



FCC TEST REPORT (15.407)

REPORT NO.: RF991008C05A-1 R1

MODEL NO.: ISB7005

FCC ID: MXF-S981116N

RECEIVED: Oct. 08, 2010

TESTED: Oct. 08 to 29, 2010

ISSUED: Mar. 23, 2011

APPLICANT: Gemtek Technology Co., Ltd.

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ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

LAB ADDRESS: No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	NA	Mar. 21, 2011
RF991008C05A-1 R1	Modified the test procedures for section 4.2.4.	Mar. 23, 2011



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1. CERTIFICATION

PRODUCT: Internet Protocol Wireless Set Top Box
BRAND NAME: Cisco
MODEL NO.: ISB7005
TEST SAMPLE: ENGINEERING SAMPLE
TESTED: Oct. 08 to 29, 2010
APPLICANT: Gemtek Technology Co., Ltd.
STANDARDS: FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10-2009

The above equipment (Model: ISB7005) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, 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:** Mar. 23, 2011
(Carol Liao, Specialist)

APPROVED BY : May Chen , **DATE:** Mar. 23, 2011
(May Chen, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

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 -1.74 dB at 0.451 MHz
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 -0.5dB at 15900.00MHz
15.407(a/1/2/3)	Output 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.
15.203	Antenna Requirement	PASS	No antenna connector is used.

NOTE:

1. The EUT was operating in 5.15~5.35GHz, 5.47~5.725GHz and 5.725~5.85GHz frequencies band. This report was recorded the RF parameters including 5.15~5.35GHz and 5.47~5.725GHz. For the 5.725~5.85GHz 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 16-4-2:

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

Measurement	Value
Conducted emissions	2.45 dB
Radiated emissions (30MHz-1GHz)	3.76 dB
Radiated emissions (1GHz -18GHz)	2.19 dB
Radiated emissions (18GHz -40GHz)	2.55 dB



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3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Internet Protocol Wireless Set Top Box
MODEL NO.	ISB7005
FCC ID	MXF-S981116N
POWER SUPPLY	DC 12V from power adapter
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300 Mbps
FREQUENCY RANGE	For 15.407 802.11a: 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.70GHz
	For 15.247 802.11a: 5.745 ~ 5.825GHz
NUMBER OF CHANNEL	For 15.407 19 for 802.11a, 802.11n (20MHz) 9 for 802.11n (40MHz)
	For 15.247 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
MAXIMUM OUTPUT POWER	For 15.407 802.11a: 91.2mW 802.11n (20MHz): 159.0mW 802.11n (40MHz): 180.6mW
	For 15.247 802.11a: 213.8mW 802.11n (20MHz): 443.4mW 802.11n (40MHz): 423.4mW
ANTENNA TYPE	Please see note 2
ANTENNA CONNECTOR	Please see note 2
DATA CABLE	NA

I/O PORTS	USB port x 2 COMPNT VIDEO port (Y/Pb/Pr) x 1 S-VIDEO port x 1 HDMI port x 1 Coaxial port x 1 RJ45 x 1 Fiber port x 1 AV port x 2
ASSOCIATED DEVICES	Adapter x 1 Remote control x 1

NOTE:

1. This report is prepared for FCC permissive change. The difference compared with the Report No.: RF991008C05-1 R1 design is as the following:

- u Add DFS band <5250~5350MHz & 5470~5725MHz>

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

Chain	Manufacture	Model	Antenna Gain (dBi)	Antenna Type	Connector	Remark
Chain (0) Antenna (1)	Airgain	M2450DLC	5	PCB	NA	-
Chain (1) Antenna (2)	Airgain	M5X05C	4	PIFA	NA	Rx only
Chain (2) Antenna (3)	Airgain	M2450DLCB	4	PCB	NA	-

3. The EUT must be supplied with a power adapter as following table:

Brand:	OEM
Model No.:	ADS0202-U120167
Input power :	AC 100-240V 0.6A 50~60Hz AC input cable (Unshielded, 1.5m)
Output power :	DC 12V 1.67A DC output cable (Unshielded, 1.8m)

4. The 5600~5650MHz band operation of this product will be disabled by the firmware setting during the manufacturing process and won't be user changeable for complying with the present FCC NII product certification policy.

5. The EUT is actually a 2x2 radio with diversity.

6. The EUT is a 2x2 with 2 spatial streams without beam forming.

7. The EUT complies with 802.11n standards and backwards compatible with 802.11a 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.



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3.2 DESCRIPTION OF TEST MODES

Operated in 5150MHz ~ 5350MHz bands:

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

CHANNEL	FREQUENCY
36	5180 MHz
40	5200 MHz
44	5220 MHz
48	5240 MHz
52	5260 MHz
56	5280 MHz
60	5300 MHz
64	5320 MHz

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

CHANNEL	FREQUENCY
38	5190 MHz
46	5230 MHz
54	5270 MHz
62	5310 MHz

Operated in 5470MHz ~ 5725MHz bands:

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

CHANNEL	FREQUENCY
100	5500 MHz
104	5520 MHz
108	5540 MHz
112	5560 MHz
116	5580 MHz
120	5600 MHz
124	5620 MHz
128	5640 MHz
132	5660 MHz
136	5680 MHz
140	5700 MHz

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

CHANNEL	FREQUENCY
102	5510 MHz
110	5550 MHz
118	5590 MHz
126	5630 MHz



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134	5670 MHz
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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

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)
Worst Channel	-	-	-	-	-

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)
802.11n (40MHz)	38 to 134	54	OFDM	BPSK	13.5



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)
802.11a	36 to 140	36, 40, 48, 52, 60, 64, 100, 120, 140	OFDM	BPSK	6
802.11n (20MHz)	36 to 140	36, 40, 48, 52, 60, 64, 100, 120, 140	OFDM	BPSK	6.5
802.11n (40MHz)	38 to 134	38,46, 54, 62, 102, 118, 134	OFDM	BPSK	13.5

CONDUCTED OUT-BAND EMISSION MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	36 to 140	36, 64, 100, 140	OFDM	BPSK	6
802.11n (20MHz)	36 to 140	36, 64, 100, 140	OFDM	BPSK	6.5
802.11n (40MHz)	38 to 134	38, 62, 102, 134	OFDM	BPSK	13.5

✳ After verification, conducted out band emission as show worst chain in report by investigations.



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ANTENNA PORT CONDUCTED MEASUREMENT:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	36 to 140	36, 40, 48, 52, 60, 64, 100, 120, 140	OFDM	BPSK	6
802.11n (20MHz)	36 to 140	36, 40, 48, 52, 60, 64, 100, 120, 140	OFDM	BPSK	6.5
802.11n (40MHz)	38 to 134	38,46, 54, 62, 102, 118, 134	OFDM	BPSK	13.5

※ After verification, bandwidth as show worst chain in report by investigations.

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE ³ 1G	25deg. C, 70%RH, 1012 hPa	120Vac, 60Hz	Eric Lee
RE<1G	28deg. C, 72%RH, 1012 hPa	120Vac, 60Hz	Rex Huang
PLC	24deg. C, 66%RH, 1012 hPa	120Vac, 60Hz	Wen Yu
APCM	25deg. C, 60%RH, 1012 hPa	120Vac, 60Hz	Eric Lee



3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)

ANSI C63.10-2009

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



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3.4 DESCRIPTION OF SUPPORT UNITS

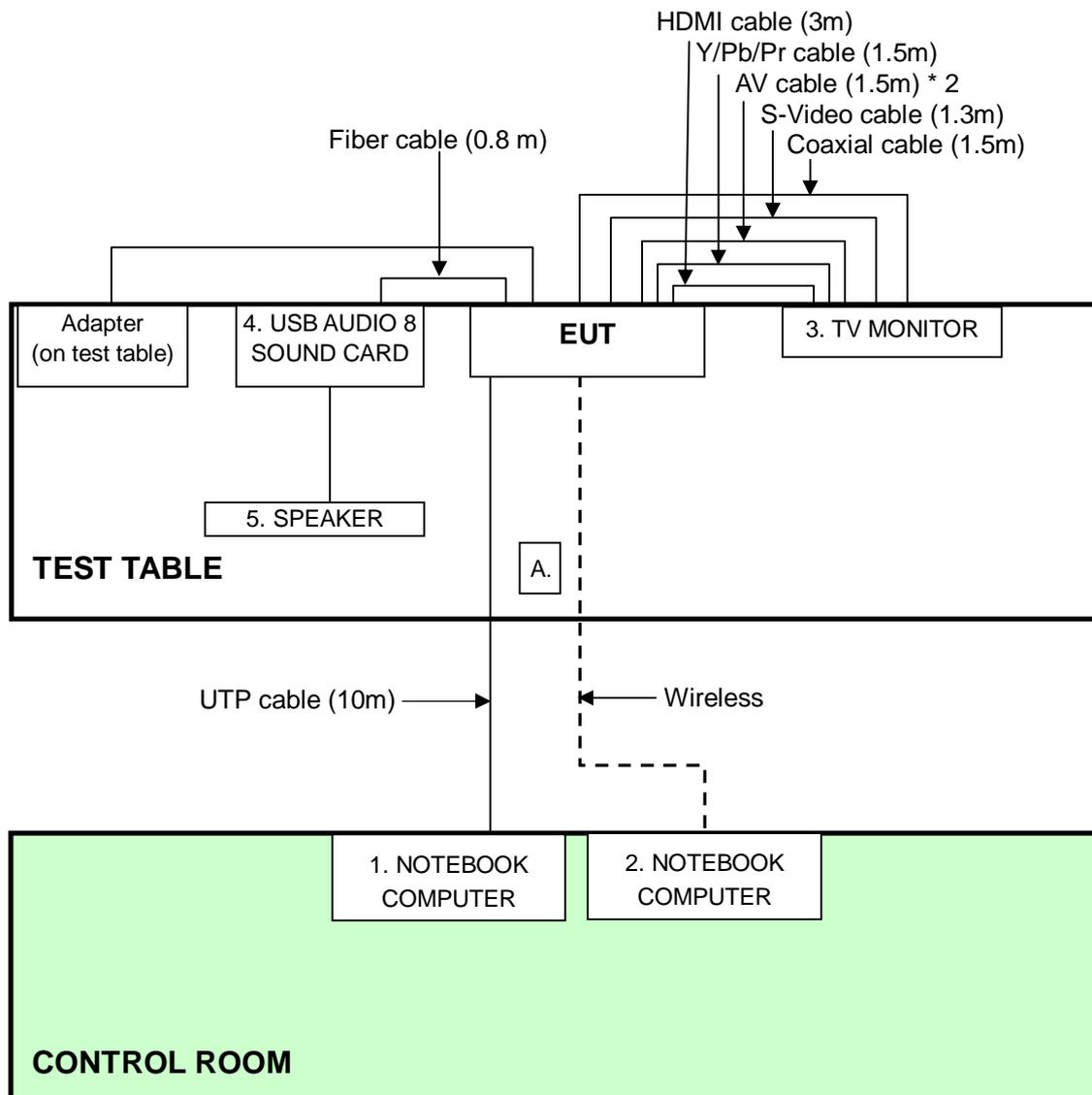
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP19L	CN-OHC416-70166-5CA-0448	PIW632500516610
2	NOTEBOOK COMPUTER	DELL	PP32LA	FSLB32S	FCC DoC
3	TV MONITOR	Panasonic	TH-L26K10W	9540684	NA
4	USB AUDIO 8 sound card	CASE	DSA-0101F-05 UP	5204	NA
5	SPEAKERS	J-S	JY2003	090404619	FCC DoC

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	UTP cable (10m)
2	NA
3	HDMI cable (3m)/ Y/Pb/Pr cable (1.5m) / AV cable (1.5m) / S-Video cable (1.3m) / Coaxial cable (1.5m)
4	Fiber cable (0.8 m)
5	Audio cable (1.3m)

NOTE: 1. All power cords of the above support units are non shielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST



NOTE: 1. Item A is the remote control of the EUT.

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

Test date: Oct. 29, 2010

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 09, 2010	Mar. 08, 2011
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-522	Sep. 22, 2010	Sep. 21, 2011
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Oct. 25, 2010	Oct. 24, 2011
RF Cable (JYEBAO)	5DFB	COBCAB-001	Nov. 24, 2009	Nov. 23, 2010
50 ohms Terminator	50	3	Oct. 27, 2010	Oct. 26, 2011
Software	BV ADT_Cond_V7.3.7	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 Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.

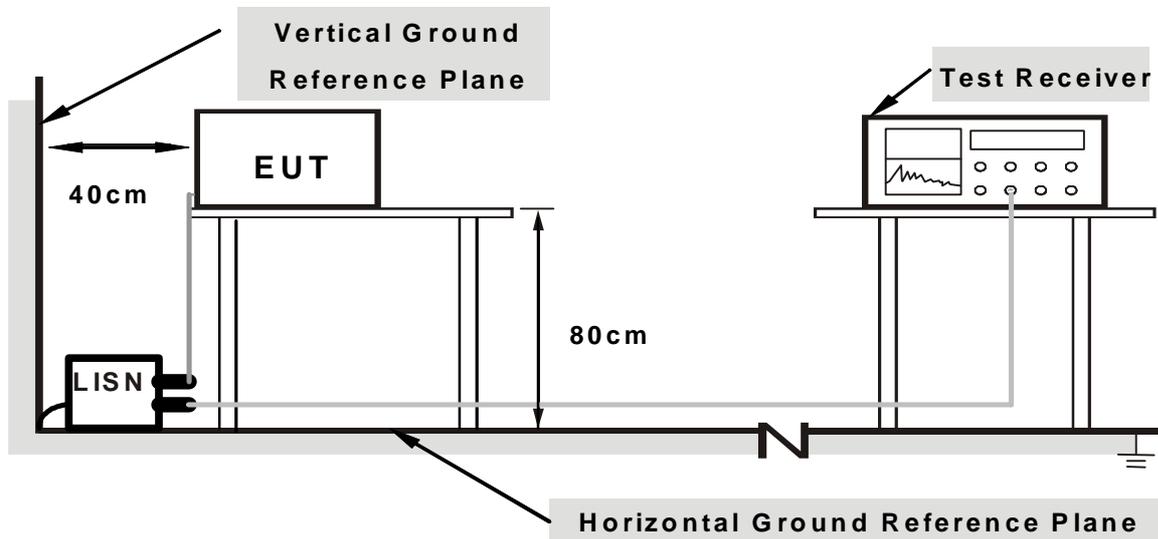
4.1.3 TEST PROCEDURES

- 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.
- b. The two LISNs 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

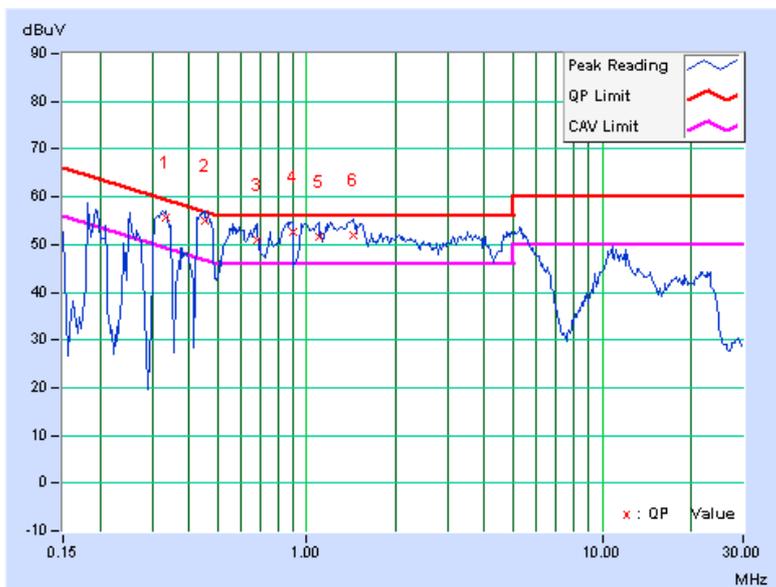
1. Placed the EUT on testing table.
2. Prepared other computer systems (support unit 1, 2) to act as communication partners and placed them outside of testing area.
3. The communication partners ran test program “Broadcom wl command” to enable EUT under transmission/receiving condition continuously at specific channel frequency via one UTP cable and wireless.

4.1.7 TEST RESULTS

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.334	0.09	55.54	43.16	55.63	43.25	59.36	49.36	-3.73	-6.11
2	0.451	0.09	54.99	41.19	55.08	41.28	56.86	46.86	-1.78	-5.58
3	0.682	0.09	50.71	37.72	50.80	37.81	56.00	46.00	-5.20	-8.19
4	0.897	0.10	52.61	33.75	52.71	33.85	56.00	46.00	-3.29	-12.15
5	1.096	0.10	51.66	35.78	51.76	35.88	56.00	46.00	-4.24	-10.12
6	1.432	0.10	51.94	37.93	52.04	38.03	56.00	46.00	-3.96	-7.97

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



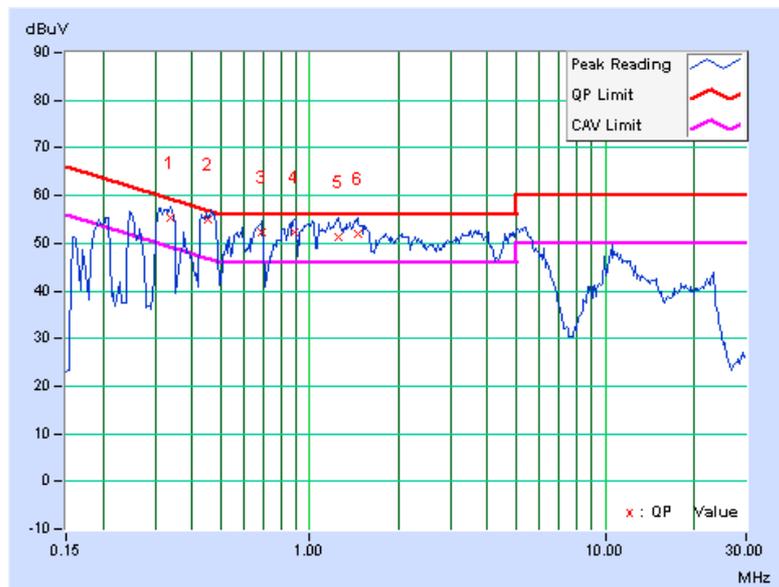


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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	(dB)	(dB)
1	0.338	0.10	55.24	42.62	55.34	42.72	59.26	49.26	-3.92	-6.54
2	0.451	0.10	55.01	40.38	55.11	40.48	56.85	46.85	-1.74	-6.37
3	0.690	0.10	52.30	35.88	52.40	35.98	56.00	46.00	-3.60	-10.02
4	0.885	0.11	52.18	35.74	52.29	35.85	56.00	46.00	-3.71	-10.15
5	1.245	0.11	51.21	36.90	51.32	37.01	56.00	46.00	-4.68	-8.99
6	1.452	0.11	52.02	36.64	52.13	36.75	56.00	46.00	-3.87	-9.25

- 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.



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4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequencies (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at 3m (dB μ V/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

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



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4.2.3 TEST INSTRUMENTS

Test date: Oct. 21 to 27, 2010

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250253	Aug. 23, 2010	Aug. 22, 2011
Agilent Pre-Selector	N9039A	MY46520310	Aug. 23, 2010	Aug. 22, 2011
Agilent Signal Generator	N5181A	MY49060347	July 30, 2010	July 29, 2011
LIG NEX1 Test Receiver	ER-265	L09068005	Aug. 30, 2010	Aug. 29, 2011
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-04	Nov. 18, 2009	Nov. 17, 2010
Agilent Pre-Amplifier	8449B	3008A02465	Mar. 01, 2010	Feb. 28, 2011
Miteq Pre-Amplifier	AFS33-1800265 0-30-8P-44	881786	NA	NA
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-361	Apr. 28, 2010	Apr. 27, 2011
AISI Horn_Antenna	AIH.8018	0000220091110	Nov. 16, 2009	Nov. 15, 2010
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 08, 2010	Oct. 07, 2011
RF CABLE	NA	RF104-205 RF104-207 RF104-208	Dec. 24, 2009	Dec. 23, 2010
RF Cable	NA	CHHCAB_001	NA	NA
Software	ADT_Radiated_V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

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

2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

3. The test was performed in 966 Chamber No. H.

4. The FCC Site Registration No. is 797305.

5. The CANADA Site Registration No. is IC 7450H-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 meters chamber room. 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. The Peak Detect was selected for the test-receiver system and the same measurement settings used to measure the transmit power of the fundamental emission were used here.
- g. 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.

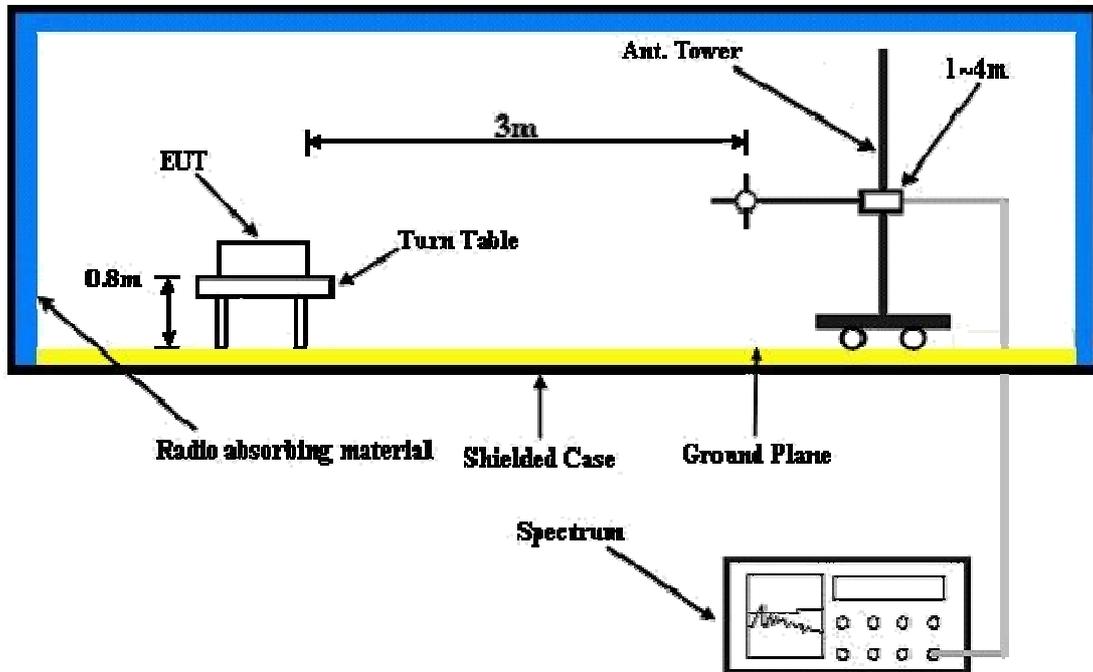
NOTE: Following setting applies to the emissions fall into Restricted Band

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



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4.2.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA : 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	28deg. C, 72%RH 1012 hPa	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	174.95	37.9 QP	43.5	-5.6	1.50 H	288	24.25	13.65
2	250.00	40.6 QP	46.0	-5.4	1.25 H	206	27.69	12.95
3	300.00	43.2 QP	46.0	-2.8	1.25 H	247	28.27	14.91
4	325.01	45.0 QP	46.0	-1.0	1.06 H	268	29.34	15.66
5	599.97	42.4 QP	46.0	-3.6	1.50 H	329	19.82	22.54
6	624.96	42.0 QP	46.0	-4.0	1.25 H	327	19.22	22.76
7	675.05	40.5 QP	46.0	-5.5	1.25 H	325	17.28	23.19

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	63.30	34.1 QP	40.0	-5.9	1.00 V	268	21.26	12.88
2	98.45	38.0 QP	43.5	-5.5	1.00 V	61	28.05	9.91
3	187.74	41.6 QP	43.5	-1.9	1.50 V	156	29.45	12.13
4	250.03	40.4 QP	46.0	-5.7	1.25 V	0	27.40	12.95
5	324.99	42.9 QP	46.0	-3.2	1.25 V	336	27.19	15.66
6	599.97	41.8 QP	46.0	-4.2	1.00 V	226	19.30	22.54

- 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.



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ABOVE 1GHz WORST-CASE DATA

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	5150.00	58.4 PK	74.0	-15.6	1.29 H	70	17.23	41.17
2	5150.00	46.4 AV	54.0	-7.6	1.29 H	70	5.23	41.17
3	*5180.00	96.4 PK			1.31 H	62	55.17	41.23
4	*5180.00	85.6 AV			1.31 H	62	44.37	41.23
5	#10360.00	40.7 PK	68.3	-27.6	1.48 H	205	2.76	47.94
6	15540.00	65.3 PK	74.0	-8.7	1.50 H	358	12.77	52.53
7	15540.00	50.6 AV	54.0	-3.4	1.50 H	358	-1.93	52.53
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	5150.00	67.6 PK	74.0	-6.4	1.34 V	140	26.43	41.17
2	5150.00	53.3 AV	54.0	-0.7	1.34 V	140	12.13	41.17
3	*5180.00	107.3 PK			1.15 V	121	66.07	41.23
4	*5180.00	96.5 AV			1.15 V	121	55.27	41.23
5	#10360.00	53.1 PK	68.3	-15.2	1.31 V	170	15.16	47.94
6	15540.00	63.9 PK	74.0	-10.1	1.34 V	170	11.37	52.53
7	15540.00	49.9 AV	54.0	-4.1	1.34 V	170	-2.63	52.53

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5200.00	96.5 PK			1.29 H	60	55.23	41.27
2	*5200.00	85.9 AV			1.29 H	60	44.63	41.27
3	#10400.00	40.2 PK	68.3	-28.1	1.30 H	305	2.22	47.98
4	15600.00	65.4 PK	74.0	-8.6	1.45 H	45	12.70	52.70
5	15600.00	50.3 AV	54.0	-3.7	1.45 H	45	-2.40	52.70
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	*5200.00	106.9 PK			1.20 V	123	65.63	41.27
2	*5200.00	96.4 AV			1.20 V	123	55.13	41.27
3	#10400.00	52.2 PK	68.3	-16.1	1.12 V	189	14.22	47.98
4	15600.00	63.5 PK	74.0	-10.5	1.26 V	148	10.80	52.70
5	15600.00	49.3 AV	54.0	-4.7	1.26 V	148	-3.40	52.70

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5240.00	97.1 PK			1.31 H	71	55.75	41.35
2	*5240.00	86.1 AV			1.31 H	71	44.75	41.35
3	#10480.00	50.8 PK	68.3	-17.5	1.34 H	88	2.74	48.06
4	15720.00	65.6 PK	74.0	-8.4	1.28 H	49	12.58	53.02
5	15720.00	50.2 AV	54.0	-3.8	1.28 H	49	-2.82	53.02
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	*5240.00	107.2 PK			1.13 V	165	65.85	41.35
2	*5240.00	96.2 AV			1.13 V	165	54.85	41.35
3	#10480.00	62.4 PK	68.3	-5.9	1.15 V	68	14.34	48.06
4	15720.00	63.6 PK	74.0	-10.4	1.68 V	141	10.58	53.02
5	15720.00	49.2 AV	54.0	-4.8	1.68 V	141	-3.82	53.02

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5260.00	102.1 PK			1.29 H	80	60.72	41.38
2	*5260.00	91.6 AV			1.29 H	80	50.22	41.38
3	#10520.00	45.1 PK	68.3	-23.2	1.18 H	200	7.01	48.09
4	15780.00	66.5 PK	74.0	-7.5	1.29 H	50	13.32	53.18
5	15780.00	53.4 AV	54.0	-0.6	1.29 H	50	0.22	53.18
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	*5260.00	114.8 PK			1.15 V	145	73.42	41.38
2	*5260.00	101.8 AV			1.15 V	145	60.42	41.38
3	#10520.00	63.8 PK	68.3	-4.5	1.14 V	245	15.71	48.09
4	15780.00	66.1 PK	74.0	-7.9	1.30 V	150	12.92	53.18
5	15780.00	51.2 AV	54.0	-2.8	1.30 V	150	-1.98	53.18

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5300.00	102.8 PK			1.24 H	71	61.34	41.46
2	*5300.00	92.1 AV			1.24 H	71	50.64	41.46
3	10600.00	55.2 PK	74.0	-18.8	1.22 H	181	7.05	48.15
4	10600.00	45.2 AV	54.0	-8.8	1.22 H	181	-2.95	48.15
5	15900.00	66.2 PK	74.0	-7.8	1.35 H	40	12.82	53.38
6	15900.00	53.5 AV	54.0	-0.5	1.35 H	40	0.12	53.38
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	*5300.00	115.9 PK			1.16 V	130	74.44	41.46
2	*5300.00	102.3 AV			1.16 V	130	60.84	41.46
3	10600.00	64.2 PK	74.0	-9.8	1.10 V	111	16.05	48.15
4	10600.00	49.8 AV	54.0	-4.2	1.10 V	111	1.65	48.15
5	15900.00	66.8 PK	74.0	-7.2	1.40 V	261	13.42	53.38
6	15900.00	51.3 AV	54.0	-2.7	1.40 V	261	-2.08	53.38

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5320.00	103.1 PK			1.31 H	60	61.60	41.50
2	*5320.00	92.3 AV			1.31 H	60	50.80	41.50
3	5350.00	61.5 PK	74.0	-12.5	1.28 H	55	19.94	41.56
4	5350.00	48.6 AV	54.0	-5.4	1.28 H	55	7.04	41.56
5	10640.00	55.8 PK	74.0	-18.2	1.11 H	23	7.63	48.17
6	10640.00	44.3 AV	54.0	-9.7	1.11 H	23	-3.87	48.17
7	15960.00	66.8 PK	74.0	-7.2	1.68 H	198	13.26	53.54
8	15960.00	53.4 AV	54.0	-0.6	1.68 H	198	-0.14	53.54
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	*5320.00	114.8 PK			1.11 V	117	73.30	41.50
2	*5320.00	102.9 AV			1.11 V	117	61.40	41.50
3	5350.30	66.5 PK	74.0	-7.5	1.11 V	120	24.94	41.56
4	5350.30	53.4 AV	54.0	-0.6	1.11 V	120	11.84	41.56
5	10640.00	63.0 PK	74.0	-11.0	1.47 V	41	14.83	48.17
6	10640.00	49.3 AV	54.0	-4.7	1.47 V	41	1.13	48.17
7	15960.00	63.4 PK	74.0	-10.6	1.54 V	84	9.86	53.54
8	15960.00	40.7 AV	54.0	-13.3	1.54 V	84	-12.84	53.54

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	5459.10	60.6 PK	74.0	-13.4	1.30 H	71	18.83	41.77
2	5459.10	48.9 AV	54.0	-5.1	1.30 H	71	7.13	41.77
3	#5470.00	56.4 PK	68.3	-11.9	1.22 H	60	24.60	41.80
4	*5500.00	103.3 PK			1.29 H	55	61.44	41.86
5	*5500.00	93.1 AV			1.29 H	55	51.24	41.86
6	11000.00	56.2 PK	74.0	-17.8	1.33 H	24	7.75	48.45
7	11000.00	45.1 AV	54.0	-8.9	1.33 H	24	-3.35	48.45
8	#16500.00	58.3 PK	68.3	-10.0	1.40 H	125	13.80	54.50
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	5460.00	69.1 PK	74.0	-4.9	1.03 V	24	27.32	41.78
2	5460.00	51.7 AV	54.0	-2.3	1.03 V	24	9.92	41.78
3	#5470.00	64.2 PK	68.3	-4.1	1.01 V	20	32.40	41.80
4	*5500.00	114.7 PK			1.02 V	21	72.84	41.86
5	*5500.00	102.8 AV			1.02 V	21	60.94	41.86
6	11000.00	64.2 PK	74.0	-9.8	1.50 V	100	15.75	48.45
7	11000.00	50.4 AV	54.0	-3.6	1.50 V	100	1.95	48.45
8	#16500.00	54.5 PK	68.3	-13.8	1.48 V	94	10.00	54.50

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5600.00	104.1 PK			1.30 H	36	62.12	41.98
2	*5600.00	93.2 AV			1.30 H	36	51.22	41.98
3	11200.00	55.9 PK	74.0	-18.1	1.50 H	78	7.35	48.55
4	11200.00	44.8 AV	54.0	-9.2	1.50 H	78	-3.75	48.55
5	#16800.00	57.2 PK	68.3	-11.1	1.66 H	34	12.00	55.20

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	*5600.00	115.4 PK			1.08 V	14	73.42	41.98
2	*5600.00	102.4 AV			1.08 V	14	60.42	41.98
3	11200.00	64.3 PK	74.0	-9.7	1.48 V	108	15.75	48.55
4	11200.00	50.8 AV	54.0	-3.2	1.48 V	108	2.25	48.55
5	#16800.00	54.6 PK	68.3	-13.7	1.42 V	144	9.40	55.20

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

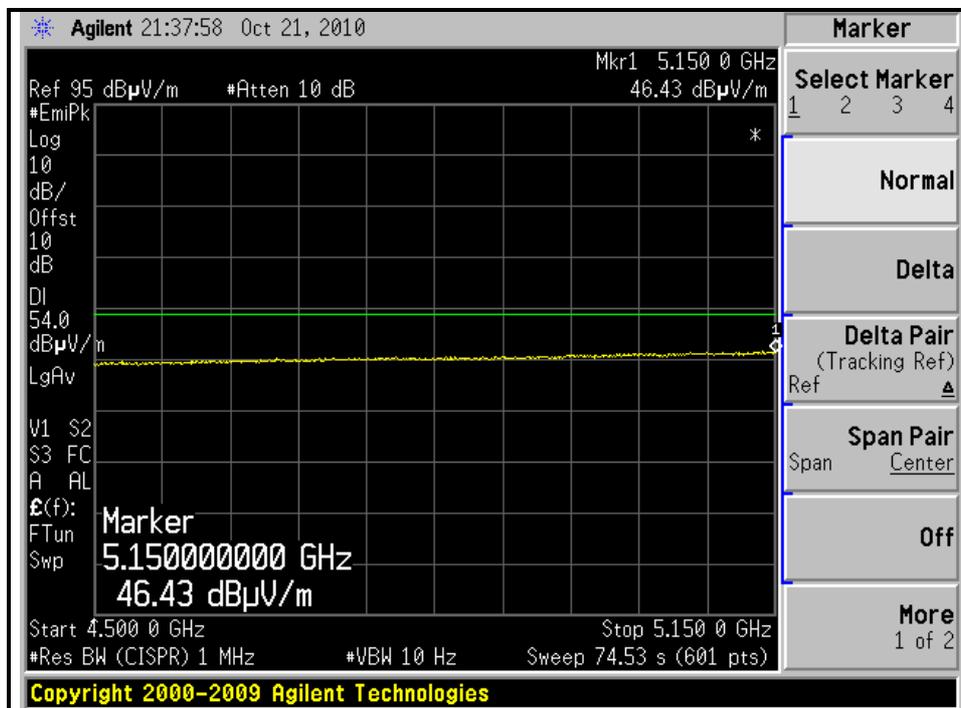
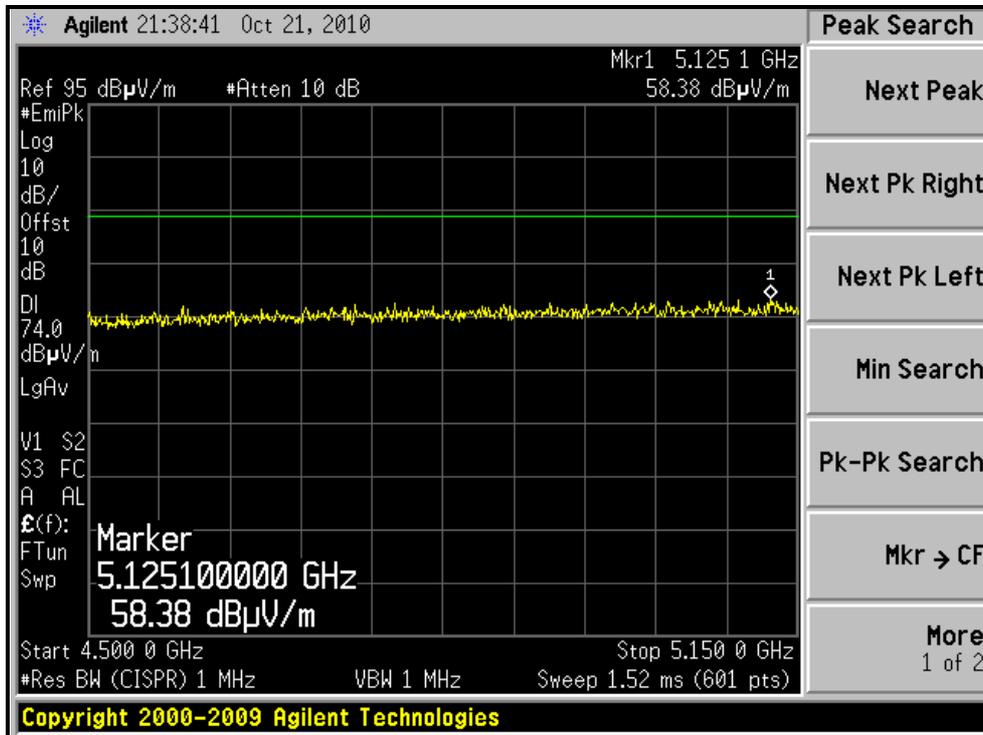
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NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	103.4 PK			1.28 H	44	61.30	42.10
2	*5700.00	93.2 AV			1.28 H	44	51.10	42.10
3	#5725.00	60.0 PK	68.3	-8.3	1.30 H	33	27.86	42.14
5	11400.00	55.8 PK	74.0	-18.2	1.32 H	112	7.25	48.55
6	11400.00	44.2 AV	54.0	-9.8	1.32 H	112	-4.35	48.55
7	#17100.00	57.4 PK	68.3	-10.9	1.34 H	39	11.60	55.80
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	*5700.00	115.8 PK			1.10 V	28	73.70	42.10
2	*5700.00	102.5 AV			1.10 V	28	60.40	42.10
3	#5725.00	68.0 PK	68.3	-0.3	1.09 V	30	35.86	42.14
5	11400.00	64.2 PK	74.0	-9.8	1.50 V	222	15.65	48.55
6	11400.00	49.4 AV	54.0	-4.6	1.50 V	222	0.85	48.55
7	#17100.00	55.2 PK	68.3	-13.1	1.38 V	167	9.40	55.80

- 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.



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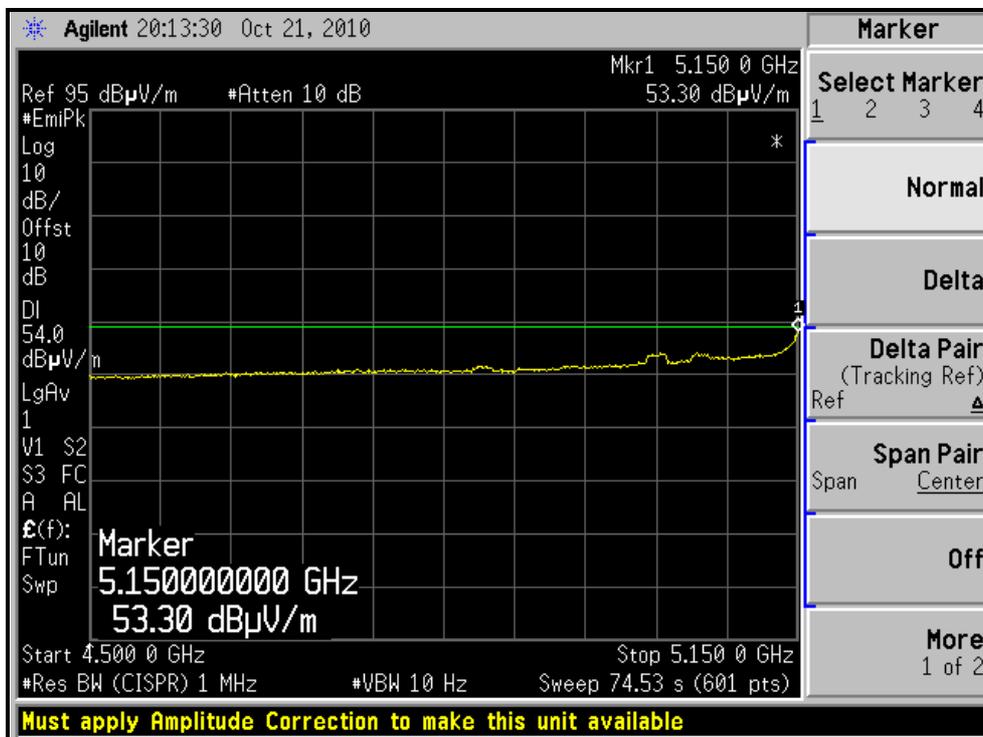
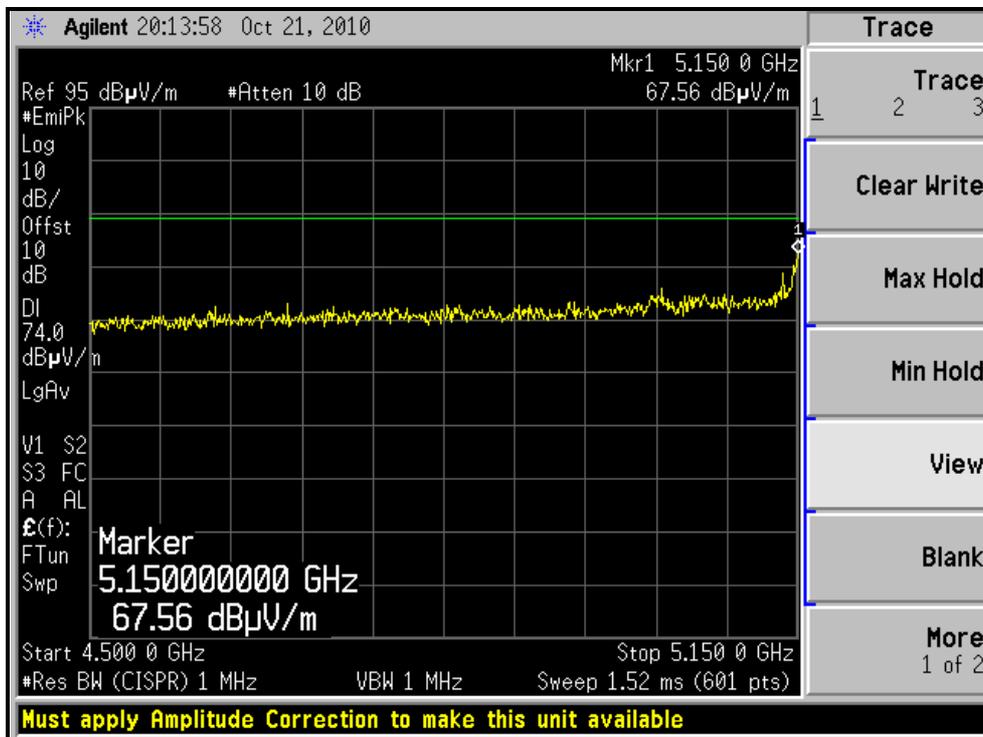
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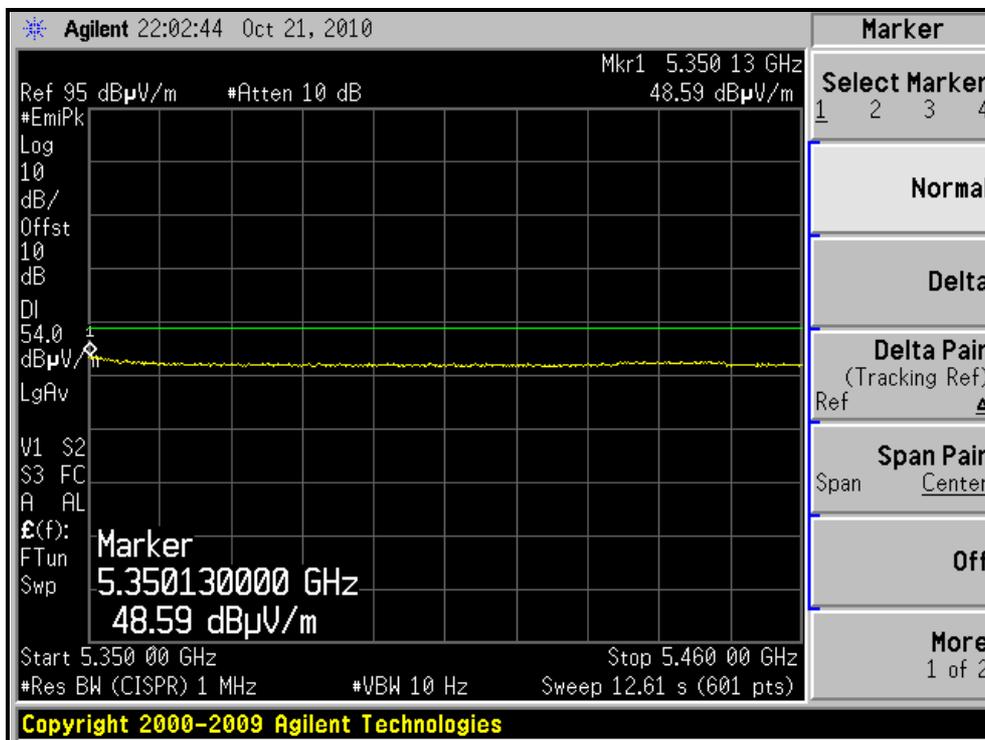
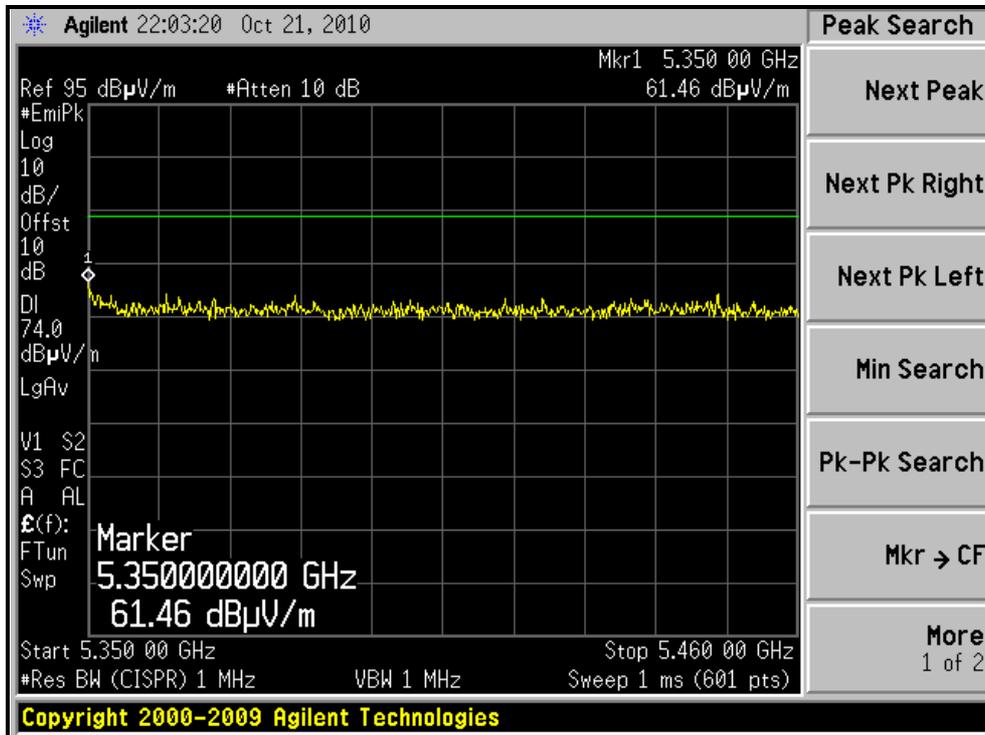
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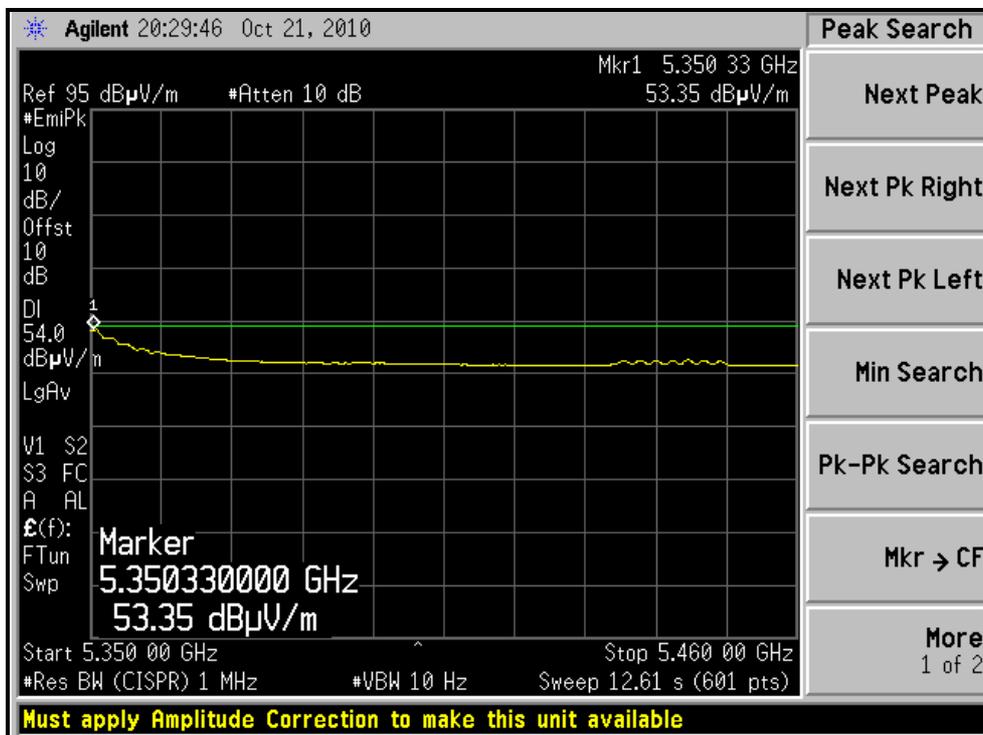
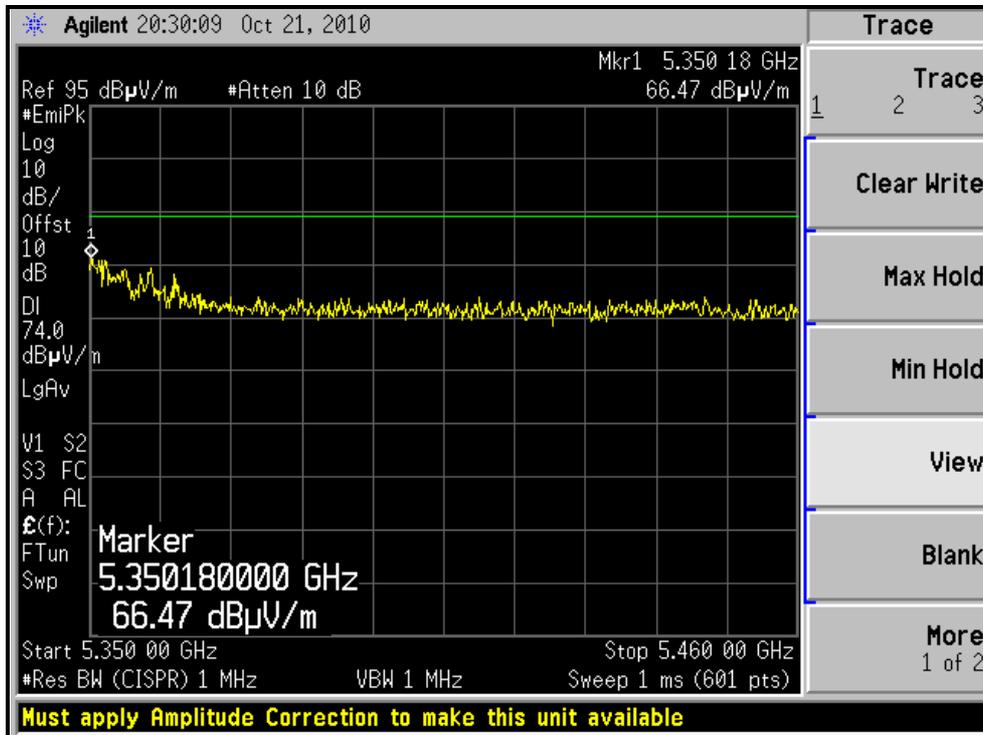
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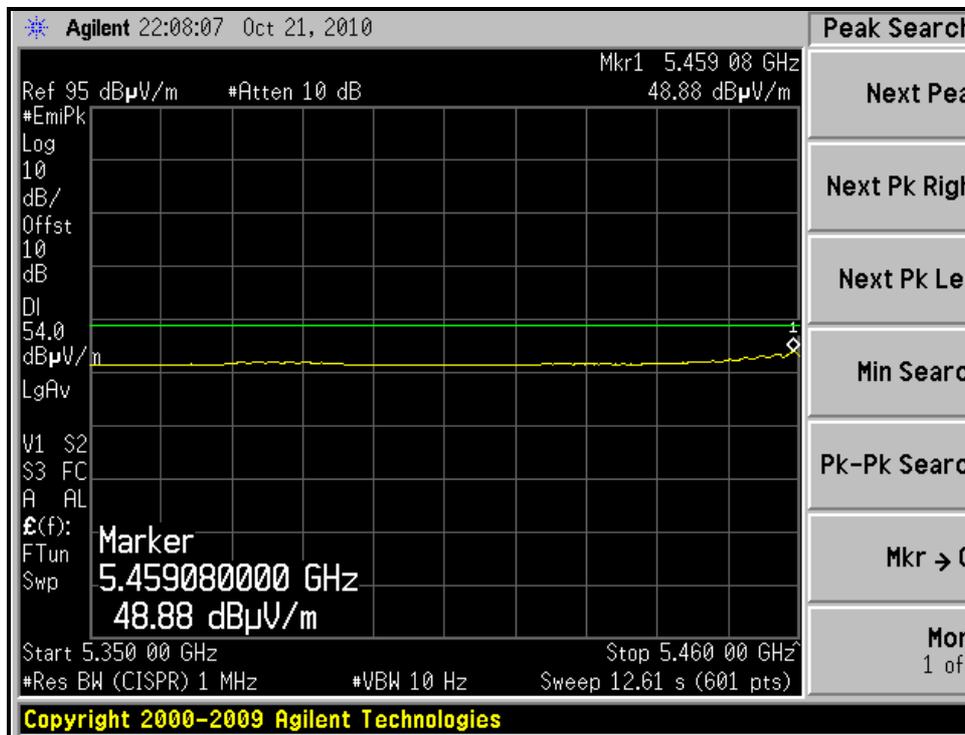
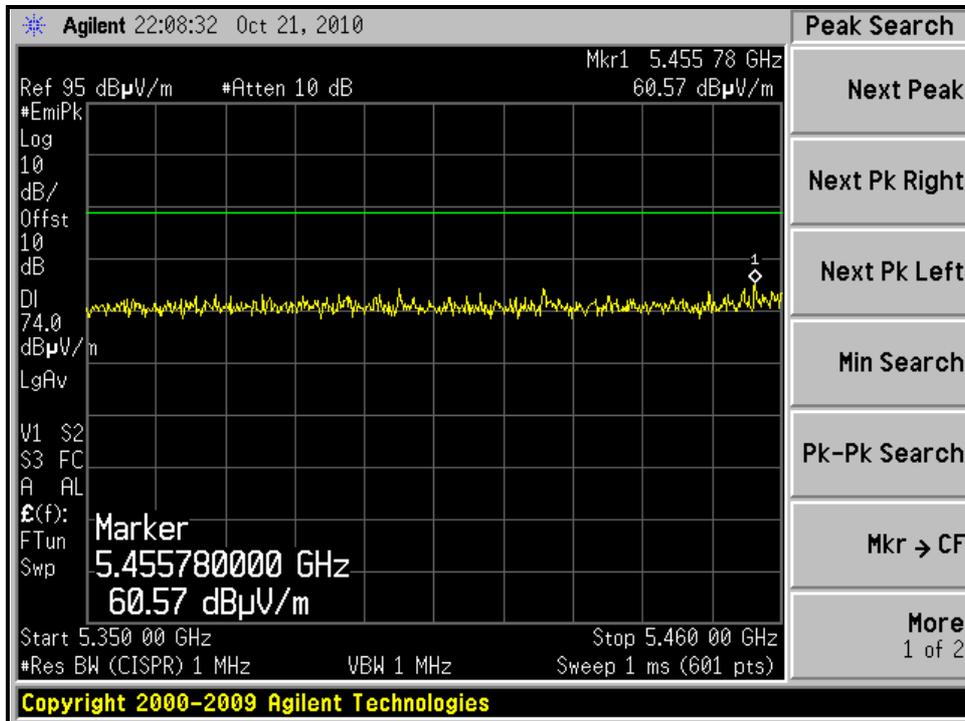
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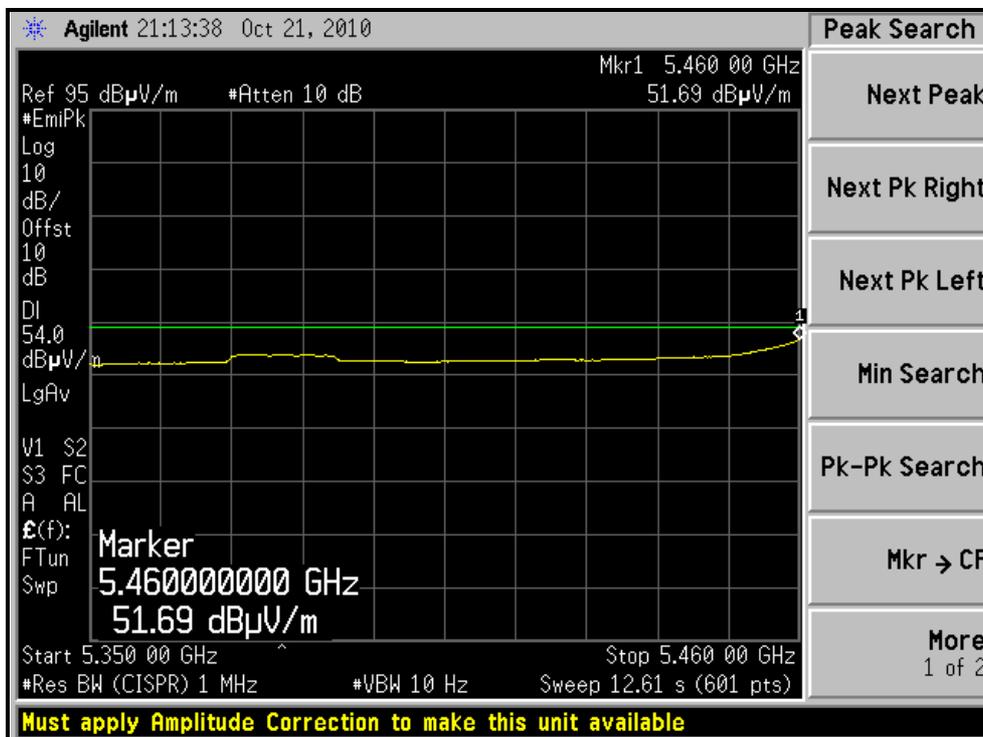
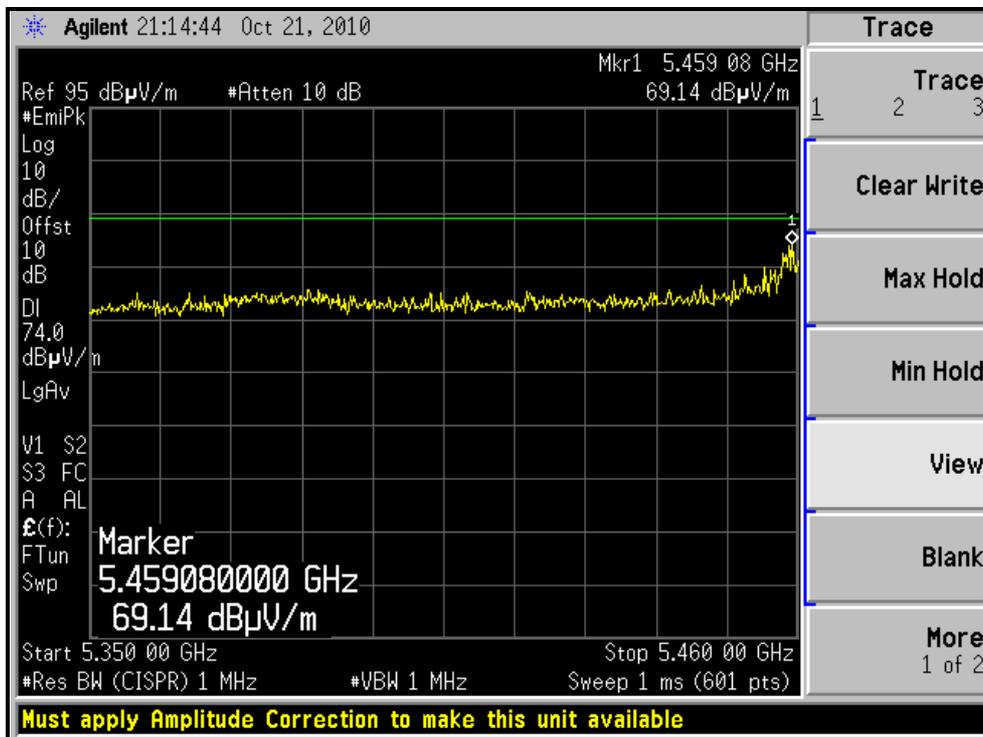
RESTRICTED BANDEDGE (802.11a MODE, CH100, HORIZONTAL)





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RESTRICTED BANDEDGE (802.11a MODE, CH100, VERTICAL)





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802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	5150.00	58.8 PK	74.0	-15.2	1.31 H	62	17.63	41.17
2	5150.00	46.6 AV	54.0	-7.4	1.31 H	62	5.43	41.17
3	*5180.00	103.0 PK			1.28 H	71	61.77	41.23
4	*5180.00	91.4 AV			1.28 H	71	50.17	41.23
5	#10360.00	40.2 PK	68.3	-28.1	1.24 H	51	2.30	47.94
6	15540.00	65.3 PK	74.0	-8.7	1.11 H	24	12.77	52.53
7	15540.00	53.2 AV	54.0	-0.8	1.11 H	24	0.67	52.53

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	5148.90	62.0 PK	74.0	-12.0	1.04 V	112	20.83	41.17
2	5148.90	51.8 AV	54.0	-2.2	1.04 V	112	10.63	41.17
3	*5180.00	108.0 PK			1.05 V	115	66.77	41.23
4	*5180.00	96.6 AV			1.05 V	115	55.37	41.23
5	#10360.00	49.2 PK	68.3	-19.1	1.38 V	65	11.26	47.94
6	15540.00	61.9 PK	74.0	-12.1	1.29 V	244	9.37	52.53
7	15540.00	50.1 AV	54.0	-3.9	1.29 V	244	-2.43	52.53

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5200.00	102.9 PK			1.28 H	71	61.63	41.27
2	*5200.00	91.3 AV			1.28 H	71	50.03	41.27
3	#10400.00	42.2 PK	68.3	-26.1	1.24 H	51	4.26	47.98
4	15600.00	64.5 PK	74.0	-9.5	1.54 H	57	11.80	52.70
5	15600.00	53.1 AV	54.0	-0.9	1.54 H	57	0.40	52.70
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	*5200.00	107.9 PK			1.04 V	112	66.63	41.27
2	*5200.00	95.9 AV			1.04 V	112	54.63	41.27
3	#10400.00	50.2 PK	68.3	-18.1	1.46 V	305	12.22	47.98
4	15600.00	61.7 PK	74.0	-12.3	1.32 V	284	9.00	52.70
5	15600.00	50.3 AV	54.0	-3.7	1.32 V	284	-2.40	52.70

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5240.00	103.2 PK			1.33 H	69	61.85	41.35
2	*5240.00	91.1 AV			1.33 H	69	49.75	41.35
3	#10480.00	44.3 PK	68.3	-24.0	1.62 H	326	6.24	48.06
4	15720.00	64.5 PK	74.0	-9.5	1.82 H	245	11.48	53.02
5	15720.00	52.9 AV	54.0	-1.1	1.82 H	245	-0.12	53.02
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	*5240.00	108.1 PK			1.04 V	112	66.75	41.35
2	*5240.00	96.8 AV			1.04 V	112	55.45	41.35
3	#10480.00	49.9 PK	68.3	-18.4	1.50 V	314	11.84	48.06
4	15720.00	61.3 PK	74.0	-12.7	1.66 V	295	8.28	53.02
5	15720.00	50.6 AV	54.0	-3.4	1.66 V	295	-2.42	53.02

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5260.00	109.6 PK			1.39 H	197	68.22	41.38
2	*5260.00	98.1 AV			1.39 H	197	56.72	41.38
3	#10520.00	46.4 PK	68.3	-21.9	1.54 H	24	8.31	48.09
4	15780.00	66.8 PK	74.0	-7.2	1.47 H	84	13.62	53.18
5	15780.00	53.1 AV	54.0	-0.9	1.47 H	84	-0.08	53.18
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	*5260.00	114.5 PK			1.05 V	118	73.12	41.38
2	*5260.00	101.4 AV			1.05 V	118	60.02	41.38
3	#10520.00	49.4 PK	68.3	-18.9	1.16 V	100	11.31	48.09
4	15780.00	62.1 PK	74.0	-11.9	1.20 V	326	8.92	53.18
5	15780.00	50.3 AV	54.0	-3.7	1.20 V	326	-2.88	53.18

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5300.00	109.7 PK			1.42 H	200	68.24	41.46
2	*5300.00	98.2 AV			1.42 H	200	56.74	41.46
3	10600.00	56.3 PK	74.0	-17.7	1.58 H	54	8.15	48.15
4	10600.00	46.1 AV	54.0	-7.9	1.58 H	54	-2.05	48.15
5	15900.00	66.6 PK	74.0	-7.4	1.32 H	65	13.22	53.38
6	15900.00	53.3 AV	54.0	-0.7	1.32 H	65	-0.08	53.38
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	*5300.00	114.8 PK			1.09 V	120	73.34	41.46
2	*5300.00	101.5 AV			1.09 V	120	60.04	41.46
3	10600.00	59.9 PK	74.0	-14.1	1.20 V	99	11.75	48.15
4	10600.00	49.8 AV	54.0	-4.2	1.20 V	99	1.65	48.15
5	15900.00	62.4 PK	74.0	-11.6	1.14 V	358	9.02	53.38
6	15900.00	50.9 AV	54.0	-3.1	1.14 V	358	-2.48	53.38

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5320.00	109.6 PK			1.69 H	19	68.10	41.50
2	*5320.00	97.9 AV			1.69 H	19	56.40	41.50
3	5350.90	65.5 PK	74.0	-8.5	1.00 H	320	23.94	41.56
4	5350.90	50.9 AV	54.0	-3.1	1.00 H	320	9.34	41.56
5	10640.00	58.2 PK	74.0	-15.8	1.24 H	51	10.03	48.17
6	10640.00	47.2 AV	54.0	-6.8	1.24 H	51	-0.97	48.17
7	15960.00	66.8 PK	74.0	-7.2	1.25 H	222	13.26	53.54
8	15960.00	53.1 AV	54.0	-0.9	1.25 H	222	-0.44	53.54
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	*5320.00	114.0 PK			1.14 V	267	72.50	41.50
2	*5320.00	101.3 AV			1.14 V	267	59.80	41.50
3	5350.60	67.7 PK	74.0	-6.3	1.15 V	281	26.14	41.56
4	5350.60	53.3 AV	54.0	-0.7	1.15 V	281	11.74	41.56
5	10640.00	59.4 PK	74.0	-14.6	1.28 V	160	11.23	48.17
6	10640.00	49.8 AV	54.0	-4.2	1.28 V	160	1.63	48.17
7	15960.00	63.2 PK	74.0	-10.8	1.14 V	218	9.66	53.54
8	15960.00	51.8 AV	54.0	-2.2	1.14 V	218	-1.74	53.54

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	5459.10	62.2 PK	74.0	-11.8	1.44 H	71	20.43	41.77
2	5459.10	47.7 AV	54.0	-6.3	1.44 H	71	5.93	41.77
3	#5470.00	61.2 PK	68.3	-7.1	1.50 H	230	29.40	41.80
4	*5500.00	111.1 PK			1.65 H	19	69.24	41.86
5	*5500.00	98.5 AV			1.65 H	19	56.64	41.86
6	11000.00	58.3 PK	74.0	-15.7	1.32 H	62	9.85	48.45
7	11000.00	48.2 AV	54.0	-5.8	1.32 H	62	-0.25	48.45
8	#16500.00	56.7 PK	68.3	-11.6	1.02 H	326	12.20	54.50
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	5460.00	67.6 PK	74.0	-6.4	1.31 V	120	25.82	41.78
2	5460.00	52.3 AV	54.0	-1.7	1.31 V	120	10.52	41.78
3	#5470.00	66.7 PK	68.3	-1.6	1.29 V	130	34.90	41.80
5	*5500.00	115.0 PK			1.30 V	124	73.14	41.86
6	*5500.00	102.6 AV			1.30 V	124	60.74	41.86
7	11000.00	60.9 PK	74.0	-13.1	1.38 V	194	12.45	48.45
8	11000.00	50.9 AV	54.0	-3.1	1.38 V	194	2.45	48.45
9	#16500.00	54.9 PK	68.3	-13.4	1.21 V	256	10.40	54.50

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5600.00	111.3 PK			1.70 H	30	69.32	41.98
2	*5600.00	98.4 AV			1.70 H	30	56.42	41.98
3	11200.00	58.5 PK	74.0	-15.5	1.50 H	221	9.92	48.55
4	11200.00	46.2 AV	54.0	-7.8	1.50 H	221	-2.32	48.55
5	#16800.00	58.9 PK	68.3	-9.4	1.57 H	48	13.70	55.20

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	*5600.00	115.2 PK			1.29 V	122	73.22	41.98
2	*5600.00	102.9 AV			1.29 V	122	60.92	41.98
3	11200.00	63.2 PK	74.0	-10.8	1.42 V	205	14.65	48.55
4	11200.00	51.9 AV	54.0	-2.1	1.42 V	205	3.35	48.55
5	#16800.00	55.8 PK	68.3	-12.5	1.33 V	271	10.60	55.20

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

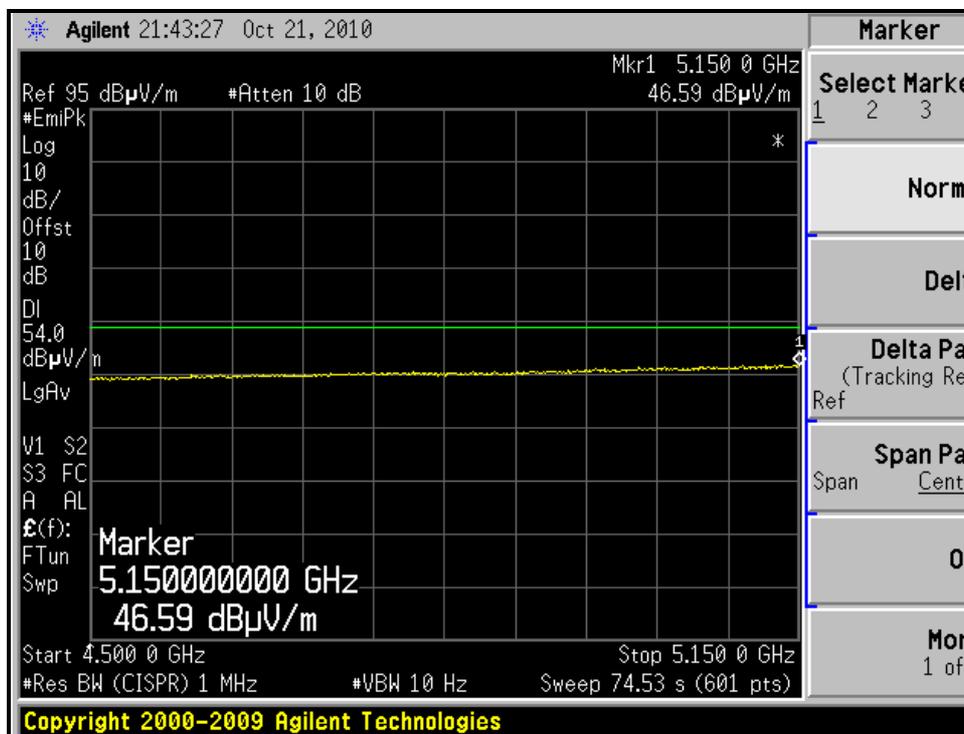
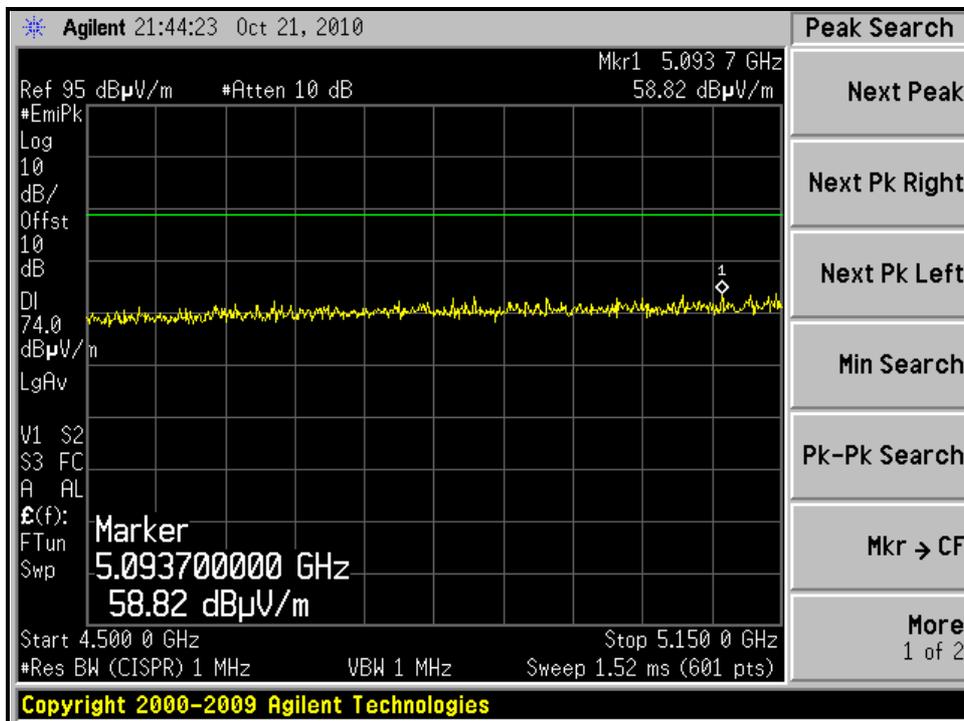
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NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	111.3 PK			1.65 H	20	69.20	42.10
2	*5700.00	98.1 AV			1.65 H	20	56.00	42.10
3	#5725.00	59.8 PK	68.3	-8.5	1.66 H	30	27.66	42.14
4	11400.00	58.4 PK	74.0	-15.6	1.65 H	360	9.85	48.55
5	11400.00	46.3 AV	54.0	-7.7	1.65 H	360	-2.25	48.55
6	#17100.00	56.9 PK	68.3	-11.4	1.82 H	236	11.10	55.80
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	*5700.00	114.9 PK			1.30 V	118	72.80	42.10
2	*5700.00	103.1 AV			1.30 V	118	61.00	42.10
3	#5725.00	64.5 PK	68.3	-3.8	1.22 V	88	32.36	42.14
4	11400.00	64.8 PK	74.0	-9.2	1.38 V	241	16.25	48.55
5	11400.00	52.7 AV	54.0	-1.3	1.38 V	241	4.15	48.55
6	#17100.00	56.1 PK	68.3	-12.2	1.42 V	316	10.30	55.80

- 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.



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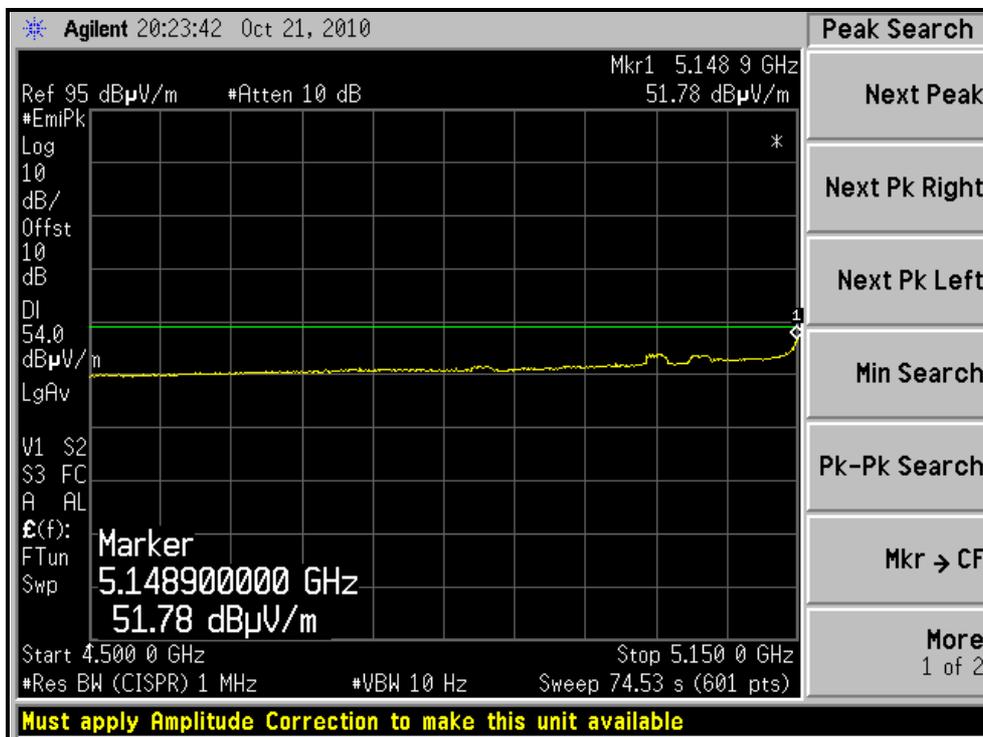
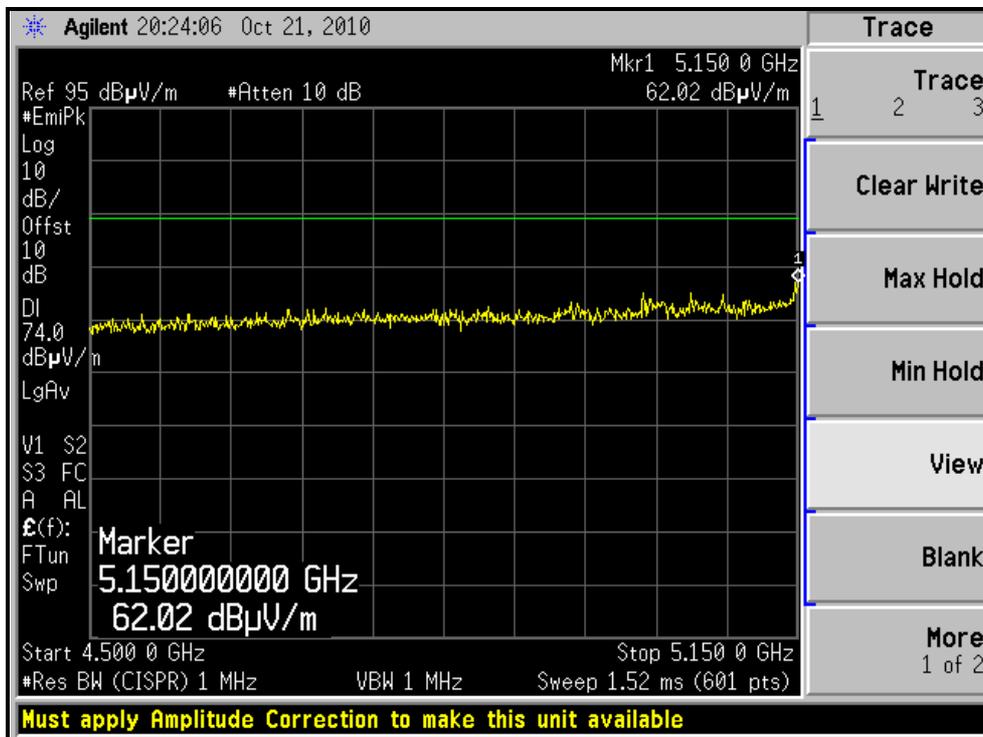
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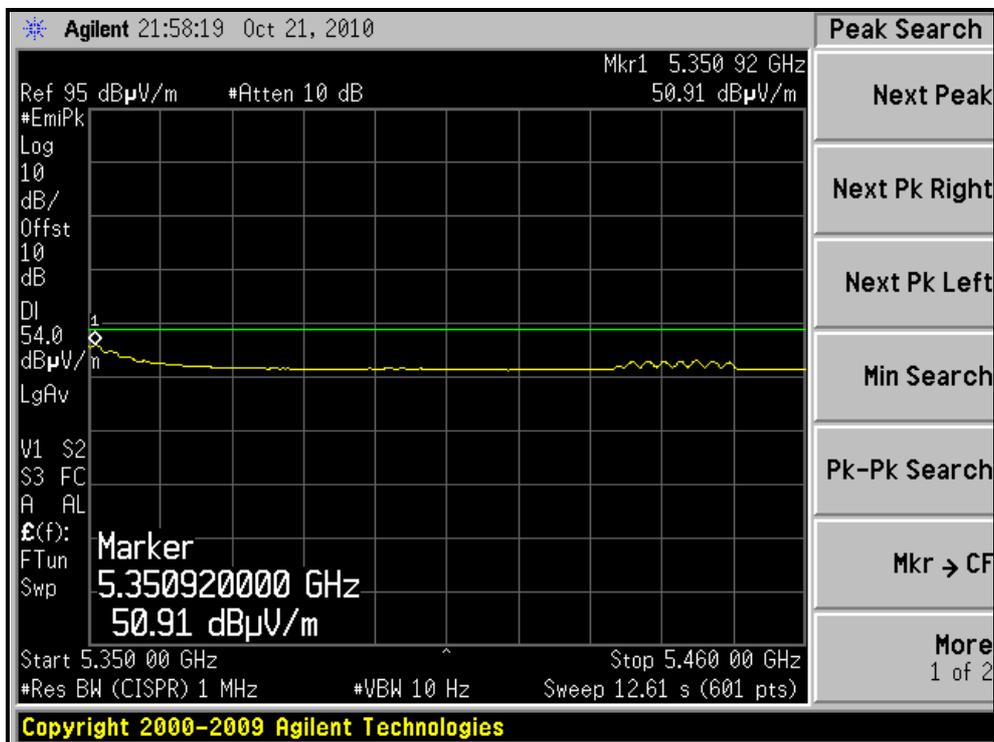
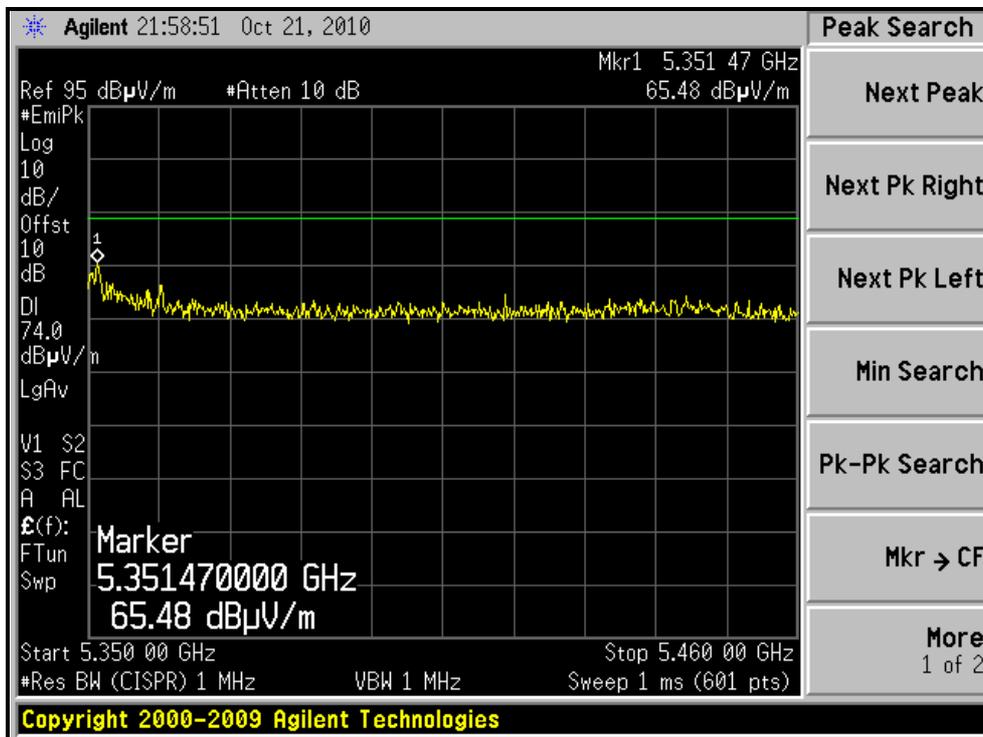
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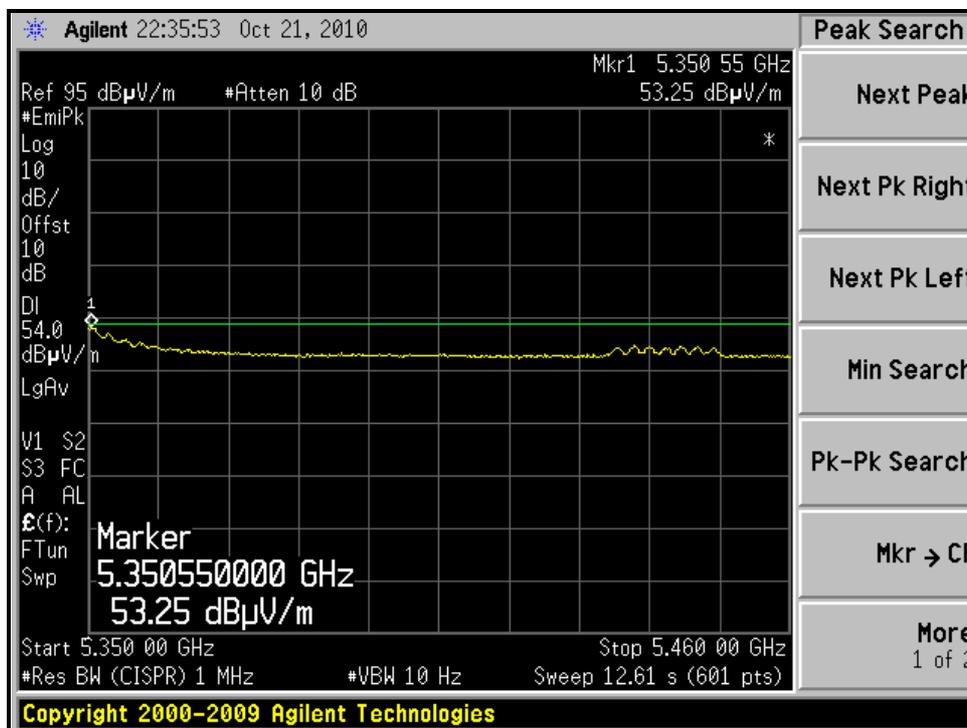
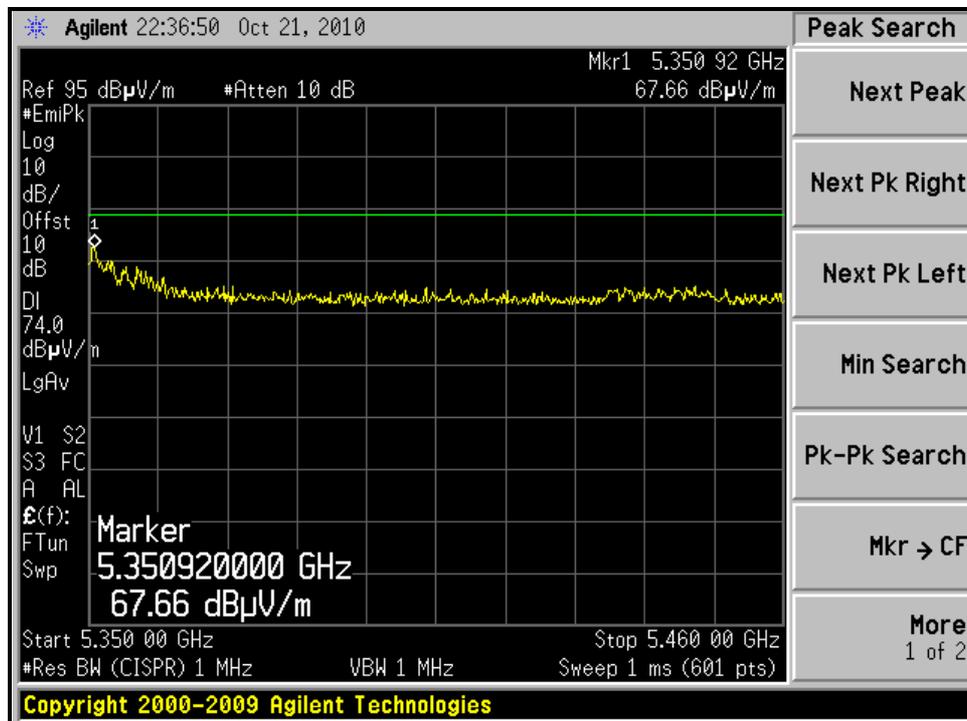
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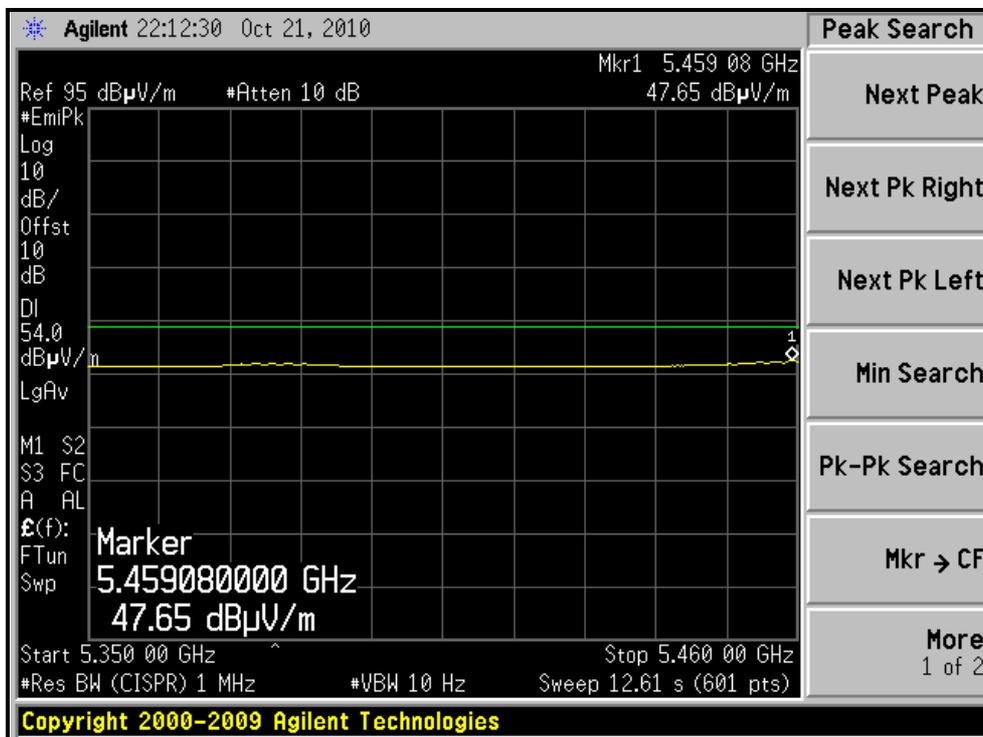
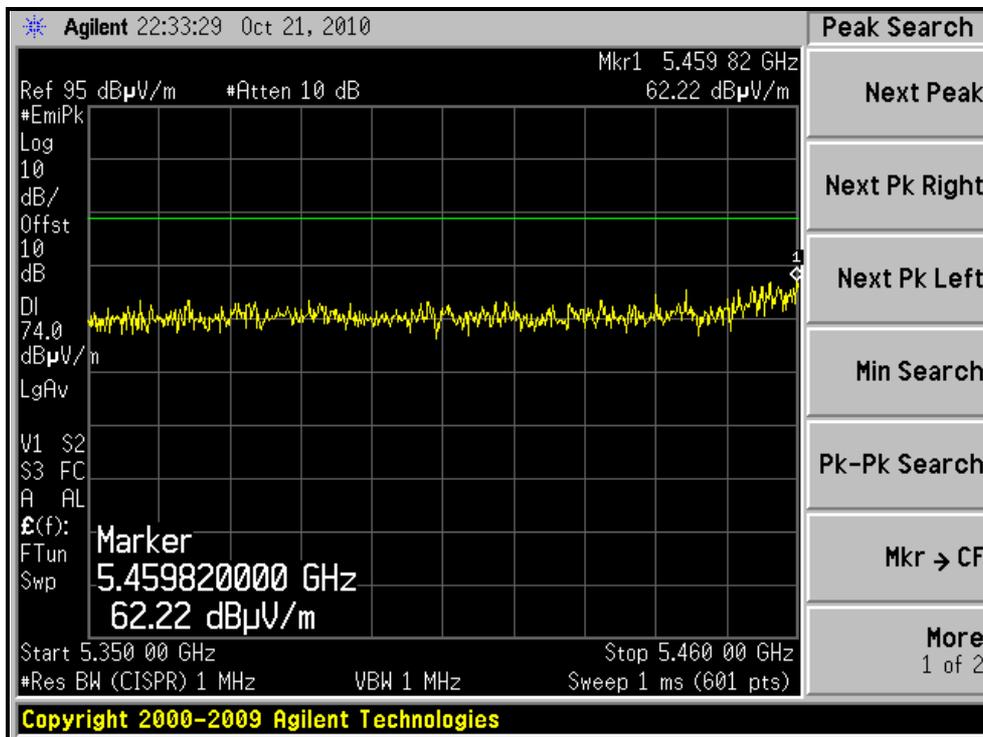
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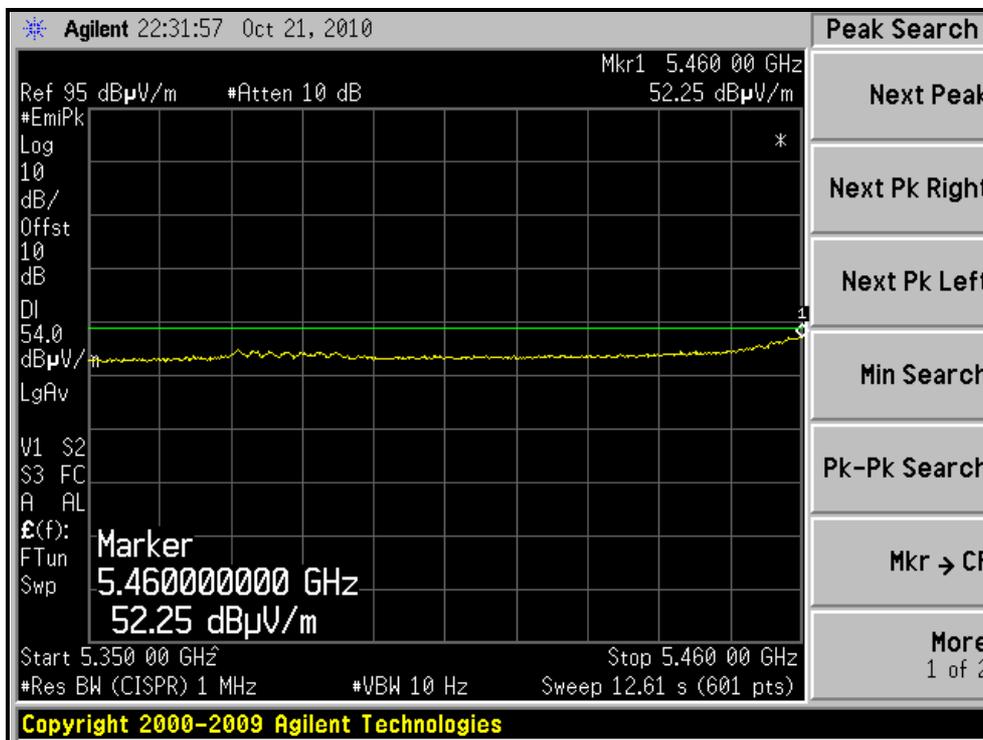
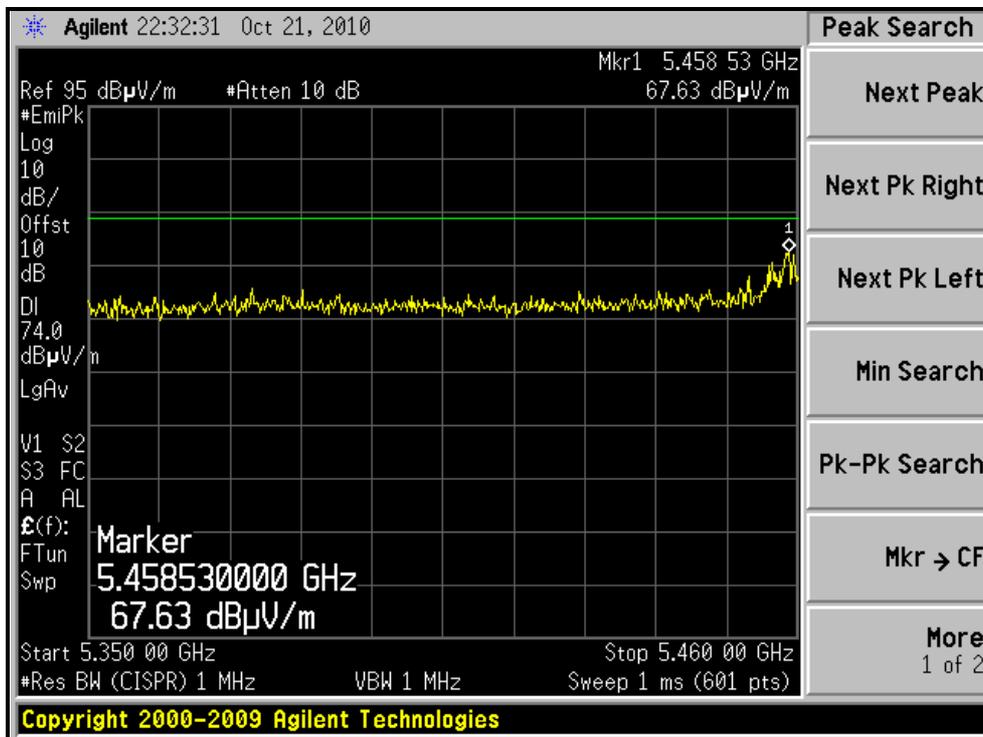
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH 100, HORIZONTAL)





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RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH 100, VERTICAL)





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802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	5148.90	61.2 PK	74.0	-12.8	1.31 H	288	20.03	41.17
2	5148.90	50.7 AV	54.0	-3.3	1.31 H	288	9.53	41.17
3	*5190.00	99.6 PK			1.30 H	266	58.35	41.25
4	*5190.00	87.7 AV			1.30 H	266	46.45	41.25
5	#10380.00	40.6 PK	68.3	-27.7	1.25 H	85	2.64	47.96
6	15570.00	66.1 PK	74.0	-7.9	1.47 H	54	13.48	52.62
7	15570.00	51.1 AV	54.0	-2.9	1.47 H	54	-1.52	52.62

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	5150.00	66.0 PK	74.0	-8.0	1.04 V	113	24.83	41.17
2	5150.00	53.2 AV	54.0	-0.8	1.04 V	113	12.03	41.17
3	*5190.00	106.1 PK			1.05 V	114	64.85	41.25
4	*5190.00	93.0 AV			1.05 V	114	51.75	41.25
5	#10380.00	52.2 PK	68.3	-16.1	1.46 V	80	14.24	47.96
7	15570.00	63.9 PK	74.0	-10.1	1.36 V	100	11.28	52.62
8	15570.00	50.3 AV	54.0	-3.7	1.36 V	100	-2.32	52.62

- 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 is out the restricted band.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5230.00	101.9 PK			1.22 H	288	60.57	41.33
2	*5230.00	89.6 AV			1.22 H	288	48.27	41.33
3	#10460.00	47.2 PK	68.3	-21.1	1.54 H	360	9.16	48.04
4	15690.00	66.9 PK	74.0	-7.1	1.11 H	25	13.96	52.94
5	15690.00	50.8 AV	54.0	-3.2	1.11 H	25	-2.14	52.94
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	108.6 PK			1.14 V	267	67.27	41.33
2	*5230.00	94.5 AV			1.14 V	267	53.17	41.33
3	#10460.00	51.8 PK	68.3	-16.5	1.50 V	77	13.76	48.04
4	15690.00	64.2 PK	74.0	-9.8	1.41 V	142	11.26	52.94
5	15690.00	51.2 AV	54.0	-2.8	1.41 V	142	-1.74	52.94

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5270.00	107.2 PK			1.80 H	69	65.80	41.40
2	*5270.00	93.9 AV			1.80 H	69	52.50	41.40
3	#10540.00	49.5 PK	68.3	-18.8	1.32 H	54	11.39	48.11
5	15810.00	66.8 PK	74.0	-7.2	1.32 H	62	13.55	53.25
6	15810.00	52.1 AV	54.0	-1.9	1.32 H	62	-1.15	53.25

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	*5270.00	112.7 PK			1.23 V	339	71.30	41.40
2	*5270.00	97.2 AV			1.23 V	339	55.80	41.40
3	#10540.00	53.4 PK	68.3	-14.9	1.48 V	37	15.29	48.11
5	15810.00	65.3 PK	74.0	-8.7	1.58 V	142	12.05	53.25
6	15810.00	51.4 AV	54.0	-2.6	1.58 V	142	-1.85	53.25

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5310.00	104.9 PK			1.28 H	71	63.42	41.48
2	*5310.00	91.0 AV			1.28 H	71	49.52	41.48
3	5351.70	64.6 PK	74.0	-9.4	1.31 H	62	23.04	41.56
4	5351.70	49.7 AV	54.0	-4.3	1.31 H	62	8.14	41.56
5	10620.00	54.2 PK	74.0	-19.8	1.54 H	248	6.04	48.16
6	10620.00	45.2 AV	54.0	-8.8	1.54 H	248	-2.92	48.16
7	15930.00	68.5 PK	74.0	-5.5	1.11 H	233	15.04	53.46
8	15930.00	53.1 AV	54.0	-0.9	1.11 H	233	-0.36	53.46
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	*5310.00	109.9 PK			1.10 V	109	68.42	41.48
2	*5310.00	95.2 AV			1.10 V	109	53.72	41.48
3	5350.00	69.3 PK	74.0	-4.7	1.11 V	114	27.74	41.56
4	5350.00	53.3 AV	54.0	-0.7	1.11 V	114	11.74	41.56
5	10620.00	63.9 PK	74.0	-10.1	1.21 V	69	15.74	48.16
6	10620.00	48.4 AV	54.0	-5.6	1.21 V	69	0.24	48.16
7	15930.00	66.2 PK	74.0	-7.8	1.14 V	157	12.74	53.46
8	15930.00	51.9 AV	54.0	-2.1	1.14 V	157	-1.56	53.46

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	5458.70	64.8 PK	74.0	-9.2	1.65 H	20	23.03	41.77
2	5458.70	50.9 AV	54.0	-3.1	1.65 H	20	9.13	41.77
3	#5470.00	61.8 PK	68.3	-6.5	1.60 H	22	30.00	41.80
4	*5510.00	105.2 PK			1.58 H	19	63.33	41.87
5	*5510.00	91.6 AV			1.58 H	19	49.73	41.87
6	11020.00	56.8 PK	74.0	-17.2	1.01 H	2	8.38	48.46
7	11020.00	44.6 AV	54.0	-9.4	1.01 H	2	-3.86	48.46
8	#16530.00	59.7 PK	68.3	-8.7	1.11 H	260	15.10	54.55
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	5458.30	68.0 PK	74.0	-6.0	1.18 V	359	26.23	41.77
2	5458.30	53.1 AV	54.0	-0.9	1.18 V	359	11.33	41.77
3	#5470.00	66.4 PK	68.3	-1.9	1.23 V	324	34.60	41.80
4	*5510.00	110.9 PK			1.19 V	359	69.03	41.87
5	*5510.00	96.2 AV			1.19 V	359	54.33	41.87
6	11020.00	64.9 PK	74.0	-9.1	1.20 V	300	16.44	48.46
7	11020.00	47.5 AV	54.0	-6.5	1.20 V	300	-0.96	48.46
8	#16530.00	57.2 PK	68.3	-11.1	1.15 V	286	12.65	54.55

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 118	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

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	*5590.00	106.3 PK			1.66 H	20	64.33	41.97
2	*5590.00	93.2 AV			1.66 H	20	51.23	41.97
3	11180.00	57.4 PK	74.0	-16.6	1.58 H	48	8.86	48.54
4	11180.00	44.2 AV	54.0	-9.8	1.58 H	48	-4.34	48.54
5	#16770.00	52.2 PK	68.3	-16.1	1.32 H	66	7.14	55.10

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	*5590.00	115.1 PK			1.22 V	320	73.13	41.97
2	*5590.00	98.8 AV			1.22 V	320	56.83	41.97
3	11180.00	65.8 PK	74.0	-8.2	1.18 V	311	17.26	48.54
4	11180.00	47.2 AV	54.0	-6.8	1.18 V	311	-1.34	48.54
5	#16770.00	57.1 PK	68.3	-11.2	1.14 V	204	12.00	55.10

- 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 is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH 1012 hPa	TESTED BY	Eric Lee

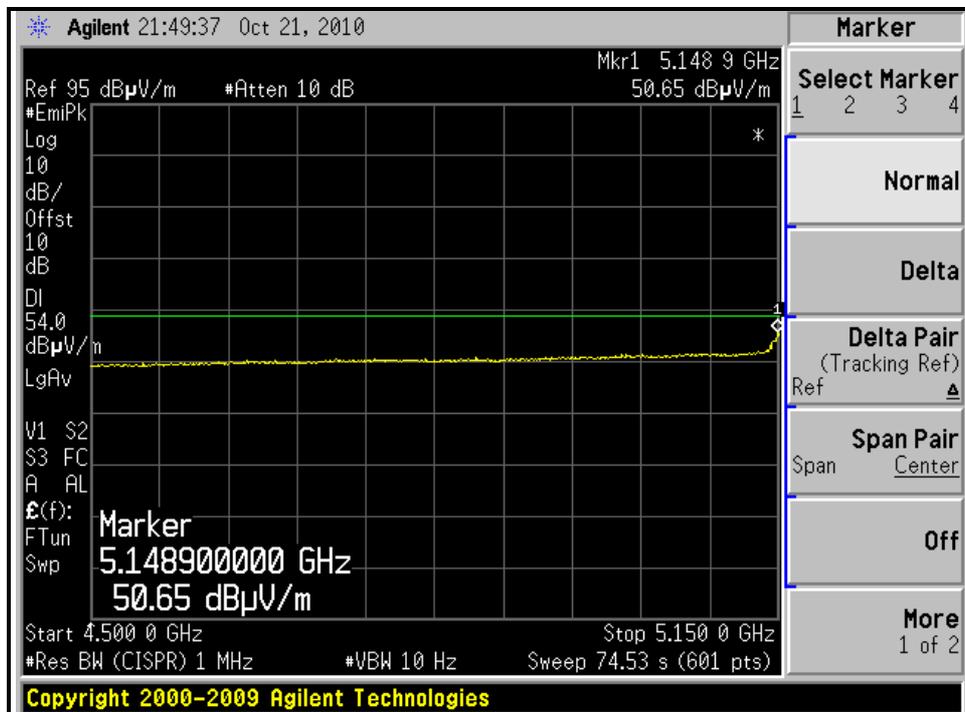
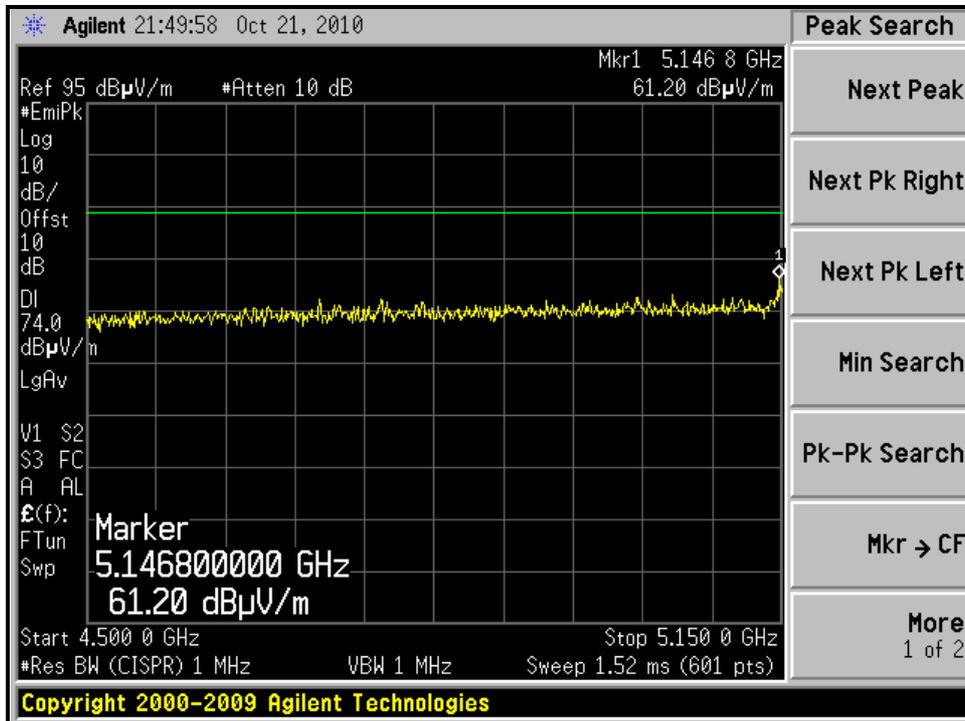
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	107.4 PK			1.66 H	33	65.34	42.06
2	*5670.00	94.2 AV			1.66 H	33	52.14	42.06
3	#5725.00	61.3 PK	68.3	-7.0	1.65 H	20	29.16	42.14
4	11340.00	57.4 PK	74.0	-16.6	1.24 H	51	8.86	48.54
5	11340.00	44.2 AV	54.0	-9.8	1.24 H	51	-4.31	48.54
6	#17010.00	59.0 PK	68.3	-9.3	1.58 H	45	13.33	55.65
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	*5670.00	115.8 PK			1.19 V	308	73.74	42.06
2	*5670.00	98.9 AV			1.19 V	308	56.84	42.06
3	#5725.00	65.3 PK	68.3	-3.0	1.20 V	311	33.16	42.14
4	11340.00	65.3 PK	74.0	-8.7	1.18 V	289	16.76	48.54
5	11340.00	47.4 AV	54.0	-6.6	1.18 V	289	-1.14	48.54
6	#17010.00	56.9 PK	68.3	-11.4	1.22 V	340	11.25	55.65

- 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.



A D T

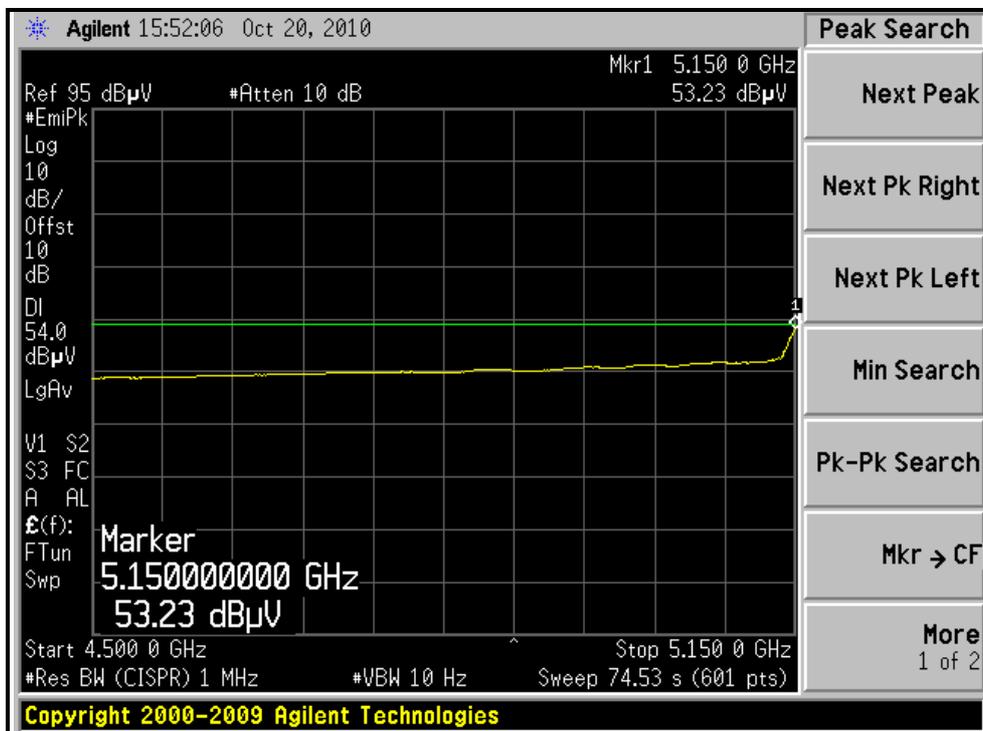
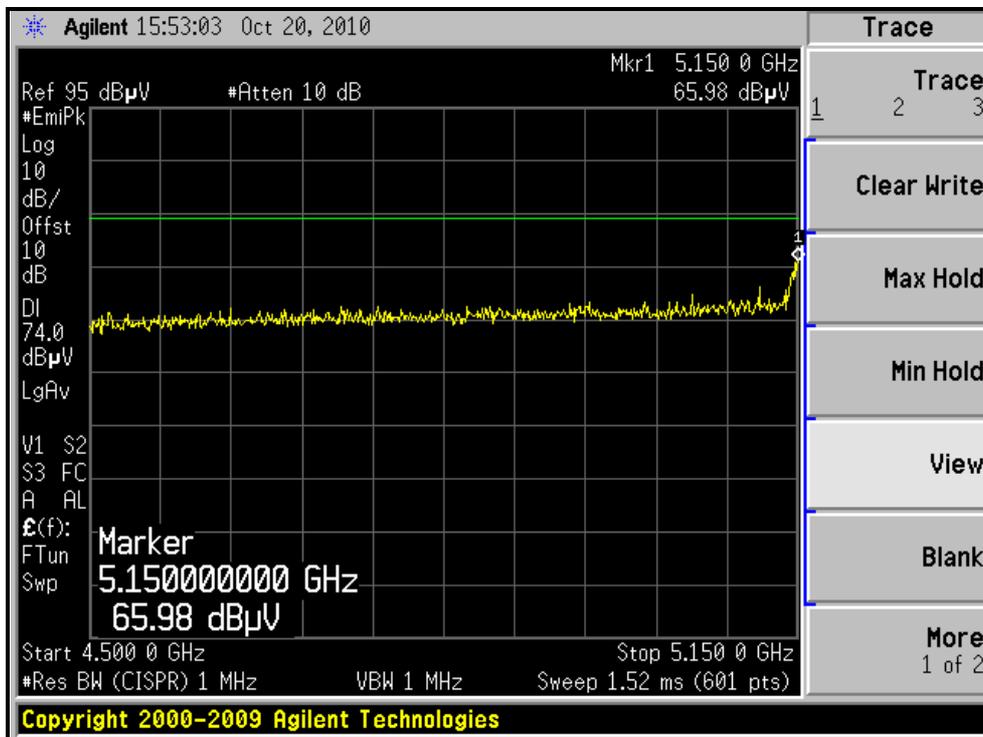
RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH38, HORIZONTAL)





A D T

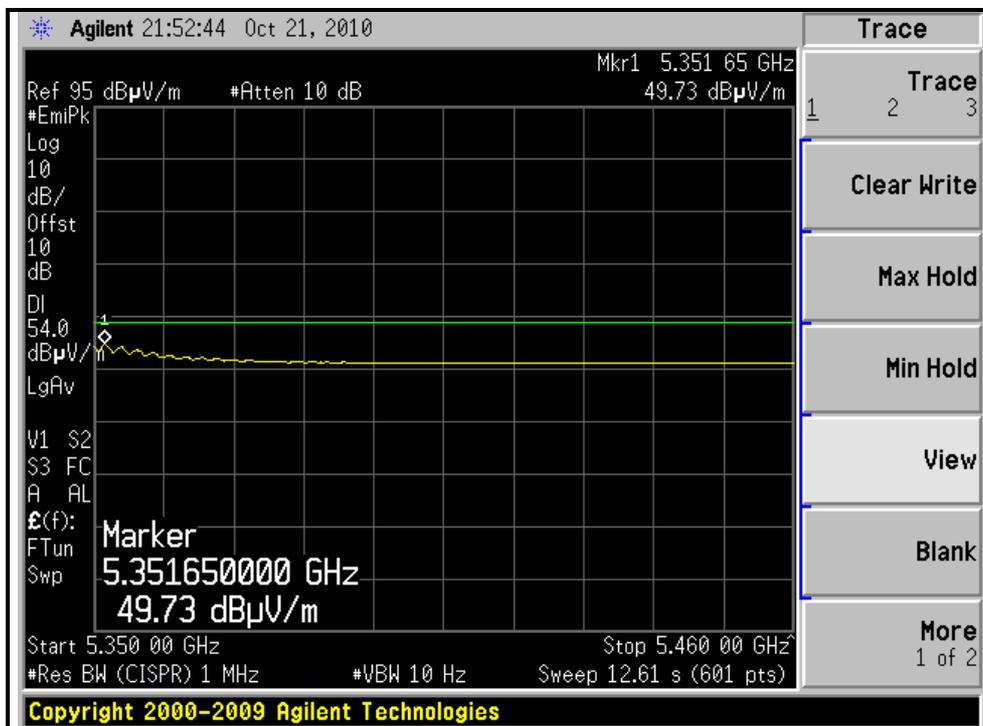
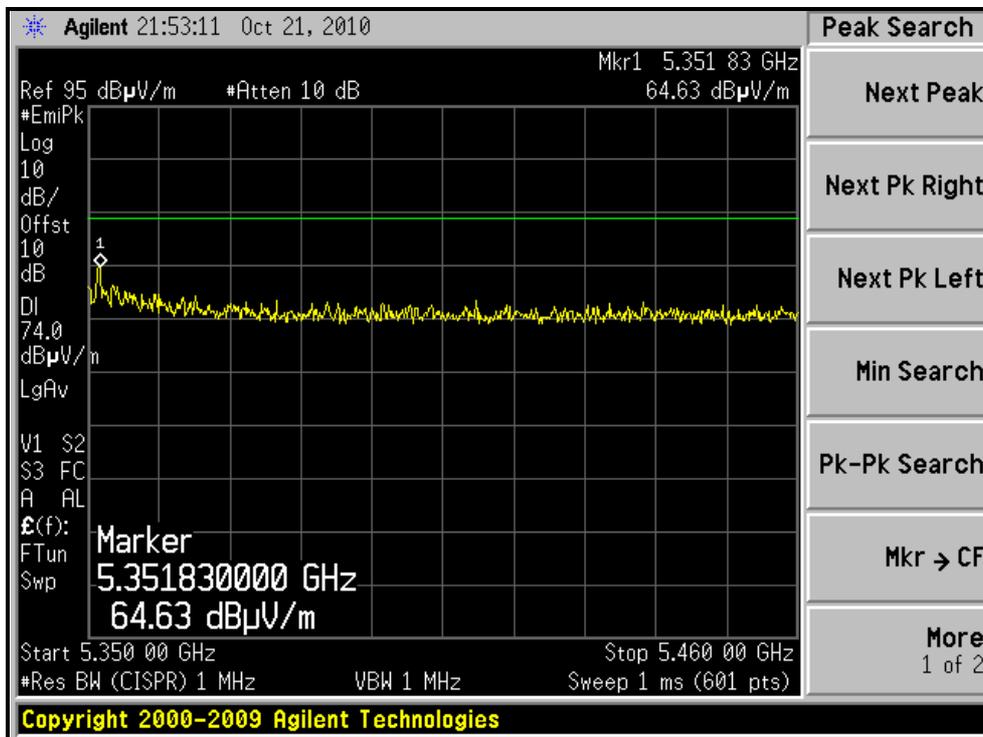
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH38, VERTICAL)





A D T

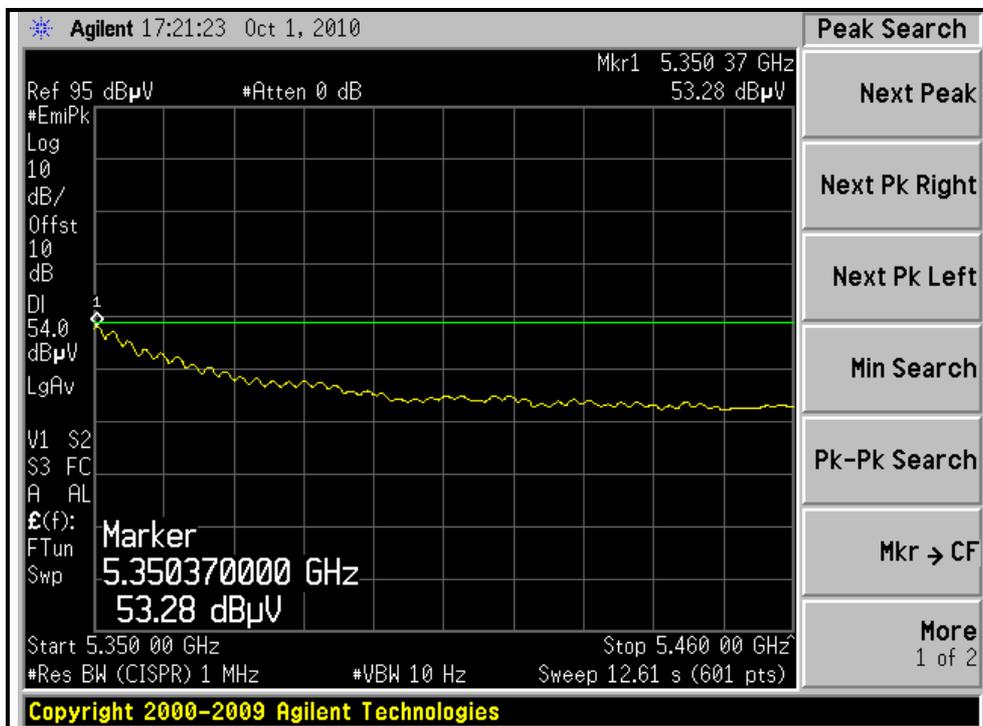
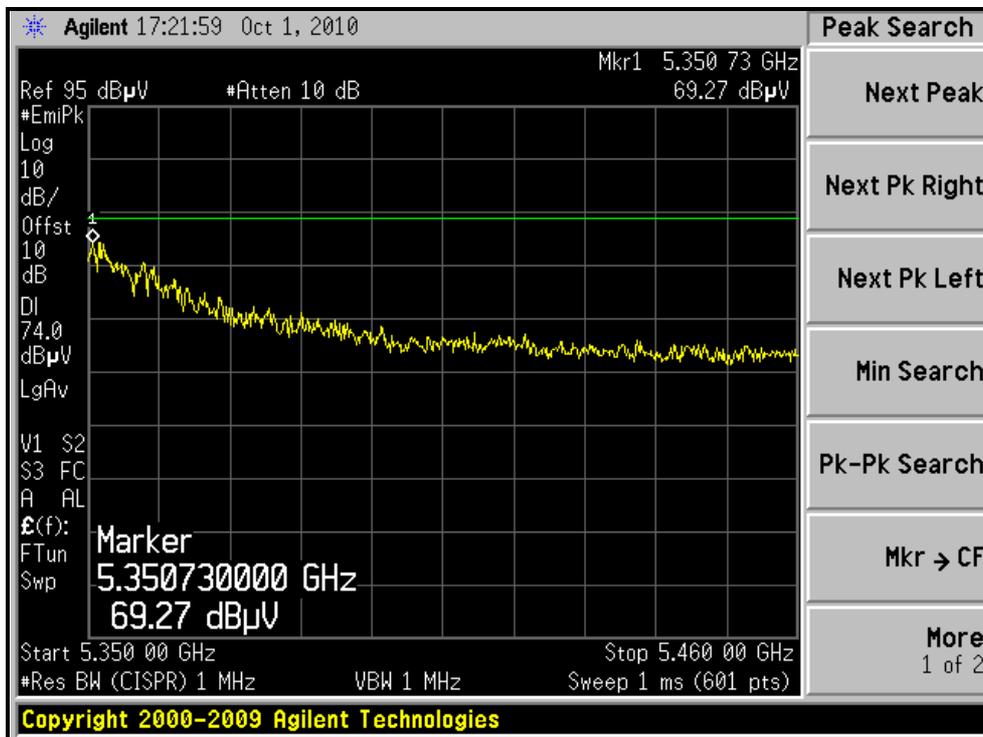
RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH62, HORIZONTAL)





A D T

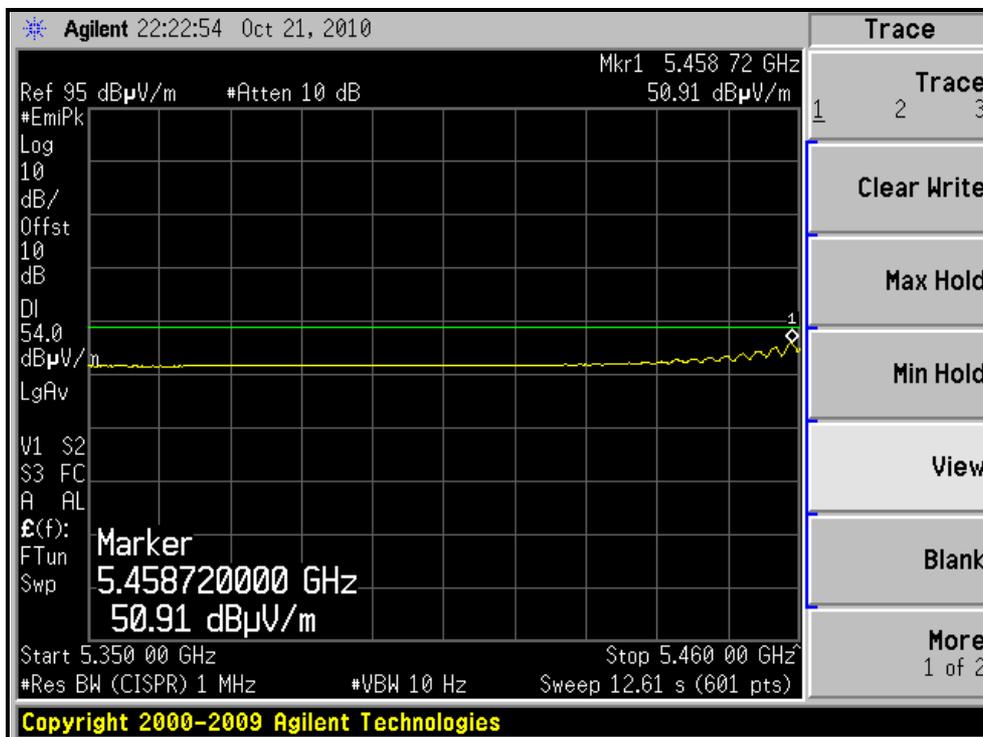
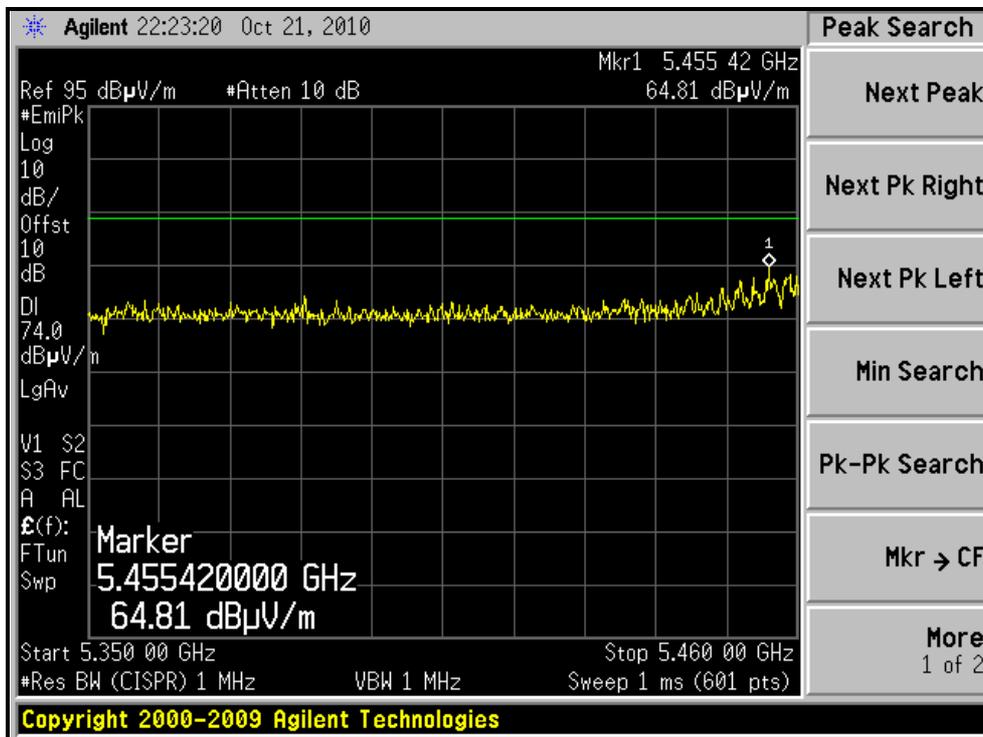
RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH62, VERTICAL)





A D T

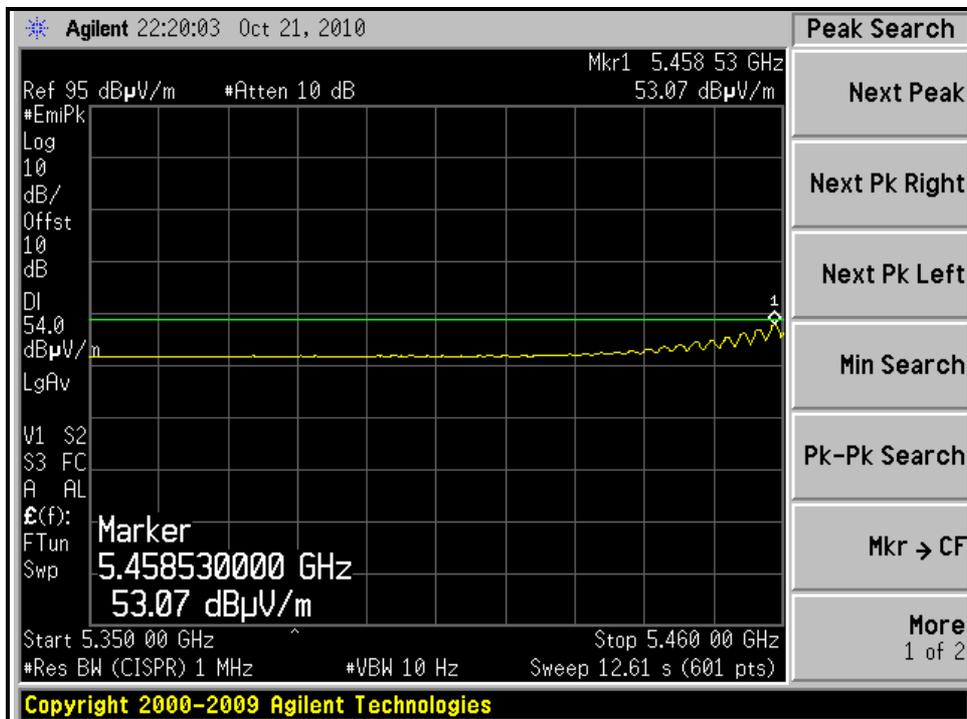
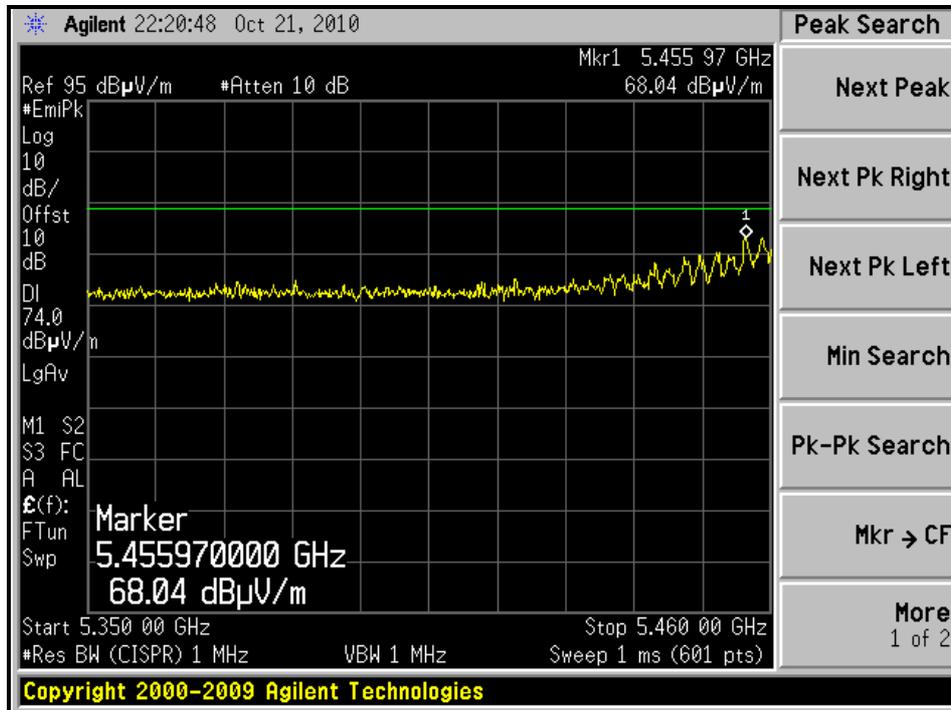
RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH102, HORIZONTAL)





A D T

RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH102, VERTICAL)





4.3 OUTPUT TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF OUTPUT 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
Spectrum Analyzer	E4446A	MY48250254	July 14, 2010	July 13, 2011

NOTE:

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

4.3.3 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 3MHz. Power average 100 times.
4. Using the spectrum analyzer's channel power measurement function to measure the output power.

NOTE:

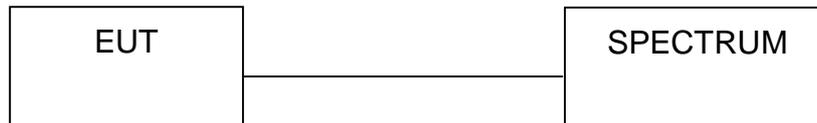
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

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.



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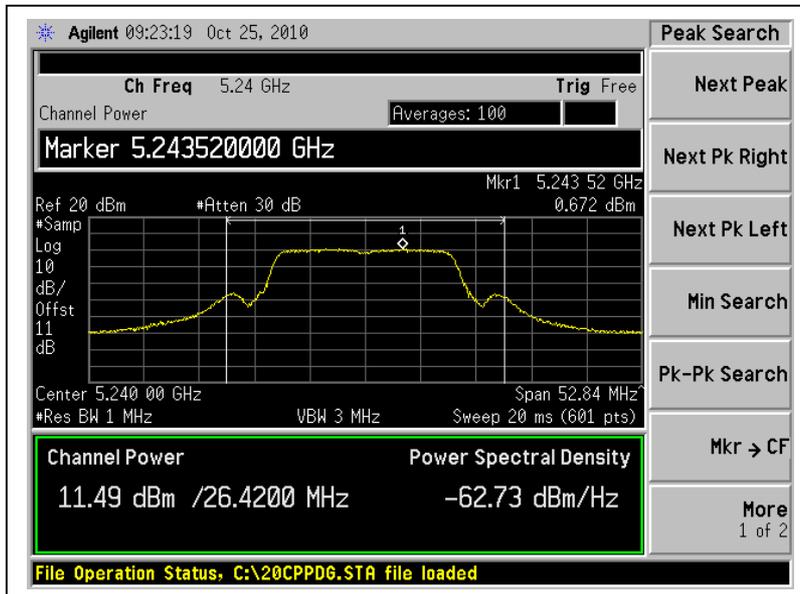
4.3.7 TEST RESULTS

802.11a OFDM MODULATION:

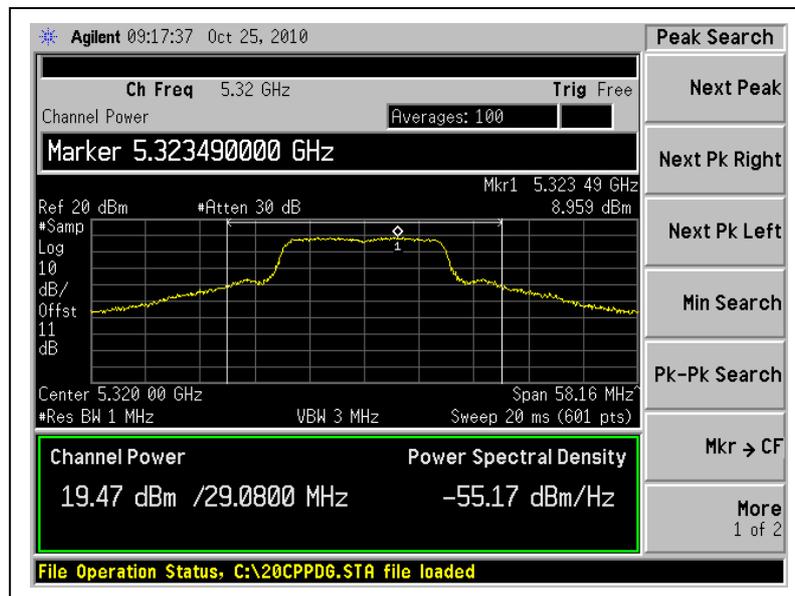
CHANNEL	CHANNEL FREQUENCY (MHz)	OUTPUT POWER (mW)	OUTPUT POWER (dBm)	OUTPUT POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/ FAIL
36	5180	13.8	11.4	17.0	20.17	PASS
40	5200	13.8	11.4	17.0	20.67	PASS
48	5240	14.1	11.5	17.0	20.83	PASS
52	5260	81.3	19.1	24.0	26.42	PASS
60	5300	87.1	19.4	24.0	28.08	PASS
64	5320	89.1	19.5	24.0	29.08	PASS
100	5500	91.2	19.6	24.0	32.08	PASS
120	5600	91.2	19.6	24.0	40.25	PASS
140	5700	91.2	19.6	24.0	40.17	PASS

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

Output Power:
CH48



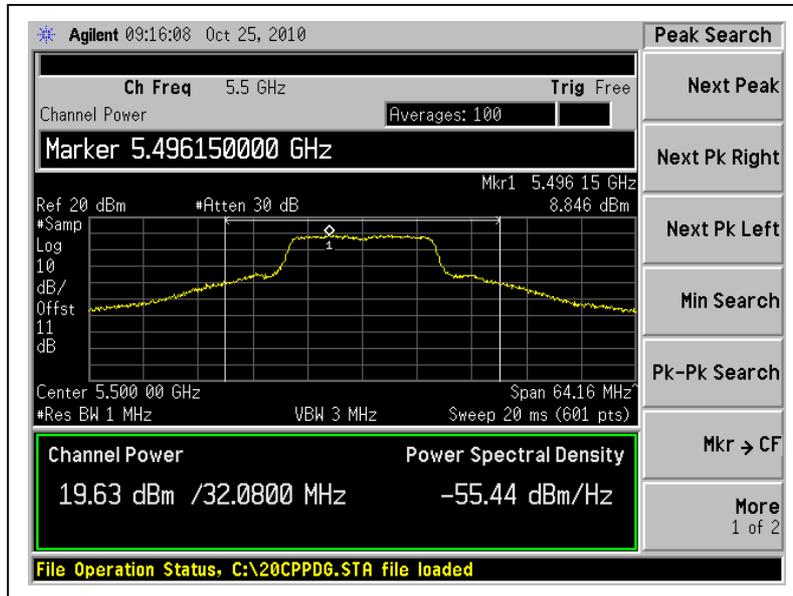
CH64





A D T

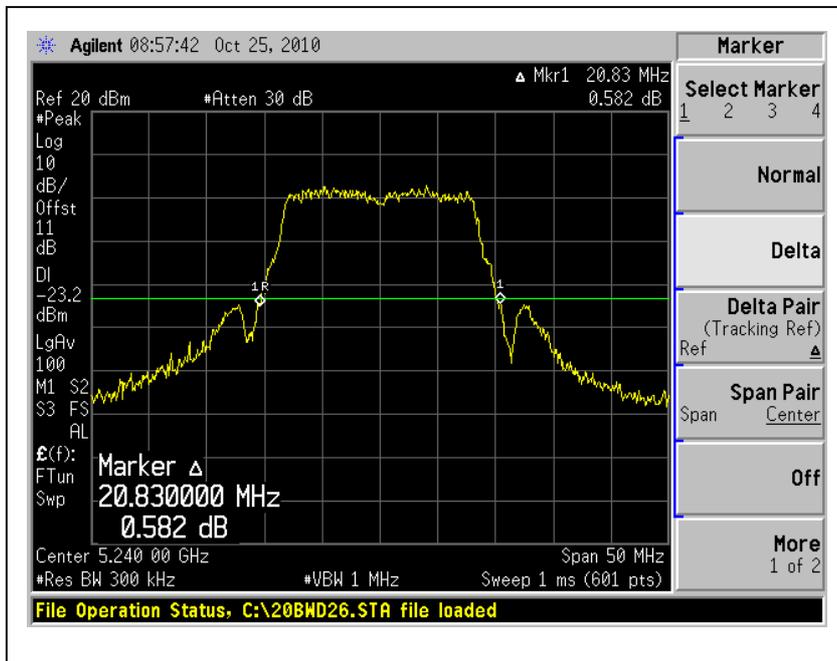
CH100



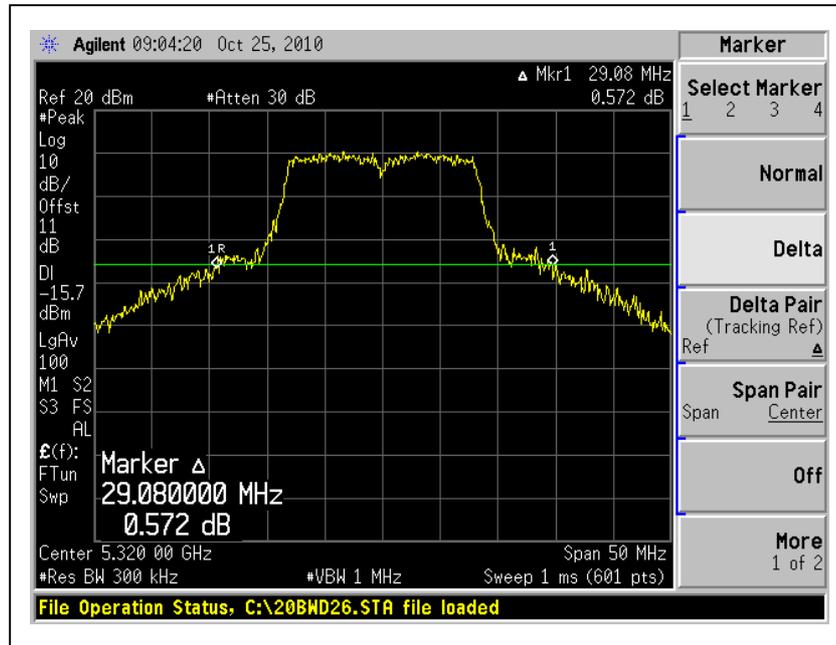


A D T

26dB Occupied Bandwidth: CH48



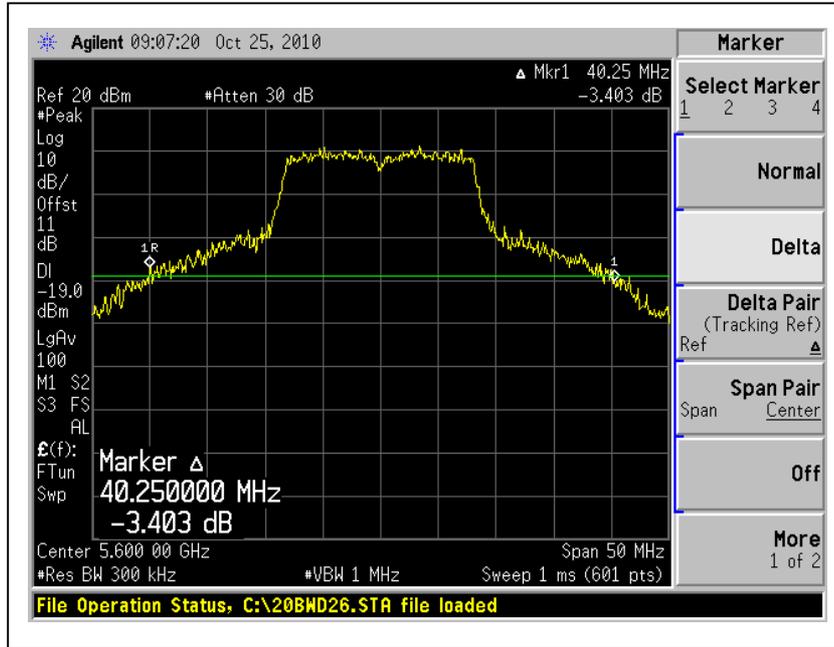
CH64





A D T

CH120





A D T

802.11n (20MHz) OFDM MODULATION:

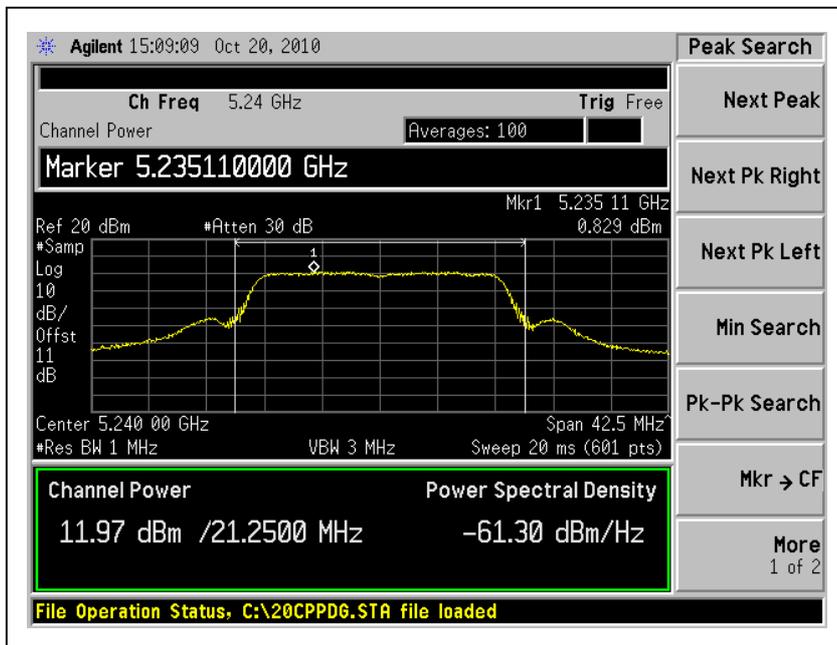
CHANNEL	CHANNEL FREQUENCY (MHz)	OUTPUT POWER (dBm)		TOTAL OUTPUT POWER (mW)	TOTAL OUTPUT POWER (dBm)	OUTPUT POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/ FAIL
		Chain 0	Chain 2					
36	5180	11.8	11.6	29.6	14.7	17.0	20.92	PASS
40	5200	11.9	11.3	29.0	14.6	17.0	21	PASS
48	5240	12.0	11.8	31.0	14.9	17.0	21.25	PASS
52	5260	17.8	19.1	141.5	21.5	24.0	25.17	PASS
60	5300	16.8	18.9	125.5	21.0	24.0	25.5	PASS
64	5320	16.5	16.5	89.3	19.5	24.0	25.33	PASS
100	5500	18.1	18.8	140.4	21.5	24.0	27.5	PASS
120	5600	19.0	18.7	153.6	21.9	24.0	36.25	PASS
140	5700	18.8	19.2	159.0	22.0	24.0	38.17	PASS

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

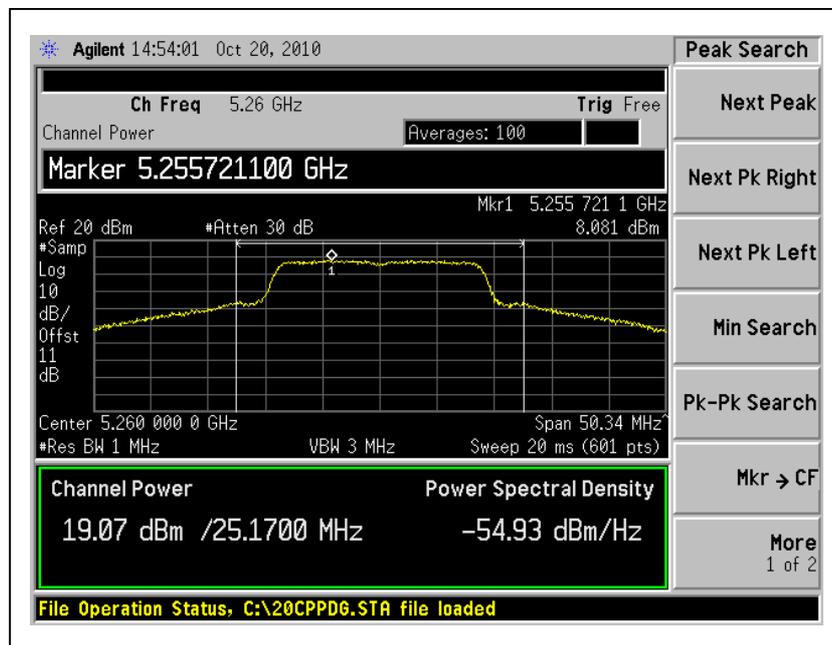


A D T

Output Power:
For Chain (0) :CH48



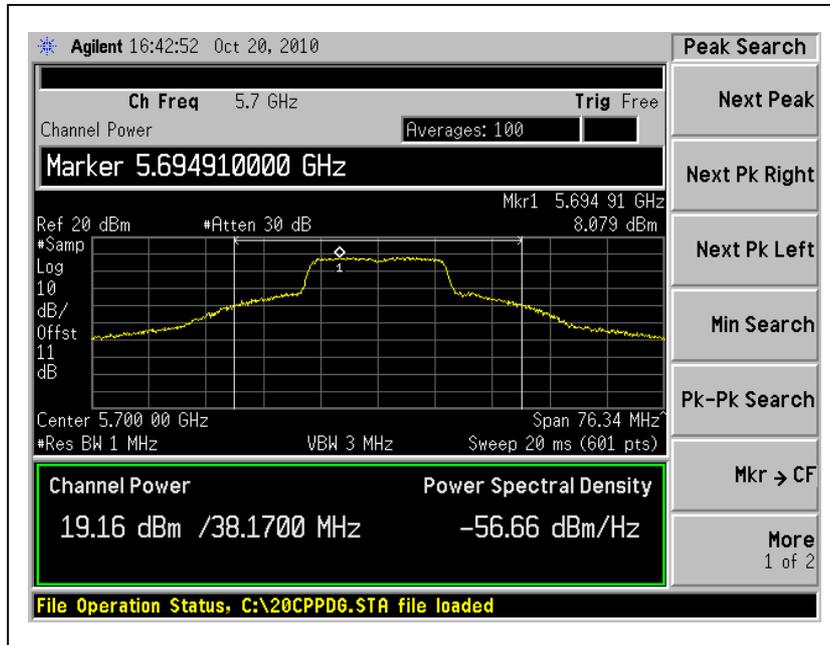
For Chain (2) :CH52





A D T

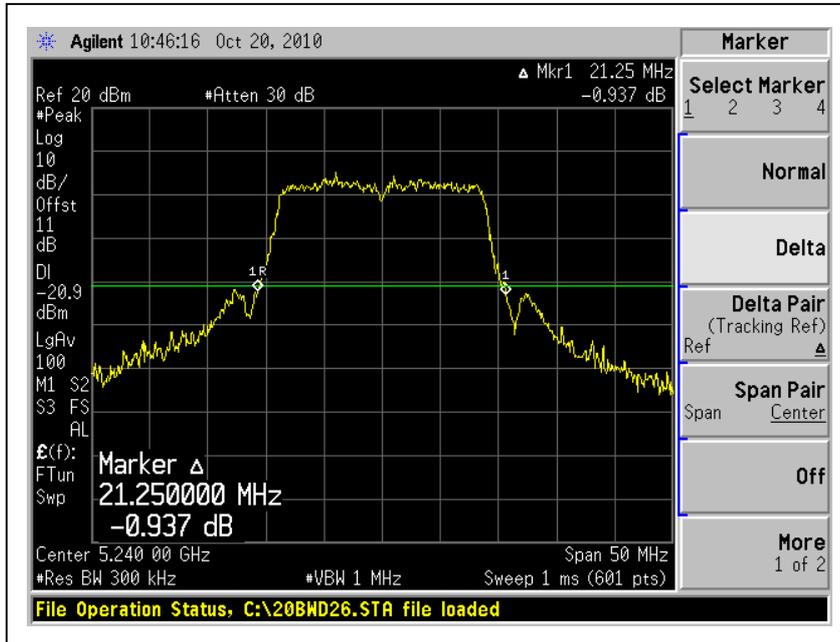
For Chain (1) :CH140



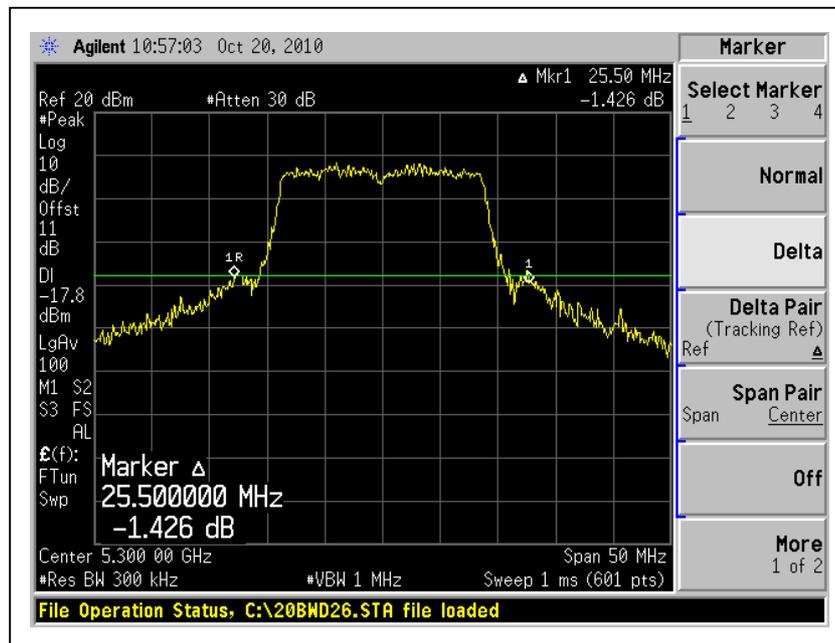


A D T

26dB Occupied Bandwidth: CH48



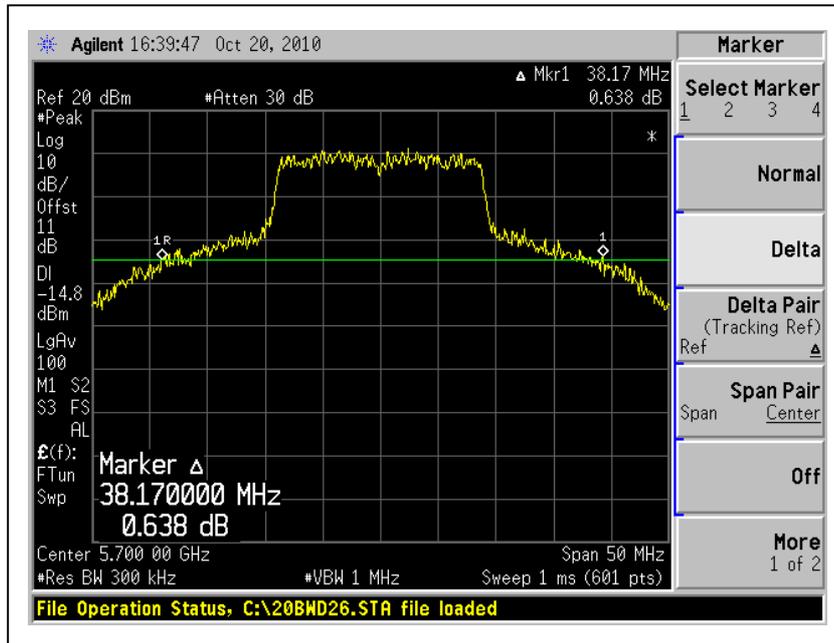
CH60





A D T

CH140





A D T

802.11n (40MHz) OFDM MODULATION:

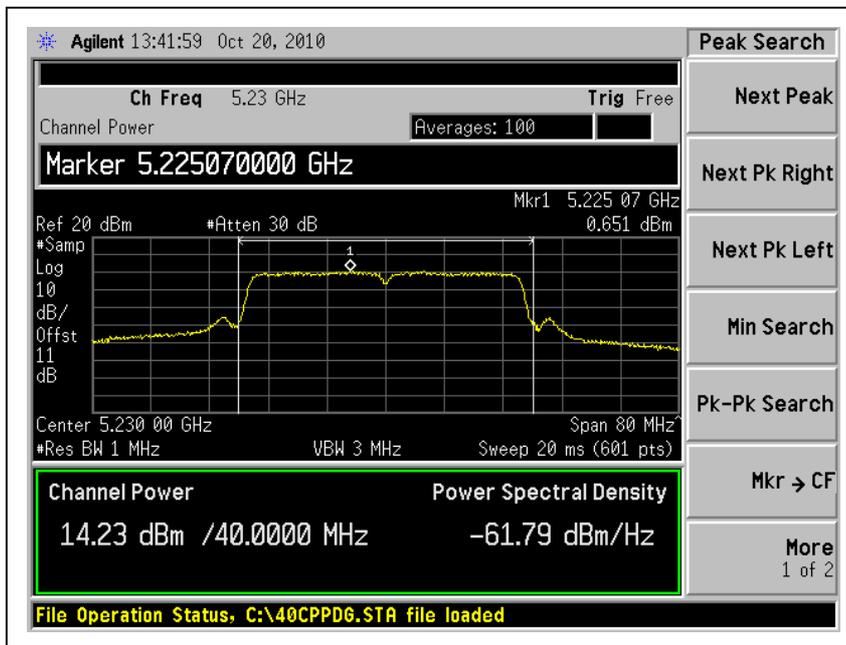
CHANNEL	CHANNEL FREQUENCY (MHz)	OUTPUT POWER (dBm)		TOTAL OUTPUT POWER (mW)	TOTAL OUTPUT POWER (dBm)	OUTPUT POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/ FAIL
		Chain 0	Chain 2					
38	5190	11.1	11.4	26.7	14.3	17.0	41.83	PASS
46	5230	13.4	14.2	48.2	16.8	17.0	40	PASS
54	5270	18.9	19.1	158.9	22.0	24.0	44.33	PASS
62	5310	14.5	15.5	63.7	18.0	24.0	44	PASS
102	5510	15.1	15.7	69.5	18.4	24.0	39.67	PASS
118	5590	18.8	20.2	180.6	22.6	24.0	79.67	PASS
134	5670	18.4	19.3	154.3	21.9	24.0	85.5	PASS

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

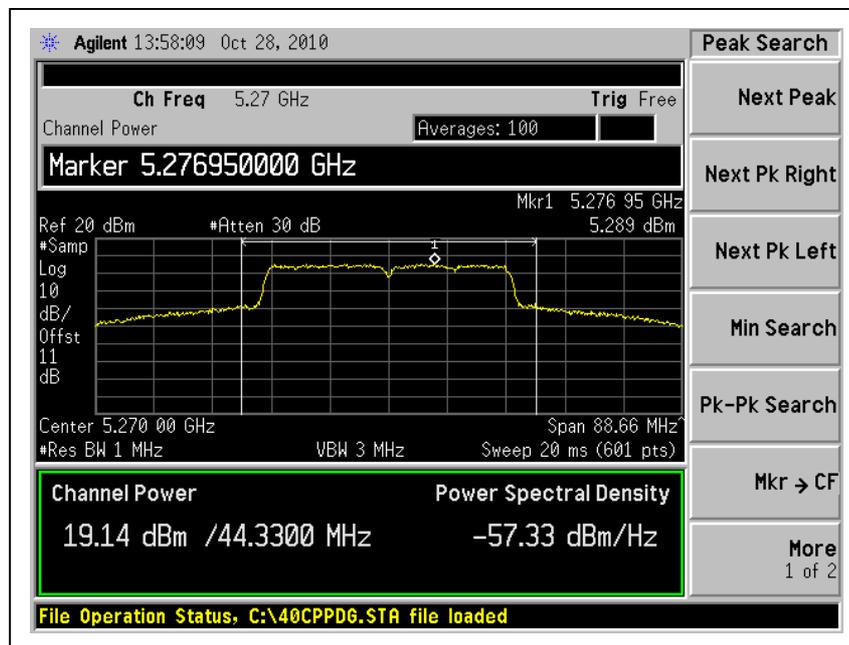


A D T

Output Power:
For Chain (2) :CH46



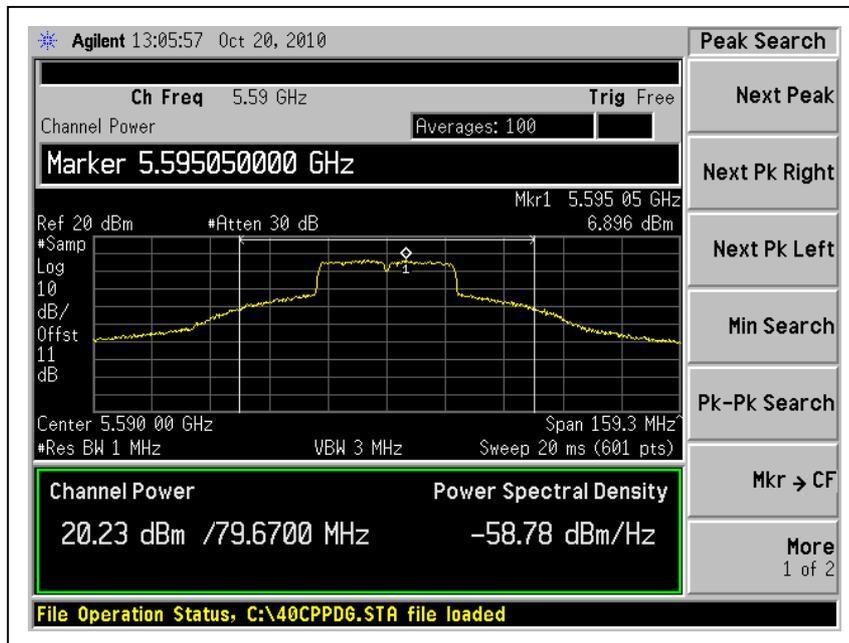
For Chain (2) :CH54



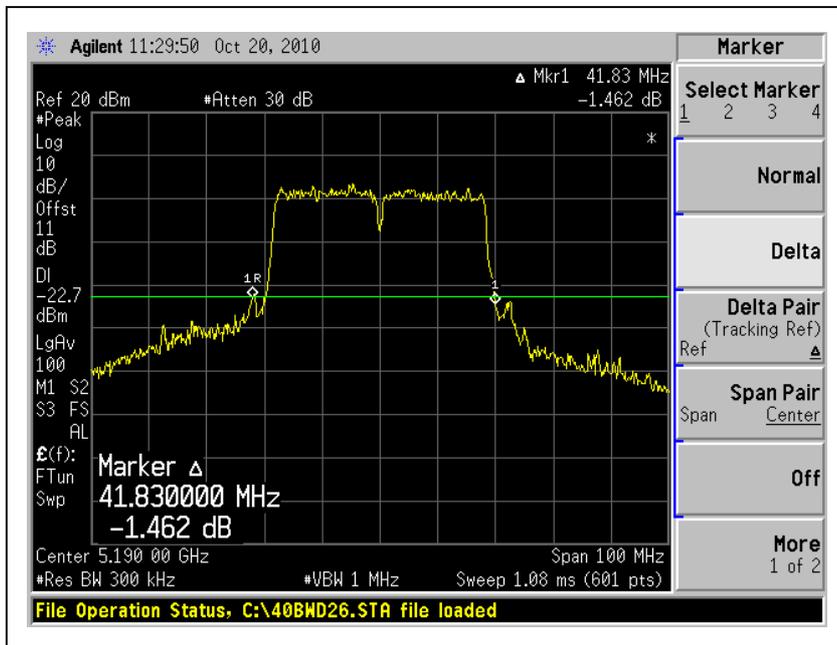


A D T

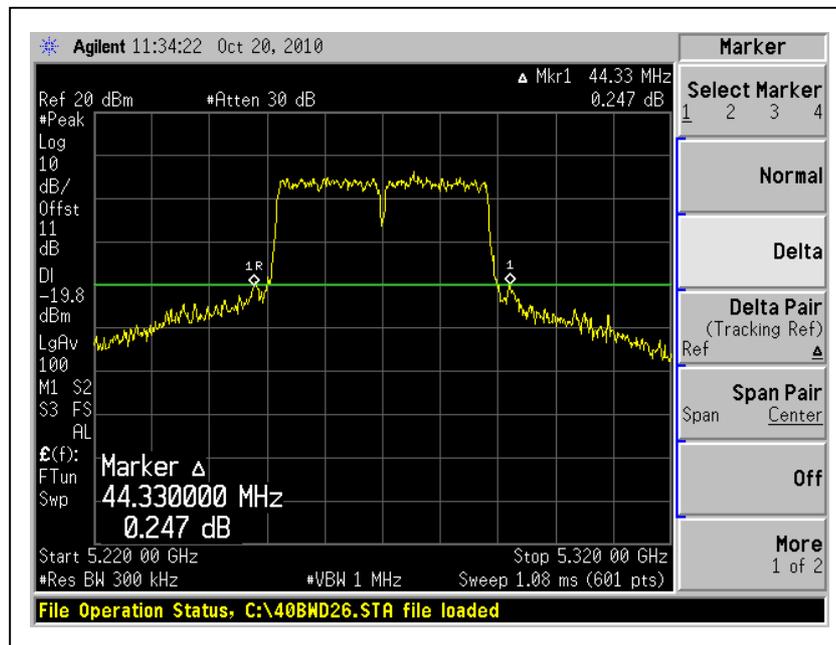
For Chain (2) :CH118



26dB Occupied Bandwidth: CH38



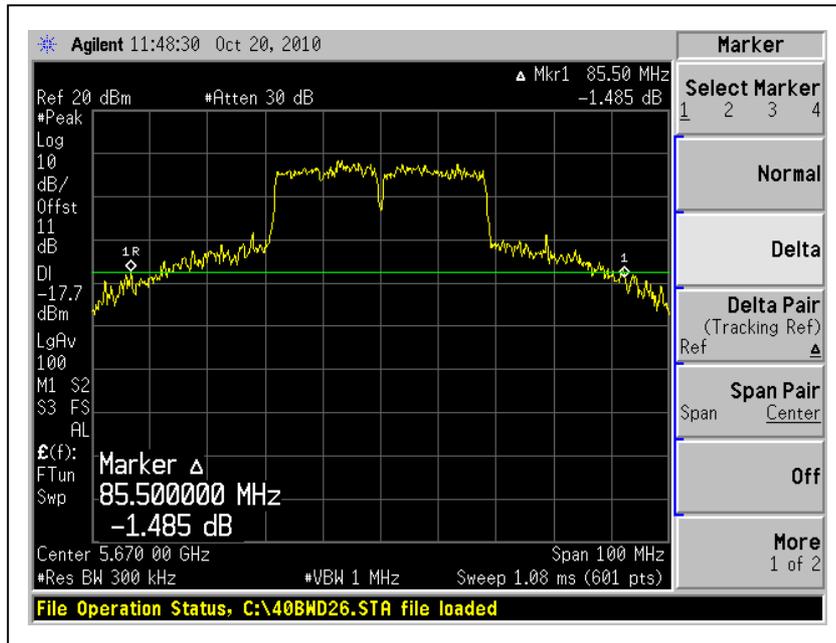
CH54





A D T

CH134



4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Frequency Band	Limit
5.15 – 5.25 GHz	13dB
5.25 – 5.35 GHz	13dB
5.47 – 5.725GHz	13dB
5.725 – 5.825 GHz	13dB

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	E4446A	MY48250254	July 14, 2010	July 13, 2011

NOTE:

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

4.4.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set the spectrum bandwidth span to view the entire spectrum.
3. Using peak detector and Max-hold function for Trace 1 (RB=1MHz, VB=3MHz) and 2 (RB=1MHz, VB=300kHz).
4. The largest difference between Trace 1 and Trace 2 in any 1MHz band on any frequency was recorded.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.



A D T

4.4.7 TEST RESULTS

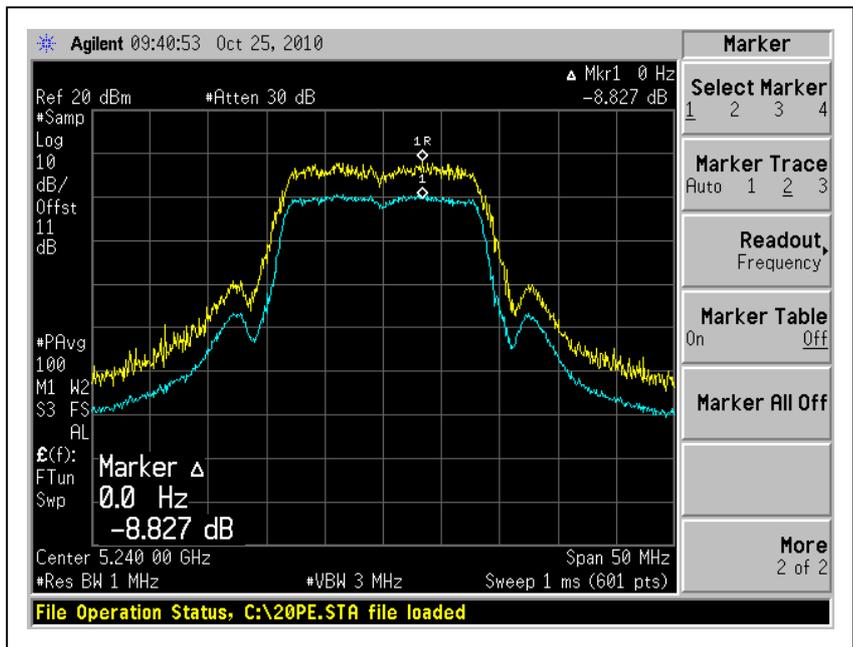
802.11a OFDM MODULATION

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
36	5180	7.7	13	PASS
40	5200	7.7	13	PASS
48	5240	8.8	13	PASS
52	5260	8.2	13	PASS
60	5300	7.5	13	PASS
64	5320	7.2	13	PASS
100	5500	8.0	13	PASS
132	5600	7.5	13	PASS
140	5700	8.0	13	PASS

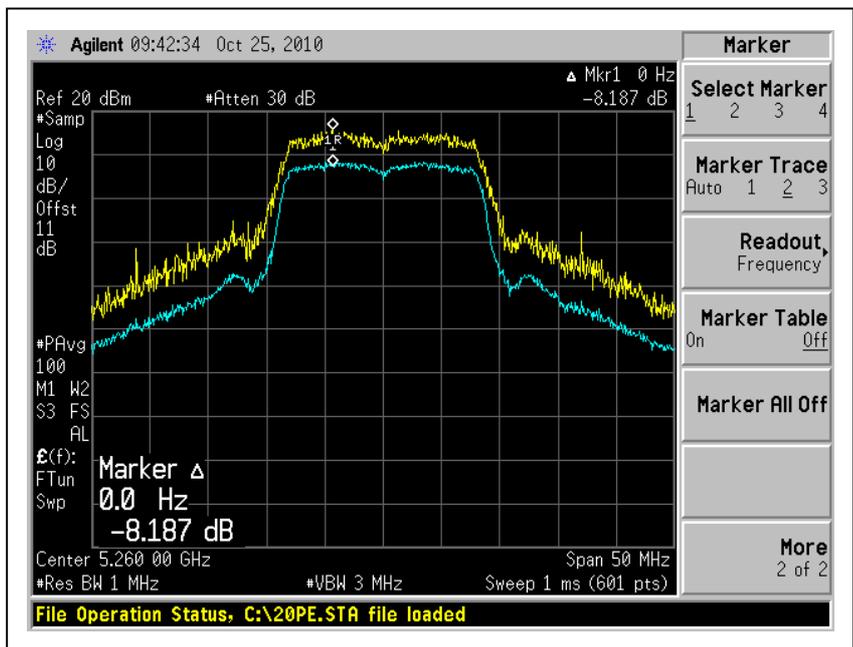


A D T

CH48



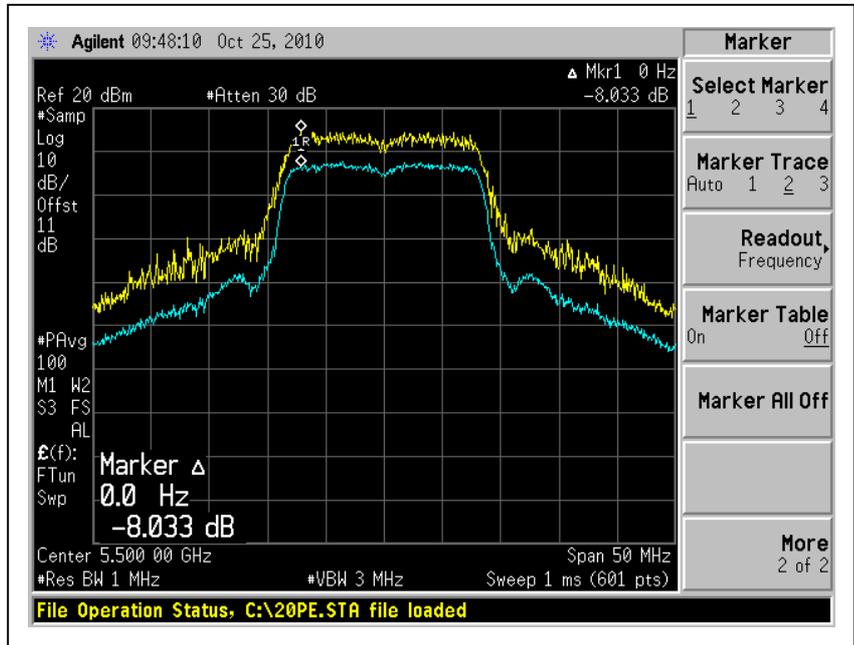
CH52





A D T

CH100





A D T

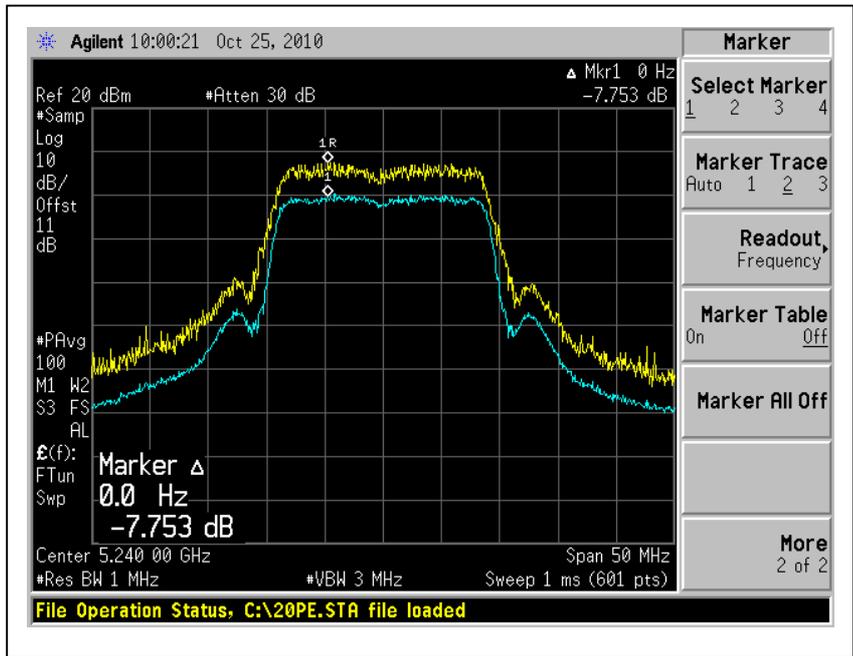
802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
36	5180	7.3	13	PASS
40	5200	7.0	13	PASS
48	5240	7.8	13	PASS
52	5260	7.5	13	PASS
60	5300	7.7	13	PASS
64	5320	8.2	13	PASS
100	5500	8.1	13	PASS
120	5600	8.0	13	PASS
140	5700	8.4	13	PASS

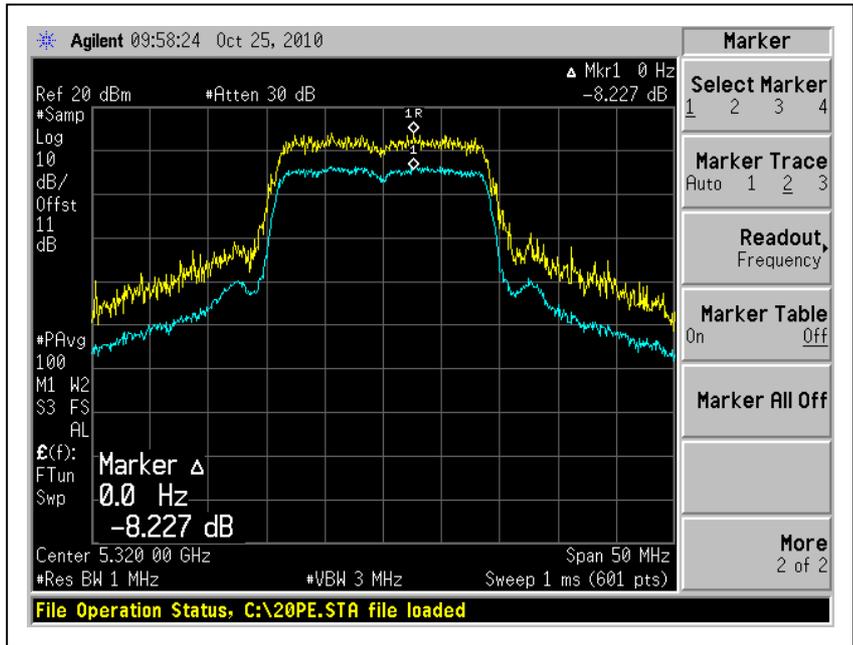


A D T

CH48



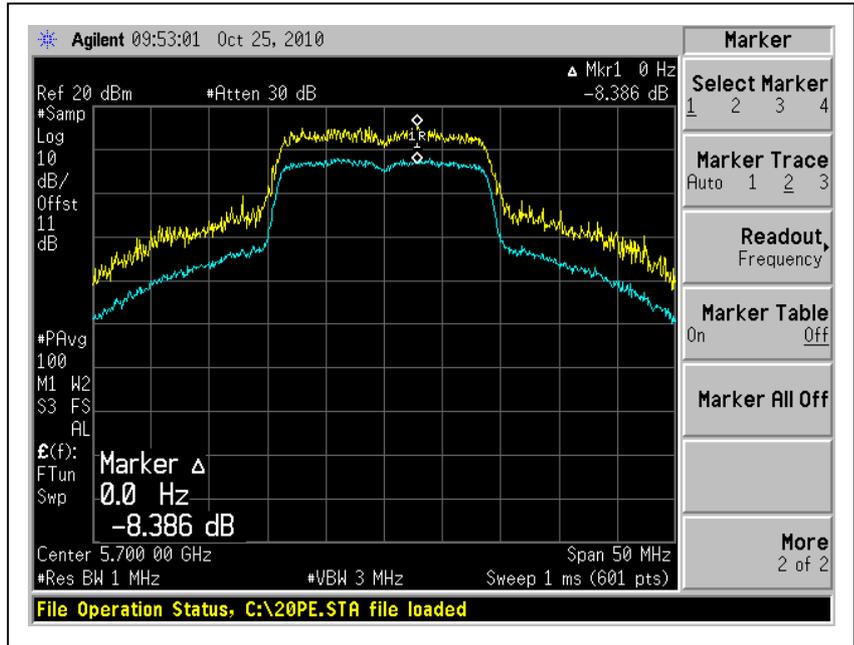
CH64





A D T

CH140





A D T

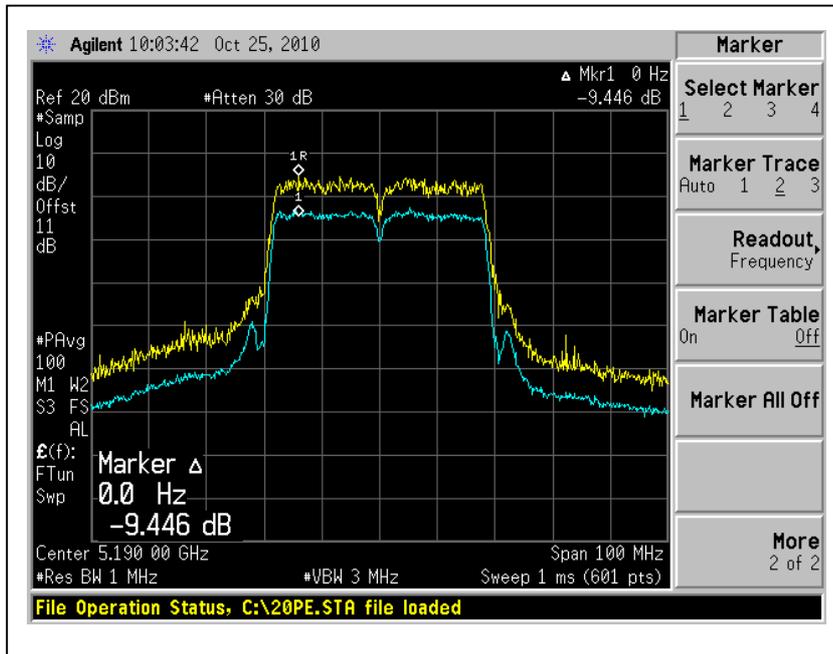
802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
38	5190	9.4	13	PASS
46	5230	8.1	13	PASS
54	5270	8.7	13	PASS
62	5310	9.7	13	PASS
102	5510	8.5	13	PASS
118	5590	11.0	13	PASS
134	5670	8.6	13	PASS

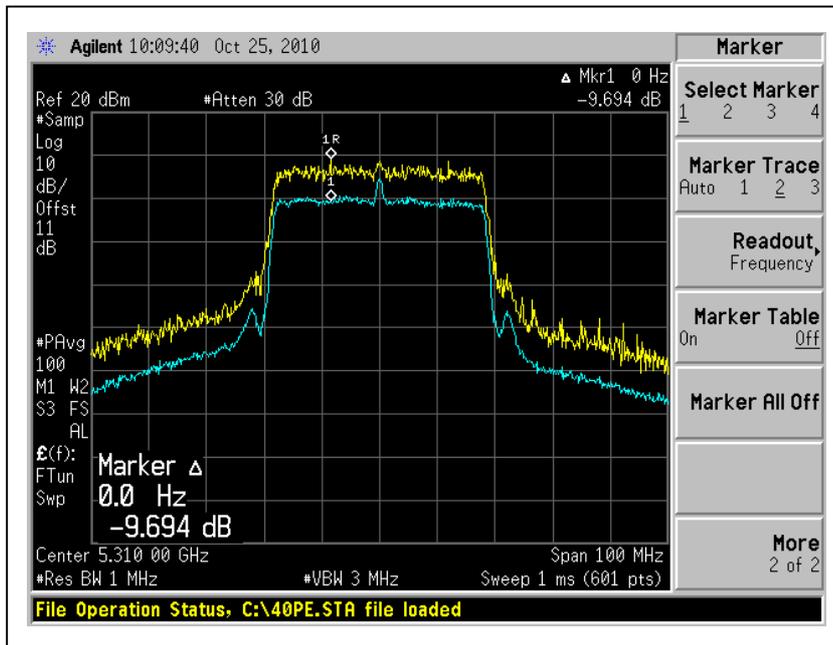


A D T

CH38



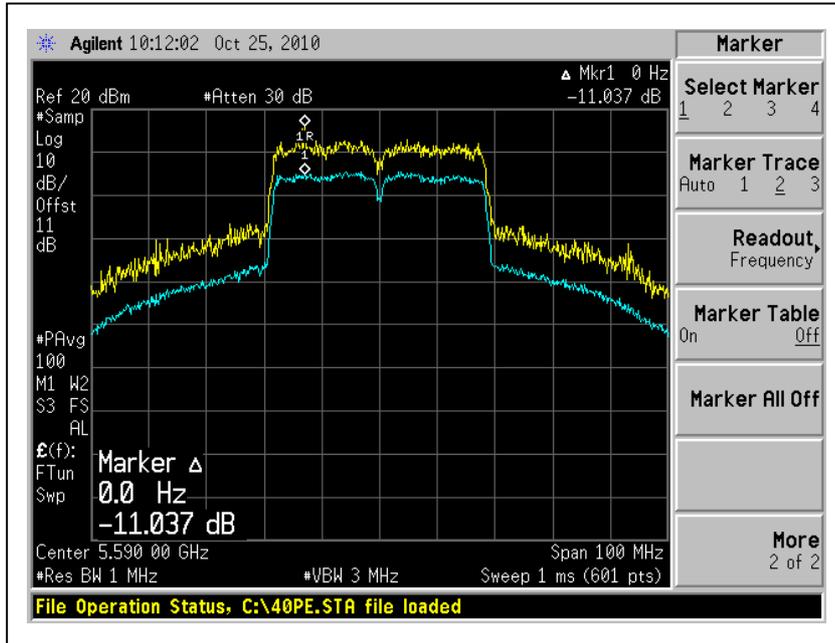
CH62





A D T

CH118



4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Frequency Band	Limit
5.15 ~ 5.25GHz	4dBm
5.25 ~ 5.35GHz	11dBm
5.47 – 5.725GHz	11dBm
5.725 ~ 5.825GHz	17dBm

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	E4446A	MY48250254	July 14, 2010	July 13, 2011

NOTE:

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

4.5.3 TEST PROCEDURES

1. The transmitter output was connected to the spectrum analyzer.
2. Set RBW=1MHz, VBW=3MHz. The PPSD is the highest level found across the emission in any 1MHz band.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

Same as 4.3.6



A D T

4.5.7 TEST RESULTS

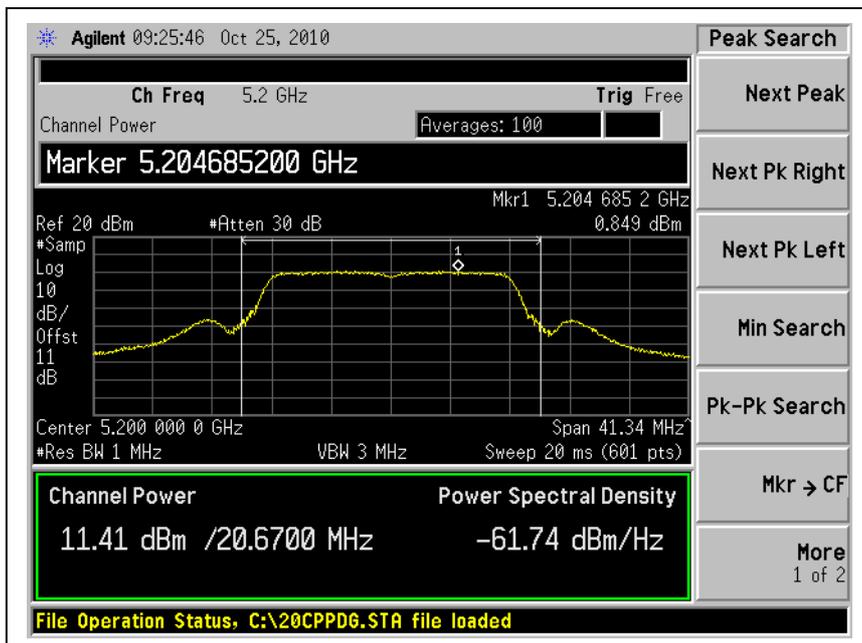
802.11a OFDM MODULATION

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	0.5	4	PASS
40	5200	0.8	4	PASS
48	5240	0.7	4	PASS
52	5260	8.5	11	PASS
60	5300	8.6	11	PASS
64	5320	9.0	11	PASS
100	5500	8.8	11	PASS
120	5600	8.7	11	PASS
140	5700	8.9	11	PASS

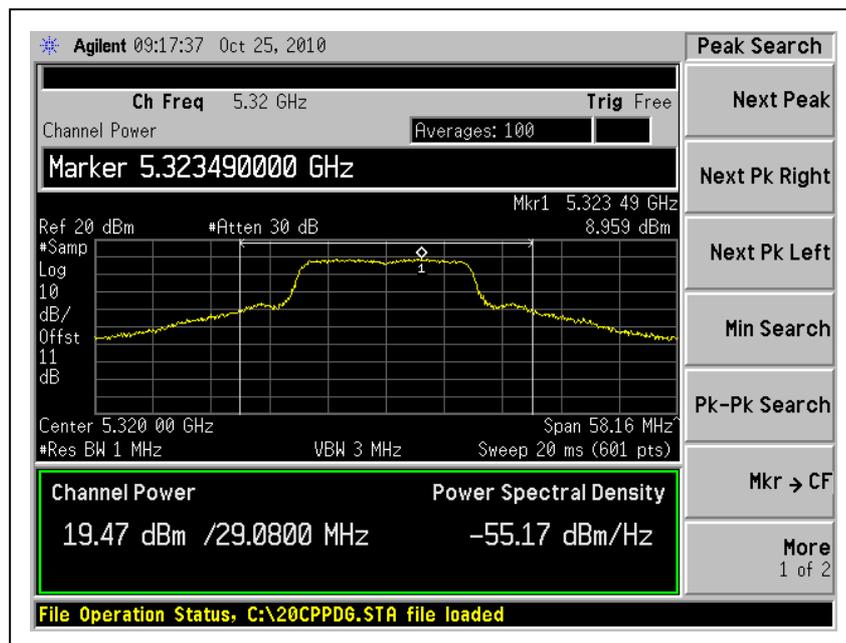


A D T

CH40



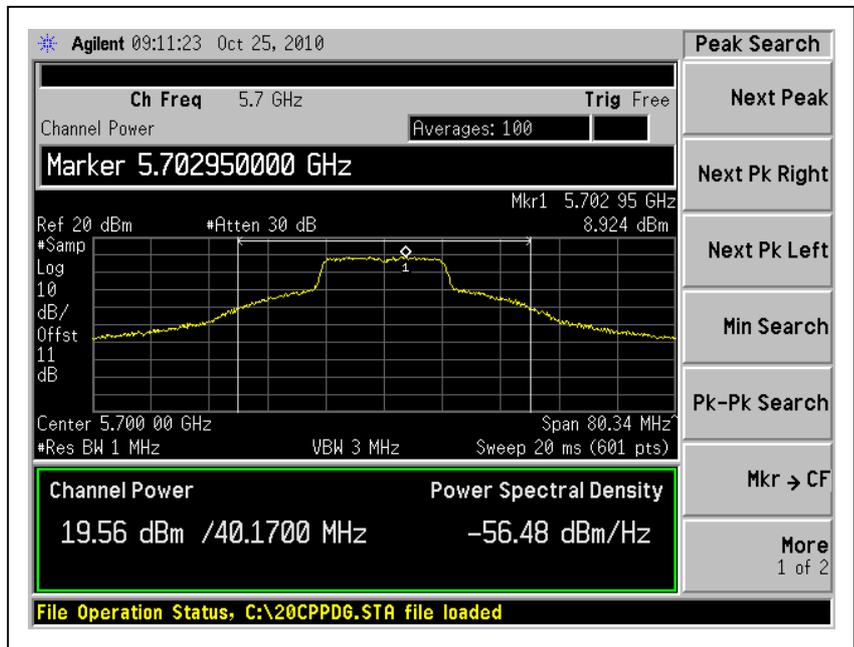
CH64





A D T

CH140





A D T

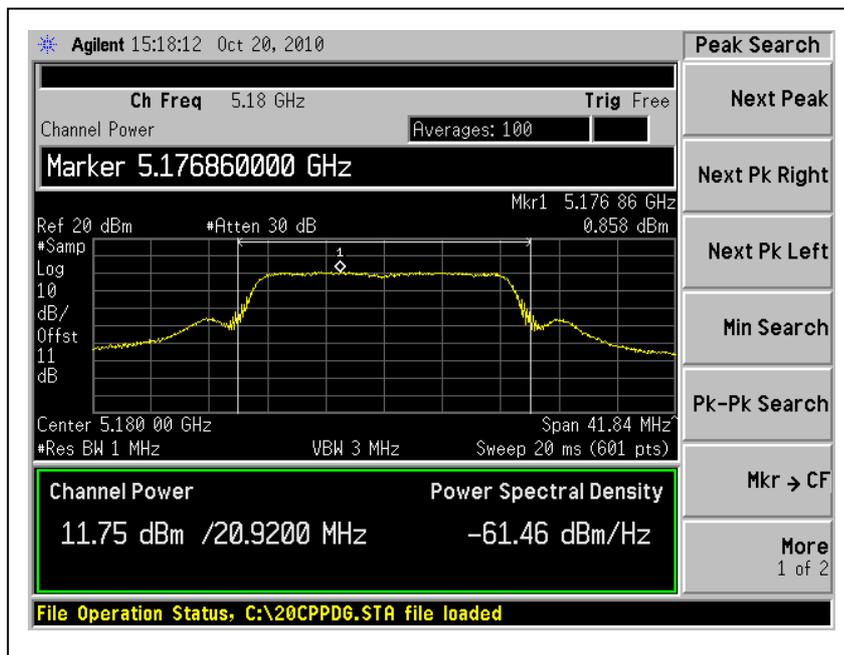
802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain (2)			
36	5180	0.9	0.5	3.7	4	PASS
40	5200	0.8	0.2	3.5	4	PASS
48	5240	0.8	0.7	3.8	4	PASS
52	5260	7.3	8.1	10.7	11	PASS
60	5300	6.0	8.1	10.2	11	PASS
64	5320	5.3	5.5	8.4	11	PASS
100	5500	7.3	7.6	10.5	11	PASS
120	5600	7.9	7.6	10.8	11	PASS
140	5700	7.6	8.1	10.9	11	PASS

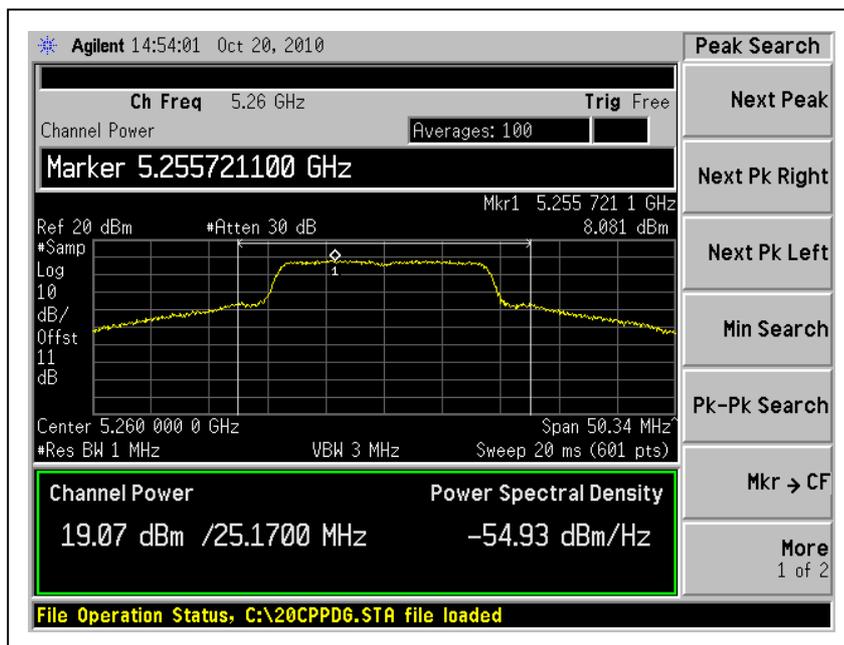


A D T

For Chain (0) : CH36



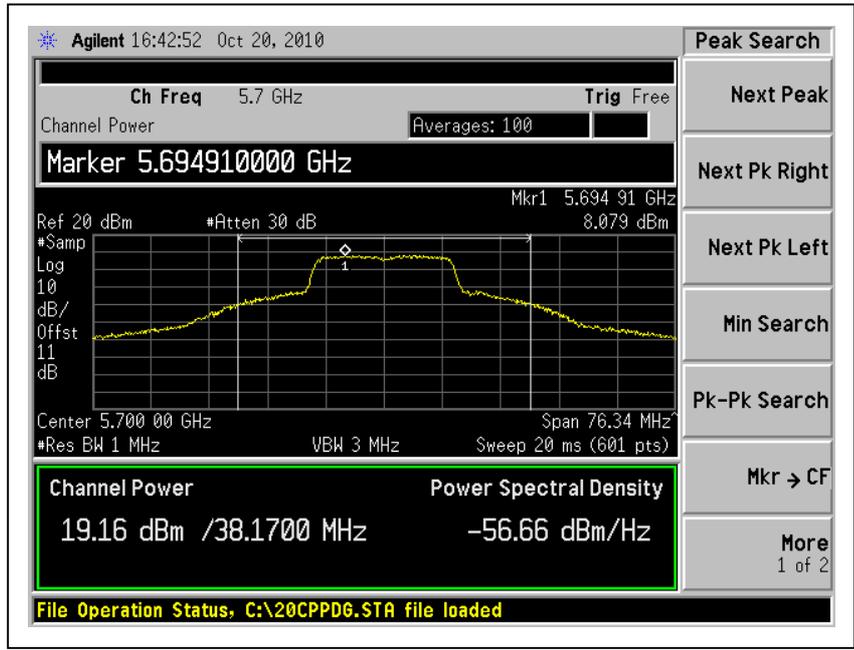
For Chain (2) : CH52





A D T

For Chain (2) : CH140





A D T

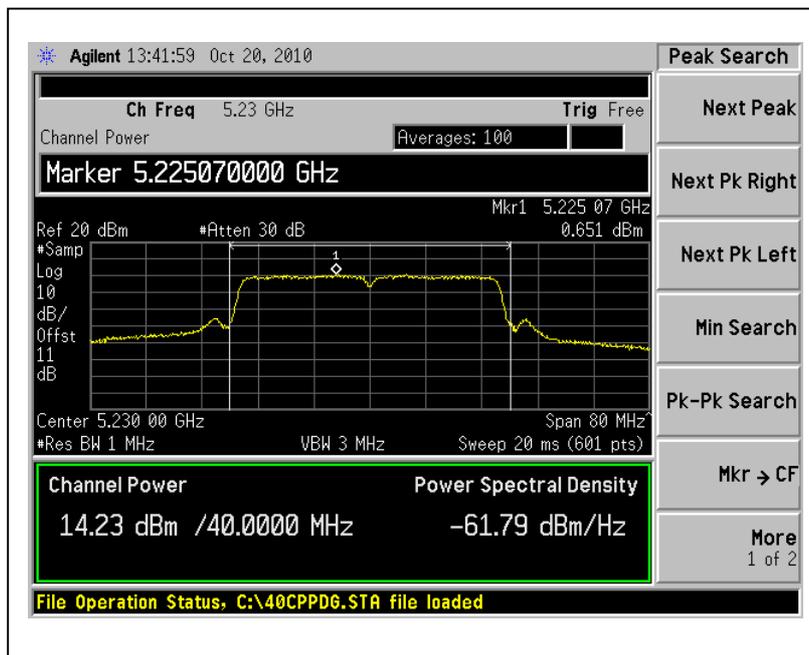
802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain (2)			
38	5190	-2.9	-2.6	0.3	4	PASS
46	5230	-0.3	0.7	3.2	4	PASS
54	5270	5.0	5.3	8.2	11	PASS
62	5310	0.6	1.7	4.2	11	PASS
102	5510	1.5	2.1	4.8	11	PASS
118	5590	5.0	6.9	9.1	11	PASS
134	5670	4.4	5.4	7.9	11	PASS

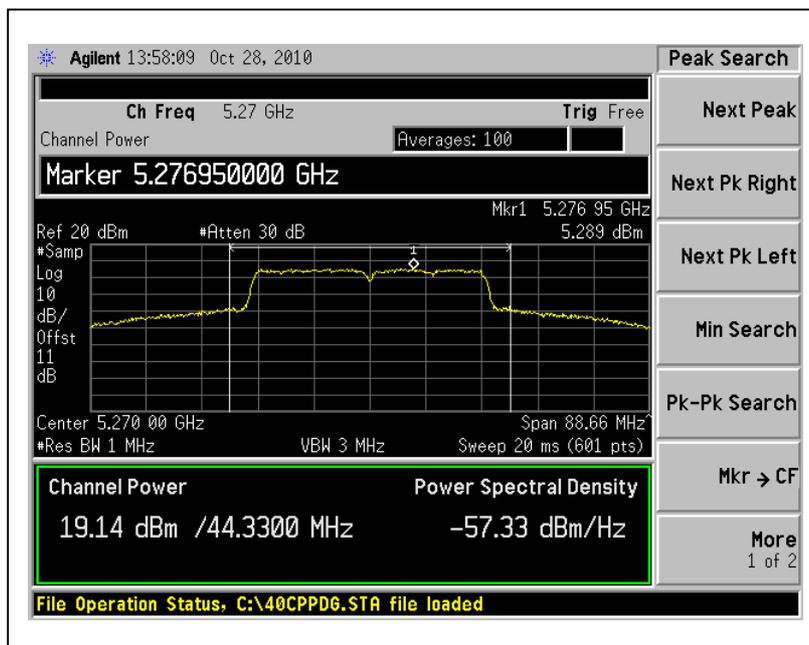


A D T

For Chain (2) : CH46



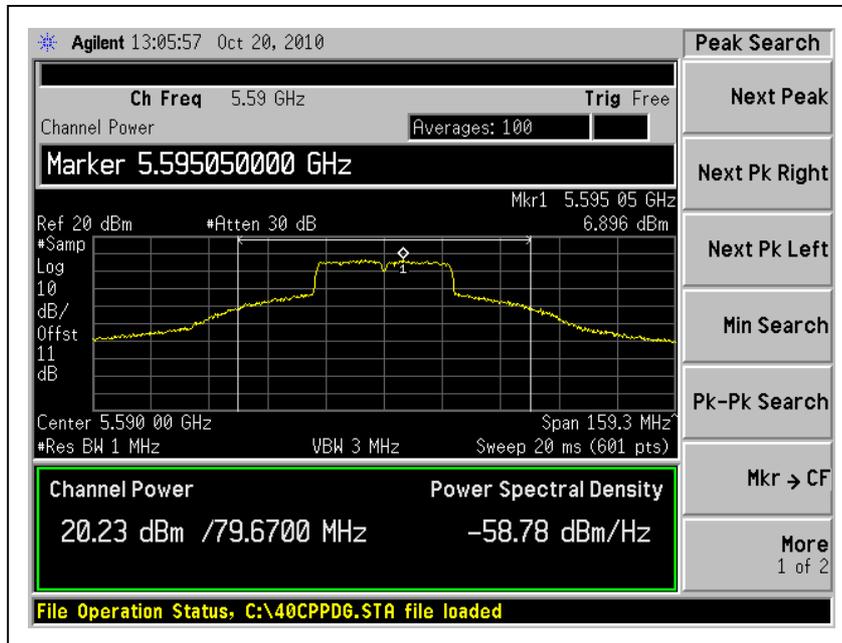
For Chain (2) : CH54





A D T

For Chain (2) : CH118



4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of -30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	E4446A	MY48250254	July 14, 2010	July 13, 2011

NOTE:

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

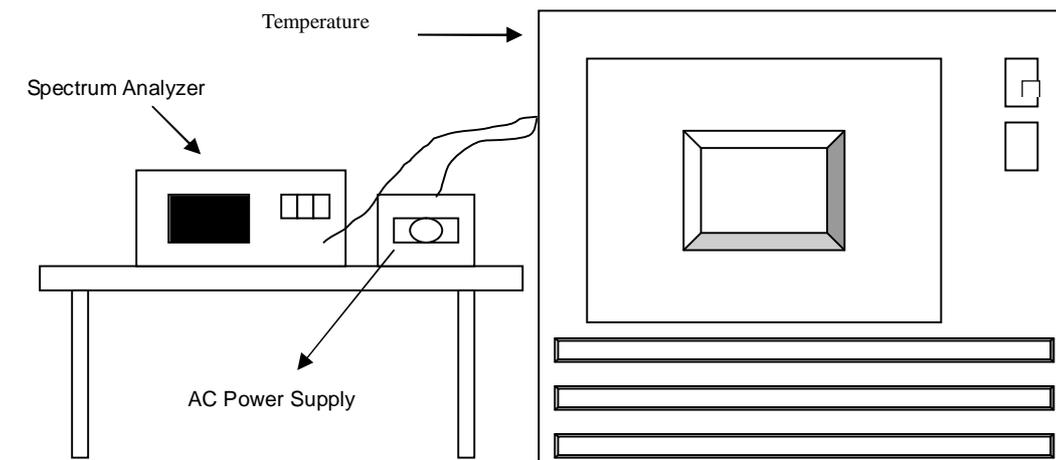
4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.



A D T

4.6.7 TEST RESULTS

Operating frequency: 5320MHz									
Temp. (°C)	Power supply (VAC)	0 minute		2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	126.5	5320.0152	0.000286	5320.0138	0.000259	5320.0120	0.000226	5320.0123	0.000231
	110	5320.015	0.000282	5320.0158	0.000297	5320.0140	0.000263	5320.0147	0.000276
	93.5	5320.015	0.000282	5320.0128	0.000241	5320.0120	0.000226	5320.0145	0.000273
40	126.5	5320.021	0.000395	5320.0215	0.000404	5320.0218	0.000410	5320.0219	0.000412
	110	5320.021	0.000395	5320.0214	0.000402	5320.0218	0.000410	5320.0225	0.000423
	93.5	5320.0212	0.000398	5320.0212	0.000398	5320.0218	0.000410	5320.0223	0.000419
30	126.5	5320.0146	0.000274	5320.0098	0.000184	5320.0060	0.000113	5320.0053	0.000100
	110	5320.0146	0.000274	5320.0128	0.000241	5320.0090	0.000169	5320.0077	0.000145
	93.5	5320.0146	0.000274	5320.0088	0.000165	5320.0070	0.000132	5320.0063	0.000118
20	126.5	5320.0076	0.000143	5320.0028	0.000053	5320.0030	0.000056	5320.0033	0.000062
	110	5320.0076	0.000143	5320.0058	0.000109	5320.0040	0.000075	5320.0039	0.000073
	93.5	5320.0056	0.000105	5320.0028	0.000053	5320.0030	0.000056	5320.0037	0.000070
10	126.5	5319.9768	0.000436	5319.9767	0.000438	5319.9767	0.000438	5319.9755	0.000461
	110	5319.9768	0.000436	5319.9769	0.000434	5319.9768	0.000436	5319.9763	0.000445
	93.5	5319.9768	0.000436	5319.9767	0.000438	5319.9766	0.000440	5319.9757	0.000457
0	126.5	5319.9917	0.000156	5319.9916	0.000158	5319.9915	0.000160	5319.9917	0.000156
	110	5319.9918	0.000154	5319.992	0.000150	5319.9919	0.000152	5319.9915	0.000160
	93.5	5319.9917	0.000156	5319.9916	0.000158	5319.9915	0.000160	5319.9912	0.000165
-10	126.5	5319.9727	0.000513	5319.9824	0.000331	5319.9823	0.000333	5319.9826	0.000327
	110	5319.9728	0.000511	5319.9824	0.000331	5319.9825	0.000329	5319.9822	0.000335
	93.5	5319.9827	0.000325	5319.9827	0.000325	5319.9822	0.000335	5319.9825	0.000329
-20	126.5	5319.9962	0.000071	5319.9959	0.000077	5319.9958	0.000079	5319.9947	0.000100
	110	5319.9962	0.000071	5319.9961	0.000073	5319.9961	0.000073	5319.9945	0.000103
	93.5	5319.9962	0.000071	5319.9959	0.000077	5319.9958	0.000079	5319.9942	0.000109
-30	126.5	5319.997	0.000056	5319.997	0.000056	5319.9969	0.000058	5319.9959	0.000077
	110	5319.997	0.000056	5319.997	0.000056	5319.9971	0.000055	5319.9957	0.000081
	93.5	5319.997	0.000056	5319.9969	0.000058	5319.9968	0.000060	5319.9955	0.000085

4.7 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.7.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 18, 2009	Dec. 17, 2010

NOTE:

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

4.7.2 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set RBW of spectrum analyzer to 1MHz with suitable frequency span including 100 MHz / 200 MHz bandwidth from band edge. The band edges was measured and recorded.

4.7.3 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.7.4 TEST RESULTS

For 5.15 to 5.35GHz band:

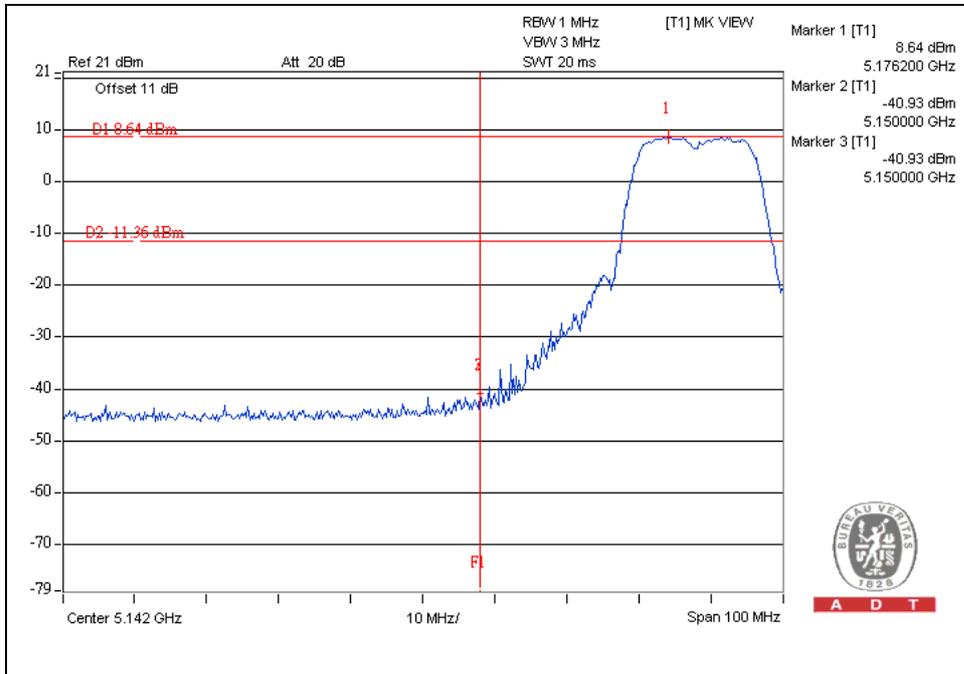
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.



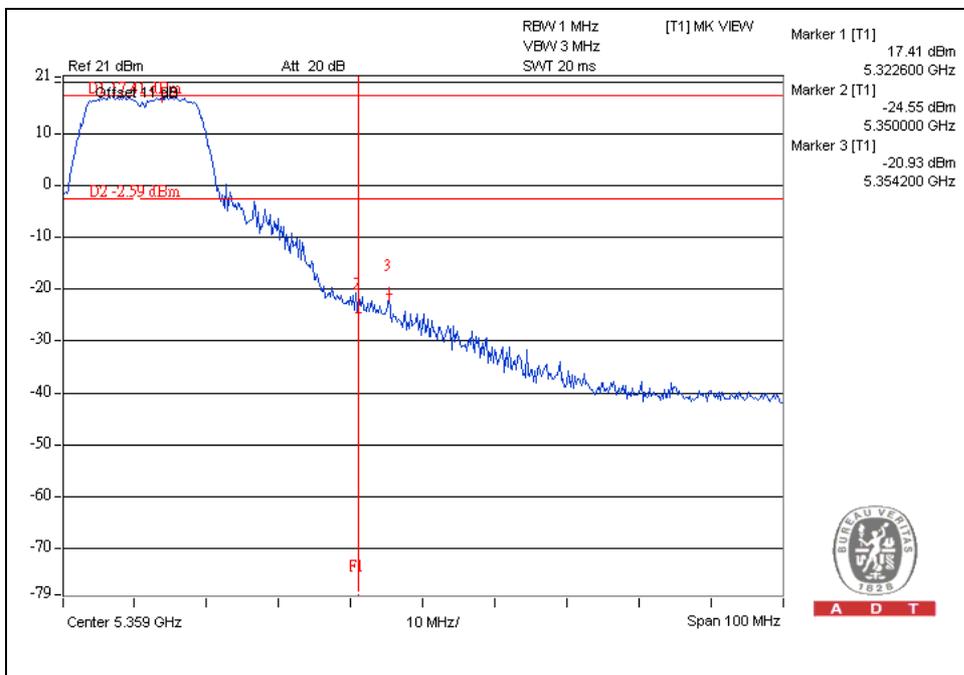
A D T

802.11a OFDM MODULATION

CH 36



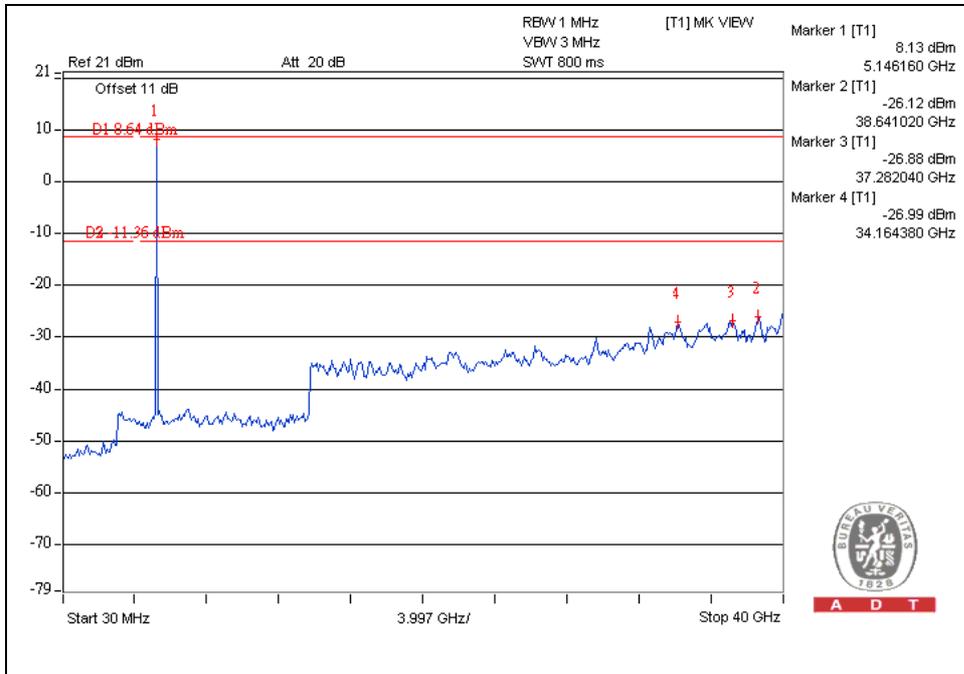
CH 64



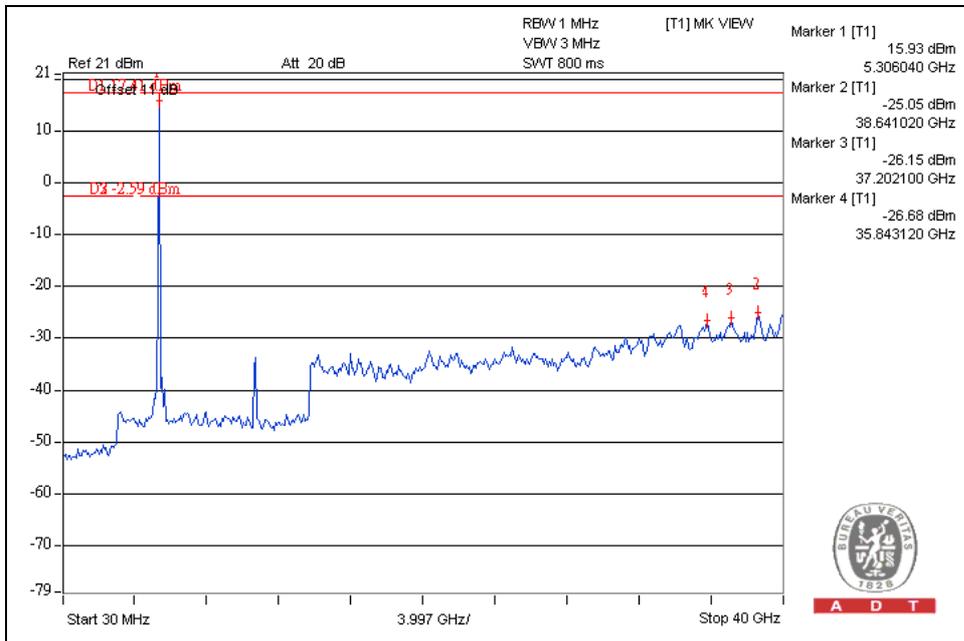


A D T

CH 36



CH 64

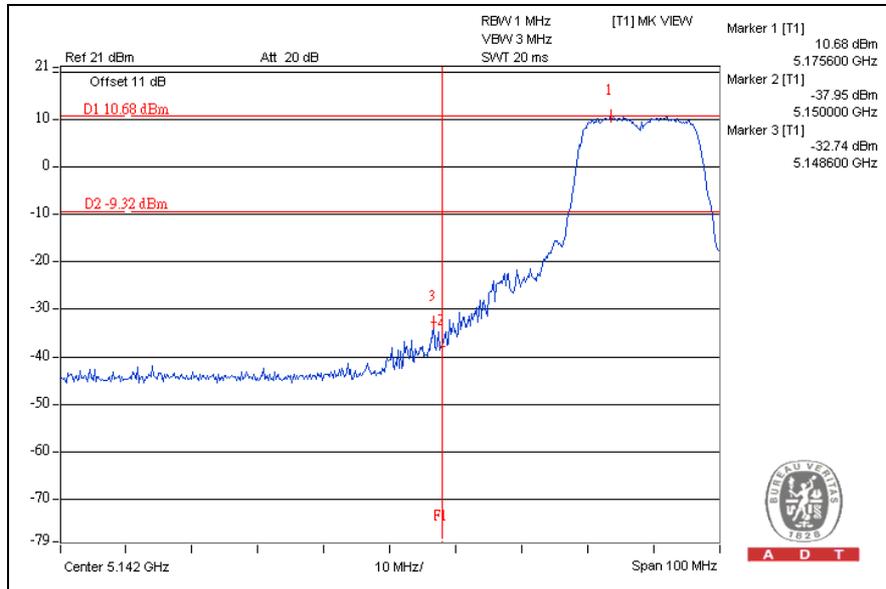




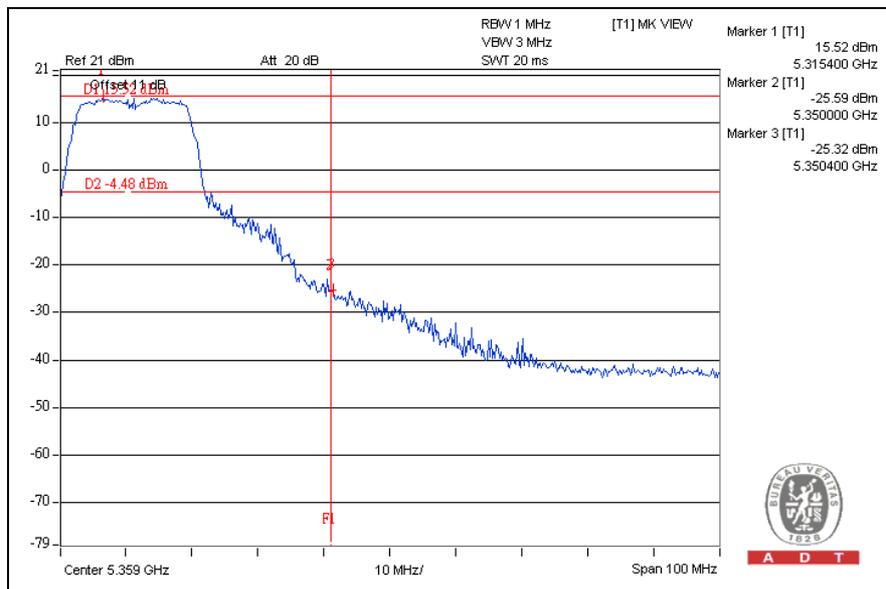
A D T

802.11n (20MHz) OFDM MODULATION:

CH36



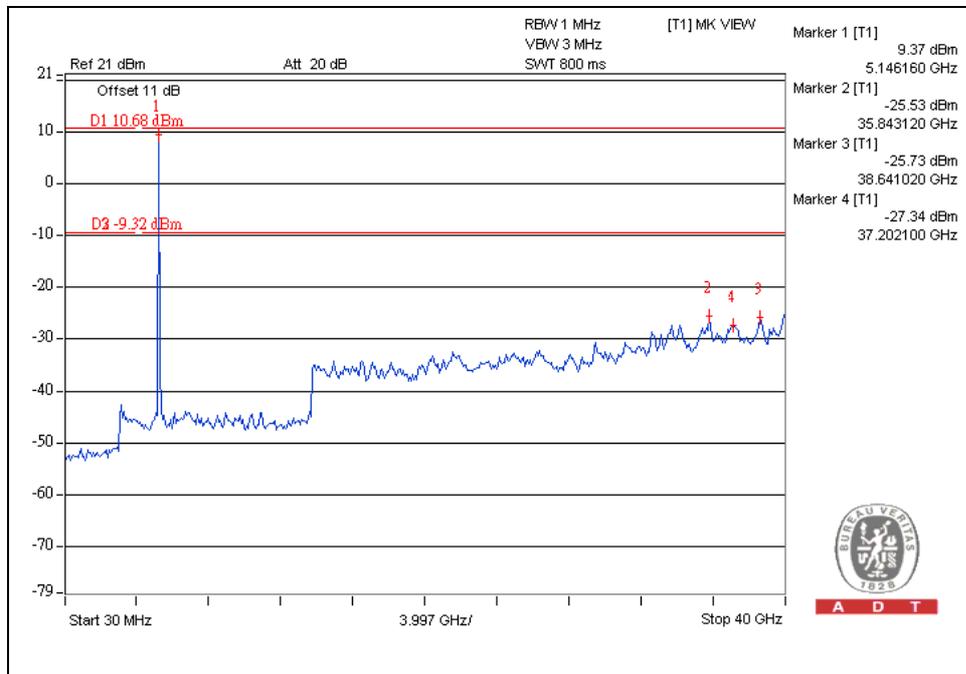
CH64



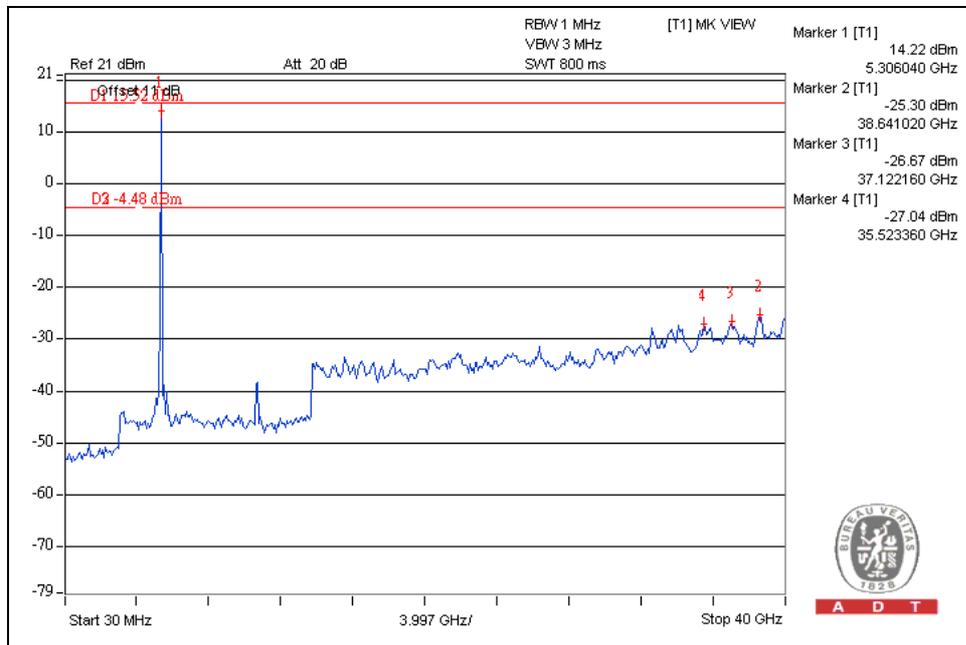


A D T

CH36

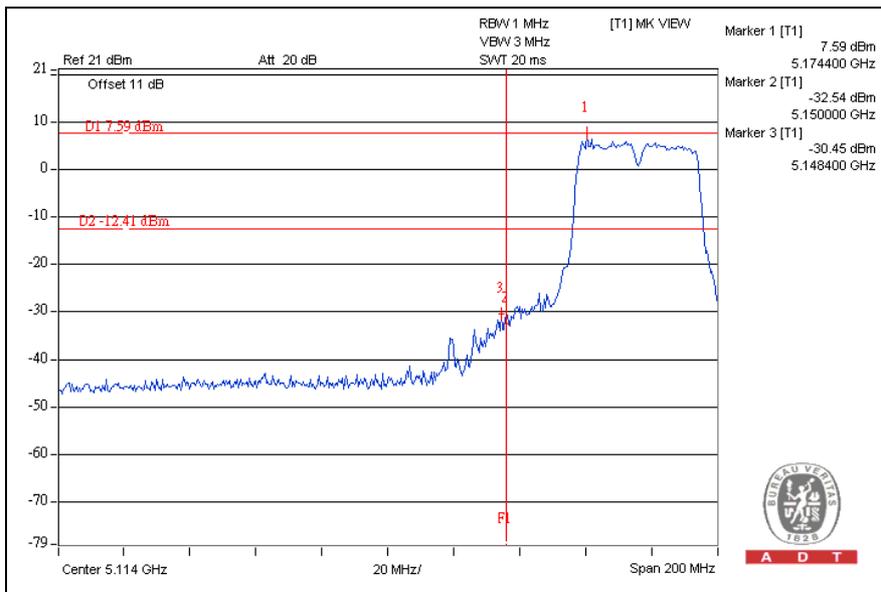


CH64

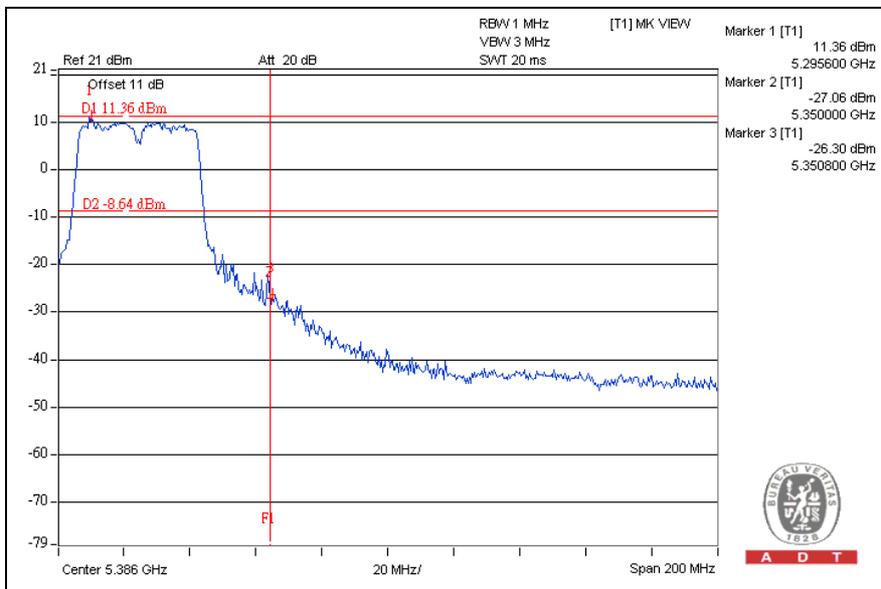


802.11n (40MHz) OFDM MODULATION:

CH38



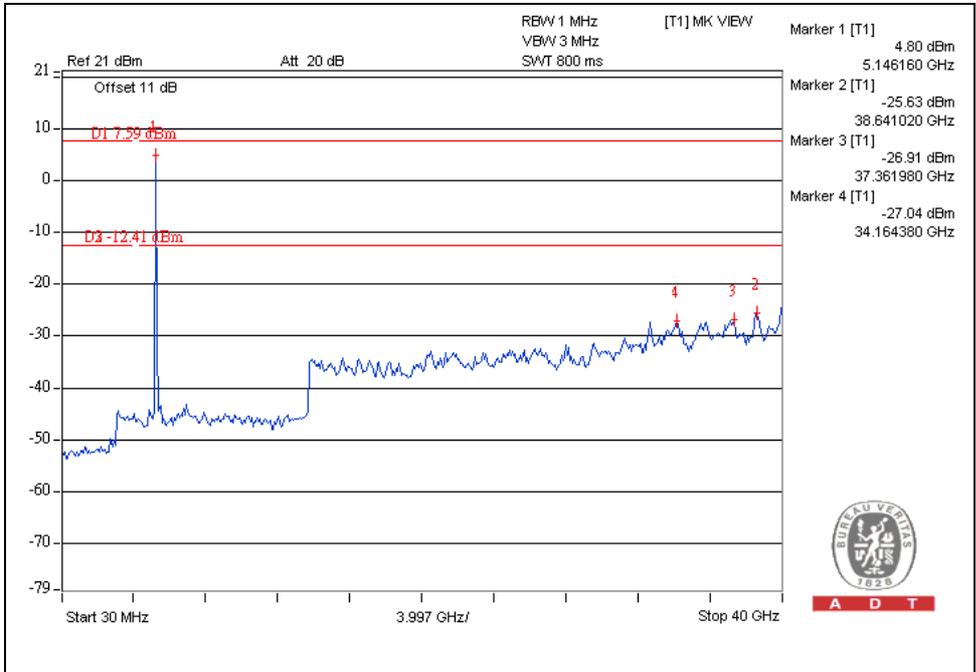
CH62



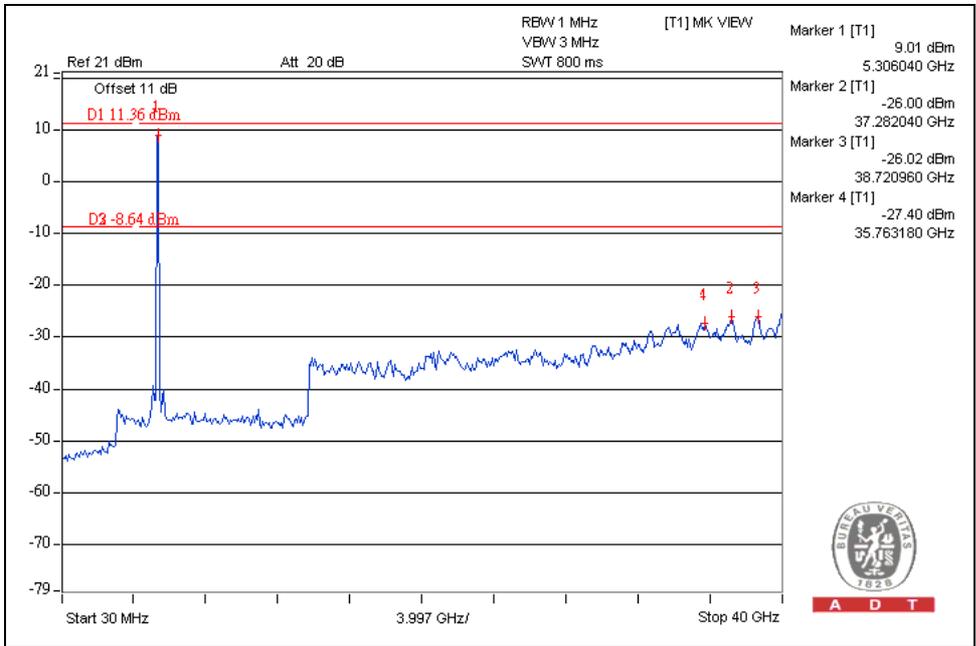


A D T

CH38



CH62





A D T

For 5.47 to 5.725GHz band:

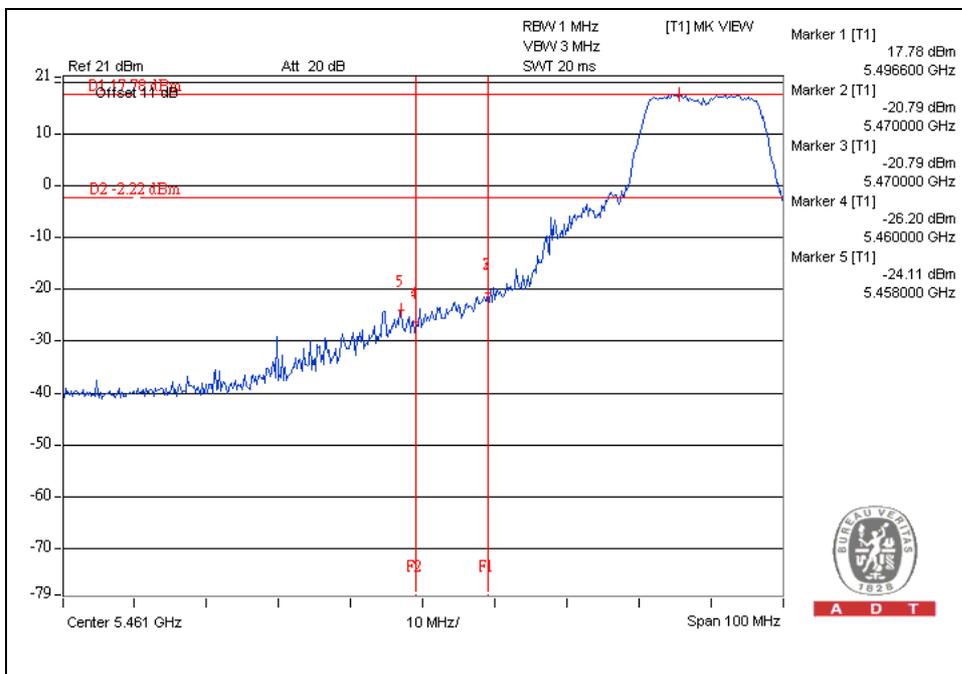
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.



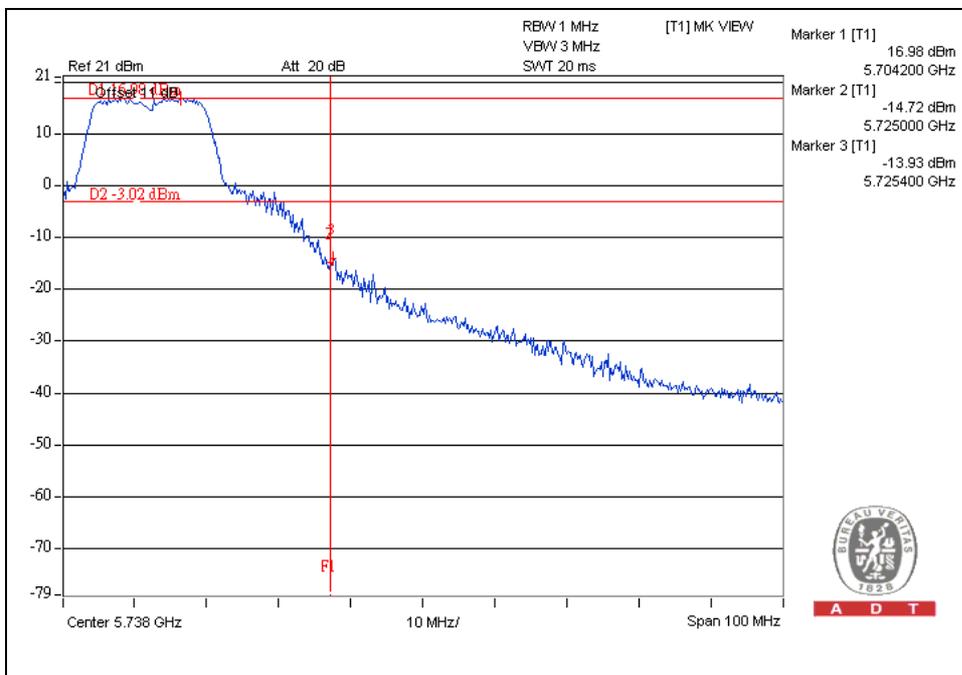
A D T

802.11a OFDM MODULATION

CH 100



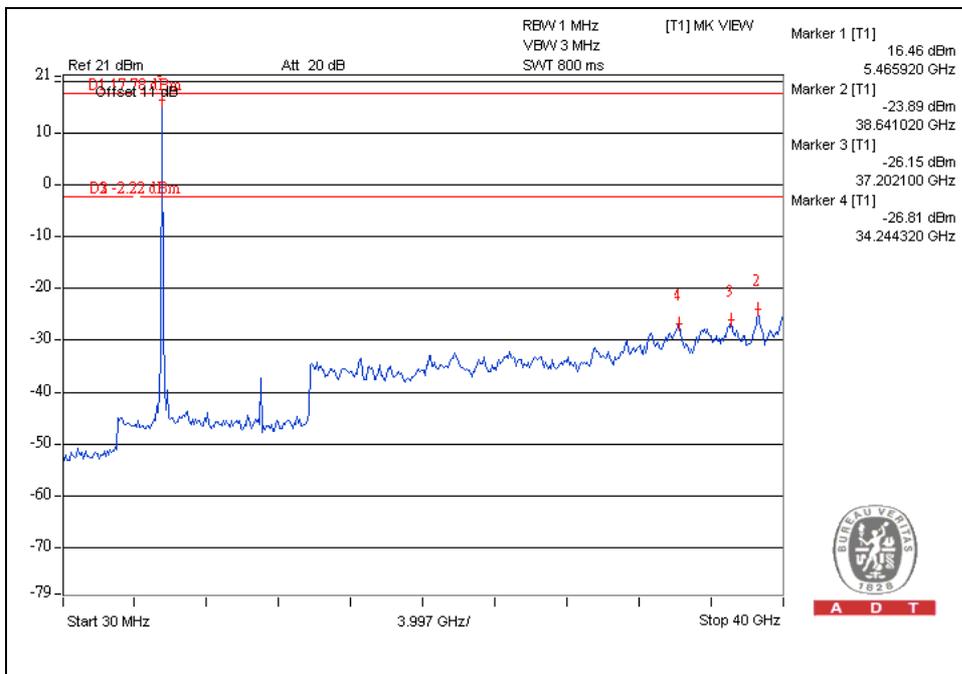
CH 140



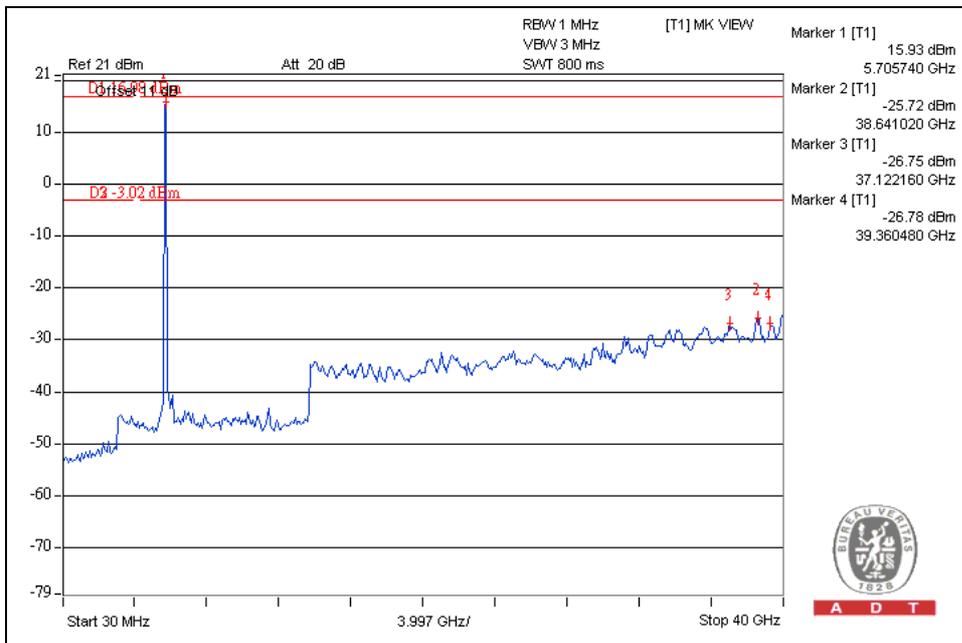


A D T

CH 100



CH 140

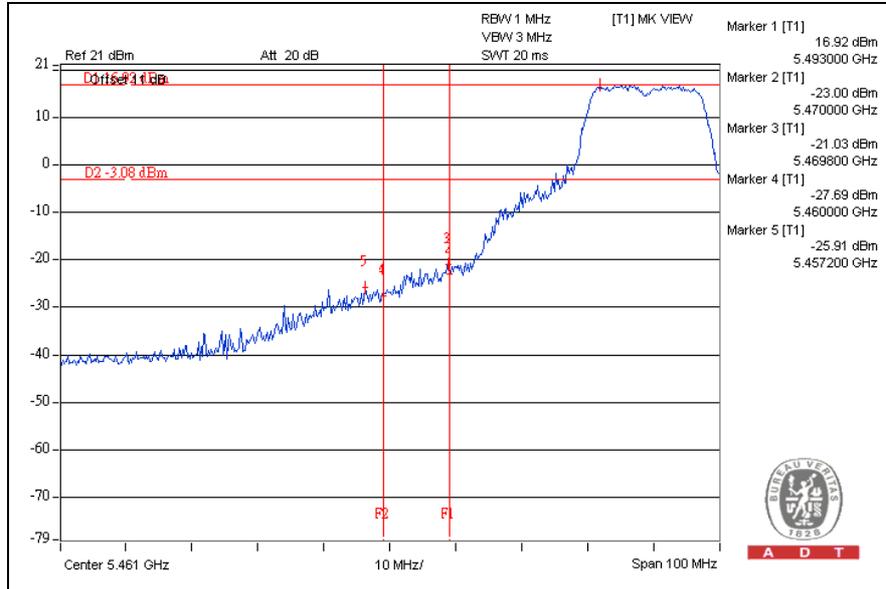




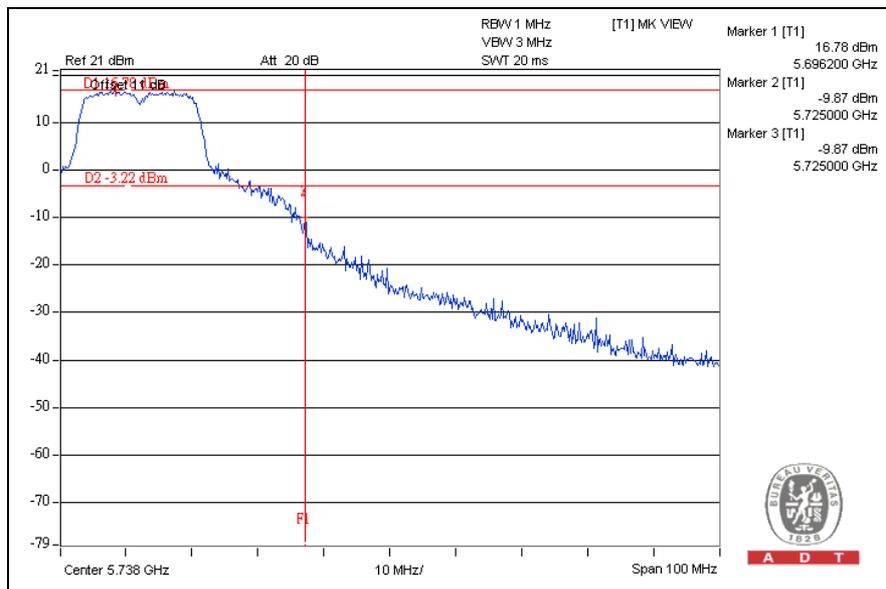
A D T

802.11n (20MHz) OFDM MODULATION:

CH100



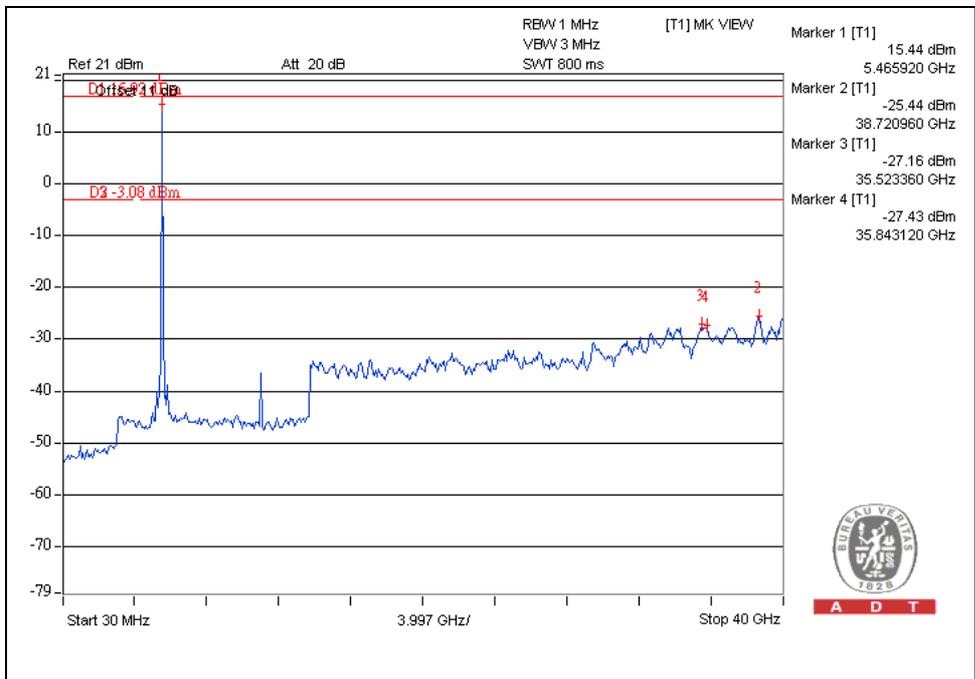
CH140



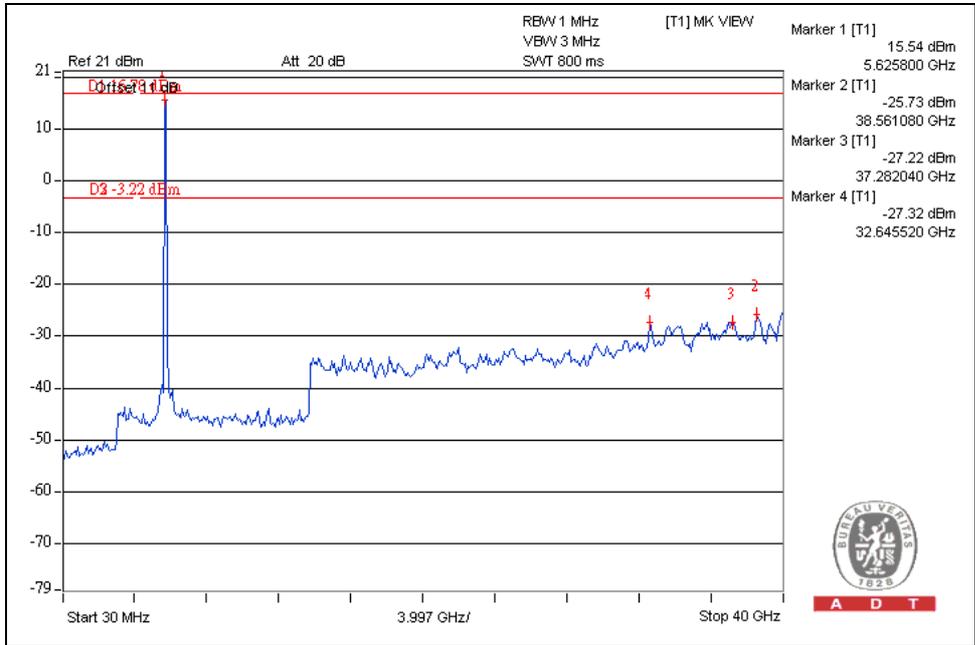


A D T

CH100



CH140

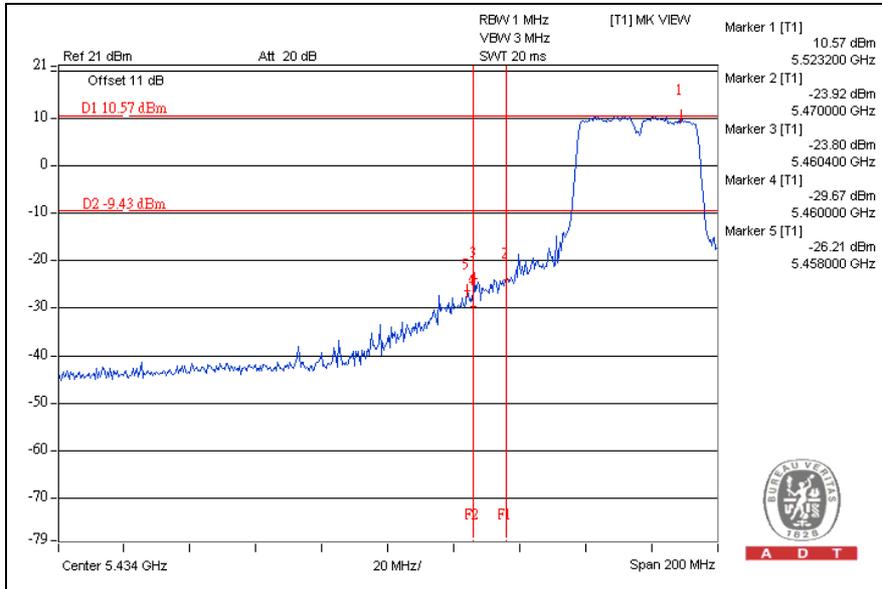




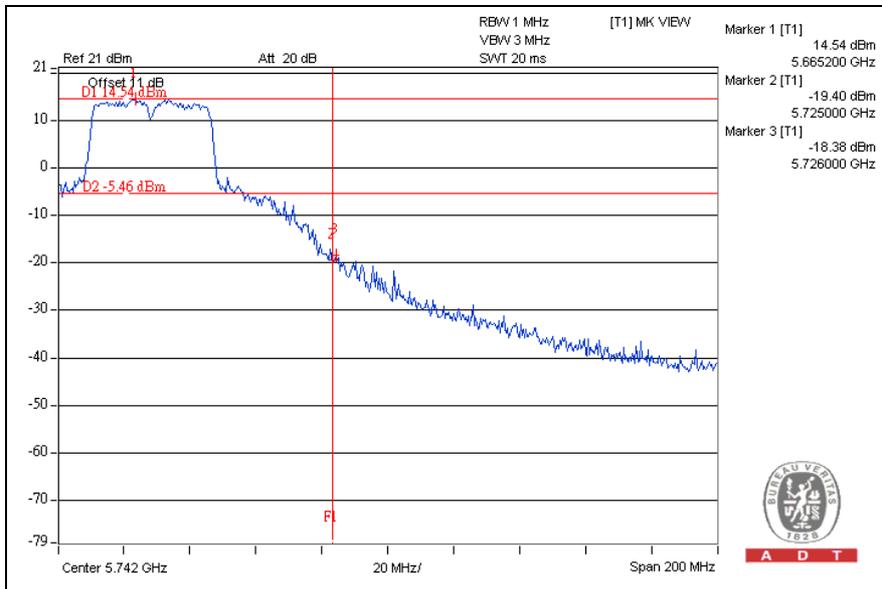
A D T

802.11n (40MHz) OFDM MODULATION:

CH102



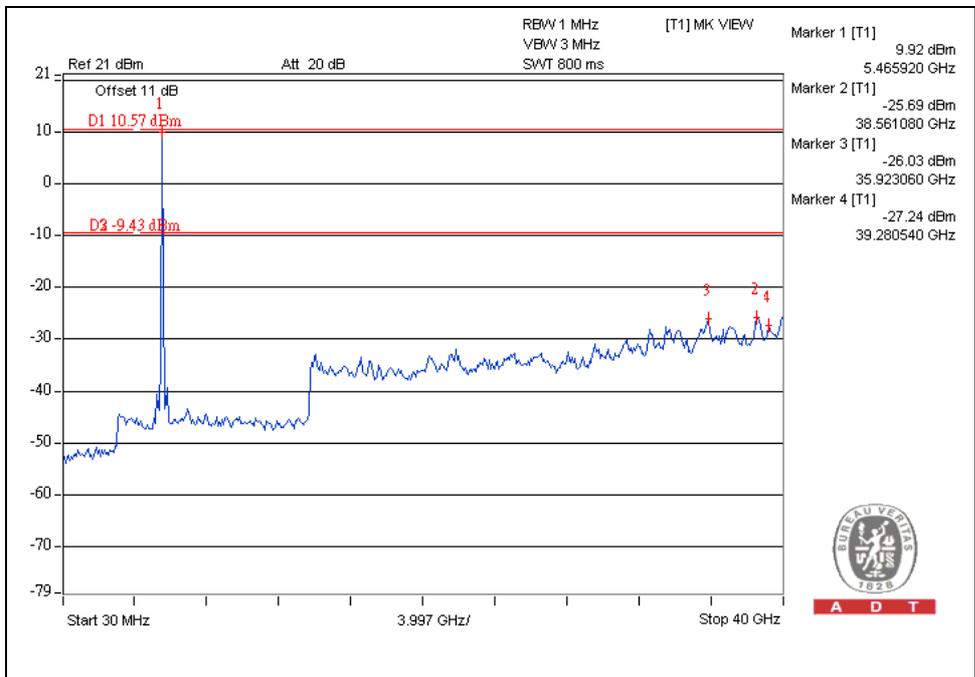
CH134



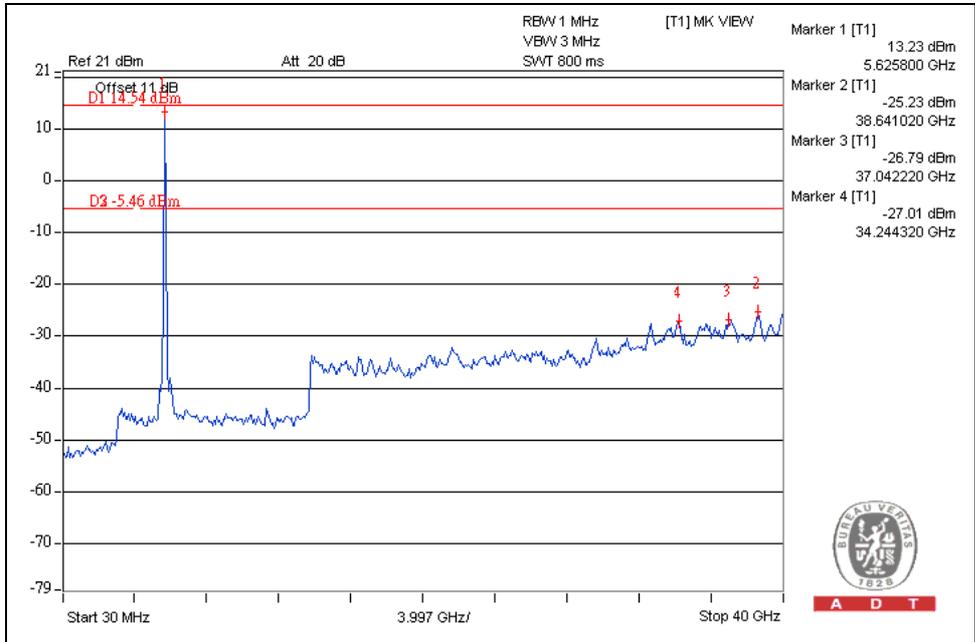


A D T

CH102



CH134





5. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025:

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

Email: service@adt.com.tw

Web Site: www.adt.com.tw

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



A D T

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

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

--- END ---