FCC TEST REPORT (15.407)

REPORT NO.:	RF970911H07
MODEL NO.:	NWD-211AN
RECEIVED:	Sep. 11, 2008
TESTED:	Sep. 23 to Oct. 03, 2008
ISSUED:	Oct. 06, 2008

APPLICANT:	ZyXEL Communications Corporation
ADDRESS:	No. 6, Innovation Road II, Science-Park, Hsin-Chu, 300, Taiwan

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.

Table of Contents

1. CERTIFICATION

PRODUCT:	Dual band Wireless N USB Adapter
BRAND NAME:	ZyXEL
MODEL NO.:	NWD-211AN
TEST SAMPLE:	ENGINEERING SAMPLE
TESTED:	Sep. 23 to Oct. 03, 2008
APPLICANT:	ZyXEL Communications Corporation
STANDARDS:	FCC Part 15, Subpart E (Section 15.407), ANSI C63.4-2003

The above equipment (Model: NWD-211AN) 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 : Carol Liao , **DATE:** *Oct. 06, 2008*
(Carol Liao, Specialist)

TECHNICAL ACCEPTANCE : , **DATE:** *Oct. 06, 2008*
Responsible for RF
(Hank Chung, Deputy Manager)

APPROVED BY : , **DATE:** *Oct. 06, 2008*
(May Chen, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 802.11a

APPLIED STANDARD: FCC Part 15, Subpart E (Section 15.407)			
Standard Section	**Test Type**	**Result**	**Remark**
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is –10.58dB at 0.525MHz
15.407(b/1/2/3)(b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit. Minimum passing margin is –1.17dB at 4560.00MHz
15.407(a/1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.

NOTE:

1. The EUT was operating in 2400 ~ 2483.5MHz, 5.15~5.35GHz, 5.47~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 5.15~5.35GHz and 5.47~5.725GHz. For the 2400 ~ 2483.5MHz and 5.725~5.850GHz 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	Dual band Wireless N USB Adapter
MODEL NO.	NWD-211AN
FCC ID	I88NWD211AN
POWER SUPPLY	DC 5V from host equipment
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 HT20 MCS0~7 (800ns GI): 65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5Mbps. HT20 MCS8~15 (800ns GI): 130 / 117 / 104 / 78 / 52 / 39 / 26 / 13Mbps. HT40 MCS0~7 (800ns GI): 135 / 121.5 / 108 / 81 / 54 / 40.5 / 27 / 13.5Mbps. HT40 MCS8~15 (800ns GI): 270 / 243 / 216 / 162 / 108 / 81 / 54 / 27Mbps. HT20 MCS0~7 (400ns GI): 72.2 / 65 / 57.8 / 43.3 / 28.9 / 21.7 / 14.4 / 7.2Mbps. HT20 MCS8~15 (400ns GI): 144.444 / 130 / 115.556 / 86.667 / 57.778 / 43.333 / 28.889 / 14.444Mbps. HT40 MCS0~7 (400ns GI): 150 / 135 / 120 / 90 / 60 / 45 / 30 / 15Mbps. HT40 MCS8~15 (400ns GI): 300 / 270 / 240 / 180 / 120 / 90 / 60 / 30Mbps.
FREQUENCY RANGE	For 15.407 802.11a: 5.18 ~ 5.32GHz, 5.50 ~ 5.70GHz
	For 15.247 802.11b & 802.11g: 2412 ~ 2462MHz 802.11a: 5.745 ~ 5.825GHz

NUMBER OF CHANNEL	**For 15.407** 19 for 802.11a, draft 802.11n (20MHz) 9 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)** 5 for 802.11a, draft 802.11n (20MHz) 2 for draft 802.11n (40MHz)
MAXIMUM OUTPUT POWER	**For 15.407** 802.11a: 41.115mW draft 802.11n (20MHz): 35.408mW draft 802.11n (40MHz): 22.983mW **For 15.247(2.4GHz)** 802.11b: 103.992mW 802.11g: 341.979mW draft 802.11n (20MHz): 655.436mW draft 802.11n (40MHz): 609.593mW **For 15.247(5GHz)** 802.11a: 120.781mW draft 802.11n (20MHz): 189.058mW draft 802.11n (40MHz): 184.554mW
ANTENNA TYPE	Please see note 1
DATA CABLE	NA
INTERFACE	USB
ASSOCIATED DEVICES	Cradle (with 1.3m cable, Shielded) (With 2 colours of black & white)

NOTE:

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

Transmitter Circuit	Antenna Type	For 2.4GHz Gain (dBi)	For 5.15~ 5.25GHz Gain (dBi)	For 5.25~ 5.47GHz Gain (dBi)	For 5.47~ 5.725GHz Gain (dBi)	For 5.725~ 5.85GHz Gain (dBi)	Antenna Connector
Chain(0)	PCB	-1.98	-0.85	-0.61	0.6	0.57	NA
Chain(1)	PCB	-2.46	-0.51	0.83	1.07	1.08	NA

2. 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.

3. The EUT is 2 * 2 spatial MIMO (2Tx & 2Rx) without beam forming function. The antenna configurations are two transmitter antennas and two receiver antennas, as there are 2 PCB antennas. Spatial multiplexing modes for simultaneous transmission using 2 antennas, and for simultaneous receiver using 2 antennas. The 11a and 11bg legacy mode is limited to single transmitter only.
4. 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.
5. The EUT complies with draft 802.11n standards and backwards compatible with 802. 11a, 802.11b, 802.11g products.
6. The EUT was pre-tested in chamber as the following test modes:

Pre-test Mode	Description
Mode A	**With Cradle**
Mode B	Without Cradle

The worse case was found in **Mode A**. Its test data were recorded in this report individually.

7. 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 5150MHz ~ 5350MHz bands:

Eight channels are provided for 802.11a and draft 802.11n (20MHz):

CHANNEL	FREQUENCY
1	5180 MHz
2	5200 MHz
3	5220 MHz
4	5240 MHz
5	5260 MHz
6	5280 MHz
7	5300 MHz
8	5320 MHz

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

CHANNEL	FREQUENCY
1	5190 MHz
2	5230 MHz
3	5270 MHz
4	5310 MHz

Operated in 5470MHz ~ 5725MHz bands:

Eleven channels are provided for 802.11a and draft 802.11n (20MHz):

CHANNEL	FREQUENCY
9	5500 MHz
10	5520 MHz
11	5540 MHz
12	5560 MHz
13	5580 MHz
14	5600 MHz
15	5620 MHz
16	5640 MHz
17	5660 MHz
18	5680 MHz
19	5700 MHz

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

CHANNEL	FREQUENCY
5	5510 MHz
6	5550 MHz
7	5590 MHz
8	5630 MHz
9	5670 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	
-	√	√	√	√	-

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

RE ³ 1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

ANTENNA COMBINATION MODE:

COMBINATION MODE	OPERATION MODE	CHAIN(0) (TX/RX)	CHAIN(1) (TX/RX)
A	802.11a, b, g	√	
B	DRAFT 802.11n(20MHz)	√	√
C	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 PCB antennas.

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
802.11a	1 to 19	1	OFDM	BPSK	6	A

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
802.11a	1 to 19	1	OFDM	BPSK	6	A

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
802.11a	1 to 19	1, 2, 4, 5, 7, 8, 9, 14, 19	OFDM	BPSK	6	A
For 5 GHz Draft 802.11n (20MHz)	1 to 19	1, 2, 4, 5, 7, 8, 9, 14, 19	OFDM	BPSK	13	B
For 5 GHz Draft 802.11n (40MHz)	1 to 9	1, 2, 3, 4, 5, 7, 9	OFDM	BPSK	27	C

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
802.11a	1 to 19	1, 8, 9, 19	OFDM	BPSK	6	A
For 5 GHz Draft 802.11n (20MHz)	1 to 19	1, 8, 9, 19	OFDM	BPSK	13	B
For 5 GHz Draft 802.11n (40MHz)	1 to 9	1, 4, 5, 9	OFDM	BPSK	27	C

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
802.11a	1 to 19	1, 2, 4, 5, 7, 8, 9, 14, 19	OFDM	BPSK	6	A
For 5 GHz Draft 802.11n (20MHz)	1 to 19	1, 2, 4, 5, 7, 8, 9, 14, 19	OFDM	BPSK	13	B
For 5 GHz Draft 802.11n (40MHz)	1 to 9	1, 2, 3, 4, 5, 7, 9	OFDM	BPSK	27	C

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Dual band Wireless N USB Adapter. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart E (15.407)

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

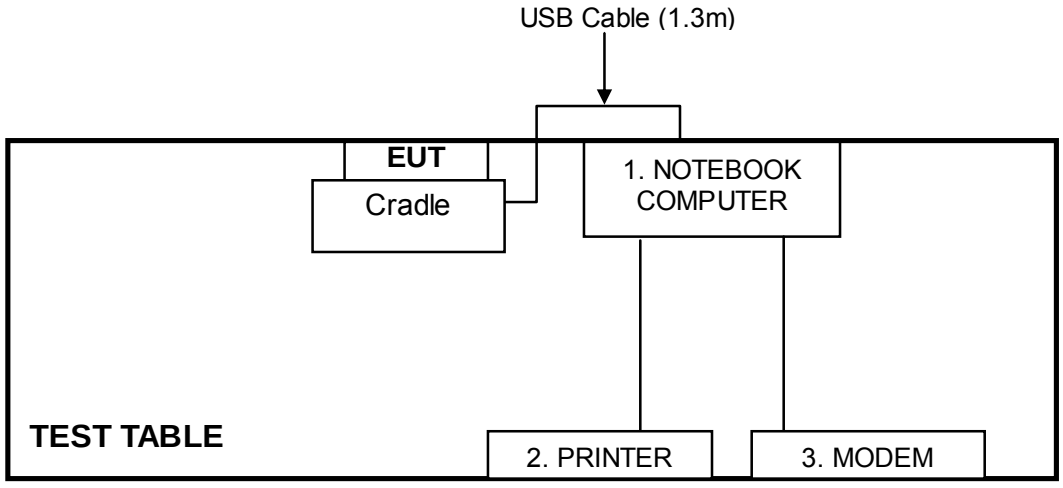
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	HP	HSTNN-S19C	WFY93-WQ98K-BH8 7F-KD366-RB773	FCC DoC
2	PRINTER	HP	C2642A	MY79F1C3MZ	B94C2642X
3	MODEM	ACEEX	1414	0206026775	IFAXDM1414

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

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 DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	847124/029	Feb. 29, 2008	Feb. 28, 2009
Line-Impedance Stabilization Network(for EUT)	ENV-216	100071	Nov. 27, 2007	Nov. 26, 2008
Line-Impedance Stabilization Network(for Peripheral)	ESH3-Z5	848773/004	Nov. 09, 2007	Nov. 08, 2008
RF Cable (JYEBAO)	5DFB	COBCAB-001	July 24, 2008	July 23, 2009
50 ohms Terminator	50	3	Nov. 16, 2007	Nov. 15, 2008
Software	ADT_Cond_V7.3.2	NA	NA	NA

Note:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in ADT Shielded Room No. B.
3 The VCCI Con B Registration No. is C-2193.

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

b. provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

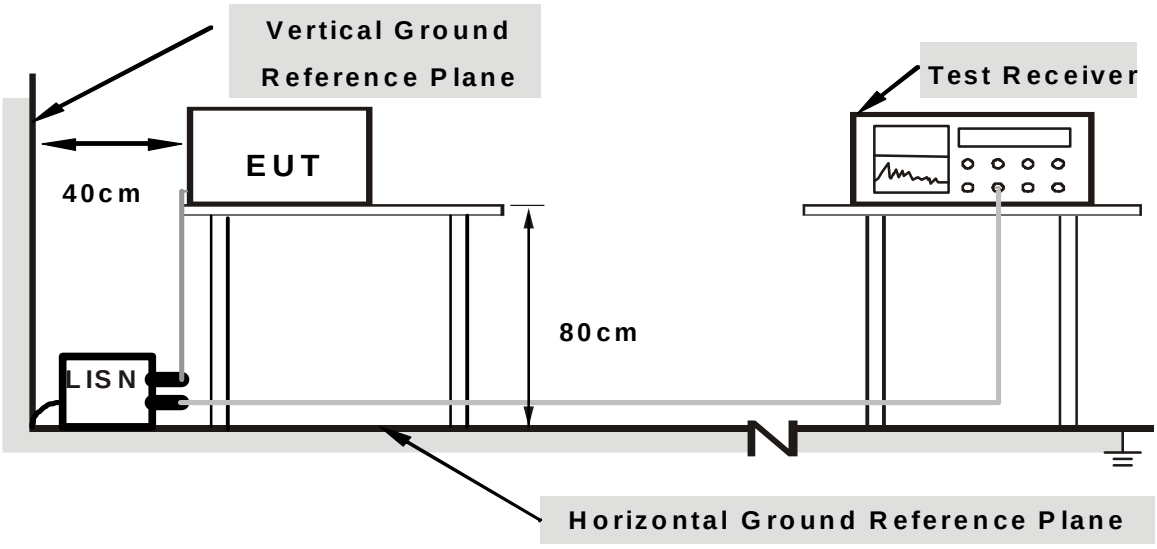
c. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

1 Connect the EUT with the support unit 1 (Notebook computer) which placed on a testing table.

2 The support unit 1 (Notebook computer) ran a test program “RT2870QA.exe” to enable EUT under transmission condition continuously.

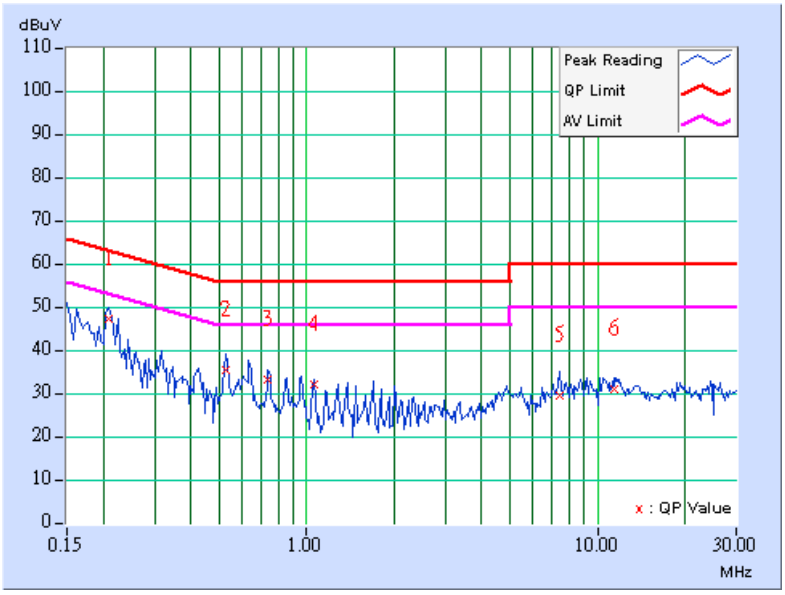
4.1.7 TEST RESULTS

802.11a OFDM MODULATION:

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

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	0.209	9.71	37.61	-	47.32	-	63.26	53.26	-15.94	-
2	0.525	9.89	25.83	-	35.72	-	56.00	46.00	-20.28	-
3	0.736	9.79	23.52	-	33.31	-	56.00	46.00	-22.69	-
4	1.063	9.67	22.53	-	32.20	-	56.00	46.00	-23.80	-
5	7.371	9.81	19.63	-	29.44	-	60.00	50.00	-30.56	-
6	11.375	9.86	21.30	-	31.16	-	60.00	50.00	-28.84	-

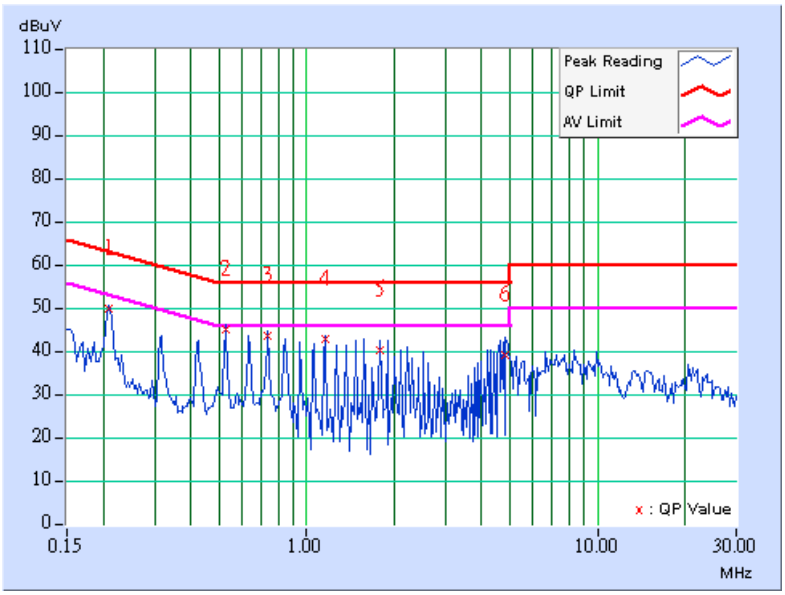
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



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

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	0.209	9.71	40.07	-	49.78	-	63.26	53.26	-13.48	-
2	**0.525**	**9.88**	**35.54**	**-**	**45.42**	**-**	**56.00**	**46.00**	**-10.58**	**-**
3	0.736	9.79	34.11	-	43.90	-	56.00	46.00	-12.10	-
4	1.156	9.68	33.21	-	42.89	-	56.00	46.00	-13.11	-
5	1.793	9.71	30.71	-	40.42	-	56.00	46.00	-15.58	-
6	4.844	9.78	29.46	-	39.24	-	56.00	46.00	-16.76	-

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 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequencies (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at 3m (dBμV/m) *note 3
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5825	-27 *note 1	68.3
	-17 *note 2	78.3

NOTE:

1. For frequencies 10MHz or greater above or below the band edge.
2. All emissions within the frequency range from the band edge to 10MHz above or below the band edge.
3. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength

$$E=\frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts)

4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 16, 2008	July 15, 2009
HP Pre_Amplifier	8449B	3008A01922	Oct. 05, 2007	Oct. 04, 2008
ROHDE & SCHWARZ Test Receiver	ESCS30	100375	April 01, 2008	Mar. 31, 2009
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	April 30, 2008	April 29, 2009
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 17, 2007	Dec. 16, 2008
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 28, 2008	Jan. 27, 2009
R&S Loop Antenna	HFH2-Z2	100070	Jan. 14, 2008	Jan. 13, 2009
RF Switches (ARNITSU)	CS-201	1565157	Aug. 13, 2008	Aug. 12, 2009
RF CABLE (Chaintek)	SF102	22054-2	Dec. 07, 2007	Dec. 06, 2008
RF Cable	8DFB	STCCAB-30M-1GHz	Oct. 10, 2007	Oct. 09, 2008
Software	ADT_Radiated_V7.6.15.8	NA	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA	NA
CHANCE MOST Turn Table	TT-100	0203	NA	NA

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

4.2.4 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.

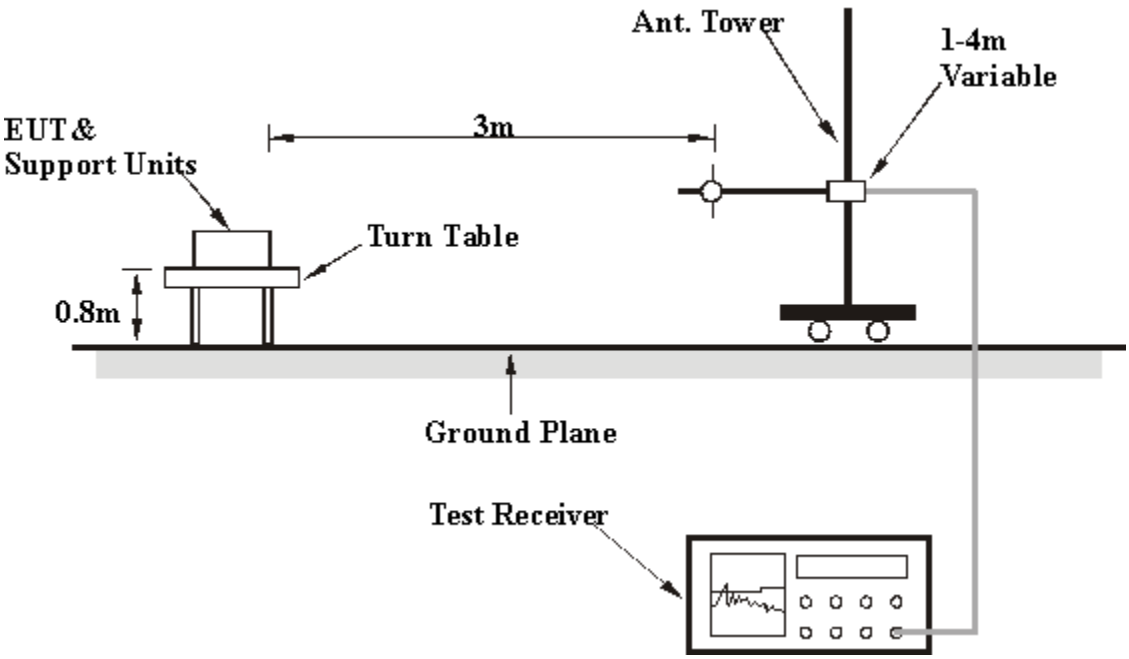
NOTE:

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.

4.2.5 DEVIATION FROM TEST STANDARD

No deviation

4.2.6 TEST SETUP



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

4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

Below 1GHz Test Data

4.2.8 TEST RESULTS

802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 74%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	60.45	19.87 QP	40.00	-20.13	1.00 H	159	4.88	14.99
2	245.50	34.85 QP	46.00	-11.15	1.06 H	273	18.75	16.10
3	263.98	32.64 QP	46.00	-13.36	1.00 H	233	15.90	16.74
4	360.00	32.67 QP	46.00	-13.33	1.06 H	154	12.28	20.39
5	480.00	31.64 QP	46.00	-14.36	1.00 H	5	7.99	23.65
6	720.00	34.20 QP	46.00	-11.80	1.00 H	187	5.17	29.03
7	880.00	32.65 QP	46.00	-13.35	1.00 H	167	0.42	32.23

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	60.60	29.19 QP	40.00	-10.81	1.00 V	29	14.23	14.96
2	120.00	21.34 QP	43.50	-22.16	1.00 V	237	6.86	14.48
3	240.25	24.97 QP	46.00	-21.03	1.48 V	346	9.14	15.83
4	360.00	25.78 QP	46.00	-20.22	1.00 V	246	5.39	20.39
5	480.00	32.34 QP	46.00	-13.66	1.01 V	117	8.69	23.65
6	720.00	33.13 QP	46.00	-12.87	1.03 V	225	4.10	29.03
7	880.00	29.64 QP	46.00	-16.36	1.09 V	153	-2.59	32.23

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

Above 1GHz Test Data

4.2.9 TEST RESULTS

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%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	4144.00	55.30 PK	74.00	-18.70	1.56 H	177	21.31	33.99
2	4144.00	43.60 AV	54.00	-10.40	1.56 H	177	9.61	33.99
3	5150.00	58.91 PK	74.00	-15.09	1.33 H	0	22.91	36.00
4	5150.00	45.18 AV	54.00	-8.82	1.33 H	0	9.18	36.00
5	*5180.00	103.90 PK			1.41 H	0	67.85	36.05
6	*5180.00	93.50 AV			1.41 H	0	57.45	36.05
7	#10360.00	59.90 PK	68.30	-8.40	1.59 H	279	13.98	45.92
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	4144.00	55.80 PK	74.00	-18.20	1.26 V	94	21.81	33.99
2	4144.00	45.40 AV	54.00	-8.60	1.26 V	94	11.41	33.99
3	5150.00	61.58 PK	74.00	-12.42	1.39 V	266	25.58	36.00
4	5150.00	48.44 AV	54.00	-5.56	1.39 V	266	12.44	36.00
5	*5180.00	108.20 PK			1.34 V	249	72.15	36.05
6	*5180.00	98.00 AV			1.34 V	249	61.95	36.05
7	#10360.00	62.50 PK	68.30	-5.80	1.51 V	139	16.58	45.92

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 2	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4160.00	55.80 PK	74.00	-18.20	1.56 H	173	21.76	34.04
2	4160.00	44.30 AV	54.00	-9.70	1.56 H	173	10.26	34.04
3	*5200.00	103.80 PK			1.42 H	1	67.72	36.08
4	*5200.00	93.40 AV			1.42 H	1	57.32	36.08
5	#10400.00	50.10 PK	68.30	-18.20	1.57 H	220	4.11	45.99
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	4160.00	56.30 PK	74.00	-17.70	1.25 V	103	22.26	34.04
2	4160.00	45.50 AV	54.00	-8.50	1.25 V	103	11.46	34.04
3	*5200.00	109.10 PK			1.40 V	245	73.02	36.08
4	*5200.00	98.40 AV			1.40 V	245	62.32	36.08
5	#10400.00	66.50 PK	68.30	-1.80	1.49 V	141	20.51	45.99

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4192.00	56.10 PK	74.00	-17.90	1.32 H	180	21.98	34.12
2	4192.00	45.90 AV	54.00	-8.10	1.32 H	180	11.78	34.12
3	*5240.00	104.00 PK			1.27 H	0	67.86	36.14
4	*5240.00	93.60 AV			1.27 H	0	57.46	36.14
5	#10480.00	60.30 PK	68.30	-8.00	1.65 H	264	14.18	46.12
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	4192.00	56.80 PK	74.00	-17.20	1.24 V	101	22.68	34.12
2	4192.00	46.90 AV	54.00	-7.10	1.24 V	101	12.78	34.12
3	*5240.00	109.30 PK			1.44 V	239	73.16	36.14
4	*5240.00	98.60 AV			1.44 V	239	62.46	36.14
5	#10480.00	65.60 PK	68.30	-2.70	1.40 V	143	19.48	46.12

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4208.00	56.10 PK	74.00	-17.90	1.49 H	188	21.94	34.16
2	4208.00	46.40 AV	54.00	-7.60	1.49 H	188	12.24	34.16
3	*5260.00	104.20 PK			1.38 H	4	68.02	36.18
4	*5260.00	93.60 AV			1.38 H	4	57.42	36.18
5	#10520.00	58.80 PK	68.30	-9.50	1.77 H	279	12.61	46.19
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	4208.00	56.20 PK	74.00	-17.80	1.25 V	101	22.04	34.16
2	4208.00	46.20 AV	54.00	-7.80	1.25 V	101	12.04	34.16
3	*5260.00	108.10 PK			1.38 V	244	71.92	36.18
4	*5260.00	98.20 AV			1.38 V	244	62.02	36.18
5	#10520.00	62.20 PK	68.30	-6.10	1.47 V	143	16.01	46.19

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4240.00	56.20 PK	74.00	-17.80	1.50 H	162	21.96	34.24
2	4240.00	45.20 AV	54.00	-8.80	1.50 H	162	10.96	34.24
3	*5300.00	103.70 PK			1.36 H	1	67.46	36.24
4	*5300.00	93.40 AV			1.36 H	1	57.16	36.24
5	10600.00	59.30 PK	74.00	-14.70	1.72 H	281	12.93	46.37
6	10600.00	45.60 AV	54.00	-8.40	1.72 H	281	-0.77	46.37
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	4240.00	56.40 PK	74.00	-17.60	1.26 V	109	22.16	34.24
2	4240.00	45.30 AV	54.00	-8.70	1.26 V	109	11.06	34.24
3	*5300.00	108.30 PK			1.36 V	248	72.06	36.24
4	*5300.00	98.10 AV			1.36 V	248	61.86	36.24
5	10600.00	62.30 PK	74.00	-11.70	1.44 V	148	15.93	46.37
6	10600.00	47.10 AV	54.00	-6.90	1.44 V	148	0.73	46.37

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 8	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4256.00	56.00 PK	74.00	-18.00	1.58 H	206	21.71	34.29
2	4256.00	44.40 AV	54.00	-9.60	1.58 H	206	10.11	34.29
3	*5320.00	104.20 PK			1.28 H	0	67.93	36.27
4	*5320.00	93.50 AV			1.28 H	0	57.23	36.27
5	5352.40	59.17 PK	74.00	-14.83	1.26 H	0	22.85	36.32
6	5352.40	44.65 AV	54.00	-9.35	1.26 H	0	8.33	36.32
7	10640.00	60.30 PK	74.00	-13.70	1.68 H	280	13.84	46.46
8	10640.00	45.00 AV	54.00	-9.00	1.68 H	280	-1.46	46.46
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	4256.00	55.90 PK	74.00	-18.10	1.38 V	109	21.61	34.29
2	4256.00	44.70 AV	54.00	-9.30	1.38 V	109	10.41	34.29
3	*5320.00	108.70 PK			1.33 V	245	72.43	36.27
4	*5320.00	98.30 AV			1.33 V	245	62.03	36.27
5	5354.80	58.15 PK	74.00	-15.85	1.34 V	245	21.82	36.33
6	5354.80	46.77 AV	54.00	-7.23	1.34 V	245	10.44	36.33
7	10640.00	60.40 PK	74.00	-13.60	1.25 V	149	13.94	46.46
8	10640.00	46.40 AV	54.00	-7.60	1.25 V	149	-0.06	46.46

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4400.00	56.50 PK	74.00	-17.50	1.42 H	183	21.84	34.66
2	4400.00	44.30 AV	54.00	-9.70	1.42 H	183	9.64	34.66
3	5460.00	55.58 PK	74.00	-18.42	1.26 H	182	19.08	36.50
4	5460.00	43.89 AV	54.00	-10.11	1.26 H	182	7.39	36.50
5	#5470.00	56.80 PK	68.30	-11.50	1.03 H	1	20.29	36.51
6	*5500.00	103.20 PK			1.04 H	0	66.64	36.56
7	*5500.00	92.60 AV			1.04 H	0	56.04	36.56
8	11000.00	59.20 PK	74.00	-14.80	1.77 H	287	11.95	47.25
9	11000.00	45.20 AV	54.00	-8.80	1.77 H	287	-2.05	47.25
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	4400.00	56.70 PK	74.00	-17.30	1.48 V	94	22.04	34.66
2	4400.00	46.40 AV	54.00	-7.60	1.48 V	94	11.74	34.66
3	5460.00	56.77 PK	74.00	-17.23	1.30 V	15	20.27	36.50
4	5460.00	44.25 AV	54.00	-9.75	1.30 V	15	7.75	36.50
5	#5470.00	57.30 PK	68.30	-11.00	1.24 V	254	20.79	36.51
6	*5500.00	106.70 PK			1.26 V	244	70.14	36.56
7	*5500.00	96.60 AV			1.26 V	244	60.04	36.56
8	11000.00	61.20 PK	74.00	-12.80	1.40 V	149	13.95	47.25
9	11000.00	46.70 AV	54.00	-7.30	1.40 V	149	-0.55	47.25

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 14	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#4480.00	52.26 PK	68.30	-16.04	1.50 H	190	17.39	34.87
2	*5600.00	102.34 PK			1.14 H	2	65.52	36.82
3	*5600.00	91.81 AV			1.14 H	2	54.99	36.82
4	11200.00	56.76 PK	74.00	-17.24	1.39 H	187	9.60	47.16
5	11200.00	42.69 AV	54.00	-11.31	1.39 H	187	-4.47	47.16
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#4480.00	49.52 PK	68.30	-18.78	1.43 V	94	14.65	34.87
2	*5600.00	102.66 PK			1.39 V	244	65.84	36.82
3	*5600.00	92.55 AV			1.39 V	244	55.73	36.82
4	11200.00	57.37 PK	74.00	-16.63	1.51 V	159	10.21	47.16
5	11200.00	43.07 AV	54.00	-10.93	1.51 V	159	-4.09	47.16

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

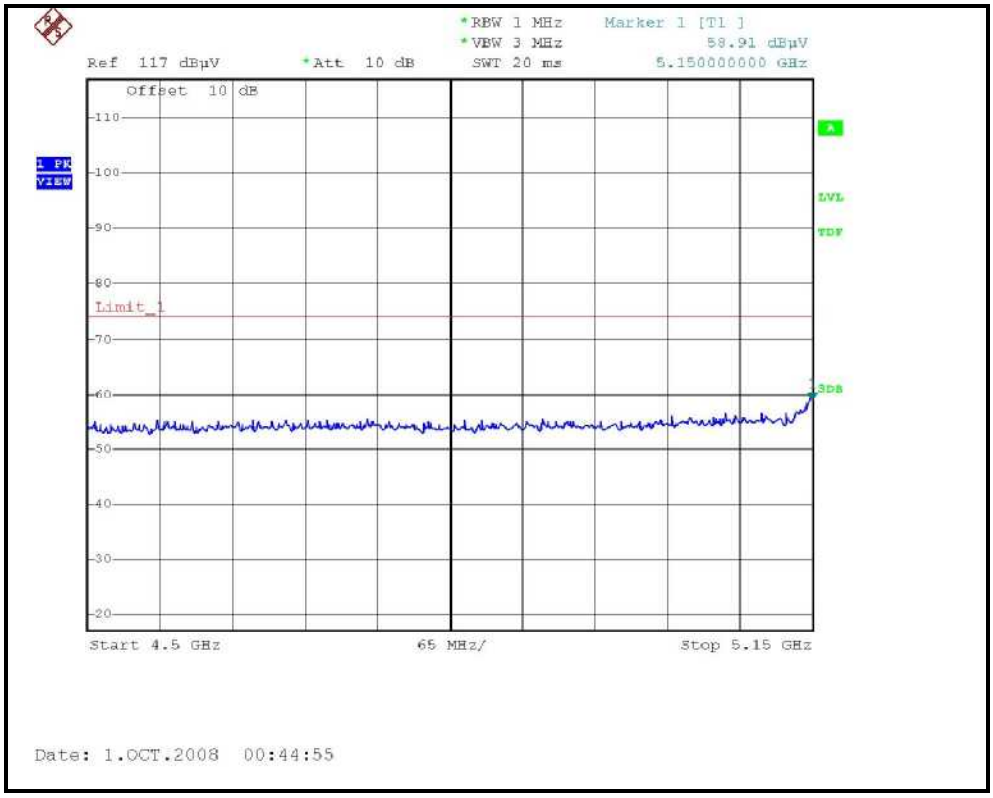
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 19	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

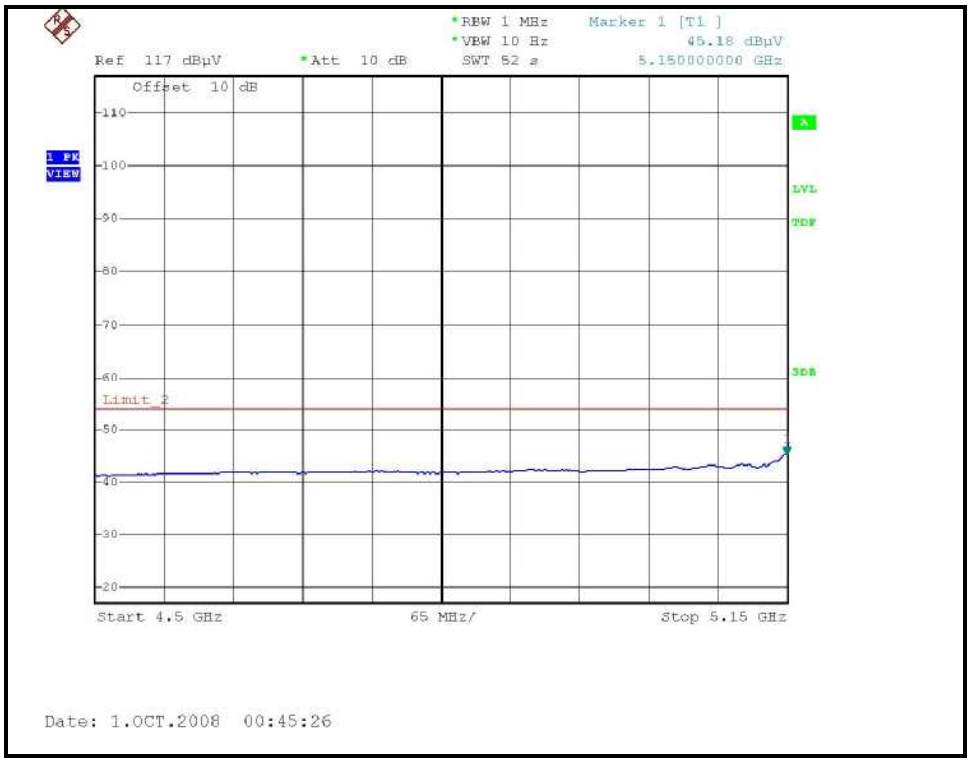
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4560.00	58.14 PK	74.00	-15.86	1.56 H	187	23.12	35.02
2	**4560.00**	**52.83 AV**	**54.00**	**-1.17**	**1.56 H**	**187**	**17.81**	**35.02**
3	*5700.00	101.03 PK			1.25 H	0	63.94	37.09
4	*5700.00	90.51 AV			1.25 H	0	53.42	37.09
5	#5725.00	54.30 PK	68.30	-14.00	1.24 H	193	17.15	37.15
6	11400.00	57.51 PK	74.00	-16.49	1.38 H	179	10.44	47.07
7	11400.00	43.74 AV	54.00	-10.26	1.38 H	179	-3.33	47.07
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	4560.00	57.46 PK	74.00	-16.54	1.57 V	93	22.44	35.02
2	4560.00	50.66 AV	54.00	-3.34	1.57 V	93	15.64	35.02
3	*5700.00	103.74 PK			1.23 V	243	66.65	37.09
4	*5700.00	93.50 AV			1.23 V	243	56.41	37.09
5	#5725.00	57.10 PK	68.30	-11.20	1.36 V	9	19.95	37.15
6	11400.00	58.07 PK	74.00	-15.93	1.36 V	195	11.00	47.07
7	11400.00	44.10 AV	54.00	-9.90	1.36 V	195	-2.97	47.07

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

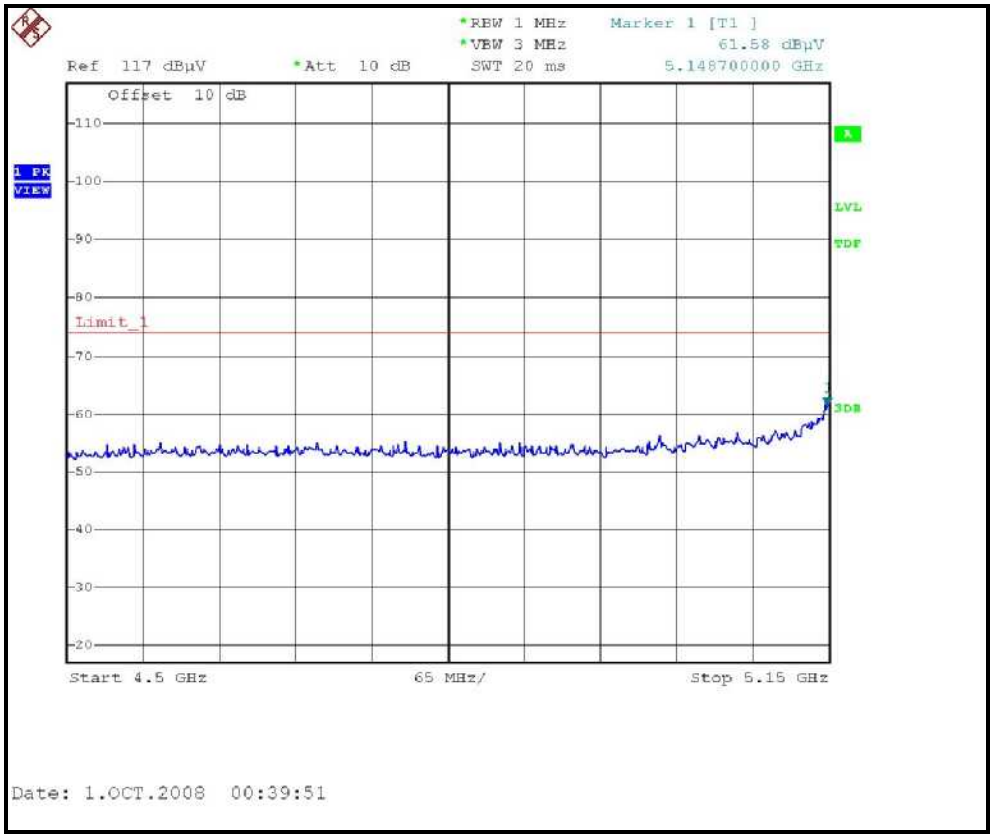
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

RESTRICTED BANDEDGE (802.11a MODE, CH1, HORIZONTAL)

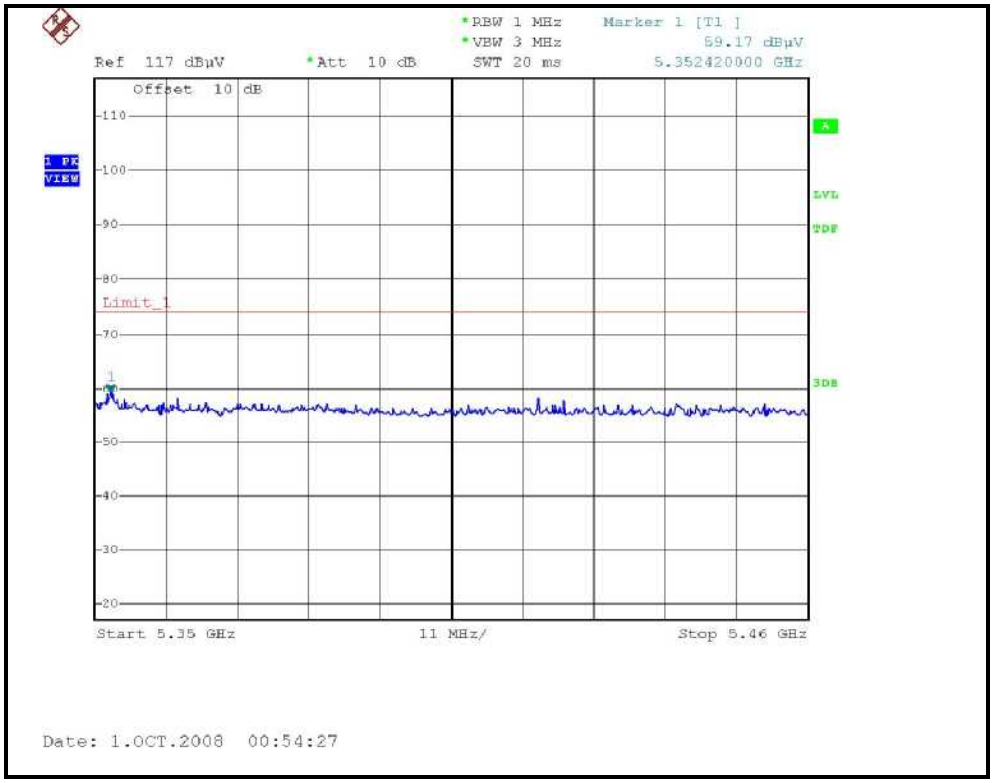


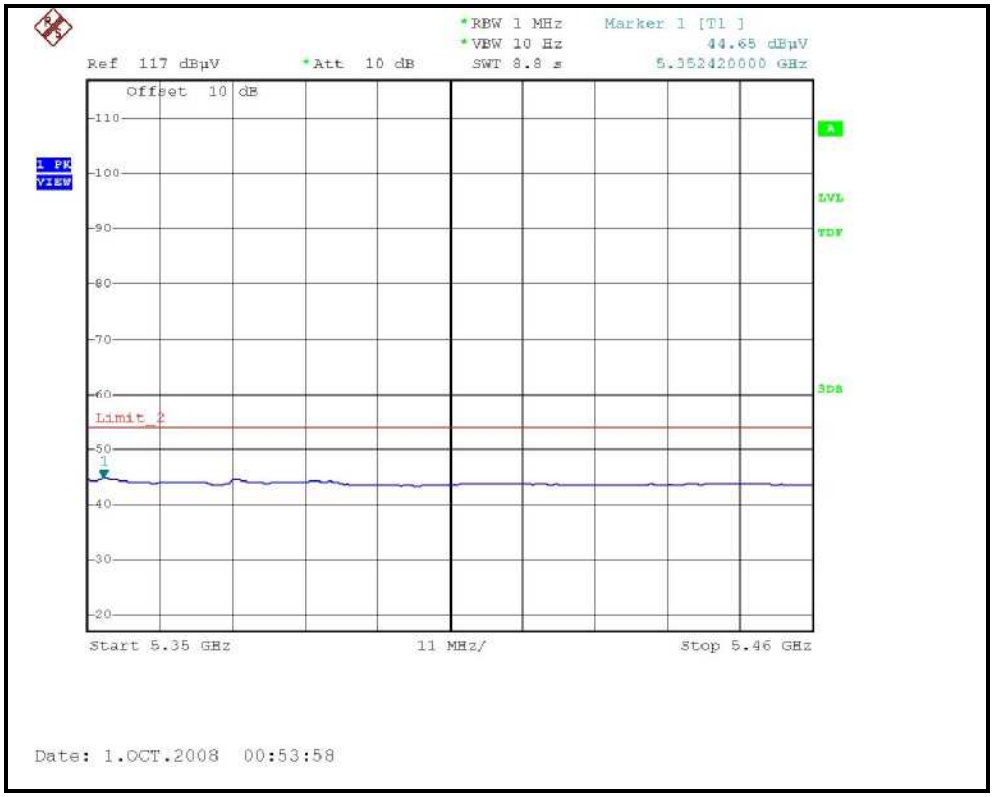


RESTRICTED BANDEDGE (802.11a MODE, CH1, VERTICAL)



RESTRICTED BANDEDGE (802.11a MODE, CH8, HORIZONTAL)





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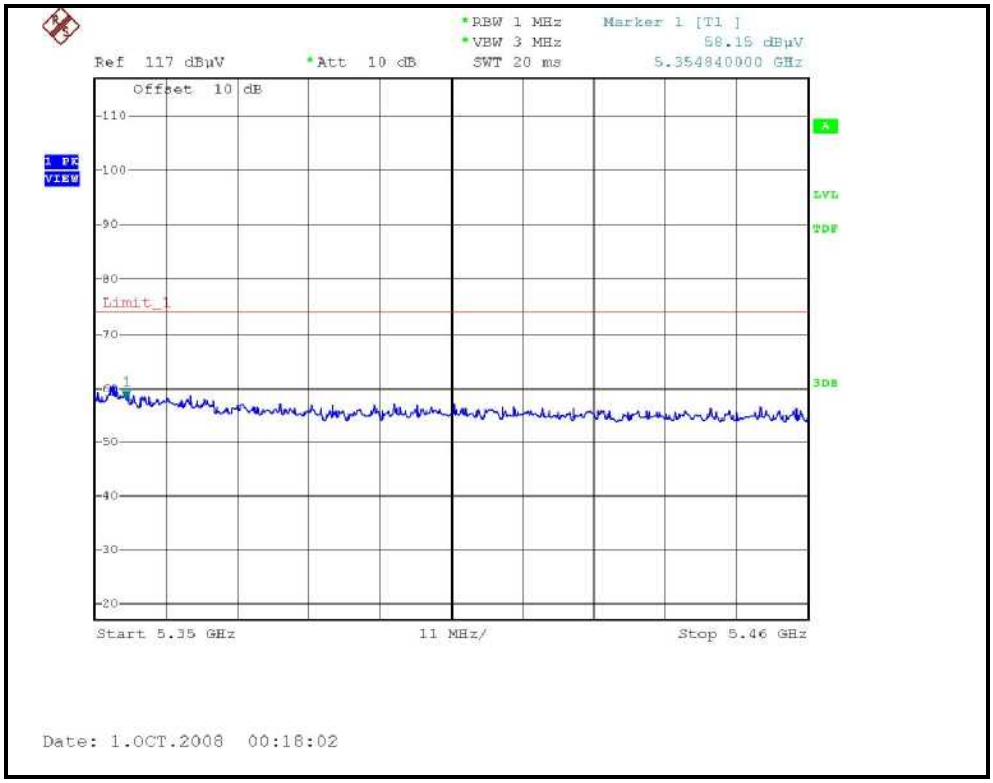
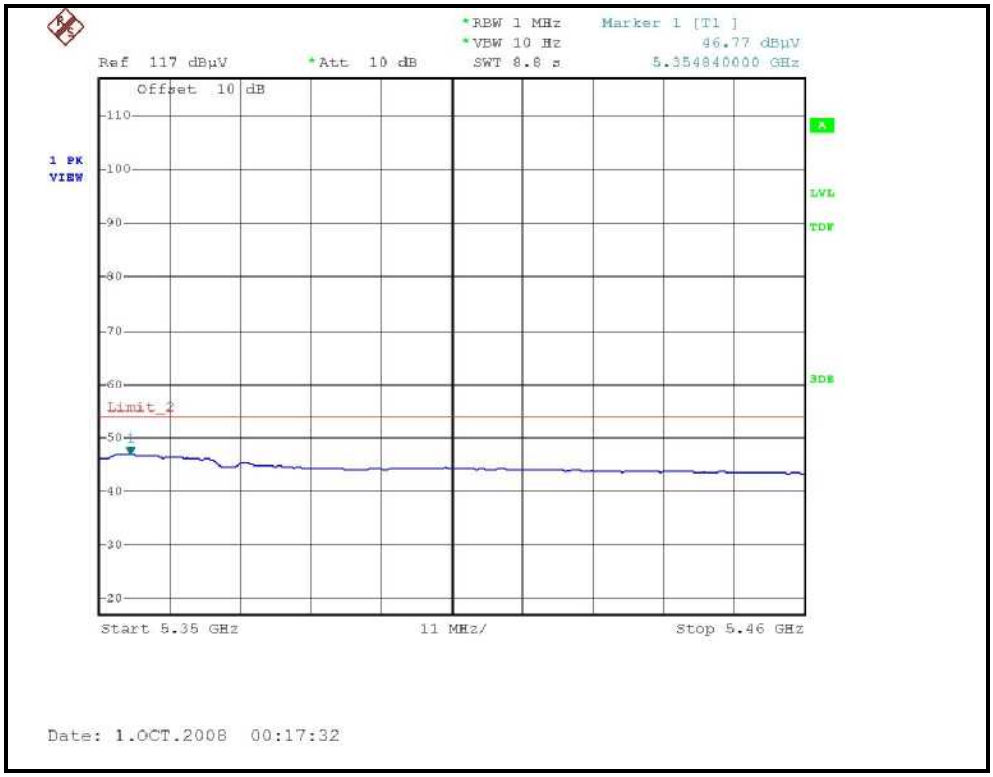
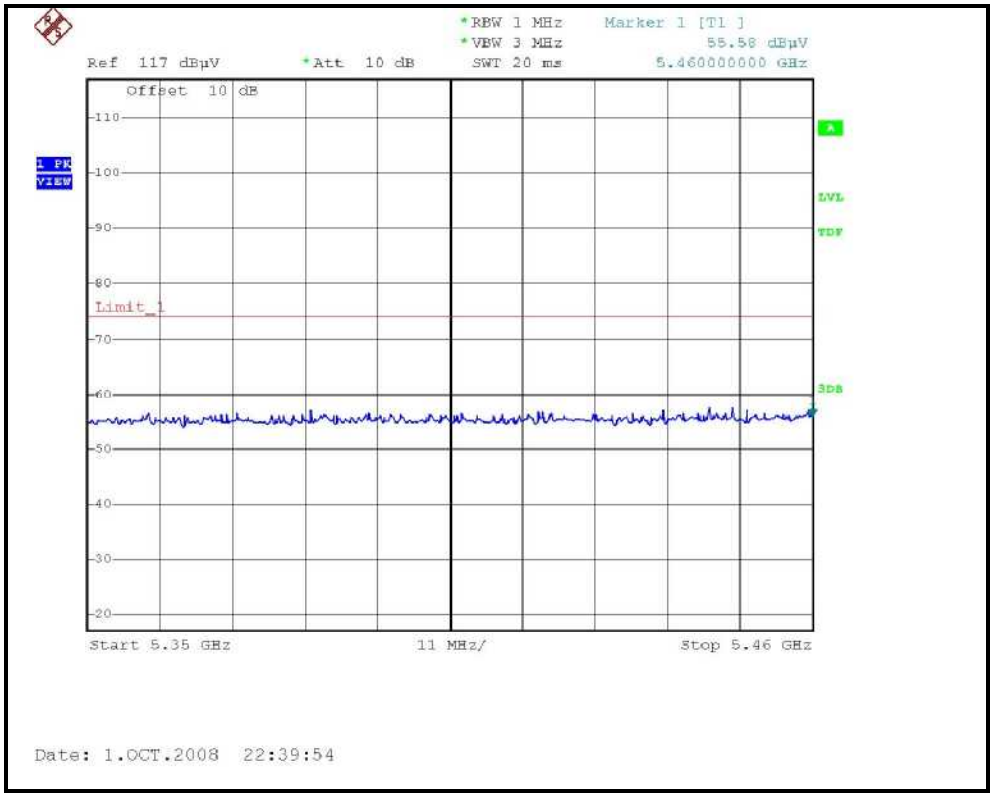
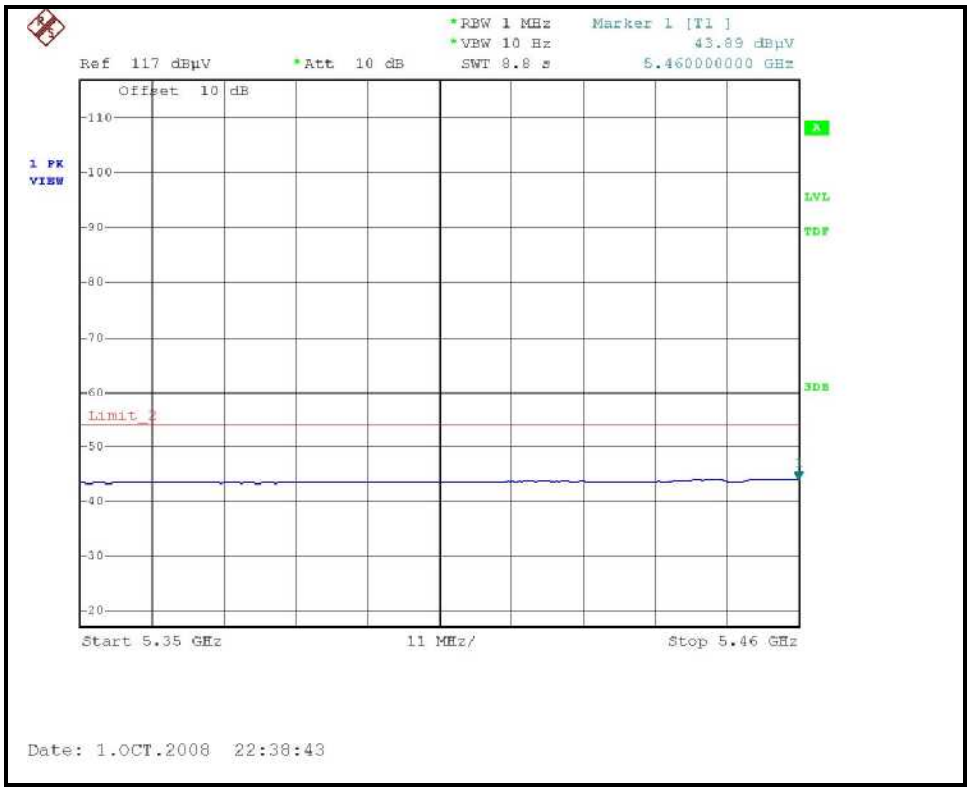


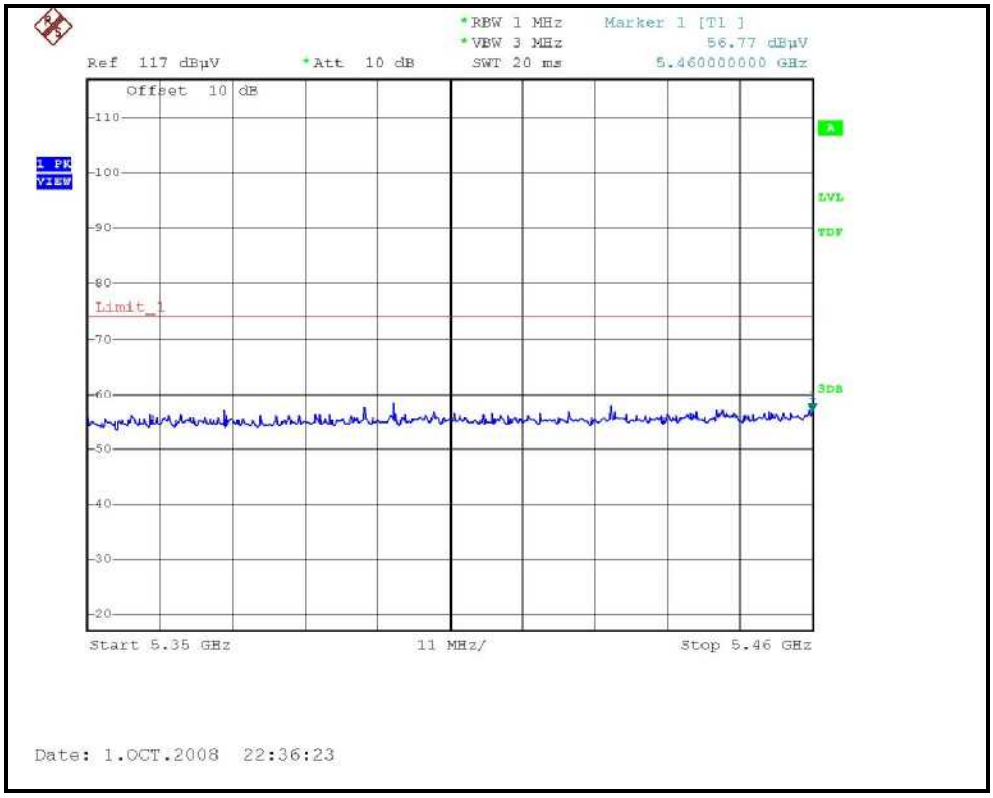


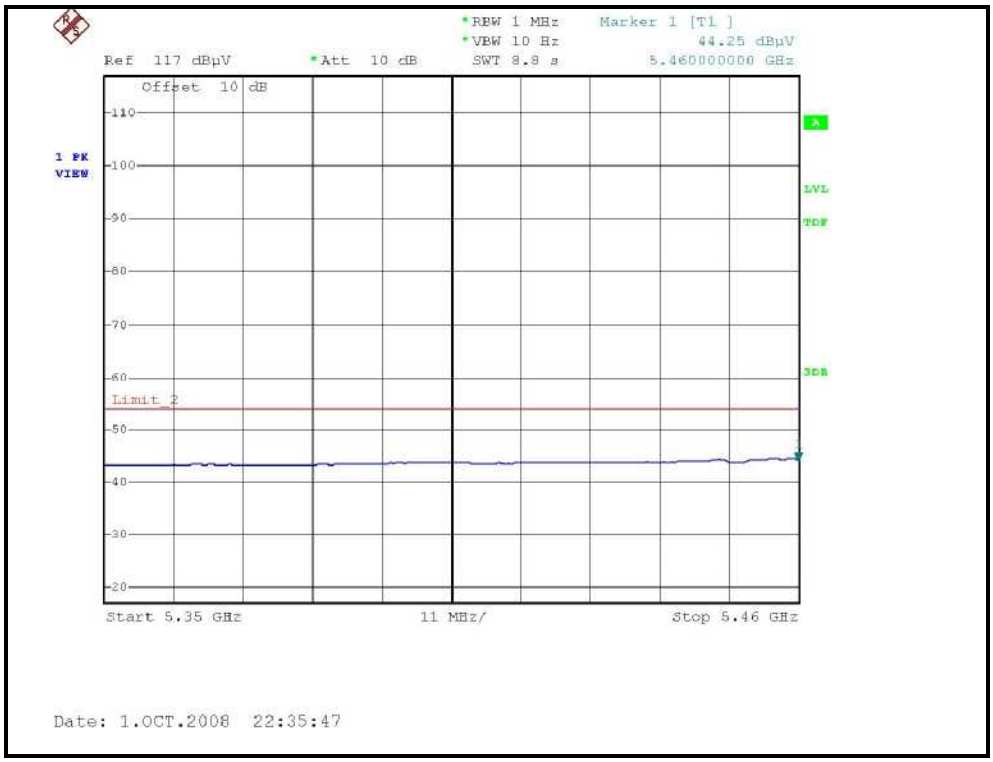
RESTRICTED BANDEDGE (802.11a MODE, CH9, HORIZONTAL)





RESTRICTED BANDEDGE (802.11a MODE, CH9, VERTICAL)





DRAFT 802.11n (20MHz) OFDM MODULATION

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4144.00	55.50 PK	74.00	-18.50	1.54 H	20	21.51	33.99
2	4144.00	44.40 AV	54.00	-9.60	1.54 H	20	10.41	33.99
3	5146.10	58.73 PK	74.00	-15.27	1.27 H	0	22.74	35.99
4	5146.10	46.46 AV	54.00	-7.54	1.27 H	0	10.47	35.99
5	*5180.00	105.70 PK			1.45 H	0	69.65	36.05
6	*5180.00	94.30 AV			1.45 H	0	58.25	36.05
7	8288.00	52.60 PK	74.00	-21.40	1.46 H	9	9.25	43.35
8	8288.00	40.20 AV	54.00	-13.80	1.46 H	9	-3.15	43.35
9	#10360.00	56.80 PK	68.30	-11.50	1.31 H	118	10.88	45.92
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	4144.00	56.10 PK	74.00	-17.90	1.27 V	94	22.11	33.99
2	4144.00	46.00 AV	54.00	-8.00	1.27 V	94	12.01	33.99
3	5147.10	60.16 PK	74.00	-13.84	1.38 V	349	24.16	36.00
4	5147.10	47.51 AV	54.00	-6.49	1.38 V	349	11.51	36.00
5	*5180.00	108.70 PK			1.38 V	349	72.65	36.05
6	*5180.00	97.30 AV			1.38 V	349	61.25	36.05
7	8288.00	53.61 PK	74.00	-20.39	1.43 V	328	10.26	43.35
8	8288.00	43.50 AV	54.00	-10.50	1.43 V	328	0.15	43.35
9	#10360.00	58.80 PK	68.30	-9.50	1.30 V	94	12.88	45.92

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 2	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4160.00	55.60 PK	74.00	-18.40	1.51 H	164	21.56	34.04
2	4160.00	44.50 AV	54.00	-9.50	1.51 H	164	10.46	34.04
3	*5200.00	105.40 PK			1.32 H	0	69.32	36.08
4	*5200.00	93.70 AV			1.32 H	0	57.62	36.08
5	8320.00	52.10 PK	74.00	-21.90	1.27 H	141	8.74	43.36
6	8320.00	39.80 AV	54.00	-14.20	1.27 H	141	-3.56	43.36
7	#10400.00	56.40 PK	68.30	-11.90	1.24 H	248	10.41	45.99
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	4160.00	55.20 PK	74.00	-18.80	1.25 V	242	21.16	34.04
2	4160.00	42.50 AV	54.00	-11.50	1.25 V	242	8.46	34.04
3	*5200.00	108.60 PK			1.37 V	246	72.52	36.08
4	*5200.00	96.60 AV			1.37 V	246	60.52	36.08
5	8320.00	53.20 PK	74.00	-20.80	1.34 V	329	9.84	43.36
6	8320.00	43.10 AV	54.00	-10.90	1.34 V	329	-0.26	43.36
7	#10400.00	57.10 PK	68.30	-11.20	1.26 V	319	11.11	45.99

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

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4192.00	55.90 PK	74.00	-18.10	1.50 H	169	21.78	34.12
2	4192.00	44.60 AV	54.00	-9.40	1.50 H	169	10.48	34.12
3	*5240.00	105.60 PK			1.31 H	0	69.46	36.14
4	*5240.00	93.90 AV			1.31 H	0	57.76	36.14
5	8384.00	52.00 PK	74.00	-22.00	1.54 H	12	8.62	43.38
6	8384.00	39.50 AV	54.00	-14.50	1.54 H	12	-3.88	43.38
7	#10480.00	56.00 PK	68.30	-12.30	1.22 H	180	9.88	46.12
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	4192.00	55.30 PK	74.00	-18.70	1.29 V	268	21.18	34.12
2	4192.00	43.20 AV	54.00	-10.80	1.29 V	268	9.08	34.12
3	*5240.00	108.30 PK			1.36 V	244	72.16	36.14
4	*5240.00	96.40 AV			1.36 V	244	60.26	36.14
5	8384.00	51.20 PK	74.00	-22.80	1.25 V	344	7.82	43.38
6	8384.00	41.50 AV	54.00	-12.50	1.25 V	344	-1.88	43.38
7	#10480.00	57.10 PK	68.30	-11.20	1.36 V	323	10.98	46.12

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4208.00	56.10 PK	74.00	-17.90	1.54 H	161	21.94	34.16
2	4208.00	45.70 AV	54.00	-8.30	1.54 H	161	11.54	34.16
3	*5260.00	105.70 PK			1.31 H	2	69.52	36.18
4	*5260.00	93.80 AV			1.31 H	2	57.62	36.18
5	8416.00	52.40 PK	74.00	-21.60	1.26 H	243	9.01	43.39
6	8416.00	39.91 AV	54.00	-14.09	1.26 H	243	-3.48	43.39
7	#10520.00	56.10 PK	68.30	-12.20	1.34 H	178	9.91	46.19
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	4208.00	55.10 PK	74.00	-18.90	1.58 V	254	20.94	34.16
2	4208.00	43.10 AV	54.00	-10.90	1.58 V	254	8.94	34.16
3	*5260.00	107.60 PK			1.36 V	248	71.42	36.18
4	*5260.00	95.80 AV			1.36 V	248	59.62	36.18
5	8416.00	53.70 PK	74.00	-20.30	1.37 V	197	10.31	43.39
6	8416.00	41.40 AV	54.00	-12.60	1.37 V	197	-1.99	43.39
7	#10520.00	53.30 PK	68.30	-15.00	1.37 V	229	7.11	46.19

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4240.00	56.80 PK	74.00	-17.20	1.52 H	159	22.56	34.24
2	4240.00	45.30 AV	54.00	-8.70	1.52 H	159	11.06	34.24
3	*5300.00	105.90 PK			1.32 H	1	69.66	36.24
4	*5300.00	94.10 AV			1.32 H	1	57.86	36.24
5	8480.00	52.80 PK	74.00	-21.20	1.50 H	21	9.40	43.40
6	8480.00	39.90 AV	54.00	-14.10	1.50 H	21	-3.50	43.40
7	10600.00	55.92 PK	74.00	-18.08	1.28 H	93	9.55	46.37
8	10600.00	42.90 AV	54.00	-11.10	1.28 H	93	-3.47	46.37
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	4240.00	55.40 PK	74.00	-18.60	1.57 V	268	21.16	34.24
2	4240.00	43.60 AV	54.00	-10.40	1.57 V	268	9.36	34.24
3	*5300.00	106.40 PK			1.37 V	243	70.16	36.24
4	*5300.00	95.10 AV			1.37 V	243	58.86	36.24
5	8480.00	53.63 PK	74.00	-20.37	1.37 V	1	10.23	43.40
6	8480.00	41.83 AV	54.00	-12.17	1.37 V	1	-1.57	43.40
7	10600.00	56.60 PK	74.00	-17.40	1.30 V	308	10.23	46.37
8	10600.00	43.70 AV	54.00	-10.30	1.30 V	308	-2.67	46.37

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 8	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4256.00	57.40 PK	74.00	-16.60	1.51 H	194	23.11	34.29
2	4256.00	45.40 AV	54.00	-8.60	1.51 H	194	11.11	34.29
3	*5320.00	106.10 PK			1.29 H	0	69.83	36.27
4	*5320.00	94.30 AV			1.29 H	0	58.03	36.27
5	5352.40	59.07 PK	74.00	-14.93	1.29 H	0	22.75	36.32
6	5352.40	46.67 AV	54.00	-7.33	1.29 H	0	10.35	36.32
7	10640.00	56.00 PK	74.00	-18.00	1.28 H	114	9.54	46.46
8	10640.00	43.10 AV	54.00	-10.90	1.28 H	114	-3.36	46.46
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	4256.00	56.40 PK	74.00	-17.60	1.58 V	279	22.11	34.29
2	4256.00	43.30 AV	54.00	-10.70	1.58 V	279	9.01	34.29
3	*5320.00	105.70 PK			1.50 V	245	69.43	36.27
4	*5320.00	94.20 AV			1.50 V	245	57.93	36.27
5	5372.00	59.34 PK	74.00	-14.66	1.32 V	245	22.98	36.36
6	5372.00	45.96 AV	54.00	-8.04	1.32 V	245	9.60	36.36
7	10640.00	56.50 PK	74.00	-17.50	1.21 V	325	10.04	46.46
8	10640.00	43.30 AV	54.00	-10.70	1.21 V	325	-3.16	46.46

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4400.00	57.36 PK	74.00	-16.64	1.27 H	196	22.70	34.66
2	4400.00	47.30 AV	54.00	-6.70	1.27 H	196	12.64	34.66
3	5448.10	56.44 PK	74.00	-17.56	1.24 H	6	19.96	36.48
4	5448.10	44.61 AV	54.00	-9.39	1.24 H	6	8.13	36.48
5	#5470.00	55.50 PK	68.30	-12.80	1.24 H	6	18.99	36.51
6	*5500.00	102.60 PK			1.37 H	21	66.04	36.56
7	*5500.00	91.00 AV			1.37 H	21	54.44	36.56
8	11000.00	57.51 PK	74.00	-16.49	1.26 H	108	10.26	47.25
9	11000.00	44.60 AV	54.00	-9.40	1.26 H	108	-2.65	47.25
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	4400.00	56.80 PK	74.00	-17.20	1.51 V	271	22.14	34.66
2	4400.00	46.70 AV	54.00	-7.30	1.51 V	271	12.04	34.66
3	5447.90	56.89 PK	74.00	-17.11	1.46 V	239	20.41	36.48
4	5447.90	44.86 AV	54.00	-9.14	1.46 V	239	8.38	36.48
5	#5470.00	56.50 PK	68.30	-11.80	1.46 V	239	19.99	36.51
6	*5500.00	105.20 PK			1.44 V	240	68.64	36.56
7	*5500.00	93.40 AV			1.44 V	240	56.84	36.56
8	11000.00	58.50 PK	74.00	-15.50	1.47 V	1	11.25	47.25
9	11000.00	45.60 AV	54.00	-8.40	1.47 V	1	-1.65	47.25

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 14	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#4480.00	57.20 PK	68.30	-11.10	1.58 H	197	22.33	34.87
2	*5600.00	103.40 PK			1.28 H	7	66.58	36.82
3	*5600.00	91.30 AV			1.28 H	7	54.48	36.82
4	11200.00	57.72 PK	74.00	-16.28	1.26 H	104	10.56	47.16
5	11200.00	44.70 AV	54.00	-9.30	1.26 H	104	-2.46	47.16
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#4480.00	56.40 PK	68.30	-11.90	1.67 V	271	21.53	34.87
2	*5600.00	104.70 PK			1.27 V	234	67.88	36.82
3	*5600.00	93.00 AV			1.27 V	234	56.18	36.82
4	11200.00	59.13 PK	74.00	-14.87	1.50 V	3	11.97	47.16
5	11200.00	46.10 AV	54.00	-7.90	1.50 V	3	-1.06	47.16

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

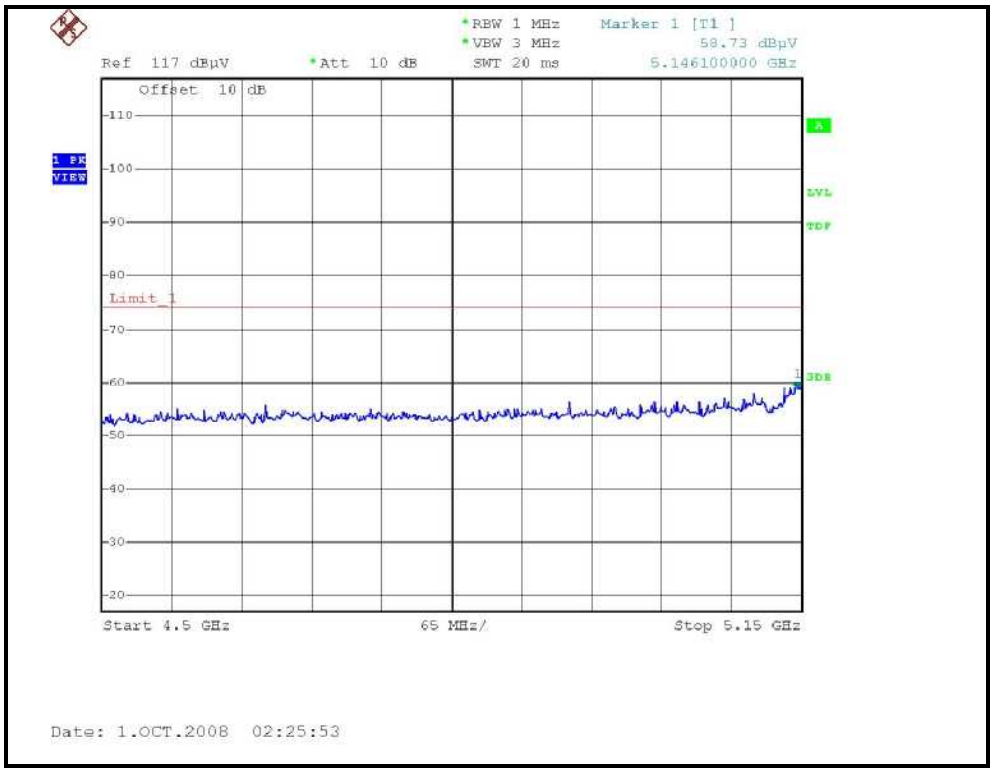
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 19	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

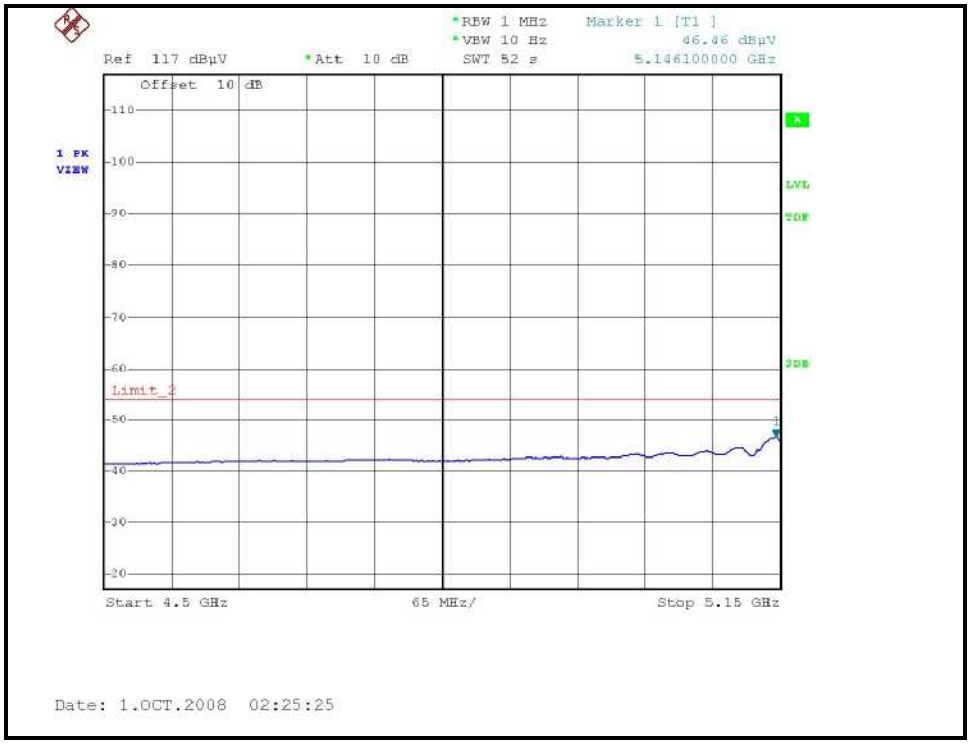
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4560.00	58.80 PK	74.00	-15.20	1.37 H	170	23.78	35.02
2	4560.00	50.60 AV	54.00	-3.40	1.37 H	170	15.58	35.02
3	*5700.00	103.40 PK			1.46 H	7	66.31	37.09
4	*5700.00	91.40 AV			1.46 H	7	54.31	37.09
5	#5725.00	56.30 PK	68.30	-12.00	1.46 H	8	19.15	37.15
6	11400.00	58.60 PK	74.00	-15.40	1.41 H	13	11.53	47.07
7	11400.00	44.70 AV	54.00	-9.30	1.41 H	13	-2.37	47.07
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	4560.00	56.20 PK	74.00	-17.80	1.76 V	273	21.18	35.02
2	4560.00	44.40 AV	54.00	-9.60	1.76 V	273	9.38	35.02
3	*5700.00	103.80 PK			1.15 V	261	66.71	37.09
4	*5700.00	92.70 AV			1.15 V	261	55.61	37.09
5	#5725.00	57.60 PK	68.30	-10.70	1.15 V	262	20.45	37.15
6	11400.00	58.40 PK	74.00	-15.60	1.31 V	354	11.33	47.07
7	11400.00	46.34 AV	54.00	-7.66	1.31 V	354	-0.73	47.07

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

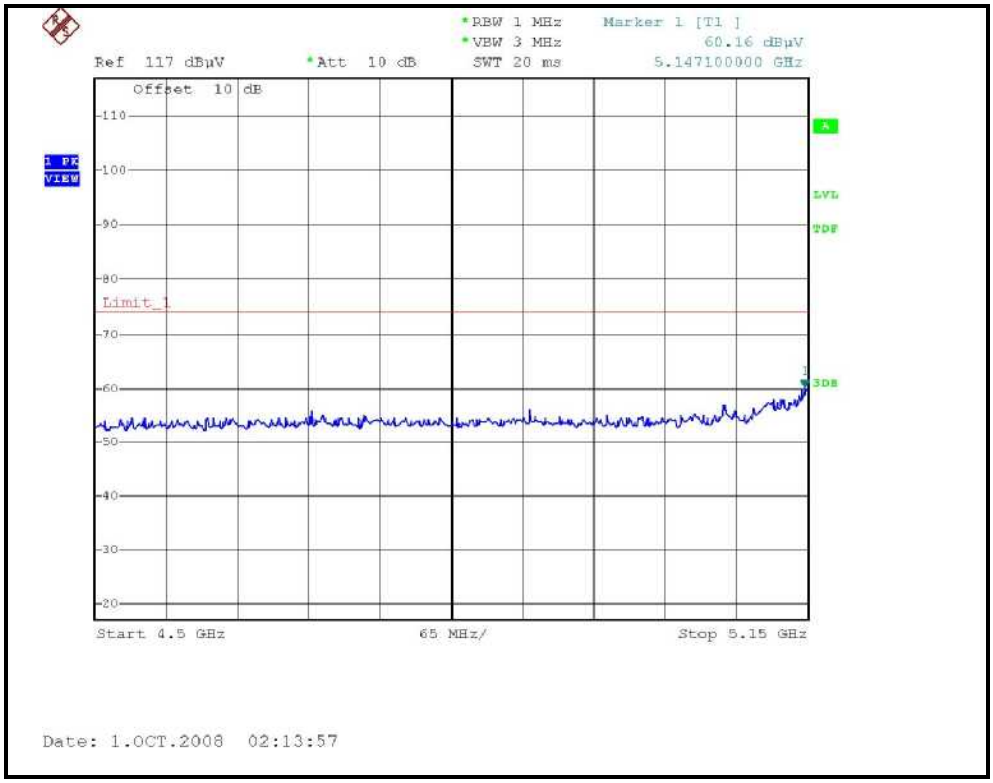
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

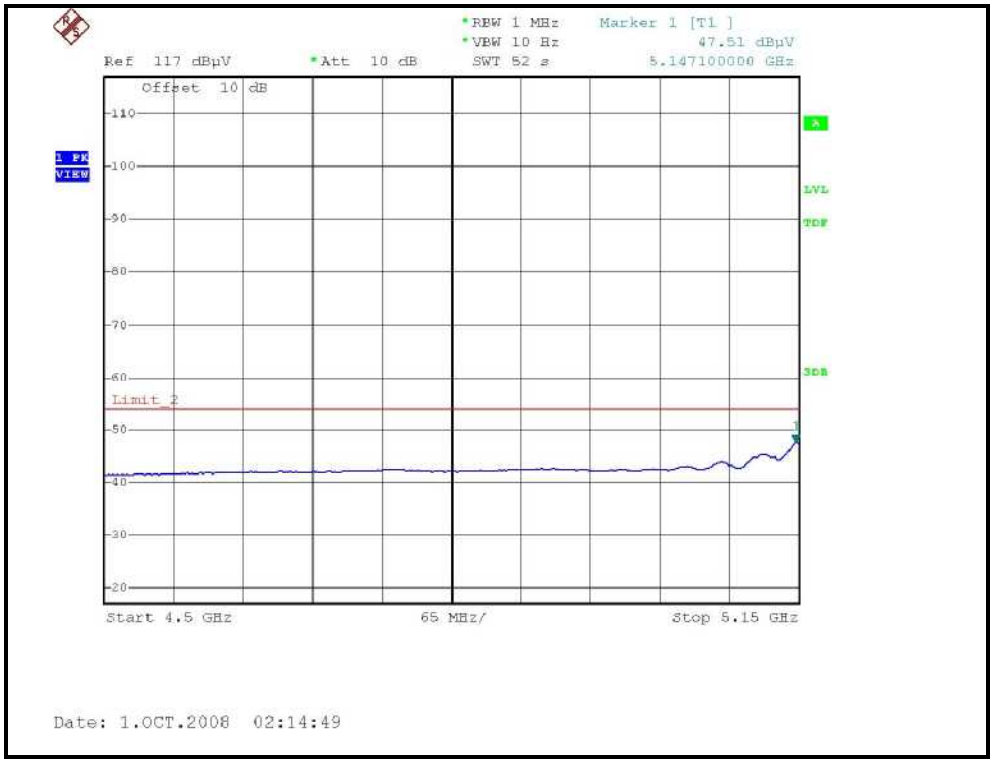
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, HORIZONTAL)





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





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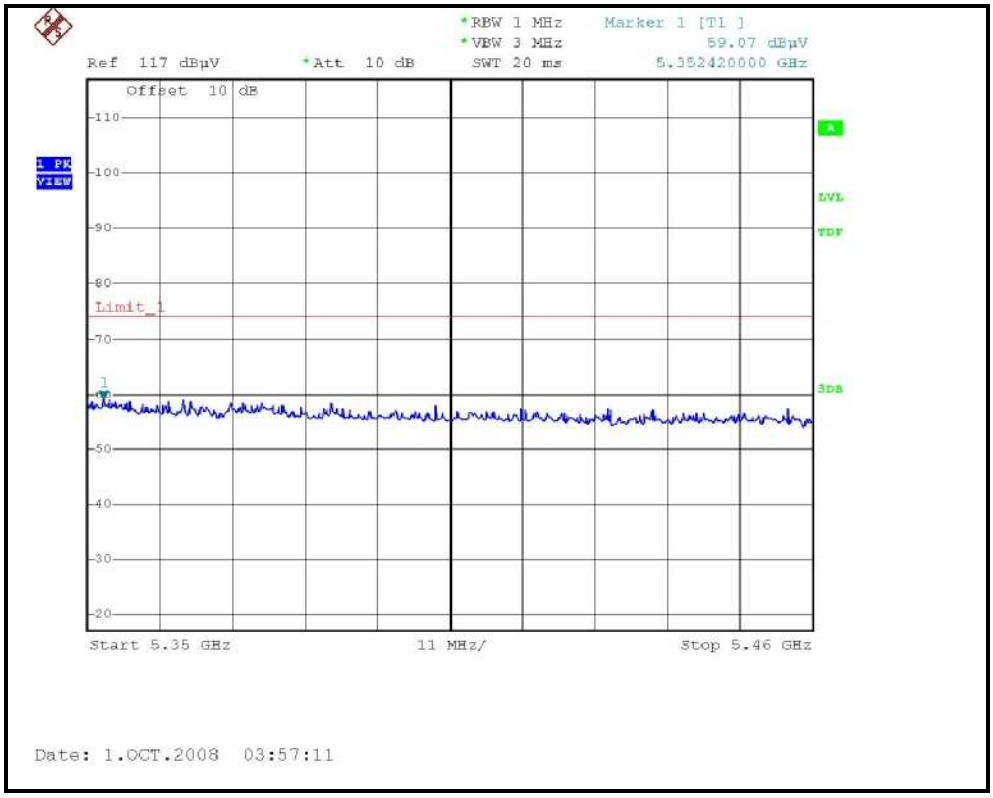

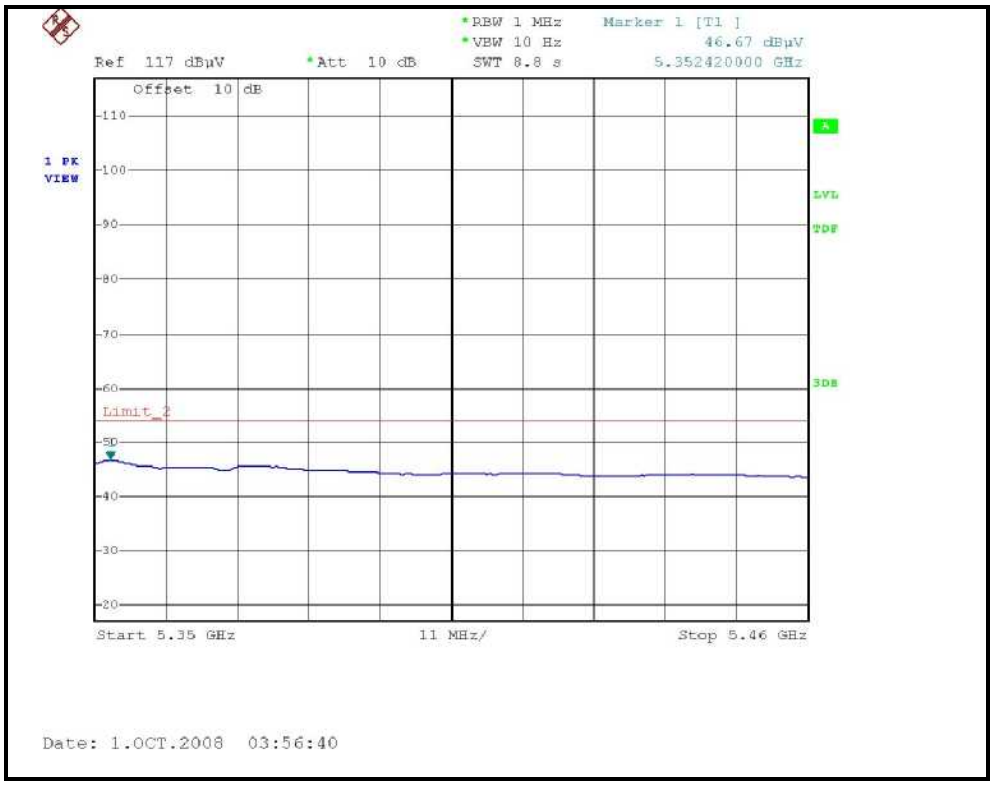

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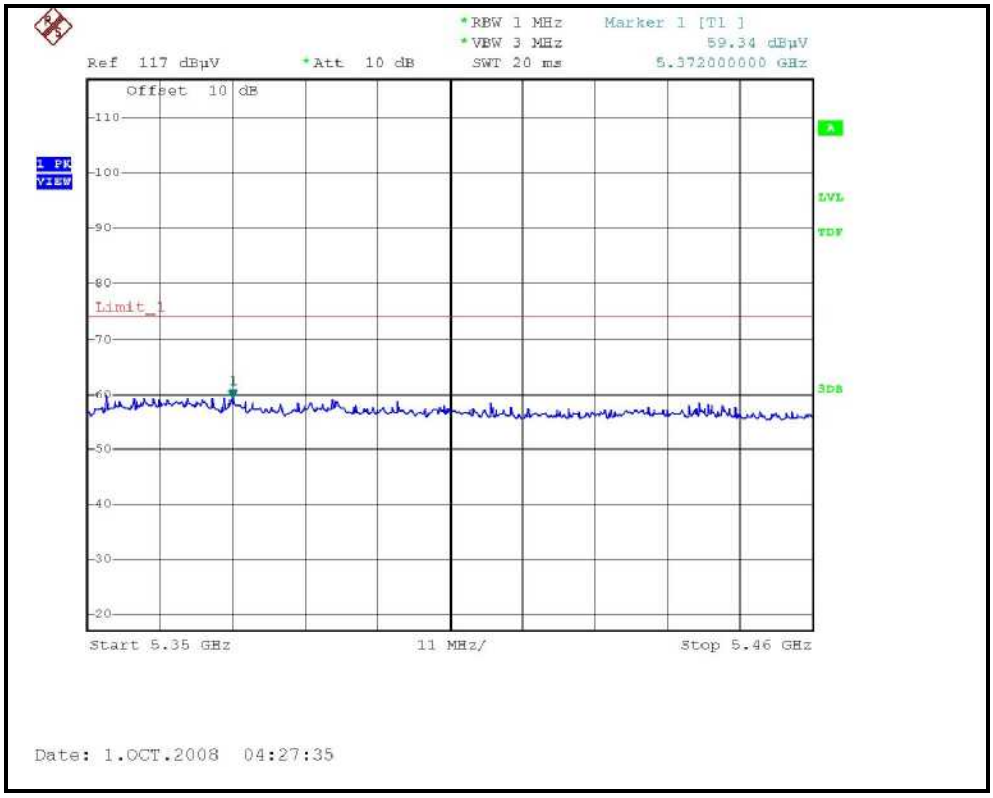

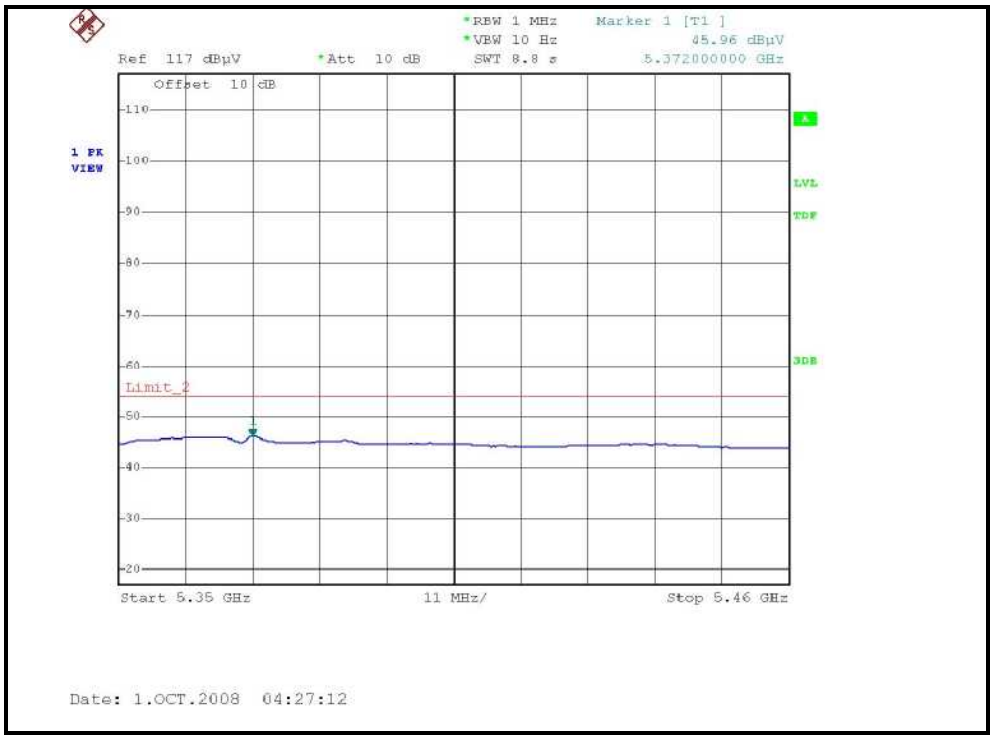

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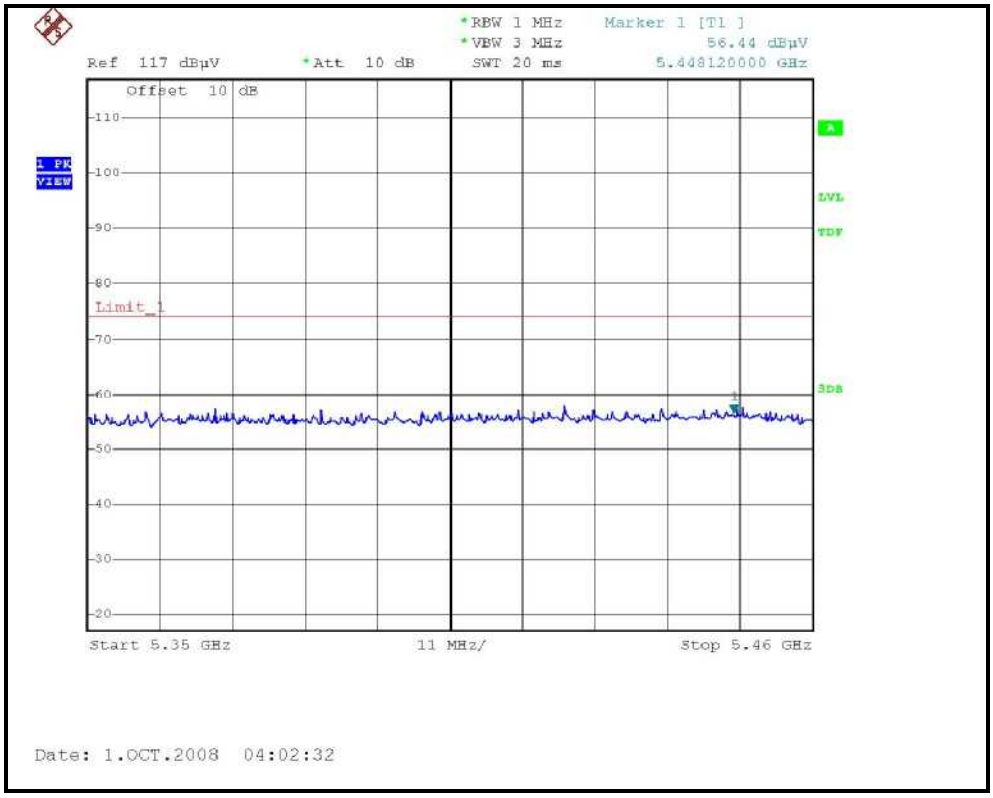
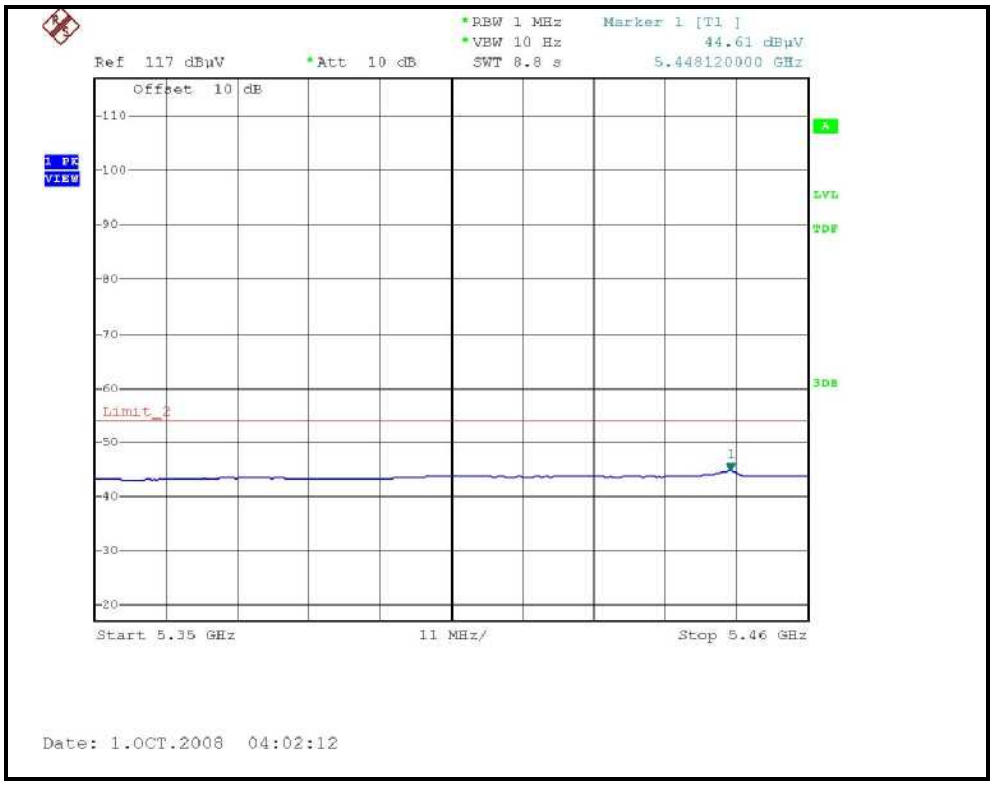
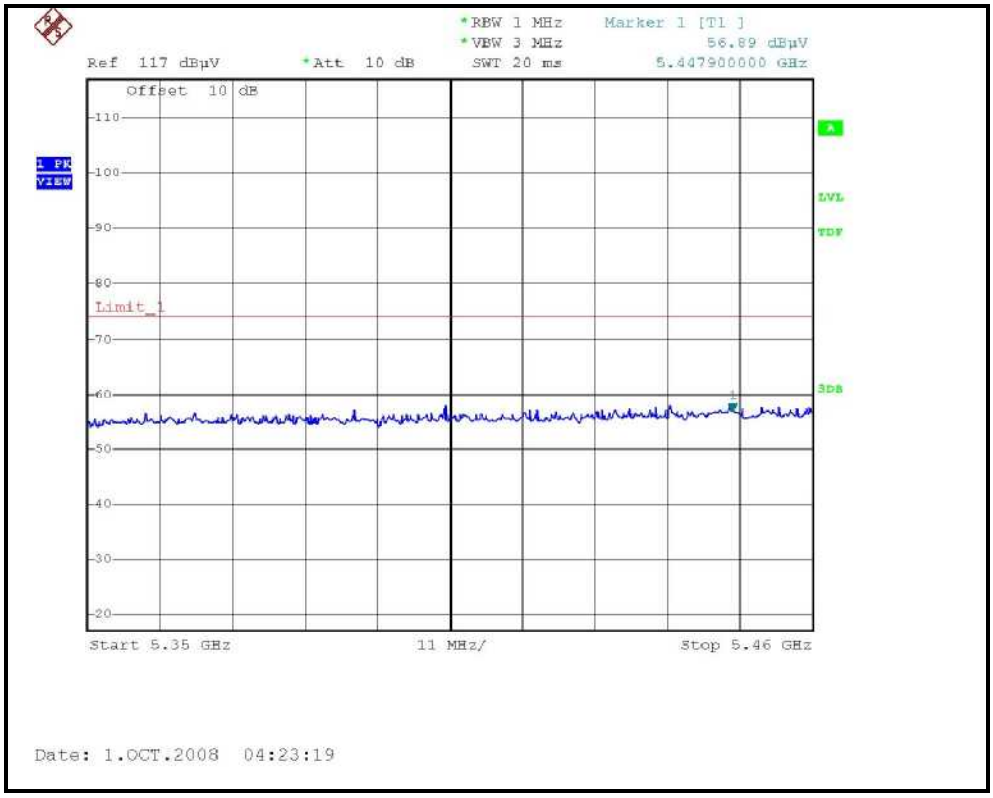
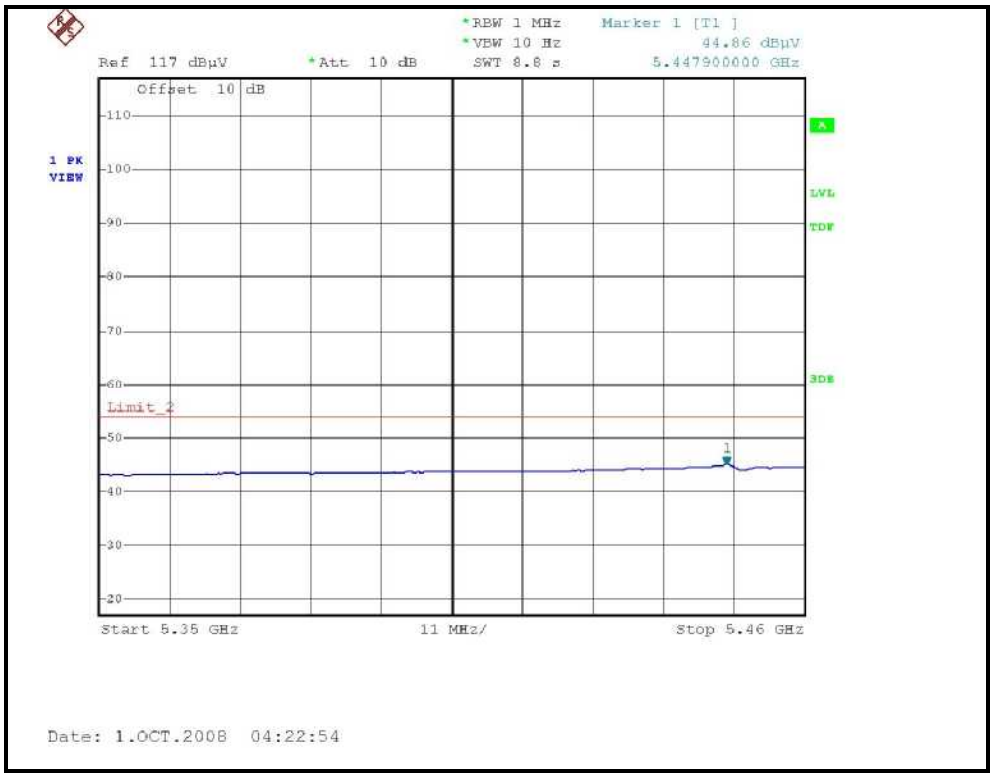




RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH9, VERTICAL)





DRAFT 802.11n (40MHz) OFDM MODULATION

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4152.00	54.04 PK	74.00	-19.96	1.16 H	181	20.02	34.02
2	4152.00	42.38 AV	54.00	-11.62	1.16 H	181	8.36	34.02
3	5150.00	60.91 PK	74.00	-13.09	1.21 H	180	24.91	36.00
4	5150.00	47.72 AV	54.00	-6.28	1.21 H	180	11.72	36.00
5	*5190.00	102.30 PK			1.30 H	183	66.24	36.06
6	*5190.00	90.81 AV			1.30 H	183	54.75	36.06
7	8304.00	51.70 PK	74.00	-22.30	1.58 H	2	8.34	43.36
8	8304.00	39.60 AV	54.00	-14.40	1.58 H	2	-3.76	43.36
9	#10380.00	55.70 PK	68.30	-12.60	1.11 H	15	9.74	45.96
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	4152.00	54.70 PK	74.00	-19.30	1.44 V	360	20.68	34.02
2	4152.00	43.50 AV	54.00	-10.50	1.44 V	360	9.48	34.02
3	5150.00	64.59 PK	74.00	-9.41	1.27 V	348	28.59	36.00
4	5150.00	48.65 AV	54.00	-5.35	1.27 V	348	12.65	36.00
5	*5190.00	103.60 PK			1.38 V	359	67.54	36.06
6	*5190.00	92.05 AV			1.38 V	359	55.99	36.06
7	8304.00	52.80 PK	74.00	-21.20	1.35 V	328	9.44	43.36
8	8304.00	42.60 AV	54.00	-11.40	1.35 V	328	-0.76	43.36
9	#10380.00	56.00 PK	68.30	-12.30	1.38 V	328	10.04	45.96

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 2	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, %RH 965hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4184.00	54.20 PK	74.00	-19.80	1.30 H	354	20.10	34.10
2	4184.00	43.10 AV	54.00	-10.90	1.30 H	354	9.00	34.10
3	*5230.00	101.20 PK			1.28 H	166	65.07	36.13
4	*5230.00	89.80 AV			1.28 H	166	53.67	36.13
5	8368.00	52.30 PK	74.00	-21.70	1.63 H	1	8.93	43.37
6	8368.00	39.90 AV	54.00	-14.10	1.63 H	1	-3.47	43.37
7	#10460.00	54.92 PK	68.30	-13.38	1.36 H	16	8.83	46.09
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	4184.00	55.00 PK	74.00	-19.00	1.47 V	299	20.90	34.10
2	4184.00	43.60 AV	54.00	-10.40	1.47 V	299	9.50	34.10
3	*5230.00	103.33 PK			1.41 V	300	67.20	36.13
4	*5230.00	91.44 AV			1.41 V	300	55.31	36.13
5	8368.00	52.30 PK	74.00	-21.70	1.10 V	2	8.93	43.37
6	8368.00	41.45 AV	54.00	-12.55	1.10 V	2	-1.92	43.37
7	#10460.00	54.90 PK	68.30	-13.40	1.24 V	323	8.81	46.09

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%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	4216.00	56.50 PK	74.00	-17.50	1.49 H	17	22.32	34.18
2	4216.00	44.23 AV	54.00	-9.77	1.49 H	17	10.05	34.18
3	*5270.00	101.40 PK			1.41 H	177	65.21	36.19
4	*5270.00	90.20 AV			1.41 H	177	54.01	36.19
5	8432.00	52.70 PK	74.00	-21.30	1.56 H	22	9.31	43.39
6	8432.00	40.60 AV	54.00	-13.40	1.56 H	22	-2.79	43.39
7	#10540.00	55.78 PK	68.30	-12.52	1.34 H	156	9.54	46.24
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	4216.00	55.90 PK	74.00	-18.10	1.43 V	285	21.72	34.18
2	4216.00	44.21 AV	54.00	-9.79	1.43 V	285	10.03	34.18
3	*5270.00	102.00 PK			1.45 V	299	65.81	36.19
4	*5270.00	90.50 AV			1.45 V	299	54.31	36.19
5	8432.00	53.21 PK	74.00	-20.79	1.42 V	0	9.82	43.39
6	8432.00	42.50 AV	54.00	-11.50	1.42 V	0	-0.89	43.39
7	#10540.00	55.69 PK	68.30	-12.61	1.39 V	311	9.45	46.24

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%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	4248.00	56.32 PK	74.00	-17.68	1.23 H	24	22.06	34.26
2	4248.00	44.20 AV	54.00	-9.80	1.23 H	24	9.94	34.26
3	*5310.00	100.70 PK			1.24 H	165	64.44	36.26
4	*5310.00	89.30 AV			1.24 H	165	53.04	36.26
5	5350.00	58.41 PK	74.00	-15.59	1.36 H	172	22.09	36.32
6	5350.00	45.40 AV	54.00	-8.60	1.36 H	172	9.08	36.32
7	8496.00	52.80 PK	74.00	-21.20	1.53 H	25	9.39	43.41
8	8496.00	40.20 AV	54.00	-13.80	1.53 H	25	-3.21	43.41
9	10620.00	56.03 PK	74.00	-17.97	1.37 H	163	9.62	46.41
10	10620.00	42.90 AV	54.00	-11.10	1.37 H	163	-3.51	46.41
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	4248.00	55.60 PK	74.00	-18.40	1.43 V	295	21.34	34.26
2	4248.00	43.93 AV	54.00	-10.07	1.43 V	295	9.67	34.26
3	*5310.00	102.20 PK			1.25 V	333	65.94	36.26
4	*5310.00	90.70 AV			1.25 V	333	54.44	36.26
5	5352.20	59.28 PK	74.00	-14.72	1.23 V	333	22.96	36.32
6	5352.20	45.62 AV	54.00	-8.38	1.23 V	333	9.30	36.32
7	8496.00	53.21 PK	74.00	-20.79	1.24 V	348	9.80	43.41
8	8496.00	41.80 AV	54.00	-12.20	1.24 V	348	-1.61	43.41
9	10620.00	55.34 PK	74.00	-18.66	1.32 V	14	8.93	46.41
10	10620.00	42.70 AV	54.00	-11.30	1.32 V	14	-3.71	46.41

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 5	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 62%RH 971hPa	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	#4408.00	57.30 PK	68.30	-11.00	1.45 H	348	22.62	34.68
2	5459.12	56.26 PK	74.00	-17.74	1.30 H	172	19.77	36.49
3	5459.12	42.58 AV	54.00	-11.42	1.30 H	172	6.09	36.49
4	#5470.00	56.50 PK	68.30	-11.80	1.24 H	171	19.99	36.51
5	*5510.00	97.13 PK			1.24 H	171	60.54	36.59
6	*5510.00	86.00 AV			1.24 H	171	49.41	36.59
7	11020.00	57.11 PK	74.00	-16.89	1.33 H	326	9.87	47.24
8	11020.00	44.20 AV	54.00	-9.80	1.33 H	326	-3.04	47.24
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	#4408.00	55.50 PK	68.30	-12.80	1.32 V	112	20.82	34.68
2	5459.34	57.38 PK	74.00	-16.62	1.32 V	350	20.89	36.49
3	5459.34	43.50 AV	54.00	-10.50	1.32 V	350	7.01	36.49
4	#5470.00	58.00 PK	68.30	-10.30	1.32 V	30	21.49	36.51
5	*5510.00	100.24 PK			1.32 V	25	63.65	36.59
6	*5510.00	89.30 AV			1.32 V	25	52.71	36.59
7	11020.00	57.23 PK	74.00	-16.77	1.57 V	353	9.99	47.24
8	11020.00	44.50 AV	54.00	-9.50	1.57 V	353	-2.74	47.24

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.

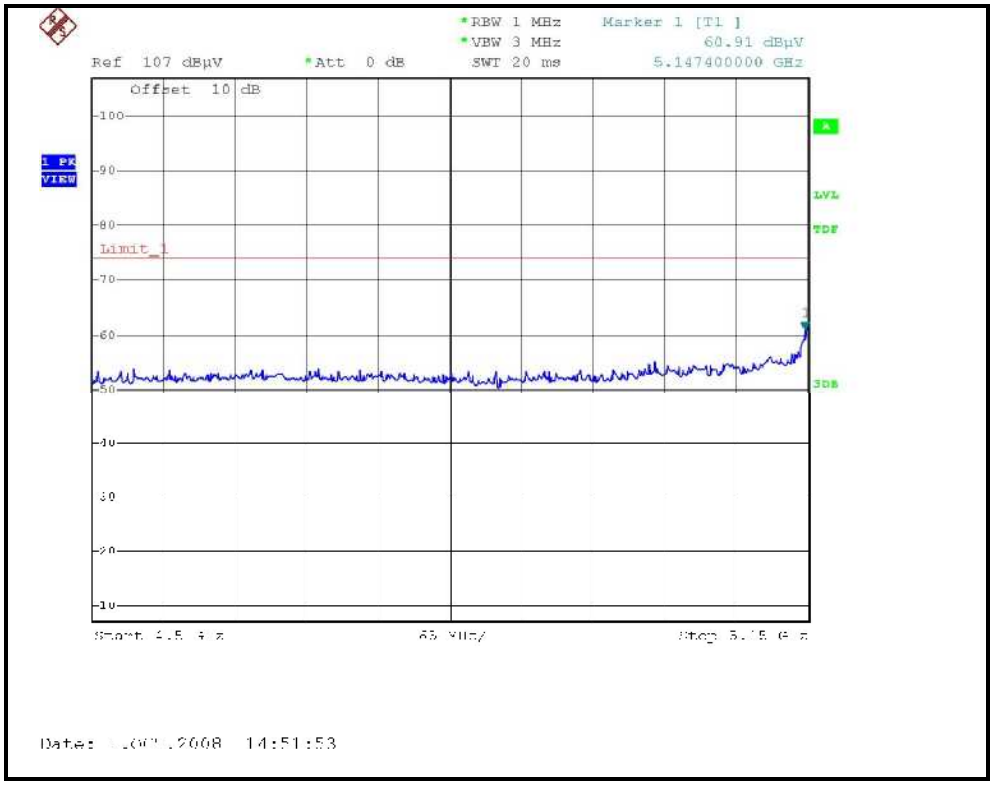
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 62%RH 971hPa	TESTED BY	Sky Liao

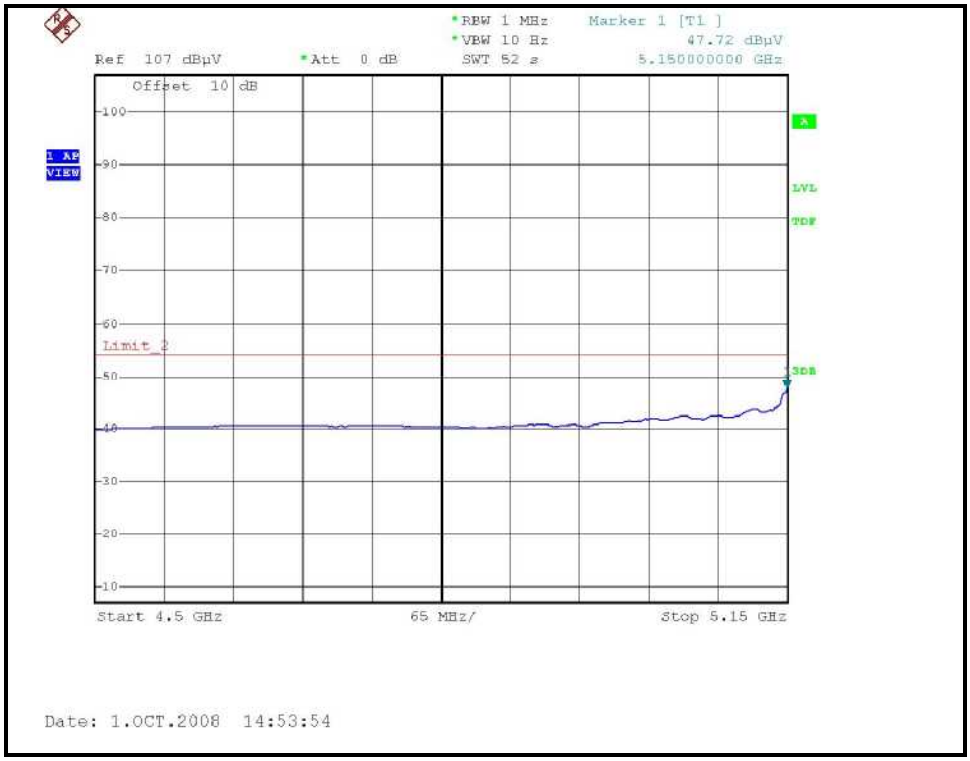
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4536.00	57.20 PK	74.00	-16.80	1.49 H	171	22.22	34.98
2	4536.00	50.00 AV	54.00	-4.00	1.49 H	171	15.02	34.98
3	*5670.00	98.00 PK			1.28 H	167	60.99	37.01
4	*5670.00	86.40 AV			1.28 H	167	49.39	37.01
5	#5725.00	55.94 PK	68.30	-12.36	1.28 H	167	18.79	37.15
6	9072.00	53.20 PK	74.00	-20.80	1.38 H	10	8.90	44.30
7	9072.00	40.93 AV	54.00	-13.07	1.38 H	10	-3.37	44.30
8	11340.00	56.98 PK	74.00	-17.02	1.47 H	11	9.88	47.10
9	11340.00	44.56 AV	54.00	-9.44	1.47 H	11	-2.54	47.10
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	4536.00	56.98 PK	74.00	-17.02	1.30 V	291	22.00	34.98
2	4536.00	47.90 AV	54.00	-6.10	1.30 V	291	12.92	34.98
3	*5670.00	98.80 PK			1.39 V	1	61.79	37.01
4	*5670.00	87.70 AV			1.39 V	1	50.69	37.01
5	#5725.00	56.20 PK	68.30	-12.10	1.39 V	1	19.05	37.15
6	9072.00	54.07 PK	74.00	-19.93	1.23 V	14	9.77	44.30
7	9072.00	40.78 AV	54.00	-13.22	1.23 V	14	-3.52	44.30
8	11340.00	57.30 PK	74.00	-16.70	1.50 V	14	10.20	47.10
9	11340.00	44.70 AV	54.00	-9.30	1.50 V	14	-2.40	47.10

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

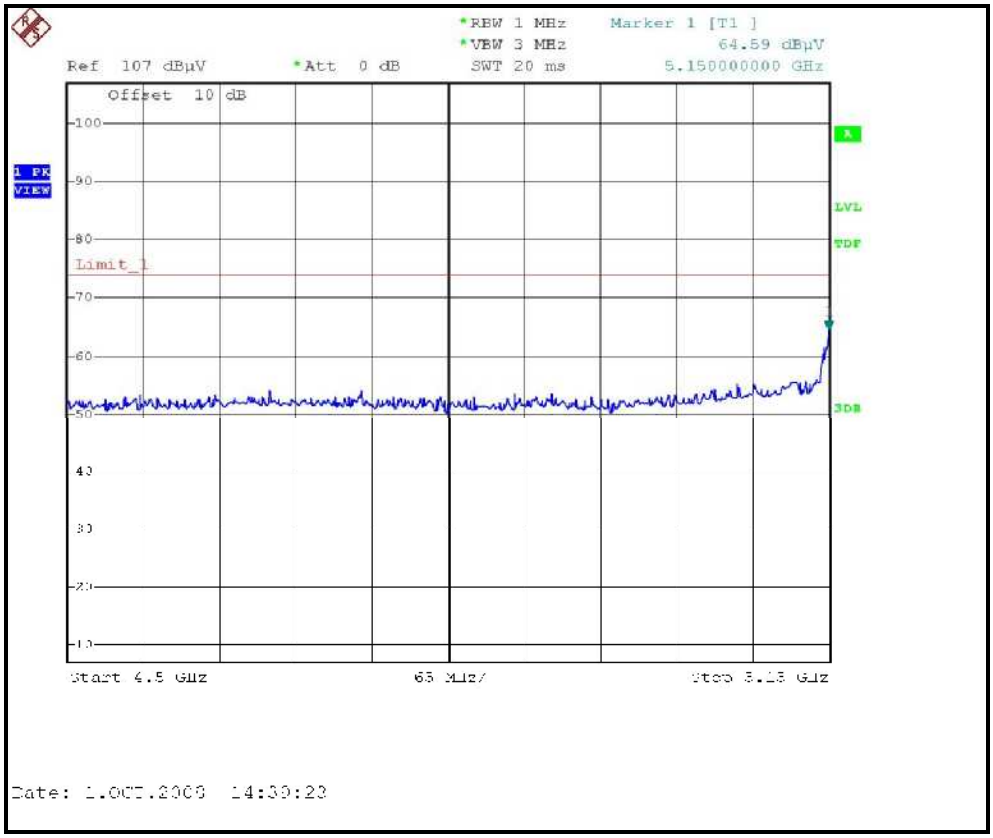
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency falling in the restricted band.

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

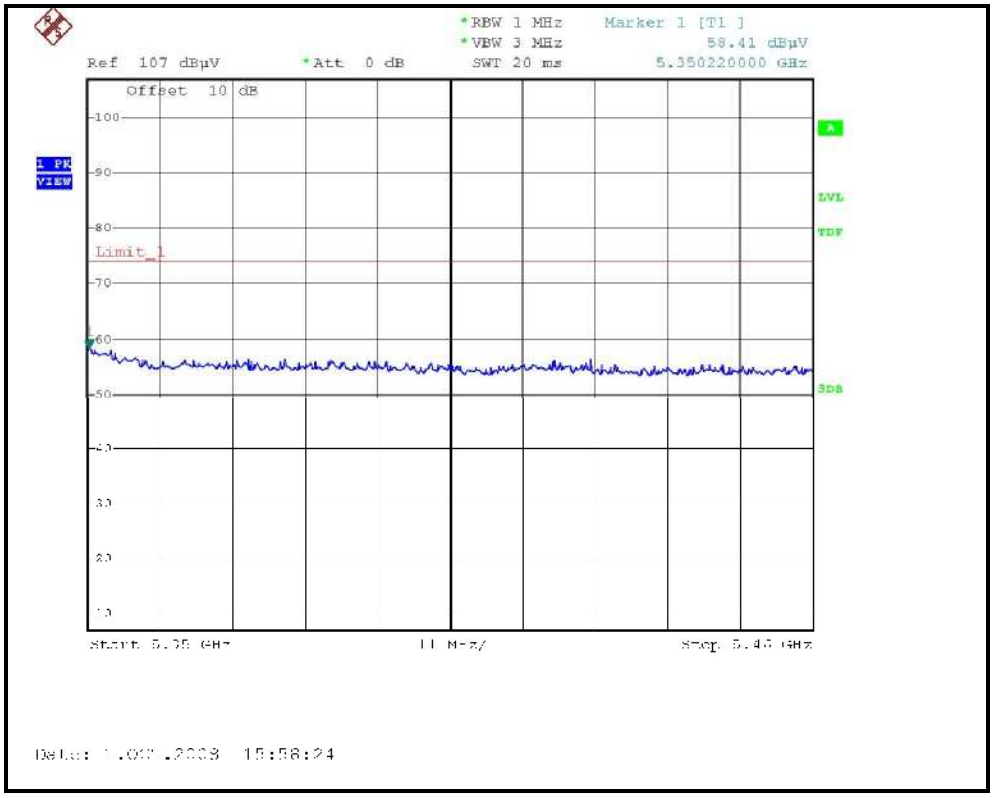


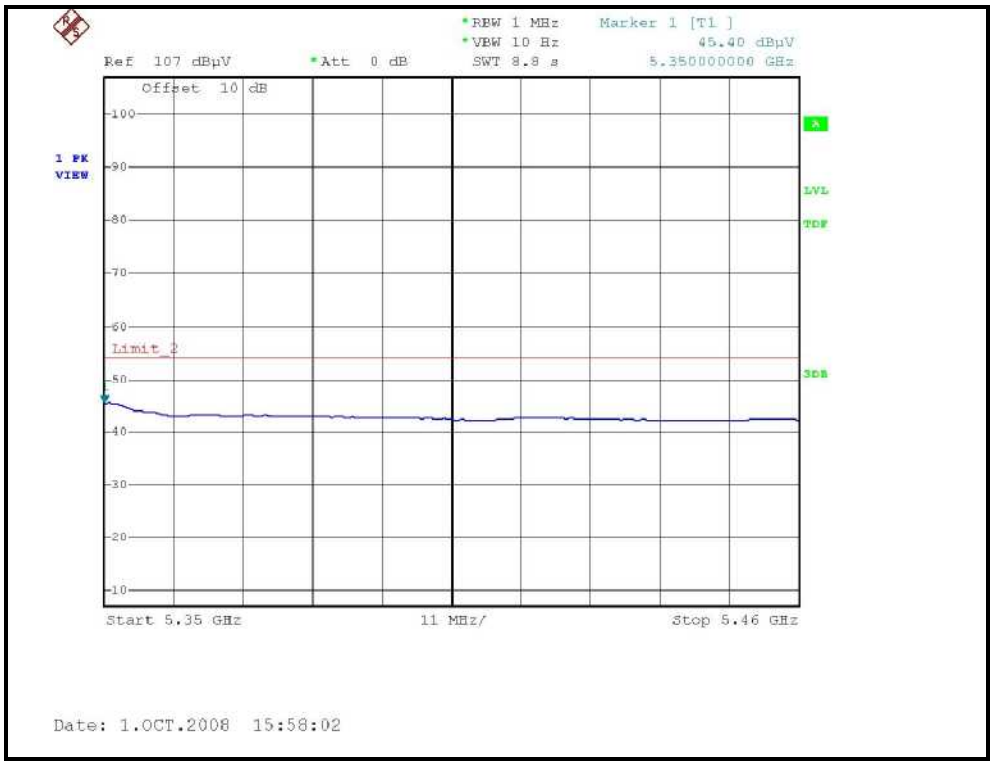


RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, VERTICAL)

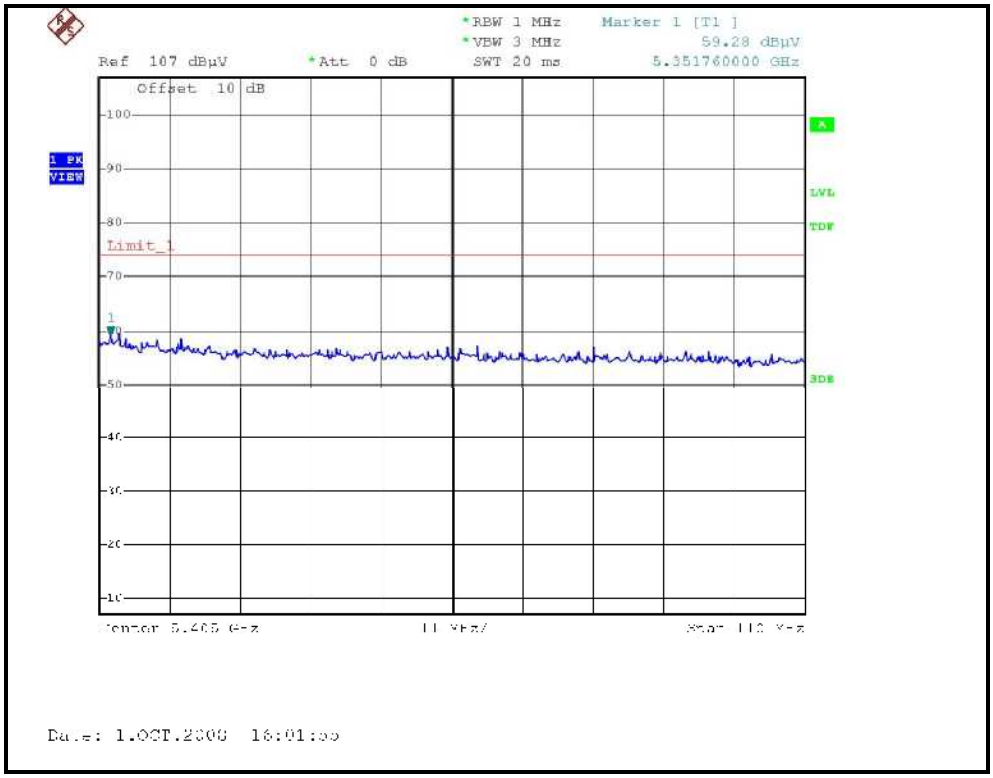


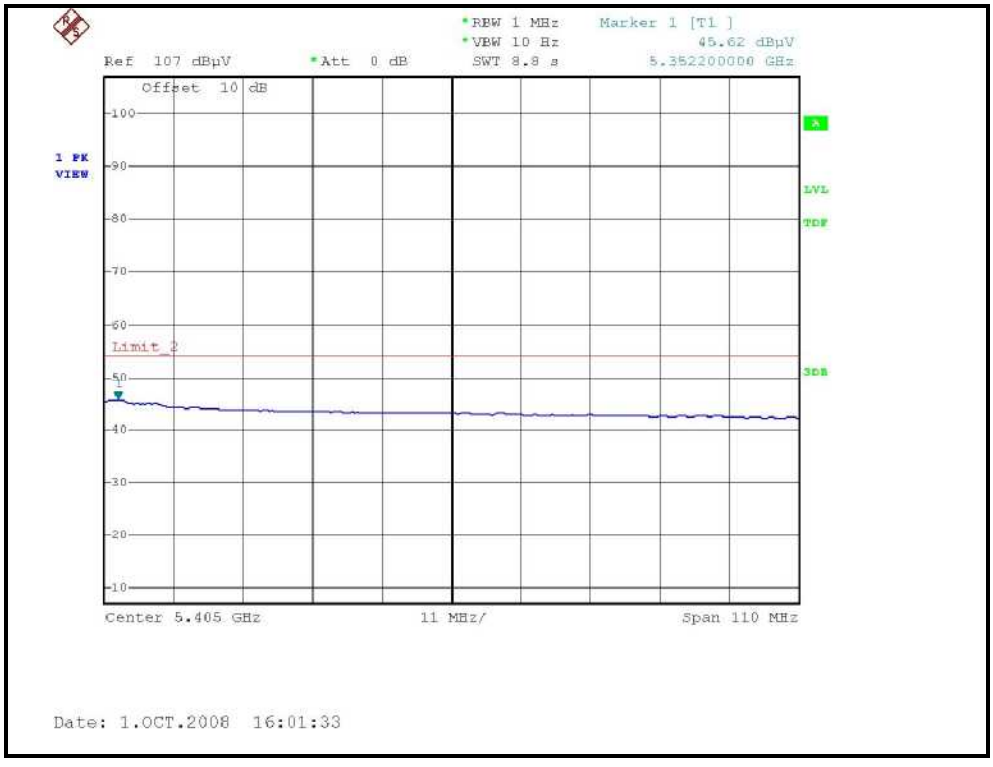
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE, CH4, HORIZONTAL)



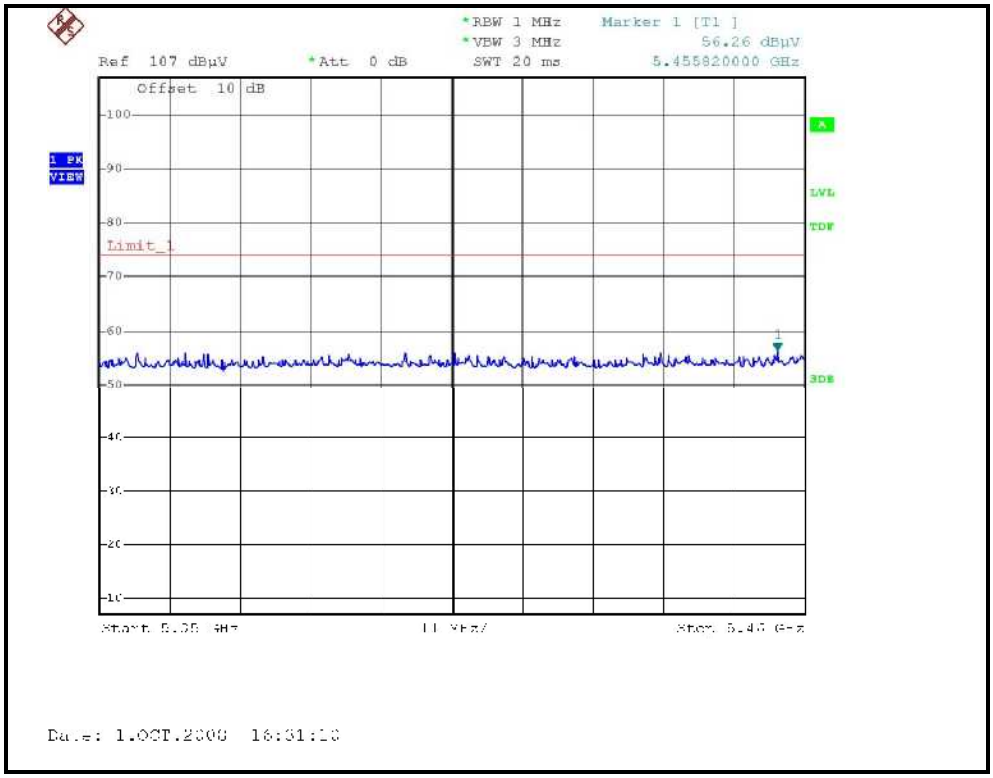


RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE, CH4, VERTICAL)

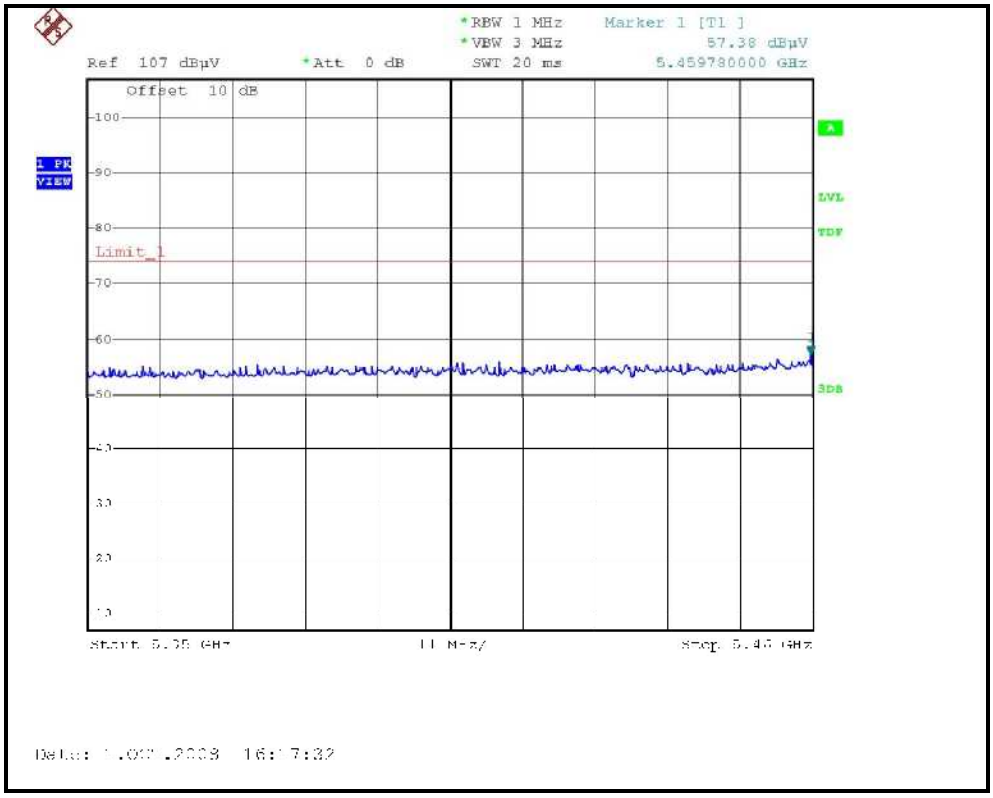




RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE, CH5, HORIZONTAL)



RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE, CH5, VERTICAL)



4.3 PEAK TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

Frequency Band	Limit
5.15 – 5.25GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.25 – 5.35GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.47 – 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.725 – 5.825GHz	The lesser of 1W (30dBm) or 17dBm + 10logB

NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST INSTRUMENTS

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

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

4.3.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set span to encompass the entire emission bandwidth of the signal.
3. Set RBW to 1MHz, VBW to 300kHz.
4. Using the spectrum analyzer's channel power measurement function to measure the output power.

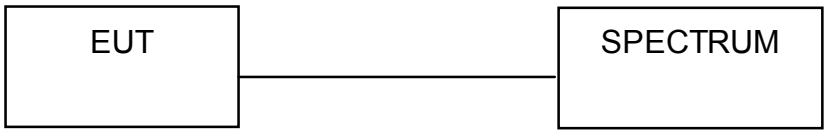
NOTE:
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

The transmitter output operates continuously therefore Method # 1 is used.

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 specific channel frequencies individually.

4.3.7 TEST RESULTS

802.11a OFDM MODULATION:

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

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	13.65	23.174	17	25.04	PASS
2	5200	13.86	24.322	17	25.12	PASS
4	5240	13.57	22.751	24	25.24	PASS
5	5260	15.95	39.355	24	33.16	PASS
7	5300	16.14	41.115	24	35.44	PASS
8	5320	15.81	38.107	24	34.36	PASS
9	5500	12.01	15.885	24	20.76	PASS
14	5600	11.94	15.631	24	24.56	PASS
19	5700	13.72	23.550	24	25.20	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

Peak Power Output:
CH1

CH2

CH4


CHPOW
REF 20.00 dBm
DL 13.57 dBm
10.0 dB/ *A PwAvg Smpl B Blank Auto C Blank Auto
LOF
WIN WIDTH
25.24 MHz
CENTER 5.24000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 13.57 dBm
Power Spectral Density -60.45 dBm/Hz

CH5


CHPOW
REF 20.00 dBm
DL 15.95 dBm
10.0 dB/ *A PwAvg Smpl B Blank Auto C Blank Auto
LOF
WIN WIDTH
33.16 MHz
CENTER 5.26000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 15.95 dBm
Power Spectral Density -59.26 dBm/Hz

CH7


CHPOW
REF 20.00 dBm
DL 16.14 dBm
10.0 dB/
*A PwAvg Smpl B Blank Auto
C Blank Auto
LOF
WIN WIDTH
35.44 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.30000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power
16.14 dBm
Power Spectral Density
-59.35 dBm/Hz

CH8


CHPOW
REF 20.00 dBm
DL 15.81 dBm
10.0 dB/
*A PwAvg Smpl B Blank Auto
C Blank Auto
LOF
WIN WIDTH
34.36 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.32000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power
15.81 dBm
Power Spectral Density
-59.56 dBm/Hz

CH9


CHPOW
REF 20.00 dBm
DL 12.01 dBm
10.0 dB/ *A PwAvg Smpl B Blank Auto C Blank Auto
LOF
WIN WIDTH
20.76 MHz
CENTER 5.50000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 12.01 dBm
Power Spectral Density -61.16 dBm/Hz

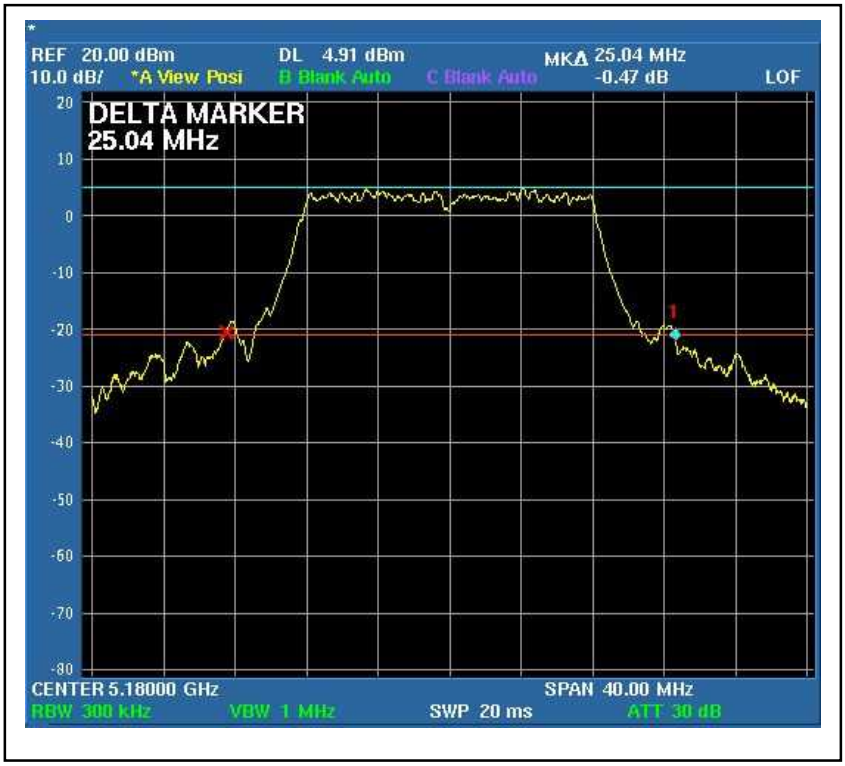
CH14


CHPOW
REF 20.00 dBm
DL 11.94 dBm
10.0 dB/ *A PwAvg Smpl B Blank Auto C Blank Auto
LOF
WIN WIDTH
24.56 MHz
CENTER 5.60000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 11.94 dBm
Power Spectral Density -61.96 dBm/Hz

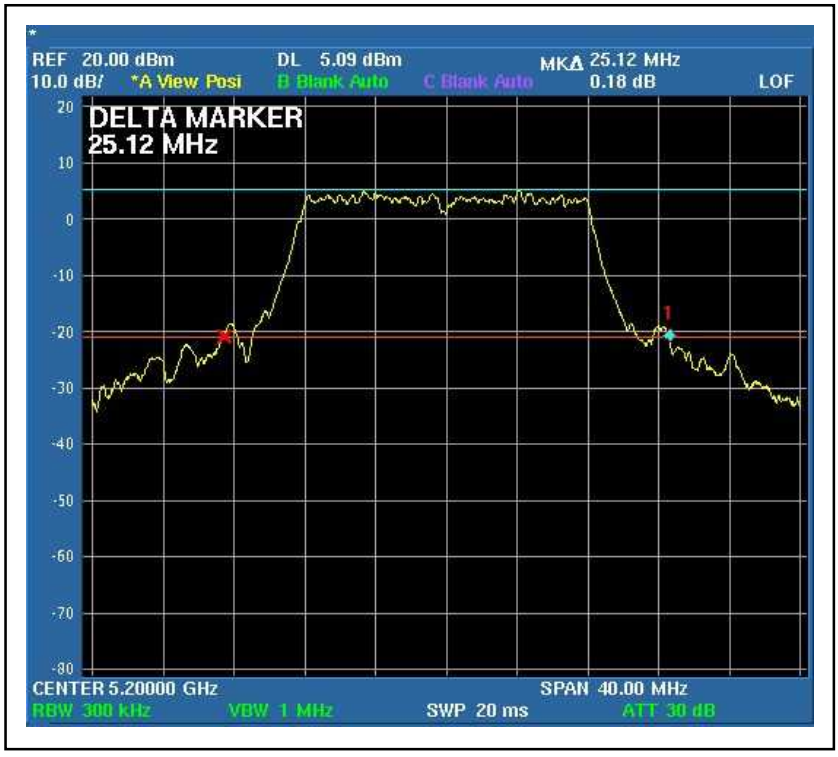
CH19


CHPOW
REF 20.00 dBm
DL 13.72 dBm
10.0 dB/
*A PwAvg Smpl
B Blank Auto
C Blank Auto
LOF
WIN WIDTH
25.20 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.70000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 13.72 dBm
Power Spectral Density -60.29 dBm/Hz

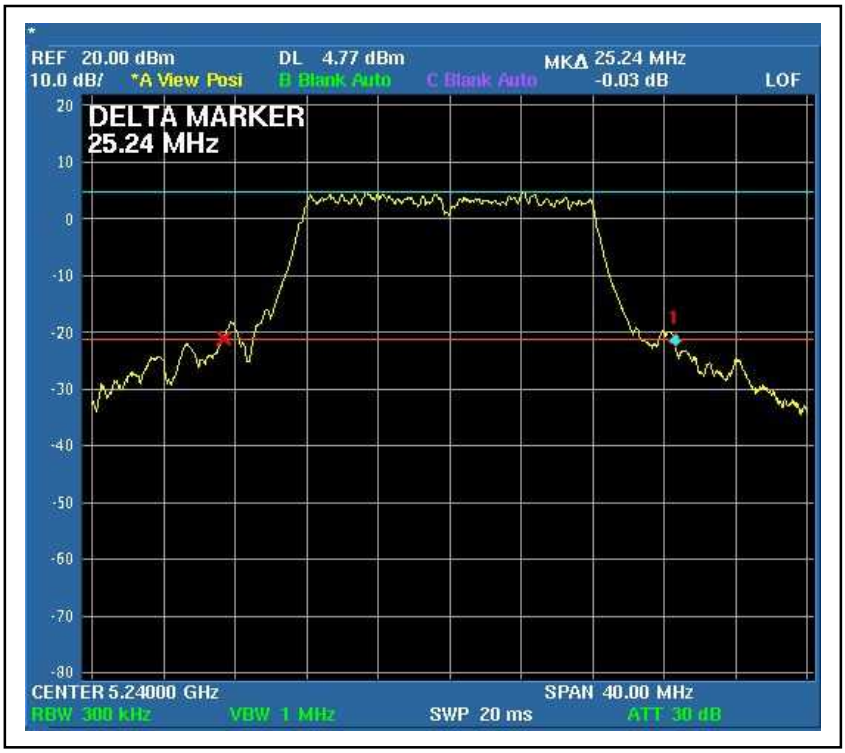
26dB Occupied Bandwidth:
CH1



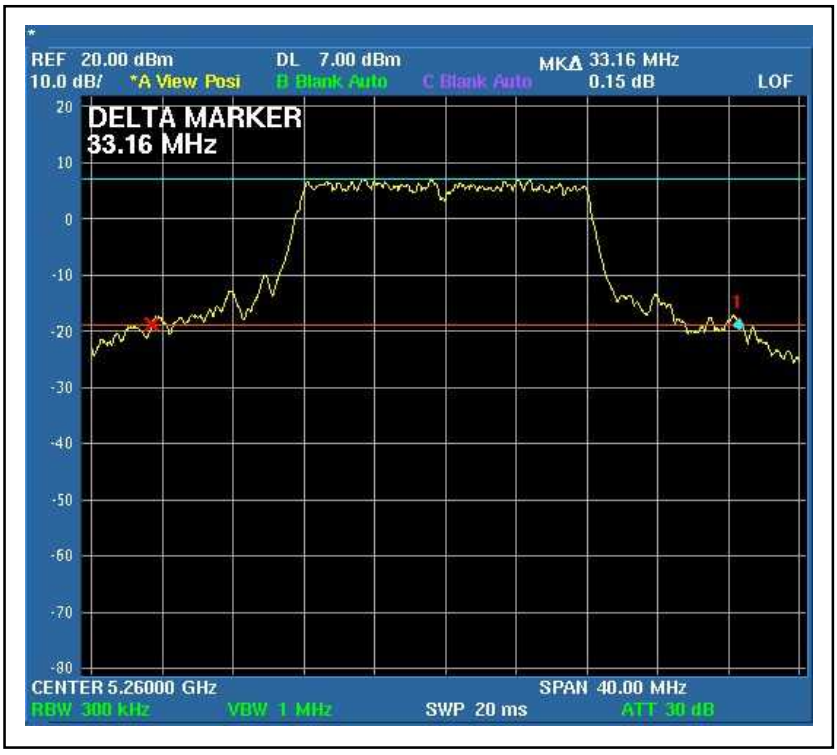
CH2



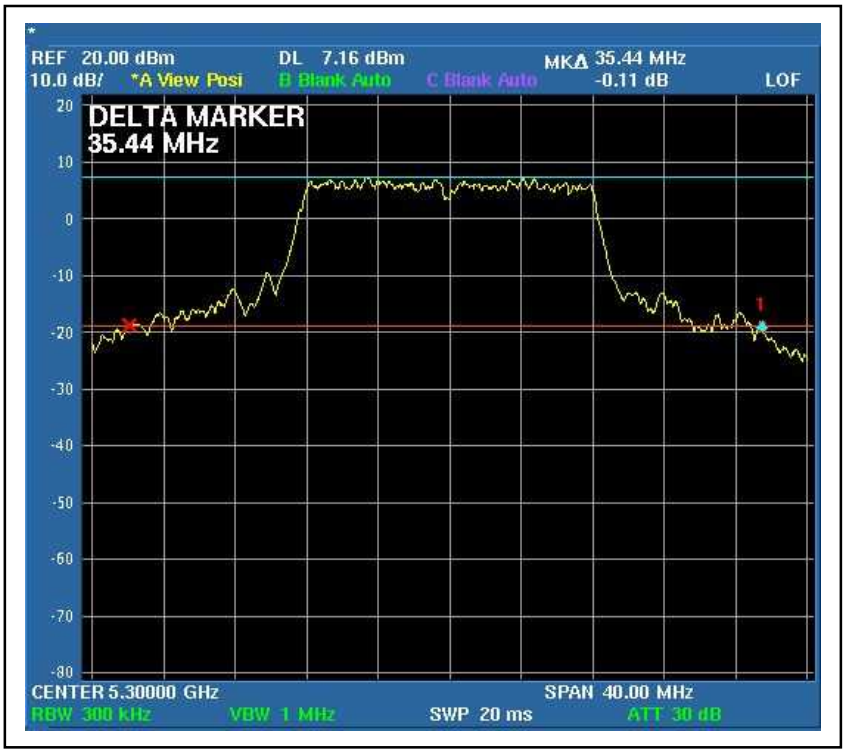
CH4


REF 20.00 dBm
DL 4.77 dBm
MKΔ 25.24 MHz
10.0 dB/ *A View Posi
B Blank Auto
C Blank Auto
-0.03 dB
LOF
DELTA MARKER
25.24 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.24000 GHz
SPAN 40.00 MHz
RBW 300 kHz
VBW 1 MHz
SWP 20 ms
ATT 30 dB

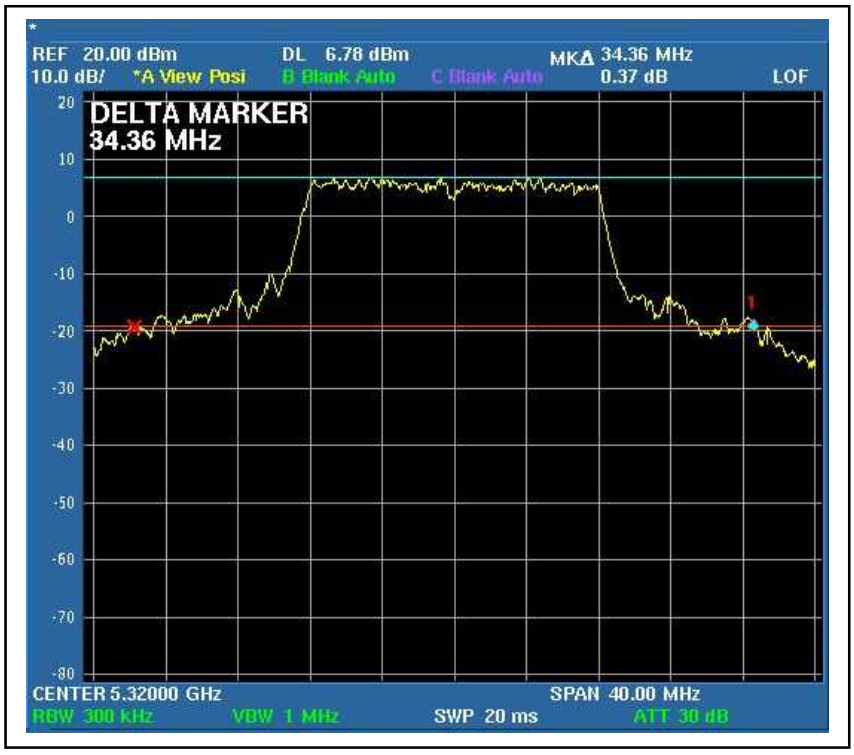
CH5


REF 20.00 dBm
DL 7.00 dBm
MKΔ 33.16 MHz
10.0 dB/ *A View Posi
B Blank Auto
C Blank Auto
0.15 dB
LOF
DELTA MARKER
33.16 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.26000 GHz
SPAN 40.00 MHz
RBW 300 kHz
VBW 1 MHz
SWP 20 ms
ATT 30 dB

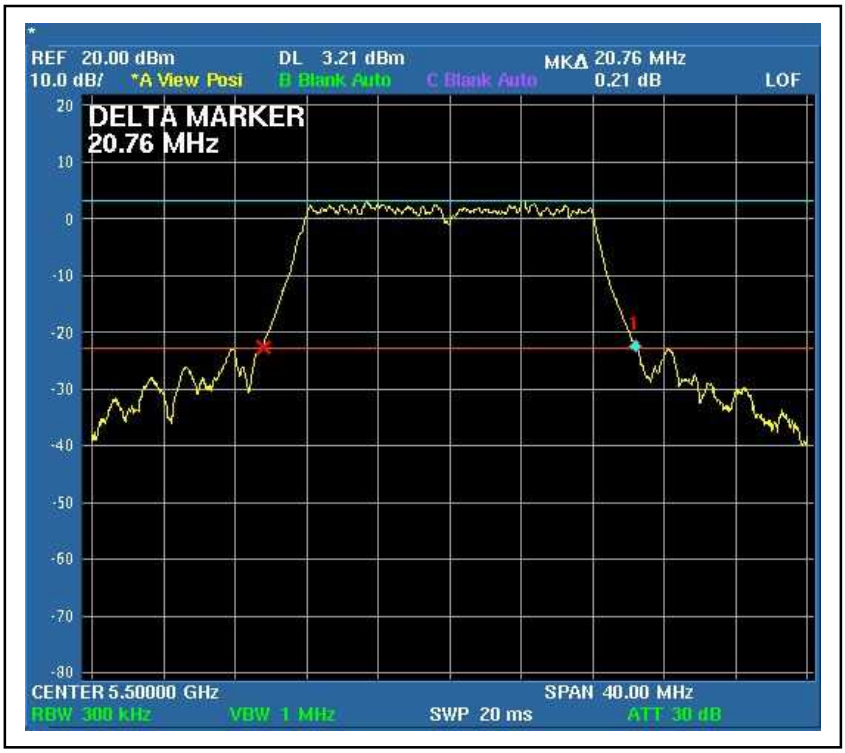
CH7


REF 20.00 dBm
DL 7.16 dBm
MKΔ 35.44 MHz
10.0 dB/ *A View Posi
B Blank Auto
C Blank Auto
-0.11 dB
LOF
DELTA MARKER
35.44 MHz
CENTER 5.30000 GHz
SPAN 40.00 MHz
RBW 300 kHz
VBW 1 MHz
SWP 20 ms
ATT 30 dB

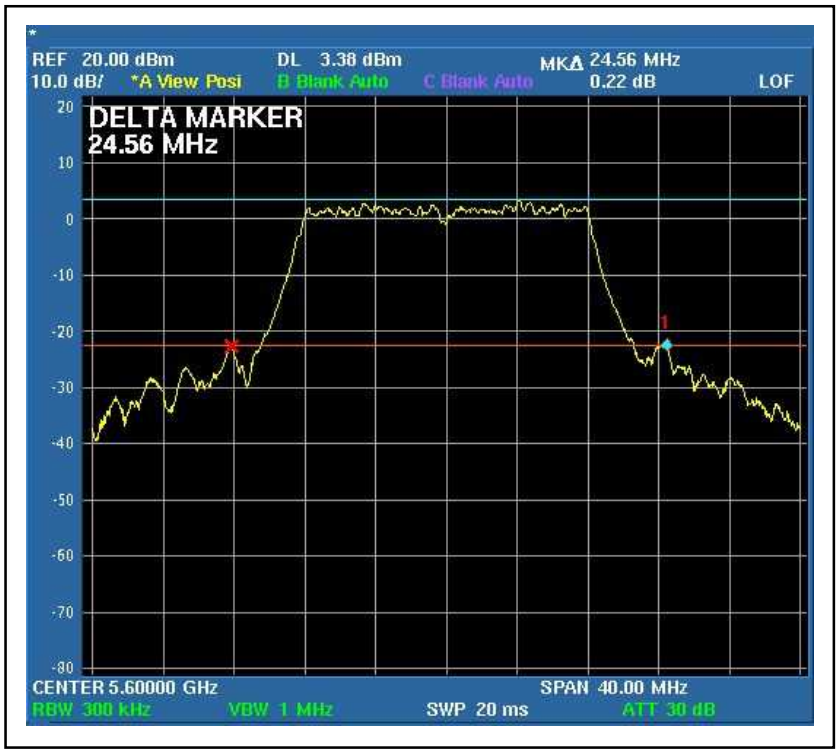
CH8


REF 20.00 dBm
DL 6.78 dBm
MKΔ 34.36 MHz
10.0 dB/ *A View Posi
B Blank Auto
C Blank Auto
0.37 dB
LOF
DELTA MARKER
34.36 MHz
CENTER 5.32000 GHz
SPAN 40.00 MHz
RBW 300 kHz
VBW 1 MHz
SWP 20 ms
ATT 30 dB

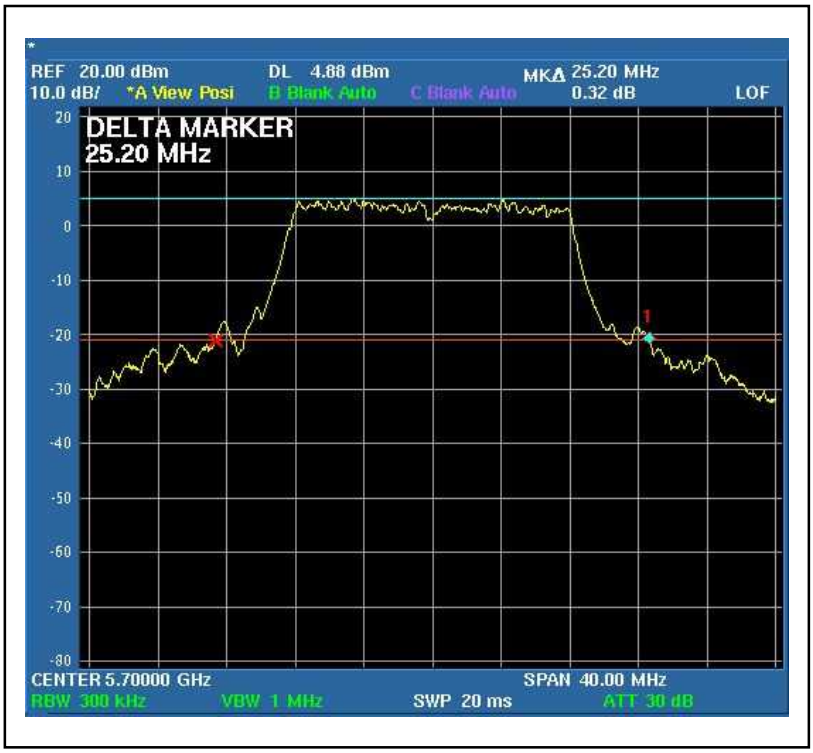
CH9


REF 20.00 dBm
DL 3.21 dBm
MKΔ 20.76 MHz
10.0 dB/ *A View Posi
B Blank Auto
C Blank Auto
0.21 dB
LOF
DELTA MARKER
20.76 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.50000 GHz
SPAN 40.00 MHz
RBW 300 kHz
VBW 1 MHz
SWP 20 ms
ATT 30 dB

CH14


REF 20.00 dBm
DL 3.38 dBm
MKΔ 24.56 MHz
10.0 dB/ *A View Posi
B Blank Auto
C Blank Auto
0.22 dB
LOF
DELTA MARKER
24.56 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.60000 GHz
SPAN 40.00 MHz
RBW 300 kHz
VBW 1 MHz
SWP 20 ms
ATT 30 dB

CH19


REF 20.00 dBm
DL 4.88 dBm
MKΔ 25.20 MHz
10.0 dB/ *A View Posi
B Blank Auto
C Blank Auto
0.32 dB
LOF
DELTA MARKER
25.20 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.70000 GHz
SPAN 40.00 MHz
RBW 300 kHz
VBW 1 MHz
SWP 20 ms
ATT 30 dB

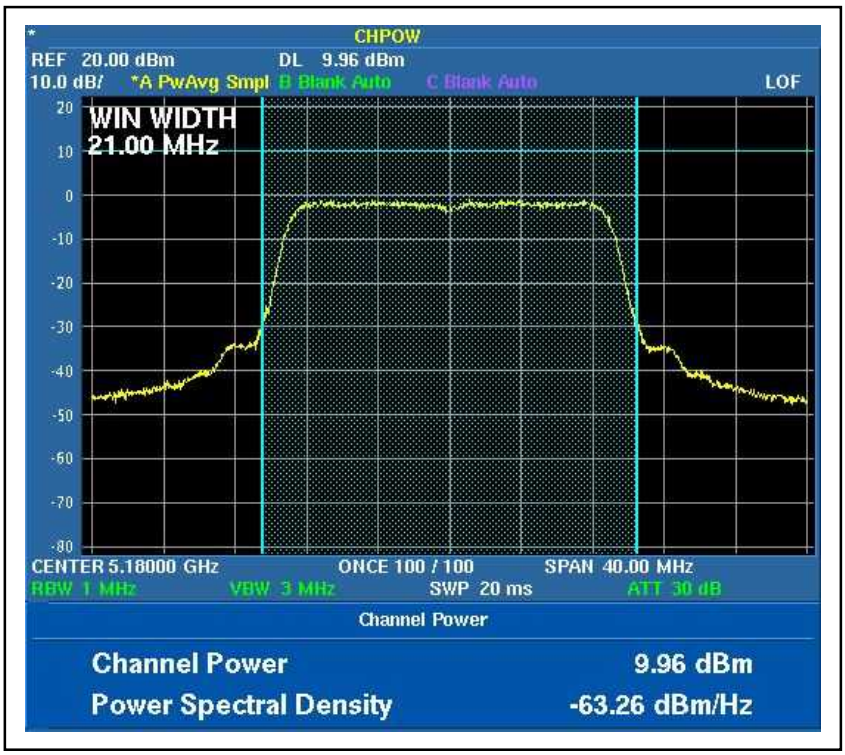
DRAFT 802.11n (20MHz) OFDM modulation:

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

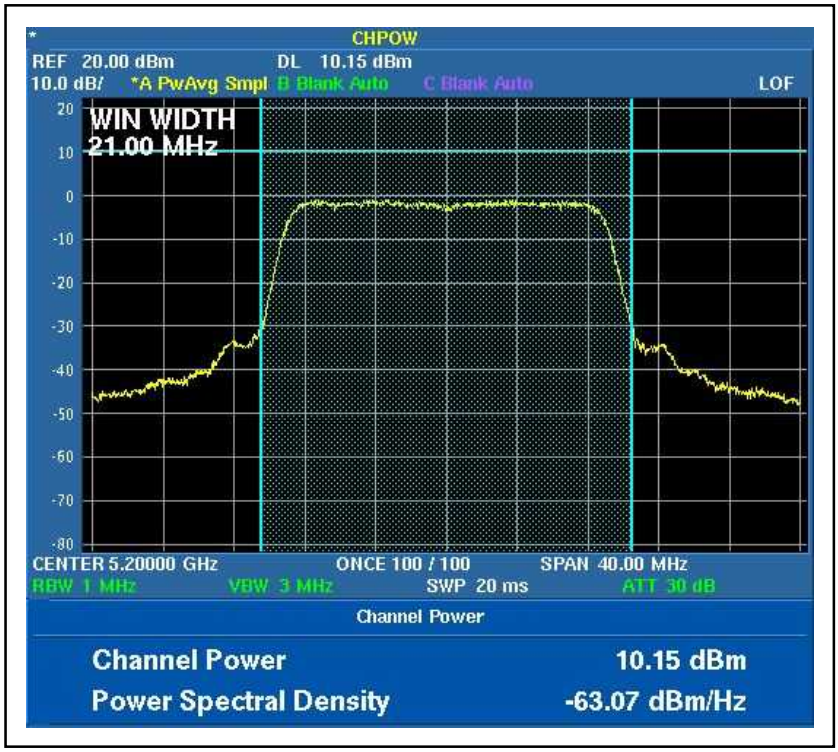
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)		PEAK POWER OUTPUT (mW)		TOTAL PEAK POWER (dBm)	TOTAL PEAK POWER (mW)	**PEAK POWER LIMIT (dBm)**	26dBc Occupied Bandwidth (MHz)		PASS/ FAIL
		Chain 0	Chain 1	Chain 0	Chain 1				Chain 0	Chain 1	
1	5180	9.96	10.31	9.908	10.740	13.15	20.648	17.00	21	20.44	PASS
2	5200	10.15	10.31	10.351	10.740	13.24	21.091	17.00	21	20.48	PASS
4	5240	10.75	10.35	11.885	10.839	13.56	22.724	24.00	21.08	20.44	PASS
5	5260	12.32	12.36	17.061	17.219	15.35	34.280	24.00	21.2	20.56	PASS
7	5300	12.56	12.40	18.030	17.378	15.49	35.408	24.00	21.16	20.44	PASS
8	5320	12.16	12.47	16.444	17.660	15.33	34.104	24.00	21.12	20.44	PASS
9	5500	9.00	9.82	7.943	9.594	12.44	17.537	24.00	21.04	20.32	PASS
14	5600	9.23	10.37	8.318	10.889	12.83	19.207	24.00	21.04	20.24	PASS
19	5700	10.45	10.63	11.092	11.561	13.55	22.653	24.00	21.04	20.4	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

Peak Power Output:
For Chain (0) :CH1



CH2



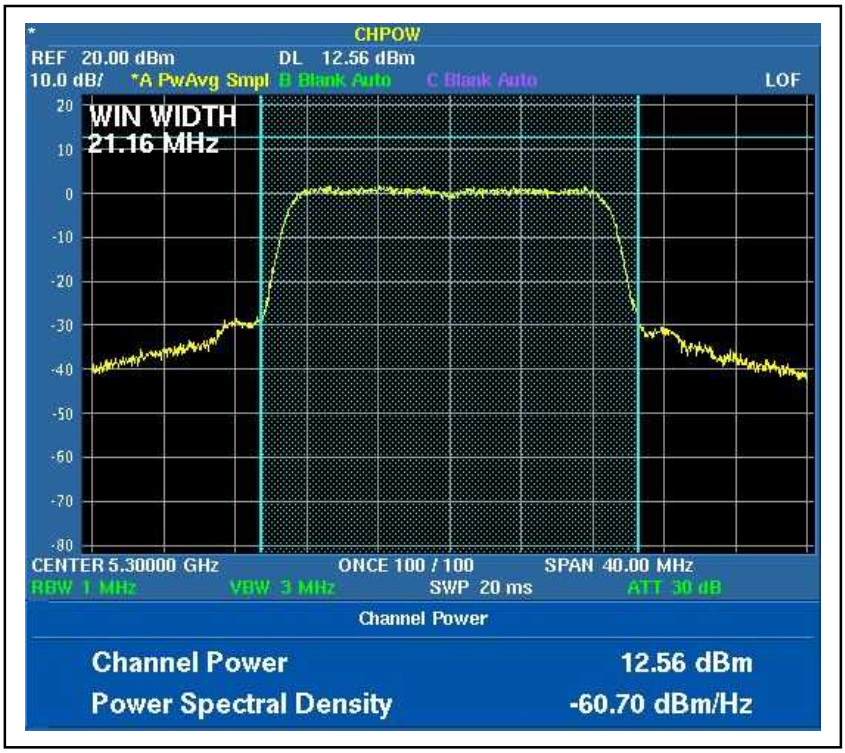
CH4


CHPOW
REF 20.00 dBm
DL 10.75 dBm
10.0 dB/ *A PwAvg Smpl B Blank Auto C Blank Auto
LOF
WIN WIDTH
21.08 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.24000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 10.75 dBm
Power Spectral Density -62.49 dBm/Hz

CH5


CHPOW
REF 20.00 dBm
DL 12.32 dBm
10.0 dB/ *A PwAvg Smpl B Blank Auto C Blank Auto
LOF
WIN WIDTH
21.20 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.26000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 12.32 dBm
Power Spectral Density -60.94 dBm/Hz

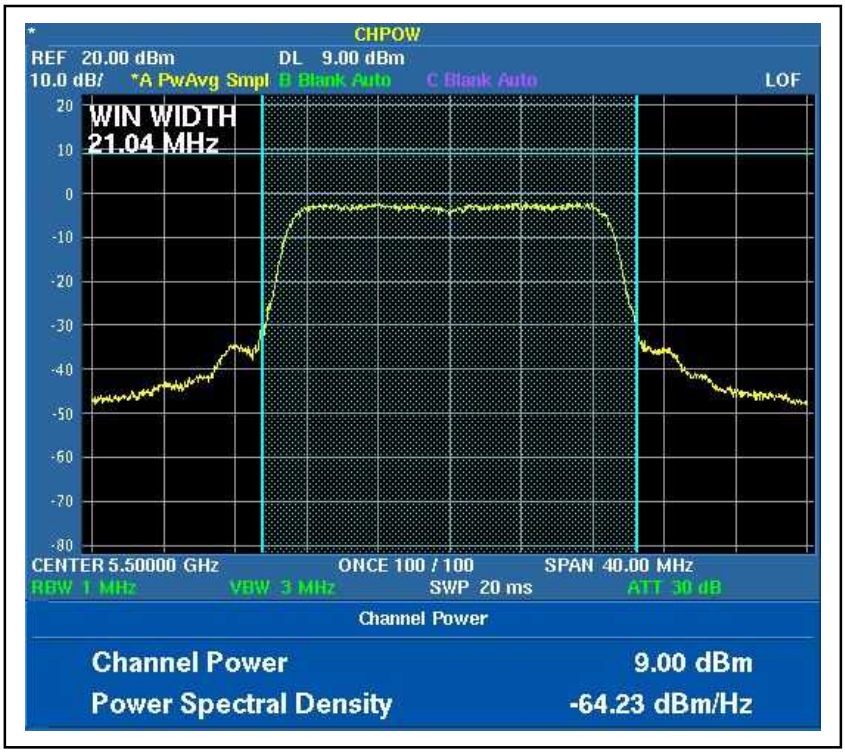
CH7


CHPOW
REF 20.00 dBm
DL 12.56 dBm
10.0 dB/
*A PwAvg Smpl
B Blank Auto
C Blank Auto
LOF
WIN WIDTH
21.16 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.30000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power
12.56 dBm
Power Spectral Density
-60.70 dBm/Hz

CH8


CHPOW
REF 20.00 dBm
DL 12.16 dBm
10.0 dB/
*A PwAvg Smpl
B Blank Auto
C Blank Auto
LOF
WIN WIDTH
21.12 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.32000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power
12.16 dBm
Power Spectral Density
-61.09 dBm/Hz

CH9


CHPOW
REF 20.00 dBm
DL 9.00 dBm
10.0 dB/
*A PwAvg Smpl
B Blank Auto
C Blank Auto
LOF
WIN WIDTH
21.04 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.50000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power
9.00 dBm
Power Spectral Density
-64.23 dBm/Hz

CH14


CHPOW
REF 20.00 dBm
DL 9.23 dBm
10.0 dB/
*A PwAvg Smpl
B Blank Auto
C Blank Auto
LOF
WIN WIDTH
21.04 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.60000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power
9.23 dBm
Power Spectral Density
-64.00 dBm/Hz

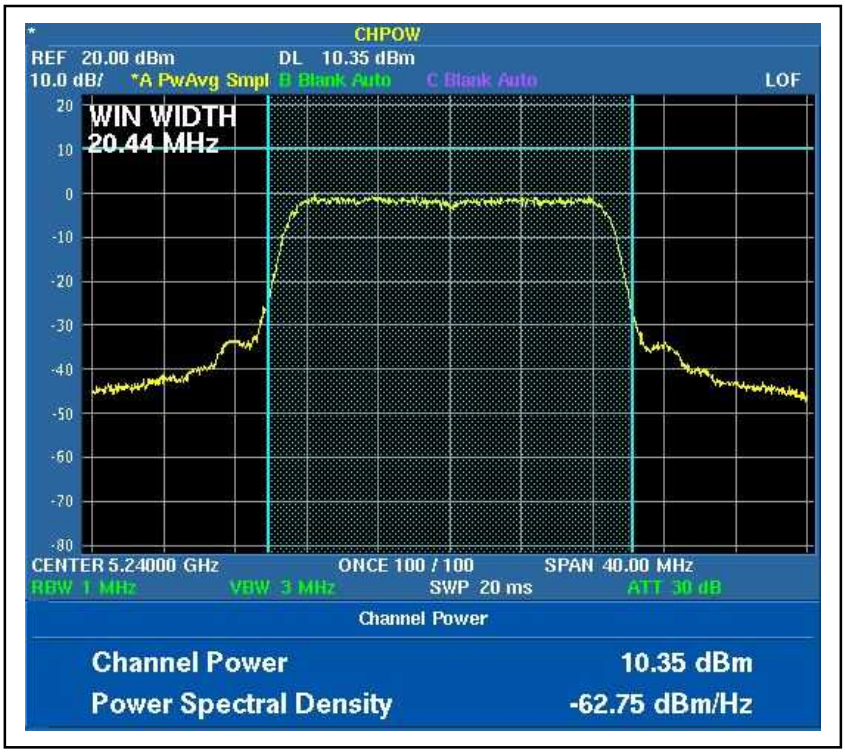
CH19


CHPOW
REF 20.00 dBm
DL 10.45 dBm
10.0 dB/
*A PwAvg Smpl
B Blank Auto
C Blank Auto
LOF
WIN WIDTH
21.04 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.70000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 10.45 dBm
Power Spectral Density -62.78 dBm/Hz

For Chain (1) :CH1

CH2

CH4


CHPOW
REF 20.00 dBm
DL 10.35 dBm
10.0 dB/
*A PwAvg Smpl
B Blank Auto
C Blank Auto
LOF
WIN WIDTH
20.44 MHz
CENTER 5.24000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 10.35 dBm
Power Spectral Density -62.75 dBm/Hz

CH5


CHPOW
REF 20.00 dBm
DL 12.36 dBm
10.0 dB/
*A PwAvg Smpl
B Blank Auto
C Blank Auto
LOF
WIN WIDTH
20.56 MHz
CENTER 5.26000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 12.36 dBm
Power Spectral Density -60.77 dBm/Hz

CH7


CHPOW
REF 20.00 dBm
DL 12.40 dBm
10.0 dB/ *A PwAvg Smpl B Blank Auto C Blank Auto
LOF
WIN WIDTH
20.44 MHz
CENTER 5.30000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 12.40 dBm
Power Spectral Density -60.71 dBm/Hz

CH8


CHPOW
REF 20.00 dBm
DL 12.47 dBm
10.0 dB/ *A PwAvg Smpl B Blank Auto C Blank Auto
LOF
WIN WIDTH
20.44 MHz
CENTER 5.32000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 12.47 dBm
Power Spectral Density -60.63 dBm/Hz

CH9


CHPOW
REF 20.00 dBm
DL 9.82 dBm
10.0 dB/ *A PwAvg Smpl B Blank Auto C Blank Auto
LOF
WIN WIDTH
20.32 MHz
CENTER 5.50000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 9.82 dBm
Power Spectral Density -63.26 dBm/Hz

CH14


CHPOW
REF 20.00 dBm
DL 10.37 dBm
10.0 dB/ *A PwAvg Smpl B Blank Auto C Blank Auto
LOF
WIN WIDTH
20.24 MHz
CENTER 5.60000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 10.37 dBm
Power Spectral Density -62.70 dBm/Hz

CH19


CHPOW
REF 20.00 dBm
DL 10.63 dBm
10.0 dB/
*A PwAvg Smpl
B Blank Auto
C Blank Auto
LOF
WIN WIDTH
20.40 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
CENTER 5.70000 GHz
ONCE 100 / 100
SPAN 40.00 MHz
RBW 1 MHz
VBW 3 MHz
SWP 20 ms
ATT 30 dB
Channel Power
Channel Power 10.63 dBm
Power Spectral Density -62.46 dBm/Hz