FCC TEST REPORT (15.407)

REPORT NO.:	RF110617E04-1
MODEL NO.:	DWA-566
FCC ID:	KA2WA566A1
RECEIVED:	June 17, 2011
TESTED:	June 22 to July 07, 2011
ISSUED:	Aug. 26, 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
RF110617E04-1	Original release	Aug. 26, 2011

1. CERTIFICATION

PRODUCT:	WIRELESS N 300 PCIe
BRAND NAME:	D-Link
MODEL NO.:	DWA-566
TEST SAMPLE:	MASS-PRODUCTION
APPLICANT:	D-Link Corporation
TESTED:	June 22 to July 07, 2011
STANDARDS:	FCC Part 15, Subpart E (Section 15.407) ANSI C63.4-2003 ANSI C63.10-2009

The above equipment (Model: DWA-566) 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:** *Aug. 26, 2011*
(Midoli Peng, Specialist)

APPROVED BY : _____ , **DATE:** *Aug. 26, 2011*
(May Chen, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart E (Section 15.407)			
Standard Section	**Test Type**	**Result**	**Remark**
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -11.32dB at 0.205MHz
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 -0.6dB at 5350.00MHz
15.407(a/1/2/3)	Output Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is SMA Plug Straight / Reverse not a standard connector.

NOTE:

1. The EUT was operating in 2400 ~ 2483.5MHz, 5.15~5.35GHz, 5.47~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 5.15~5.35GHz and 5.47~5.725GHz. For the 2400 ~ 2483.5MHz and 5.725~5.85GHz RF parameters was recorded in another test report.
2. The DFS report was recorded in another test report<Report No.: RF110617E04-2>.

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)	3.81 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	WIRELESS N 300 PCIe
MODEL NO.	DWA-566
FCC ID	KA2WA566A1
POWER SUPPLY	DC 3.3V ± 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:** 11 / 5.5 / 2 / 1Mbps **802.11g:** 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps **HT20 MCS0~7 (800ns GI):** 6.5Mbps, 13Mbps, 19.5Mbps, 26Mbps, 39Mbps, 52Mbps, 58.5Mbps, 65Mbps, **HT20 MCS8~15 (800ns GI):** 13Mbps, 26Mbps, 39Mbps, 52Mbps, 78Mbps, 104Mbps, 117Mbps, 130Mbps. **HT40 MCS0~7 (800ns GI):** 13.5Mbps, 27Mbps, 40.5Mbps, 54Mbps, 81Mbps, 108Mbps, 121.5Mbps, 135Mbps. **HT40 MCS8~15 (800ns GI):** 27Mbps, 54Mbps, 81Mbps, 108Mbps, 162Mbps, 216Mbps, 243Mbps, 270Mbps. **HT20 MCS0~7 (400ns GI):** 7.2Mbps, 14.4Mbps, 21.7Mbps, 28.9Mbps, 43.3Mbps, 57.8Mbps, 65.0Mbps, 72.2Mbps, **HT20 MCS8~15 (400ns GI):** 14.444Mbps, 28.889Mbps, 43.333Mbps, 57.778Mbps, 86.667Mbps, 115.556Mbps, 130.000Mbps, 144.444Mbps. **HT40 MCS0~7 (400ns GI):** 15.0Mbps, 30.0Mbps, 45.0Mbps, 60.0Mbps, 90.0Mbps, 120.0Mbps, 135.0Mbps, 150.0Mbps, **HT40 MCS8~15 (400ns GI):** 30.0Mbps, 60.0Mbps, 90.0Mbps, 120.0Mbps, 180.0Mbps, 240.0Mbps, 270.0Mbps, 300.0Mbps.
OPERATING FREQUENCY	**For 15.407** 802.11a: 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.70GHz
	For 15.247 802.11b & 802.11g: 2.412 ~ 2.462GHz 802.11a: 5.745 ~ 5.825GHz

NUMBER OF CHANNEL	**For 15.407** 19 for 802.11a, 802.11n (20MHz) 9 for 802.11n (40MHz) **For 15.247(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: 109.3mW 802.11n (20MHz): 102.4mW 802.11n (40MHz): 74.4mW **For 15.247(2.4GHz)** 802.11b: 221.0mW 802.11g: 442.6mW 802.11n (20MHz): 502.5mW 802.11n (40MHz): 347.7mW **For 15.247(5GHz)** 802.11a: 302.7mW 802.11n (20MHz): 306.7mW 802.11n (40MHz): 355.8mW
ANTENNA TYPE	Please see note
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

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

Transmitter Circuit	Brand	Model	Gain (dBi) include cable loss	Antenna Type	Connector
Chain (0)	WHA YU GROUP	C037-511105-A (SSR-02561)	2	Dipole	SMA Plug Straight / Reverse
Chain (1)	WHA YU GROUP	C037-511105-A (SSR-02561)	2	Dipole	SMA Plug Straight / Reverse

2. 2.4GHz and 5GHz technology cannot transmit at same time.

3. The EUT incorporates CDD function with 802.11a, 802.11b, 802.11g.

4. The EUT is 2 * 2 spatial MIMO (2Tx & 2Rx) without beam forming function.

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

6. 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 Manual.

3.2 DESCRIPTION OF TEST MODES

Operated in 5150MHz ~ 5350MHz bands:

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

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

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

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

Operated in 5470MHz ~ 5725MHz bands:

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

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

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

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

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
802.11a	36 to 140	52	OFDM	BPSK	6	A

RADIATED EMISSION TEST (BELOW 1 GHz):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	COMBINATION
802.11a	36 to 140	52	OFDM	BPSK	6	A

RADIATED EMISSION TEST (ABOVE 1 GHz):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	COMBINATION
802.11a	36 to 140	36, 40, 48, 52, 60, 64, 100, 120, 140	OFDM	BPSK	6	A
For 5 GHz 802.11n (20MHz)	36 to 140	36, 40, 48, 52, 60, 64, 100, 120, 140	OFDM	BPSK	6.5	B
For 5 GHz 802.11n (40MHz)	38 to 134	38, 46, 54, 62, 102, 118, 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, 120, 140	OFDM	BPSK	6	A
For 5 GHz 802.11n (20MHz)	36 to 140	36, 40, 48, 52, 60, 64, 100, 120, 140	OFDM	BPSK	6.5	B
For 5 GHz 802.11n (40MHz)	38 to 134	38, 46, 54, 62, 102, 118, 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, 75%RH	120Vac, 60Hz	Eagle Chen
RE<1G	24deg. C, 70%RH	120Vac, 60Hz	Nelson Teng
RE≥1G	26deg. C, 68%RH	120Vac, 60Hz	Kent Liu
APCM	25deg. C, 60%RH	120Vac, 60Hz	Kent Liu
OB	25deg. C, 60%RH	120Vac, 60Hz	Kent Liu

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

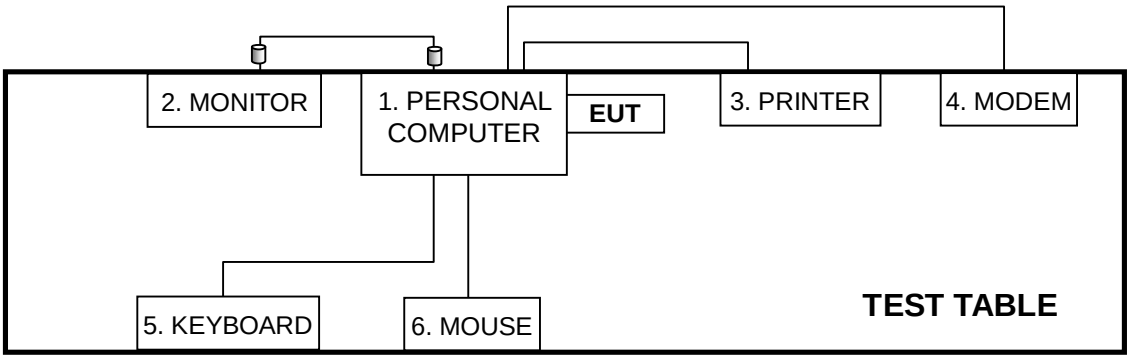
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

For Conducted test					
NO.	**PRODUCT**	**BRAND**	**MODEL NO.**	**SERIAL NO.**	**FCC ID**
1	PERSONAL COMPUTER	DELL	DCSCMF	9KKB32S	FCC DoC
2	MONITOR	DELL	E2210Hc	CN-OG337R-64180-97S-OQDS	FCC DoC
3	PRINTER	EPSON	LQ-300+II	G88Y074083	FCC DoC
4	MODEM	ACEEX	1414	0206026778	IFAXDM1414
5	KEYBOARD	DELL	SK-8115	MY-0DJ325-71619-99B-0476	FCC DoC
6	MOUSE	DELL	MOC5UO	l1401LVG	FCC DoC
For other test items					
NO.	**PRODUCT**	**BRAND**	**MODEL NO.**	**SERIAL NO.**	**FCC ID**
1	PERSONAL COMPUTER	IBM	A65	L3B4724	FCC DoC
2	MONITOR	DELL	E2210Hc	CN-OG337R-64180-97S-OQ8S	FCC DoC
3	PRINTER	EPSON	LQ-300+II	G88Y074015	FCC DoC
4	MODEM	ACEEX	1414	0206026778	IFAXDM1414
5	KEYBOARD	DELL	SK-8115	MY-0DJ325-71619-99B-0479	FCC DoC
6	MOUSE	DELL	MOC5UO	l14066PS	FCC DoC

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.8m VGA Cable, shielded, with two cores.
3	1.8m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core.
4	1.2m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.
5	1.8m USB Cable, shielded.
6	1.5m USB Cable, shielded.

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15-0.5 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: June 22, 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)	NSLK 8127	8127-522	Sep. 08, 2010	Sep. 07, 2011
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Nov. 03, 2010	Nov. 02, 2011
RF Cable (JYEBAO)	5DFB	COCCAB-002	Aug. 30, 2010	Aug. 29, 2011
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.

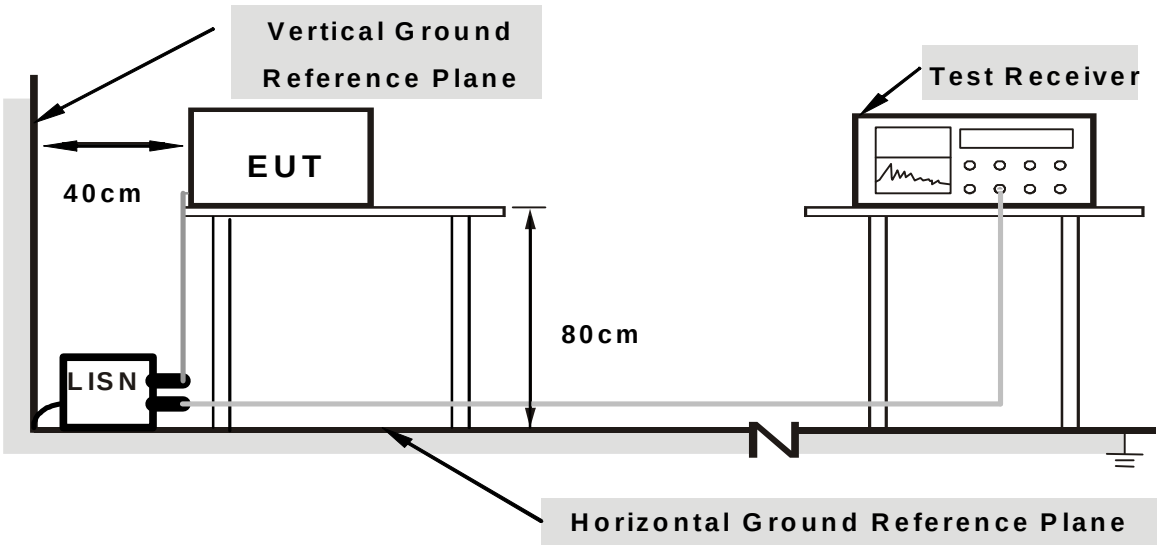
4.1.3 TEST PROCEDURES

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

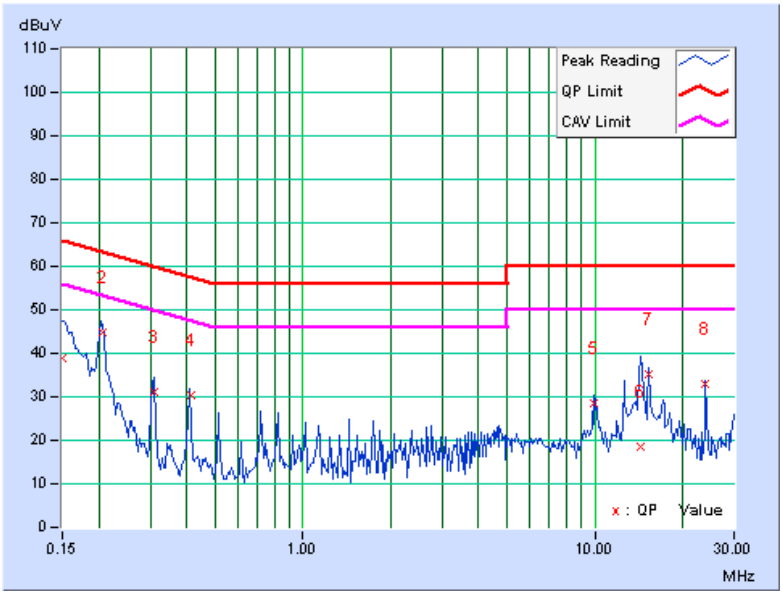
1. Turned on the power of all equipment.
2. Prepared computer system support unit 1 (Personal Computer) to act as communication partner and placed it outside of testing area.
3. The communication partner ran test program “art2_ver_2_14BIN” to enable EUT under transmission/receiving condition continuously.

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	0.39	38.65	27.45	39.04	27.84	66.00	56.00	-26.96	-28.16
2	**0.205**	**0.40**	**44.38**	**41.67**	**44.78**	**42.07**	**63.39**	**53.39**	**-18.61**	**-11.32**
3	0.310	0.41	30.86	29.71	31.27	30.12	59.97	49.97	-28.70	-19.85
4	0.414	0.41	30.14	29.86	30.55	30.27	57.57	47.57	-27.02	-17.30
5	9.902	0.94	27.64	23.62	28.58	24.56	60.00	50.00	-31.42	-25.44
6	14.445	1.11	17.25	11.38	18.36	12.49	60.00	50.00	-41.64	-37.51
7	15.363	1.14	34.22	30.46	35.36	31.60	60.00	50.00	-24.64	-18.40
8	23.992	1.45	31.62	30.17	33.07	31.62	60.00	50.00	-26.93	-18.38

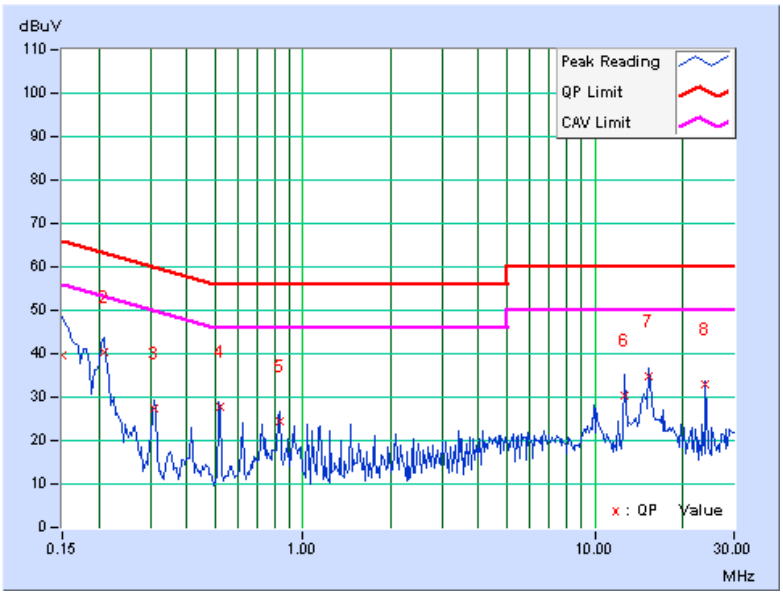
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading 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	0.150	0.12	39.43	24.25	39.55	24.37	66.00	56.00	-26.45	-31.63
2	0.209	0.15	40.34	33.27	40.49	33.42	63.26	53.26	-22.77	-19.84
3	0.310	0.16	27.34	27.52	27.50	27.68	59.97	49.97	-32.47	-22.29
4	0.519	0.16	27.62	27.14	27.78	27.30	56.00	46.00	-28.22	-18.70
5	0.830	0.17	24.22	23.56	24.39	23.73	56.00	46.00	-31.61	-22.27
6	12.637	0.92	29.31	25.61	30.23	26.53	60.00	50.00	-29.77	-23.47
7	15.359	1.11	33.86	30.17	34.97	31.28	60.00	50.00	-25.03	-18.72
8	23.993	1.71	31.25	29.13	32.96	30.84	60.00	50.00	-27.04	-19.16

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

Test date: July 05 to 07, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250254	July 14, 2010	July 13, 2011
Agilent Pre-Selector	N9039A	MY46520311	July 14, 2010	July 13, 2011
Agilent Signal Generator	N5181A	MY49060517	July 14, 2010	July 13, 2011
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	NA	NA
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	NA	NA
Software	ADT_Radiated_V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. 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 antanna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

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

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

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

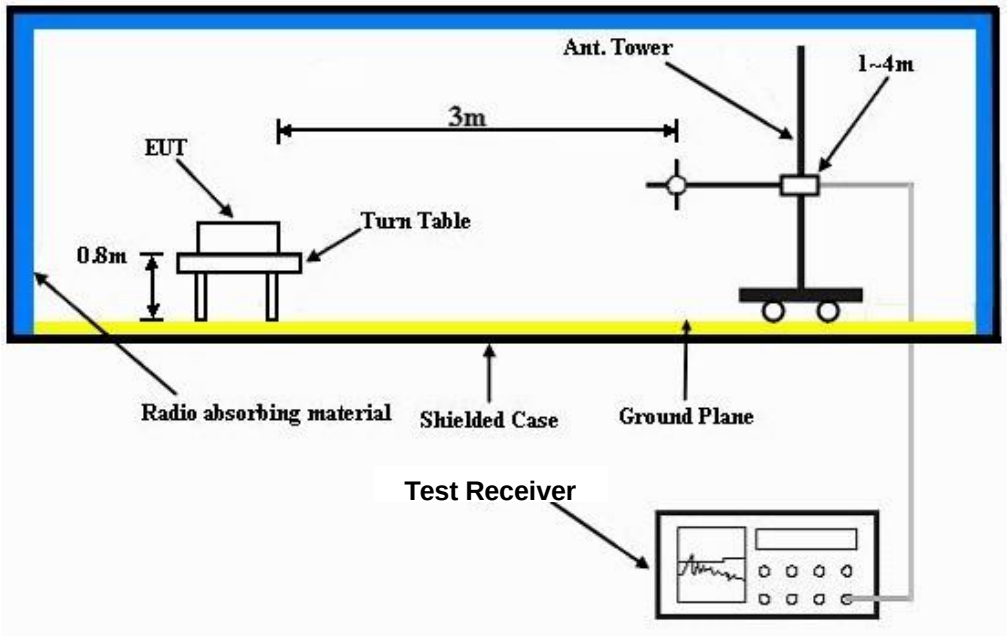
NOTE:

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

4.2.5 DEVIATION FROM TEST STANDARD

No deviation

4.2.6 TEST SETUP



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

4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

4.2.8 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 70%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	232.27	39.6 QP	46.0	-6.4	1.25 H	321	27.00	12.59
2	299.77	35.0 QP	46.0	-11.1	1.00 H	258	19.78	15.17
3	527.97	38.2 QP	46.0	-7.8	1.50 H	320	17.70	20.54
4	633.01	36.2 QP	46.0	-9.8	1.25 H	175	13.89	22.31
5	750.01	34.8 QP	46.0	-11.2	1.00 H	315	10.96	23.87
6	798.92	36.5 QP	46.0	-9.5	1.00 H	314	11.39	25.15
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	123.32	29.5 QP	43.5	-14.0	1.25 V	185	16.54	12.92
2	233.09	34.5 QP	46.0	-11.5	2.00 V	207	21.87	12.62
3	527.97	36.4 QP	46.0	-9.6	1.00 V	282	15.89	20.54
4	632.77	37.1 QP	46.0	-8.9	1.25 V	193	14.78	22.31
5	799.63	39.6 QP	46.0	-6.4	1.25 V	103	14.39	25.17
6	831.48	36.6 QP	46.0	-9.5	1.25 V	315	10.94	25.61

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	26deg. C, 68%RH	TESTED BY	Kent 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	5000.50	57.2 PK	74.0	-16.8	1.50 H	58	17.65	39.55
2	5000.50	47.9 AV	54.0	-6.1	1.50 H	58	8.35	39.55
3	*5180.00	108.5 PK			1.50 H	58	68.48	40.02
4	*5180.00	98.6 AV			1.50 H	58	58.58	40.02
5	#10360.00	54.6 PK	68.3	-13.7	1.13 H	57	8.07	46.53
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5147.80	66.5 PK	74.0	-7.5	1.44 V	6	26.57	39.93
2	5147.80	52.2 AV	54.0	-1.8	1.44 V	6	12.27	39.93
3	*5180.00	115.2 PK			1.44 V	7	75.18	40.02
4	*5180.00	104.9 AV			1.44 V	7	64.88	40.02
5	#10360.00	54.2 PK	68.3	-14.1	1.13 V	62	7.67	46.53

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

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	26deg. C, 68%RH	TESTED BY	Kent 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	*5200.00	107.9 PK			1.44 H	47	67.83	40.07
2	*5200.00	98.3 AV			1.44 H	47	58.23	40.07
3	#10400.00	54.3 PK	68.3	-14.0	1.14 H	63	7.73	46.57
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	115.6 PK			1.44 V	9	75.53	40.07
2	*5200.00	104.2 AV			1.44 V	9	64.13	40.07
3	#10400.00	54.4 PK	68.3	-13.9	1.12 V	53	7.83	46.57

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency 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	26deg. C, 68%RH	TESTED BY	Kent 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	*5240.00	107.9 PK			1.38 H	57	67.73	40.17
2	*5240.00	98.5 AV			1.38 H	57	58.33	40.17
3	#10480.00	54.5 PK	68.3	-13.8	1.24 H	59	7.83	46.67
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	115.3 PK			1.41 V	43	75.13	40.17
2	*5240.00	104.5 AV			1.41 V	43	64.33	40.17
3	#10480.00	54.2 PK	68.3	-14.1	1.11 V	63	7.53	46.67

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	26deg. C, 68%RH	TESTED BY	Kent 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	*5260.00	112.3 PK			1.34 H	61	72.07	40.23
2	*5260.00	102.4 AV			1.34 H	61	62.17	40.23
3	#10520.00	54.6 PK	68.3	-13.7	1.27 H	43	7.88	46.72
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	117.6 PK			1.45 V	23	77.37	40.23
2	*5260.00	107.2 AV			1.45 V	23	66.97	40.23
3	#10520.00	54.1 PK	68.3	-14.2	1.16 V	59	7.38	46.72

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	26deg. C, 68%RH	TESTED BY	Kent 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	*5300.00	112.0 PK			1.39 H	68	71.67	40.33
2	*5300.00	102.3 AV			1.39 H	68	61.97	40.33
3	10600.00	55.1 PK	74.0	-18.9	1.14 H	54	8.28	46.82
4	10600.00	43.2 AV	54.0	-10.8	1.14 H	54	-3.62	46.82
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	116.2 PK			1.42 V	49	75.87	40.33
2	*5300.00	106.4 AV			1.42 V	49	66.07	40.33
3	10600.00	55.0 PK	74.0	-19.0	1.14 V	35	8.18	46.82
4	10600.00	43.7 AV	54.0	-10.3	1.14 V	35	-3.12	46.82

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	26deg. C, 68%RH	TESTED BY	Kent 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	*5320.00	111.6 PK			1.34 H	67	71.21	40.39
2	*5320.00	101.4 AV			1.34 H	67	61.01	40.39
3	5350.00	60.4 PK	74.0	-13.6	1.47 H	55	19.93	40.47
4	5350.00	48.5 AV	54.0	-5.5	1.47 H	55	8.03	40.47
5	10640.00	55.1 PK	74.0	-18.9	1.17 H	56	8.23	46.87
6	10640.00	43.3 AV	54.0	-10.7	1.17 H	56	-3.57	46.87
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	117.1 PK			1.17 V	25	76.71	40.39
2	*5320.00	106.4 AV			1.17 V	25	66.01	40.39
3	5350.00	68.4 PK	74.0	-5.6	1.15 V	29	27.93	40.47
4	5350.00	53.2 AV	54.0	-0.8	1.15 V	29	12.73	40.47
5	10640.00	55.0 PK	74.0	-19.0	1.15 V	37	8.13	46.87
6	10640.00	43.8 AV	54.0	-10.2	1.15 V	37	-3.07	46.87

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	26deg. C, 68%RH	TESTED BY	Kent 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	5460.00	64.2 PK	74.0	-9.8	1.47 H	55	23.44	40.76
2	5460.00	48.9 AV	54.0	-5.1	1.47 H	55	8.14	40.76
3	#5470.00	57.4 PK	68.3	-10.9	1.47 H	55	16.62	40.78
4	*5500.00	112.1 PK			1.35 H	77	71.24	40.86
5	*5500.00	101.7 AV			1.35 H	77	60.84	40.86
6	11000.00	56.0 PK	74.0	-18.0	1.14 H	54	8.72	47.28
7	11000.00	43.9 AV	54.0	-10.1	1.14 H	54	-3.38	47.28
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	5460.00	70.7 PK	74.0	-3.3	1.15 V	17	29.94	40.76
2	5460.00	53.2 AV	54.0	-0.8	1.15 V	17	12.44	40.76
3	#5470.00	64.1 PK	68.3	-4.2	1.15 V	17	23.32	40.78
4	*5500.00	119.3 PK			1.15 V	17	78.44	40.86
5	*5500.00	107.8 AV			1.15 V	17	66.94	40.86
6	11000.00	55.3 PK	74.0	-18.7	1.20 V	44	8.02	47.28
7	11000.00	43.9 AV	54.0	-10.1	1.20 V	44	-3.38	47.28

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH	TESTED BY	Kent 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	*5600.00	111.6 PK			1.34 H	64	70.45	41.15
2	*5600.00	101.4 AV			1.34 H	64	60.25	41.15
3	11200.00	55.6 PK	74.0	-18.4	1.18 H	52	8.18	47.42
4	11200.00	43.7 AV	54.0	-10.3	1.18 H	52	-3.72	47.42
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5600.00	119.6 PK			1.15 V	23	78.45	41.15
2	*5600.00	107.4 AV			1.15 V	23	66.25	41.15
3	11200.00	55.6 PK	74.0	-18.4	1.22 V	43	8.18	47.42
4	11200.00	44.2 AV	54.0	-9.8	1.22 V	43	-3.22	47.42

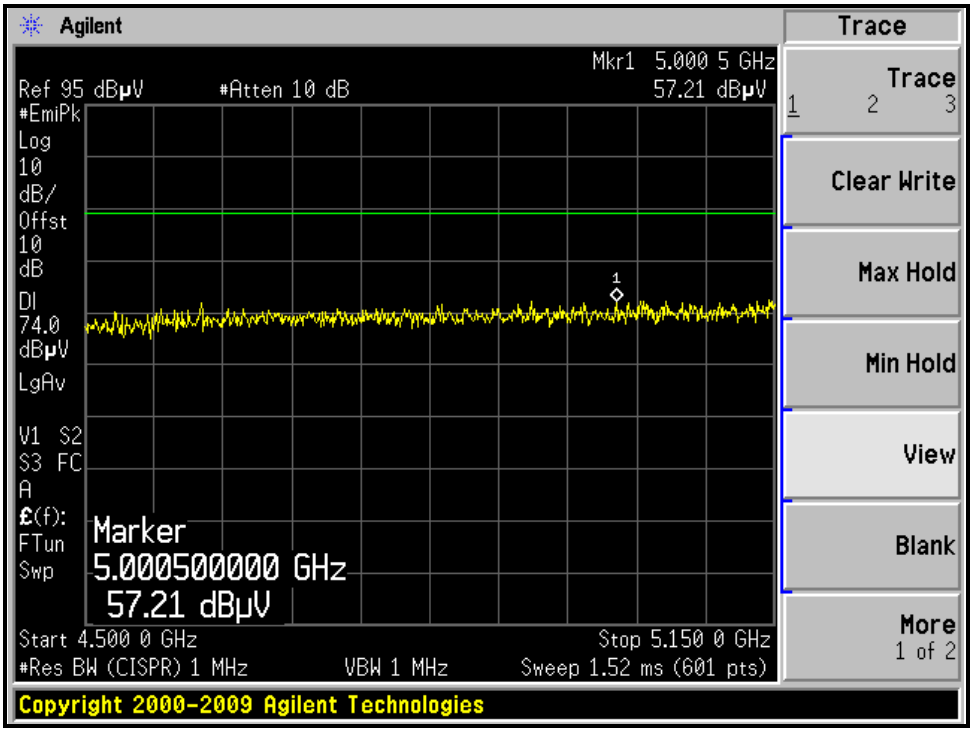
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

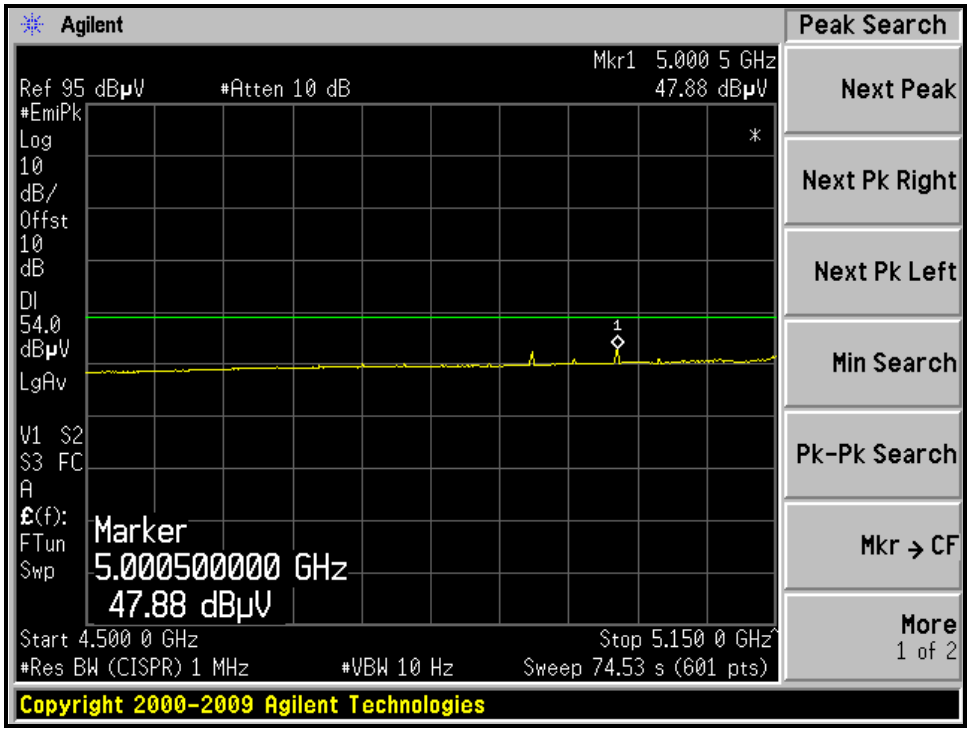
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH	TESTED BY	Kent Liu

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	*5700.00	111.2 PK			1.32 H	59	69.78	41.42
2	*5700.00	101.3 AV			1.32 H	59	59.88	41.42
3	#5725.00	58.3 PK	68.3	-10.0	1.44 H	23	16.81	41.49
4	11400.00	54.9 PK	74.0	-19.1	1.10 H	247	7.28	47.62
5	11400.00	44.1 AV	54.0	-9.9	1.10 H	247	-3.52	47.62
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	119.3 PK			1.14 V	43	77.88	41.42
2	*5700.00	107.2 AV			1.14 V	43	65.78	41.42
3	#5725.00	66.2 PK	68.3	-2.1	1.17 V	20	24.71	41.49
4	11400.00	54.7 PK	74.0	-19.3	1.49 V	180	7.08	47.62
5	11400.00	43.8 AV	54.0	-10.2	1.49 V	180	-3.82	47.62

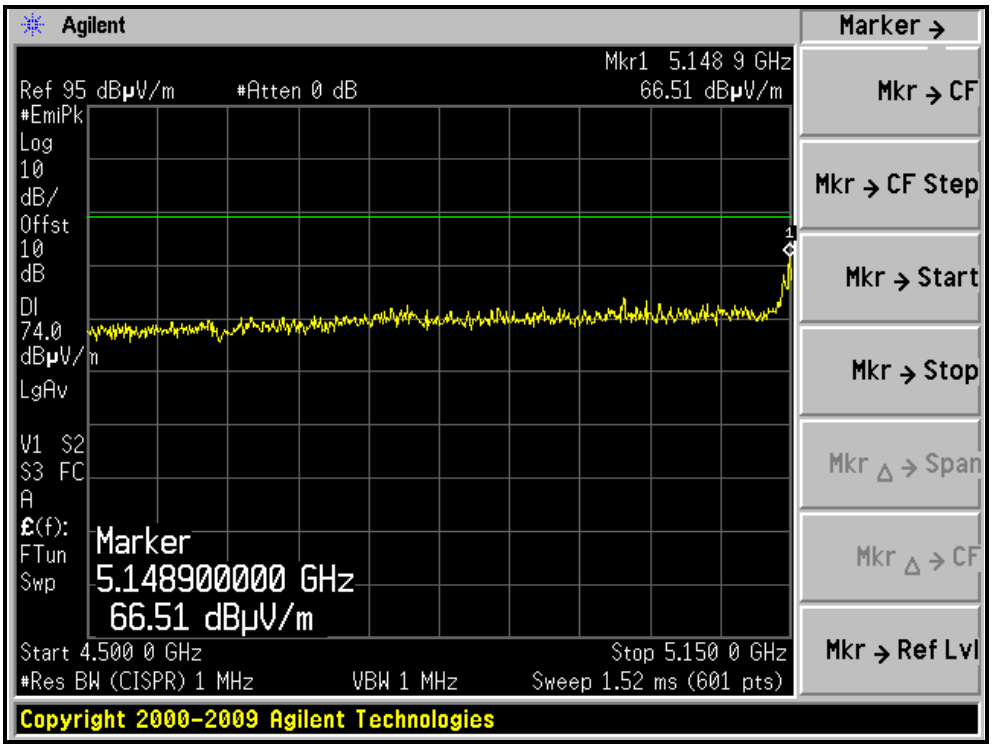
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6.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

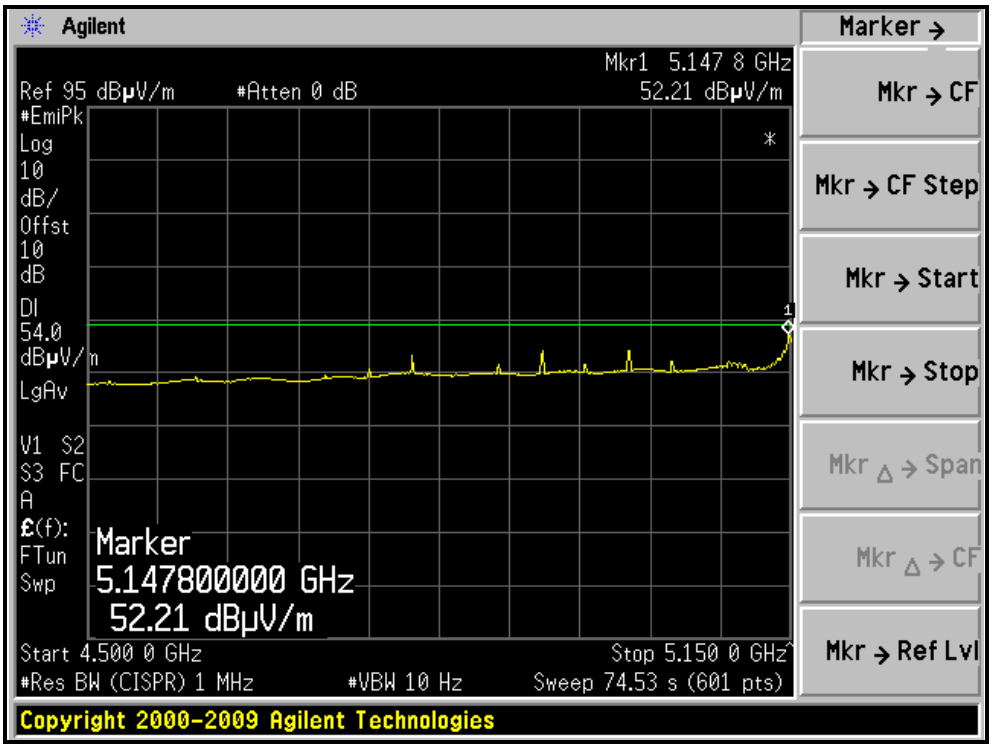
RESTRICTED BANDEDGE (802.11a MODE, CH36, HORIZONTAL)



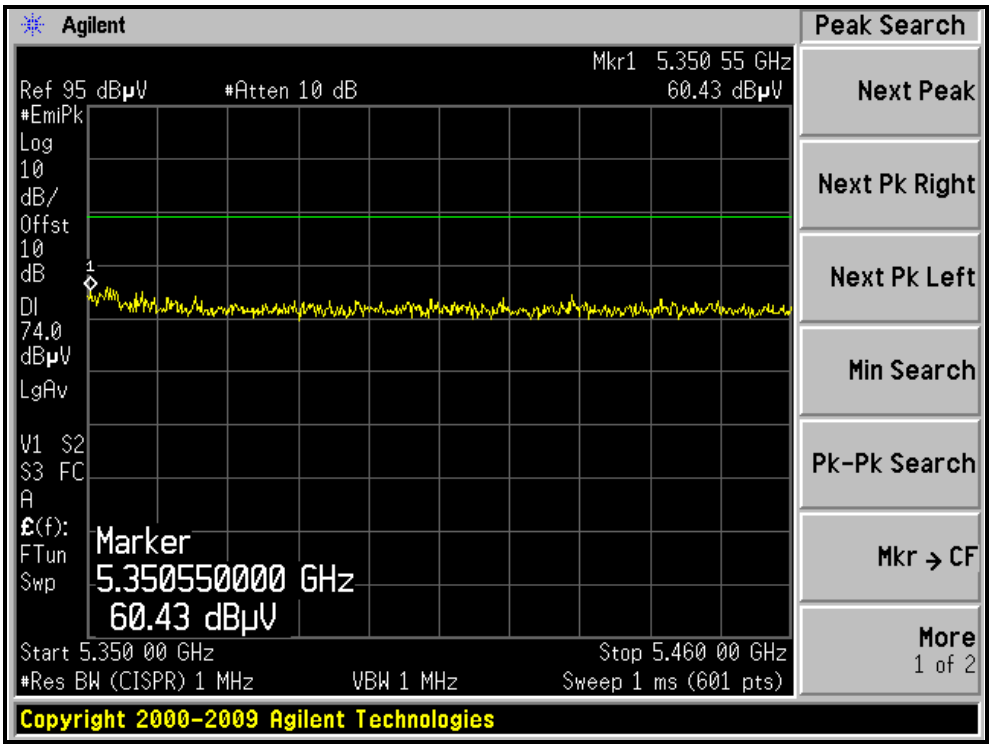


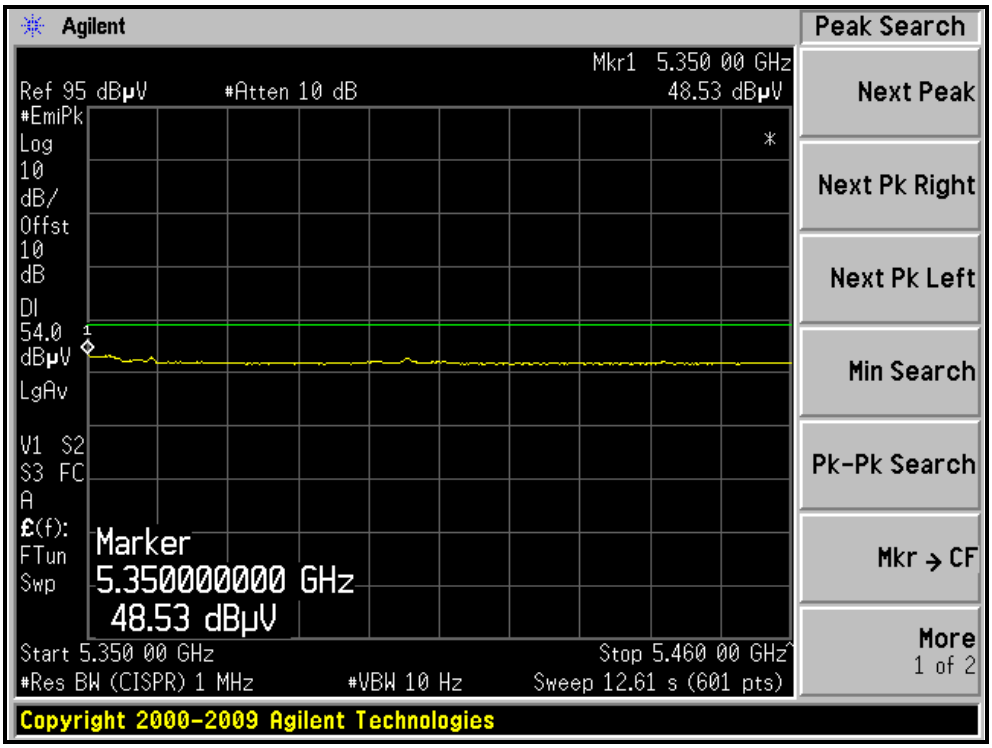
RESTRICTED BANDEDGE (802.11a MODE, CH36, VERTICAL)





RESTRICTED BANDEDGE (802.11a MODE, CH64, HORIZONTAL)





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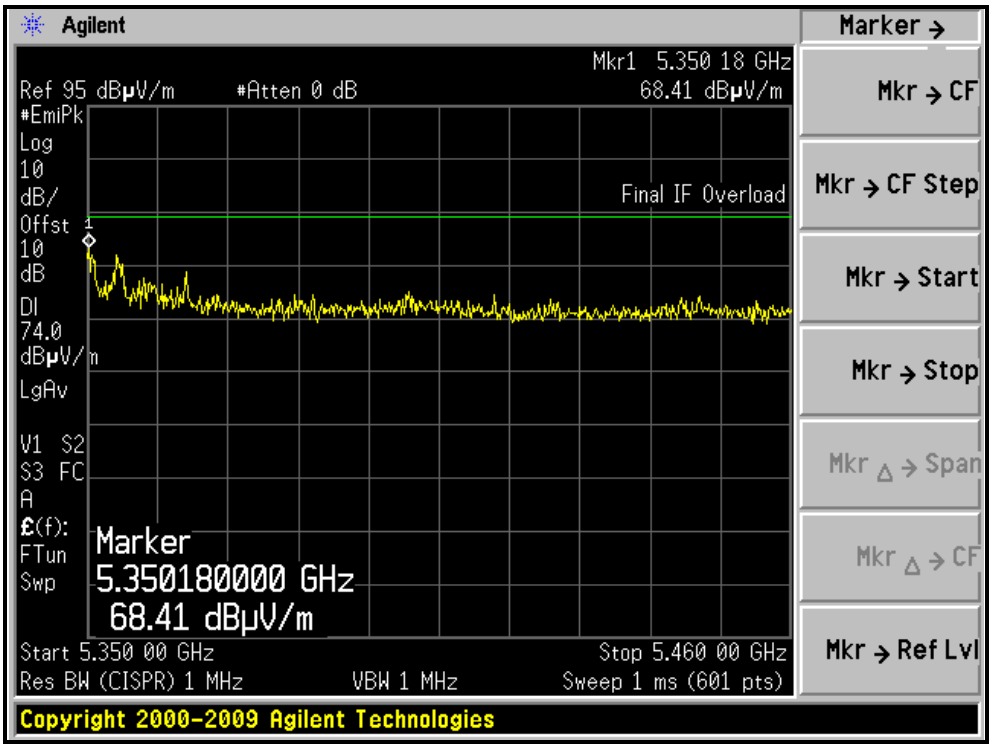

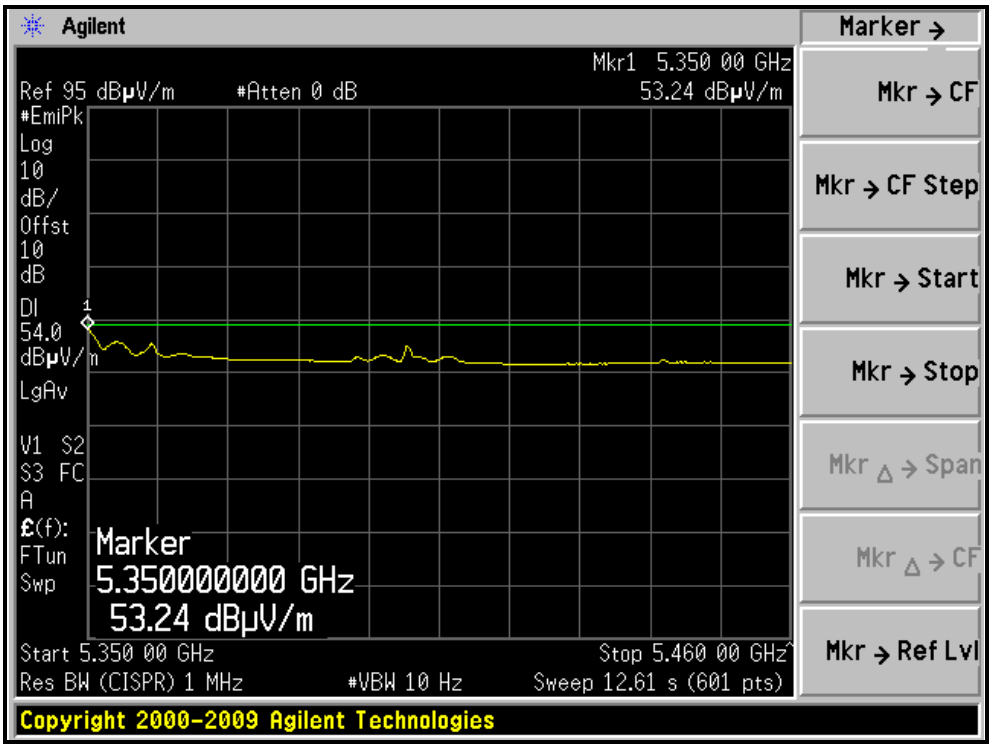

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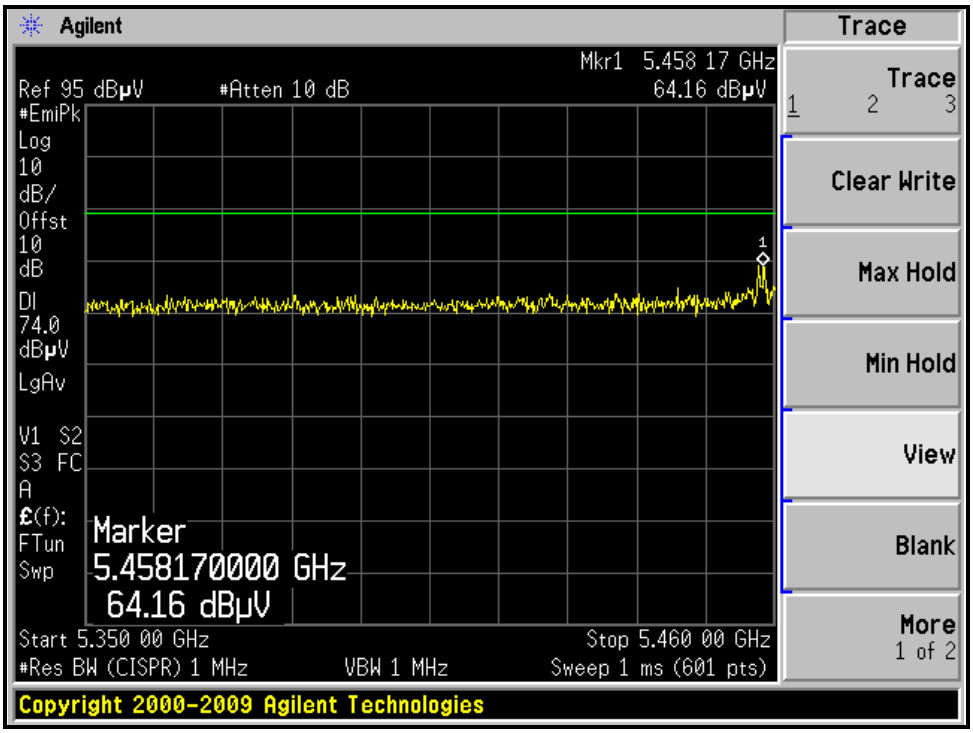
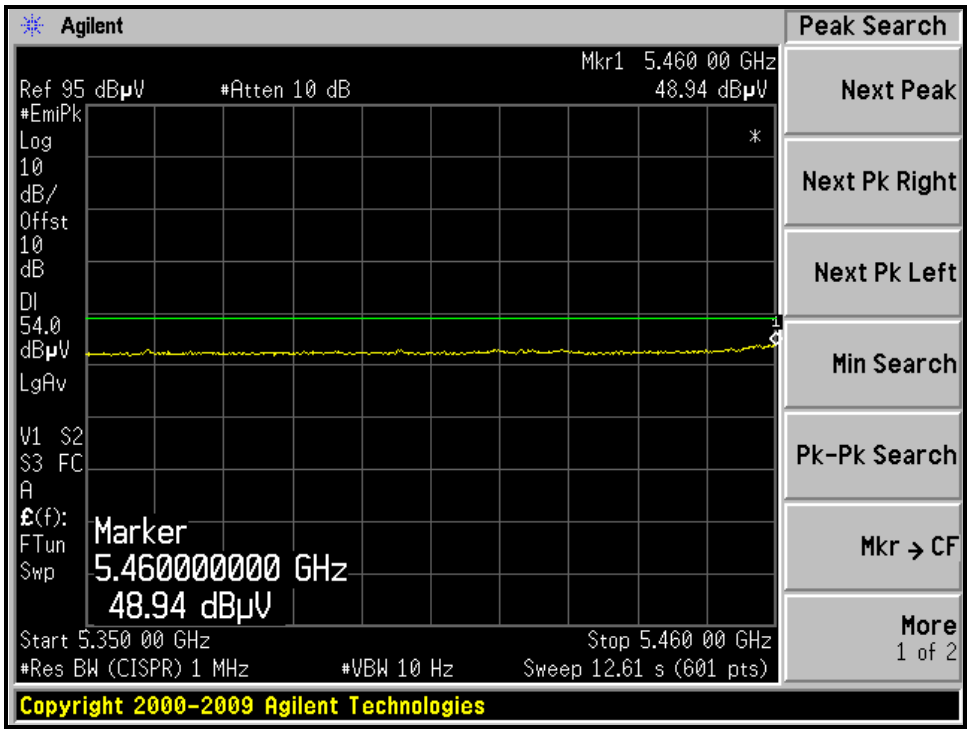
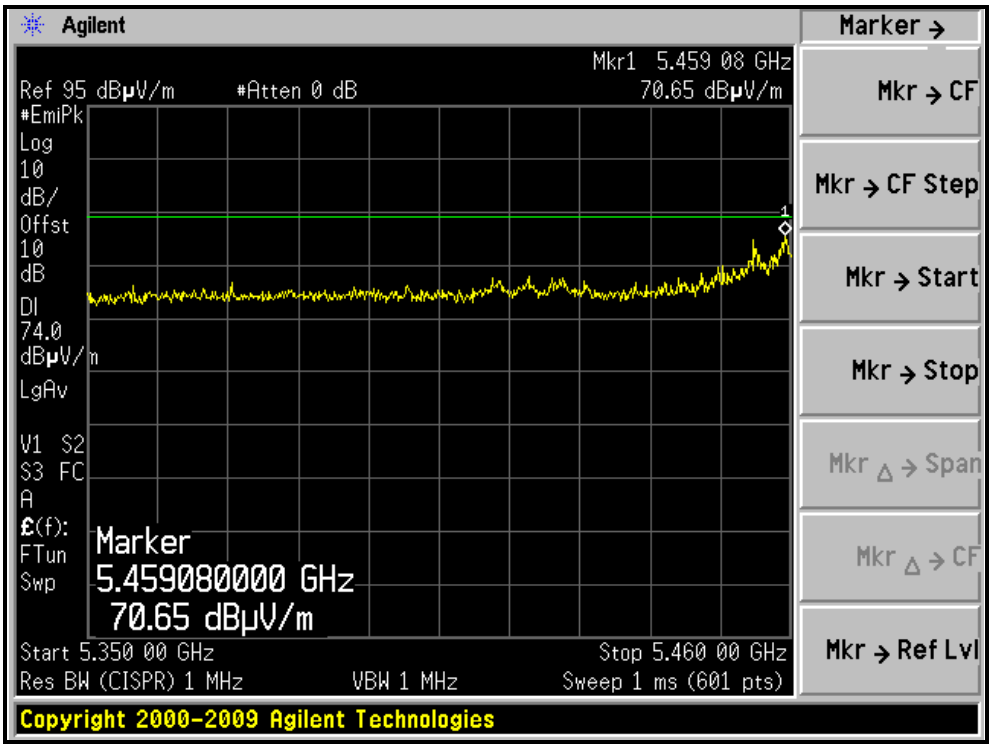
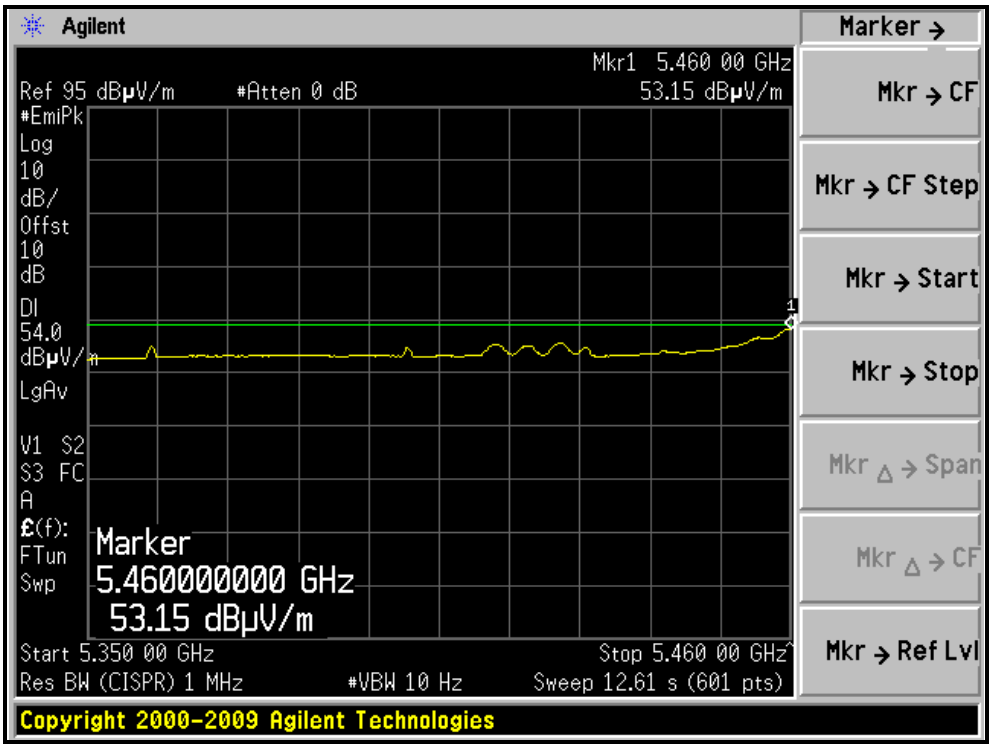




RESTRICTED BANDEDGE (802.11a MODE, CH100, VERTICAL)





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	26deg. C, 68%RH	TESTED BY	Kent 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	5150.00	59.8 PK	74.0	-14.2	1.47 H	55	19.86	39.94
2	5150.00	48.9 AV	54.0	-5.1	1.47 H	55	8.96	39.94
3	*5180.00	108.3 PK			1.34 H	62	68.28	40.02
4	*5180.00	98.2 AV			1.34 H	62	58.18	40.02
5	#10360.00	54.1 PK	68.3	-14.2	1.10 H	213	7.57	46.53
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.4 PK	74.0	-7.6	1.17 V	303	26.46	39.94
2	5150.00	53.1 AV	54.0	-0.9	1.17 V	303	13.16	39.94
3	*5180.00	114.7 PK			1.17 V	303	74.68	40.02
4	*5180.00	104.1 AV			1.17 V	303	64.08	40.02
5	#10360.00	54.2 PK	68.3	-14.1	1.43 V	124	7.67	46.53

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

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

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	26deg. C, 68%RH	TESTED BY	Kent 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	*5200.00	108.4 PK			1.31 H	54	68.33	40.07
2	*5200.00	98.6 AV			1.31 H	54	58.53	40.07
3	#10400.00	54.3 PK	68.3	-14.0	1.13 H	216	7.73	46.57
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	114.2 PK			1.13 V	313	74.13	40.07
2	*5200.00	103.9 AV			1.13 V	313	63.83	40.07
3	#10400.00	54.3 PK	68.3	-14.0	1.42 V	121	7.73	46.57

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency 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	26deg. C, 68%RH	TESTED BY	Kent 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	*5240.00	108.1 PK			1.32 H	56	67.93	40.17
2	*5240.00	98.2 AV			1.32 H	56	58.03	40.17
3	#10480.00	54.4 PK	68.3	-13.9	1.42 H	53	7.73	46.67
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	114.9 PK			1.13 V	309	74.73	40.17
2	*5240.00	104.2 AV			1.13 V	309	64.03	40.17
3	#10480.00	54.2 PK	68.3	-14.1	1.44 V	126	7.53	46.67

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	26deg. C, 68%RH	TESTED BY	Kent 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	*5260.00	112.4 PK			1.31 H	49	72.17	40.23
2	*5260.00	102.3 AV			1.31 H	49	62.07	40.23
3	#10520.00	54.2 PK	68.3	-14.1	1.46 H	64	7.48	46.72
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	117.6 PK			1.16 V	343	77.37	40.23
2	*5260.00	107.4 AV			1.16 V	343	67.17	40.23
3	#10520.00	55.3 PK	68.3	-13.0	1.41 V	129	8.58	46.72

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	26deg. C, 68%RH	TESTED BY	Kent 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	*5300.00	111.4 PK			1.34 H	56	71.07	40.33
2	*5300.00	101.7 AV			1.34 H	56	61.37	40.33
3	10600.00	54.3 PK	74.0	-19.7	1.44 H	37	7.48	46.82
4	10600.00	43.60 AV	54.00	-10.4	1.44 H	37	-3.22	43.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	116.8 PK			1.14 V	351	76.47	40.33
2	*5300.00	106.4 AV			1.14 V	351	66.07	40.33
3	10600.00	55.6 PK	74.0	-18.4	1.41 V	153	8.78	46.82
4	10600.00	43.9 AV	54.0	-10.1	1.41 V	153	-2.92	46.82

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	26deg. C, 68%RH	TESTED BY	Kent 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	*5320.00	110.3 PK			1.31 H	64	69.91	40.39
2	*5320.00	100.4 AV			1.31 H	64	60.01	40.39
3	5350.00	63.1 PK	74.0	-10.9	1.44 H	62	22.63	40.47
4	5350.00	49.5 AV	54.0	-4.5	1.44 H	62	9.03	40.47
5	10640.00	55.7 PK	74.0	-18.3	1.26 H	59	8.83	46.87
6	10640.00	44.3 AV	54.0	-9.7	1.26 H	59	-2.57	46.87
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	115.9 PK			1.17 V	20	75.51	40.39
2	*5320.00	105.5 AV			1.17 V	20	65.11	40.39
3	5350.00	68.8 PK	74.0	-5.2	1.17 V	20	28.33	40.47
4	**5350.00**	**53.4 AV**	**54.0**	**-0.6**	**1.17 V**	**20**	**12.93**	**40.47**
5	10640.00	55.6 PK	74.0	-18.4	1.42 V	53	8.73	46.87
6	10640.00	43.4 AV	54.0	-10.6	1.42 V	53	-3.47	46.87

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	26deg. C, 68%RH	TESTED BY	Kent 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	5460.00	59.0 PK	74.0	-15.0	1.47 H	57	18.24	40.76
2	5460.00	48.8 AV	54.0	-5.2	1.47 H	57	8.04	40.76
3	#5470.00	58.4 PK	68.3	-9.9	1.47 H	57	17.62	40.78
4	*5500.00	110.7 PK			1.26 H	59	69.84	40.86
5	*5500.00	100.6 AV			1.26 H	59	59.74	40.86
6	11000.00	56.3 PK	74.0	-17.7	1.24 H	61	9.02	47.28
7	11000.00	44.9 AV	54.0	-9.1	1.24 H	61	-2.38	47.28
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	5460.00	70.7 PK	74.0	-3.3	1.26 V	17	29.94	40.76
2	5460.00	52.6 AV	54.0	-1.4	1.26 V	17	11.84	40.76
3	#5470.00	64.8 PK	68.3	-3.5	1.26 V	17	24.02	40.78
4	*5500.00	116.8 PK			1.24 V	17	75.94	40.86
5	*5500.00	106.4 AV			1.24 V	17	65.54	40.86
6	11000.00	55.9 PK	74.0	-18.1	1.43 V	64	8.62	47.28
7	11000.00	43.7 AV	54.0	-10.3	1.43 V	64	-3.58	47.28

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH	TESTED BY	Kent 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	*5600.00	112.6 PK			1.21 H	63	71.45	41.15
2	*5600.00	102.4 AV			1.21 H	63	61.25	41.15
3	11200.00	57.0 PK	74.0	-17.0	1.22 H	70	9.58	47.42
4	11200.00	45.3 AV	54.0	-8.7	1.22 H	70	-2.12	47.42
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5600.00	117.4 PK			1.26 V	69	76.25	41.15
2	*5600.00	107.3 AV			1.26 V	69	66.15	41.15
3	11200.00	55.6 PK	74.0	-18.4	1.39 V	69	8.18	47.42
4	11200.00	43.5 AV	54.0	-10.5	1.39 V	69	-3.92	47.42

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.

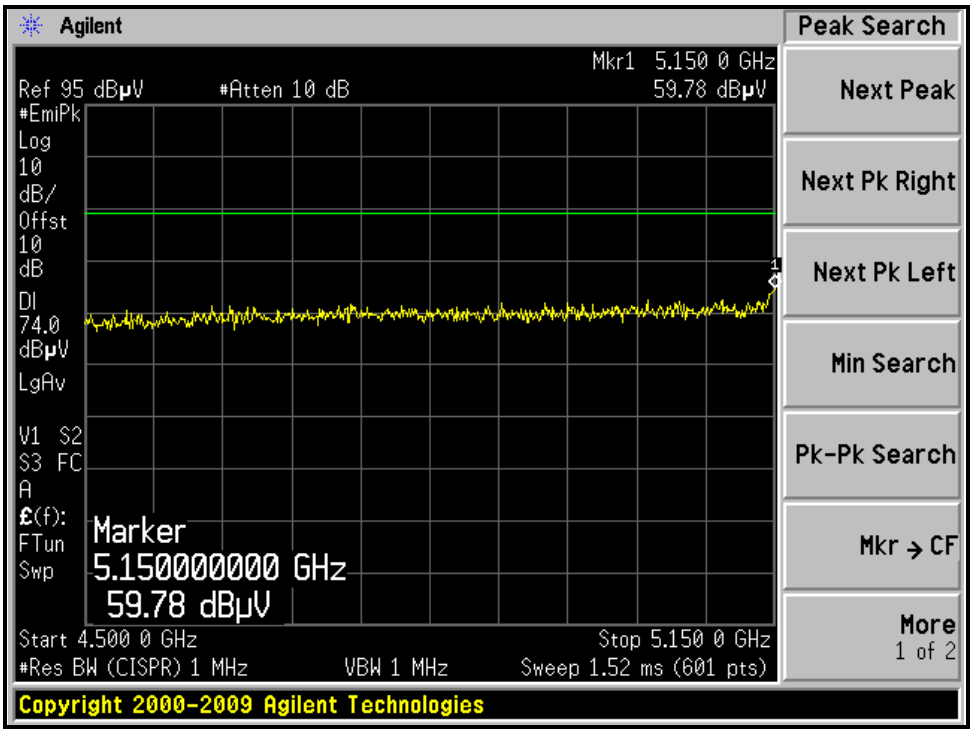
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH	TESTED BY	Kent Liu

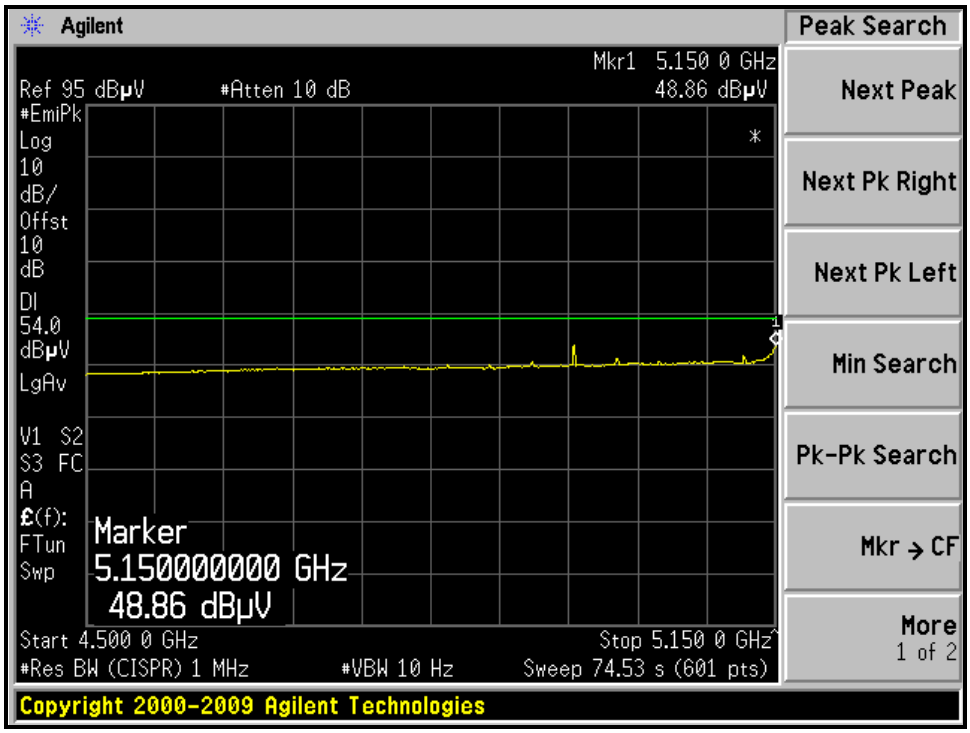
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	112.3 PK			1.24 H	59	70.88	41.42
2	*5700.00	101.3 AV			1.24 H	59	59.88	41.42
3	#5725.00	58.2 PK	68.3	-10.1	1.24 H	59	16.71	41.49
4	11400.00	57.5 PK	74.0	-16.5	1.20 H	80	9.88	47.62
5	11400.00	45.6 AV	54.0	-8.4	1.20 H	80	-2.02	47.62
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	118.8 PK			1.20 V	15	77.38	41.42
2	*5700.00	107.7 AV			1.20 V	15	66.28	41.42
3	#5725.00	66.8 PK	68.3	-1.5	1.17 V	20	25.31	41.49
4	11400.00	55.7 PK	74.0	-18.3	1.37 V	63	8.08	47.62
5	11400.00	43.7 AV	54.0	-10.3	1.37 V	63	-3.92	47.62

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

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

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





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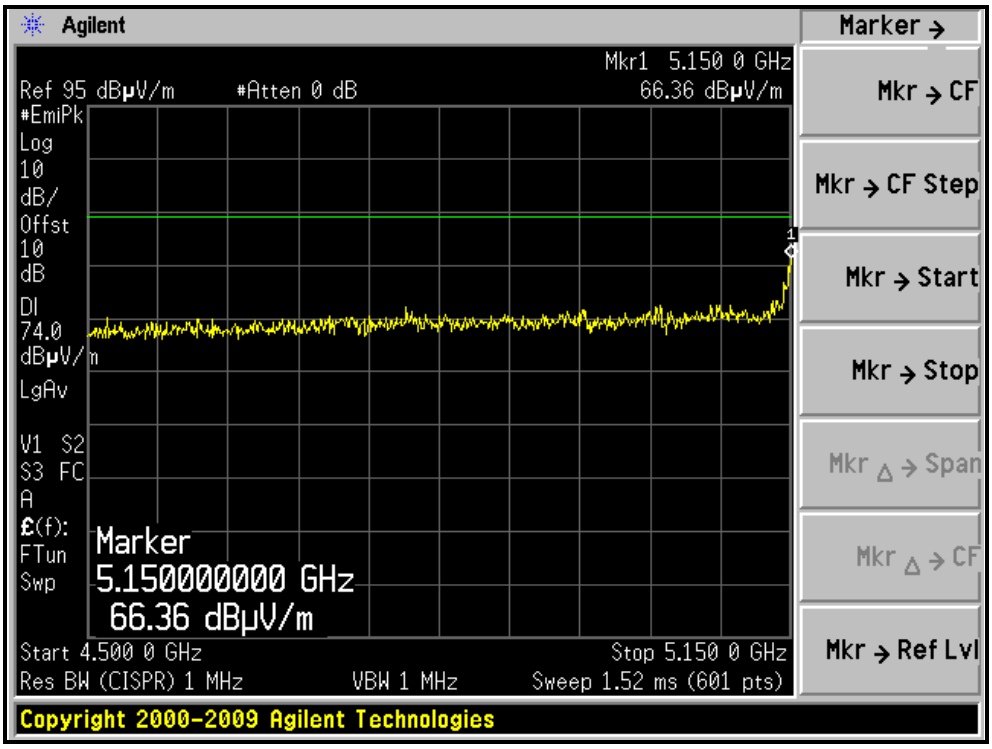

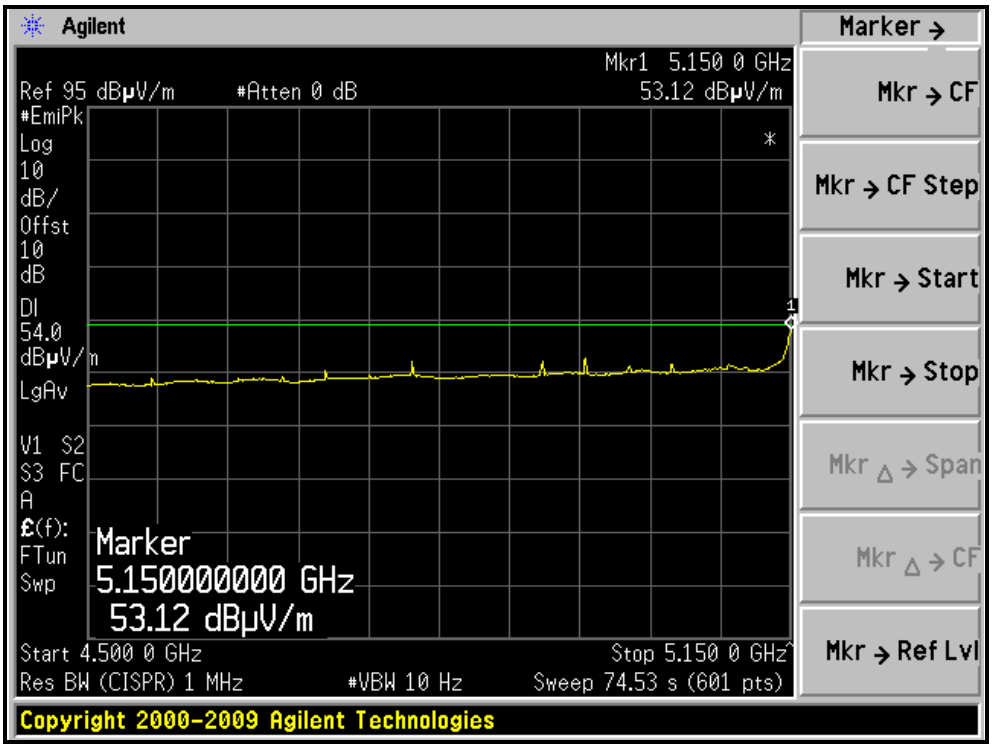

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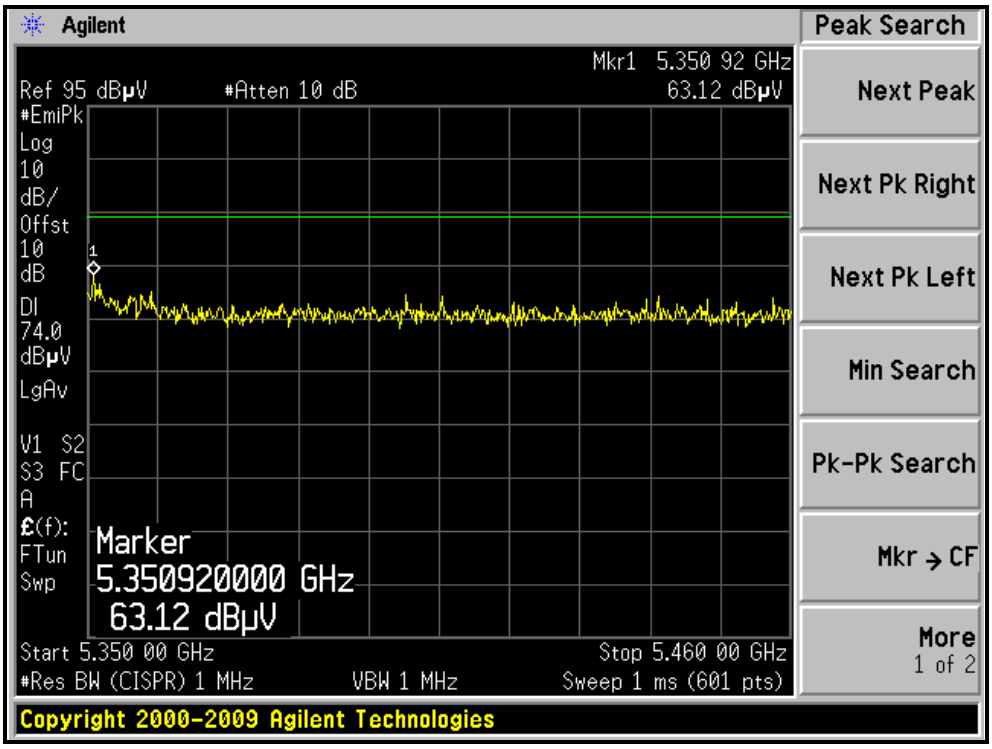

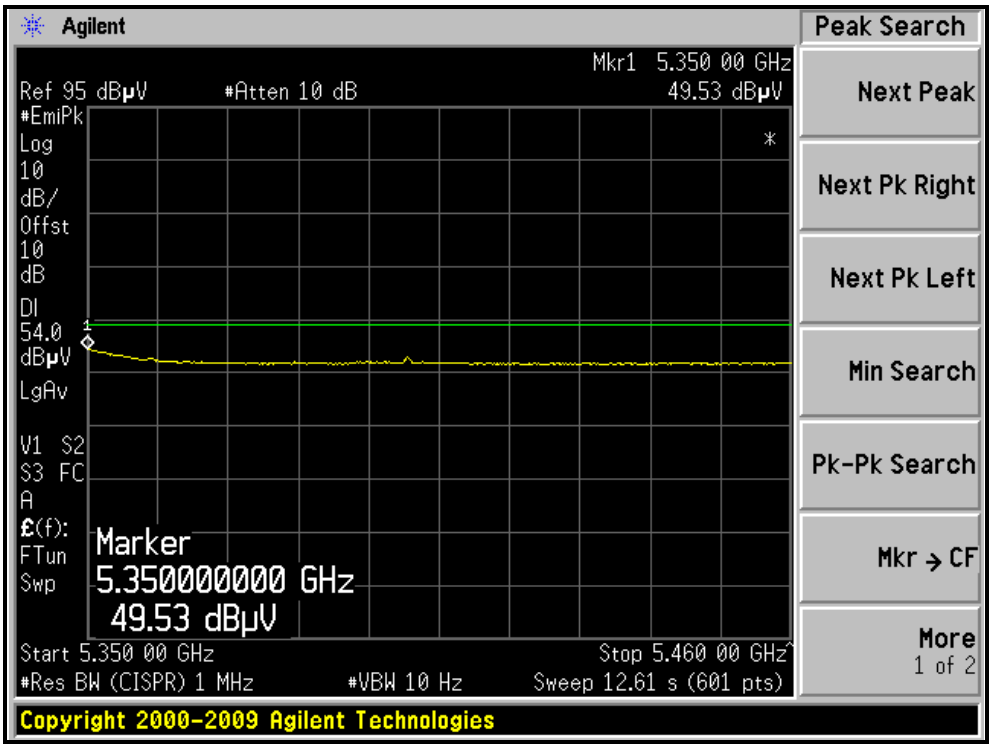

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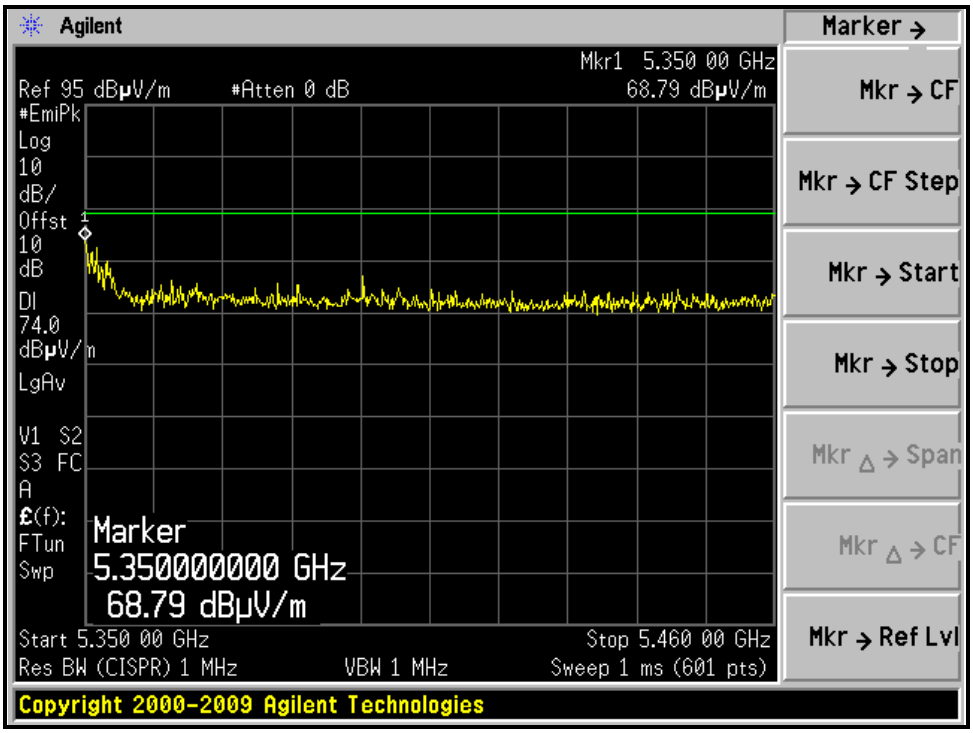

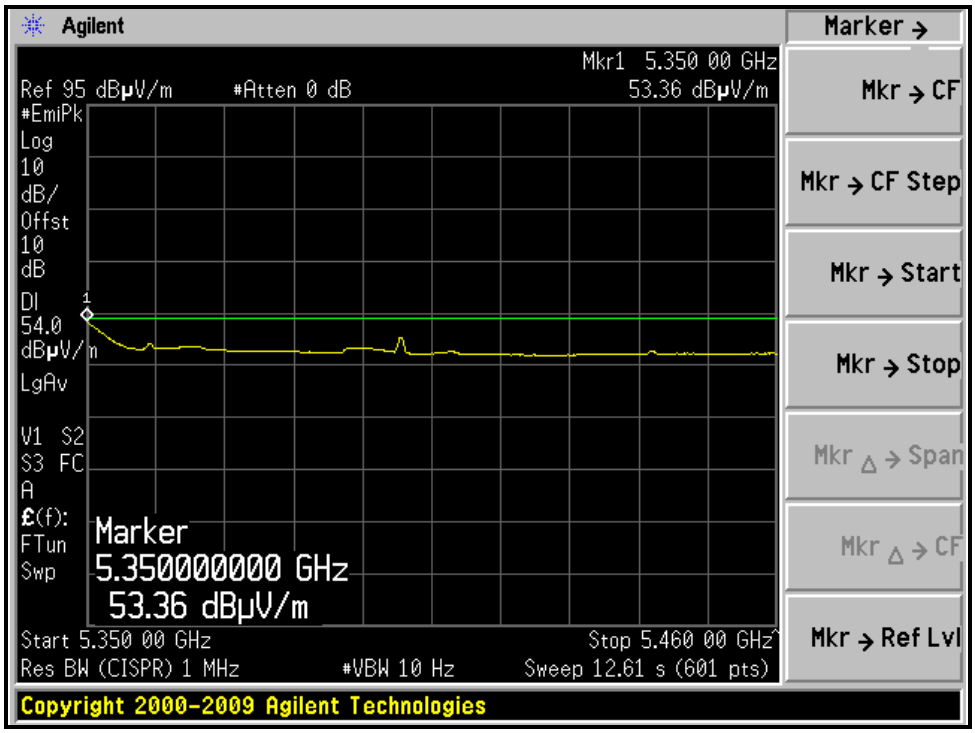

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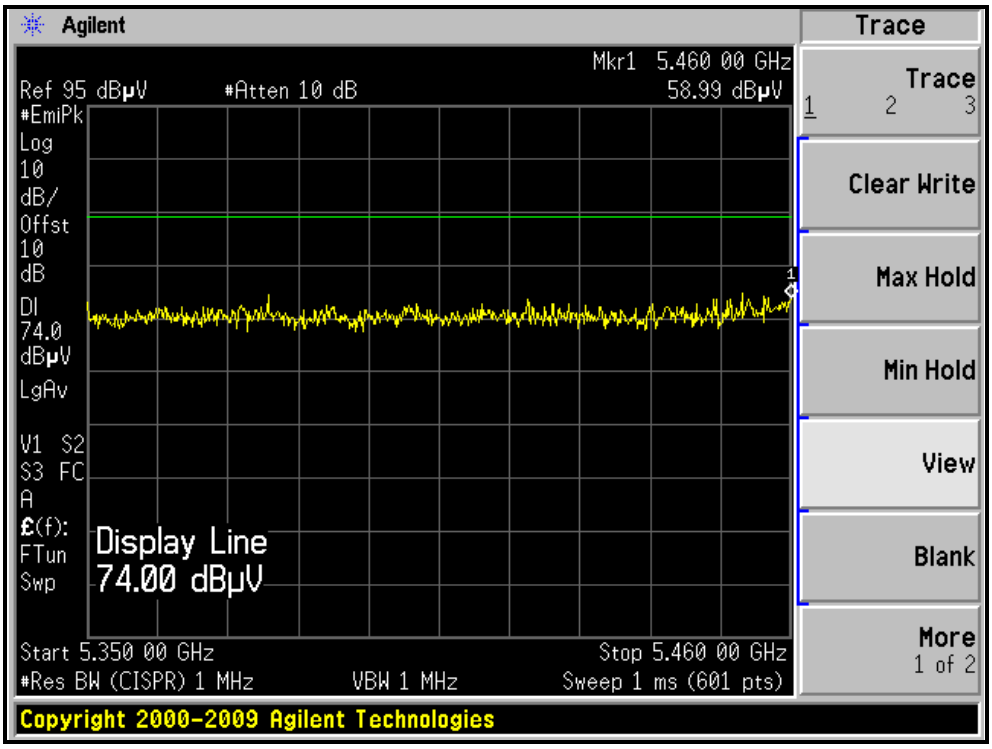

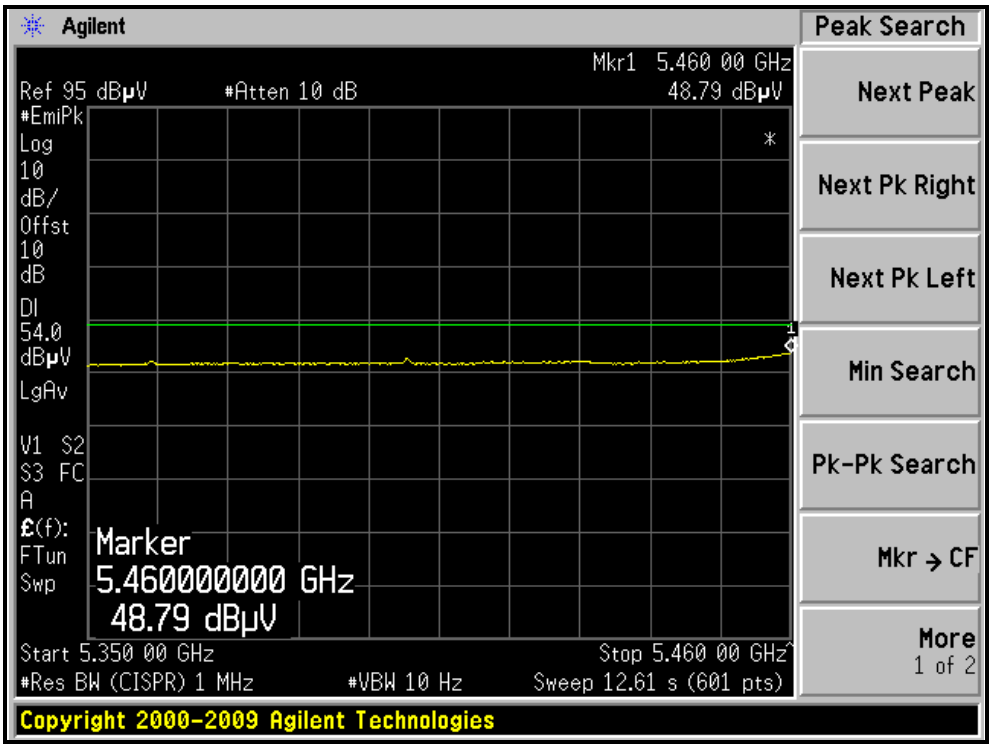

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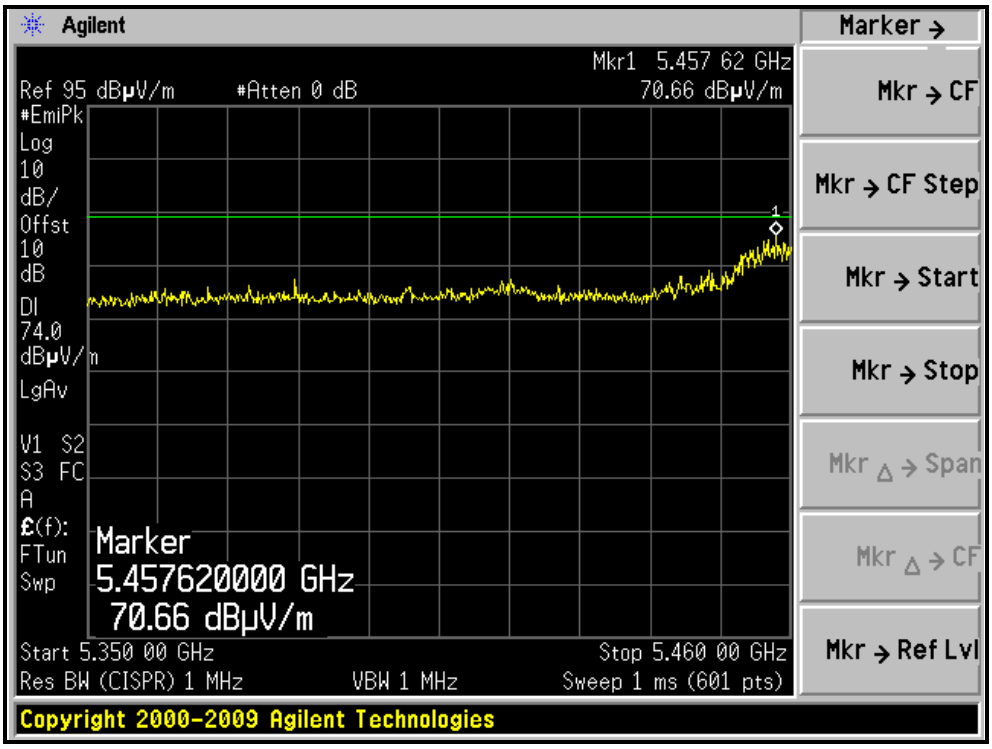
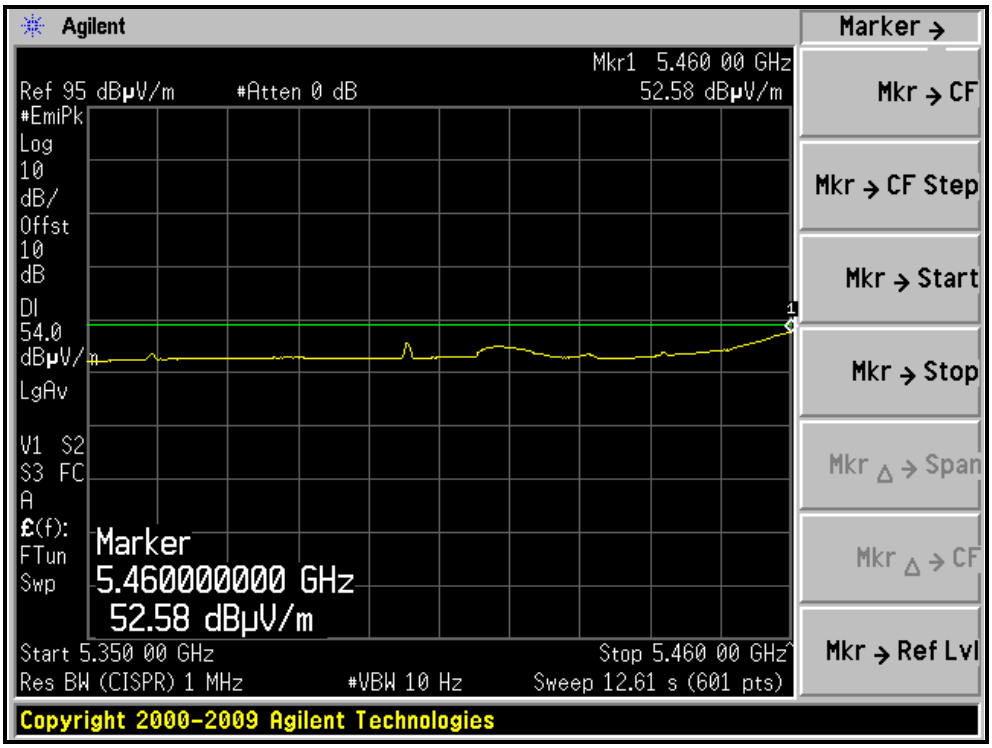




802.11n (40MHz) OFDM MODULATION

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	26deg. C, 68%RH	TESTED BY	Kent 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	5150.00	61.6 PK	74.0	-12.4	1.47 H	66	21.66	39.94
2	5150.00	49.0 AV	54.0	-5.0	1.47 H	66	9.06	39.94
3	*5190.00	103.4 PK			1.21 H	69	63.36	40.04
4	*5190.00	93.6 AV			1.21 H	69	53.56	40.04
5	#10380.00	54.1 PK	68.3	-14.2	1.21 H	74	7.55	46.55
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.0 PK	74.0	-5.0	1.33 V	8	29.06	39.94
2	5150.00	53.1 AV	54.0	-0.9	1.33 V	8	13.16	39.94
3	*5190.00	109.8 PK			1.22 V	15	69.76	40.04
4	*5190.00	99.5 AV			1.22 V	15	59.46	40.04
5	#10380.00	54.4 PK	68.3	-13.9	1.26 V	59	7.85	46.55

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

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	26deg. C, 68%RH	TESTED BY	Kent 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	*5230.00	108.2 PK			1.21 H	43	68.05	40.15
2	*5230.00	98.4 AV			1.21 H	43	58.25	40.15
3	#10460.00	54.7 PK	68.3	-13.6	1.24 H	43	8.05	46.65
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	112.4 PK			1.22 V	62	72.25	40.15
2	*5230.00	102.3 AV			1.22 V	62	62.15	40.15
3	#10460.00	54.6 PK	68.3	-13.7	1.21 V	44	7.95	46.65

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

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	26deg. C, 68%RH	TESTED BY	Kent 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	*5270.00	108.2 PK			1.24 H	54	67.95	40.25
2	*5270.00	98.7 AV			1.24 H	54	58.45	40.25
3	#10540.00	54.2 PK	68.3	-14.1	1.26 H	59	7.45	46.75
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	*5270.00	112.6 PK			1.24 V	56	72.35	40.25
2	*5270.00	102.3 AV			1.24 V	56	62.05	40.25
3	#10540.00	54.9 PK	68.3	-13.4	1.24 V	73	8.15	46.75

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.

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	26deg. C, 68%RH	TESTED BY	Kent 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	*5310.00	107.3 PK			1.26 H	55	66.94	40.36
2	*5310.00	97.2 AV			1.26 H	55	56.84	40.36
3	5350.00	65.1 PK	74.0	-8.9	1.47 H	64	24.63	40.47
4	5350.00	49.3 AV	54.0	-4.7	1.47 H	64	8.83	40.47
5	10620.00	57.2 PK	74.0	-16.8	1.16 H	62	10.36	46.84
6	10620.00	45.3 AV	54.0	-8.7	1.16 H	62	-1.54	46.84
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	*5310.00	110.8 PK			1.24 V	13	70.44	40.36
2	*5310.00	100.0 AV			1.24 V	13	59.64	40.36
3	5350.00	70.7 PK	74.0	-3.3	1.16 V	13	30.23	40.47
4	5350.00	53.2 AV	54.0	-0.8	1.16 V	13	12.73	40.47
5	10620.00	55.9 PK	74.0	-18.1	1.45 V	81	9.06	46.84
6	10620.00	44.0 AV	54.0	-10.0	1.45 V	81	-2.84	46.84

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.

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	26deg. C, 68%RH	TESTED BY	Kent 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	5460.00	64.5 PK	74.0	-9.5	1.44 H	43	23.74	40.76
2	5460.00	48.8 AV	54.0	-5.2	1.44 H	43	8.04	40.76
3	#5470.00	57.3 PK	68.3	-11.0	1.44 H	43	16.52	40.78
4	*5510.00	107.1 PK			1.24 H	54	66.21	40.89
5	*5510.00	97.1 AV			1.24 H	54	56.21	40.89
6	11020.00	57.2 PK	74.0	-16.8	1.19 H	50	9.91	47.29
7	11020.00	45.1 AV	54.0	-8.9	1.19 H	50	-2.19	47.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	70.3 PK	74.0	-3.7	1.24 V	43	29.54	40.76
2	5460.00	53.3 AV	54.0	-0.7	1.24 V	43	12.54	40.76
3	#5470.00	61.4 PK	68.3	-6.9	1.21 V	43	20.62	40.78
4	*5510.00	111.3 PK			1.24 V	14	70.41	40.89
5	*5510.00	100.4 AV			1.24 V	14	59.51	40.89
6	11020.00	55.7 PK	74.0	-18.3	1.48 V	92	8.41	47.29
7	11020.00	44.1 AV	54.0	-9.9	1.48 V	92	-3.19	47.29

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 118	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH hPa	TESTED BY	Kent 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	*5590.00	107.9 PK			1.26 H	63	66.78	41.12
2	*5590.00	97.7 AV			1.26 H	63	56.58	41.12
3	11180.00	57.7 PK	74.0	-16.3	1.23 H	38	10.29	47.41
4	11180.00	45.5 AV	54.0	-8.5	1.23 H	38	-1.91	47.41
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5590.00	113.9 PK			1.26 V	23	72.78	41.12
2	*5590.00	103.6 AV			1.26 V	23	62.48	41.12
3	11180.00	55.3 PK	74.0	-18.7	1.49 V	102	7.89	47.41
4	11180.00	43.8 AV	54.0	-10.2	1.49 V	102	-3.61	47.41

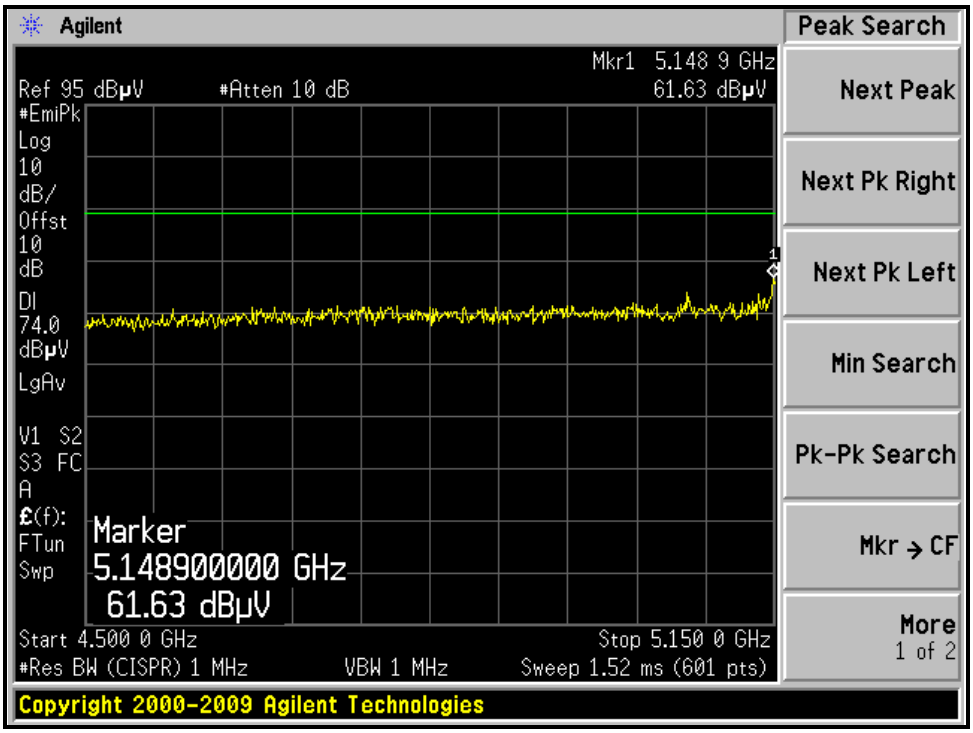
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

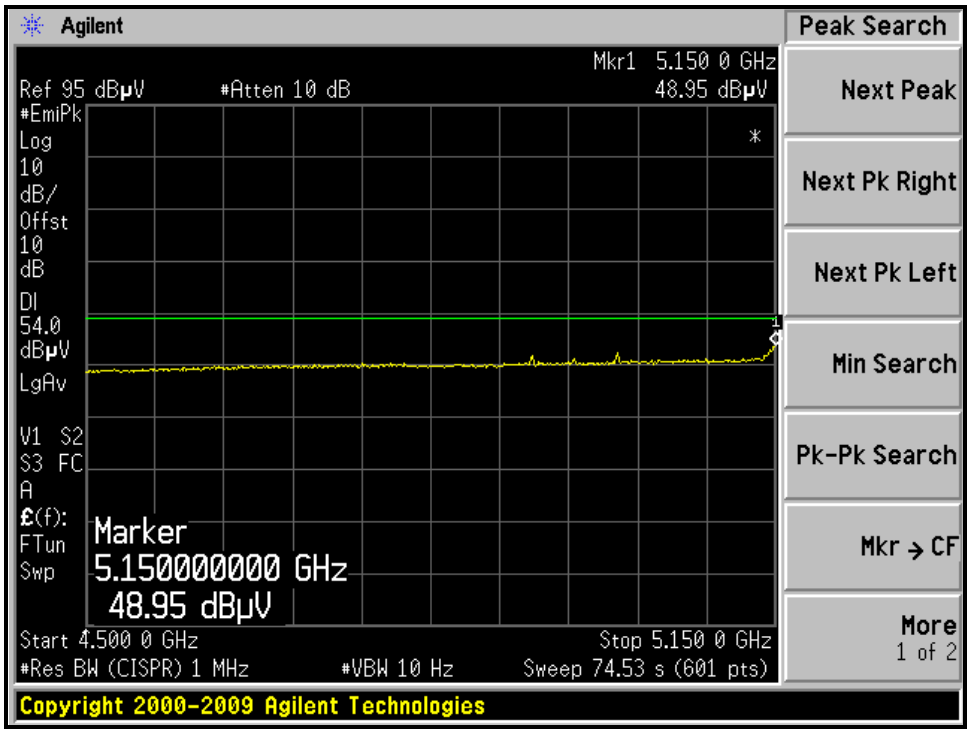
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 68%RH hPa	TESTED BY	Kent Liu

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	*5670.00	107.8 PK			1.24 H	59	66.46	41.34
2	*5670.00	97.3 AV			1.24 H	59	55.96	41.34
3	#5725.00	59.3 PK	68.3	-9.0	1.24 H	53	17.81	41.49
4	11340.00	58.0 PK	74.0	-16.0	1.29 H	51	10.43	47.57
5	11340.00	45.6 AV	54.0	-8.4	1.29 H	51	-1.97	47.57
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	*5670.00	115.0 PK			1.21 V	14	73.66	41.34
2	*5670.00	103.5 AV			1.21 V	14	62.16	41.34
3	#5725.00	62.7 PK	68.3	-5.6	1.21 V	17	21.21	41.49
4	11340.00	54.7 PK	74.0	-19.3	1.49 V	111	7.13	47.57
5	11340.00	43.5 AV	54.0	-10.5	1.49 V	111	-4.07	47.57

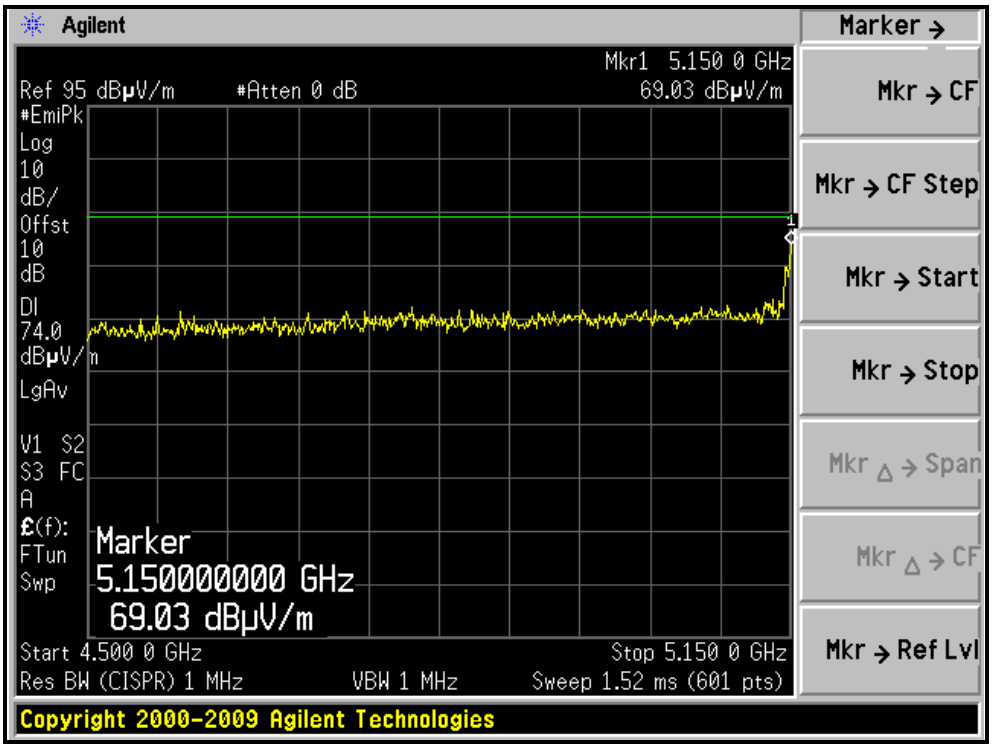
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6.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

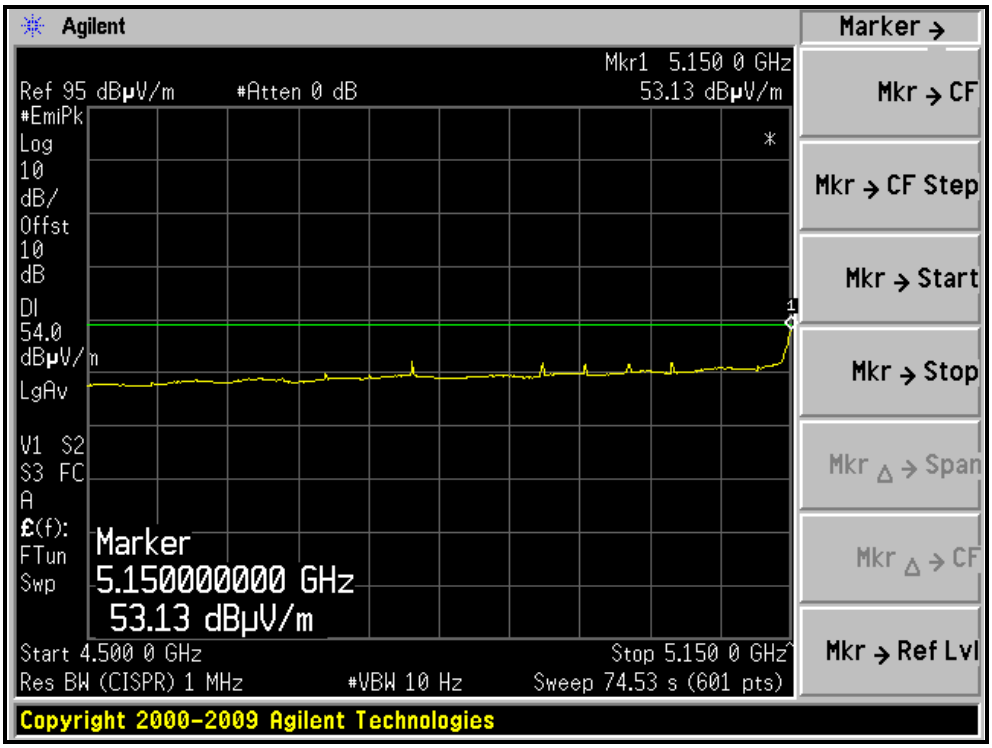
RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH38, HORIZONTAL)



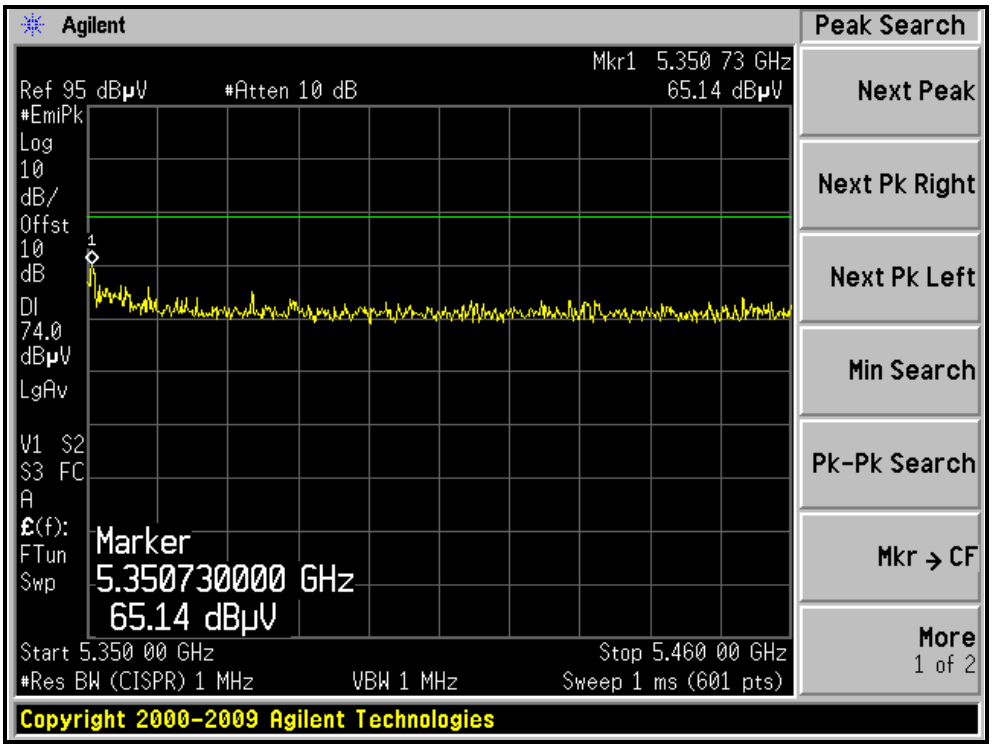


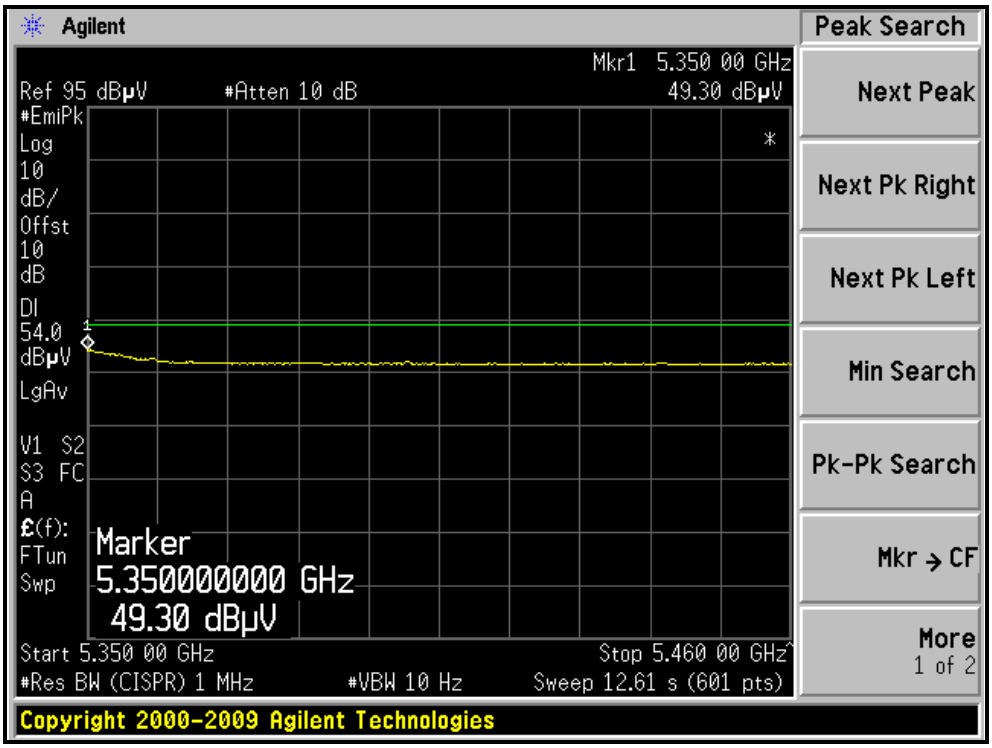
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH38, VERTICAL)



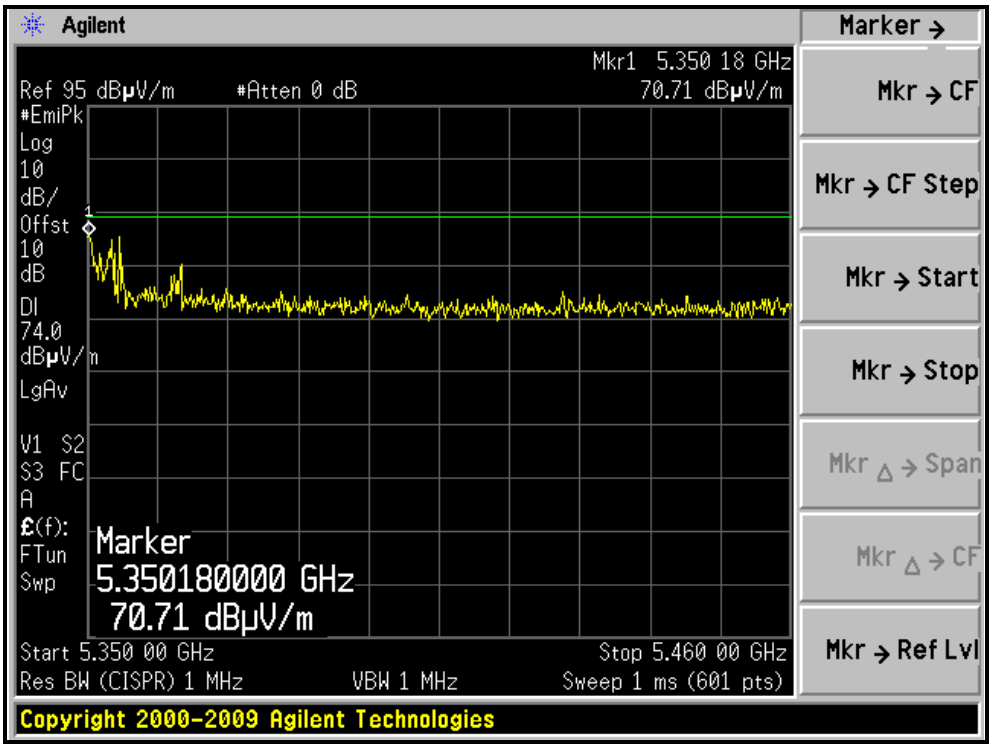


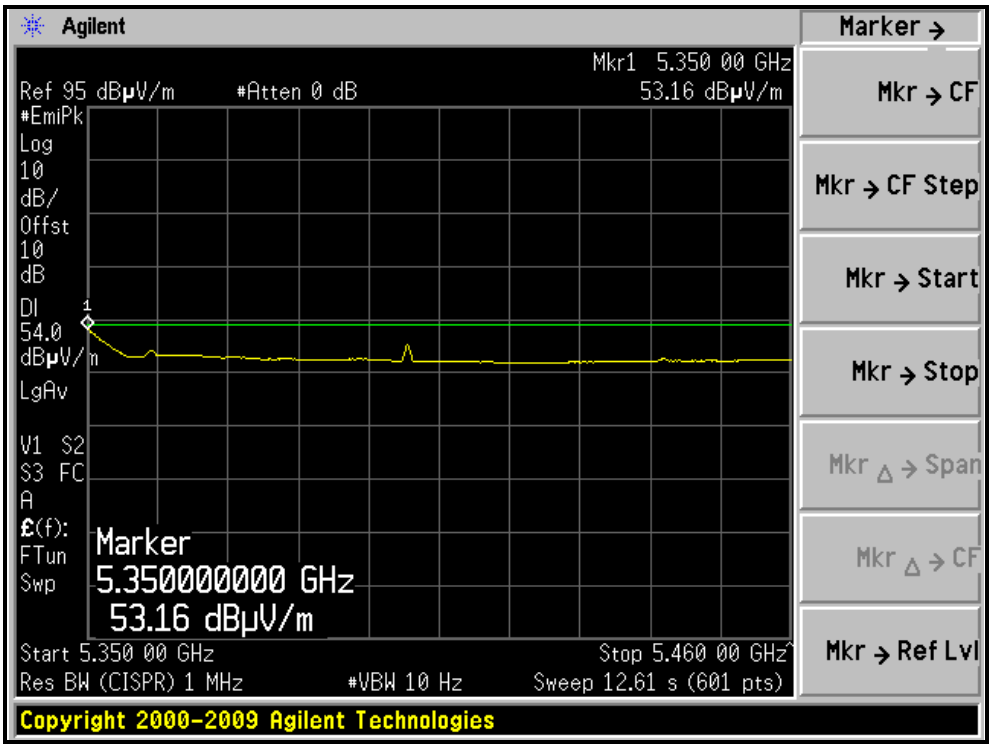
RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH62, HORIZONTAL)



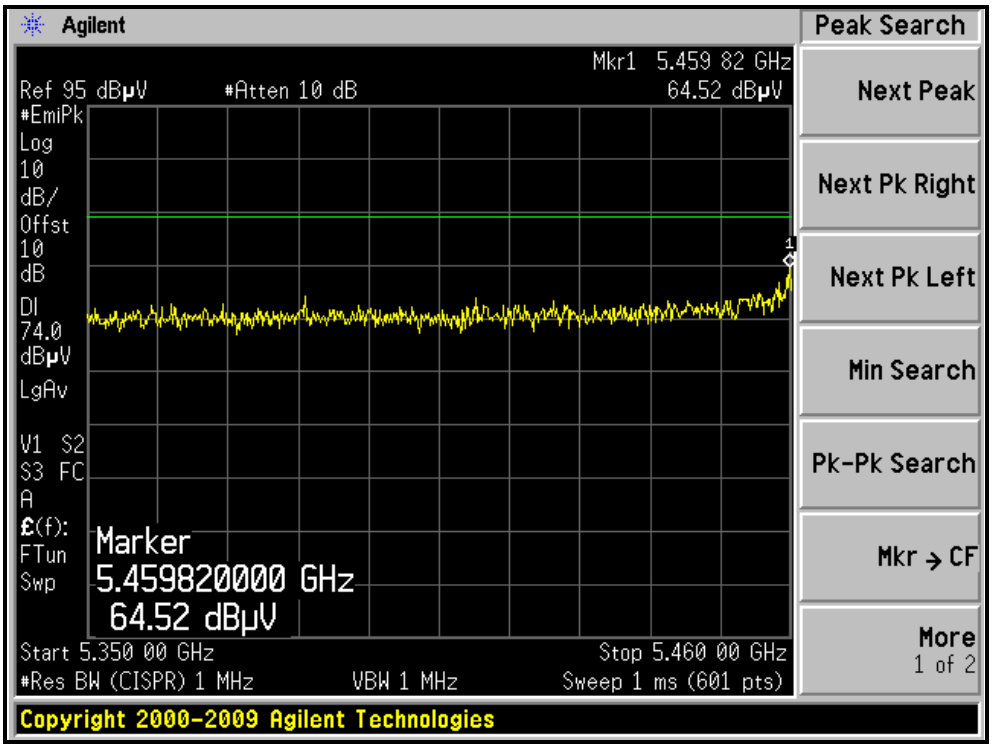


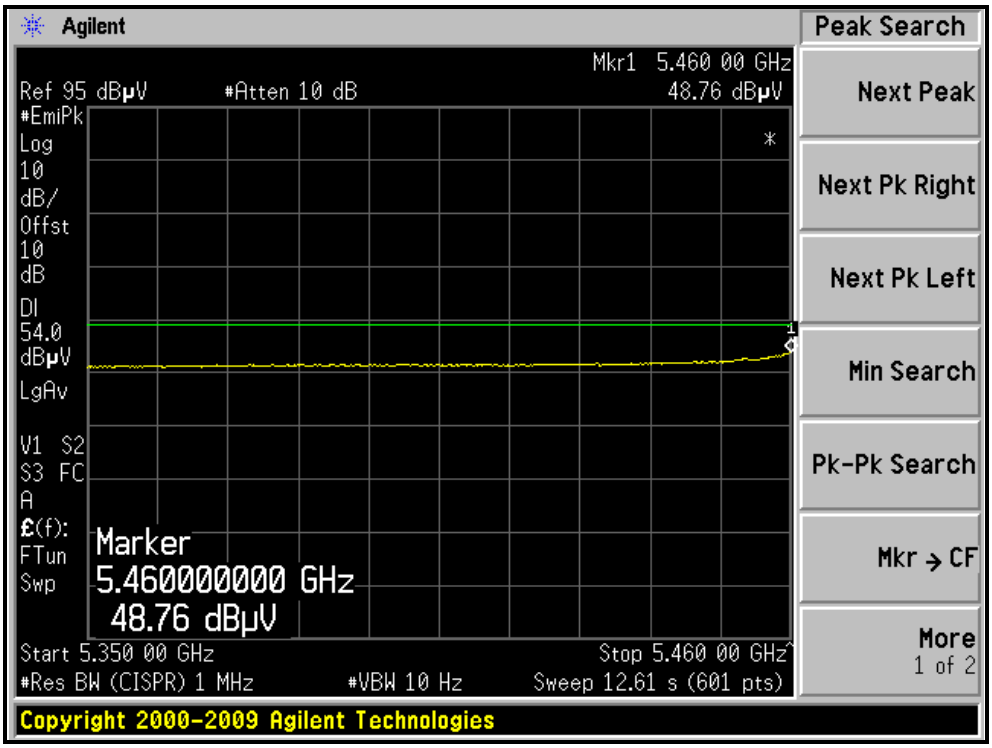
RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH62, VERTICAL)



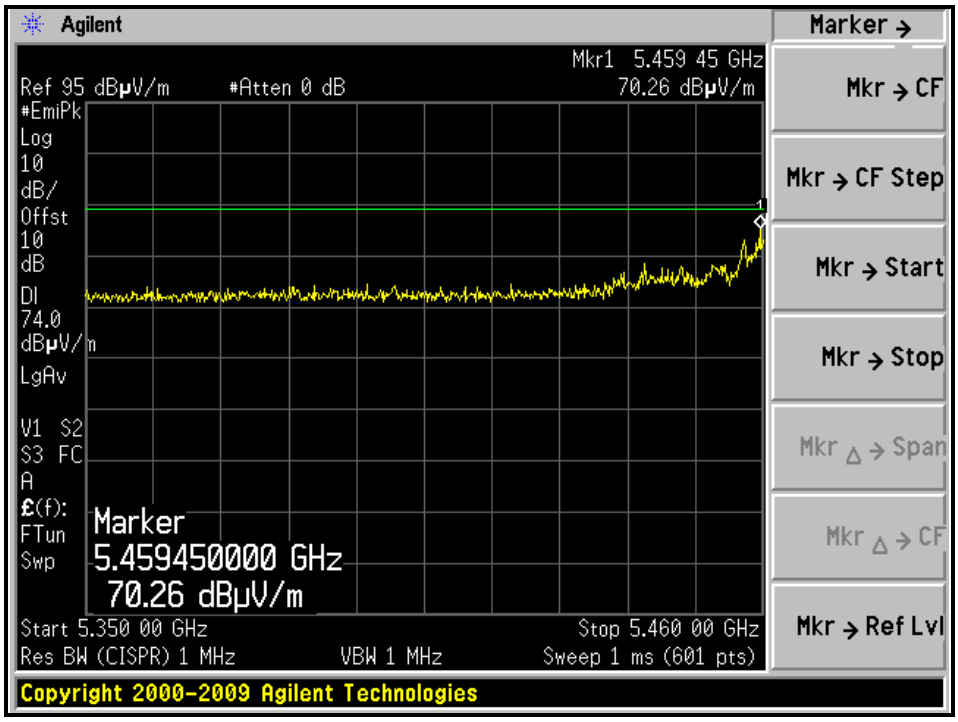


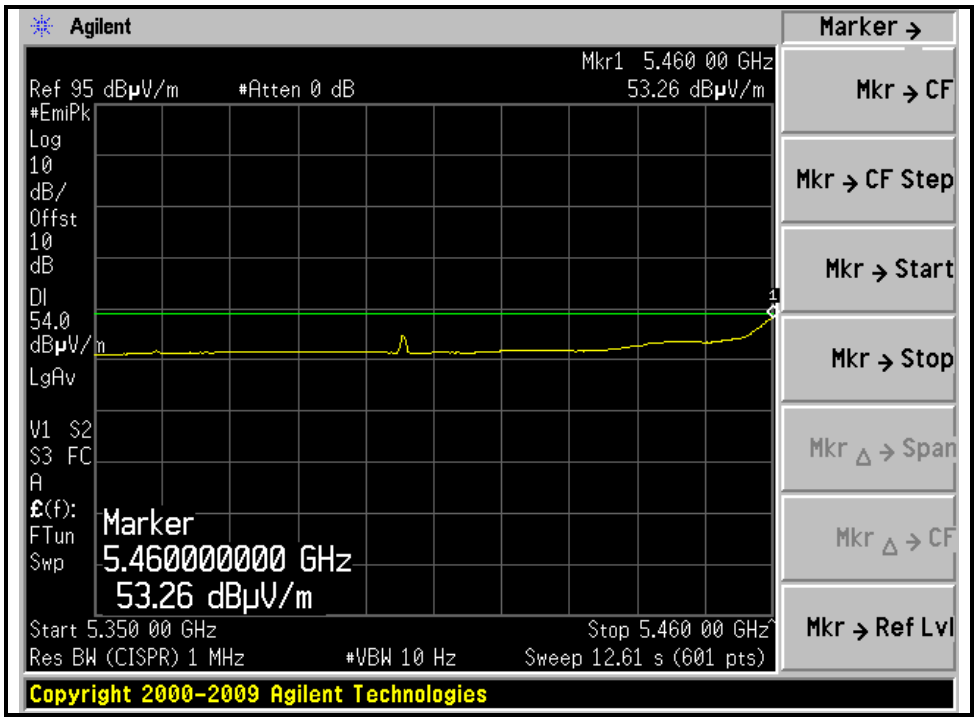
RESTRICTED BANDEDGE (802.11n (40MHz) MODE, CH102, HORIZONTAL)





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: July 07, 2011

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

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

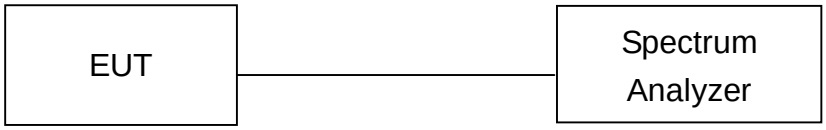
4.3.3 TEST PROCEDURE

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 (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	12.3	10.0	27.0	14.3	17	24.58	24.45	PASS
40	5200	11.7	10.0	24.8	13.9	17	23.83	23.74	PASS
48	5240	12.4	10.6	28.9	14.6	17	25.67	25.51	PASS
52	5260	18.3	16.2	109.3	20.4	24	33.50	33.41	PASS
60	5300	18.1	16.2	106.3	20.3	24	33.92	33.78	PASS
64	5320	15.7	14.6	66.0	18.2	24	24.83	24.74	PASS
100	5500	16.6	17.1	97.0	19.9	24	26.25	26.12	PASS
120	5600	16.0	16.2	81.5	19.1	24	30.58	30.41	PASS
140	5700	17.0	15.9	89.0	19.5	24	31.08	30.89	PASS

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

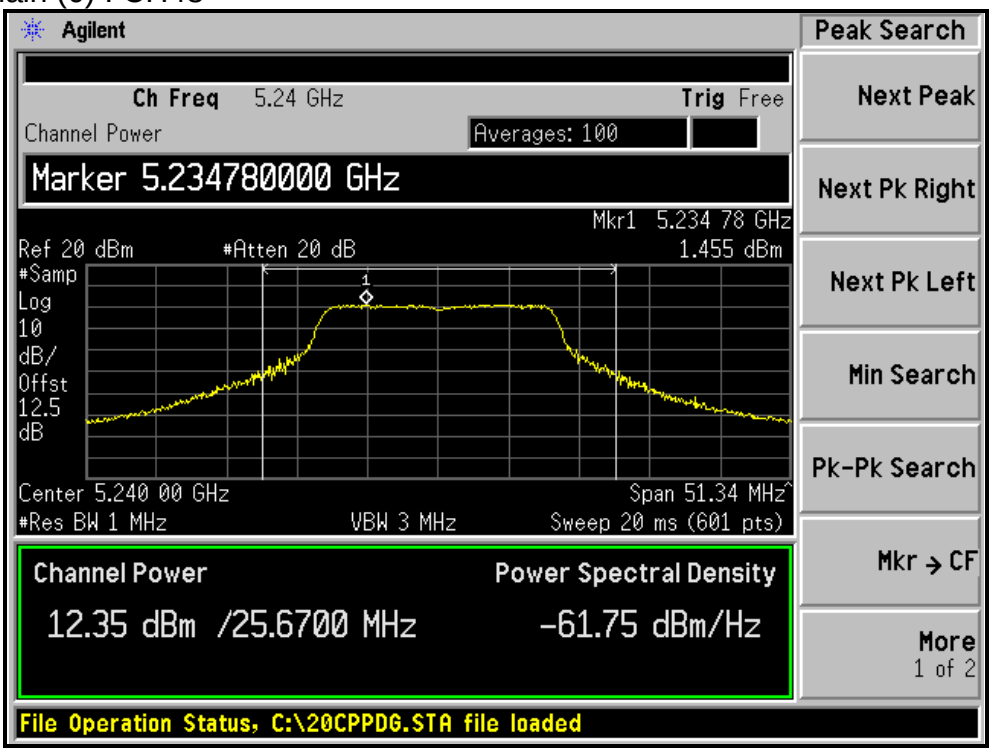
2. Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=5

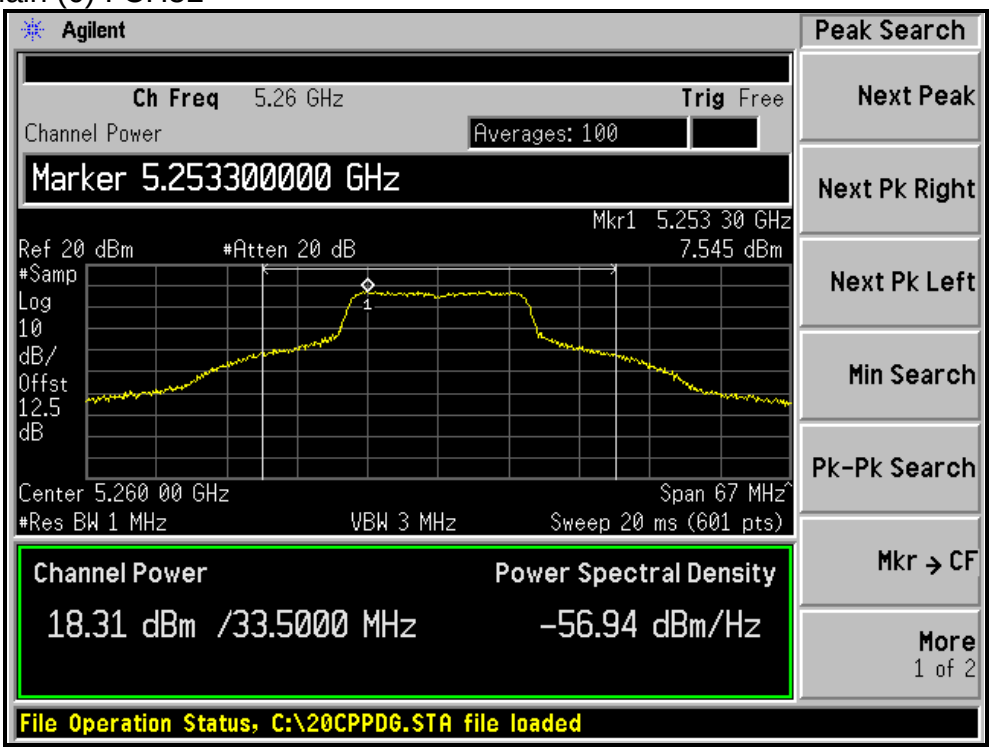
The effective legacy gain is 5dBi, therefore the limit doesn't reduce.

Peak Power Output:

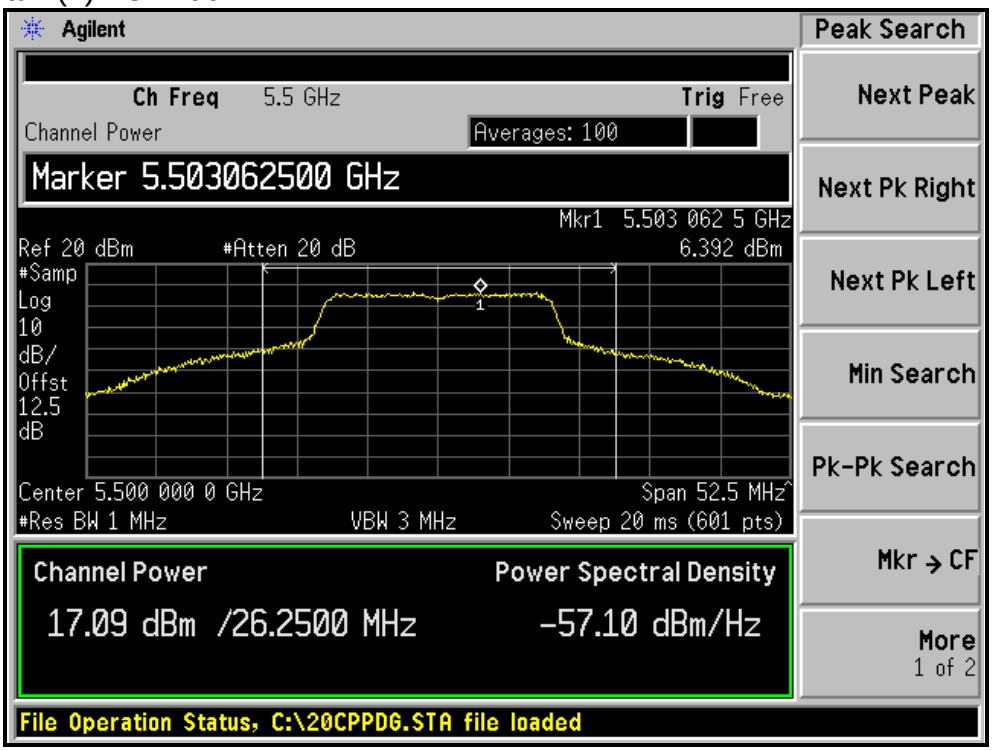
For Chain (0) : CH48



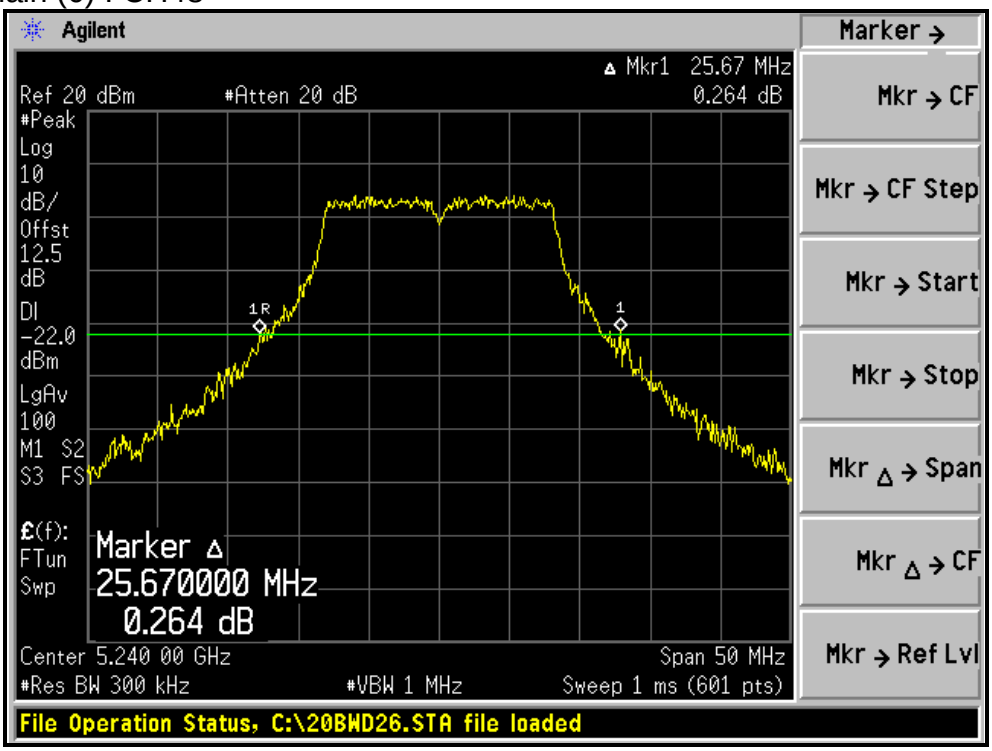
For Chain (0) : CH52



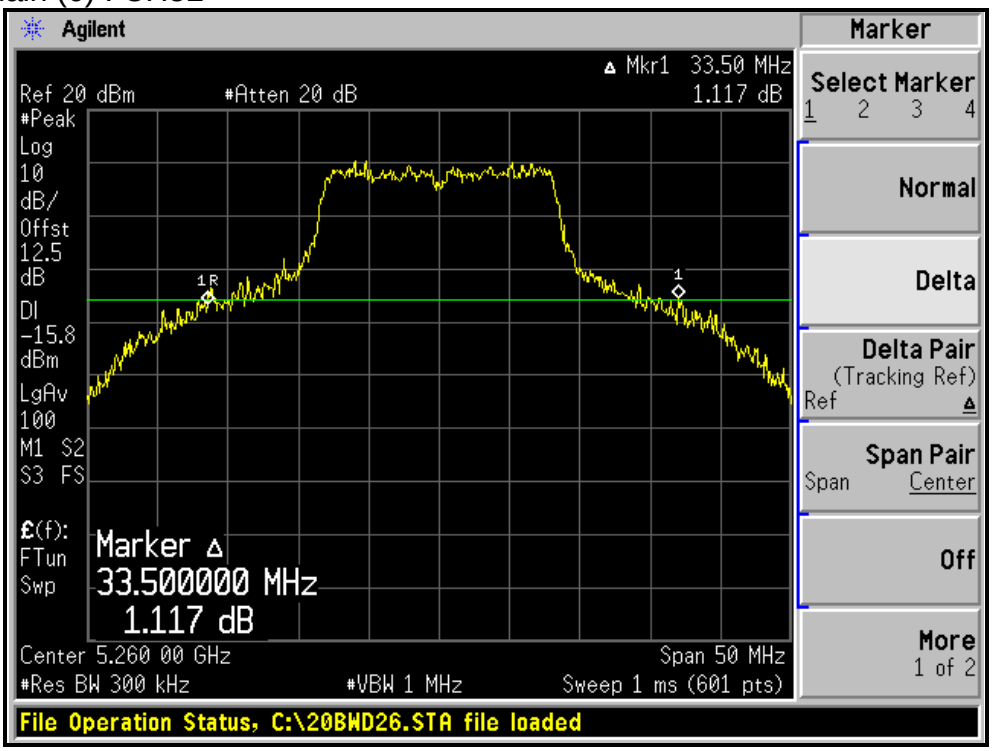
For Chain (1) : CH100



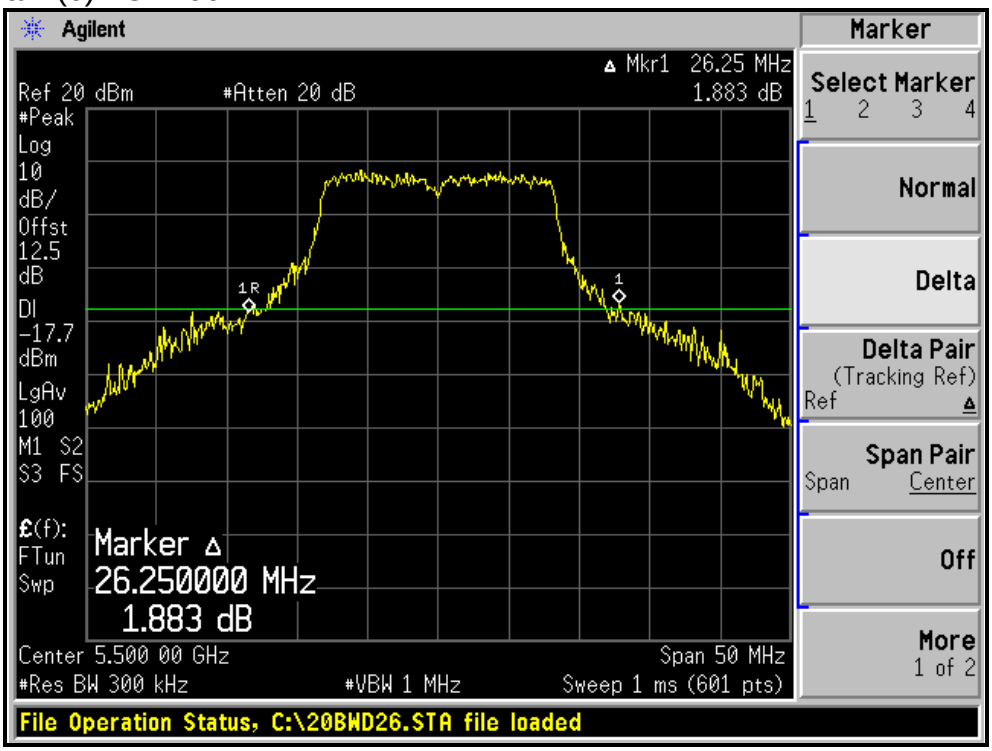
26dB Occupied Bandwidth:
For Chain (0) : CH48



For Chain (0) : CH52



For Chain (0) : CH100



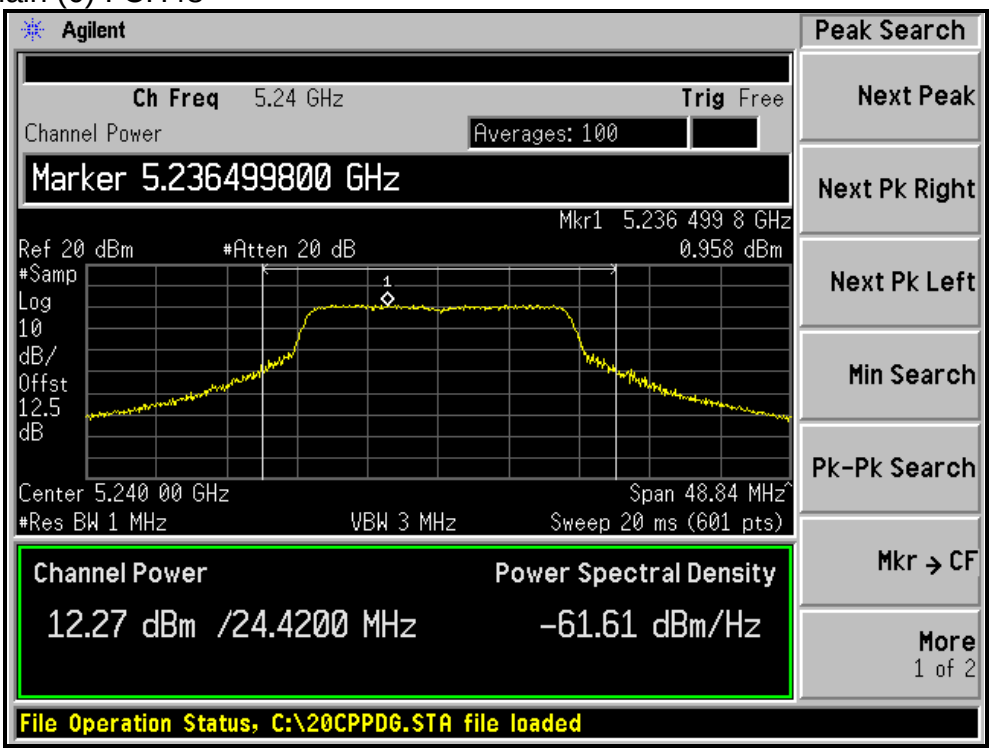
802.11n (20MHz) OFDM MODULATION:

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	12.1	10.1	26.5	14.2	17	25.00	24.98	PASS
40	5200	12.2	10.6	28.1	14.5	17	24.42	24.26	PASS
48	5240	12.3	10.8	29.0	14.6	17	24.42	24.32	PASS
52	5260	17.7	16.0	98.7	19.9	24	29.67	29.55	PASS
60	5300	17.9	16.1	102.4	20.1	24	32.08	31.89	PASS
64	5320	15.6	14.0	61.4	17.9	24	25.42	25.34	PASS
100	5500	16.0	16.3	82.5	19.2	24	26.08	25.98	PASS
120	5600	16.1	16.1	81.5	19.1	24	29.00	28.89	PASS
140	5700	16.5	16.1	85.4	19.3	24	31.75	31.66	PASS

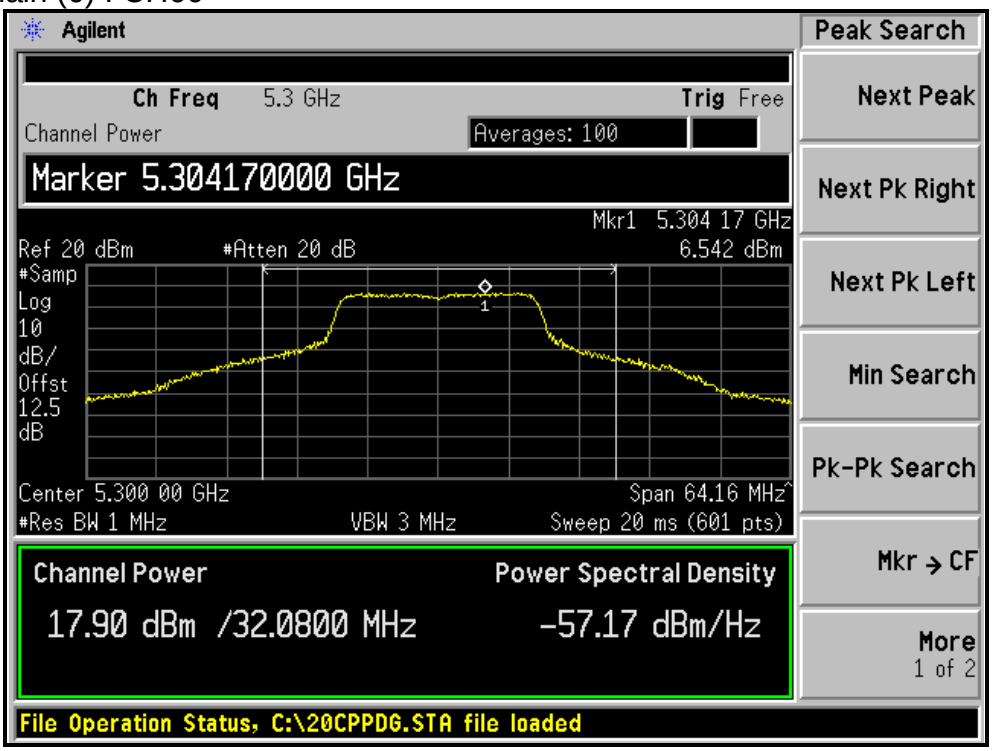
NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

Peak Power Output:

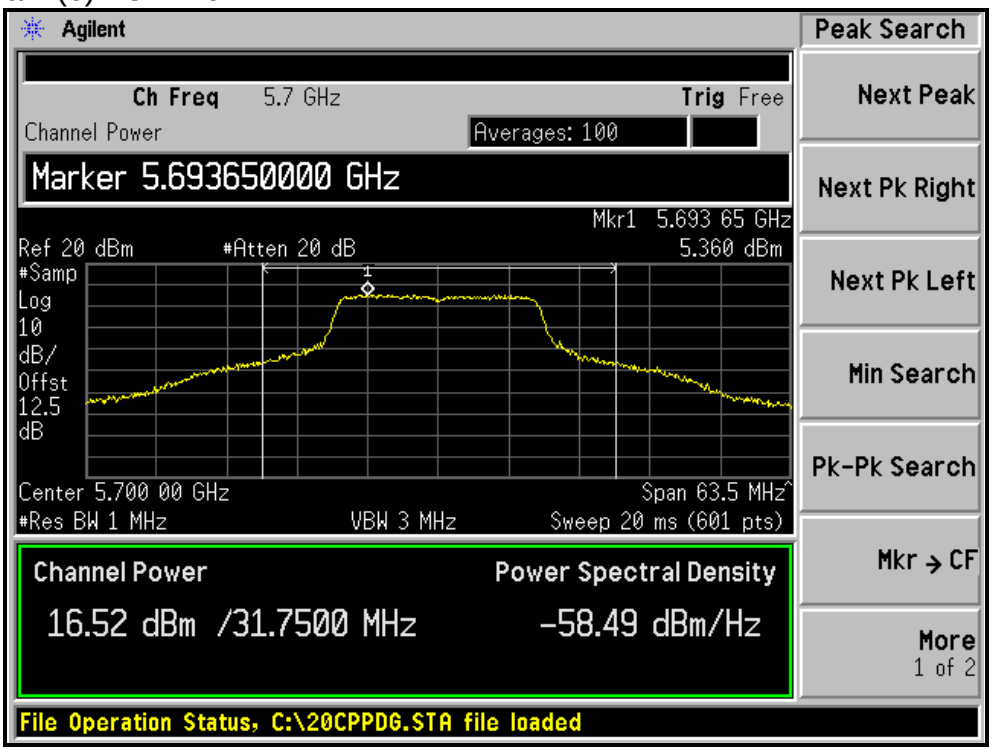
For Chain (0) : CH48



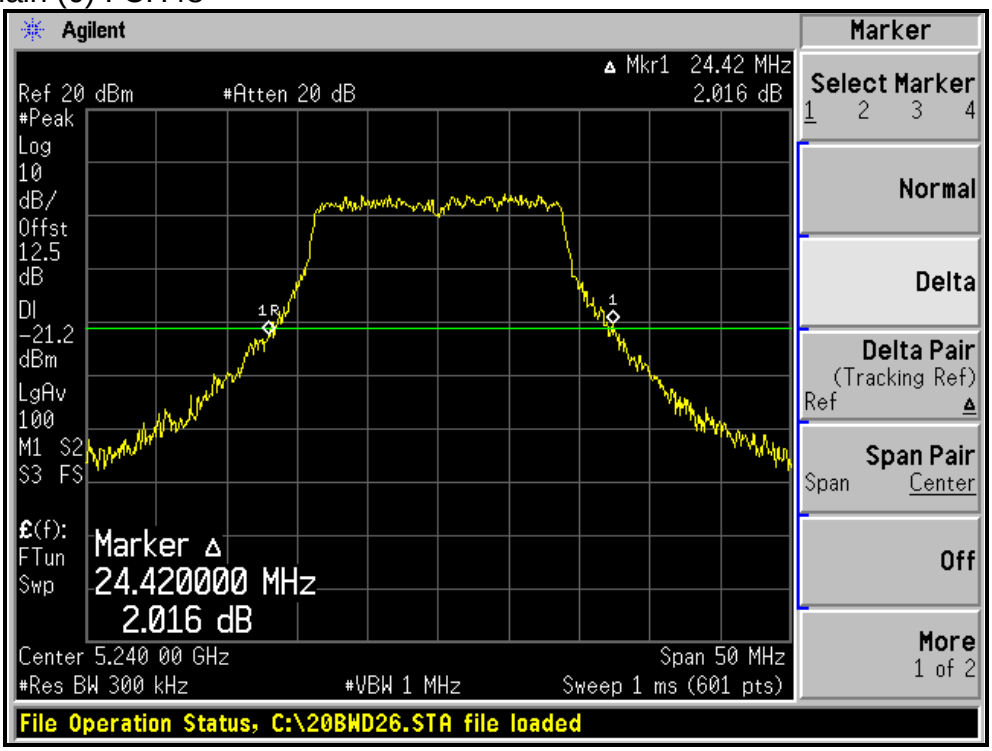
For Chain (0) : CH60



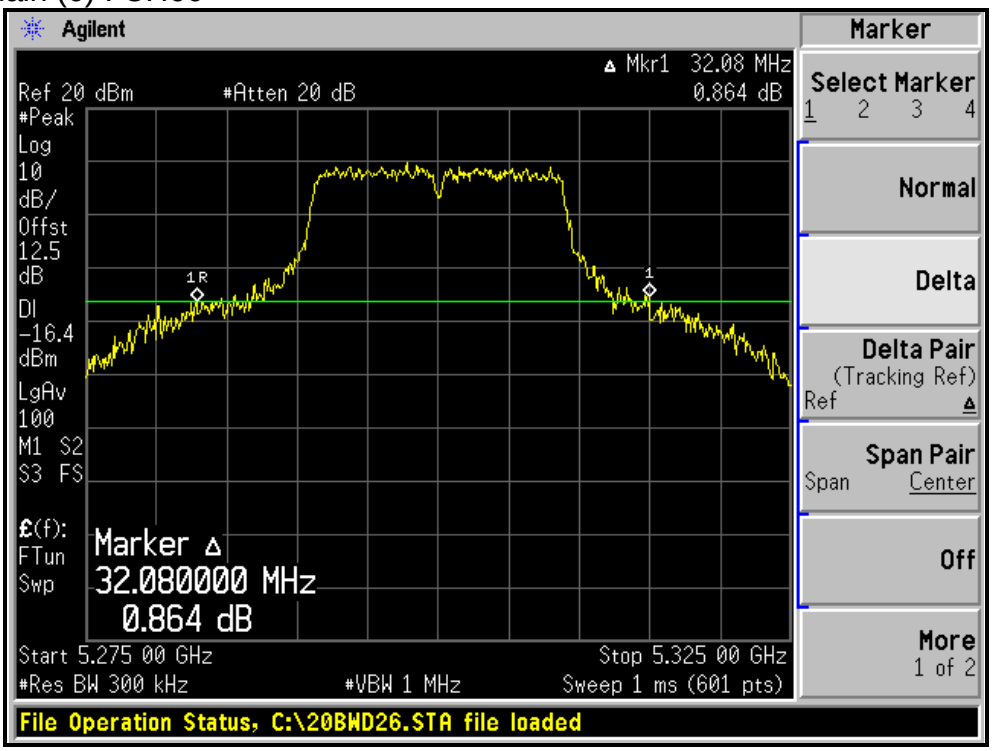
For Chain (0) : CH140



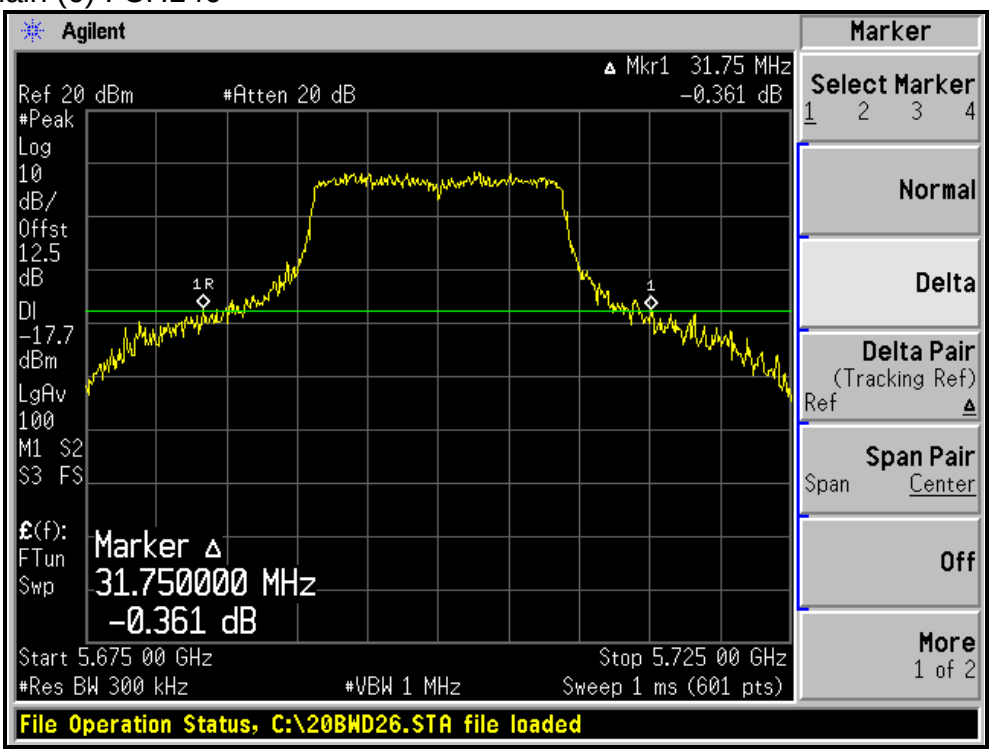
26dB Occupied Bandwidth:
For Chain (0) : CH48



For Chain (0) : CH60



For Chain (0) : CH140



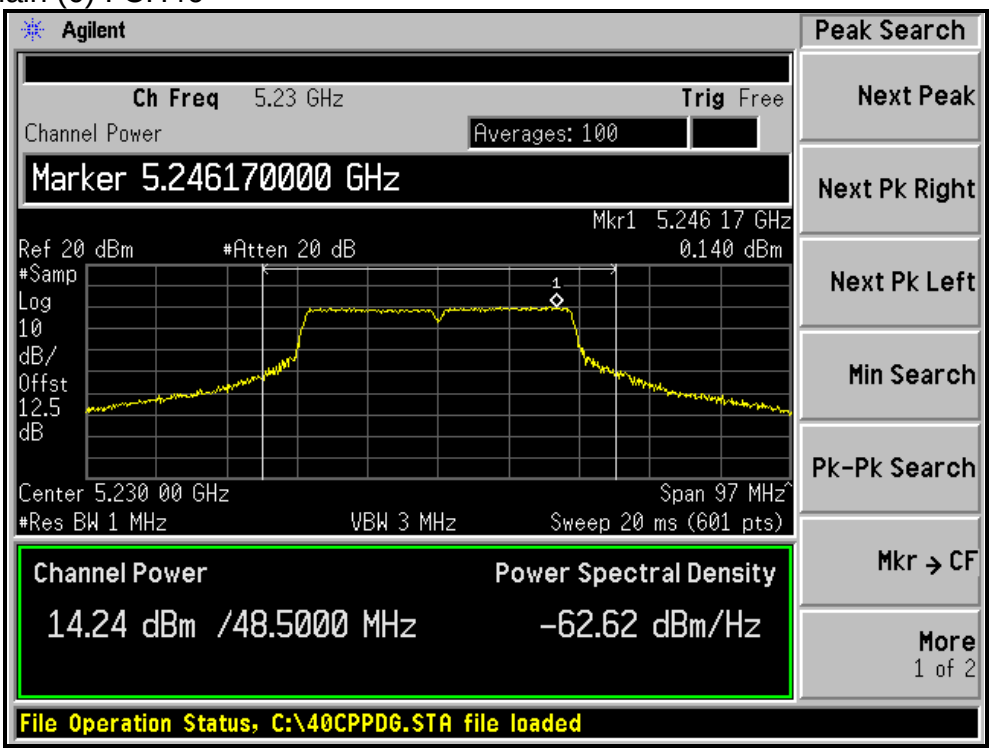
802.11n (40MHz) OFDM MODULATION:

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	11.9	9.5	24.4	13.9	17	47.33	47.22	PASS
46	5230	14.2	12.7	44.9	16.5	17	48.50	48.26	PASS
54	5270	16.0	14.7	69.3	18.4	24	53.33	53.26	PASS
62	5310	11.4	10.7	25.6	14.1	24	48.33	48.22	PASS
102	5510	12.0	12.9	35.3	15.5	24	48.33	48.23	PASS
118	5590	15.5	15.6	71.8	18.6	24	51.00	50.89	PASS
134	5670	15.9	15.5	74.4	18.7	24	54.83	54.74	PASS

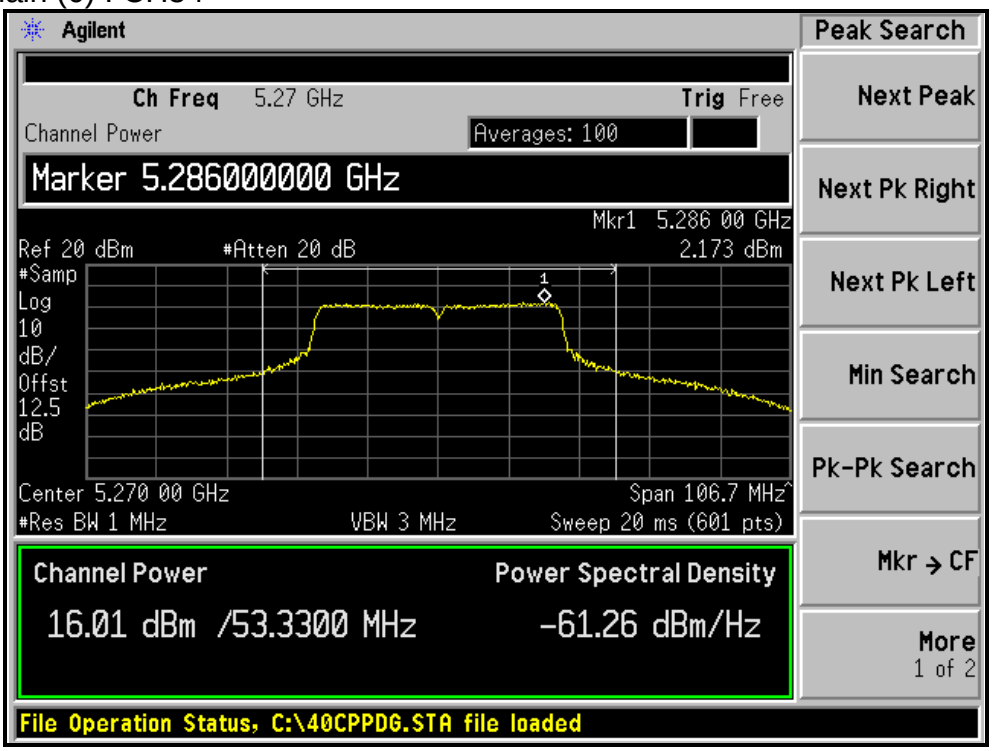
NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

Peak Power Output:

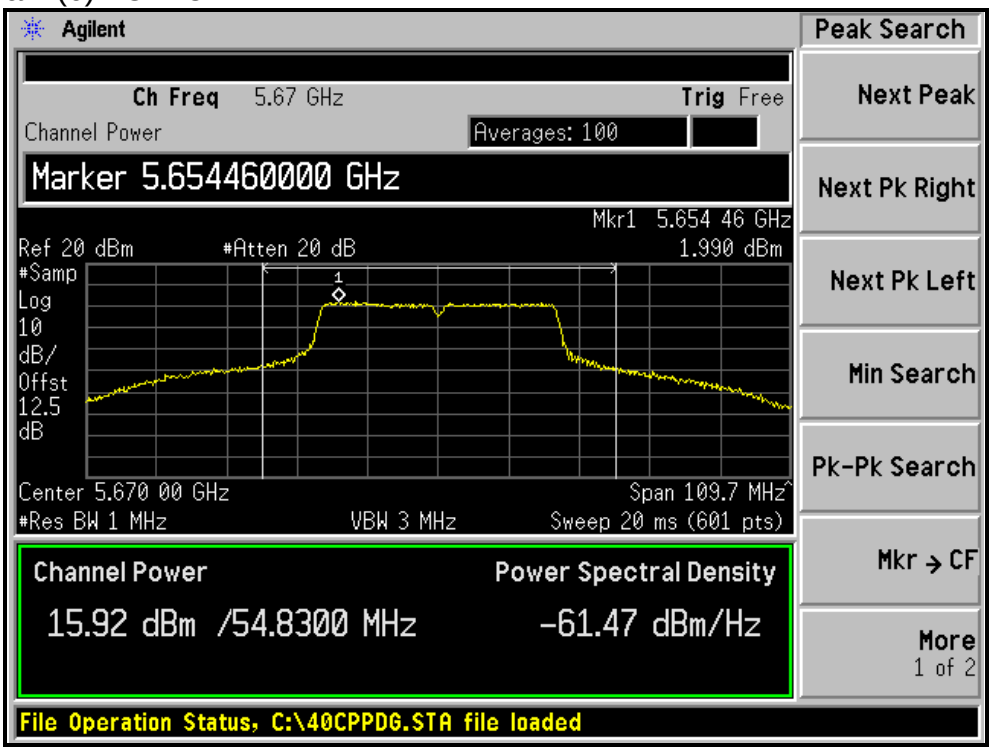
For Chain (0) : CH46



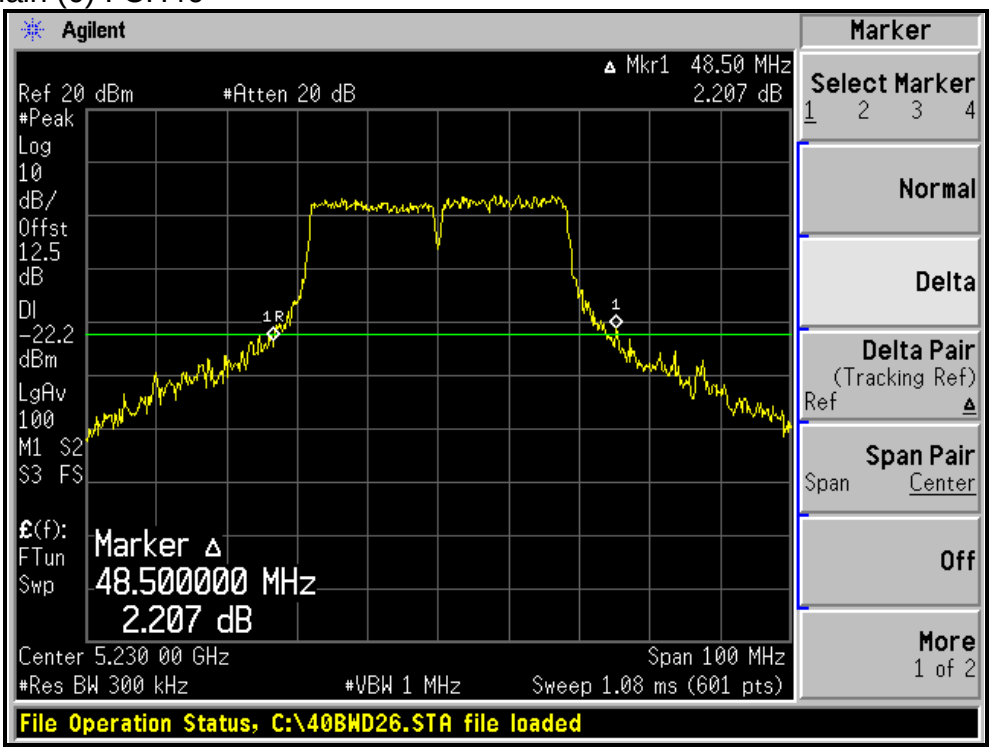
For Chain (0) : CH54



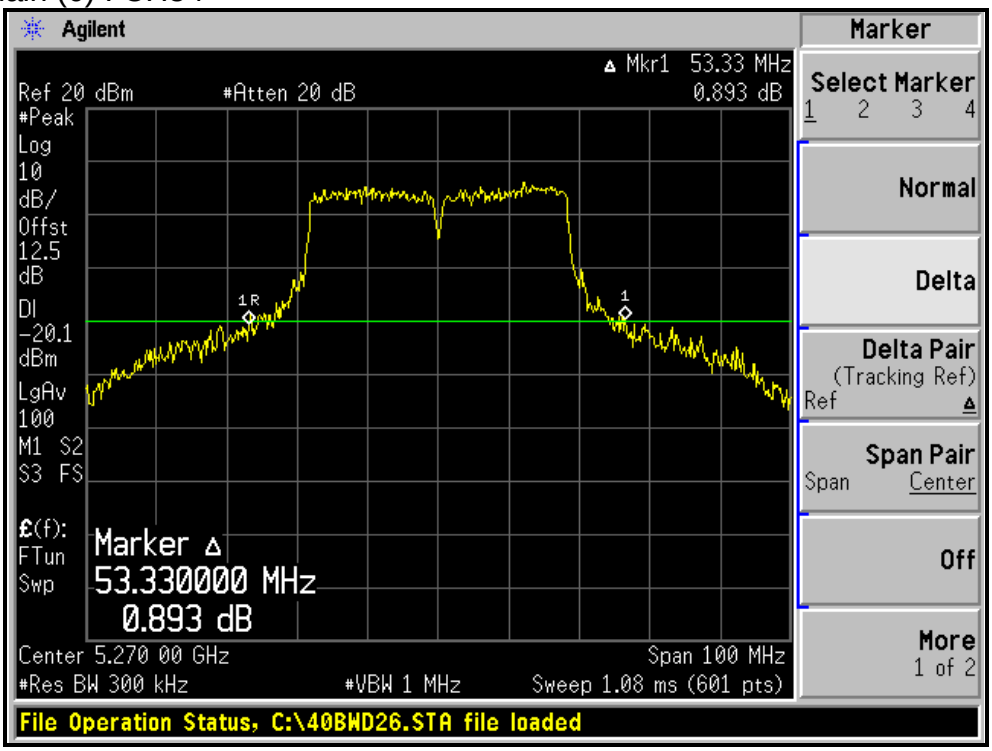
For Chain (0) : CH134



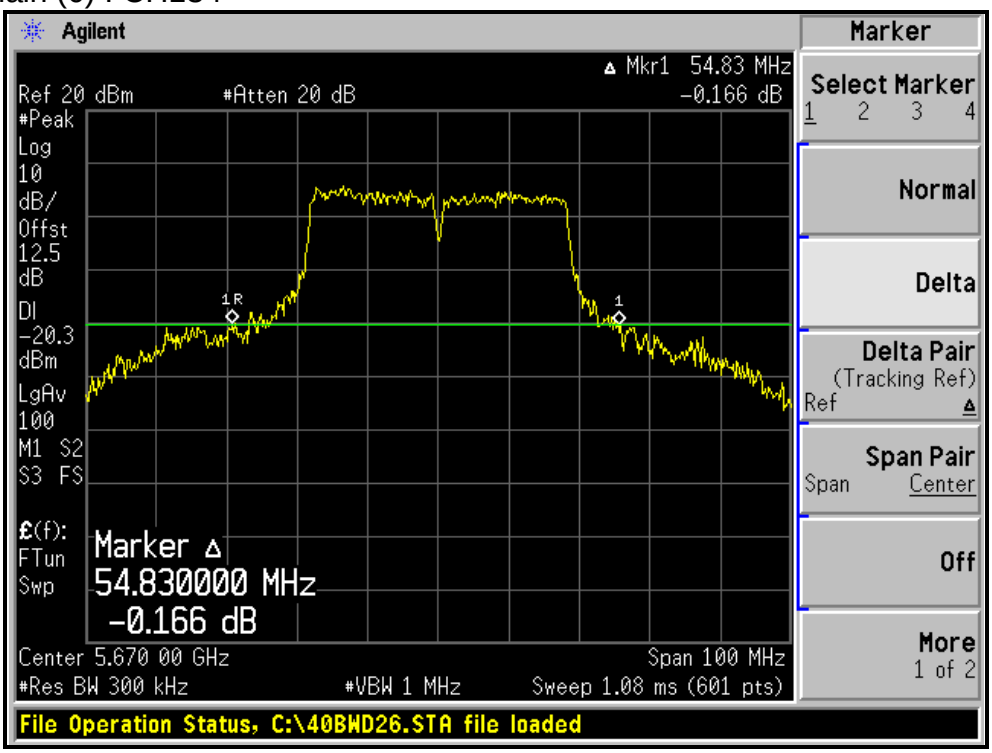
26dB Occupied Bandwidth:
For Chain (0) : CH46



For Chain (0) : CH54



For Chain (0) : CH134



4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

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

4.4.2 TEST INSTRUMENTS

Test date: July 07, 2011

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

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

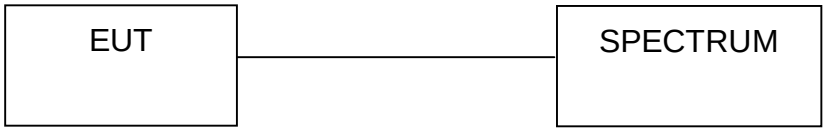
4.4.3 TEST PROCEDURE

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

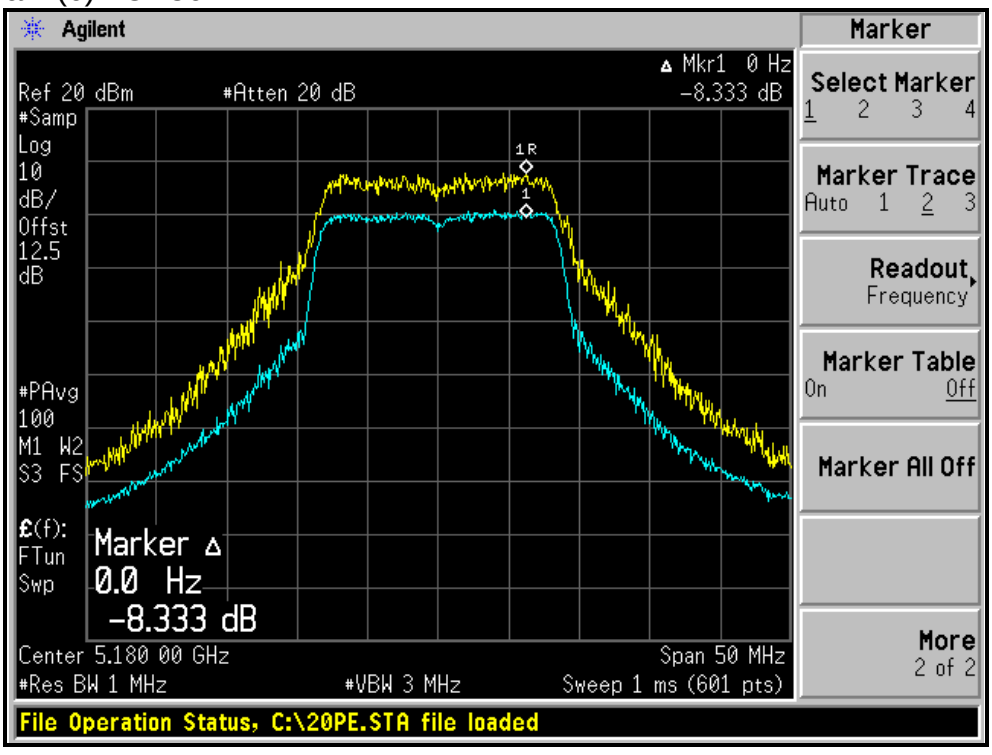
The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.4.7 TEST RESULTS

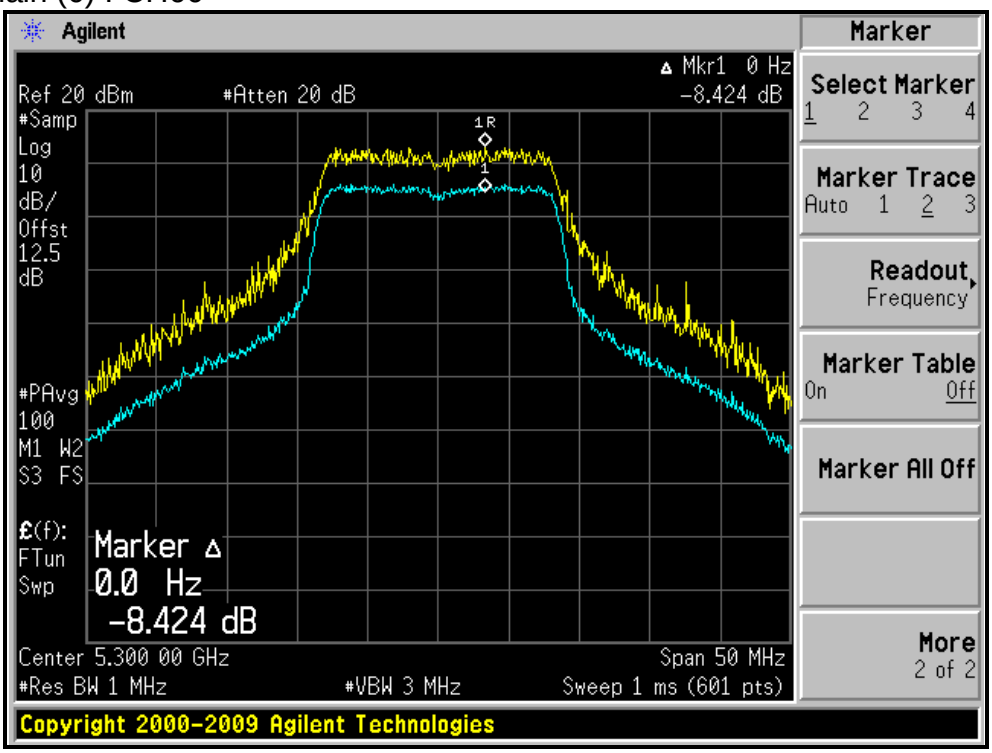
802.11a OFDM MODULATION

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN(0)	CHAIN(1)		
36	5180	8.3	8.1	13	PASS
40	5200	8.0	7.9	13	PASS
48	5240	7.6	7.5	13	PASS
52	5260	7.3	7.2	13	PASS
60	5300	8.4	8.2	13	PASS
64	5320	7.5	7.4	13	PASS
100	5500	7.8	7.6	13	PASS
120	5600	7.8	7.7	13	PASS
140	5700	8.1	8.0	13	PASS

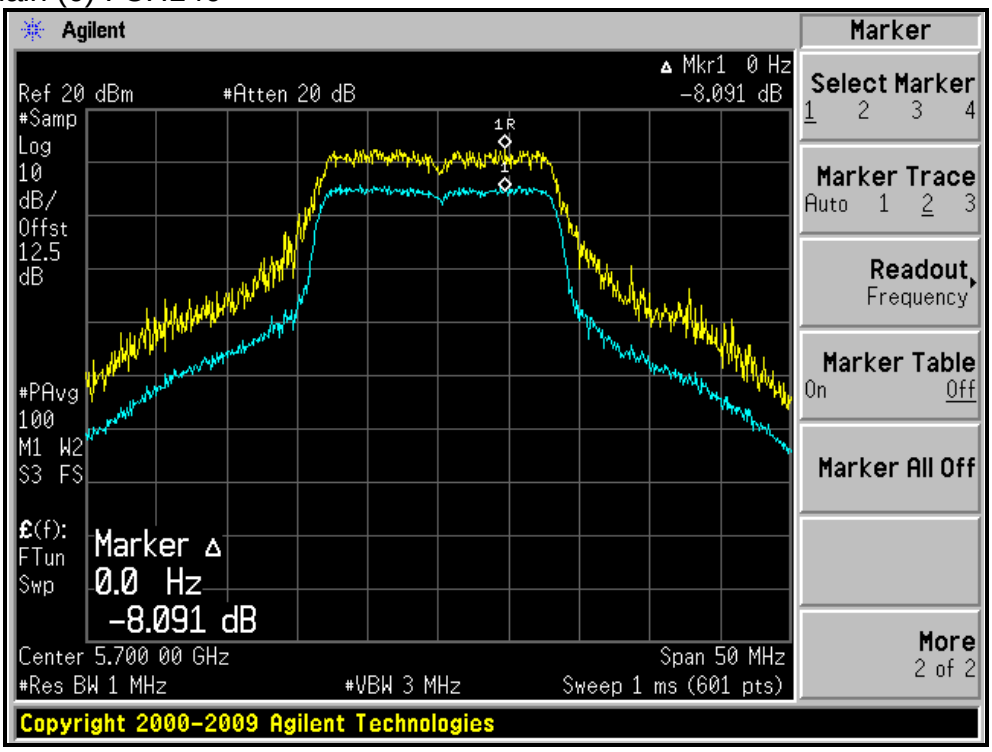
For Chain (0) : CH36



For Chain (0) : CH60



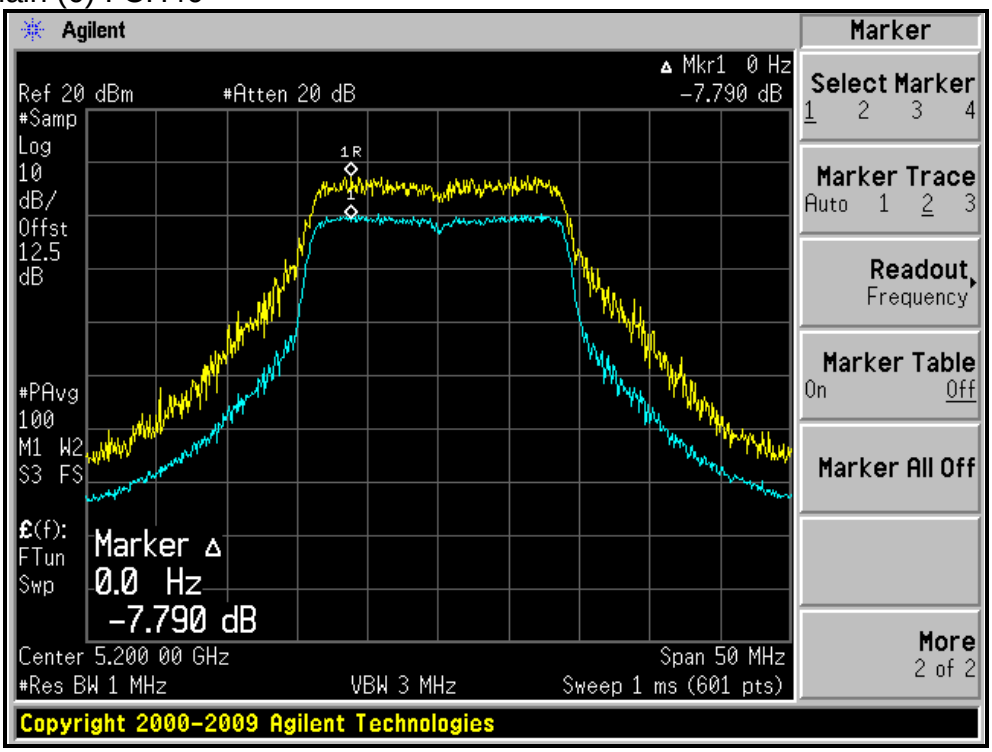
For Chain (0) : CH140



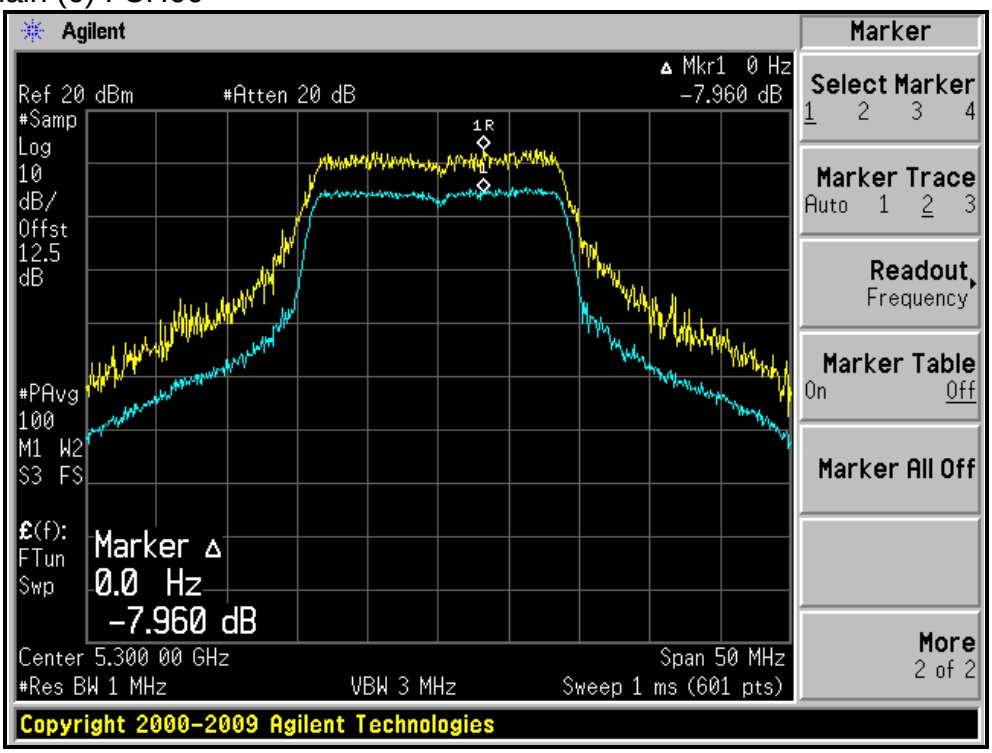
802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN(0)	CHAIN(1)		
36	5180	7.5	7.4	13	PASS
40	5200	7.8	7.6	13	PASS
48	5240	7.6	7.5	13	PASS
52	5260	7.2	7.1	13	PASS
60	5300	8.0	7.8	13	PASS
64	5320	7.1	7.0	13	PASS
100	5500	7.5	7.4	13	PASS
120	5600	7.4	7.3	13	PASS
140	5700	8.0	7.9	13	PASS

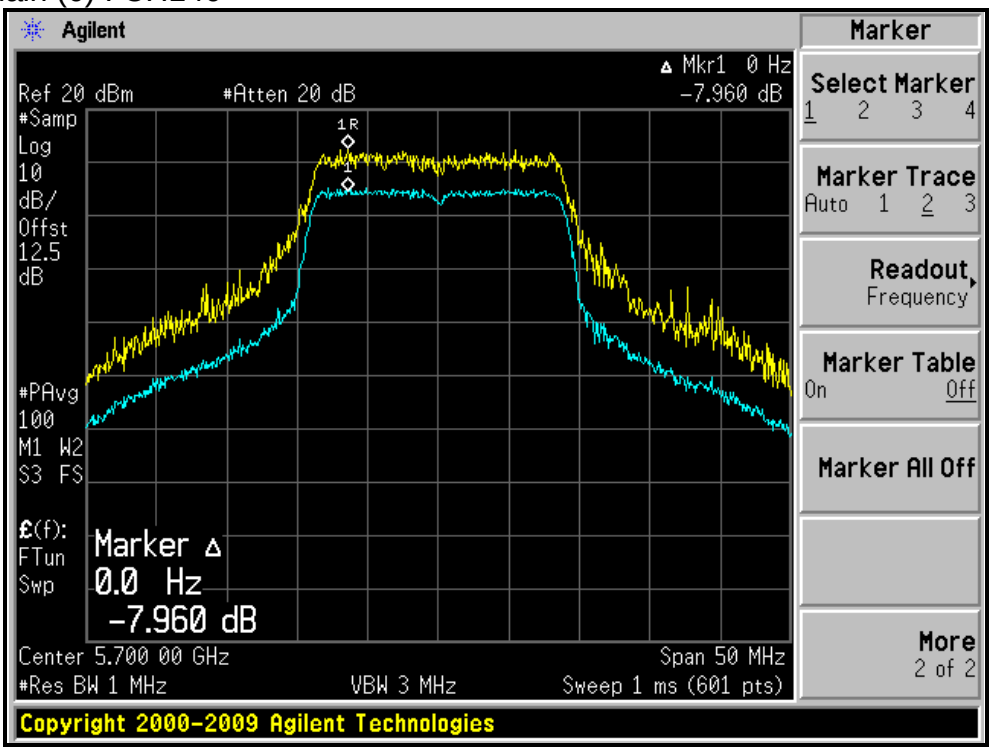
For Chain (0) : CH40



For Chain (0) : CH60



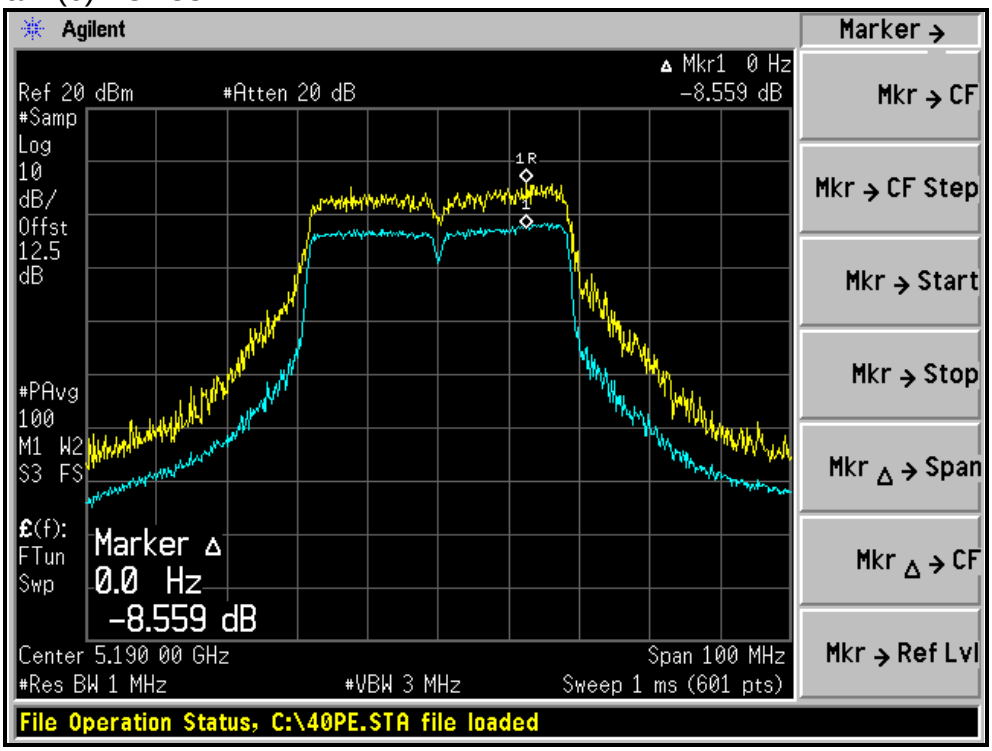
For Chain (0) : CH140



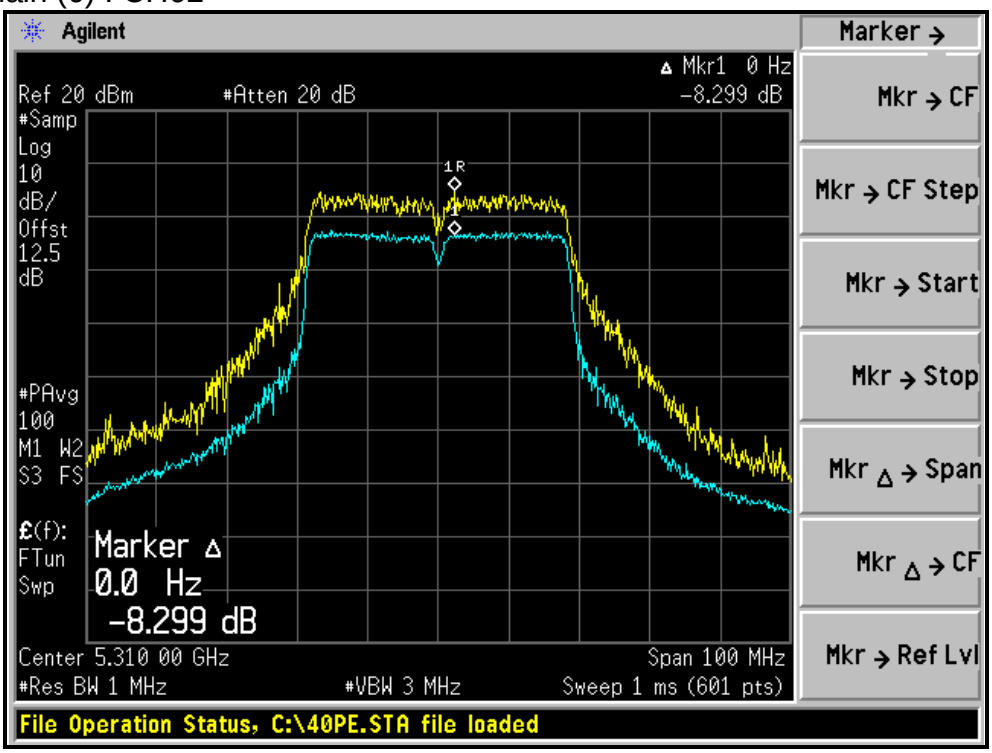
802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN(0)	CHAIN(1)		
38	5190	8.6	8.5	13	PASS
46	5230	8.0	7.8	13	PASS
54	5270	8.1	8.0	13	PASS
62	5310	8.3	8.2	13	PASS
102	5510	7.2	7.1	13	PASS
118	5590	7.4	7.3	13	PASS
134	5670	7.8	7.6	13	PASS

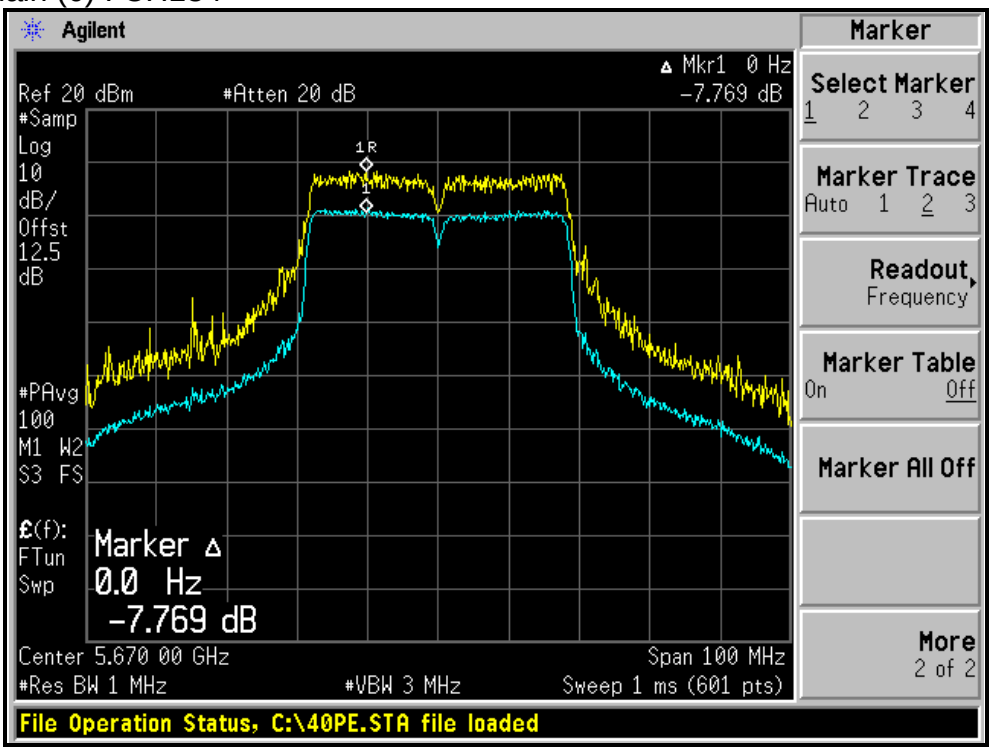
For Chain (0) : CH38



For Chain (0) : CH62



For Chain (0) : CH134



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: July 07, 2011

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

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

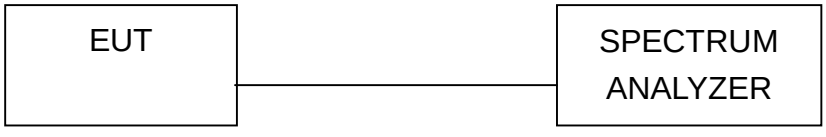
4.5.3 TEST PROCEDURES

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

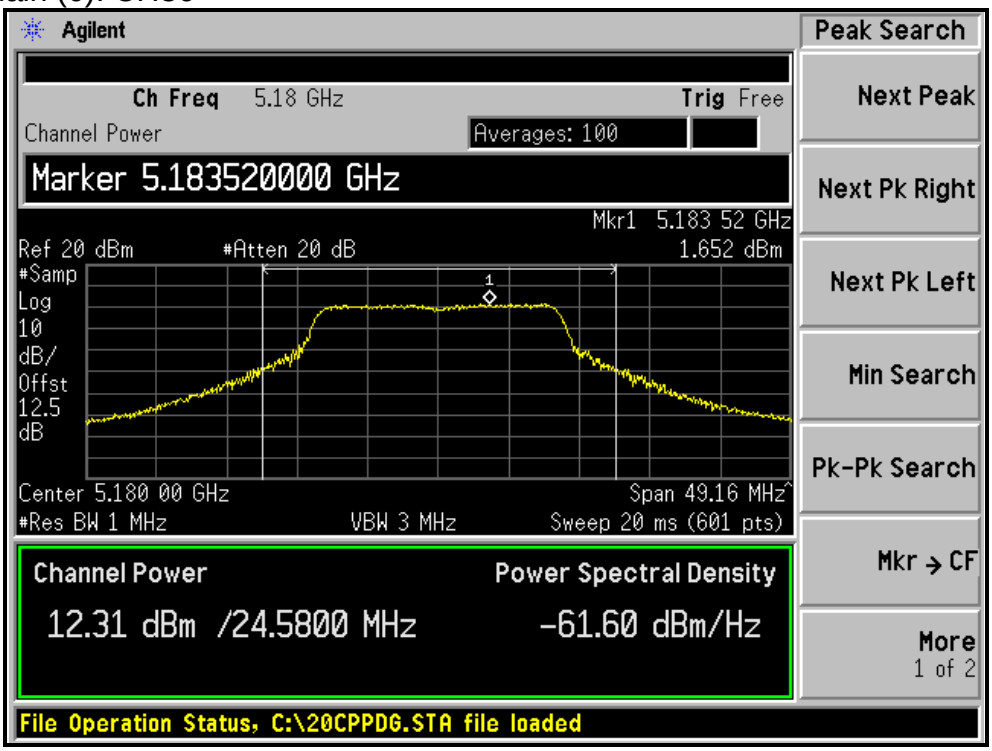
4.5.7 TEST RESULTS

802.11a OFDM MODULATION

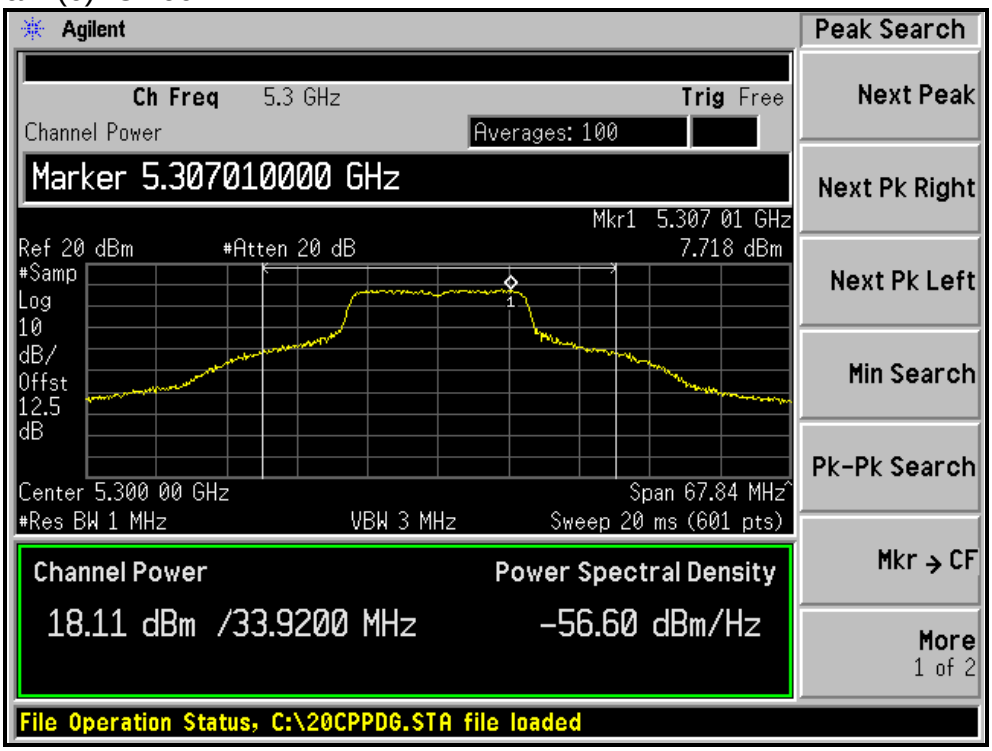
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)			
36	5180	1.7	-0.9	3.6	4	PASS
40	5200	1.5	-0.6	3.6	4	PASS
48	5240	1.5	-0.3	3.7	4	PASS
52	5260	7.5	6.0	9.8	11	PASS
60	5300	7.7	5.6	9.8	11	PASS
64	5320	5.0	3.8	7.5	11	PASS
100	5500	5.7	6.4	9.1	11	PASS
120	5600	5.4	5.3	8.4	11	PASS
140	5700	6.5	5.0	8.8	11	PASS

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)
Effective Legacy Gain (dBi)=5
The effective legacy gain is 5dBi, therefore the limit doesn't reduce.

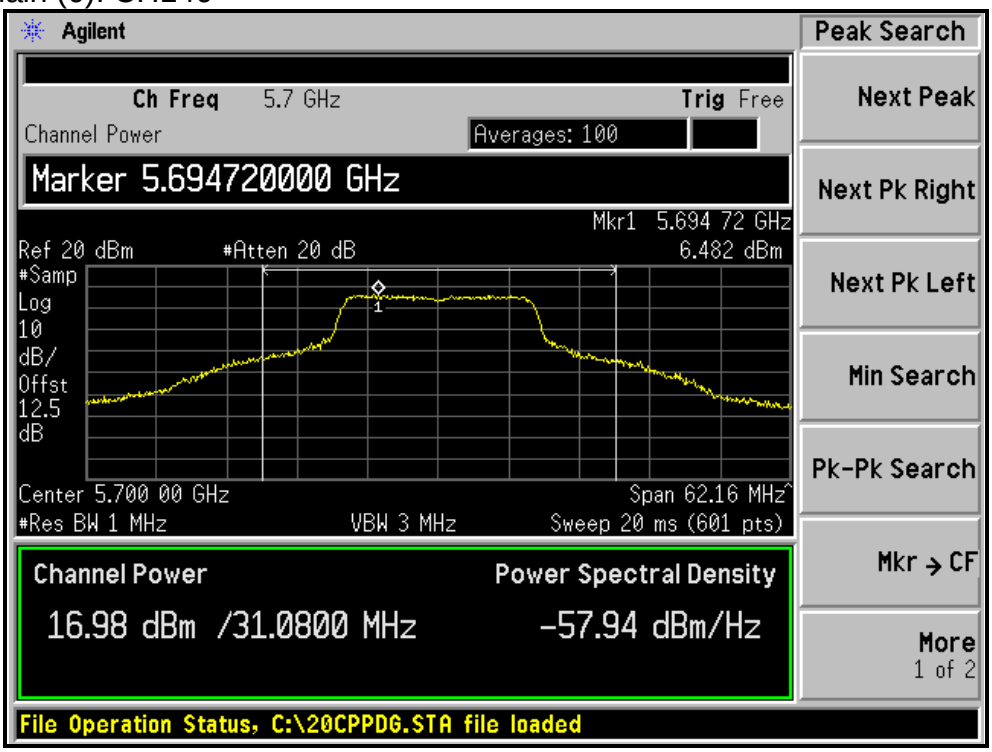
For Chain (0): CH36



For Chain (0): CH60



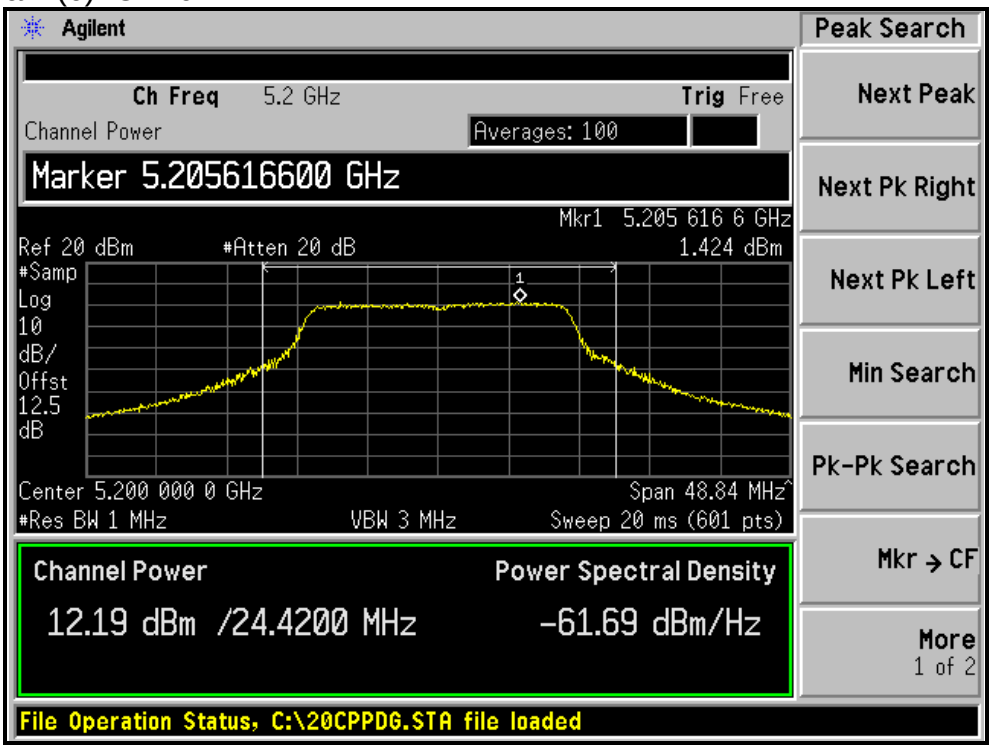
For Chain (0): CH140



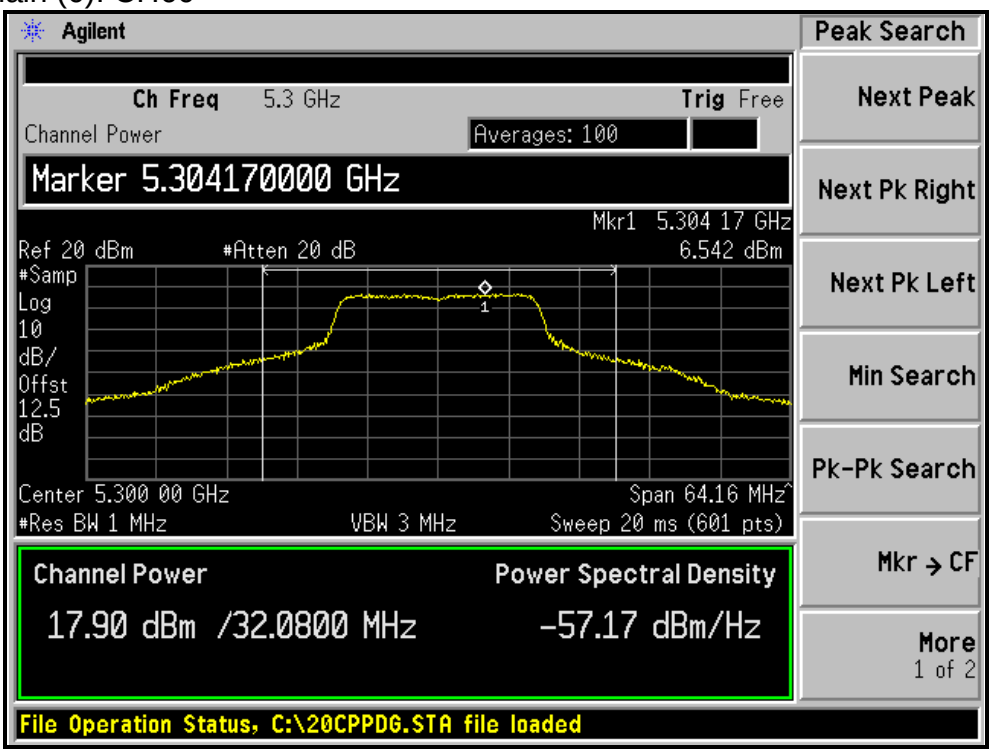
802.11n (20MHz) OFDM MODULATION:

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	1.3	-0.9	3.3	4	PASS
40	5200	1.4	0.3	3.9	4	PASS
48	5240	1.0	-0.3	3.4	4	PASS
52	5260	5.6	5.1	8.4	11	PASS
60	5300	6.5	5.1	8.9	11	PASS
64	5320	4.6	2.9	6.8	11	PASS
100	5500	5.2	5.5	8.4	11	PASS
120	5600	4.9	5.2	8.1	11	PASS
140	5700	5.4	5.2	8.3	11	PASS

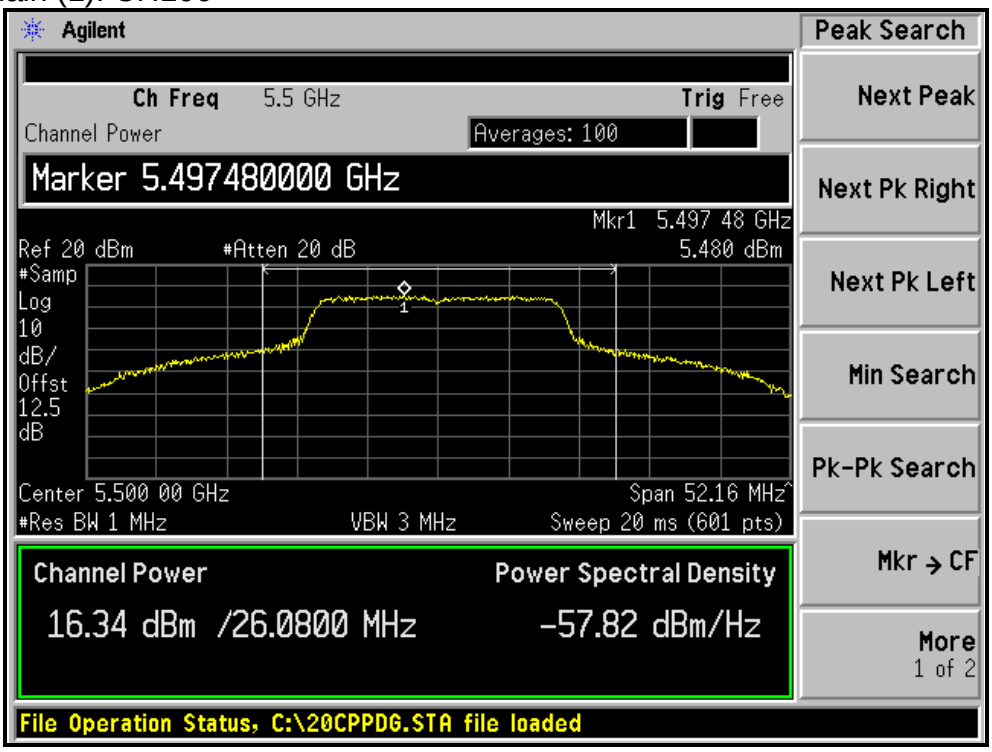
For Chain (0): CH40



For Chain (0): CH60



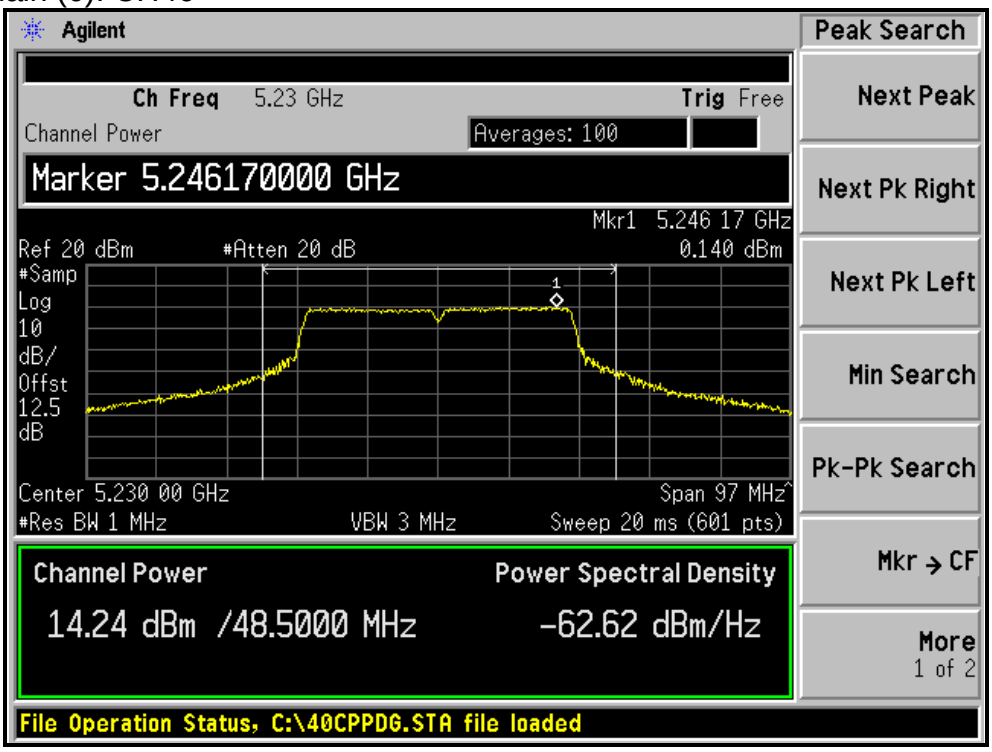
For Chain (1): CH100



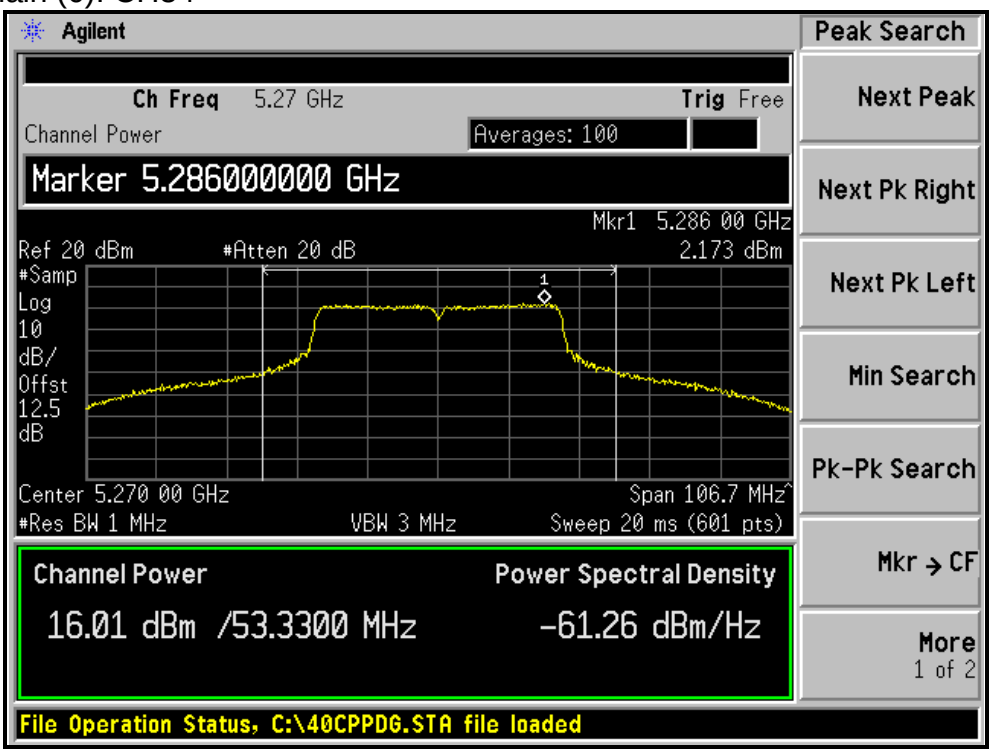
802.11n (40MHz) OFDM MODULATION:

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	-1.3	-4.7	0.3	4	PASS
46	5230	0.1	-1.6	2.3	4	PASS
54	5270	2.2	0.4	4.4	11	PASS
62	5310	-2.8	-3.4	-0.1	11	PASS
102	5510	-2.3	-1.4	1.2	11	PASS
118	5590	1.7	1.5	4.6	11	PASS
134	5670	2.0	1.4	4.7	11	PASS

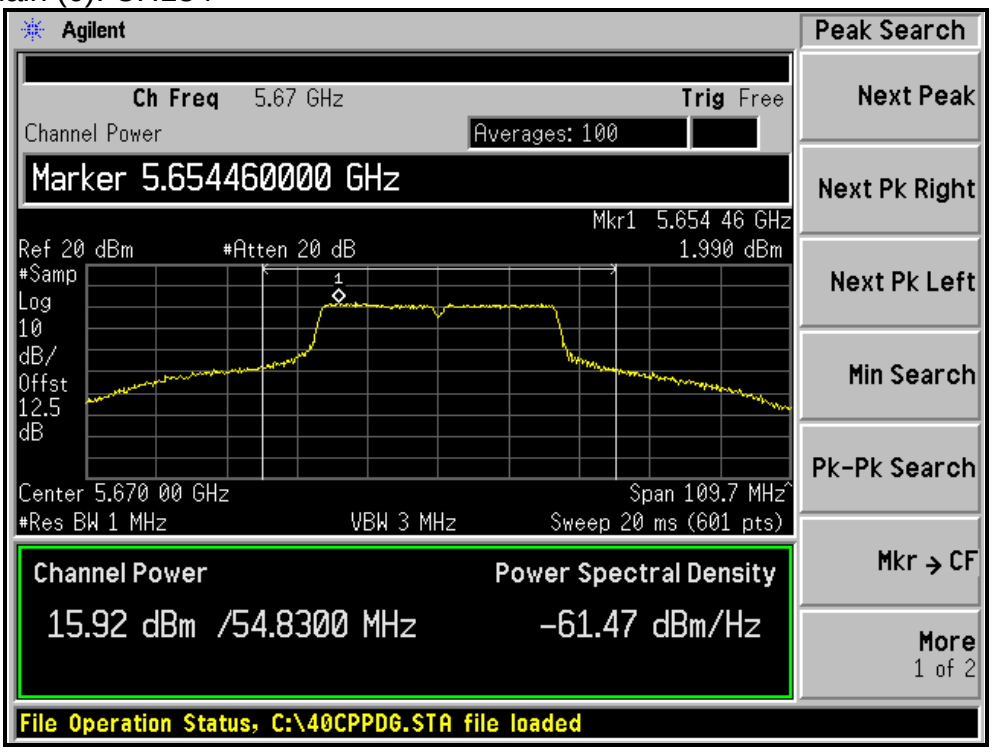
For Chain (0): CH46



For Chain (0): CH54



For Chain (0): CH134



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: July 07, 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.

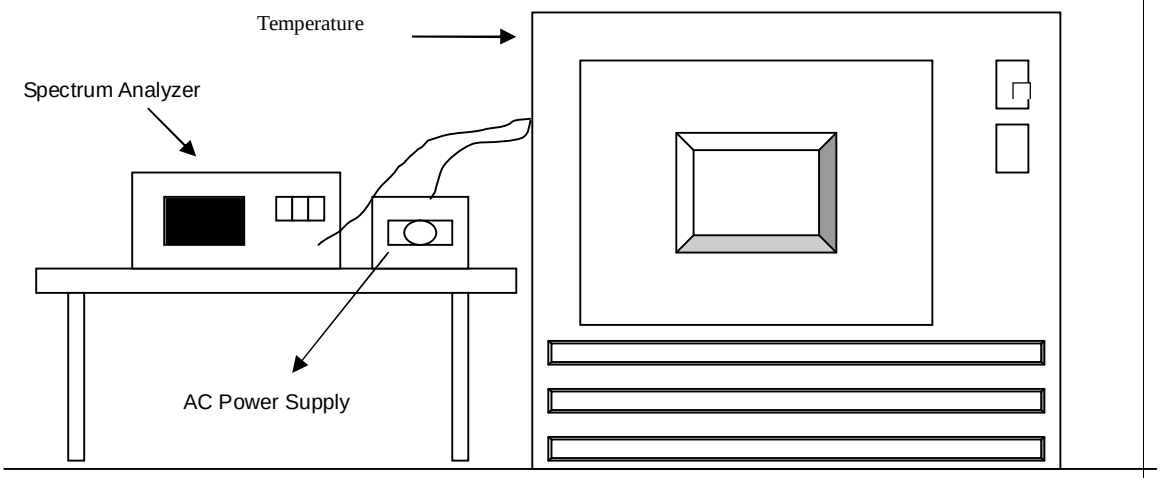
4.6.3 TEST PROCEDURE

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)	(%)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	138	5320.0067	1.2594	5320.0006	0.1128	5319.9985	-0.2820	5320.0018	0.3383
	120	5320.0059	1.1090	5320.0002	0.0376	5319.9977	-0.4323	5320.0012	0.2256
	102	5320.0055	1.0338	5320.0009	0.1692	5319.9982	-0.3383	5320.0013	0.2444
40	138	5320.0107	2.0113	5320.0108	2.0301	5320.0144	2.7068	5320.0172	3.2331
	120	5320.011	2.0677	5320.0109	2.0489	5320.0144	2.7068	5320.0175	3.2895
	102	5320.0109	2.0489	5320.011	2.0677	5320.0136	2.5564	5320.0175	3.2895
30	138	5320.0127	2.3872	5320.0103	1.9361	5320.0112	2.1053	5320.0071	1.3346
	120	5320.0131	2.4624	5320.0108	2.0301	5320.0097	1.8233	5320.0079	1.4850
	102	5320.0118	2.2180	5320.0097	1.8233	5320.0114	2.1429	5320.0085	1.5977
20	138	5320.0116	2.1805	5320.0055	1.0338	5320.0031	0.5827	5320.0024	0.4511
	120	5320.0102	1.9173	5320.0057	1.0714	5320.0024	0.4511	5320.0019	0.3571
	102	5320.0099	1.8609	5320.0065	1.2218	5320.0019	0.3571	5320.0023	0.4323
10	138	5320.0215	4.0414	5320.0263	4.9436	5320.0252	4.7368	5320.0218	4.0977
	120	5320.0217	4.0789	5320.0248	4.6617	5320.0271	5.0940	5320.0225	4.2293
	102	5320.0213	4.0038	5320.0253	4.7556	5320.0252	4.7368	5320.0213	4.0038
0	138	5320.0079	1.4850	5320.0124	2.3308	5320.0162	3.0451	5320.0137	2.5752
	120	5320.0086	1.6165	5320.0124	2.3308	5320.0162	3.0451	5320.014	2.6316
	102	5320.0089	1.6729	5320.0113	2.1241	5320.016	3.0075	5320.0147	2.7632
-10	138	5320.0132	2.4812	5320.0143	2.6880	5320.0185	3.4774	5320.0193	3.6278
	120	5320.0129	2.4248	5320.0148	2.7820	5320.0182	3.4211	5320.0202	3.7970
	102	5320.0139	2.6128	5320.0134	2.5188	5320.0184	3.4586	5320.0193	3.6278
-20	138	5320.0044	0.8271	5320.0039	0.7331	5320.0049	0.9211	5320.0008	0.1504
	120	5320.0028	0.5263	5320.0041	0.7707	5320.0054	1.0150	5320.001	0.1880
	102	5320.003	0.5639	5320.0044	0.8271	5320.0038	0.7143	5320.0009	0.1692
-30	138	5319.9962	-0.7143	5319.9936	-1.2030	5319.9891	-2.0489	5319.9925	-1.4098
	120	5319.9957	-0.8083	5319.9939	-1.1466	5319.9889	-2.0865	5319.993	-1.3158
	102	5319.9955	-0.8459	5319.9943	-1.0714	5319.9894	-1.9925	5319.9924	-1.4286

4.7 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.7.1 TEST INSTRUMENTS

Test date : July 07, 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

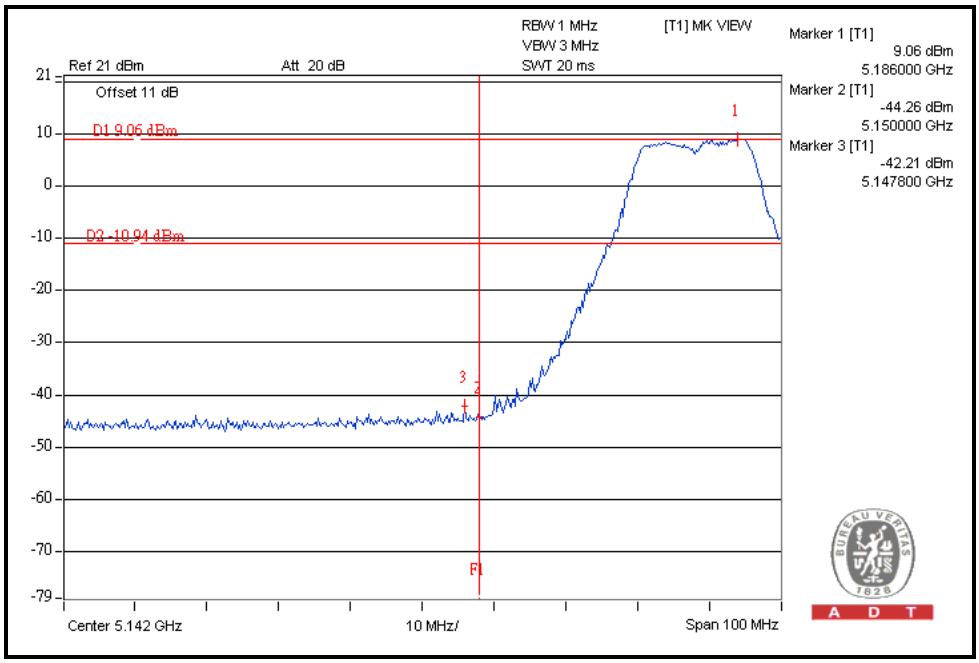
The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

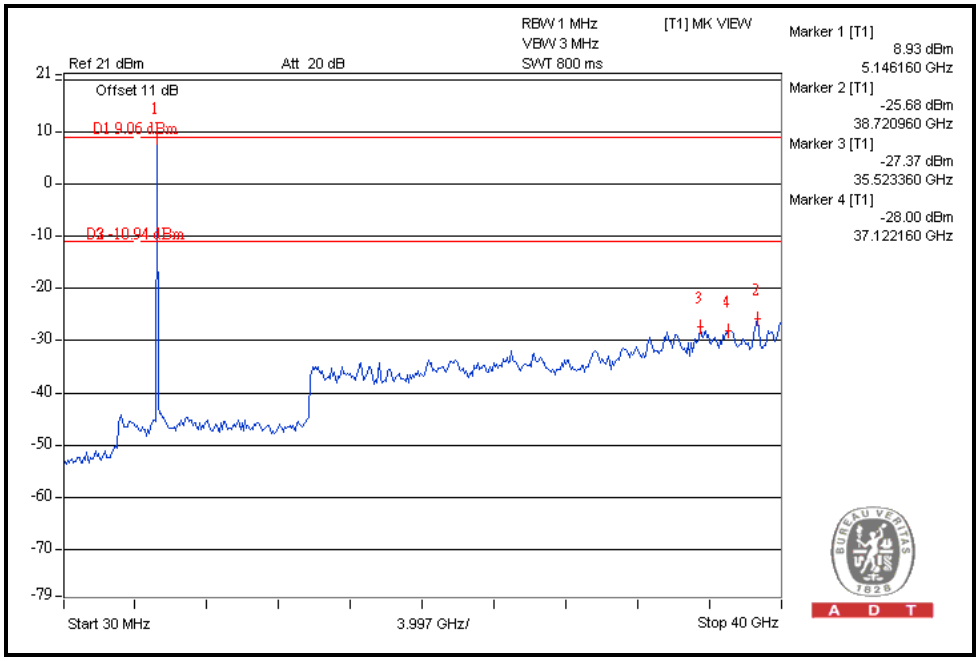
4.7.4 TEST RESULTS

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

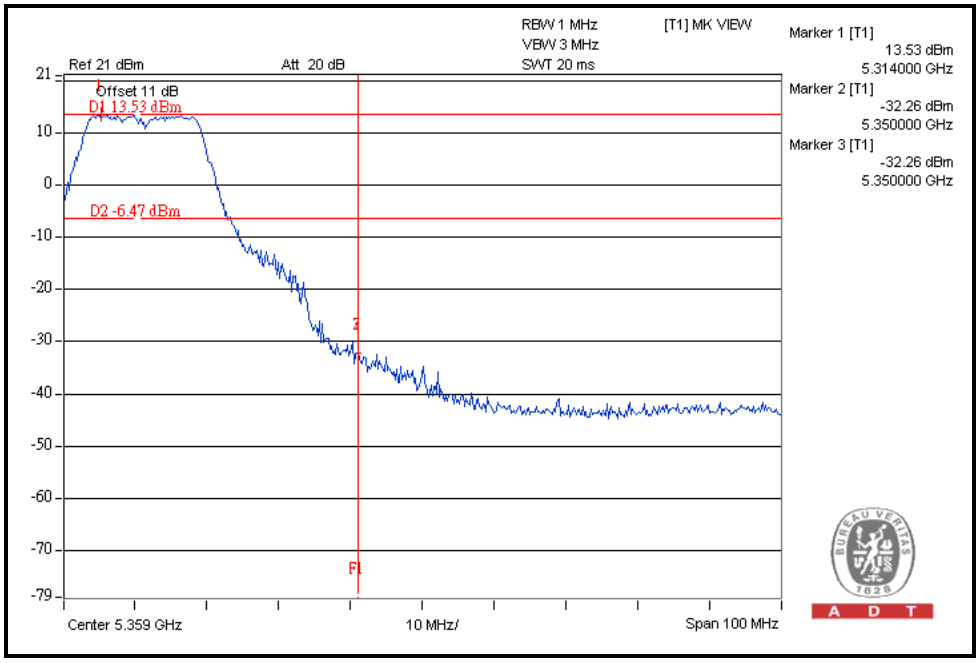
802.11a OFDM MODULATION

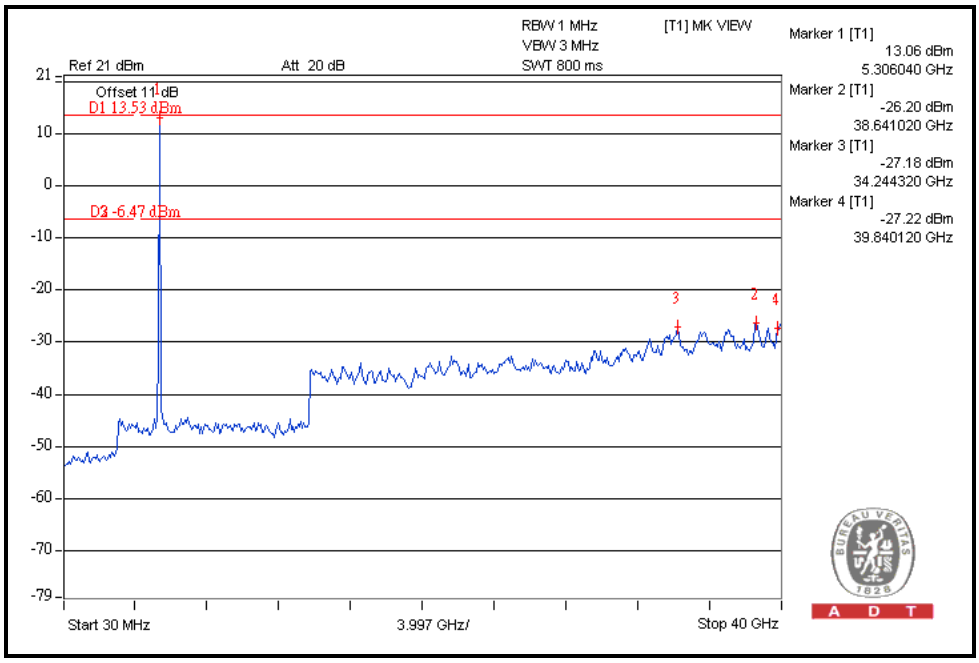
For Chain(0) : CH36



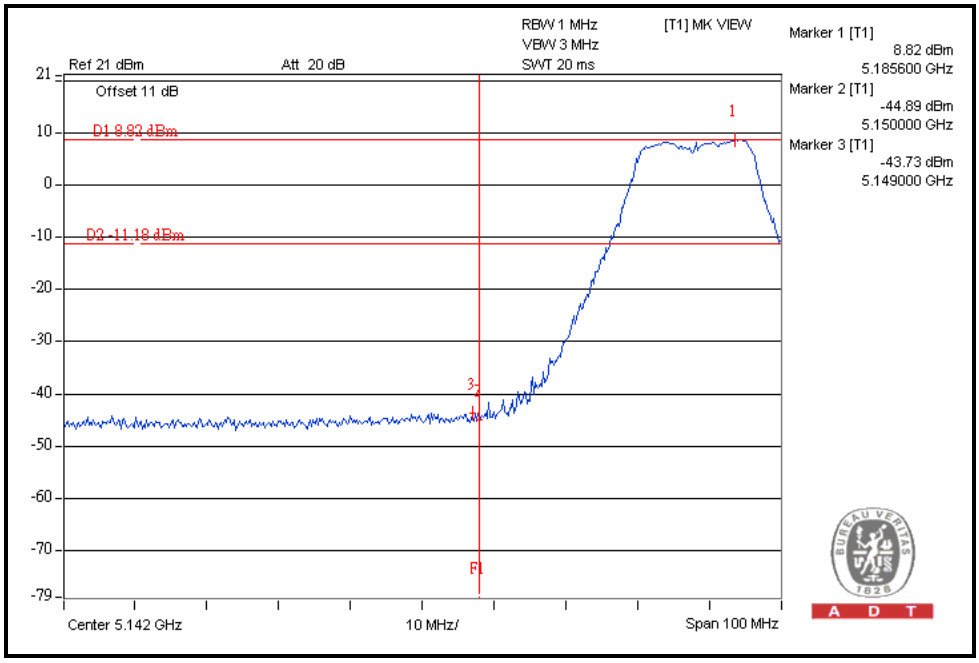


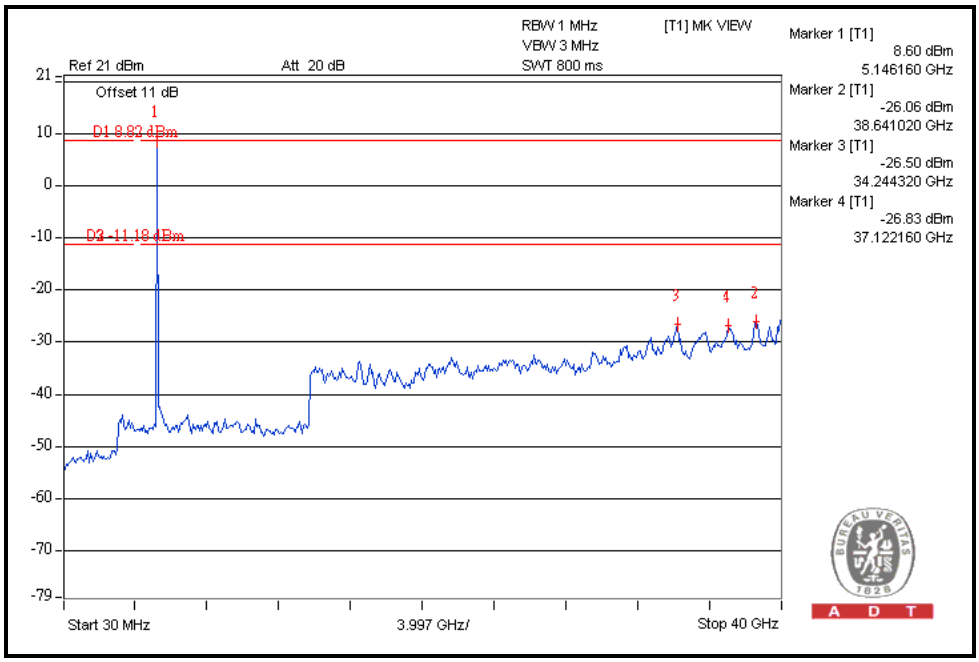
For Chain(0) : CH64



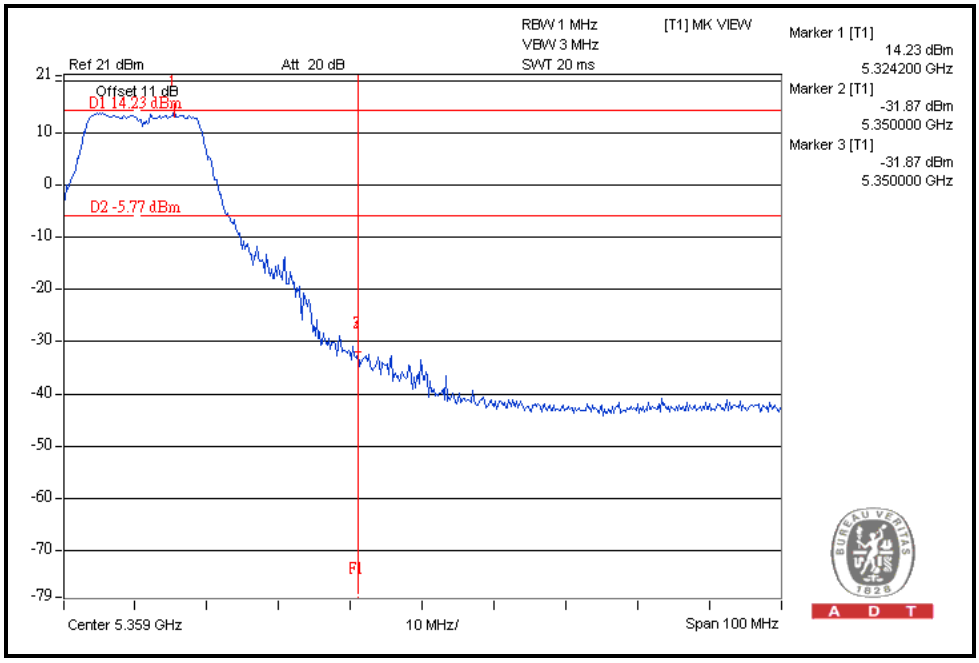


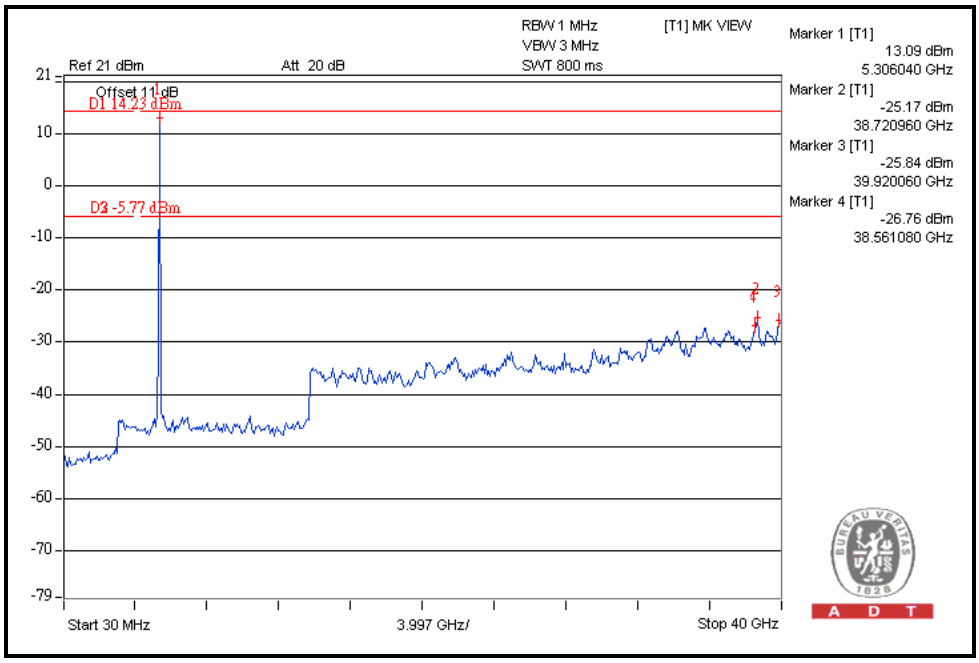
For Chain(1) : CH36





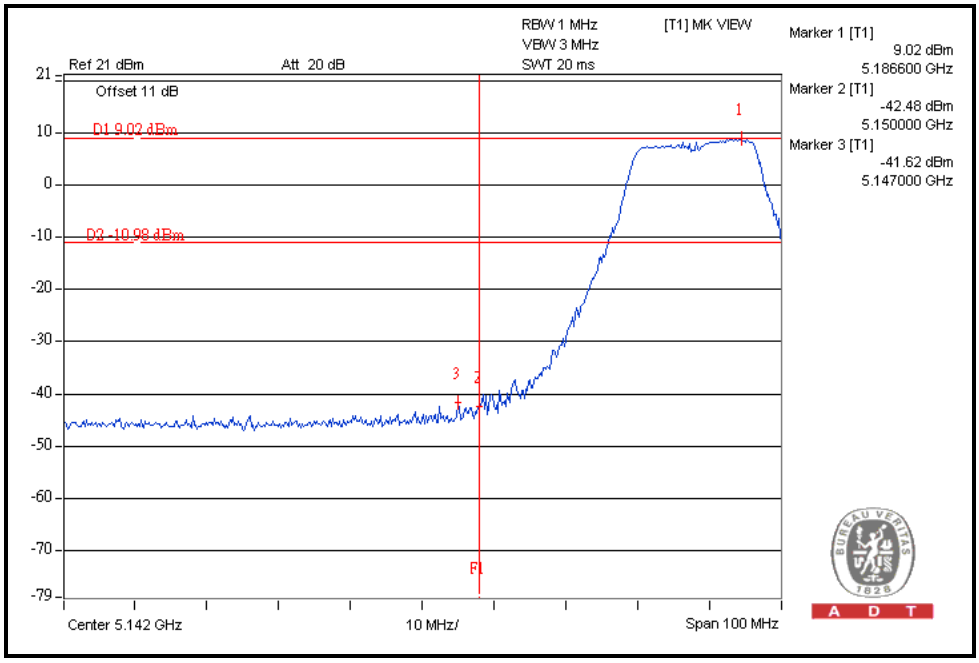
For Chain(1) : CH64

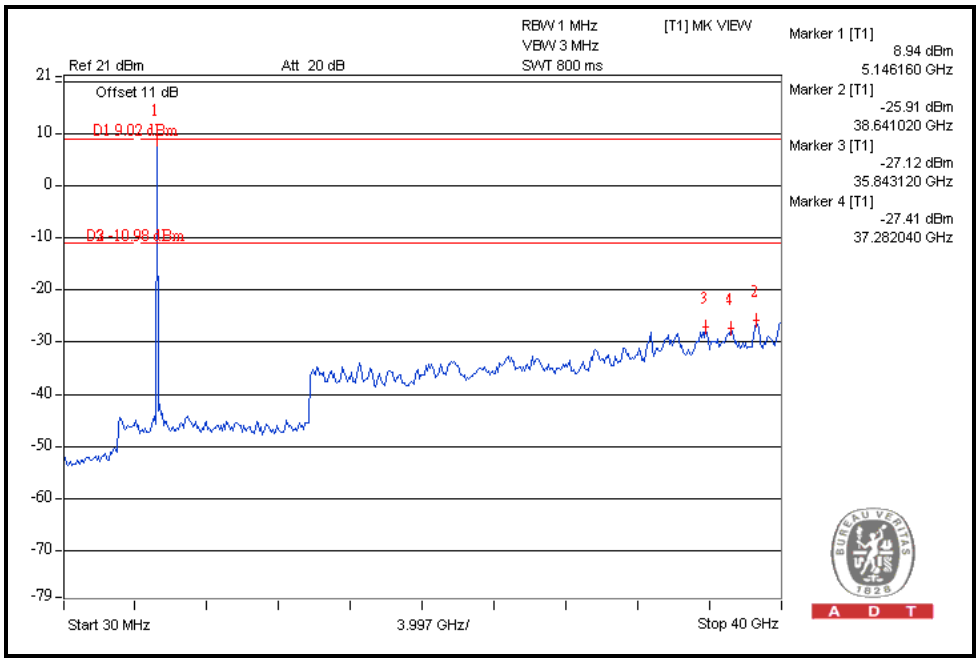




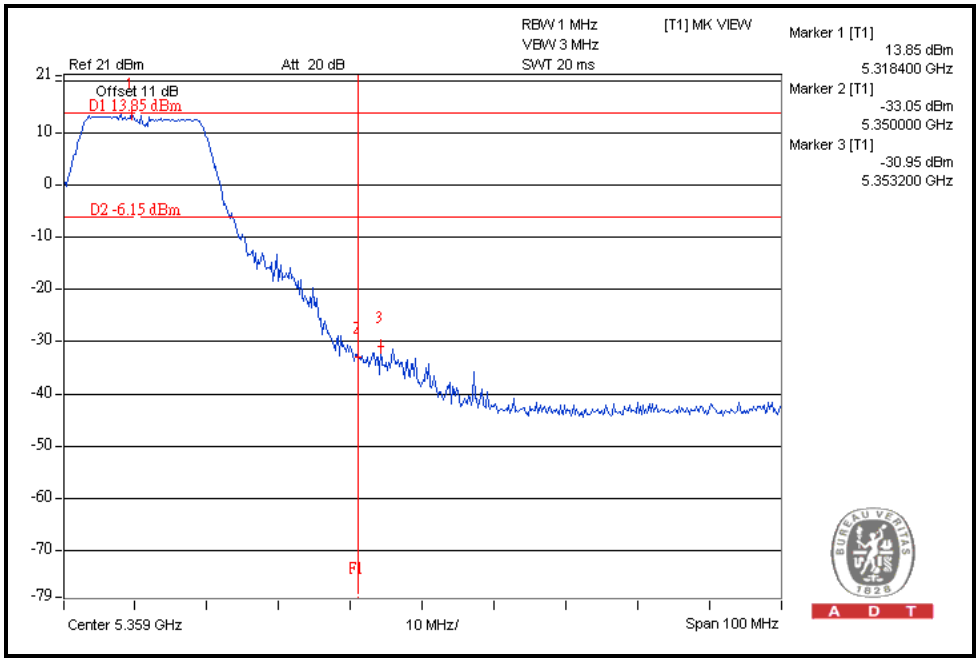
802.11n (20MHz) OFDM MODULATION:

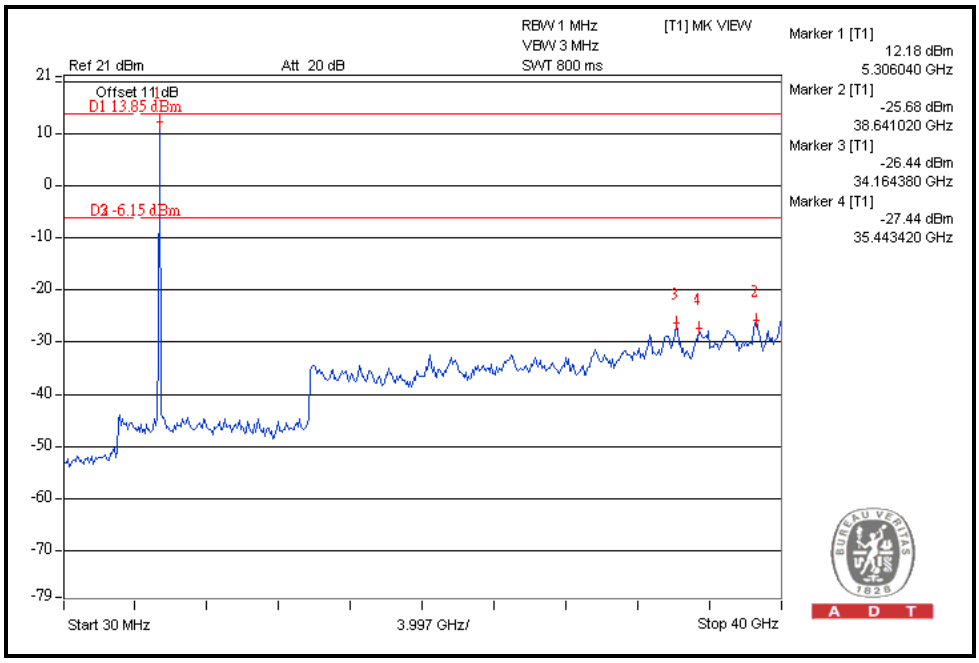
For Chain(0) : CH36



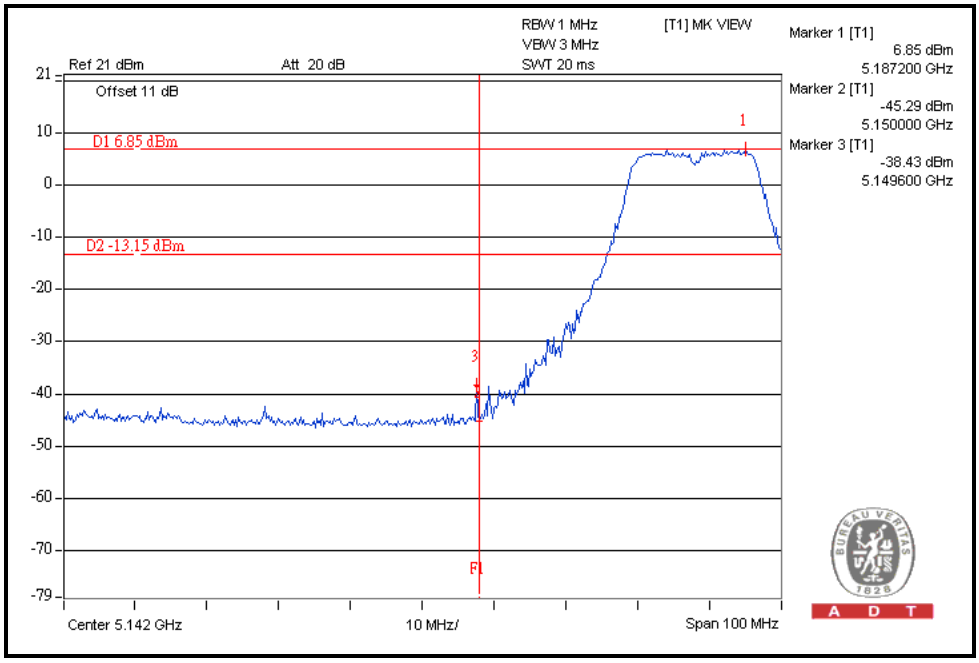


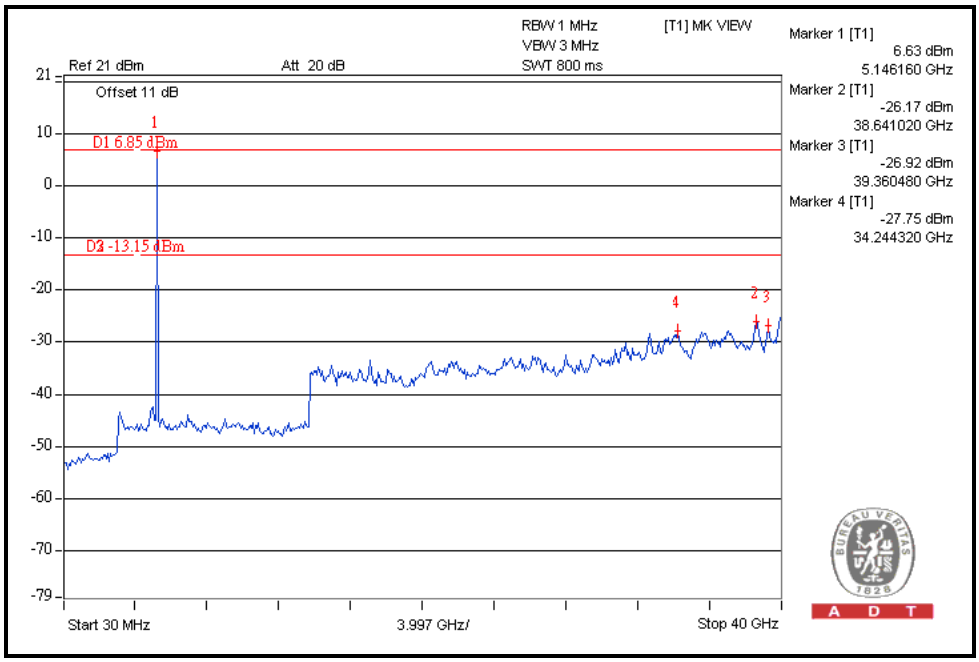
For Chain(0) : CH64



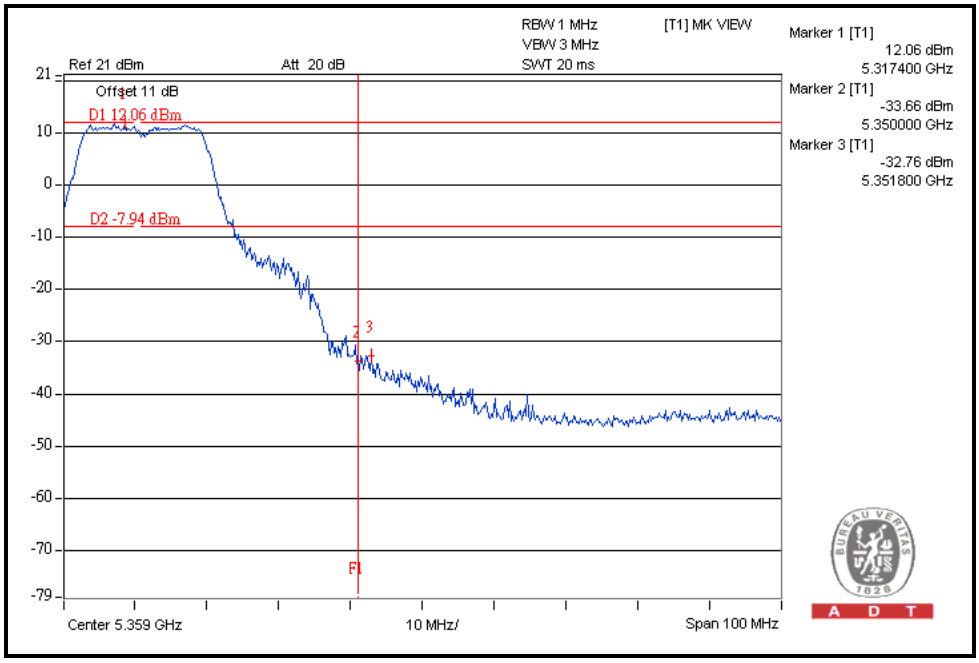


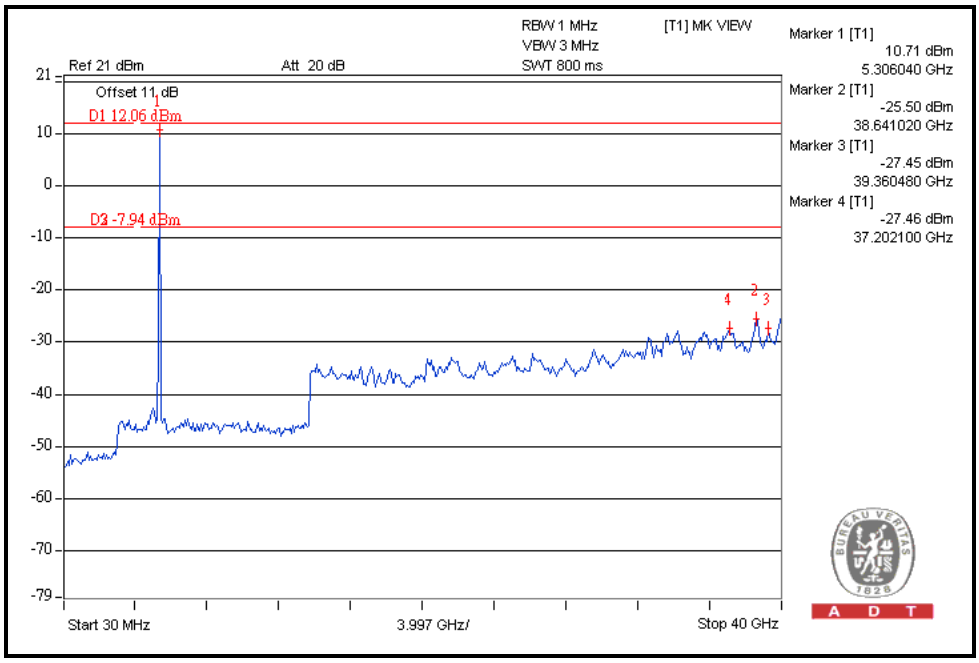
For Chain(1) : CH36





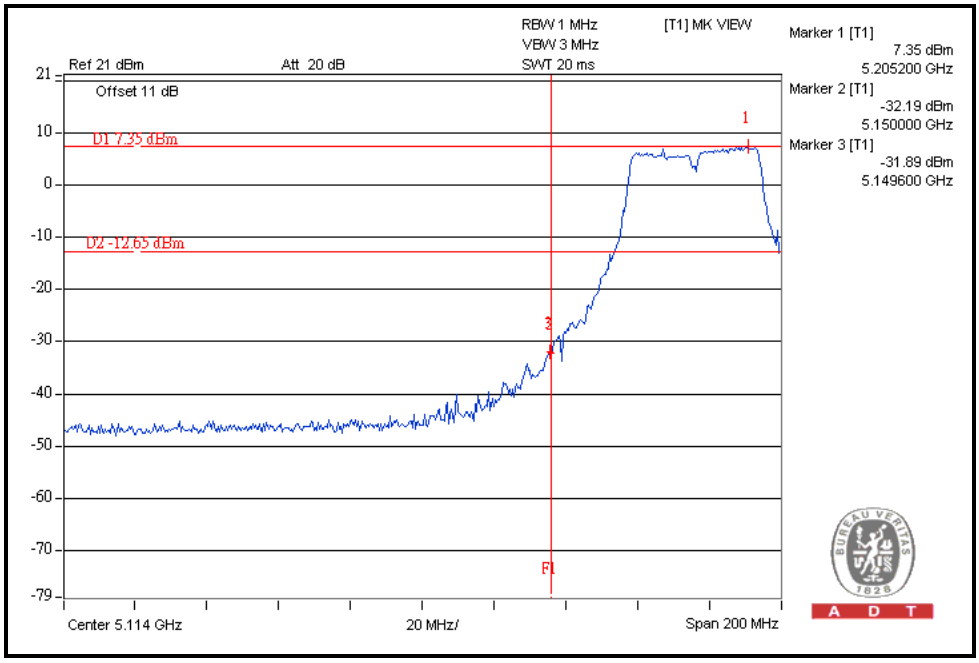
For Chain(1) : CH64

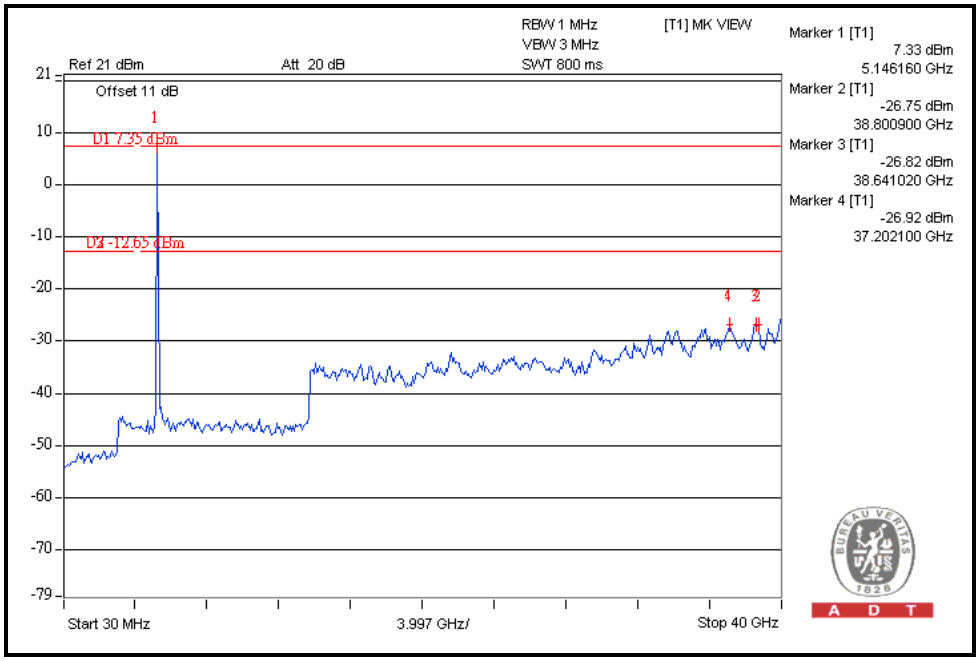




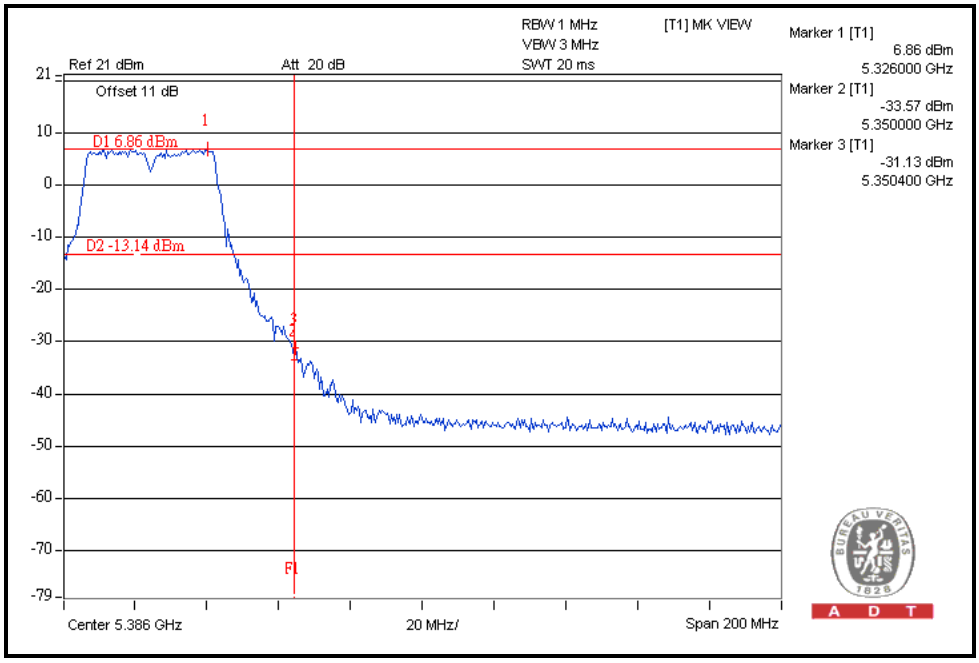
802.11n (40MHz) OFDM MODULATION:

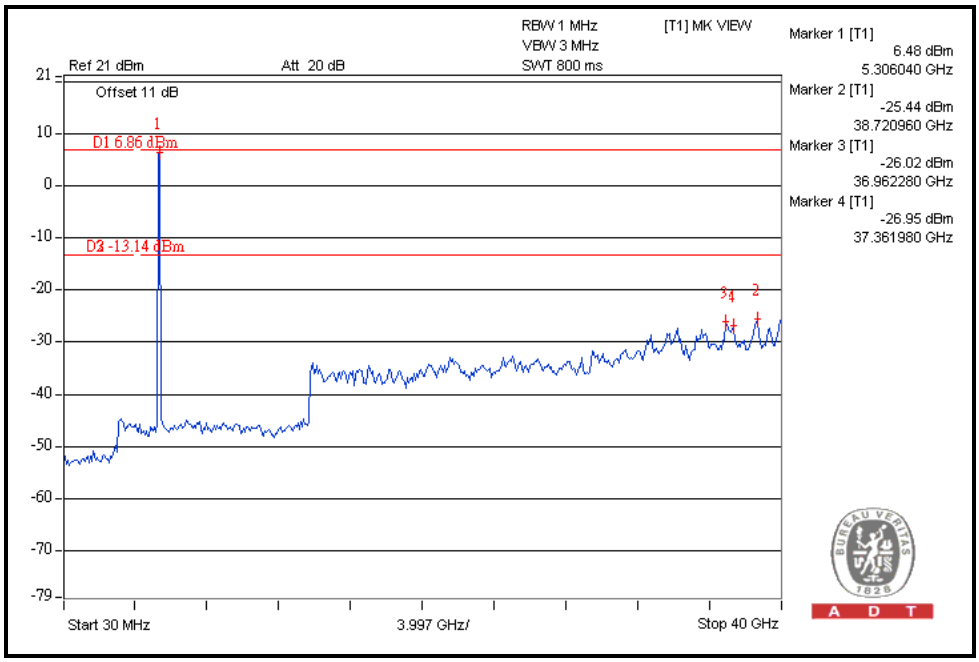
For Chain(0) : CH38



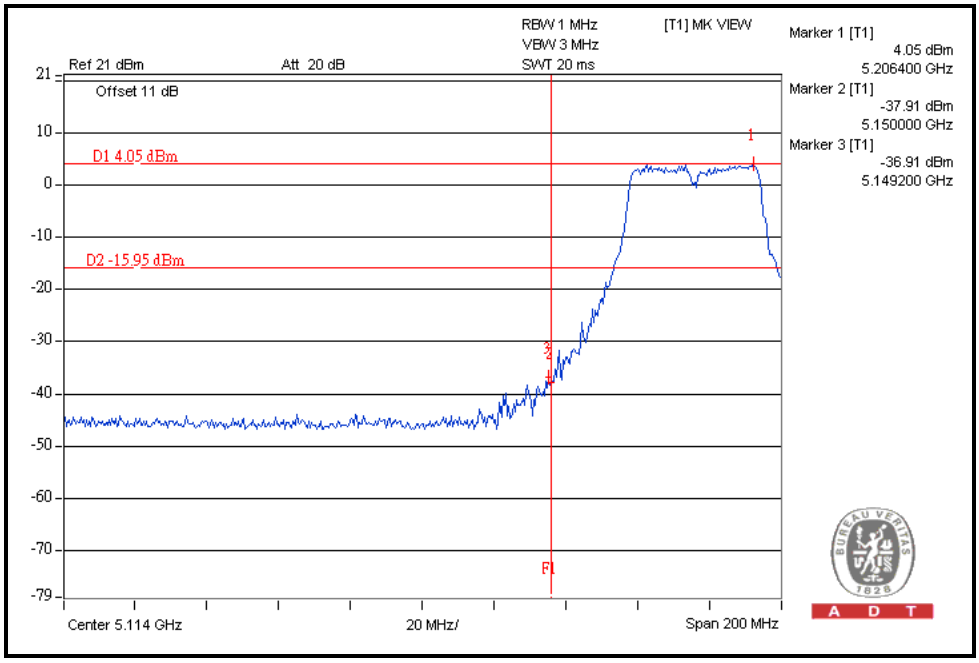


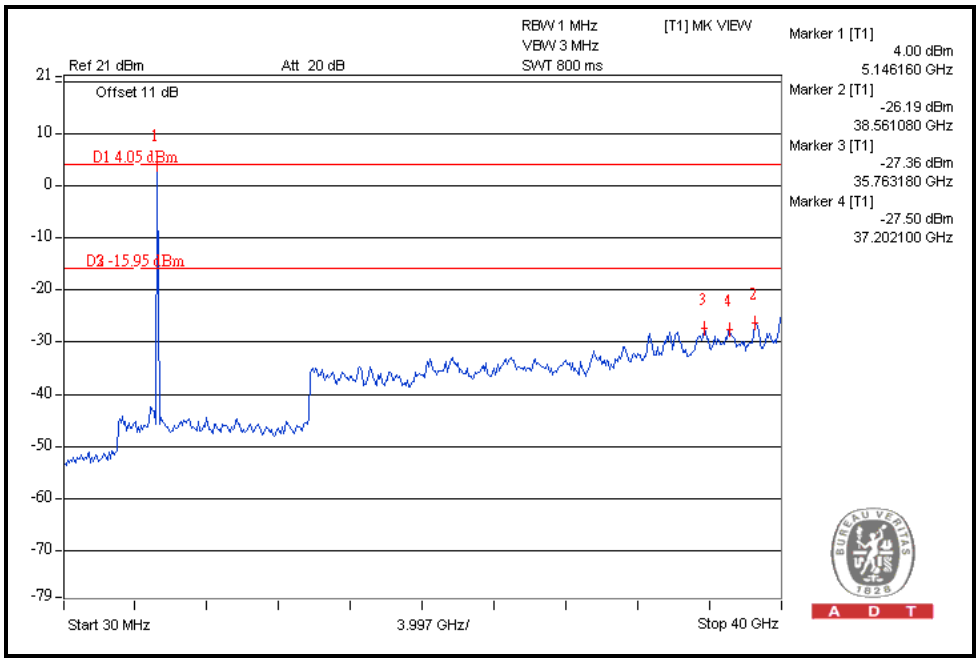
For Chain(0) : CH62



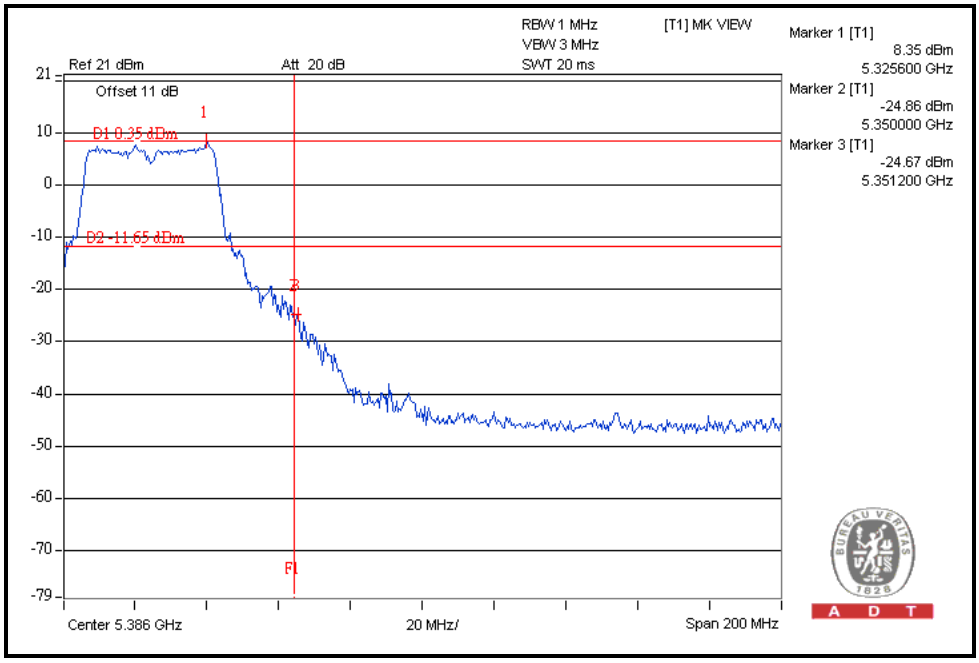


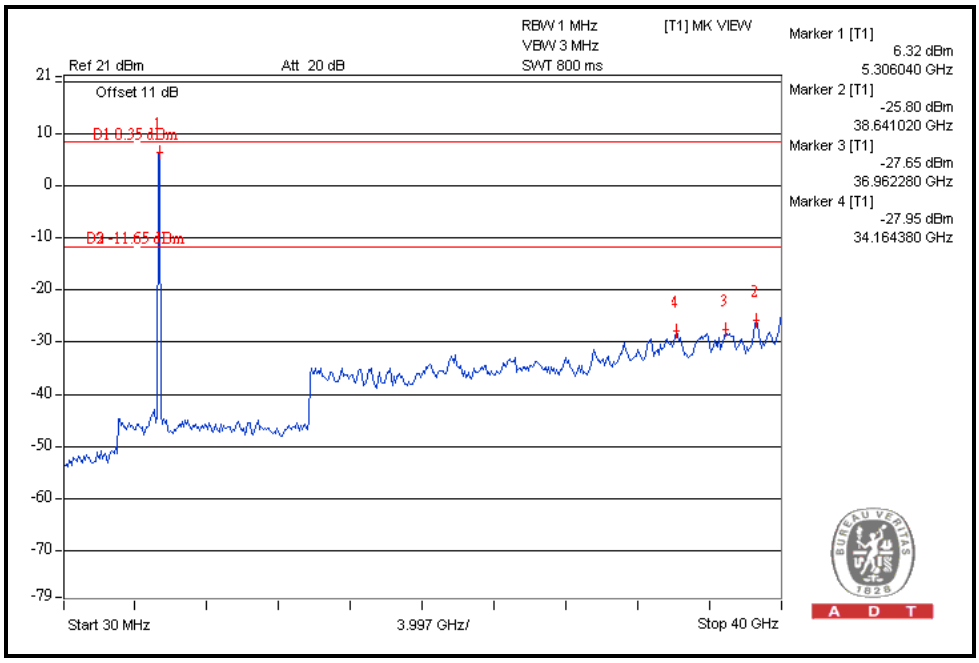
For Chain(1) : CH38





For Chain(1) : CH62



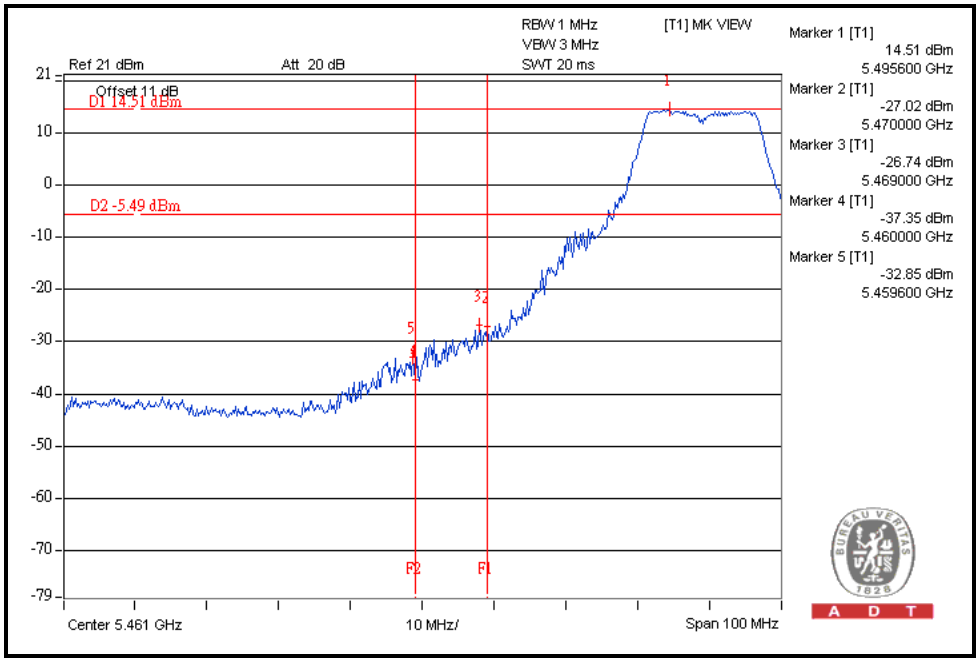


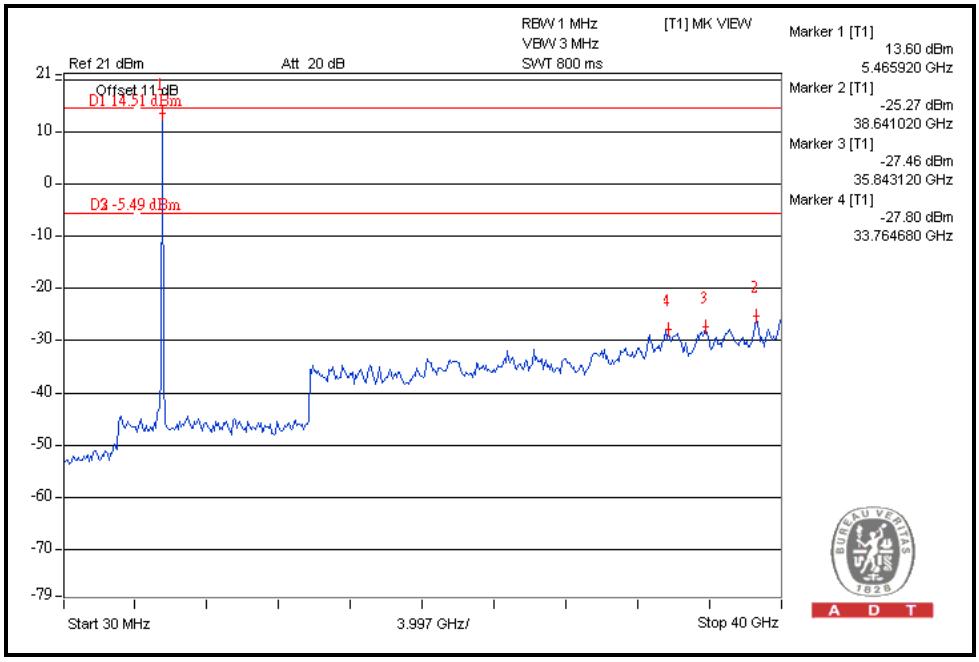
For 5.47 to 5.725GHz band:

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

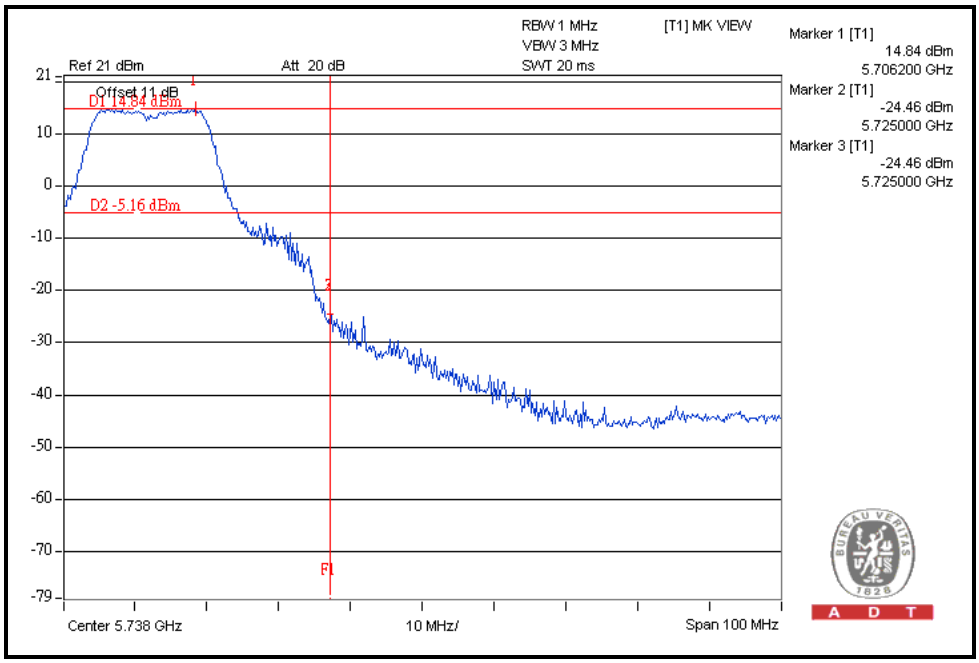
802.11a OFDM MODULATION

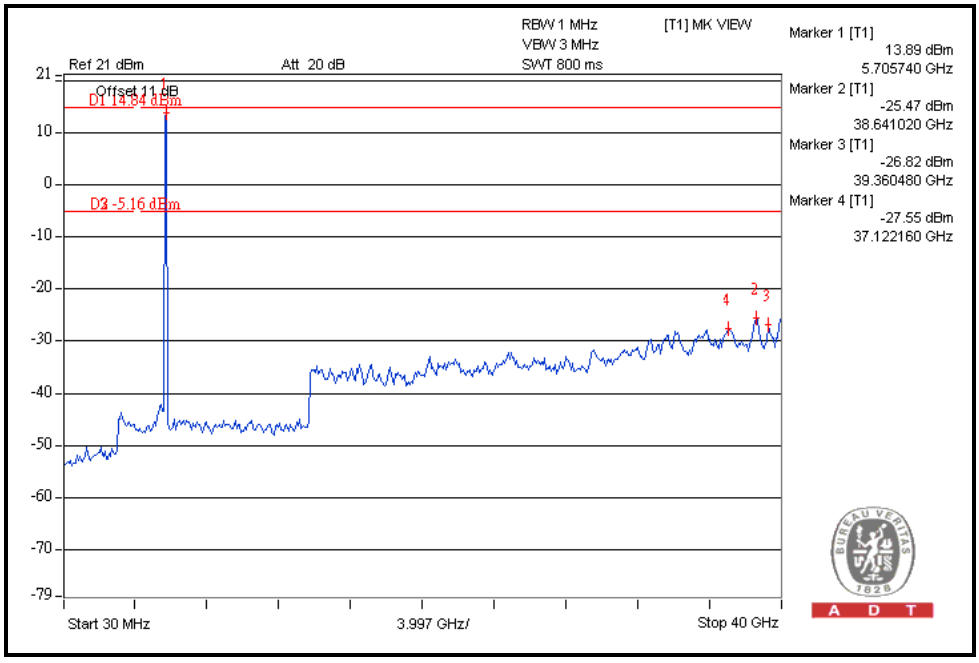
For Chain(0) : CH100



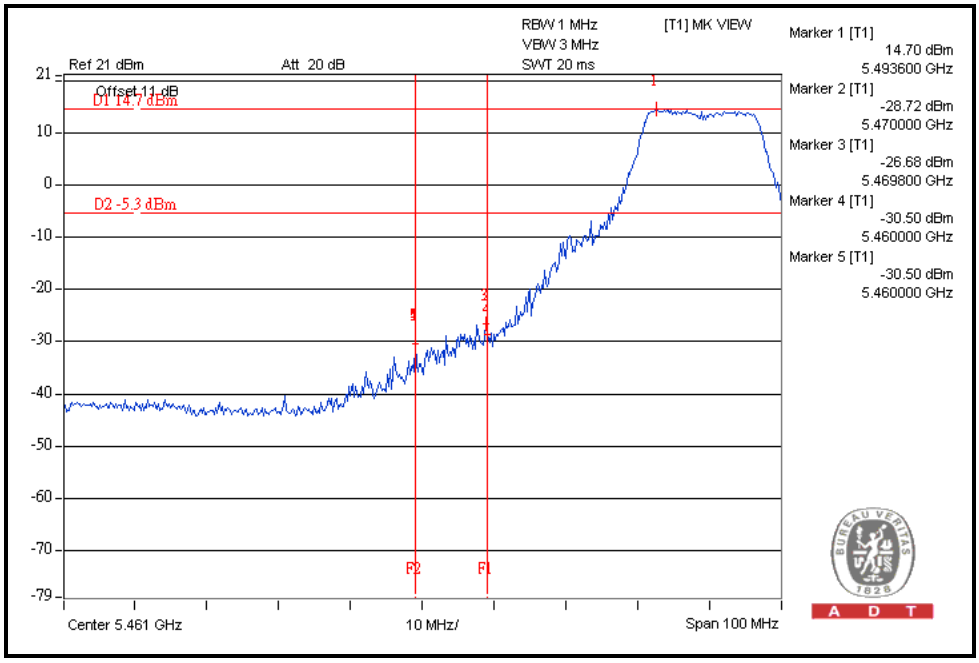


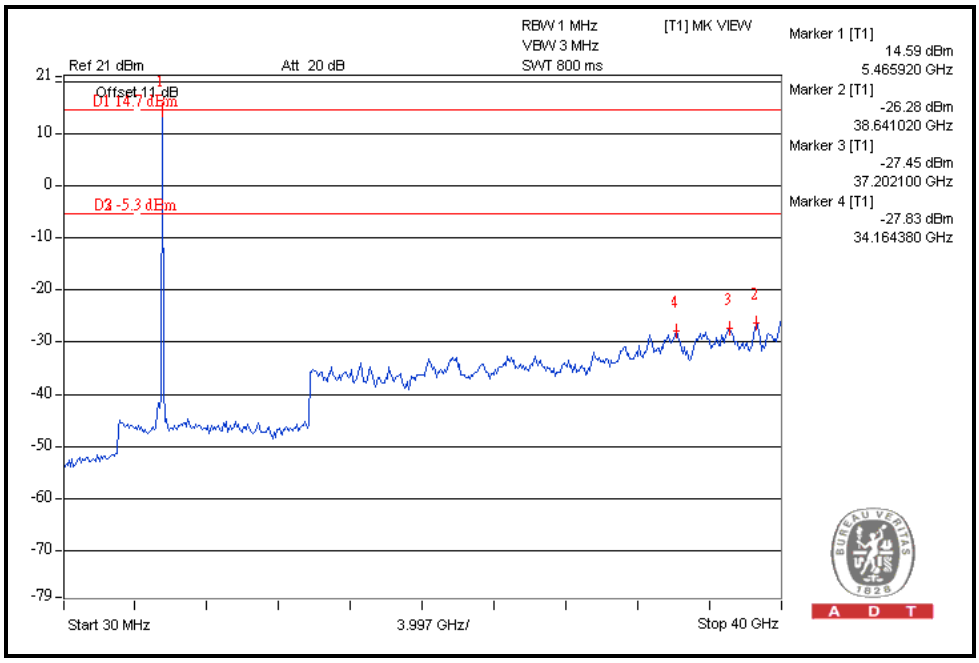
For Chain(0) : CH140



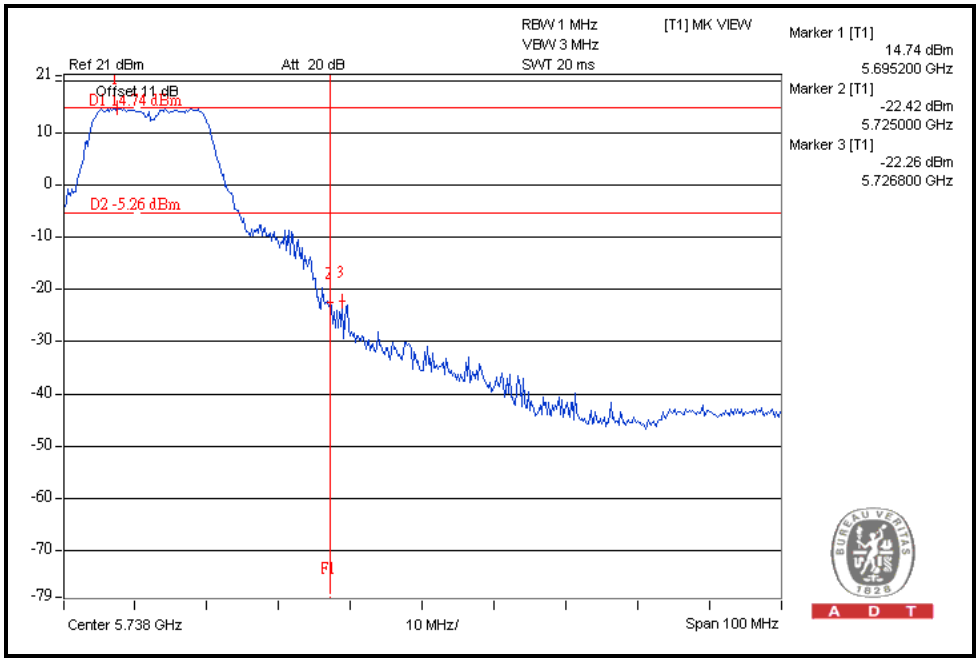


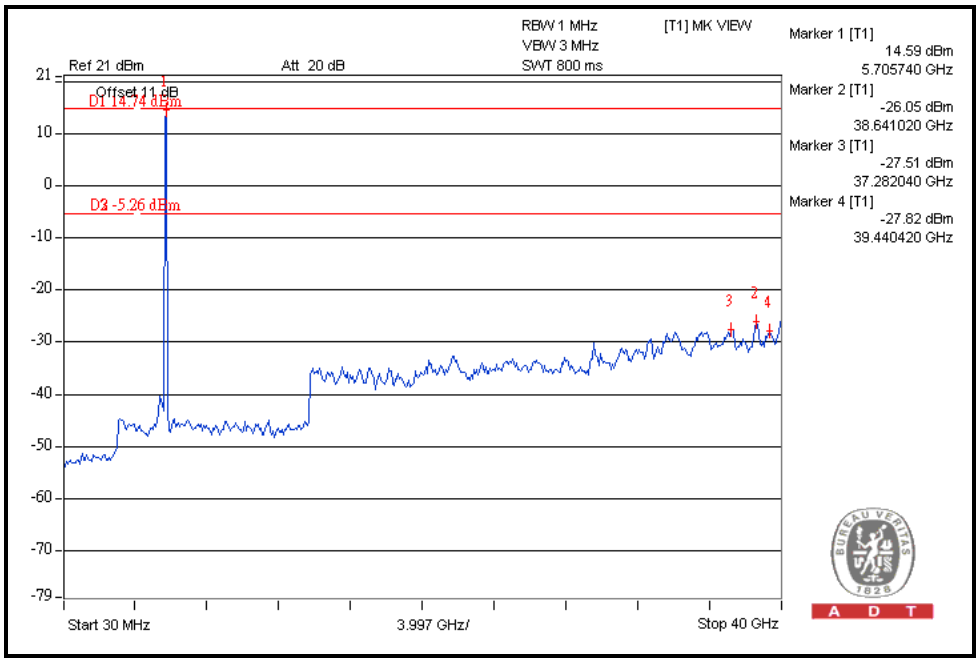
For Chain(1) : CH100





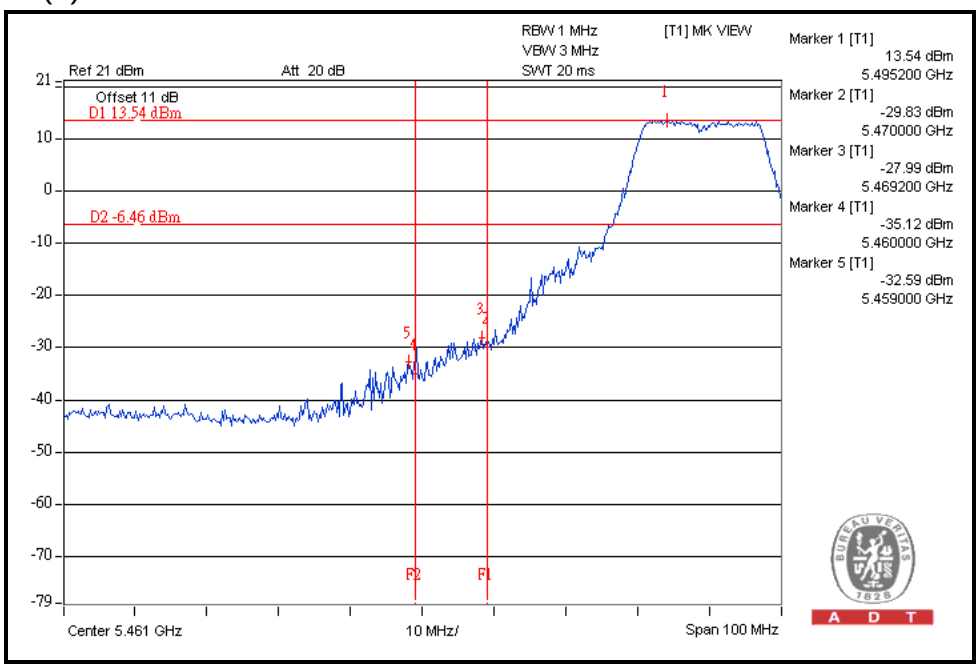
For Chain(1) : CH140

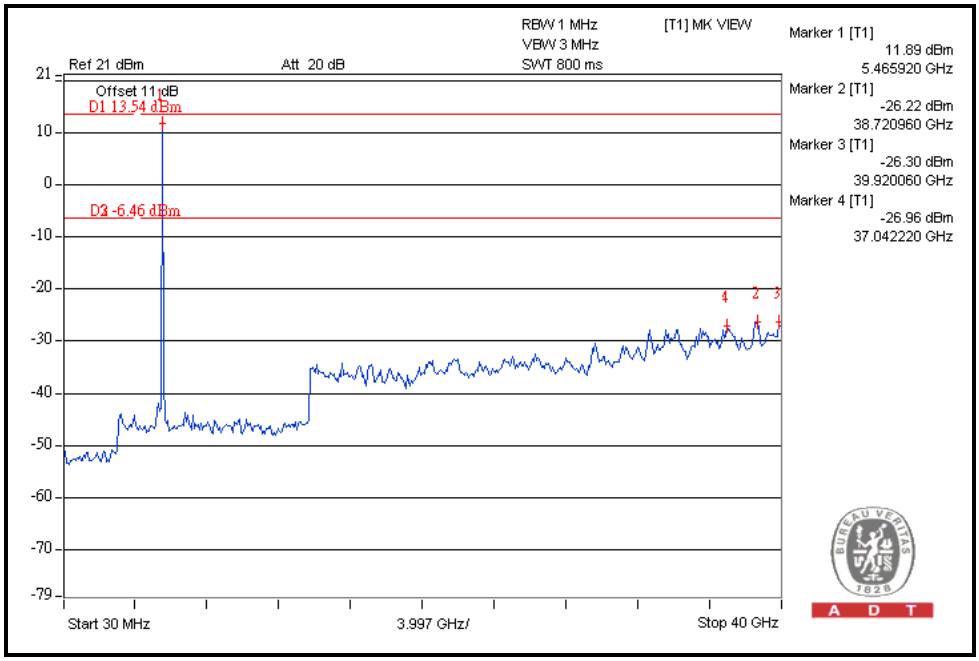




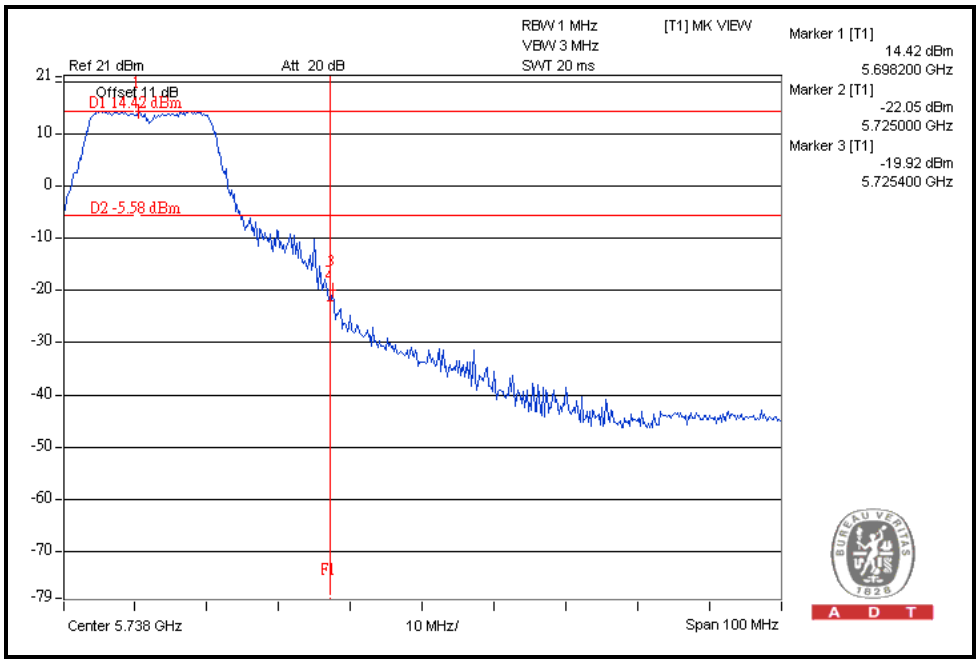
802.11n (20MHz) OFDM MODULATION:

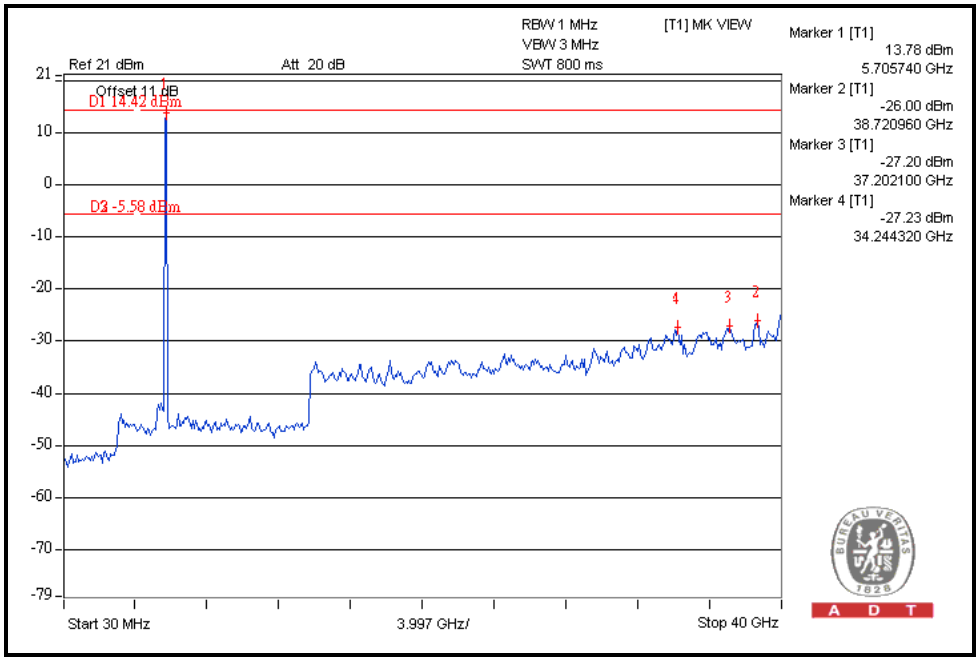
For Chain(0) : CH100



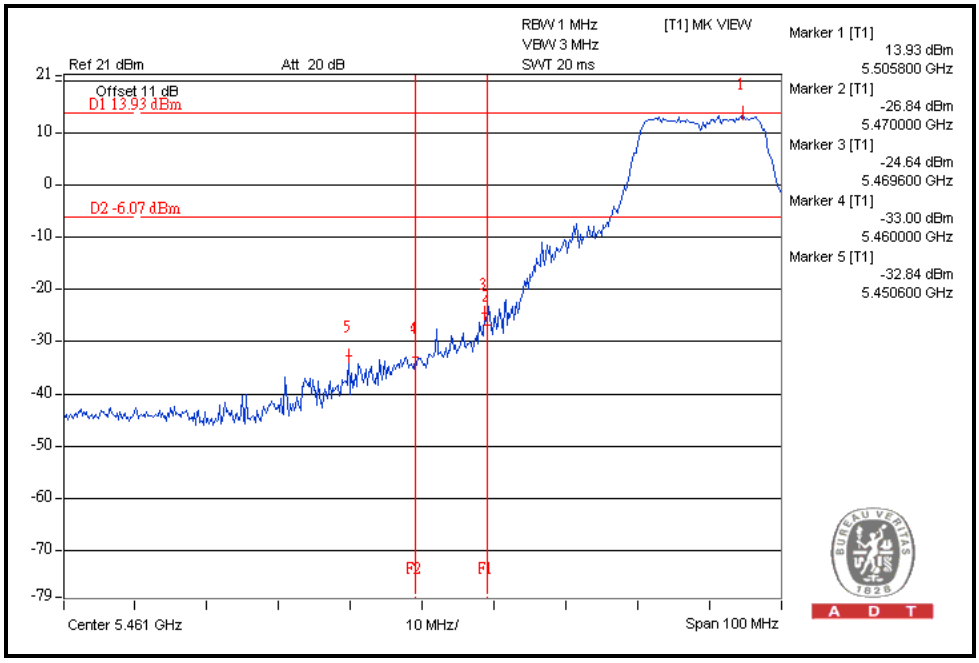


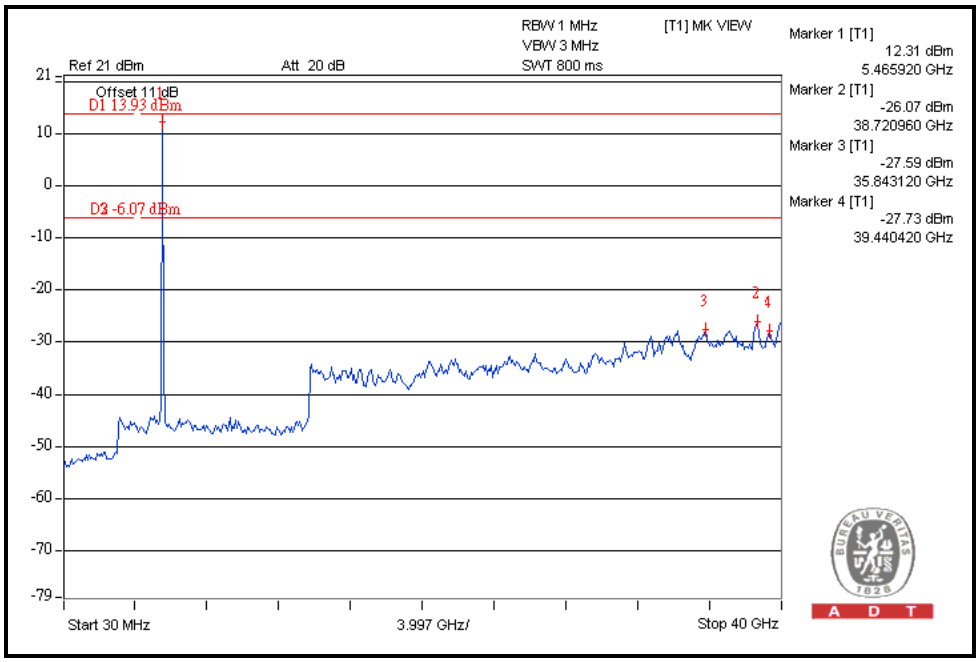
For Chain(0) : CH140



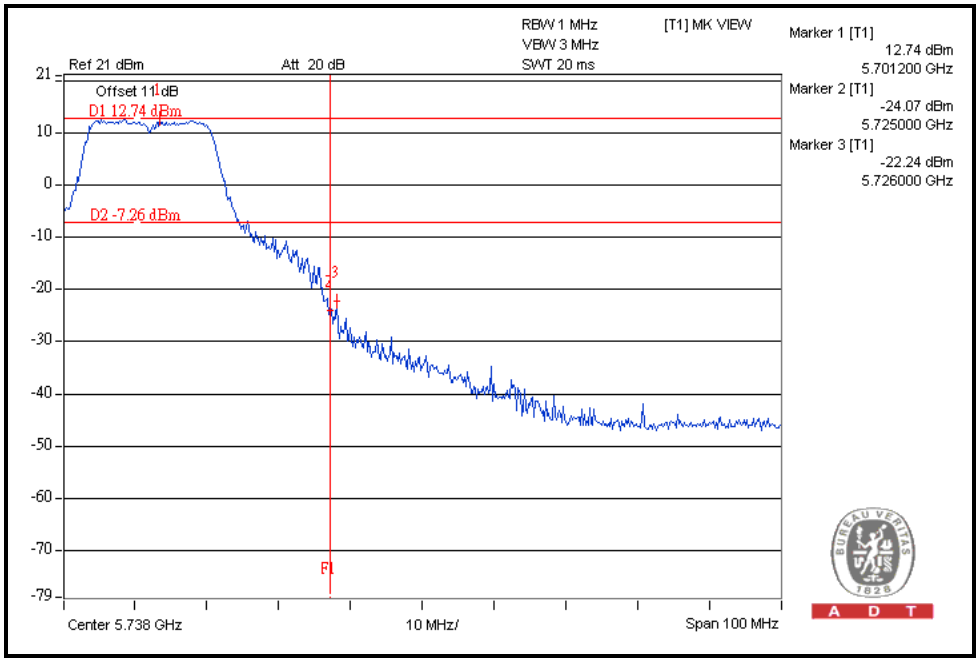


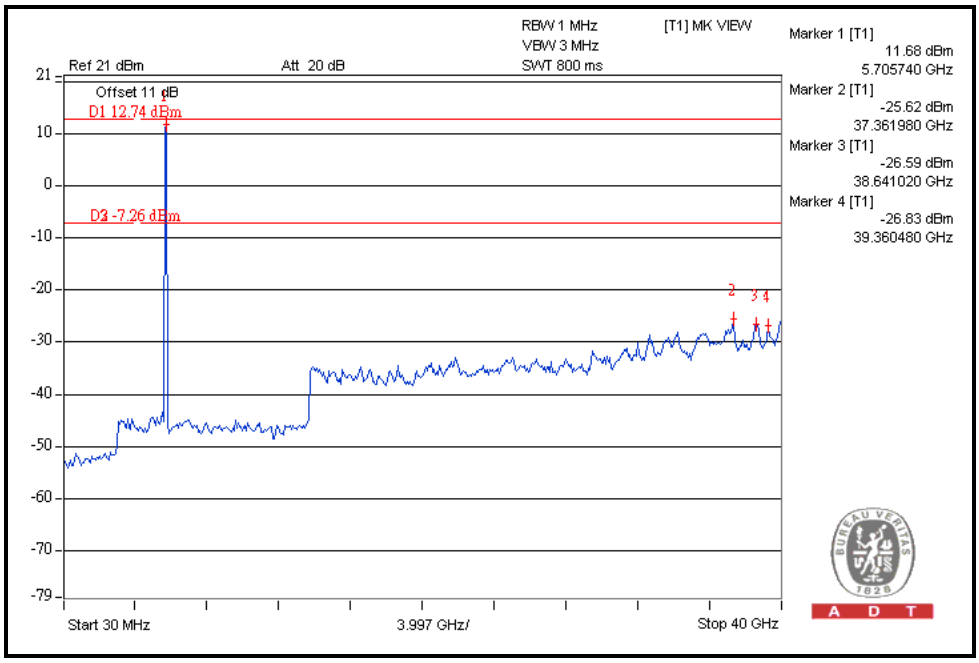
For Chain(1) : CH100





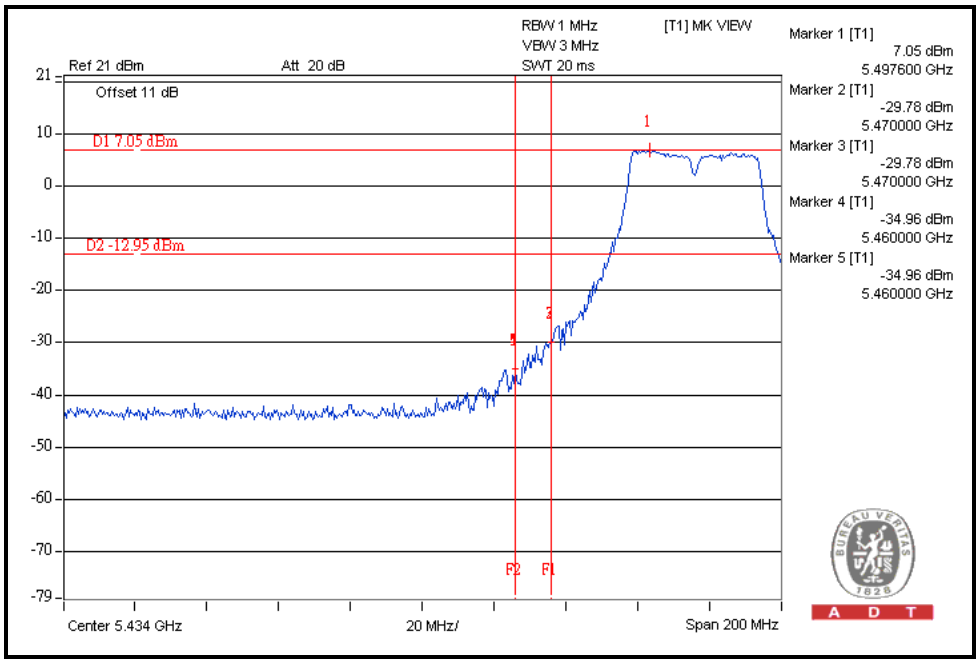
For Chain(1) : CH140

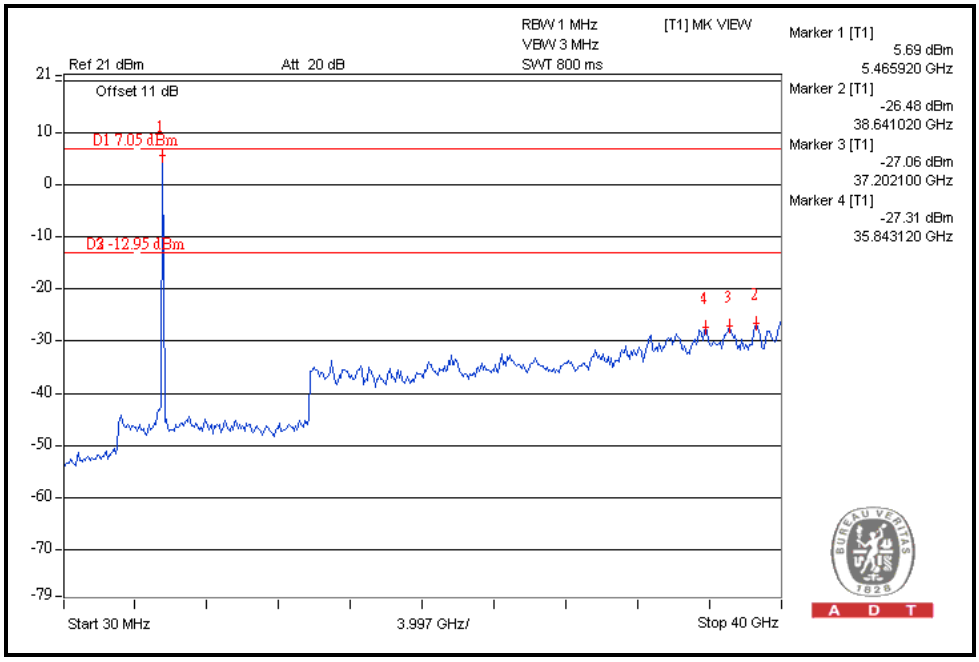




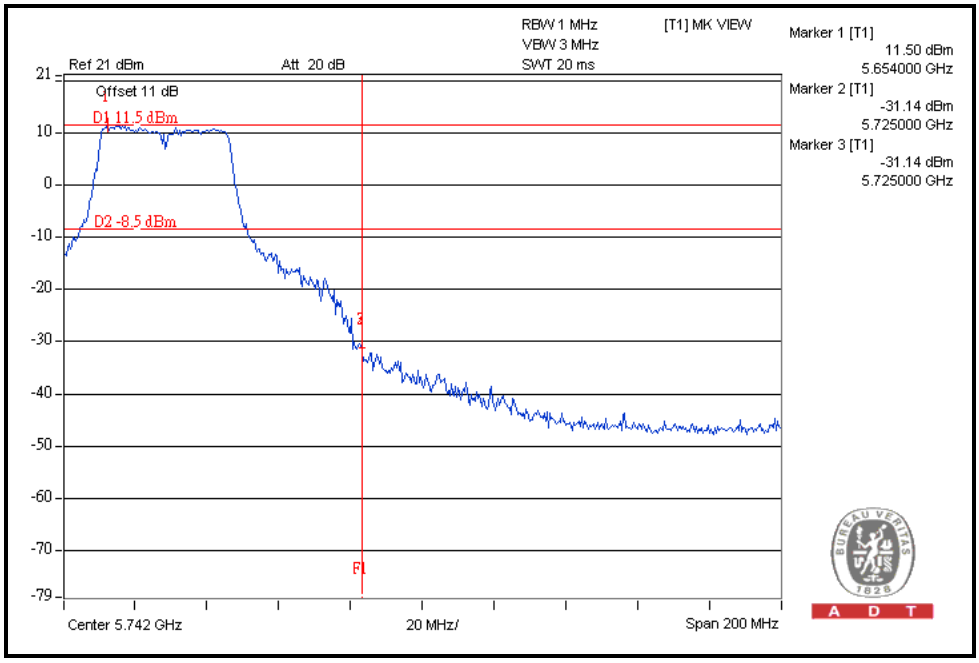
802.11n (40MHz) OFDM MODULATION:

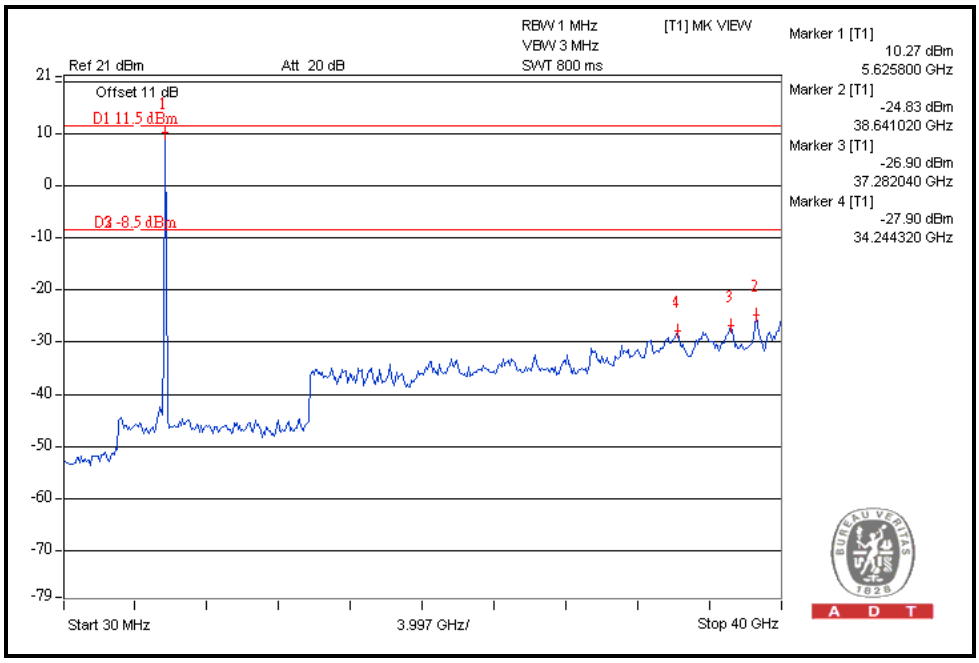
For Chain(0) : CH102



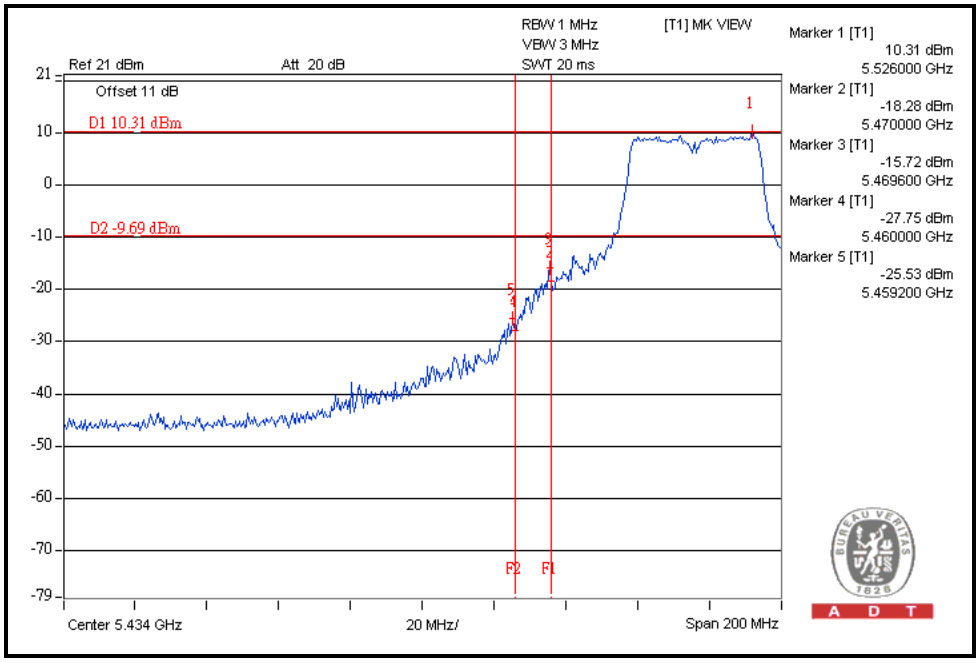


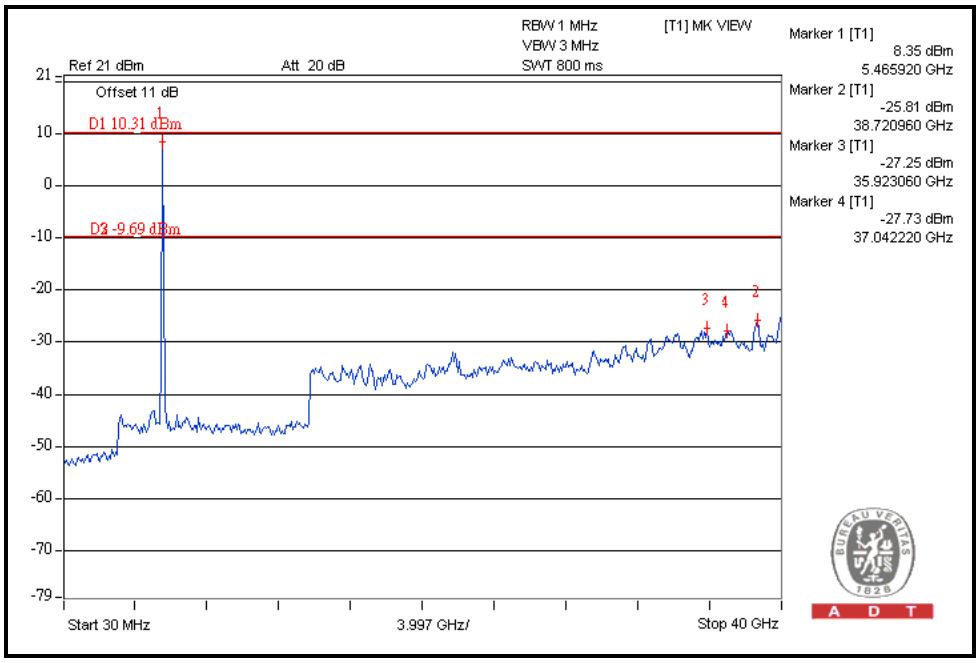
For Chain(0) : CH134



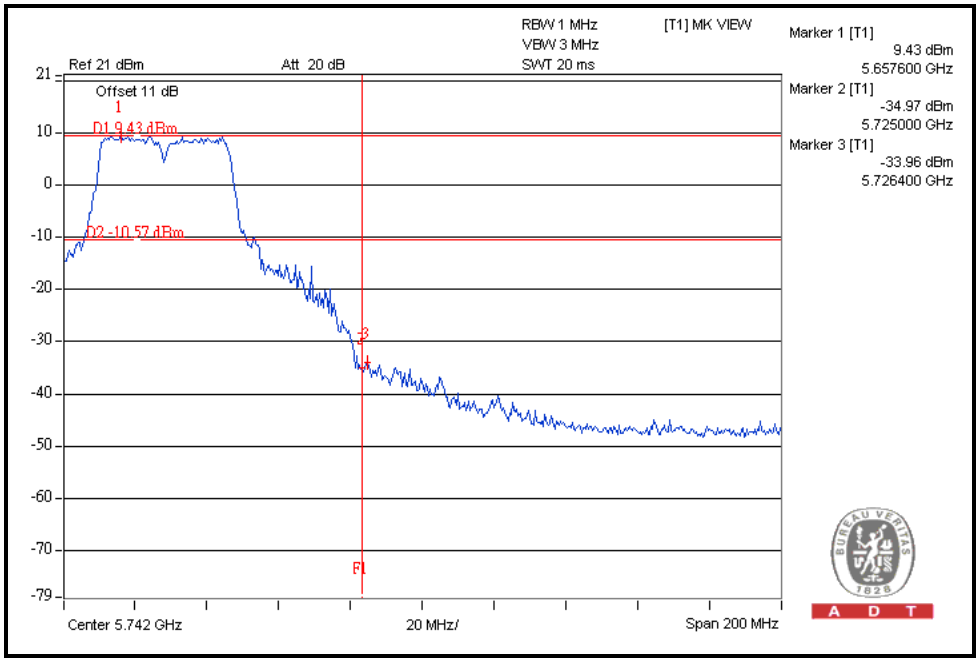


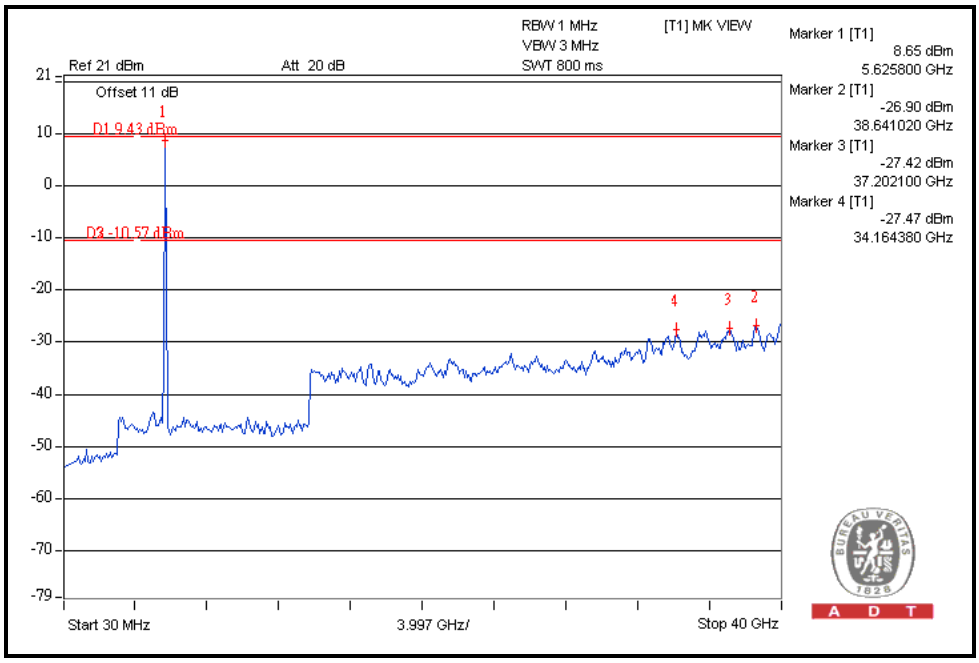
For Chain(1) : CH102





For Chain(1) : CH134





5. INFORMATION ON THE TESTING LABORATORIES

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

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

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

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

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

Email: service.adt@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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