FCC TEST REPORT (15.407)

REPORT NO.:	RF110913E01-1
MODEL NO.:	DWA-160
FCC ID:	KA2WA160B2
RECEIVED:	Sep. 13, 2011
TESTED:	Sep. 15 to Oct. 19, 2011
ISSUED:	Dec. 07, 2011
APPLICANT:	D-Link Corporation
ADDRESS:	No.289, Sinhu 3rd Rd., Neihu District, Taipei City 114, Taiwan, R.O.C.
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
TEST LOCATION (1):	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan
TEST LOCATION (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF110913E01-1	Original release	Dec. 07, 2011

1. CERTIFICATION

PRODUCT:	Xtreme N Dual Band USB Adapter
BRAND NAME:	D-Link
MODEL NO.:	DWA-160
TEST SAMPLE:	MASS-PRODUCTION
APPLICANT:	D-Link Corporation
TESTED:	Sep. 15 to Oct. 19, 2011
STANDARDS:	FCC Part 15, Subpart E (Section 15.407) ANSI C63.4-2003 ANSI C63.10-2009

The above equipment (Model: DWA-160) 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 : _____, **DATE:** Dec. 07, 2011
(Midoli Peng, Specialist)

APPROVED BY : _____, **DATE:** Dec. 07, 2011
(May Chen, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 5GHz, 5150~5350MHz & 5470~5600 & 5650~5725MHz

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 -26.15dB at 1.773MHz
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 10640MHz & 10600MHz
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 2400 ~ 2483.5MHz, 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 5.15~5.35GHz and 5.47~5.6GHz & 5.65~5.725GHz. For the 2400 ~ 2483.5MHz and 5.725~5.85GHz RF parameters was recorded in another test report.
2. The DFS report was recorded in another test report<Report No.: RF110913E01-2>.

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)	3.89 dB
Radiated emissions (1GHz -18GHz)	2.19 dB
Radiated emissions (18GHz -40GHz)	2.56 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Xtreme N Dual Band USB Adapter
MODEL NO.	DWA-160
FCC ID	KA2WA160B2
POWER SUPPLY	DC 5V ± 10% from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: up to11Mbps 802.11g: up to 54Mbps 802.11n (20MHz, 800ns GI): up to 130Mbps 802.11n (40MHz, 800ns GI):up to 270Mbps 802.11n (20MHz, 400ns GI): up to 144.444Mbps 802.11n (40MHz, 400ns GI):up to 300Mbps
OPERATING FREQUENCY	**For 15.407** 802.11a: 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.5~5.58GHz & 5.66~5.7GHz
	For 15.247 802.11b & 802.11g: 2.412 ~ 2.462GHz 802.11a: 5.745 ~ 5.825GHz
NUMBER OF CHANNEL	**For 15.407** 16 for 802.11a, 802.11n (20MHz) 7 for 802.11n (40MHz)
	For 15.247(2.4GHz) 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz) **For 15.247(5GHz)** 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)

MAXIMUM OUTPUT POWER	**For 15.407** 802.11a: 75.9mW 802.11n (20MHz): 118.3mW 802.11n (40MHz): 120.1mW **For 15.247(2.4GHz)** 802.11b: 114.82mW 802.11g: 263.0mW 802.11n (20MHz): 709.8mW 802.11n (40MHz): 355.8mW **For 15.247(5GHz)** 802.11a: 251.2mW 802.11n (20MHz): 458.3mW 802.11n (40MHz): 486.1mW
ANTENNA TYPE	Please see note
DATA CABLE	USB Cable x 1(shielded, 0.97m)
I/O PORTS	NA
ASSOCIATED DEVICES	USB Cradle x 1

NOTE:

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

Transmitter Circuit	Manufacture	Antenna Type	Gain (dBi)	Antenna Connector
Chain (0)	Alpha	PCB Printed	2.4GHz : 0.7 5.15~5.25GHz: 2.97 5.25~5.35GHz: 3.27 5.47~5.725GHz :2.60 5.725~5.850GHz :2.60	NA
Chain (1)	Alpha	PCB Printed	2.4GHz : 1.39 5.15~5.25GHz: 3.61 5.25~5.35GHz: 3.98 5.47~5.725GHz :2.87 5.725~5.850GHz :2.87	NA

2. The EUT must be supplied with a USB Cradle, and it has two different Model could be chosen:

No.	Model Name
1	581005241000G
2	581005241002G

3. The EUT was pre-tested in chamber as the following test modes:

Pre-test Mode	Description
Mode A	**EUT with USB Cradle (Model : 581005241000G)**
Mode B	EUT with USB Cradle (Model : 581005241002G)
Mode C	**EUT without USB Cradle**

From the above modes, the worst radiated test (below 1GHz) was found in **Mode A** and the worst radiated test (above 1GHz) was found in **Mode C**. Therefore only the test data of the mode was recorded in this report.

4. 2.4GHz & 5GHz technology cannot transmit at same time.
5. The EUT is 2 * 2 spatial MIMO (2Tx & 2Rx) without beam forming function. The 11a, 11b and 11g legacy mode is limited to single transmitter only.
6. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.
7. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's.

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 ~ 5600MHz & 5650MHz ~ 5725MHz bands:

Eight 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
132	5660 MHz
136	5680 MHz
140	5700 MHz

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

CHANNEL	FREQUENCY
102	5510 MHz
110	5550 MHz
134	5670 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO					DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	OB	
1	√	√	-	-	-	with USB Cradle
2	-	-	√	√	√	without USB Cradle

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

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

OB: Conducted Out-Band Emission Measurement

ANTENNA COMBINATION MODE:

COMBINATION MODE	OPERATION MODE	TX CHAIN(0)	TX CHAIN(1)
A	802.11 a	√	-
B	802.11n(20MHz) for MCS0~15	√	√
C	802.11n(40MHz) for MCS0~15	√	√
Note: 1. The above information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.			

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)	COMBINATION
For 5 GHz 802.11n (20MHz)	36 to 140	116	OFDM	BPSK	6.5	B

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)	COMBINATION
For 5 GHz 802.11n (20MHz)	36 to 140	116	OFDM	BPSK	6.5	B

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)	COMBINATION
802.11a	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	6	A
For 5 GHz 802.11n (20MHz)	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	6.5	B
For 5 GHz 802.11n (40MHz)	38 to 134	38, 46, 54, 62, 102, 110, 134	OFDM	BPSK	13.5	C

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)	COMBINATION
802.11a	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	6	A
For 5 GHz 802.11n (20MHz)	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	6.5	B
For 5 GHz 802.11n (40MHz)	38 to 134	38, 46, 54, 62, 102, 110, 134	OFDM	BPSK	13.5	C

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)	COMBINATION
802.11a	36 to 140	36, 64, 100, 140	OFDM	BPSK	6	A
For 5 GHz 802.11n (20MHz)	36 to 140	36, 64, 100, 140	OFDM	BPSK	6.5	B
For 5 GHz 802.11n (40MHz)	38 to 134	38, 62, 102, 134	OFDM	BPSK	13.5	C

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	25deg. C, 68%RH	120Vac, 60Hz	Frank Liu
RE<1G	27deg. C, 72%RH	120Vac, 60Hz	Frank Liu
RE≥1G	25deg. C, 69%RH	120Vac, 60Hz	Nelson Teng
APCM	27deg. C, 60%RH	120Vac, 60Hz	Rex Huang
OB	27deg. C, 60%RH	120Vac, 60Hz	Rex Huang

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 (Section 15.407)

ANSI C63.4-2003

ANSI C63.10-2009

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

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

3.4 DESCRIPTION OF SUPPORT UNITS

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

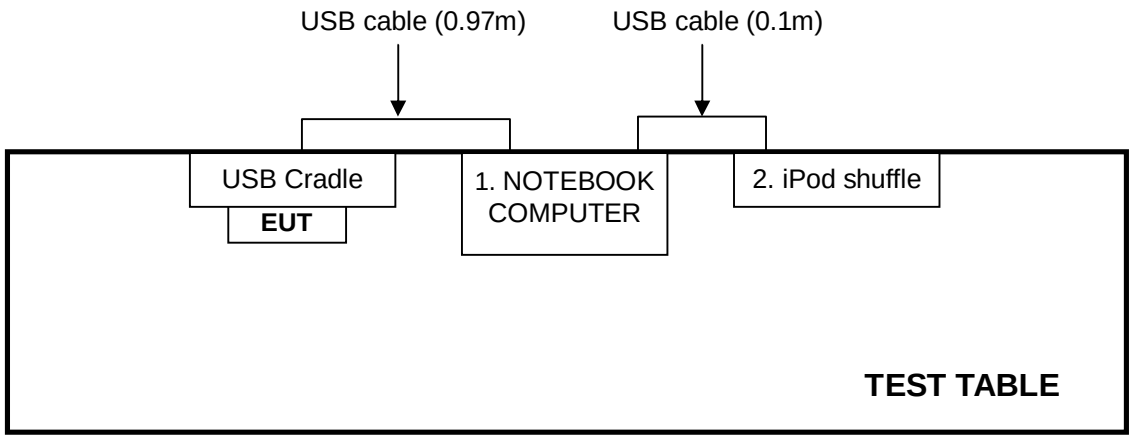
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	GSLB32S	FCC DoC
2	iPod shuffle	Apple	MC749TA/A	CC4DMFJUDFDM	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB Cable (0.97m)
2	USB Cable (0.1m)

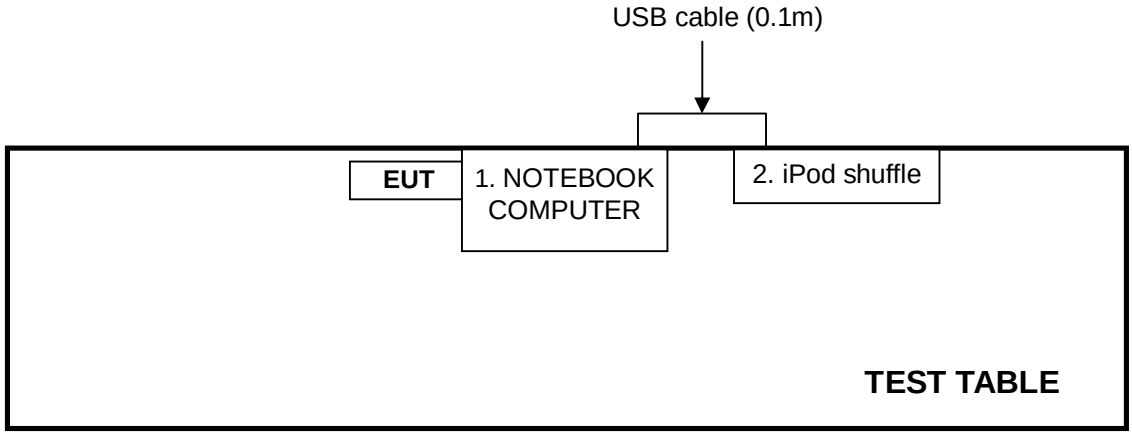
NOTE: All power cords of the above support units are non shielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST

For conducted and radiated (below 1GHz) test:



For other test items:



4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

Test date: Oct. 19, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 09, 2011	Mar. 08, 2012
Line-Impedance Stabilization Network (for EUT)	ENV216	100072	Jun. 10, 2011	Jun. 09, 2012
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Nov. 03, 2010	Nov. 02, 2011
RF Cable (JYEBAO)	5DFB	COCCAB-002	Aug. 29, 2011	Aug. 28, 2012
50 ohms Terminator	50	3	Nov. 03, 2010	Nov. 02, 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.

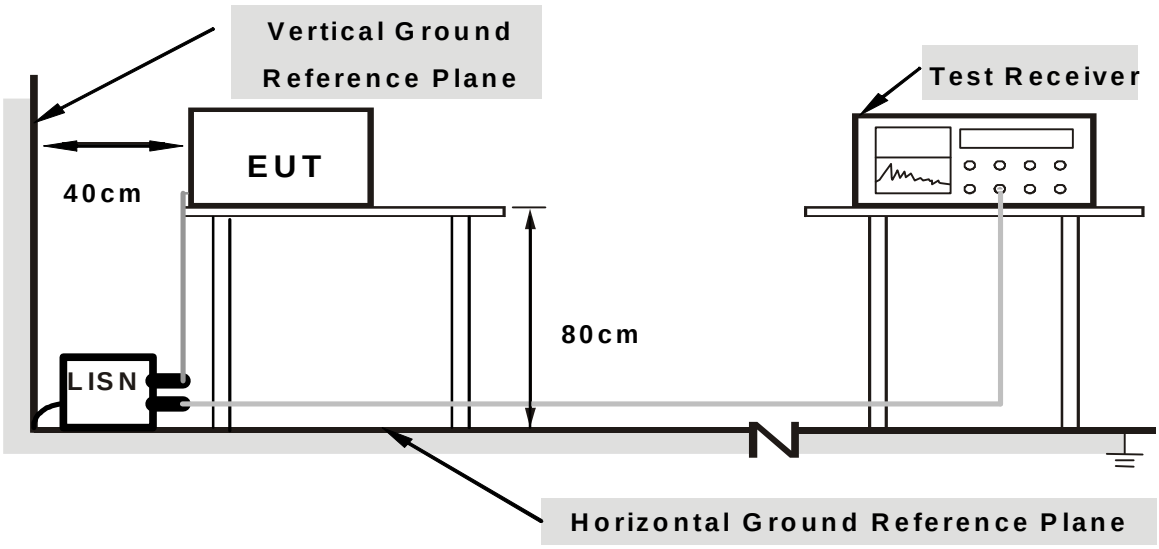
4.1.3 TEST PROCEDURES

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

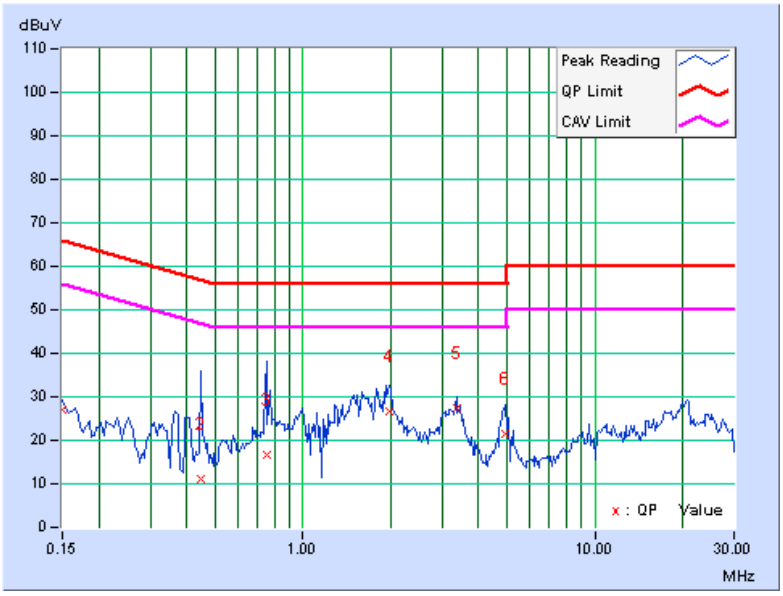
1. Connect the EUT with the support unit 1 (Notebook Computer) which is placed on a testing table.
2. The communication partner run test program “RT5x7x V1.0.4..8.exe” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 TEST RESULTS

PHASE	Line (L)	6dB BANDWIDTH	9 kHz

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.09	27.06	18.34	27.15	18.43	66.00	56.00	-38.85	-37.57
2	0.447	0.11	10.86	2.56	10.97	2.67	56.93	46.93	-45.96	-44.26
3	0.752	0.13	16.64	3.09	16.77	3.22	56.00	46.00	-39.23	-42.78
4	1.984	0.20	26.30	18.83	26.50	19.03	56.00	46.00	-29.50	-26.97
5	3.359	0.28	27.07	18.20	27.35	18.48	56.00	46.00	-28.65	-27.52
6	4.914	0.36	21.26	3.59	21.62	3.95	56.00	46.00	-34.38	-42.05

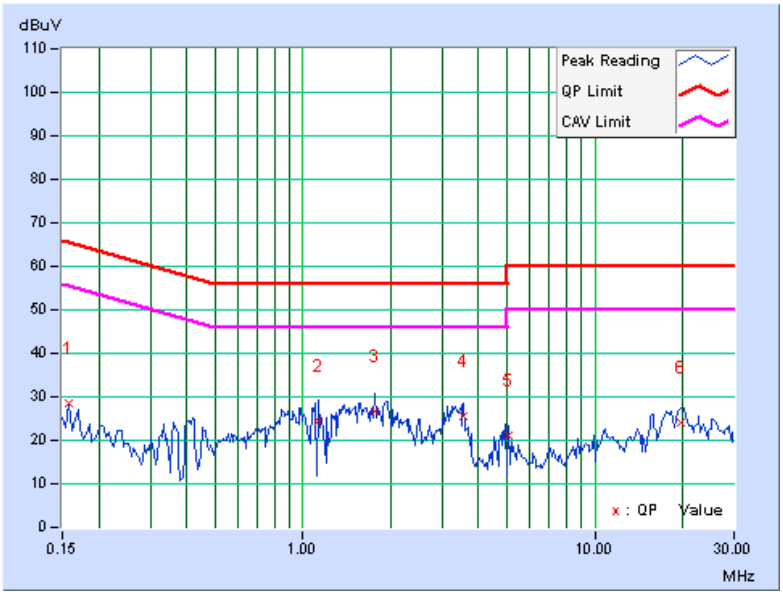
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.08	28.43	13.95	28.51	14.03	65.58	55.58	-37.07	-41.55
2	1.125	0.13	24.34	11.69	24.47	11.82	56.00	46.00	-31.53	-34.18
3	**1.773**	**0.16**	**26.36**	**19.69**	**26.52**	**19.85**	**56.00**	**46.00**	**-29.48**	**-26.15**
4	3.570	0.22	25.36	19.41	25.58	19.63	56.00	46.00	-30.42	-26.37
5	5.059	0.27	20.88	6.71	21.15	6.98	60.00	50.00	-38.85	-43.02
6	19.785	0.65	23.46	17.70	24.11	18.35	60.00	50.00	-35.89	-31.65

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
4. Section 15.205 restricted bands of operation shall compliance with the limits in Section 15.209.

4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

NOTE:

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

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

4.2.3 TEST INSTRUMENTS

For below 1GHz: Test date: Sep. 15, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250253	Aug. 29, 2011	Aug. 28, 2012
Agilent Pre-Selector	N9039A	MY46520310	Aug. 29, 2011	Aug. 28, 2012
Agilent Signal Generator	N5181A	MY49060347	July 25, 2011	July 24, 2012
LIG NEX1 Test Receiver	ER-265	L09068005	Oct. 25, 2010	Oct. 24, 2011
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-04	Nov. 16, 2010	Nov. 15, 2011
Agilent Pre-Amplifier	8449B	3008A02465	Feb. 28, 2011	Feb. 27, 2012
Miteq Pre-Amplifier	AFS33-18002650-30-8P-44	881786	Nov. 16, 2010	Nov. 15, 2011
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-361	Apr. 14, 2011	Apr. 13, 2012
AISI Horn_Antenna	AIH.8018	0000220091110	Nov. 22, 2010	Nov. 21, 2011
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 08, 2010	Oct. 07, 2011
RF CABLE	NA	RF104-205 RF104-207 RF104-202	Dec. 28, 2010	Dec. 27, 2011
RF Cable	NA	CHHCAB_001	Oct. 12, 2010	Oct. 11, 2011
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.

For above 1GHz: Test date: Oct. 04, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250254	July 12, 2011	July 11, 2012
Agilent Pre-Selector	N9039A	MY46520311	July 12, 2011	July 11, 2012
Agilent Signal Generator	N5181A	MY49060517	July 12, 2011	July 11, 2012
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-03	Nov. 16, 2010	Nov. 15, 2011
Agilent Pre-Amplifier	8449B	3008A02578	July 04, 2011	July 03, 2012
Miteq Pre-Amplifier	AFS33-18002650-30-8P-44	881786	Nov. 16, 2010	Nov. 15, 2011
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-360	Apr. 14, 2011	Apr. 13, 2012
AISI Horn_Antenna	AIH.8018	0000320091110	Nov. 12, 2010	Nov. 11, 2011
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 08, 2010	Oct. 07, 2011
RF CABLE	NA	RF104-201 RF104-203 RF104-204	Dec. 27, 2010	Dec. 26, 2011
RF Cable	NA	CHGCAB_001	Oct. 12, 2010	Oct. 11, 2011
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. G.
4. The FCC Site Registration No. is 966073.
5. The VCCI Site Registration No. is G-137.
6. The CANADA Site Registration No. is IC 7450H-2.

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

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

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

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

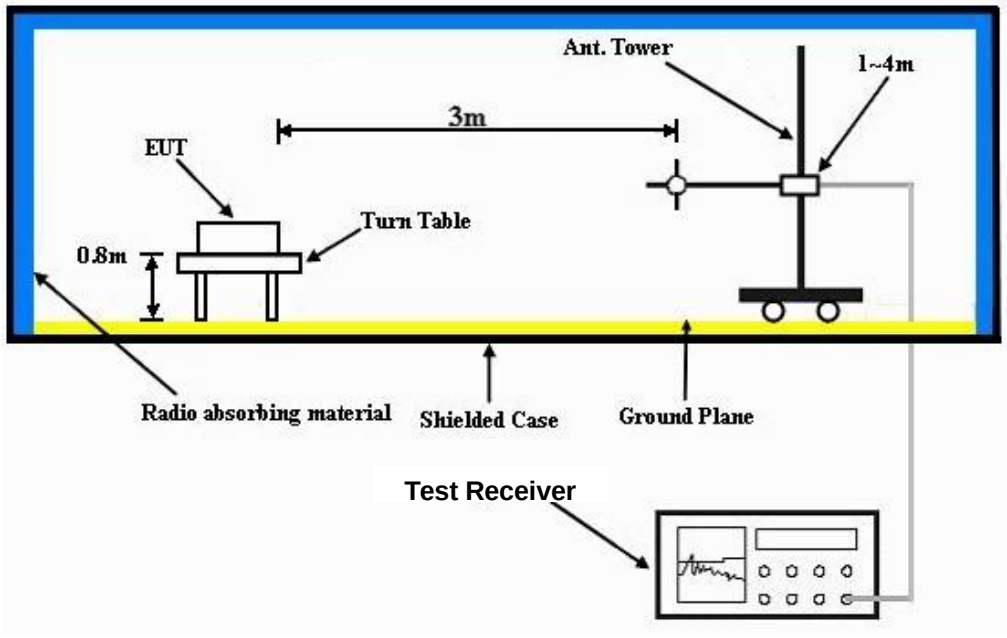
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for 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

4.2.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA：802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 72%RH	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	216.99	38.7 QP	46.0	-7.3	1.50 H	133	26.90	11.83
2	234.99	39.1 QP	46.0	-6.9	1.50 H	164	26.63	12.49
3	321.79	41.6 QP	46.0	-4.5	1.00 H	246	25.90	15.65
4	409.19	34.7 QP	46.0	-11.3	2.00 H	257	17.14	17.53
5	604.82	39.9 QP	46.0	-6.1	1.50 H	231	18.24	21.63
6	959.97	32.1 QP	46.0	-13.9	1.00 H	166	5.62	26.50
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	33.67	33.2 QP	40.0	-6.8	1.00 V	153	20.01	13.22
2	143.09	28.5 QP	43.5	-15.0	1.00 V	44	14.25	14.21
3	217.34	29.1 QP	46.0	-16.9	1.00 V	360	17.28	11.84
4	303.20	37.7 QP	46.0	-8.3	1.50 V	34	22.43	15.25
5	604.94	28.4 QP	46.0	-17.6	1.50 V	213	6.80	21.63
6	846.05	28.3 QP	46.0	-17.8	1.50 V	344	3.16	25.09

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

ABOVE 1GHz WORST-CASE DATA

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	5127.00	57.9 PK	74.0	-16.1	1.20 H	358	17.66	40.24
2	5127.00	46.7 AV	54.0	-7.3	1.20 H	358	6.46	40.24
3	*5180.00	105.3 PK			1.31 H	171	64.97	40.33
4	*5180.00	95.8 AV			1.31 H	171	55.47	40.33
5	#10360.00	54.4 PK	68.3	-13.9	1.18 H	245	7.57	46.83
6	15540.00	62.0 PK	74.0	-12.0	1.00 H	243	9.79	52.21
7	15540.00	49.3 AV	54.0	-4.7	1.00 H	243	-2.91	52.21
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	5127.00	61.5 PK	74.0	-12.5	1.21 V	278	21.26	40.24
2	5127.00	53.3 AV	54.0	-0.7	1.21 V	278	13.06	40.24
3	*5180.00	110.8 PK			1.18 V	75	70.47	40.33
4	*5180.00	100.4 AV			1.18 V	75	60.07	40.33
5	#10360.00	50.4 PK	68.3	-17.9	1.21 V	200	3.57	46.83
6	15540.00	62.4 PK	74.0	-11.6	1.00 V	55	10.19	52.21
7	15540.00	47.3 AV	54.0	-6.7	1.00 V	55	-4.91	52.21

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	103.5 PK			1.26 H	327	63.14	40.36
2	*5200.00	93.8 AV			1.26 H	327	53.44	40.36
3	#10400.00	54.6 PK	68.3	-13.7	1.13 H	245	7.70	46.90
4	15600.00	62.4 PK	74.0	-11.6	1.00 H	251	10.48	51.92
5	15600.00	49.6 AV	54.0	-4.4	1.00 H	251	-2.32	51.92
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	108.6 PK			1.16 V	73	68.24	40.36
2	*5200.00	98.4 AV			1.16 V	73	58.04	40.36
3	#10400.00	50.3 PK	68.3	-18.0	1.24 V	200	3.40	46.90
4	15600.00	62.1 PK	74.0	-11.9	1.00 V	12	10.18	51.92
5	15600.00	47.6 AV	54.0	-6.4	1.00 V	12	-4.32	51.92

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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			1.25 H	331	62.69	40.51
2	*5240.00	93.7 AV			1.25 H	331	53.19	40.51
3	#10480.00	55.0 PK	68.3	-13.3	1.08 H	247	8.09	46.91
4	15720.00	63.6 PK	74.0	-10.4	1.08 H	27	11.69	51.91
5	15720.00	53.2 AV	54.0	-0.8	1.08 H	27	1.29	51.91
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	108.3 PK			1.17 V	72	67.79	40.51
2	*5240.00	98.3 AV			1.17 V	72	57.79	40.51
3	#10480.00	50.6 PK	68.3	-17.7	1.21 V	213	3.69	46.91
4	15720.00	62.4 PK	74.0	-11.6	1.00 V	7	10.49	51.91
5	15720.00	47.3 AV	54.0	-6.7	1.00 V	7	-4.61	51.91

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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			1.34 H	338	69.02	40.58
2	*5260.00	99.8 AV			1.34 H	338	59.22	40.58
3	#10520.00	54.6 PK	68.3	-13.7	1.04 H	244	7.58	47.02
4	15780.00	62.9 PK	74.0	-11.1	1.11 H	242	10.72	52.18
5	15780.00	52.9 AV	54.0	-1.1	1.11 H	242	0.72	52.18
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	113.7 PK			1.16 V	74	73.12	40.58
2	*5260.00	104.3 AV			1.16 V	74	63.72	40.58
3	#10520.00	50.7 PK	68.3	-17.6	1.24 V	219	3.68	47.02
4	15780.00	62.2 PK	74.0	-11.8	1.00 V	7	10.02	52.18
5	15780.00	47.1 AV	54.0	-6.9	1.00 V	7	-5.08	52.18

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	109.6 PK			1.32 H	328	68.87	40.73
2	*5300.00	99.6 AV			1.32 H	328	58.87	40.73
3	10600.00	64.1 PK	74.0	-9.9	1.17 H	242	16.62	47.48
4	10600.00	53.1 AV	54.0	-0.9	1.17 H	242	5.62	47.48
5	15900.00	64.6 PK	74.0	-9.4	1.14 H	24	12.32	52.28
6	15900.00	53.0 AV	54.0	-1.0	1.14 H	24	0.72	52.28
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	115.6 PK			1.14 V	69	74.87	40.73
2	*5300.00	105.3 AV			1.14 V	69	64.57	40.73
3	10600.00	54.3 PK	74.0	-19.7	1.33 V	214	6.82	47.48
4	10600.00	46.4 AV	54.0	-7.6	1.33 V	214	-1.08	47.48
5	15900.00	62.4 PK	74.0	-11.6	1.00 V	4	10.12	52.28
6	15900.00	47.3 AV	54.0	-6.7	1.00 V	4	-4.98	52.28

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	109.4 PK			1.36 H	333	68.62	40.78
2	*5320.00	99.4 AV			1.36 H	333	58.62	40.78
3	5350.00	66.9 PK	74.0	-7.1	1.33 H	333	26.04	40.86
4	5350.00	50.1 AV	54.0	-3.9	1.33 H	333	9.24	40.86
5	10640.00	64.2 PK	74.0	-9.8	1.17 H	242	16.77	47.43
6	**10640.00**	**53.5 AV**	**54.0**	**-0.5**	**1.17 H**	**242**	**6.07**	**47.43**
7	15960.00	64.7 PK	74.0	-9.3	1.13 H	29	12.56	52.14
8	15960.00	53.1 AV	54.0	-0.9	1.13 H	29	0.96	52.14
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	112.3 PK			1.14 V	78	71.52	40.78
2	*5320.00	103.6 AV			1.14 V	78	62.82	40.78
3	5350.00	71.4 PK	74.0	-2.6	1.27 V	260	30.54	40.86
4	5350.00	53.1 AV	54.0	-0.9	1.27 V	260	12.24	40.86
5	10640.00	54.6 PK	74.0	-19.4	1.32 V	219	7.17	47.43
6	10640.00	46.2 AV	54.0	-7.8	1.32 V	219	-1.23	47.43
7	15960.00	62.2 PK	74.0	-11.8	1.00 V	12	10.06	52.14
8	15960.00	47.1 AV	54.0	-6.9	1.00 V	12	-5.04	52.14

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

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

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

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	5447.72	61.7 PK	74.0	-12.3	1.33 H	337	20.61	41.09
2	5447.72	51.3 AV	54.0	-2.7	1.33 H	337	10.21	41.09
3	#5470.00	59.2 PK	68.3	-9.1	1.33 H	324	18.06	41.14
4	*5500.00	110.6 PK			1.33 H	337	69.39	41.21
5	*5500.00	99.5 AV			1.33 H	337	58.29	41.21
6	11000.00	62.0 PK	74.0	-12.0	1.13 H	247	14.05	47.95
7	11000.00	51.3 AV	54.0	-2.7	1.13 H	247	3.35	47.95
8	#16500.00	58.8 PK	68.3	-9.5	1.09 H	230	5.16	53.64
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	5447.72	64.1 PK	74.0	-9.9	1.23 V	72	23.01	41.09
2	5447.72	53.3 AV	54.0	-0.7	1.23 V	72	12.21	41.09
3	#5470.00	64.3 PK	68.3	-4.0	1.23 V	72	23.16	41.14
4	*5500.00	112.9 PK			1.18 V	72	71.69	41.21
5	*5500.00	102.1 AV			1.18 V	72	60.89	41.21
6	11000.00	54.1 PK	74.0	-19.9	1.32 V	224	6.15	47.95
7	11000.00	46.5 AV	54.0	-7.5	1.32 V	224	-1.45	47.95
8	#16500.00	57.3 PK	68.3	-11.0	1.00 V	2	3.66	53.64

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	*5580.00	110.3 PK			1.33 H	351	68.87	41.43
2	*5580.00	100.2 AV			1.33 H	351	58.77	41.43
3	11160.00	59.2 PK	74.0	-14.8	1.12 H	269	11.32	47.88
4	11160.00	48.8 AV	54.0	-5.2	1.12 H	269	0.92	47.88
5	#16740.00	59.3 PK	68.3	-9.0	1.03 H	213	5.73	53.57
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	113.9 PK			1.14 V	63	72.47	41.43
2	*5580.00	103.4 AV			1.14 V	63	61.97	41.43
3	11160.00	53.7 PK	74.0	-20.3	1.31 V	223	5.82	47.88
4	11160.00	46.3 AV	54.0	-7.7	1.31 V	223	-1.58	47.88
5	#16740.00	57.4 PK	68.3	-10.9	1.00 V	7	3.83	53.57

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 132	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	*5660.00	107.5 PK			1.37 H	307	65.78	41.72
2	*5660.00	97.2 AV			1.37 H	307	55.48	41.72
3	11320.00	57.9 PK	74.0	-16.1	1.10 H	296	9.93	47.97
4	11320.00	47.3 AV	54.0	-6.7	1.10 H	296	-0.67	47.97
5	#16980.00	59.4 PK	68.3	-8.9	1.04 H	247	5.62	53.78
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	*5660.00	111.3 PK			1.14 V	73	69.58	41.72
2	*5660.00	101.7 AV			1.14 V	73	59.98	41.72
3	11320.00	54.3 PK	74.0	-19.7	1.36 V	221	6.33	47.97
4	11320.00	46.7 AV	54.0	-7.3	1.36 V	221	-1.27	47.97
5	#16980.00	57.6 PK	68.3	-10.7	1.00 V	5	3.82	53.78

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

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

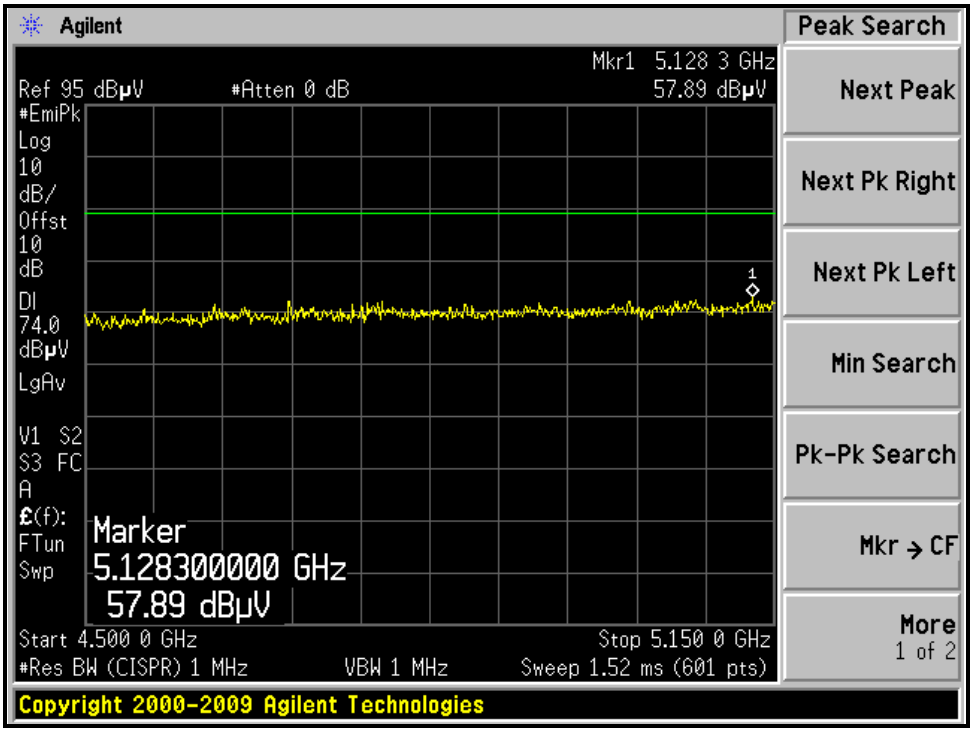
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

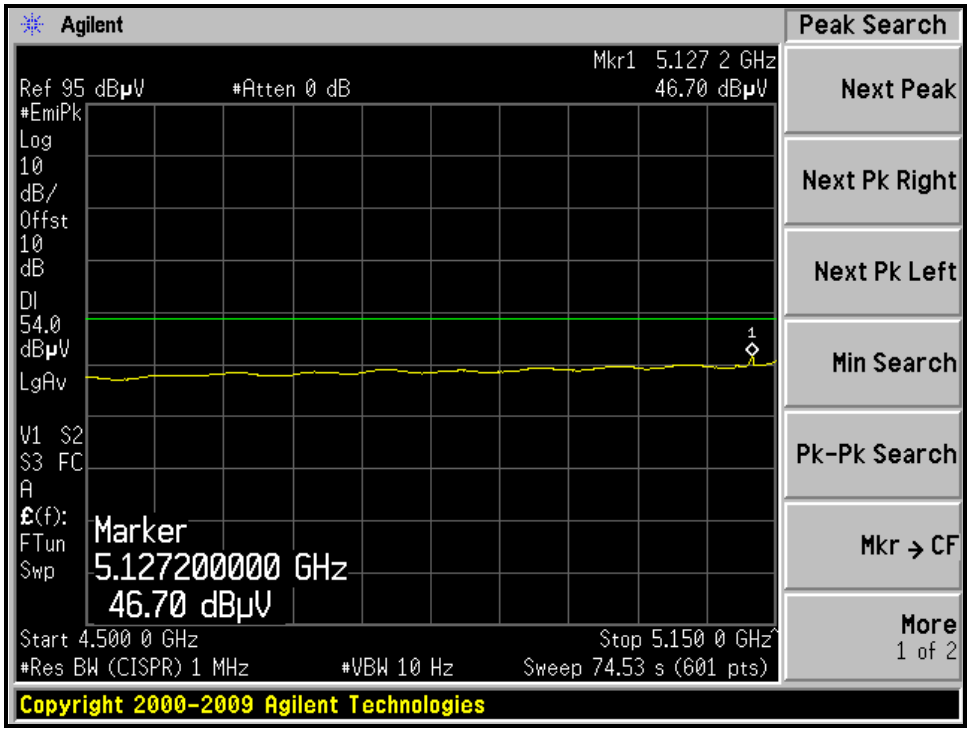
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.7 PK			1.36 H	307	66.83	41.87
2	*5700.00	100.6 AV			1.36 H	307	58.73	41.87
3	#5725.00	59.3 PK	68.3	-9.0	1.36 H	304	17.34	41.96
4	11400.00	56.8 PK	74.0	-17.2	1.13 H	243	8.58	48.22
5	11400.00	45.5 AV	54.0	-8.5	1.13 H	243	-2.72	48.22
6	#17100.00	59.7 PK	68.3	-8.6	1.07 H	242	5.86	53.84
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	113.0 PK			1.14 V	72	71.13	41.87
2	*5700.00	103.9 AV			1.14 V	72	62.03	41.87
3	#5725.00	64.3 PK	68.3	-4.0	1.16 V	76	22.34	41.96
4	11400.00	53.4 PK	74.0	-20.6	1.35 V	211	5.18	48.22
5	11400.00	46.3 AV	54.0	-7.7	1.35 V	211	-1.92	48.22
6	#17100.00	57.9 PK	68.3	-10.4	1.00 V	4	4.06	53.84

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

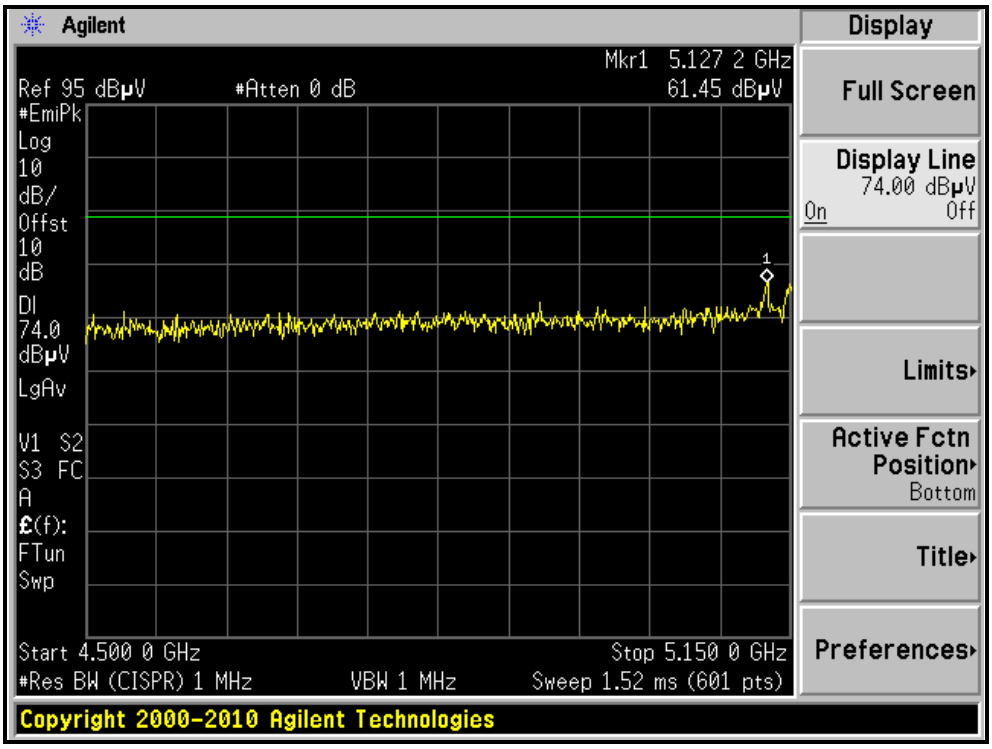
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

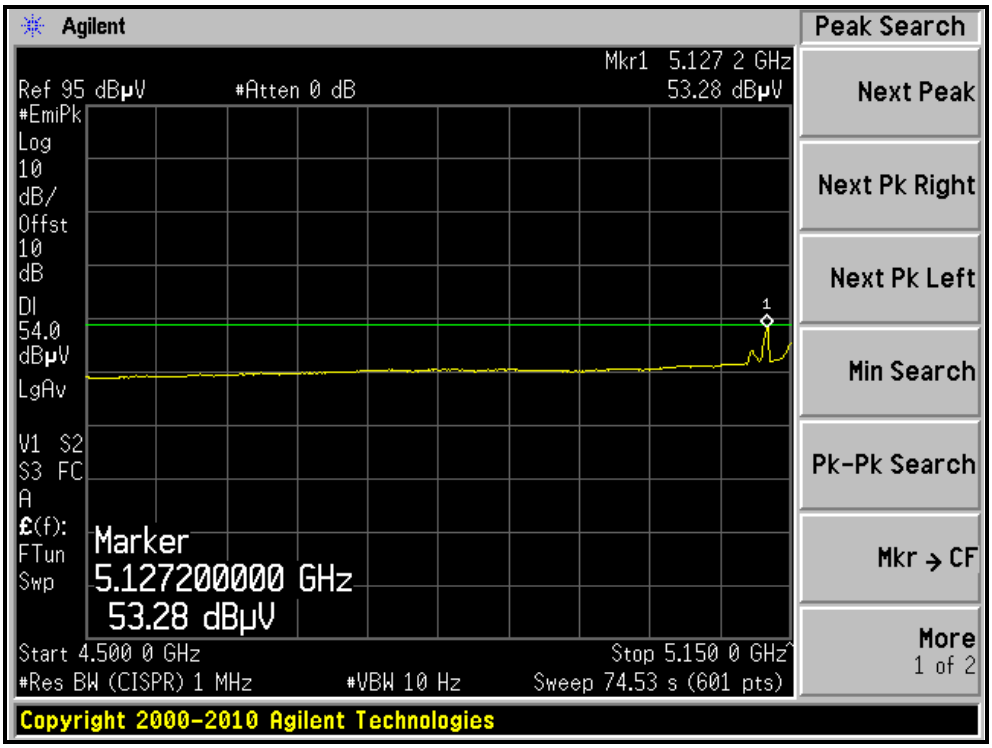
RESTRICTED BANDEDGE (802.11a MODE, CH36, HORIZONTAL)





RESTRICTED BANDEDGE (802.11a MODE, CH36, VERTICAL)





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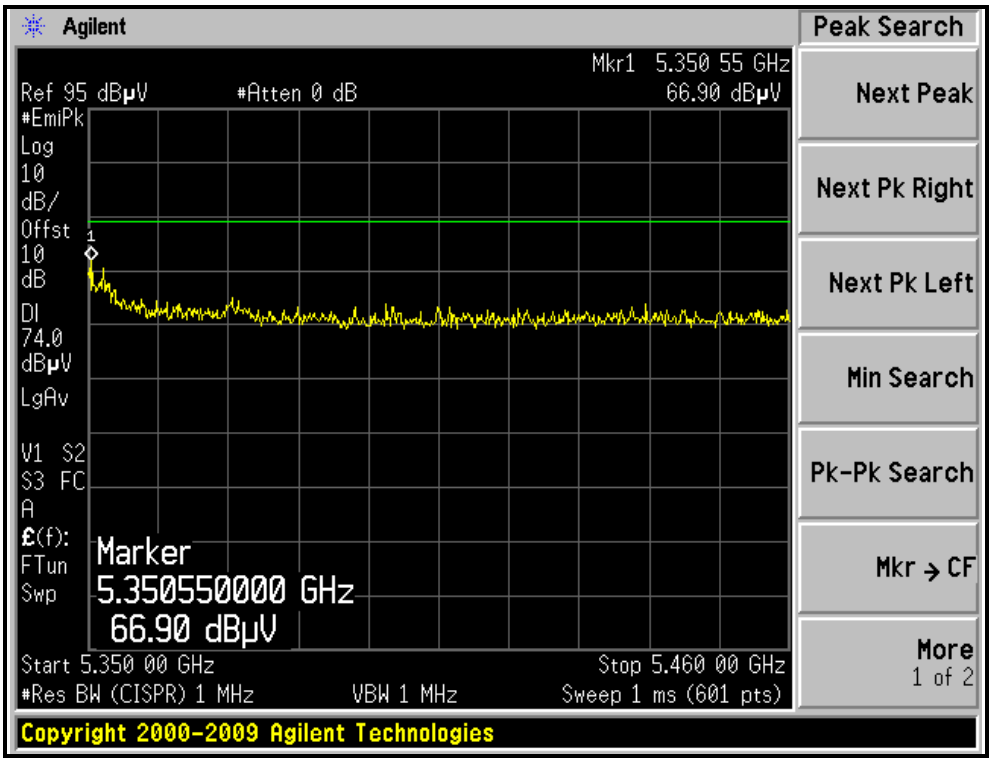

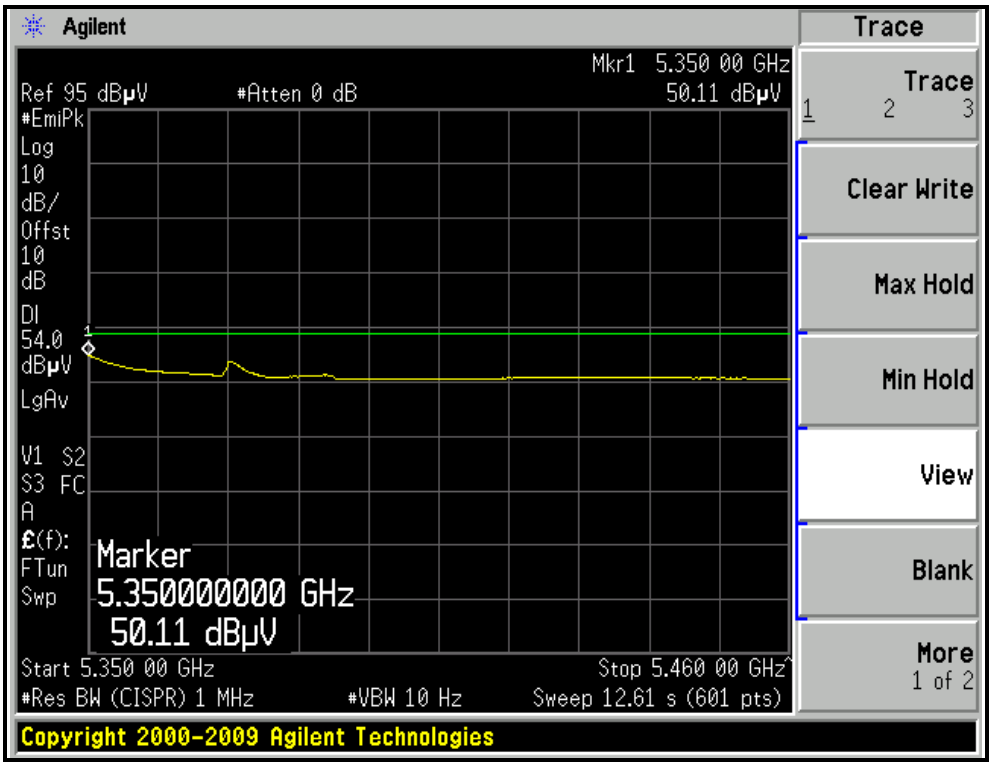

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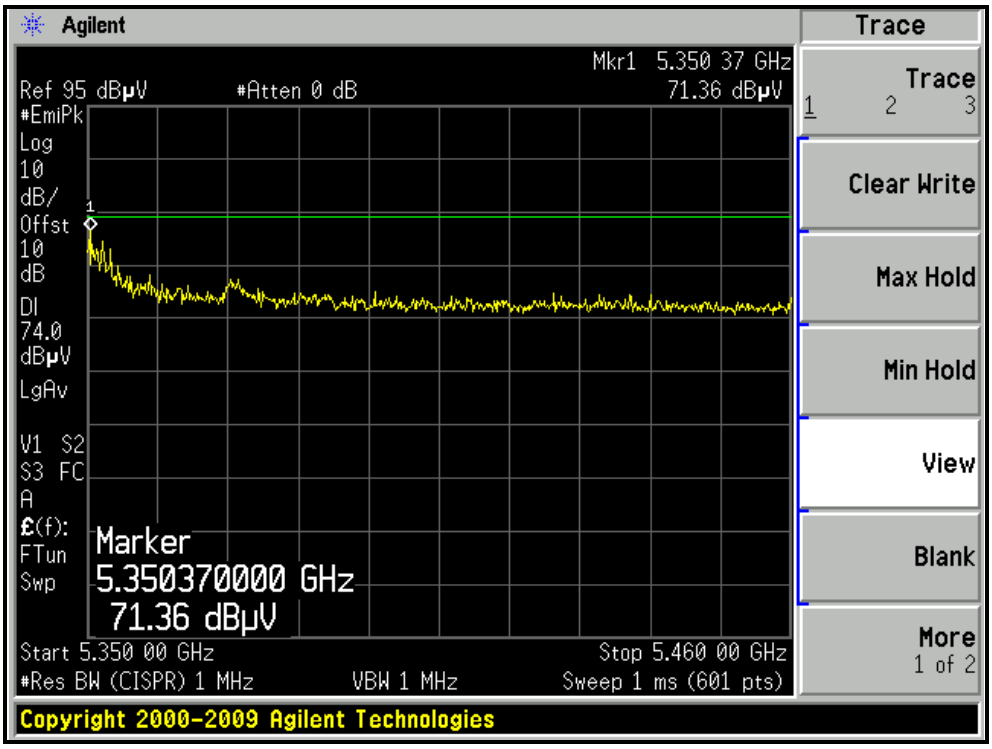

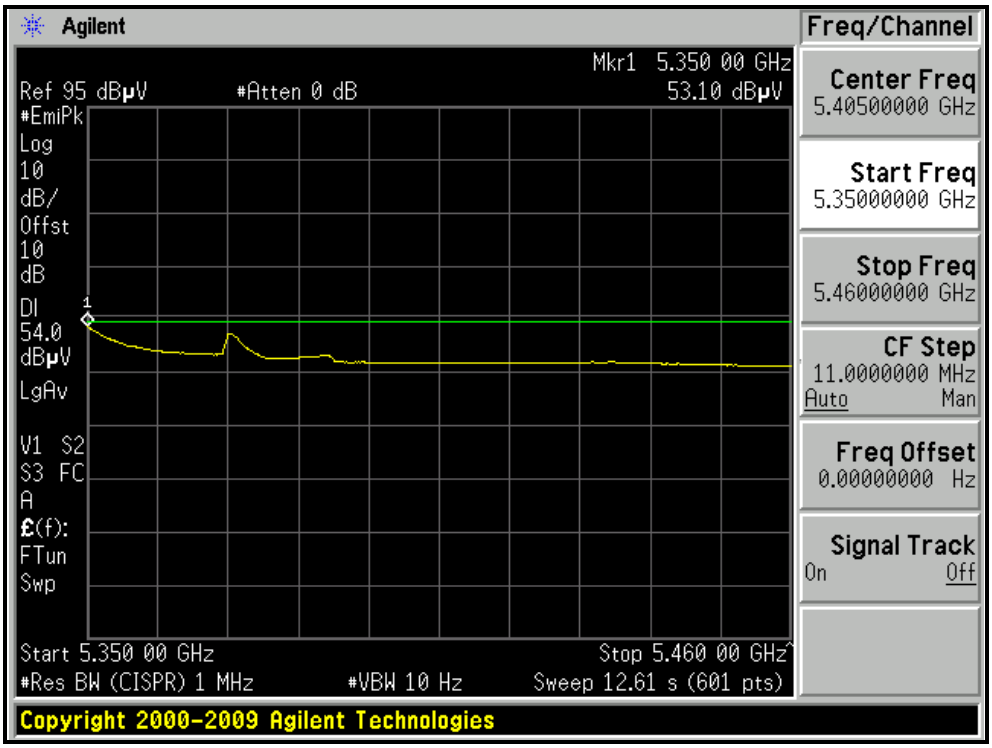

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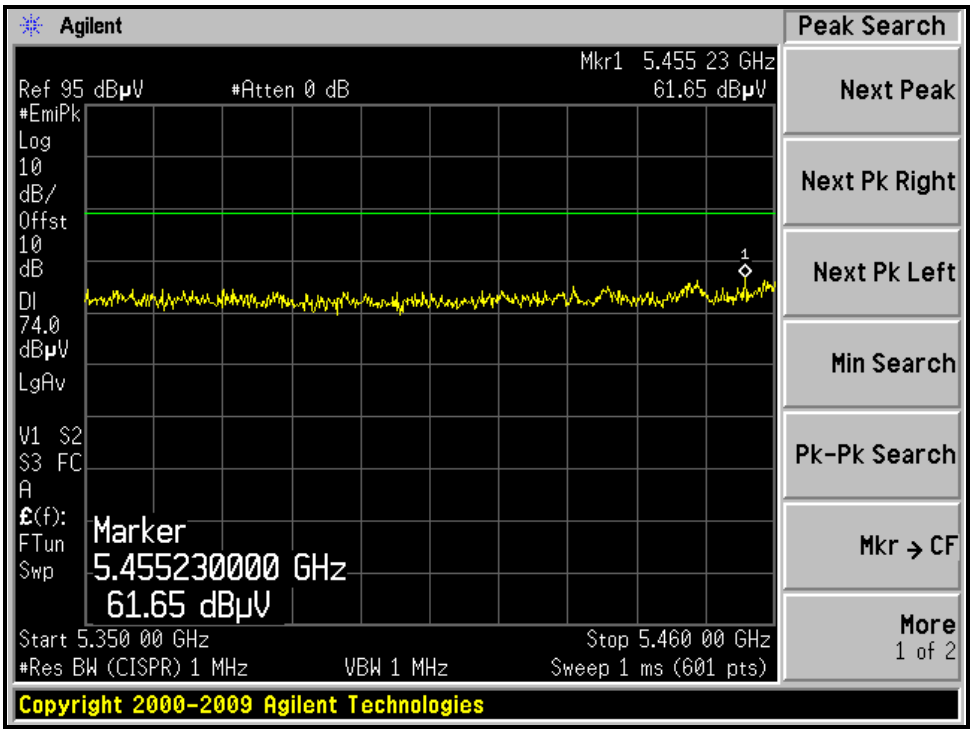

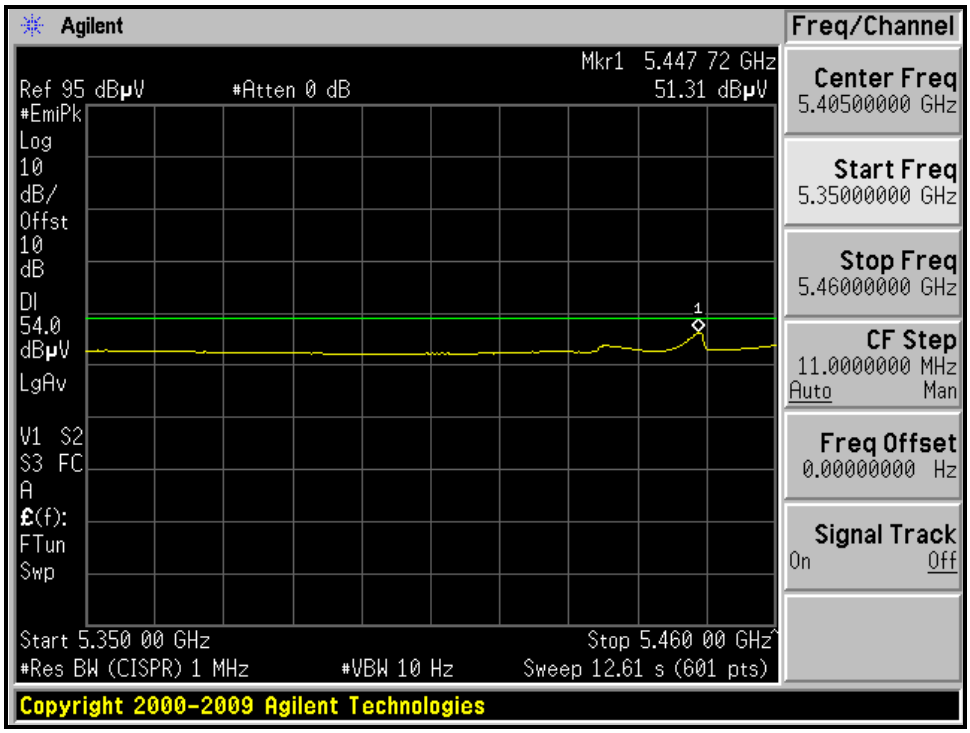

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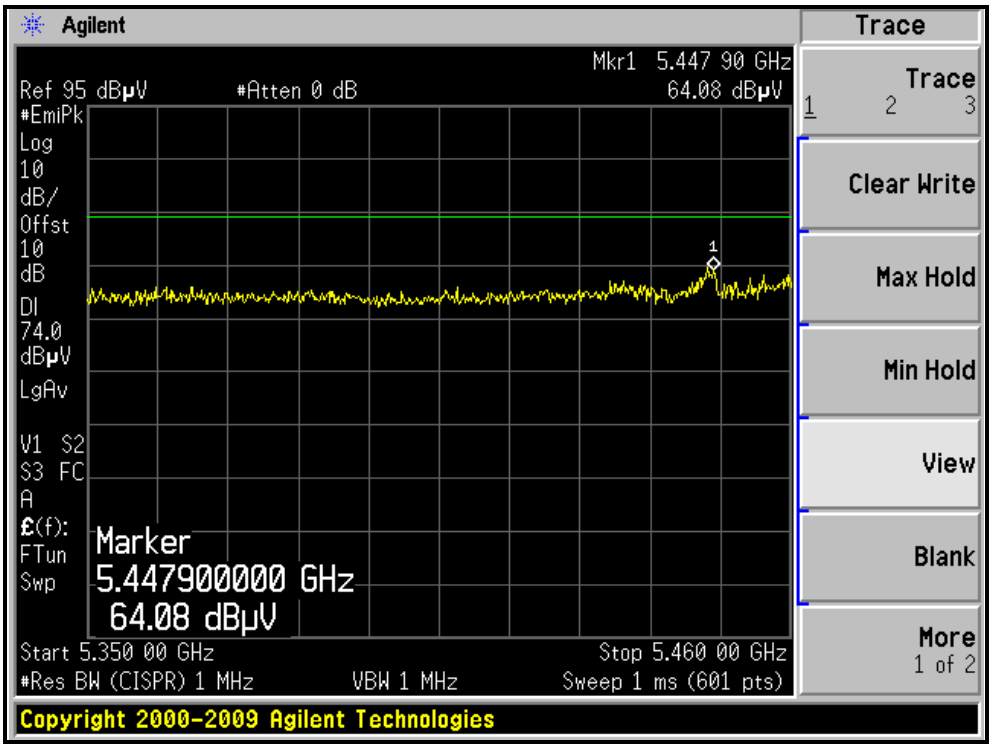
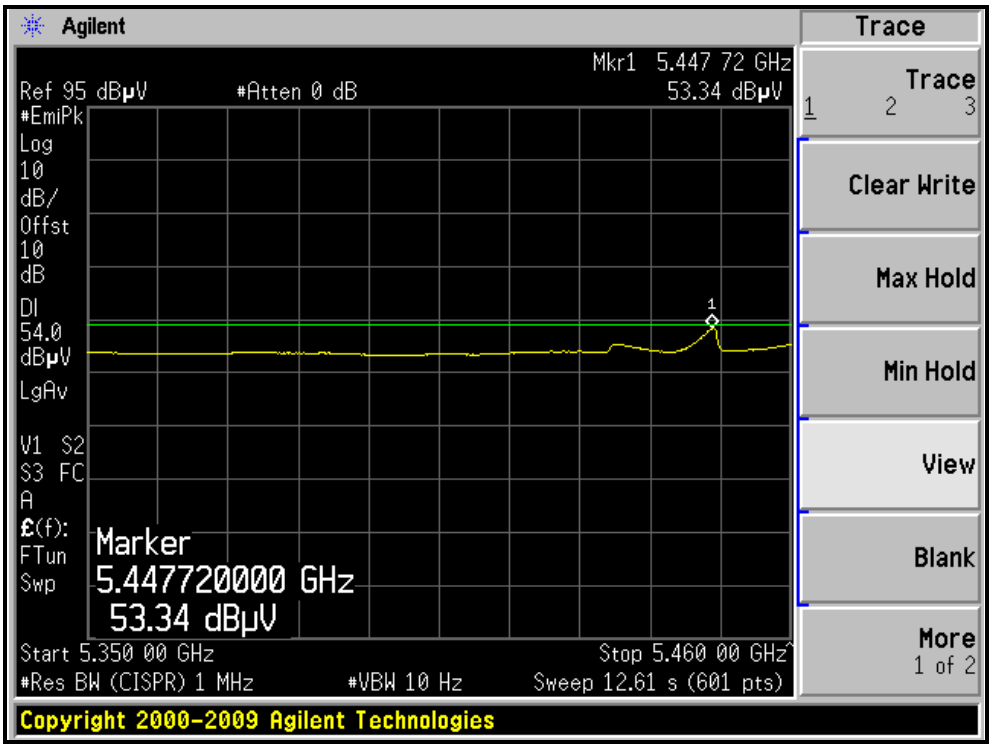




802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	5128.30	58.8 PK	74.0	-15.2	1.26 H	4	18.56	40.24
2	5128.30	49.2 AV	54.0	-4.8	1.26 H	4	8.96	40.24
3	*5180.00	102.2 PK			1.40 H	30	61.87	40.33
4	*5180.00	92.3 AV			1.40 H	30	51.97	40.33
5	#10360.00	53.4 PK	68.3	-14.9	1.15 H	10	6.57	46.83
6	15540.00	59.1 PK	74.0	-14.9	1.00 H	26	6.89	52.21
7	15540.00	49.5 AV	54.0	-4.5	1.00 H	26	-2.71	52.21
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	5128.30	62.8 PK	74.0	-11.2	1.18 V	261	22.56	40.24
2	5128.30	52.9 AV	54.0	-1.1	1.18 V	261	12.66	40.24
3	*5180.00	110.3 PK			1.28 V	315	69.97	40.33
4	*5180.00	100.2 AV			1.28 V	315	59.87	40.33
5	#10360.00	48.3 PK	68.3	-20.0	1.04 V	208	1.47	46.83
6	15540.00	59.3 PK	74.0	-14.7	1.00 V	26	7.09	52.21
7	15540.00	49.4 AV	54.0	-4.6	1.00 V	26	-2.81	52.21

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	102.4 PK			1.41 H	42	62.04	40.36
2	*5200.00	92.4 AV			1.41 H	42	52.04	40.36
3	#10400.00	53.2 PK	68.3	-15.1	1.15 H	24	6.30	46.90
4	15600.00	59.2 PK	74.0	-14.8	1.01 H	16	7.28	51.92
5	15600.00	49.4 AV	54.0	-4.6	1.01 H	16	-2.52	51.92
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	110.6 PK			1.27 V	314	70.24	40.36
2	*5200.00	100.4 AV			1.27 V	314	60.04	40.36
3	#10400.00	48.8 PK	68.3	-19.5	1.04 V	205	1.90	46.90
4	15600.00	59.3 PK	74.0	-14.7	1.00 V	35	7.38	51.92
5	15600.00	49.6 AV	54.0	-4.4	1.00 V	35	-2.32	51.92

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	102.6 PK			1.46 H	46	62.09	40.51
2	*5240.00	92.3 AV			1.46 H	46	51.79	40.51
3	#10480.00	53.3 PK	68.3	-15.0	1.17 H	20	6.39	46.91
4	15720.00	59.6 PK	74.0	-14.4	1.01 H	19	7.69	51.91
5	15720.00	49.5 AV	54.0	-4.5	1.01 H	19	-2.41	51.91
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	110.7 PK			1.24 V	319	70.19	40.51
2	*5240.00	100.2 AV			1.24 V	319	59.69	40.51
3	#10480.00	49.3 PK	68.3	-19.0	1.01 V	197	2.39	46.91
4	15720.00	59.8 PK	74.0	-14.2	1.00 V	36	7.89	51.91
5	15720.00	50.1 AV	54.0	-3.9	1.00 V	36	-1.81	51.91

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	104.6 PK			1.43 H	57	64.02	40.58
2	*5260.00	94.3 AV			1.43 H	57	53.72	40.58
3	#10520.00	56.4 PK	68.3	-11.9	1.13 H	10	9.38	47.02
4	15780.00	63.5 PK	74.0	-10.5	1.10 H	26	11.32	52.18
5	15780.00	53.1 AV	54.0	-0.9	1.10 H	26	0.92	52.18
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	112.7 PK			1.26 V	314	72.12	40.58
2	*5260.00	102.6 AV			1.26 V	314	62.02	40.58
3	#10520.00	49.6 PK	68.3	-18.7	1.00 V	191	2.58	47.02
4	15780.00	60.2 PK	74.0	-13.8	1.01 V	28	8.02	52.18
5	15780.00	50.6 AV	54.0	-3.4	1.01 V	28	-1.58	52.18

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	104.3 PK			1.44 H	62	63.57	40.73
2	*5300.00	94.2 AV			1.44 H	62	53.47	40.73
3	10600.00	66.9 PK	74.0	-7.1	1.11 H	170	19.42	47.48
4	**10600.00**	**53.5 AV**	**54.0**	**-0.5**	**1.11 H**	**170**	**6.02**	**47.48**
5	15900.00	63.7 PK	74.0	-10.3	1.07 H	28	11.42	52.28
6	15900.00	53.4 AV	54.0	-0.6	1.07 H	28	1.12	52.28
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	113.4 PK			1.24 V	313	72.67	40.73
2	*5300.00	102.9 AV			1.24 V	313	62.17	40.73
3	10600.00	54.0 PK	74.0	-20.0	1.37 V	220	6.52	47.48
4	10600.00	46.3 AV	54.0	-7.7	1.37 V	220	-1.18	47.48
5	15900.00	62.4 PK	74.0	-11.6	1.00 V	0	10.12	52.28
6	15900.00	50.3 AV	54.0	-3.7	1.00 V	0	-1.98	52.28

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

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

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

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	104.2 PK			1.45 H	65	63.42	40.78
2	*5320.00	94.3 AV			1.45 H	65	53.52	40.78
3	5350.00	58.6 PK	74.0	-15.4	1.26 H	4	17.74	40.86
4	5350.00	48.9 AV	54.0	-5.1	1.26 H	4	8.04	40.86
5	10640.00	66.7 PK	74.0	-7.3	1.12 H	175	19.27	47.43
6	10640.00	53.4 AV	54.0	-0.6	1.12 H	175	5.97	47.43
7	15960.00	63.4 PK	74.0	-10.6	1.04 H	34	11.26	52.14
8	15960.00	53.1 AV	54.0	-0.9	1.04 H	34	0.96	52.14
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	113.3 PK			1.42 V	284	72.52	40.78
2	*5320.00	102.2 AV			1.42 V	284	61.42	40.78
3	5372.00	59.8 PK	74.0	-14.2	1.26 V	260	18.88	40.92
4	5372.00	49.6 AV	54.0	-4.4	1.26 V	260	8.68	40.92
5	10640.00	54.0 PK	74.0	-20.0	1.33 V	208	6.57	47.43
6	10640.00	46.5 AV	54.0	-7.5	1.33 V	208	-0.93	47.43
7	15960.00	62.3 PK	74.0	-11.7	1.00 V	11	10.16	52.14
8	15960.00	50.3 AV	54.0	-3.7	1.00 V	11	-1.84	52.14

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

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

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

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	5447.72	57.1 PK	74.0	-16.9	1.26 H	191	16.01	41.09
2	5447.72	48.0 AV	54.0	-6.0	1.26 H	191	6.91	41.09
3	#5470.00	56.9 PK	68.3	-11.4	1.57 H	17	15.76	41.14
4	*5500.00	104.1 PK			1.43 H	30	62.89	41.21
5	*5500.00	92.7 AV			1.43 H	30	51.49	41.21
6	7333.00	54.5 PK	74.0	-19.5	1.29 H	24	7.65	46.85
7	7333.00	46.8 AV	54.0	-7.2	1.29 H	24	-0.05	46.85
8	11000.00	64.1 PK	74.0	-9.9	1.17 H	37	16.15	47.95
9	11000.00	52.4 AV	54.0	-1.6	1.17 H	37	4.45	47.95
10	#16500.00	59.3 PK	68.3	-9.0	1.03 H	62	5.66	53.64
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	5448.27	63.0 PK	74.0	-11.0	1.26 V	148	21.90	41.10
2	5448.27	53.3 AV	54.0	-0.7	1.26 V	148	12.20	41.10
3	#5470.00	56.4 PK	68.3	-11.9	1.26 V	184	15.26	41.14
4	*5500.00	107.2 PK			1.30 V	144	65.99	41.21
5	*5500.00	95.2 AV			1.30 V	144	53.99	41.21
6	7333.00	54.9 PK	74.0	-19.1	1.18 V	120	8.05	46.85
7	7333.00	45.8 AV	54.0	-8.2	1.18 V	120	-1.05	46.85
8	11000.00	54.4 PK	74.0	-19.6	1.33 V	204	6.45	47.95
9	11000.00	46.3 AV	54.0	-7.7	1.33 V	204	-1.65	47.95
10	#16500.00	58.4 PK	68.3	-9.9	1.00 V	23	4.76	53.64

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	*5580.00	105.3 PK			1.43 H	36	63.87	41.43
2	*5580.00	93.9 AV			1.43 H	36	52.47	41.43
3	11160.00	61.1 PK	74.0	-12.9	1.13 H	62	13.22	47.88
4	11160.00	50.4 AV	54.0	-3.6	1.13 H	62	2.52	47.88
5	#16740.00	60.4 PK	68.3	-7.9	1.04 H	57	6.83	53.57
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	110.8 PK			1.24 V	143	69.37	41.43
2	*5580.00	100.7 AV			1.24 V	143	59.27	41.43
3	11160.00	54.1 PK	74.0	-19.9	1.32 V	201	6.22	47.88
4	11160.00	46.2 AV	54.0	-7.8	1.32 V	201	-1.68	47.88
5	#16740.00	57.3 PK	68.3	-11.0	1.00 V	33	3.73	53.57

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 132	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	*5660.00	105.6 PK			1.43 H	72	63.88	41.72
2	*5660.00	94.3 AV			1.43 H	72	52.58	41.72
3	11320.00	57.2 PK	74.0	-16.8	1.13 H	37	9.23	47.97
4	11320.00	49.3 AV	54.0	-4.7	1.13 H	37	1.33	47.97
5	#16980.00	60.3 PK	68.3	-8.0	1.02 H	62	6.52	53.78
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	*5660.00	110.6 PK			1.24 V	149	68.88	41.72
2	*5660.00	100.4 AV			1.24 V	149	58.68	41.72
3	11320.00	54.2 PK	74.0	-19.8	1.31 V	204	6.23	47.97
4	11320.00	46.3 AV	54.0	-7.7	1.31 V	204	-1.67	47.97
5	#16980.00	57.3 PK	68.3	-11.0	1.00 V	62	3.52	53.78

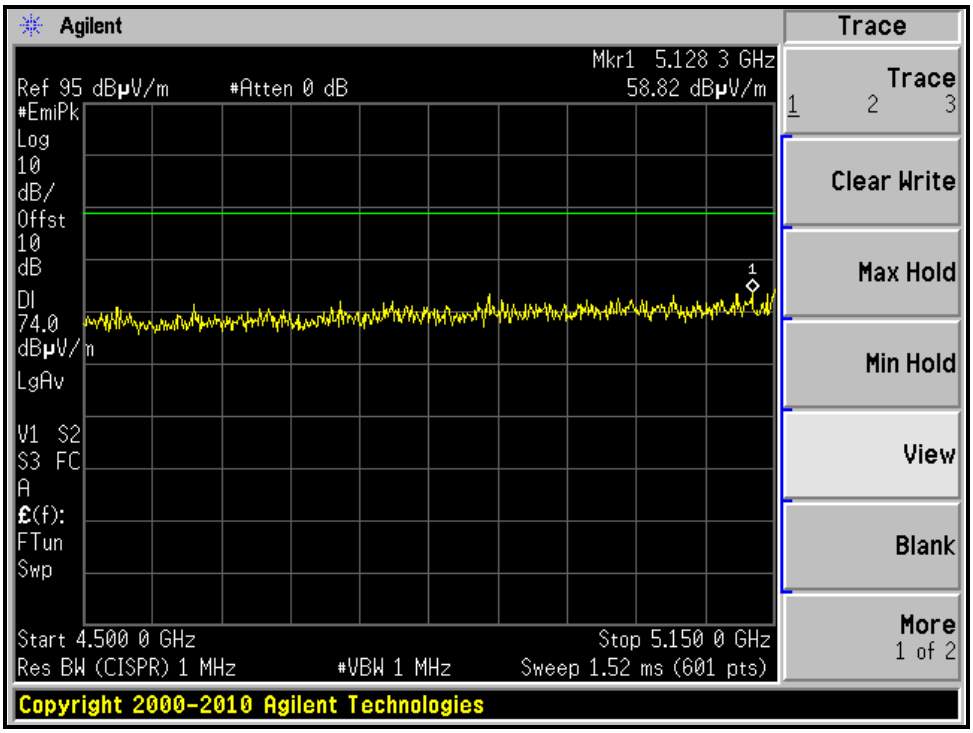
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6.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

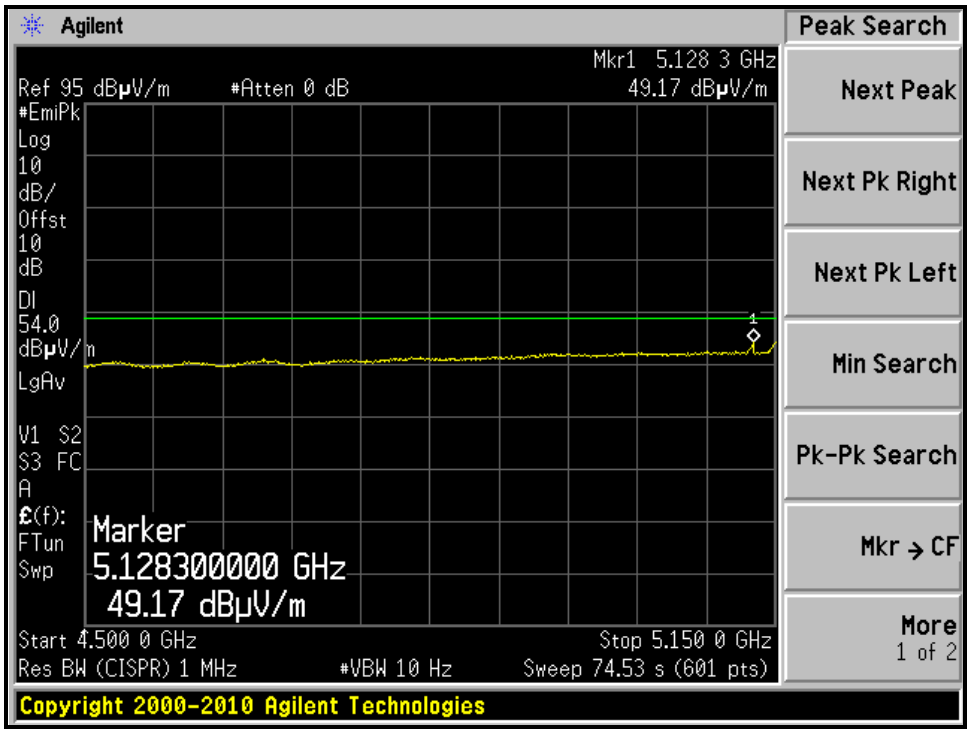
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	*5700.00	105.7 PK			1.47 H	160	63.83	41.87
2	*5700.00	94.6 AV			1.47 H	160	52.73	41.87
3	#5725.00	58.3 PK	68.3	-10.0	1.47 H	160	16.34	41.96
4	11400.00	57.3 PK	74.0	-16.7	1.15 H	42	9.08	48.22
5	11400.00	48.4 AV	54.0	-5.6	1.15 H	42	0.18	48.22
6	#17100.00	64.2 PK	68.3	-4.1	1.12 H	27	10.36	53.84
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	110.3 PK			1.42 V	265	68.43	41.87
2	*5700.00	100.6 AV			1.42 V	265	58.73	41.87
3	#5725.00	62.4 PK	68.3	-5.9	1.42 V	230	20.44	41.96
4	11400.00	54.3 PK	74.0	-19.7	1.34 V	209	6.08	48.22
5	11400.00	46.7 AV	54.0	-7.3	1.34 V	209	-1.52	48.22
6	#17100.00	57.4 PK	68.3	-10.9	1.00 V	64	3.56	53.84

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

RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH36, HORIZONTAL)





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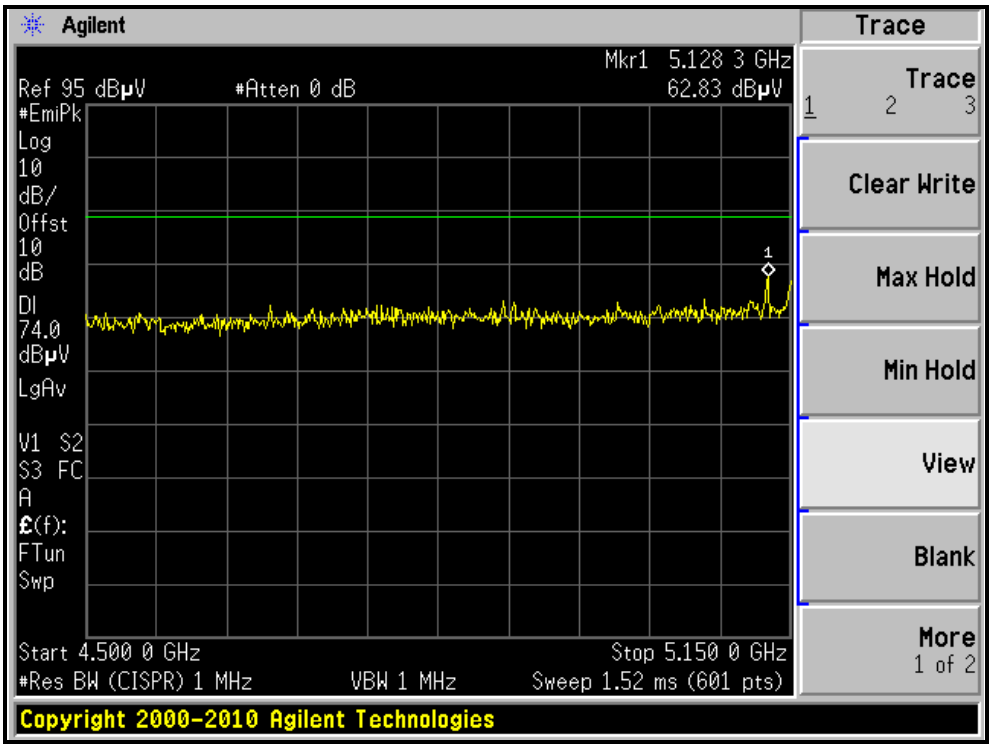

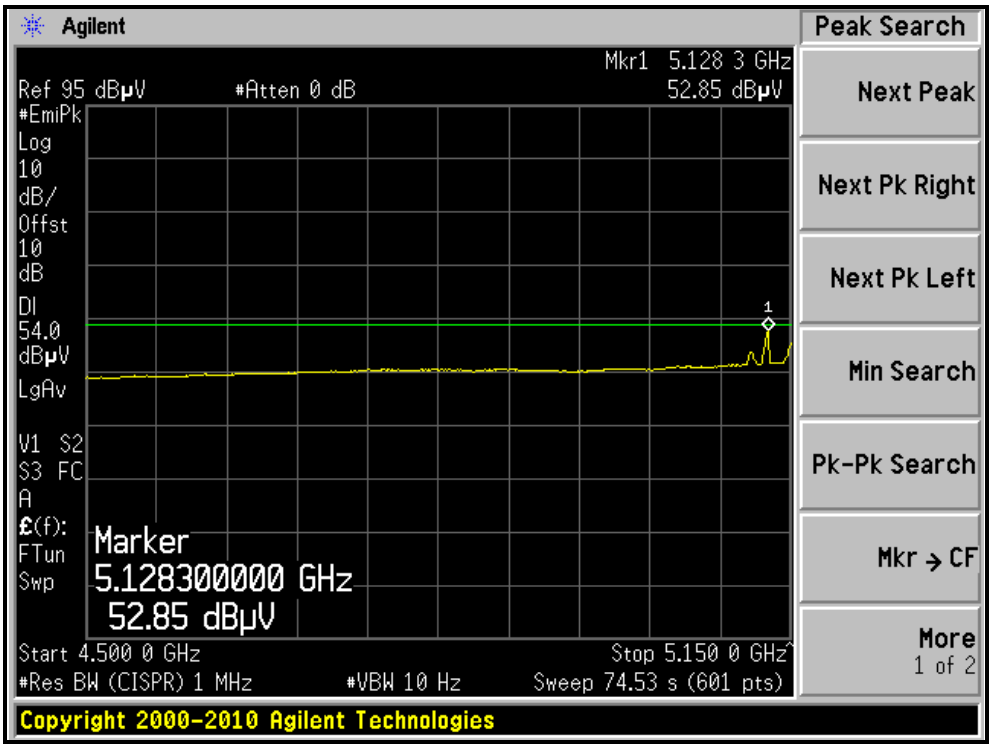

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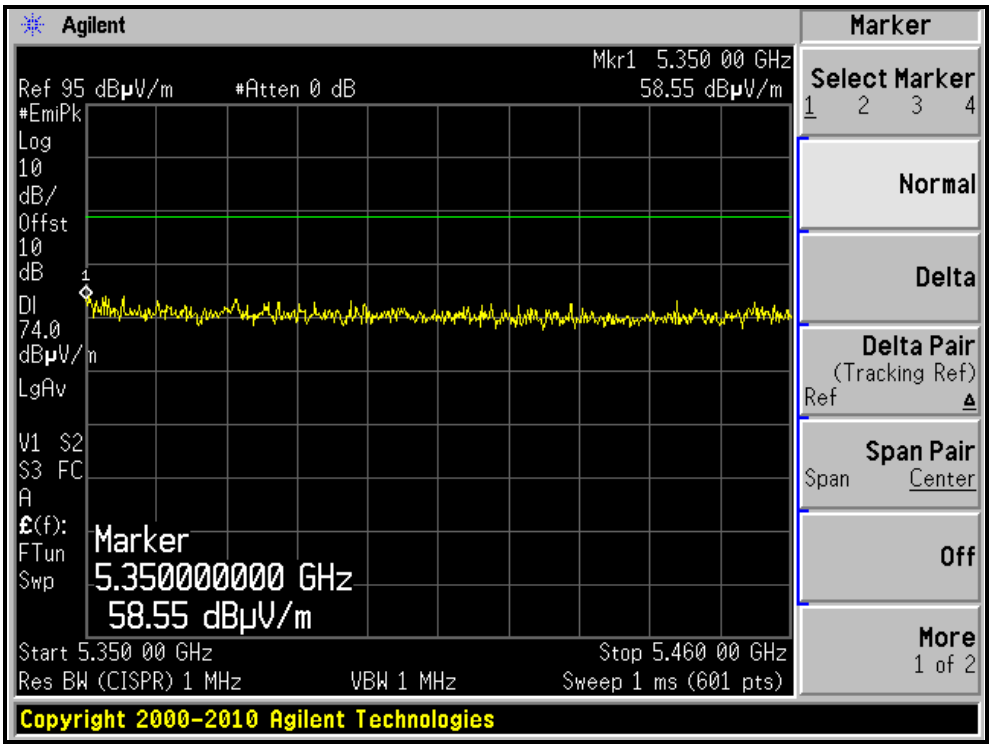

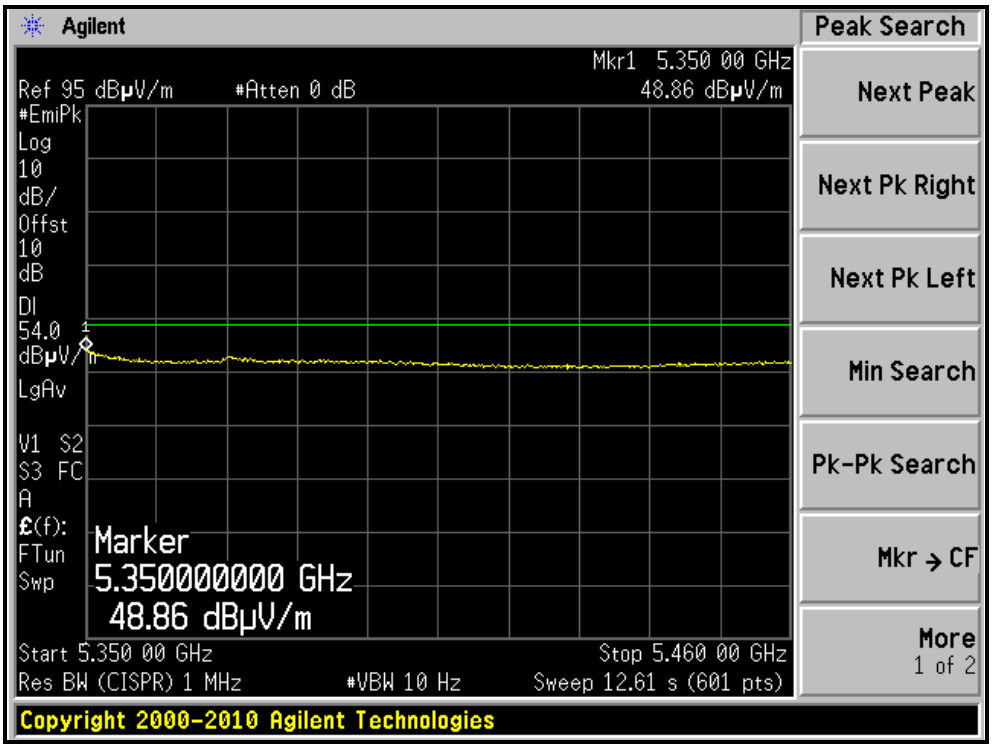

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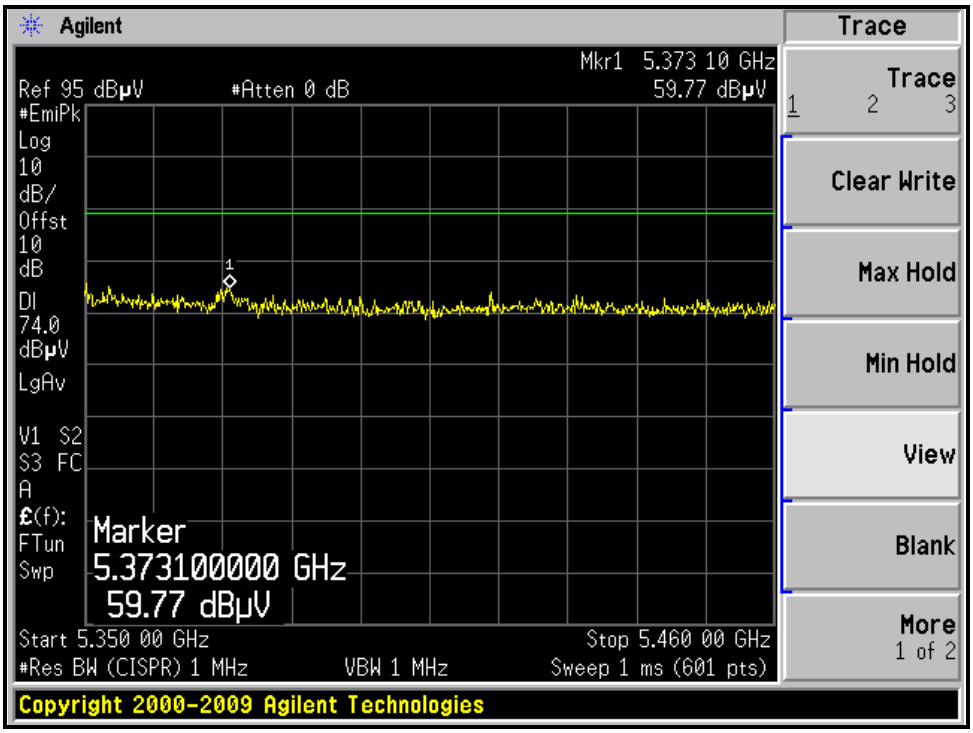

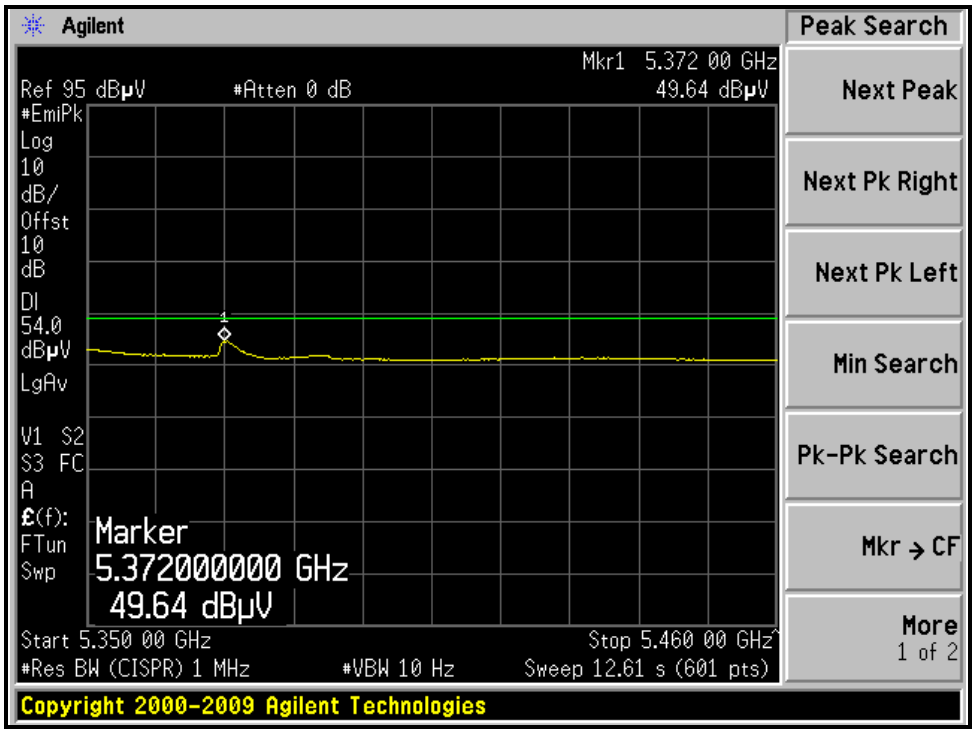

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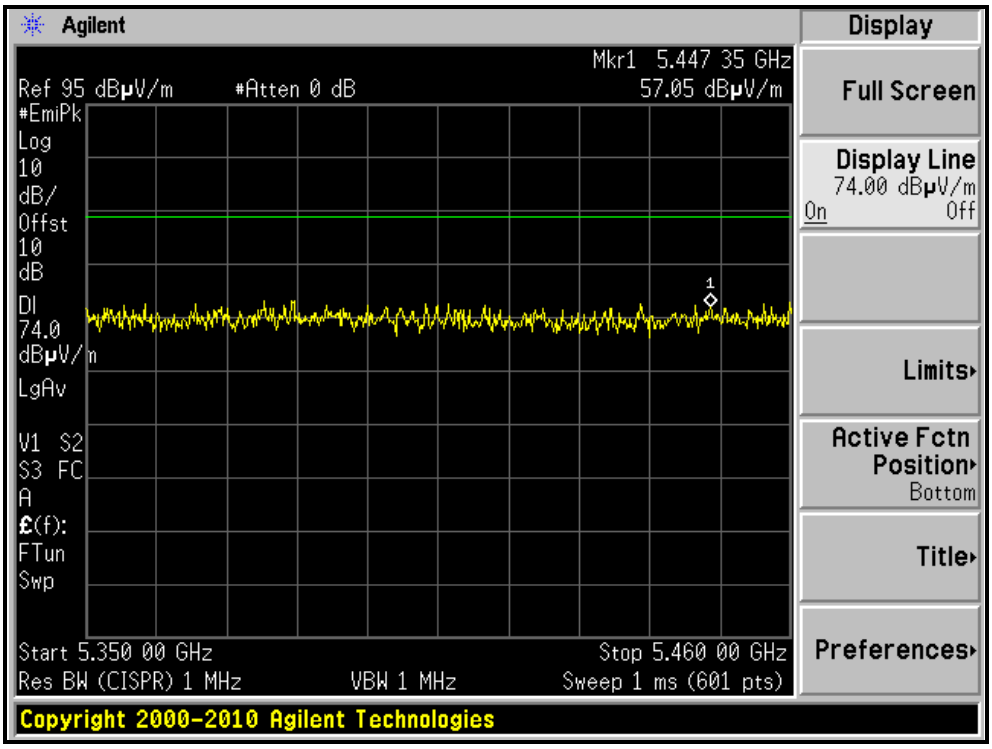

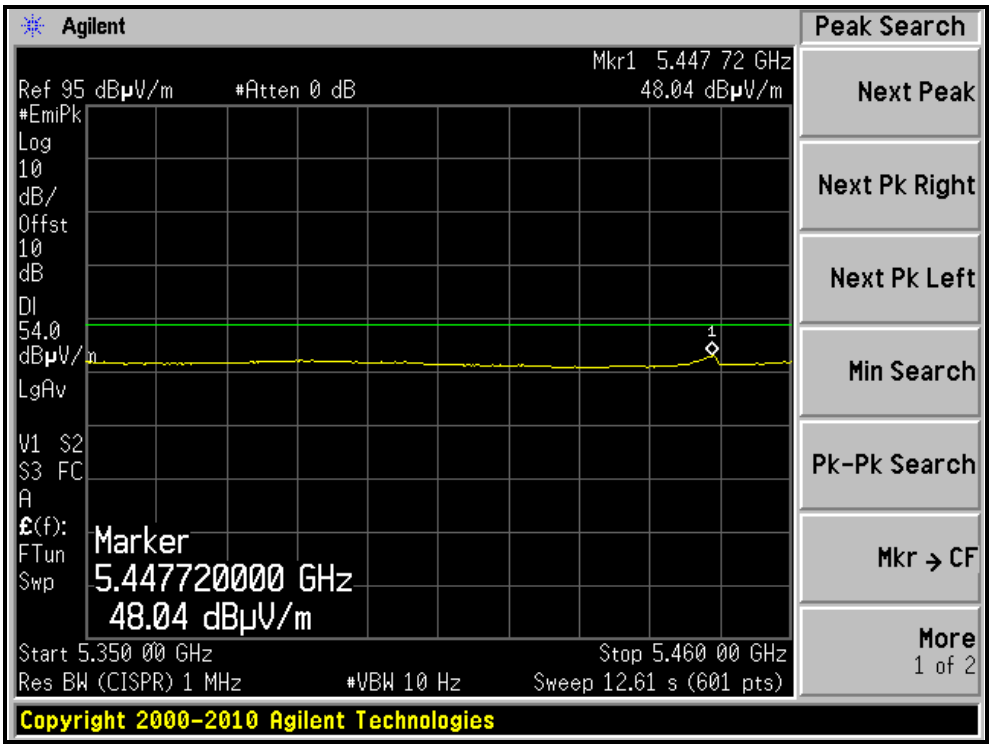

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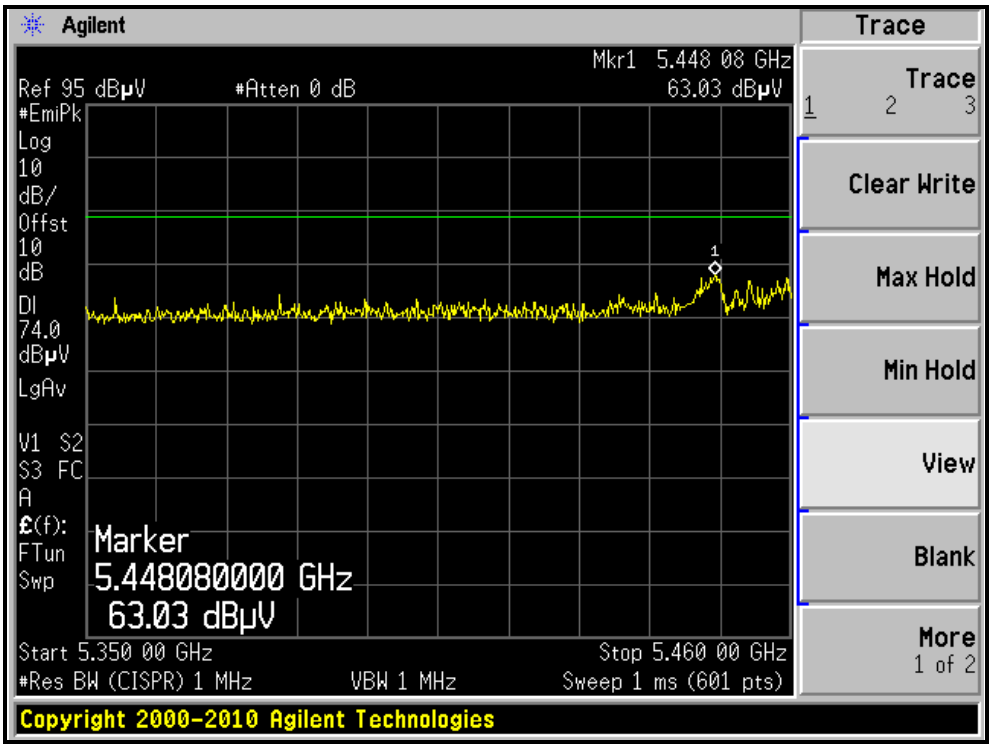
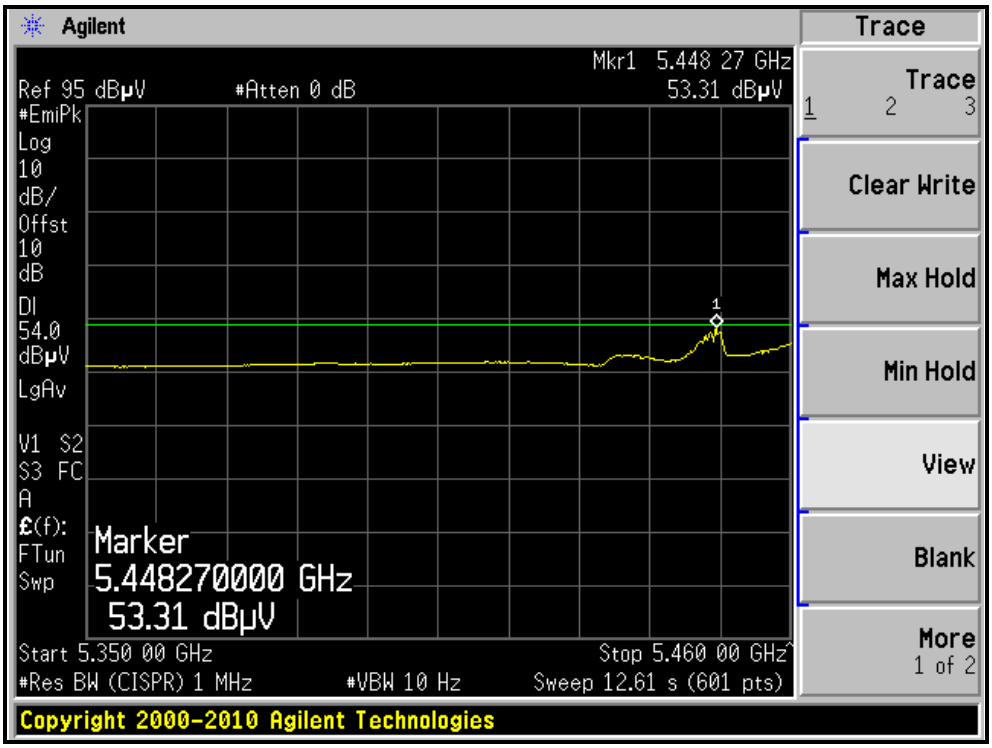




802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	61.0 PK	74.0	-13.0	1.43 H	162	20.73	40.27
2	5150.00	50.0 AV	54.0	-4.0	1.43 H	162	9.73	40.27
3	*5190.00	98.6 PK			1.45 H	154	58.26	40.34
4	*5190.00	88.4 AV			1.45 H	154	48.06	40.34
5	#10380.00	53.1 PK	68.3	-15.2	1.15 H	14	6.24	46.86
6	15570.00	59.4 PK	74.0	-14.6	1.00 H	243	7.33	52.07
7	15570.00	49.2 AV	54.0	-4.8	1.00 H	243	-2.87	52.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.0 PK	74.0	-10.0	1.19 V	262	23.73	40.27
2	5150.00	53.4 AV	54.0	-0.6	1.19 V	262	13.13	40.27
3	*5190.00	102.0 PK			1.18 V	278	61.66	40.34
4	*5190.00	92.2 AV			1.18 V	278	51.86	40.34
5	#10380.00	50.3 PK	68.3	-18.0	1.31 V	204	3.44	46.86
6	15570.00	59.4 PK	74.0	-14.6	1.00 V	56	7.33	52.07
7	15570.00	49.1 AV	54.0	-4.9	1.00 V	56	-2.97	52.07

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	103.4 PK			1.42 H	157	62.93	40.47
2	*5230.00	93.1 AV			1.42 H	157	52.63	40.47
3	#10460.00	53.4 PK	68.3	-14.9	1.13 H	26	6.49	46.91
4	15690.00	59.6 PK	74.0	-14.4	1.00 H	253	7.77	51.83
5	15690.00	49.3 AV	54.0	-4.7	1.00 H	253	-2.53	51.83
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	107.4 PK			1.13 V	274	66.93	40.47
2	*5230.00	97.3 AV			1.13 V	274	56.83	40.47
3	#10460.00	50.4 PK	68.3	-17.9	1.32 V	201	3.49	46.91
4	15690.00	59.7 PK	74.0	-14.3	1.00 V	63	7.87	51.83
5	15690.00	49.2 AV	54.0	-4.8	1.00 V	63	-2.63	51.83

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	107.3 PK			1.44 H	162	66.68	40.62
2	*5270.00	97.4 AV			1.44 H	162	56.78	40.62
3	#10540.00	58.4 PK	68.3	-9.9	1.10 H	171	11.26	47.14
4	15810.00	64.5 PK	74.0	-9.5	1.00 H	33	12.23	52.27
5	15810.00	53.4 AV	54.0	-0.6	1.00 H	33	1.13	52.27
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	111.4 PK			1.13 V	276	70.78	40.62
2	*5270.00	101.3 AV			1.13 V	276	60.68	40.62
3	#10540.00	51.2 PK	68.3	-17.1	1.31 V	204	4.06	47.14
4	15810.00	61.4 PK	74.0	-12.6	1.00 V	64	9.13	52.27
5	15810.00	51.3 AV	54.0	-2.7	1.00 V	64	-0.97	52.27

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	100.4 PK			1.43 H	157	59.64	40.76
2	*5310.00	90.3 AV			1.43 H	157	49.54	40.76
3	5350.00	61.9 PK	74.0	-12.1	1.46 H	164	21.04	40.86
4	5350.00	50.9 AV	54.0	-3.1	1.46 H	164	10.04	40.86
5	10620.00	58.8 PK	74.0	-15.2	1.11 H	9	11.35	47.45
6	10620.00	48.2 AV	54.0	-5.8	1.11 H	9	0.75	47.45
7	15930.00	64.3 PK	74.0	-9.7	1.00 H	37	12.09	52.21
8	15930.00	53.2 AV	54.0	-0.8	1.00 H	37	0.99	52.21
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	104.2 PK			1.12 V	271	63.44	40.76
2	*5310.00	94.3 AV			1.12 V	271	53.54	40.76
3	5350.00	65.7 PK	74.0	-8.3	1.15 V	227	24.84	40.86
4	5350.00	53.3 AV	54.0	-0.7	1.15 V	227	12.44	40.86
5	10620.00	58.7 PK	74.0	-15.3	1.32 V	209	11.25	47.45
6	10620.00	48.4 AV	54.0	-5.6	1.32 V	209	0.95	47.45
7	15930.00	61.2 PK	74.0	-12.8	1.00 V	65	8.99	52.21
8	15930.00	51.1 AV	54.0	-2.9	1.00 V	65	-1.11	52.21

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

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

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

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	5460.00	60.3 PK	74.0	-13.7	1.21 H	283	19.18	41.12
2	5460.00	49.7 AV	54.0	-4.3	1.21 H	283	8.58	41.12
3	#5470.00	54.6 PK	68.3	-13.7	1.00 H	264	13.46	41.14
4	*5510.00	96.4 PK			1.36 H	204	55.16	41.24
5	*5510.00	86.3 AV			1.36 H	204	45.06	41.24
6	11020.00	57.4 PK	74.0	-16.6	1.11 H	15	9.46	47.94
7	11020.00	46.3 AV	54.0	-7.7	1.11 H	15	-1.64	47.94
8	#16530.00	62.2 PK	68.3	-6.1	1.00 H	62	8.51	53.69
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	5458.35	60.8 PK	74.0	-13.2	1.38 V	139	19.68	41.12
2	5458.35	53.3 AV	54.0	-0.7	1.38 V	139	12.18	41.12
3	#5470.00	64.2 PK	68.3	-4.1	1.33 V	222	23.06	41.14
4	*5510.00	102.9 PK			1.37 V	208	61.66	41.24
5	*5510.00	92.7 AV			1.37 V	208	51.46	41.24
6	11020.00	58.3 PK	74.0	-15.7	1.31 V	204	10.36	47.94
7	11020.00	48.3 AV	54.0	-5.7	1.31 V	204	0.36	47.94
8	#16530.00	59.3 PK	68.3	-9.0	1.00 V	73	5.61	53.69

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 110	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	*5550.00	99.3 PK			1.34 H	207	57.95	41.35
2	*5550.00	89.4 AV			1.34 H	207	48.05	41.35
3	11100.00	57.6 PK	74.0	-16.4	1.16 H	23	9.68	47.92
4	11100.00	45.3 AV	54.0	-8.7	1.16 H	23	-2.62	47.92
5	#16650.00	62.1 PK	68.3	-6.2	1.00 H	37	8.41	53.69
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	*5550.00	105.6 PK			1.36 V	204	64.25	41.35
2	*5550.00	95.4 AV			1.36 V	204	54.05	41.35
3	11100.00	60.3 PK	74.0	-13.7	1.34 V	213	12.38	47.92
4	11100.00	50.4 AV	54.0	-3.6	1.34 V	213	2.48	47.92
5	#16650.00	59.4 PK	68.3	-8.9	1.00 V	69	5.71	53.69

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.

6. "#":The radiated frequency is out the restricted band.

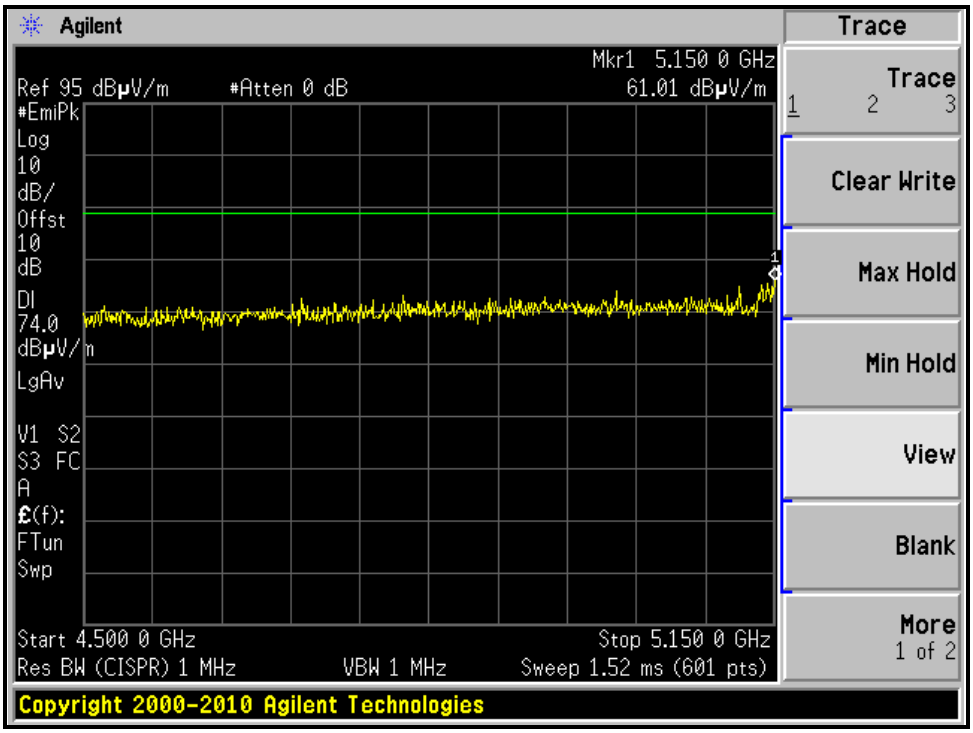
4. Margin value = Emission level – Limit value.

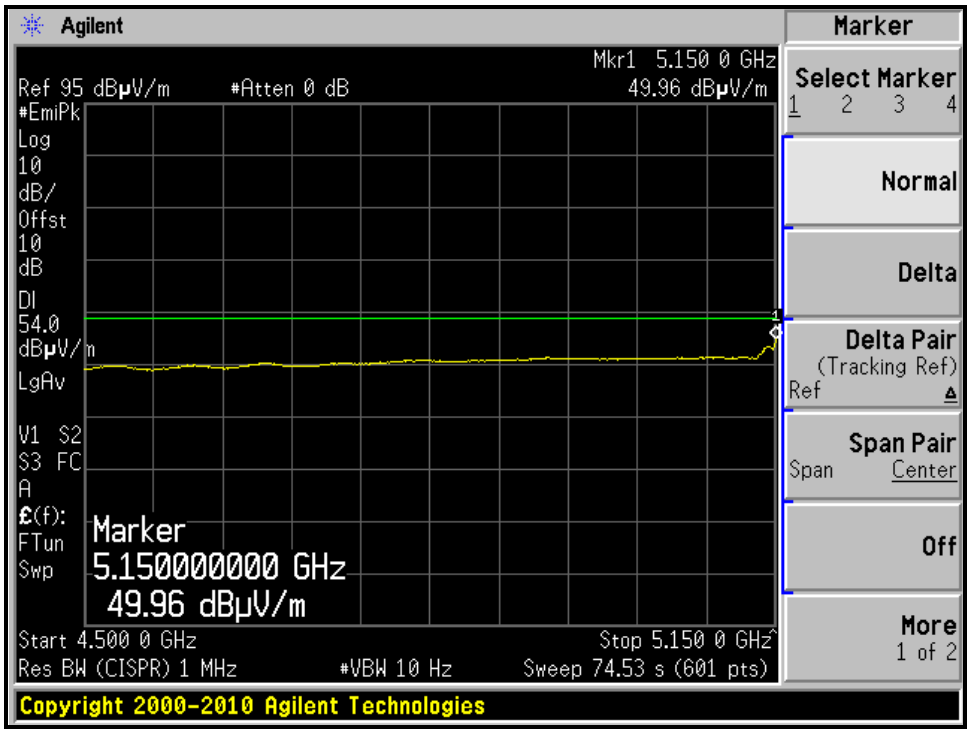
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 69%RH	TESTED BY	Nelson Teng

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	99.7 PK			1.31 H	204	57.94	41.76
2	*5670.00	89.9 AV			1.31 H	204	48.14	41.76
3	#5725.00	58.4 PK	68.3	-9.9	1.00 H	263	16.44	41.96
4	11340.00	57.7 PK	74.0	-16.3	1.12 H	59	9.67	48.03
5	11340.00	45.7 AV	54.0	-8.3	1.12 H	59	-2.33	48.03
6	#17010.00	62.4 PK	68.3	-5.9	1.00 H	43	8.65	53.75
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	105.8 PK			1.34 V	207	64.04	41.76
2	*5670.00	95.7 AV			1.34 V	207	53.94	41.76
3	#5725.00	60.3 PK	68.3	-8.0	1.32 V	204	18.34	41.96
4	11340.00	60.4 PK	74.0	-13.6	1.31 V	219	12.37	48.03
5	11340.00	50.3 AV	54.0	-3.7	1.31 V	219	2.27	48.03
6	#17010.00	59.9 PK	68.3	-8.4	1.00 V	73	6.15	53.75

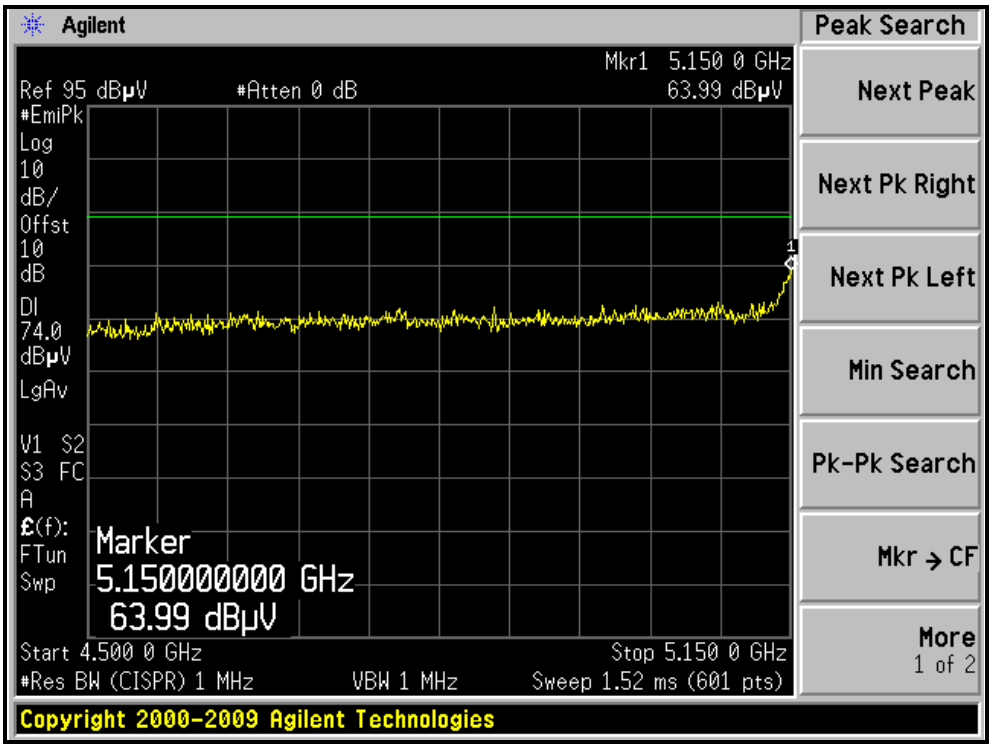
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6.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

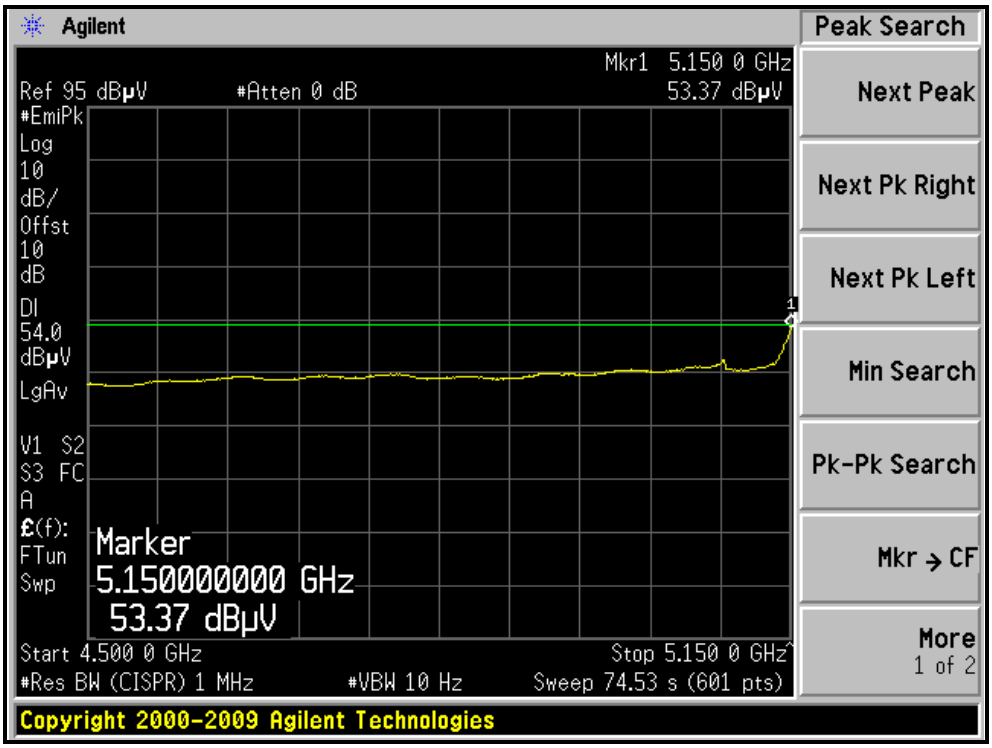
RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH38, HORIZONTAL)



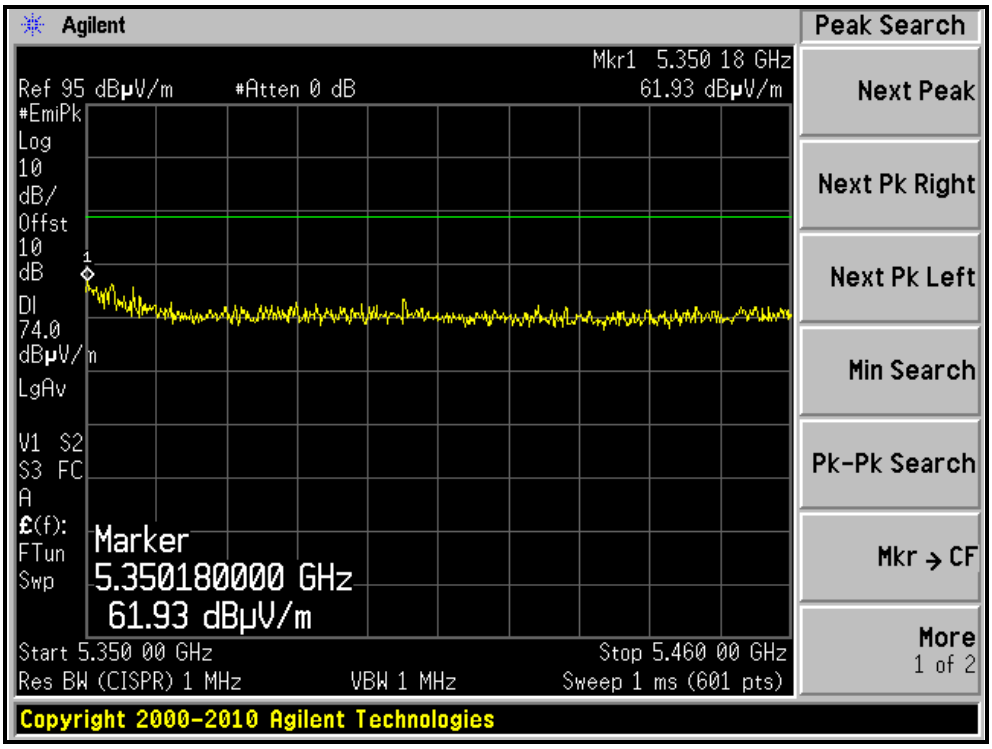


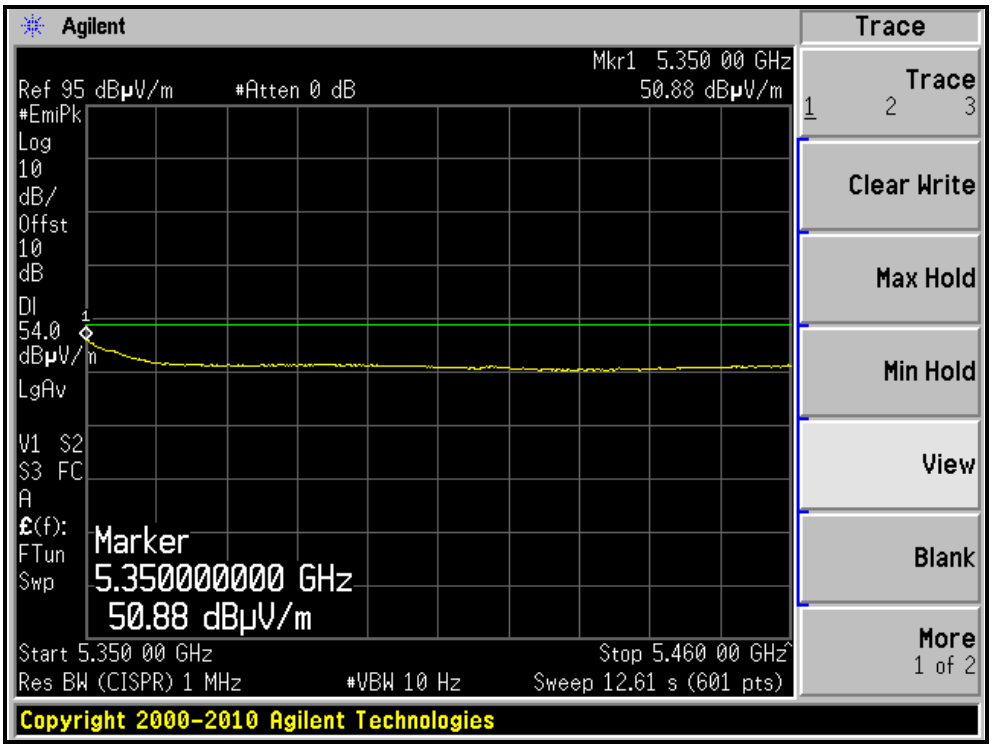
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH38, VERTICAL)



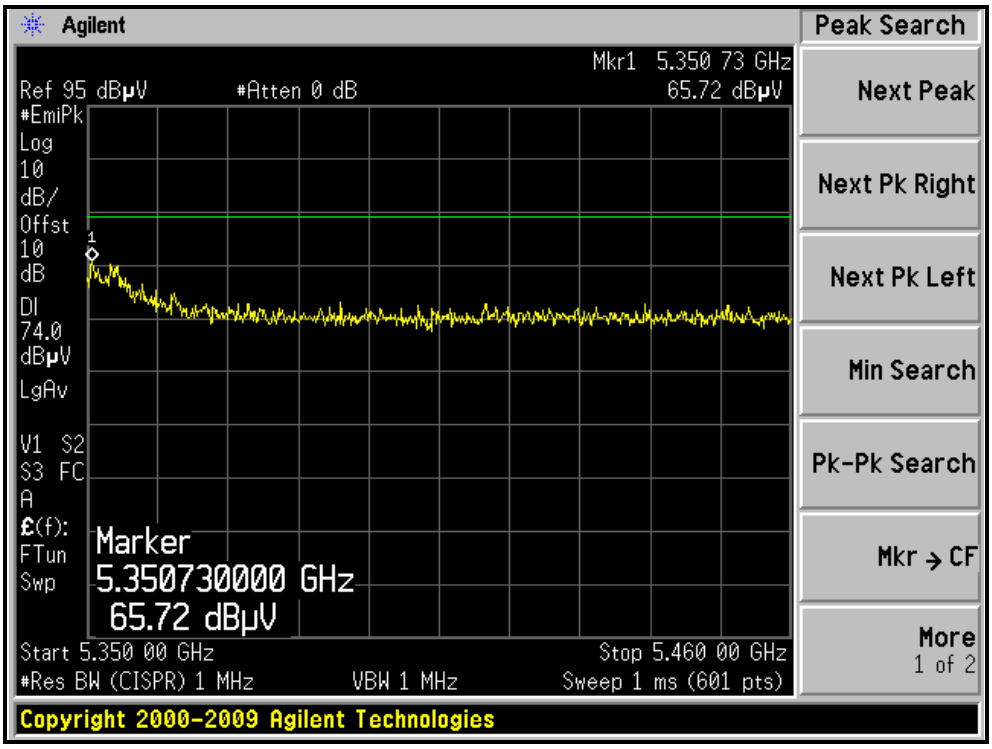


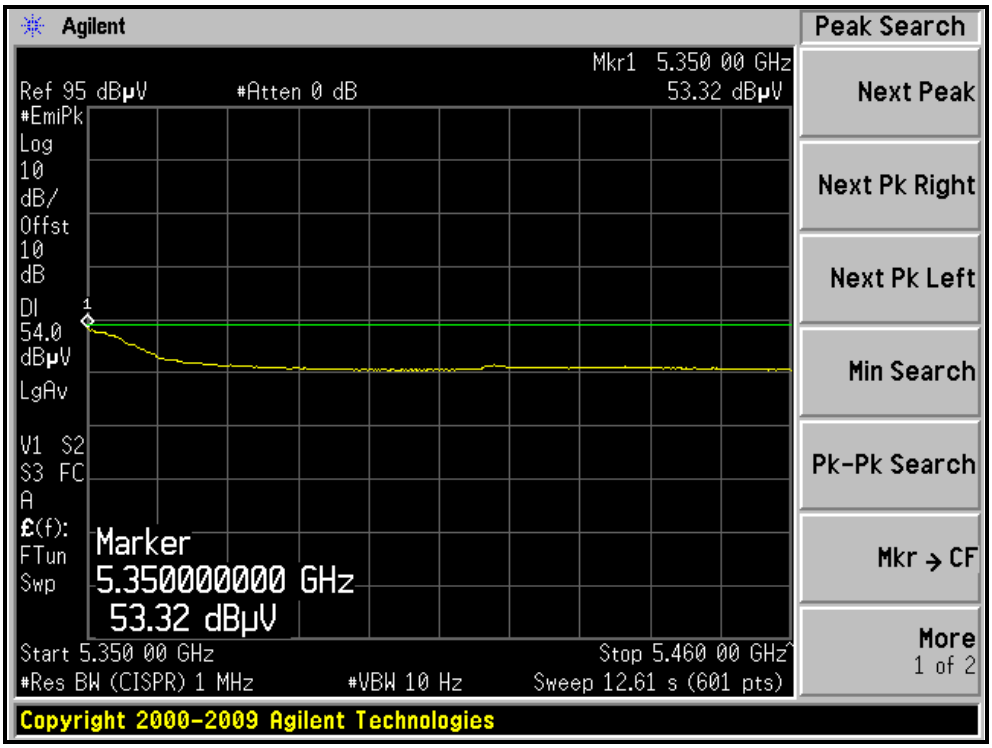
RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH62, HORIZONTAL)





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





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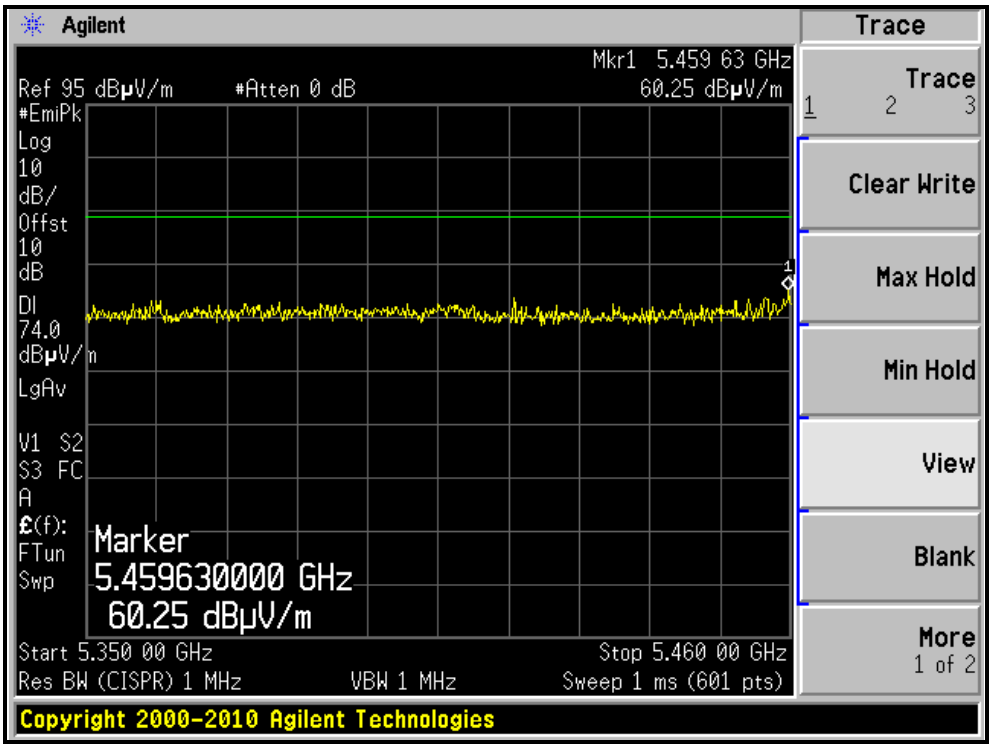
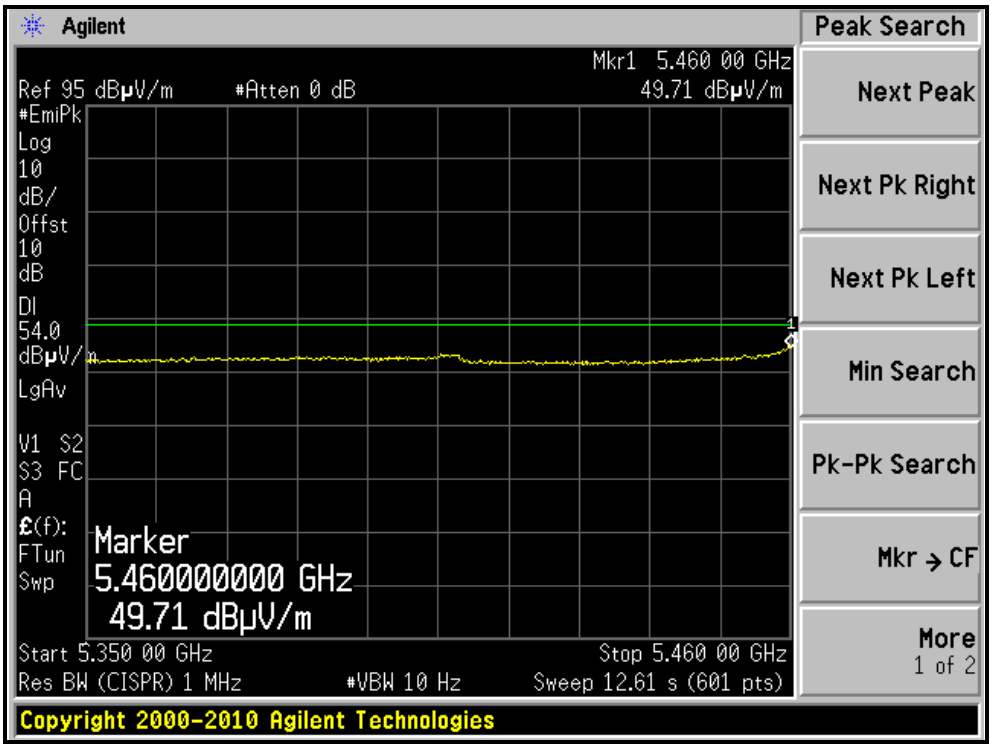
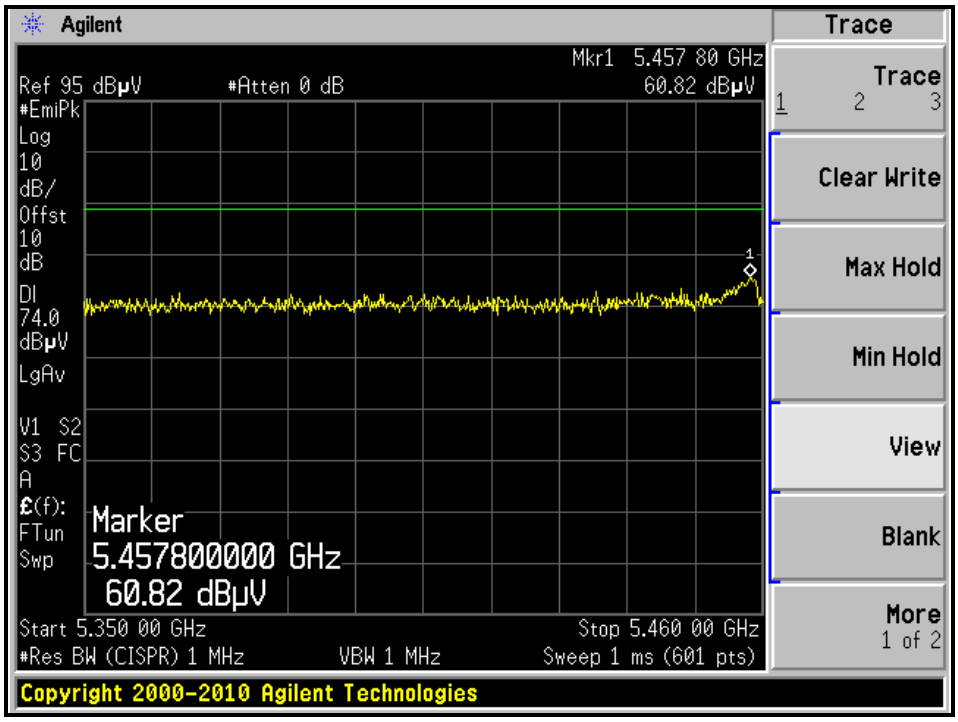
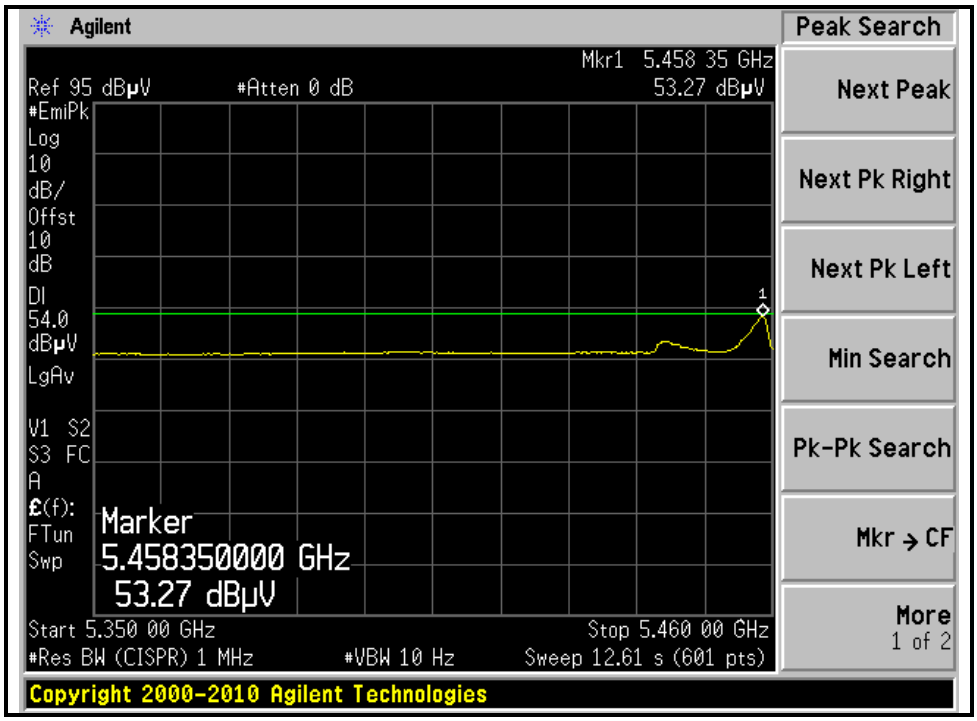




RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH102, VERTICAL)





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

Test date: Oct. 18, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	E4446A	MY48250254	July 12, 2011	July 11, 2012

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

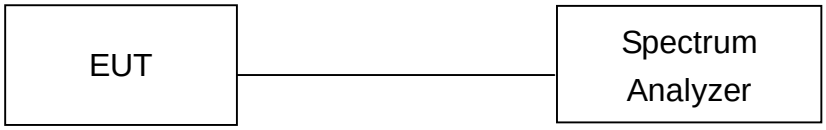
4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

802.11a OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	OUTPUT POWER (mW)	OUTPUT POWER (dBm)	OUTPUT POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS / FAIL
36	5180	30.9	14.9	16.8	21.71	PASS
40	5200	26.3	14.2	16.8 *	19.24	PASS
48	5240	29.5	14.7	16.8	24.61	PASS
52	5260	50.1	17.0	24	26.54	PASS
60	5300	41.7	16.2	24	24.77	PASS
64	5320	38.0	15.8	24**	22.97	PASS
100	5500	75.9	18.8	24	32.52	PASS
116	5580	60.3	17.8	24	32.60	PASS
132	5660	52.5	17.2	24	29.87	PASS
140	5700	67.6	18.3	24	29.48	PASS

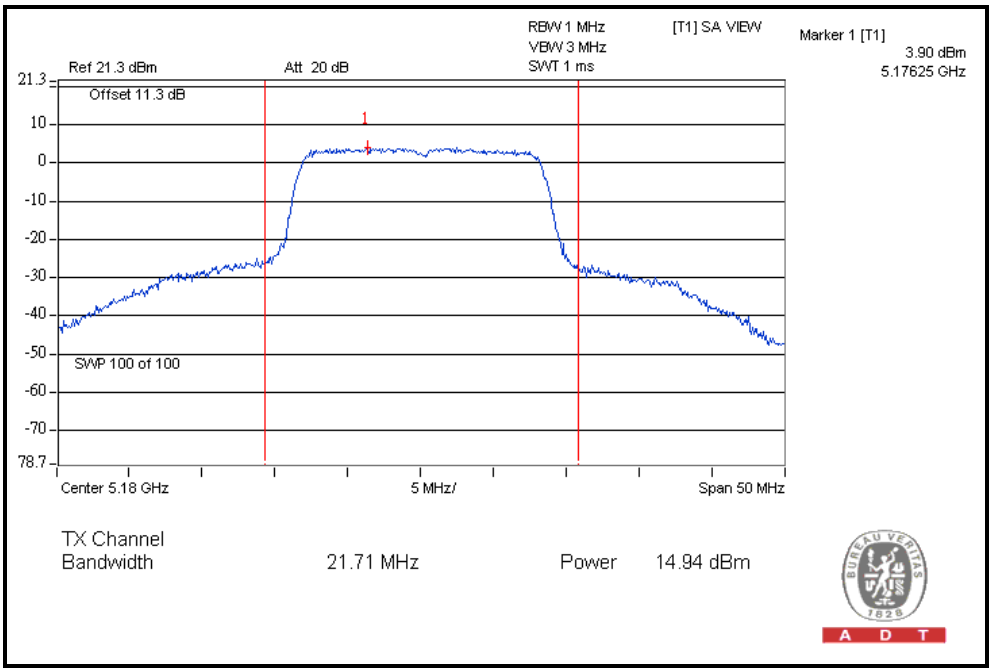
NOTE: 1. The 26dBc Occupied Bandwidth plot, please refer to the following pages.

* 4dBm + 10log(19.24) = 16.84dBm < 17dBm

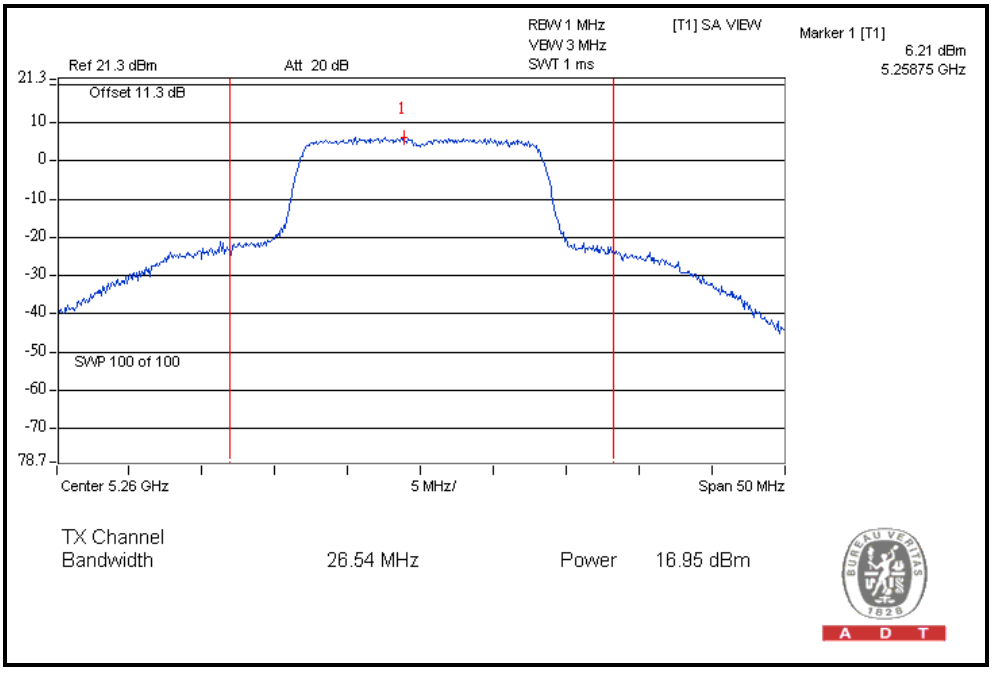
**11dBm + 10log(22.97) = 24.61dBm > 24dBm

Peak Power Output:

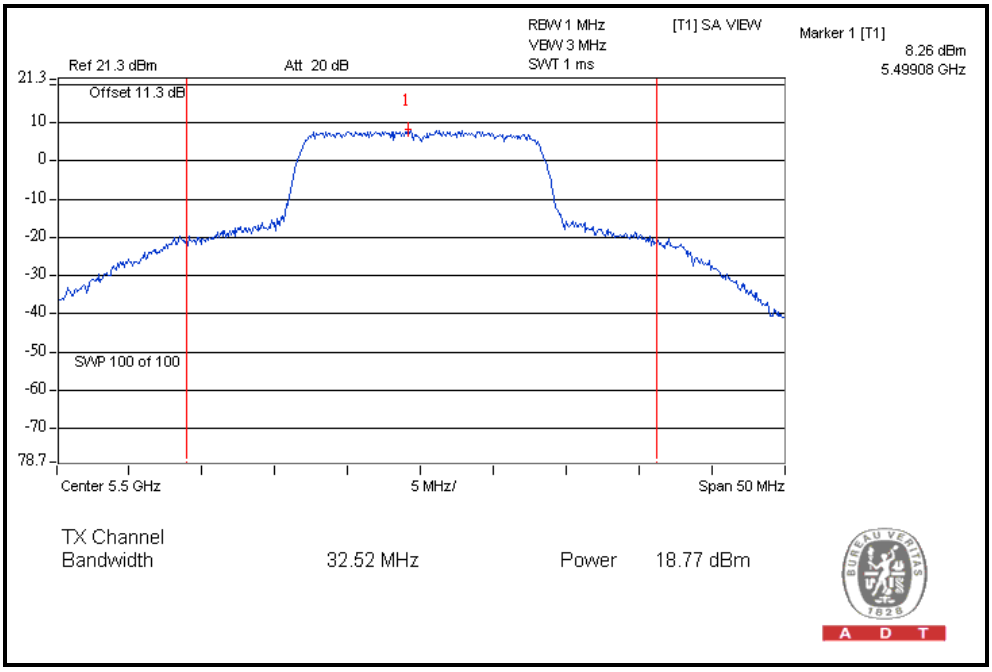
CH36



CH52

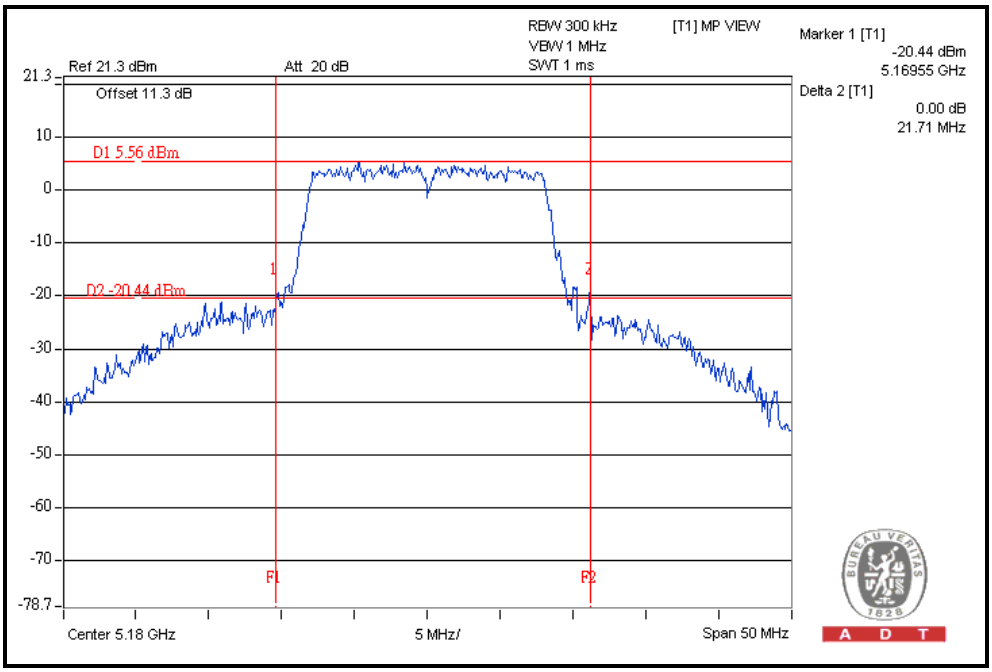


CH100

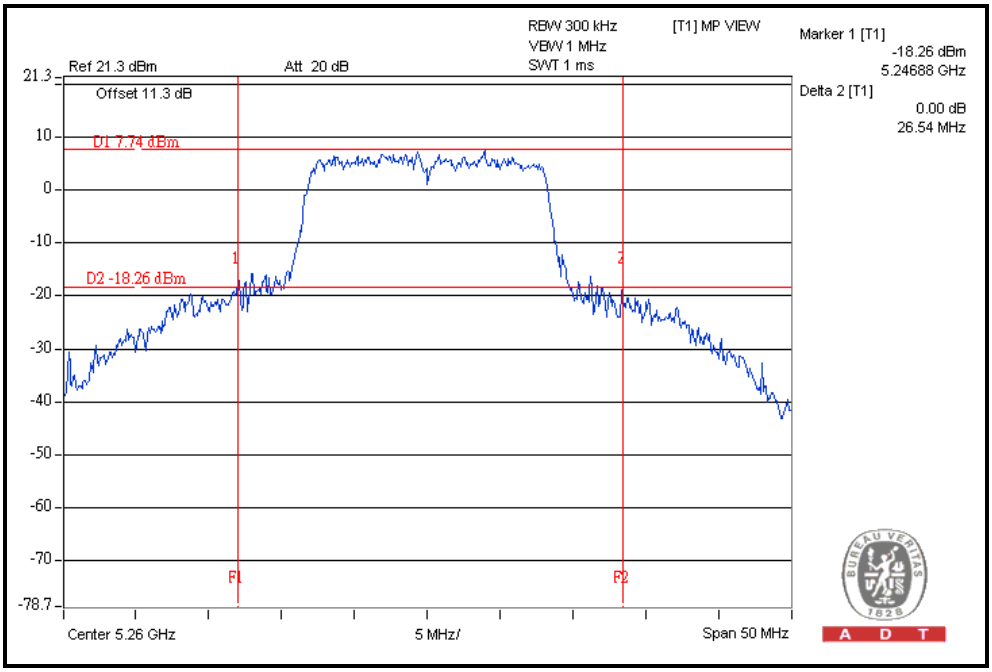

RBW 1 MHz
VBW 3 MHz
SWT 1 ms
[T1] SA VIEW
Marker 1 [T1]
8.26 dBm
5.49908 GHz
Ref 21.3 dBm
Att 20 dB
Offset 11.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
78.7
SWP 100 of 100
Center 5.5 GHz
5 MHz/
Span 50 MHz
TX Channel
Bandwidth
32.52 MHz
Power
18.77 dBm

26dB Occupied Bandwidth:

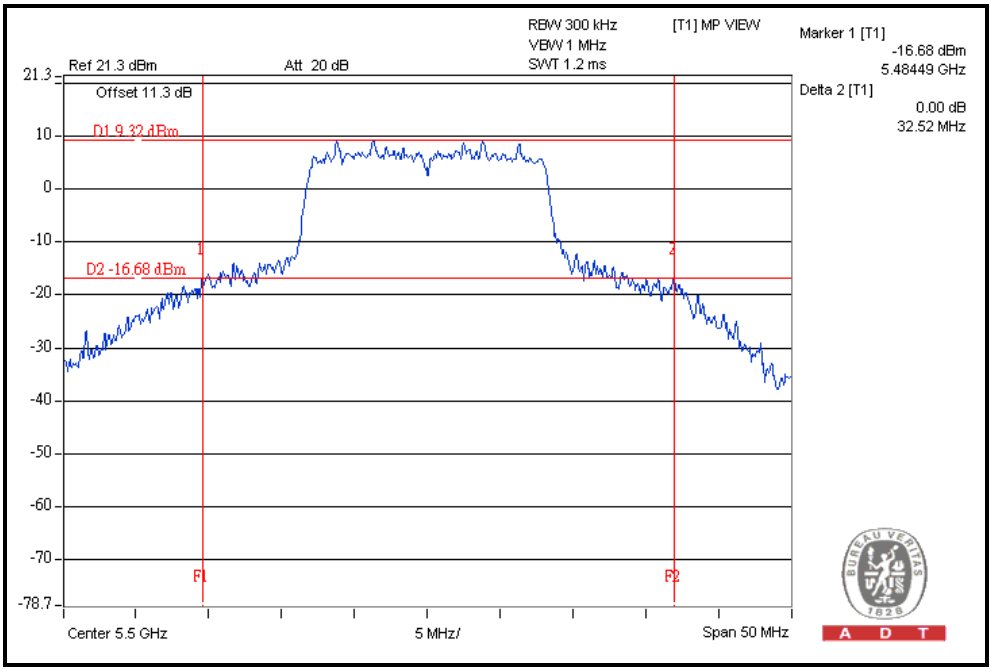
CH36



CH52



CH100


RBW 300 kHz
VBW 1 MHz
SWT 1.2 ms
[T1] MP VIEW
Marker 1 [T1]
-16.68 dBm
5.48449 GHz
Delta 2 [T1]
0.00 dB
32.52 MHz
Ref 21.3 dBm
Att 20 dB
Offset 11.3 dB
D1 9.32 dBm
D2 -16.68 dBm
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
1
2
F1
F2
Center 5.5 GHz
5 MHz/
Span 50 MHz

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(1)				Chain(0)	Chain(1)	
36	5180	11.4	10.9	26.1	14.2	16.9	20.02	20.24	PASS
40	5200	10.7	10.4	22.7	13.6	16.9*	19.84	20.31	PASS
48	5240	10.9	11.2	25.5	14.1	16.9	20.50	20.01	PASS
52	5260	16.0	15.1	72.2	18.6	24	25.63	24.69	PASS
60	5300	15.0	14.3	58.5	17.7	24	25.76	24.42	PASS
64	5320	14.7	13.8	53.5	17.3	24**	21.84	20.65	PASS
100	5500	17.8	16.2	101.9	20.1	24	32.84	25.11	PASS
116	5580	17.9	17.4	116.6	20.7	24	33.47	34.77	PASS
132	5660	16.4	16.0	83.5	19.2	24	29.69	29.50	PASS
140	5700	18.1	17.3	118.3	20.7	24	35.48	34.94	PASS

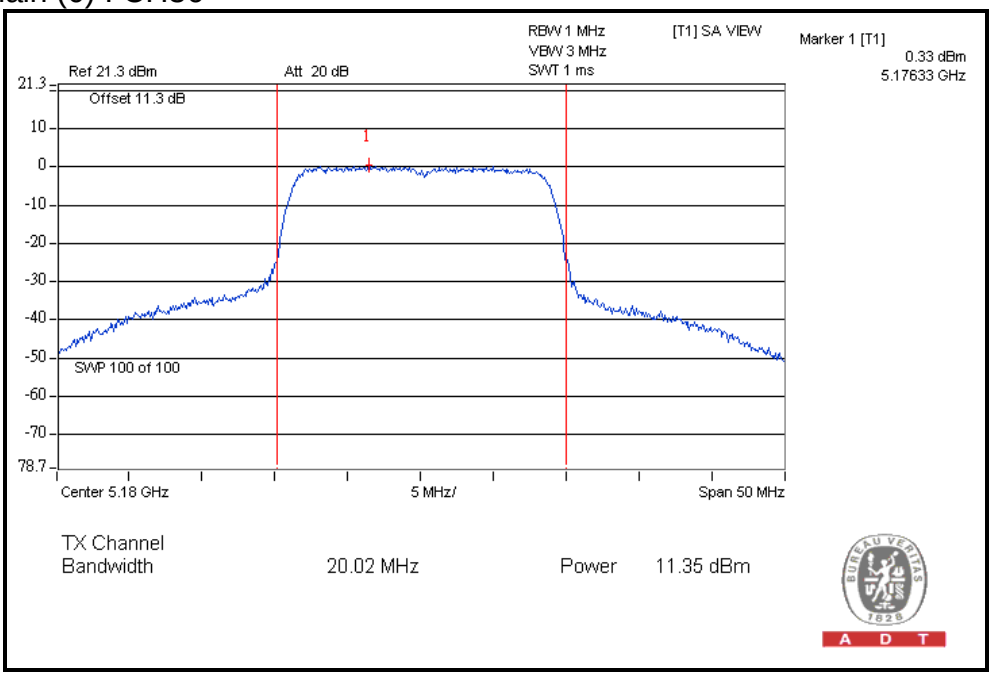
NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

* 4dBm + 10log(19.84) = 16.98dBm < 17dBm

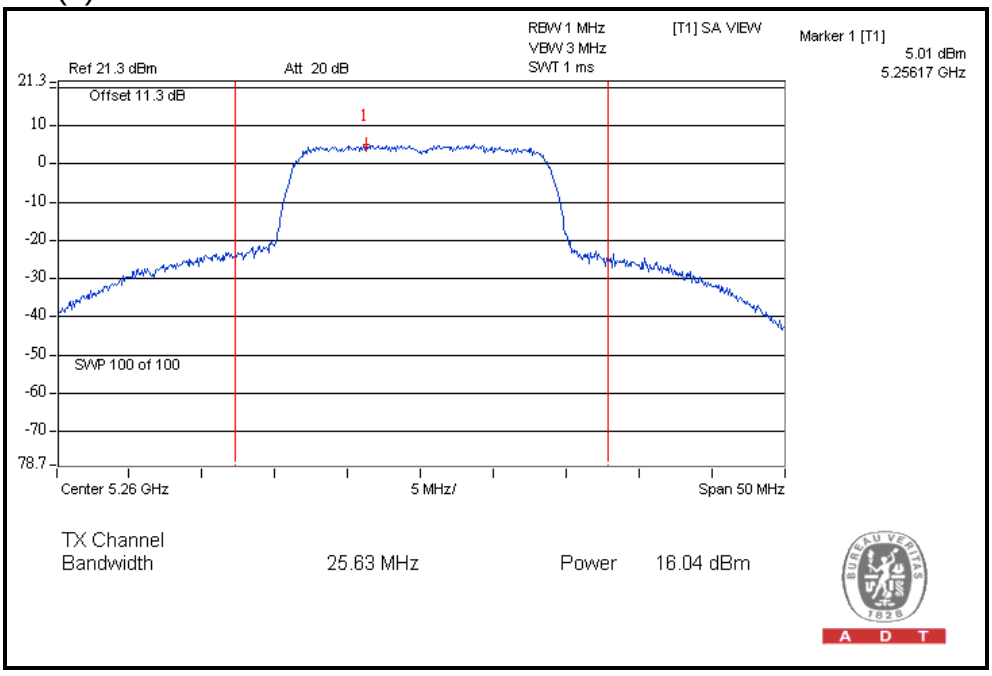
**11dBm + 10log(20.65) = 24.15dBm > 24dBm

Peak Power Output:

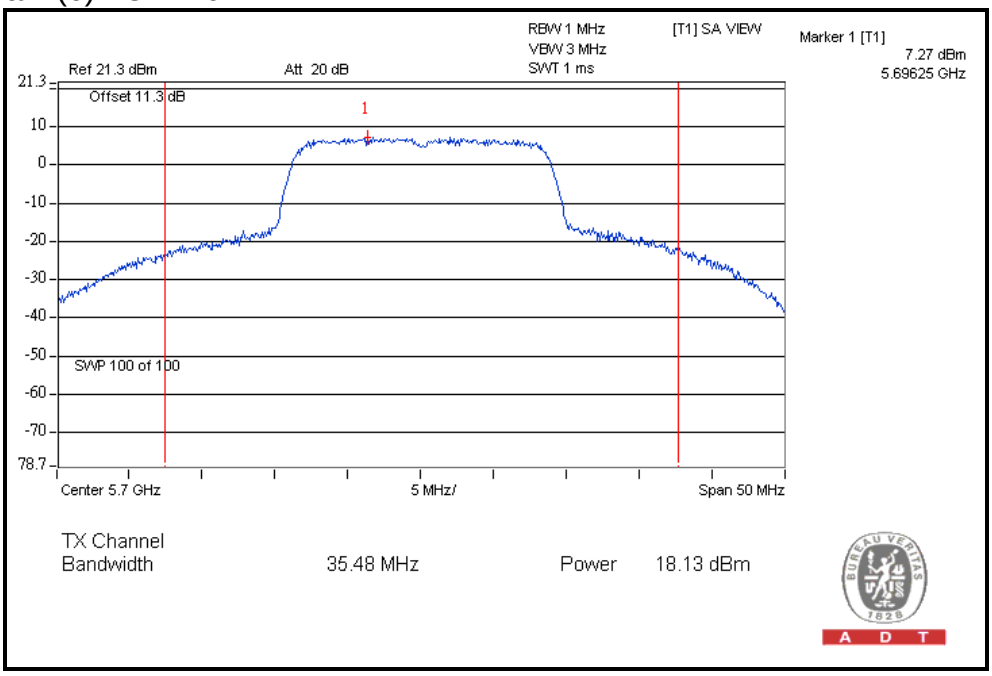
For Chain (0) : CH36



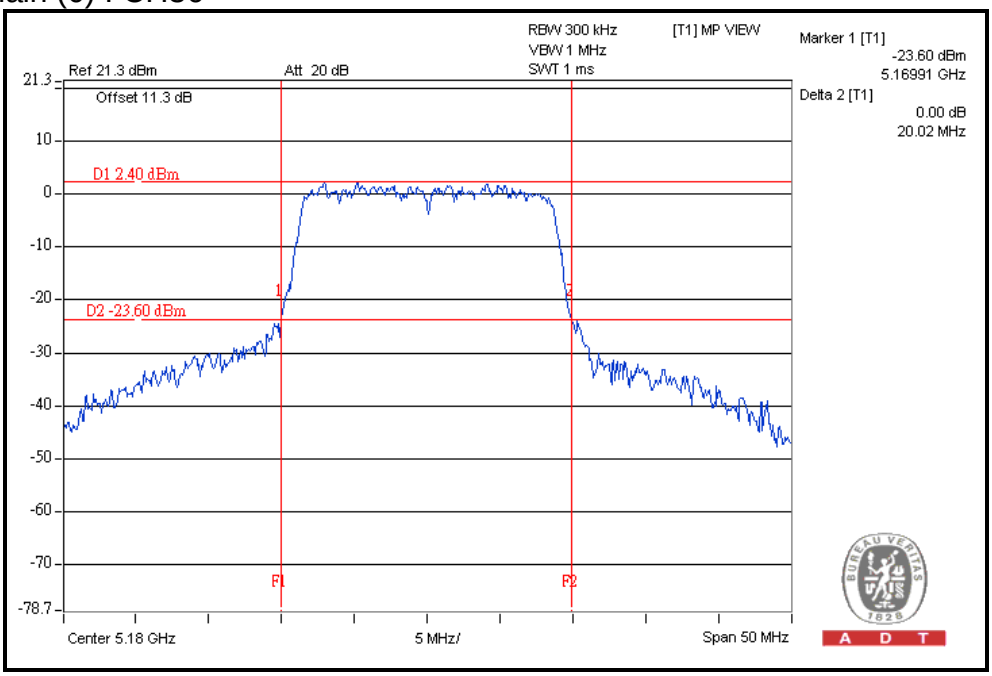
For Chain (0) : CH52



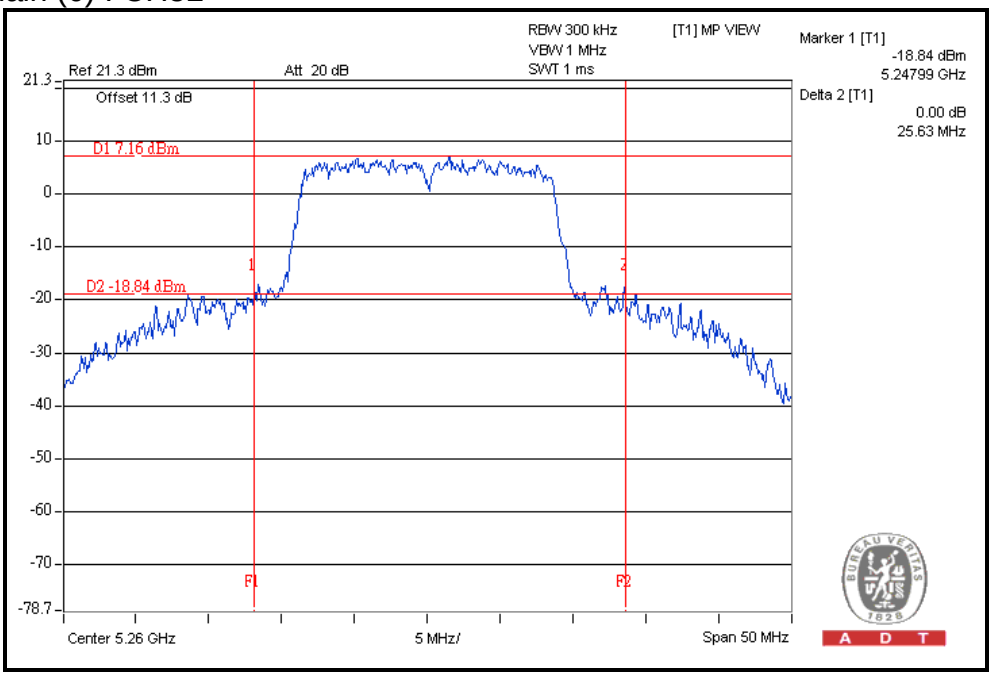
For Chain (0) : CH140



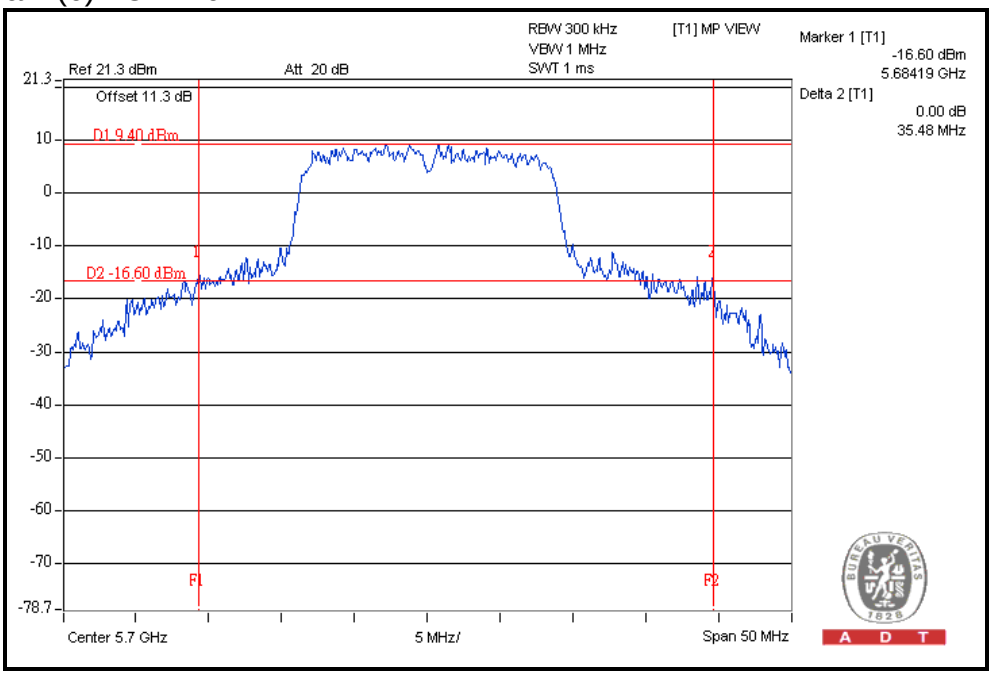
26dB Occupied Bandwidth:
For Chain (0) : CH36



For Chain (0) : CH52



For Chain (0) : CH140



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(1)				CHAIN(0)	CHAIN(1)	
38	5190	9.7	9.0	17.3	12.4	17	39.26	39.50	PASS
46	5230	13.5	12.4	39.8	16.0	17*	38.93	38.79	PASS
54	5270	18.1	17.3	118.3	20.7	24	73.34	70.56	PASS
62	5310	10.9	10.5	23.5	13.7	24**	39.98	39.70	PASS
102	5510	15.4	14.6	63.5	18.0	24	39.95	40.47	PASS
110	5550	18.3	17.2	120.1	20.8	24	74.41	59.93	PASS
134	5670	15.9	14.4	66.4	18.2	24	60.67	59.55	PASS

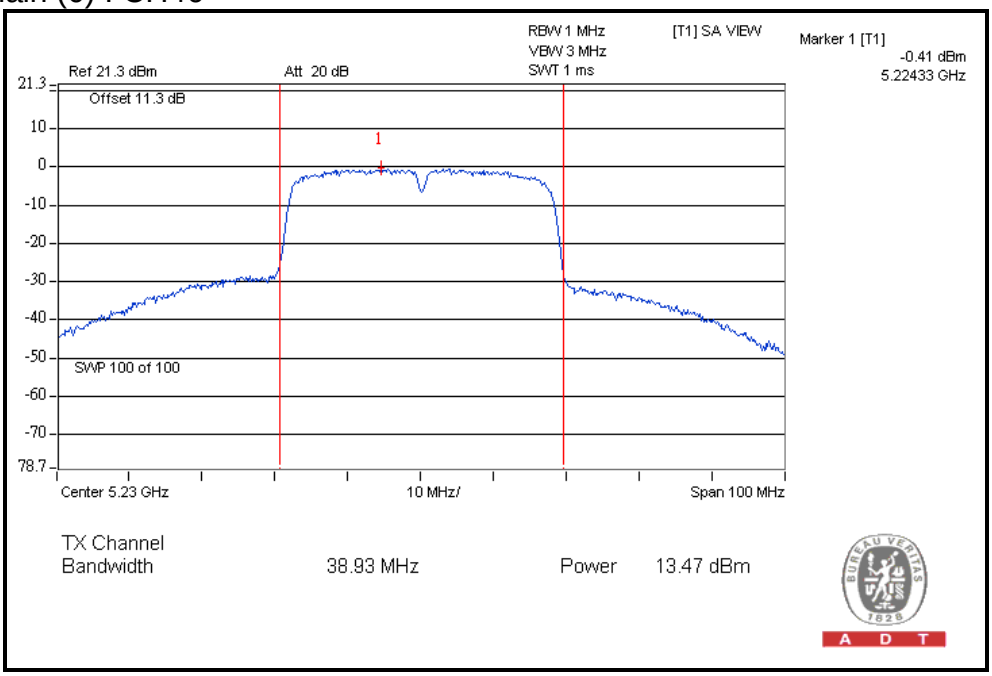
NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

* 4dBm + 10log(38.79) = 19.89dBm > 17dBm

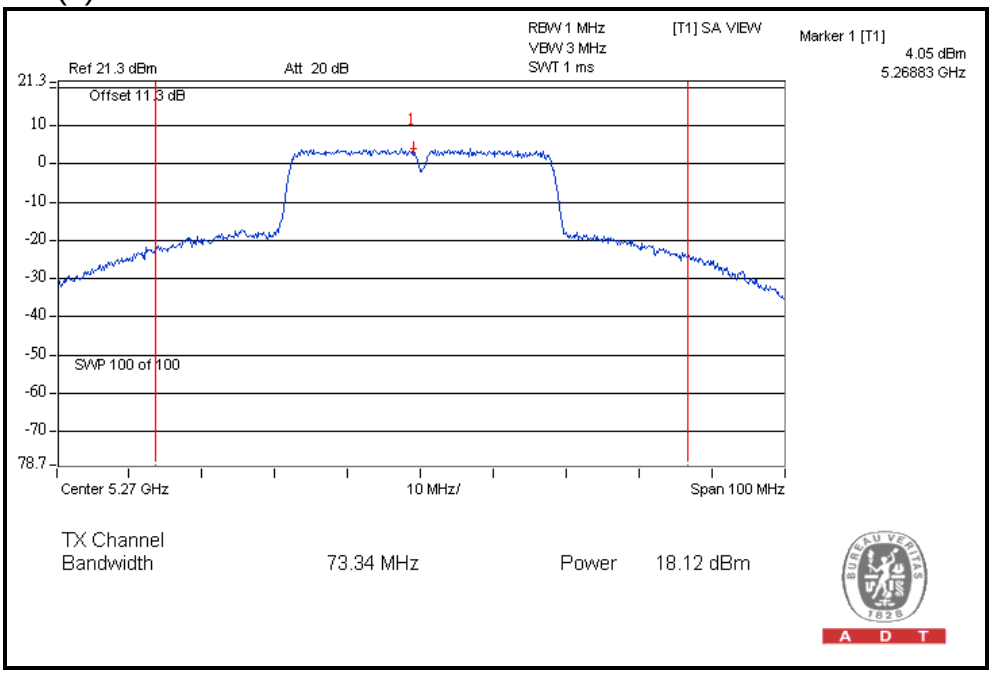
**11dBm + 10log(39.70) = 26.99dBm > 24dBm

Peak Power Output:

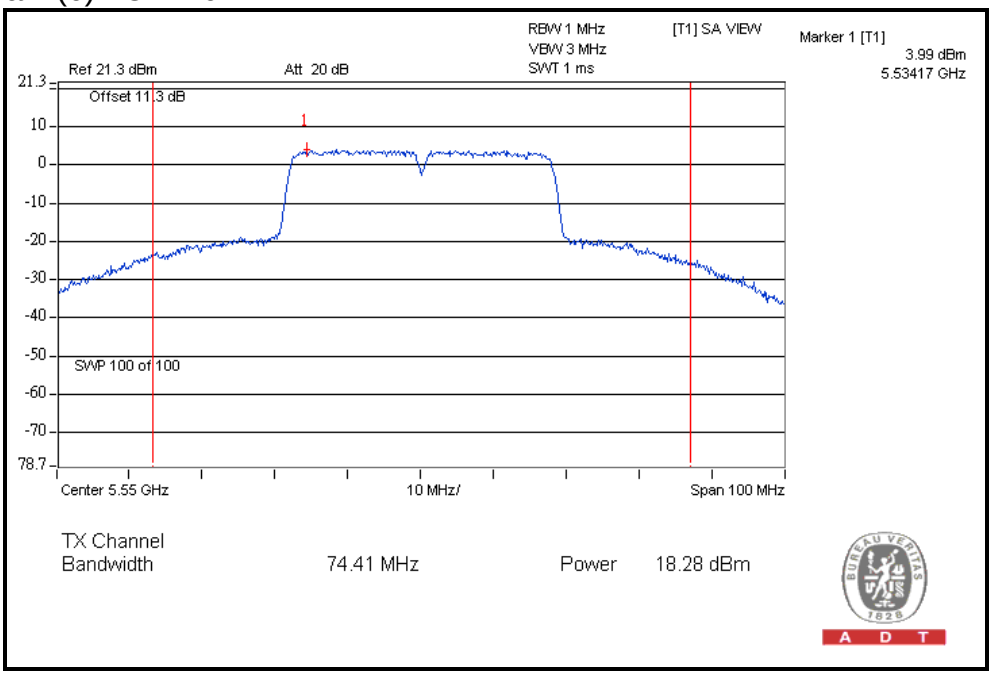
For Chain (0) : CH46



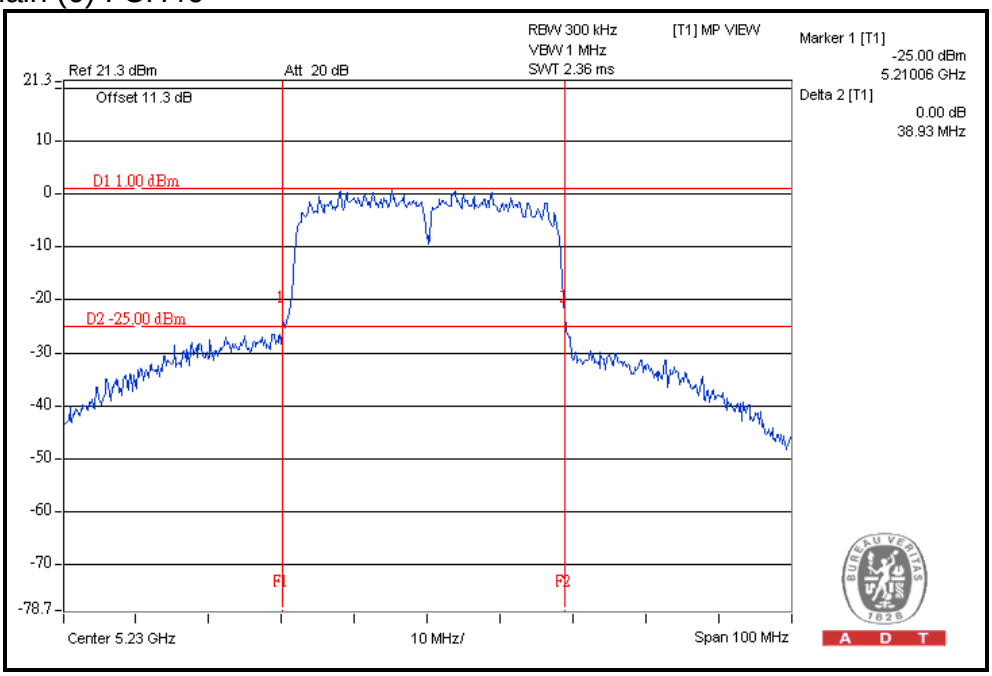
For Chain (0) : CH54



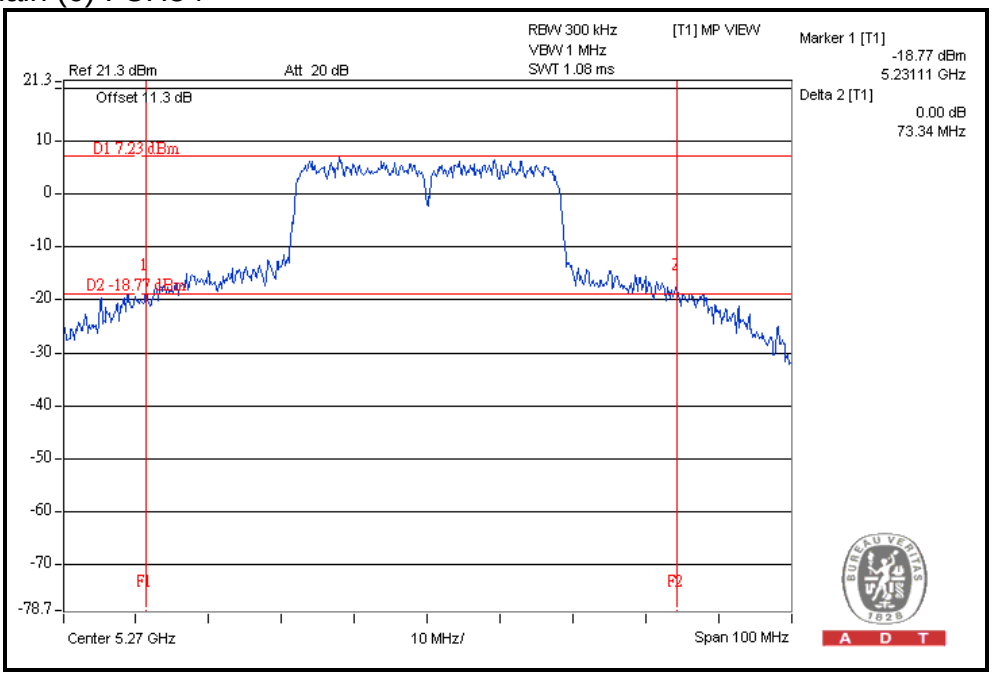
For Chain (0) : CH110



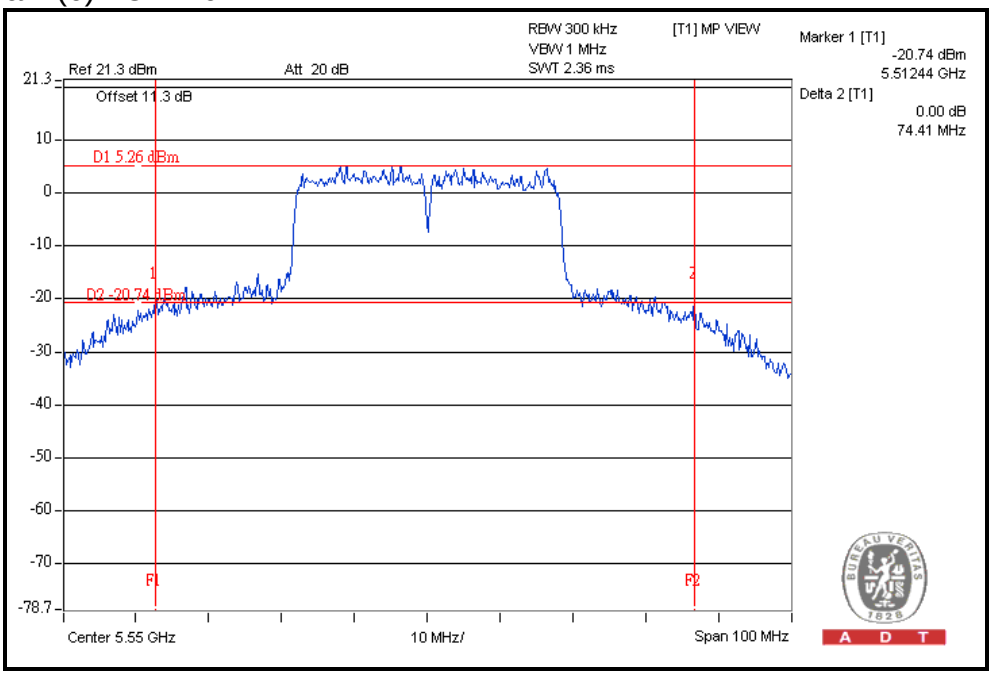
26dB Occupied Bandwidth:
For Chain (0) : CH46



For Chain (0) : CH54



For Chain (0) : CH110



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

Test date: Oct. 18, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	E4446A	MY48250254	July 12, 2011	July 11, 2012

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

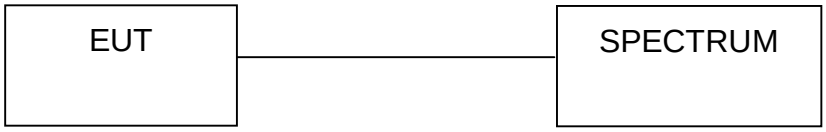
4.4.3 TEST PROCEDURE

1. Connect the cable from the spectrum analyzer to the EUT antenna port using an appropriate RF attenuator.
2. Verify the antenna port selected is the active one if the system has more then one antenna.
3. Verify the unlicensed wireless device is set to operate at 100 % duty cycle at the maximum allowed power for operation.
4. Testing shall be done on the center frequency of each U-NII band.
5. Set the spectrum analyzer span to view the entire emission bandwidth. The largest difference between the following two traces must be 13 dB for all frequencies across the emission bandwidth.
   a. First trace: set RBW = 1 MHz, VBW = 3 MHz with peak detector and max hold settings.
   b. Second trace: set RBW = 1 MHz, VBW = 3 MHz with sample detector and trace average across 100 traces in power averaging mode.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

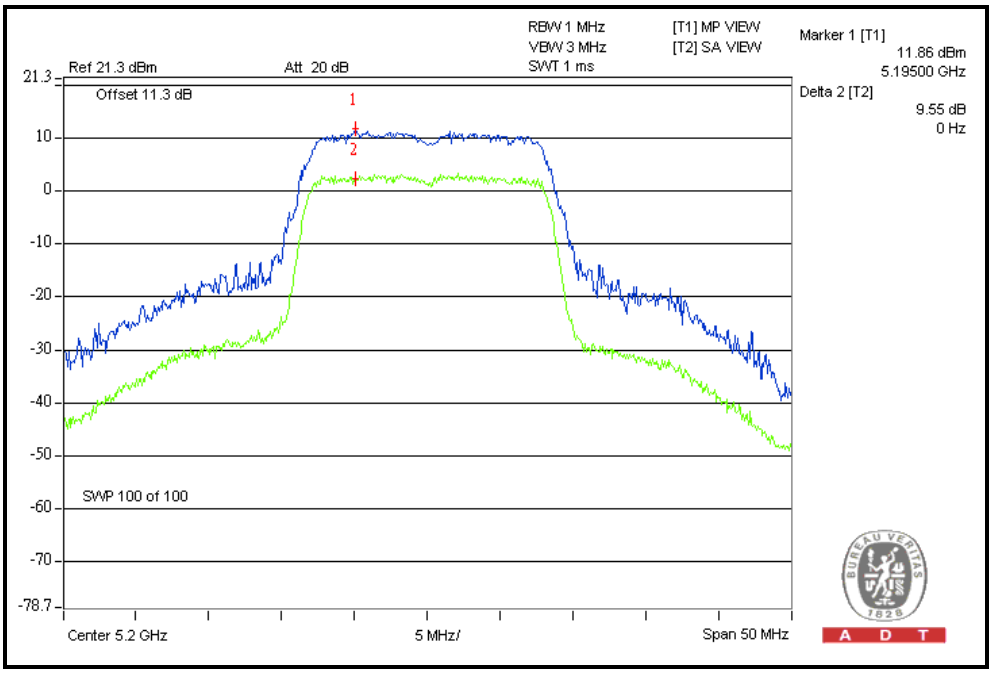
The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.4.7 TEST RESULTS

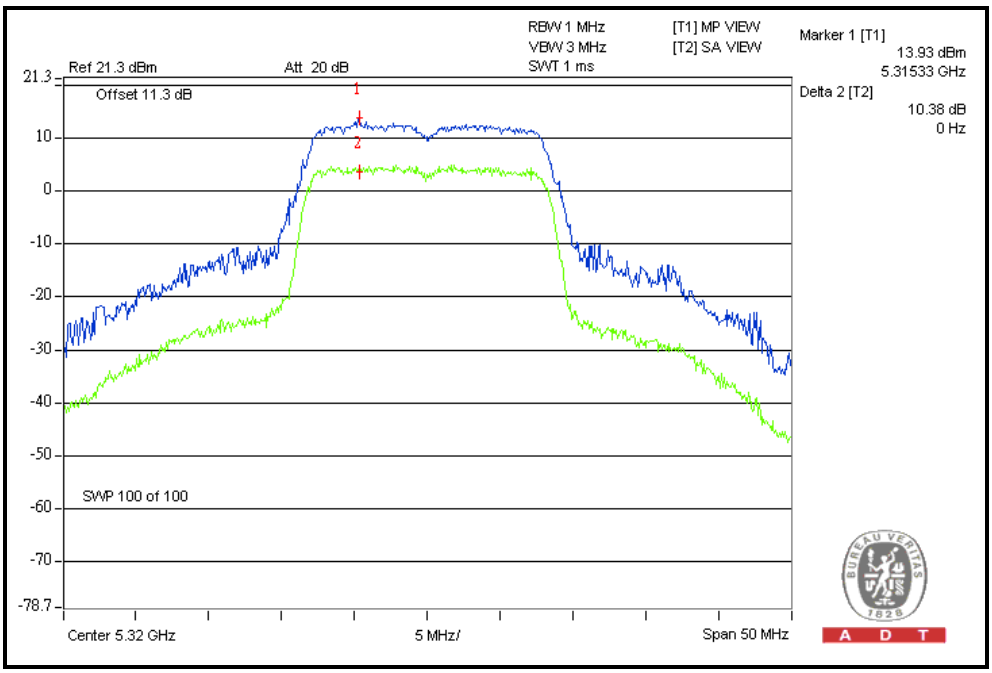
802.11a OFDM MODULATION

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
36	5180	9.1	13	PASS
40	5200	9.6	13	PASS
48	5240	9.3	13	PASS
52	5260	9.6	13	PASS
60	5300	9.6	13	PASS
64	5320	10.4	13	PASS
100	5500	9.2	13	PASS
116	5580	9.5	13	PASS
132	5660	9.7	13	PASS
140	5700	9.3	13	PASS

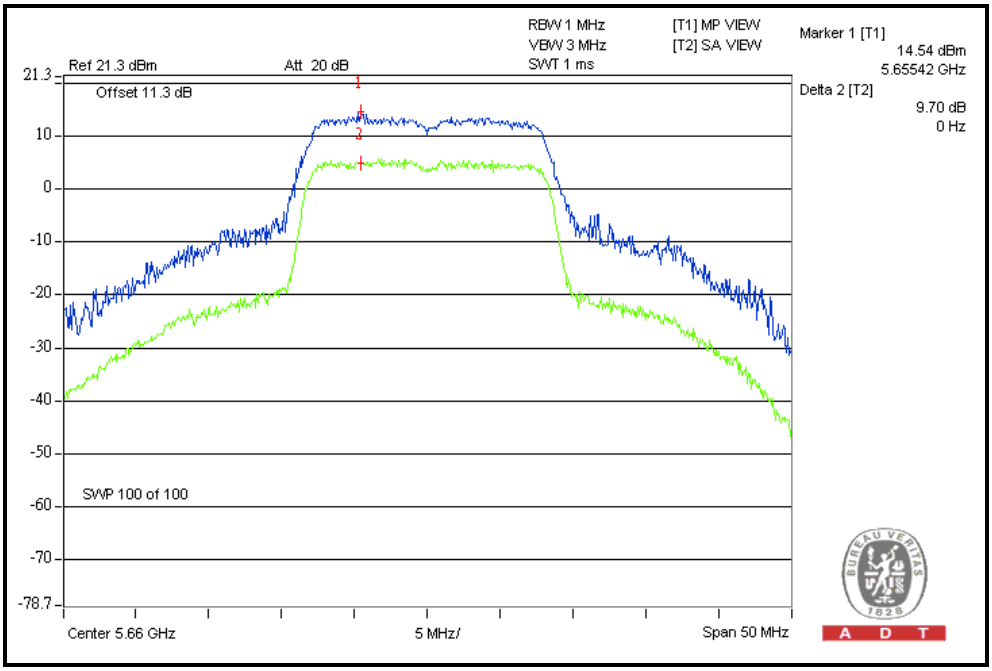
CH40



CH64


RBW 1 MHz
VBW 3 MHz
SWT 1 ms
[T1] MP VIEW
[T2] SA VIEW
Marker 1 [T1]
13.93 dBm
5.31533 GHz
Delta 2 [T2]
10.38 dB
0 Hz
Ref 21.3 dBm
Att 20 dB
Offset 11.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
SWP 100 of 100
Center 5.32 GHz
5 MHz/
Span 50 MHz

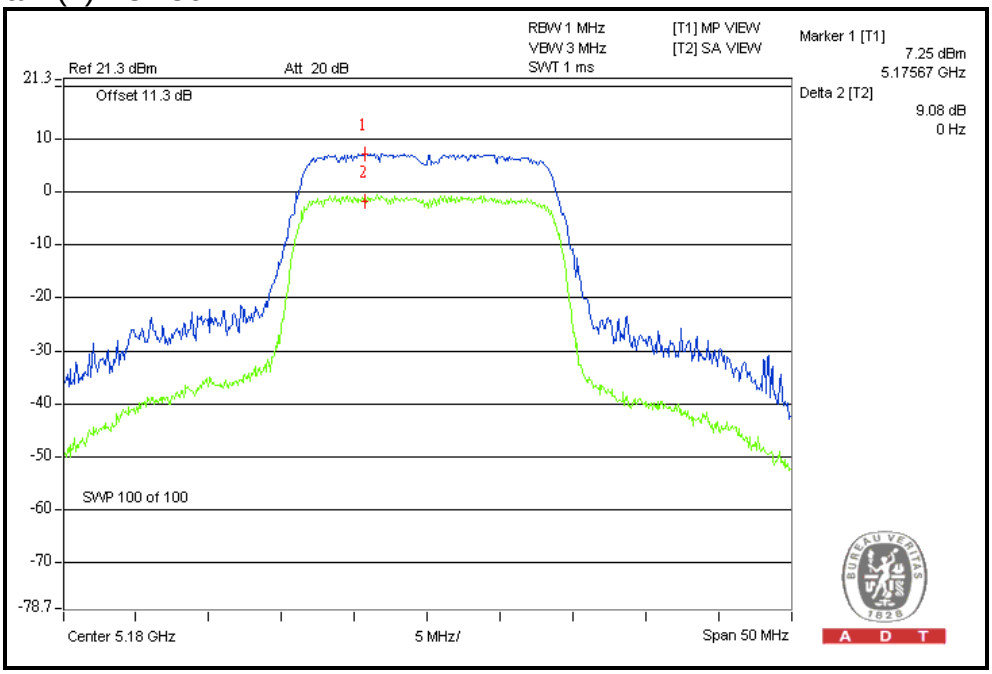
CH132


RBW 1 MHz
VBW 3 MHz
SWT 1 ms
[T1] MP VIEW
[T2] SA VIEW
Marker 1 [T1]
14.54 dBm
5.65542 GHz
Delta 2 [T2]
9.70 dB
0 Hz
Ref 21.3 dBm
Att 20 dB
Offset 11.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
SWP 100 of 100
Center 5.66 GHz
5 MHz/
Span 50 MHz

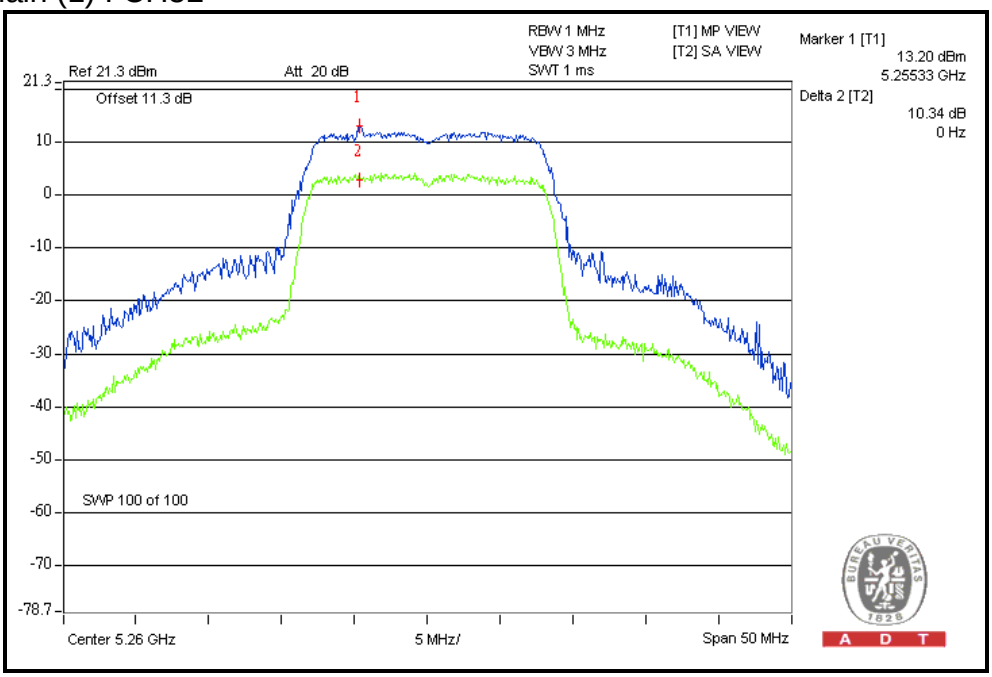
802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN(0)	CHAIN(1)		
36	5180	8.2	9.1	13	PASS
40	5200	8.0	8.3	13	PASS
48	5240	8.9	8.4	13	PASS
52	5260	8.7	10.3	13	PASS
60	5300	8.4	10.0	13	PASS
64	5320	9.1	9.3	13	PASS
100	5500	8.8	10.1	13	PASS
116	5580	8.2	9.4	13	PASS
132	5660	8.3	9.3	13	PASS
140	5700	8.2	8.6	13	PASS

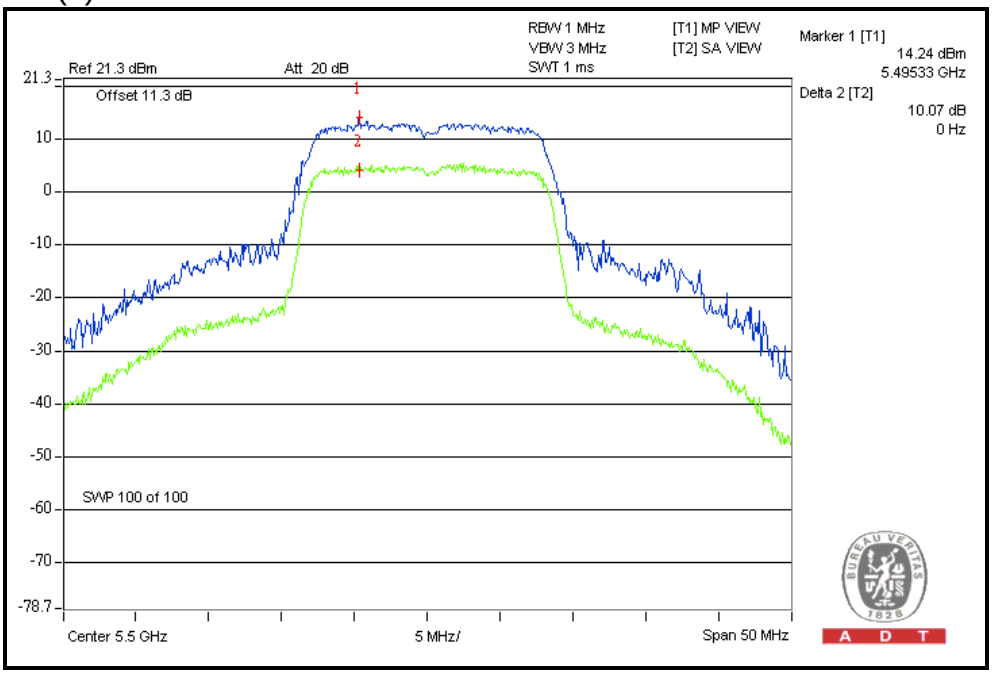
For Chain (1) : CH36



For Chain (1) : CH52



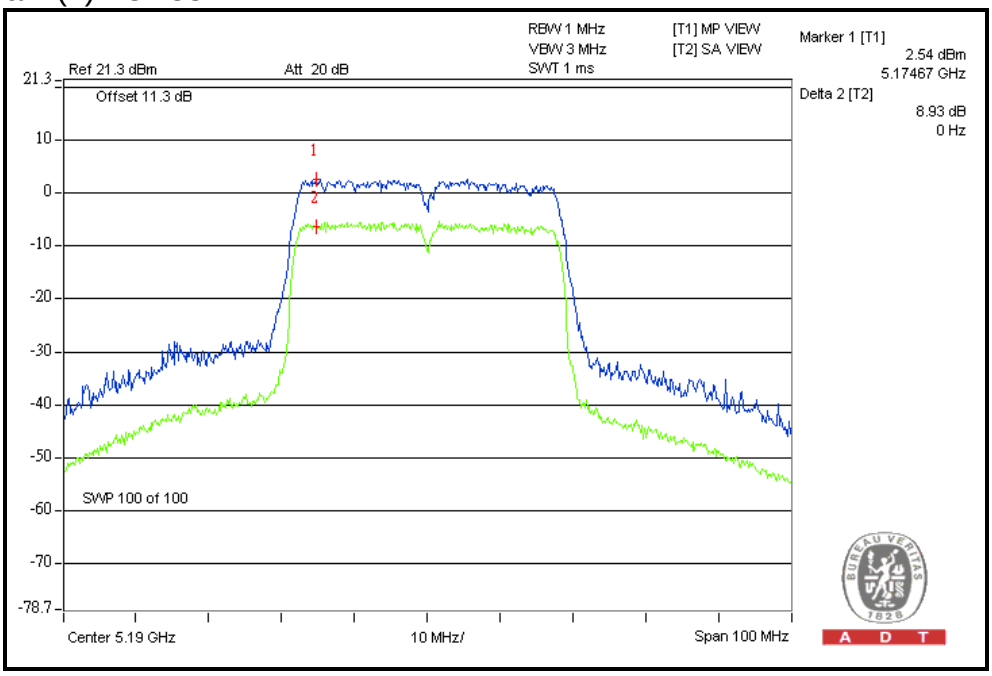
For Chain (1) : CH100



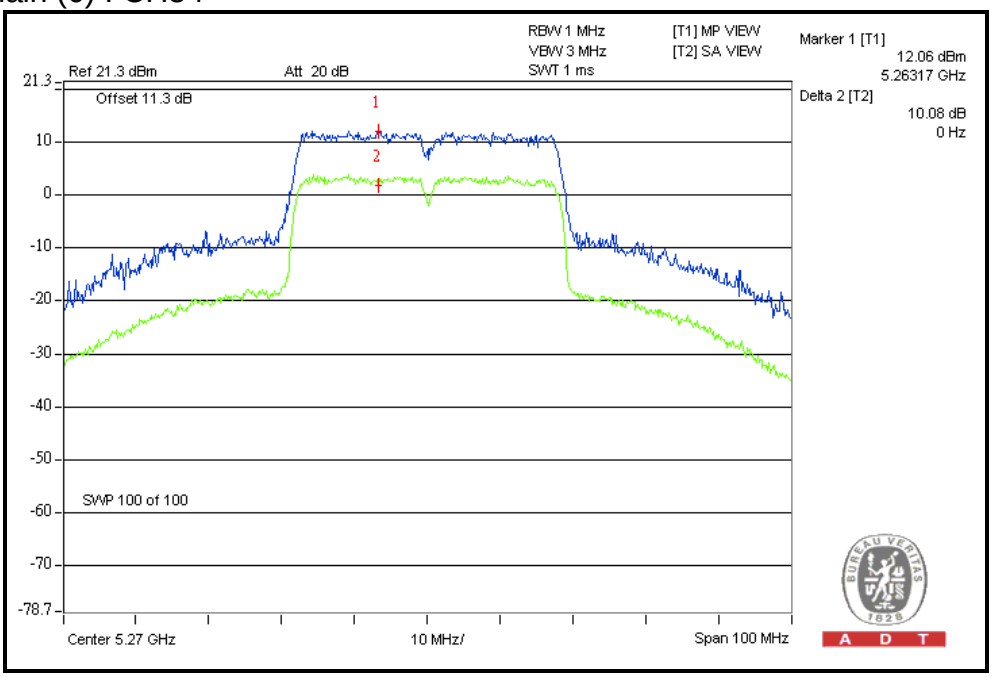
802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN(0)	CHAIN(1)		
38	5190	8.0	8.9	13	PASS
46	5230	8.6	8.8	13	PASS
54	5270	10.1	8.2	13	PASS
62	5310	9.0	8.5	13	PASS
102	5510	8.4	8.3	13	PASS
110	5550	8.6	9.7	13	PASS
134	5670	8.9	8.1	13	PASS

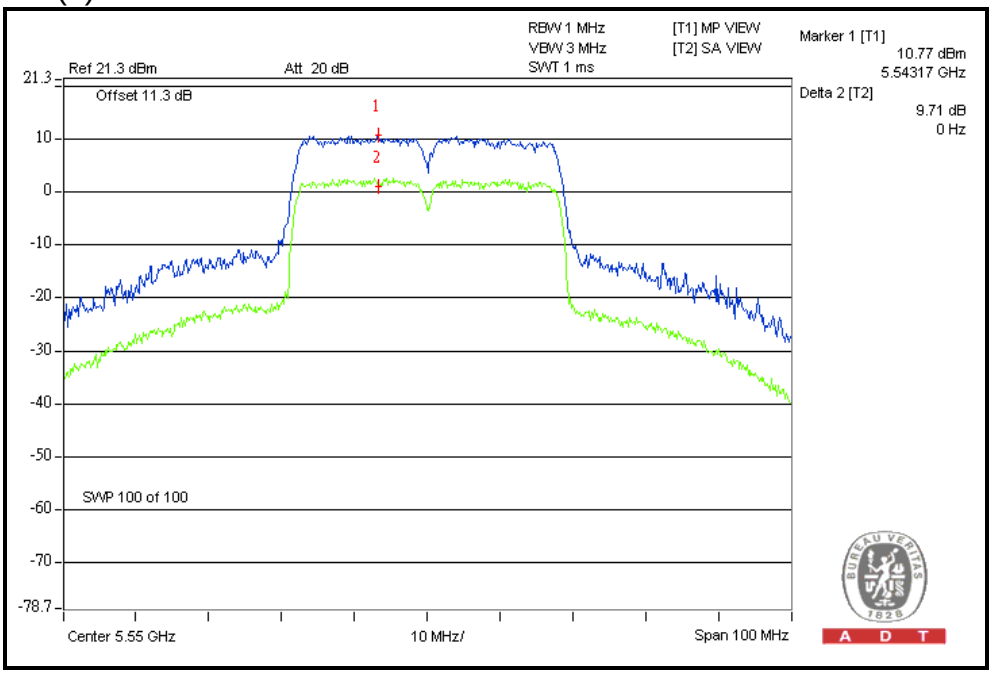
For Chain (1) : CH38



For Chain (0) : CH54



For Chain (1) : CH110



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

Test date: Oct. 18, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	E4446A	MY48250254	July 12, 2011	July 11, 2012

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

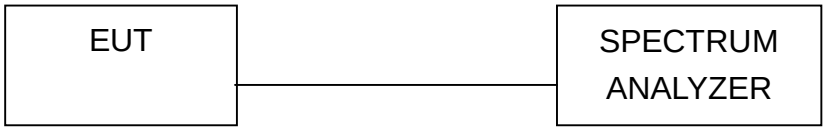
4.5.3 TEST PROCEDURES

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

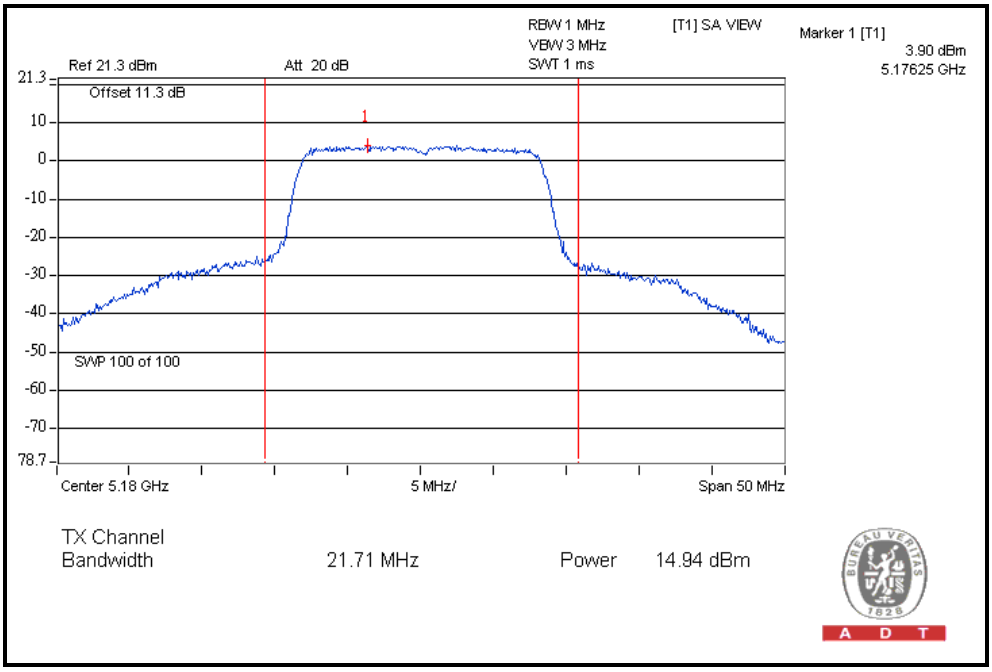
Same as 4.3.6

4.5.7 TEST RESULTS

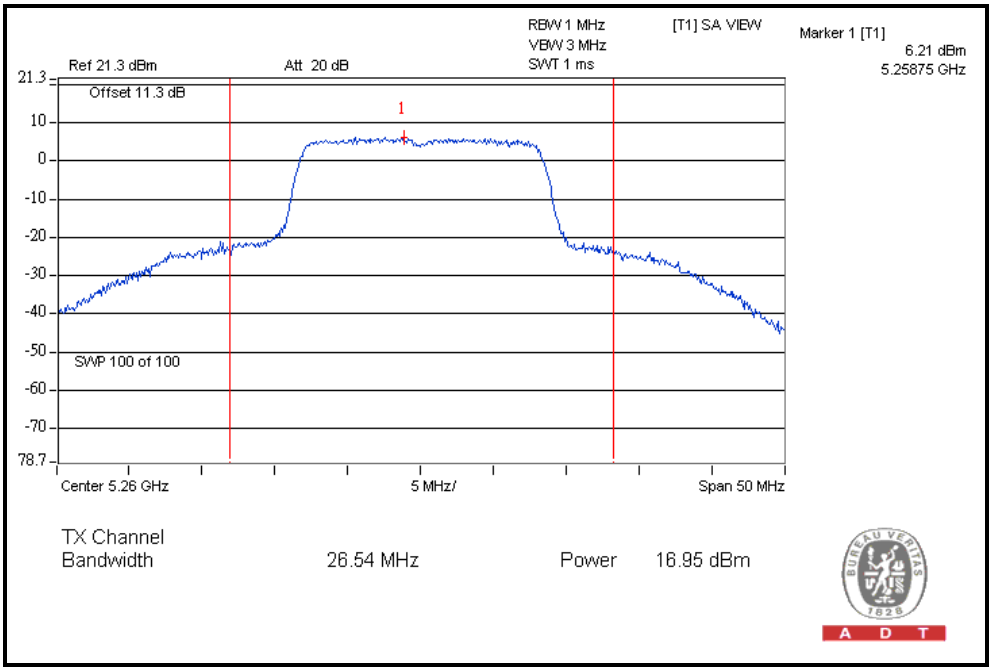
802.11a OFDM MODULATION

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
36	5180	3.9	4	PASS
40	5200	3.4	4	PASS
48	5240	3.9	4	PASS
52	5260	6.2	11	PASS
60	5300	5.4	11	PASS
64	5320	5.1	11	PASS
100	5500	8.3	11	PASS
116	5580	6.8	11	PASS
132	5660	6.1	11	PASS
140	5700	7.7	11	PASS

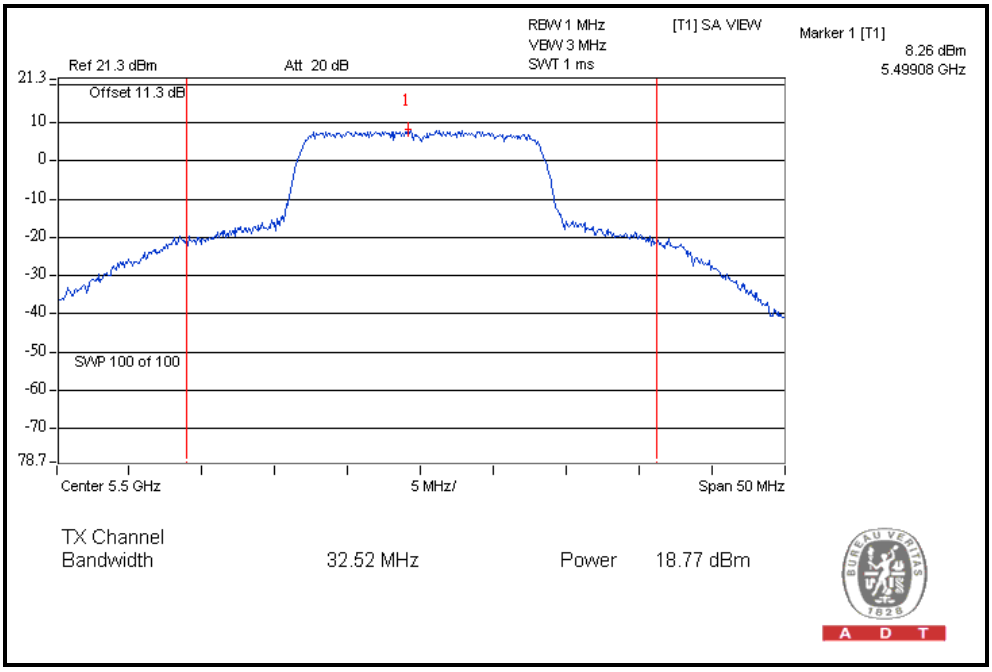
CH36



CH52


RBW 1 MHz
VBW 3 MHz
SWT 1 ms
[T1] SA VIEW
Marker 1 [T1]
6.21 dBm
5.25875 GHz
Ref 21.3 dBm
Att 20 dB
Offset 11.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
78.7
SWP 100 of 100
Center 5.26 GHz
5 MHz/
Span 50 MHz
TX Channel Bandwidth
26.54 MHz
Power
16.95 dBm

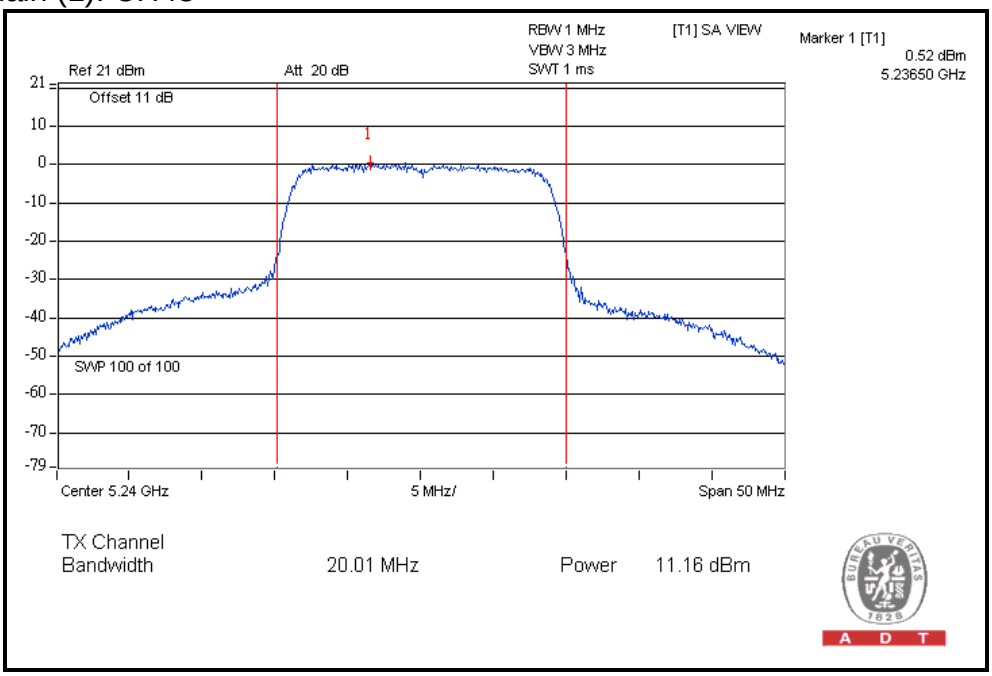
CH100


RBW 1 MHz
VBW 3 MHz
SWT 1 ms
[T1] SA VIEW
Marker 1 [T1]
8.26 dBm
5.49908 GHz
Ref 21.3 dBm
Att 20 dB
Offset 11.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
78.7
SWP 100 of 100
Center 5.5 GHz
5 MHz/
Span 50 MHz
TX Channel Bandwidth
32.52 MHz
Power
18.77 dBm

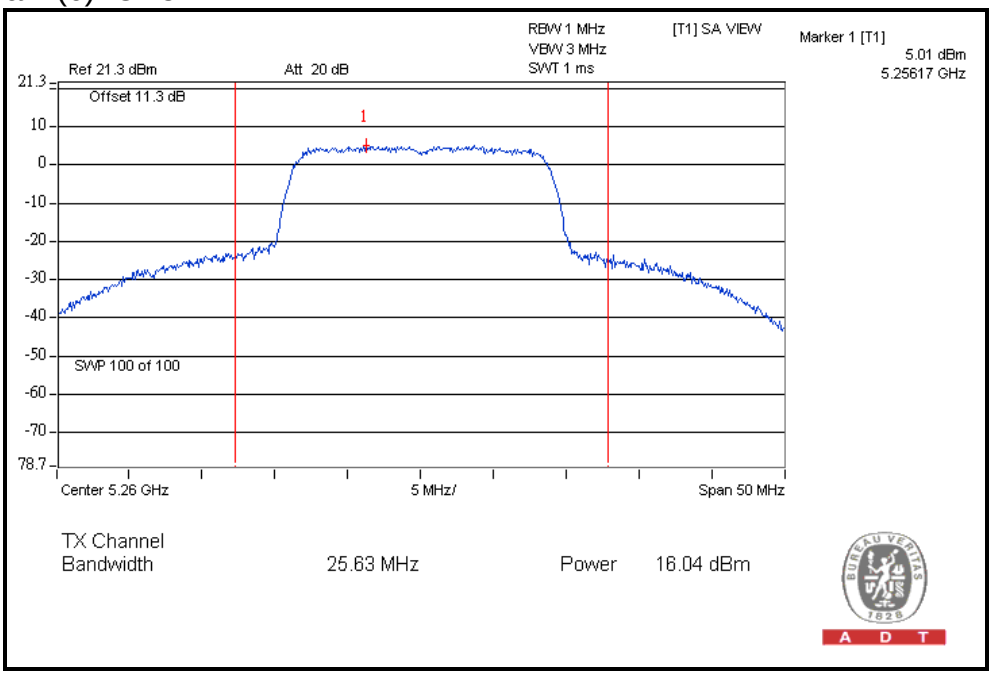
802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)			
36	5180	0.3	-0.3	3.0	4	PASS
40	5200	-0.3	-0.9	2.4	4	PASS
48	5240	-0.3	0.5	3.1	4	PASS
52	5260	5.0	4.3	7.7	11	PASS
60	5300	4.2	3.5	6.9	11	PASS
64	5320	3.6	3.0	6.3	11	PASS
100	5500	7.1	5.2	9.3	11	PASS
116	5580	7.0	6.7	9.9	11	PASS
132	5660	5.5	5.5	8.5	11	PASS
140	5700	7.3	6.2	9.8	11	PASS

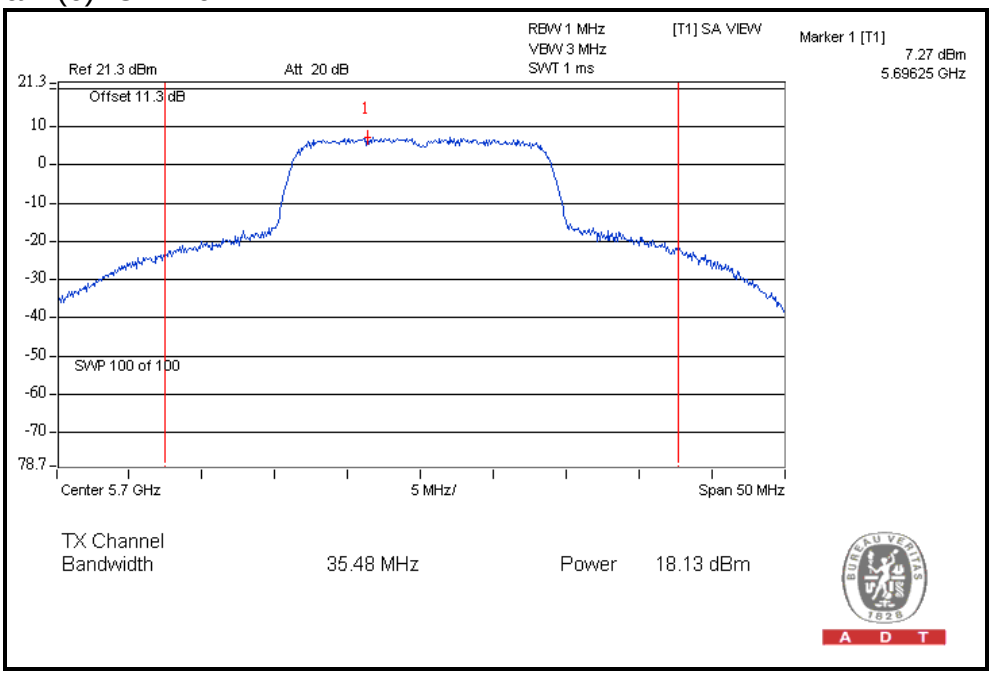
For Chain (1): CH48



For Chain (0): CH52



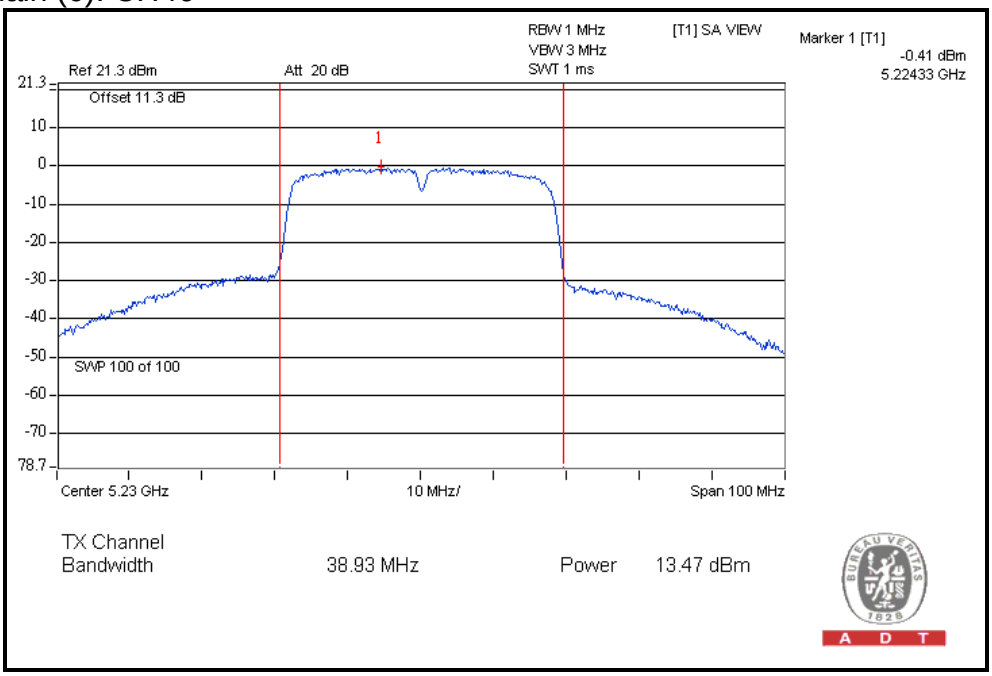
For Chain (0): CH140



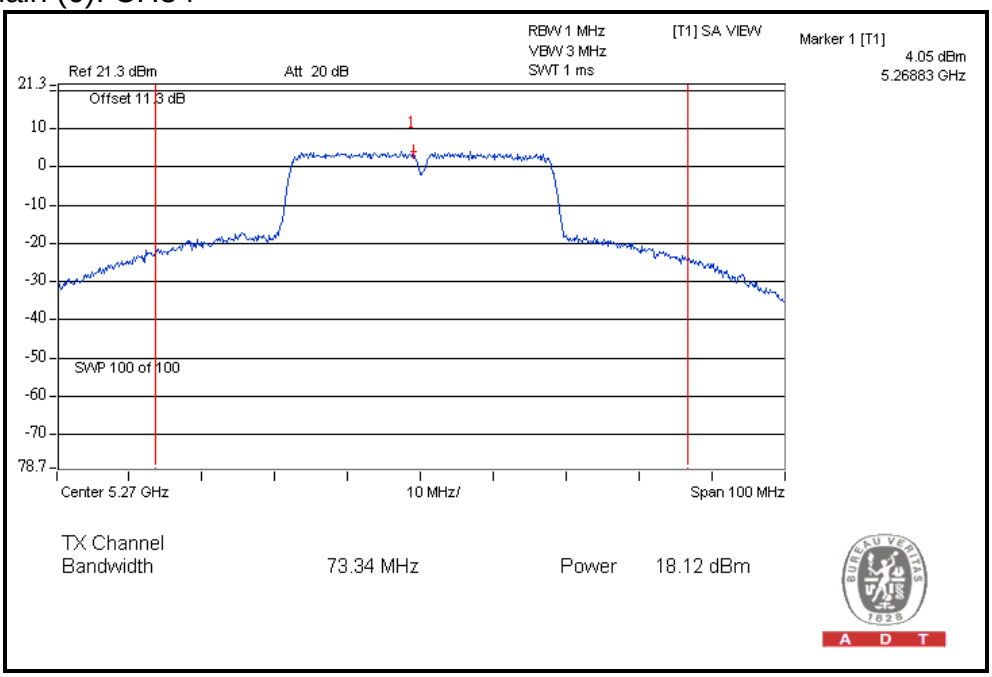
802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)			
38	5190	-4.6	-5.2	-1.9	4	PASS
46	5230	-0.4	-1.3	2.2	4	PASS
54	5270	4.1	3.2	6.7	11	PASS
62	5310	-3.6	-3.7	-0.6	11	PASS
102	5510	1.2	0.7	4.0	11	PASS
110	5550	4.0	2.8	6.5	11	PASS
134	5670	1.8	0.2	4.1	11	PASS

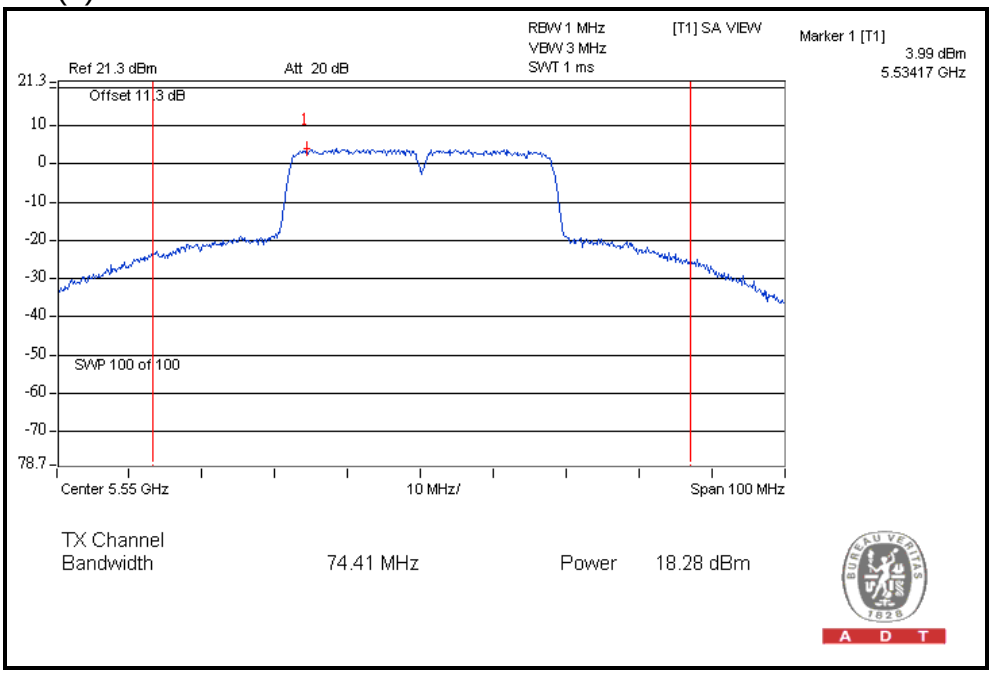
For Chain (0): CH46



For Chain (0): CH54



For Chain (0): CH110



4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within the band 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

Test date: Oct. 18, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP40	100036	Dec. 08, 2010	Dec. 07, 2011

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

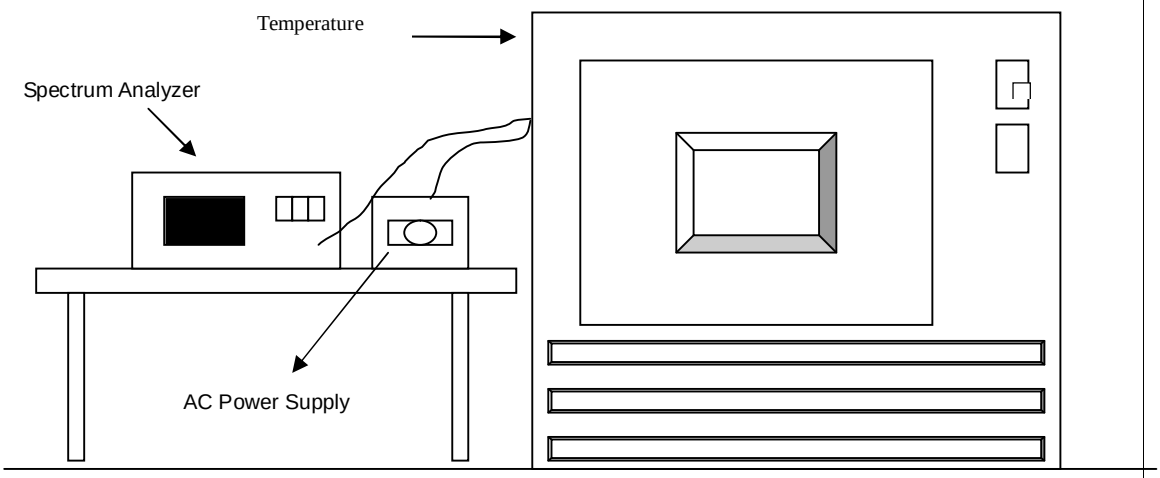
4.6.3 TEST PROCEDURE

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.

4.6.7 TEST RESULTS

Operating frequency: 5320MHz									
Temp. (℃)	Power supply (VAC)	0 minute		2 minute		5 minute		10 minute	
		(MHz)	ppm	(MHz)	ppm	(MHz)	ppm	(MHz)	ppm
50	138	5320.0189	3.5526	5320.0201	3.7782	5320.0237	4.4549	5320.0218	4.0977
	120	5320.0189	3.5526	5320.0195	3.6654	5320.0245	4.6053	5320.0206	3.8722
	102	5320.0193	3.6278	5320.0199	3.7406	5320.0231	4.3421	5320.0218	4.0977
40	138	5320.0065	1.2218	5320.0033	0.6203	5320.0055	1.0338	5320.004	0.7519
	120	5320.0065	1.2218	5320.0022	0.4135	5320.007	1.3158	5320.0051	0.9586
	102	5320.0055	1.0338	5320.002	0.3759	5320.0058	1.0902	5320.0048	0.9023
30	138	5320.0204	3.8346	5320.0179	3.3647	5320.0164	3.0827	5320.0157	2.9511
	120	5320.0201	3.7782	5320.0175	3.2895	5320.017	3.1955	5320.016	3.0075
	102	5320.0204	3.8346	5320.0165	3.1015	5320.0155	2.9135	5320.0172	3.2331
20	138	5319.9918	-1.5414	5319.9882	-2.2180	5319.99	-1.8797	5319.9942	-1.0902
	120	5319.9905	-1.7857	5319.9873	-2.3872	5319.9912	-1.6541	5319.9955	-0.8459
	102	5319.9919	-1.5226	5319.9874	-2.3684	5319.9913	-1.6353	5319.9948	-0.9774
10	138	5319.9918	-1.5414	5319.9914	-1.6165	5319.991	-1.6917	5319.9906	-1.7669
	120	5319.9909	-1.7105	5319.9897	-1.9361	5319.9913	-1.6353	5319.9911	-1.6729
	102	5319.9909	-1.7105	5319.9901	-1.8609	5319.9914	-1.6165	5319.9915	-1.5977
0	138	5320.0097	1.8233	5320.0146	2.7444	5320.0174	3.2707	5320.0124	2.3308
	120	5320.0102	1.9173	5320.0139	2.6128	5320.0171	3.2143	5320.0142	2.6692
	102	5320.0096	1.8045	5320.015	2.8195	5320.0182	3.4211	5320.0127	2.3872
-10	138	5319.9804	-3.6842	5319.9831	-3.1767	5319.9853	-2.7632	5319.9846	-2.8947
	120	5319.9806	-3.6466	5319.9842	-2.9699	5319.9861	-2.6128	5319.9844	-2.9323
	102	5319.9791	-3.9286	5319.9839	-3.0263	5319.9861	-2.6128	5319.984	-3.0075
-20	138	5320.0034	0.6391	5320.0002	0.0376	5319.9989	-0.2068	5319.9966	-0.6391
	120	5320.0041	0.7707	5320.0006	0.1128	5319.9985	-0.2820	5319.9968	-0.6015
	102	5320.0037	0.6955	5320.0006	0.1128	5319.9979	-0.3947	5319.9966	-0.6391
-30	138	5320.0084	1.5789	5320.0043	0.8083	5320.0015	0.2820	5319.9998	-0.0376
	120	5320.0097	1.8233	5320.0041	0.7707	5320.0013	0.2444	5319.9985	-0.2820
	102	5320.0092	1.7293	5320.0053	0.9962	5320.0011	0.2068	5319.9985	-0.2820

4.7 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.7.1 TEST INSTRUMENTS

Test date : Oct. 18, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP40	100036	Dec. 08, 2010	Dec. 07, 2011

NOTE: 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 lose cable. Set RBW of spectrum analyzer to 1MHz with suitable frequency span including 100 MHz or 200 MHz bandwidth from band edge. The band edges was measured and recorded.

4.7.3 EUT OPERATING CONDITION

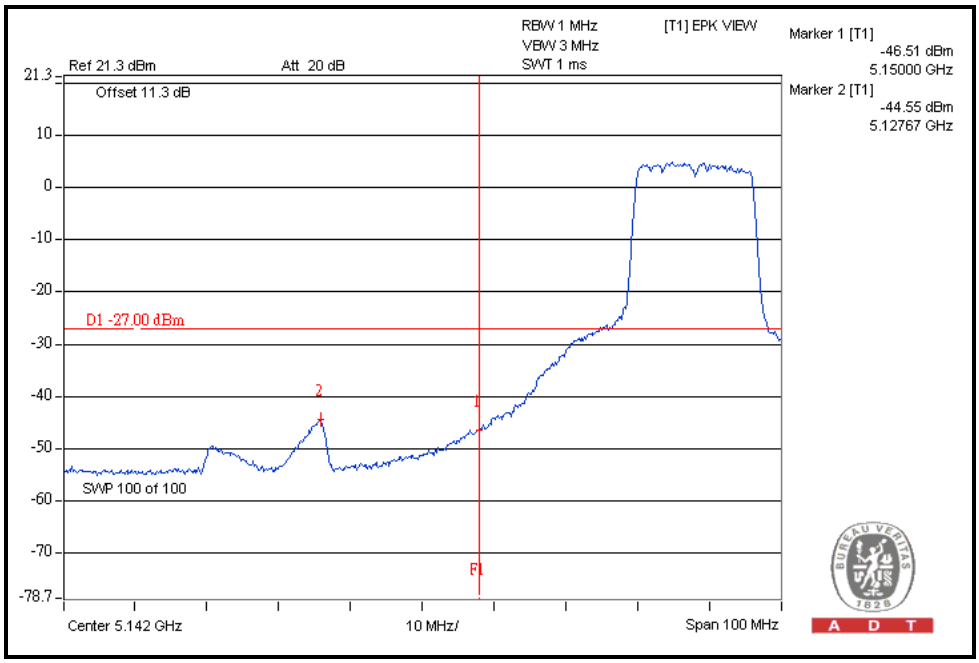
The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

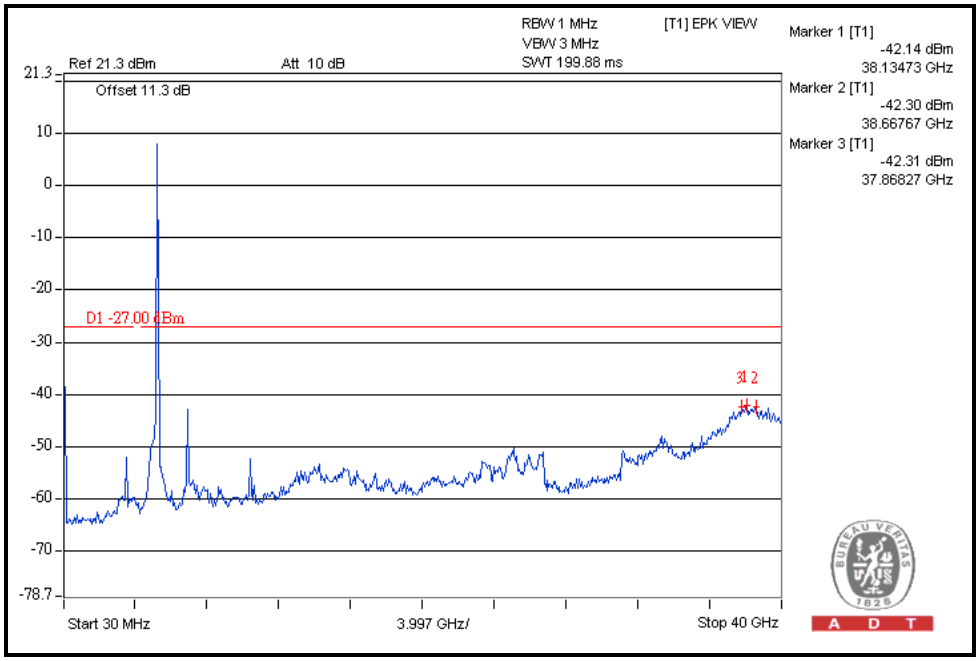
4.7.4 TEST RESULTS

For 5.15 to 5.35GHz band:
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.

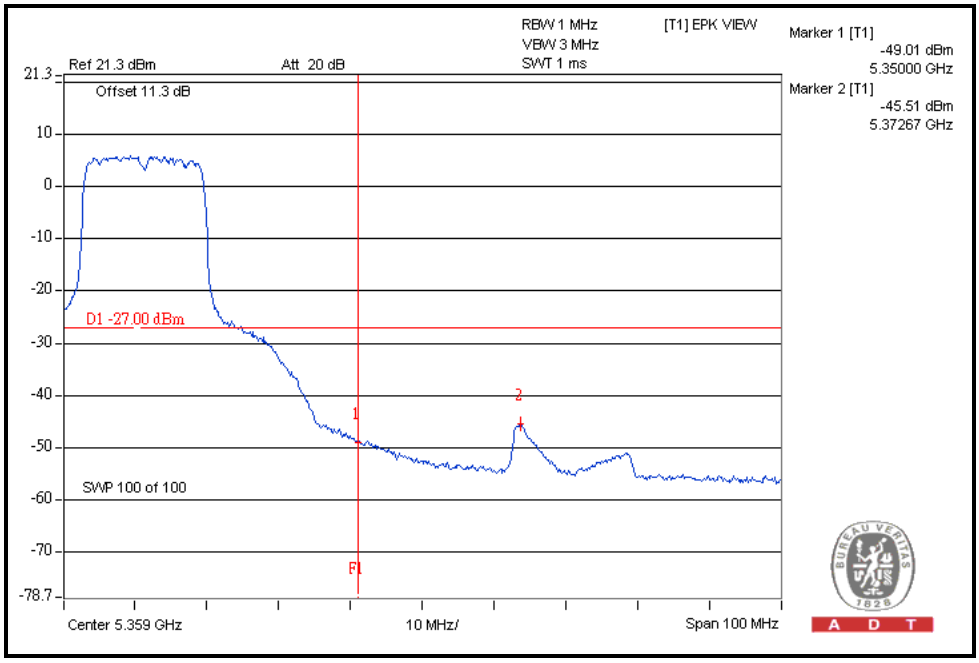
Performing measurements: Measure and add 10 log(N) dB
802.11a OFDM MODULATION

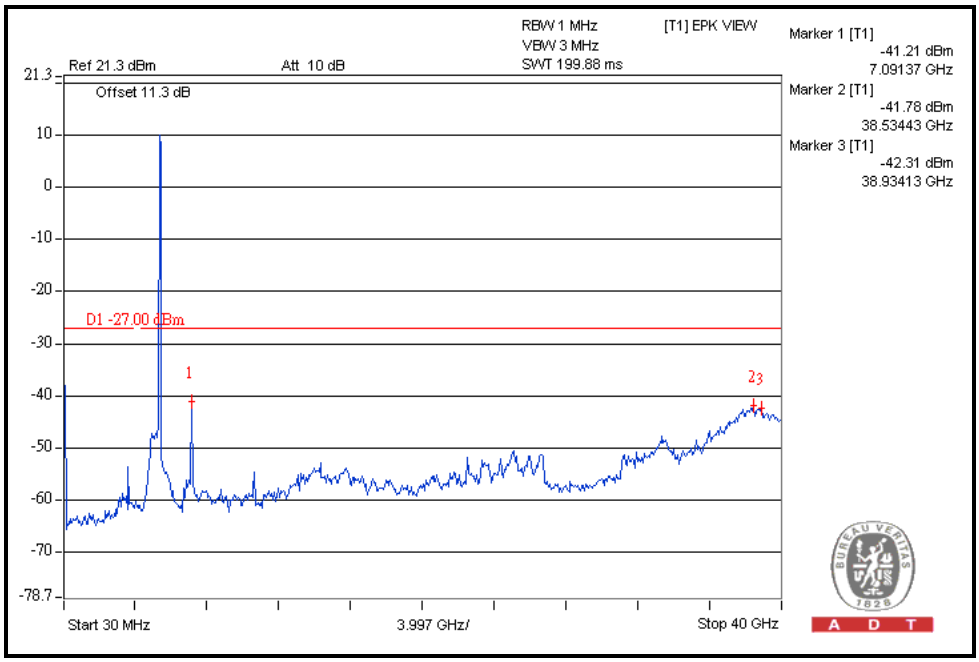
CH36





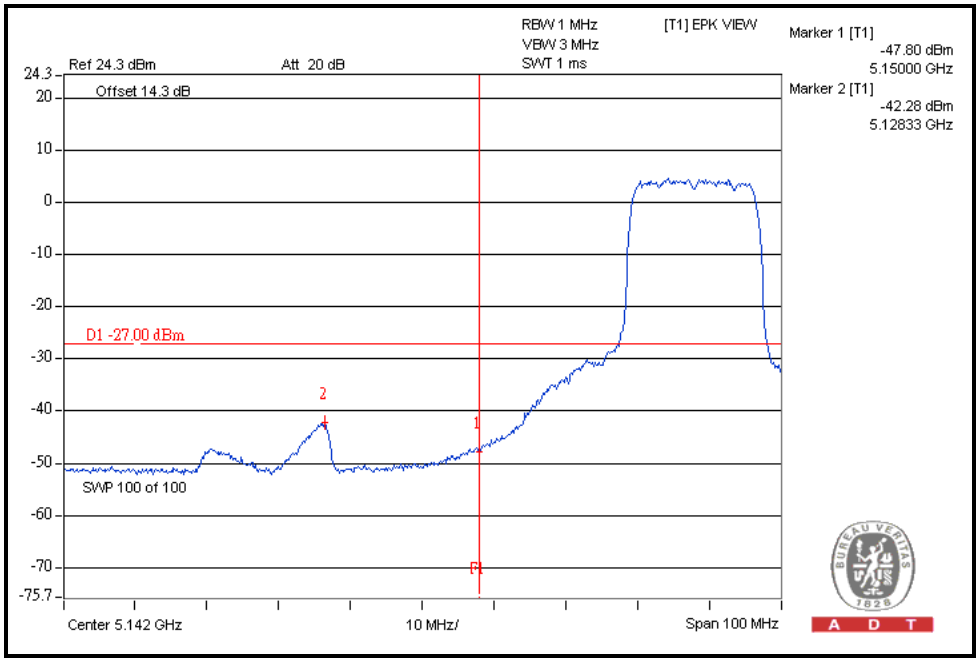
CH64

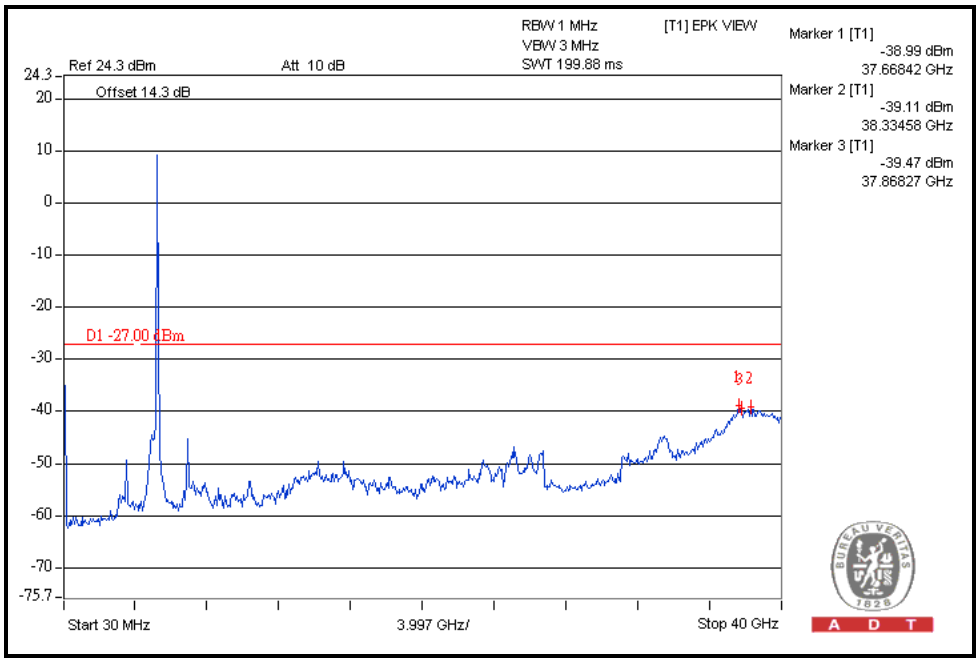

RBW 1 MHz
VBW 3 MHz
SWT 1 ms
[T1] EPK VIEW
Marker 1 [T1]
-49.01 dBm
5.35000 GHz
Marker 2 [T1]
-45.51 dBm
5.37267 GHz
Ref 21.3 dBm
Att 20 dB
Offset 11.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
D1 -27.00 dBm
SWP 100 of 100
Center 5.359 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 3 MHz
SWT 199.88 ms
[T1] EPK VIEW
Marker 1 [T1]
-41.21 dBm
7.09137 GHz
Marker 2 [T1]
-41.78 dBm
38.53443 GHz
Marker 3 [T1]
-42.31 dBm
38.93413 GHz
Ref 21.3 dBm
Att 10 dB
Offset 11.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
D1 -27.00 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz

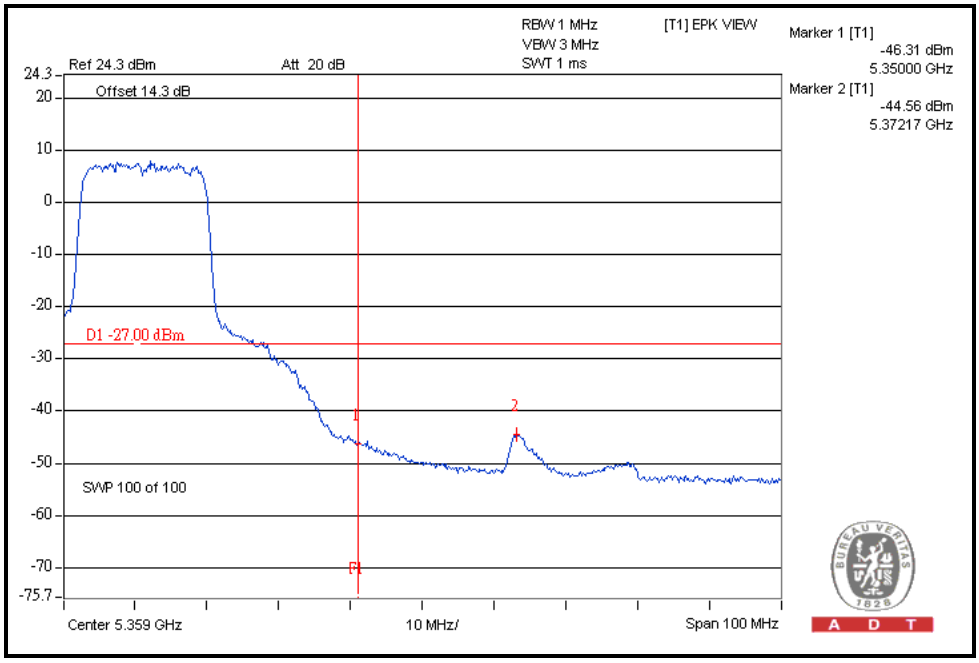
802.11n (20MHz) OFDM MODULATION:

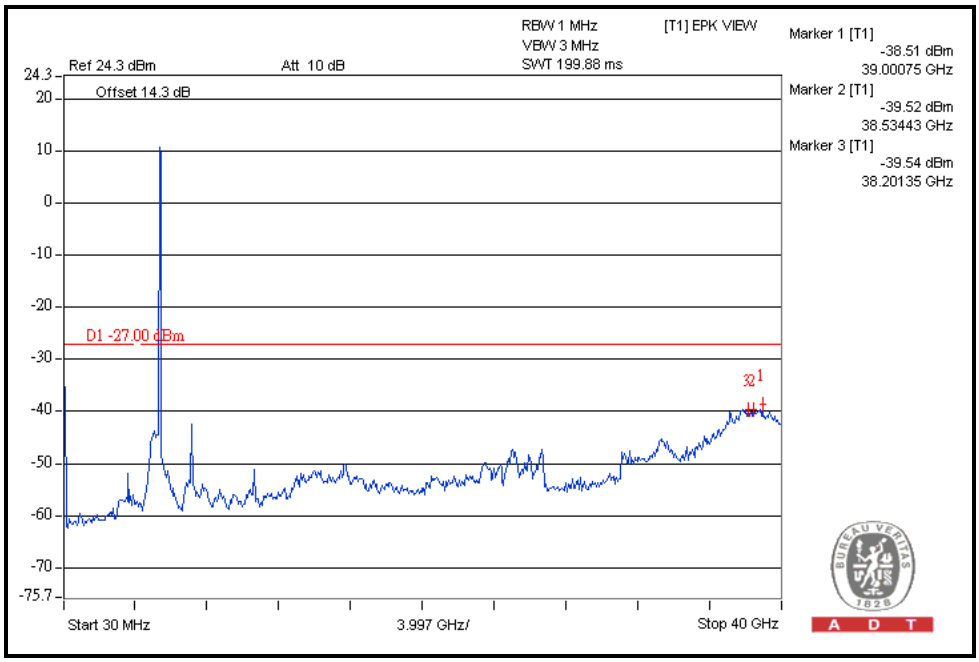
CH36





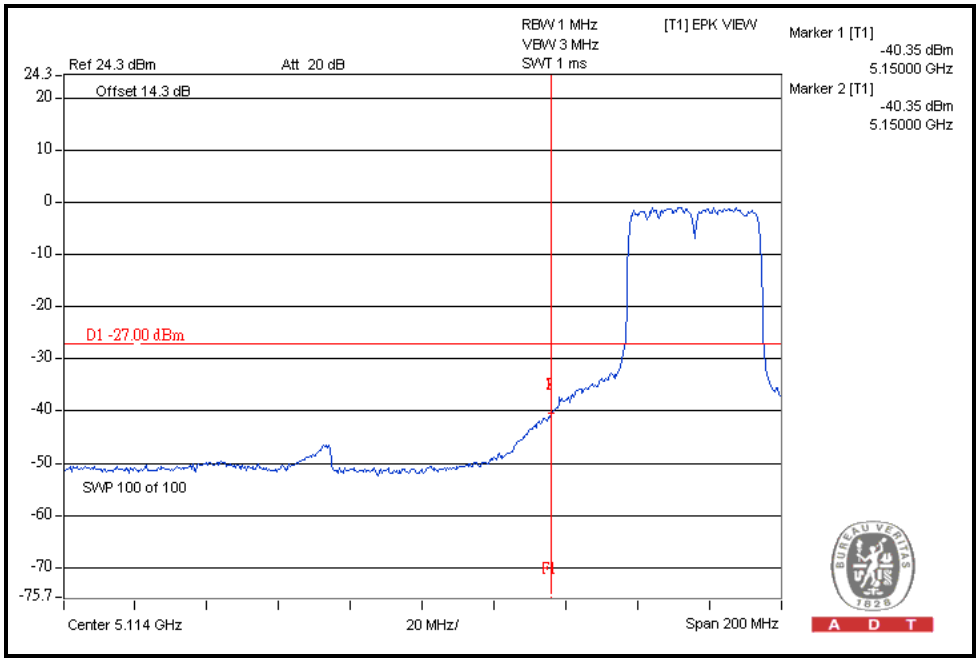
CH64

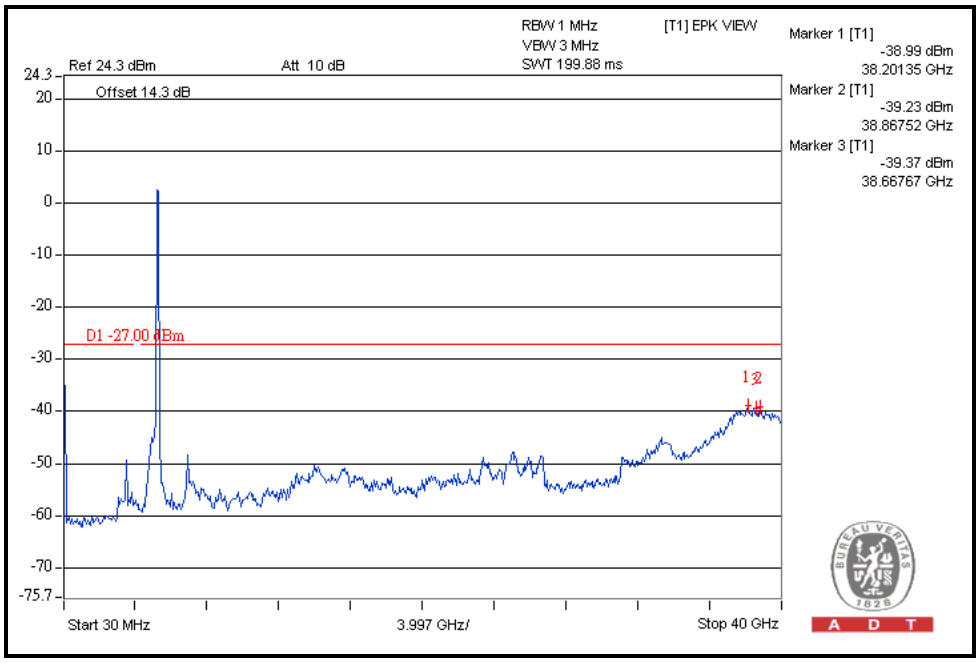

RBW 1 MHz
VBW 3 MHz
SWT 1 ms
[T1] EPK VIEW
Marker 1 [T1]
-46.31 dBm
5.35000 GHz
Marker 2 [T1]
-44.56 dBm
5.37217 GHz
Ref 24.3 dBm
Att 20 dB
Offset 14.3 dB
D1 -27.00 dBm
SWP 100 of 100
Center 5.359 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 3 MHz
SWT 199.88 ms
[T1] EPK VIEW
Marker 1 [T1]
-38.51 dBm
39.00075 GHz
Marker 2 [T1]
-39.52 dBm
38.53443 GHz
Marker 3 [T1]
-39.54 dBm
38.20135 GHz
Ref 24.3 dBm
Att 10 dB
Offset 14.3 dB
D1 -27.00 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz

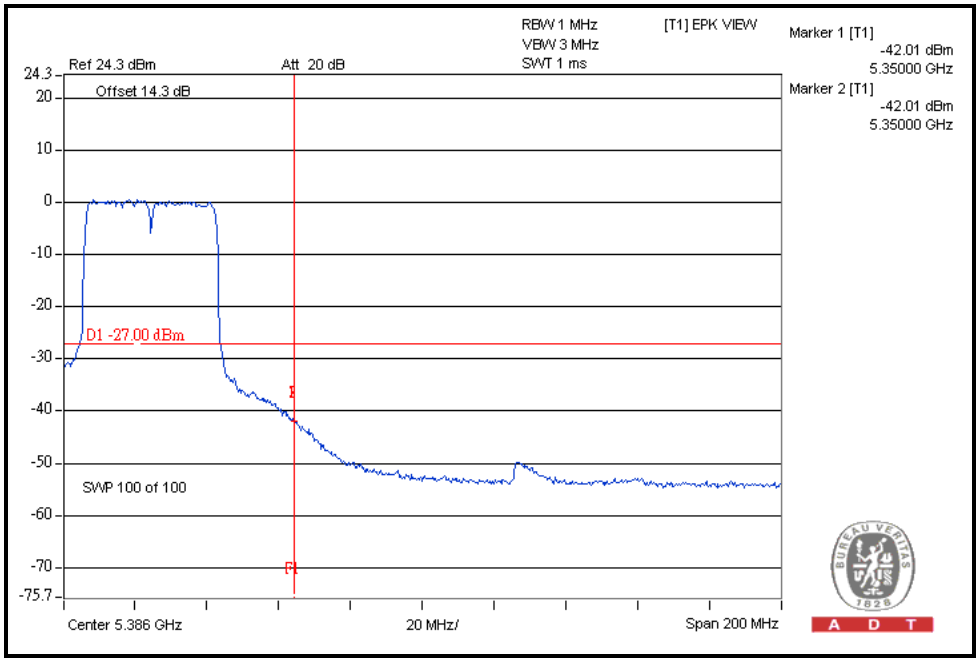
802.11n (40MHz) OFDM MODULATION:

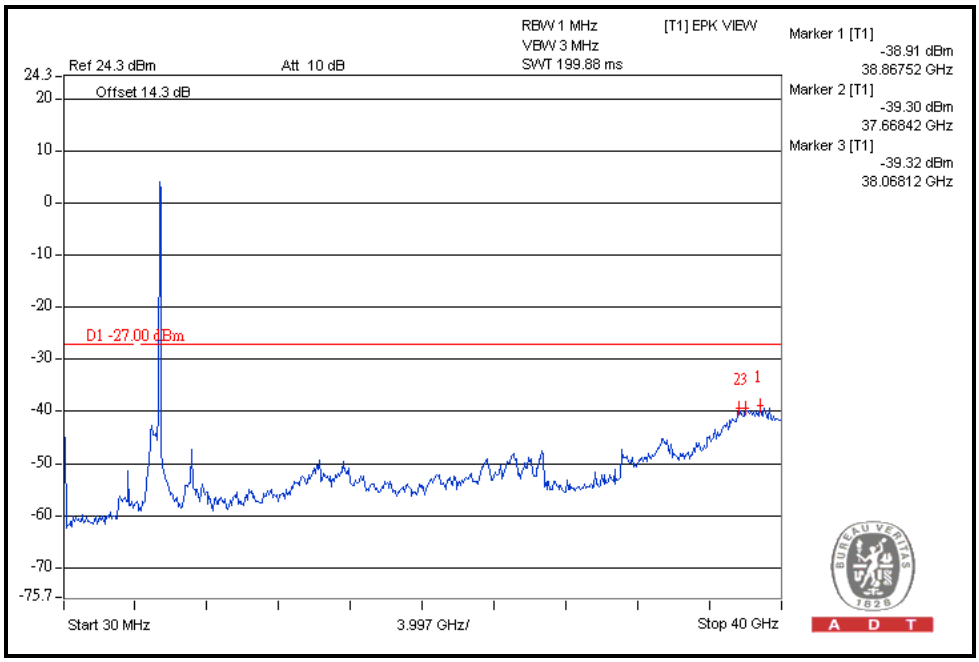
CH38





CH62


RBW 1 MHz
VBW 3 MHz
SWT 1 ms
[T1] EPK VIEW
Marker 1 [T1]
-42.01 dBm
5.35000 GHz
Marker 2 [T1]
-42.01 dBm
5.35000 GHz
Ref 24.3 dBm
Att 20 dB
Offset 14.3 dB
24.3
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75.7
D1 -27.00 dBm
SWP 100 of 100
Center 5.386 GHz
20 MHz/
Span 200 MHz

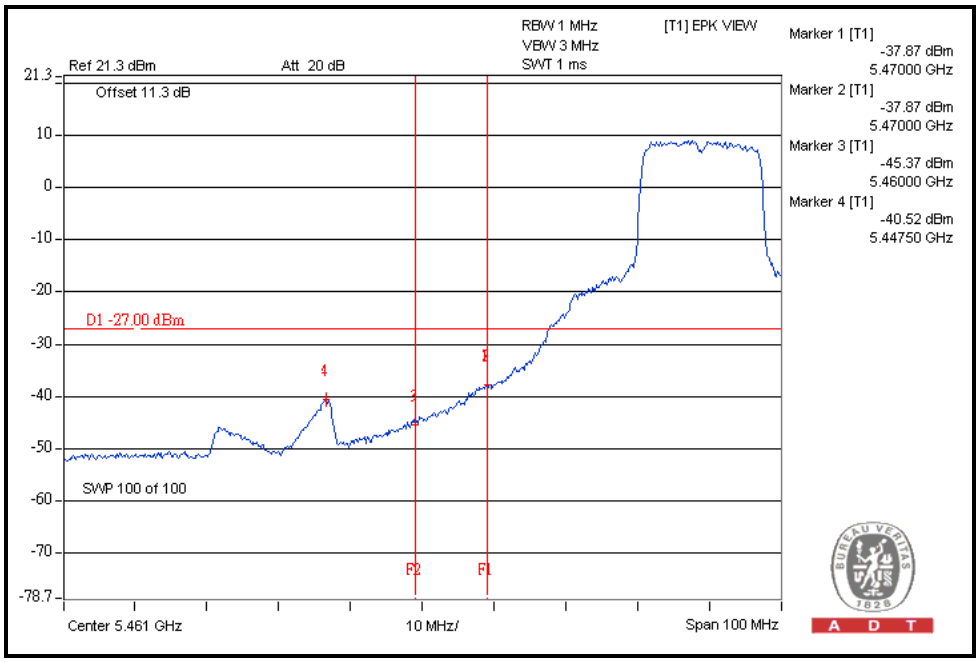

RBW 1 MHz
VBW 3 MHz
SWT 199.88 ms
[T1] EPK VIEW
Marker 1 [T1]
-38.91 dBm
38.86752 GHz
Marker 2 [T1]
-39.30 dBm
37.66842 GHz
Marker 3 [T1]
-39.32 dBm
38.06812 GHz
Ref 24.3 dBm
Att 10 dB
Offset 14.3 dB
24.3
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75.7
D1 -27.00 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz

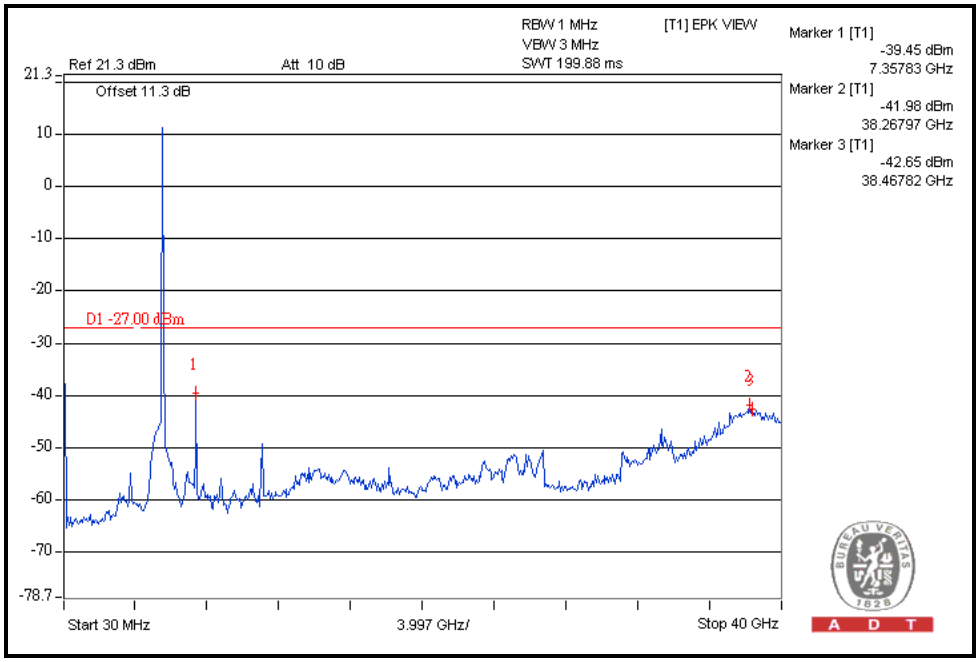
For 5.47 to 5.725GHz band:

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

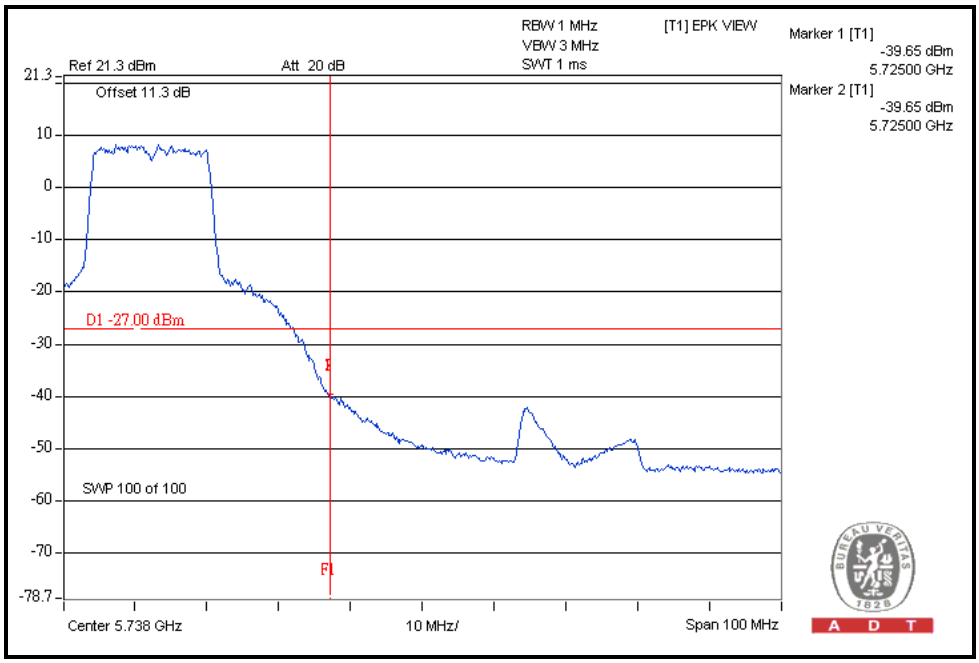
Performing measurements: Measure and add 10 log(N) dB
802.11a OFDM MODULATION

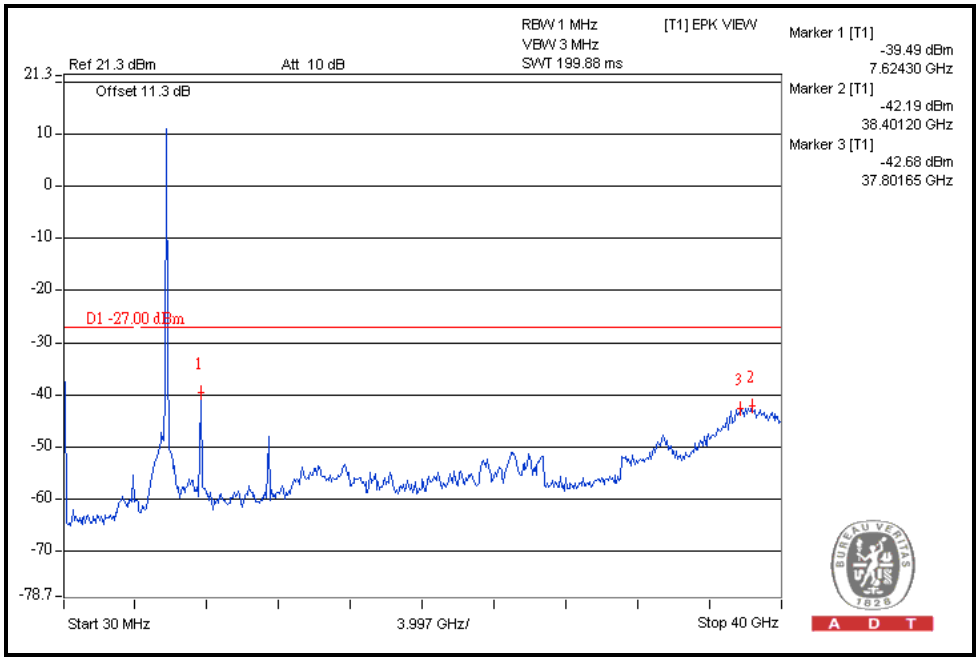
CH100





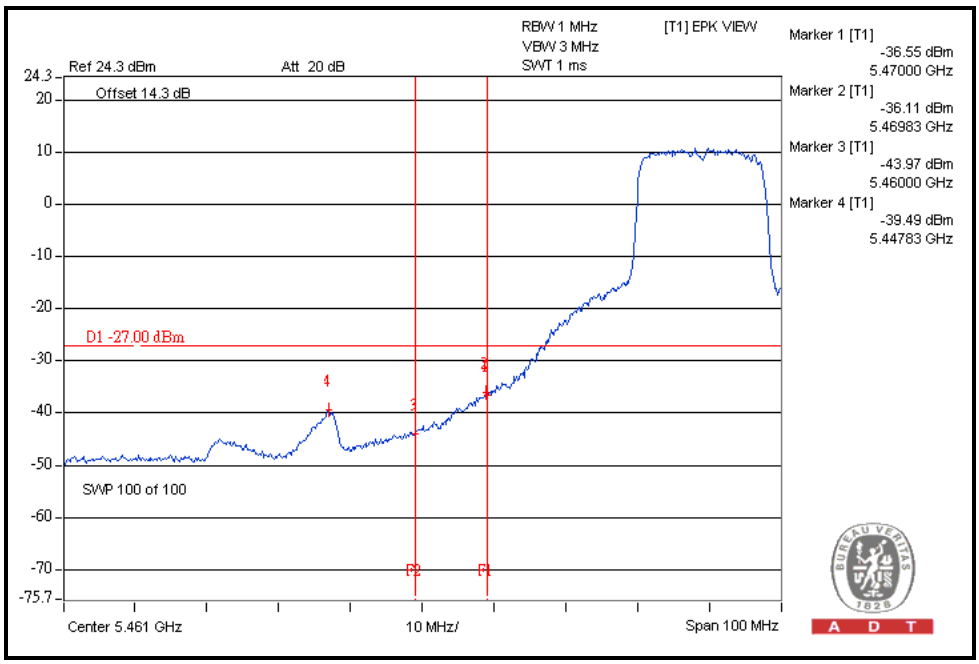
CH140

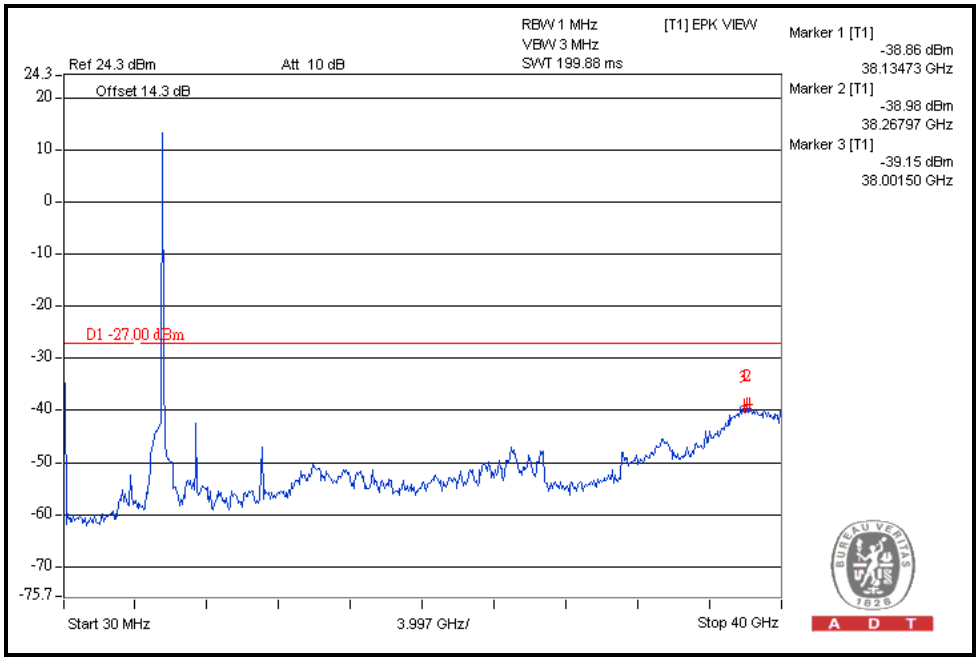

RBW 1 MHz
VBW 3 MHz
SWT 1 ms
[T1] EPK VIEW
Marker 1 [T1]
-39.65 dBm
5.72500 GHz
Marker 2 [T1]
-39.65 dBm
5.72500 GHz
Ref 21.3 dBm
Att 20 dB
Offset 11.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
D1 -27.00 dBm
SWP 100 of 100
Center 5.738 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 3 MHz
SWT 199.88 ms
[T1] EPK VIEW
Marker 1 [T1]
-39.49 dBm
7.62430 GHz
Marker 2 [T1]
-42.19 dBm
38.40120 GHz
Marker 3 [T1]
-42.68 dBm
37.80165 GHz
Ref 21.3 dBm
Att 10 dB
Offset 11.3 dB
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
D1 -27.00 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz

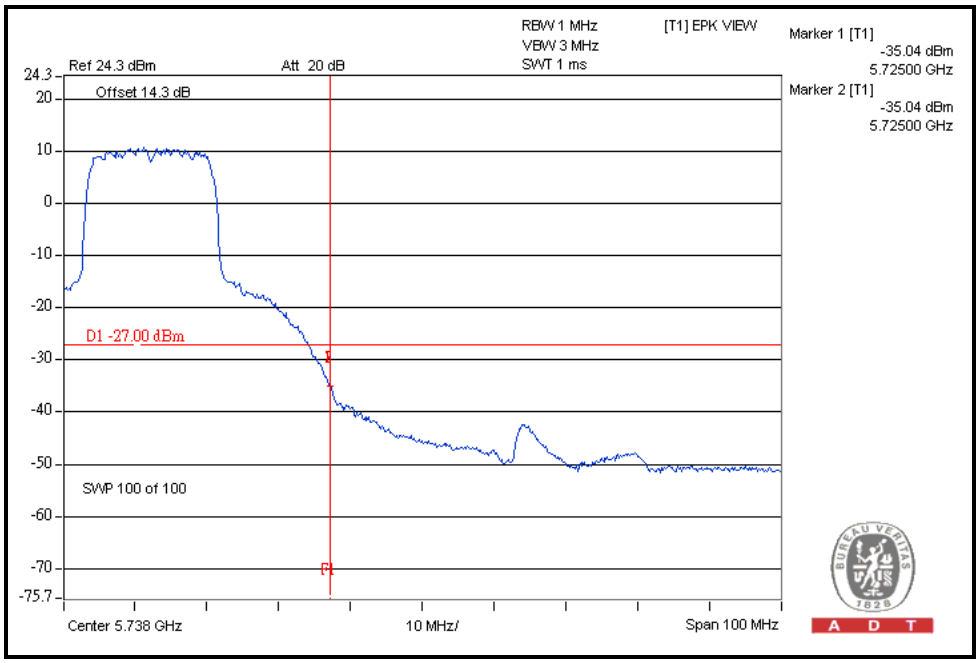
802.11n (20MHz) OFDM MODULATION:

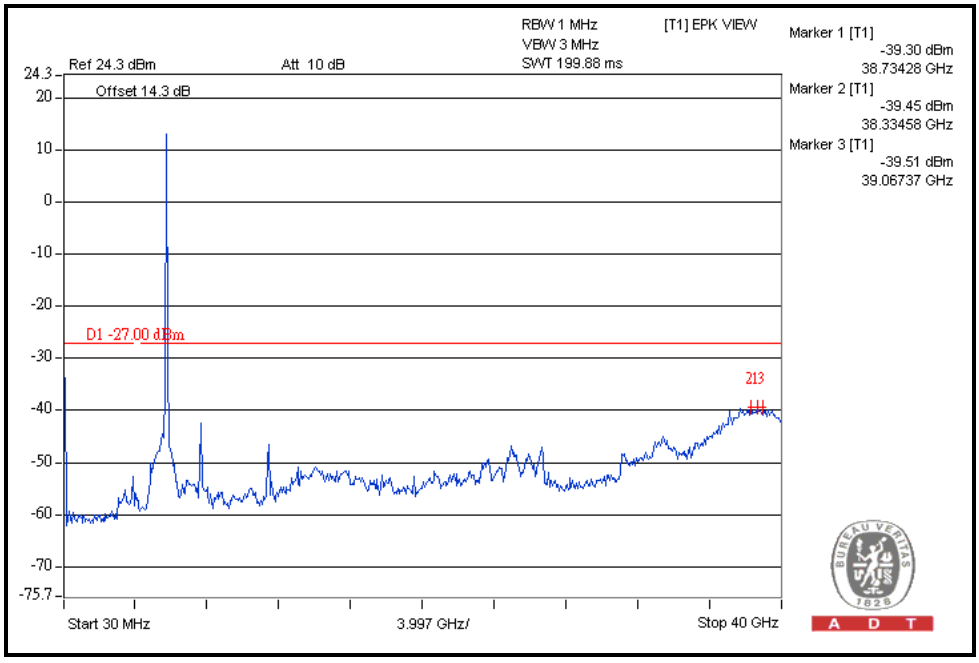
CH100





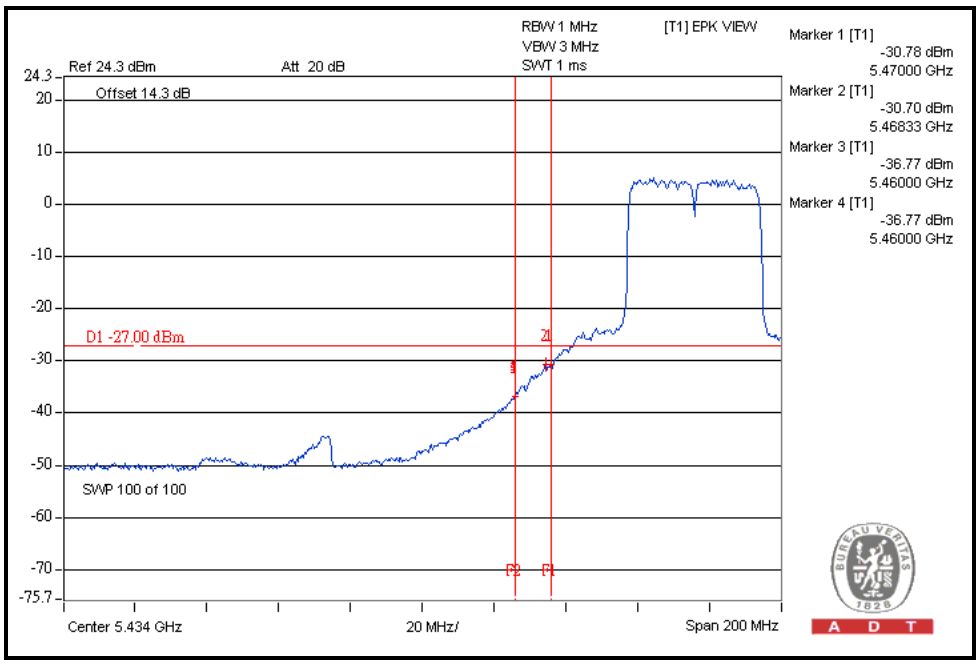
CH140

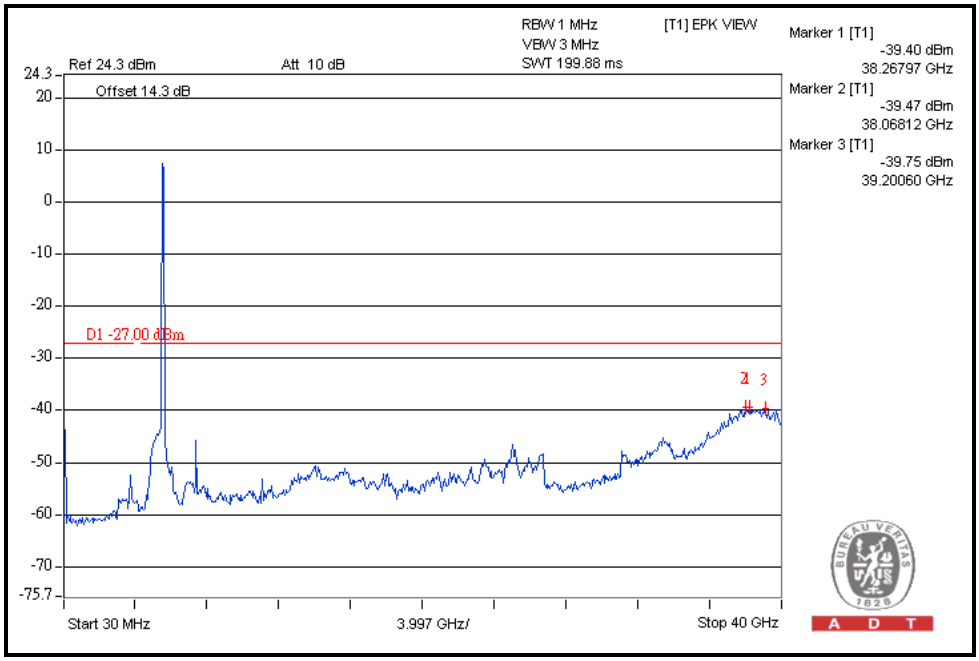

RBW 1 MHz
VBW 3 MHz
SWT 1 ms
[T1] EPK VIEW
Marker 1 [T1]
-35.04 dBm
5.72500 GHz
Marker 2 [T1]
-35.04 dBm
5.72500 GHz
Ref 24.3 dBm
Att 20 dB
Offset 14.3 dB
D1 -27.00 dBm
SWP 100 of 100
Center 5.738 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 3 MHz
SWT 199.88 ms
[T1] EPK VIEW
Marker 1 [T1]
-39.30 dBm
38.73428 GHz
Marker 2 [T1]
-39.45 dBm
38.33458 GHz
Marker 3 [T1]
-39.51 dBm
39.06737 GHz
Ref 24.3 dBm
Att 10 dB
Offset 14.3 dB
D1 -27.00 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz

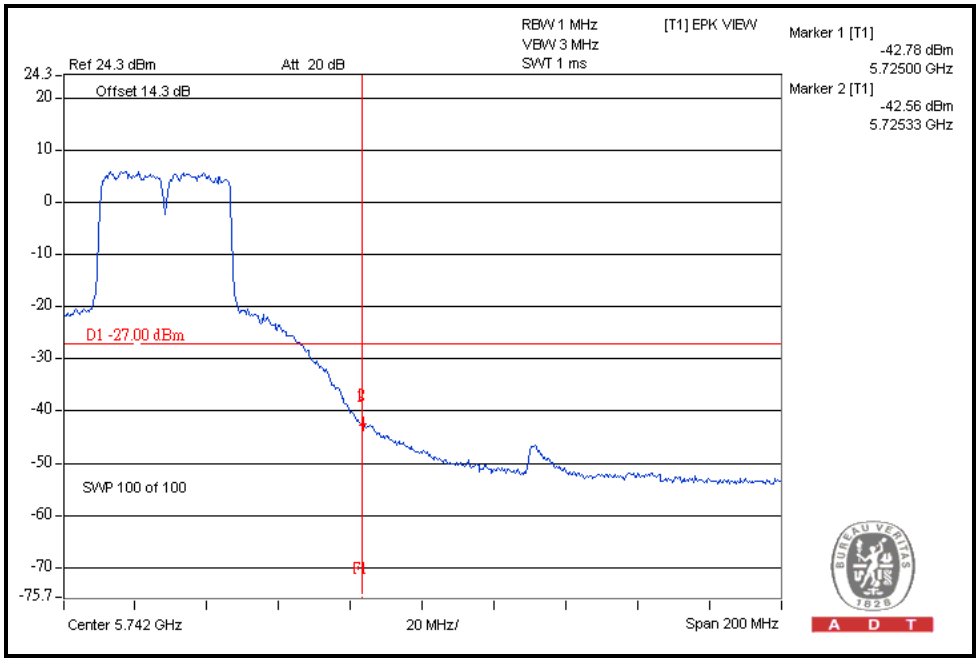
802.11n (40MHz) OFDM MODULATION:

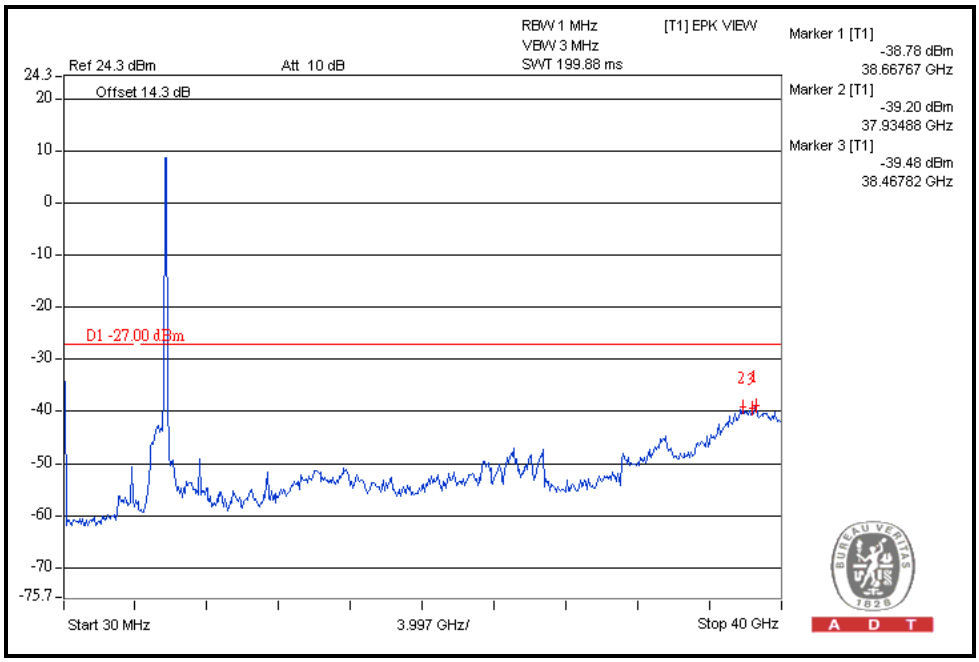
CH102





CH134


RBW 1 MHz
VBW 3 MHz
SWT 1 ms
[T1] EPK VIEW
Marker 1 [T1]
-42.78 dBm
5.72500 GHz
Marker 2 [T1]
-42.56 dBm
5.72533 GHz
Ref 24.3 dBm
Att 20 dB
Offset 14.3 dB
24.3
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75.7
D1 -27.00 dBm
SWP 100 of 100
Center 5.742 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 3 MHz
SWT 199.88 ms
[T1] EPK VIEW
Marker 1 [T1]
-38.78 dBm
38.66767 GHz
Marker 2 [T1]
-39.20 dBm
37.93488 GHz
Marker 3 [T1]
-39.48 dBm
38.46782 GHz
Ref 24.3 dBm
Att 10 dB
Offset 14.3 dB
24.3
20
10
0
-10
-20
-30
-40
-50
-60
-70
-75.7
D1 -27.00 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz

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 and authorization 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
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Email: service.adt@tw.bureauveritas.com
Web Site: www.adt.com.tw

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

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.

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