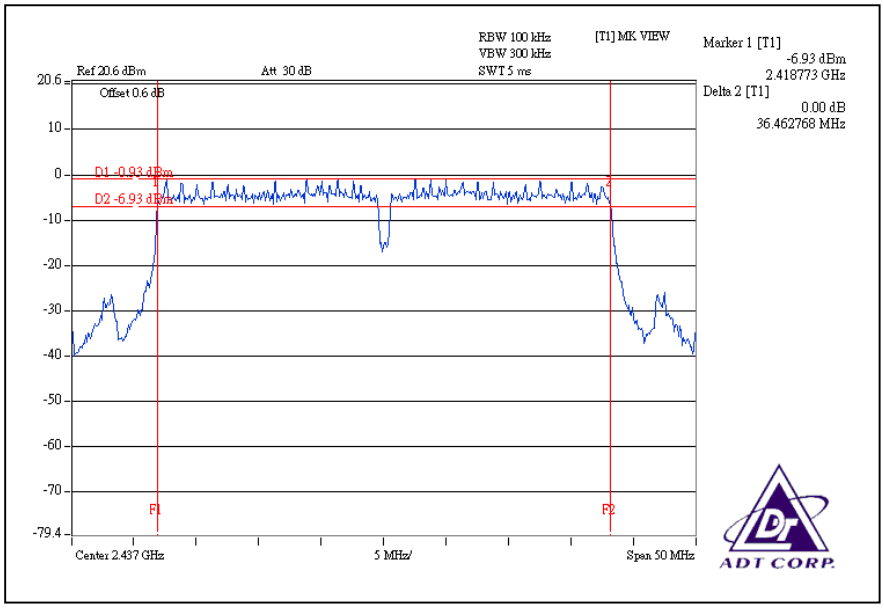
CH7


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-9.07 dBm
2.433830 GHz
Delta 2 [T1]
0.00 dB
36.430768 MHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 -3.07 dBm
D2 -9.07 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz
ADT CORP.

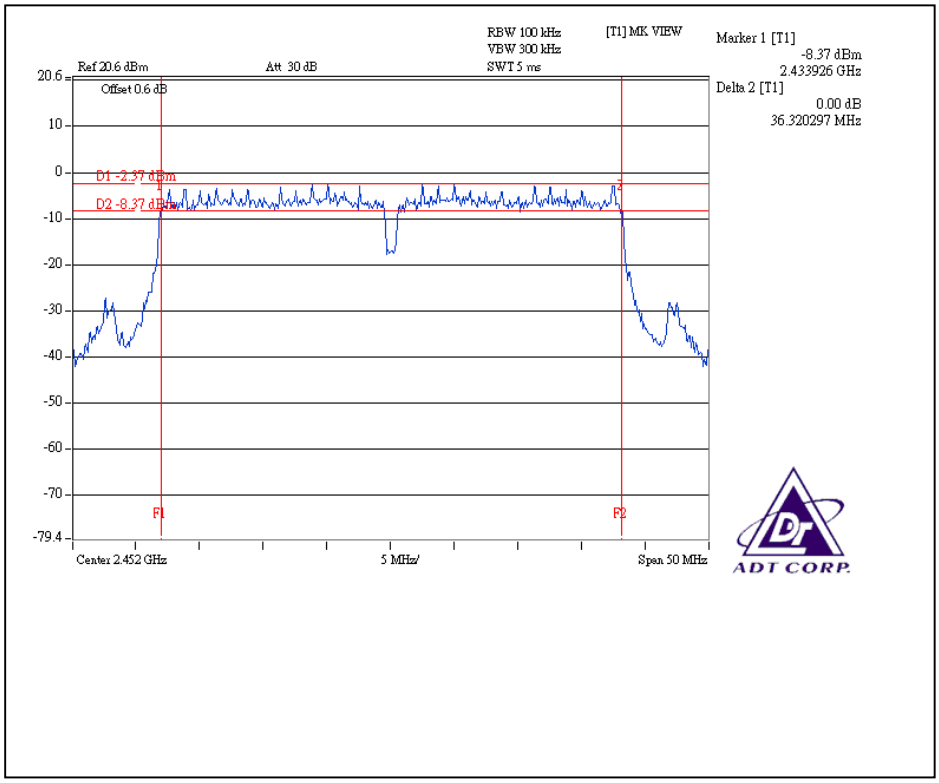
For Chain (1): CH1



CH4



CH7


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-8.37 dBm
2.433926 GHz
Delta 2 [T1]
0.00 dB
36.320297 MHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
D1 -2.37 dBm
D2 -8.37 dBm
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz
ADT CORP.

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

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

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

4.4.3 TEST PROCEDURES

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

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

802.11b DSSS MODULATION:

MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	47.863	16.80	30	PASS
6	2437	63.096	18.00	30	PASS
11	2462	66.069	18.20	30	PASS

802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2412	57.544	56.234	17.60	17.50	113.778	20.56	30	PASS
6	2437	60.256	57.544	17.80	17.60	117.800	20.71	30	PASS
11	2462	44.668	44.668	16.50	16.50	89.336	19.51	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2412	54.954	56.234	17.40	17.50	111.188	20.46	30	PASS
6	2437	58.884	58.884	17.70	17.70	117.768	20.71	30	PASS
11	2462	44.668	45.709	16.50	16.60	90.377	19.56	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2422	35.481	35.481	15.50	15.50	70.962	18.51	30	PASS
4	2437	57.544	56.234	17.60	17.50	113.778	20.56	30	PASS
7	2452	36.308	42.658	15.60	16.30	78.966	18.97	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

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

NOTE:

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

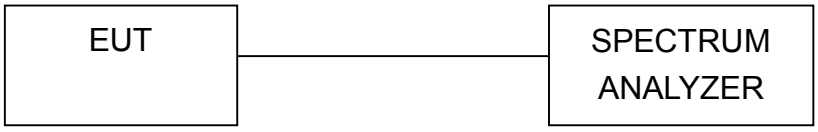
4.5.3 TEST PROCEDURE

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

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

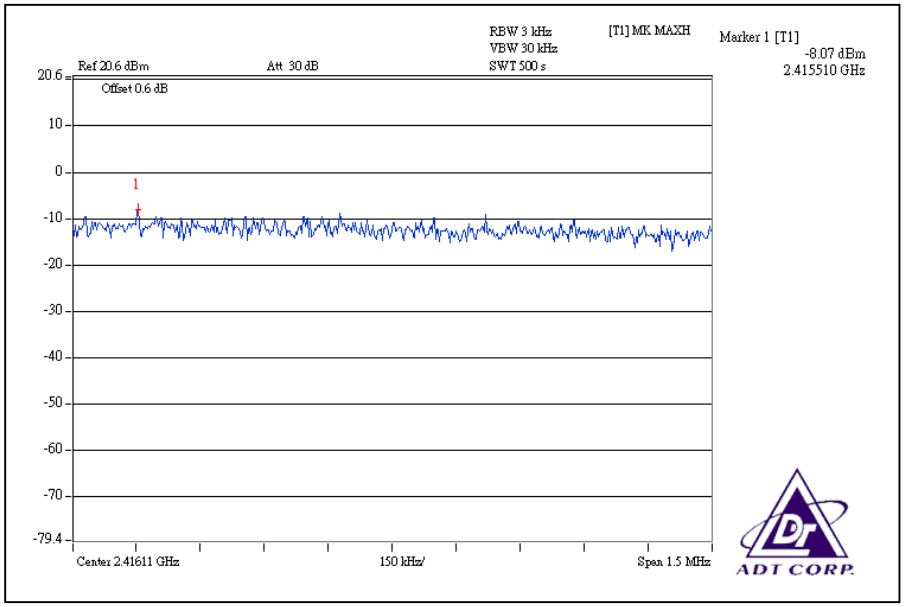
4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

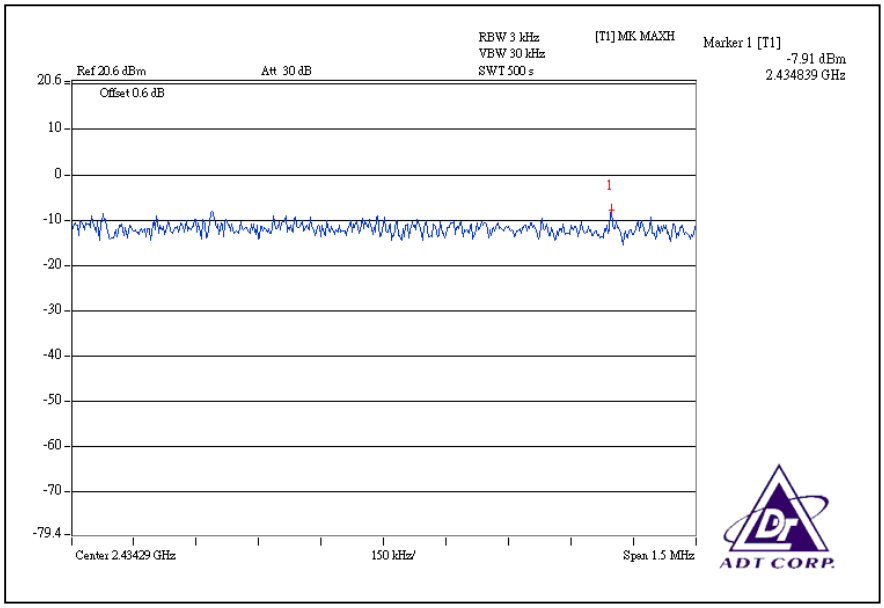
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-8.07	8	PASS
6	2437	-7.91	8	PASS
11	2462	-8.58	8	PASS

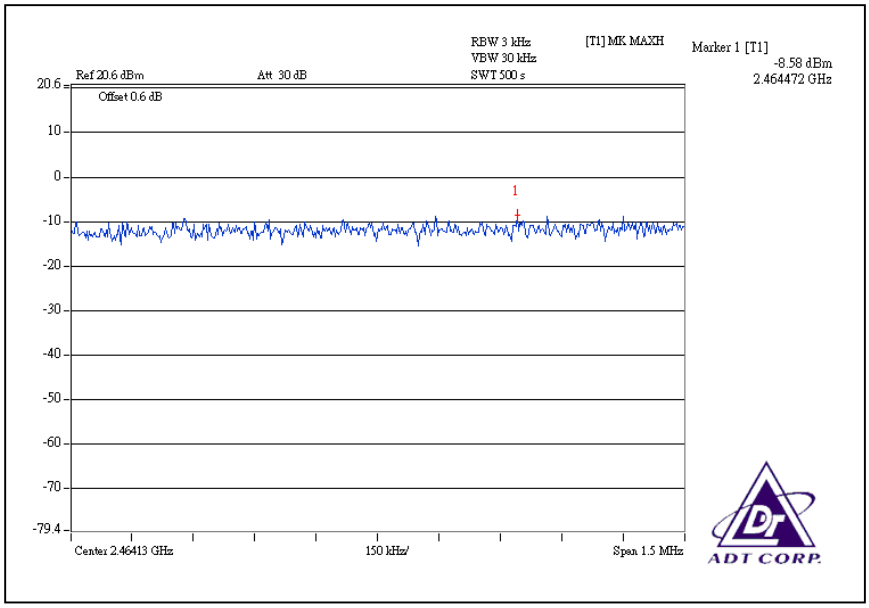
CH1



CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-7.91 dBm
2.434839 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Center 2.43429 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

CH11

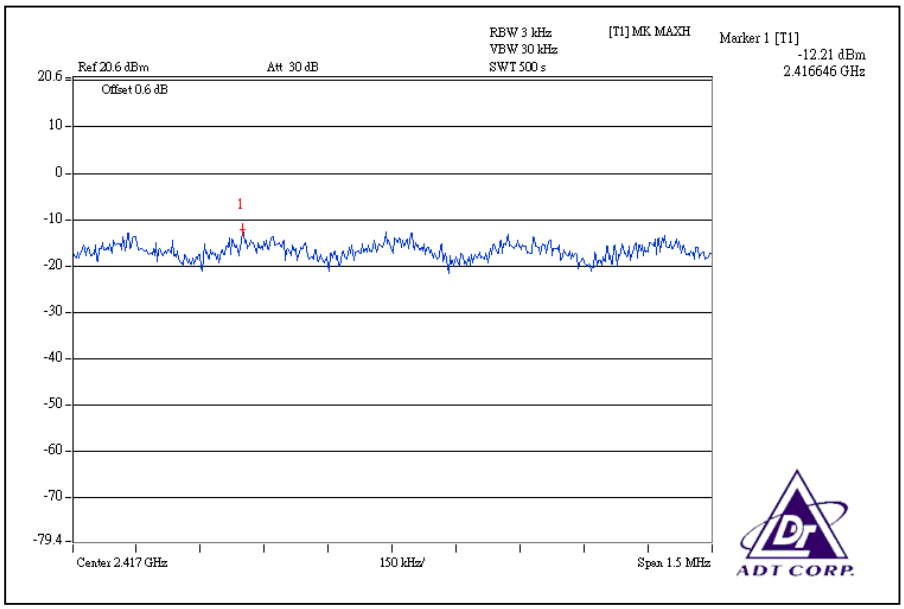

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-8.58 dBm
2.464472 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Center 2.46413 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

802.11g OFDM MODULATION:

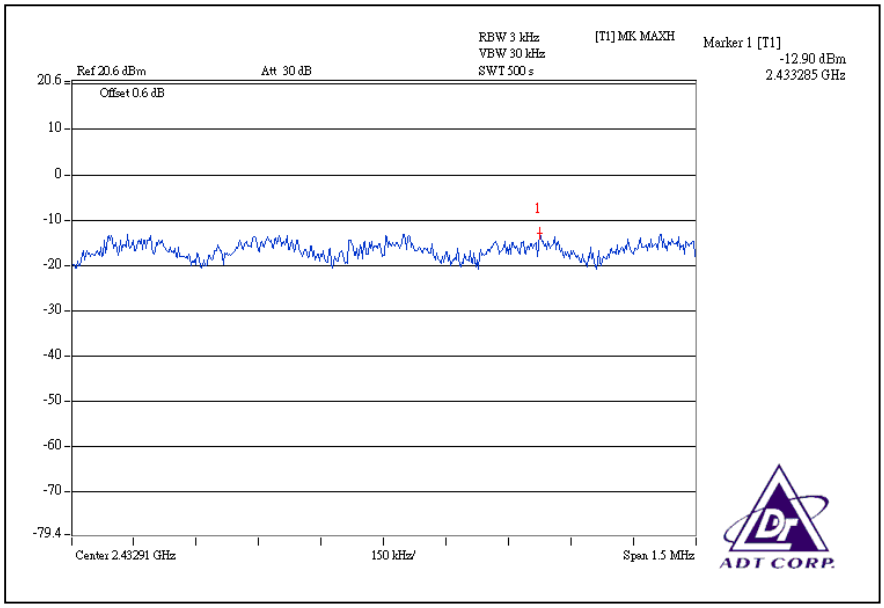
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)		RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2412	0.060	0.052	-12.21	-12.87	0.112	-9.51	8	PASS
6	2437	0.051	0.059	-12.90	-12.26	0.110	-9.59	8	PASS
11	2462	0.068	0.043	-11.70	-13.70	0.111	-9.55	8	PASS

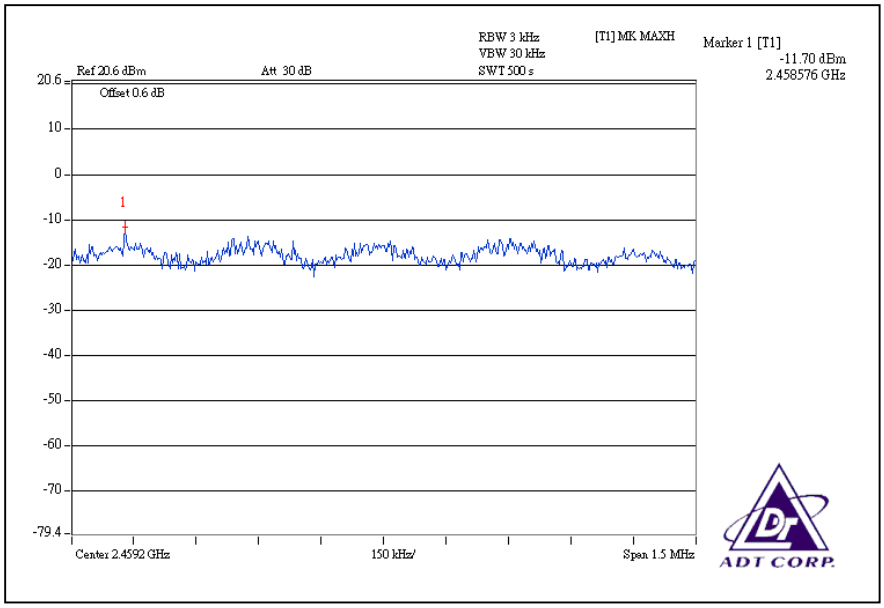
For Chain(0): CH1



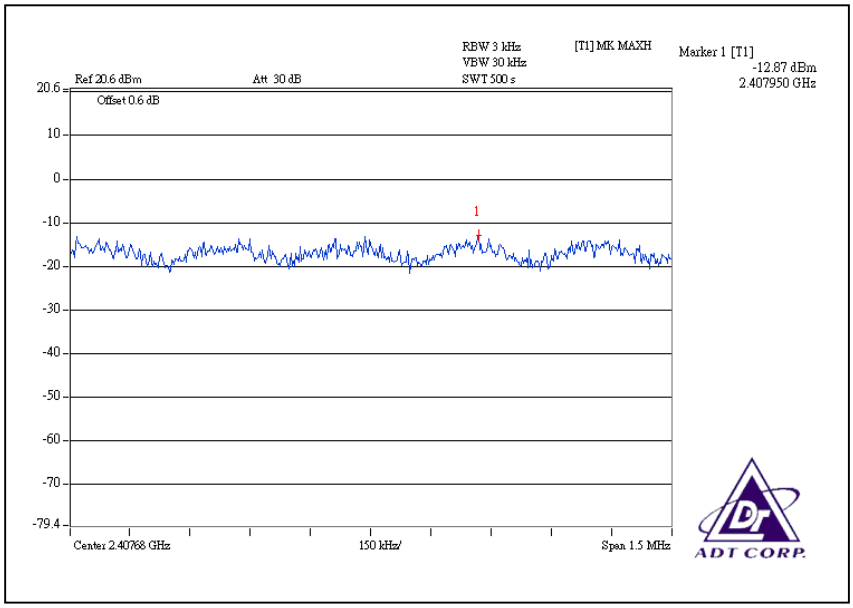
CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-12.90 dBm
2.433285 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Center 2.43291 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

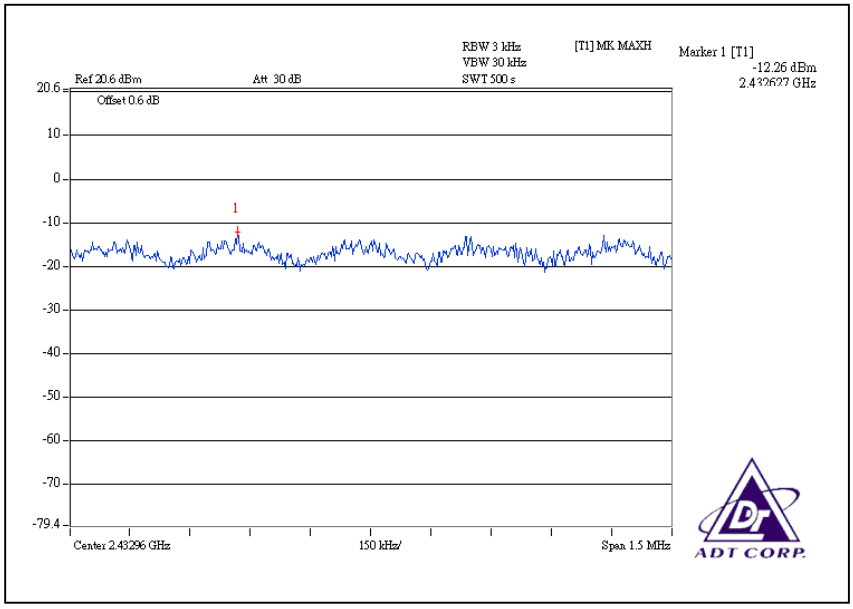
CH11


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.70 dBm
2.458576 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Center 2.4592 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

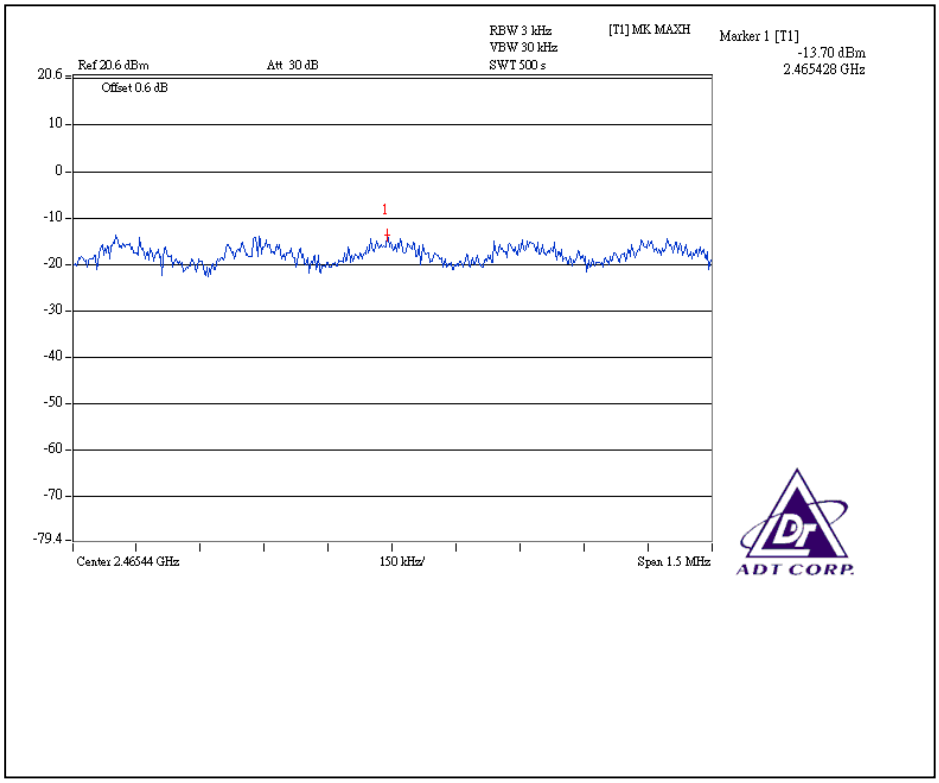
For Chain (1): CH1



CH6



CH11

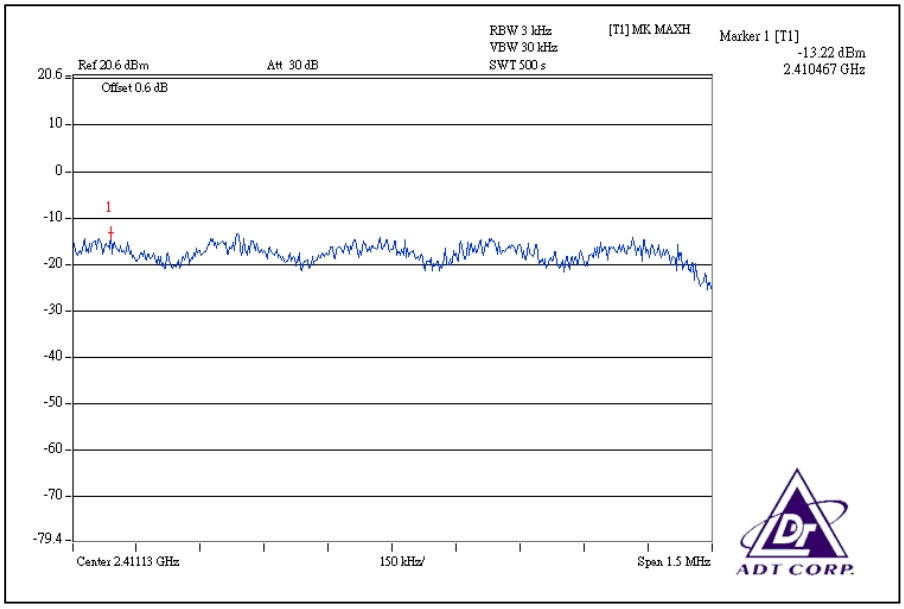

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-13.70 dBm
2.465428 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Center 2.46544 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

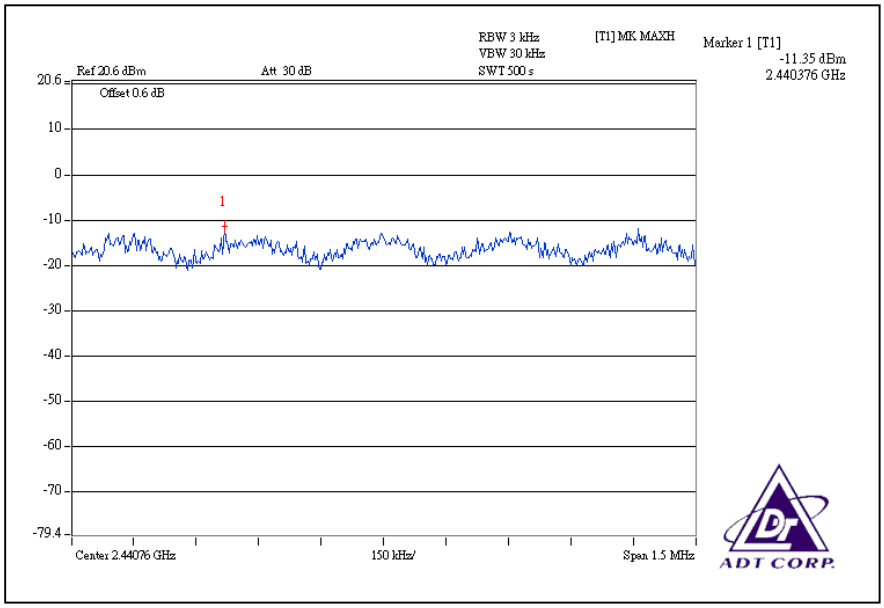
MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)		RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2412	0.048	0.055	-13.22	-12.63	0.103	-9.87	8	PASS
6	2437	0.073	0.055	-11.35	-12.62	0.128	-8.93	8	PASS
11	2462	0.052	0.048	-12.85	-13.22	0.100	-10.00	8	PASS

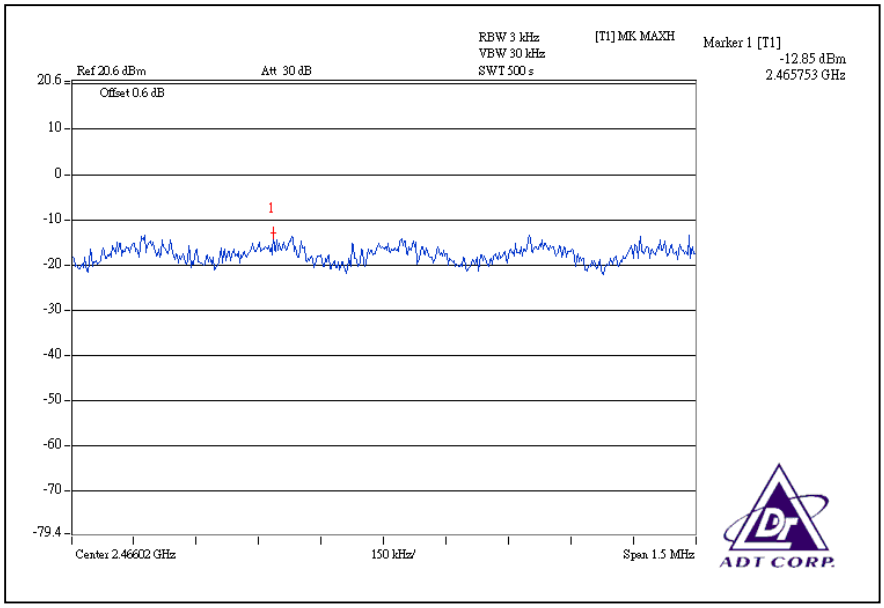
For Chain(0): CH1



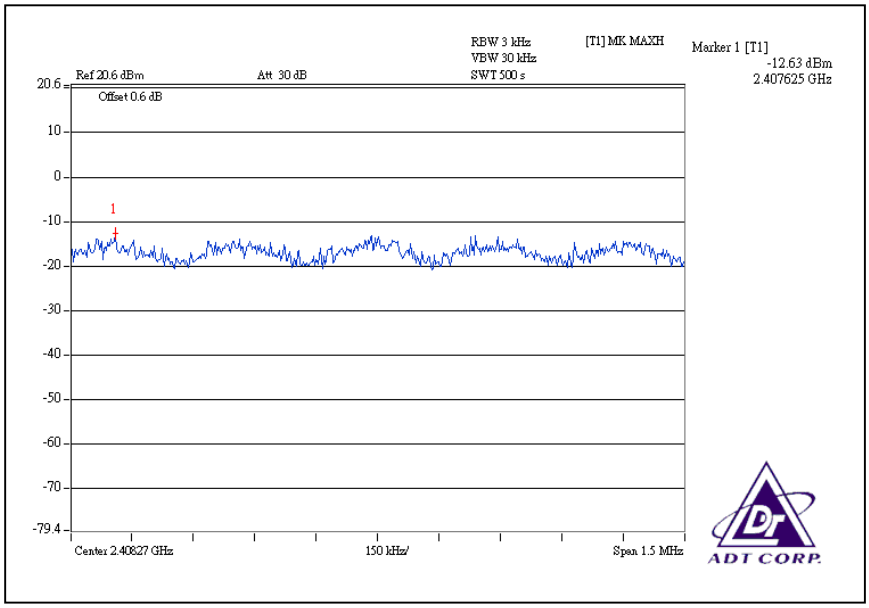
CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.35 dBm
2.440376 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Center 2.44076 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

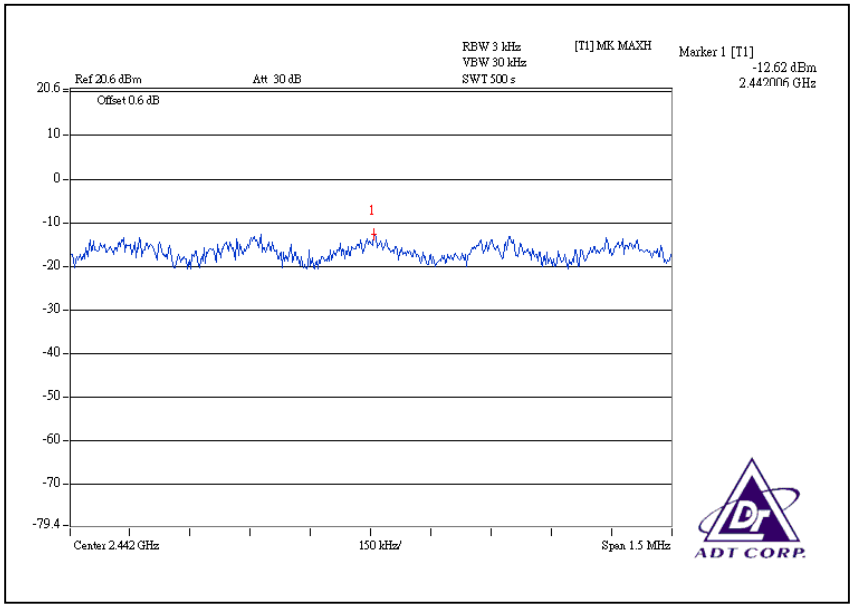
CH11


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-12.85 dBm
2.465753 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Center 2.46602 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

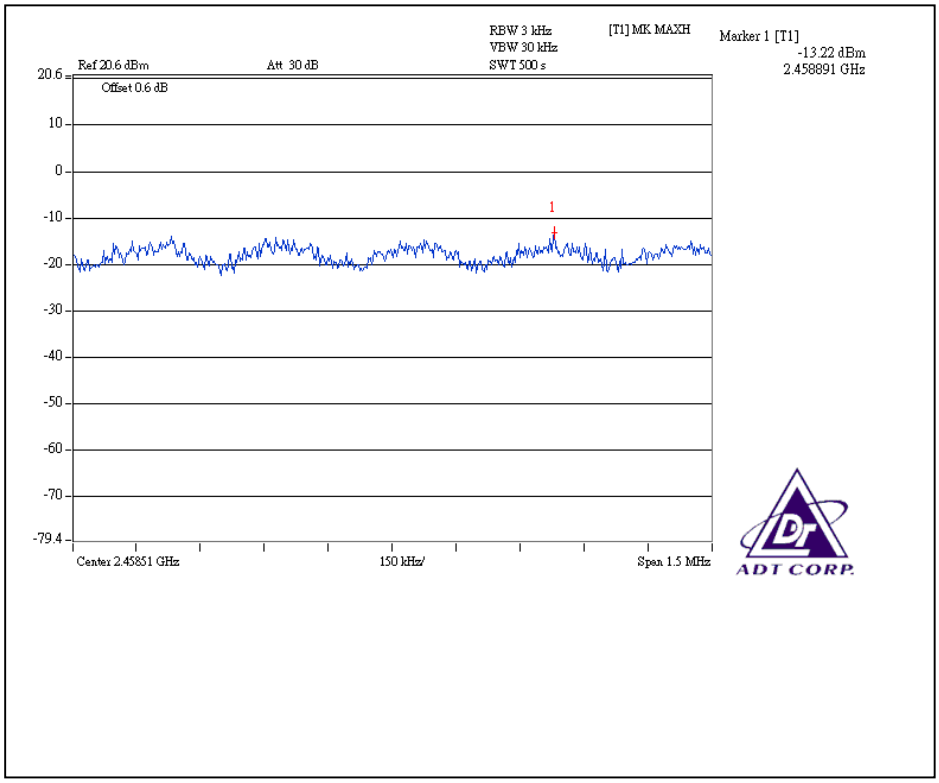
For Chain (1): CH1



CH6



CH11

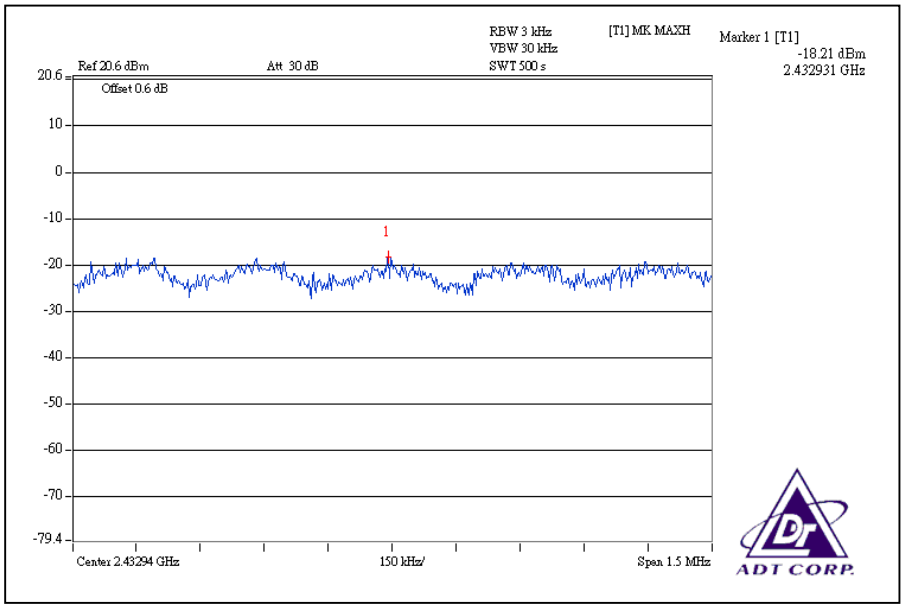

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-13.22 dBm
2.458891 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
1
Center 2.45851 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

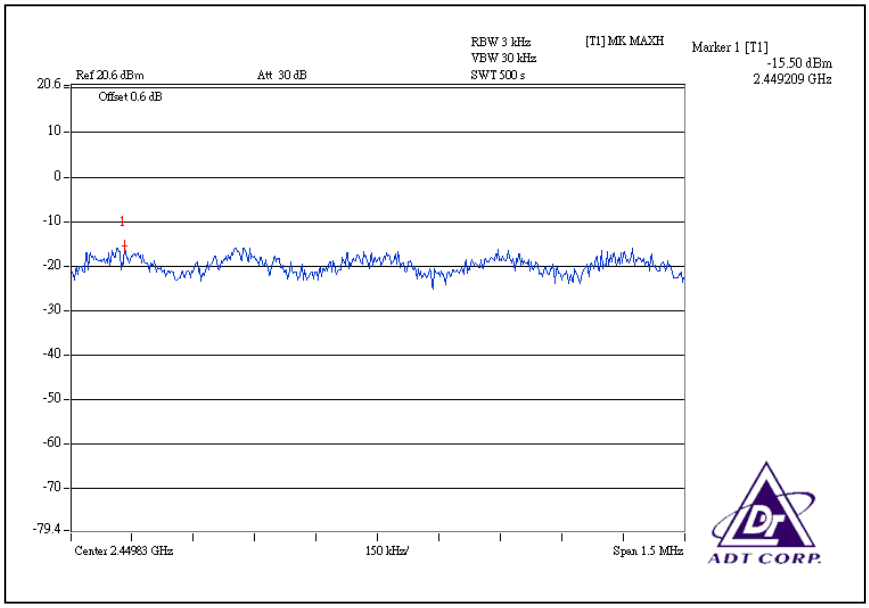
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)		RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2422	0.015	0.043	-18.21	-13.63	0.058	-12.37	8	PASS
4	2437	0.028	0.029	-15.50	-15.42	0.057	-12.44	8	PASS
7	2452	0.018	0.030	-17.49	-15.29	0.048	-13.19	8	PASS

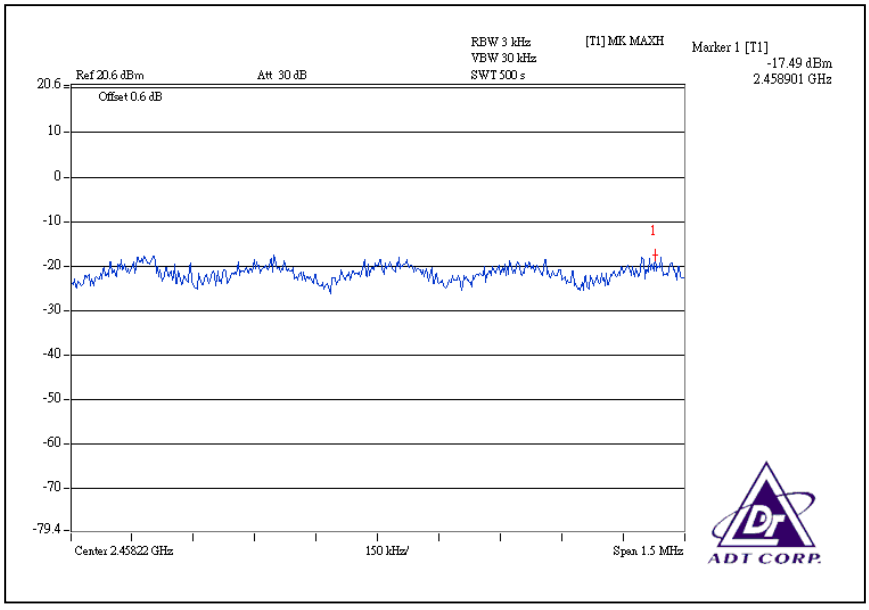
For Chain (0): CH1



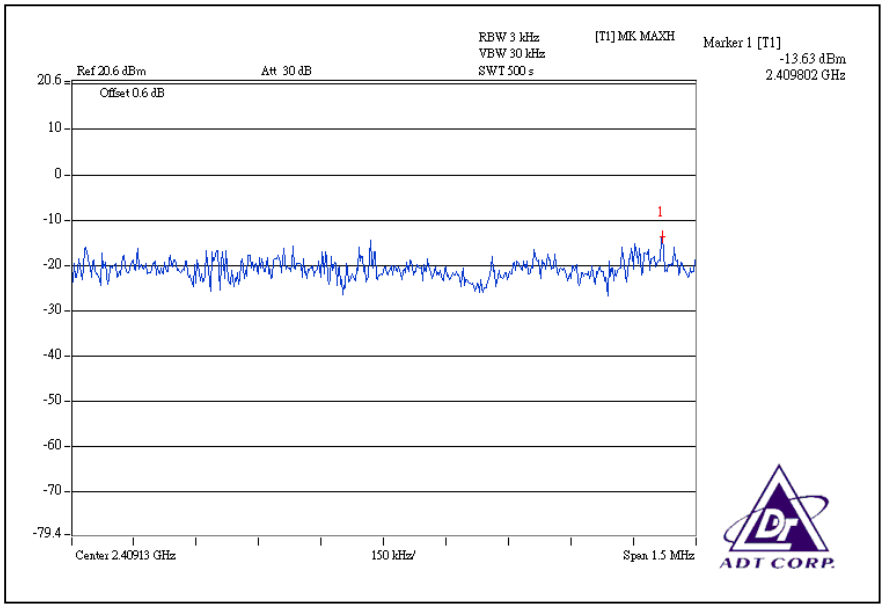
CH4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-15.50 dBm
2.449209 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Center 2.44983 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

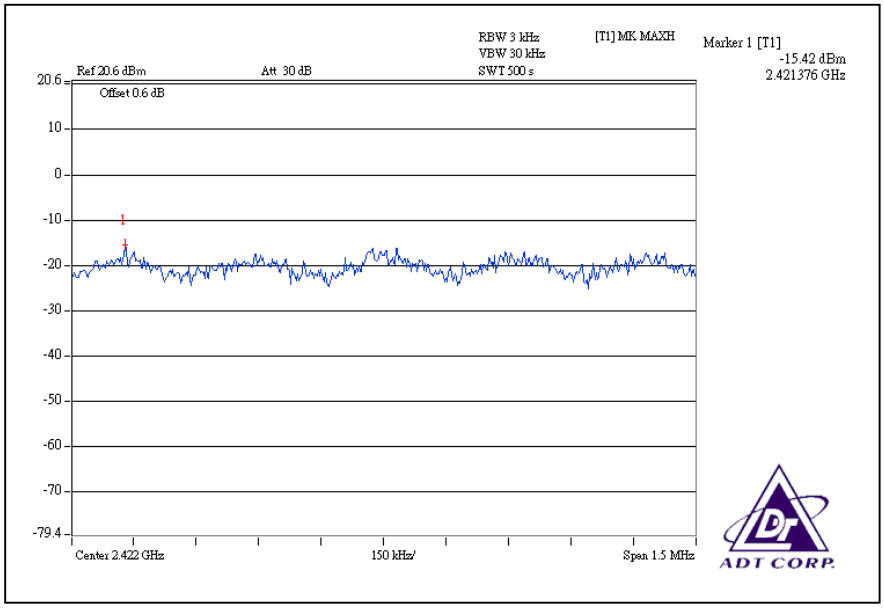
CH7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-17.49 dBm
2.458901 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Center 2.45822 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

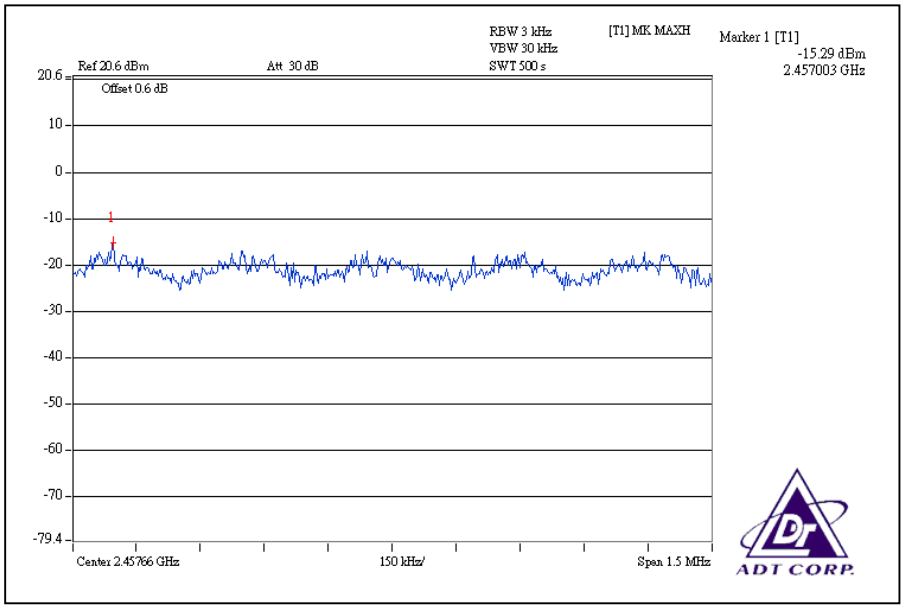
For Chain (1): CH1



CH4



CH7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-15.29 dBm
2.457003 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Center 2.45766 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
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 12, 2008

NOTE:

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

4.6.3 TEST PROCEDURE

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

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

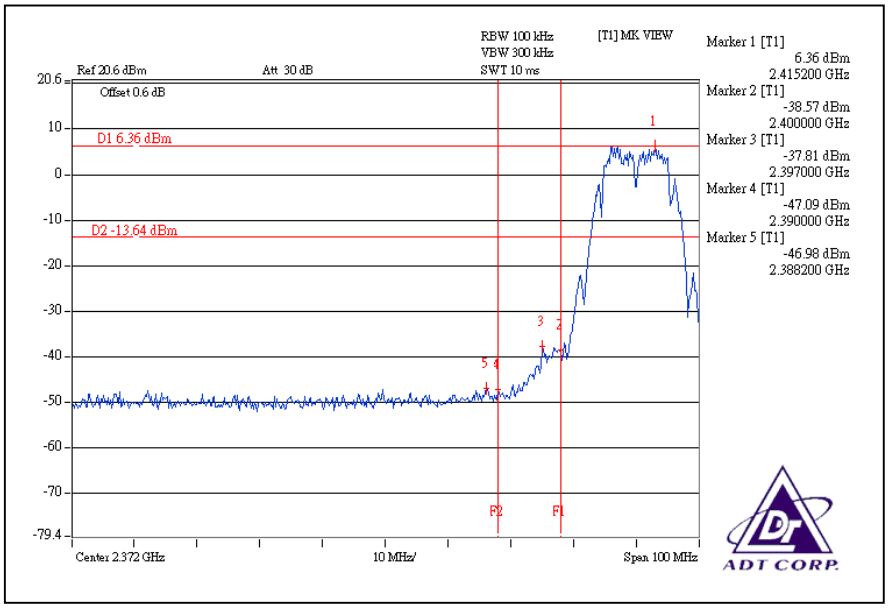
Same as Item 4.3.6

4.6.6 TEST RESULTS

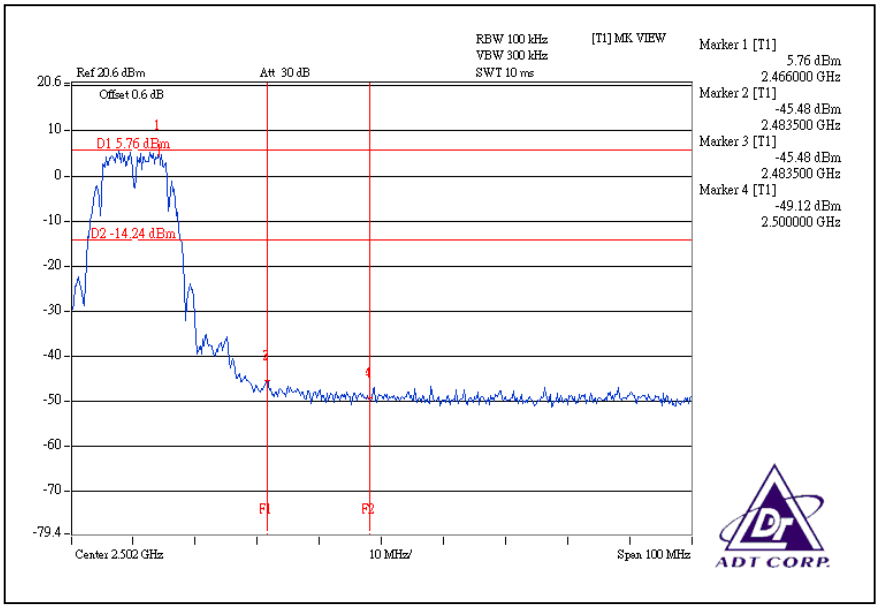
The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b DSSS MODULATION:

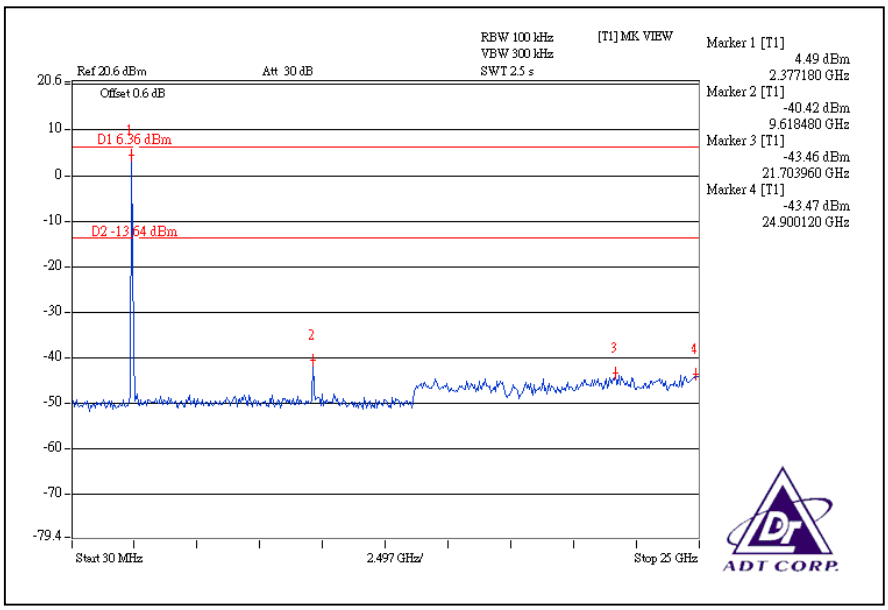
CH1



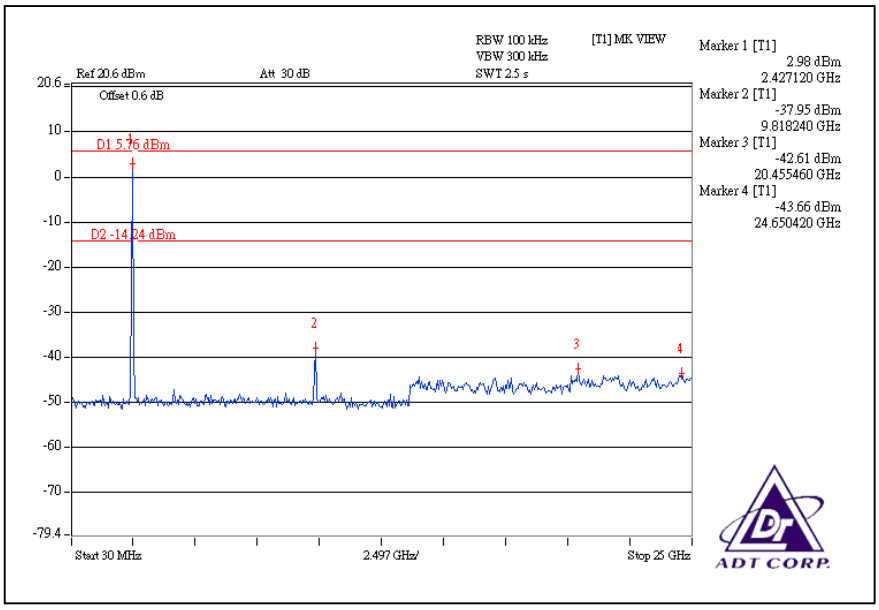
CH11



CH1

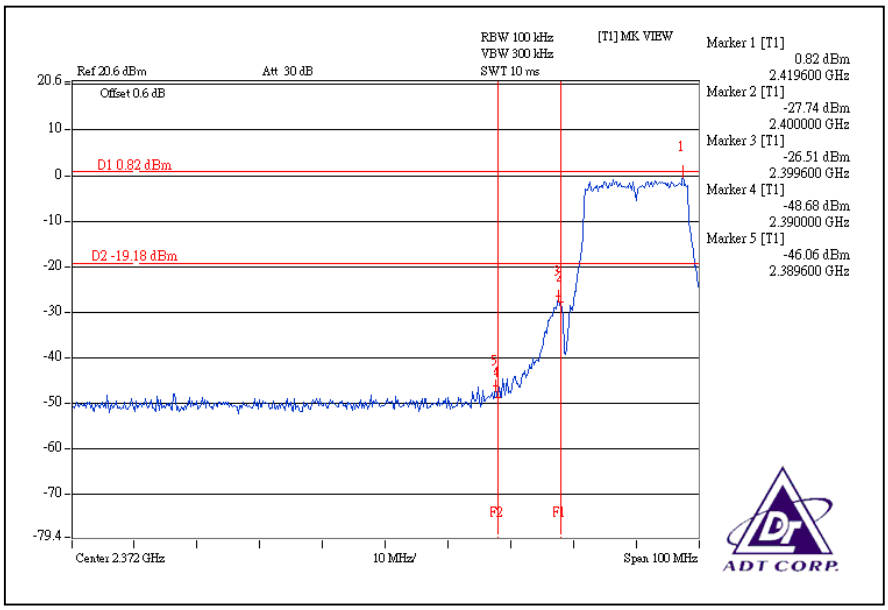

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
4.49 dBm
2.377180 GHz
Marker 2 [T1]
-40.42 dBm
9.618480 GHz
Marker 3 [T1]
-43.46 dBm
21.703960 GHz
Marker 4 [T1]
-43.47 dBm
24.900120 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 6.36 dBm
D2 -13.64 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

CH11

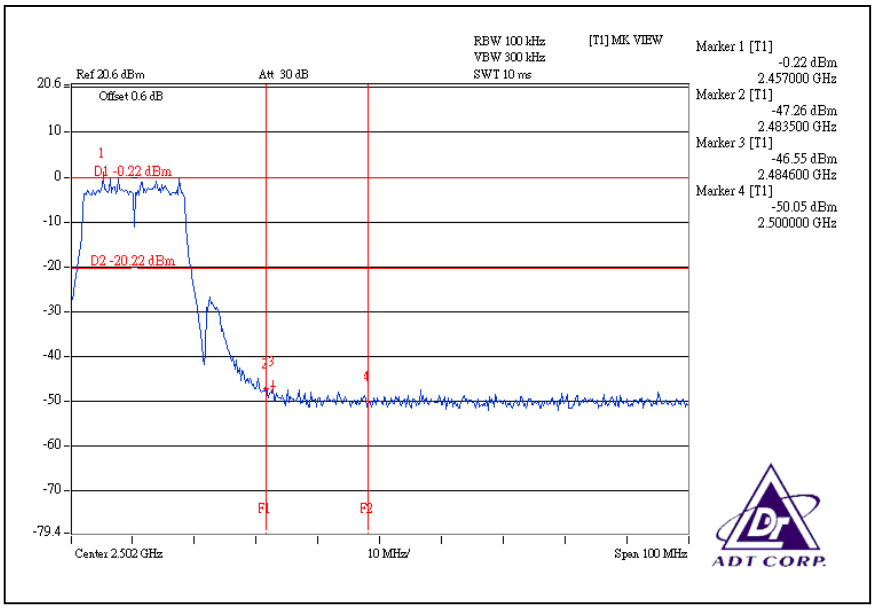

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
2.98 dBm
2.427120 GHz
Marker 2 [T1]
-37.95 dBm
9.818240 GHz
Marker 3 [T1]
-42.61 dBm
20.455460 GHz
Marker 4 [T1]
-43.66 dBm
24.650420 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 5.76 dBm
D2 -14.24 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

802.11g OFDM MODULATION:

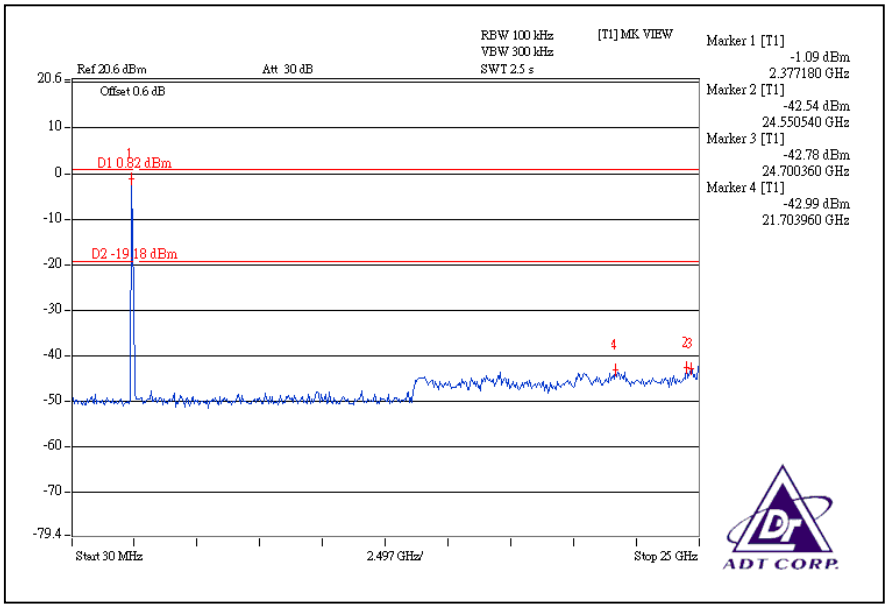
For Chain (0):CH1



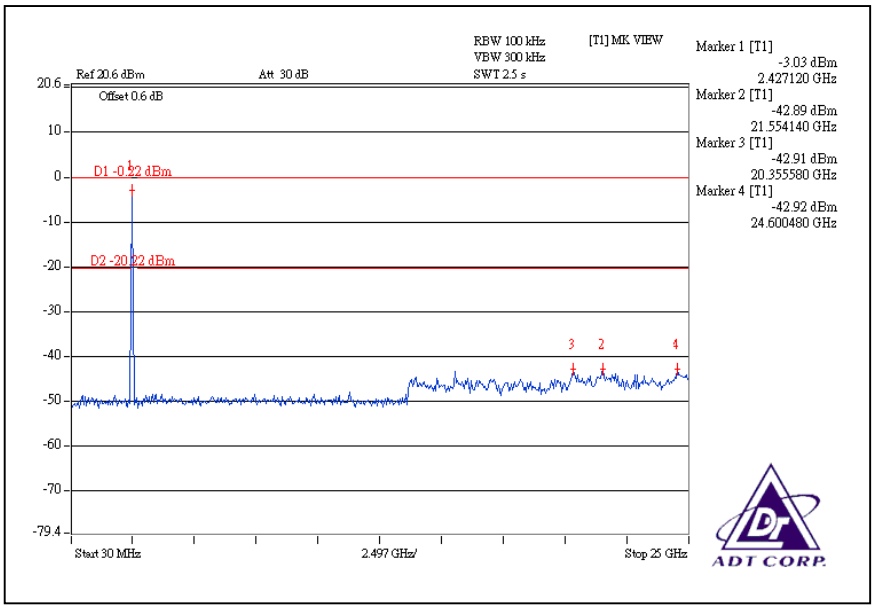
CH11



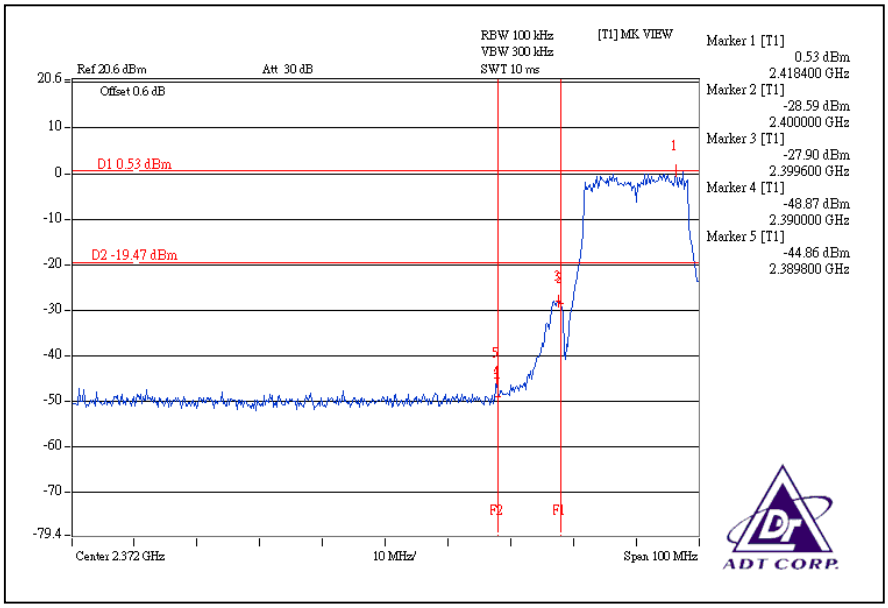
CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
-1.09 dBm
2.377180 GHz
Marker 2 [T1]
-42.54 dBm
24.550540 GHz
Marker 3 [T1]
-42.78 dBm
24.700360 GHz
Marker 4 [T1]
-42.99 dBm
21.703960 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 0.82 dBm
D2 -19.18 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

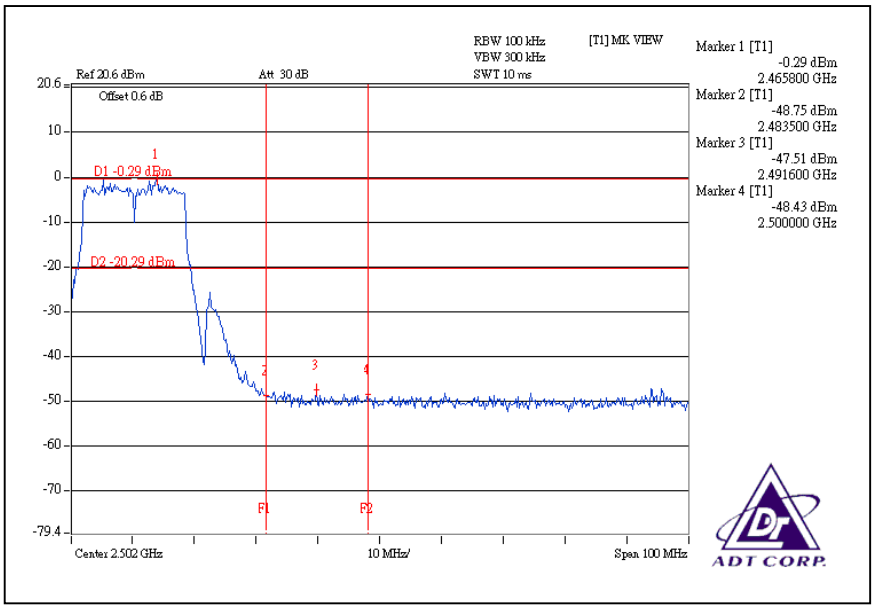
CH11


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
-3.03 dBm
2.427120 GHz
Marker 2 [T1]
-42.89 dBm
21.554140 GHz
Marker 3 [T1]
-42.91 dBm
20.355580 GHz
Marker 4 [T1]
-42.92 dBm
24.600480 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 -0.22 dBm
D2 -20.22 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

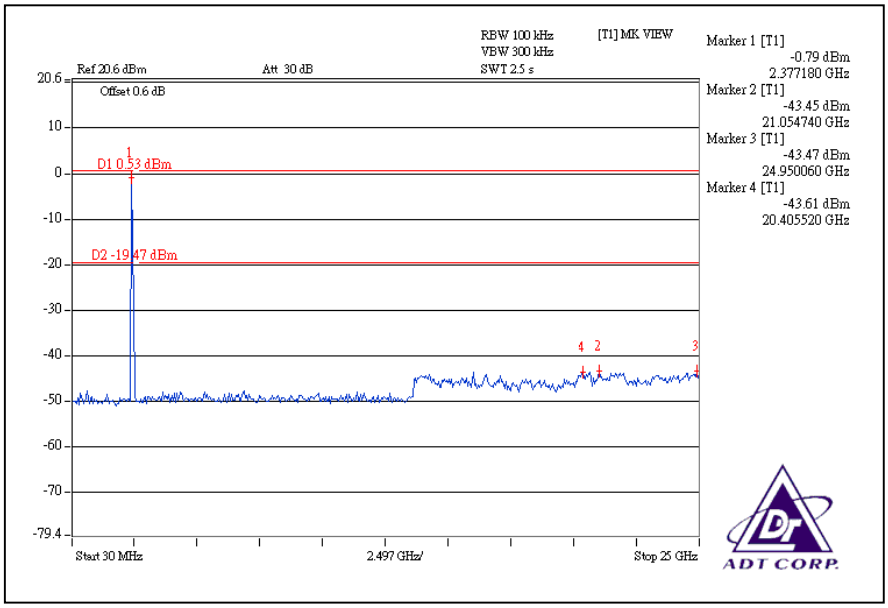
For Chain (1):CH1



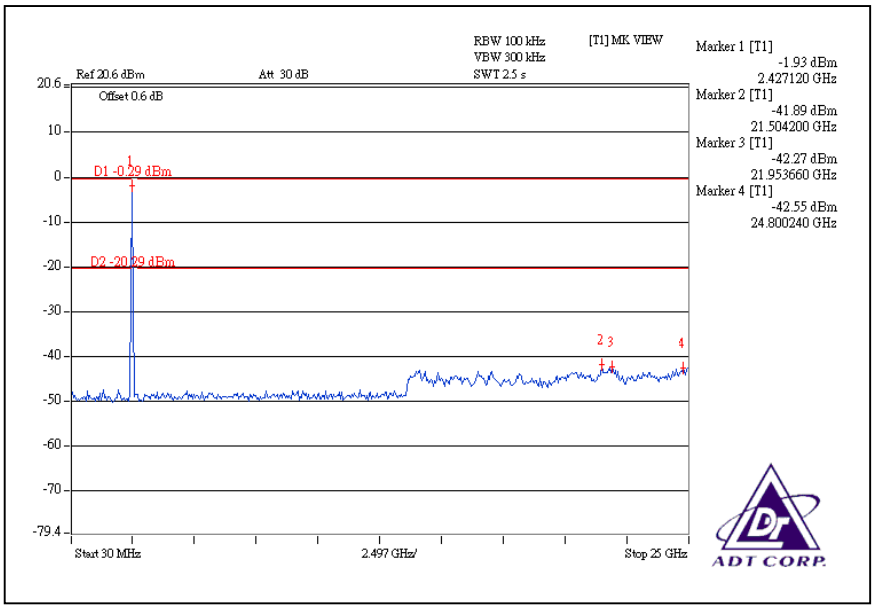
CH11



CH1

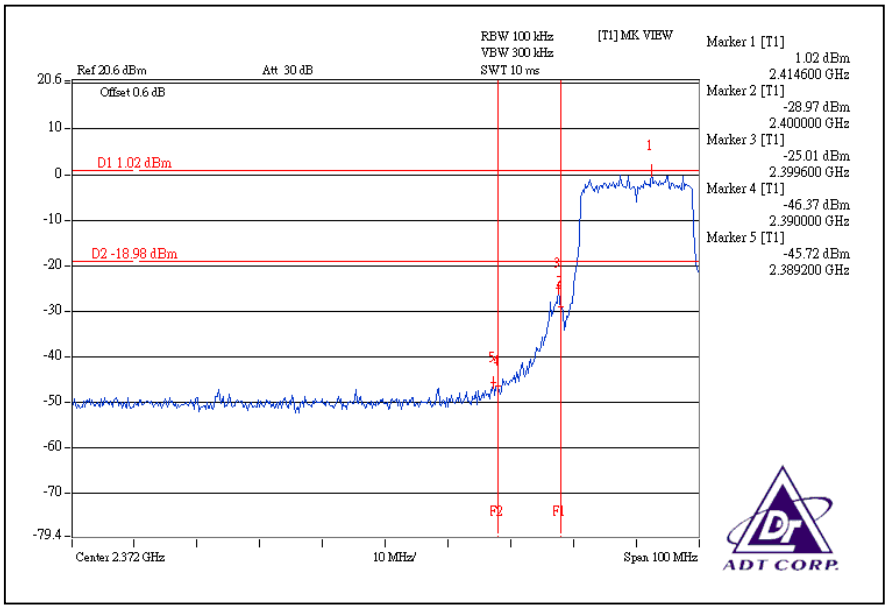

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
-0.79 dBm
2.377180 GHz
Marker 2 [T1]
-43.45 dBm
21.054740 GHz
Marker 3 [T1]
-43.47 dBm
24.950060 GHz
Marker 4 [T1]
-43.61 dBm
20.405520 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 0.53 dBm
D2 -19.47 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

CH11

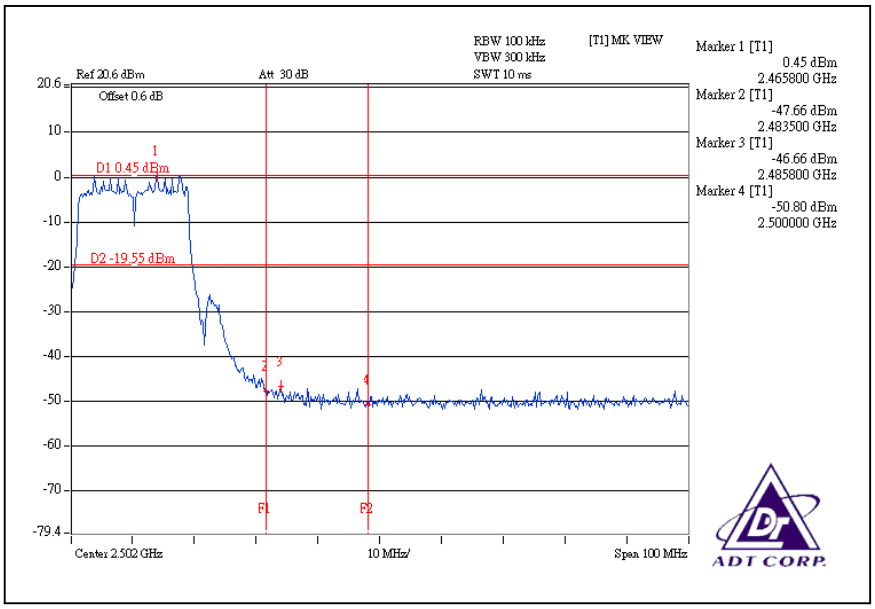

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
-1.93 dBm
2.427120 GHz
Marker 2 [T1]
-41.89 dBm
21.504200 GHz
Marker 3 [T1]
-42.27 dBm
21.953660 GHz
Marker 4 [T1]
-42.55 dBm
24.800240 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 -0.29 dBm
D2 -20.29 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

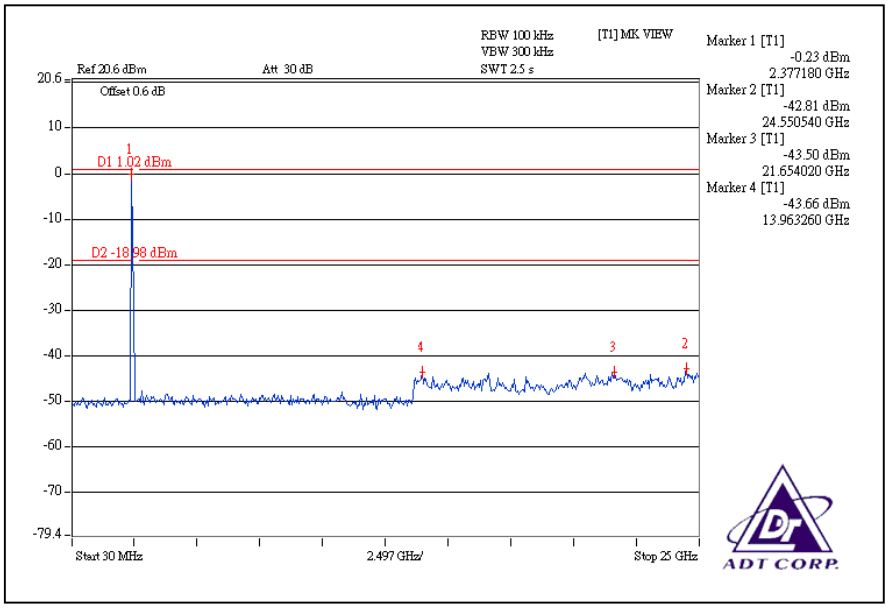
For Chain (0):CH1



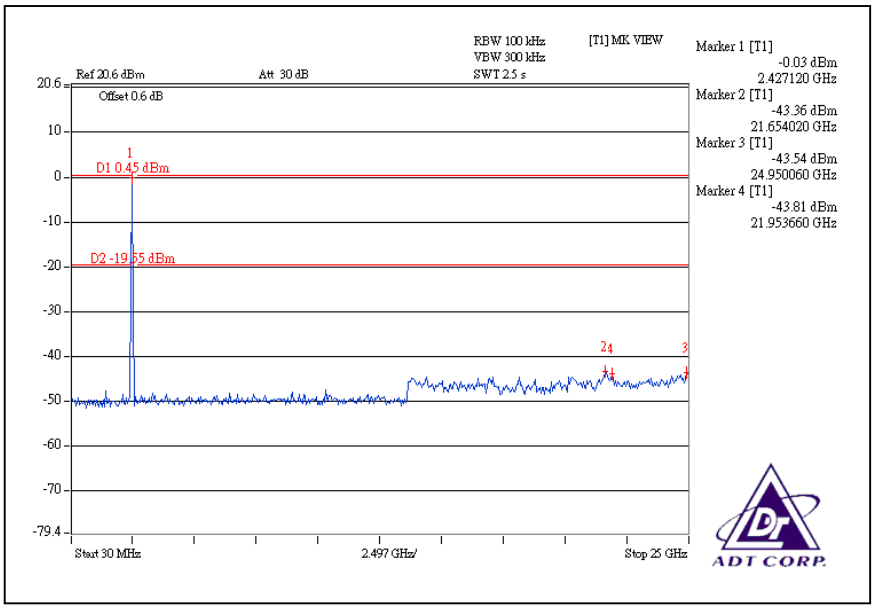
CH11



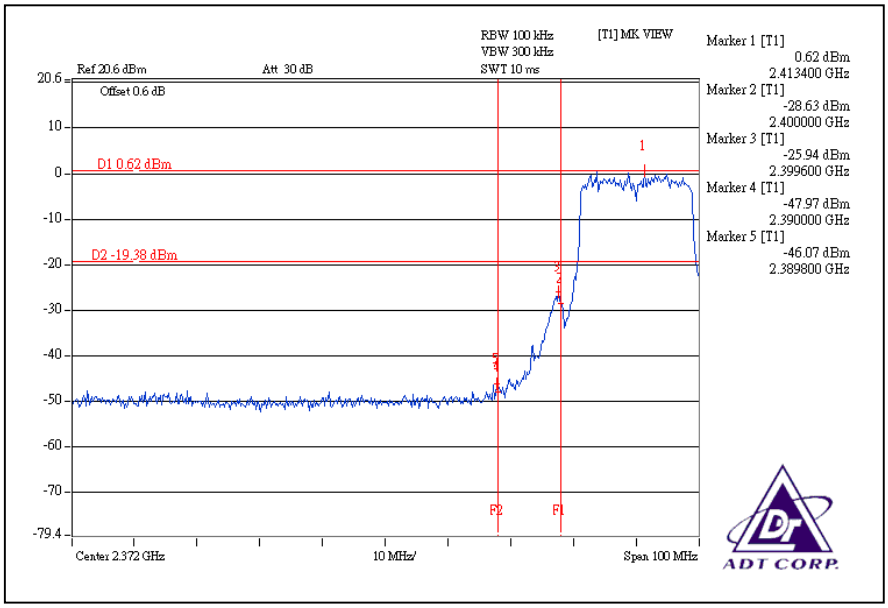
CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
-0.23 dBm
2.377180 GHz
Marker 2 [T1]
-42.81 dBm
24.550540 GHz
Marker 3 [T1]
-43.50 dBm
21.654020 GHz
Marker 4 [T1]
-43.66 dBm
13.963260 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 1.02 dBm
D2 -18.98 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

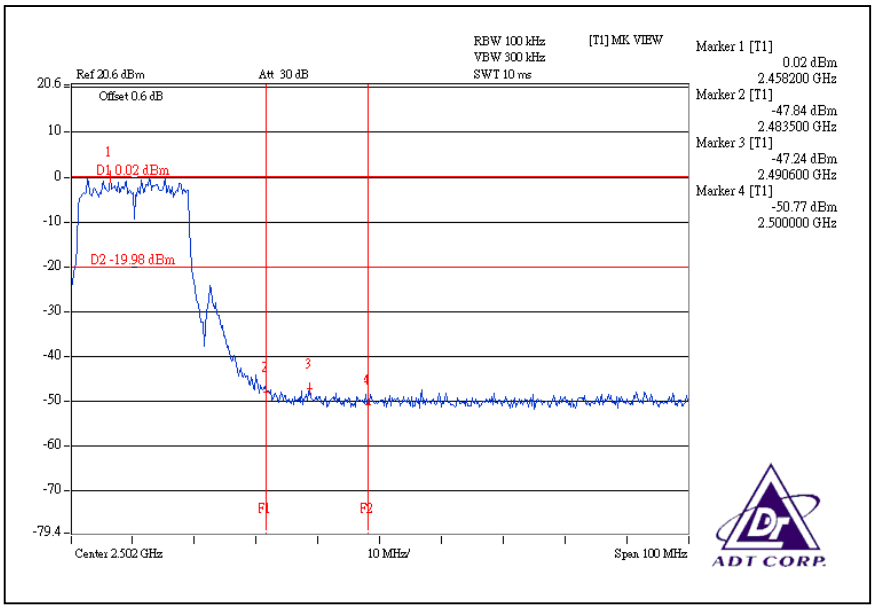
CH11


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
-0.03 dBm
2.427120 GHz
Marker 2 [T1]
-43.36 dBm
21.654020 GHz
Marker 3 [T1]
-43.54 dBm
24.950060 GHz
Marker 4 [T1]
-43.81 dBm
21.953660 GHz
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 0.45 dBm
D2 -19.55 dBm
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

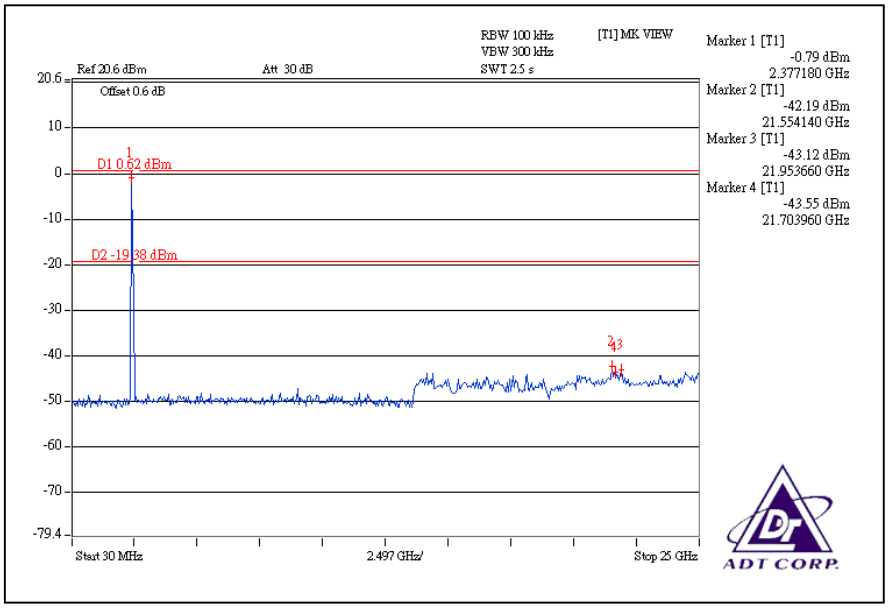
For Chain (1):CH1



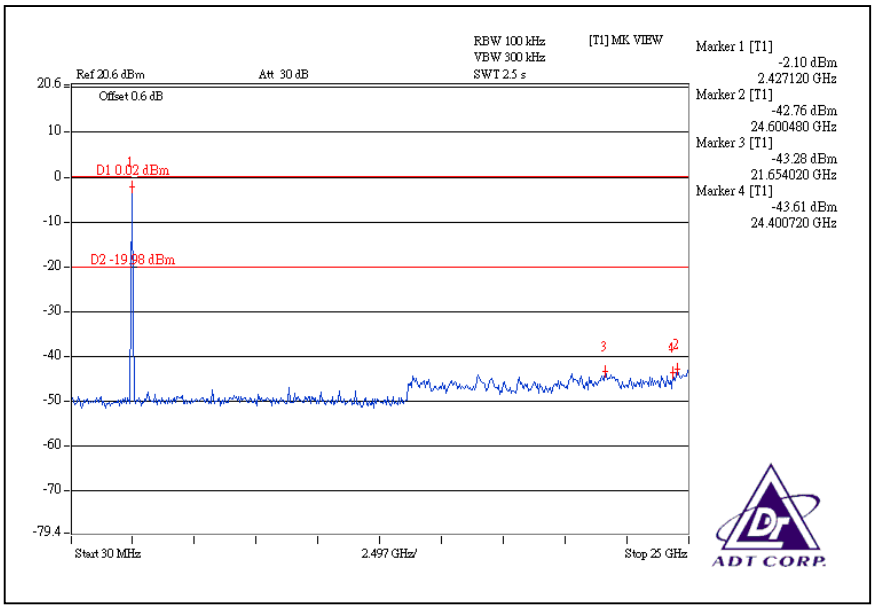
CH11



CH1

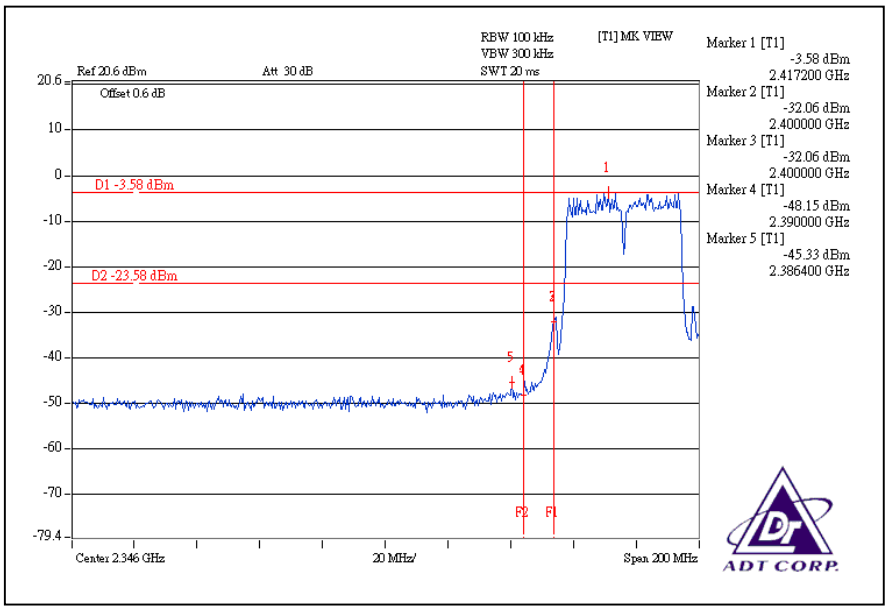

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 0.62 dBm
D2 -19.38 dBm
Marker 1 [T1]
-0.79 dBm
2.377180 GHz
Marker 2 [T1]
-42.19 dBm
21.554140 GHz
Marker 3 [T1]
-43.12 dBm
21.953660 GHz
Marker 4 [T1]
-43.55 dBm
21.703960 GHz
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

CH11

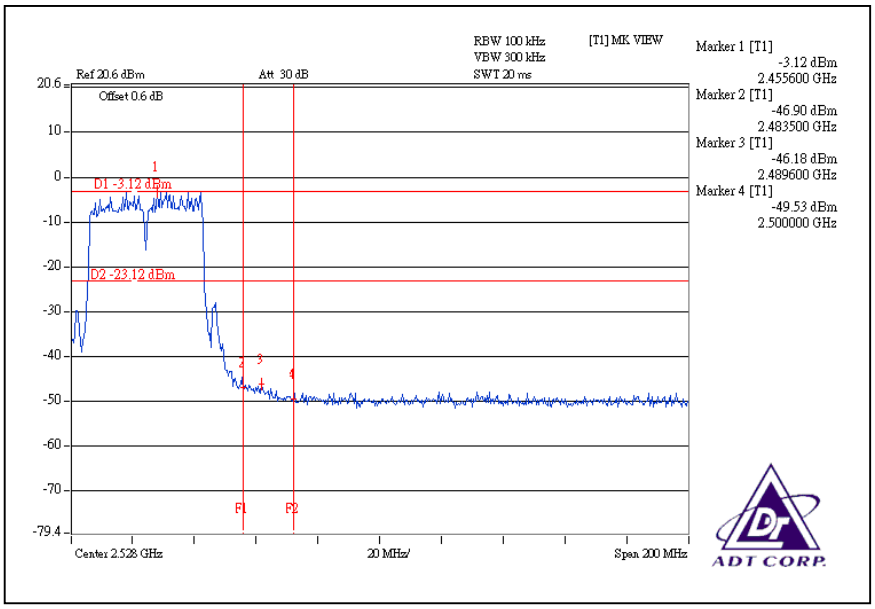

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 0.02 dBm
D2 -19.98 dBm
Marker 1 [T1]
-2.10 dBm
2.427120 GHz
Marker 2 [T1]
-42.76 dBm
24.600480 GHz
Marker 3 [T1]
-43.28 dBm
21.654020 GHz
Marker 4 [T1]
-43.61 dBm
24.400720 GHz
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

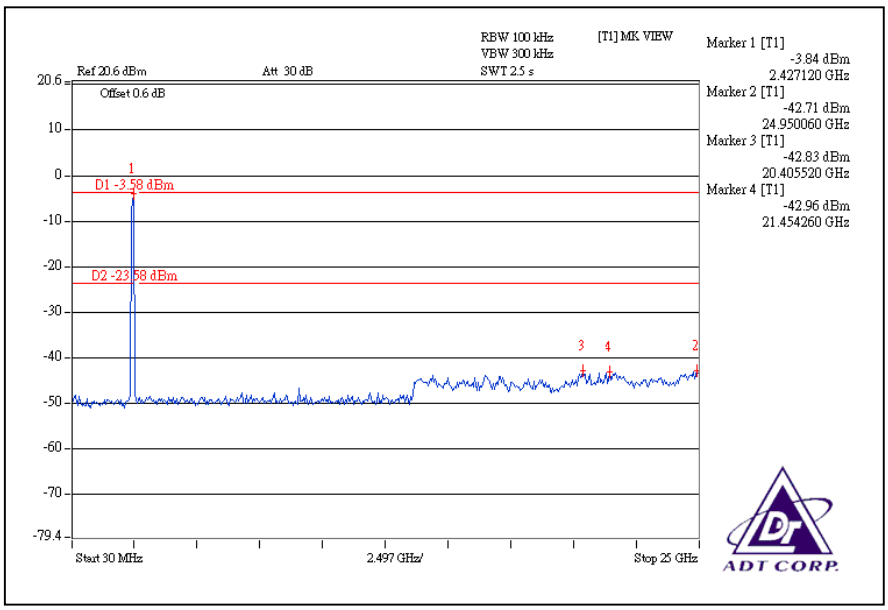
For Chain (0):CH1



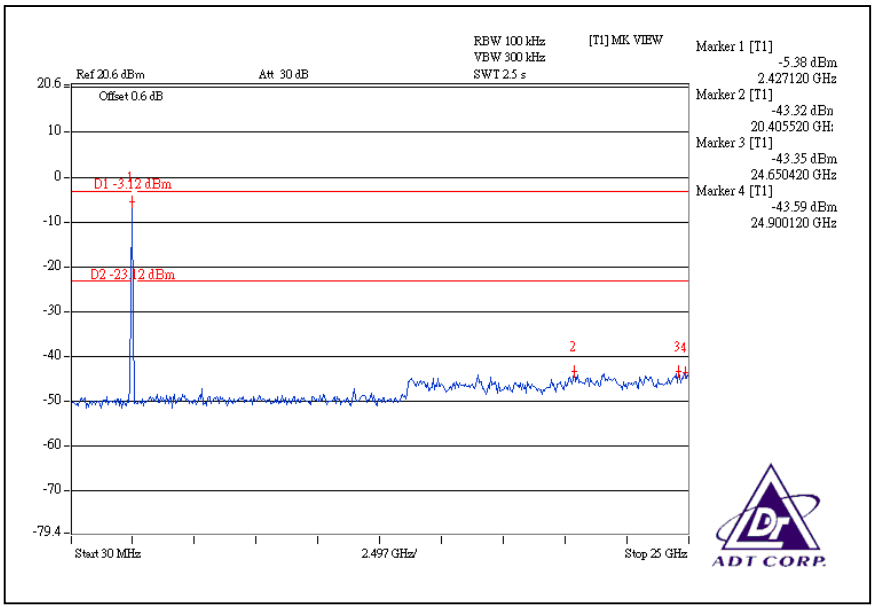
CH7



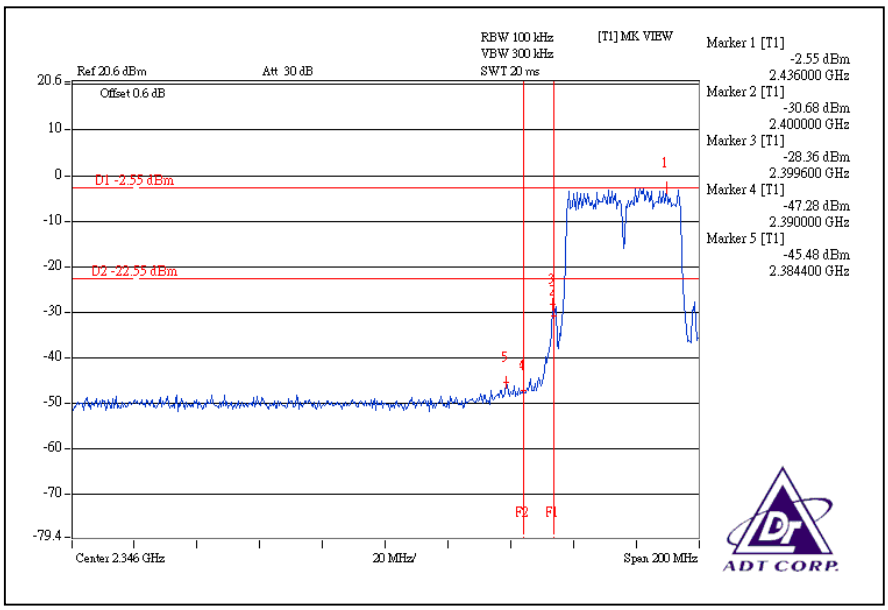
CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 -3.58 dBm
D2 -23.58 dBm
Marker 1 [T1]
-3.84 dBm
2.427120 GHz
Marker 2 [T1]
-42.71 dBm
24.950060 GHz
Marker 3 [T1]
-42.83 dBm
20.405520 GHz
Marker 4 [T1]
-42.96 dBm
21.454260 GHz
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

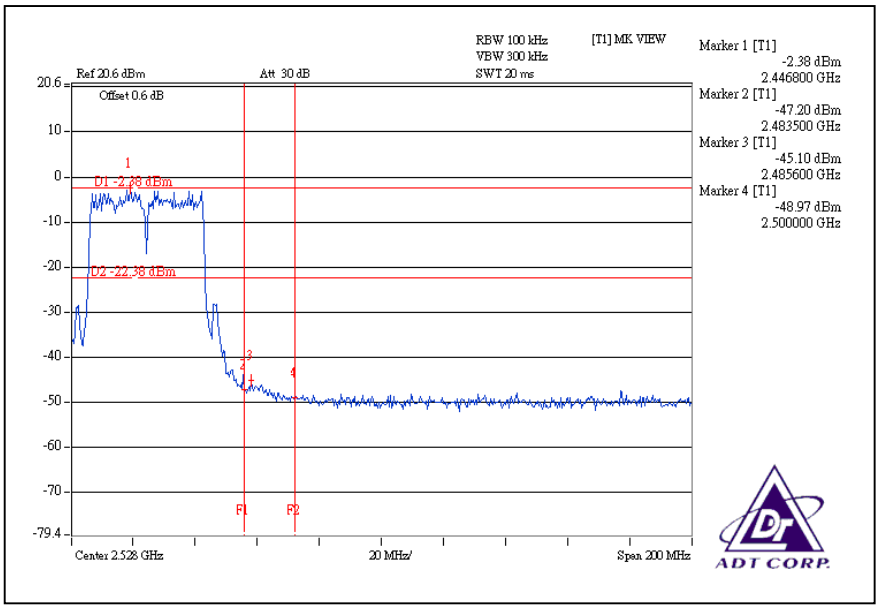
CH7


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 -3.12 dBm
D2 -23.12 dBm
Marker 1 [T1]
-5.38 dBm
2.427120 GHz
Marker 2 [T1]
-43.32 dBm
20.405520 GHz
Marker 3 [T1]
-43.35 dBm
24.650420 GHz
Marker 4 [T1]
-43.59 dBm
24.900120 GHz
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

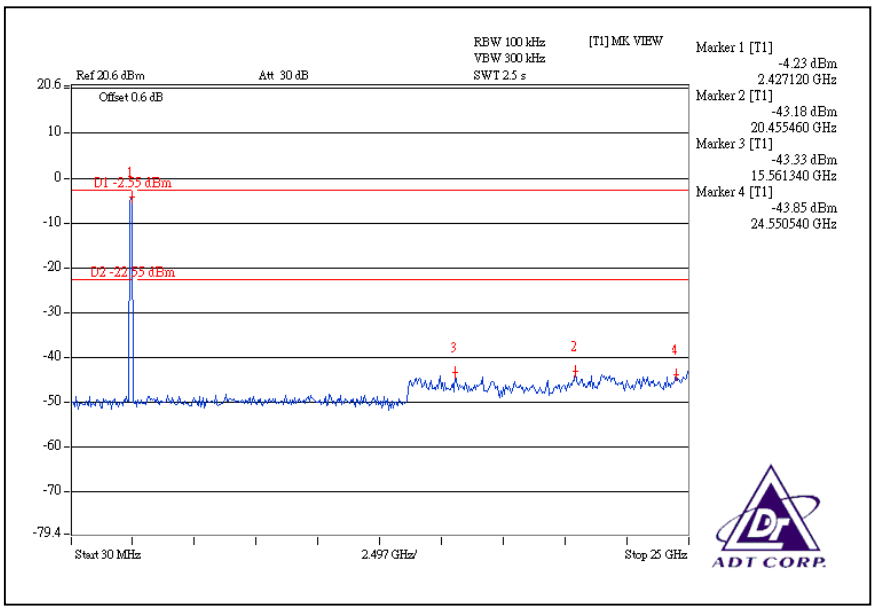
For Chain (1):CH1



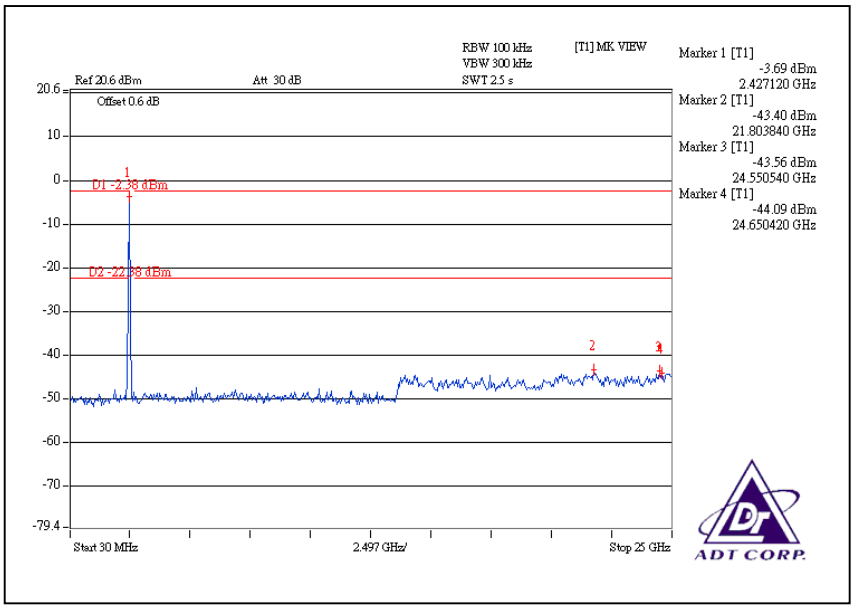
CH7



CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 -2.55 dBm
D2 -22.55 dBm
Marker 1 [T1]
-4.23 dBm
2.427120 GHz
Marker 2 [T1]
-43.18 dBm
20.455460 GHz
Marker 3 [T1]
-43.33 dBm
15.561340 GHz
Marker 4 [T1]
-43.85 dBm
24.550540 GHz
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

CH7


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 -2.38 dBm
D2 -22.38 dBm
Marker 1 [T1]
-3.69 dBm
2.427120 GHz
Marker 2 [T1]
-43.40 dBm
21.803840 GHz
Marker 3 [T1]
-43.56 dBm
24.550540 GHz
Marker 4 [T1]
-44.09 dBm
24.650420 GHz
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

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

4.7.2 ANTENNA CONNECTED CONSTRUCTION

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

Transmitter Circuit	Antenna Type	For 2.4GHz Gain (dBi)	For 5GHz Gain (dBi)	Antenna Connector	Note
Chain(0)	PIFA	0.75	3	NA	TX & RX function
Chain(1)	PIFA	1.5	2.23	NA	TX & RX function
Chain(2)	PIFA	3.5	2.5	NA	Only RX function

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

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100287	Mar. 10, 2009
Line-Impedance Stabilization Network(for EUT)	KNW-407	8-1395-12	Aug. 19, 2008
Line-Impedance Stabilization Network(for Peripheral)	ENV-216	100072	Nov. 08, 2008
RF Cable (JETBAO)	RG5B/U-6m	COACAB-9KHz-30MHz	Aug. 15, 2008
50 ohms Terminator	50	3	Nov. 15, 2008
Software	ADT_Cond_V7.3.2	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
4. The test was performed in ADT Shielded Room No. A.
5. The VCCI Con A Registration No. is C-817.

5.1.3 TEST PROCEDURES

g. 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.

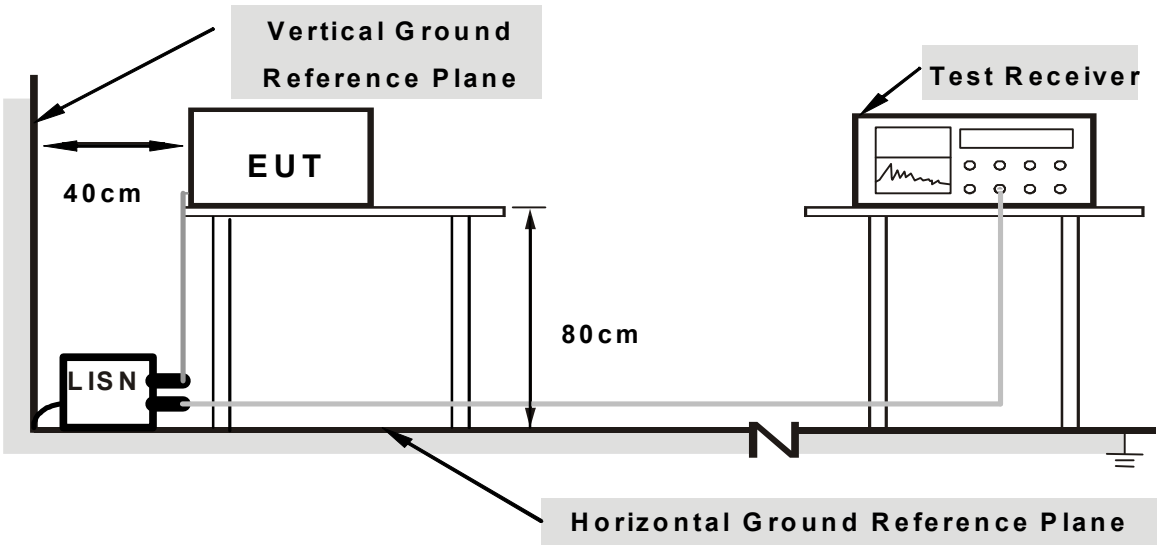
h. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



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

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

5.1.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

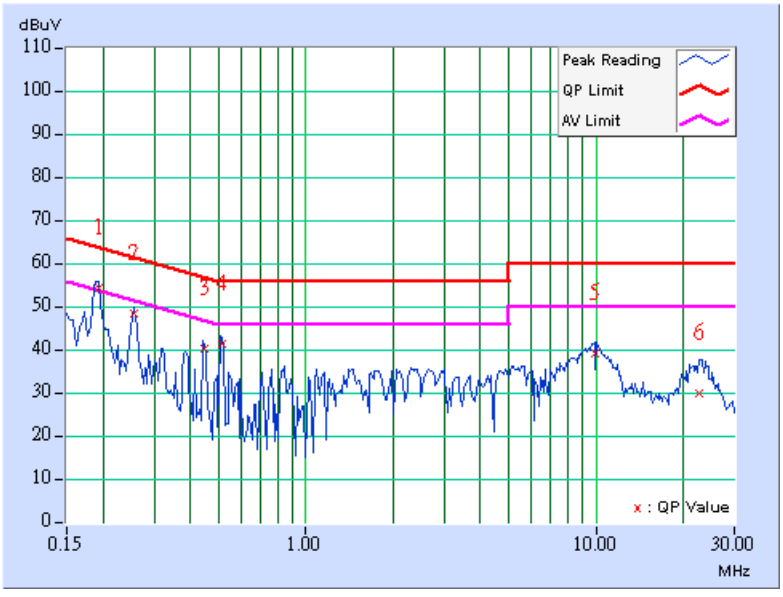
5.1.7 TEST RESULTS – Adapter 1

802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	**PHASE**	Line (L)
MODULATION TYPE	BPSK	**6dB BANDWIDTH**	9 kHz
TRANSFER RATE	6Mbps	**INPUT POWER**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 971hPa	**TESTED BY**	Mike Hsieh

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	0.34	53.46	-	53.80	-	63.90	53.90	-10.10	-
2	0.255	0.27	47.46	-	47.73	-	61.58	51.58	-13.84	-
3	0.447	0.12	39.29	-	39.41	-	56.94	46.94	-17.53	-
4	0.512	0.14	40.45	-	40.59	-	56.00	46.00	-15.41	-
5	9.898	0.55	38.28	-	38.83	-	60.00	50.00	-21.17	-
6	22.824	0.93	29.18	-	30.11	-	60.00	50.00	-29.89	-

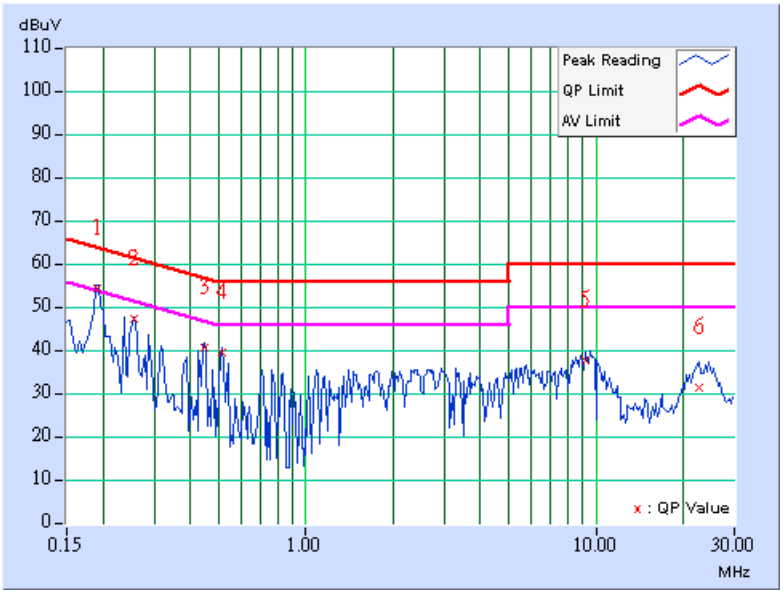
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission 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	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 971hPa	TESTED BY	Mike Hsieh

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	0.36	53.68	46.06	54.04	46.42	63.96	53.96	-9.92	-7.54
2	0.254	0.29	46.57	-	46.86	-	61.61	51.61	-14.75	-
3	0.448	0.11	39.83	-	39.94	-	56.92	46.92	-16.98	-
4	0.513	0.13	38.68	-	38.81	-	56.00	46.00	-17.19	-
5	9.218	0.52	36.81	-	37.33	-	60.00	50.00	-22.67	-
6	22.621	0.92	30.56	-	31.48	-	60.00	50.00	-28.52	-

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.



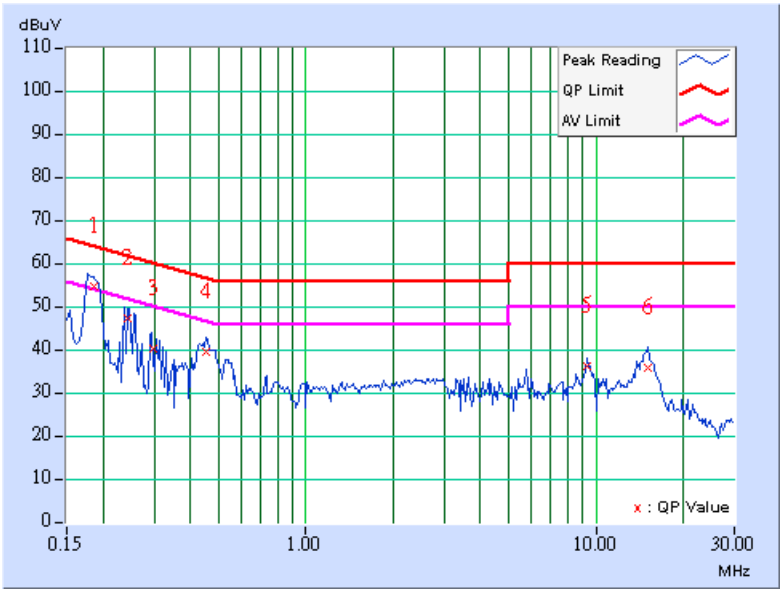
5.1.8 TEST RESULTS – Adapter 2

802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	**PHASE**	Line (L)
MODULATION TYPE	BPSK	**6dB BANDWIDTH**	9 kHz
TRANSFER RATE	6Mbps	**INPUT POWER**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 971hPa	**TESTED BY**	Mike Hsieh

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	0.185	0.34	53.82	-	54.16	-	64.25	54.25	-10.09	-
2	0.242	0.29	46.41	-	46.70	-	62.01	52.01	-15.31	-
3	0.299	0.22	39.42	-	39.64	-	60.26	50.26	-20.62	-
4	0.451	0.12	38.81	-	38.93	-	56.86	46.86	-17.93	-
5	9.289	0.53	35.53	-	36.06	-	60.00	50.00	-23.94	-
6	15.109	0.86	35.21	-	36.07	-	60.00	50.00	-23.93	-

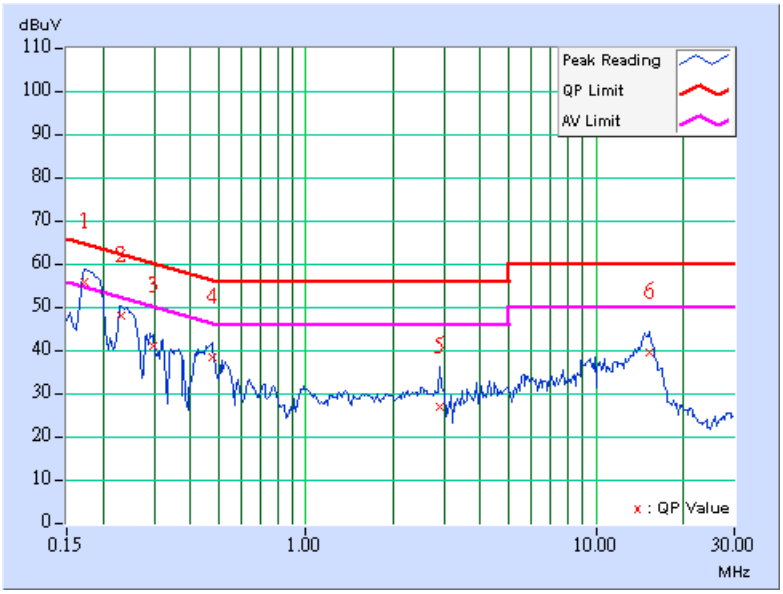
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission 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	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 971hPa	TESTED BY	Mike Hsieh

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	0.173	0.37	55.19	38.15	55.56	38.52	64.79	54.79	-9.24	-16.28
2	0.232	0.32	47.44	-	47.76	-	62.38	52.38	-14.62	-
3	0.298	0.23	40.19	-	40.42	-	60.29	50.29	-19.87	-
4	0.474	0.12	37.62	-	37.74	-	56.44	46.44	-18.70	-
5	2.904	0.34	26.12	-	26.46	-	56.00	46.00	-29.54	-
6	15.281	0.86	38.70	-	39.56	-	60.00	50.00	-20.44	-

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.



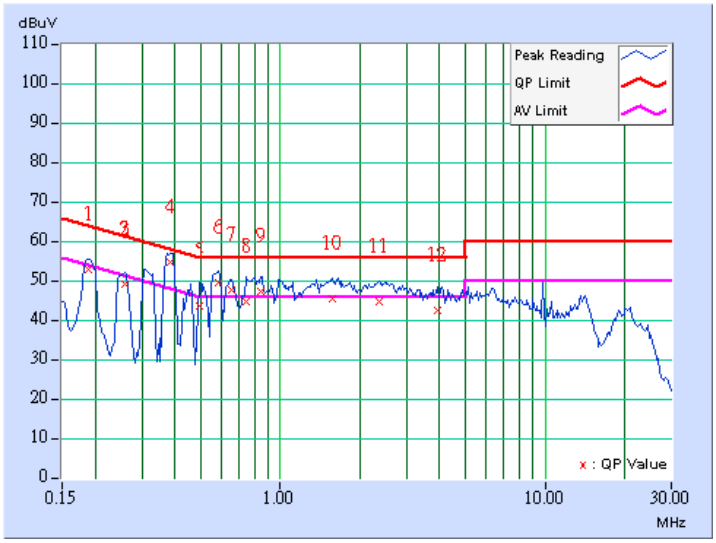
5.1.9 TEST RESULTS – Adapter 3

802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 971hPa	TESTED BY	Mike Hsieh

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	0.189	0.34	52.43	-	52.77	-	64.08	54.08	-11.30	-
2	0.259	0.27	48.84	-	49.11	-	61.45	51.45	-12.34	-
3	0.259	0.27	48.80	-	49.07	-	61.45	51.45	-12.38	-
4	0.384	0.12	54.31	44.91	54.43	45.03	58.18	48.18	-3.76	-3.16
5	0.494	0.13	43.40	-	43.53	-	56.10	46.10	-12.57	-
6	0.584	0.17	49.20	40.56	49.37	40.73	56.00	46.00	-6.63	-5.27
7	0.658	0.19	47.36	35.26	47.55	35.45	56.00	46.00	-8.45	-10.55
8	0.740	0.22	44.36	-	44.58	-	56.00	46.00	-11.42	-
9	0.849	0.26	46.93	35.89	47.19	36.15	56.00	46.00	-8.81	-9.85
10	1.568	0.30	45.06	-	45.36	-	56.00	46.00	-10.64	-
11	2.353	0.30	44.38	-	44.68	-	56.00	46.00	-11.32	-
12	3.926	0.41	42.33	-	42.74	-	56.00	46.00	-13.26	-

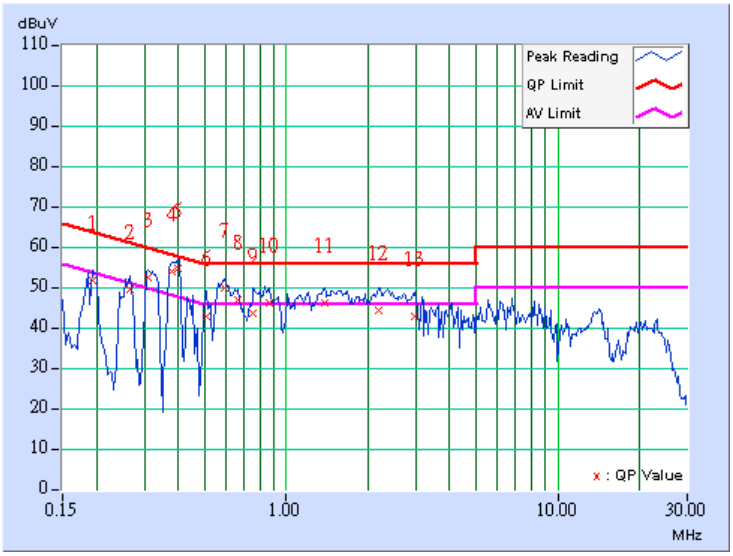
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	PHASE	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 971hPa	TESTED BY	Mike Hsieh

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	0.36	51.44	-	51.80	-	63.91	53.91	-12.11	-
2	0.267	0.27	49.18	-	49.45	-	61.20	51.20	-11.76	-
3	0.310	0.21	52.29	43.85	52.50	44.06	59.97	49.97	-7.46	-5.90
4	**0.380**	**0.12**	**53.79**	**45.13**	**53.91**	**45.25**	**58.27**	**48.27**	**-4.36**	**-3.02**
5	0.399	0.09	54.51	42.04	54.60	42.13	57.88	47.88	-3.28	-5.75
6	0.509	0.13	42.73	-	42.86	-	56.00	46.00	-13.14	-
7	0.591	0.16	49.76	39.10	49.92	39.26	56.00	46.00	-6.08	-6.74
8	0.662	0.19	46.64	33.88	46.83	34.07	56.00	46.00	-9.17	-11.93
9	0.755	0.23	43.31	-	43.54	-	56.00	46.00	-12.46	-
10	0.861	0.27	46.07	34.09	46.34	34.36	56.00	46.00	-9.66	-11.64
11	1.388	0.30	45.96	35.87	46.26	36.17	56.00	46.00	-9.74	-9.83
12	2.201	0.29	44.26	-	44.55	-	56.00	46.00	-11.45	-
13	2.986	0.34	42.72	-	43.06	-	56.00	46.00	-12.94	-

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.



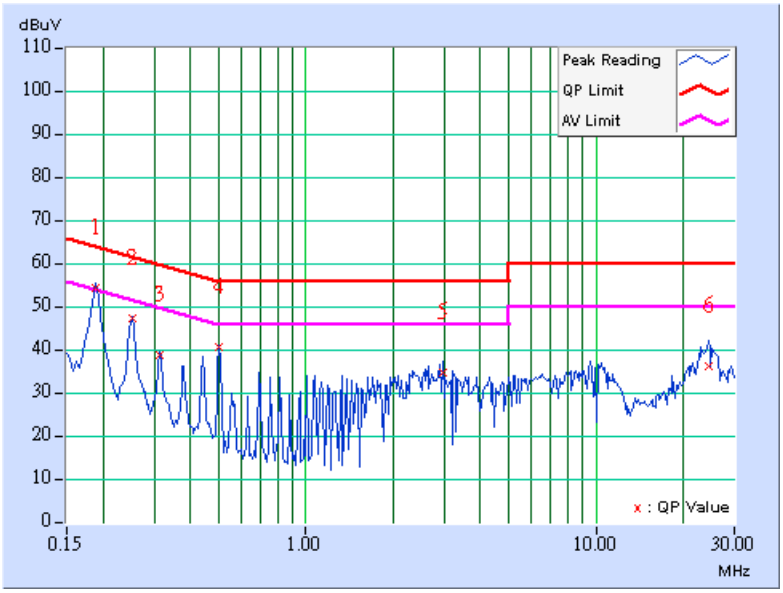
5.1.10 TEST RESULTS – Adapter 4

802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	**PHASE**	Line (L)
MODULATION TYPE	BPSK	**6dB BANDWIDTH**	9 kHz
TRANSFER RATE	6Mbps	**INPUT POWER**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 971hPa	**TESTED BY**	Mike Hsieh

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	0.189	0.34	53.64	-	53.98	-	64.08	54.08	-10.09	-
2	0.252	0.28	46.29	-	46.57	-	61.71	51.71	-15.14	-
3	0.314	0.20	38.10	-	38.30	-	59.86	49.86	-21.56	-
4	0.504	0.14	39.87	-	40.01	-	56.00	46.00	-15.99	-
5	2.966	0.34	33.95	-	34.29	-	56.00	46.00	-21.71	-
6	24.453	0.96	35.36	-	36.32	-	60.00	50.00	-23.68	-

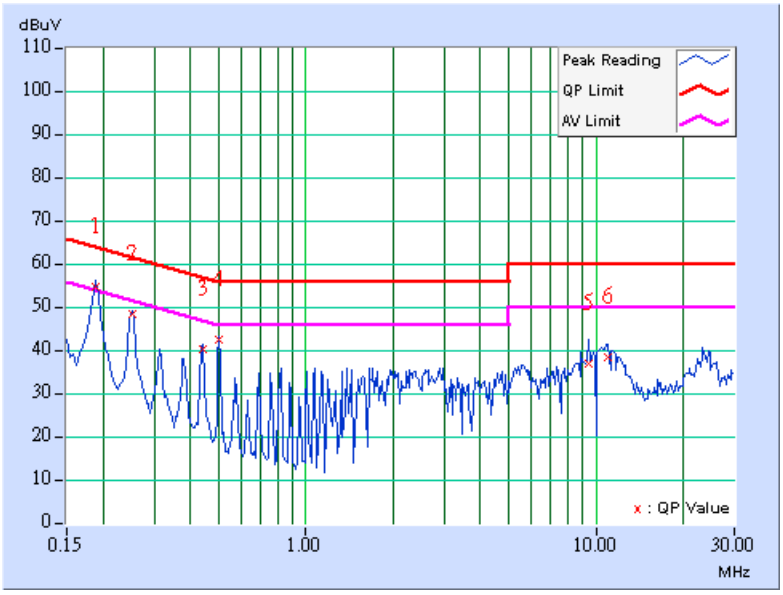
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	PHASE	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 971hPa	TESTED BY	Mike Hsieh

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	0.189	0.36	54.38	46.89	54.74	47.25	64.08	54.08	-9.33	-6.82
2	0.252	0.29	47.74	-	48.03	-	61.71	51.71	-13.68	-
3	0.442	0.11	39.61	-	39.72	-	57.03	47.03	-17.32	-
4	0.504	0.13	41.83	-	41.96	-	56.00	46.00	-14.04	-
5	9.418	0.53	36.46	-	36.99	-	60.00	50.00	-23.01	-
6	11.024	0.61	37.84	-	38.45	-	60.00	50.00	-21.55	-

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



5.2 RADIATED EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 15, 2008
HP Pre_Amplifier	8449B	3008A01922	Oct. 04, 2008
ROHDE & SCHWARZ Test Receiver	ESCS30	100375	Mar. 31, 2009
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	July 26, 2008
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 16, 2008
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 27, 2009
RF Switches (ARNITSU)	CS-201	1565157	Aug. 13, 2008
RF CABLE (Chaintek)	SF102	22054-2	Dec. 06. 2008
RF Cable(RICHTEC)	9913-30M N-N Cable	STCCAB-30M-1 GHz	Aug. 13, 2008
Software	ADT_Radiated_V 7.6.15.8	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: R3271A) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in ADT Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 3789C-3.

5.2.3 TEST PROCEDURES

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

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

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

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

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

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

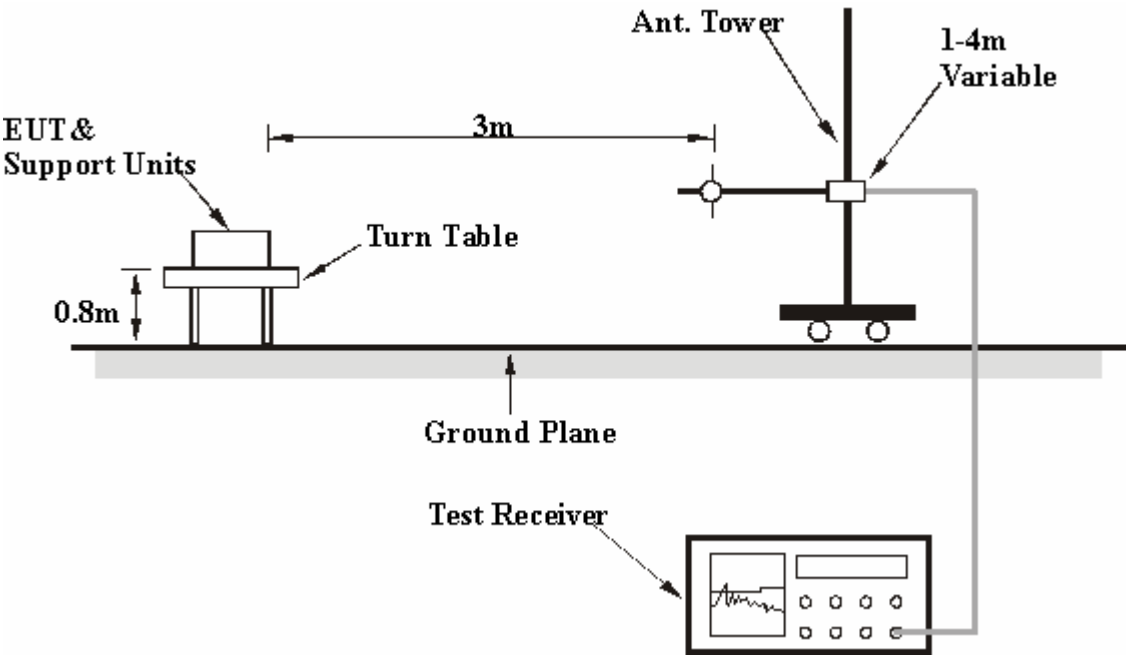
NOTE:

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

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



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

5.2.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

Below 1GHz Test Data

5.2.7 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	125.00	38.90 QP	43.50	-4.60	1.35 H	85	25.67	13.23
2	201.90	31.97 QP	43.50	-11.53	1.44 H	82	19.91	12.06
3	250.01	37.85 QP	46.00	-8.15	1.00 H	260	25.02	12.83
4	300.00	37.24 QP	46.00	-8.76	1.00 H	282	20.65	16.59
5	375.01	34.85 QP	46.00	-11.15	1.03 H	213	17.37	17.48
6	450.00	33.68 QP	46.00	-12.32	1.82 H	12	13.80	19.88
7	500.00	32.23 QP	46.00	-13.77	1.56 H	190	11.18	21.05
8	625.02	33.21 QP	46.00	-12.79	1.71 H	86	9.21	24.00
9	900.00	34.67 QP	46.00	-11.33	1.80 H	43	5.00	29.67
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	46.45	36.63 QP	40.00	-3.37	1.00 V	1	20.73	15.90
2	**125.00**	**40.61 QP**	**43.50**	**-2.89**	**1.00 V**	**224**	**27.38**	**13.23**
3	250.00	33.13 QP	46.00	-12.87	1.14 V	173	20.30	12.83
4	375.00	37.88 QP	46.00	-8.12	1.29 V	224	20.40	17.48
5	384.01	33.29 QP	46.00	-12.71	1.14 V	178	15.60	17.69
6	500.01	34.02 QP	46.00	-11.98	1.00 V	333	12.97	21.05
7	625.01	37.31 QP	46.00	-8.69	1.00 V	15	13.31	24.00
8	750.00	35.17 QP	46.00	-10.83	1.28 V	296	7.91	27.26

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

Above 1GHz Test Data

5.2.8 TEST RESULTS

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	114.20 PK			1.20 H	113	77.09	37.11
2	*5745.00	102.70 AV			1.20 H	113	65.59	37.11
3	#11490.00	58.50 PK	74.00	-15.50	1.42 H	359	11.88	46.62
4	#11490.00	44.70 AV	54.00	-9.30	1.42 H	359	-1.92	46.62
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	108.40 PK			1.03 V	209	71.29	37.11
2	*5745.00	97.50 AV			1.03 V	209	60.39	37.11
3	#11490.00	58.00 PK	74.00	-16.00	1.00 V	327	11.38	46.62
4	#11490.00	44.30 AV	54.00	-9.70	1.00 V	327	-2.32	46.62

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	114.70 PK			1.24 H	111	77.52	37.18
2	*5785.00	103.60 AV			1.24 H	111	66.42	37.18
3	#11570.00	58.50 PK	74.00	-15.50	1.43 H	8	11.92	46.58
4	#11570.00	45.20 AV	54.00	-8.80	1.43 H	8	-1.38	46.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	108.00 PK			1.03 V	210	70.82	37.18
2	*5785.00	97.00 AV			1.03 V	210	59.82	37.18
3	#11570.00	57.90 PK	74.00	-16.10	1.00 V	337	11.32	46.58
4	#11570.00	44.20 AV	54.00	-9.80	1.00 V	337	-2.38	46.58

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5805.00	113.90 PK			1.19 H	109	76.68	37.22
2	*5805.00	102.80 AV			1.19 H	109	65.58	37.22
3	#11610.00	58.70 PK	74.00	-15.30	1.37 H	6	12.14	46.56
4	#11610.00	45.50 AV	54.00	-8.50	1.37 H	6	-1.06	46.56
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	*5805.00	106.60 PK			1.00 V	210	69.38	37.22
2	*5805.00	96.10 AV			1.00 V	210	58.88	37.22
3	#11610.00	58.20 PK	74.00	-15.80	1.00 V	335	11.64	46.56
4	#11610.00	44.50 AV	54.00	-9.50	1.00 V	335	-2.06	46.56

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	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	110.40 PK			1.24 H	113	73.29	37.11
2	*5745.00	98.10 AV			1.24 H	113	60.99	37.11
3	#11490.00	57.60 PK	74.00	-16.40	1.41 H	357	10.98	46.62
4	#11490.00	44.20 AV	54.00	-9.80	1.41 H	357	-2.42	46.62
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	105.40 PK			1.03 V	209	68.29	37.11
2	*5745.00	92.70 AV			1.03 V	209	55.59	37.11
3	#11490.00	57.40 PK	74.00	-16.60	1.00 V	329	10.78	46.62
4	#11490.00	44.10 AV	54.00	-9.90	1.00 V	329	-2.52	46.62

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	112.30 PK			1.23 H	112	75.12	37.18
2	*5785.00	99.90 AV			1.23 H	112	62.72	37.18
3	#11570.00	57.90 PK	74.00	-16.10	1.45 H	8	11.32	46.58
4	#11570.00	44.30 AV	54.00	-9.70	1.45 H	8	-2.28	46.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	105.50 PK			1.03 V	211	68.32	37.18
2	*5785.00	93.20 AV			1.03 V	211	56.02	37.18
3	#11570.00	57.80 PK	74.00	-16.20	1.00 V	323	11.22	46.58
4	#11570.00	44.40 AV	54.00	-9.60	1.00 V	323	-2.18	46.58

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5805.00	112.10 PK			1.19 H	110	74.88	37.22
2	*5805.00	99.30 AV			1.19 H	110	62.08	37.22
3	#11610.00	58.10 PK	74.00	-15.90	1.39 H	7	11.54	46.56
4	#11610.00	44.60 AV	54.00	-9.40	1.39 H	7	-1.96	46.56
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	*5805.00	104.80 PK			1.00 V	209	67.58	37.22
2	*5805.00	92.50 AV			1.00 V	209	55.28	37.22
3	#11610.00	57.90 PK	74.00	-16.10	1.00 V	334	11.34	46.56
4	#11610.00	44.20 AV	54.00	-9.80	1.00 V	334	-2.36	46.56

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	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5755.00	108.60 PK			1.21 H	110	71.47	37.13
2	*5755.00	95.60 AV			1.21 H	110	58.47	37.13
3	#11510.00	57.40 PK	74.00	-16.60	1.44 H	2	10.78	46.62
4	#11510.00	44.10 AV	54.00	-9.90	1.44 H	2	-2.52	46.62
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5755.00	103.00 PK			1.04 V	209	65.87	37.13
2	*5755.00	90.10 AV			1.04 V	209	52.97	37.13
3	#11510.00	57.60 PK	74.00	-16.40	1.00 V	329	10.98	46.62
4	#11510.00	44.30 AV	54.00	-9.70	1.00 V	329	-2.32	46.62

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 965hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	108.90 PK			1.23 H	112	71.70	37.20
2	*5795.00	95.80 AV			1.23 H	112	58.60	37.20
3	#11590.00	57.70 PK	74.00	-16.30	1.40 H	9	11.13	46.57
4	#11590.00	44.30 AV	54.00	-9.70	1.40 H	9	-2.27	46.57
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	101.00 PK			1.01 V	211	63.80	37.20
2	*5795.00	89.30 AV			1.01 V	211	52.10	37.20
3	#11590.00	57.70 PK	74.00	-16.30	1.00 V	343	11.13	46.57
4	#11590.00	44.20 AV	54.00	-9.80	1.00 V	343	-2.37	46.57

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

5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.3.2 TEST INSTRUMENTS

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

NOTE:

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

5.3.3 TEST PROCEDURE

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

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP

5.3.6 EUT OPERATING CONDITIONS

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

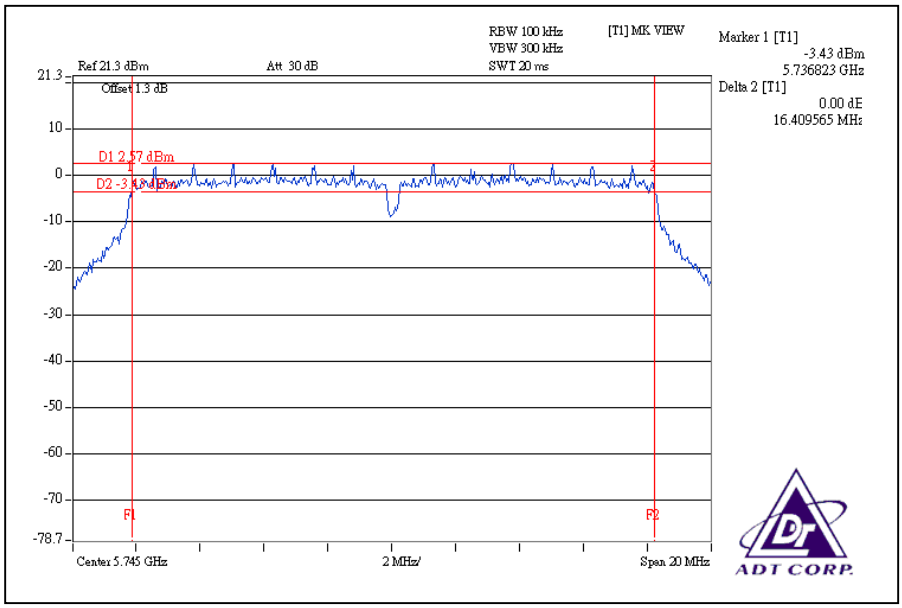
5.3.7 TEST RESULTS

802.11a OFDM MODULATION:

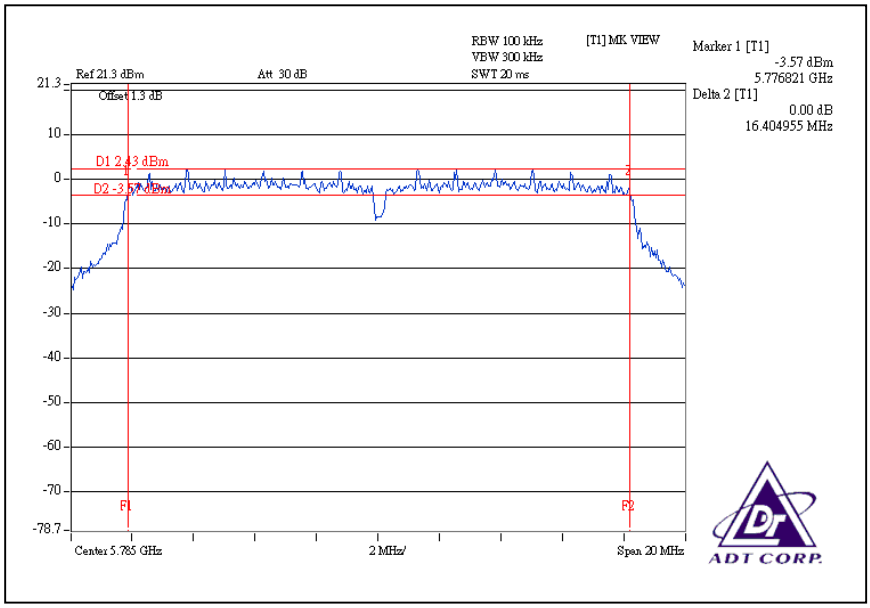
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 972hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	5745	16.41	16.43	0.5	PASS
3	5785	16.40	16.43	0.5	PASS
4	5805	16.41	16.43	0.5	PASS

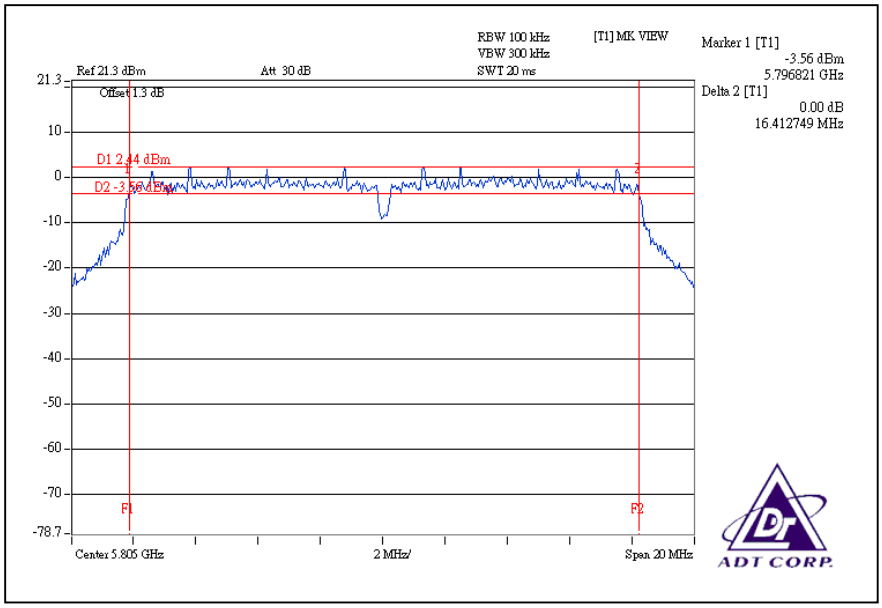
For Chain (0): CH1



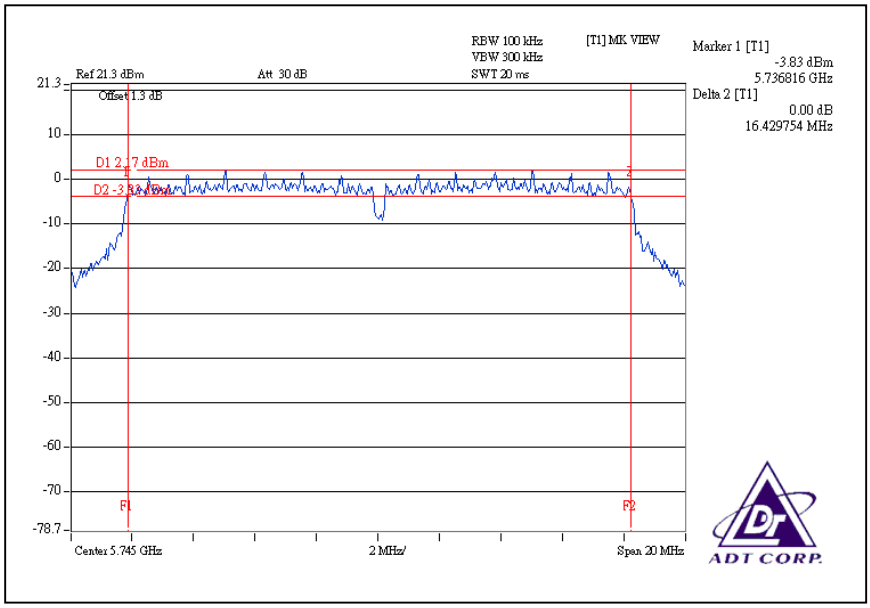
CH3


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-3.57 dBm
5.776821 GHz
Delta 2 [T1]
0.00 dB
16.404955 MHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
D1 2.43 dBm
F1
F2
Center 5.785 GHz
2 MHz/
Span 20 MHz
ADT CORP.

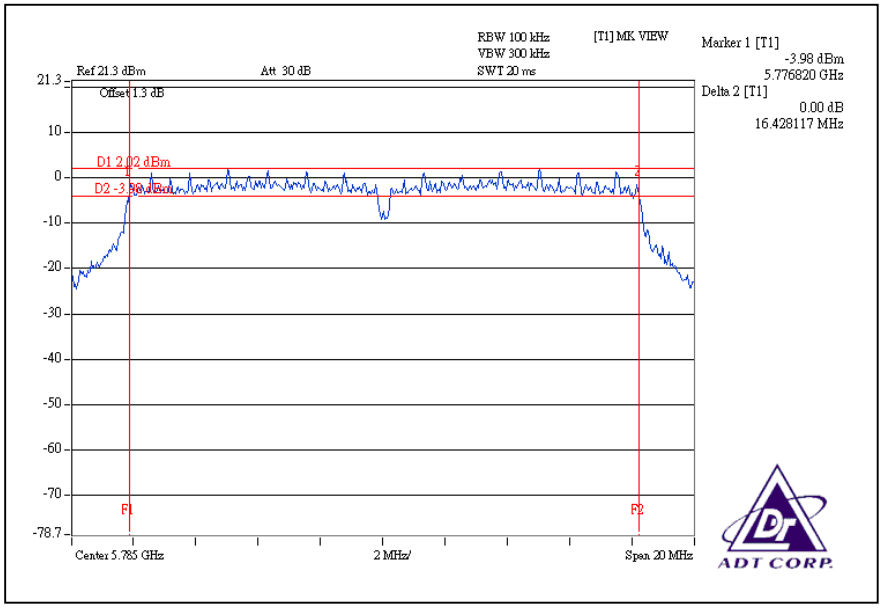
CH4


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-3.56 dBm
5.796821 GHz
Delta 2 [T1]
0.00 dB
16.412749 MHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
D1 2.44 dBm
F1
F2
Center 5.805 GHz
2 MHz/
Span 20 MHz
ADT CORP.

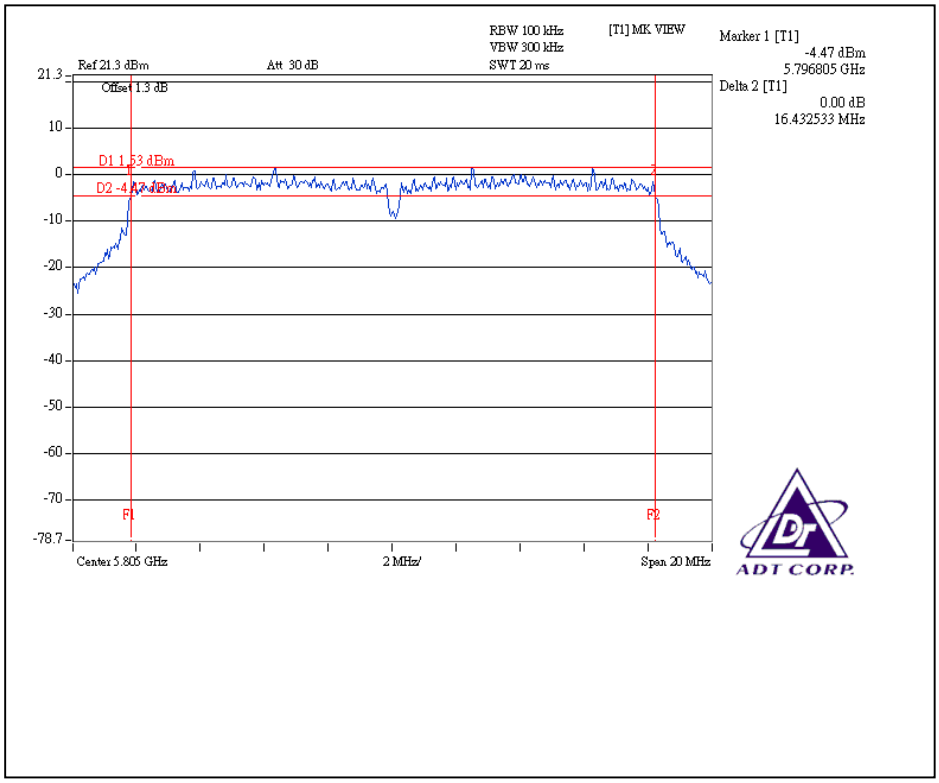
For Chain (1): CH1



CH3



CH4

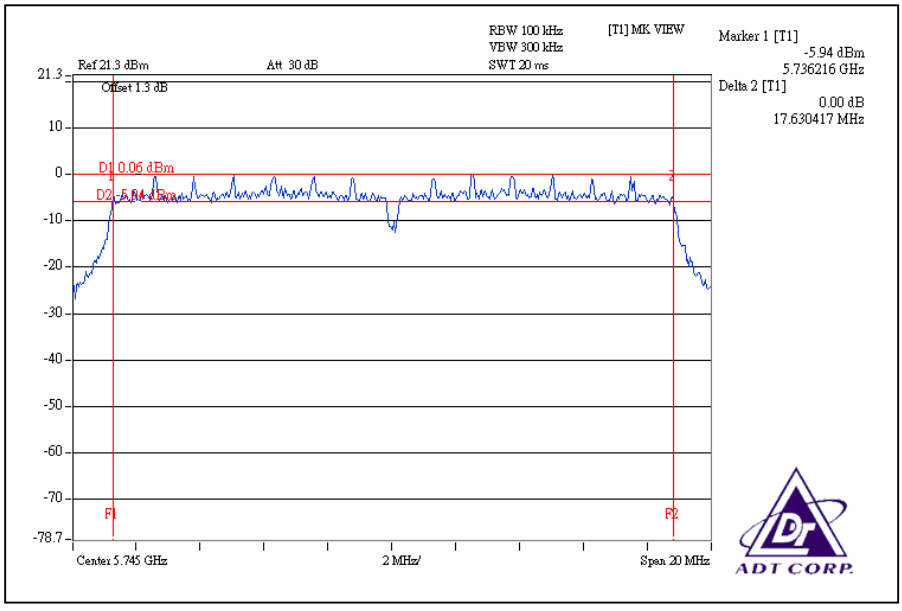

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-4.47 dBm
5.796805 GHz
Delta 2 [T1]
0.00 dB
16.432533 MHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
D1 1.53 dBm
F1
F2
Center 5.805 GHz
2 MHz/
Span 20 MHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

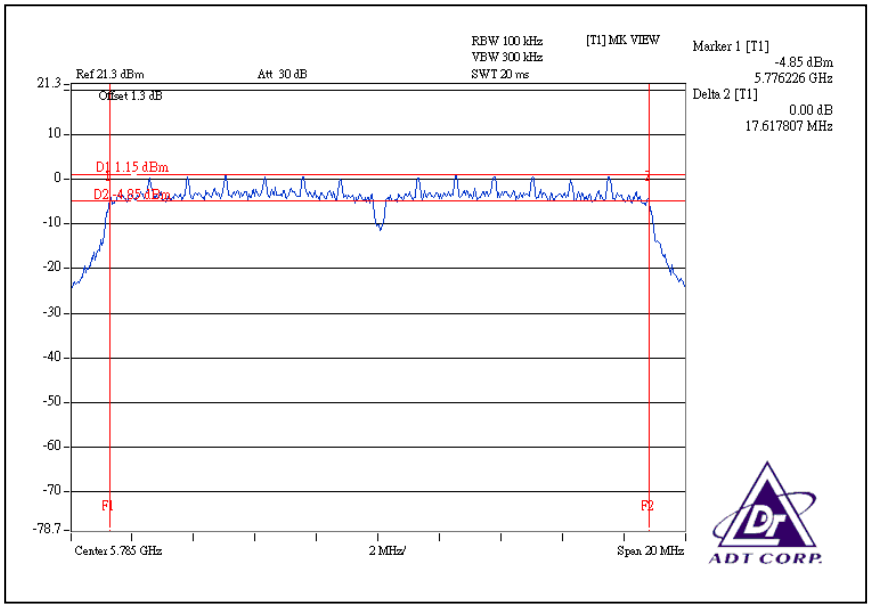
MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	5745	17.63	17.64	0.5	PASS
3	5785	17.62	17.65	0.5	PASS
4	5805	17.61	17.64	0.5	PASS

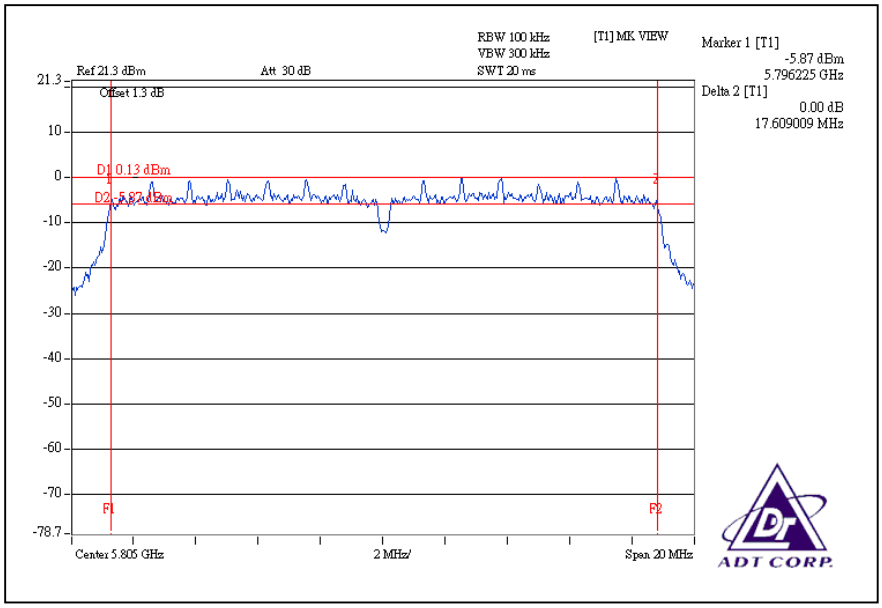
For Chain (0): CH1



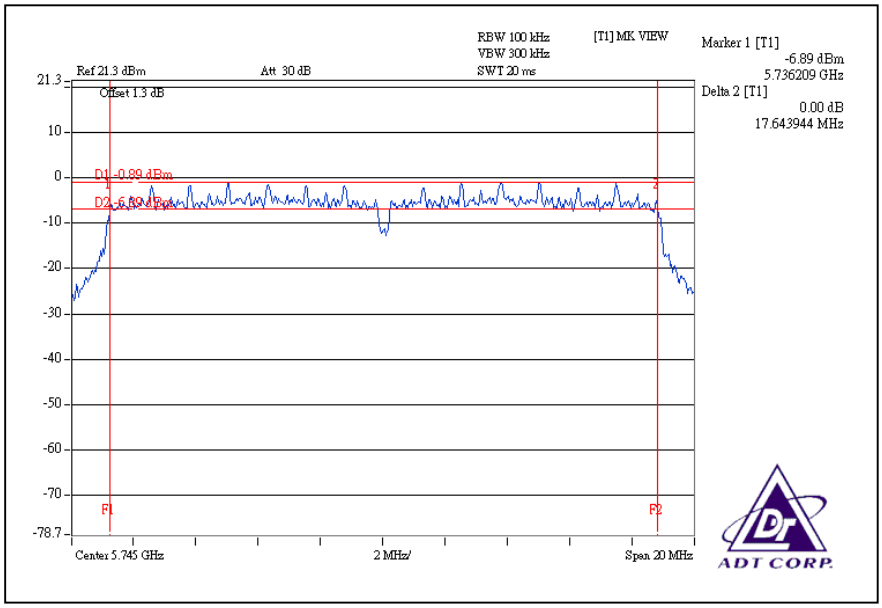
CH3


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-4.85 dBm
5.776226 GHz
Delta 2 [T1]
0.00 dB
17.617807 MHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 1.15 dBm
D2 -4.85 dBm
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
F1
F2
Center 5.785 GHz
2 MHz/
Span 20 MHz
ADT CORP.

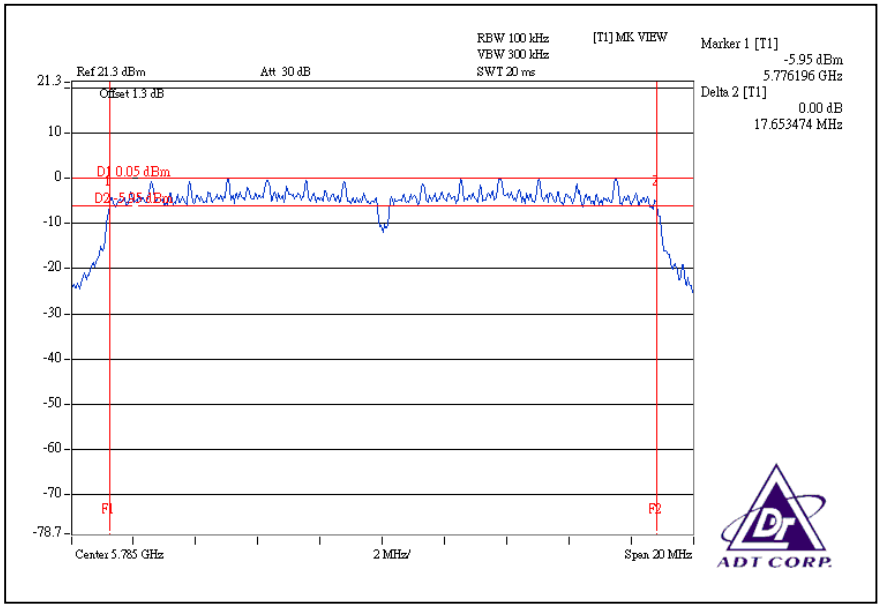
CH4


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-5.87 dBm
5.796225 GHz
Delta 2 [T1]
0.00 dB
17.609009 MHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 0.13 dBm
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
F1
F2
Center 5.805 GHz
2 MHz/
Span 20 MHz
ADT CORP.

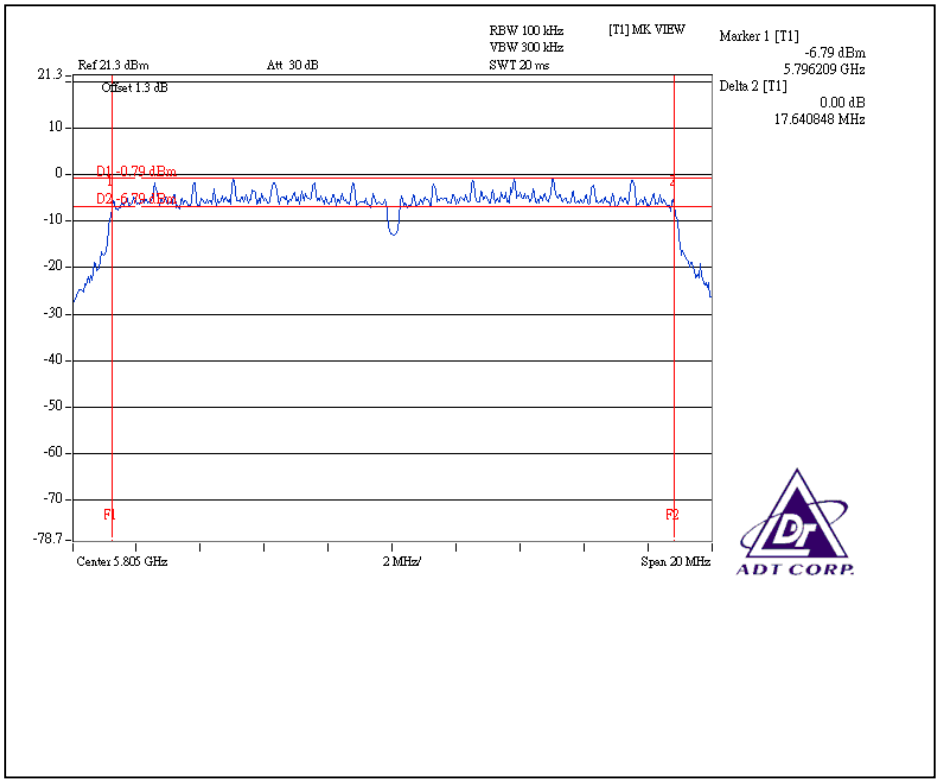
For Chain (1): CH1



CH3



CH4

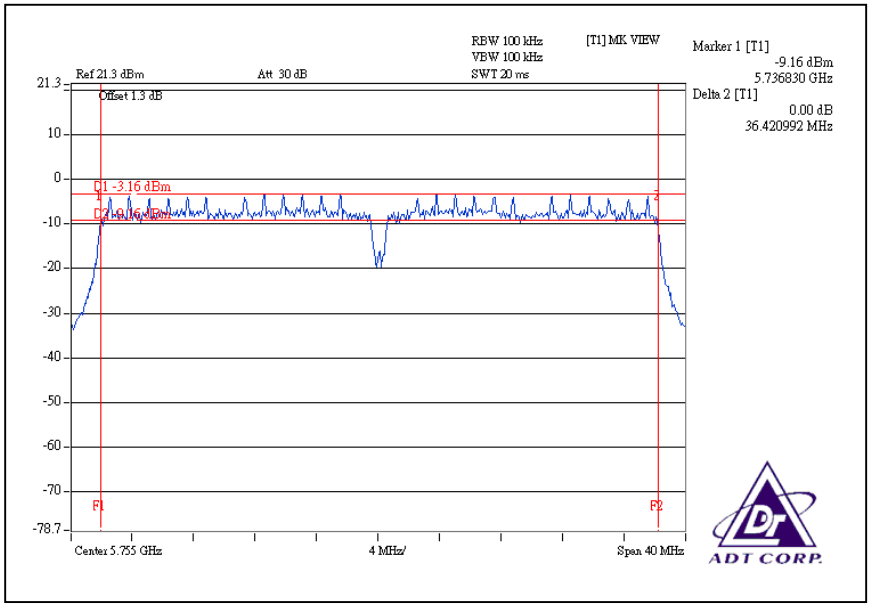

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-6.79 dBm
5.796209 GHz
Delta 2 [T1]
0.00 dB
17.640848 MHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
D1 -0.79 dBm
D2 -6.79 dBm
F1
F2
Center 5.805 GHz
2 MHz/
Span 20 MHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

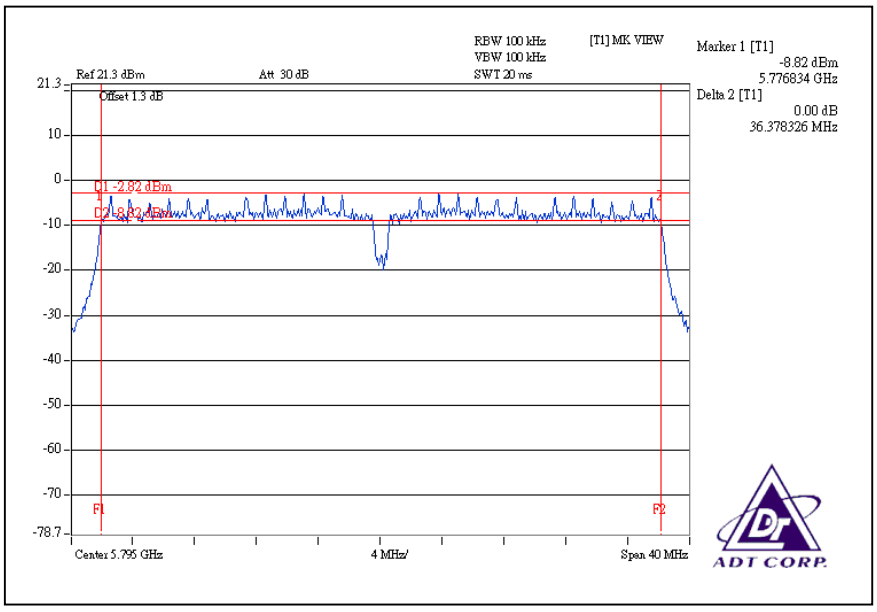
MODULATION TYPE	BPSK	**TRANSFER RATE**	27Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg. C, 60%RH, 972hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	5755	36.42	36.40	0.5	PASS
3	5795	36.38	36.43	0.5	PASS

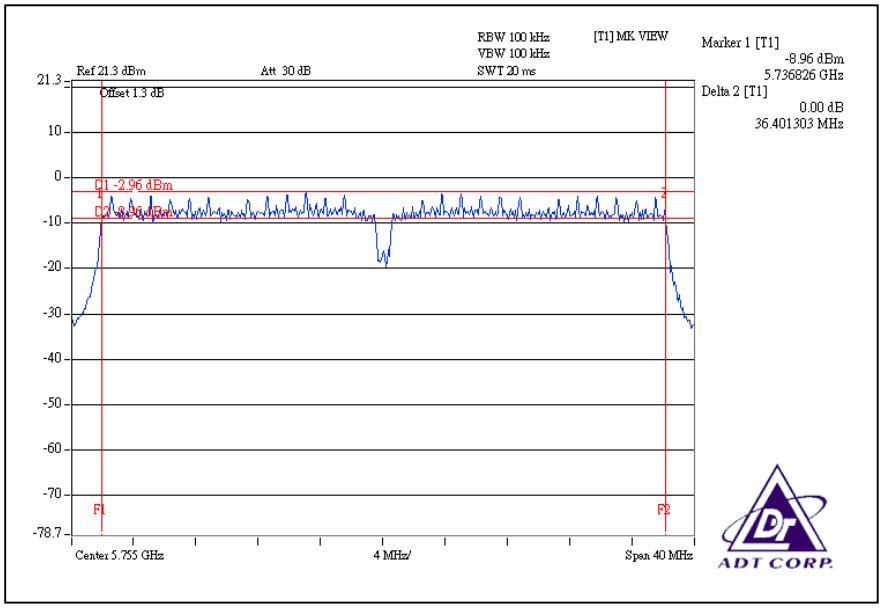
For Chain (0): CH1



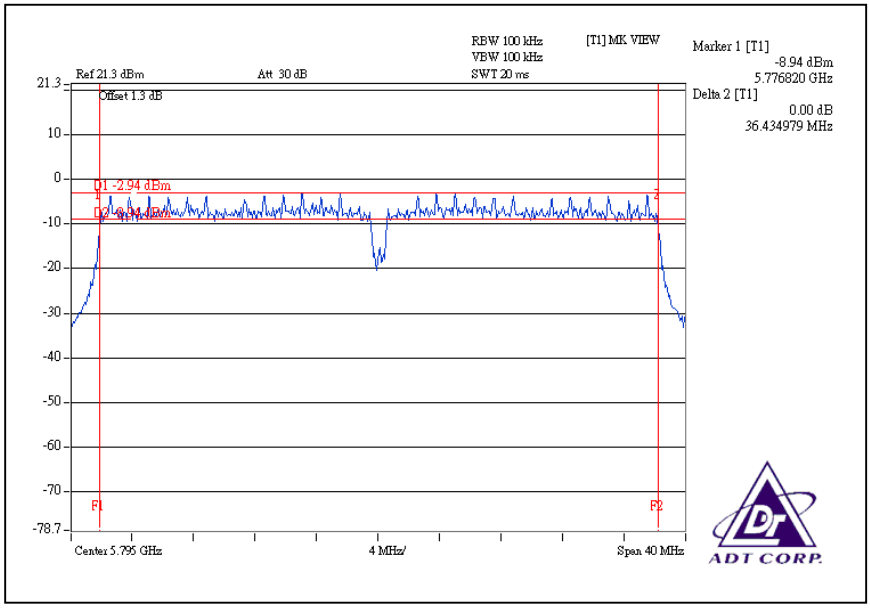
CH3



For Chain (1): CH1



CH3



5.4 MAXIMUM PEAK OUTPUT POWER

5.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

5.4.2 INSTRUMENTS

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

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

5.4.3 TEST PROCEDURES

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

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP

5.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

5.4.7 TEST RESULTS

802.11a OFDM modulation

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 972hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	5745	63.096	60.256	18.00	17.80	123.352	20.91	30	PASS
3	5785	61.660	60.256	17.90	17.80	121.916	20.86	30	PASS
4	5805	63.096	60.256	18.00	17.80	123.352	20.91	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 972hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	5745	30.200	28.840	14.80	14.60	59.040	17.71	30	PASS
3	5785	38.905	38.905	15.90	15.90	77.810	18.91	30	PASS
4	5805	30.903	28.840	14.90	14.60	59.743	17.76	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 972hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	5755	33.113	37.154	15.20	15.70	70.267	18.47	30	PASS
3	5795	33.113	36.308	15.20	15.60	69.421	18.41	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	100037	Aug. 12, 2008

NOTE:

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

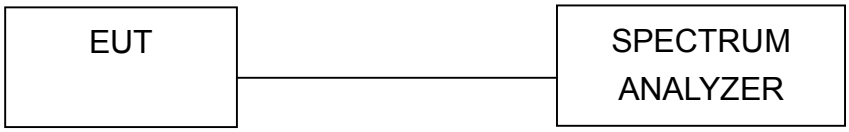
5.5.3 TEST PROCEDURE

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

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

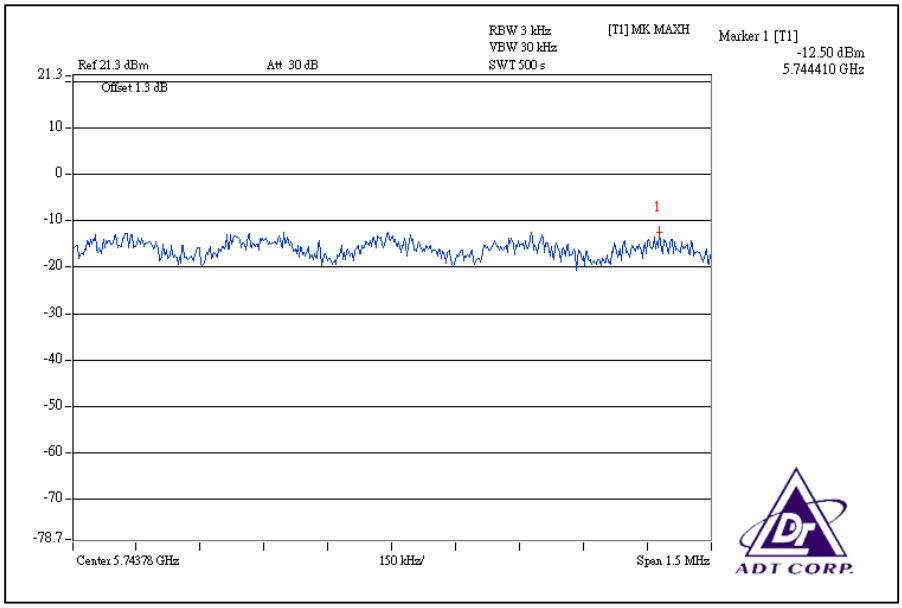
5.5.7 TEST RESULTS

802.11a OFDM modulation

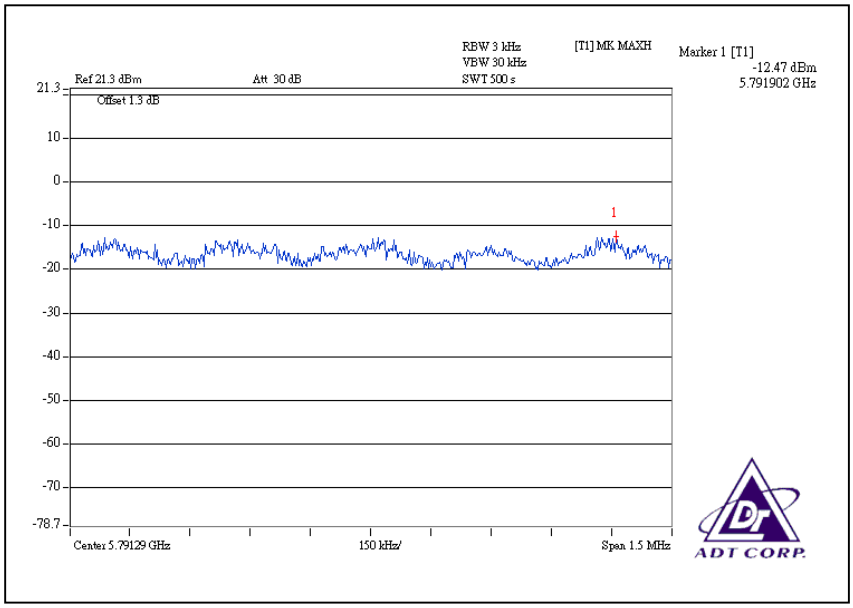
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)		RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	5745	0.056	0.055	-12.50	-12.58	0.111	-9.55	8	PASS
3	5785	0.057	0.070	-12.47	-11.57	0.127	-8.96	8	PASS
4	5805	0.072	0.056	-11.45	-12.51	0.128	-8.93	8	PASS

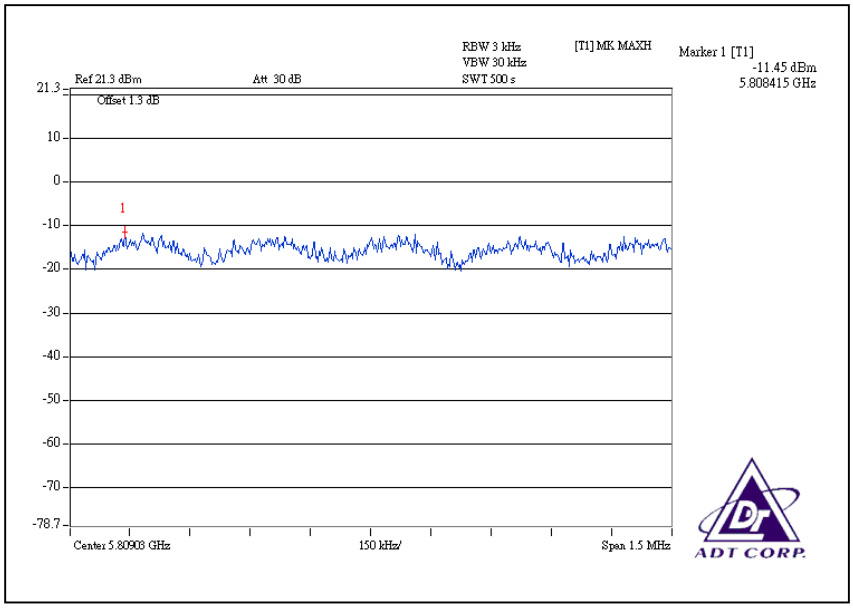
For Chain(0): CH1



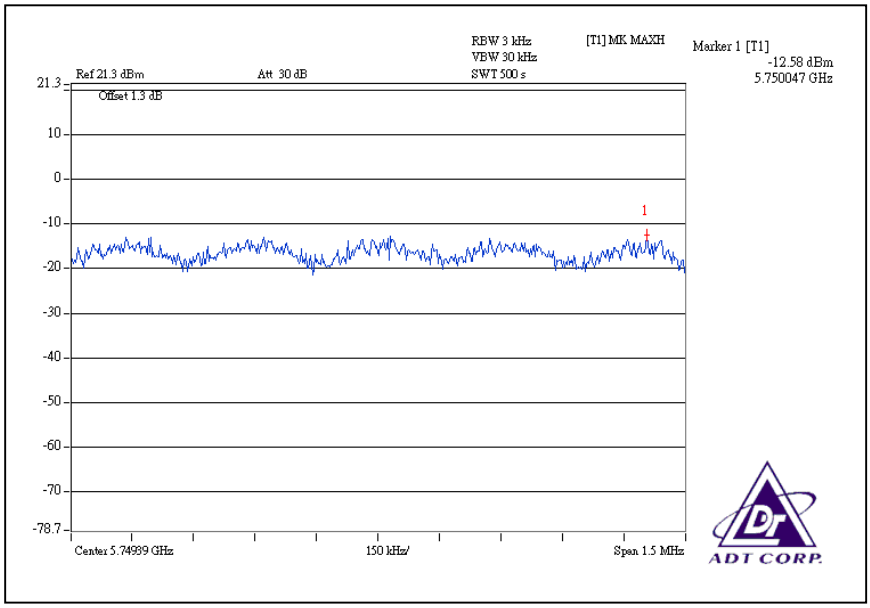
CH3


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-12.47 dBm
5.791902 GHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Center 5.79129 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

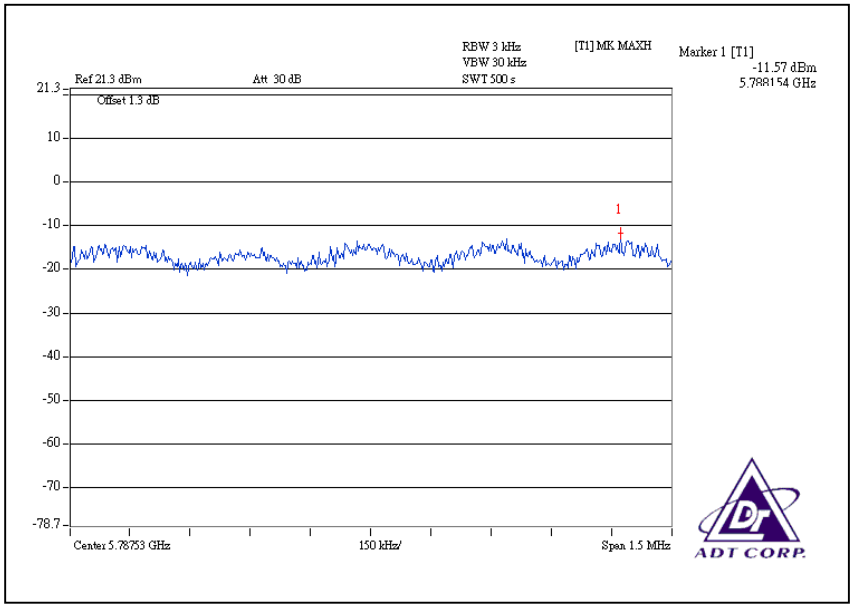
CH4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.45 dBm
5.808415 GHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Center 5.80908 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

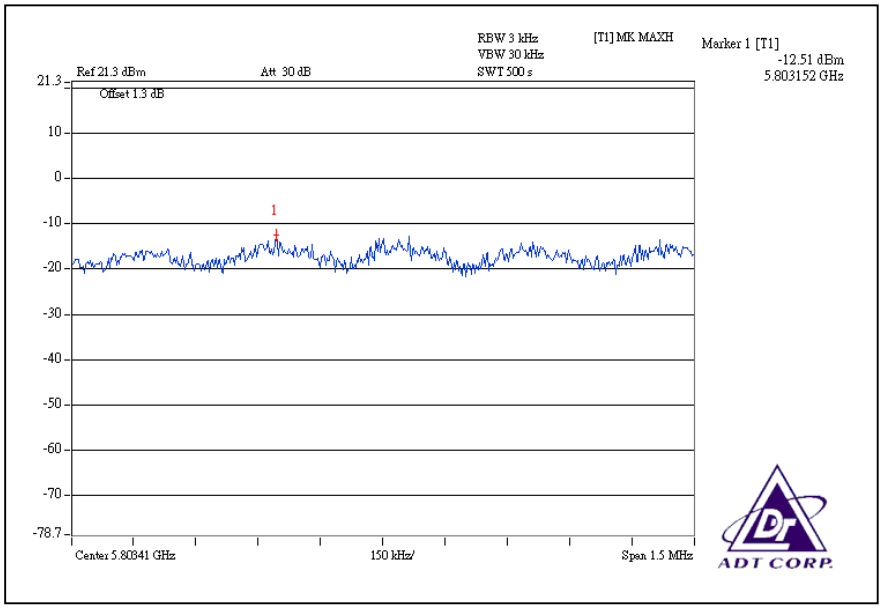
For Chain (1): CH1



CH3



CH4

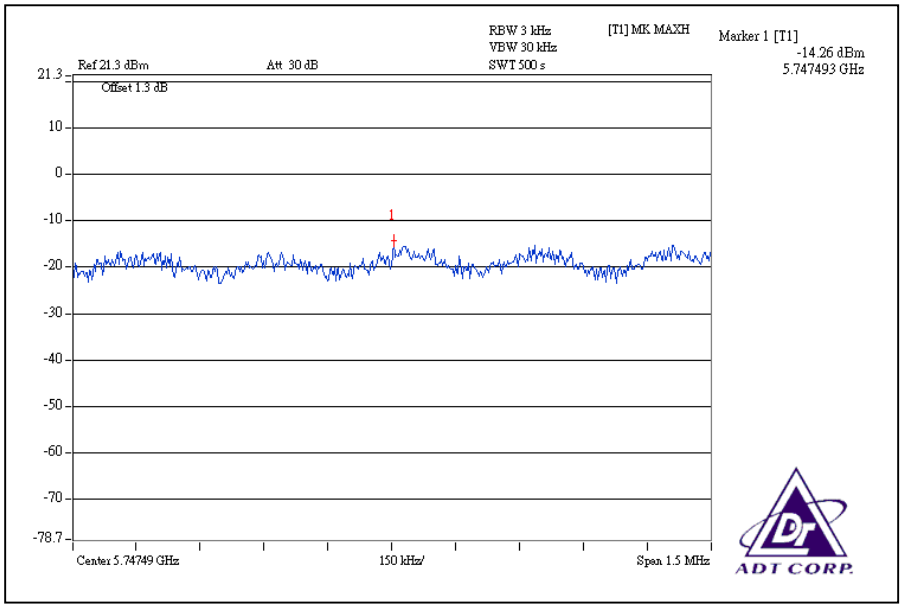

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-12.51 dBm
5.803152 GHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
1
Center 5.80341 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

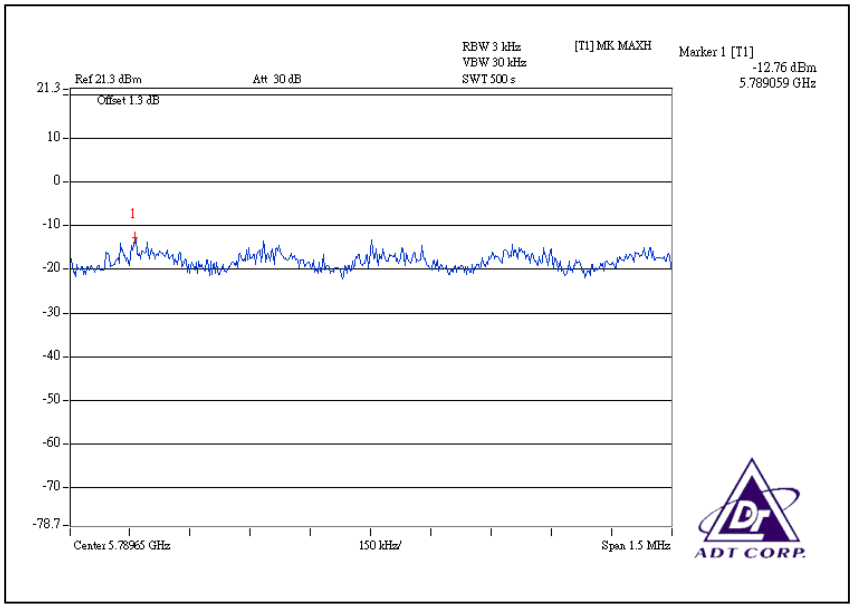
MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)		RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	5745	0.037	0.024	-14.26	-16.15	0.061	-12.15	8	PASS
3	5785	0.053	0.036	-12.76	-14.48	0.089	-10.51	8	PASS
4	5805	0.032	0.031	-15.01	-15.03	0.063	-12.01	8	PASS

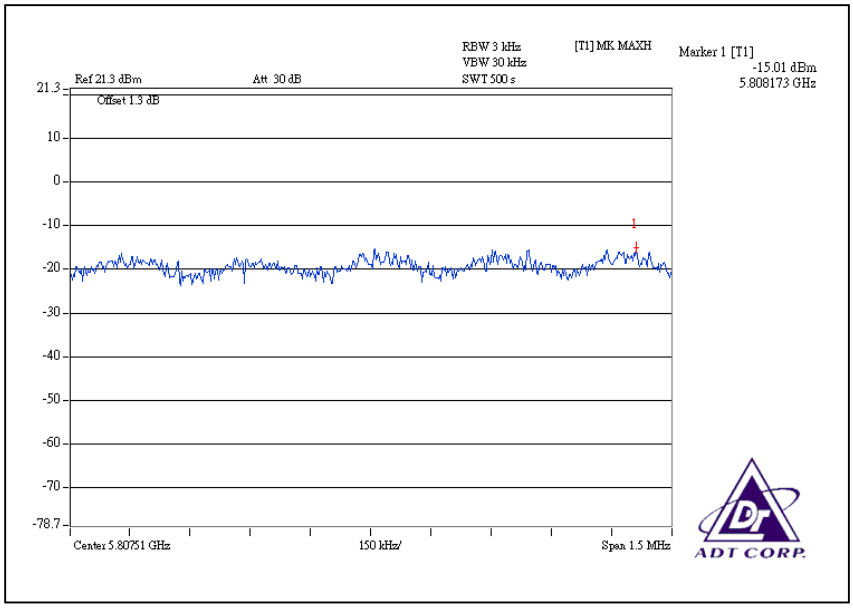
For Chain(0): CH1



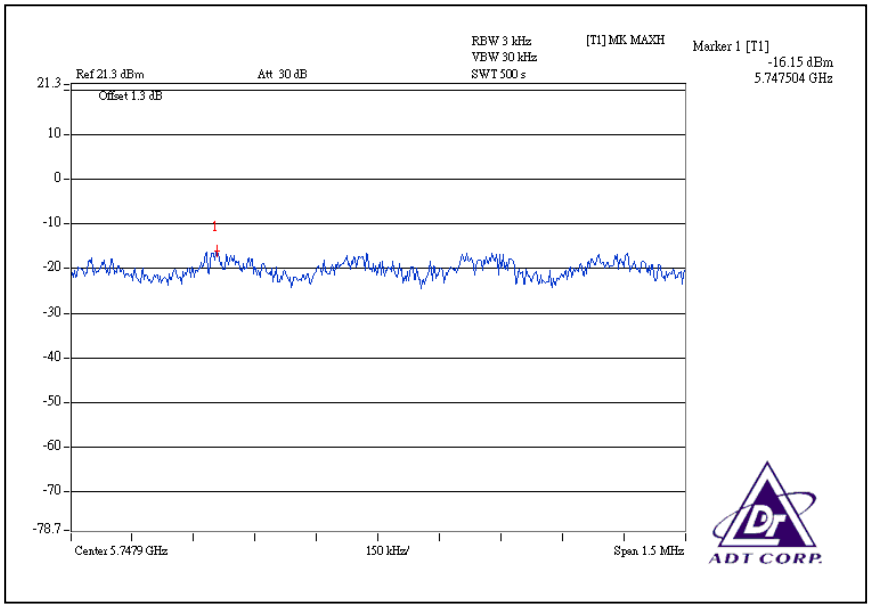
CH3


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-12.76 dBm
5.789059 GHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Center 5.78965 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

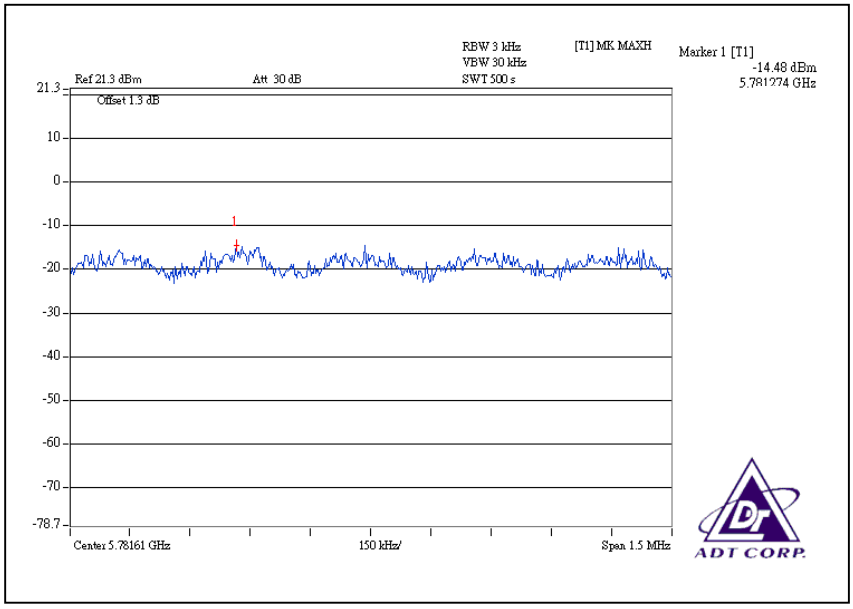
CH4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-15.01 dBm
5.808173 GHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Center 5.80751 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

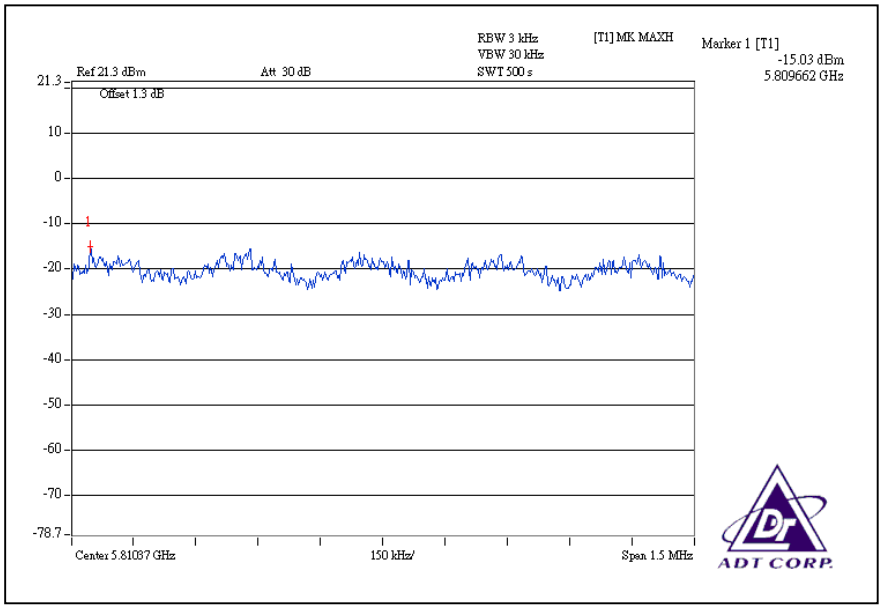
For Chain (1): CH1



CH3



CH4

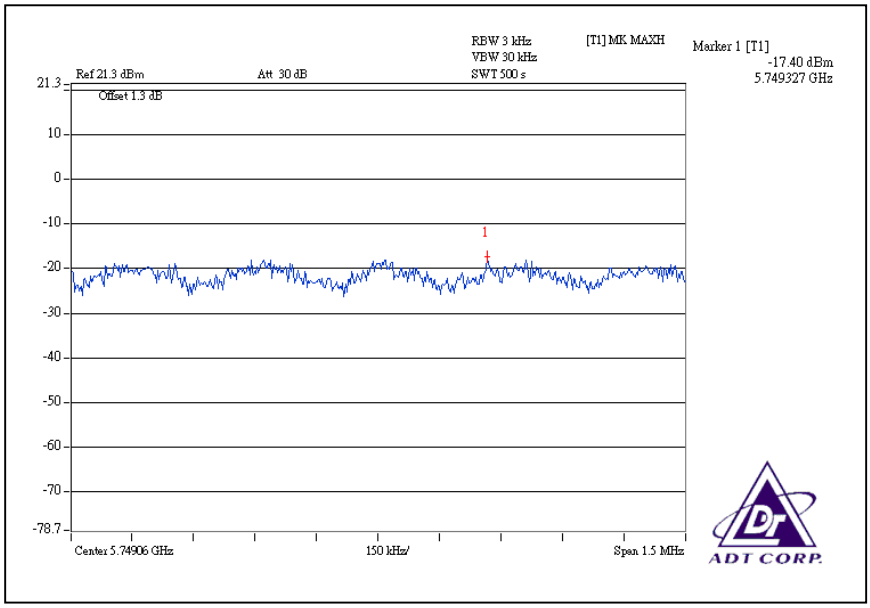

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-15.03 dBm
5.809662 GHz
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Center 5.81037 GHz
150 kHz/
Span 1.5 MHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

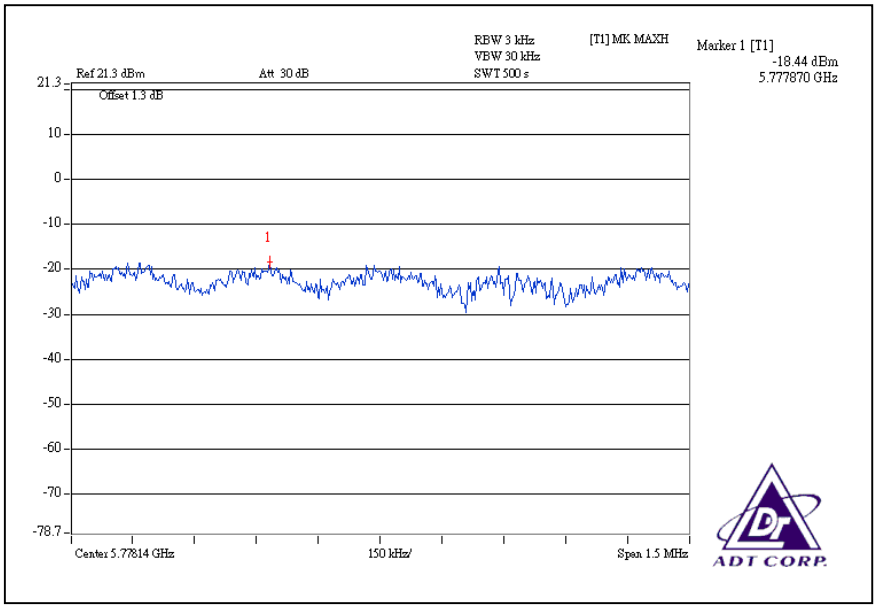
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 971hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)		RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	5755	0.018	0.021	-17.40	-16.68	0.039	-14.09	8	PASS
3	5795	0.014	0.021	-18.44	-16.88	0.035	-14.56	8	PASS

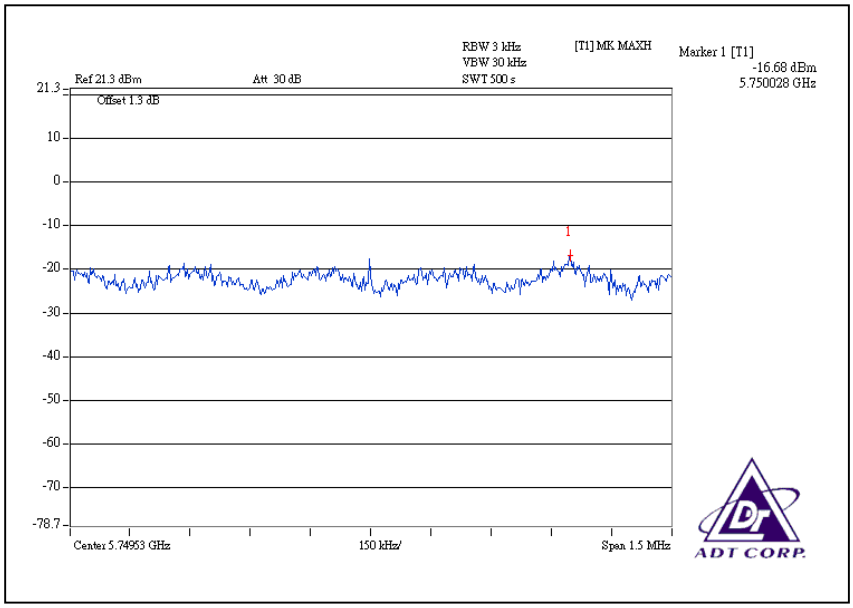
For Chain(0): CH1



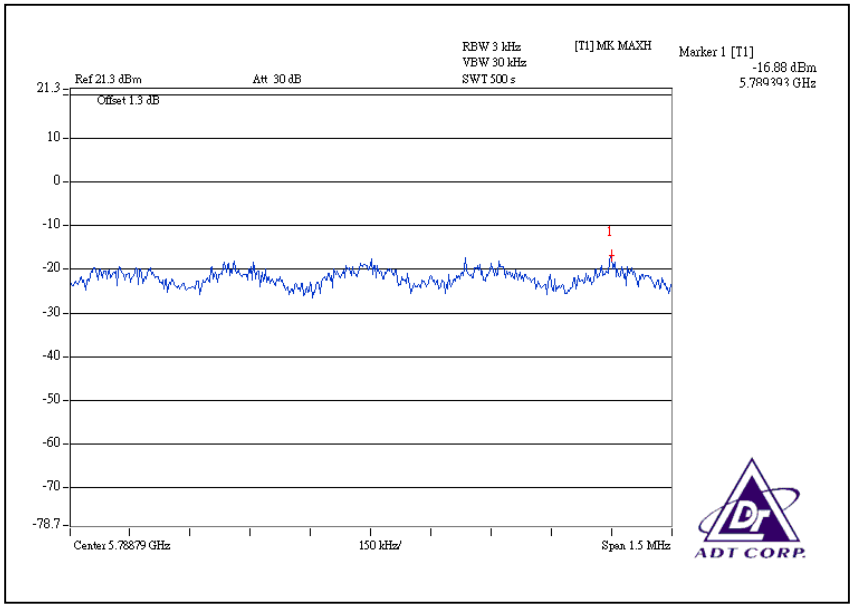
CH3



For Chain (1): CH1



CH3



5.6 BAND EDGES MEASUREMENT

5.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

5.6.2 TEST INSTRUMENTS

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

NOTE:

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

5.6.3 TEST PROCEDURE

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

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 EUT OPERATING CONDITION

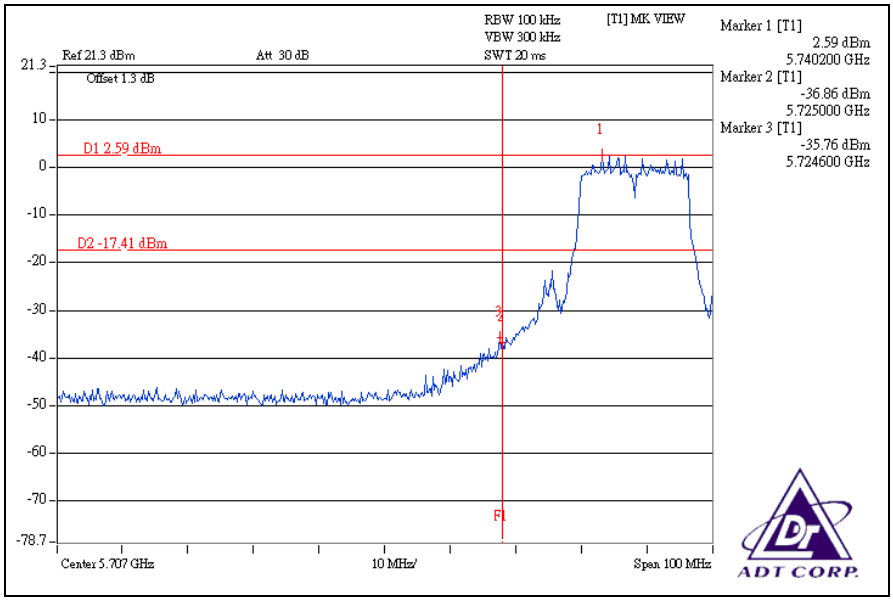
Same as Item 4.3.6

5.6.6 TEST RESULTS

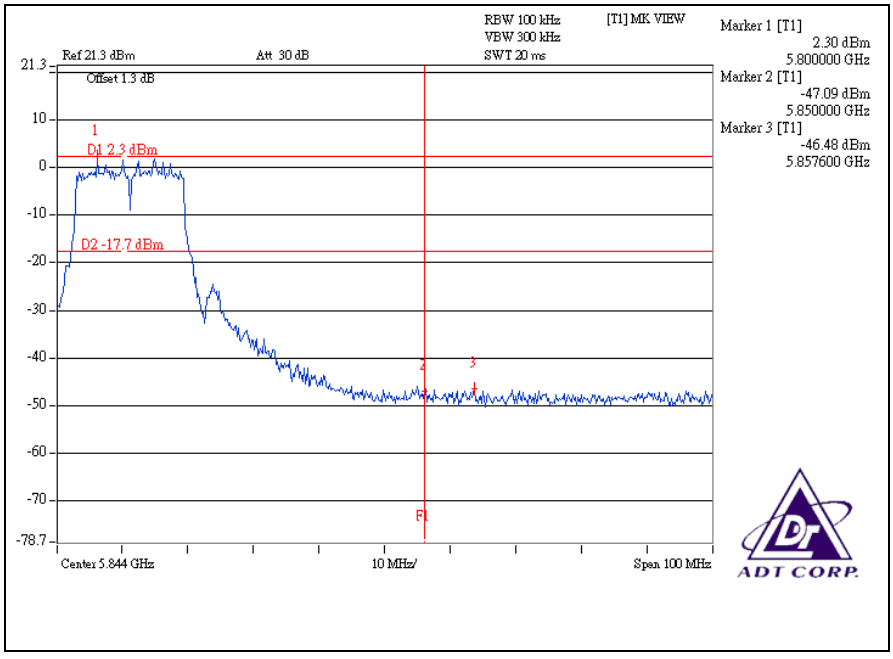
The spectrum plots are attached on the following pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(d).

802.11a OFDM modulation

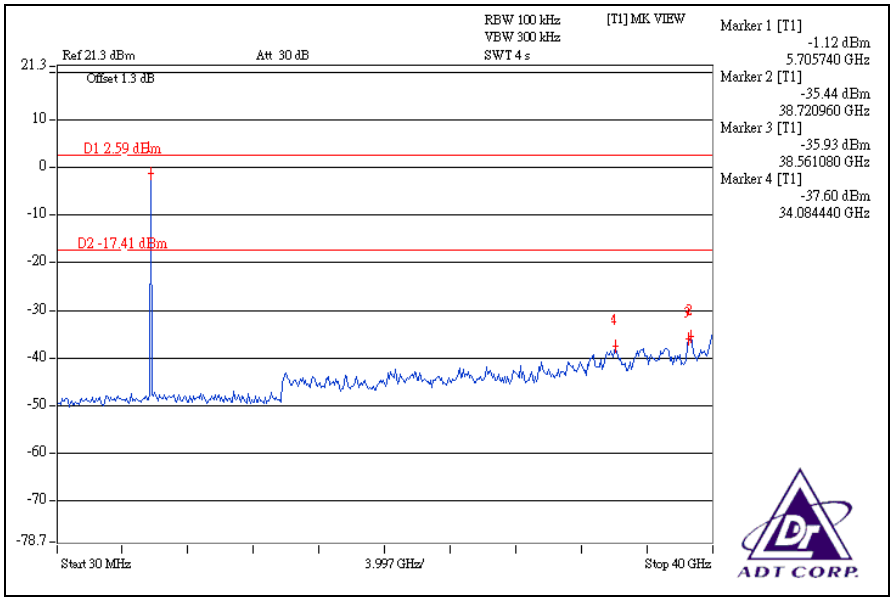
For chain (0) :CH1



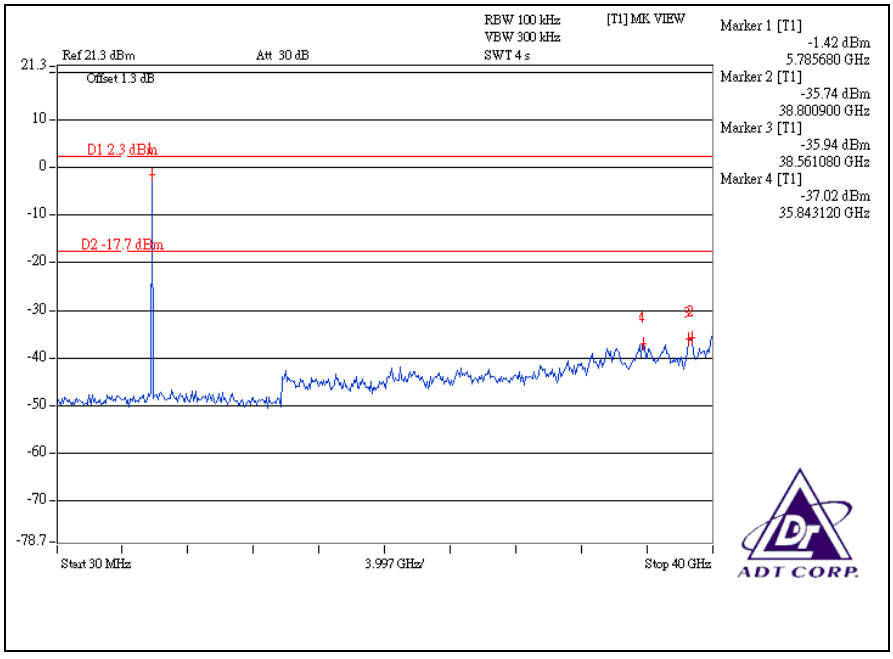
CH4



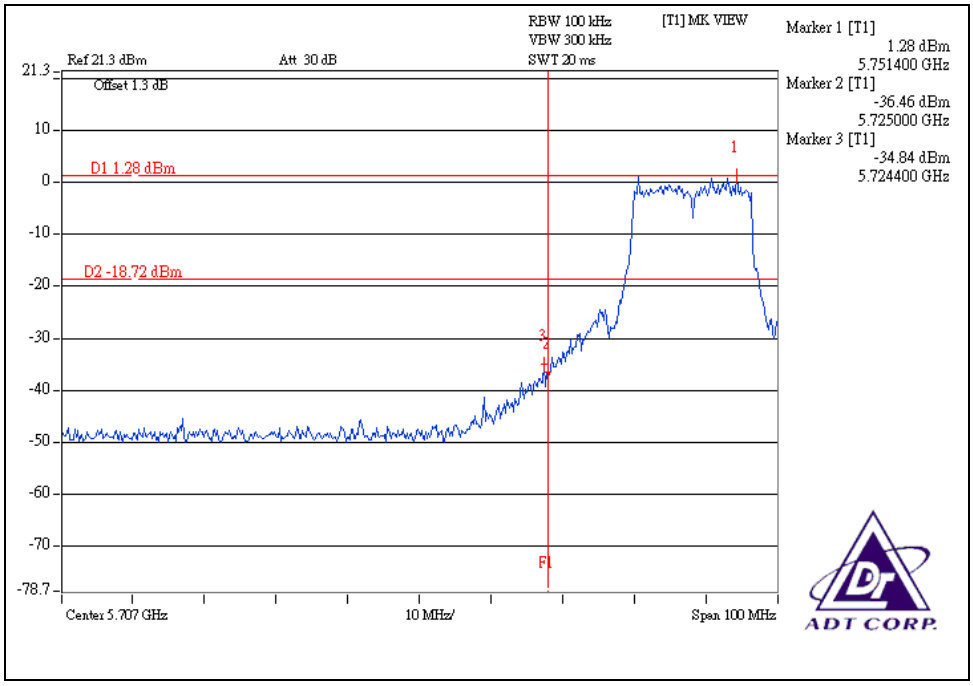
CH1


RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 2.59 dBm
D2 -17.41 dBm
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz
Marker 1 [T1]
-1.12 dBm
5.705740 GHz
Marker 2 [T1]
-35.44 dBm
38.720960 GHz
Marker 3 [T1]
-35.93 dBm
38.561080 GHz
Marker 4 [T1]
-37.60 dBm
34.084440 GHz
ADT CORP.

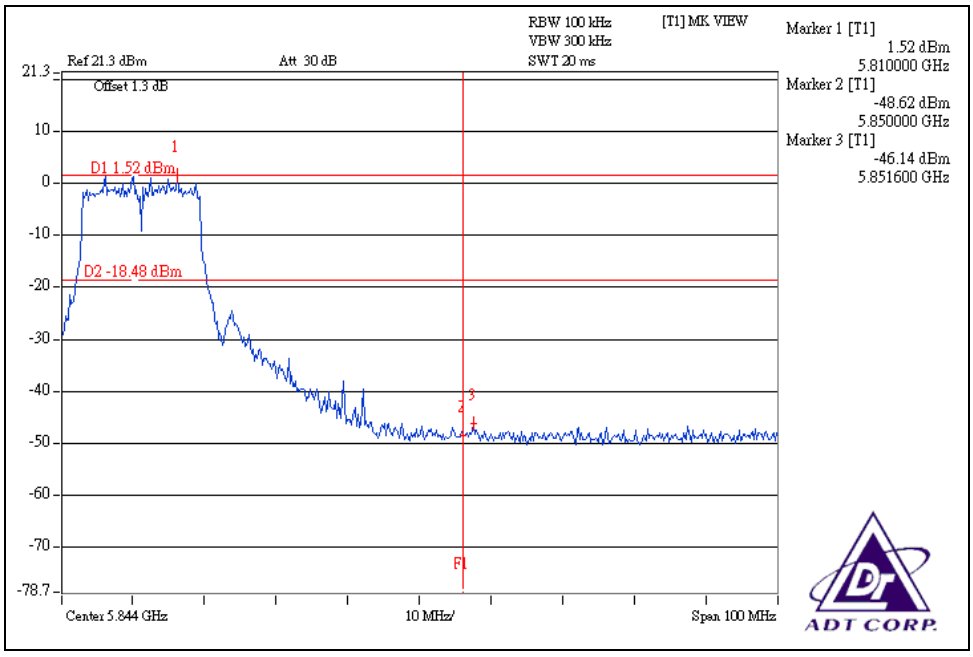
CH4


RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 2.3 dBm
D2 -17.7 dBm
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz
Marker 1 [T1]
-1.42 dBm
5.785680 GHz
Marker 2 [T1]
-35.74 dBm
38.800900 GHz
Marker 3 [T1]
-35.94 dBm
38.561080 GHz
Marker 4 [T1]
-37.02 dBm
35.843120 GHz
ADT CORP.

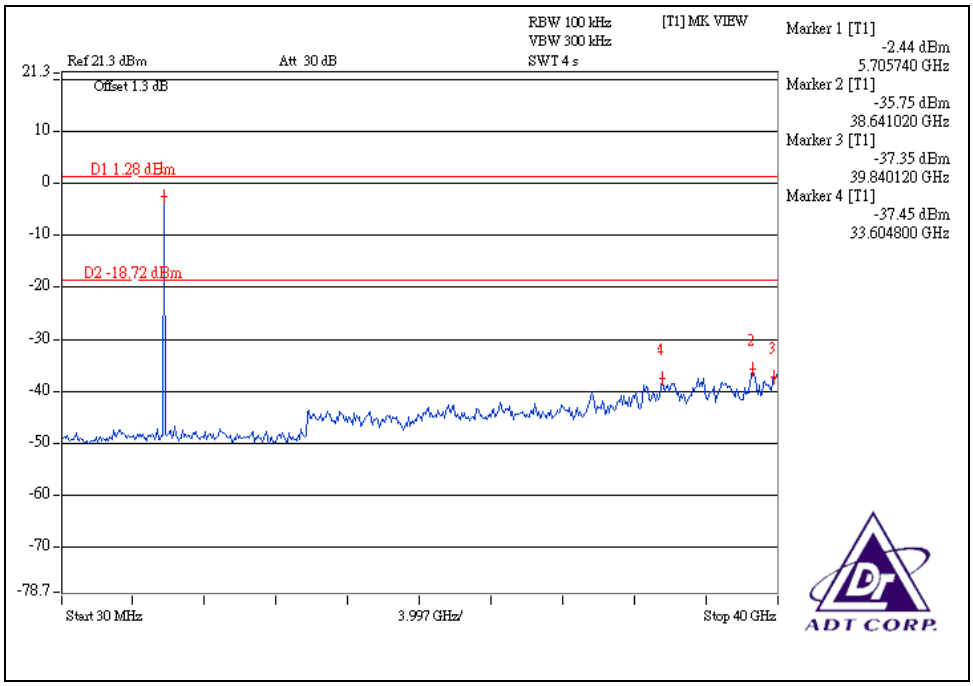
For chain (1) :CH1



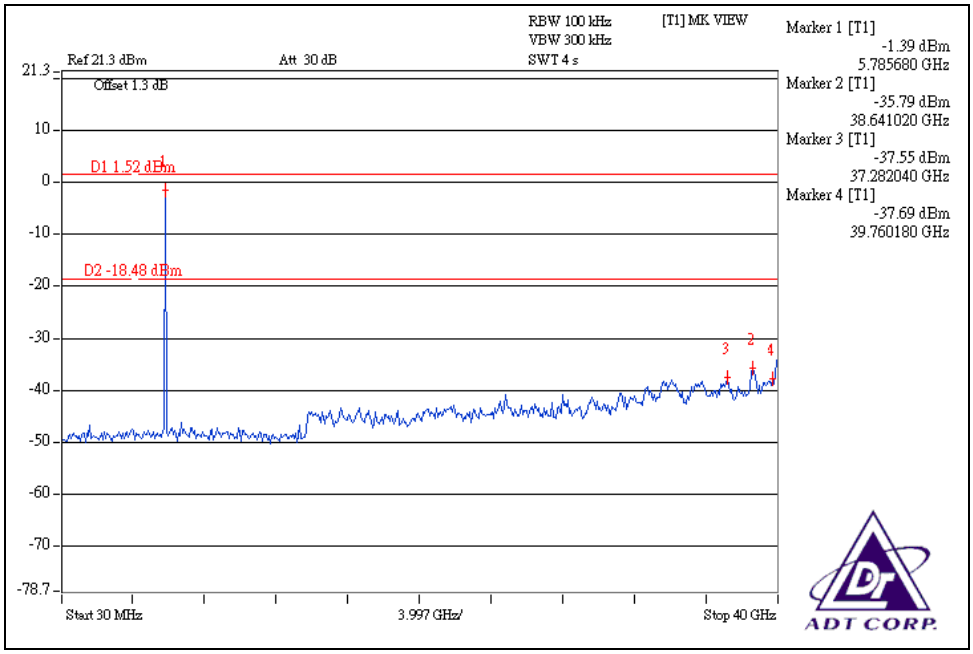
CH4



CH1

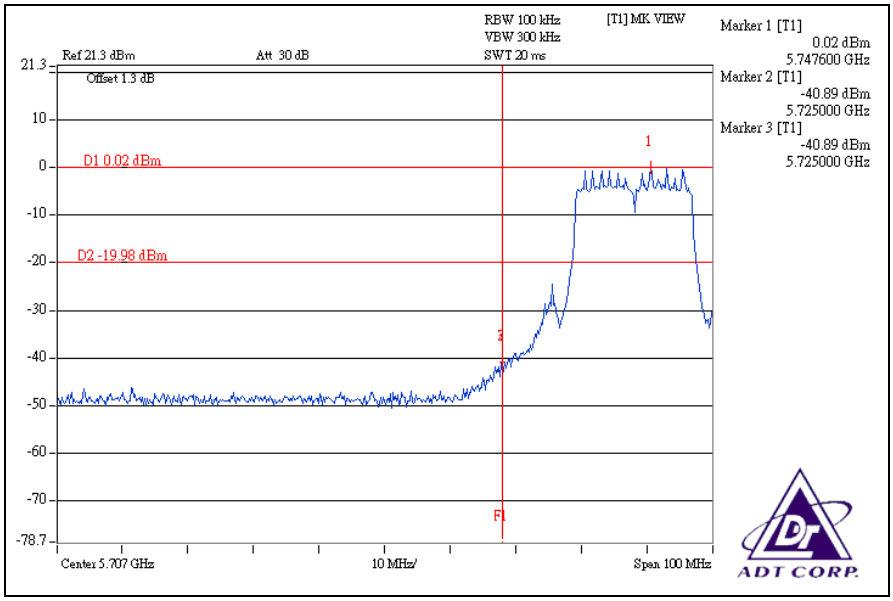

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 1.28 dBm
D2 -18.72 dBm
Marker 1 [T1]
-2.44 dBm
5.705740 GHz
Marker 2 [T1]
-35.75 dBm
38.641020 GHz
Marker 3 [T1]
-37.35 dBm
39.840120 GHz
Marker 4 [T1]
-37.45 dBm
33.604800 GHz
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

CH4

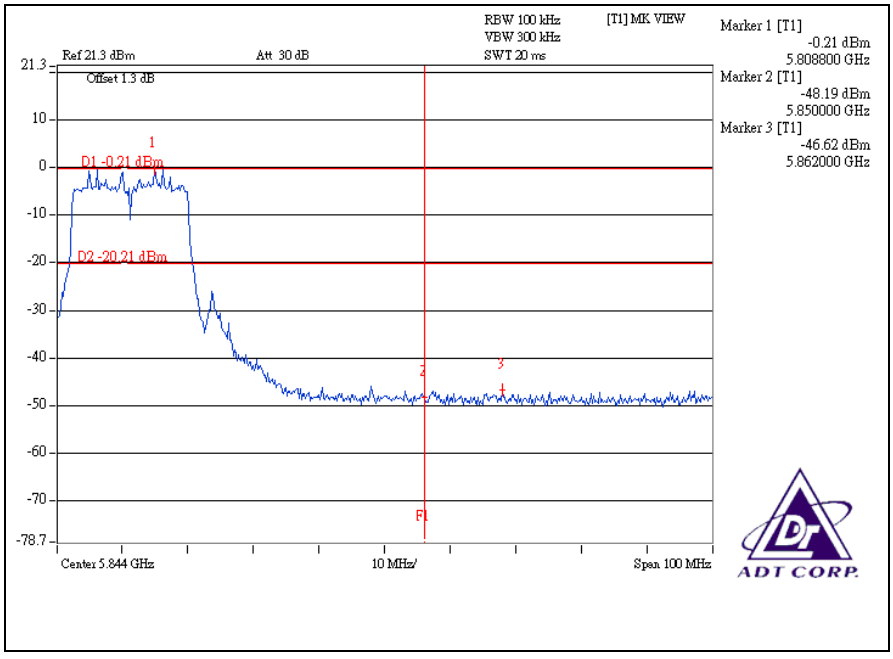

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 1.52 dBm
D2 -18.48 dBm
Marker 1 [T1]
-1.39 dBm
5.785680 GHz
Marker 2 [T1]
-35.79 dBm
38.641020 GHz
Marker 3 [T1]
-37.55 dBm
37.282040 GHz
Marker 4 [T1]
-37.69 dBm
39.760180 GHz
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

DRAFT 802.11n (20MHz) OFDM MODULATION:

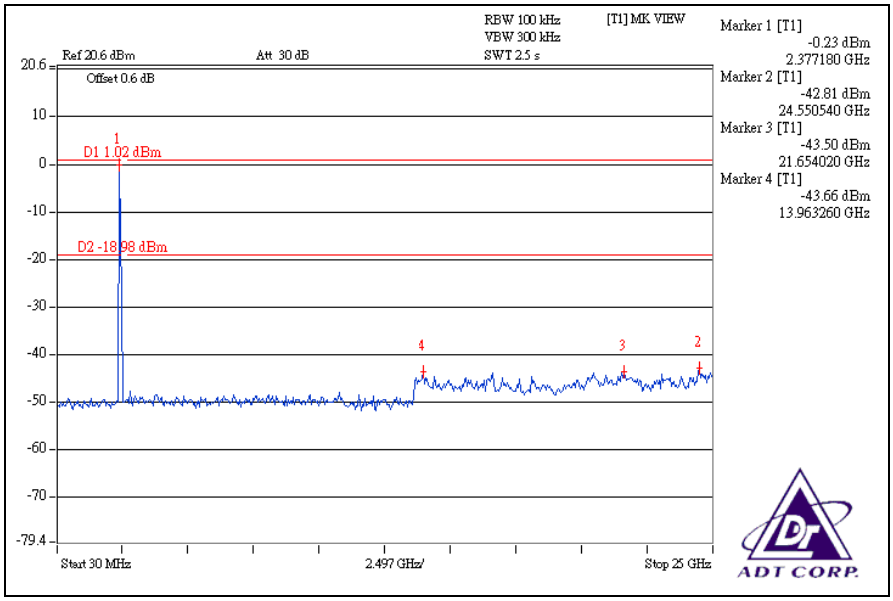
For chain (0) :CH1



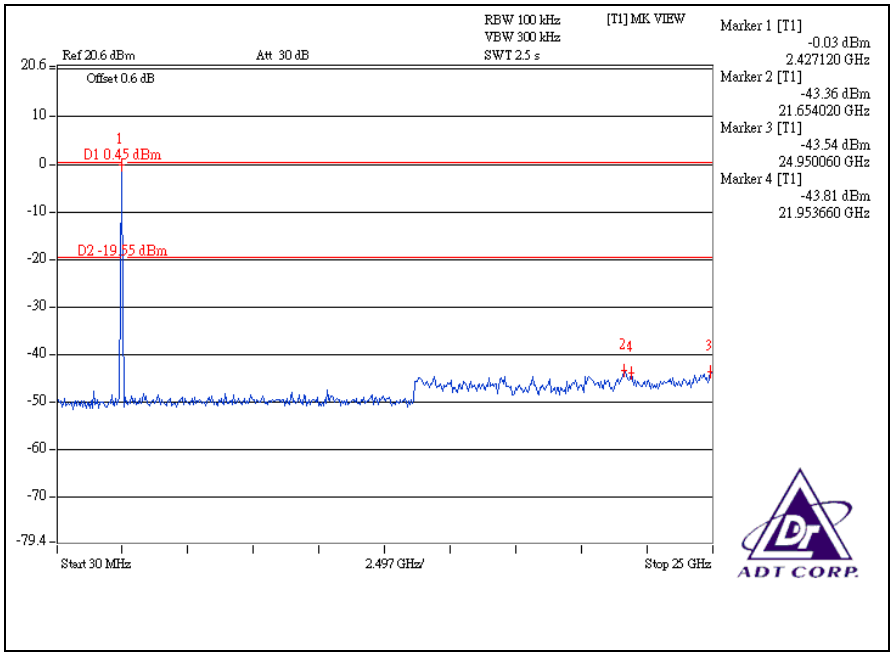
CH4



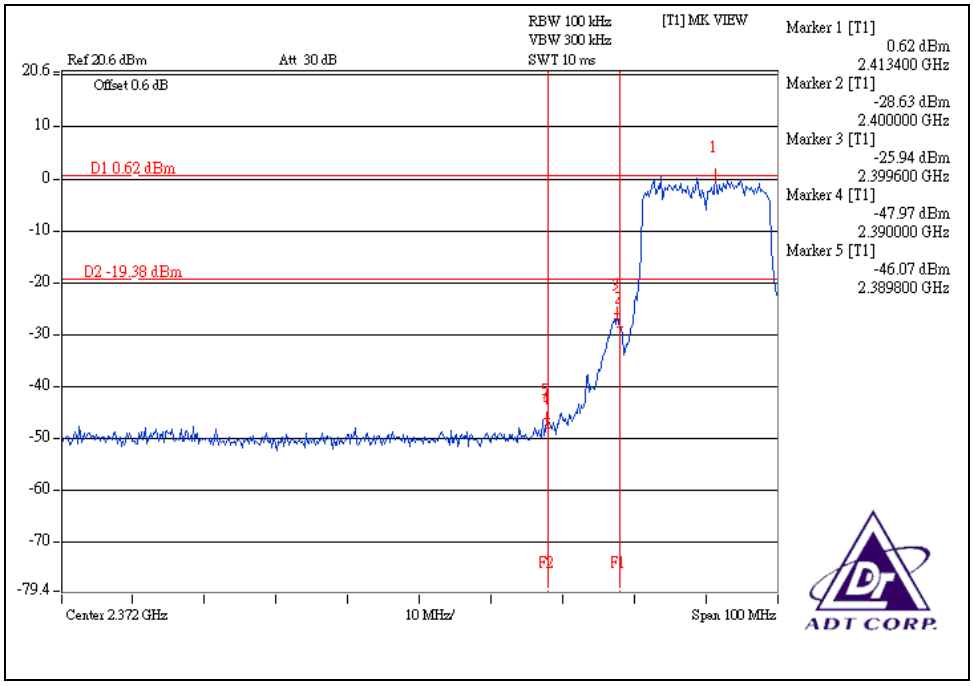
CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 1.02 dBm
D2 -18.98 dBm
Marker 1 [T1]
-0.23 dBm
2.377180 GHz
Marker 2 [T1]
-42.81 dBm
24.550540 GHz
Marker 3 [T1]
-43.50 dBm
21.654020 GHz
Marker 4 [T1]
-43.66 dBm
13.963260 GHz
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

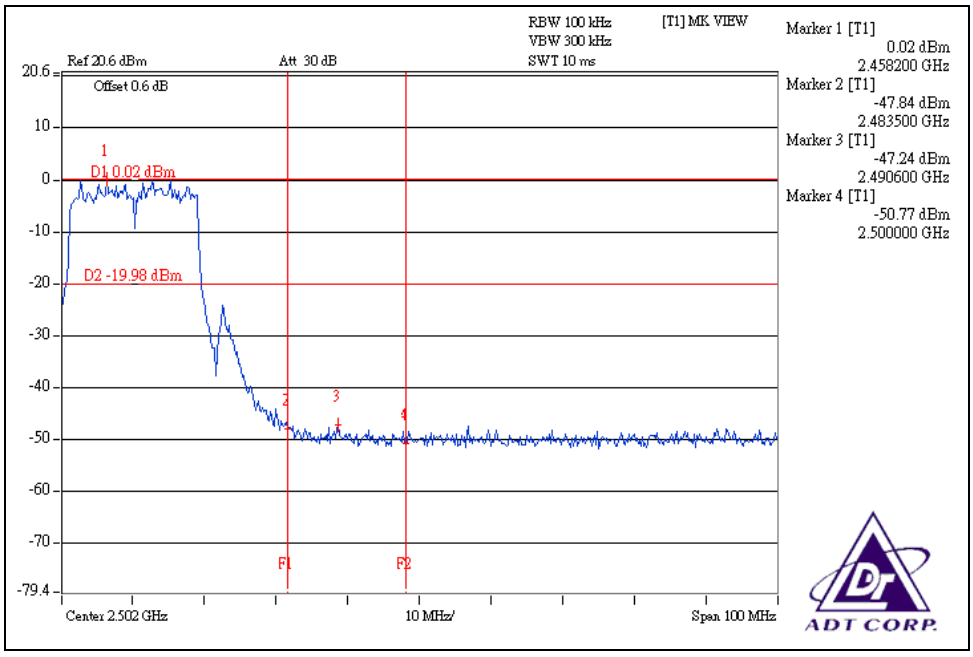
CH4


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.6 dBm
Att 30 dB
Offset 0.6 dB
D1 0.45 dBm
D2 -19.55 dBm
Marker 1 [T1]
-0.03 dBm
2.427120 GHz
Marker 2 [T1]
-43.36 dBm
21.654020 GHz
Marker 3 [T1]
-43.54 dBm
24.950060 GHz
Marker 4 [T1]
-43.81 dBm
21.953660 GHz
20.6
10
0
-10
-20
-30
-40
-50
-60
-70
-79.4
Start 30 MHz
2.497 GHz/
Stop 25 GHz
ADT CORP.

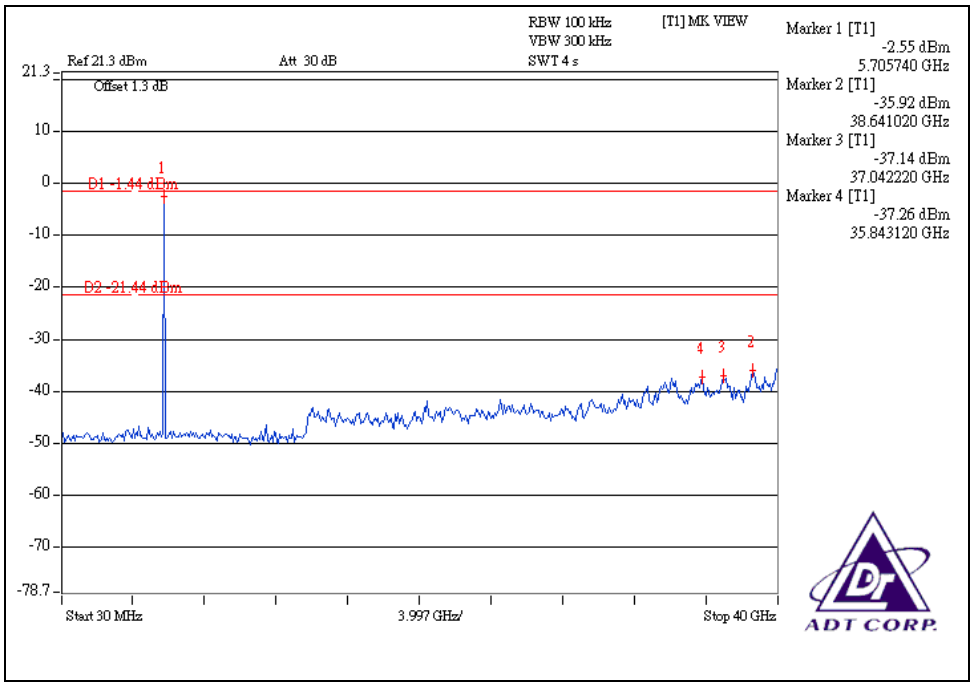
For chain (1):CH1



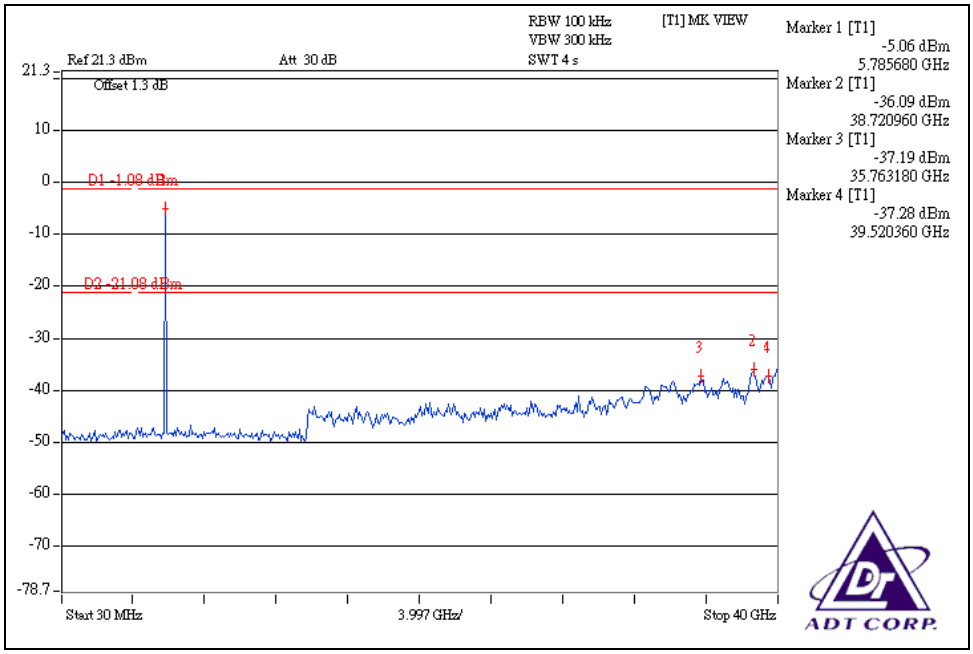
CH4



CH1

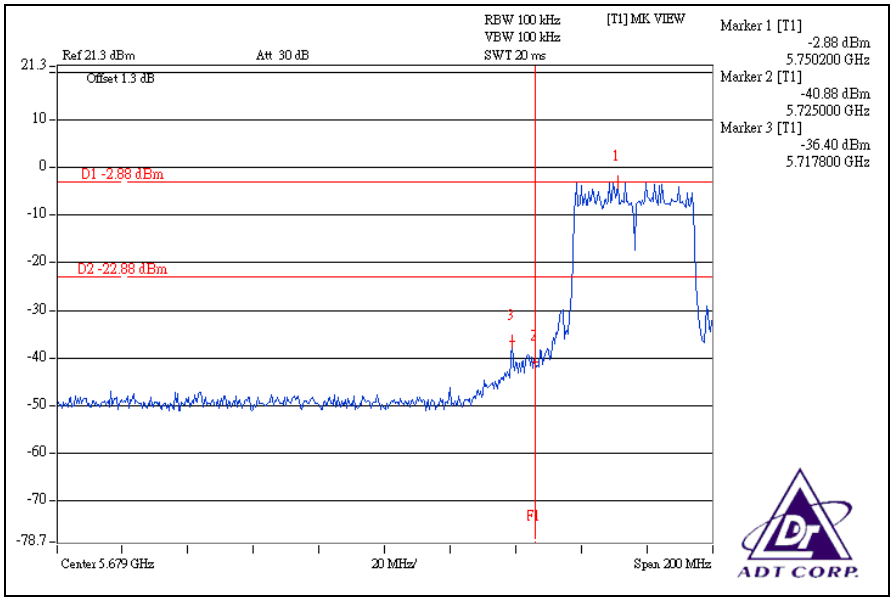

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 -1.44 dBm
D2 -21.44 dBm
Marker 1 [T1]
-2.55 dBm
5.705740 GHz
Marker 2 [T1]
-35.92 dBm
38.641020 GHz
Marker 3 [T1]
-37.14 dBm
37.042220 GHz
Marker 4 [T1]
-37.26 dBm
35.843120 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

CH4

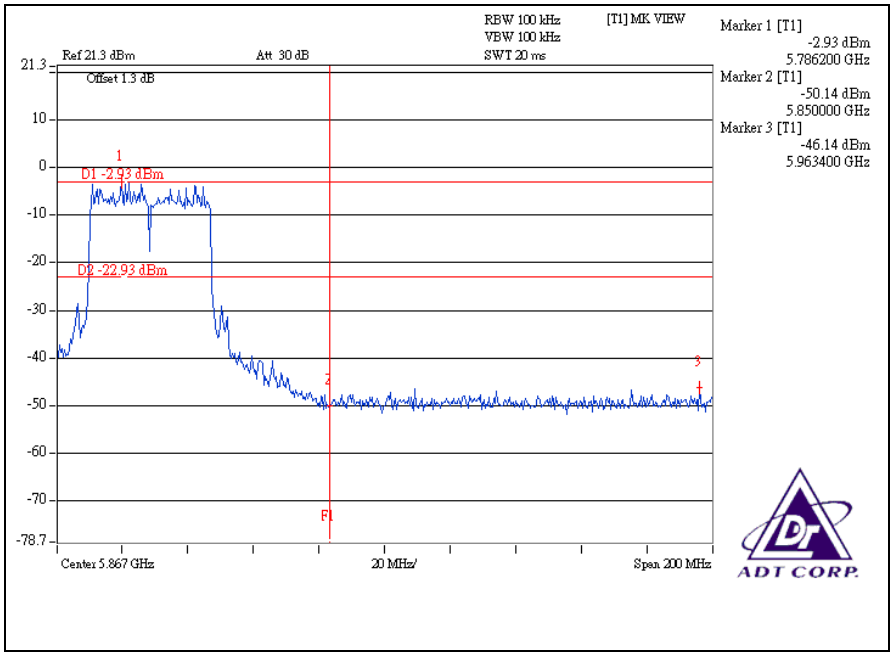

RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 -1.08 dBm
D2 -21.08 dBm
Marker 1 [T1]
-5.06 dBm
5.785680 GHz
Marker 2 [T1]
-36.09 dBm
38.720960 GHz
Marker 3 [T1]
-37.19 dBm
35.763180 GHz
Marker 4 [T1]
-37.28 dBm
39.520360 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

DRAFT 802.11n (40MHz) OFDM MODULATION:

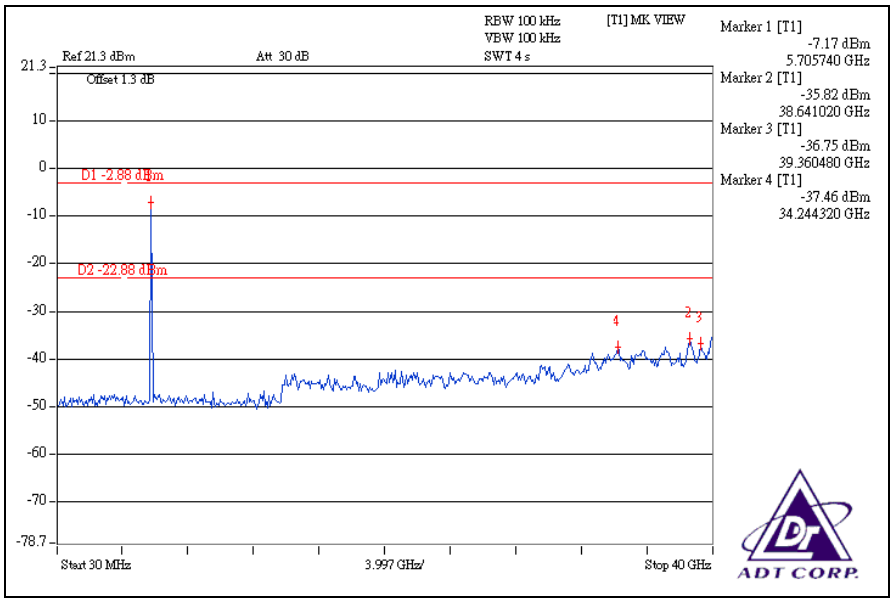
For chain (0) :CH1



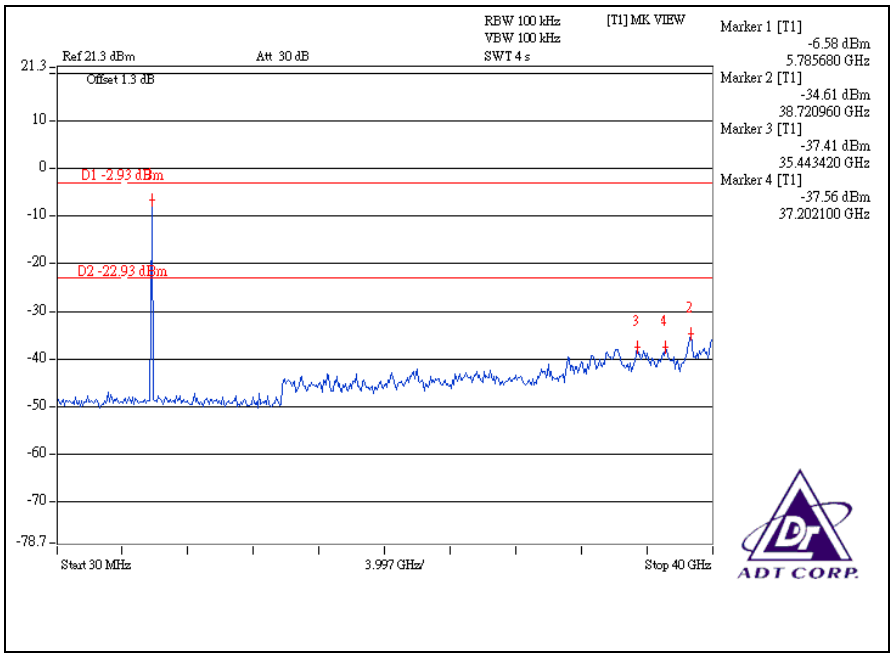
CH3



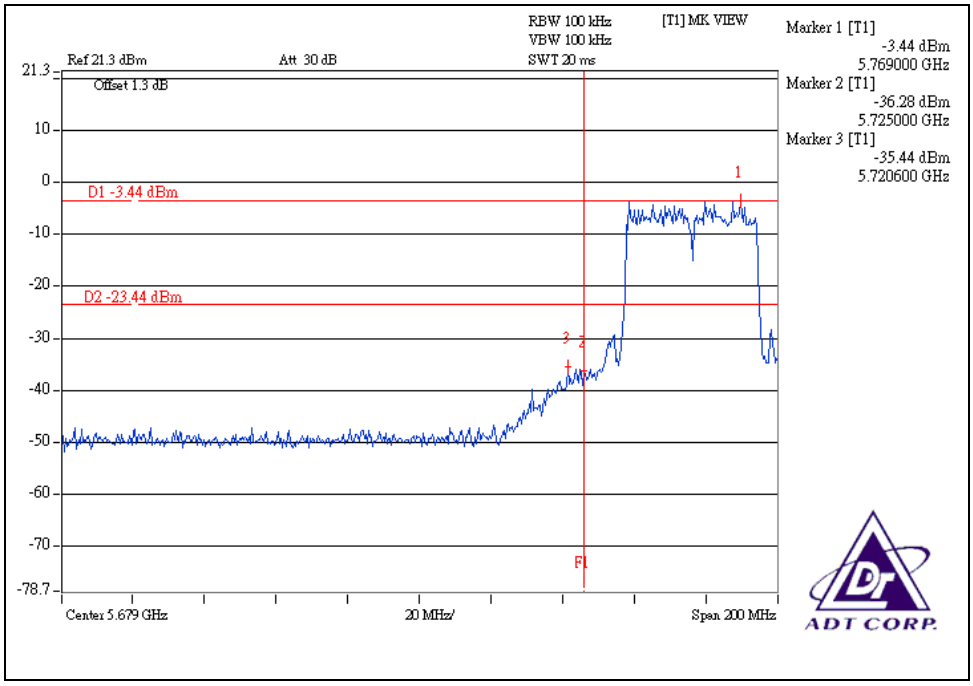
CH1


RBW 100 kHz
VBW 100 kHz
SWT 4 s
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 -2.88 dBm
D2 -22.88 dBm
Marker 1 [T1]
-7.17 dBm
5.705740 GHz
Marker 2 [T1]
-35.82 dBm
38.641020 GHz
Marker 3 [T1]
-36.75 dBm
39.360480 GHz
Marker 4 [T1]
-37.46 dBm
34.244320 GHz
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

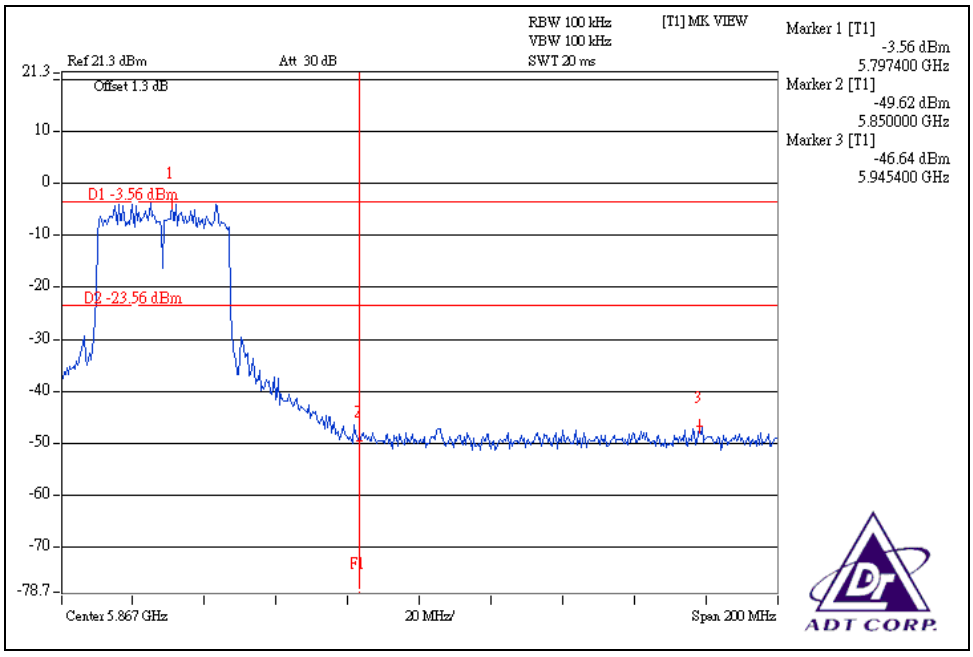
CH3


RBW 100 kHz
VBW 100 kHz
SWT 4 s
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 -2.93 dBm
D2 -22.93 dBm
Marker 1 [T1]
-6.58 dBm
5.785680 GHz
Marker 2 [T1]
-34.61 dBm
38.720960 GHz
Marker 3 [T1]
-37.41 dBm
35.443420 GHz
Marker 4 [T1]
-37.56 dBm
37.202100 GHz
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

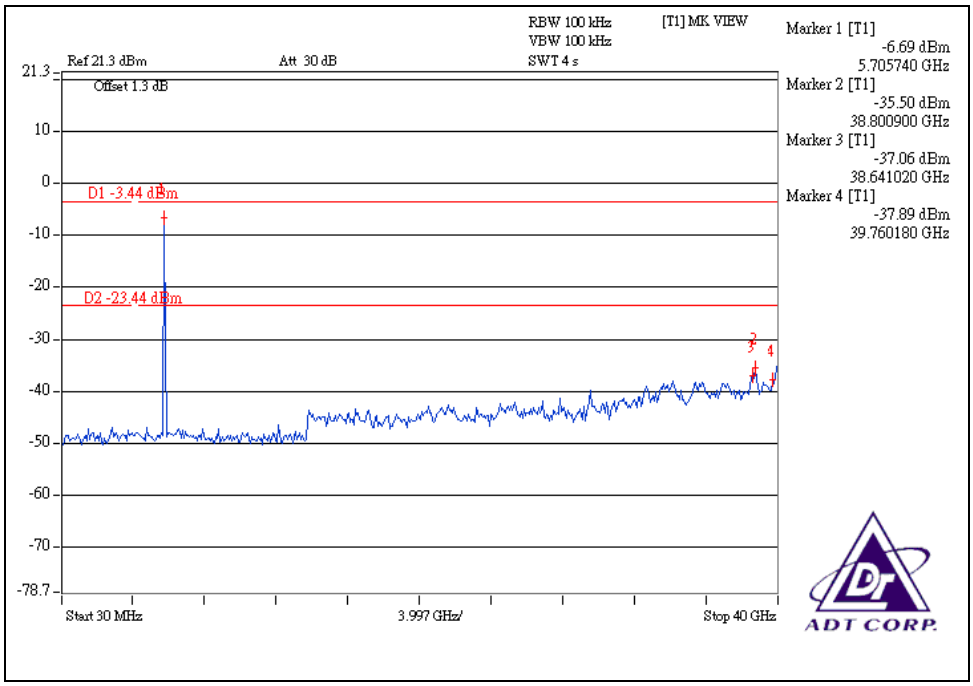
For chain (1) :CH1



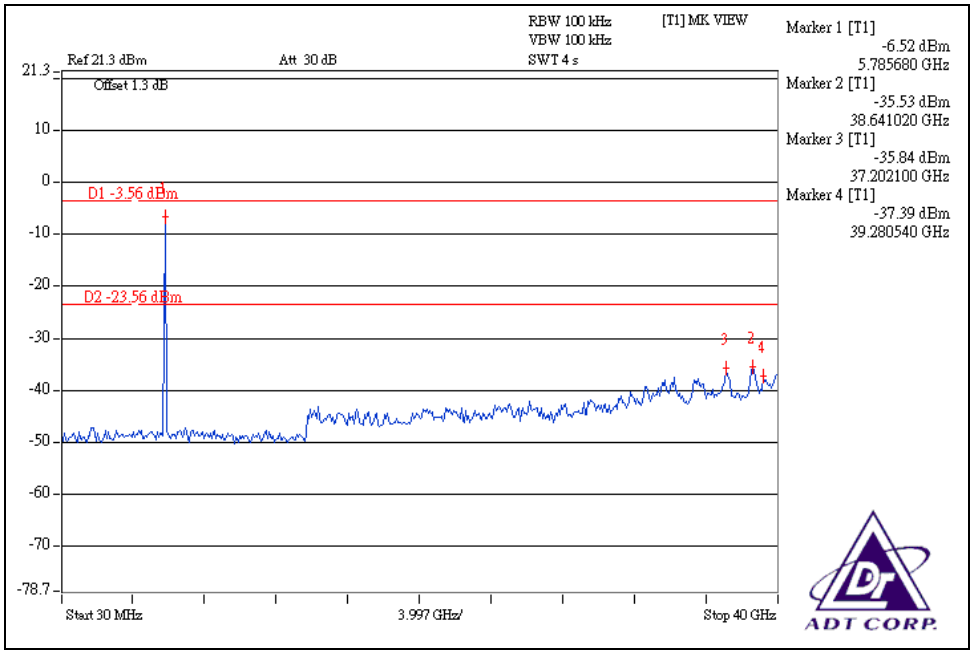
CH3



CH1


RBW 100 kHz
VBW 100 kHz
SWT 4 s
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 -3.44 dBm
D2 -23.44 dBm
Marker 1 [T1]
-6.69 dBm
5.705740 GHz
Marker 2 [T1]
-35.50 dBm
38.800900 GHz
Marker 3 [T1]
-37.06 dBm
38.641020 GHz
Marker 4 [T1]
-37.89 dBm
39.760180 GHz
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

CH3


RBW 100 kHz
VBW 100 kHz
SWT 4 s
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 -3.56 dBm
D2 -23.56 dBm
Marker 1 [T1]
-6.52 dBm
5.785680 GHz
Marker 2 [T1]
-35.53 dBm
38.641020 GHz
Marker 3 [T1]
-35.84 dBm
37.202100 GHz
Marker 4 [T1]
-37.39 dBm
39.280540 GHz
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz
ADT CORP.

5.7 ANTENNA REQUIREMENT

5.7.1 STANDARD APPLICABLE

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

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

5.7.2 ANTENNA CONNECTED CONSTRUCTION

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

Transmitter Circuit	Antenna Type	For 2.4GHz Gain (dBi)	For 5GHz Gain (dBi)	Antenna Connector	Note
Chain(0)	PIFA	0.75	3	NA	TX & RX function
Chain(1)	PIFA	1.5	2.23	NA	TX & RX function
Chain(2)	PIFA	3.5	2.5	NA	Only RX function

6. INFORMATION ON THE TESTING LABORATORIES

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

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

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

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

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

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

Web Site: www.adt.com.tw

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

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

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