FCC TEST REPORT (15.407)

REPORT NO.:	RF980210H07-1
MODEL NO.:	WU600-TS
RECEIVED:	Feb. 10, 2009
TESTED:	Feb. 21 to Apr. 02, 2009
ISSUED:	Apr. 03, 2009

APPLICANT:	SONY Corporation
ADDRESS:	1-7-1 Konan, Minato-ku, Tokyo 108-0075, Japan

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
TEST LOCATION:	No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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1. CERTIFICATION

PRODUCT:	802.11a/b/g/n Wireless LAN Module
BRAND NAME:	SONY Corporation
MODEL NO.:	WU600-TS
TEST SAMPLE:	ENGINEERING SAMPLE
TESTED:	Feb. 21 to Apr. 02, 2009
APPLICANT:	SONY Corporation
STANDARDS:	FCC Part 15, Subpart E (Section 15.407), ANSI C63.4-2003

The above equipment (Model: WU600-TS) 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 : Sunny Wen , **DATE:** *Apr. 03, 2009*
(Sunny Wen, Specialist)

TECHNICAL ACCEPTANCE : , **DATE:** *Apr. 03, 2009*
Responsible for RF
(Hank Chung, Deputy Manager)

APPROVED BY : , **DATE:** *Apr. 03, 2009*
(May Chen, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:
For 802.11a

APPLIED STANDARD: FCC Part 15, Subpart E (Section 15.407)			
Standard Section	**Test Type**	**Result**	**Remark**
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -5.42dB at 0.166MHz
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 -0.50dB at 5725.00MHz & 5470.00MHz
15.407(a/1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.

NOTE:

1. The EUT was operating in 2400 ~ 2483.5MHz, 5.15~5.35GHz, 5.47~5.725GHz and 5.725~5.85GHz frequencies band. This report was recorded the RF parameters including 5.15~5.35GHz and 5.47~5.725GHz. For the 2400 ~ 2483.5MHz and 5.725~5.850GHz RF parameters was recorded in another test report.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

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

Measurement	Value
Conducted emissions	2.44 dB
Radiated emissions (30MHz-1GHz)	3.94 dB
Radiated emissions (1GHz -18GHz)	2.49 dB
Radiated emissions (18GHz -40GHz)	2.70 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	802.11a/b/g/n Wireless LAN Module
MODEL NO.	WU600-TS
FCC ID	AK8WU600-TS
POWER SUPPLY	DC 5V from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11 / 5.5 / 2 / 1Mbps 802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps 802.11a: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps HT20 MCS0~7 (800ns GI): 65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5Mbps HT20 MCS8~15 (800ns GI): 130 / 117 / 104 / 78 / 52 / 39 / 26 / 13Mbps
FREQUENCY RANGE	**For 15.407** 5.18 ~ 5.32GHz, 5.50 ~ 5.70GHz
	For 15.247 802.11b & 802.11g: 2412 ~ 2462MHz 802.11a: 5.745 ~ 5.825GHz
NUMBER OF CHANNEL	**For 15.407** 19 for 802.11a, draft 802.11n (20MHz)
	For 15.247(2.4GHz) 11 for 802.11b, 802.11g, draft 802.11n (20MHz) **For 15.247(5GHz)** 5 for 802.11a, draft 802.11n (20MHz)
MAXIMUM OUTPUT POWER	**For 15.407** 802.11a: 23.659mW draft 802.11n (20MHz): 41.280mW **For 15.247(2.4GHz)** 802.11b: 82.224mW 802.11g: 133.352mW draft 802.11n (20MHz): 393.573mW **For 15.247(5GHz)** 802.11a: 141.254mW draft 802.11n (20MHz): 306.238mW

ANTENNA TYPE	Please see note 1
DATA CABLE	NA
I/O PORT	NA
ASSOCIATED DEVICES	NA

NOTE:

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

No.	Antenna Type	Antenna Connector	For 2.4GHz Gain (dBi)	For 5GHz Gain (dBi)	Cable Loss (dB)	Cable Length (cm)
1	PCB	Hirose U.FL	2.7	3	0	24
2	PCB	Hirose U.FL	1.5	1.5	0	39

2. The EUT incorporates a MIMO function with draft 802.11n. Physically, the EUT provides two completed transmits and two completed receivers.
3. The EUT is 2 * 2 spatial MIMO (2Tx & 2Rx) without beam forming function. The antenna configurations are two transmitter antennas and two receiver antennas, as there are 2 PCB antennas. Spatial multiplexing modes for simultaneous transmission using 2 antennas, and for simultaneous receiver using 2 antennas. The 11a and 11bg legacy mode is limited to single transmitter only.
4. When the EUT operating in draft 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.
5. The EUT complies with draft 802.11n standards and backwards compatible with 802. 11a, 802.11b, 802.11g products.
6. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

Operated in 5150MHz ~ 5350MHz bands:

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

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

Operated in 5470MHz ~ 5725MHz bands:

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

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

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

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

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

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

ANTENNA COMBINATION MODE:

COMBINATION MODE	OPERATION MODE	CHAIN(0) (TX)	CHAIN(1) (TX)
A	802.11a	√	
B	DRAFT 802.11n (20MHz) for MCS 0~7	√	
C	DRAFT 802.11n (20MHz) for MCS 8~15	√	√

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.
2. Antenna 1~2 are PCB antennas.

POWER LINE CONDUCTED EMISSION TEST:

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX COMBINATION
802.11a	1 to 19	1	OFDM	BPSK	6	A

RADIATED EMISSION TEST (BELOW 1 GHZ):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX COMBINATION
802.11a	1 to 19	1	OFDM	BPSK	6	A

RADIATED EMISSION TEST (ABOVE 1 GHz):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX COMBINATION
802.11a	1 to 19	1, 2, 4, 5, 7, 8, 9, 14, 19	OFDM	BPSK	6	A
For 5 GHz Draft 802.11n (20MHz)	1 to 19	1, 2, 4, 5, 7, 8, 9, 14, 19	OFDM	BPSK	13	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)	TX COMBINATION
802.11a	1 to 19	1, 8, 9, 19	OFDM	BPSK	6	A
For 5 GHz Draft 802.11n (20MHz)	1 to 19	1, 8, 9, 19	OFDM	BPSK	13	C

ANTENNA PORT CONDUCTED MEASUREMENT:

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

☒ The EUT have MIMO power save mode, one transmitter may be active (chain 0) while other is inactive (chain 1). Output power is no different compared to operation when both transmitter chains are active. Transmitter power is not increased or decreased for chain 0 when in single chain mode, compared to dual chain active mode.

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX COMBINATION
802.11a	1 to 19	1, 2, 4, 5, 7, 8, 9, 14, 19	OFDM	BPSK	6	A
For 5 GHz Draft 802.11n (20MHz)	1 to 19	1, 2, 4, 5, 7, 8, 9, 14, 19	OFDM	BPSK	13	B

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is an 802.11a/b/g/n Wireless LAN Module. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart E (15.407)

ANSI C63.4-2003

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

3.4 DESCRIPTION OF SUPPORT UNITS

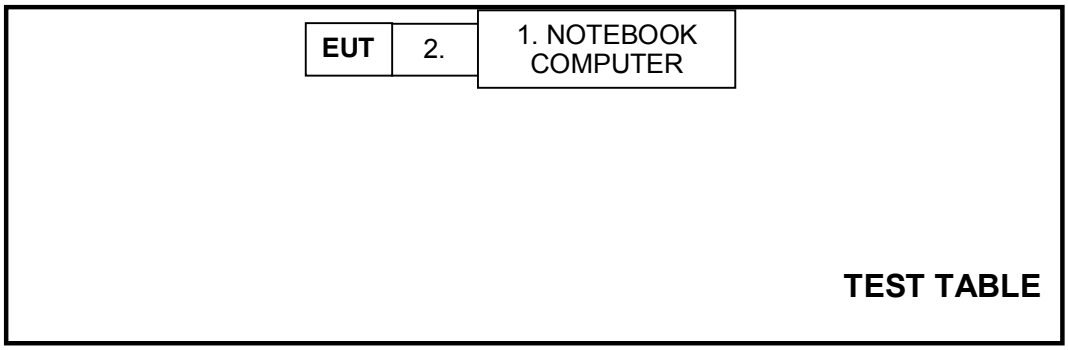
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP19L	CN-OHC416-70166-5CA-0448	PIW632500516610
2	TEST TOOL	CyberTAN	NA	NA	NA

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

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4.TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15-0.5 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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 23, 2009	Mar. 22, 2010
Line-Impedance Stabilization Network (for EUT)	ENV-216	100071	Nov. 26, 2008	Nov. 25, 2009
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Nov. 05, 2008	Nov. 04, 2009
RF Cable (JYEBAO)	5DFB	COBCAB-001	Aug. 15, 2008	Aug. 14, 2009
50 ohms Terminator	50	3	Nov. 05, 2008	Nov. 04, 2009
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. B.
3 The VCCI Con B Registration No. is C-2193.

4.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs

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

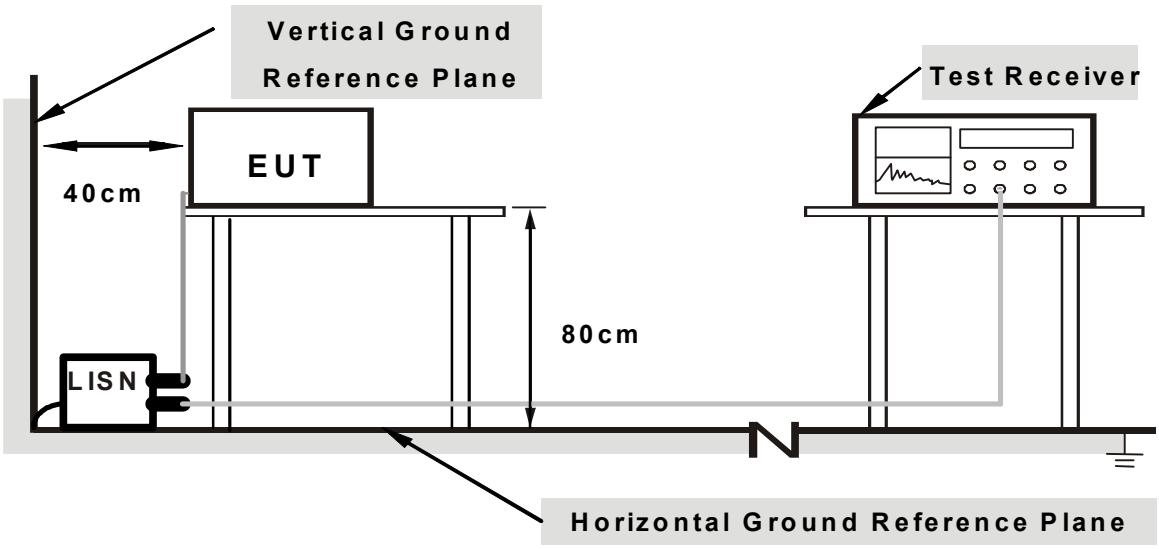
c. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

1 Plug the EUT into the support unit 1 (Notebook Computer) which placed on a testing table.

2 Support unit 1 (Notebook Computer) run test program “MFGTest” to enable EUT under transmission condition continuously at specific channel frequency.

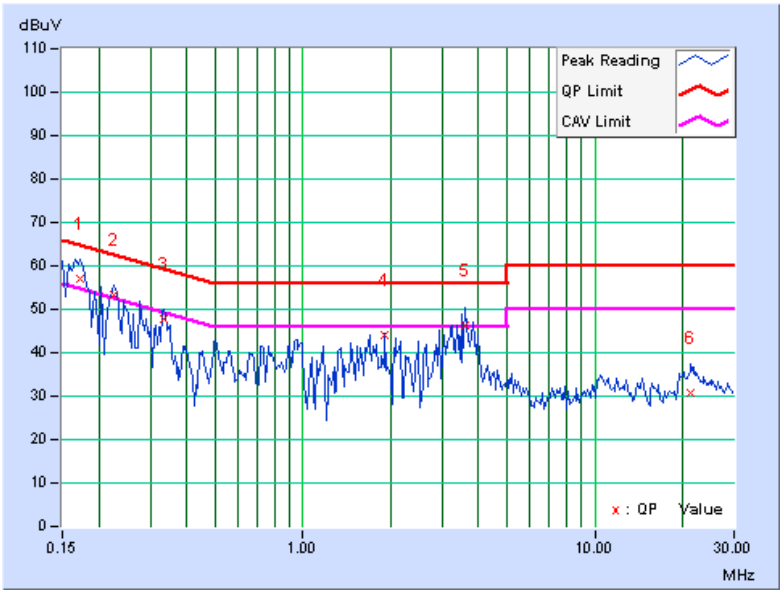
4.1.7 TEST RESULTS

802.11a OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	17deg. C, 64%RH, 965hPa	TESTED BY	Frank Liu

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.173	9.78	47.30	36.26	57.08	46.04	64.79	54.79	-7.71	-8.75
2	0.224	9.83	43.54	36.48	53.37	46.31	62.66	52.66	-9.29	-6.35
3	0.334	9.95	37.90	-	47.85	-	59.36	49.36	-11.51	-
4	1.914	9.81	34.31	-	44.12	-	56.00	46.00	-11.88	-
5	3.594	9.85	36.43	23.12	46.28	32.97	56.00	46.00	-9.72	-13.03
6	21.398	10.10	20.68	-	30.78	-	60.00	50.00	-29.22	-

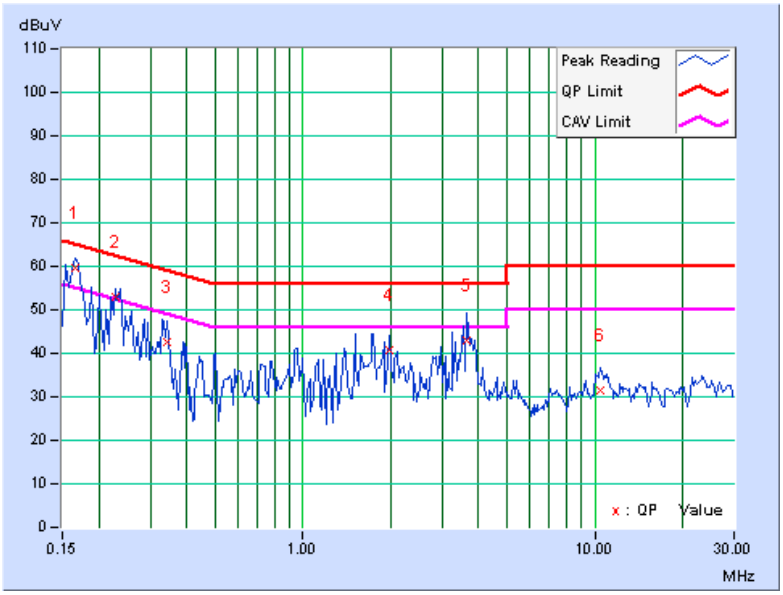
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	**PHASE**	Neutral (N)
MODULATION TYPE	BPSK	**6dB BANDWIDTH**	9 kHz
TRANSFER RATE	6Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	17deg. C, 64%RH, 965hPa	**TESTED BY**	Frank Liu

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.166**	**9.77**	**49.99**	**39.23**	**59.76**	**49.00**	**65.18**	**55.18**	**-5.42**	**-6.18**
2	0.228	9.81	43.13	35.25	52.94	45.06	62.52	52.52	-9.57	-7.45
3	0.341	9.95	32.72	-	42.67	-	59.17	49.17	-16.50	-
4	1.973	9.80	30.93	-	40.73	-	56.00	46.00	-15.27	-
5	3.660	9.84	32.99	-	42.83	-	56.00	46.00	-13.17	-
6	10.422	9.98	21.61	-	31.59	-	60.00	50.00	-28.41	-

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

NOTE:

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

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

4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Spectrum Analyzer	FSP40	100036	Dec. 09, 2008	Dec. 08, 2009
HP Pre_Amplifier	8449B	3008A01923	Nov. 10, 2008	Nov. 09, 2009
ROHDE & SCHWARZ Test Receiver	ESCS30	847124/029	Sep. 09, 2008	Sep. 08, 2009
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	April 30, 2008	April 29, 2009
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 09, 2008	Dec. 08, 2009
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 22, 2009	Jan. 21, 2010
RF Switches	EMH-011	08009	Oct. 07, 2008	Oct. 06, 2009
RF CABLE (Chaintek)	Sucoflex 106	28077	Aug. 15, 2008	Aug. 14, 2009
RF Cable	8DFB	STCCAB-30M-1GHz	Oct. 07, 2008	Oct. 06, 2009
Software	ADT_Radiated_V7.6.15.9.2	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, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 7450G-3.

4.2.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

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

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

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

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

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

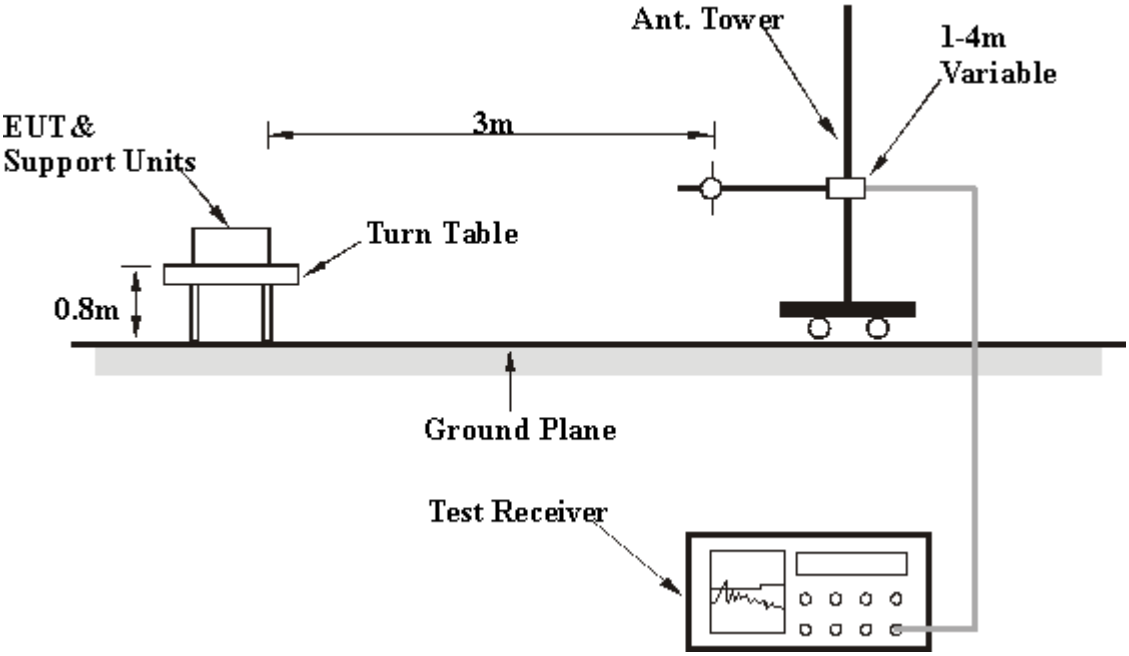
NOTE:

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

4.2.5 DEVIATION FROM TEST STANDARD

No deviation

4.2.6 TEST SETUP



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

4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

Below 1GHz Test Data

4.2.8 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 63%RH 965hPa	TESTED BY	Wen Yu

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	190.70	28.12 QP	43.50	-15.38	1.55 H	322	14.42	13.70
2	209.77	26.11 QP	43.50	-17.39	1.05 H	11	12.65	13.46
3	228.84	26.24 QP	46.00	-19.76	1.66 H	315	11.85	14.39
4	247.91	24.37 QP	46.00	-21.63	1.98 H	204	9.05	15.32
5	266.98	24.68 QP	46.00	-21.32	1.51 H	1	8.70	15.98
6	400.02	34.87 QP	46.00	-11.13	1.00 H	120	13.73	21.14
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	190.70	35.11 QP	43.50	-8.39	1.00 V	84	21.41	13.70
2	209.77	36.58 QP	43.50	-6.92	1.00 V	122	23.12	13.46
3	228.84	39.56 QP	46.00	-6.44	1.00 V	311	25.17	14.39
4	247.91	34.51 QP	46.00	-11.49	1.00 V	1	19.19	15.32
5	266.98	34.11 QP	46.00	-11.89	1.00 V	168	18.13	15.98
6	286.05	26.05 QP	46.00	-19.95	1.00 V	55	9.46	16.59
	305.12	28.77 QP	46.00	-17.23	1.00 V	268	11.54	17.23

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

Above 1GHz Test Data

4.2.9 TEST RESULTS

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4144.00	55.80 PK	74.00	-18.20	1.24 H	351	21.81	33.99
2	4144.00	39.30 AV	54.00	-14.70	1.24 H	351	5.31	33.99
3	5150.00	56.43 PK	74.00	-17.57	1.41 H	295	20.43	36.00
4	5150.00	45.35 AV	54.00	-8.65	1.41 H	295	9.35	36.00
5	*5180.00	101.10 PK			1.41 H	295	65.05	36.05
6	*5180.00	90.10 AV			1.41 H	295	54.05	36.05
7	#10360.00	53.40 PK	68.30	-14.90	1.43 H	242	7.48	45.92
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4144.00	54.20 PK	74.00	-19.80	1.43 V	72	20.21	33.99
2	4144.00	38.60 AV	54.00	-15.40	1.43 V	72	4.61	33.99
3	5150.000	73.47 PK	74.00	-0.53	1.11 V	260	37.47	36.00
4	5150.000	48.66 AV	54.00	-5.34	1.11 V	260	12.66	36.00
5	*5180.00	114.95 PK			1.00 V	271	78.90	36.05
6	*5180.00	102.19 AV			1.00 V	271	66.14	36.05
7	#10360.00	55.67 PK	68.30	-12.63	1.33 V	69	9.75	45.92

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 2	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4160.00	56.20 PK	74.00	-17.80	1.27 H	342	22.16	34.04
2	4160.00	39.60 AV	54.00	-14.40	1.27 H	342	5.56	34.04
3	*5200.00	101.60 PK			1.43 H	294	65.52	36.08
4	*5200.00	90.20 AV			1.43 H	294	54.12	36.08
5	#10400.00	53.60 PK	68.30	-14.70	1.44 H	248	7.61	45.99
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4160.00	54.60 PK	74.00	-19.40	1.44 V	79	20.56	34.04
2	4160.00	39.20 AV	54.00	-14.80	1.44 V	79	5.16	34.04
3	*5200.00	114.97 PK			1.02 V	140	78.89	36.08
4	*5200.00	102.40 AV			1.02 V	140	66.32	36.08
5	#10400.00	56.23 PK	68.30	-12.07	1.34 V	72	10.24	45.99

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4192.00	56.80 PK	74.00	-17.20	1.26 H	331	22.68	34.12
2	4192.00	40.10 AV	54.00	-13.90	1.26 H	331	5.98	34.12
3	*5240.00	101.40 PK			1.42 H	293	65.26	36.14
4	*5240.00	90.10 AV			1.42 H	293	53.96	36.14
5	#10480.00	54.20 PK	68.30	-14.10	1.41 H	242	8.08	46.12
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4192.00	54.70 PK	74.00	-19.30	1.41 V	76	20.58	34.12
2	4192.00	39.30 AV	54.00	-14.70	1.41 V	76	5.18	34.12
3	*5240.00	114.60 PK			1.03 V	144	78.46	36.14
4	*5240.00	102.30 AV			1.03 V	144	66.16	36.14
5	#10480.00	57.20 PK	68.30	-11.10	1.35 V	73	11.08	46.12

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4208.00	57.20 PK	74.00	-16.80	1.26 H	319	23.04	34.16
2	4208.00	40.90 AV	54.00	-13.10	1.26 H	319	6.74	34.16
3	*5260.00	101.60 PK			1.54 H	287	65.42	36.18
4	*5260.00	90.20 AV			1.54 H	287	54.02	36.18
5	#10520.00	55.10 PK	68.30	-13.20	1.31 H	318	8.91	46.19
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4208.00	55.20 PK	74.00	-18.80	1.43 V	84	21.04	34.16
2	4208.00	39.80 AV	54.00	-14.20	1.43 V	84	5.64	34.16
3	*5260.00	115.74 PK			1.07 V	142	79.56	36.18
4	*5260.00	102.50 AV			1.07 V	142	66.32	36.18
5	#10520.00	57.60 PK	68.30	-10.70	1.42 V	76	11.41	46.19

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4240.00	58.20 PK	74.00	-15.80	1.21 H	353	23.96	34.24
2	4240.00	41.30 AV	54.00	-12.70	1.21 H	353	7.06	34.24
3	*5300.00	101.90 PK			1.53 H	293	65.66	36.24
4	*5300.00	90.50 AV			1.53 H	293	54.26	36.24
5	10600.00	55.40 PK	74.00	-18.60	1.37 H	324	9.03	46.37
6	10600.00	40.60 AV	54.00	-13.40	1.37 H	324	-5.77	46.37
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4240.00	55.60 PK	74.00	-18.40	1.44 V	79	21.36	34.24
2	4240.00	40.30 AV	54.00	-13.70	1.44 V	79	6.06	34.24
3	*5300.00	115.96 PK			1.05 V	147	79.72	36.24
4	*5300.00	102.80 AV			1.05 V	147	66.56	36.24
5	10600.00	57.40 PK	74.00	-16.60	1.47 V	68	11.03	46.37
6	10600.00	42.30 AV	54.00	-11.70	1.47 V	68	-4.07	46.37

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 8	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4256.00	58.60 PK	74.00	-15.40	1.24 H	327	24.31	34.29
2	4256.00	41.60 AV	54.00	-12.40	1.24 H	327	7.31	34.29
3	*5320.00	100.30 PK			1.51 H	289	64.03	36.27
4	*5320.00	89.64 AV			1.51 H	289	53.37	36.27
5	5350.00	56.36 PK	74.00	-17.64	1.51 H	289	20.04	36.32
6	5350.00	45.32 AV	54.00	-8.68	1.51 H	289	9.00	36.32
7	10640.00	55.80 PK	74.00	-18.20	1.36 H	325	9.34	46.46
8	10640.00	40.70 AV	54.00	-13.30	1.36 H	325	-5.76	46.46
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4256.00	55.80 PK	74.00	-18.20	1.43 V	82	21.51	34.29
2	4256.00	40.40 AV	54.00	-13.60	1.43 V	82	6.11	34.29
3	*5320.00	115.89 PK			1.04 V	299	79.62	36.27
4	*5320.00	102.58 AV			1.04 V	299	66.31	36.27
5	5350.000	63.55 PK	74.00	-10.45	1.11 V	200	27.23	36.32
6	5350.000	46.40 AV	54.00	-7.60	1.11 V	200	10.08	36.32
7	10640.00	57.80 PK	74.00	-16.20	1.49 V	54	11.34	46.46
8	10640.00	42.60 AV	54.00	-11.40	1.49 V	54	-3.86	46.46

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

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

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

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 63%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4400.00	58.40 PK	68.30	-9.90	1.29 H	324	23.74	34.66
2	5460.00	56.88 PK	74.00	-17.12	1.42 H	311	20.38	36.50
3	5460.00	44.93 AV	54.00	-9.07	1.42 H	311	8.43	36.50
4	#5470.00	58.30 PK	68.30	-10.00	1.41 H	312	21.79	36.51
5	*5500.00	96.23 PK			1.09 H	321	59.67	36.56
6	*5500.00	85.64 AV			1.09 H	321	49.08	36.56
7	11000.00	56.30 PK	74.00	-17.70	1.34 H	317	9.05	47.25
8	11000.00	41.20 AV	54.00	-12.80	1.34 H	317	-6.05	47.25
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4400.00	55.90 PK	68.30	-12.40	1.44 V	87	21.24	34.66
2	5440.64	56.37 PK	74.00	-17.63	1.00 V	22	19.90	36.47
3	5440.64	44.64 AV	54.00	-9.36	1.00 V	22	8.17	36.47
4	#5470.00	66.88 PK	68.30	-1.42	1.00 V	48	30.37	36.51
5	*5500.00	107.20 PK			1.00 V	43	70.64	36.56
6	*5500.00	94.60 AV			1.00 V	43	58.04	36.56
7	11000.00	54.11 PK	74.00	-19.89	1.32 V	70	6.86	47.25
8	11000.00	40.99 AV	54.00	-13.01	1.32 V	70	-6.26	47.25

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 14	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#4480.00	58.60 PK	68.30	-9.70	1.26 H	331	23.73	34.87
2	*5600.00	101.30 PK			1.08 H	324	64.48	36.82
3	*5600.00	89.20 AV			1.08 H	324	52.38	36.82
4	11200.00	56.90 PK	74.00	-17.10	1.36 H	320	9.74	47.16
5	11200.00	41.70 AV	54.00	-12.30	1.36 H	320	-5.46	47.16
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#4480.00	55.80 PK	68.30	-12.50	1.41 V	93	20.93	34.87
2	*5600.00	113.80 PK			1.11 V	98	76.98	36.82
3	*5600.00	102.30 AV			1.11 V	98	65.48	36.82
4	11200.00	55.62 PK	74.00	-18.38	1.47 V	69	8.46	47.16
5	11200.00	41.30 AV	54.00	-12.70	1.47 V	69	-5.86	47.16

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

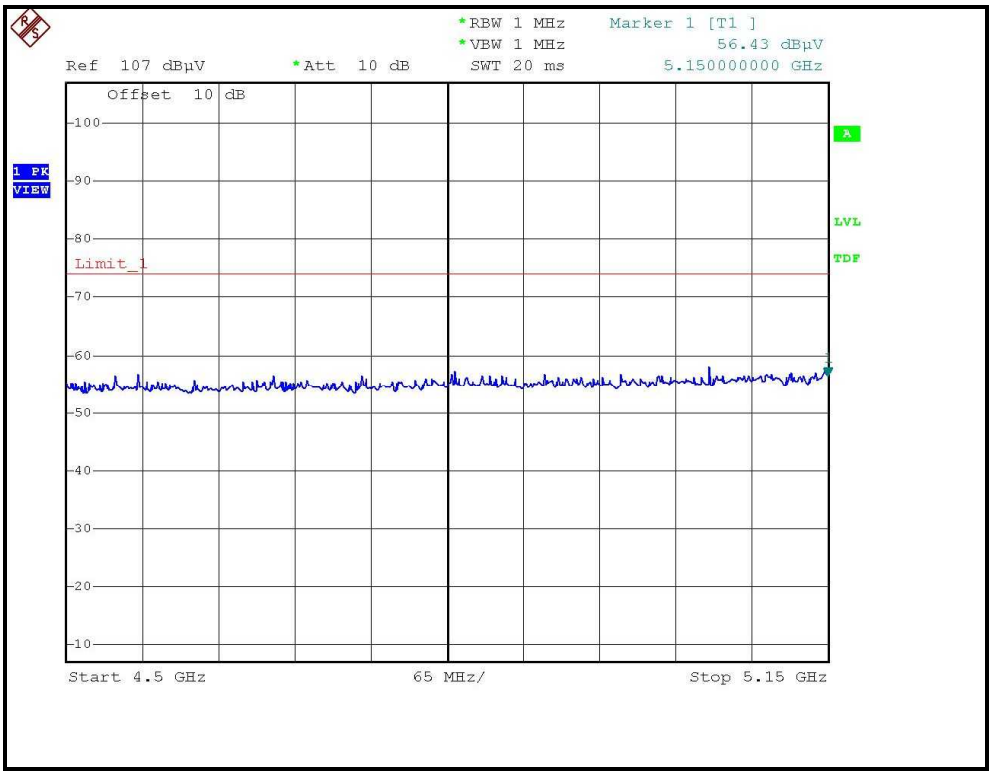
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 19	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 63%RH 965hPa	TESTED BY	Eric Lee

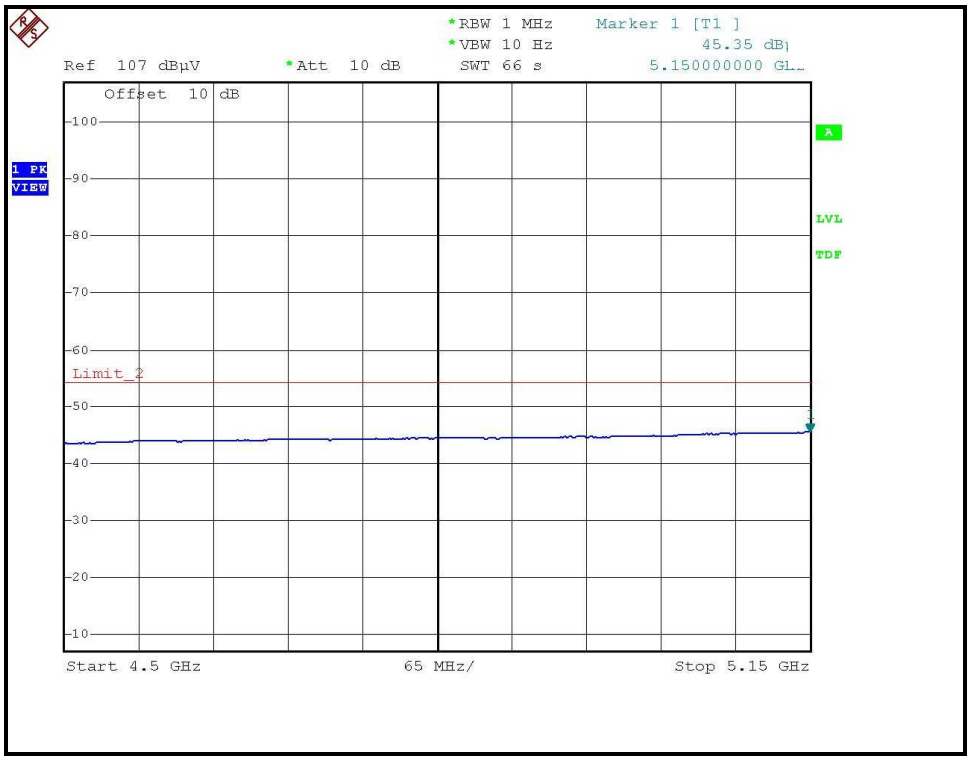
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4560.00	58.20 PK	74.00	-15.80	1.24 H	327	23.18	35.02
2	4560.00	41.60 AV	54.00	-12.40	1.24 H	327	6.58	35.02
3	*5700.00	95.30 PK			1.04 H	328	58.21	37.09
4	*5700.00	84.20 AV			1.04 H	328	47.11	37.09
5	#5725.00	59.20 PK	68.30	-9.10	1.40 H	314	22.05	37.15
6	11400.00	56.10 PK	74.00	-17.90	1.78 H	320	9.03	47.07
7	11400.00	41.30 AV	54.00	-12.70	1.78 H	320	-5.77	47.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4560.00	55.70 PK	74.00	-18.30	1.43 V	86	20.68	35.02
2	4560.00	40.40 AV	54.00	-13.60	1.43 V	86	5.38	35.02
3	*5700.00	107.20 PK			1.00 V	47	70.11	37.09
4	*5700.00	94.60 AV			1.00 V	47	57.51	37.09
5	**#5725.00**	**67.80 PK**	**68.30**	**-0.50**	**1.00 V**	**141**	**30.65**	**37.15**
6	11400.00	53.69 PK	74.00	-20.31	1.40 V	2	6.62	47.07
7	11400.00	41.11 AV	54.00	-12.89	1.40 V	2	-5.96	47.07

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

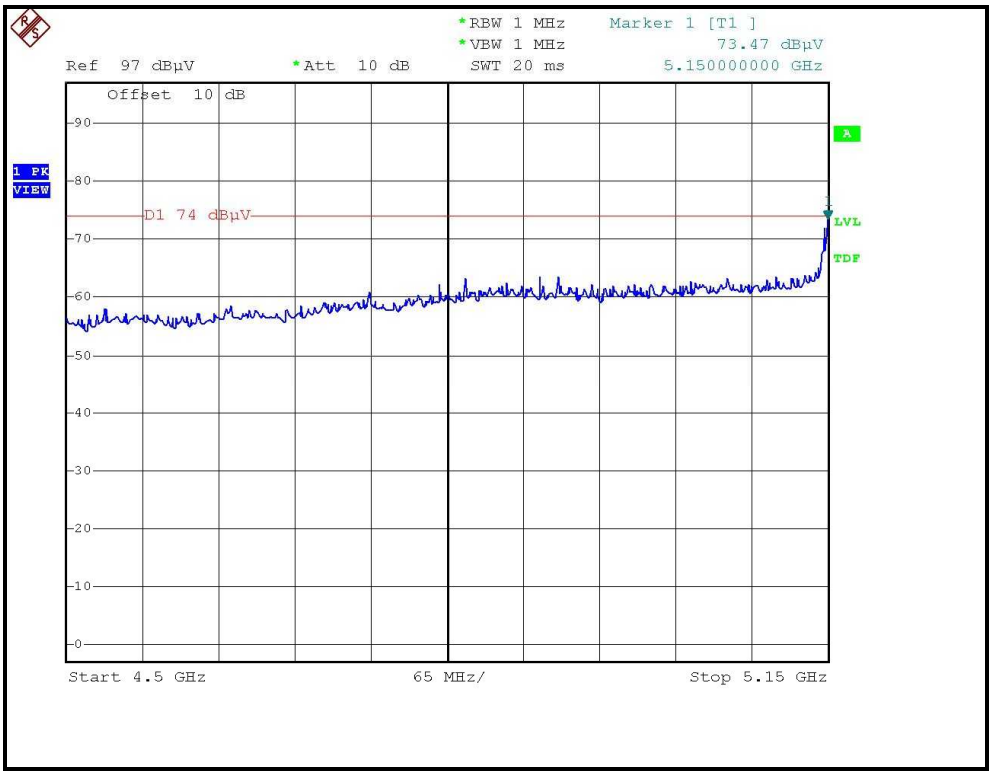
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

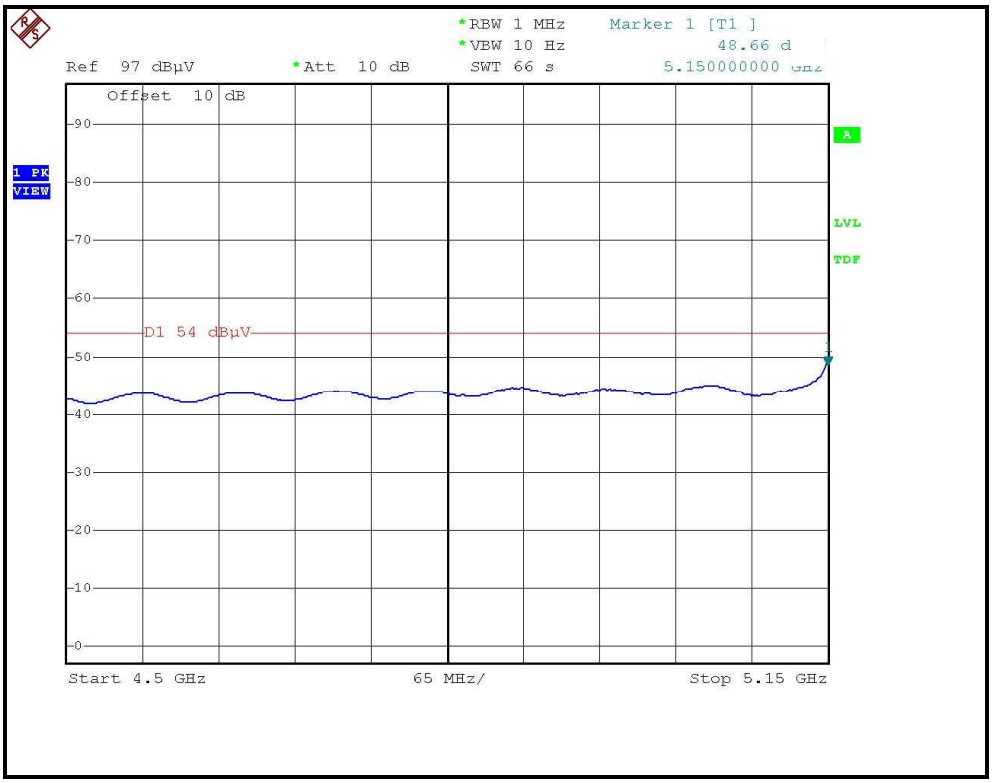
RESTRICTED BANDEDGE (802.11a MODE, CH1, HORIZONTAL)





RESTRICTED BANDEDGE (802.11a MODE, CH1, VERTICAL)





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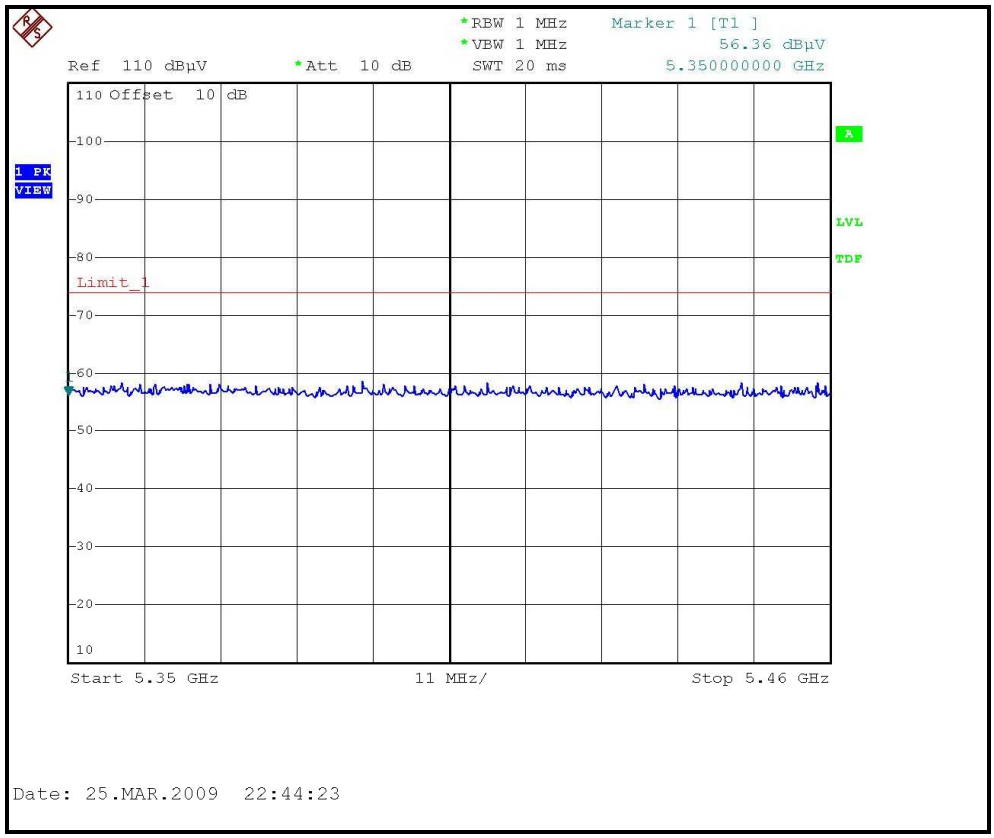
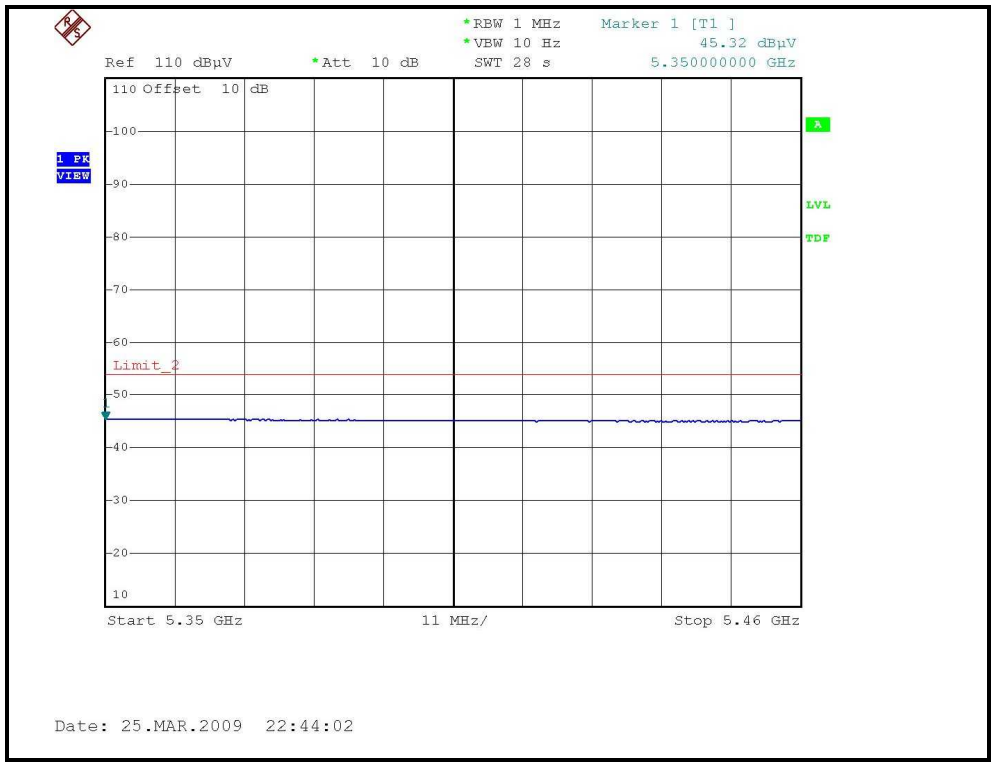
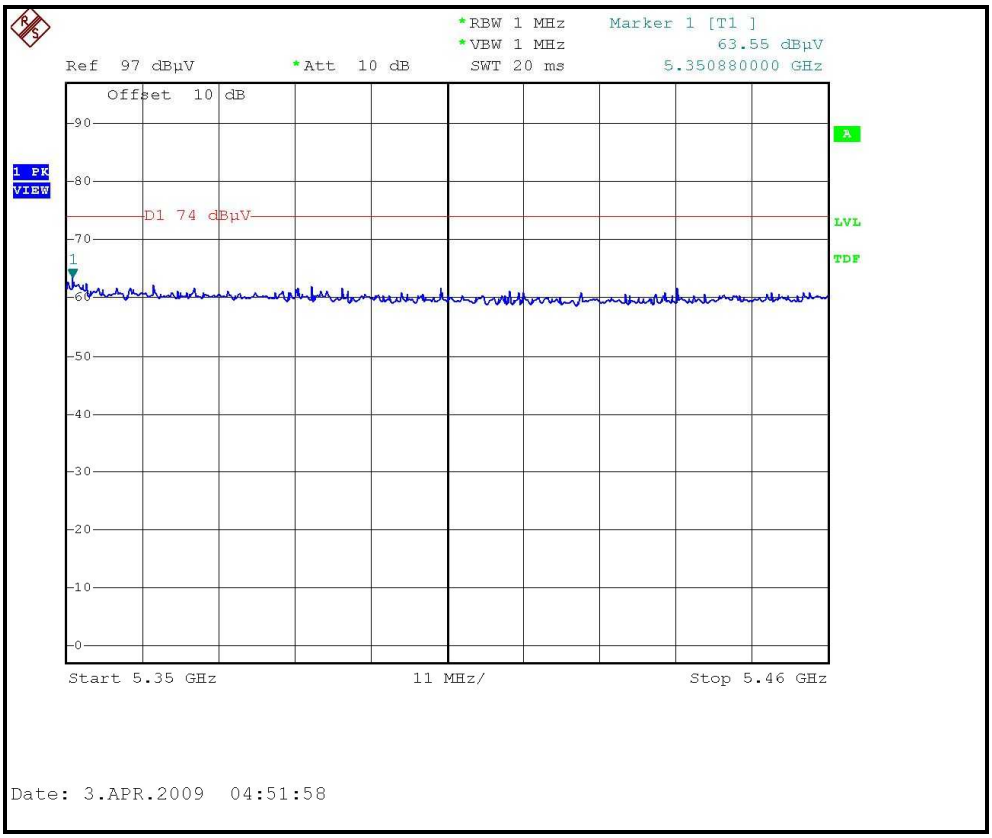
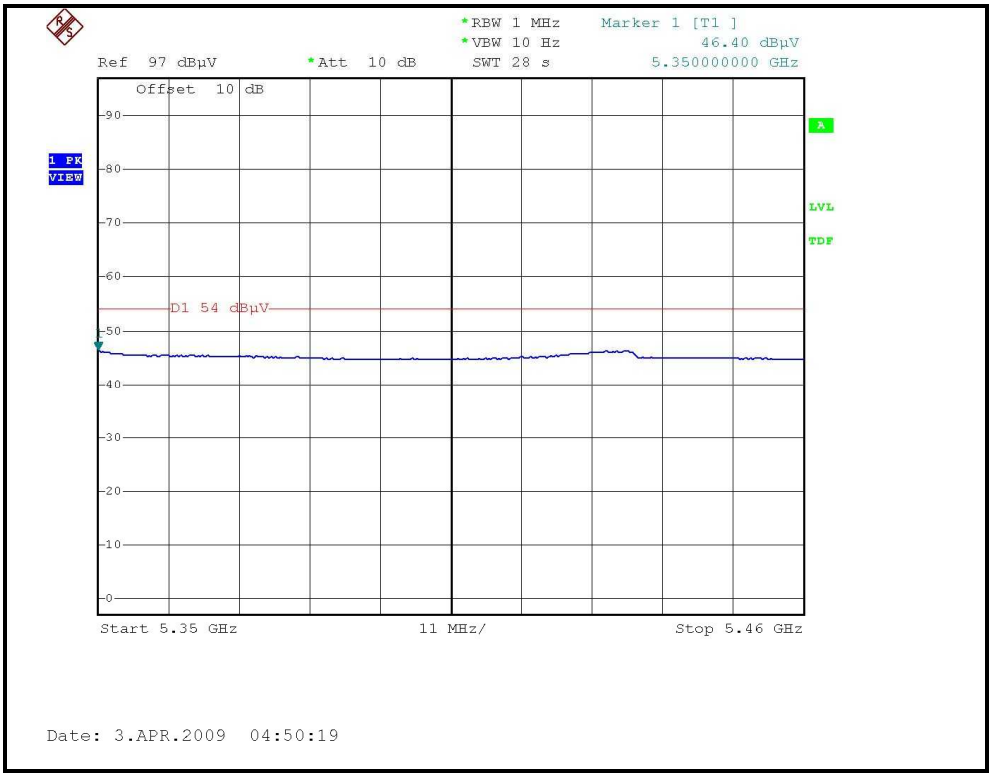


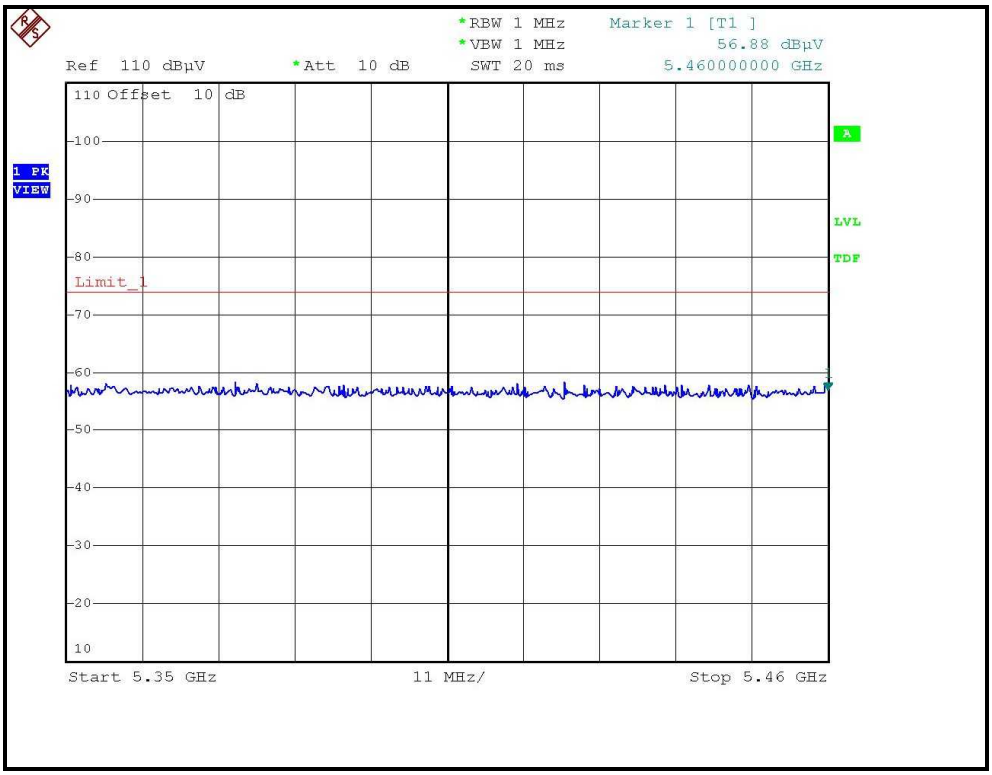


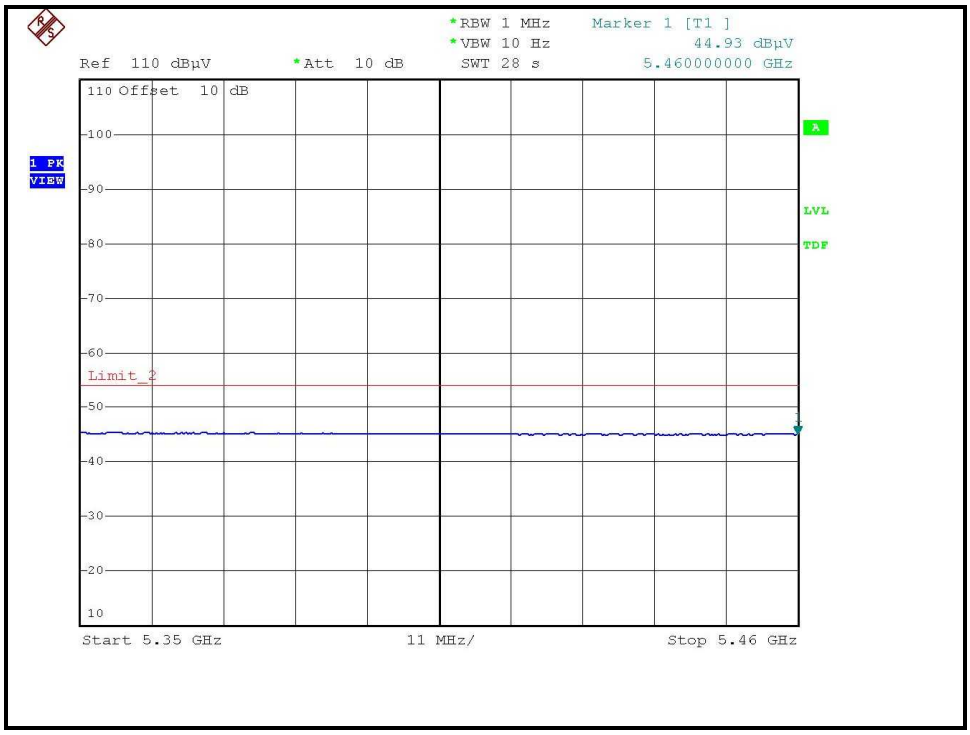
RESTRICTED BANDEDGE (802.11a MODE, CH8, VERTICAL)



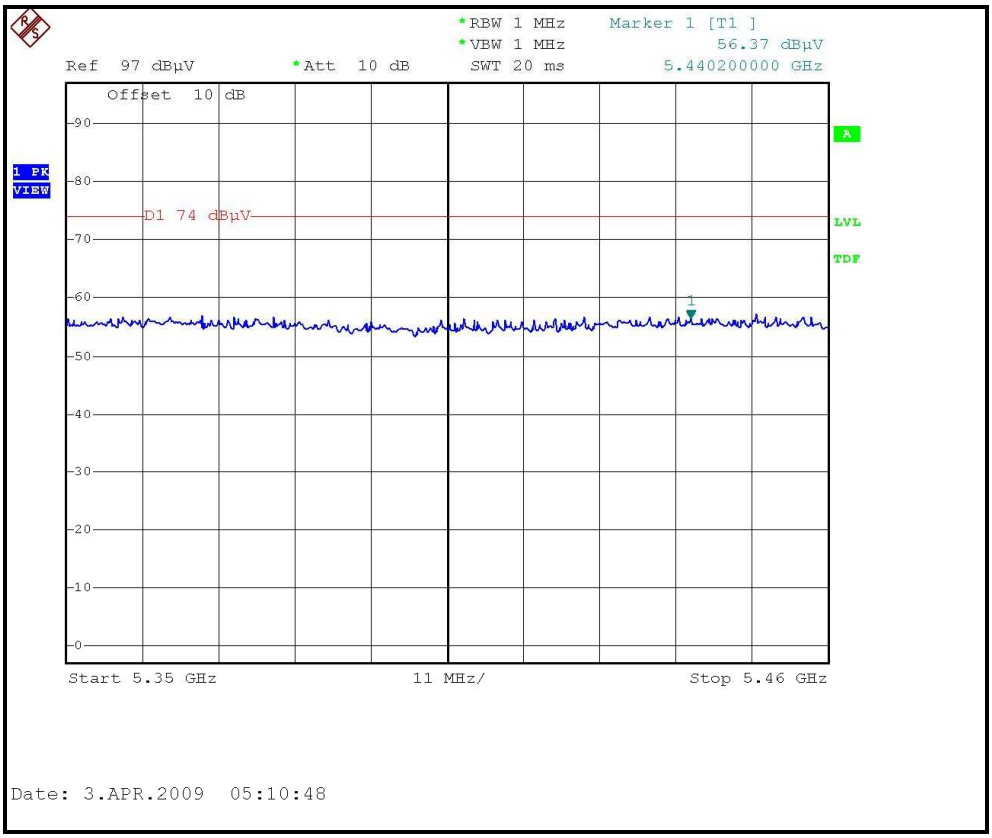


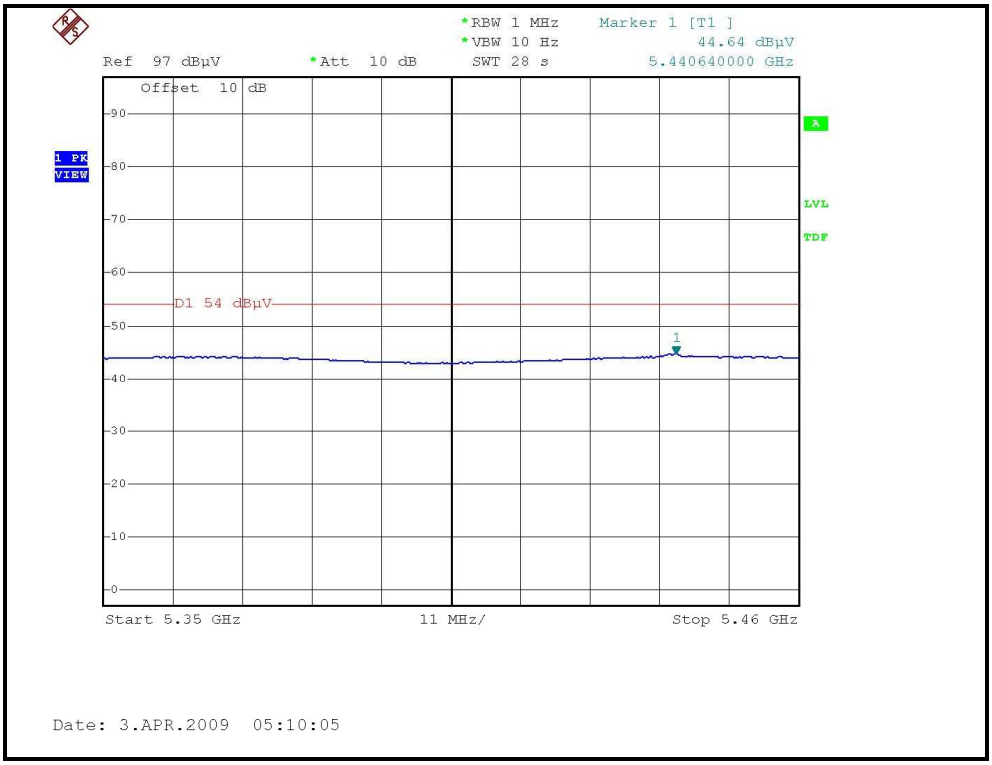
RESTRICTED BANDEDGE (802.11a MODE, CH9, HORIZONTAL)





RESTRICTED BANDEDGE (802.11a MODE, CH9, VERTICAL)





DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4144.00	55.60 PK	74.00	-18.40	1.27 H	354	21.61	33.99
2	4144.00	39.10 AV	54.00	-14.90	1.27 H	354	5.11	33.99
3	5150.00	55.87 PK	74.00	-18.13	1.27 H	305	19.87	36.00
4	5150.00	45.13 AV	54.00	-8.87	1.27 H	305	9.13	36.00
5	*5180.00	101.20 PK			1.44 H	312	65.15	36.05
6	*5180.00	89.84 AV			1.44 H	312	53.79	36.05
7	#10350.00	56.30 PK	68.30	-12.00	1.42 H	354	10.39	45.91
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4144.00	55.40 PK	74.00	-18.60	1.40 V	64	21.41	33.99
2	4144.00	39.20 AV	54.00	-14.80	1.40 V	64	5.21	33.99
3	5150.000	64.27 PK	74.00	-9.73	1.10 V	60	28.27	36.00
4	5150.000	45.75 AV	54.00	-8.25	1.10 V	60	9.75	36.00
5	*5180.00	111.99 PK			1.20 V	288	75.94	36.05
6	*5180.00	99.24 AV			1.20 V	288	63.19	36.05
7	#10360.00	57.60 PK	68.30	-10.70	1.52 V	74	11.68	45.92

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 2	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4160.00	55.00 PK	74.00	-19.00	1.24 H	321	20.96	34.04
2	4160.00	39.21 AV	54.00	-14.79	1.24 H	321	5.17	34.04
3	*5200.00	102.30 PK			1.42 H	314	66.22	36.08
4	*5200.00	89.74 AV			1.42 H	314	53.66	36.08
5	#10400.00	57.20 PK	68.30	-11.10	1.43 H	264	11.21	45.99
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4160.00	55.10 PK	74.00	-18.90	1.41 V	63	21.06	34.04
2	4160.00	39.60 AV	54.00	-14.40	1.41 V	63	5.56	34.04
3	*5200.00	112.30 PK			1.21 V	98	76.22	36.08
4	*5200.00	101.40 AV			1.21 V	98	65.32	36.08
5	#10480.00	58.10 PK	68.30	-10.20	1.47 V	73	11.98	46.12

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4192.00	55.21 PK	74.00	-18.79	1.29 H	324	21.09	34.12
2	4192.00	39.60 AV	54.00	-14.40	1.29 H	324	5.48	34.12
3	*5240.00	101.80 PK			1.37 H	319	65.66	36.14
4	*5240.00	89.63 AV			1.37 H	319	53.49	36.14
5	#10480.00	56.90 PK	68.30	-11.40	1.44 H	265	10.78	46.12
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4192.00	54.20 PK	74.00	-19.80	1.42 V	59	20.08	34.12
2	4192.00	38.10 AV	54.00	-15.90	1.42 V	59	3.98	34.12
3	*5240.00	112.10 PK			1.19 V	90	75.96	36.14
4	*5240.00	101.30 AV			1.19 V	90	65.16	36.14
5	#10480.00	57.40 PK	68.30	-10.90	1.44 V	69	11.28	46.12

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4208.00	55.80 PK	74.00	-18.20	1.24 H	213	21.64	34.16
2	4208.00	39.90 AV	54.00	-14.10	1.24 H	213	5.74	34.16
3	*5260.00	102.60 PK			1.39 H	324	66.42	36.18
4	*5260.00	89.24 AV			1.39 H	324	53.06	36.18
5	#10520.00	57.20 PK	68.30	-11.10	1.37 H	351	11.01	46.19
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4208.00	54.90 PK	74.00	-19.10	1.41 V	53	20.74	34.16
2	4208.00	38.90 AV	54.00	-15.10	1.41 V	53	4.74	34.16
3	*5260.00	113.40 PK			1.21 V	89	77.22	36.18
4	*5260.00	102.60 AV			1.21 V	89	66.42	36.18
5	#10520.00	58.40 PK	68.30	-9.90	1.53 V	69	12.21	46.19

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4240.00	54.90 PK	74.00	-19.10	1.29 H	214	20.66	34.24
2	4240.00	40.30 AV	54.00	-13.70	1.29 H	214	6.06	34.24
3	*5300.00	101.40 PK			1.34 H	327	65.16	36.24
4	*5300.00	89.72 AV			1.34 H	327	53.48	36.24
5	10600.00	56.30 PK	74.00	-17.70	1.36 H	321	9.93	46.37
6	10600.00	40.20 AV	54.00	-13.80	1.36 H	321	-6.17	46.37
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4240.00	54.90 PK	74.00	-19.10	1.42 V	46	20.66	34.24
2	4240.00	38.70 AV	54.00	-15.30	1.42 V	46	4.46	34.24
3	*5300.00	113.20 PK			1.13 V	85	76.96	36.24
4	*5300.00	101.70 AV			1.13 V	85	65.46	36.24
5	10600.00	57.10 PK	74.00	-16.90	1.48 V	62	10.73	46.37
6	10600.00	41.80 AV	54.00	-12.20	1.48 V	62	-4.57	46.37

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 8	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4256.00	55.20 PK	74.00	-18.80	1.24 H	223	20.91	34.29
2	4256.00	40.80 AV	54.00	-13.20	1.24 H	223	6.51	34.29
3	*5320.00	100.37 PK			1.24 H	263	64.10	36.27
4	*5320.00	89.59 AV			1.24 H	263	53.32	36.27
5	5350.00	56.17 PK	74.00	-17.83	1.23 H	279	19.85	36.32
6	5350.00	45.18 AV	54.00	-8.82	1.23 H	279	8.86	36.32
7	10640.00	56.80 PK	74.00	-17.20	1.34 H	329	10.34	46.46
8	10640.00	41.30 AV	54.00	-12.70	1.34 H	329	-5.16	46.46
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4256.00	54.70 PK	74.00	-19.30	1.39 V	48	20.41	34.29
2	4256.00	38.60 AV	54.00	-15.40	1.39 V	48	4.31	34.29
3	*5320.00	111.00 PK			1.17 V	289	74.73	36.27
4	*5320.00	98.53 AV			1.17 V	289	62.26	36.27
5	5350.880	68.71 PK	74.00	-5.29	1.16 V	290	32.39	36.32
6	5350.880	48.82 AV	54.00	-5.18	1.16 V	290	12.50	36.32
7	10640.00	57.90 PK	74.00	-16.10	1.48 V	69	11.44	46.46
8	10640.00	42.90 AV	54.00	-11.10	1.48 V	69	-3.56	46.46

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 63%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4400.00	55.60 PK	68.30	-12.70	1.29 H	221	20.94	34.66
2	5460.00	57.87 PK	74.00	-16.13	1.42 H	311	21.37	36.50
3	5460.00	44.85 AV	54.00	-9.15	1.42 H	311	8.35	36.50
4	#5470.00	59.20 PK	68.30	-9.10	1.41 H	294	22.69	36.51
5	*5500.00	96.20 PK			1.44 H	312	59.64	36.56
6	*5500.00	85.74 AV			1.44 H	312	49.18	36.56
7	11000.00	56.90 PK	74.00	-17.10	1.28 H	320	9.65	47.25
8	11000.00	41.60 AV	54.00	-12.40	1.28 H	320	-5.65	47.25
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4400.00	54.30 PK	68.30	-14.00	1.38 V	47	19.64	34.66
2	5359.46	60.06 PK	74.00	-13.94	1.15 V	55	23.72	36.34
3	5359.46	46.69 AV	54.00	-7.31	1.15 V	55	10.35	36.34
4	**#5470.00**	**67.80 PK**	**68.30**	**-0.50**	**1.00 V**	**69**	**31.29**	**36.51**
5	*5500.00	110.20 PK			1.14 V	71	73.64	36.56
6	*5500.00	94.90 AV			1.14 V	71	58.34	36.56
7	11000.00	57.60 PK	74.00	-16.40	1.46 V	62	10.35	47.25
8	11000.00	42.30 AV	54.00	-11.70	1.46 V	62	-4.95	47.25

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 14	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH 965hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#4480.00	55.90 PK	68.30	-12.40	1.24 H	239	21.03	34.87
2	*5600.00	100.40 PK			1.41 H	320	63.58	36.82
3	*5600.00	89.20 AV			1.41 H	320	52.38	36.82
4	11200.00	57.30 PK	74.00	-16.70	1.27 H	313	10.14	47.16
5	11200.00	42.10 AV	54.00	-11.90	1.27 H	313	-5.06	47.16
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#4480.00	54.20 PK	68.30	-14.10	1.43 V	62	19.33	34.87
2	*5600.00	110.60 PK			1.13 V	89	73.78	36.82
3	*5600.00	99.80 AV			1.13 V	89	62.98	36.82
4	11200.00	57.40 PK	74.00	-16.60	1.43 V	58	10.24	47.16
5	11200.00	42.10 AV	54.00	-11.90	1.43 V	58	-5.06	47.16

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

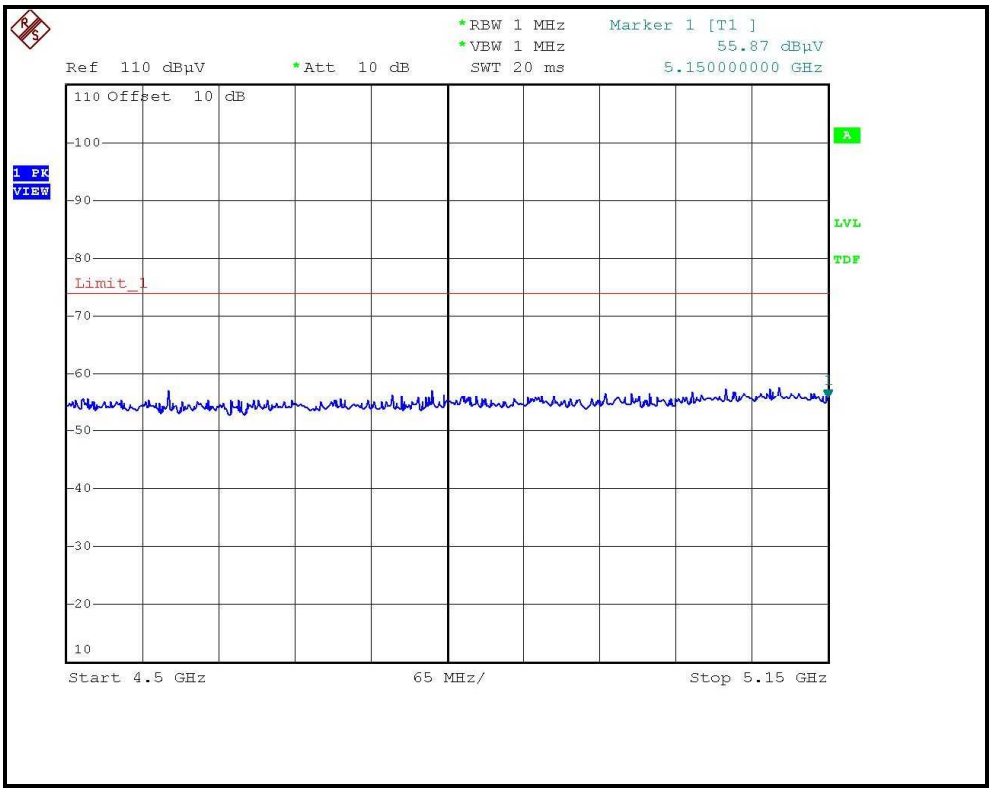
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 19	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 63%RH 965hPa	TESTED BY	Eric Lee

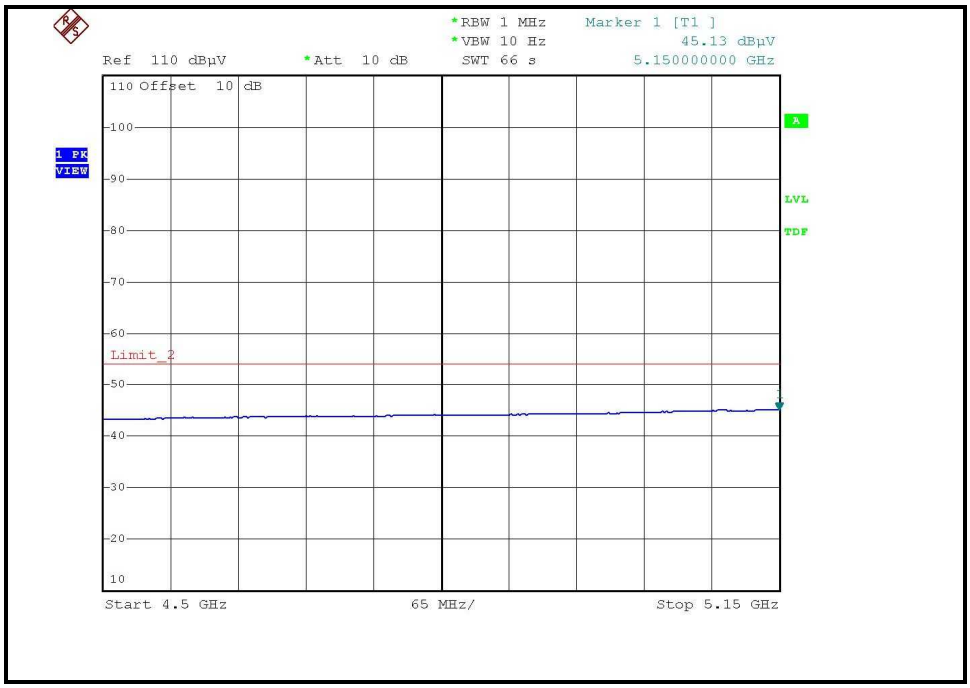
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4560.00	58.20 PK	74.00	-15.80	1.29 H	243	23.18	35.02
2	4560.00	42.60 AV	54.00	-11.40	1.29 H	243	7.58	35.02
3	*5700.00	95.30 PK			1.47 H	312	58.21	37.09
4	*5700.00	84.60 AV			1.47 H	312	47.51	37.09
5	#5725.00	58.20 PK	68.30	-10.10	1.41 H	283	21.05	37.15
6	11400.00	57.60 PK	74.00	-16.40	1.24 H	349	10.53	47.07
7	11400.00	42.30 AV	54.00	-11.70	1.24 H	349	-4.77	47.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4560.00	54.10 PK	74.00	-19.90	1.42 V	46	19.08	35.02
2	4560.00	40.80 AV	54.00	-13.20	1.42 V	46	5.78	35.02
3	*5700.00	108.70 PK			1.13 V	69	71.61	37.09
4	*5700.00	96.80 AV			1.13 V	69	59.71	37.09
5	#5725.00	67.76 PK	68.30	-0.54	1.14 V	271	30.61	37.15
6	11400.00	57.90 PK	74.00	-16.10	1.33 V	64	10.83	47.07
7	11400.00	42.60 AV	54.00	-11.40	1.33 V	64	-4.47	47.07

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

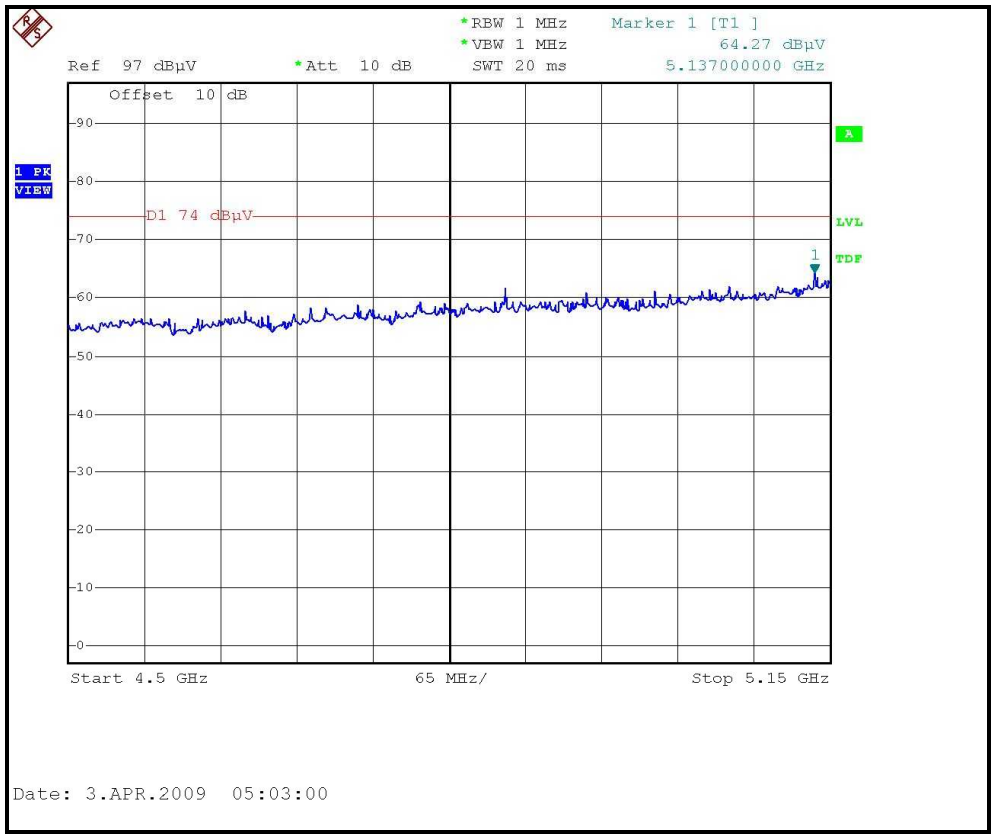
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

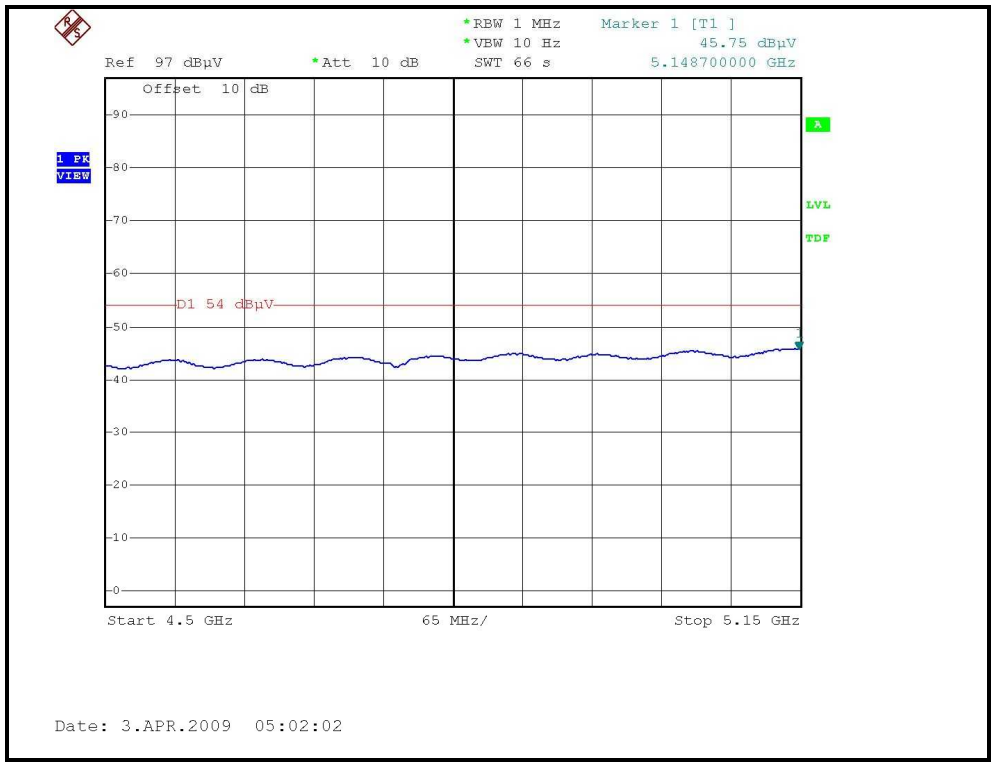
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, HORIZONTAL)



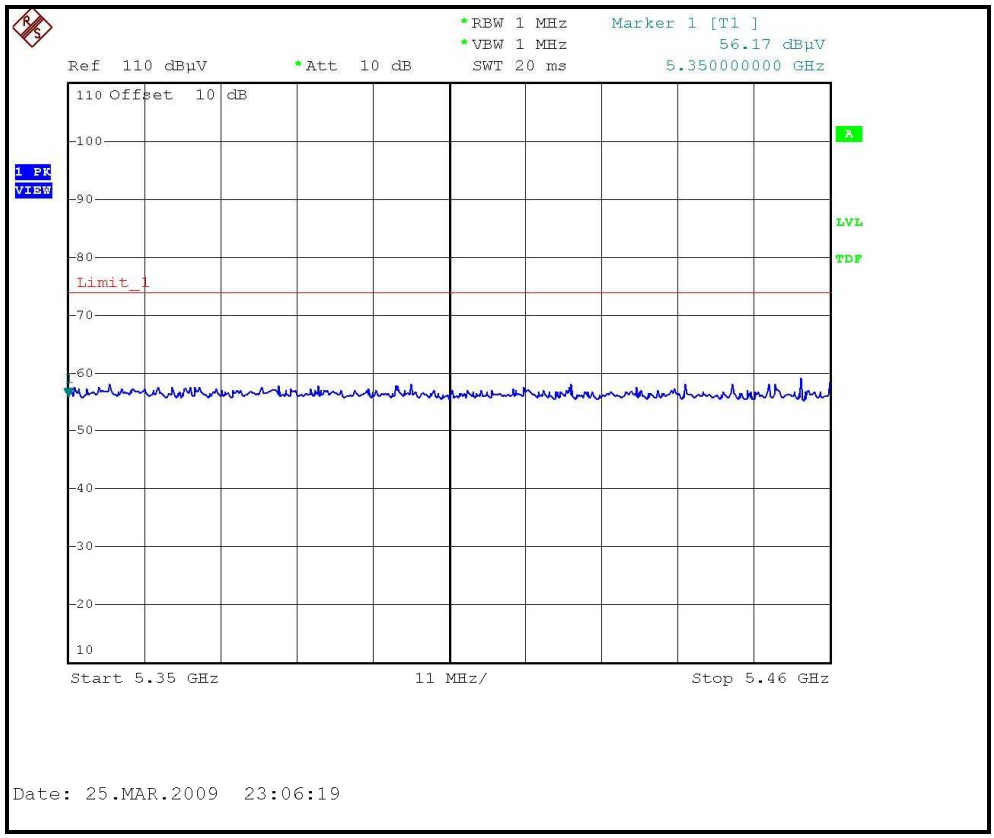


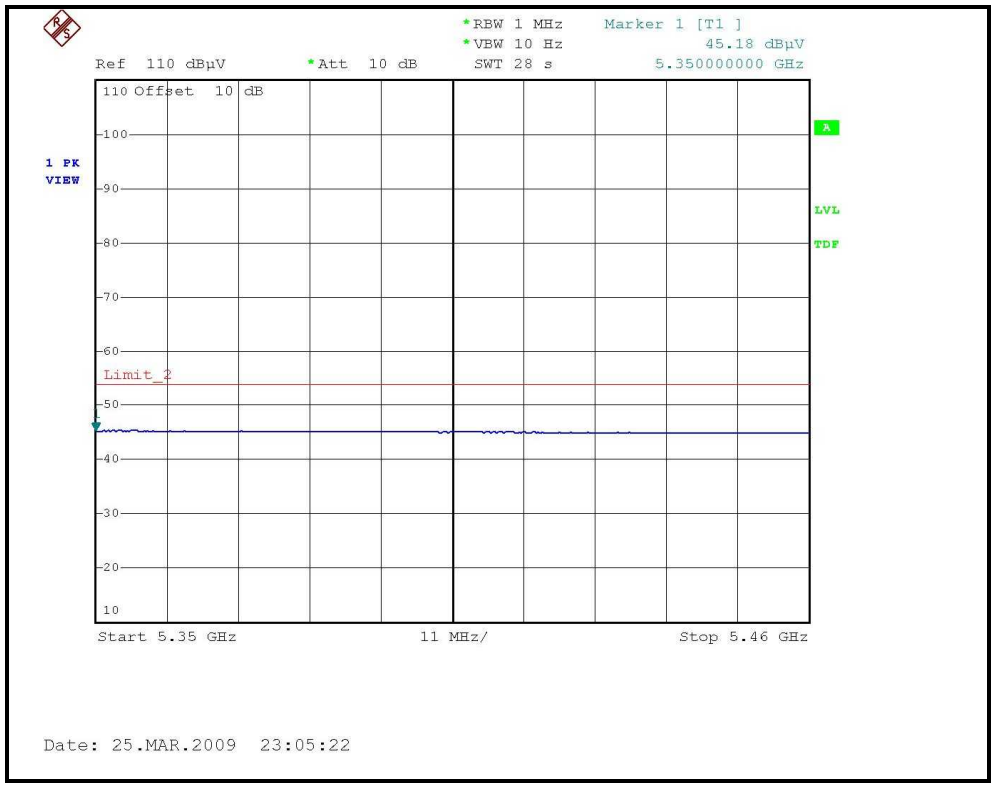
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, VERTICAL)



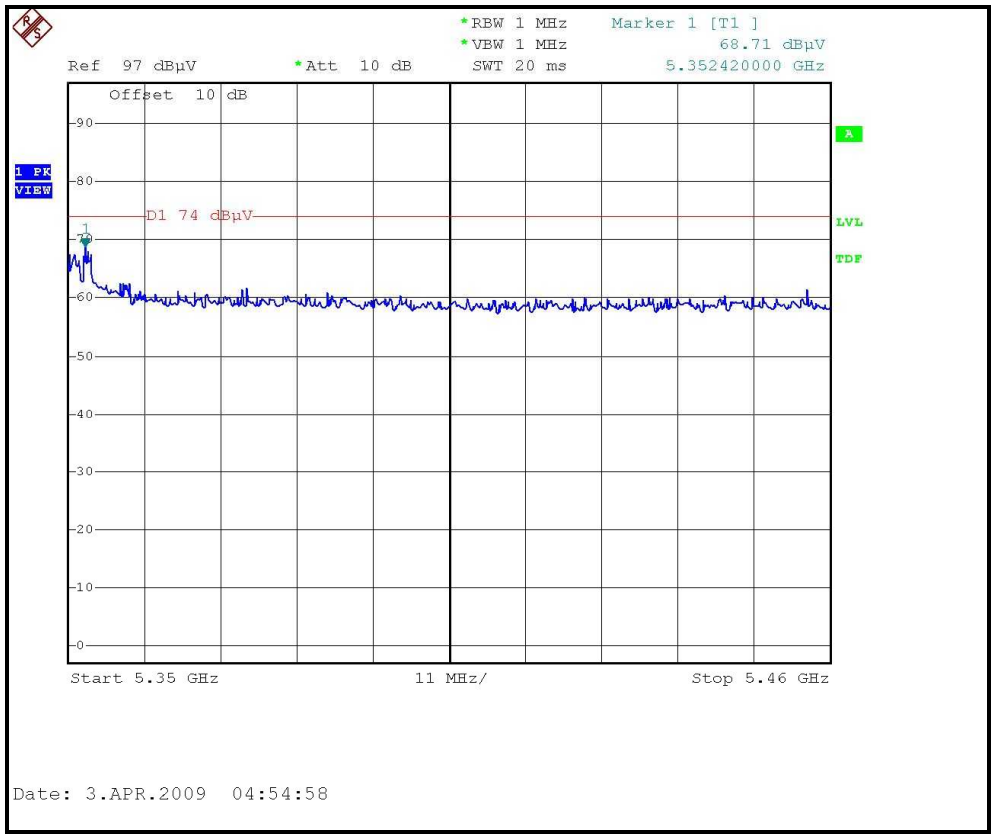


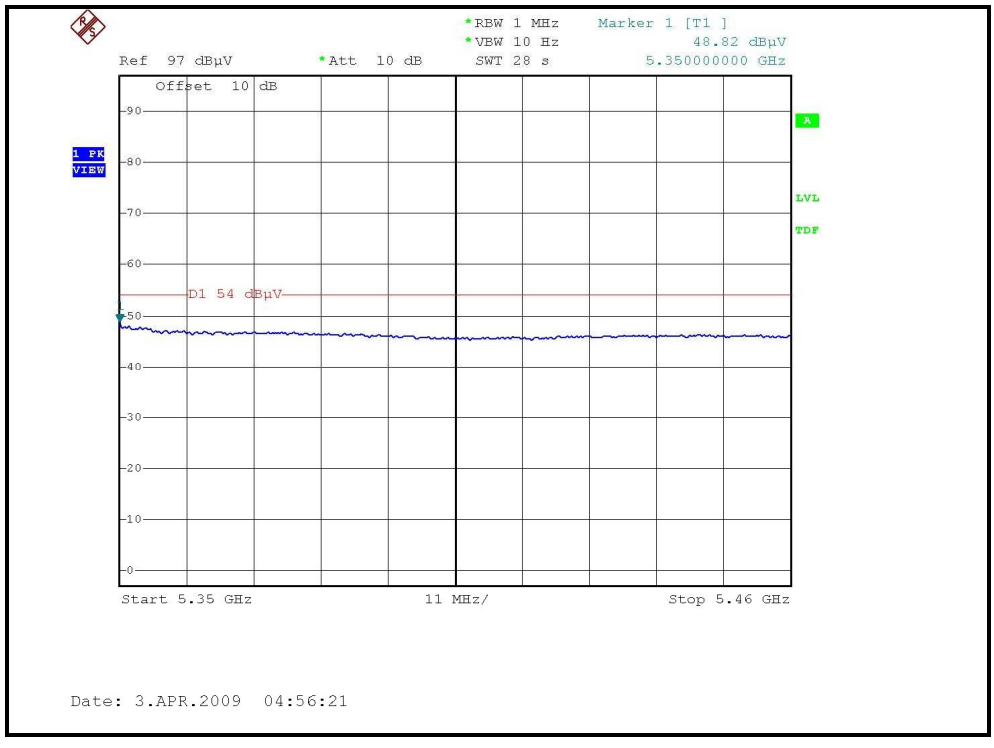
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH8, HORIZONTAL)



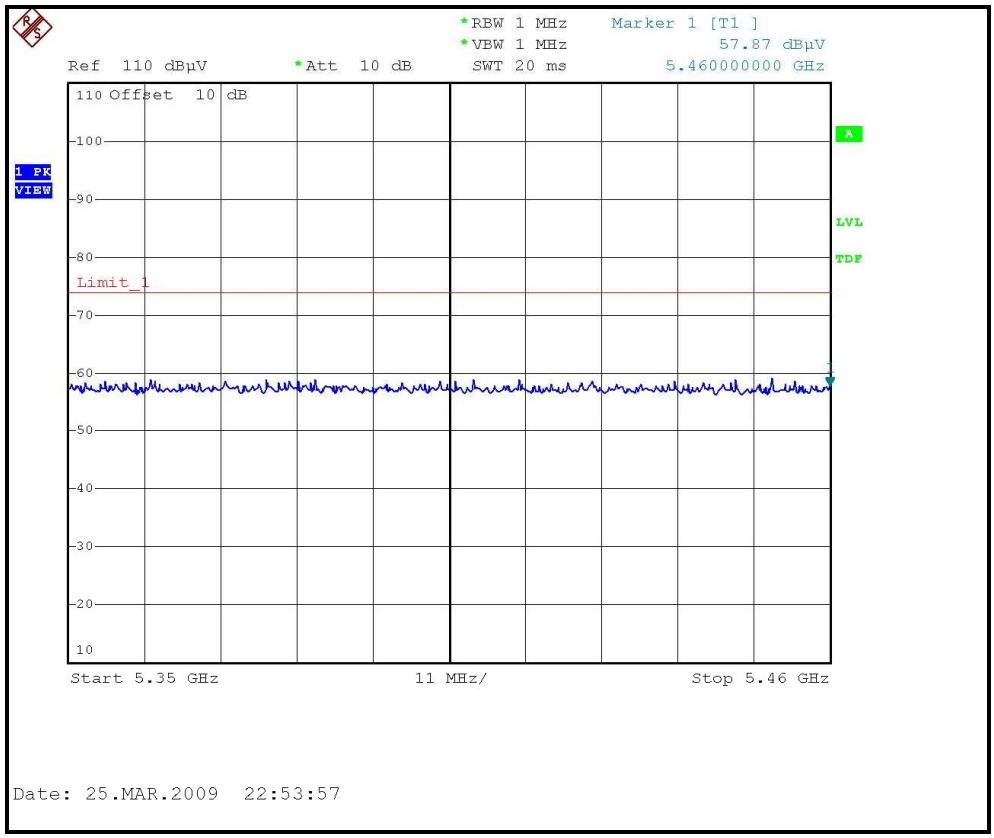


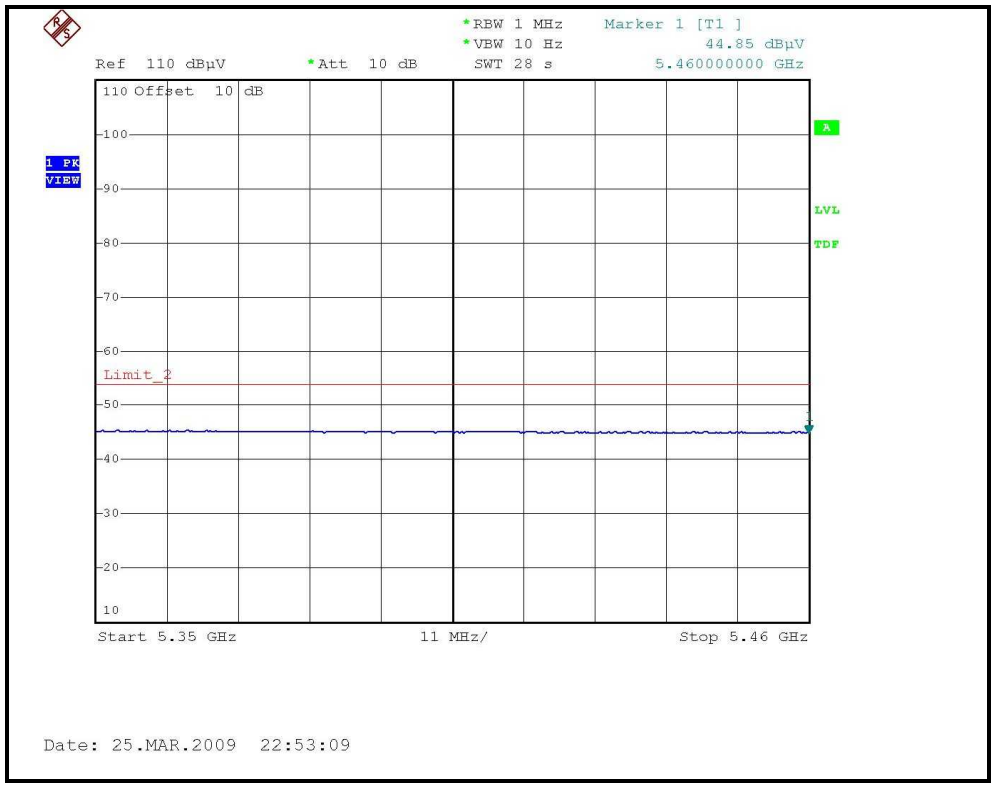
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH8, VERTICAL)



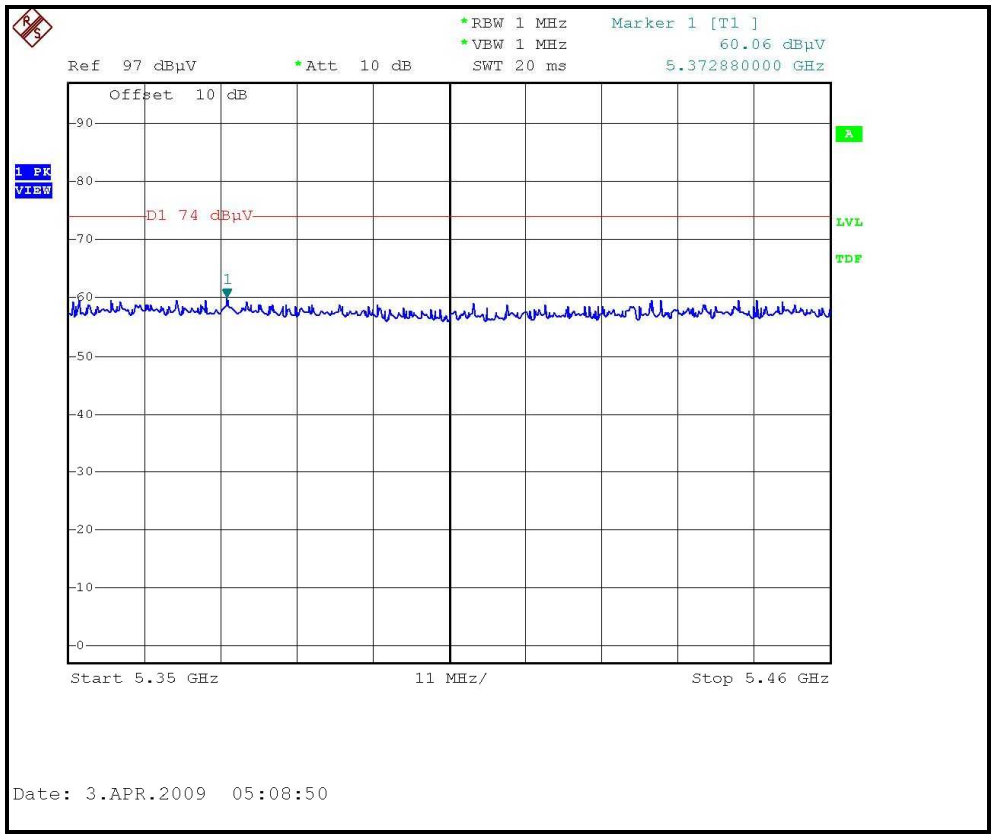


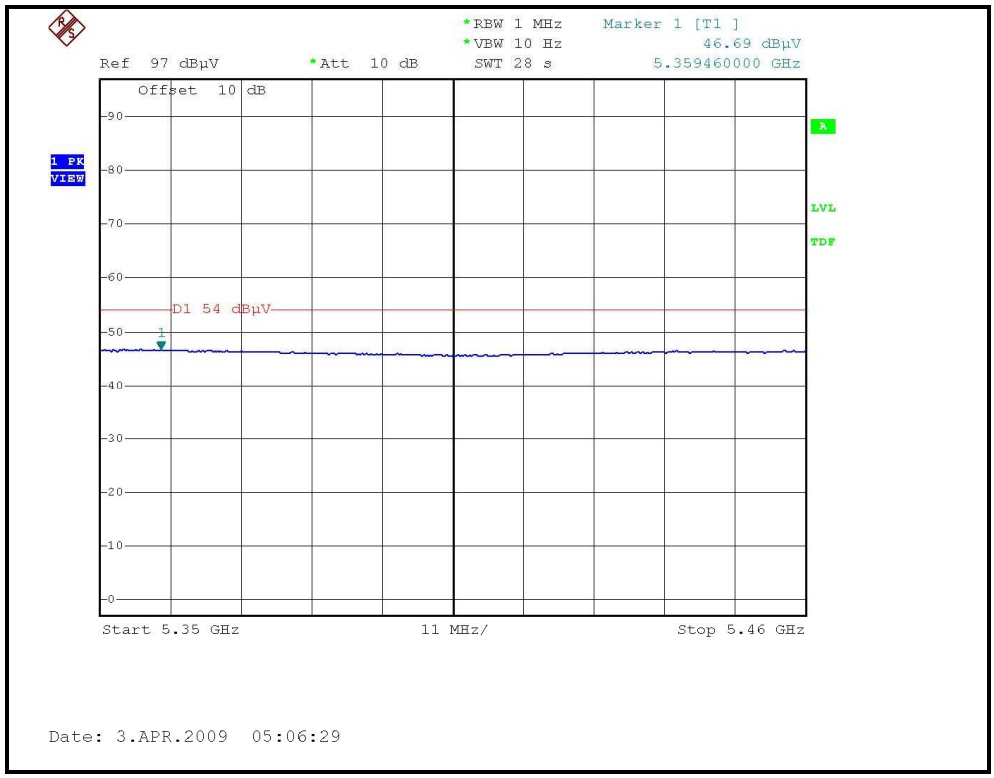
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH9, HORIZONTAL)





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





4.3 PEAK TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

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

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ADVANTEST SPECTRUM ANALYZER	U3772	160100280	July 26, 2008	July 25, 2009

NOTE:

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

4.3.3 TEST PROCEDURE

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

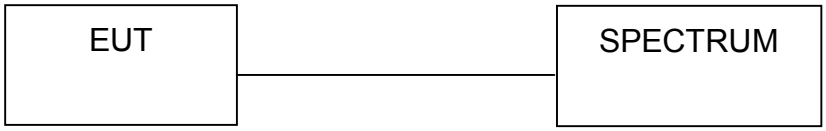
NOTE:
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

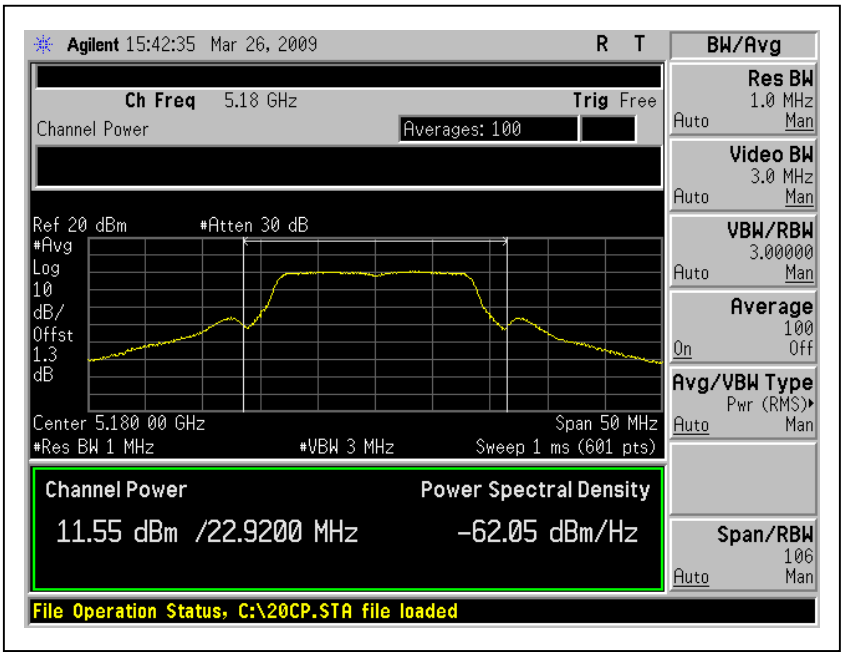
802.11a OFDM MODULATION:

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

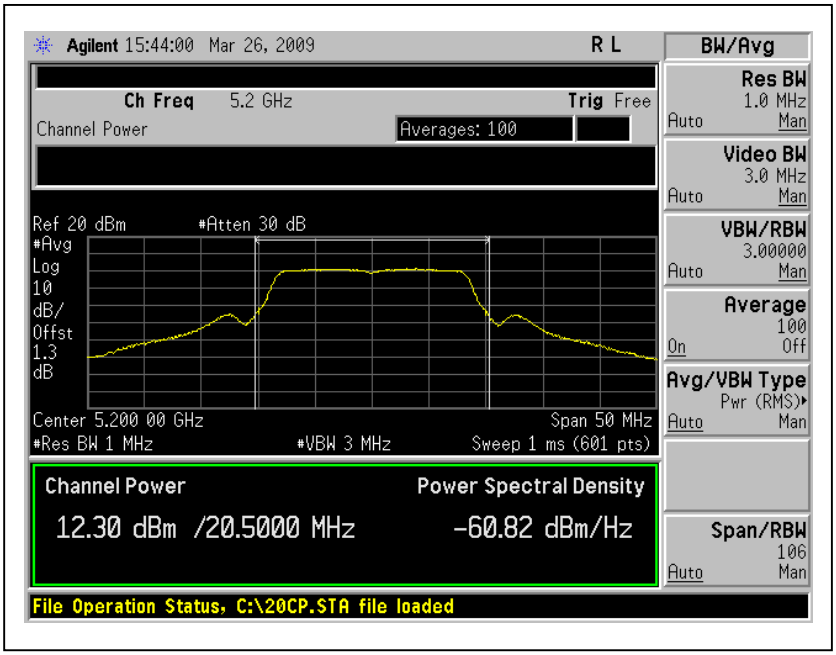
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	11.55	14.289	17	22.92	PASS
2	5200	12.30	16.982	17	20.50	PASS
4	5240	12.03	15.959	17	24.83	PASS
5	5260	12.61	18.239	24	22.75	PASS
7	5300	12.83	19.187	24	20.75	PASS
8	5320	13.04	20.137	24	20.75	PASS
9	5500	13.74	23.659	24	20.83	PASS
14	5600	13.02	20.045	24	22.92	PASS
19	5700	13.48	22.284	24	20.50	PASS

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

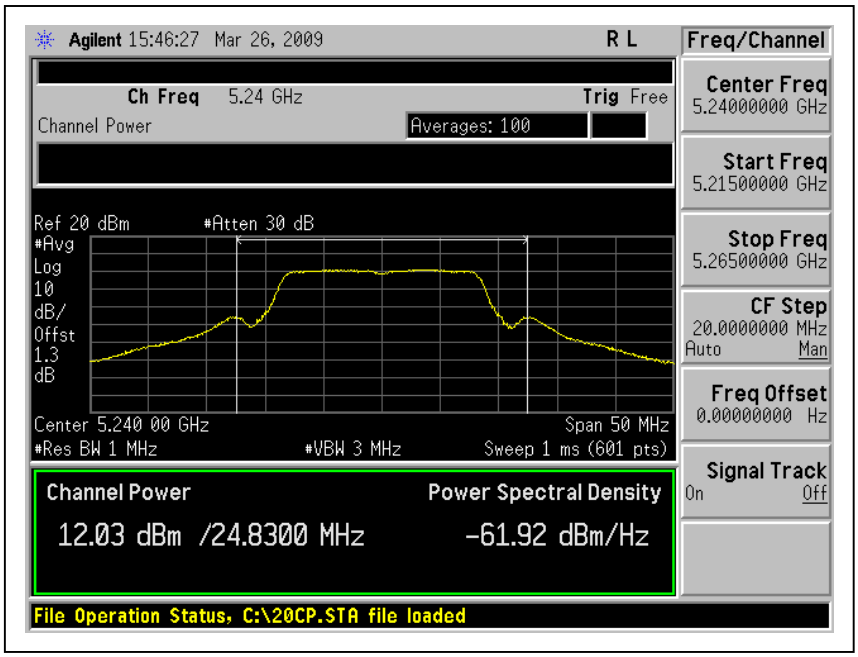
Peak Power Output:
For CH1



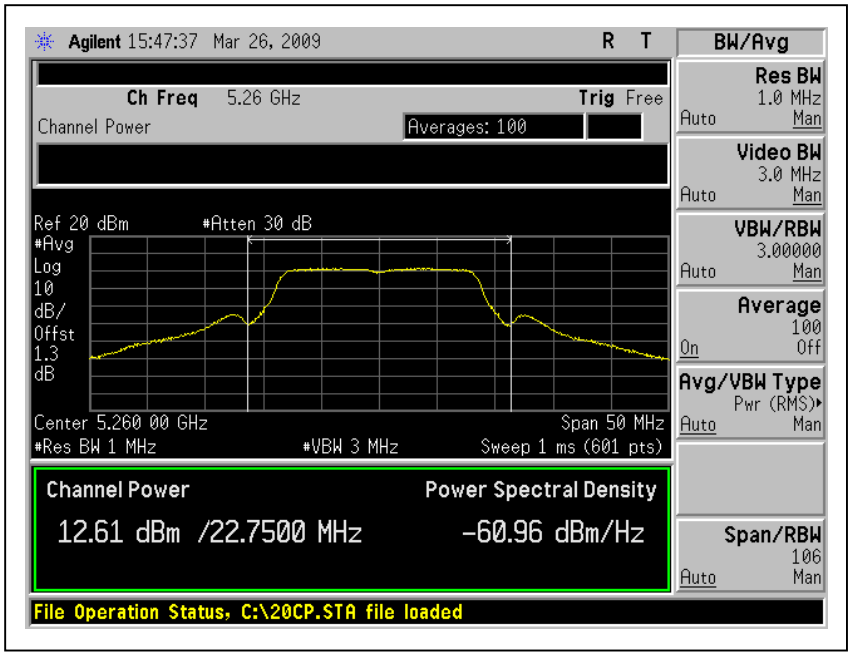
CH2



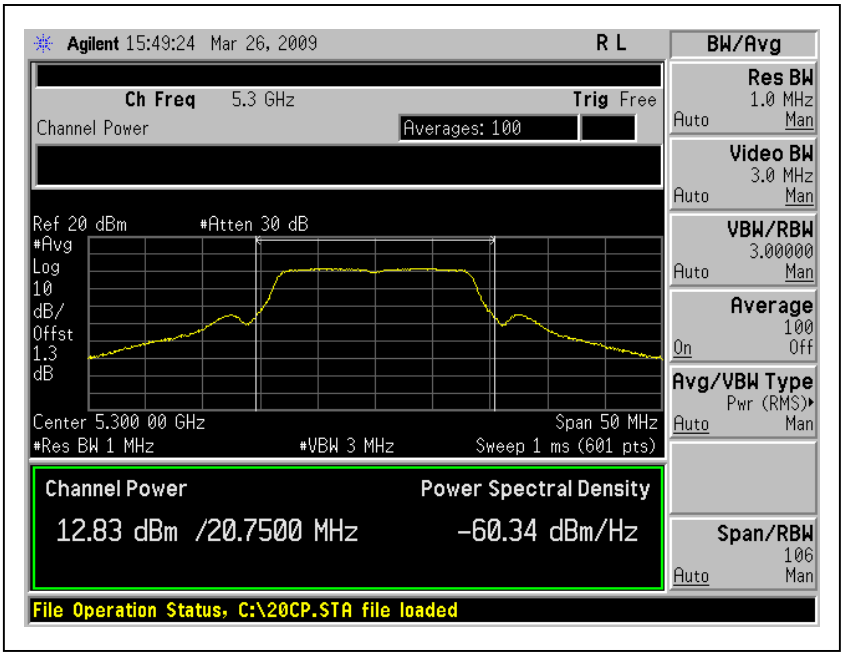
CH4


Agilent 15:46:27 Mar 26, 2009
R L
Freq/Channel
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Center Freq
5.24000000 GHz
Start Freq
5.21500000 GHz
Stop Freq
5.26500000 GHz
CF Step
20.0000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
12.03 dBm /24.8300 MHz
Power Spectral Density
-61.92 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

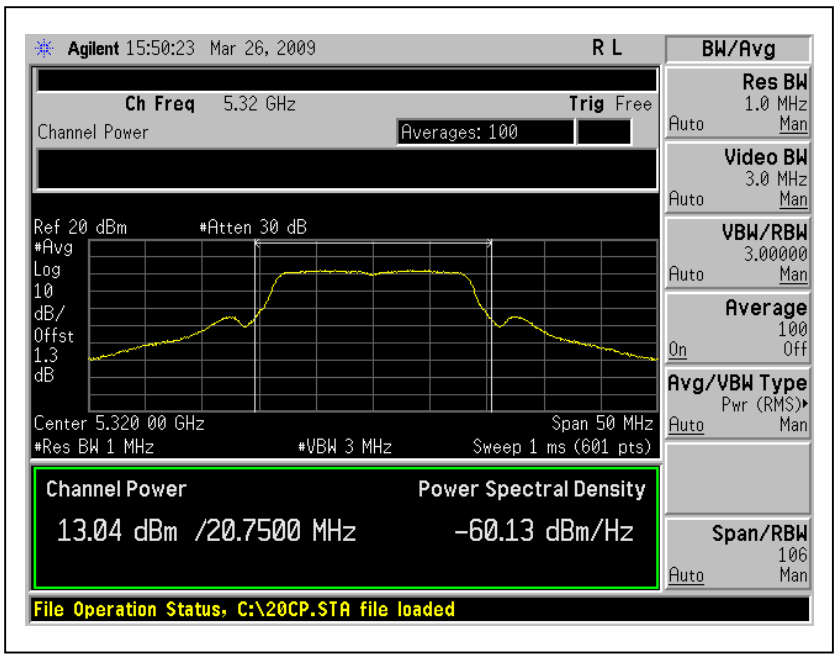
CH5


Agilent 15:47:37 Mar 26, 2009
R T
BW/Avg
Ch Freq 5.26 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.260 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
12.61 dBm /22.7500 MHz
Power Spectral Density
-60.96 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

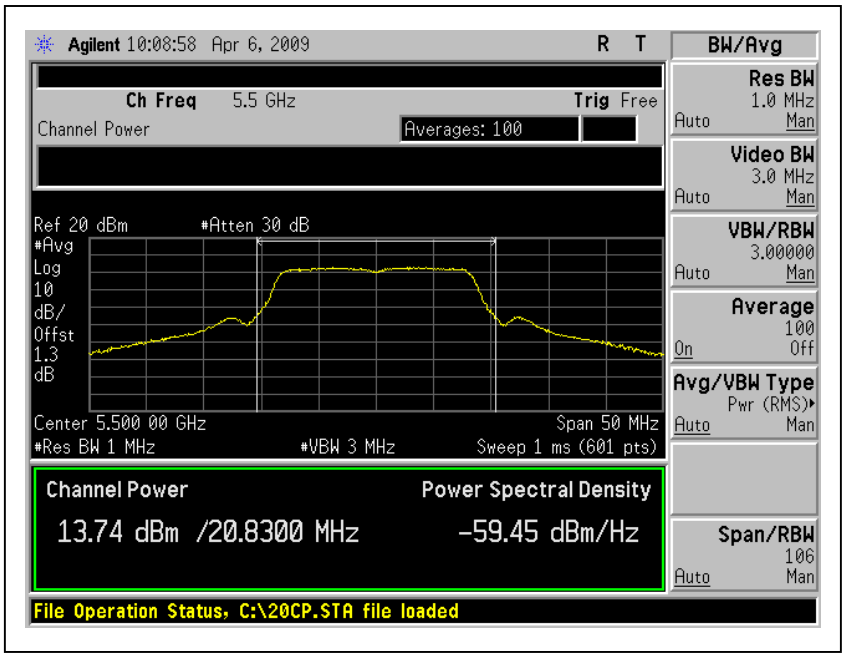
CH7


Agilent 15:49:24 Mar 26, 2009
R L
BW/Avg
Ch Freq 5.3 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.300 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
12.83 dBm /20.7500 MHz
Power Spectral Density
-60.34 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

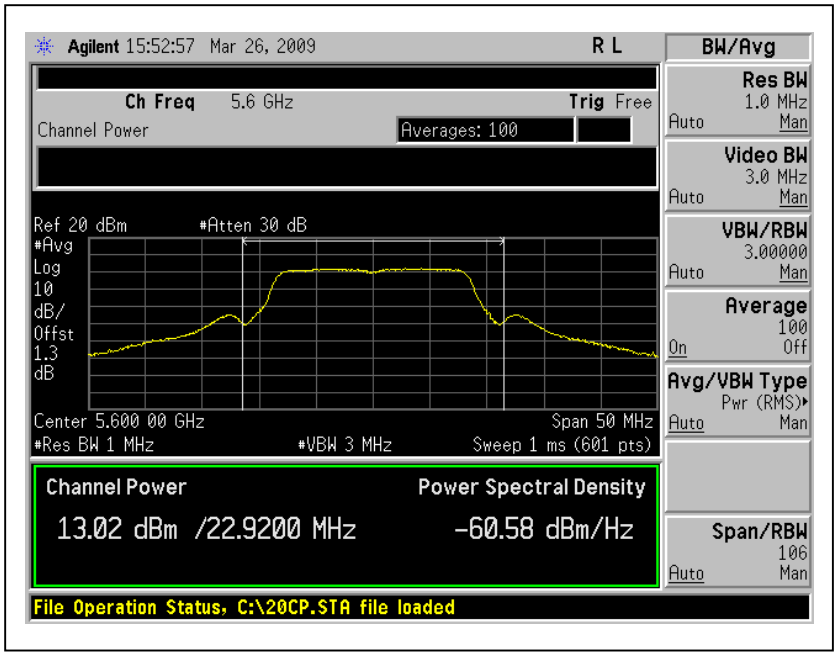
CH8


Agilent 15:50:23 Mar 26, 2009
R L
BW/Avg
Ch Freq 5.32 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.320 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
13.04 dBm /20.7500 MHz
Power Spectral Density
-60.13 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

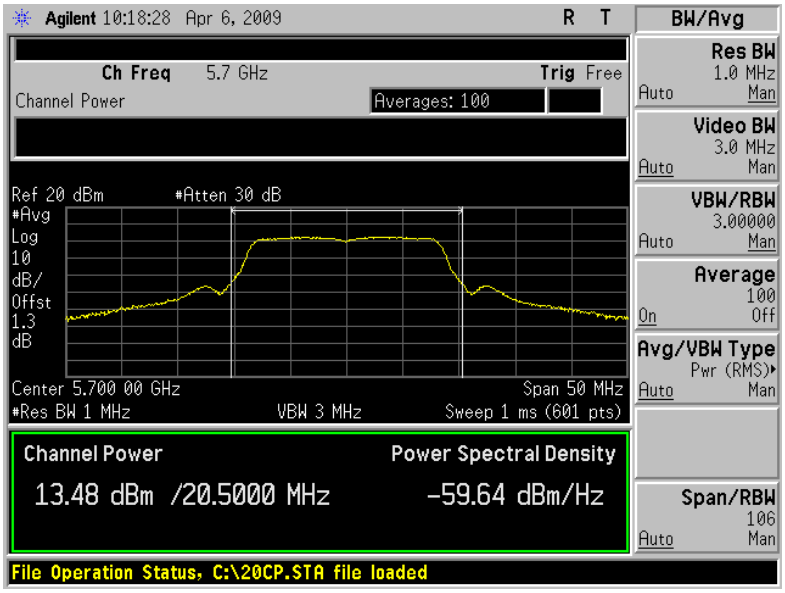
CH9


Agilent 10:08:58 Apr 6, 2009
R T
BW/Avg
Ch Freq 5.5 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.500 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
13.74 dBm /20.8300 MHz
Power Spectral Density
-59.45 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

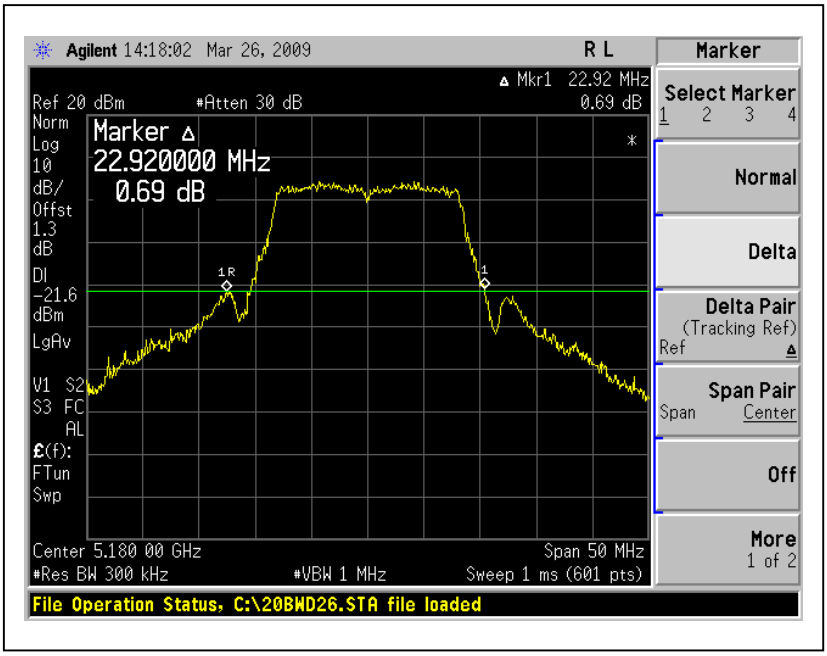
CH14


Agilent 15:52:57 Mar 26, 2009
R L
BW/Avg
Ch Freq 5.6 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.600 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
13.02 dBm /22.9200 MHz
Power Spectral Density
-60.58 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

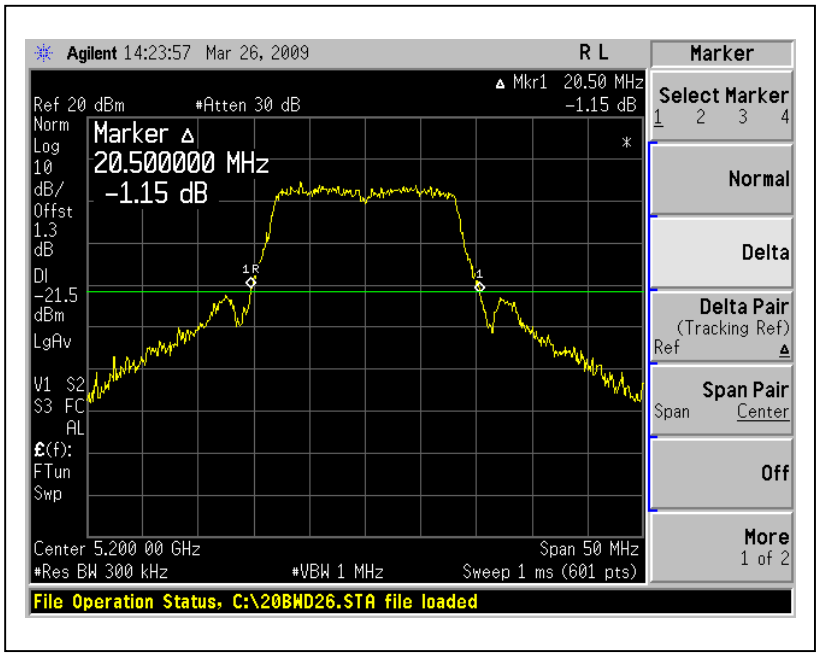
CH19


Agilent 10:18:28 Apr 6, 2009
R T
BW/Avg
Ch Freq 5.7 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.700 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
13.48 dBm /20.5000 MHz
Power Spectral Density
-59.64 dBm/Hz
File Operation Status. C:\20CP.STA file loaded

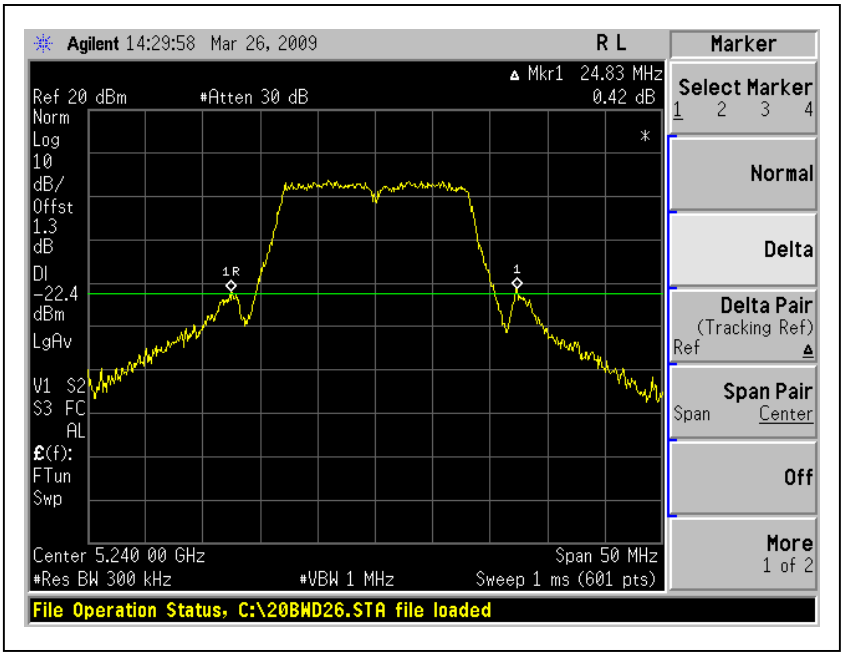
26dB Occupied Bandwidth:
For CH1



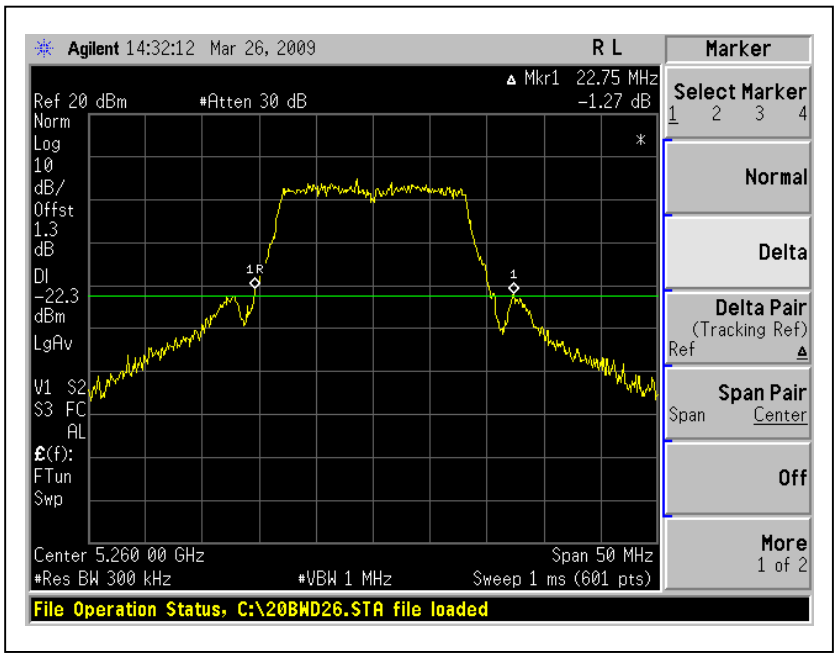
CH2



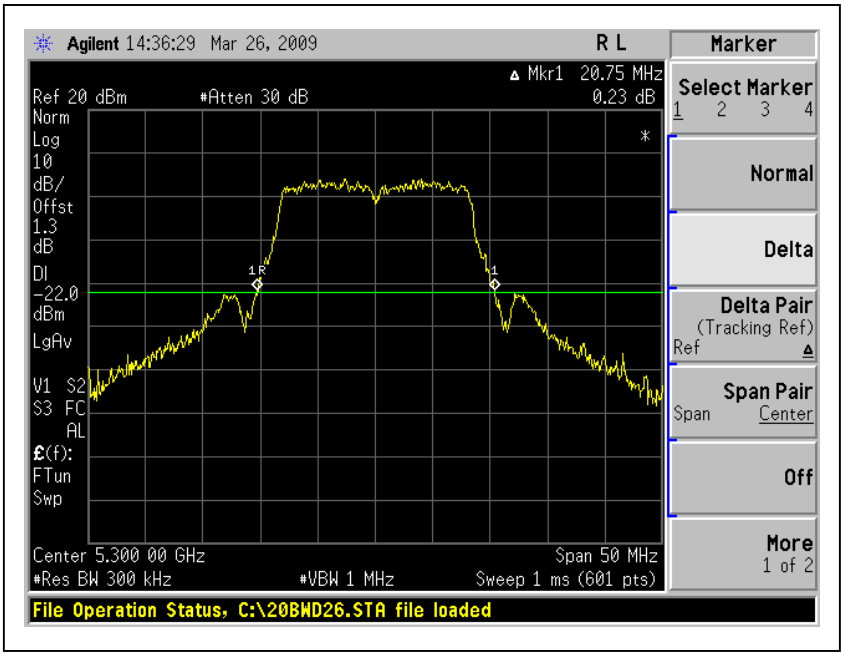
CH4


Agilent 14:29:58 Mar 26, 2009
R L
Marker
Mkr1 24.83 MHz
0.42 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-22.4
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Center 5.240 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

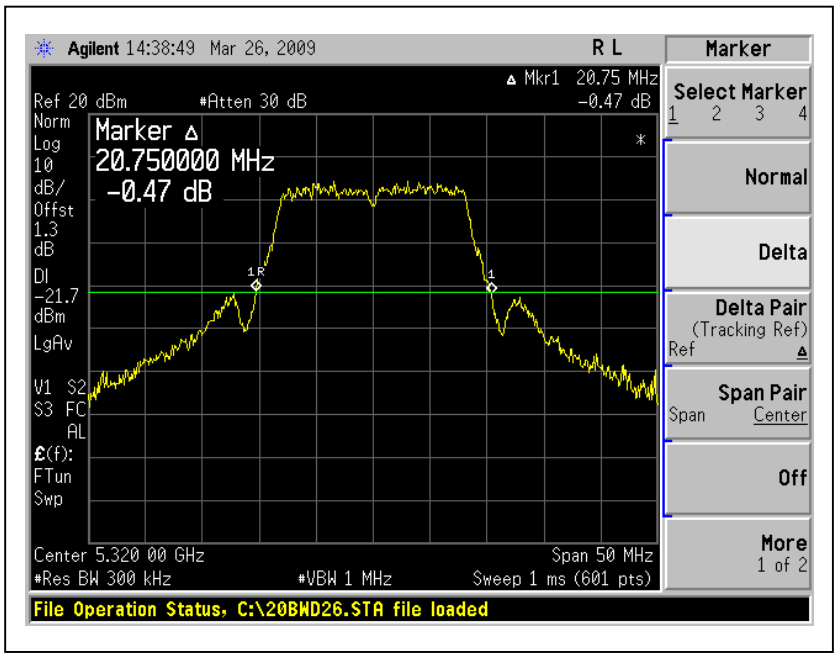
CH5


Agilent 14:32:12 Mar 26, 2009
R L
Marker
Mkr1 22.75 MHz
-1.27 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-22.3
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Center 5.260 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

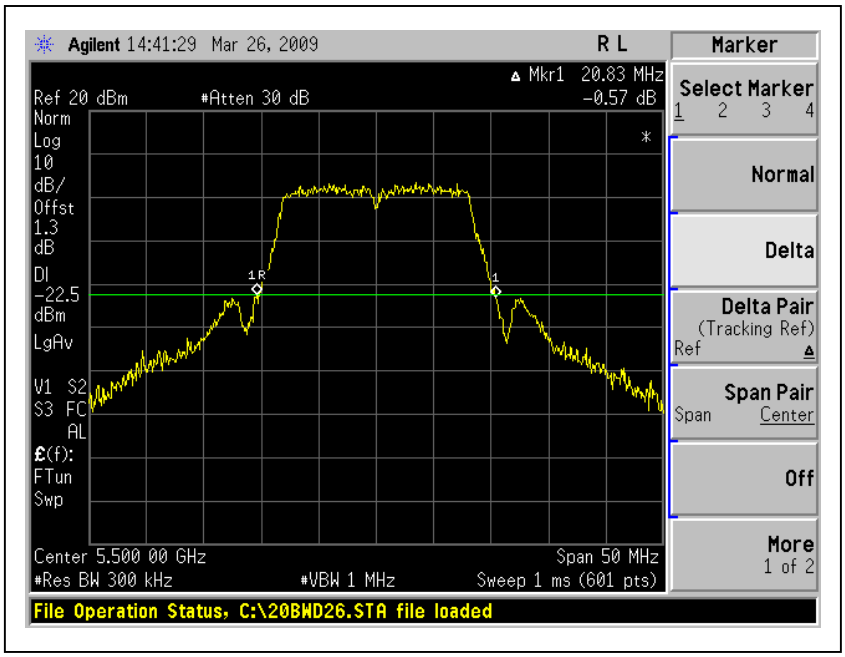
CH7


Agilent 14:36:29 Mar 26, 2009
R L
Marker
Mkr1 20.75 MHz
0.23 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-22.0
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Center 5.300 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

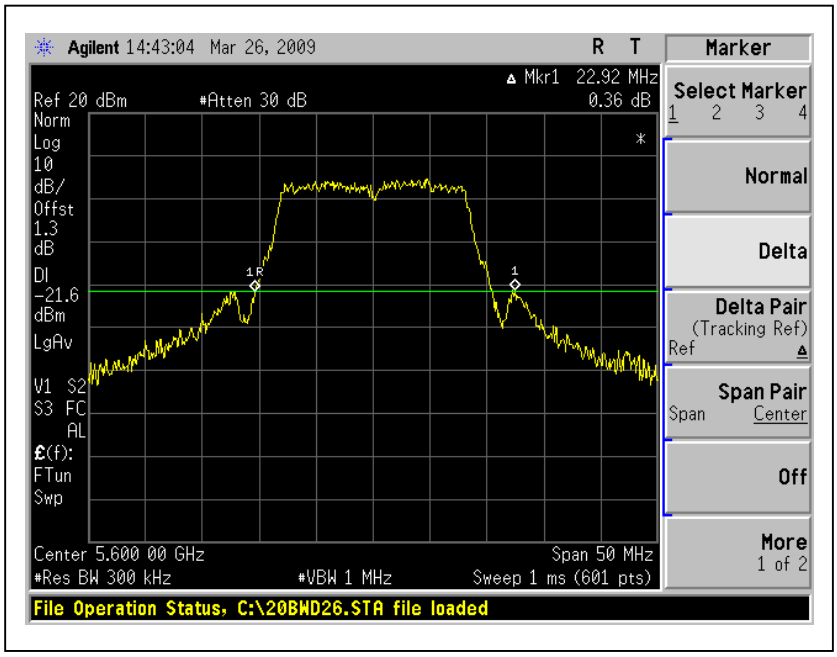
CH8


Agilent 14:38:49 Mar 26, 2009
R L
Marker
Mkr1 20.75 MHz
-0.47 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-21.7
dBm
LgAv
Marker Δ
20.750000 MHz
-0.47 dB
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Center 5.320 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

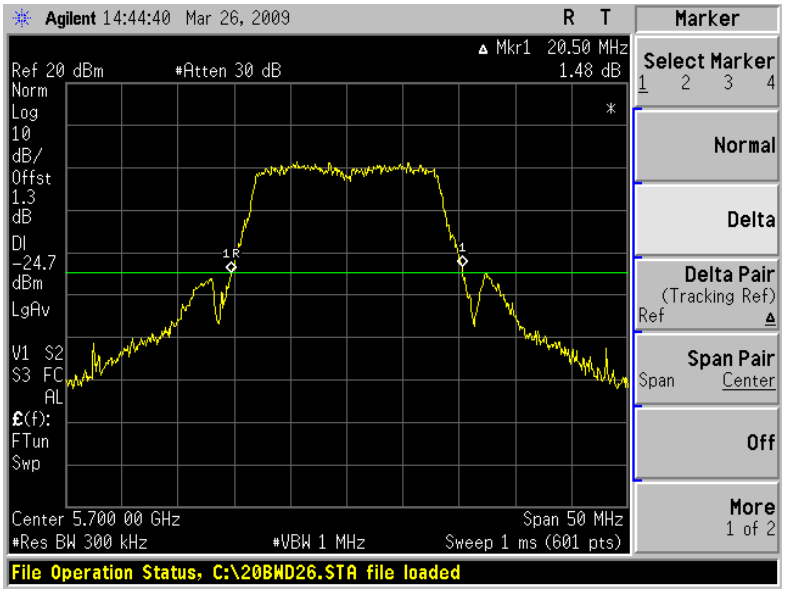
CH9


Agilent 14:41:29 Mar 26, 2009
R L
Marker
Mkr1 20.83 MHz
-0.57 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-22.5
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.500 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20BWD26.STA file loaded

CH14


Agilent 14:43:04 Mar 26, 2009
R T
Marker
Mkr1 22.92 MHz
0.36 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-21.6
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.600 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20BWD26.STA file loaded

CH19


Agilent 14:44:40 Mar 26, 2009
R T
Marker
Mkr1 20.50 MHz
1.48 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-24.7
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.700 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status. C:\20BWD26.STA file loaded

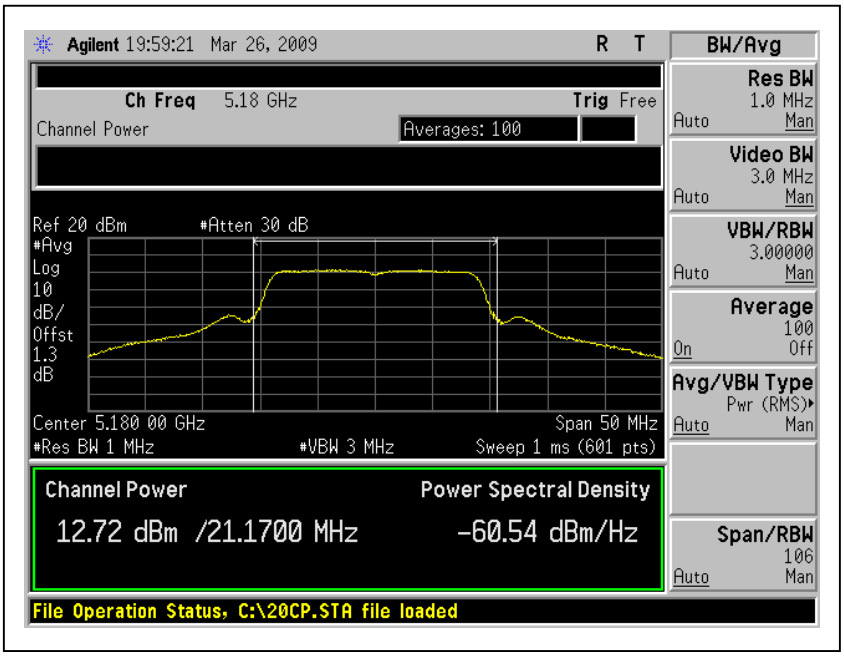
DRAFT 802.11n (20MHz) OFDM modulation:

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

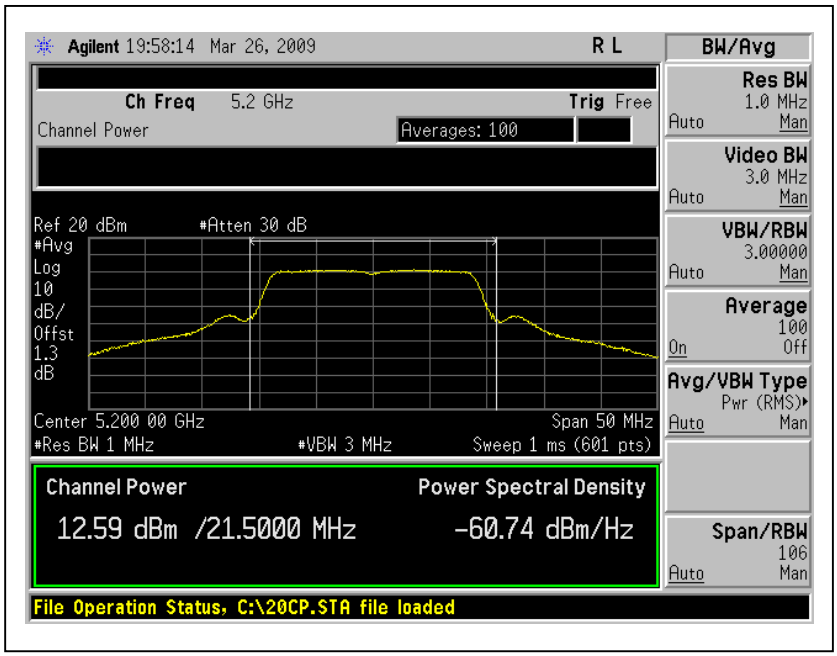
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)		PEAK POWER OUTPUT (mW)		TOTAL PEAK POWER (dBm)	TOTAL PEAK POWER (mW)	**PEAK POWER LIMIT (dBm)**	26dBc Occupied Bandwidth (MHz)		PASS/ FAIL
		Chain 0	Chain 1	Chain 0	Chain 1				Chain 0	Chain 1	
1	5180	12.72	12.42	18.707	17.458	15.58	36.165	17.00	23.07	20.72	PASS
2	5200	12.59	11.95	18.155	15.668	15.29	33.823	17.00	21.18	20.61	PASS
4	5240	12.32	11.78	17.061	15.066	15.07	32.127	17.00	21.18	20.61	PASS
5	5260	13.28	13.01	21.281	19.999	16.16	41.280	24.00	24.78	20.58	PASS
7	5300	13.02	13.11	20.045	20.464	16.08	40.509	24.00	23.17	20.48	PASS
8	5320	12.66	12.60	18.450	18.197	15.64	36.647	24.00	21.25	20.61	PASS
9	5500	13.44	12.63	22.080	18.323	16.06	40.403	24.00	21.04	20.55	PASS
14	5600	12.69	12.39	18.578	17.338	15.55	35.916	24.00	20.96	20.41	PASS
19	5700	9.71	8.96	9.354	7.870	12.36	17.224	24.00	21.04	20.44	PASS

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

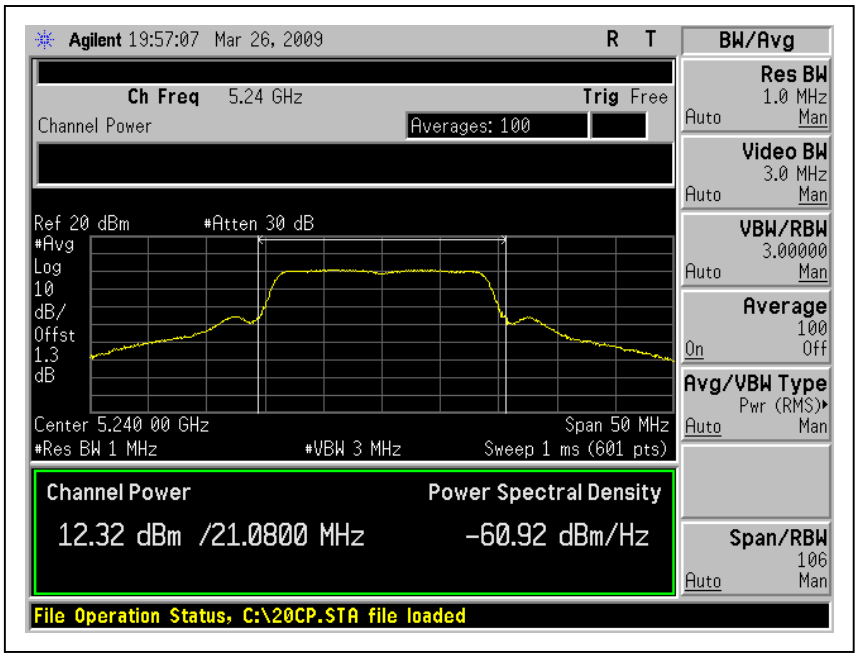
Peak Power Output:
For Chain (0) :CH1



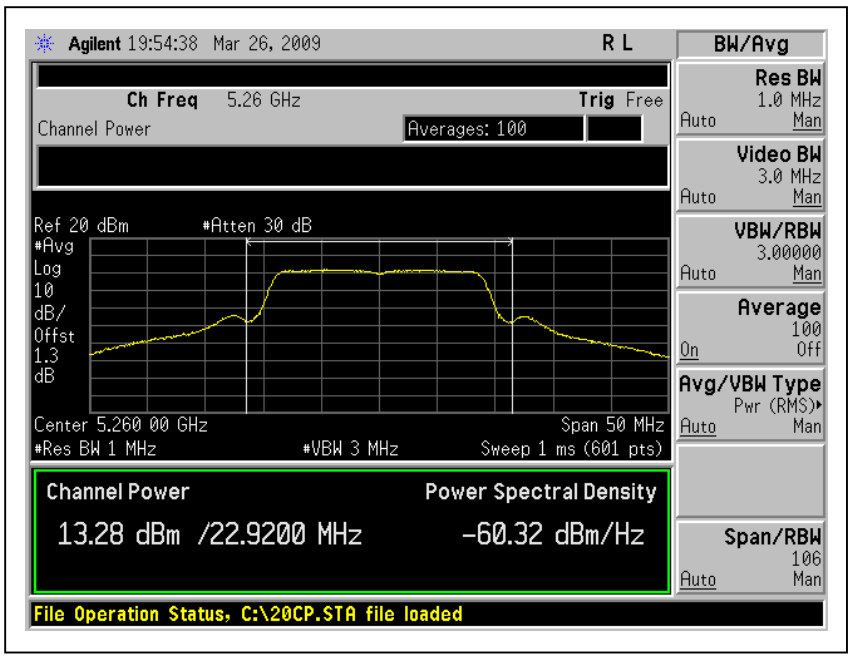
CH2



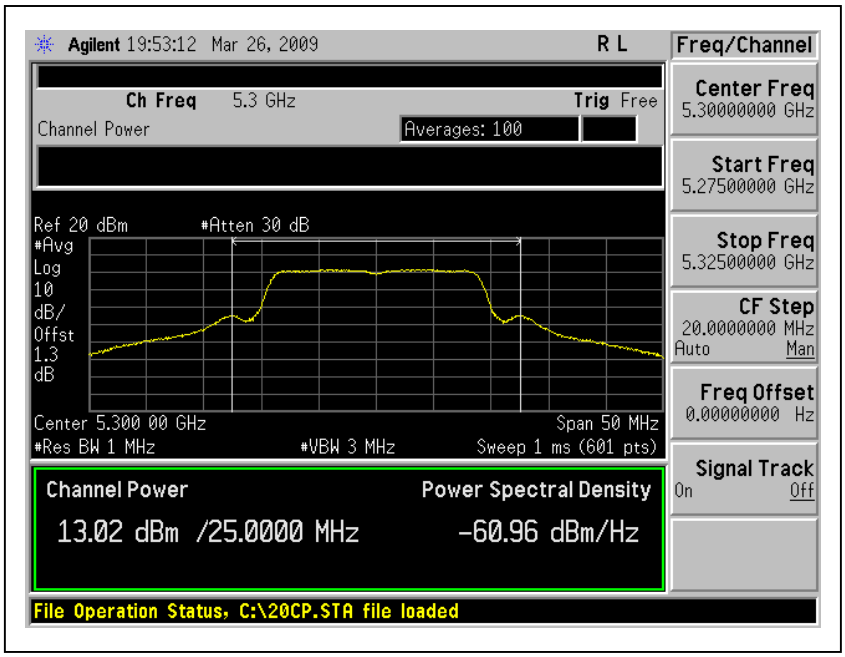
CH4


Agilent 19:57:07 Mar 26, 2009
R T
BW/Avg
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
12.32 dBm /21.0800 MHz
Power Spectral Density
-60.92 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

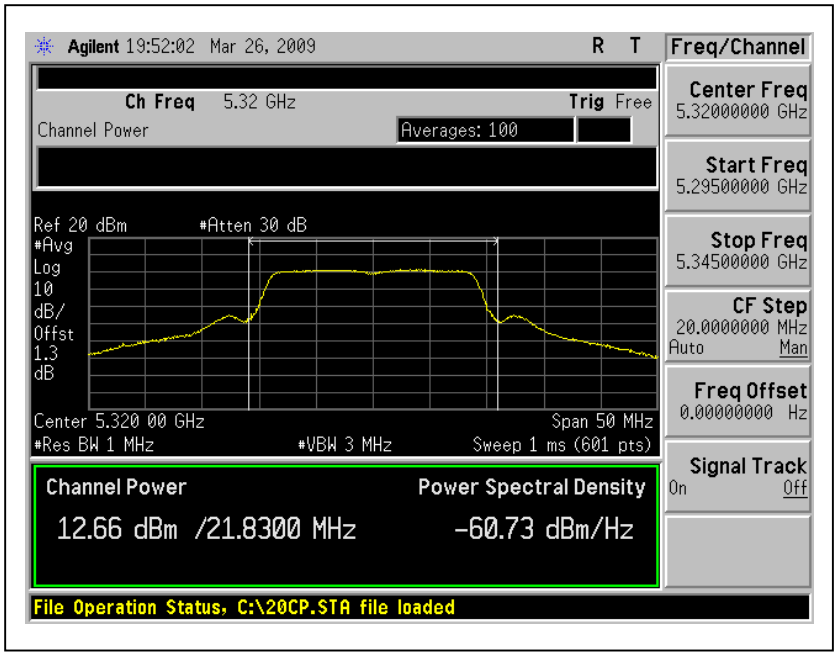
CH5


Agilent 19:54:38 Mar 26, 2009
R L
BW/Avg
Ch Freq 5.26 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.260 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
13.28 dBm /22.9200 MHz
Power Spectral Density
-60.32 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

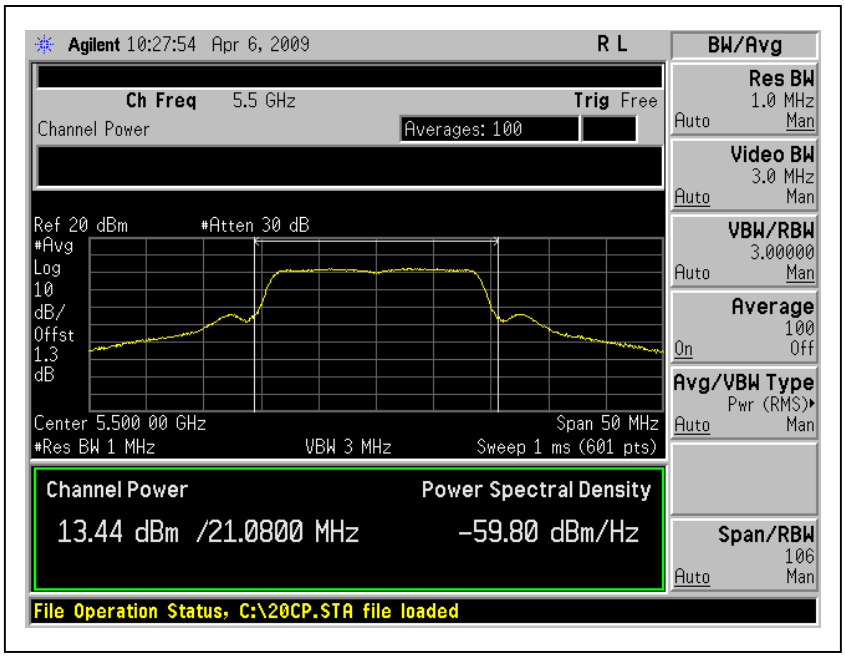
CH7


Agilent 19:53:12 Mar 26, 2009
R L
Freq/Channel
Ch Freq 5.3 GHz
Trig Free
Channel Power
Averages: 100
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.300 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
13.02 dBm /25.0000 MHz
Power Spectral Density
-60.96 dBm/Hz
File Operation Status, C:\20CP.STA file loaded
Center Freq
5.30000000 GHz
Start Freq
5.27500000 GHz
Stop Freq
5.32500000 GHz
CF Step
20.0000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off

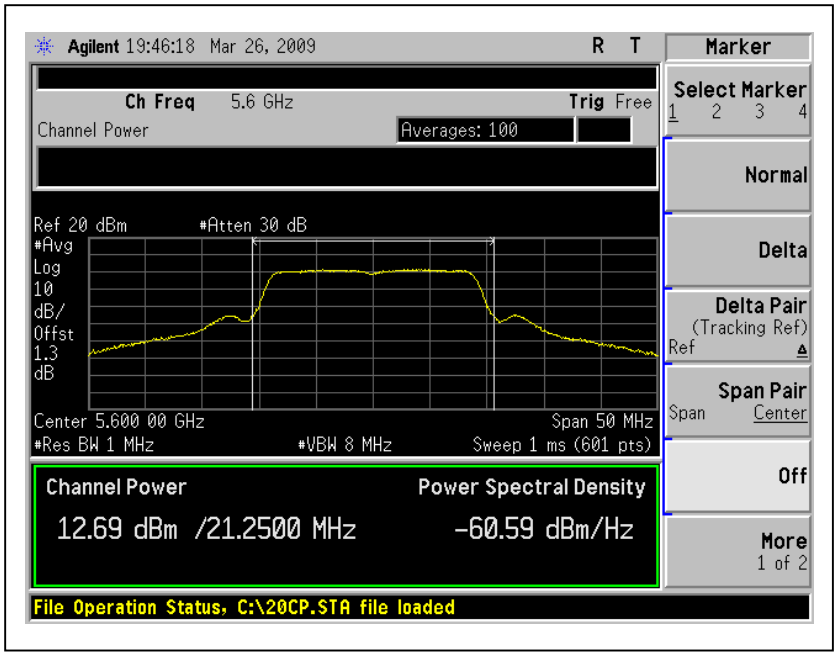
CH8


Agilent 19:52:02 Mar 26, 2009
R T
Freq/Channel
Ch Freq 5.32 GHz
Trig Free
Channel Power
Averages: 100
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.320 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
12.66 dBm /21.8300 MHz
Power Spectral Density
-60.73 dBm/Hz
File Operation Status, C:\20CP.STA file loaded
Center Freq
5.32000000 GHz
Start Freq
5.29500000 GHz
Stop Freq
5.34500000 GHz
CF Step
20.0000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off

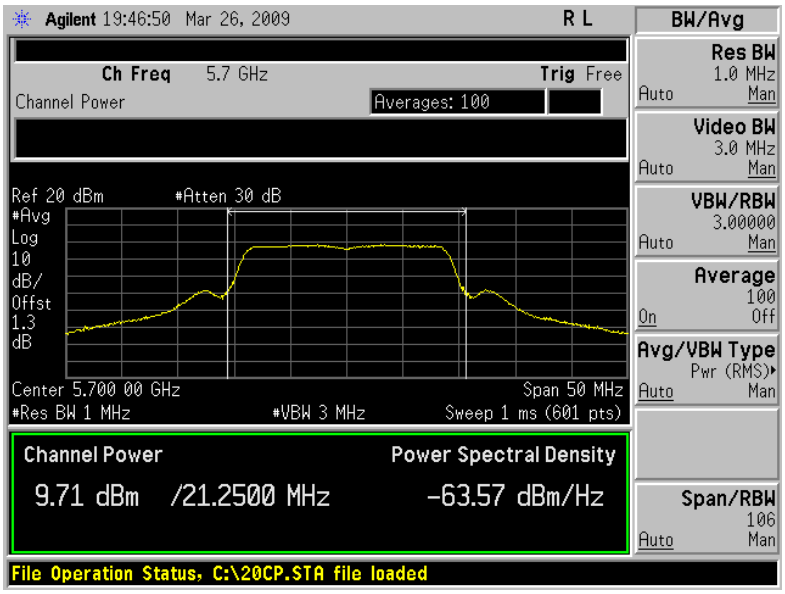
CH9


Agilent 10:27:54 Apr 6, 2009
R L
BW/Avg
Ch Freq 5.5 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.500 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
13.44 dBm /21.0800 MHz
Power Spectral Density
-59.80 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

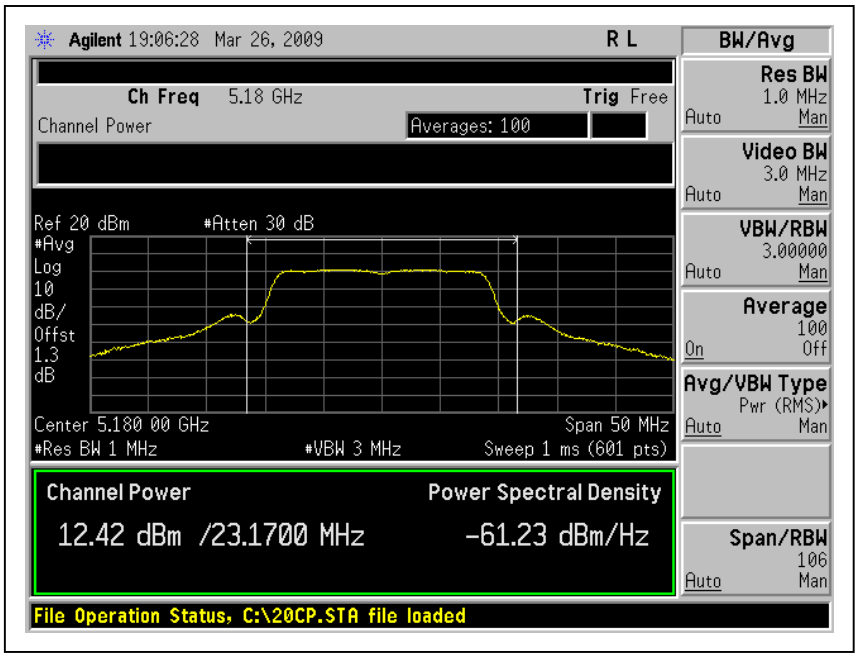
CH14


Agilent 19:46:18 Mar 26, 2009
R T
Marker
Ch Freq 5.6 GHz
Trig Free
Channel Power
Averages: 100
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.600 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 8 MHz
Sweep 1 ms (601 pts)
Channel Power
12.69 dBm /21.2500 MHz
Power Spectral Density
-60.59 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

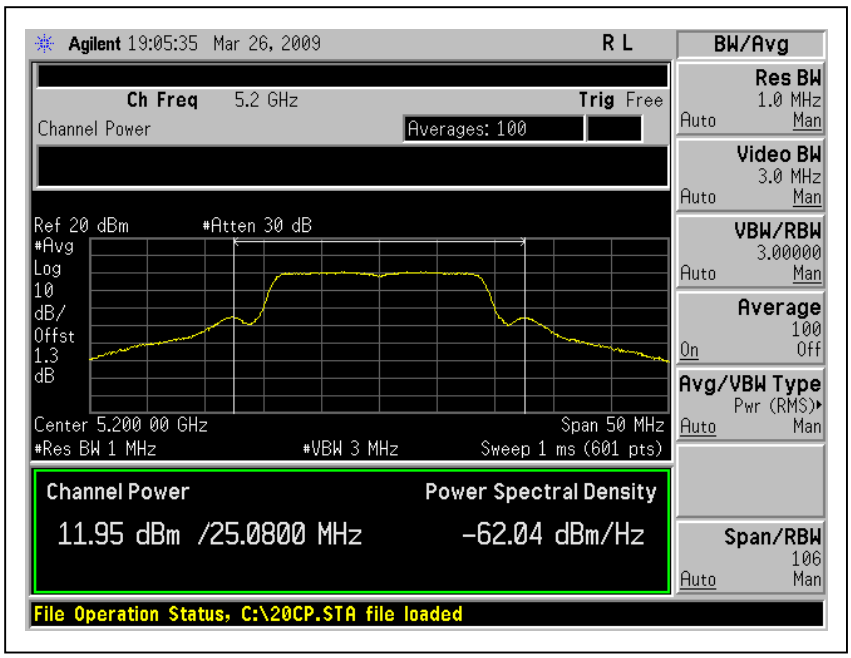
CH19


Agilent 19:46:50 Mar 26, 2009
R L
BW/Avg
Ch Freq 5.7 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.700 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
Power Spectral Density
9.71 dBm /21.2500 MHz
-63.57 dBm/Hz
Span/RBW
106
Auto Man
File Operation Status, C:\20CP.STA file loaded

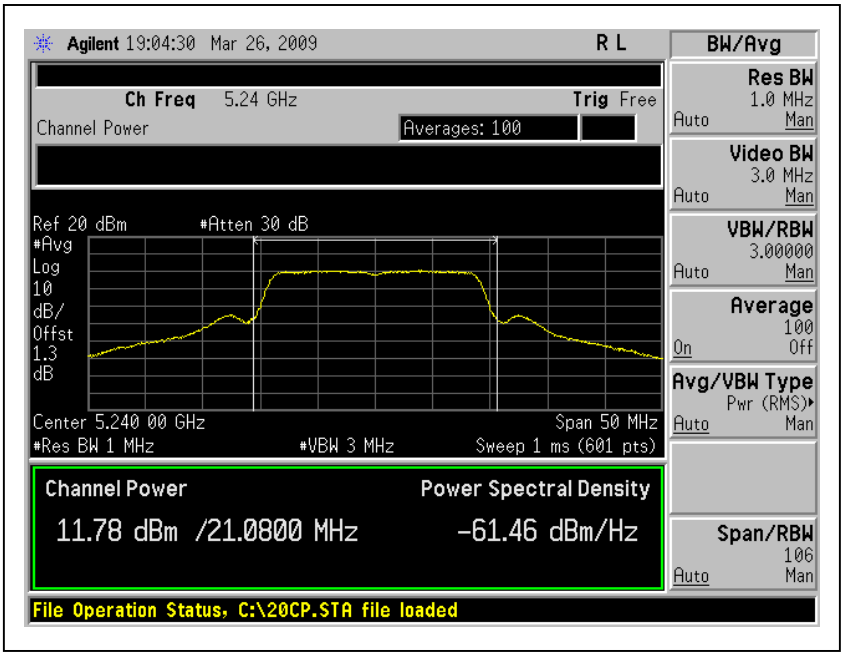
For Chain (1) :CH1



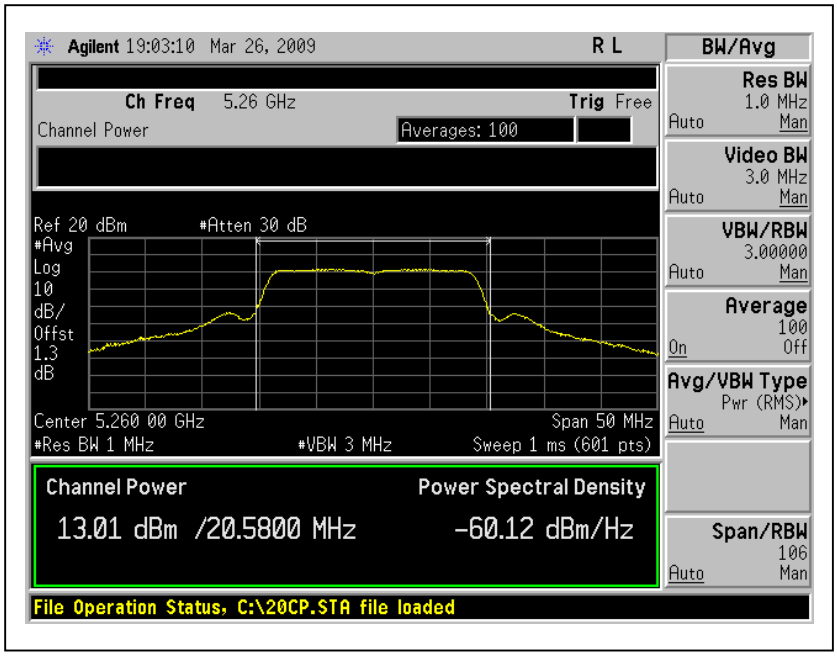
CH2



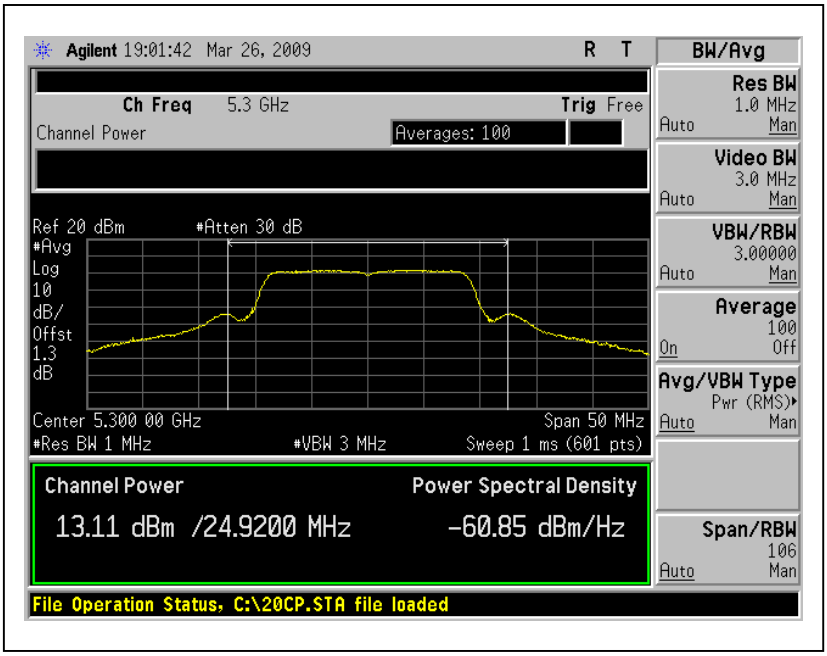
CH4


Agilent 19:04:30 Mar 26, 2009
R L
BW/Avg
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
11.78 dBm /21.0800 MHz
Power Spectral Density
-61.46 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

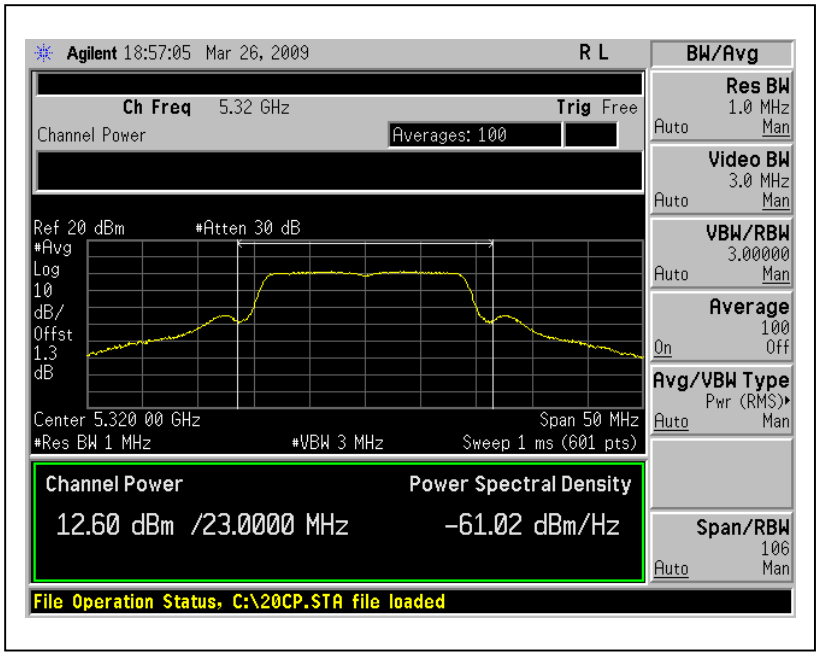
CH5


Agilent 19:03:10 Mar 26, 2009
R L
BW/Avg
Ch Freq 5.26 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.260 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
13.01 dBm /20.5800 MHz
Power Spectral Density
-60.12 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

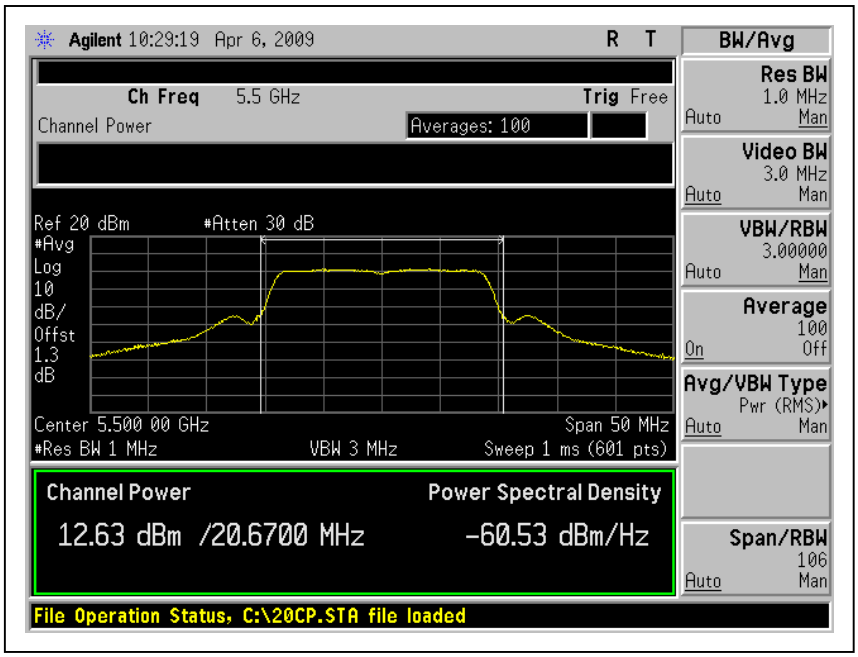
CH7


Agilent 19:01:42 Mar 26, 2009
R T
BW/Avg
Ch Freq 5.3 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.300 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
13.11 dBm /24.9200 MHz
Power Spectral Density
-60.85 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

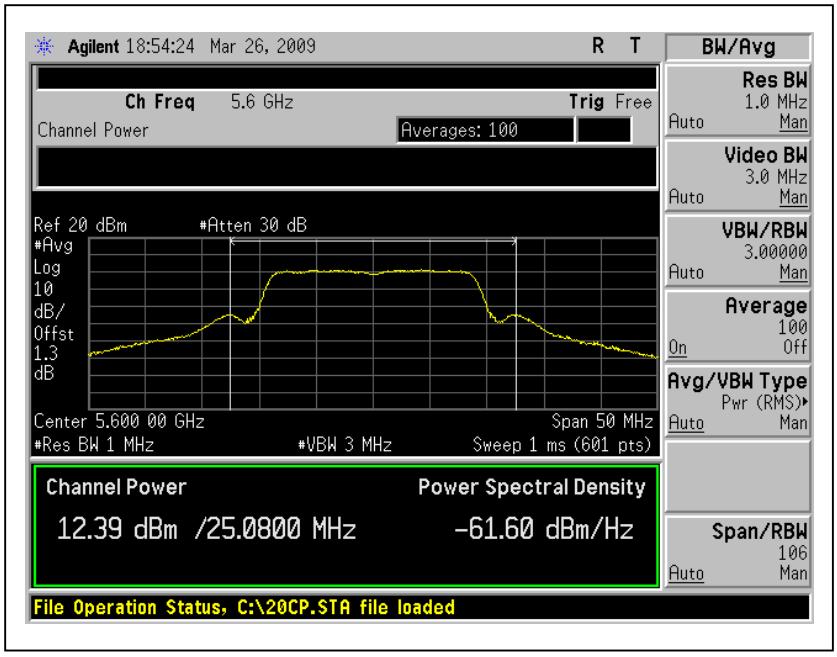
CH8


Agilent 18:57:05 Mar 26, 2009
R L
BW/Avg
Ch Freq 5.32 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.320 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
12.60 dBm /23.0000 MHz
Power Spectral Density
-61.02 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

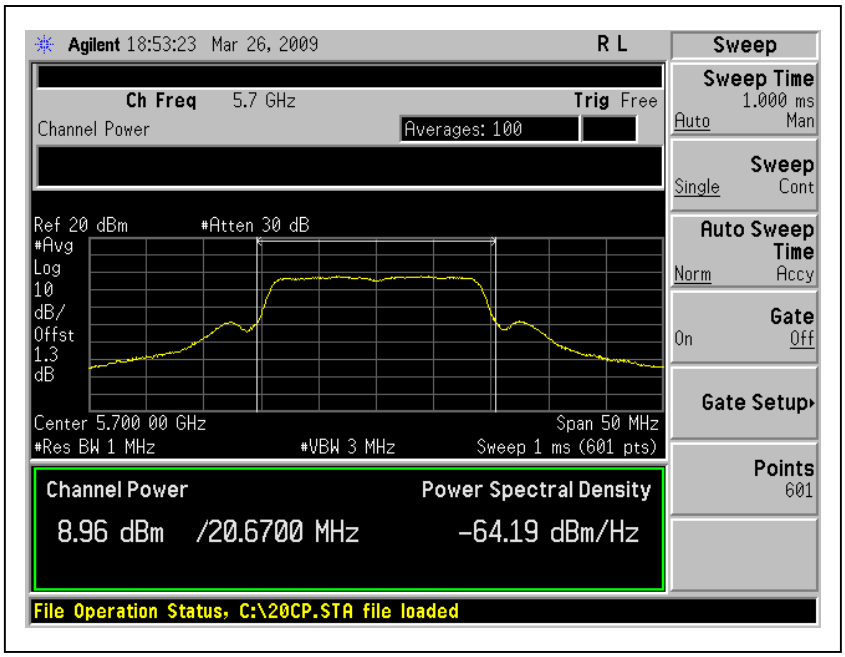
CH9


Agilent 10:29:19 Apr 6, 2009
R T
BW/Avg
Ch Freq 5.5 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.500 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
12.63 dBm /20.6700 MHz
Power Spectral Density
-60.53 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

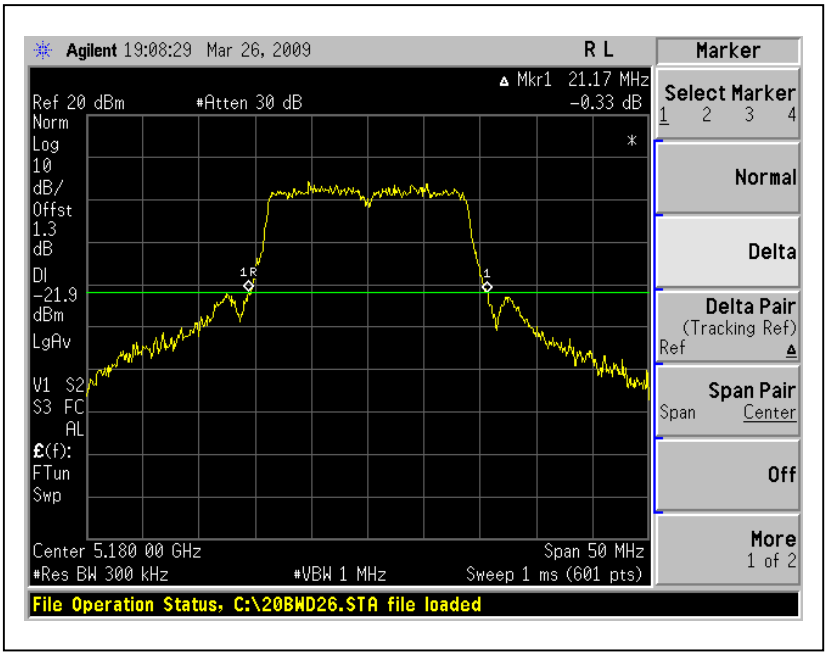
CH14


Agilent 18:54:24 Mar 26, 2009
R T
BW/Avg
Ch Freq 5.6 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.600 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
12.39 dBm /25.0800 MHz
Power Spectral Density
-61.60 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

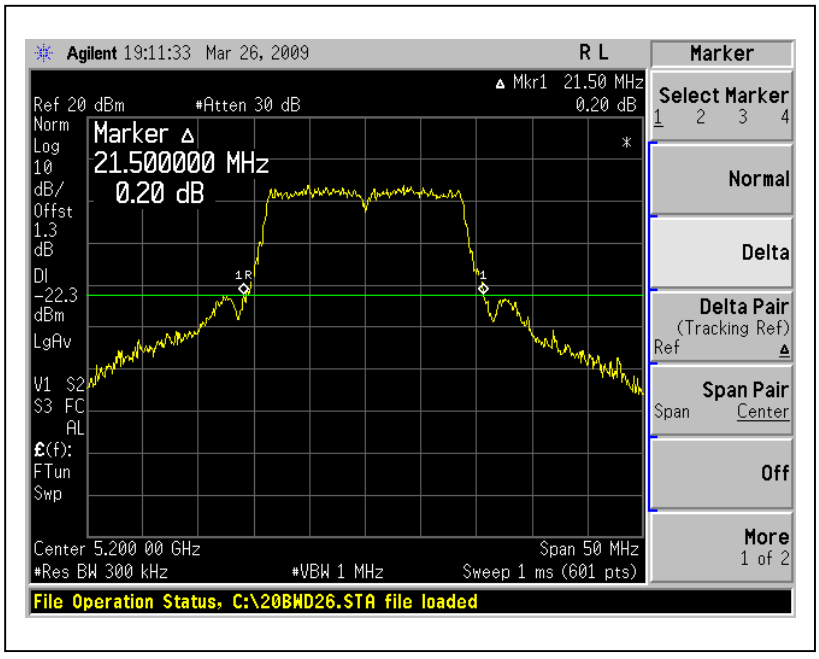
CH19


Agilent 18:53:23 Mar 26, 2009
R L
Sweep
Ch Freq 5.7 GHz
Trig Free
Channel Power
Averages: 100
Sweep Time
1.000 ms
Auto Man
Sweep
Single Cont
Auto Sweep Time
Norm Accy
Gate
On Off
Gate Setup
Points
601
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
Center 5.700 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
Power Spectral Density
8.96 dBm /20.6700 MHz
-64.19 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

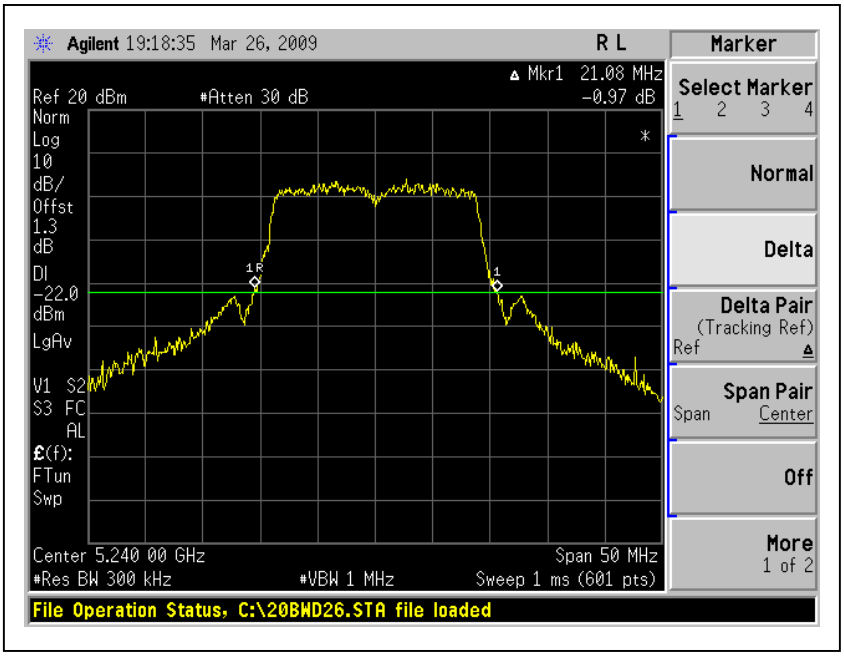
26dB Occupied Bandwidth:
For Chain (0) :CH1



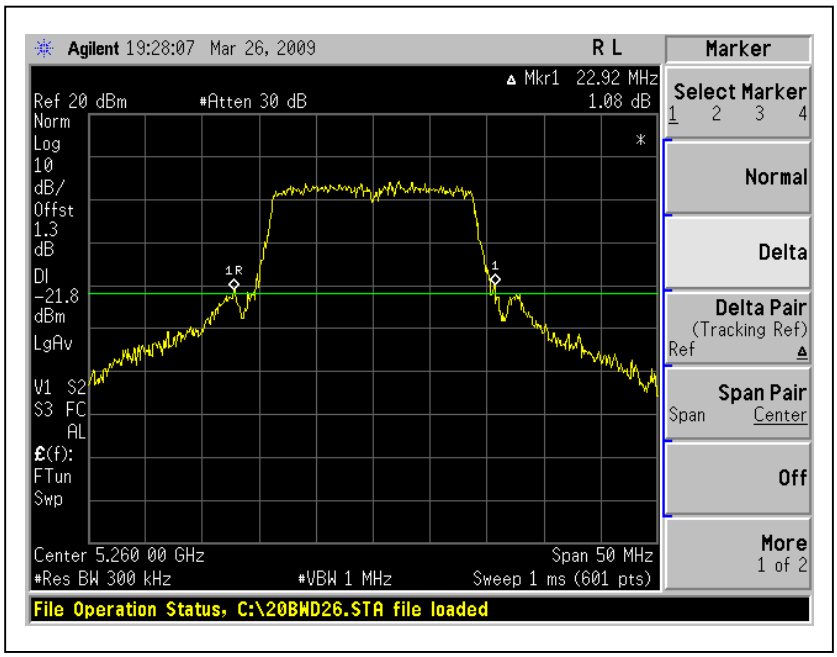
CH2



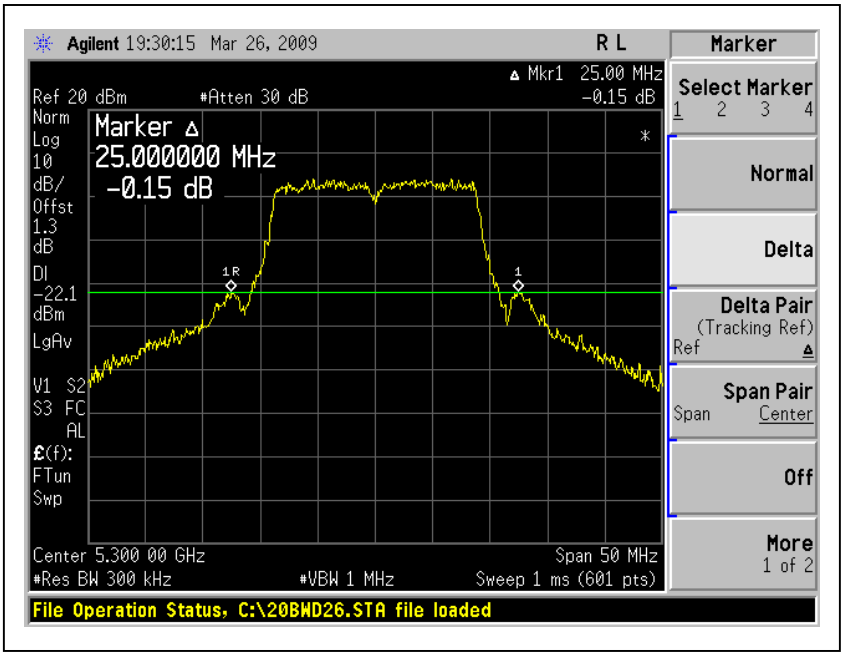
CH4


Agilent 19:18:35 Mar 26, 2009
R L
Marker
Mkr1 21.08 MHz
-0.97 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-22.0
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20BWD26.STA file loaded

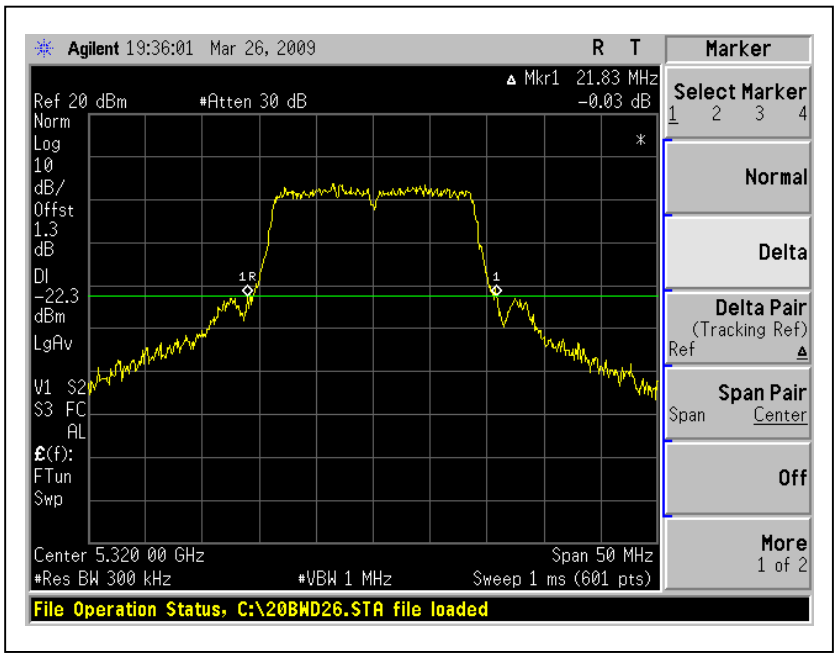
CH5


Agilent 19:28:07 Mar 26, 2009
R L
Marker
Mkr1 22.92 MHz
1.08 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-21.8
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.260 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20BWD26.STA file loaded

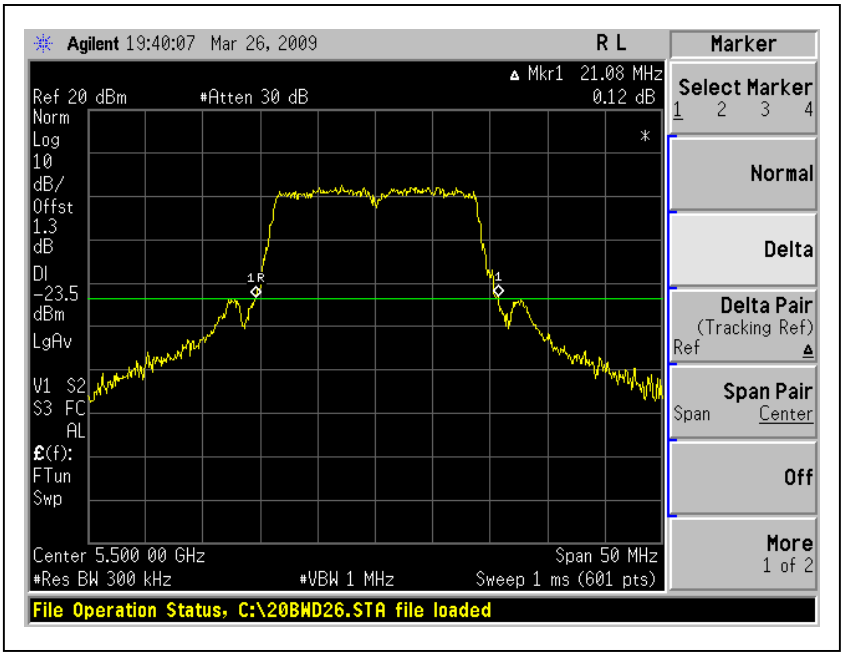
CH7


Agilent 19:30:15 Mar 26, 2009
R L
Marker
Mkr1 25.00 MHz
-0.15 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-22.1
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Marker Δ
25.000000 MHz
-0.15 dB
1R
1
Center 5.300 00 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

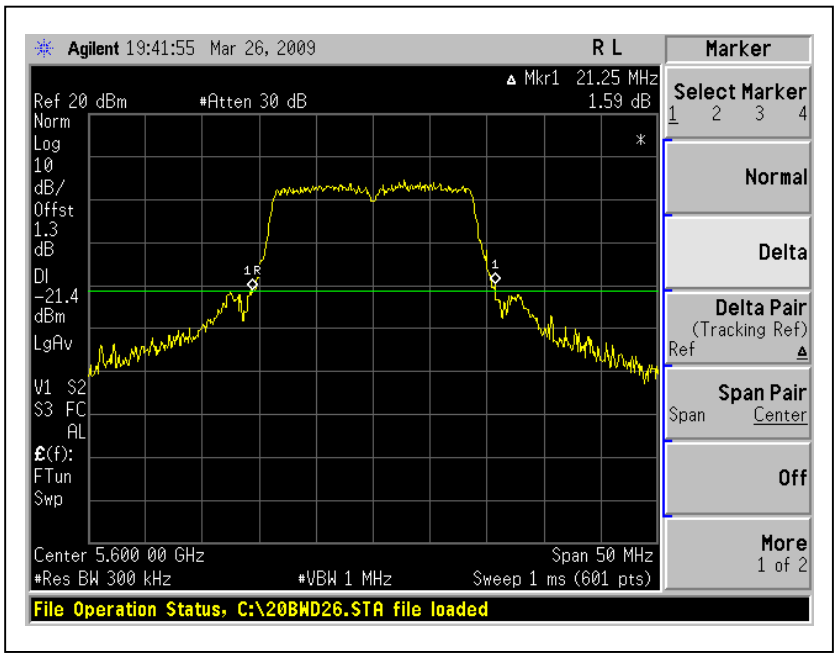
CH8


Agilent 19:36:01 Mar 26, 2009
R T
Marker
Mkr1 21.83 MHz
-0.03 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-22.3
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
1R
1
Center 5.320 00 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

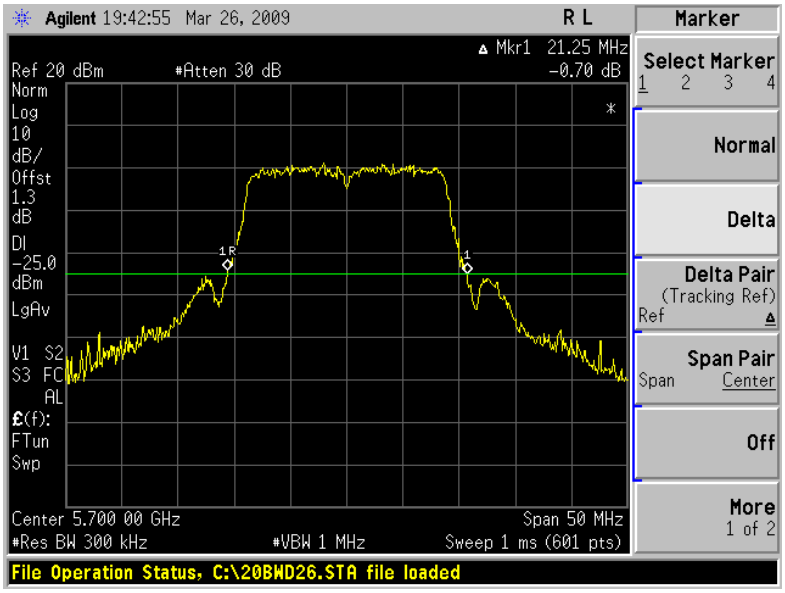
CH9


Agilent 19:40:07 Mar 26, 2009
R L
Marker
Mkr1 21.08 MHz
0.12 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-23.5
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Center 5.500 00 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

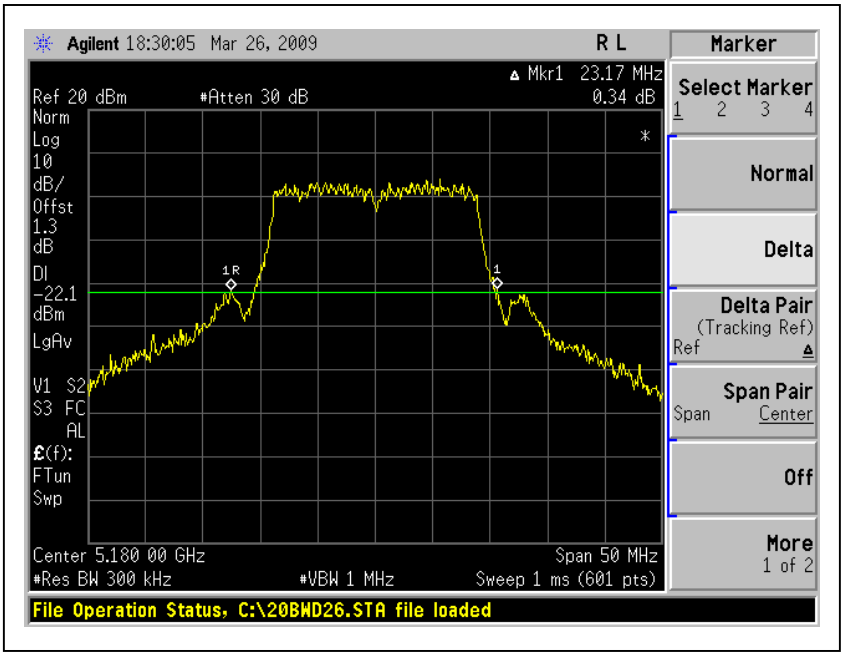
CH14


Agilent 19:41:55 Mar 26, 2009
R L
Marker
Mkr1 21.25 MHz
1.59 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-21.4
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Center 5.600 00 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

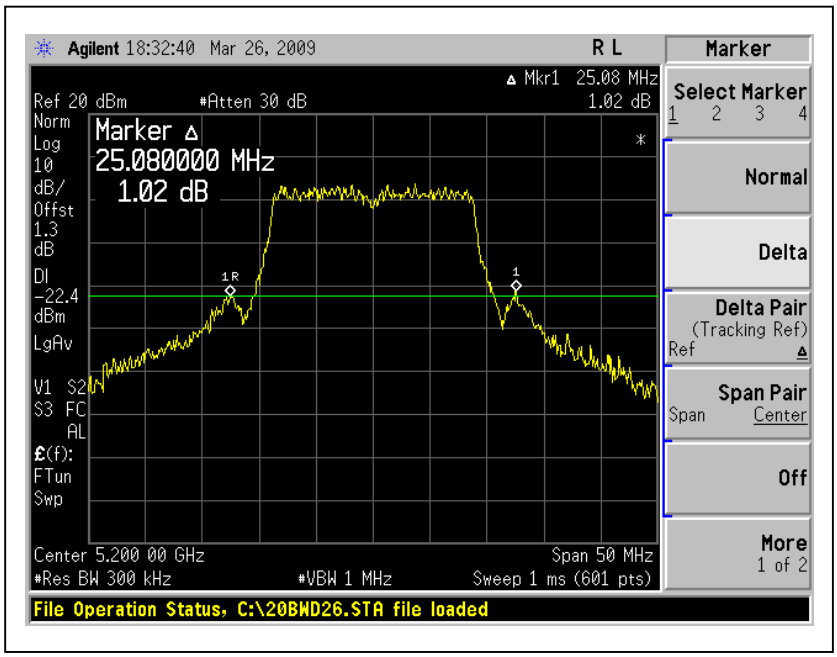
CH19


Agilent 19:42:55 Mar 26, 2009
R L
Marker
Mkr1 21.25 MHz
-0.70 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-25.0
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.700 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status. C:\20BWD26.STA file loaded

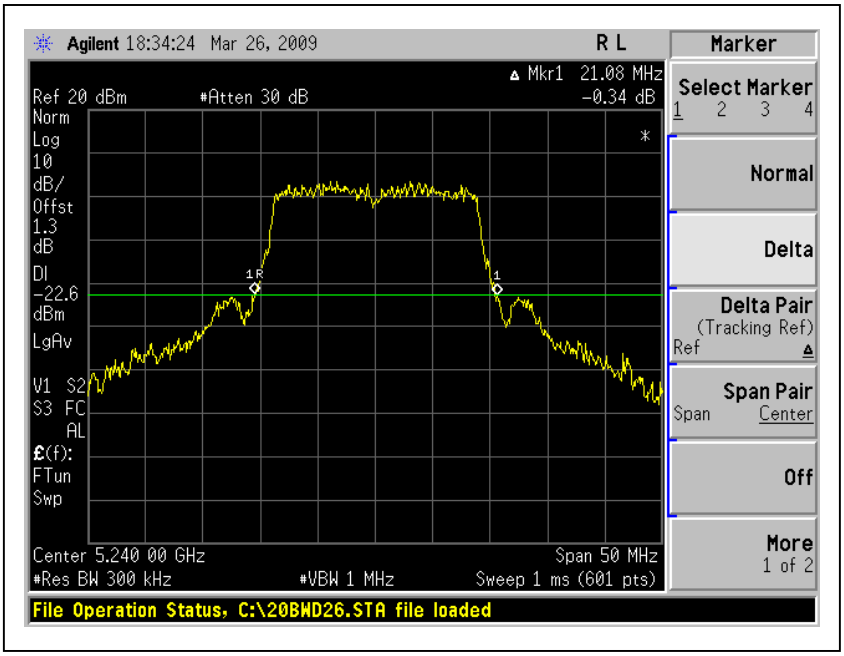
For Chain (1) :CH1



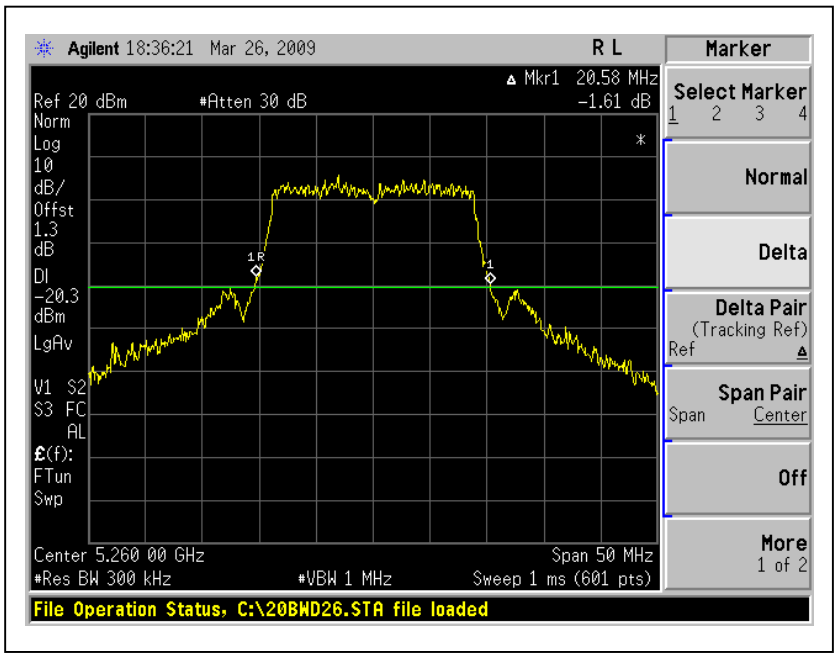
CH2



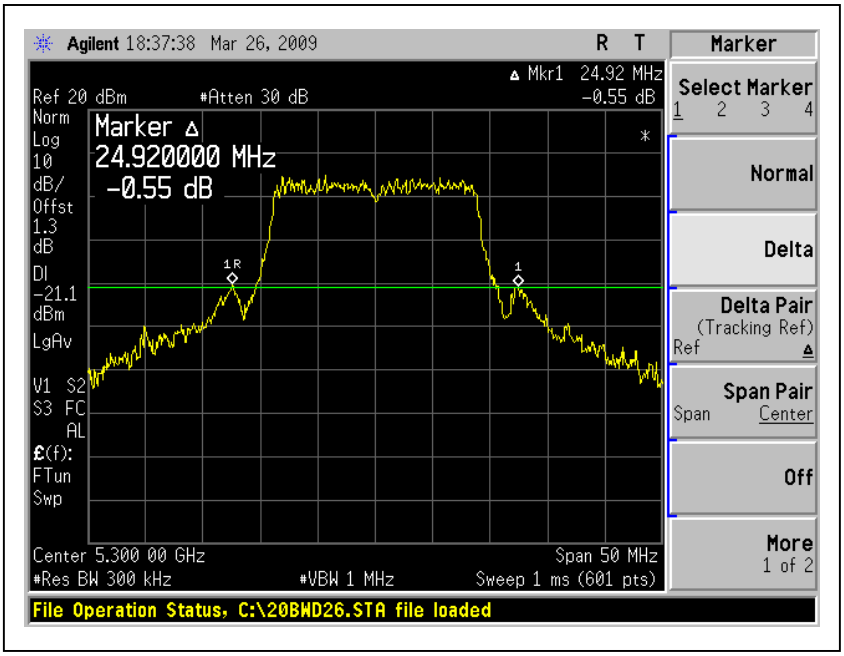
CH4


Agilent 18:34:24 Mar 26, 2009
R L
Marker
Mkr1 21.08 MHz
-0.34 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-22.6
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20BWD26.STA file loaded

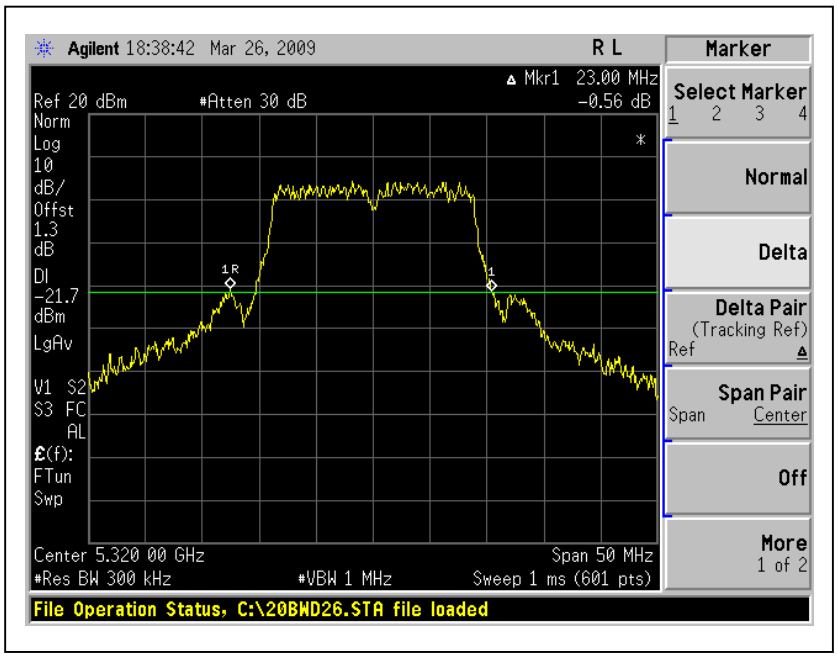
CH5


Agilent 18:36:21 Mar 26, 2009
R L
Marker
Mkr1 20.58 MHz
-1.61 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-20.3
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.260 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20BWD26.STA file loaded

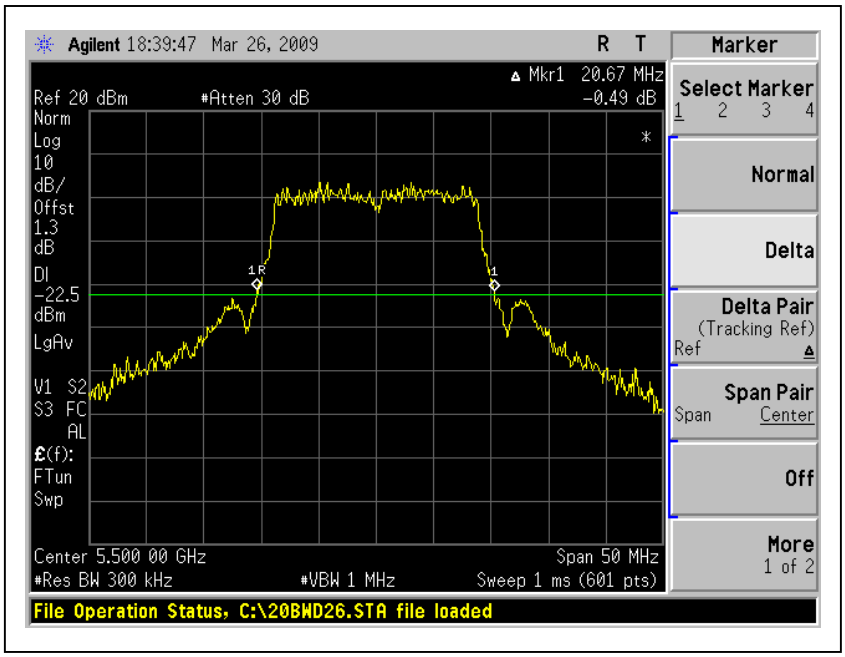
CH7


Agilent 18:37:38 Mar 26, 2009
R T
Marker
Mkr1 24.92 MHz
-0.55 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-21.1
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Marker Δ
24.920000 MHz
-0.55 dB
1R
1
Center 5.300 00 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

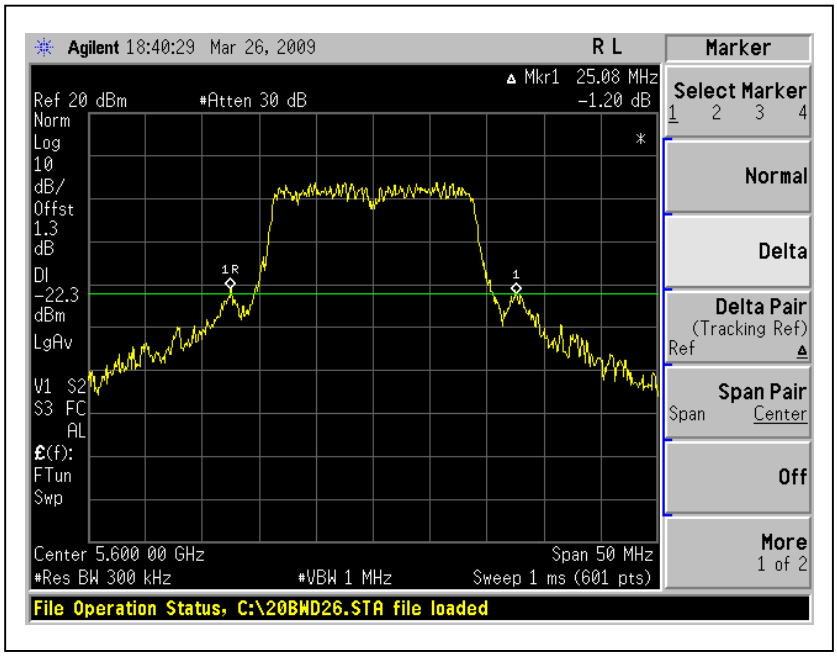
CH8


Agilent 18:38:42 Mar 26, 2009
R L
Marker
Mkr1 23.00 MHz
-0.56 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-21.7
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
1R
1
Center 5.320 00 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

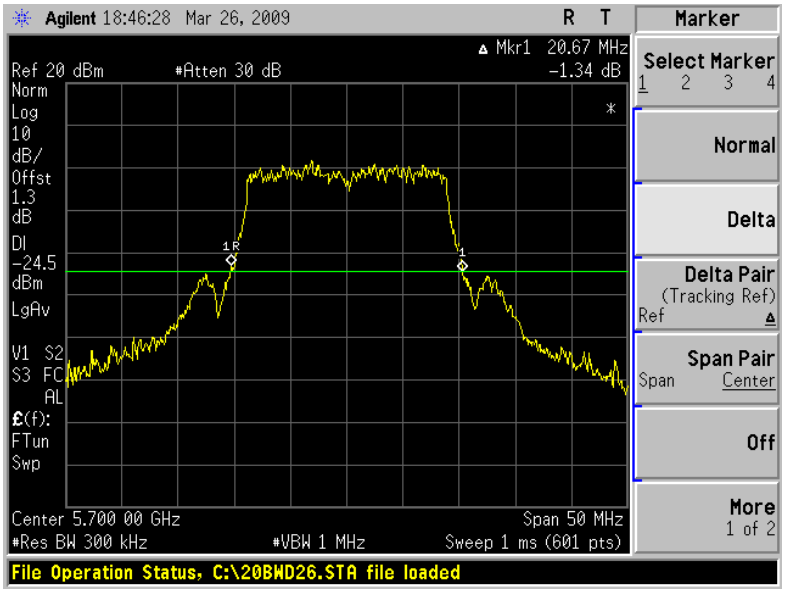
CH9


Agilent 18:39:47 Mar 26, 2009
R T
Marker
Mkr1 20.67 MHz
-0.49 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-22.5
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.500 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20BWD26.STA file loaded

CH14


Agilent 18:40:29 Mar 26, 2009
R L
Marker
Mkr1 25.08 MHz
-1.20 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-22.3
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.600 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20BWD26.STA file loaded

CH19


Agilent 18:46:28 Mar 26, 2009
R T
Marker
Mkr1 20.67 MHz
-1.34 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1.3
dB
Dl
-24.5
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.700 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status. C:\20BWD26.STA file loaded

4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

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

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

NOTE:

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

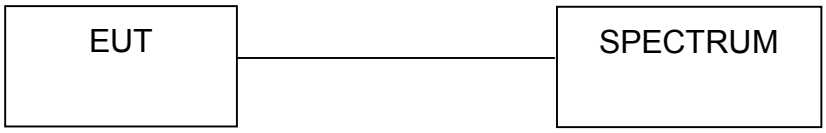
4.4.3 TEST PROCEDURE

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

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

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

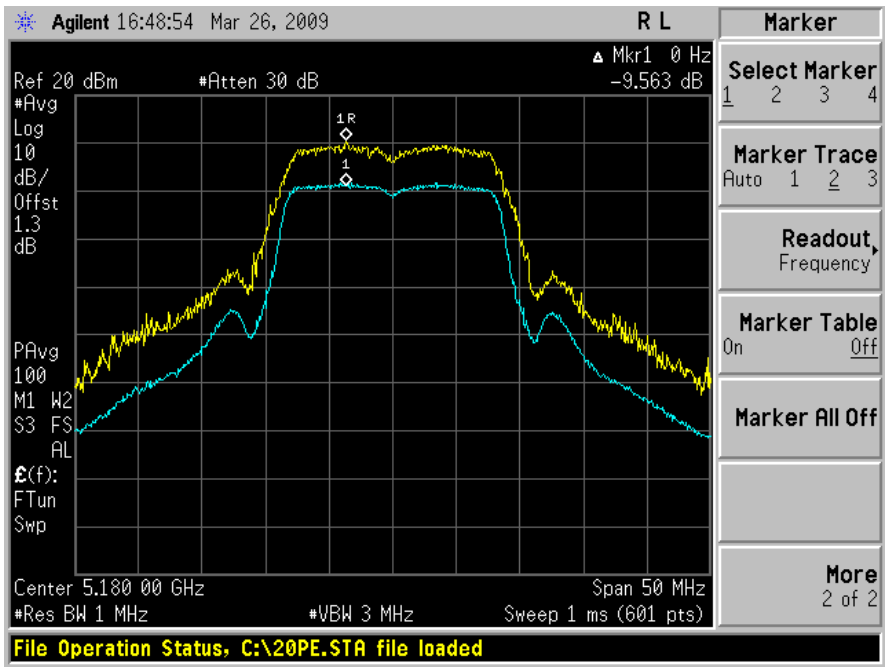
4.4.7 TEST RESULTS

802.11a OFDM modulation

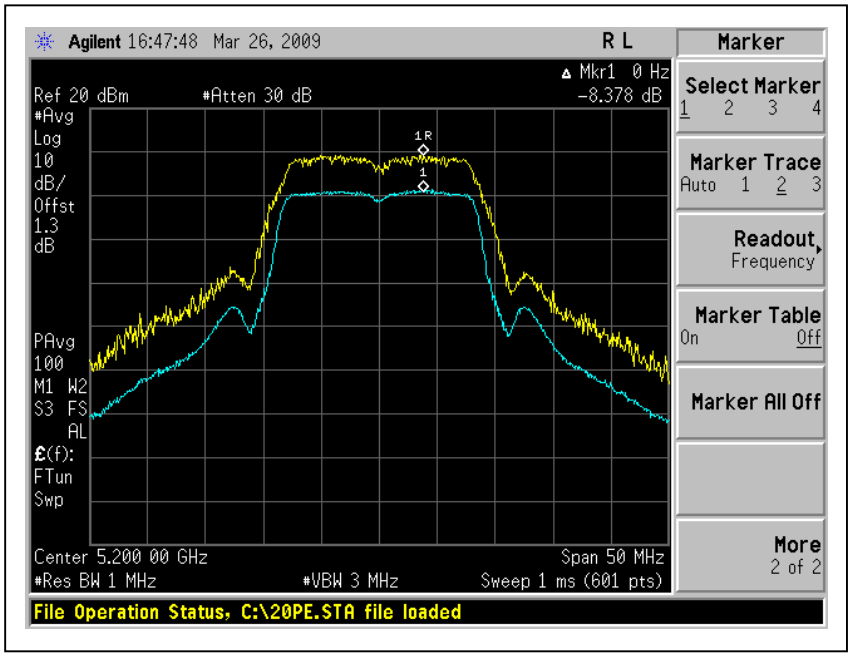
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	9.563	13	PASS
2	5200	8.378	13	PASS
4	5240	9.360	13	PASS
5	5260	8.728	13	PASS
7	5300	8.286	13	PASS
8	5320	9.078	13	PASS
9	5500	8.427	13	PASS
14	5600	8.389	13	PASS
19	5700	8.077	13	PASS

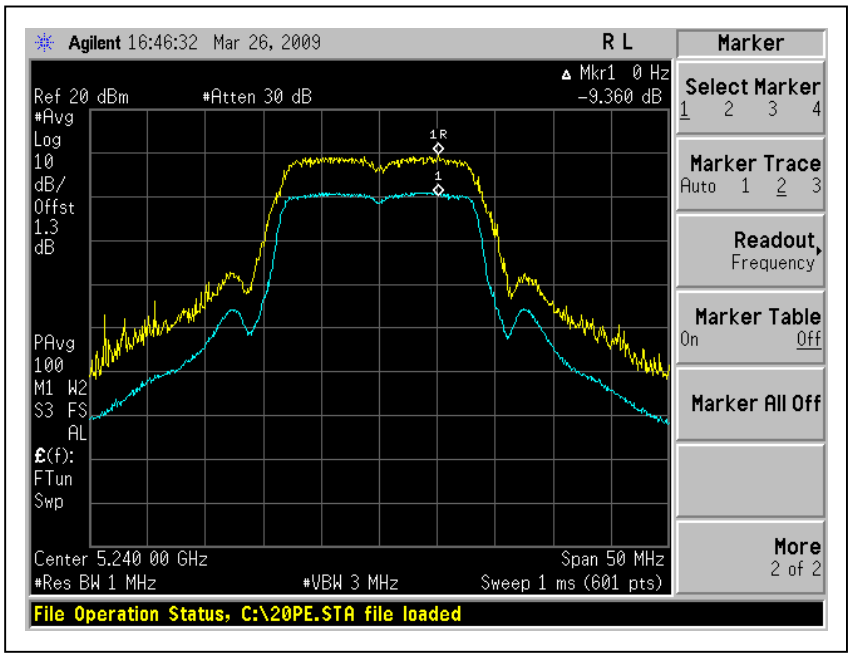
CH1



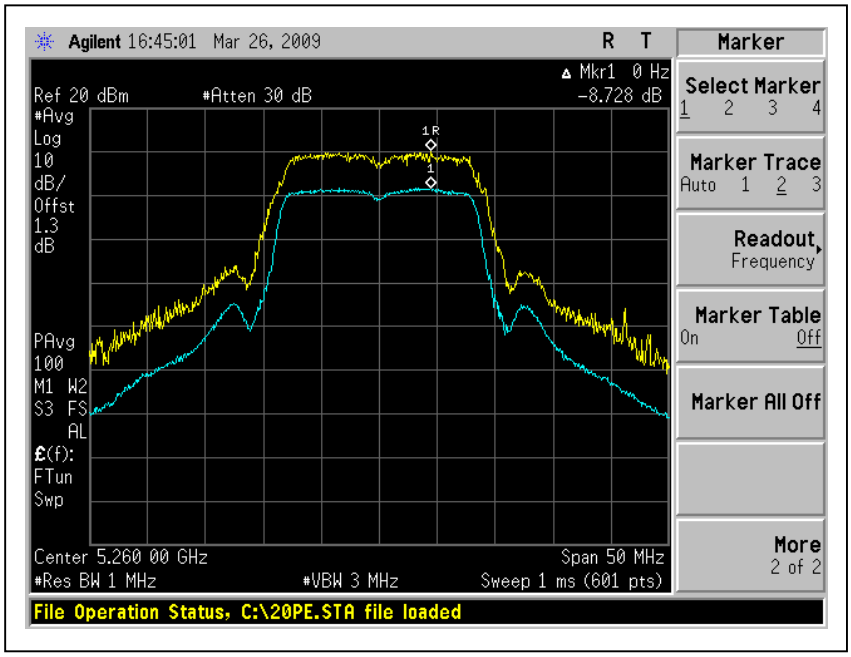
CH2


Agilent 16:47:48 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-8.378 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.200 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

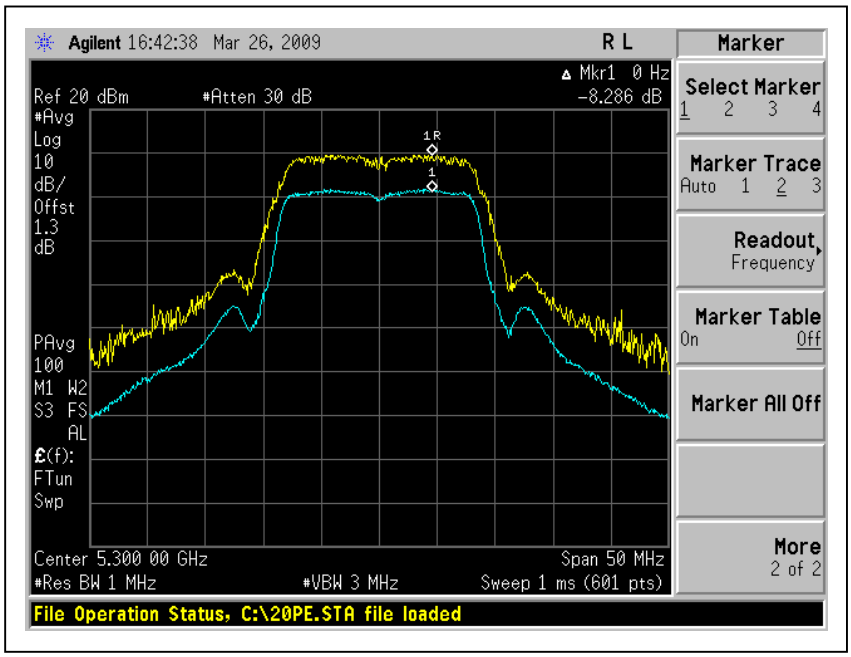
CH4


Agilent 16:46:32 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.360 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

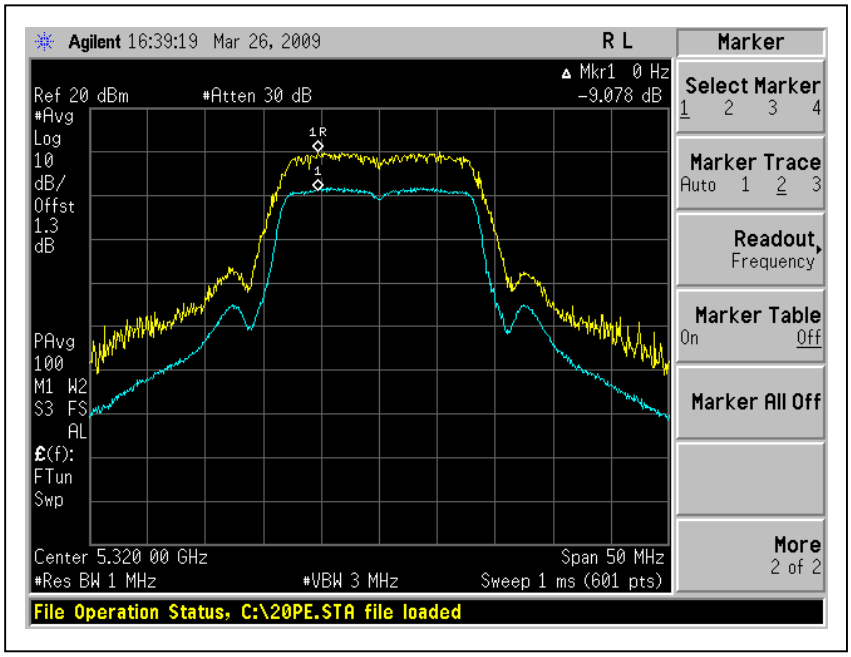
CH5


Agilent 16:45:01 Mar 26, 2009
R T
Marker
Mkr1 0 Hz
-8.728 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.260 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

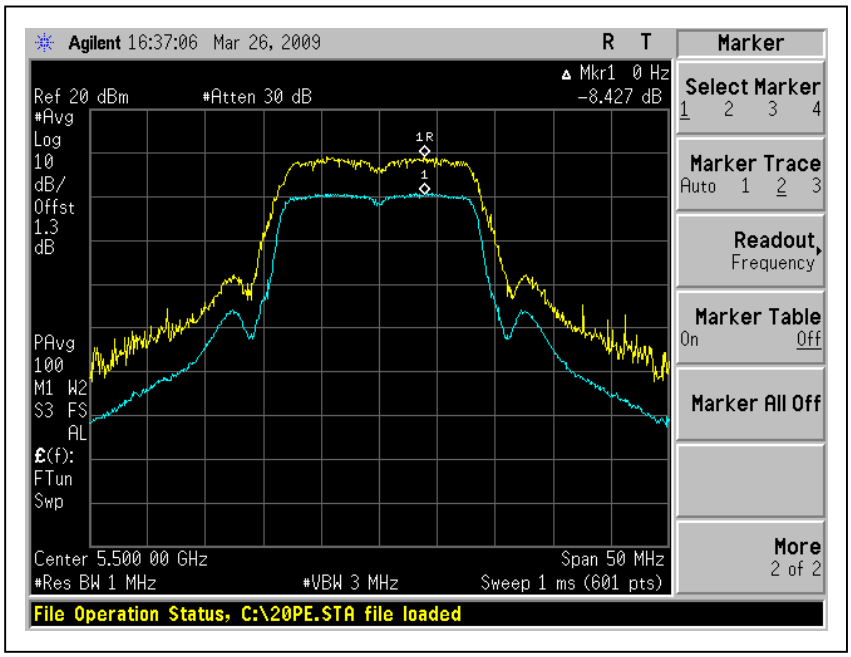
CH7


Agilent 16:42:38 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-8.286 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.300 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

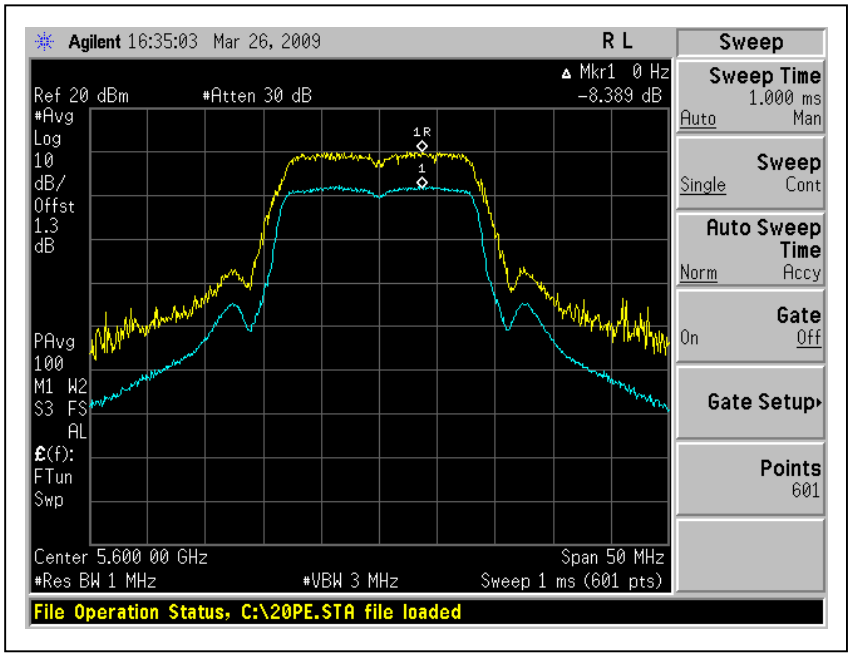
CH8


Agilent 16:39:19 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.078 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.320 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

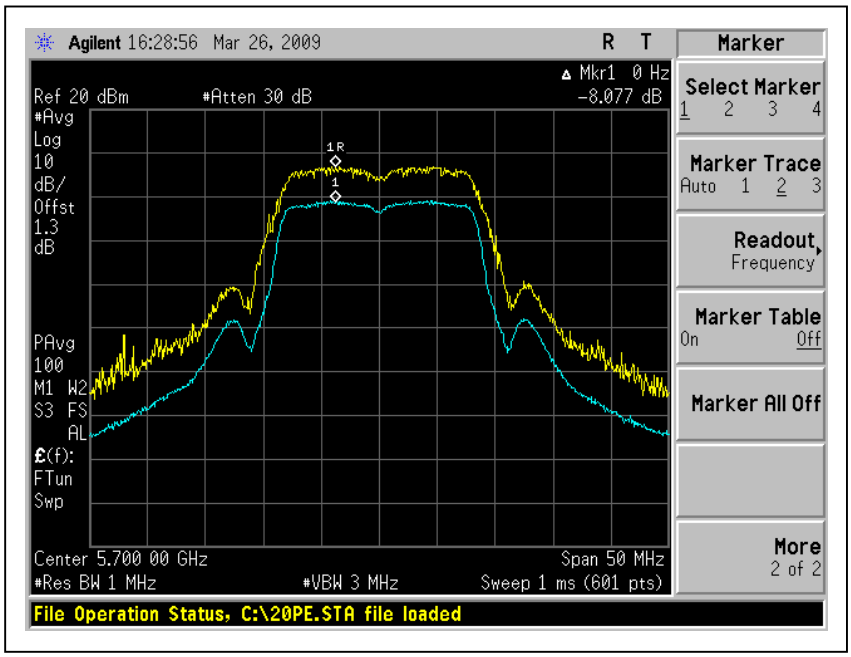
CH9


Agilent 16:37:06 Mar 26, 2009
R T
Marker
Mkr1 0 Hz
-8.427 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.500 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

CH14


Agilent 16:35:03 Mar 26, 2009
R L
Sweep
Mkr1 0 Hz
-8.389 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
1R
1
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Sweep Time
1.000 ms
Auto Man
Sweep
Single Cont
Auto Sweep Time
Norm Accy
Gate
On Off
Gate Setup
Points
601
Center 5.600 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

CH19

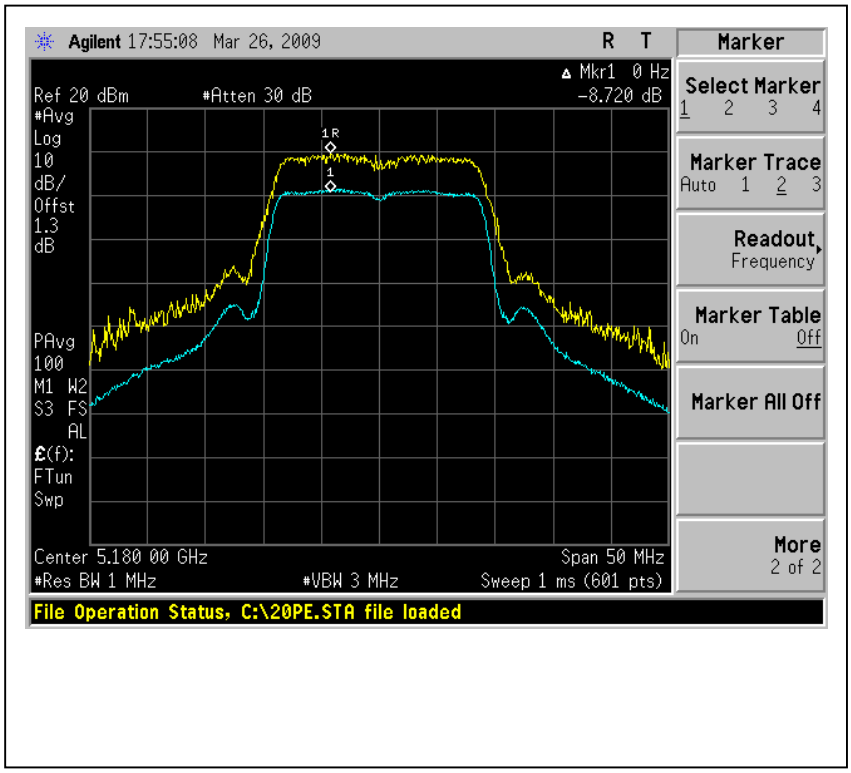

Agilent 16:28:56 Mar 26, 2009
R T
Marker
Mkr1 0 Hz
-8.077 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
1R
1
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.700 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

DRAFT 802.11n (20MHz) OFDM MODULATION:

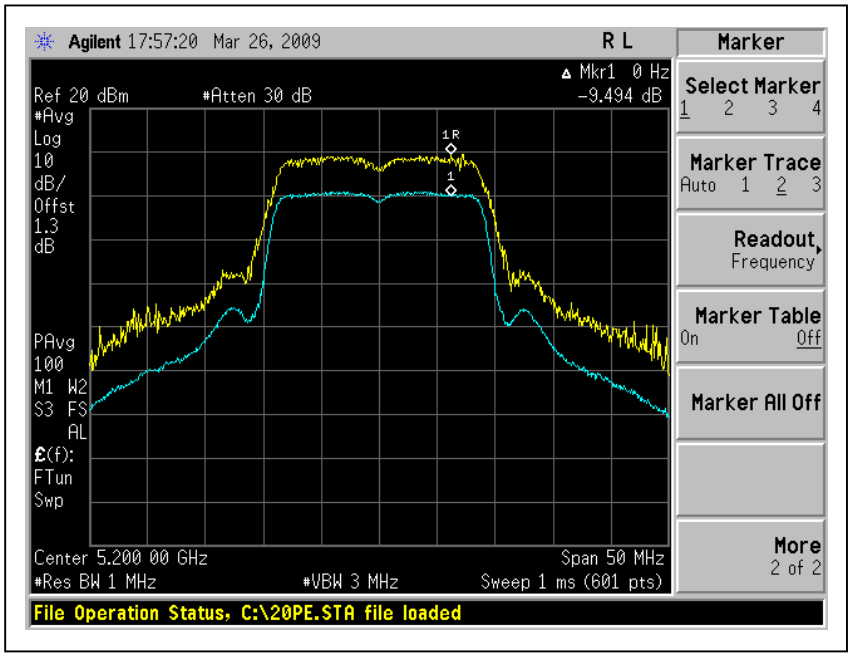
MODULATION TYPE	BPSK	**TRANSFER RATE**	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		Chain (0)	Chain(1)		
1	5180	8.720	9.805	13	PASS
2	5200	9.494	9.757	13	PASS
4	5240	9.537	9.916	13	PASS
5	5260	9.191	9.562	13	PASS
7	5300	8.458	9.757	13	PASS
8	5320	9.203	9.205	13	PASS
9	5500	9.313	9.787	13	PASS
14	5600	9.762	9.704	13	PASS
19	5700	8.498	9.552	13	PASS

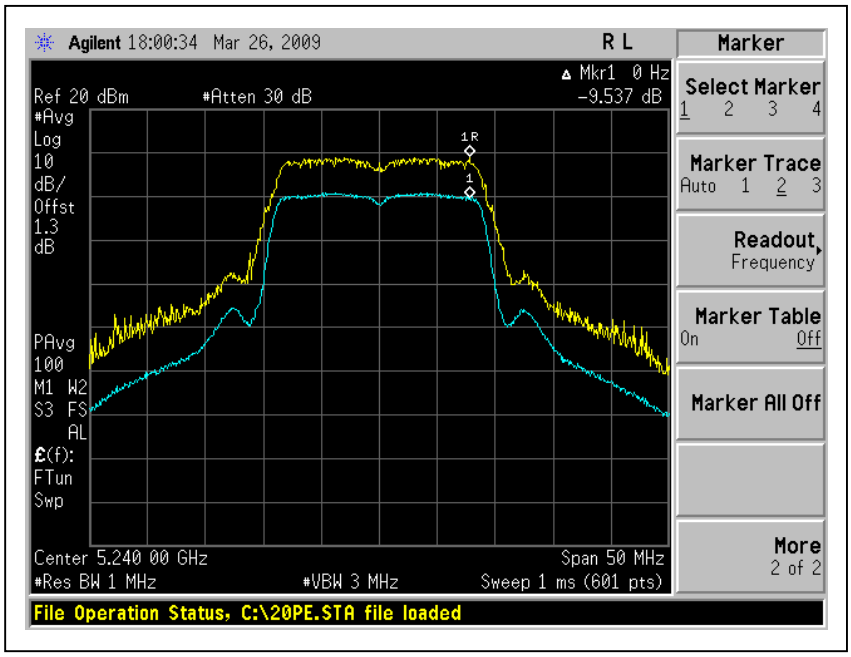
For Chain (0) : CH1



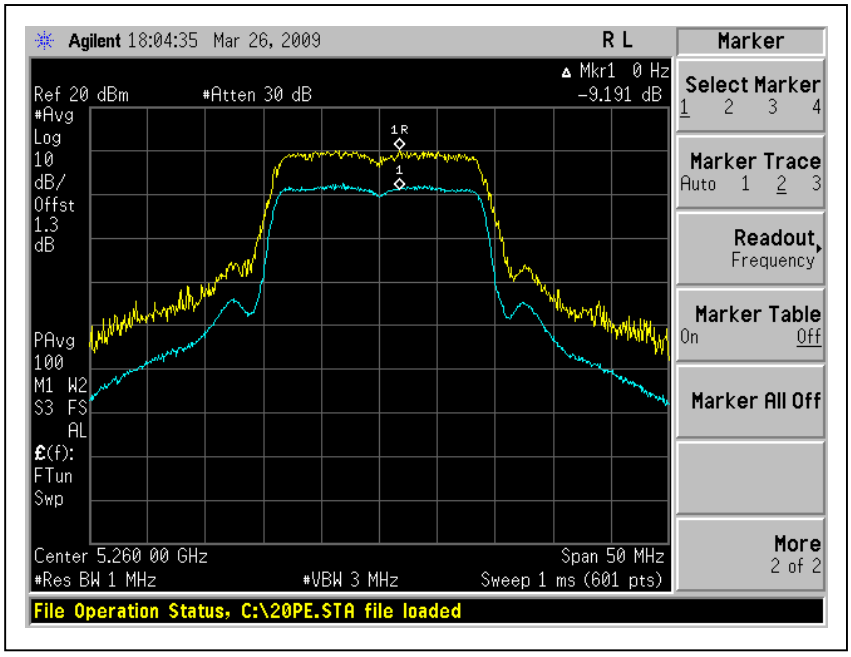
CH2



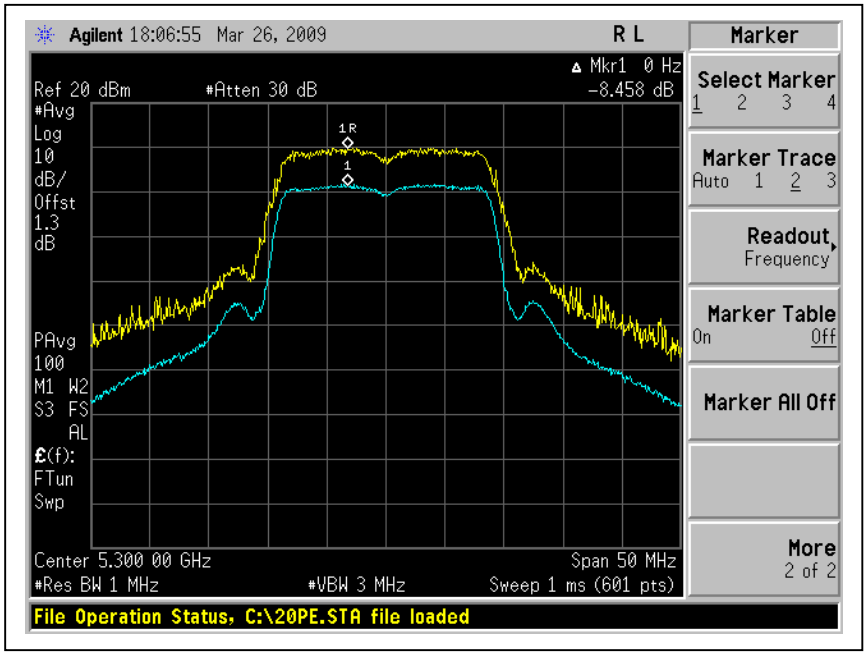
CH4


Agilent 18:00:34 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.537 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.240 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

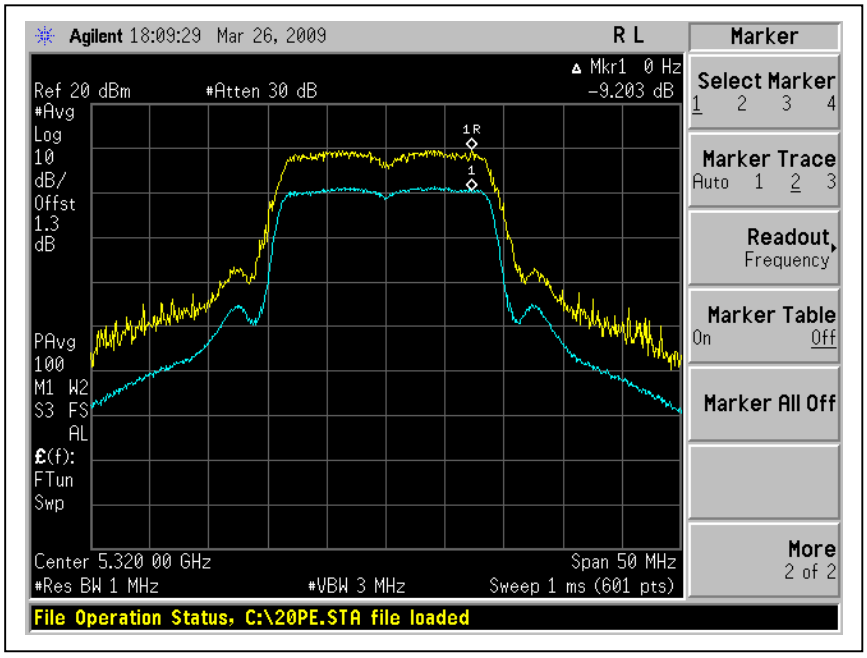
CH5


Agilent 18:04:35 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.191 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.260 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

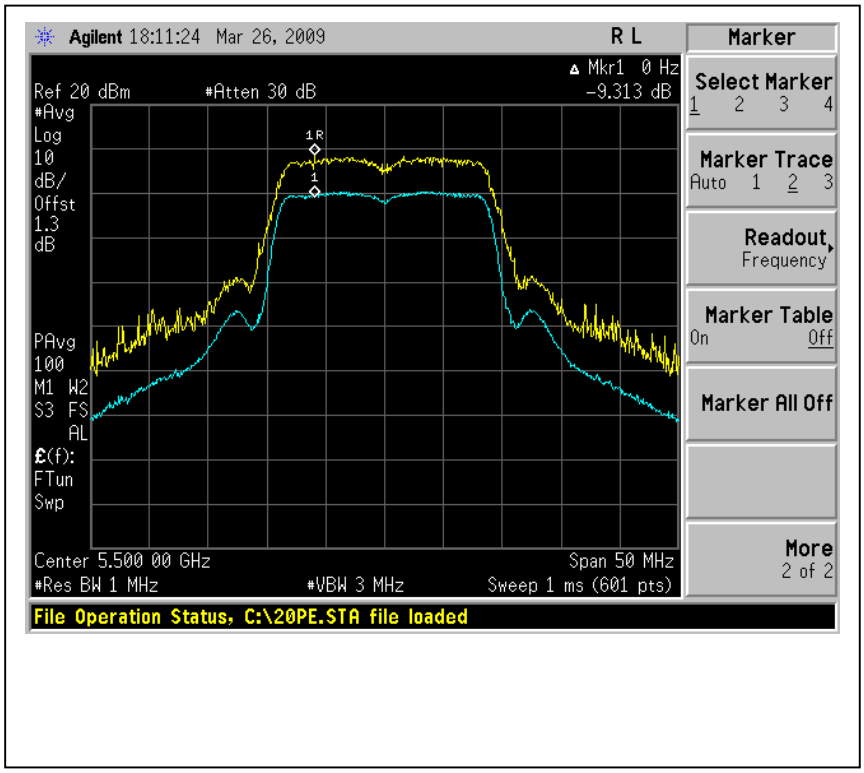
CH7


Agilent 18:06:55 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-8.458 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.300 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

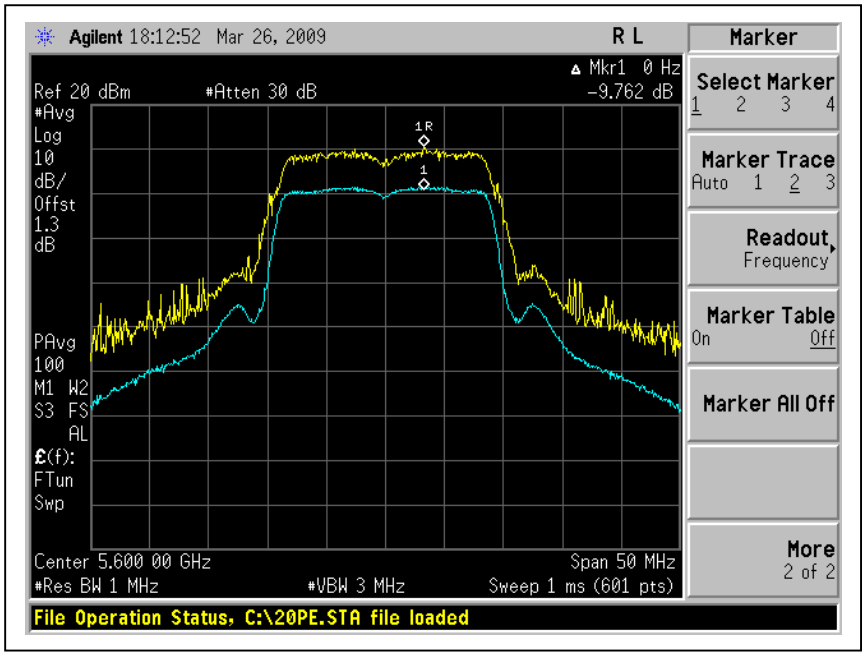
CH8


Agilent 18:09:29 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.203 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.320 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

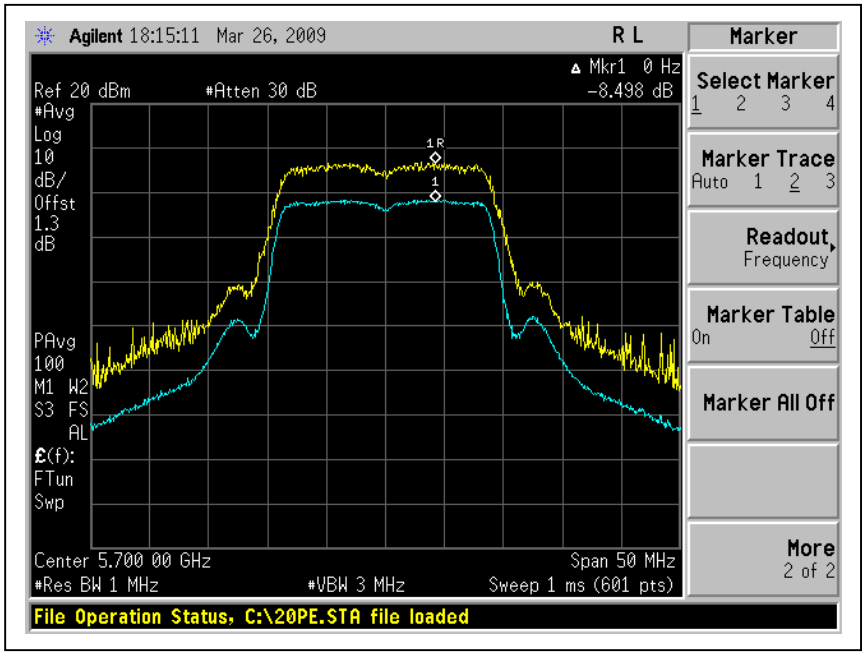
CH9


Agilent 18:11:24 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.313 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.500 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

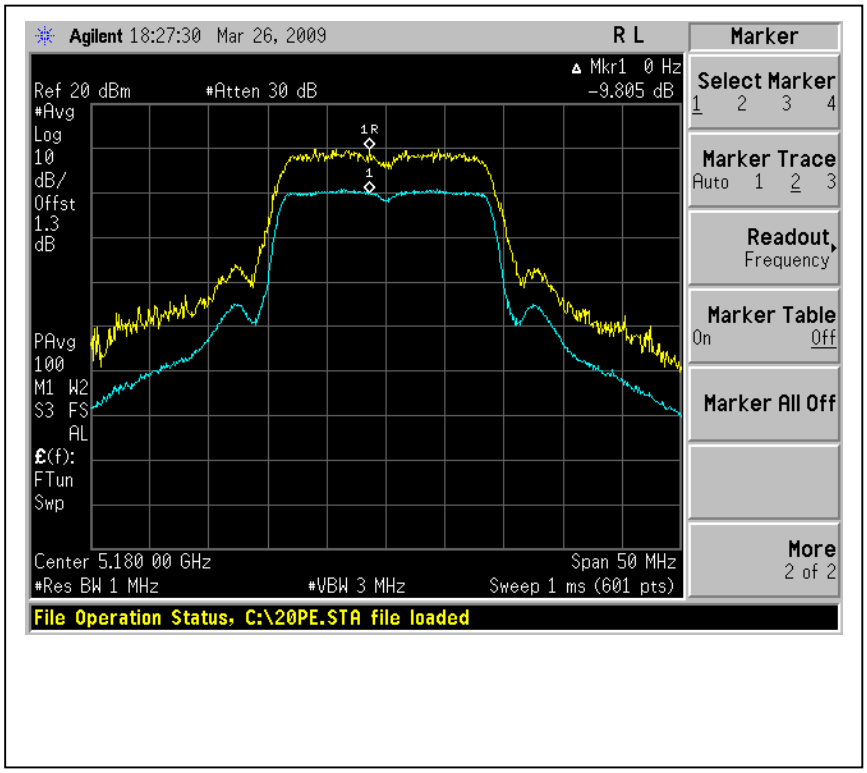
CH14


Agilent 18:12:52 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.762 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.600 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

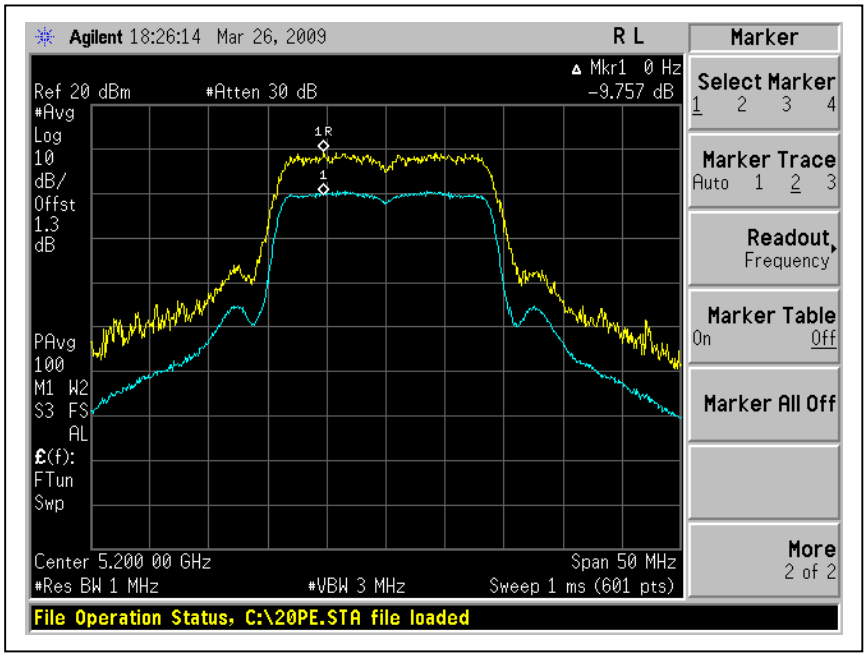
CH19


Agilent 18:15:11 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-8.498 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
1R
1
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.700 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

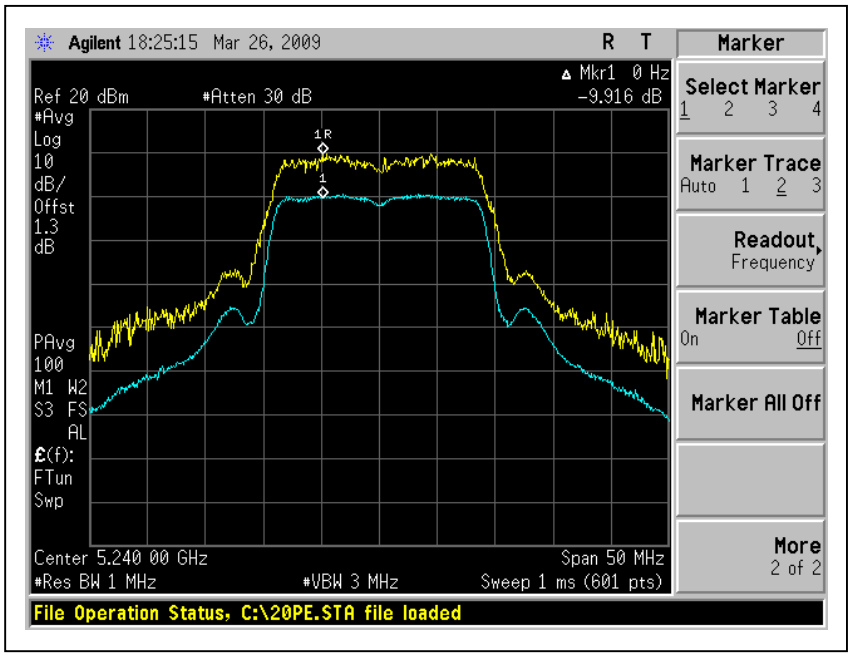
For Chain (1) : CH1



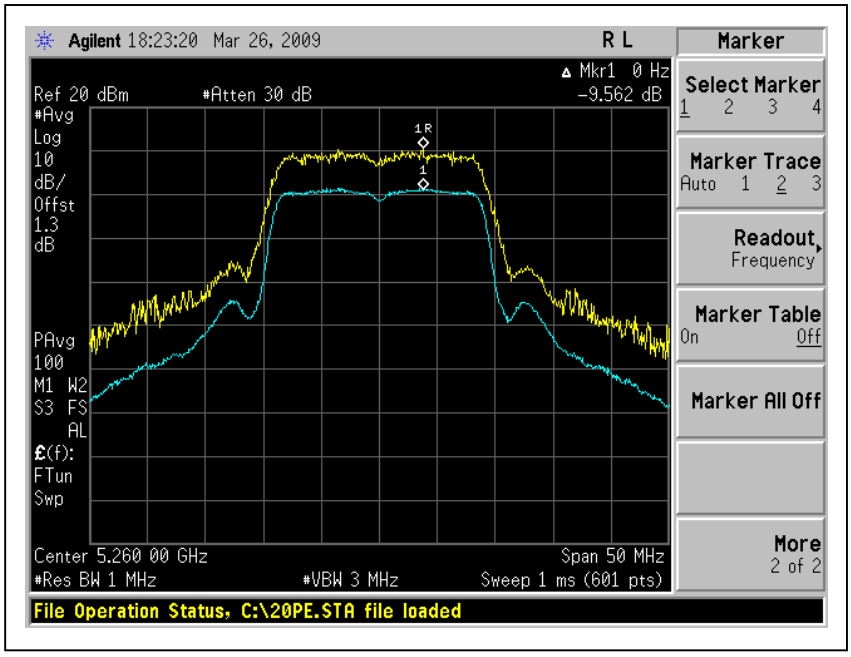
CH2



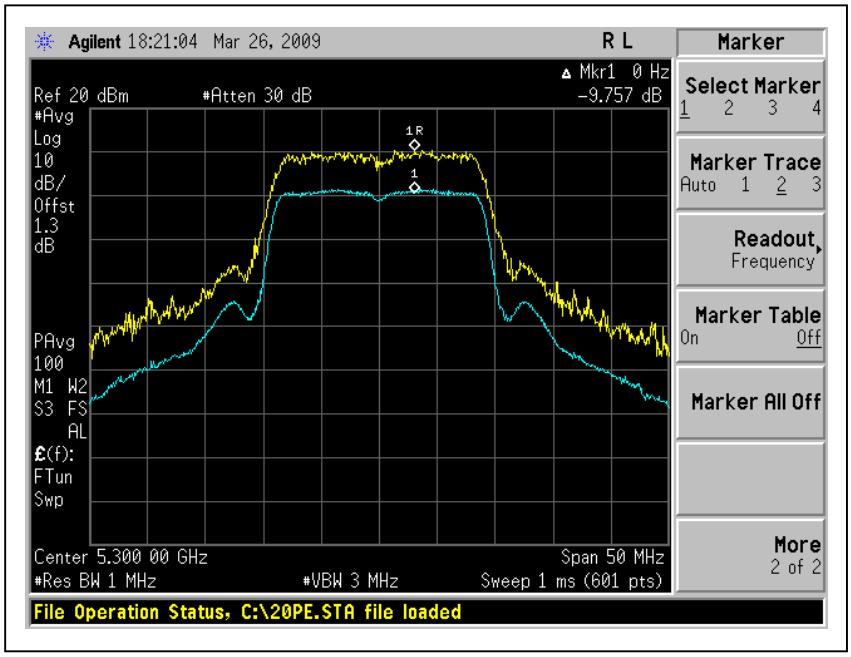
CH4


Agilent 18:25:15 Mar 26, 2009
R T
Marker
Mkr1 0 Hz
-9.916 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
1R
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.240 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

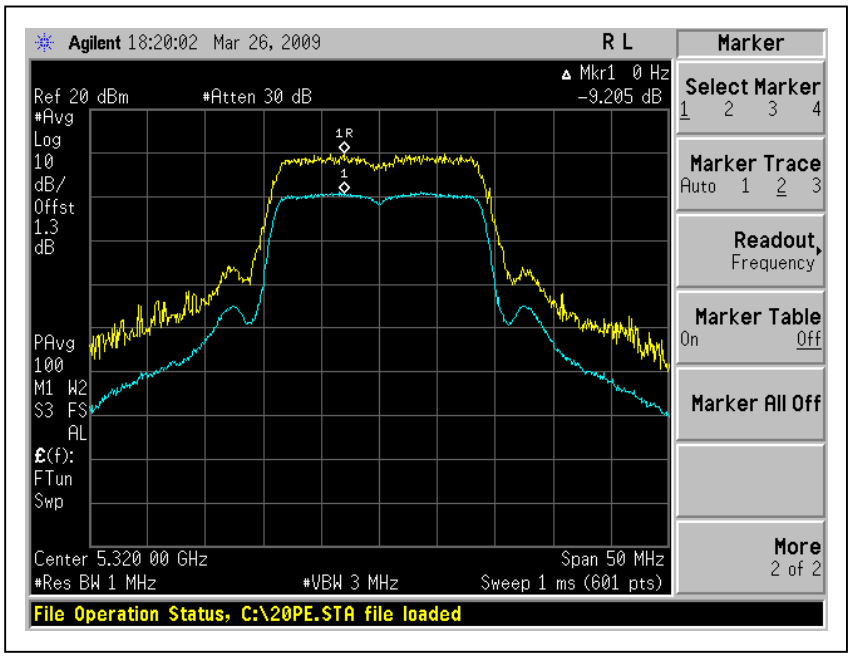
CH5


Agilent 18:23:20 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.562 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
1R
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.260 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

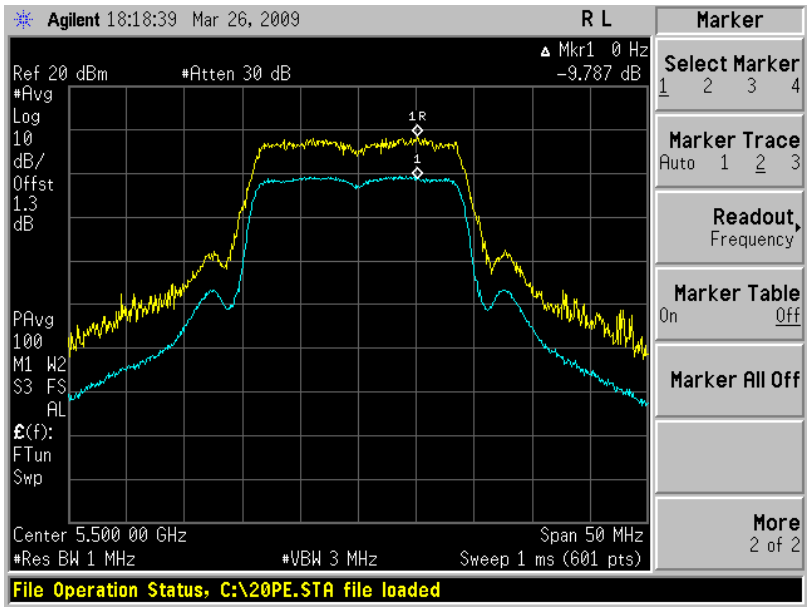
CH7


Agilent 18:21:04 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.757 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.300 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

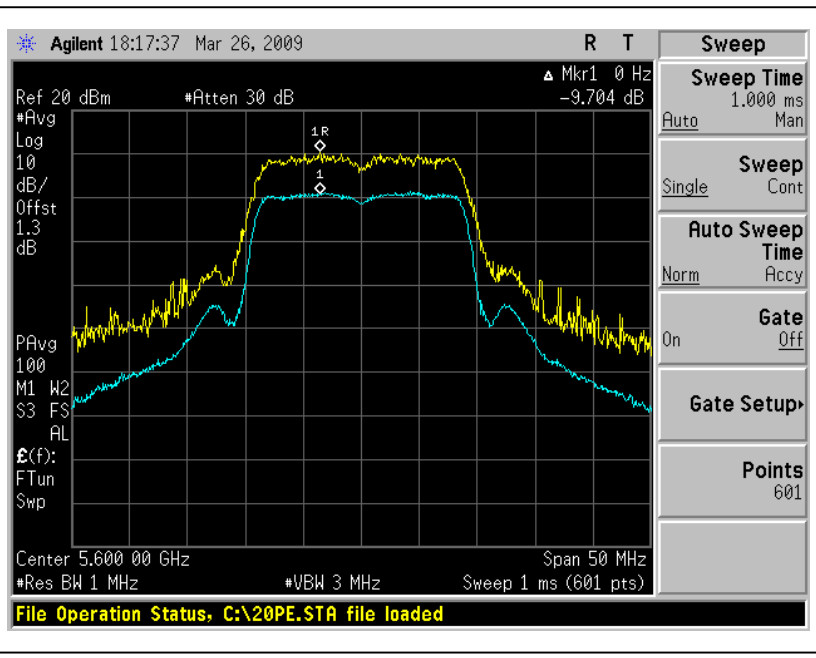
CH8


Agilent 18:20:02 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.205 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.320 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

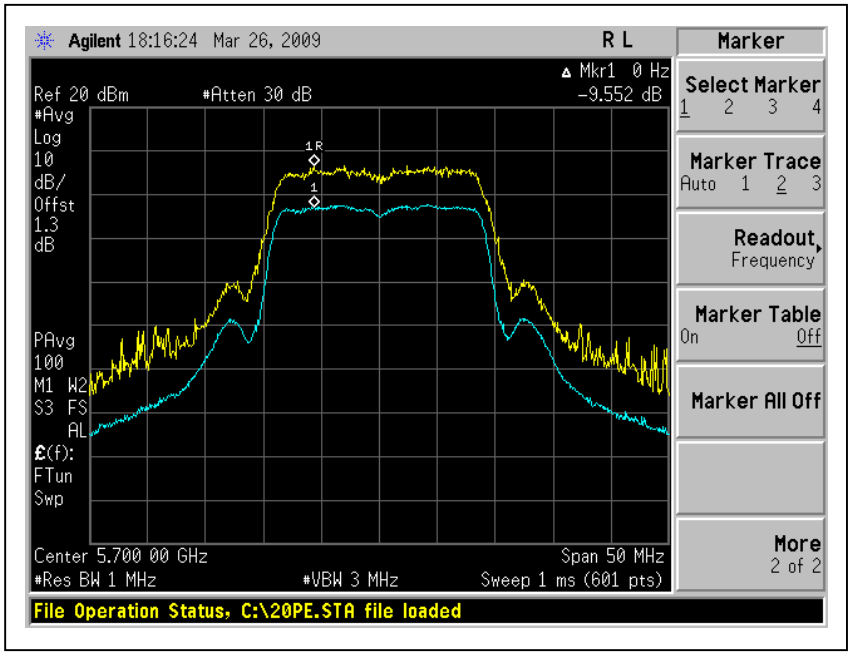
CH9


Agilent 18:18:39 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.787 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.500 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH14


Agilent 18:17:37 Mar 26, 2009
R T
Sweep
Mkr1 0 Hz
-9.704 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.600 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Sweep Time
1.000 ms
Auto Man
Sweep
Single Cont
Auto Sweep Time
Norm Accy
Gate
On Off
Gate Setup
Points
601
File Operation Status, C:\20PE.STA file loaded

CH19


Agilent 18:16:24 Mar 26, 2009
R L
Marker
Mkr1 0 Hz
-9.552 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
1R
1
PAvg
100
M1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.700 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

NOTE:

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

4.5.3 TEST PROCEDURES

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

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP

4.5.6 EUT OPERATING CONDITIONS

Same as 4.3.6

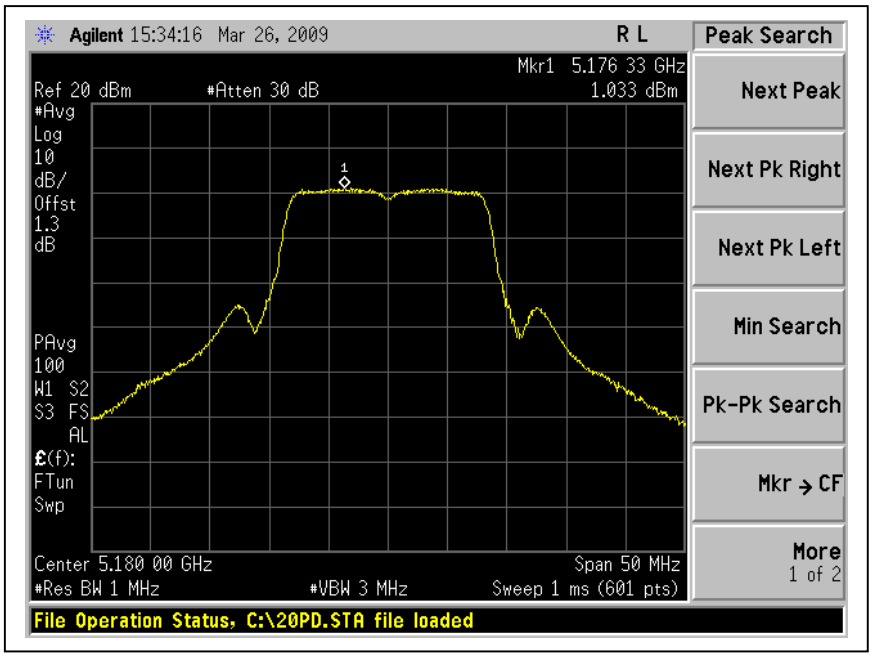
4.5.7 TEST RESULTS

802.11a OFDM modulation

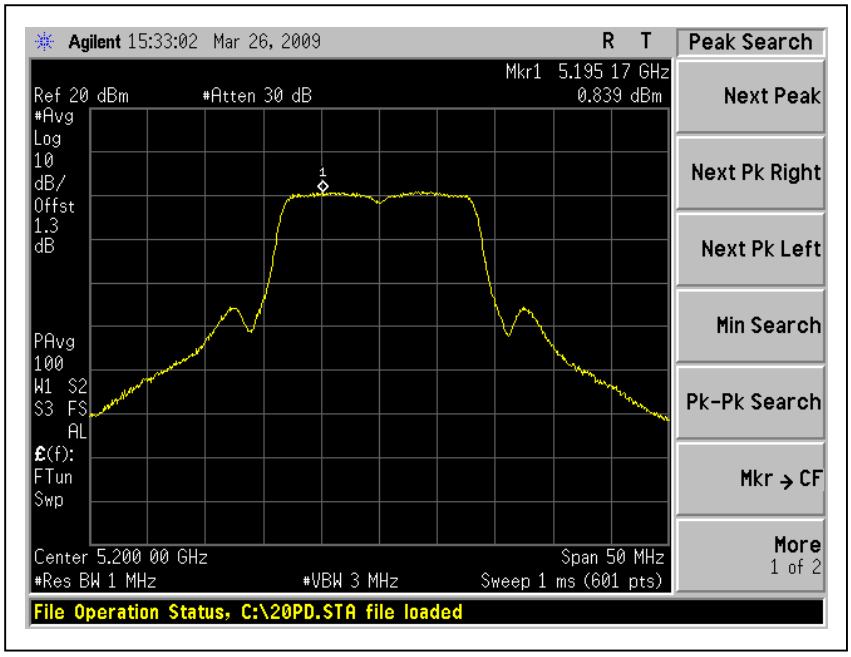
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	1.033	4	PASS
2	5200	0.839	4	PASS
4	5240	0.908	4	PASS
5	5260	1.411	11	PASS
7	5300	1.428	11	PASS
8	5320	1.266	11	PASS
9	5500	2.558	11	PASS
14	5600	1.865	11	PASS
19	5700	2.356	11	PASS

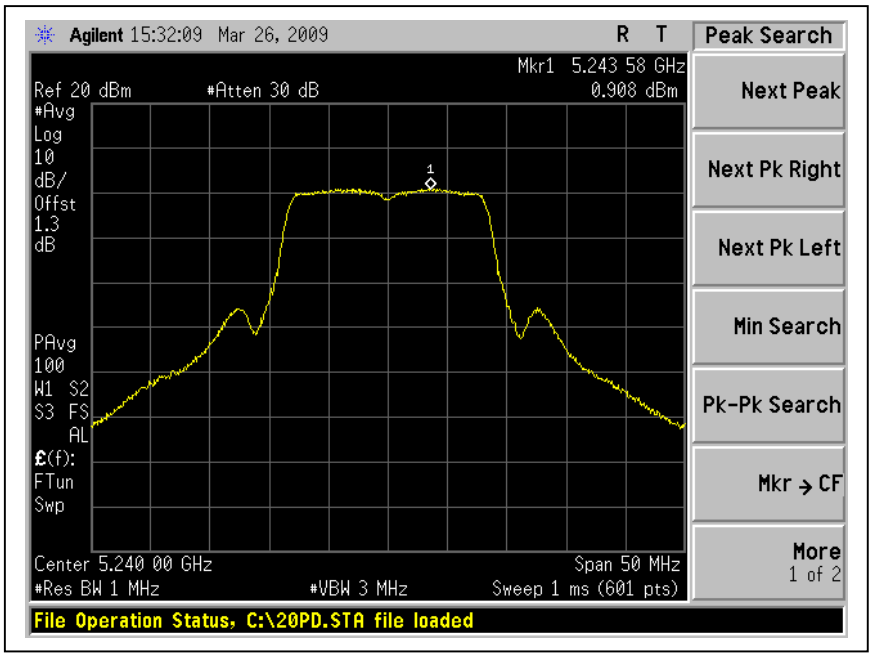
CH1


Agilent 15:34:16 Mar 26, 2009
R L
Peak Search
Mkr1 5.176 33 GHz
Ref 20 dBm
#Atten 30 dB
1.033 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.180 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

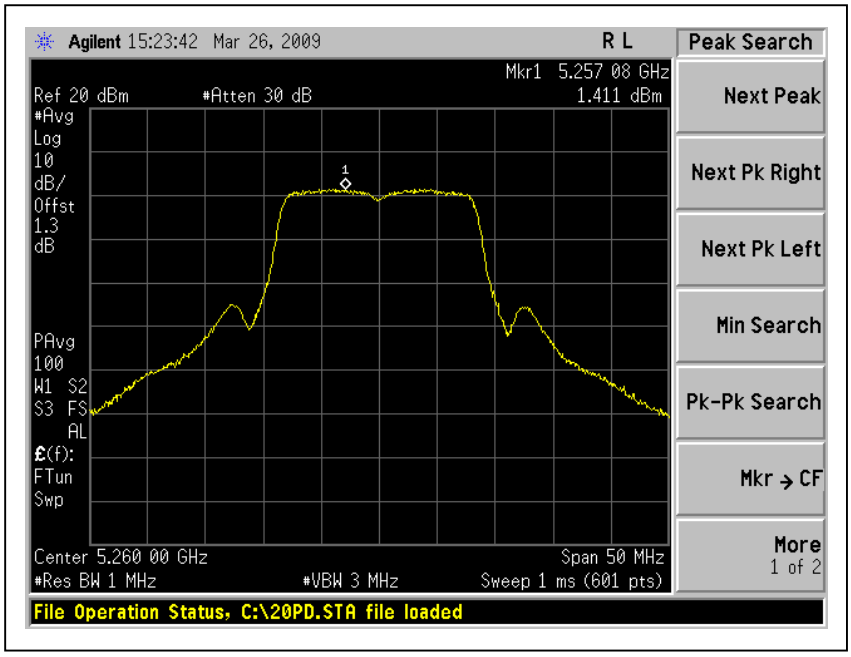
CH2


Agilent 15:33:02 Mar 26, 2009
R T
Peak Search
Mkr1 5.195 17 GHz
Ref 20 dBm
#Atten 30 dB
0.839 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.200 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

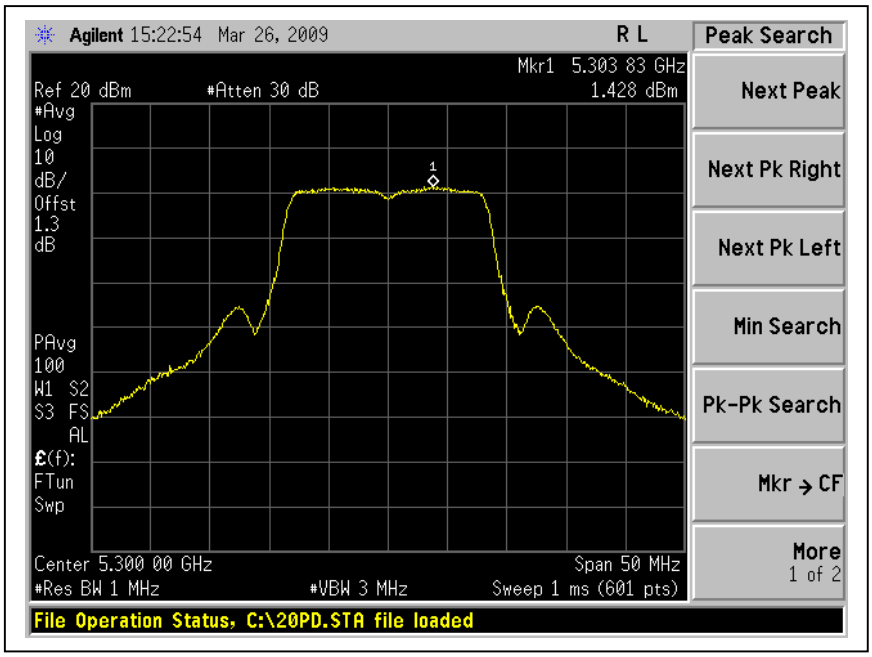
CH4


Agilent 15:32:09 Mar 26, 2009
R T
Peak Search
Mkr1 5.243 58 GHz
0.908 dBm
Ref 20 dBm
#Atten 30 dB
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

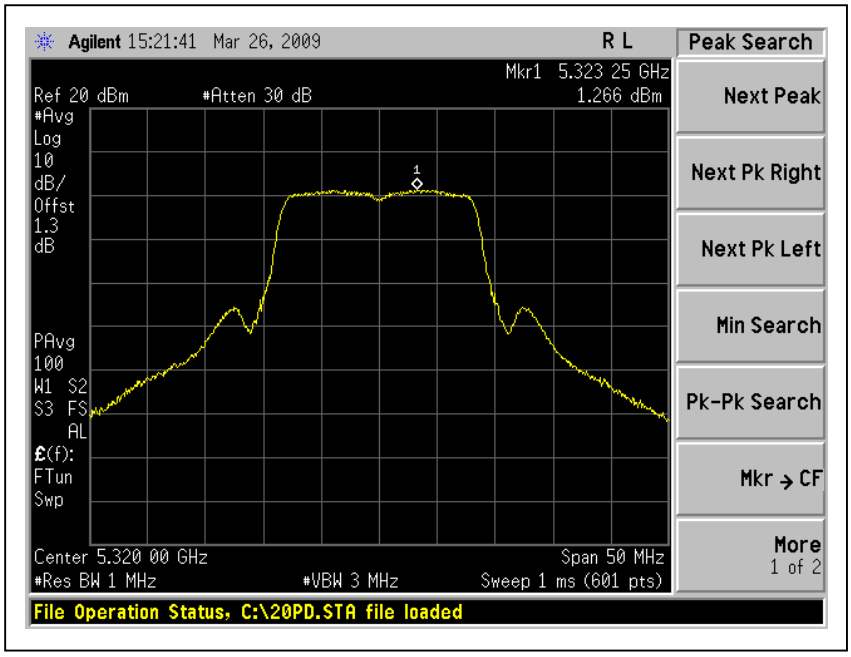
CH5


Agilent 15:23:42 Mar 26, 2009
R L
Peak Search
Mkr1 5.257 08 GHz
1.411 dBm
Ref 20 dBm
#Atten 30 dB
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.260 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

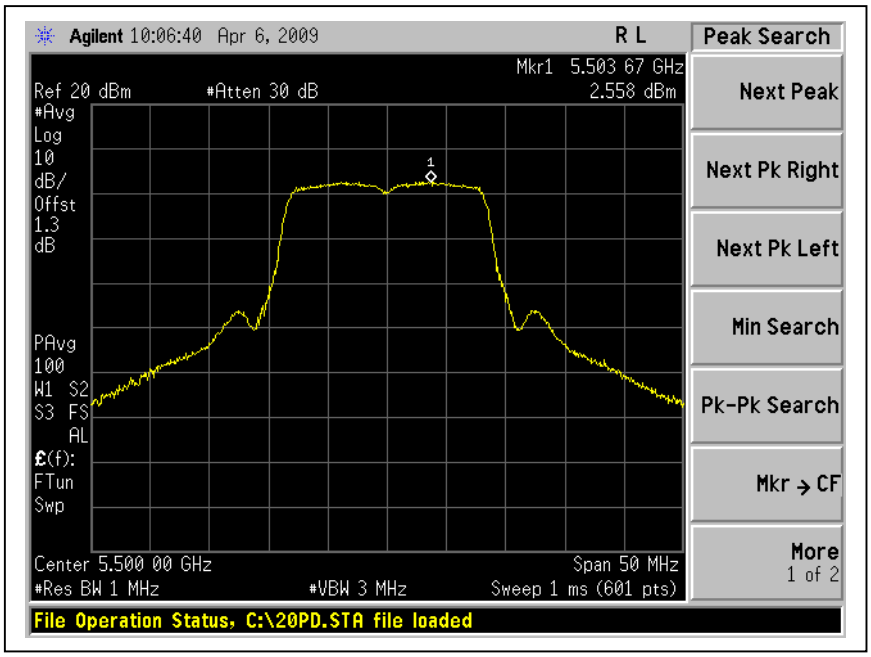
CH7


Agilent 15:22:54 Mar 26, 2009
R L
Peak Search
Mkr1 5.303 83 GHz
Ref 20 dBm
#Atten 30 dB
1.428 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.300 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

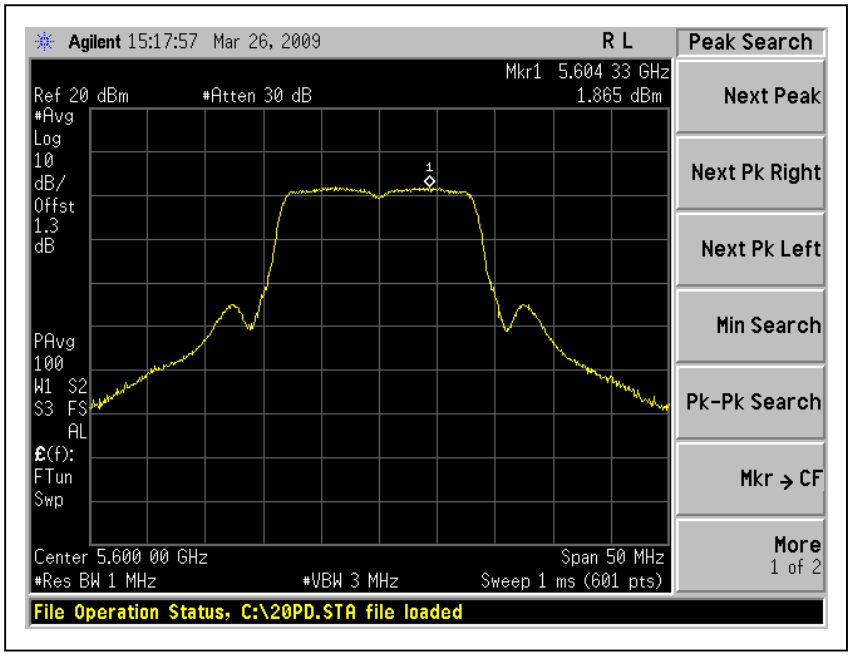
CH8


Agilent 15:21:41 Mar 26, 2009
R L
Peak Search
Mkr1 5.323 25 GHz
Ref 20 dBm
#Atten 30 dB
1.266 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.320 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

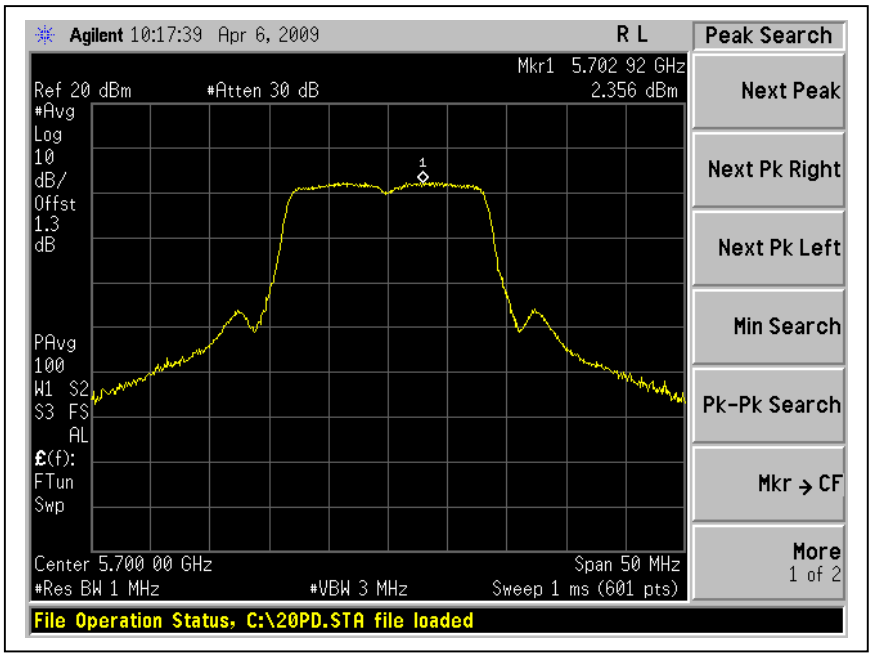
CH9


Agilent 10:06:40 Apr 6, 2009
R L
Peak Search
Mkr1 5.503 67 GHz
Ref 20 dBm
#Atten 30 dB
2.558 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.500 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

CH14


Agilent 15:17:57 Mar 26, 2009
R L
Peak Search
Mkr1 5.604 33 GHz
Ref 20 dBm
#Atten 30 dB
1.865 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.600 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

CH19

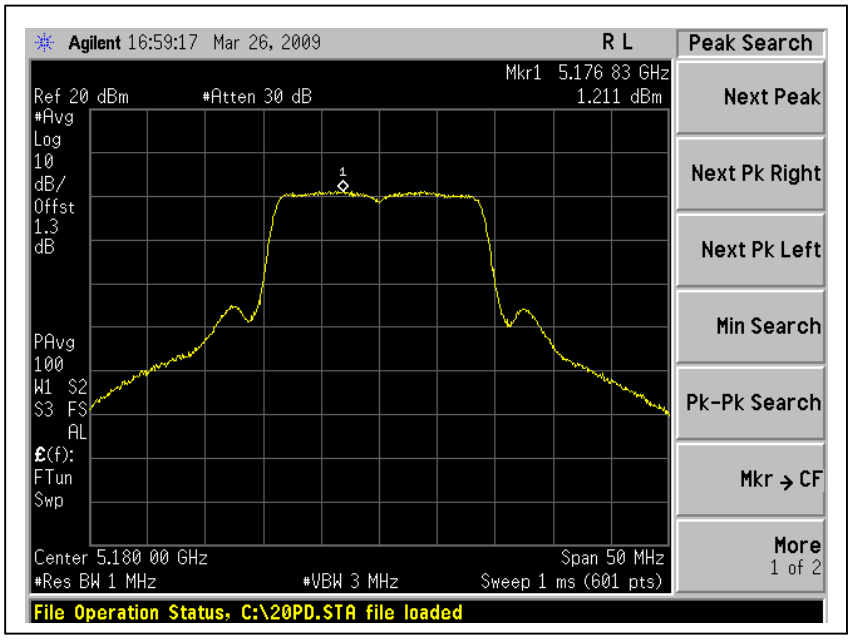

Agilent 10:17:39 Apr 6, 2009
R L
Peak Search
Mkr1 5.702 92 GHz
2.356 dBm
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.700 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

DRAFT 802.11n (20MHz) OFDM MODULATION:

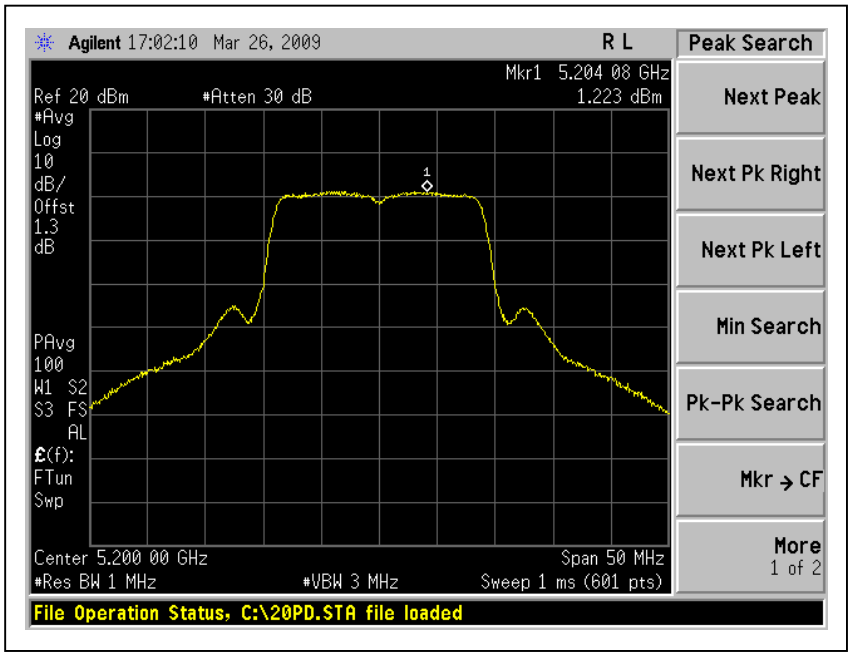
MODULATION TYPE	BPSK	**TRANSFER RATE**	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 60%RH, 965hPa
TESTED BY	Rex Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)			
1	5180	1.211	0.454	3.86	4	PASS
2	5200	1.223	0.433	3.86	4	PASS
4	5240	0.759	0.784	3.78	4	PASS
5	5260	1.811	1.638	4.73	11	PASS
7	5300	1.644	1.679	4.67	11	PASS
8	5320	0.765	1.394	4.10	11	PASS
9	5500	2.414	1.533	5.01	11	PASS
14	5600	1.237	0.896	4.08	11	PASS
19	5700	-1.745	-2.118	1.08	11	PASS

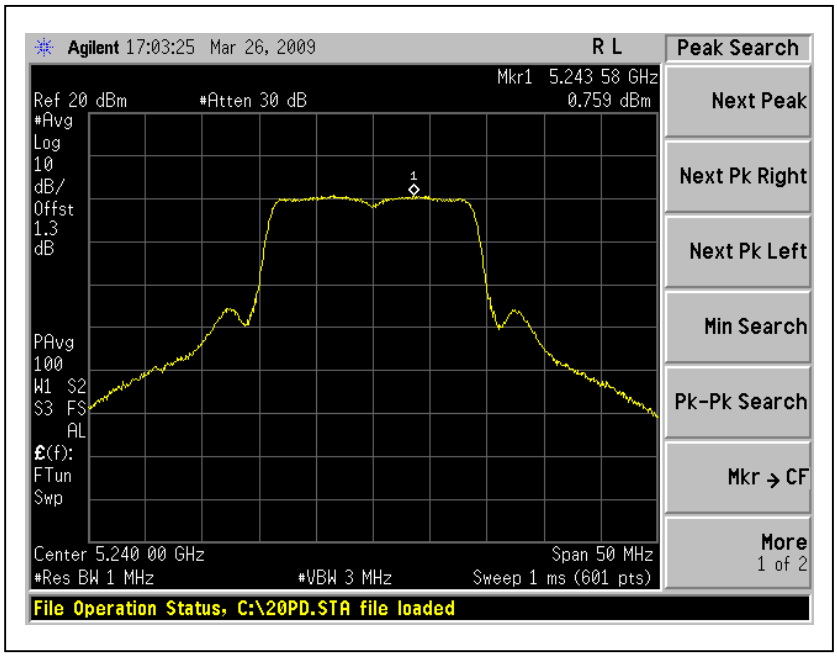
For Chain (0) : CH1



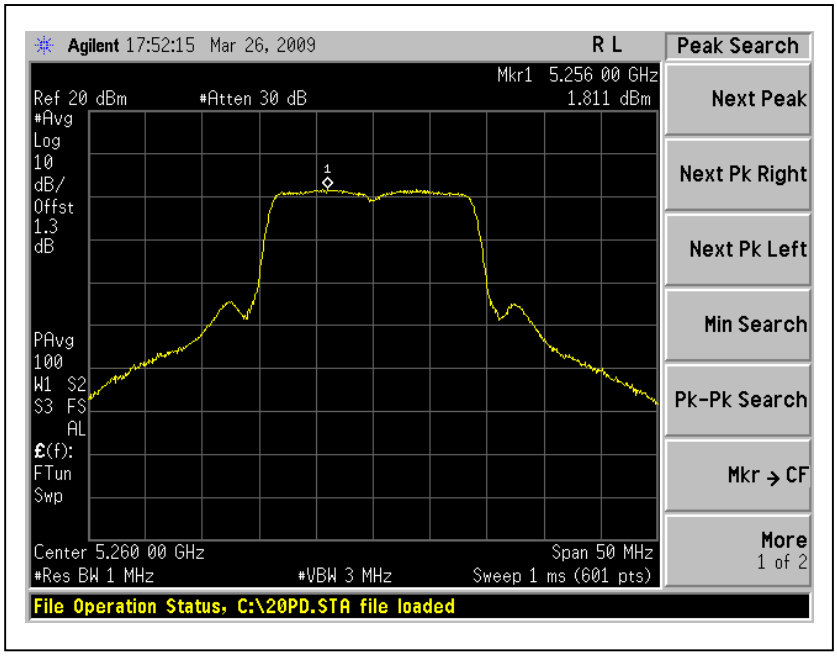
CH2



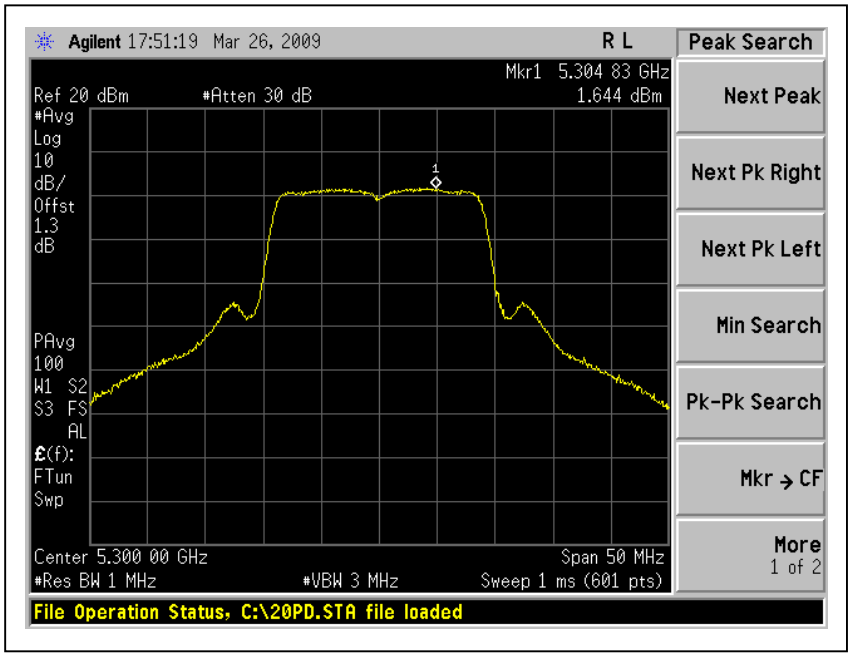
CH4


Agilent 17:03:25 Mar 26, 2009
R L
Peak Search
Mkr1 5.243 58 GHz
0.759 dBm
Ref 20 dBm
#Atten 30 dB
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.240 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

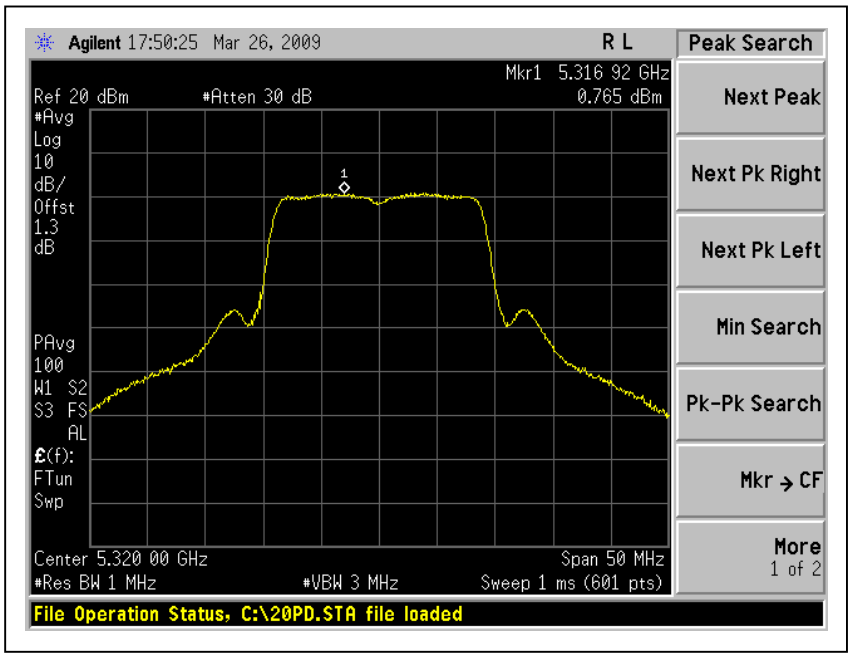
CH5


Agilent 17:52:15 Mar 26, 2009
R L
Peak Search
Mkr1 5.256 00 GHz
1.811 dBm
Ref 20 dBm
#Atten 30 dB
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.260 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

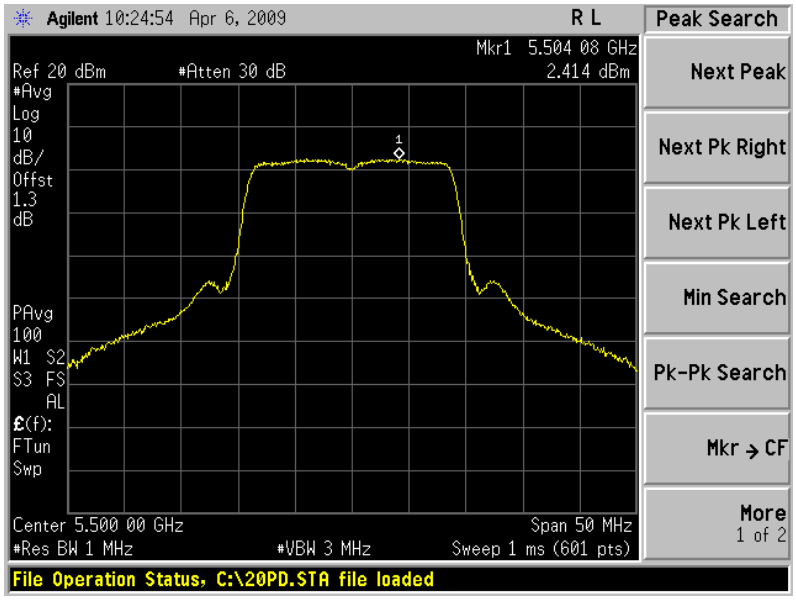
CH7


Agilent 17:51:19 Mar 26, 2009
R L
Peak Search
Mkr1 5.304 83 GHz
Ref 20 dBm
#Atten 30 dB
1.644 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.300 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

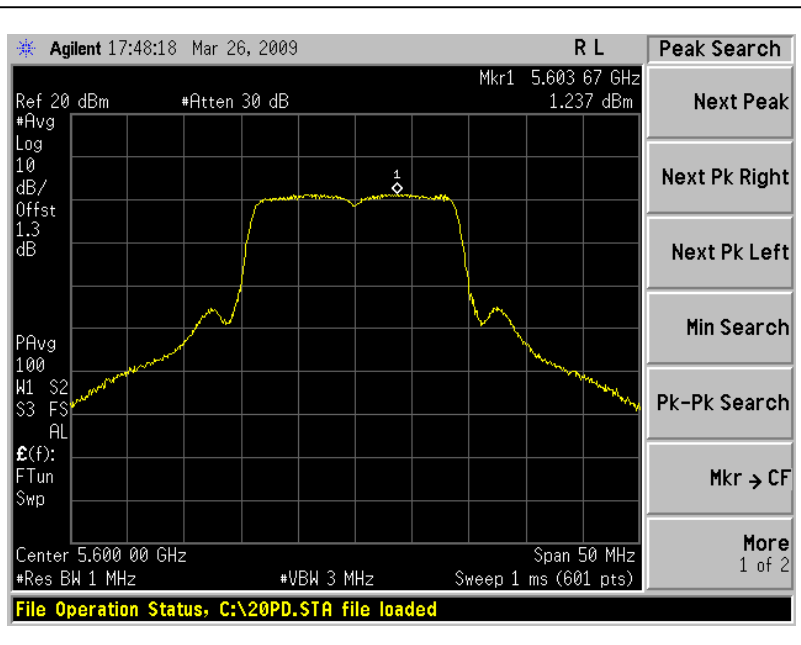
CH8


Agilent 17:50:25 Mar 26, 2009
R L
Peak Search
Mkr1 5.316 92 GHz
Ref 20 dBm
#Atten 30 dB
0.765 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.320 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

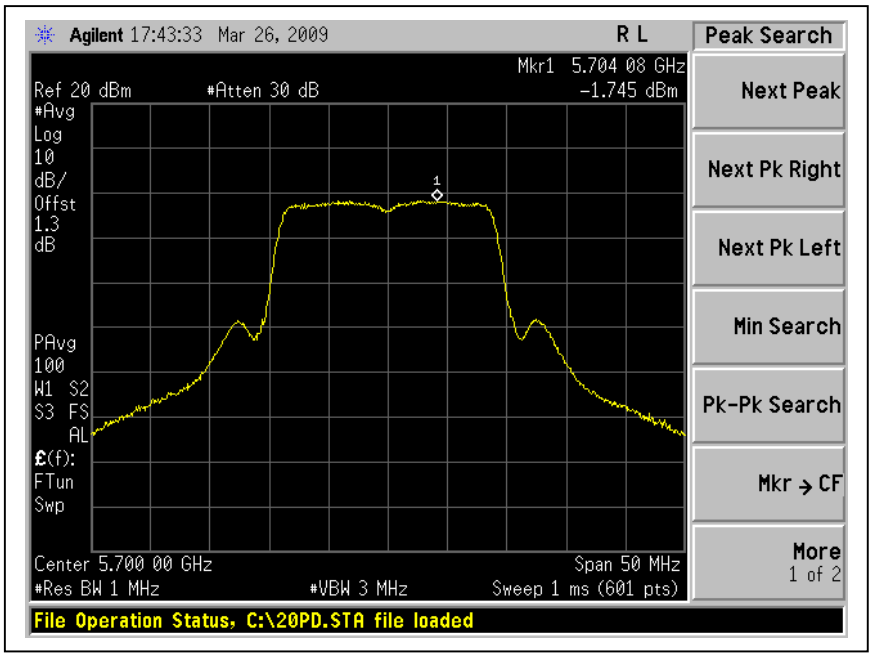
CH9


Agilent 10:24:54 Apr 6, 2009
R L
Peak Search
Mkr1 5.504 08 GHz
Ref 20 dBm
#Atten 30 dB
2.414 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.500 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

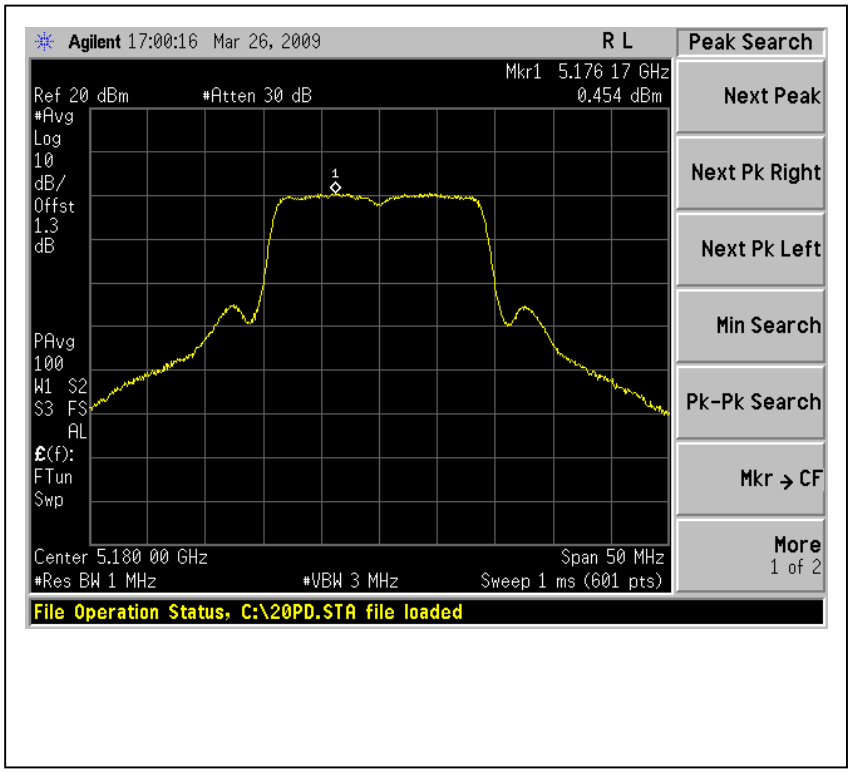
CH14


Agilent 17:48:18 Mar 26, 2009
R L
Peak Search
Mkr1 5.603 67 GHz
Ref 20 dBm
#Atten 30 dB
1.237 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.600 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

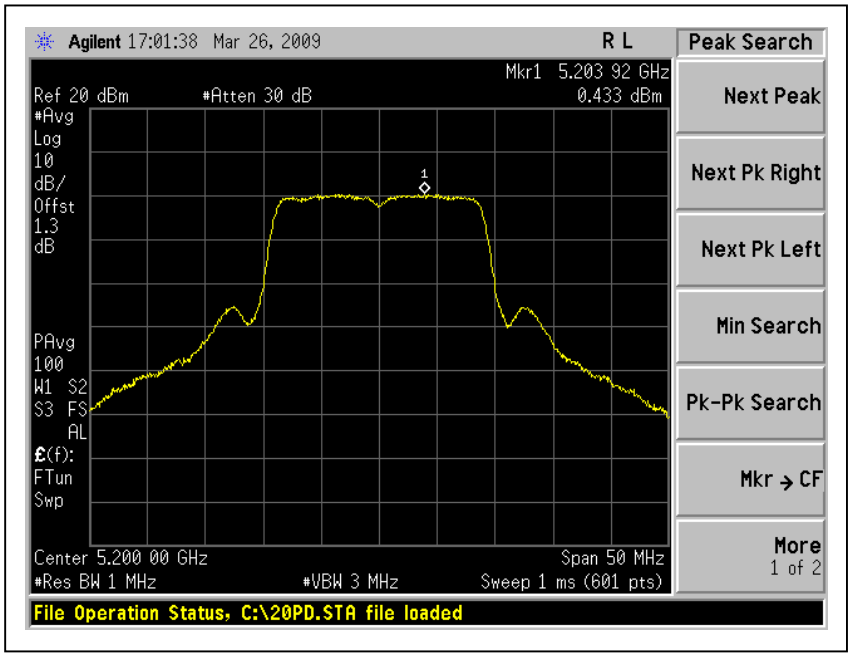
CH19


Agilent 17:43:33 Mar 26, 2009
R L
Peak Search
Mkr1 5.704 08 GHz
-1.745 dBm
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.700 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

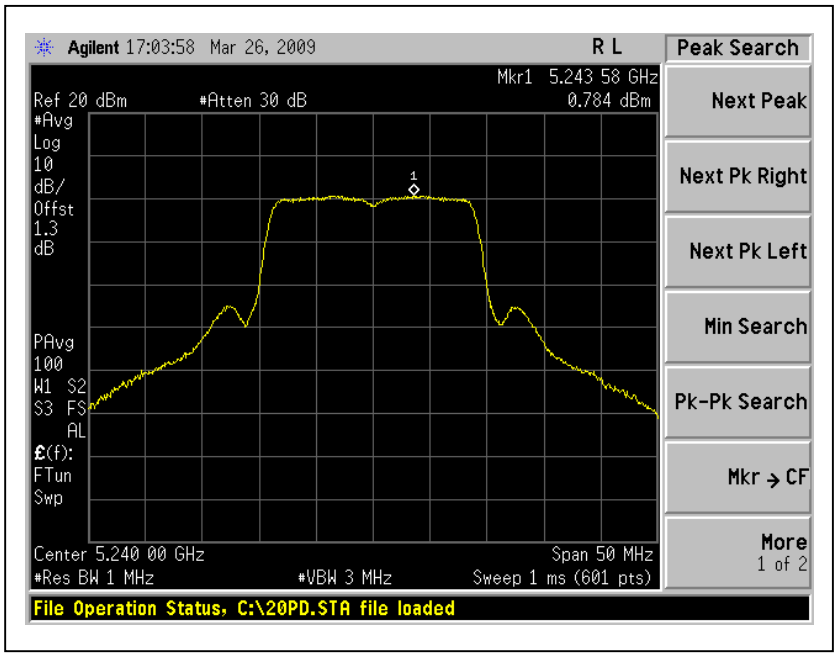
For Chain (1) : CH1



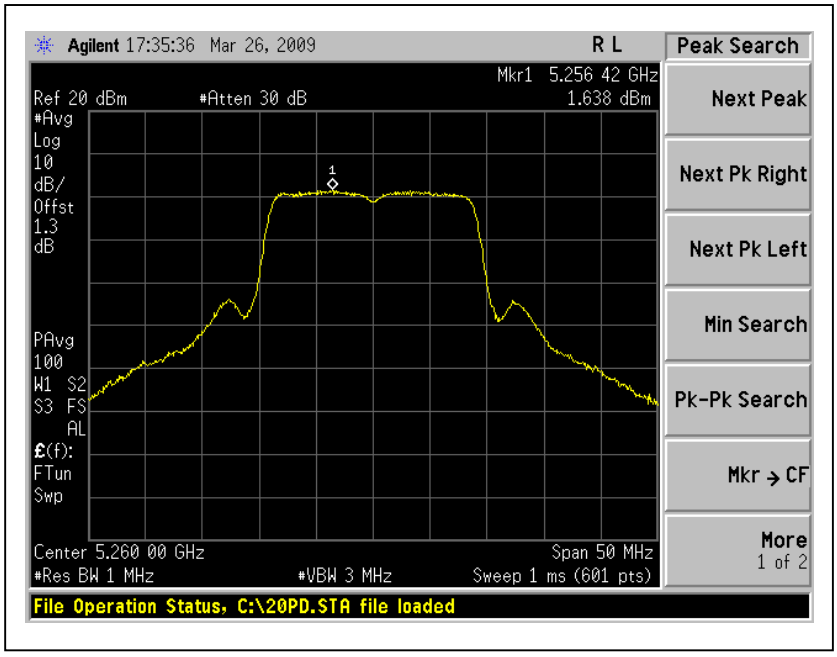
CH2



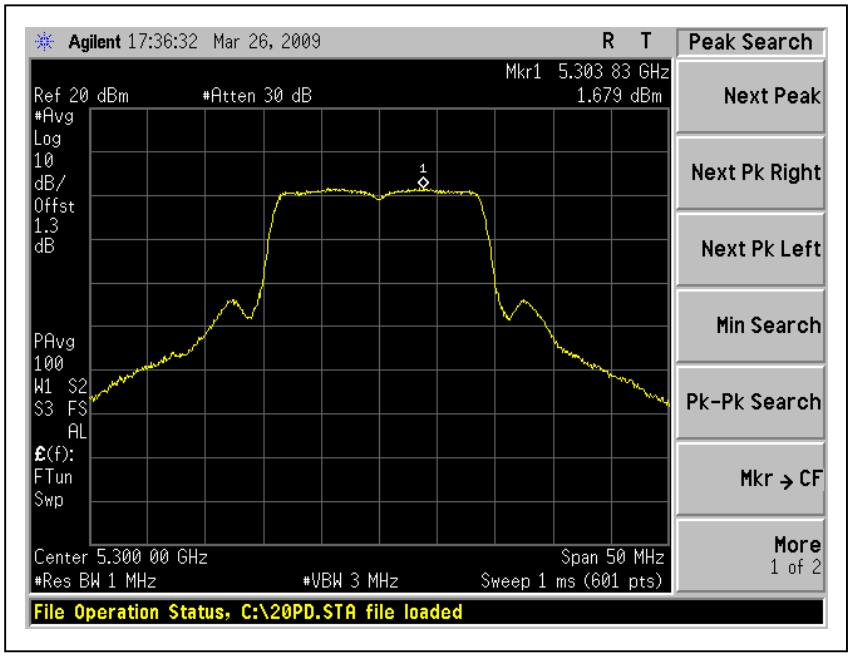
CH4


Agilent 17:03:58 Mar 26, 2009
R L
Peak Search
Mkr1 5.243 58 GHz
0.784 dBm
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

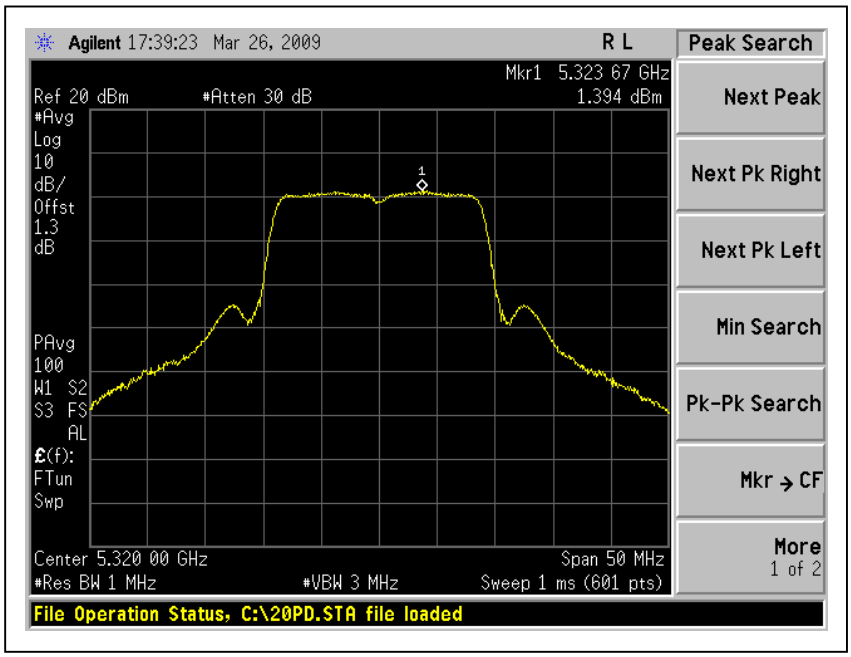
CH5


Agilent 17:35:36 Mar 26, 2009
R L
Peak Search
Mkr1 5.256 42 GHz
1.638 dBm
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.260 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

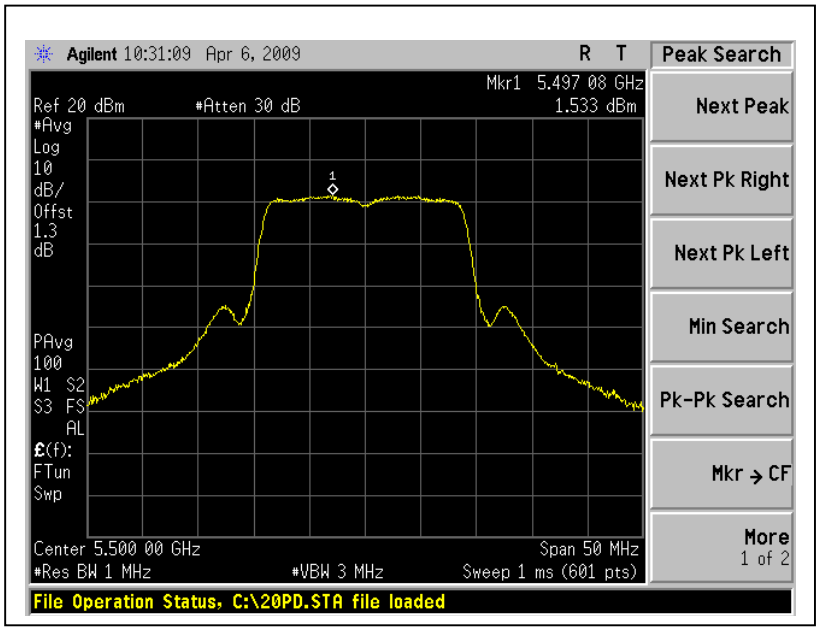
CH7


Agilent 17:36:32 Mar 26, 2009
R T
Peak Search
Mkr1 5.303 83 GHz
1.679 dBm
Ref 20 dBm
#Atten 30 dB
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.300 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

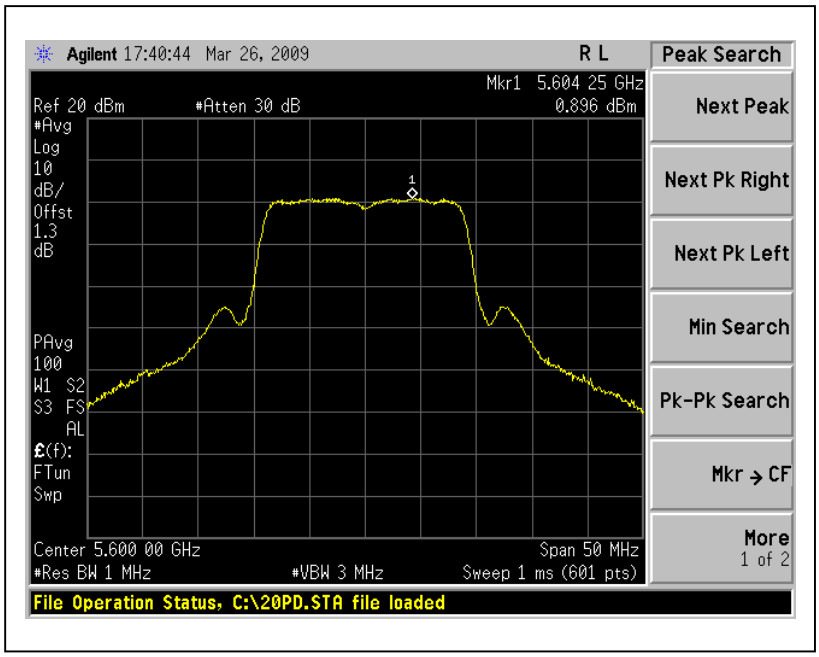
CH8


Agilent 17:39:23 Mar 26, 2009
R L
Peak Search
Mkr1 5.323 67 GHz
1.394 dBm
Ref 20 dBm
#Atten 30 dB
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.320 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

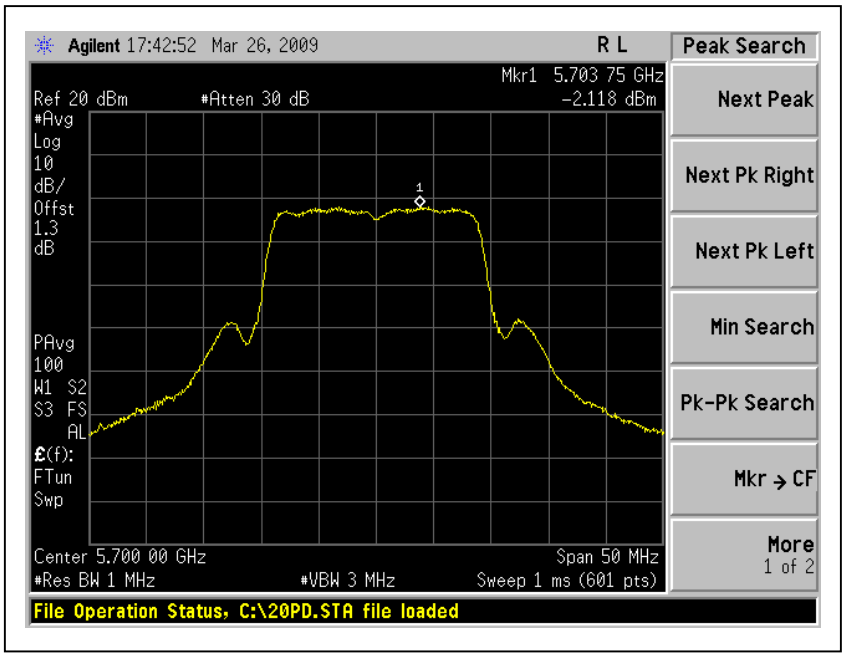
CH9


Agilent 10:31:09 Apr 6, 2009
R T
Peak Search
Mkr1 5.497 08 GHz
Ref 20 dBm
#Atten 30 dB
1.533 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.500 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

CH14


Agilent 17:40:44 Mar 26, 2009
R L
Peak Search
Mkr1 5.604 25 GHz
Ref 20 dBm
#Atten 30 dB
0.896 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.600 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

CH19


Agilent 17:42:52 Mar 26, 2009
R L
Peak Search
Mkr1 5.703 75 GHz
Ref 20 dBm
#Atten 30 dB
-2.118 dBm
#Avg
Log
10
dB/
Offst
1.3
dB
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.700 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/- 0.02% of the operating frequency over a temperature variation of –30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

NOTE:

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

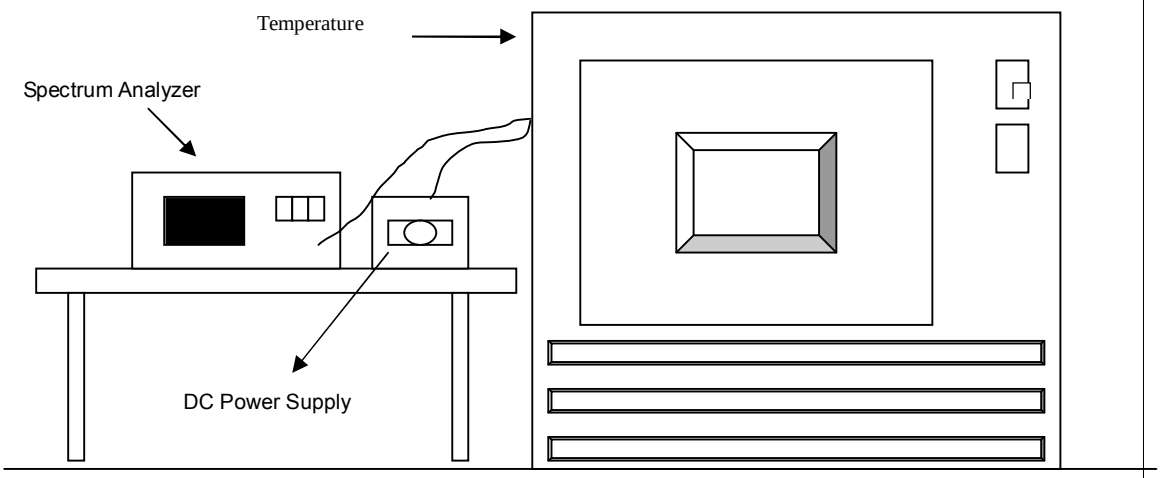
4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC 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: 5500MHz						Limit : ± 0.02%	
Temp. (℃)	Power supply (VAC)	2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	138	5500.0102	0.000185	5500.0210	0.000382	5500.0244	0.000444
	120	5500.0111	0.000202	5500.0223	0.000405	5500.0264	0.000480
	102	5500.012	0.000218	5500.0213	0.000387	5500.0244	0.000444
40	138	5500.0114	0.000207	5500.0213	0.000387	5500.0342	0.000622
	120	5500.0121	0.000220	5500.0222	0.000404	5500.0342	0.000622
	102	5500.0114	0.000207	5500.0221	0.000402	5500.0342	0.000622
30	138	5500.0125	0.000227	5500.0235	0.000427	5500.0236	0.000429
	120	5500.0189	0.000344	5500.0235	0.000427	5500.0231	0.000420
	102	5500.0199	0.000362	5500.0234	0.000425	5500.0239	0.000435
20	138	5500.0112	0.000204	5500.0233	0.000424	5500.0235	0.000427
	120	5500.0105	0.000191	5500.0241	0.000438	5500.0233	0.000424
	102	5500.0109	0.000198	5500.0236	0.000429	5500.0241	0.000438
10	138	5500.0112	0.000204	5500.0322	0.000585	5500.0284	0.000516
	120	5500.0107	0.000195	5500.0262	0.000476	5500.0294	0.000535
	102	5500.0104	0.000189	5500.0235	0.000427	5500.0294	0.000535
0	138	5500.0116	0.000211	5500.0213	0.000387	5500.0266	0.000484
	120	5500.0111	0.000202	5500.0233	0.000424	5500.0265	0.000482
	102	5500.0112	0.000204	5500.0216	0.000393	5500.0267	0.000485
-10	138	5500.0115	0.000209	5500.0224	0.000407	5500.0364	0.000662
	120	5500.0113	0.000205	5500.0231	0.000420	5500.0369	0.000671
	102	5500.0123	0.000224	5500.0218	0.000396	5500.0366	0.000665
-20	138	5500.0135	0.000245	5500.0217	0.000395	5500.0254	0.000462
	120	5500.0133	0.000242	5500.0215	0.000391	5500.0264	0.000480
	102	5500.0134	0.000244	5500.0219	0.000398	5500.0254	0.000462
-30	138	5500.0154	0.000280	5500.0241	0.000438	5500.0269	0.000489
	120	5500.0167	0.000304	5500.0245	0.000445	5500.0278	0.000505
	102	5500.0159	0.000289	5500.0235	0.000427	5500.0288	0.000524

4.7 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.7.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

NOTE:

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

4.7.2 TEST PROCEDURE

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

4.7.3 EUT OPERATING CONDITION

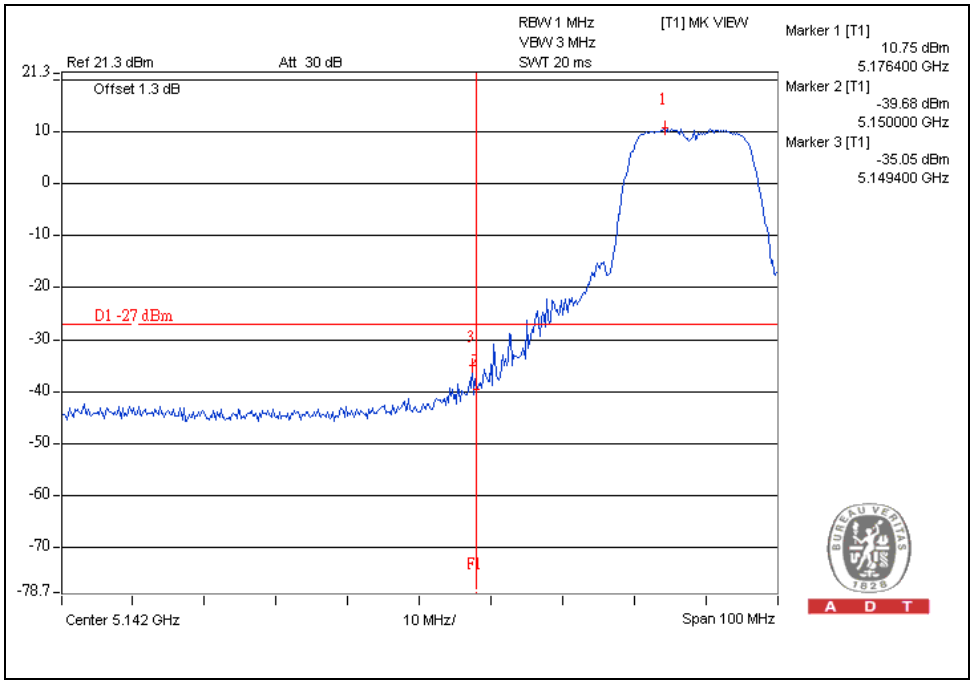
The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.7.4 TEST RESULTS

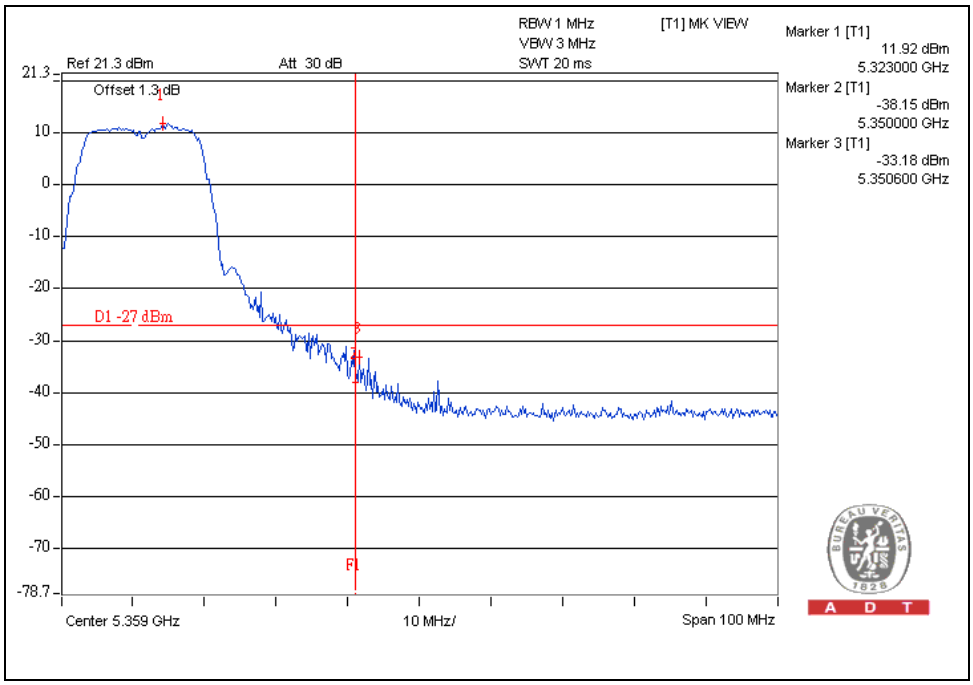
For 5.15 to 5.35GHz band:
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

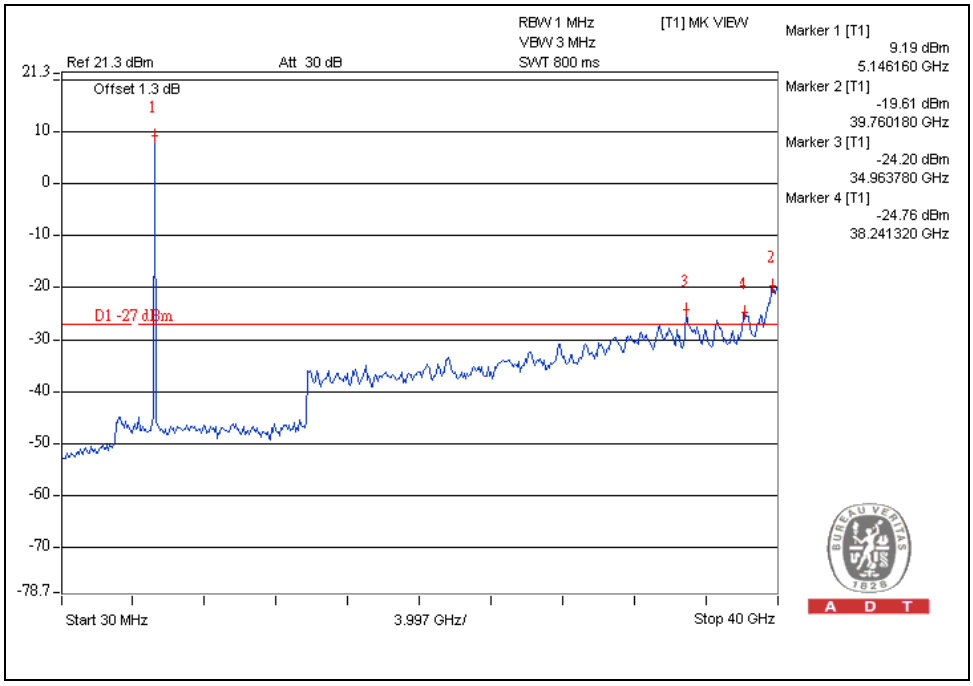
CH 1



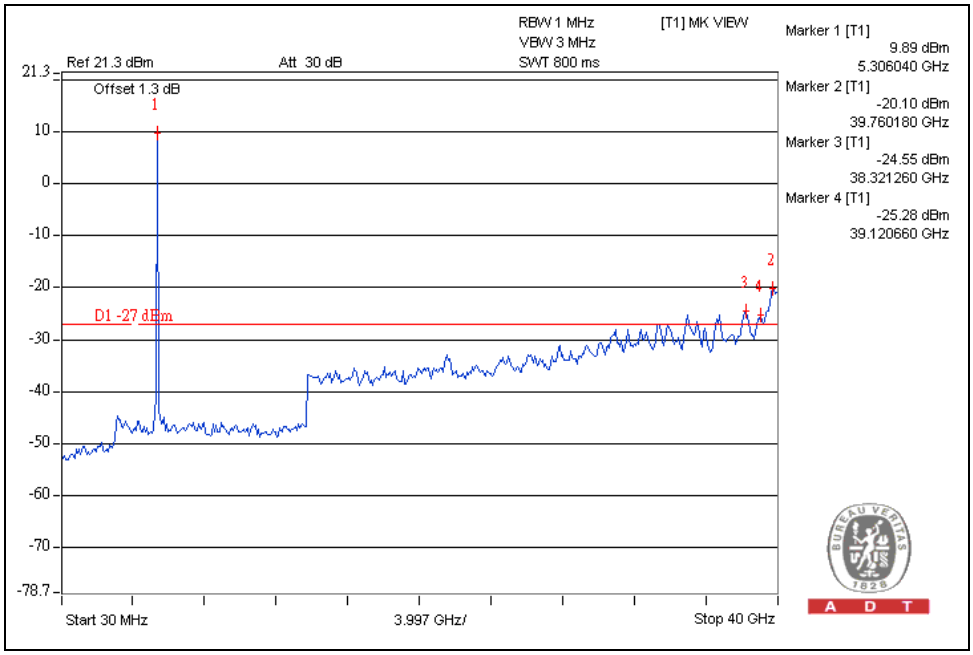
CH 8



CH 1


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 -27 dBm
Marker 1 [T1]
9.19 dBm
5.146160 GHz
Marker 2 [T1]
-19.61 dBm
39.760180 GHz
Marker 3 [T1]
-24.20 dBm
34.963780 GHz
Marker 4 [T1]
-24.76 dBm
38.241320 GHz
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz

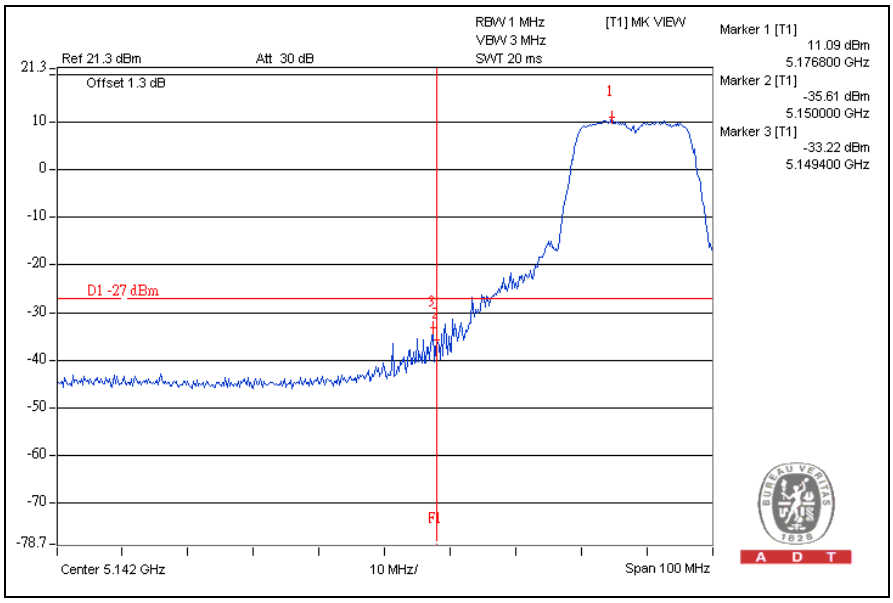
CH 8


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 -27 dBm
Marker 1 [T1]
9.89 dBm
5.306040 GHz
Marker 2 [T1]
-20.10 dBm
39.760180 GHz
Marker 3 [T1]
-24.55 dBm
38.321260 GHz
Marker 4 [T1]
-25.28 dBm
39.120660 GHz
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz

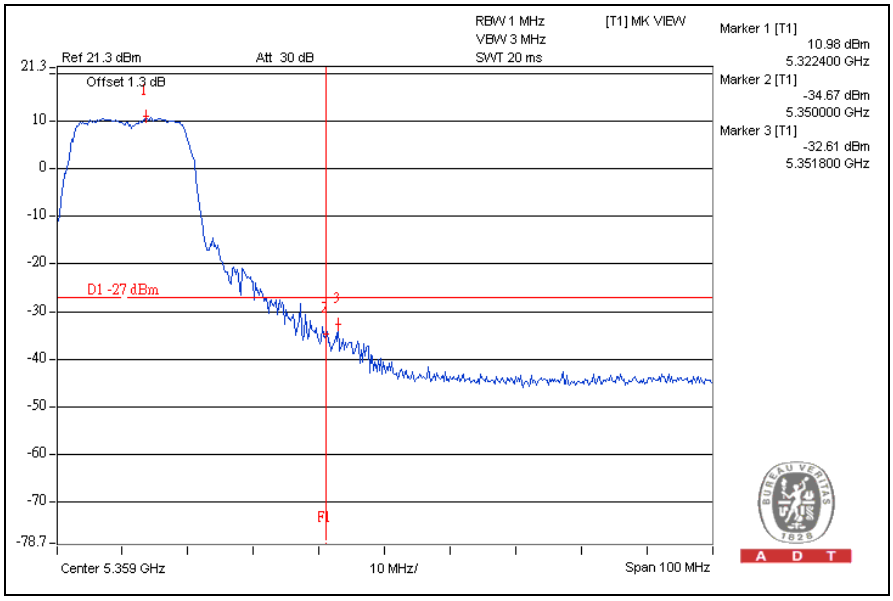
DRAFT 802.11n (20MHz) OFDM MODULATION:

For chain (0):

CH1

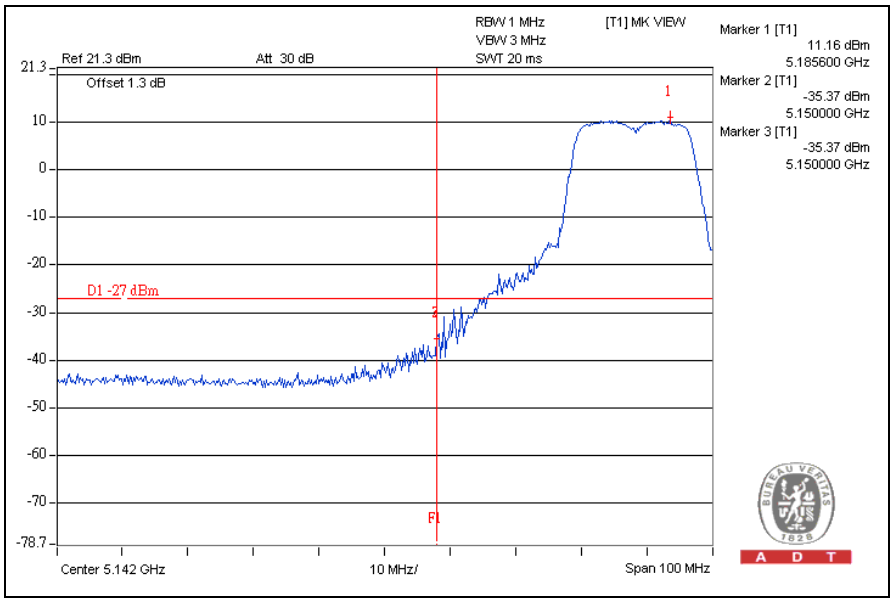


CH8

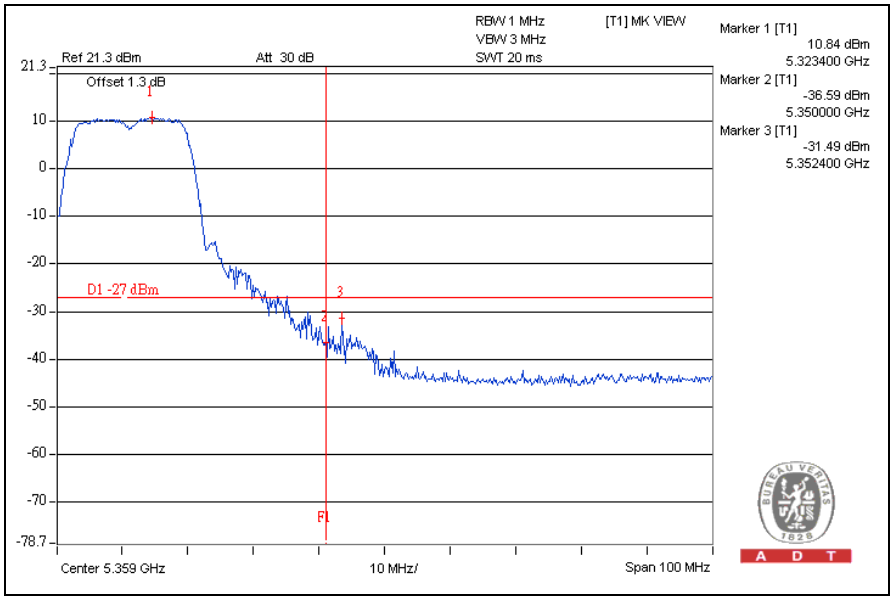


For chain (1):

CH1

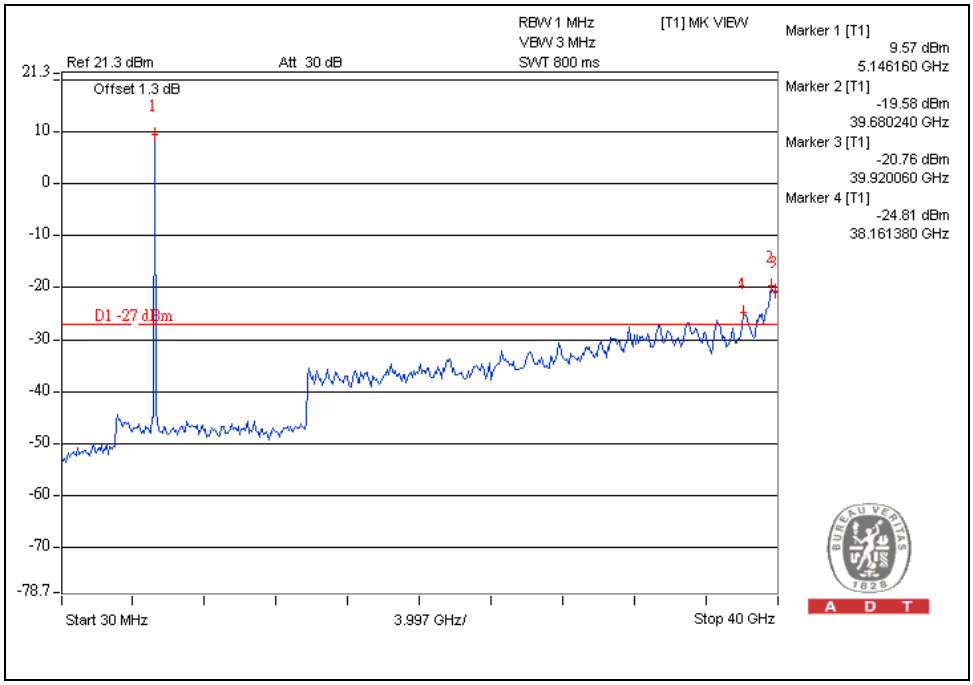


CH8

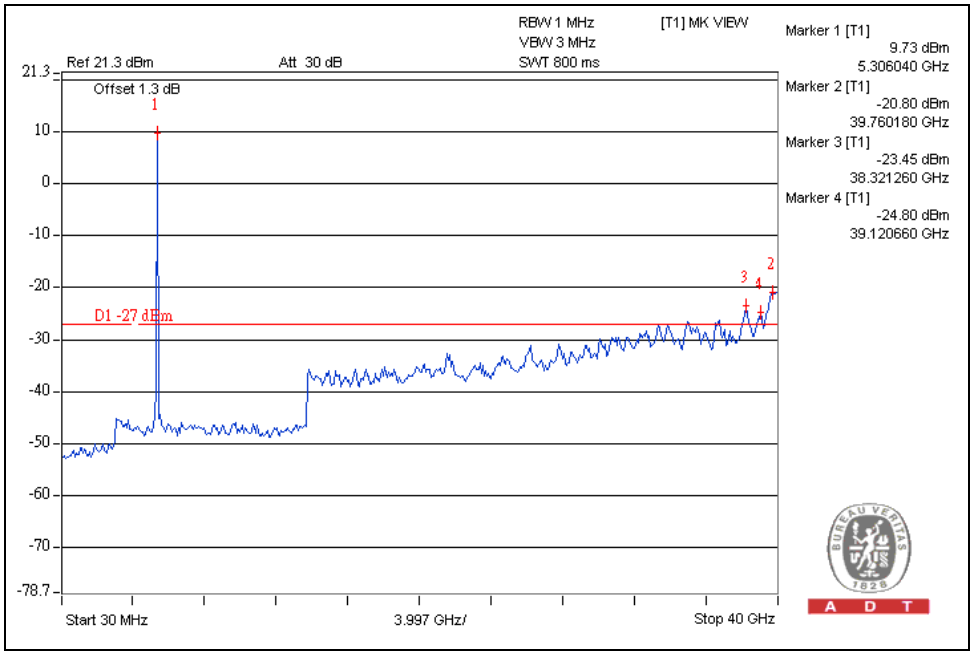


For chain (0):

CH1

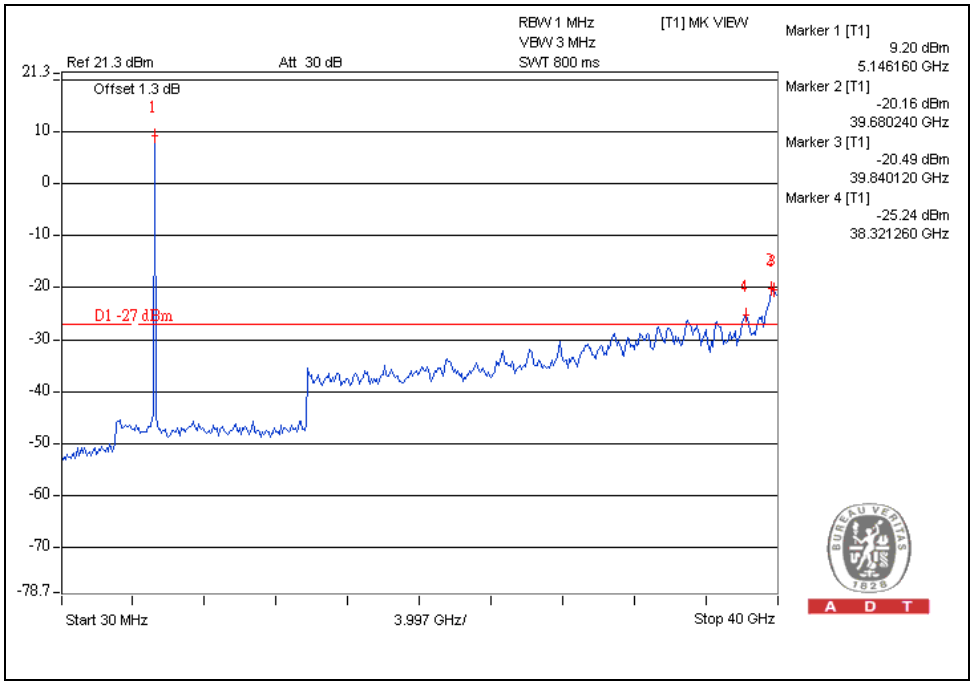


CH8

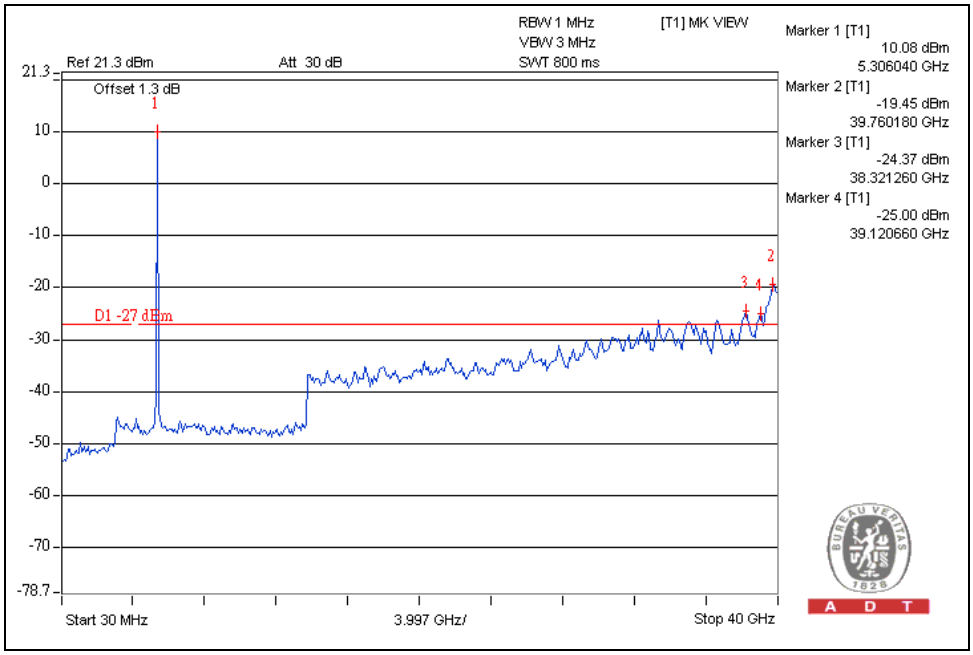


For chain (1):

CH1



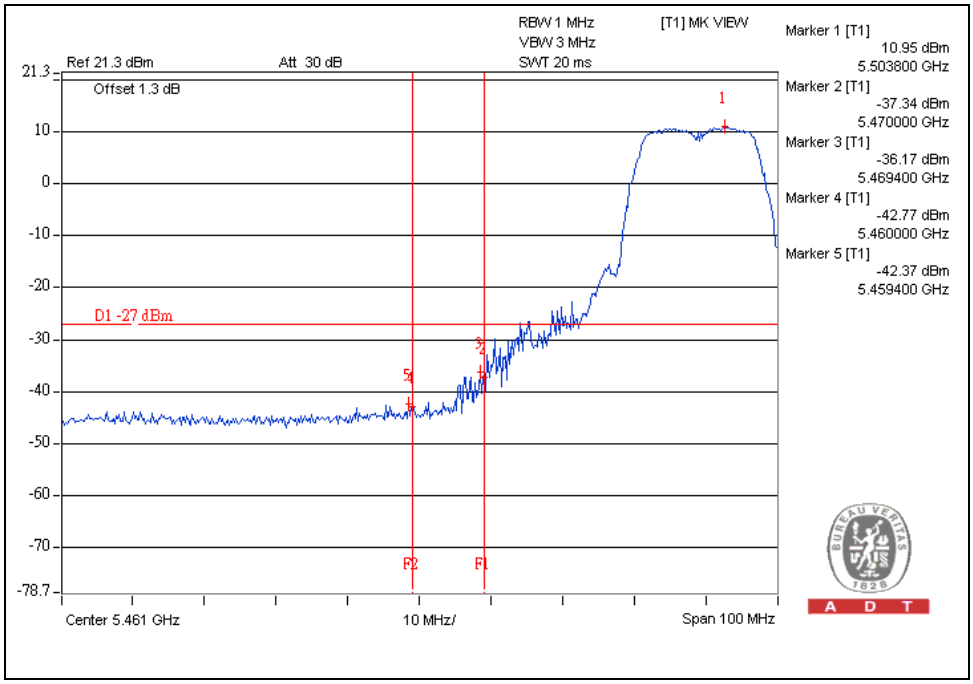
CH8



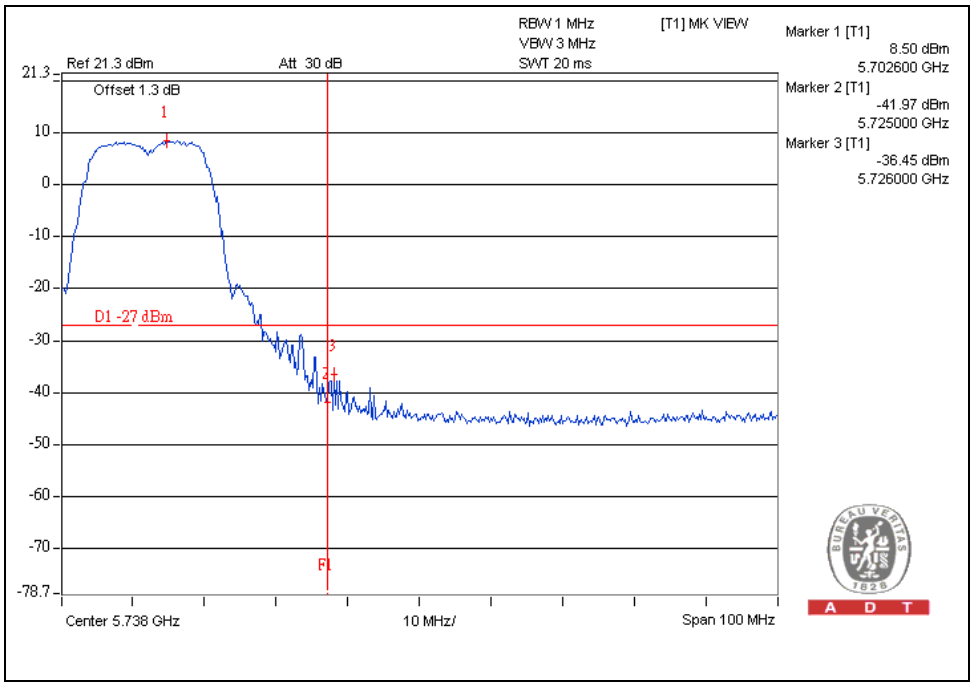
For 5.47 to 5.725GHz band:
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

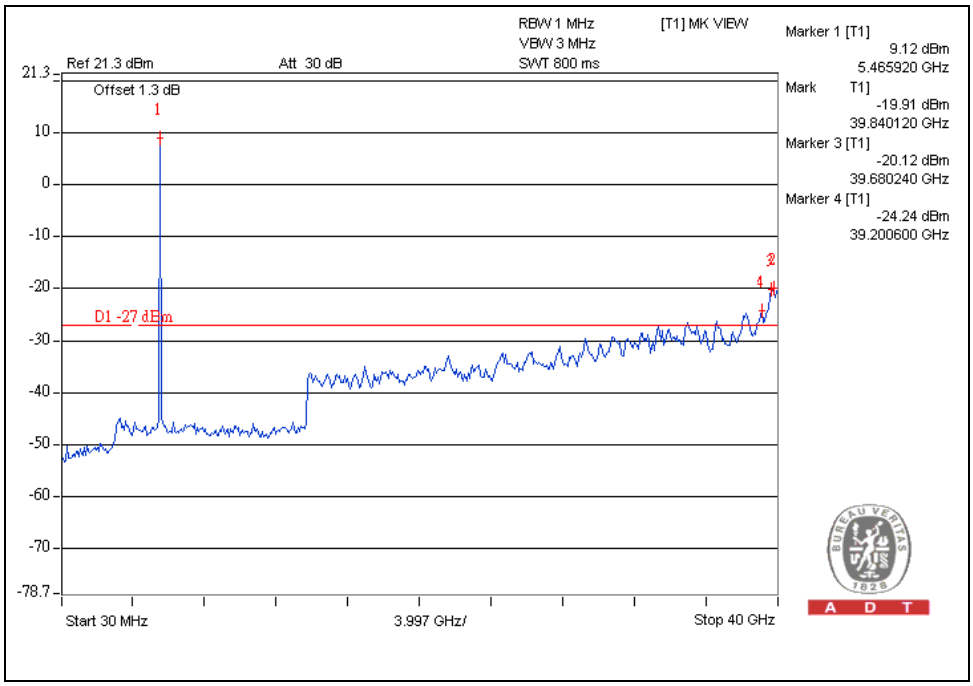
CH 9



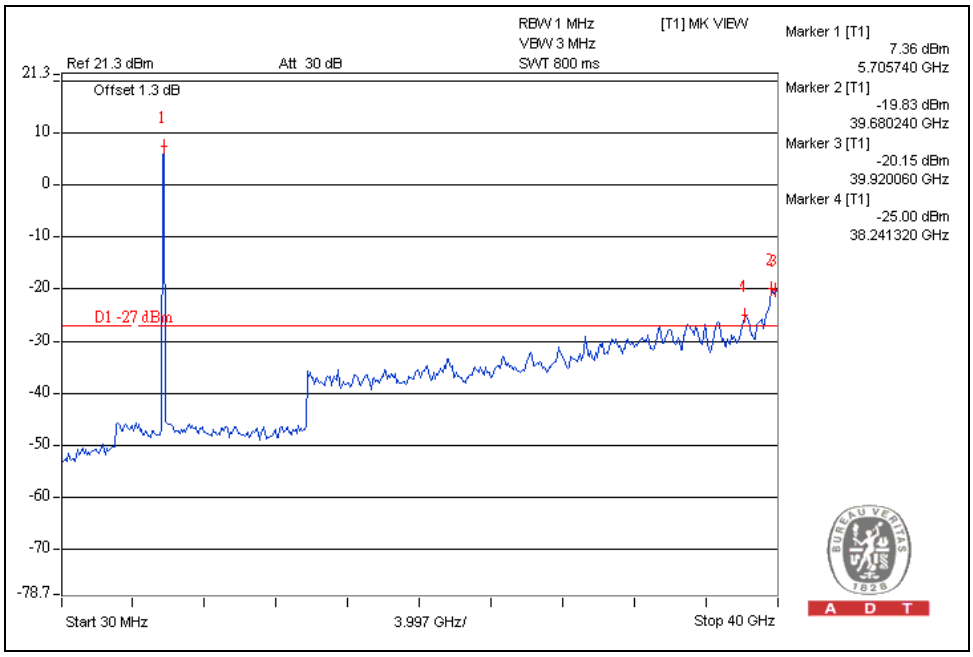
CH 19



CH 9


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 -27 dBm
Marker 1 [T1]
9.12 dBm
5.465920 GHz
Mark T1]
-19.91 dBm
39.840120 GHz
Marker 3 [T1]
-20.12 dBm
39.680240 GHz
Marker 4 [T1]
-24.24 dBm
39.200600 GHz
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz

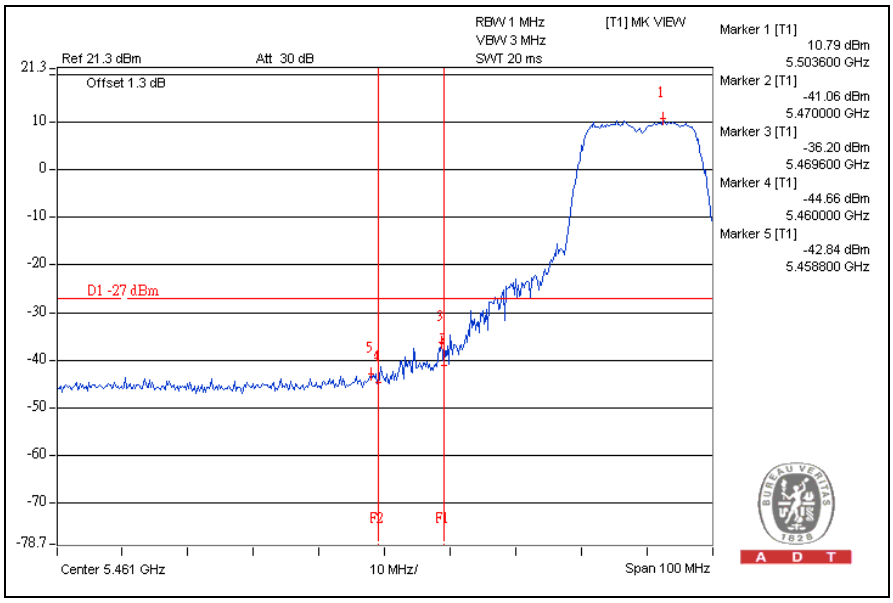
CH 19


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21.3 dBm
Att 30 dB
Offset 1.3 dB
D1 -27 dBm
Marker 1 [T1]
7.36 dBm
5.705740 GHz
Marker 2 [T1]
-19.83 dBm
39.680240 GHz
Marker 3 [T1]
-20.15 dBm
39.920060 GHz
Marker 4 [T1]
-25.00 dBm
38.241320 GHz
21.3
10
0
-10
-20
-30
-40
-50
-60
-70
-78.7
Start 30 MHz
3.997 GHz/
Stop 40 GHz

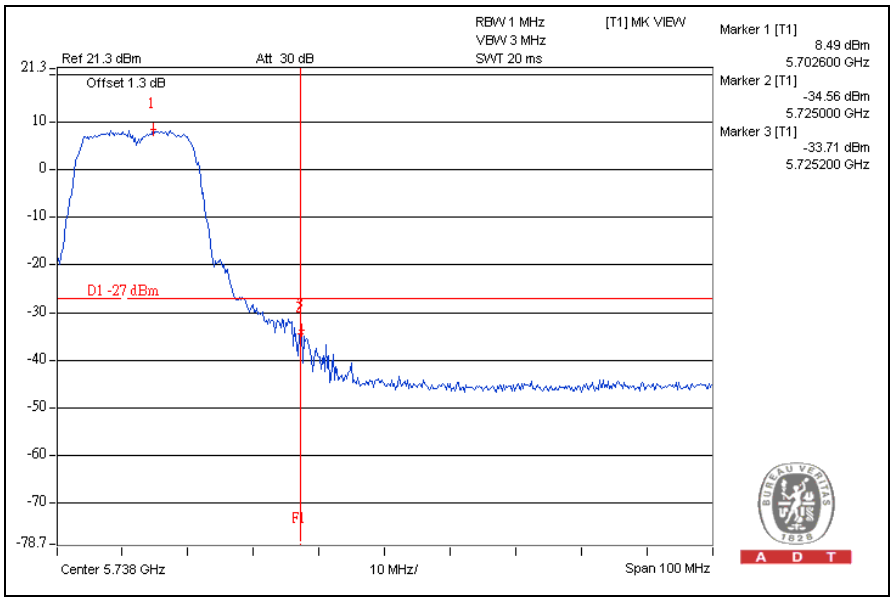
DRAFT 802.11n (20MHz) OFDM MODULATION:

For chain (0):

CH9

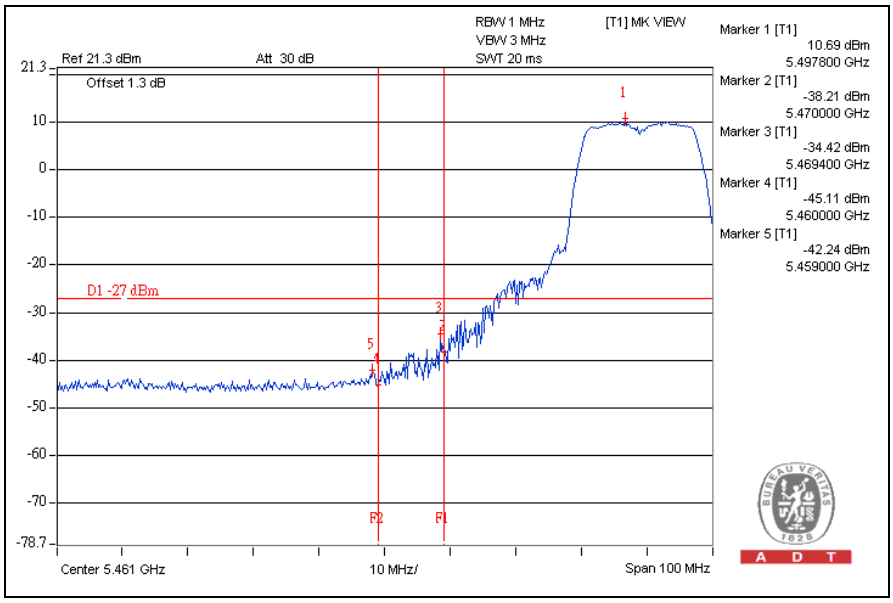


CH19

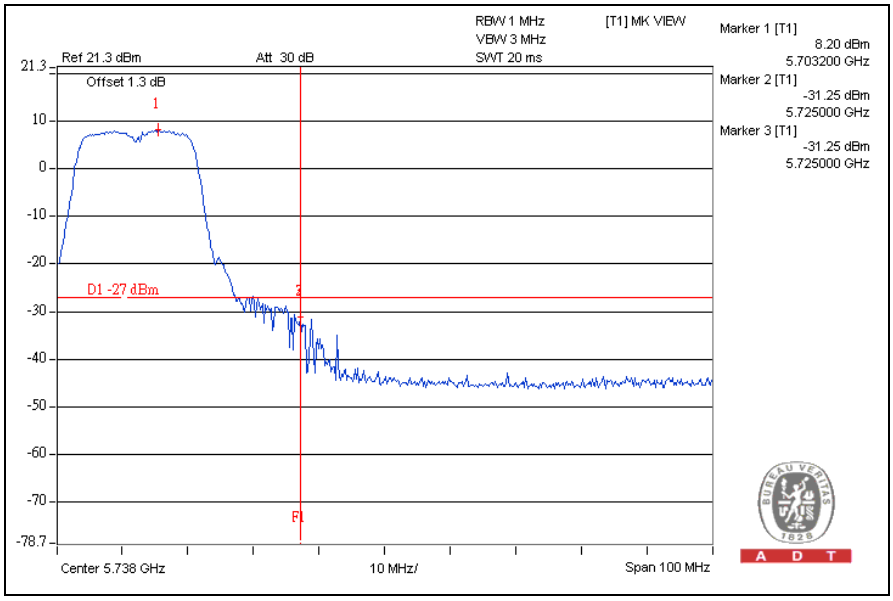


For chain (1):

CH9

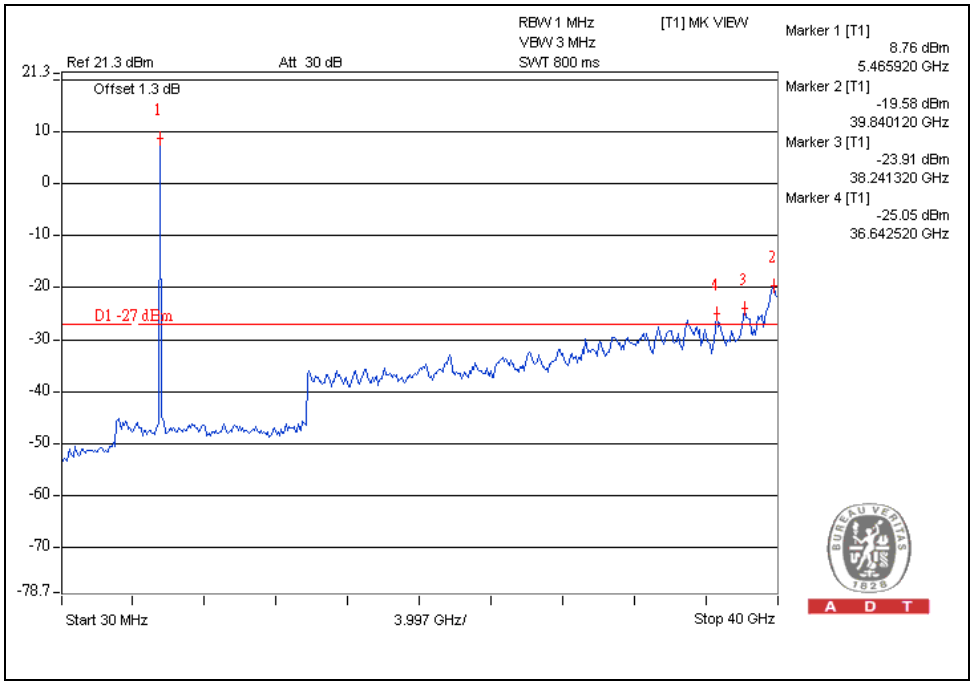


CH19

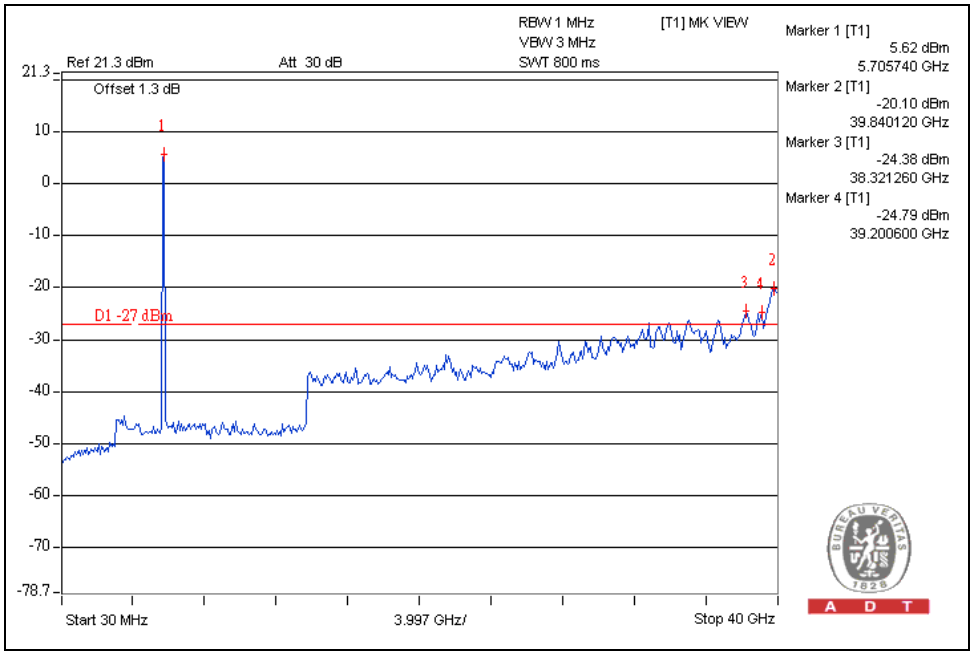


For chain (0):

CH9

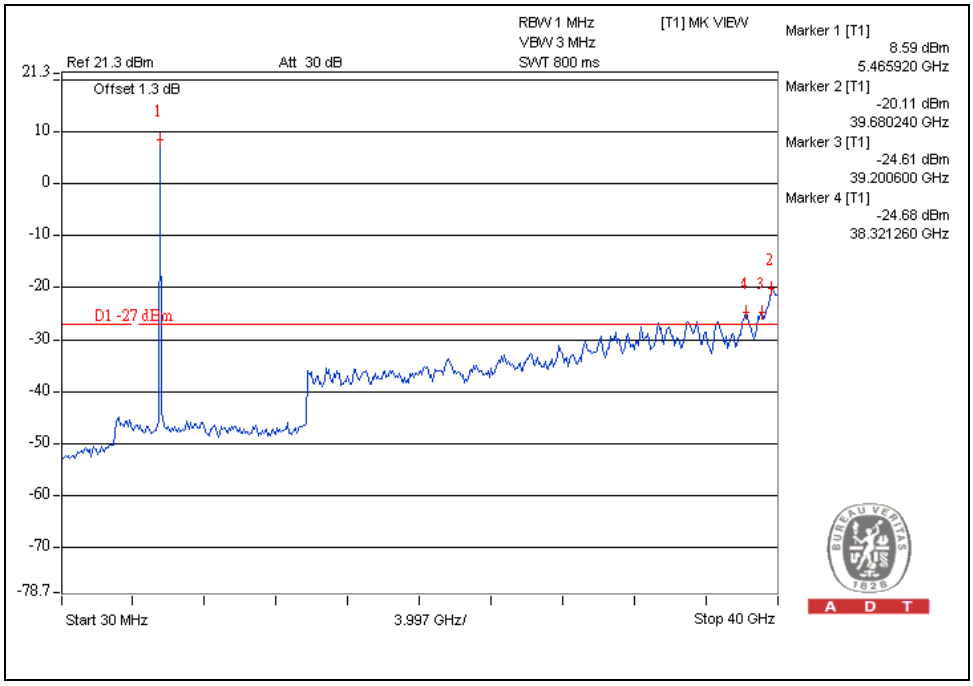


CH19

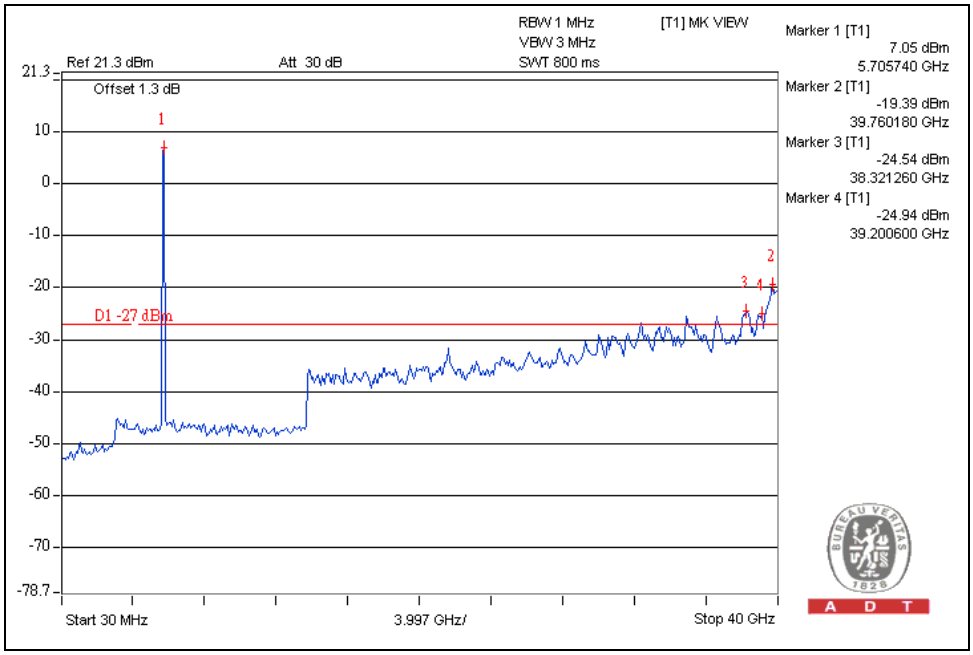


For chain (1):

CH9



CH19



4.8 ANTENNA REQUIREMENT

4.8.1 STANDARD APPLICABLE

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

And according to FCC 47 CFR Section 15.407(a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.8.2 ANTENNA CONNECTED CONSTRUCTION

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

No.	Antenna Type	Antenna Connector	For 2.4GHz Gain (dBi)	For 5GHz Gain (dBi)	Cable Loss (dB)	Cable Length (cm)
1	PCB	Hirose U.FL	2.7	3	0	24
2	PCB	Hirose U.FL	1.5	1.5	0	39

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 by the following approval agencies according to ISO/IEC 17025:

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

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

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

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

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

Web Site: www.adt.com.tw

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

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

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

---END---