FCC TEST REPORT

REPORT NO.: RF931027L11
MODEL NO.: WGA54AG
RECEIVED: Sep. 16, 2004
TESTED: Sep. 16 ~ Oct. 29, 2004

APPLICANT: Cisco-Linksys, LLC

ADDRESS: 121 Theory Drive Irvine, CA 92612, U.S.A.

ISSUED BY: Advance Data Technology Corporation

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang 244, Taipei Hsien, Taiwan, R.O.C.

TEST LOCATION: No. 19, Hwa Ya 2nd Rd., Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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ILAC MRA

No. 2177-01

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1. CERTIFICATION

PRODUCT:	Wireless A/G Game Adapter
BRAND NAME:	Linksys
MODEL NO.:	WGA54AG
APPLICANT:	Cisco-Linksys, LLC
TEST SAMPLE:	Engineering Sample
TESTED:	Sep. 16 ~ Oct. 29, 2004
STANDARDS:	FCC Part 15, Subpart C (Section 15.247), Subpart E (Section 15.407), ANSI C63.4-2003

The above equipment have been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____ , **DATE:** Nov. 01, 2004
(Windy Chou)

TECHNICAL ACCEPTANCE : _____ , **DATE:** Nov. 01, 2004
Responsible for RF
(Gary Chang)

APPROVED BY : _____ , **DATE:** Nov. 01, 2004
(Cody Chang, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247)			
Standard Section	**Test Type and Limit**	**Result**	**Remark**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is –9.91dB at 0.301MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(c)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is –0.71dB at 57.21MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(c)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

For Freq. 5.15 ~ 5.35GHz:

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 –9.41dB at 0.303MHz
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 –0.71dB at 57.21MHz
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.

For Freq. 5.725 ~ 5.850GHz：

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247)			
Standard Section	**Test Type and Limit**	**Result**	**Remark**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is –9.41dB at 0.303MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(c)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is –1.94dB at 11650.00MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(c)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

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:

Measurement	Frequency	Uncertainty
Conducted emissions	9k~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.73 dB
	200MHz ~1000MHz	3.74 dB
	1GHz ~ 18GHz	2.20 dB
	18GHz ~ 40GHz	1.88 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Wireless A/G Game Adapter
MODEL NO.	WGA54AG
POWER SUPPLY	12Vdc from AC Adapter
MODULATION TYPE	DBPSK, DQPSK, CCK, 16QAM, 64QAM
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 (Turbo mode: up to 108Mbps *see Note 2)
FREQUENCY RANGE	802.11b & 802.11g: 2412 ~ 2462MHz 802.11a: 5.15 ~ 5.35GHz and 5.725 ~ 5.850GHz
NUMBER OF CHANNEL	802.11b & 802.11g: 11 for Normal mode 802.11a: 13 for Normal mode / 5 for Turbo mode
CHANNEL SPACING	802.11b & 802.11g: 5MHz 802.11a: 20MHz for Normal mode / 40MHz for Turbo mode
OUTPUT POWER	52.481mW for 802.11b 41.687mW for 802.11g 20.230mW for 5.15 ~ 5.35GHz 20.417mW for 5.75 ~ 5.850GHz
DATA CABLE	NA
ANTENNA TYPE	Dipole antenna with 2.0dBi gain for 2.4GHz Dipole antenna with 3.0dBi gain for 5GHz
I/O PORTS	RJ45
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.
2. This EUT is capable of providing data rates of up to 108Mbps in Turbo Mode depending upon reception quality.
3. The EUT was powered by the following adapter:

BRAND:	LINKSYS
MODEL :	411210OO3CT
INPUT :	120Vac, 60Hz, 20W
OUTPUT :	12Vdc, 1000mA
LENTH :	1.8m non-shielded, with one core

4. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

802.11b and 802.11g: Eleven channels are provided to this EUT.

Channel	Frequency	Channel	Frequency
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

NOTE:

1. Below 1GHz, the channel 1, 6, and 11 were pre-tested in chamber. The channel 11, worst case one, was chosen for final test. Above 1GHz, the channel 1, 6, and 11 were tested individually.
2. From our experience and technical viewpoint, we have chosen data rates, 11Mbps with CCK technique and 6Mbps with OFDM technique, as the worst cases for the test among other data rates.

For 802.11a: Thirteen channels are provided to this EUT for Normal mode.

Channel	Frequency	Channel	Frequency
1	5180 MHz	8	5320 MHz
2	5200 MHz	9	5745 MHz
3	5220 MHz	10	5765 MHz
4	5240 MHz	11	5785 MHz
5	5260 MHz	12	5805 MHz
6	5280 MHz	13	5825 MHz
7	5300 MHz		

Five channels are provided to this EUT for Turbo Mode.

Channel	Frequency	Channel	Frequency
1	5210 MHz	4	5760 MHz
2	5250 MHz	5	5800 MHz
3	5290 MHz		

NOTE:

1. The EUT was tested in both normal mode (channel bandwidth of approximately 30MHz) and turbo mode (channel bandwidth of approximately 60MHz).
2. “Normal Mode” allows data rates of up to 54Mbps. The device was, therefore, tested in Normal mode at the data rate that produced the highest output power for normal mode (6Mbps).
3. “Turbo Mode” allows data rates of up to 108Mbps. At data rates higher than 12Mbps the PA gain is reduced to improve signal fidelity. The device was, therefore, tested in turbo mode at the data rate that produced the highest output power for turbo mode (12Mbps).
3. Channel 1, 4, 5, 8, 9, 11 and 13 are the closest frequencies to the band edge, were chosen for final test of Normal Mode.
4. Channel 1~5 were chosen for final test of Turbo mode.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless A/G Game Adapter. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. (15.247),
Subpart E (15.407). ANSI C63.4 : 2003

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

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

3.4 DESCRIPTION OF SUPPORT UNITS

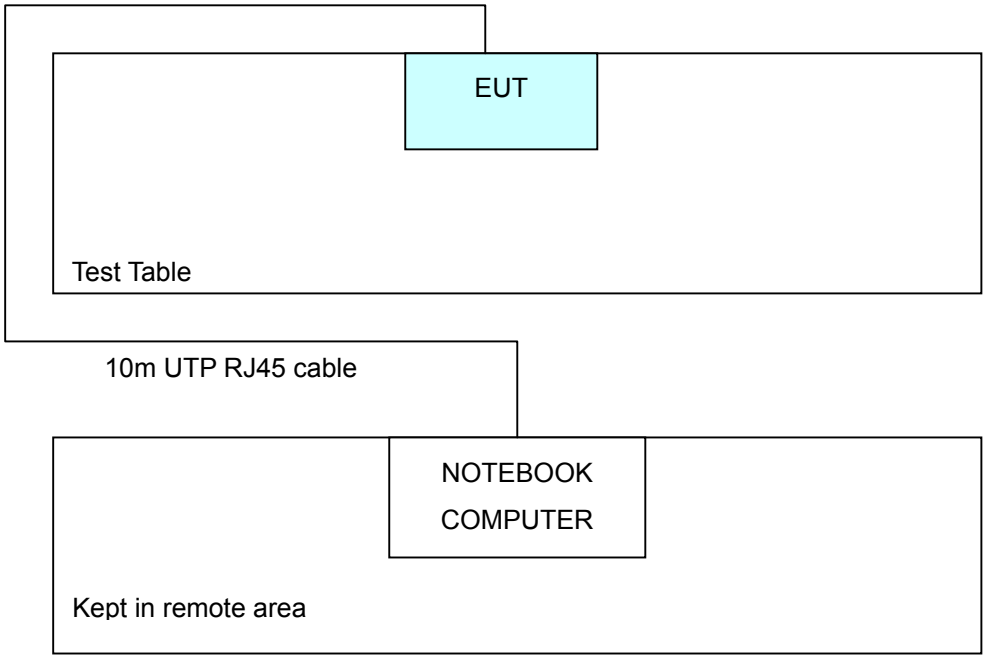
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP05L	16484462992	E2K24CLNS

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

NOTE: 1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 act as a communication partner to transfer data.

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4. TEST TYPES AND RESULTS (FOR PART 802.11b & 802.11g)

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Dec. 11, 2004
RF signal cable Woken	5D-FB	Cable-HyC02-01	Mar. 07, 2005
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Mar. 10, 2005
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Mar. 04, 2005
Software ADT	ADT_Cond_V3	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 HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

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

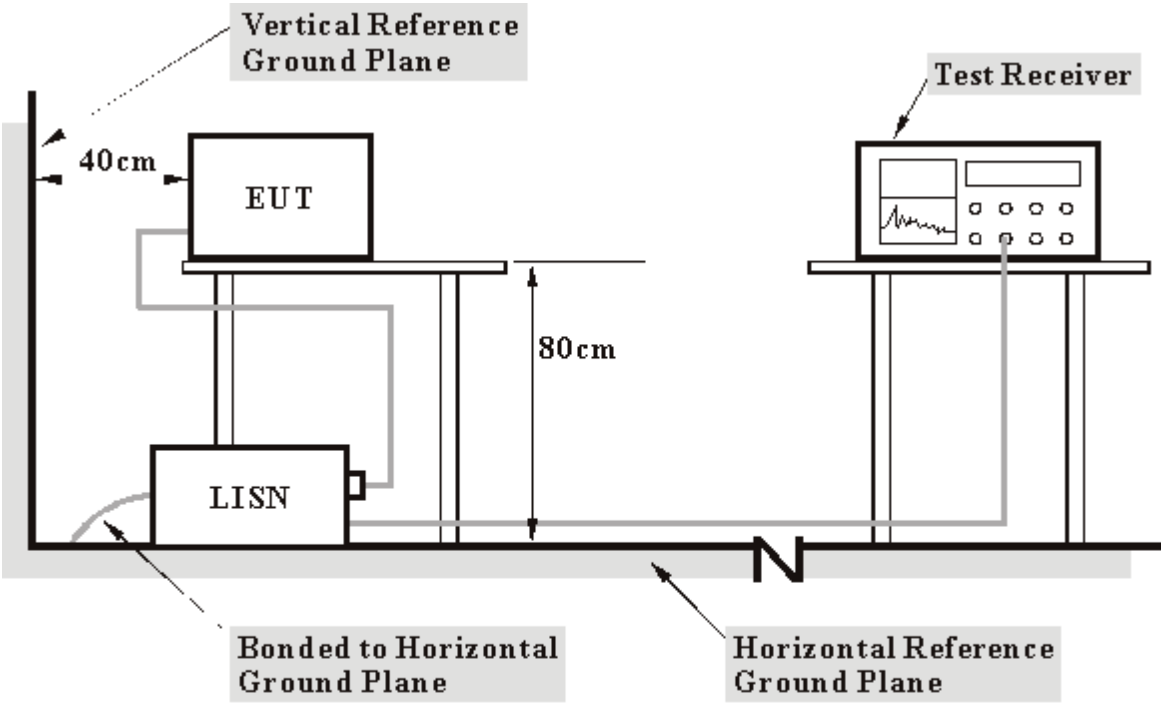
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels 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) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

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

4.1.6 EUT OPERATING CONDITIONS

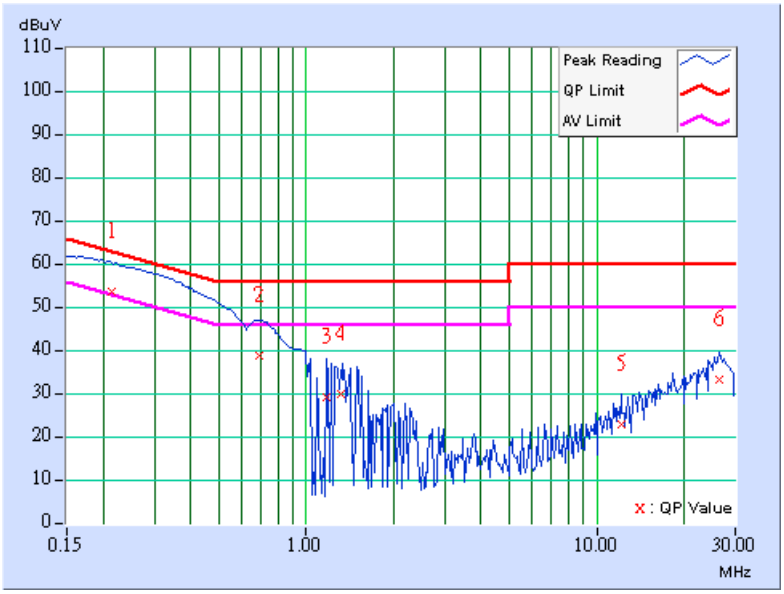
a. Placed the EUT on the testing table.
b. Prepared another Notebook system to act as a communication partner and placed it outside of testing area. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 TEST RESULTS

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: March Tsui	

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	0.214	0.10	52.37	-	52.47	-	63.04	53.04	-10.57	-
2	0.689	0.18	37.66	-	37.84	-	56.00	46.00	-18.16	-
3	1.172	0.25	27.90	-	28.15	-	56.00	46.00	-27.85	-
4	1.316	0.25	28.74	-	28.99	-	56.00	46.00	-27.01	-
5	12.141	0.60	21.73	-	22.33	-	60.00	50.00	-37.67	-
6	26.488	1.21	31.99	-	33.20	-	60.00	50.00	-26.80	-

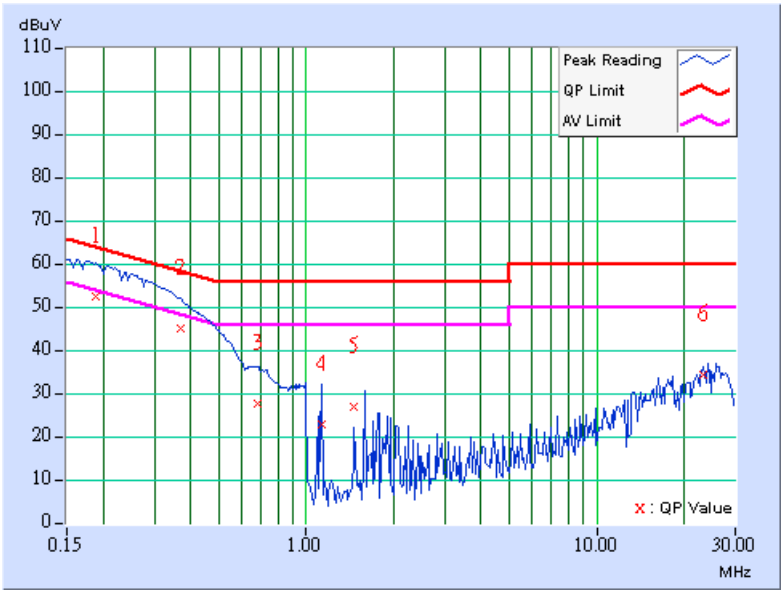
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: March Tsui	

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	0.189	0.10	52.06	-	52.16	-	64.08	54.08	-11.92	-
2	0.369	0.11	44.61	-	44.72	-	58.53	48.53	-13.81	-
3	0.677	0.17	26.96	-	27.13	-	56.00	46.00	-28.87	-
4	1.137	0.24	22.37	-	22.61	-	56.00	46.00	-33.39	-
5	1.465	0.24	26.37	-	26.61	-	56.00	46.00	-29.39	-
6	23.129	0.68	33.84	-	34.52	-	60.00	50.00	-25.48	-

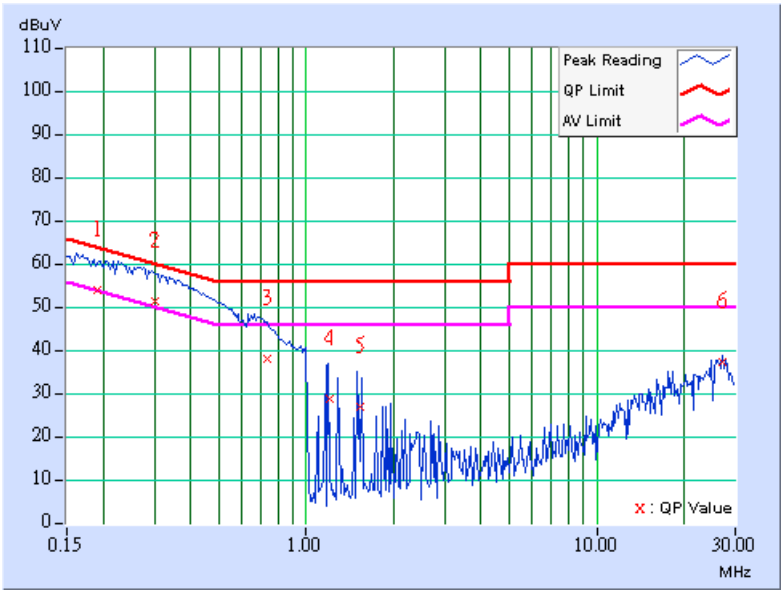
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Channel 6	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: March Tsui	

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	0.191	0.10	53.02	-	53.12	-	63.98	53.98	-10.86	-
2	0.303	0.11	50.11	20.52	50.22	20.63	60.17	50.17	-9.95	-29.54
3	0.732	0.19	36.92	-	37.11	-	56.00	46.00	-18.89	-
4	1.208	0.25	27.82	-	28.07	-	56.00	46.00	-27.93	-
5	1.529	0.26	25.89	-	26.15	-	56.00	46.00	-29.85	-
6	27.113	1.23	36.15	-	37.38	-	60.00	50.00	-22.62	-

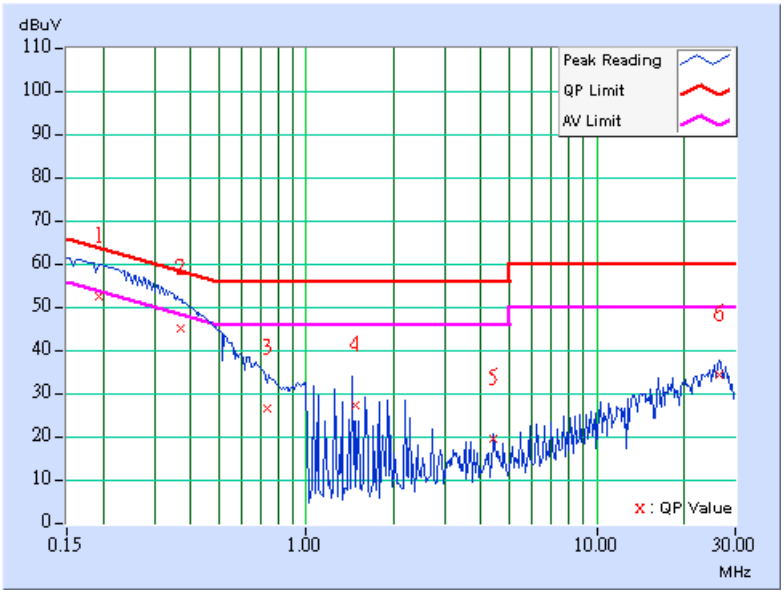
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Channel 6	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: March Tsui	

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	0.193	0.10	51.96	-	52.06	-	63.91	53.91	-11.85	-
2	0.368	0.11	44.63	-	44.74	-	58.55	48.55	-13.81	-
3	0.734	0.18	26.07	-	26.25	-	56.00	46.00	-29.75	-
4	1.468	0.24	26.69	-	26.93	-	56.00	46.00	-29.07	-
5	4.398	0.32	19.05	-	19.37	-	56.00	46.00	-36.63	-
6	26.386	0.68	33.92	-	34.60	-	60.00	50.00	-25.40	-

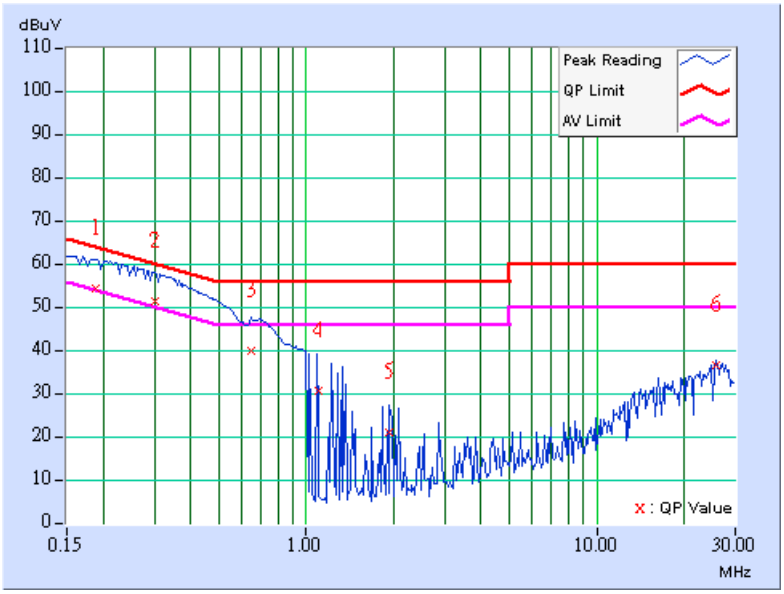
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: March Tsui	

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	0.189	0.10	53.24	-	53.34	-	64.08	54.08	-10.74	-
2	**0.301**	**0.11**	**50.21**	**20.73**	**50.32**	**20.84**	**60.22**	**50.22**	**-9.91**	**-29.39**
3	0.650	0.17	38.89	-	39.06	-	56.00	46.00	-16.94	-
4	1.098	0.25	29.68	-	29.93	-	56.00	46.00	-26.07	-
5	1.938	0.26	19.79	-	20.05	-	56.00	46.00	-35.95	-
6	25.645	1.18	35.55	-	36.73	-	60.00	50.00	-23.27	-

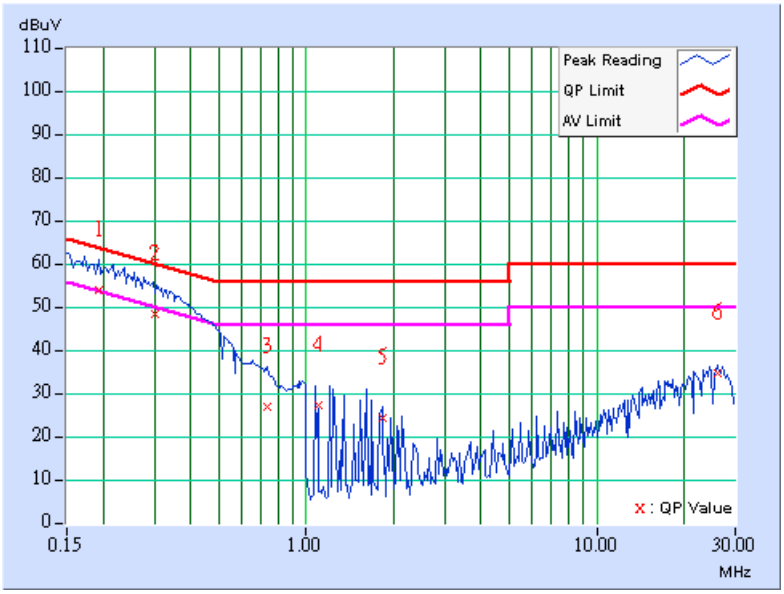
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: March Tsui	

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	0.193	0.10	53.50	-	53.60	-	63.93	53.93	-10.33	-
2	0.303	0.11	47.96	-	48.07	-	60.16	50.16	-12.09	-
3	0.732	0.18	26.21	-	26.39	-	56.00	46.00	-29.61	-
4	1.101	0.24	26.88	-	27.12	-	56.00	46.00	-28.88	-
5	1.833	0.25	23.79	-	24.04	-	56.00	46.00	-31.96	-
6	26.008	0.68	34.09	-	34.77	-	60.00	50.00	-25.23	-

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 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Jan. 13, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Dec. 15, 2004
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170241	Feb. 23, 2005
Preamplifier Agilent	8449B	3008A01961	Jan. 22, 2005
Preamplifier Agilent	8447D	2944A10629	Jan. 14, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218182/4	Mar. 04, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218194/4	Mar. 04, 2005
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower ADT.	AT100	AT93021702	NA
Turn Table ADT.	TT100.	TT93021702	NA
Controller ADT.	SC100.	SC93021702	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 HwaYa Chamber 1.

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

4. The IC Site Registration No. is IC4924-2.

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic. 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 10 dB 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 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

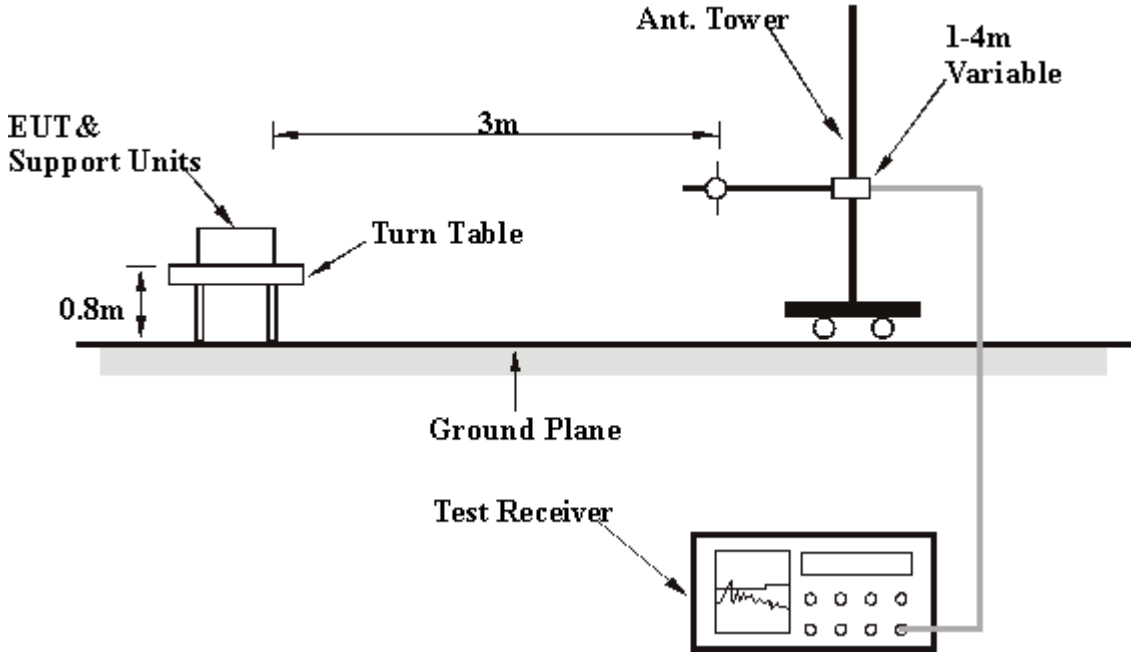
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 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.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

4.2.7 TEST RESULTS

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 991hPa	**TESTED BY**: Match Tsui	

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	107.76	38.50 QP	43.50	-5.00	1.50 H	253	26.73	11.77
2	129.14	38.22 QP	43.50	-5.28	1.50 H	250	24.55	13.67
3	249.66	40.61 QP	46.00	-5.39	1.00 H	52	27.39	13.22
4	269.10	39.13 QP	46.00	-6.87	1.00 H	244	25.40	13.73
5	372.38	43.28 QP	46.00	-2.72	1.00 H	78	27.14	16.14
6	424.61	44.36 QP	46.00	-1.64	1.00 H	205	26.96	17.40
7	500.42	41.01 QP	46.00	-4.99	1.50 H	259	22.27	18.74
8	539.30	39.65 QP	46.00	-6.35	1.50 H	46	20.16	19.48
9	624.83	41.70 QP	46.00	-4.30	1.00 H	1	20.36	21.34
10	720.08	41.41 QP	46.00	-4.59	1.00 H	202	18.62	22.79
11	751.18	42.04 QP	46.00	-3.96	1.00 H	346	18.51	23.54
12	811.44	40.10 QP	46.00	-5.90	1.00 H	226	16.20	23.90
13	875.59	39.38 QP	46.00	-6.62	1.50 H	355	14.72	24.66
14	900.86	41.25 QP	46.00	-4.75	1.50 H	73	16.13	25.12

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

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 991hPa	**TESTED BY**: Match Tsui	

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	39.72	37.30 QP	40.00	-2.70	1.00 V	76	22.12	15.18
2	**57.21**	**39.29 QP**	**40.00**	**-0.71**	**1.00 V**	**91**	**25.31**	**13.99**
3	103.87	37.93 QP	43.50	-5.57	1.00 V	331	26.55	11.38
4	160.24	35.31 QP	43.50	-8.19	1.00 V	271	20.44	14.87
5	208.84	38.02 QP	43.50	-5.48	1.50 V	304	26.44	11.59
6	360.46	36.34 QP	46.00	-9.66	1.50 V	94	20.46	15.88
7	374.07	38.08 QP	46.00	-7.92	1.00 V	319	21.90	16.18
8	449.88	40.29 QP	46.00	-5.71	1.25 V	34	22.22	18.07
9	500.42	43.52 QP	46.00	-2.48	1.50 V	334	24.78	18.74
10	517.92	38.54 QP	46.00	-7.46	1.00 V	319	19.46	19.07
11	539.30	38.90 QP	46.00	-7.10	1.00 V	355	19.41	19.48
12	630.66	41.32 QP	46.00	-4.68	1.00 V	250	19.90	21.42
13	720.08	42.80 QP	46.00	-3.20	1.50 V	220	20.00	22.79
14	811.44	41.94 QP	46.00	-4.06	1.25 V	238	18.04	23.90
15	900.86	42.20 QP	46.00	-3.80	1.00 V	271	17.08	25.12

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

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
CHANNEL	Channel 1	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 56%RH, 991hPa	**TESTED BY**: Leo Hung	

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	1440.00	45.86 PK	74.00	-28.14	1.00 H	34	15.26	30.60
2	2016.00	64.41 PK	86.86	-22.45	1.24 H	360	32.45	31.96
2	2016.00	63.68 AV	78.72	-15.04	1.24 H	360	31.72	31.96
3	2292.00	56.22 PK	74.00	-17.78	1.09 H	35	22.88	33.34
3	2292.00	44.82 AV	54.00	-9.18	1.09 H	35	11.48	33.34
4	2390.00	49.24 PK	74.00	-24.76	1.22 H	48	15.41	33.83
5	*2412.00	106.86 PK			1.22 H	48	72.93	33.93
5	*2412.00	98.72 AV			1.22 H	48	64.79	33.93
6	2688.00	49.31 PK	74.00	-24.69	1.10 H	221	14.45	34.86
7	4824.00	52.95 PK	74.00	-21.05	1.00 H	221	12.29	40.66
7	4824.00	39.87 AV	54.00	-14.13	1.00 H	221	-0.79	40.66

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	1440.00	48.46 PK	74.00	-25.54	1.14 V	219	17.86	30.60
2	2016.00	75.73 PK	92.37	-16.64	1.00 V	54	43.77	31.96
2	2016.00	69.41 AV	83.97	-14.56	1.00 V	54	37.45	31.96
3	2292.00	63.71 PK	74.00	-10.29	1.15 V	263	30.37	33.34
3	2292.00	52.13 AV	54.00	-1.87	1.15 V	263	18.79	33.34
4	2390.00	54.75 PK	74.00	-19.25	1.06 V	104	20.92	33.83
4	2390.00	46.35 AV	54.00	-7.65	1.06 V	104	12.52	33.83
5	*2412.00	112.37 PK			1.06 V	104	78.44	33.93
5	*2412.00	103.97 AV			1.06 V	104	70.04	33.93
6	2688.00	53.92 PK	74.00	-20.08	1.11 V	73	19.06	34.86
6	2688.00	51.43 AV	54.00	-2.57	1.11 V	73	16.57	34.86
7	4824.00	52.46 PK	74.00	-21.54	1.04 V	281	11.80	40.66
7	4824.00	41.98 AV	54.00	-12.02	1.04 V	281	1.32	40.66

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 56%RH, 991hPa	**TESTED BY**: Leo Hung	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M								
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	1440.00	46.29 PK	74.00	-27.71	1.00 H	203	15.69	30.60
2	2280.00	52.41 PK	74.00	-21.59	1.09 H	183	19.13	33.28
2	2280.00	40.87 AV	54.00	-13.13	1.09 H	183	7.59	33.28
3	*2437.00	106.36 PK			1.20 H	38	72.31	34.05
3	*2437.00	98.23 AV			1.20 H	38	64.18	34.05
4	2688.00	49.17 PK	74.00	-24.83	1.18 H	277	14.31	34.86
5	4874.00	50.97 PK	74.00	-23.03	1.01 H	322	10.28	40.69
5	4874.00	39.31 AV	54.00	-14.69	1.01 H	322	-1.38	40.69

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M								
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	1440.00	45.47 PK	74.00	-28.53	1.14 V	22	14.87	30.60
2	2280.00	58.45 PK	74.00	-15.55	1.16 V	360	25.17	33.28
2	2280.00	47.53 AV	54.00	-6.47	1.16 V	360	14.25	33.28
3	*2437.00	111.66 PK			1.03 V	101	77.61	34.05
3	*2437.00	103.50 AV			1.03 V	101	69.45	34.05
4	2688.00	54.61 PK	74.00	-19.39	1.13 V	122	19.75	34.86
4	2688.00	49.42 AV	54.00	-4.58	1.13 V	122	14.56	34.86
5	4874.00	50.45 PK	74.00	-23.55	1.00 V	257	9.76	40.69
5	4874.00	4.14 AV5	54.00	-13.86	1.00 V	257	-0.55	40.69

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
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. The limit value is defined as per 15.247
6. “ * “ : Fundamental frequency

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 56%RH, 991hPa	**TESTED BY**: Leo Hung	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M								
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	1440.00	46.20 PK	74.00	-27.80	1.00 H	277	15.60	30.60
2	2280.00	54.94 PK	74.00	-19.06	1.11 H	265	21.66	33.28
2	2280.00	43.29 AV	54.00	-10.71	1.11 H	265	10.01	33.28
3	*2462.00	107.12 PK			1.20 H	47	72.96	34.16
3	*2462.00	98.98 AV			1.20 H	47	64.82	34.16
4	2483.50	48.63 PK	74.00	-25.37	1.20 H	47	14.37	34.26
4	2483.50	40.49 AV	54.00	-13.51	1.20 H	47	6.23	34.26
5	2688.00	47.77 PK	74.00	-26.23	1.14 H	288	12.91	34.86
6	4924.00	51.08 PK	74.00	-22.92	1.00 H	112	10.22	40.86
6	4924.00	39.65 AV	54.00	-14.35	1.00 H	112	-1.21	40.86

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M								
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	1440.00	49.22 PK	74.00	-24.78	1.11 V	223	18.62	30.60
2	2280.00	59.98 PK	74.00	-14.02	1.17 V	100	26.70	33.28
2	2280.00	47.72 AV	54.00	-6.28	1.17 V	100	14.44	33.28
3	*2462.00	111.21 PK			1.06 V	96	77.05	34.16
3	*2462.00	103.11 AV			1.06 V	96	68.95	34.16
4	2483.50	52.72 PK	74.00	-21.28	1.06 V	96	18.46	34.26
4	2483.50	44.62 AV	54.00	-9.38	1.06 V	96	10.36	34.26
5	2688.00	54.14 PK	74.00	-19.86	1.12 V	226	19.28	34.86
5	2688.00	49.24 AV	54.00	-4.76	1.12 V	226	14.38	34.86
6	4924.00	50.75 PK	74.00	-23.25	1.05 V	255	9.89	40.86
6	4924.00	39.97 AV	54.00	-14.03	1.05 V	255	-0.89	40.86

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
CHANNEL	Channel 1	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 56%RH, 991hPa	**TESTED BY**: Leo Hung	

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	1440.00	47.16 PK	74.00	-26.84	1.00 H	203	16.56	30.60
2	2292.00	49.24 PK	74.00	-24.76	1.16 H	215	15.90	33.34
3	2390.00	55.04 PK	74.00	-18.96	1.22 H	44	21.21	33.83
3	2390.00	44.37 AV	54.00	-9.63	1.22 H	44	10.54	33.83
4	*2412.00	102.86 PK			1.22 H	44	68.93	33.93
4	*2412.00	92.19 AV			1.22 H	44	58.26	33.93
5	2688.00	48.40 PK	74.00	-25.60	1.00 H	230	13.54	34.86
6	4824.00	51.53 PK	74.00	-22.47	1.02 H	221	10.87	40.66
6	4824.00	38.51 AV	54.00	-15.49	1.02 H	221	-2.15	40.66

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	1440.00	47.98 PK	74.00	-26.02	1.09 V	221	17.38	30.60
2	2292.00	61.62 PK	74.00	-12.38	1.09 V	77	28.28	33.34
2	2292.00	50.83 AV	54.00	-3.17	1.09 V	77	17.49	33.34
3	2390.00	60.26 PK	74.00	-13.74	1.08 V	218	26.43	33.83
3	2390.00	49.16 AV	54.00	-4.84	1.08 V	218	15.33	33.83
4	*2412.00	108.08 PK			1.08 V	218	74.15	33.93
4	*2412.00	96.98 AV			1.08 V	218	63.05	33.93
5	2688.00	53.96 PK	74.00	-20.04	1.00 V	21	19.10	34.86
5	2688.00	48.99 AV	54.00	-5.01	1.00 V	21	14.13	34.86
6	4824.00	51.61 PK	74.00	-22.39	1.00 V	321	10.95	40.66
6	4824.00	39.84 AV	54.00	-14.16	1.00 V	321	-0.82	40.66

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
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. The limit value is defined as per 15.247
6. “ * “ : Fundamental frequency

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 56%RH, 991hPa	**TESTED BY**: Leo Hung	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M								
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	1440.00	46.57 PK	74.00	-27.43	1.00 H	44	15.97	30.60
2	2280.00	49.14 PK	74.00	-24.86	1.07 H	231	15.86	33.28
3	*2437.00	102.84 PK			1.25 H	60	68.79	34.05
3	*2437.00	91.99 AV			1.25 H	60	57.94	34.05
4	2688.00	47.73 PK	74.00	-26.27	1.19 H	56	12.87	34.86
5	4874.00	49.48 PK	74.00	-24.52	1.14 H	244	8.79	40.69
5	4874.00	37.46 AV	54.00	-16.54	1.14 H	244	-3.23	40.69

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M								
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	1440.00	47.65 PK	74.00	-26.35	1.09 V	223	17.05	30.60
2	2280.00	58.86 PK	74.00	-15.14	1.11 V	67	25.58	33.28
3	*2437.00	106.91 PK			1.06 V	110	72.86	34.05
3	*2437.00	96.35 AV			1.06 V	110	62.30	34.05
4	2688.00	53.06 PK	74.00	-20.94	1.14 V	91	18.20	34.86
4	2688.00	48.93 AV	54.00	-5.07	1.14 V	91	14.07	34.86
5	4874.00	50.59 PK	74.00	-23.41	1.02 V	112	9.90	40.69
5	4874.00	39.19 AV	54.00	-14.81	1.02 V	112	-1.50	40.69

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
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. The limit value is defined as per 15.247
6. “ * “ : Fundamental frequency

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 56%RH, 991hPa	**TESTED BY**: Leo Hung	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M								
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	1440.00	45.63 PK	74.00	-28.37	1.02 H	209	15.03	30.60
2	2280.00	50.42 PK	74.00	-23.58	1.03 H	67	17.14	33.28
2	2280.00	39.77 AV	54.00	-14.23	1.03 H	67	6.49	33.28
3	*2462.00	102.07 PK			1.24 H	56	67.91	34.16
3	*2462.00	91.82 AV			1.24 H	56	57.66	34.16
4	2483.50	53.38 PK	74.00	-20.62	1.24 H	56	19.12	34.26
4	2483.50	43.13 AV	54.00	-10.87	1.24 H	56	8.87	34.26
5	2688.00	49.65 PK	74.00	-24.35	1.08 H	59	14.79	34.86
6	4924.00	49.88 PK	74.00	-24.12	1.02 H	221	9.02	40.86

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M								
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	1440.00	47.51 PK	74.00	-26.49	1.12 V	225	16.91	30.60
2	2280.00	57.31 PK	74.00	-16.69	1.12 V	228	24.03	33.28
2	2280.00	46.26 AV	54.00	-7.74	1.12 V	228	12.98	33.28
3	*2462.00	107.72 PK			1.00 V	95	73.56	34.16
3	*2462.00	97.36 AV			1.00 V	95	63.20	34.16
4	2483.50	59.03 PK	74.00	-14.97	1.00 V	95	24.77	34.26
4	2483.50	48.67 AV	54.00	-5.33	1.00 V	95	14.41	34.26
5	2688.00	53.38 PK	74.00	-20.62	1.14 V	238	18.52	34.86
5	2688.00	48.74 AV	54.00	-5.26	1.14 V	238	13.88	34.86
6	4924.00	50.78 PK	74.00	-23.22	1.00 V	205	9.92	40.86
6	4924.00	40.11 AV	54.00	-13.89	1.00 V	205	-0.75	40.86

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
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. The limit value is defined as per 15.247
6. “ * “ : Fundamental frequency

4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK 30	100049	Aug. 12, 2005

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

4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP

4.3.6 EUT OPERATING CONDITIONS

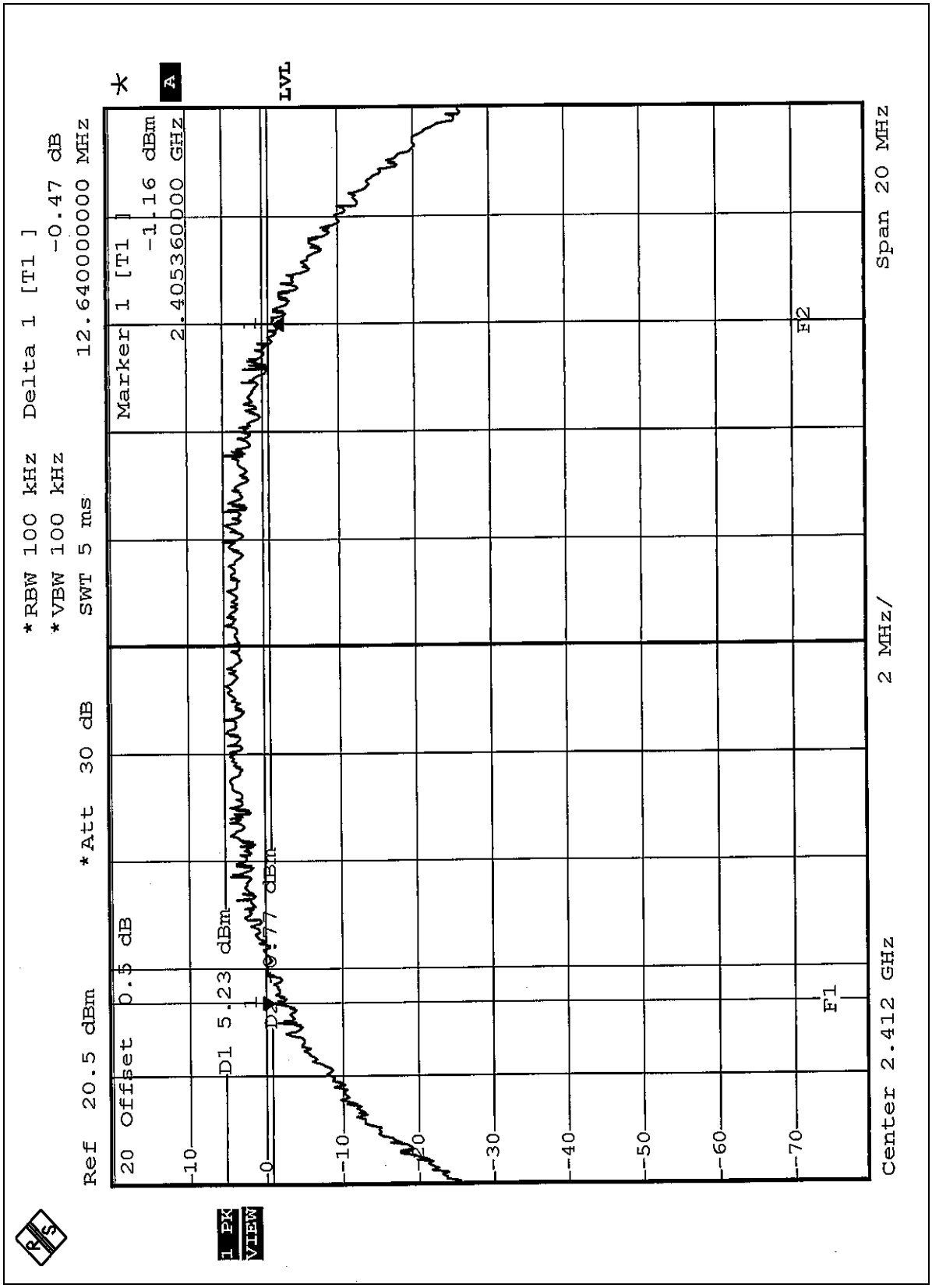
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

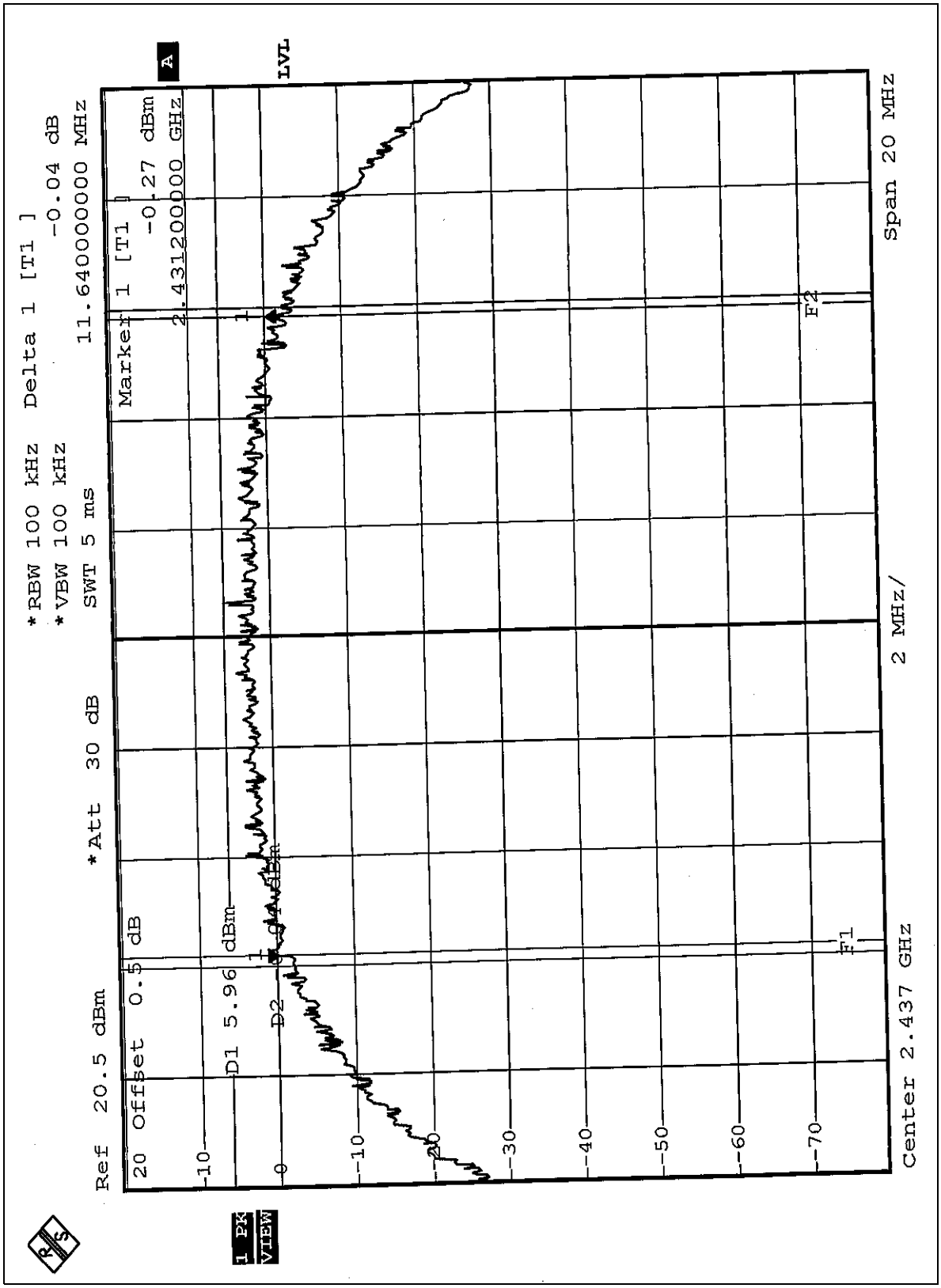
EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	CCK	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 991hPa	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	12.64	0.5	PASS
6	2437	11.64	0.5	PASS
11	2462	11.40	0.5	PASS

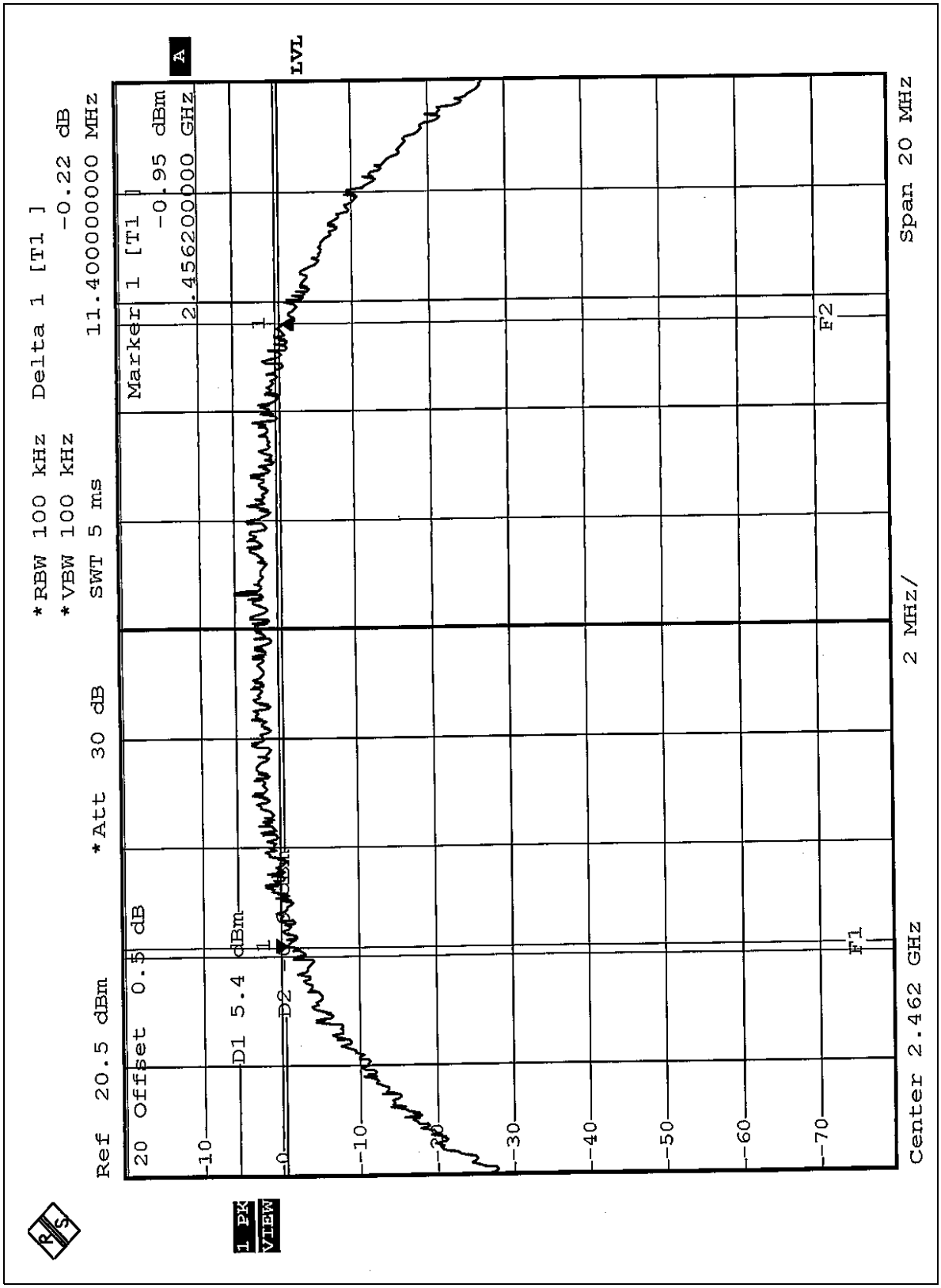
CH1


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.47 dB
12.640000000 MHz
Marker 1 [T1]
-1.16 dBm
2.405360000 GHz
D1 5.23 dBm
D2 -0.77 dBm
LVL
A
1 PK
VIEW
F1
F2
Center 2.412 GHz
2 MHz/
Span 20 MHz

CH6


Ref 20.5 dBm
20 Offset 0.5 dB
D1 5.96 dBm
D2 -0.04 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1] -0.04 dB
11.640000000 MHz
Marker 1 [T1] -0.27 dBm
2.431200000 GHz
A
LVL
1 PK
VIEW
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz

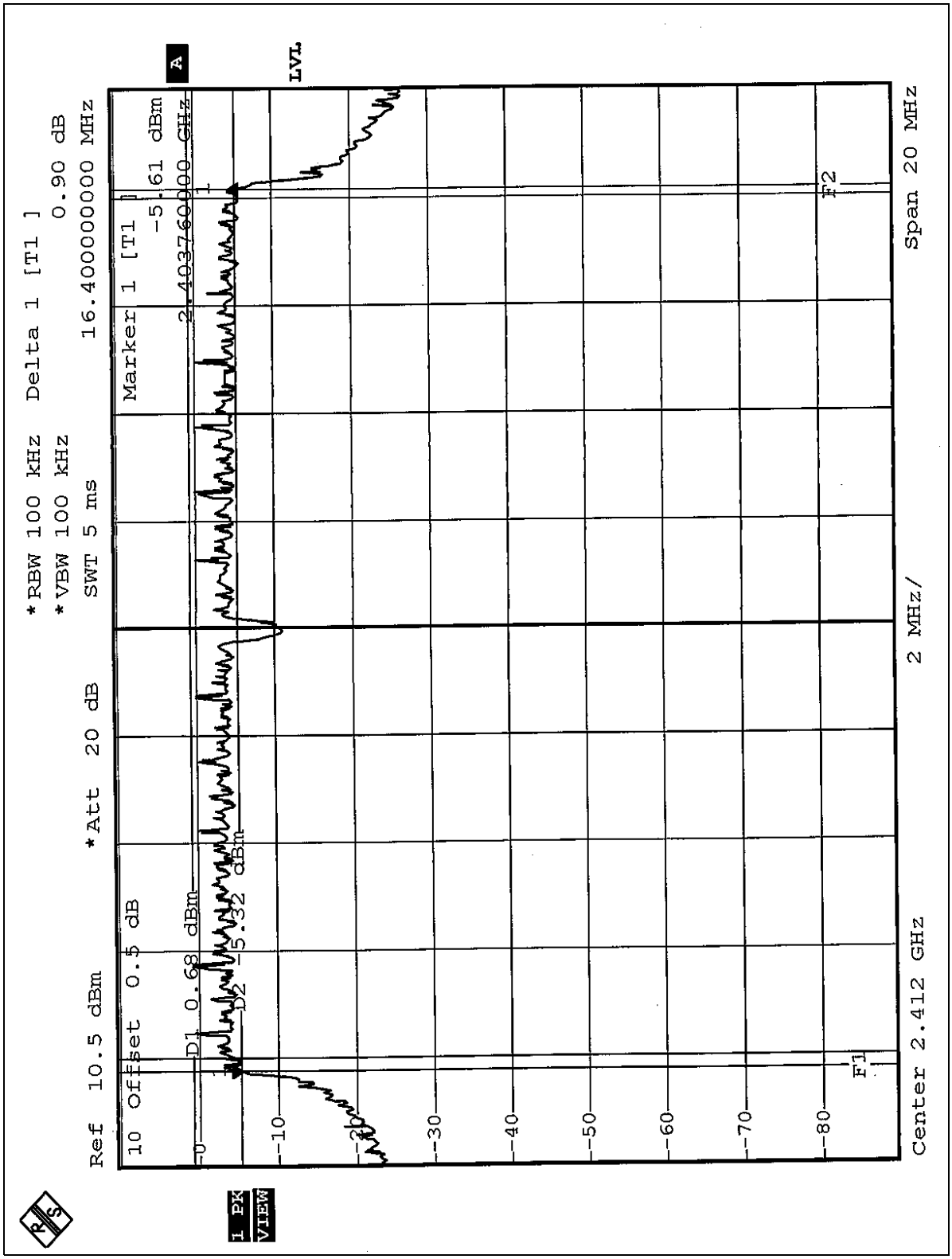
CH11


Ref 20.5 dBm
20 Offset 0.5 dB
D1 5.4 dBm
D2
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.22 dB
11.400000000 MHz
Marker 1 [T1]
-0.95 dBm
2.456200000 GHz
A
LVL
1 PK
VIEW
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz

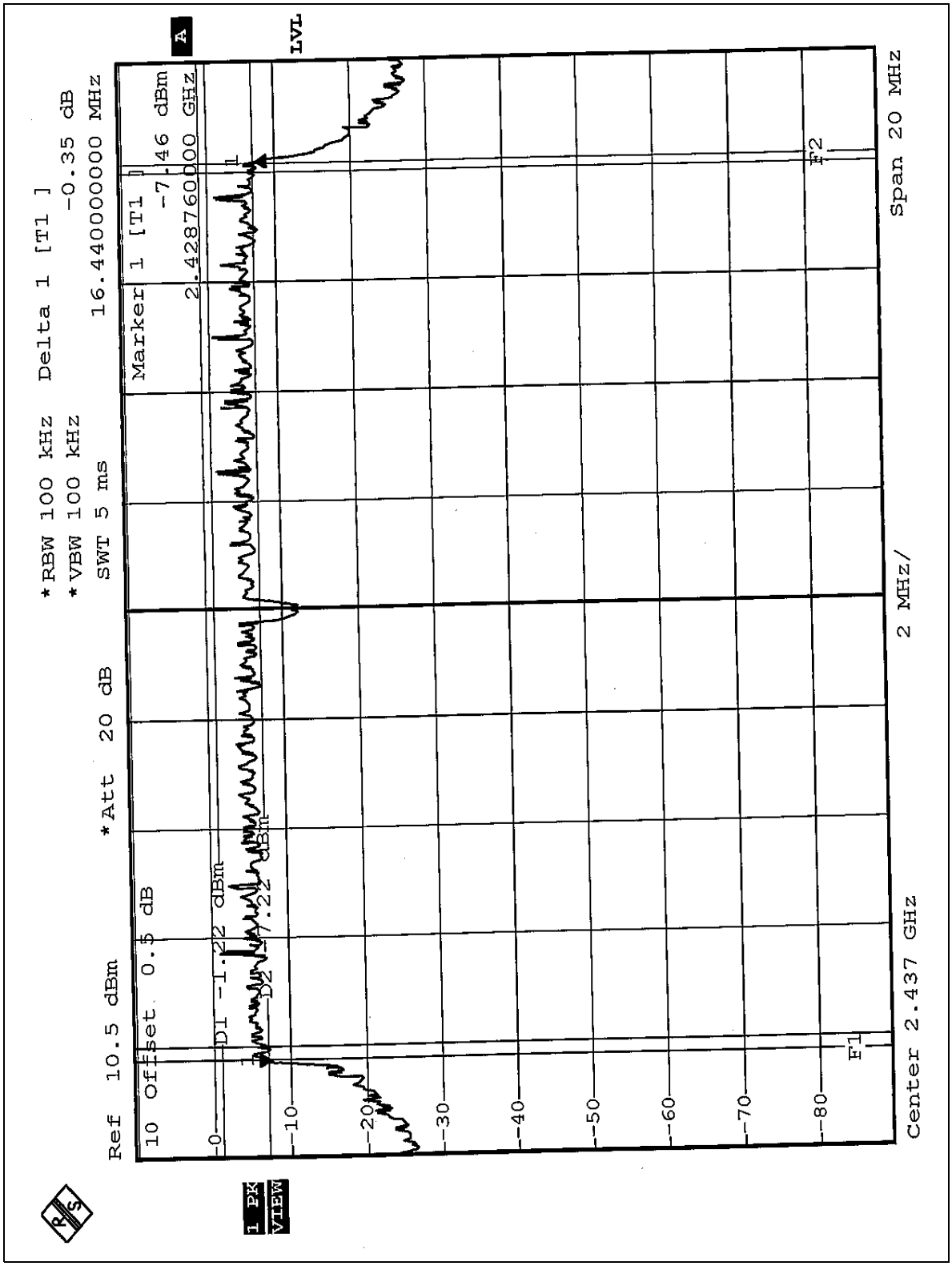
EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 991hPa	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.40	0.5	PASS
6	2437	16.44	0.5	PASS
11	2462	16.40	0.5	PASS

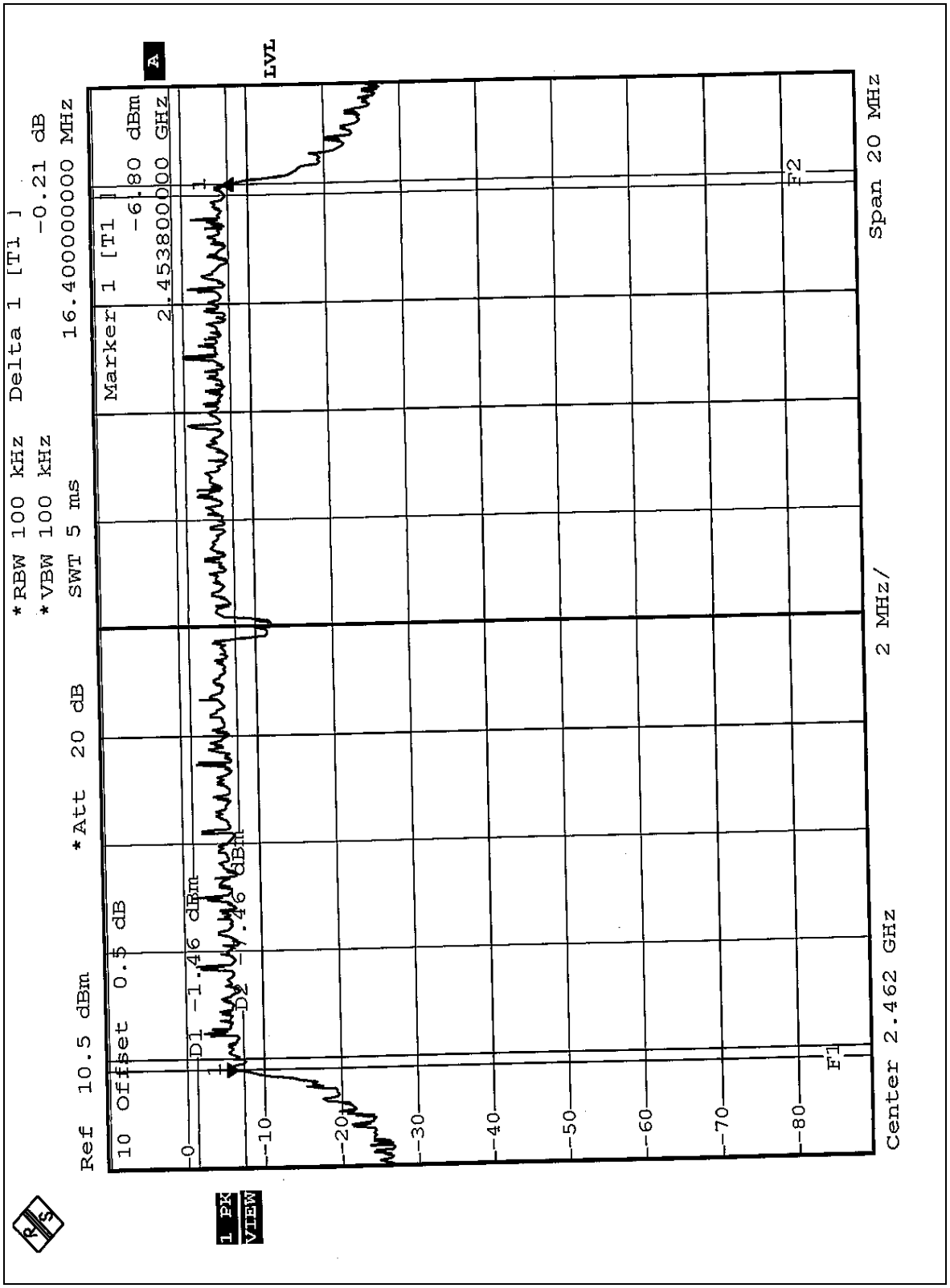
CH1


Ref 10.5 dBm
10 Offset 0.5 dB
D1 0.68 dBm
D2 -5.32 dBm
*Att 20 dB
SWT 5 ms
*RBW 100 kHz
*VBW 100 kHz
Delta 1 [T1]
0.90 dB
16.40000000 MHz
Marker 1 [T1]
-5.61 dBm
2.403760000 GHz
A
LVL
1 PK
VBW
Center 2.412 GHz
2 MHz/
Span 20 MHz
F1
F2

CH6


Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.35 dB
16.440000000 MHz
Marker 1 [T1]
-7.46 dBm
2.428760000 GHz
D1 -1.22 dBm
D2 -7.22 dBm
LVL
A
1 PK
VIEW
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz

CH11


Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.21 dB
16.40000000 MHz
Marker 1 [T1]
-6.80 dBm
2.453800000 GHz
D1 -1.46 dBm
D2 -.46 dBm
LVL
A
1 PK
VIEW
Center 2.462 GHz
2 MHz/
Span 20 MHz
F1
F2

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 31, 2004
TEKTRONIX OSCILLOSCOPE	TDS 1012	C019167	Feb. 01, 2005
NARDA DETECTOR	4503A	FSCM99899	NA

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

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4.4.1 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

4.4.2 DEVIATION FROM TEST STANDARD

No deviation

4.4.3 TEST SETUP

4.4.4 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.3 TEST RESULTS

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23deg.C, 67%RH, 991hPa
MODE	CCK	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	52.481	17.20	30	PASS
6	2437	51.286	17.10	30	PASS
11	2462	50.119	17.00	30	PASS

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23deg.C, 67%RH, 991hPa
MODE	OFDM	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	40.738	16.10	30	PASS
6	2437	39.811	16.00	30	PASS
11	2462	41.687	16.20	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

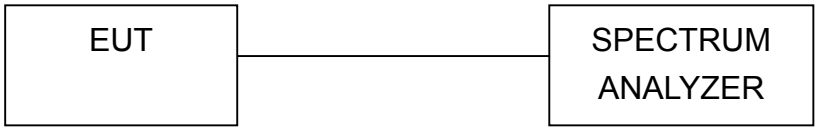
4.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.
The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

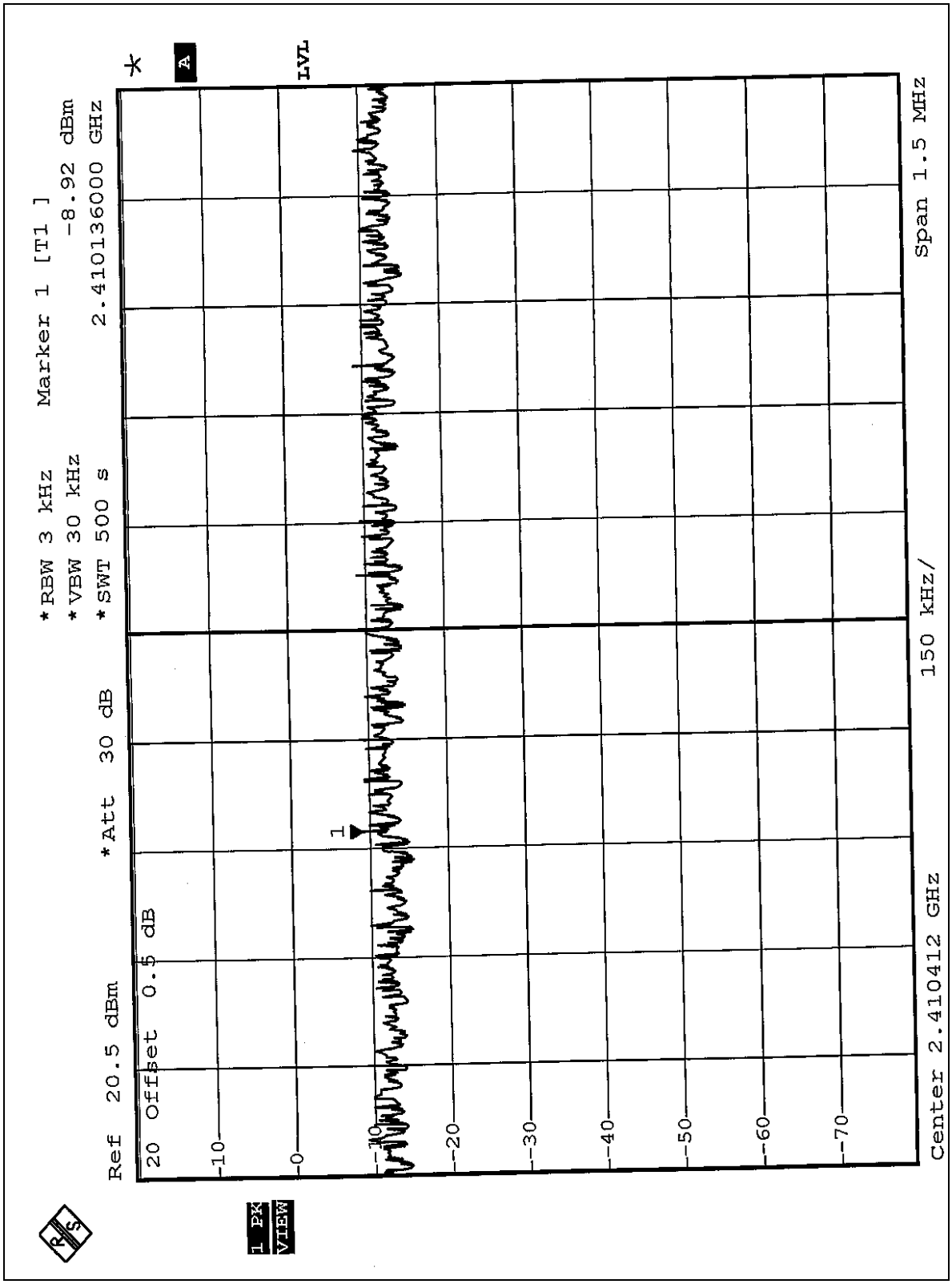
Same as Item 4.3.6

4.5.7 TEST RESULTS

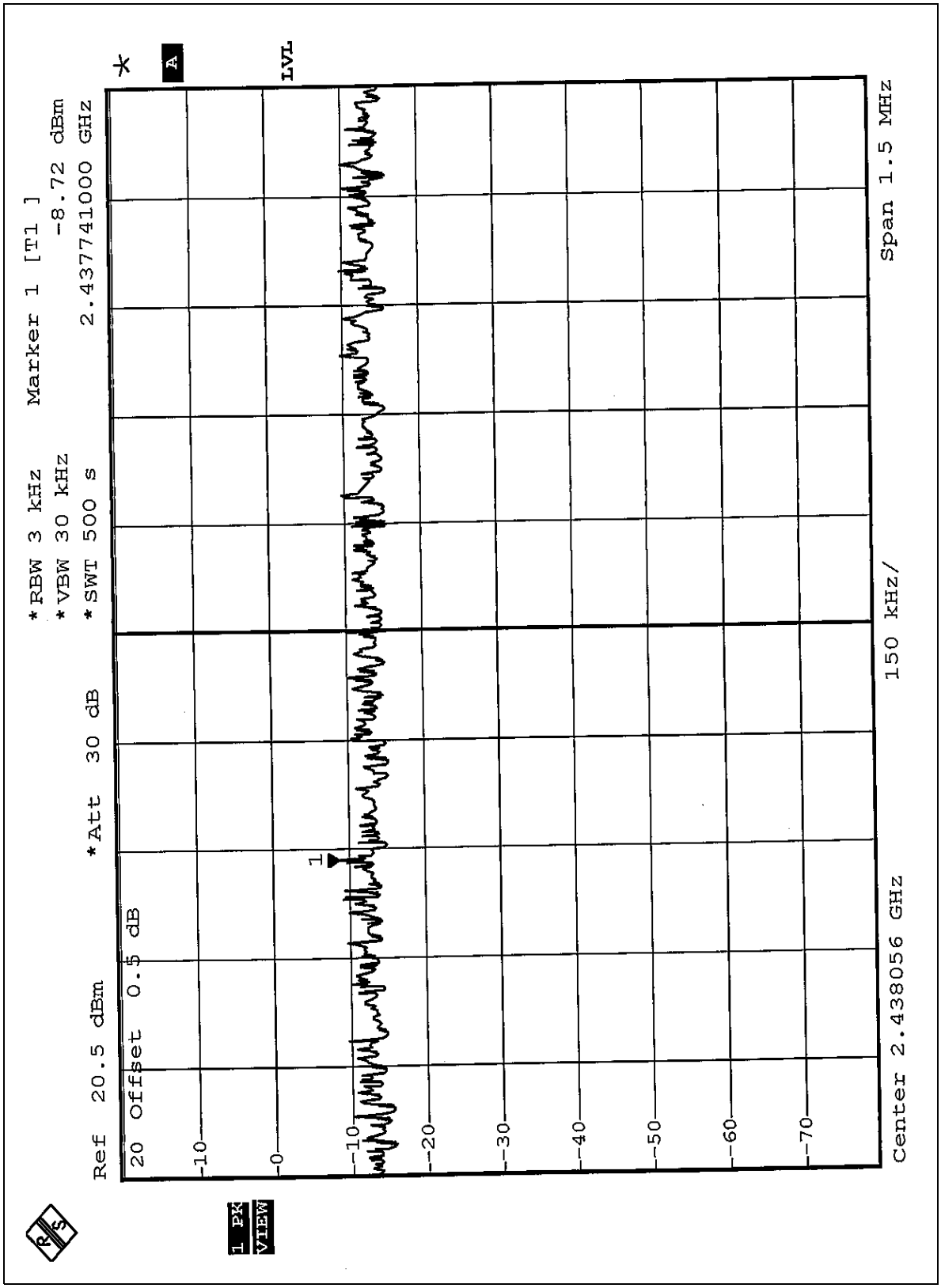
EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg.C, 64%RH, 991hPa
MODE	CCK	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-8.92	8	PASS
6	2437	-8.72	8	PASS
11	2462	-8.47	8	PASS

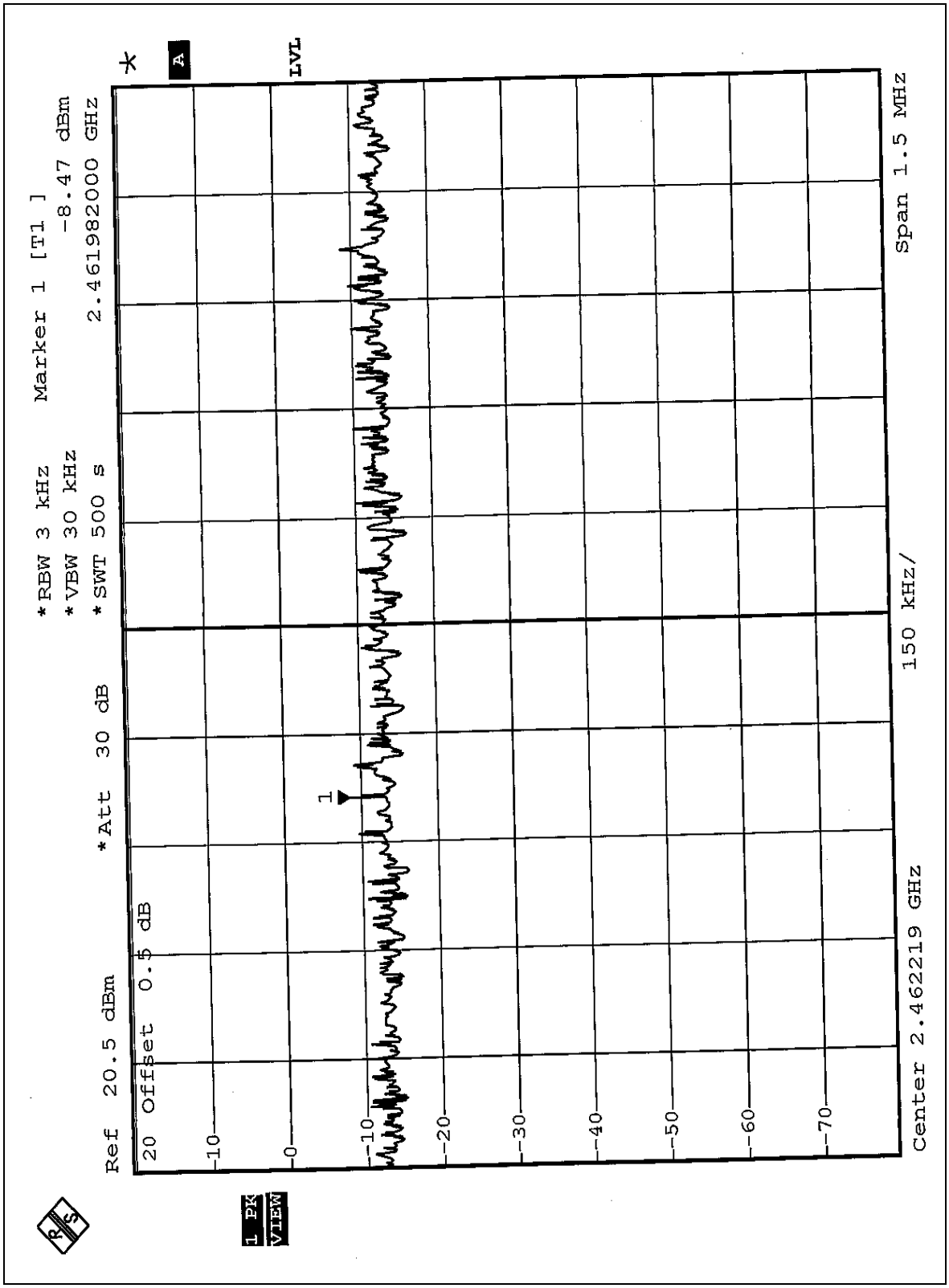
CH1


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-8.92 dBm
2.410136000 GHz
1 PK
VIEW
A
LVL
1
-10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.410412 GHz
150 kHz/
Span 1.5 MHz

CH6


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-8.72 dBm
2.437741000 GHz
1
-10
-0
-10
-20
-30
-40
-50
-60
-70
Center 2.438056 GHz
150 kHz/
Span 1.5 MHz
A
LVL
1 PK
VIEW

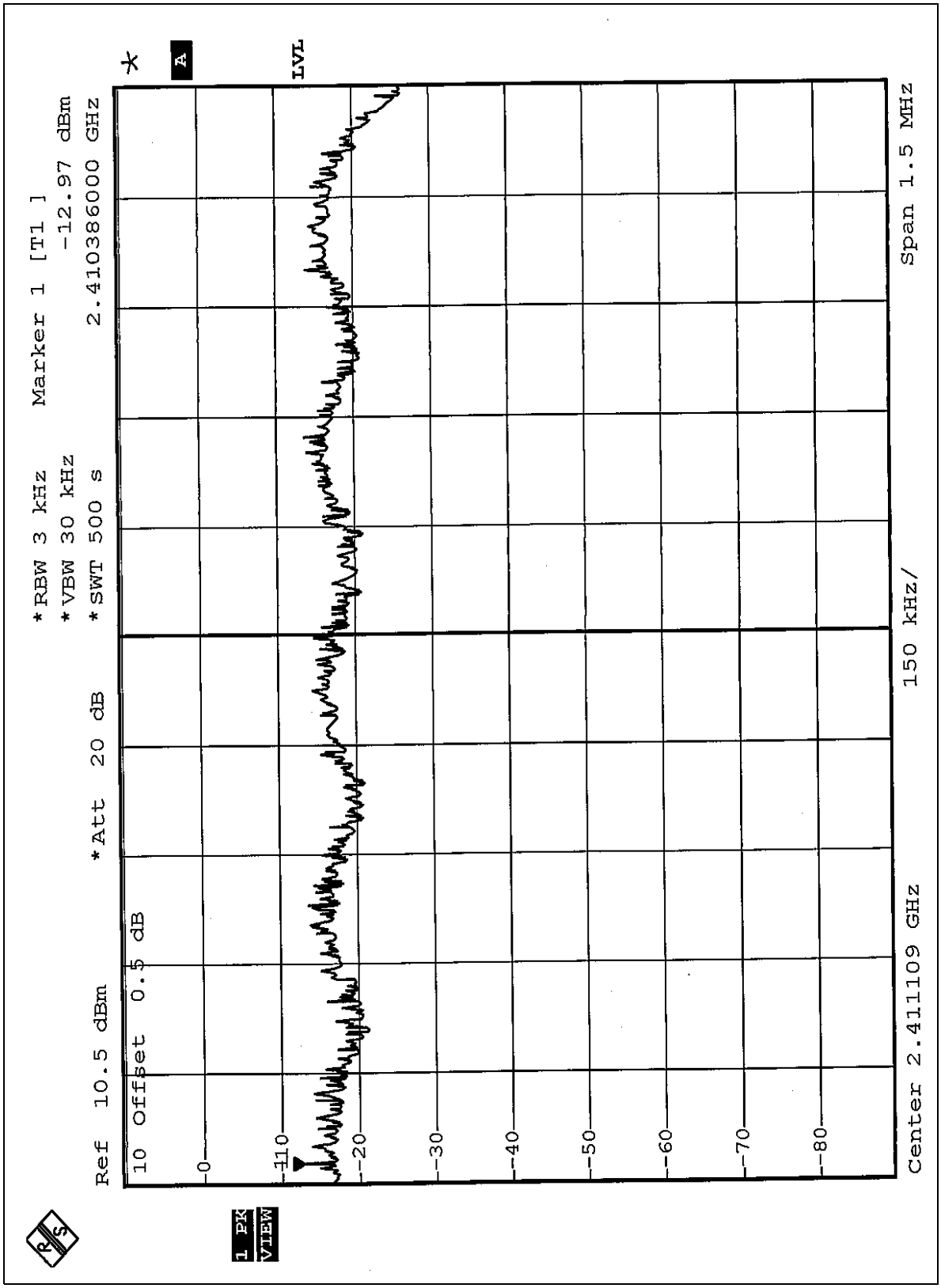
CH11


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-8.47 dBm
2.461982000 GHz
A
LVL
1 PK
VIEW
Center 2.462219 GHz
150 kHz/
Span 1.5 MHz

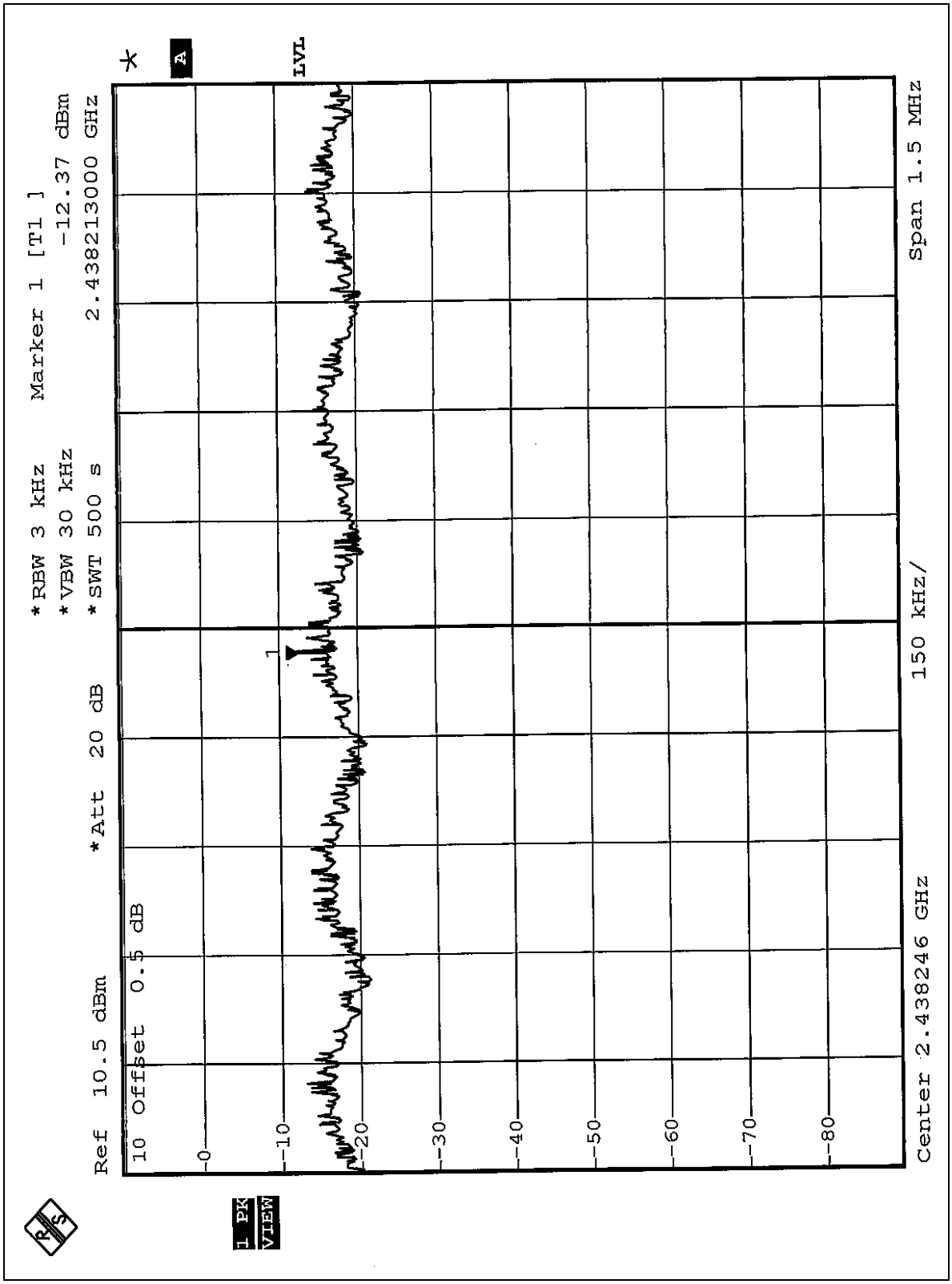
EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg.C, 64%RH, 991hPa
MODE	OFDM	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-12.97	8	PASS
6	2437	-12.37	8	PASS
11	2462	-12.72	8	PASS

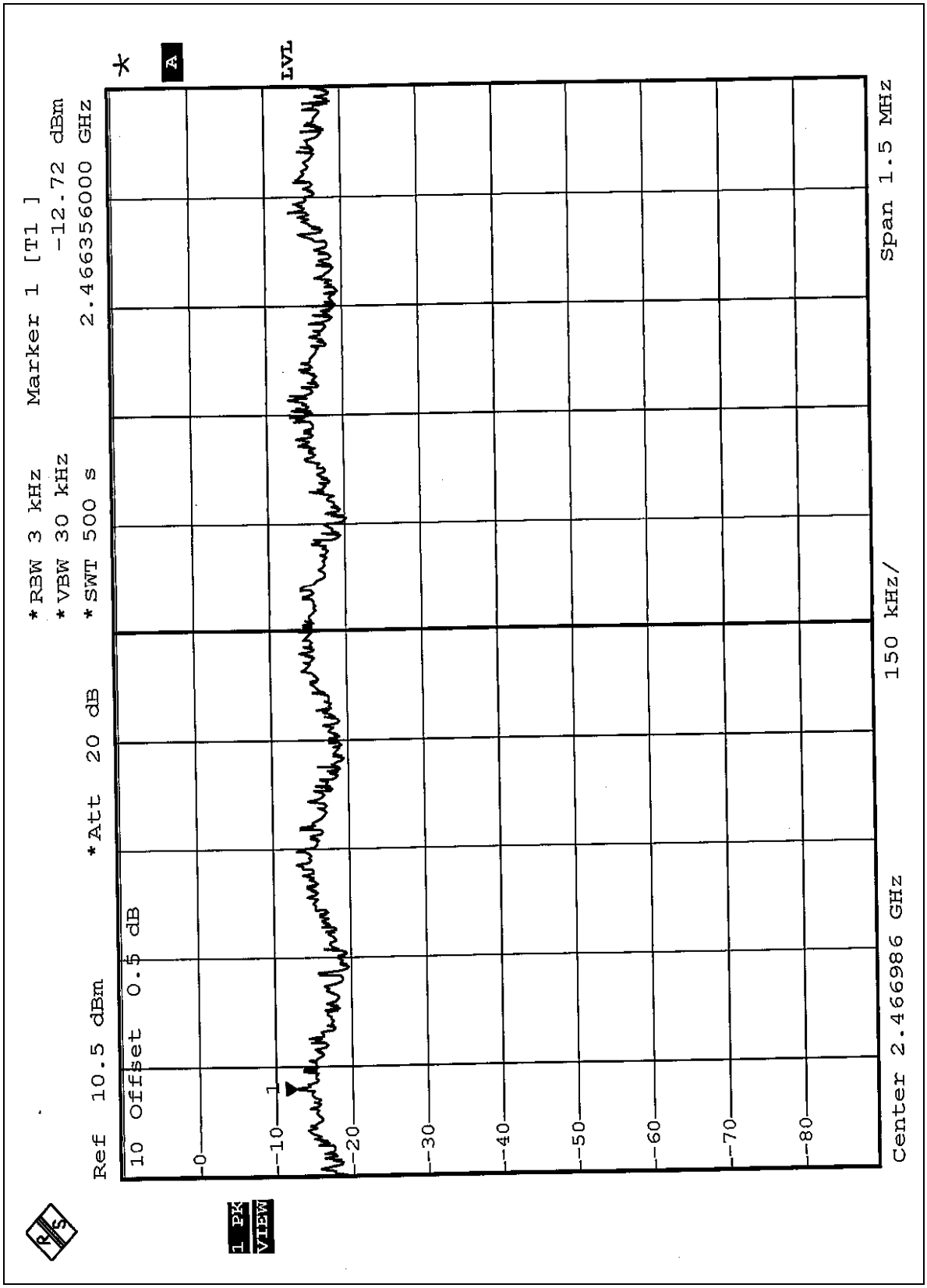
CH1


Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-12.97 dBm
2.410386000 GHz
A
LVL
1 PK
VIEW
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.411109 GHz
150 kHz/
Span 1.5 MHz

CH6


Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-12.37 dBm
2.438213000 GHz
LVL
A
1 PK
VIEW
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.438246 GHz
150 kHz/
Span 1.5 MHz

CH11


Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-12.72 dBm
2.466356000 GHz
1 PK
VIEW
A
LVL
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.466986 GHz
150 kHz/
Span 1.5 MHz

4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 1MHz and 10Hz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.6 TEST RESULTS

The spectrum plots are attached on the following 8 pages. D2 line indicates the highest level, and D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

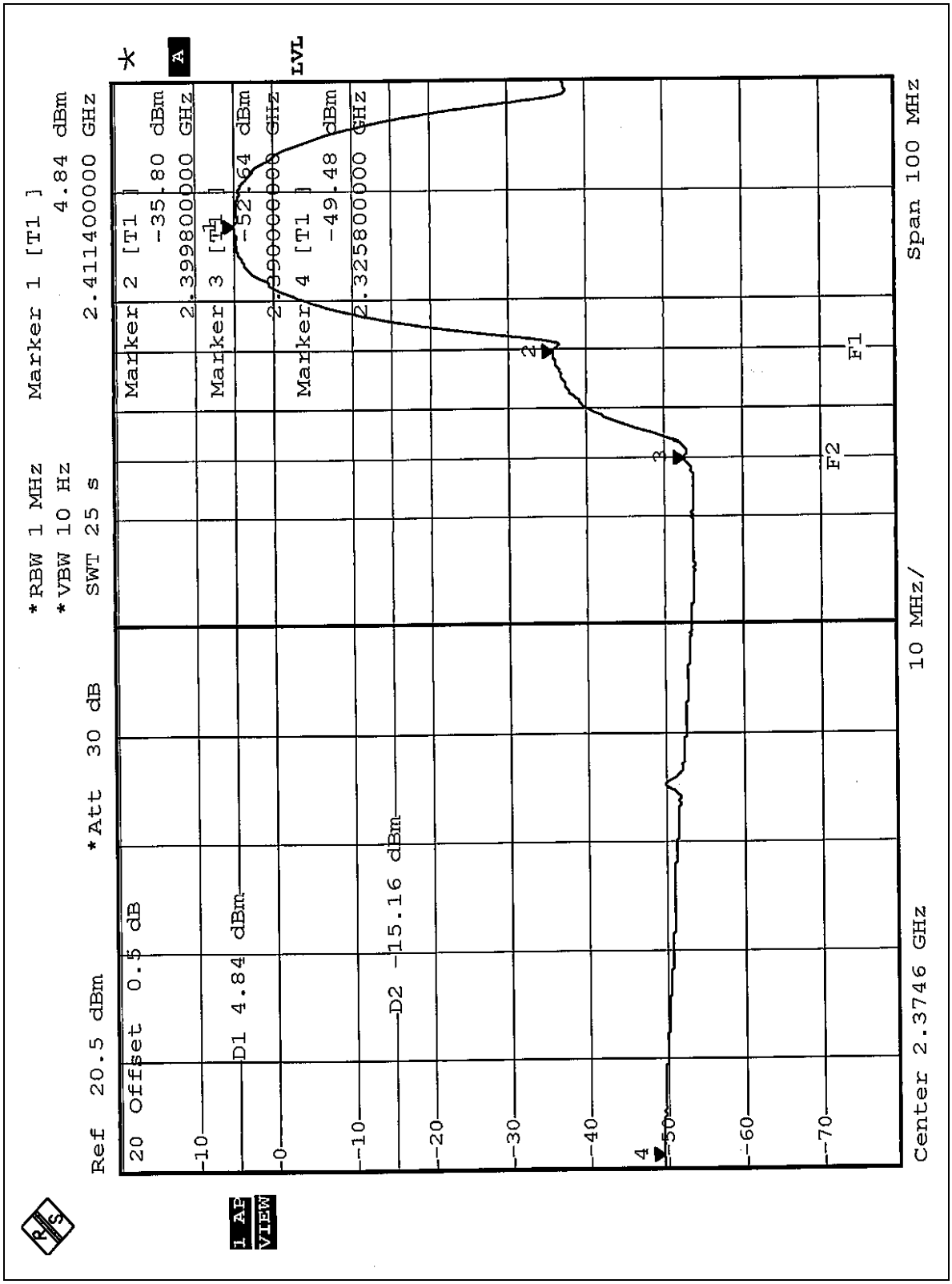
NOTE 1: The band edge emission plot of CCK technique on following page 1 ~ 2 show 54.32dB delta between carrier maximum power and local maximum emission in restrict band (2.3258GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 103.97dBuV/m, so the maximum field strength in restrict band is103.97-54.32=49.65dBuV/m which is under 54dBuV/m limit.

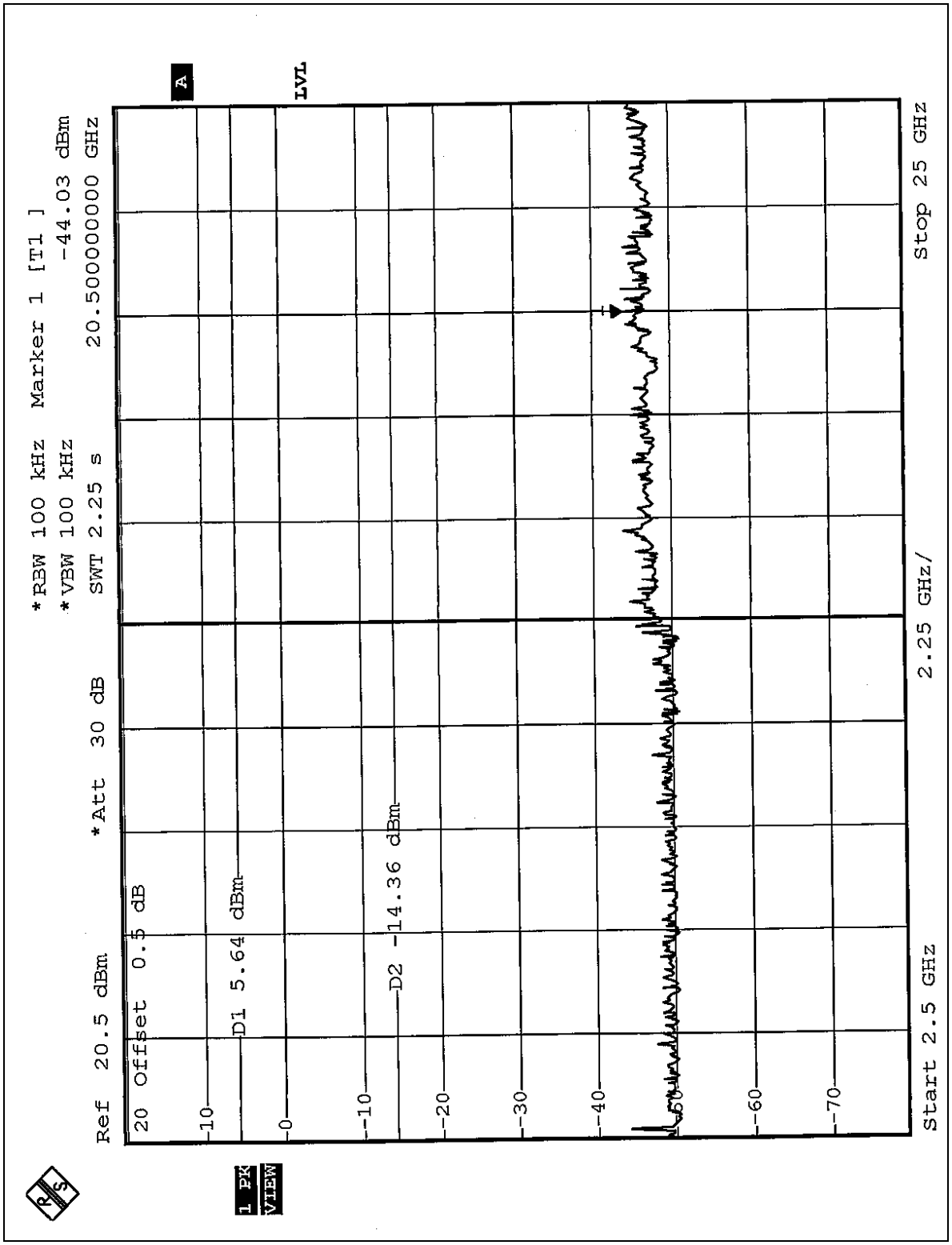
NOTE 2: The band edge emission plot of CCK technique on following page 3 ~ 4 show 58.83dB delta between carrier maximum power and local maximum emission in restrict band (2.4837GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 103.11dBuV/m, so the maximum field strength in restrict band is 103.11-58.83=44.28dBuV/m which is under 54dBuV/m limit.

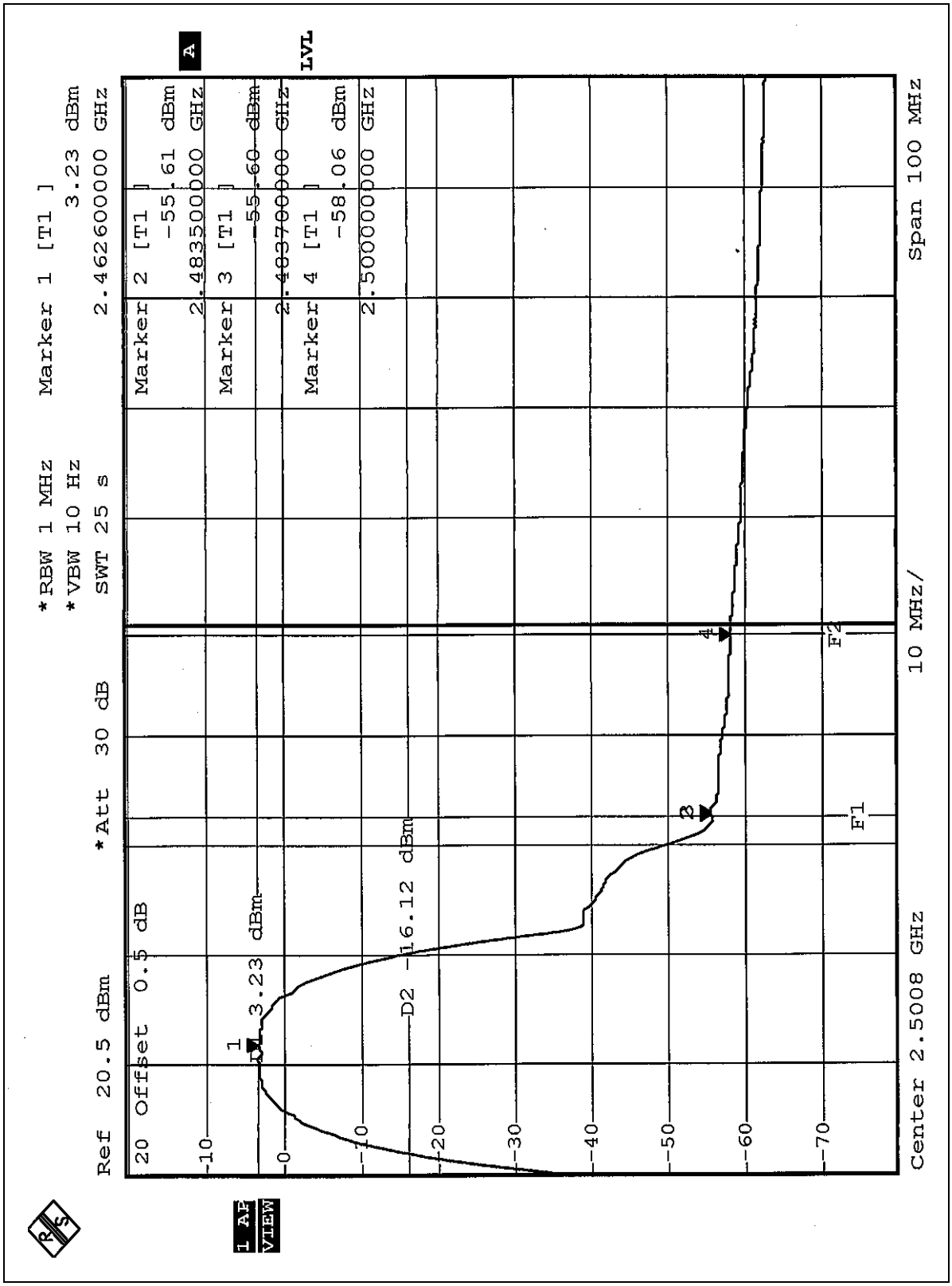
NOTE 3: The band edge emission plot of OFDM technique on following page 5 ~ 6 show 48.01dB delta between carrier maximum power and local maximum emission in restrict band (2.3232GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 96.98dBuV/m, so the maximum field strength in restrict band is 96.98-48.01=48.97dBuV/m which is under 54dBuV/m limit.

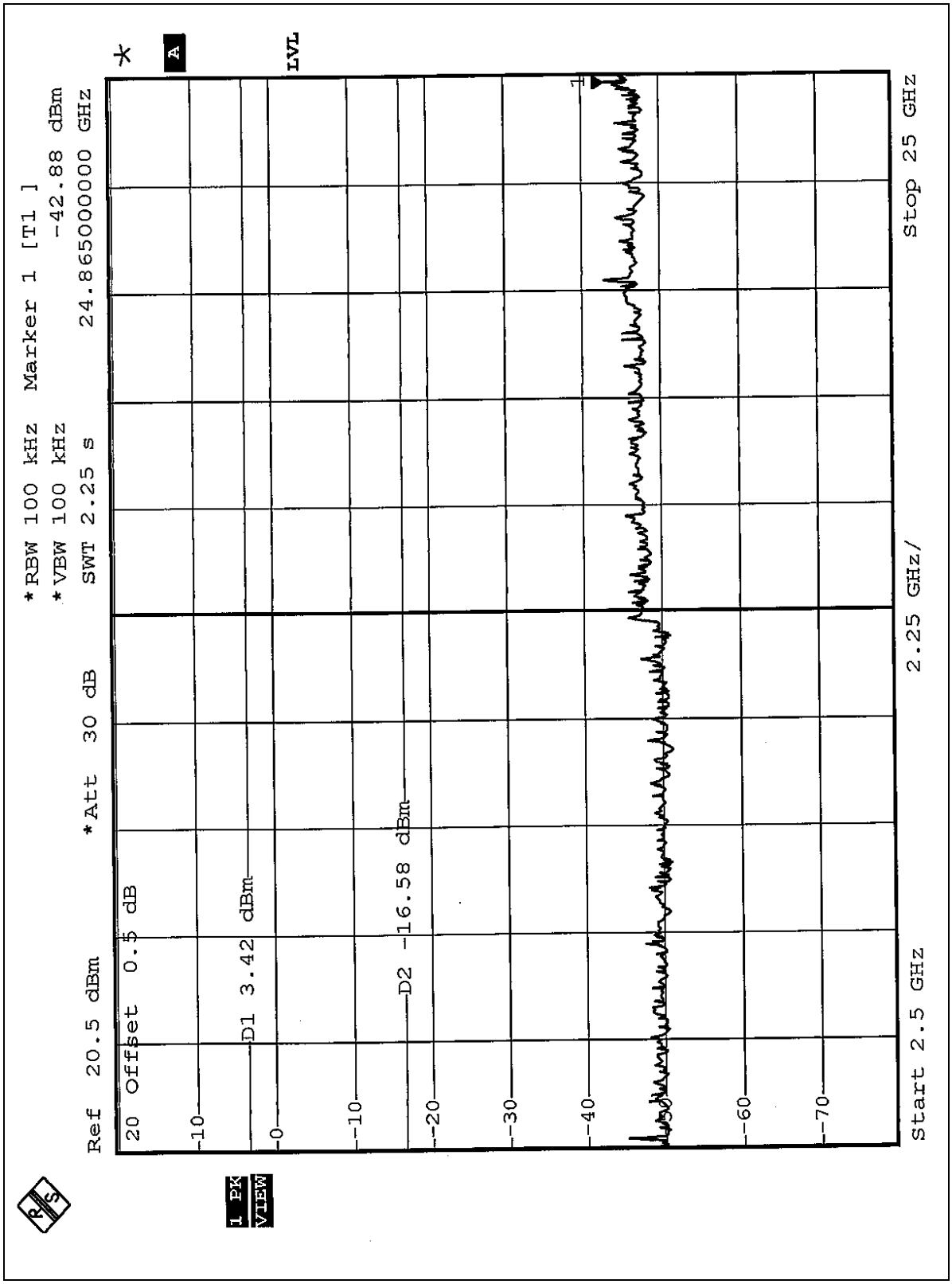
NOTE 4: The band edge emission plot of OFDM technique on following page 7 ~ 8 show 50.12dB delta between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 97.36dBuV/m, so the maximum field strength in restrict band is 97.36-50.2=47.24dBuV/m which is under 54dBuV/m limit.

CCK mode:

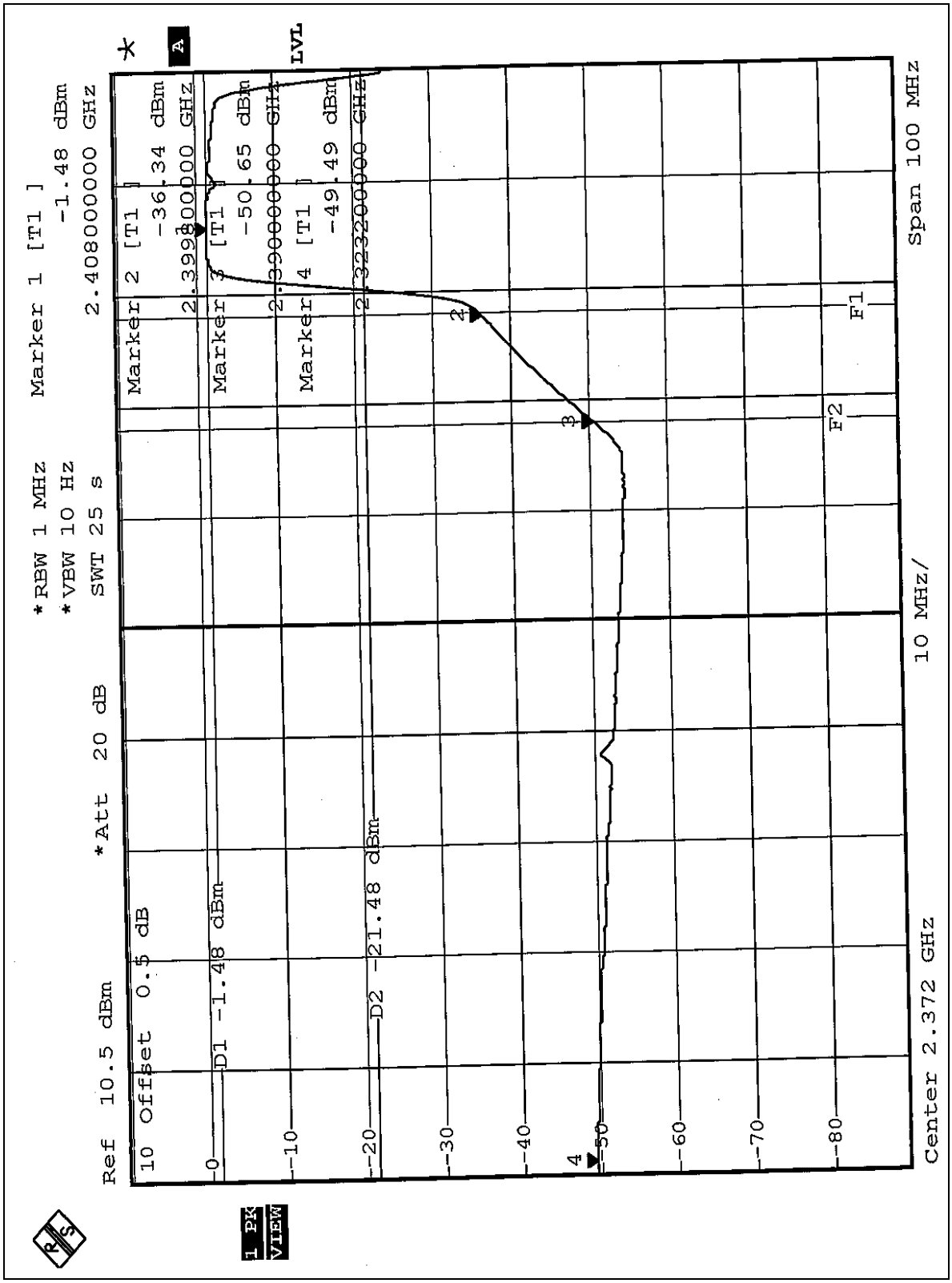

Ref 20.5 dBm
20 Offset 0.5 dB
D1 4.84 dBm
D2 -15.16 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
4.84 dBm
2.411400000 GHz
Marker 2 [T1]
-35.80 dBm
2.399800000 GHz
Marker 3 [T1]
-52.64 dBm
2.390000000 GHz
Marker 4 [T1]
-49.48 dBm
2.325800000 GHz
LVL
A
1 AP
VBW
F1
F2
Center 2.3746 GHz
10 MHz/
Span 100 MHz

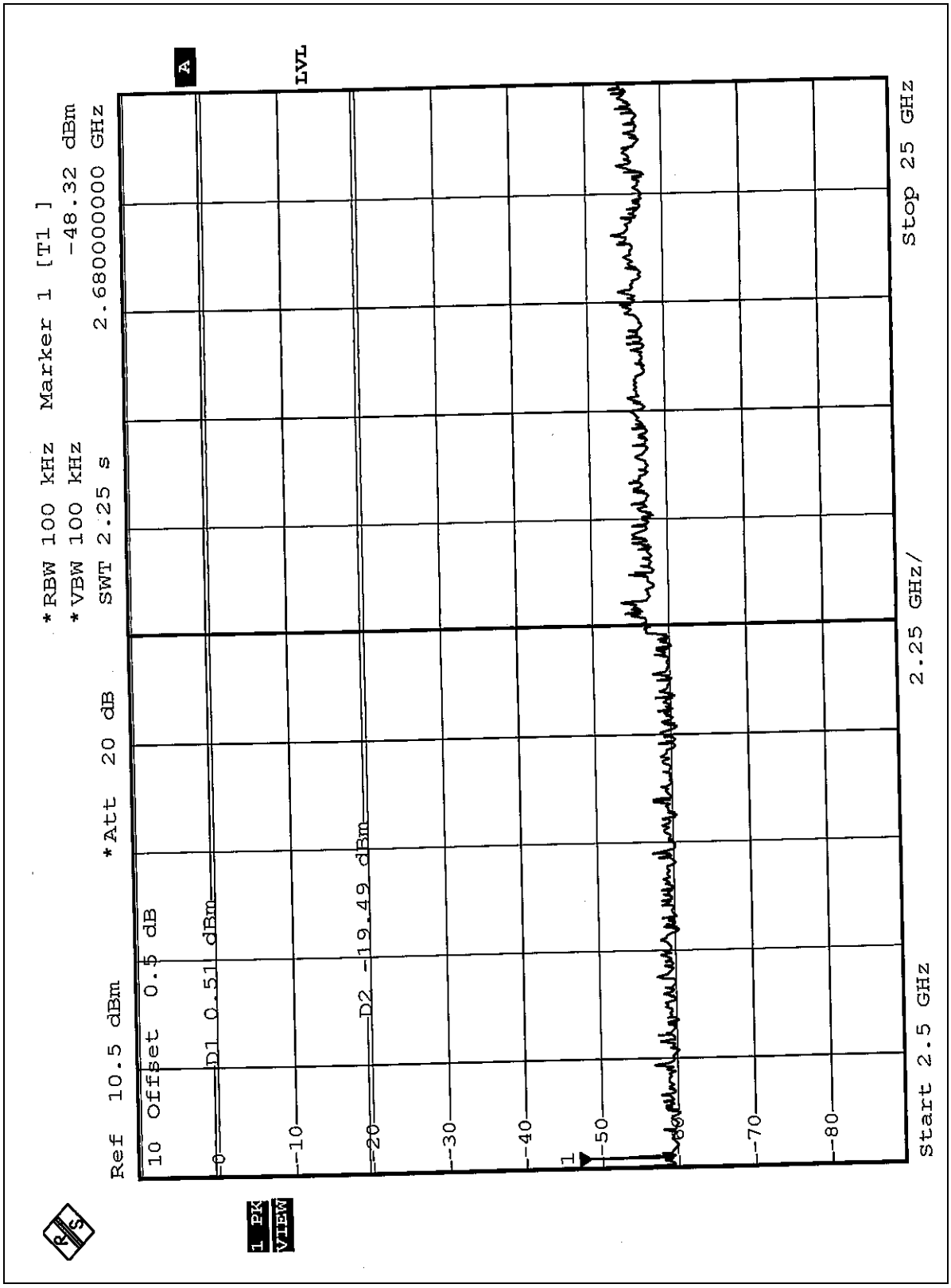

Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-44.03 dBm
20.500000000 GHz
D1 5.64 dBm
D2 -14.36 dBm
LVL
A
1 PK
VIEW
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz

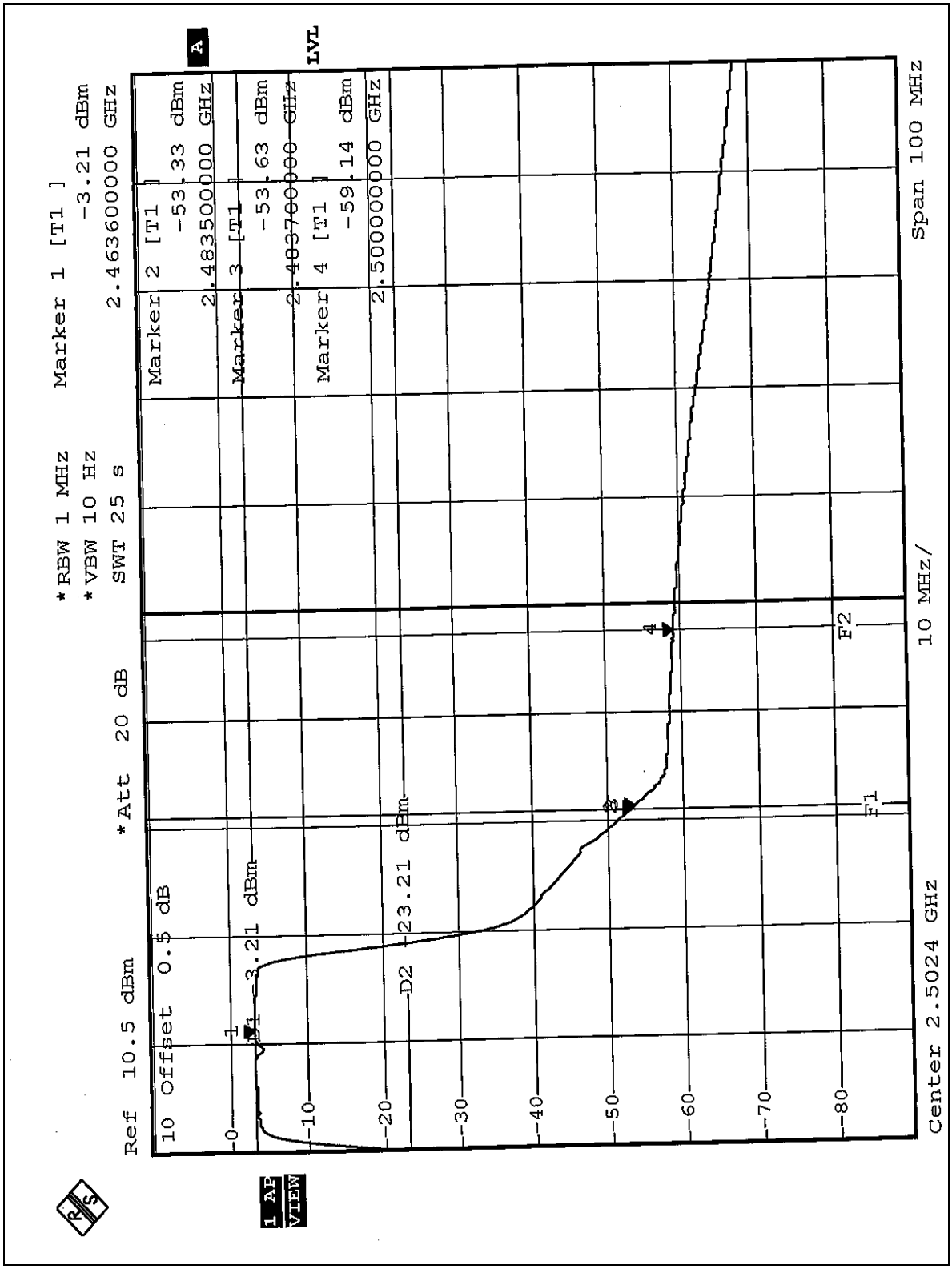

Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
3.23 dBm
2.462600000 GHz
Marker 2 [T1]
-55.61 dBm
2.483500000 GHz
Marker 3 [T1]
-55.60 dBm
2.403700000 GHz
Marker 4 [T1]
-58.06 dBm
2.500000000 GHz
A
LVL
1 3.23 dBm
D2 -16.12 dBm
F1
F2
Center 2.5008 GHz
10 MHz/
Span 100 MHz
1 AP
VIEW

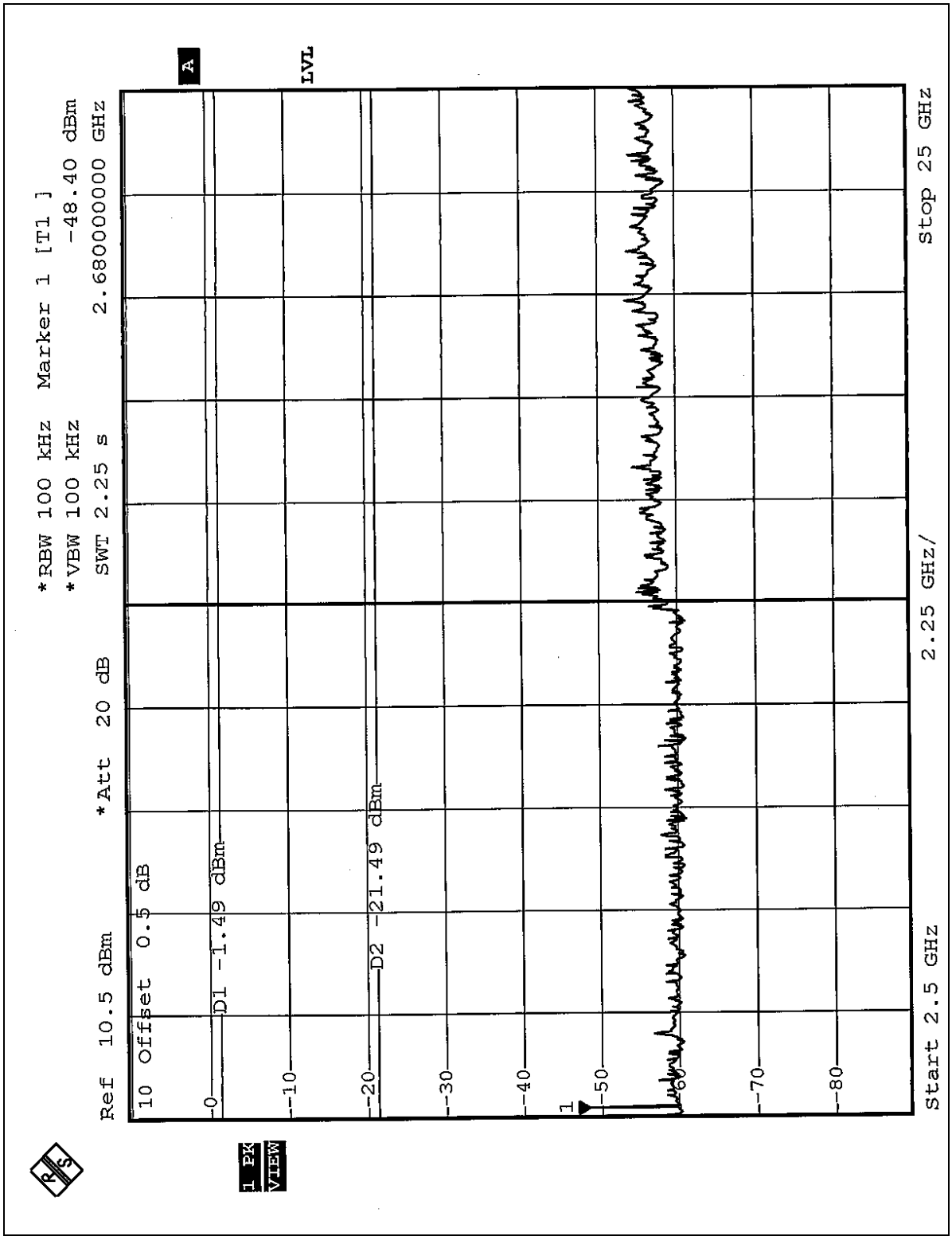

Ref 20.5 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-42.88 dBm
24.86500000 GHz
20 Offset 0.5 dB
D1 3.42 dBm
D2 -16.58 dBm
1 PK
VIEW
A
LVL
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz

OFDM mode:


Ref 10.5 dBm
10 Offset 0.5 dB
D1 -1.48 dBm
D2 -21.48 dBm
*Att 20 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-1.48 dBm
2.408000000 GHz
Marker 2 [T1]
-36.34 dBm
2.399800000 GHz
Marker 3 [T1]
-50.65 dBm
2.390000000 GHz
Marker 4 [T1]
-49.49 dBm
2.323200000 GHz
LVL
A
1 PK
VIEW
Center 2.372 GHz
10 MHz/
Span 100 MHz
F1
F2


Ref 10.5 dBm
10 Offset 0.5 dB
D1 0.51 dBm
D2 -19.49 dBm
*Att 20 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-48.32 dBm
2.680000000 GHz
A
LVL
1 PK
VIEW
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz


Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-3.21 dBm
2.463600000 GHz
Marker 2 [T1]
-53.33 dBm
2.483500000 GHz
Marker 3 [T1]
-53.63 dBm
2.487000000 GHz
Marker 4 [T1]
-59.14 dBm
2.500000000 GHz
LVL
A
1 AP
VIEW
D1 -3.21 dBm
D2 -23.21 dBm
F1
F2
Center 2.5024 GHz
10 MHz/
Span 100 MHz


Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-48.40 dBm
2.680000000 GHz
D1 -1.49 dBm
D2 -21.49 dBm
A
LVL
1 PK
VIEW
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz

4.7 ANTENNA REQUIREMENT

4.7.1 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 15.247 (b), 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.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Dipole antenna with UFL connector. The maximum Gain of the antenna is 2.0dBi.

5. TEST TYPES AND RESULTS (FOR PART 802.11a)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Dec. 11, 2004
RF signal cable Woken	5D-FB	Cable-HyC02-01	Mar. 07, 2005
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Mar. 10, 2005
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Mar. 04, 2005
Software ADT	ADT_Cond_V3	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 HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

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

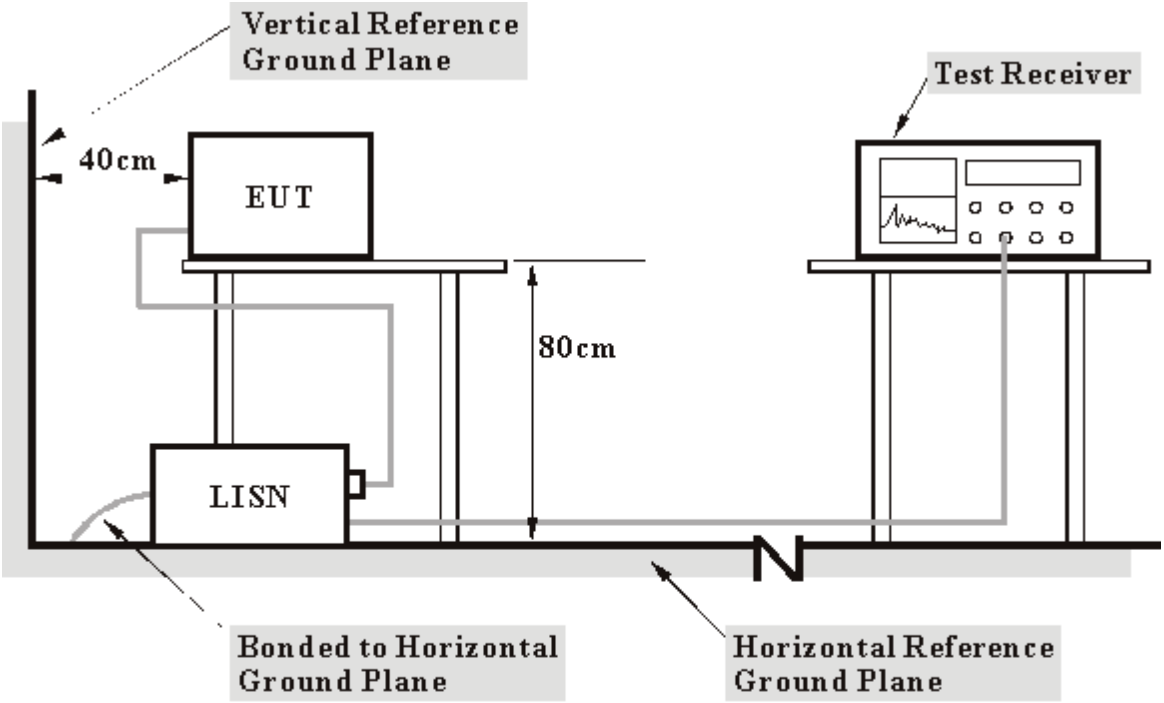
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



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

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

5.1.6 EUT OPERATING CONDITIONS

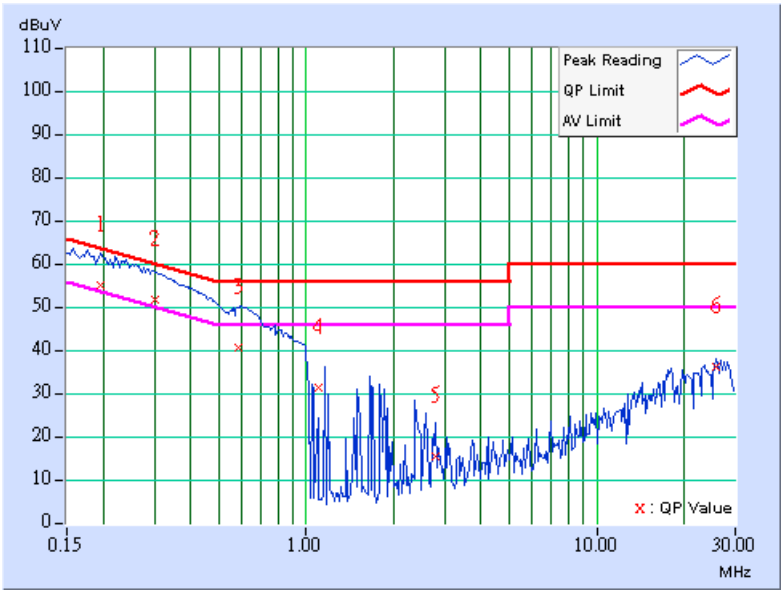
Same as 4.1.6

5.1.7 TEST RESULTS

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: Match Tsui	

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	0.195	0.10	53.84	24.00	53.94	24.10	63.82	53.82	-9.88	-29.72
2	**0.303**	**0.11**	**50.65**	**21.04**	**50.76**	**21.15**	**60.17**	**50.17**	**-9.41**	**-29.02**
3	0.583	0.15	39.70	-	39.85	-	56.00	46.00	-16.15	-
4	1.098	0.25	30.24	-	30.49	-	56.00	46.00	-25.51	-
5	2.789	0.28	14.28	-	14.56	-	56.00	46.00	-41.44	-
6	25.628	1.18	35.27	-	36.45	-	60.00	50.00	-23.55	-

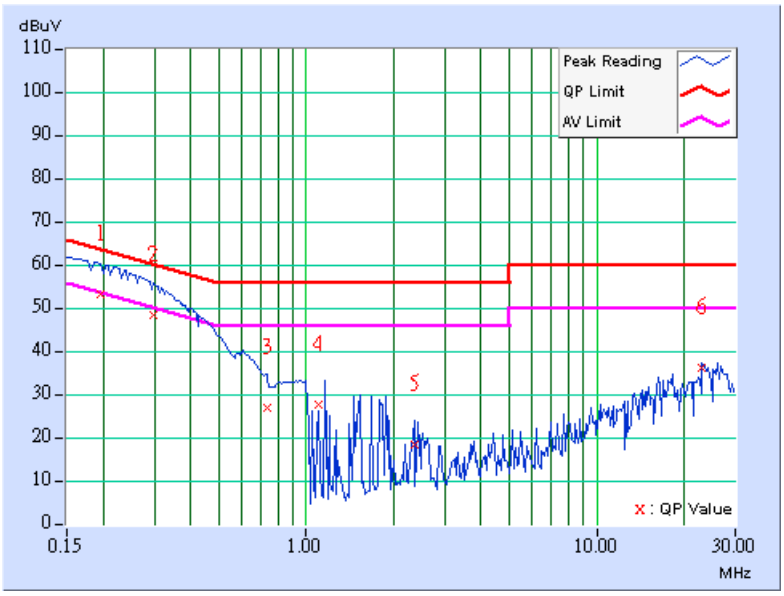
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: Match Tsui	

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	0.195	0.10	52.60	-	52.70	-	63.81	53.81	-11.11	-
2	0.299	0.11	47.99	-	48.10	-	60.26	50.26	-12.17	-
3	0.734	0.18	26.31	-	26.49	-	56.00	46.00	-29.51	-
4	1.098	0.24	27.16	-	27.40	-	56.00	46.00	-28.60	-
5	2.355	0.26	17.72	-	17.98	-	56.00	46.00	-38.02	-
6	23.070	0.68	35.49	-	36.17	-	60.00	50.00	-23.83	-

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.



5.2 RADIATED EMISSION MEASUREMENT

5.2.1 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.

5.2.2 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
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

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

5.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Jan. 13, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Dec. 15, 2004
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170241	Feb. 23, 2005
Preamplifier Agilent	8449B	3008A01961	Jan. 22, 2005
Preamplifier Agilent	8447D	2944A10629	Jan. 14, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218182/4	Mar. 04, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218194/4	Mar. 04, 2005
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower ADT.	AT100	AT93021702	NA
Turn Table ADT.	TT100.	TT93021702	NA
Controller ADT.	SC100.	SC93021702	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 HwaYa Chamber 1.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The IC Site Registration No. is IC4924-2.

5.2.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

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

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

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

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

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

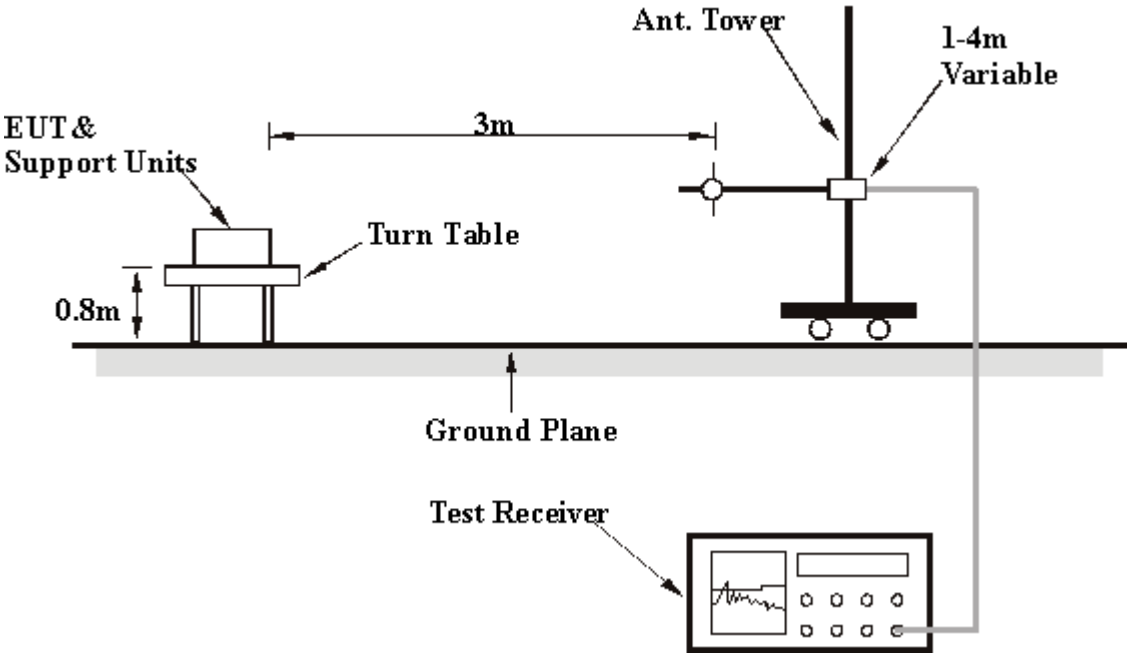
NOTE:

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

5.2.5 DEVIATION FROM TEST STANDARD

No deviation

5.2.6 TEST SETUP



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

5.2.7 EUT OPERATING CONDITIONS

Same as 4.1.6

5.2.8 TEST RESULTS

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
CHANNEL	Channel 5	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 991hPa	**TESTED BY**: Match Tsui	

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	107.76	38.50 QP	43.50	-5.00	1.50 H	253	26.73	11.77
2	129.14	38.22 QP	43.50	-5.28	1.50 H	250	24.55	13.67
3	249.66	40.61 QP	46.00	-5.39	1.00 H	52	27.39	13.22
4	269.10	39.13 QP	46.00	-6.87	1.00 H	244	25.40	13.73
5	372.38	43.28 QP	46.00	-2.72	1.00 H	78	27.14	16.14
6	424.61	44.36 QP	46.00	-1.64	1.00 H	205	26.96	17.40
7	500.42	41.01 QP	46.00	-4.99	1.50 H	259	22.27	18.74
8	539.30	39.65 QP	46.00	-6.35	1.50 H	46	20.16	19.48
9	624.83	41.70 QP	46.00	-4.30	1.00 H	1	20.36	21.34
10	720.08	41.41 QP	46.00	-4.59	1.00 H	202	18.62	22.79
11	751.18	42.04 QP	46.00	-3.96	1.00 H	346	18.51	23.54
12	811.44	40.10 QP	46.00	-5.90	1.00 H	226	16.20	23.90
13	875.59	39.38 QP	46.00	-6.62	1.50 H	355	14.72	24.66
14	900.86	41.25 QP	46.00	-4.75	1.50 H	73	16.13	25.12

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

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
CHANNEL	Channel 5	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 991hPa	**TESTED BY**: Match Tsui	

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	39.72	37.30 QP	40.00	-2.70	1.00 V	76	22.12	15.18
2	**57.21**	**39.29 QP**	**40.00**	**-0.71**	**1.00 V**	**91**	**25.31**	**13.99**
3	103.87	37.93 QP	43.50	-5.57	1.00 V	331	26.55	11.38
4	160.24	35.31 QP	43.50	-8.19	1.00 V	271	20.44	14.87
5	208.84	38.02 QP	43.50	-5.48	1.50 V	304	26.44	11.59
6	360.46	36.34 QP	46.00	-9.66	1.50 V	94	20.46	15.88
7	374.07	38.08 QP	46.00	-7.92	1.00 V	319	21.90	16.18
8	449.88	40.29 QP	46.00	-5.71	1.25 V	34	22.22	18.07
9	500.42	43.52 QP	46.00	-2.48	1.50 V	334	24.78	18.74
10	517.92	38.54 QP	46.00	-7.46	1.00 V	319	19.46	19.07
11	539.30	38.90 QP	46.00	-7.10	1.00 V	355	19.41	19.48
12	630.66	41.32 QP	46.00	-4.68	1.00 V	250	19.90	21.42
13	720.08	42.80 QP	46.00	-3.20	1.50 V	220	20.00	22.79
14	811.44	41.94 QP	46.00	-4.06	1.25 V	238	18.04	23.90
15	900.86	42.20 QP	46.00	-3.80	1.00 V	271	17.08	25.12

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

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Normal Mode	**CHANNEL**	1
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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)
1	#1440.00	42.82 PK	74.00	-31.18	1.00 H	120	14.95	27.87
1	#1440.00	38.12 AV	54.00	-15.88	1.00 H	120	10.25	27.87
2	3453.00	49.02 PK	68.30	-19.28	1.00 H	234	13.44	35.58
3	#5150.00	53.15 PK	74.00	-20.85	1.34 H	226	14.05	39.10
3	#5150.00	43.69 AV	54.00	-10.31	1.34 H	226	4.59	39.10
4	*5180.00	100.22 PK			1.34 H	226	61.05	39.17
4	*5180.00	90.76 AV			1.34 H	226	51.59	39.17
5	6906.00	54.42 PK	68.30	-13.88	1.40 H	188	12.91	41.51
6	10360.00	66.75 PK	68.30	-1.55	1.39 H	195	21.46	45.29

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	#1440.00	47.99 PK	74.00	-26.01	1.11 V	106	20.12	27.87
1	#1440.00	45.82 AV	54.00	-8.18	1.11 V	106	17.95	27.87
2	3453.00	47.81 PK	68.30	-20.49	1.39 V	284	12.23	35.58
3	#5150.00	57.74 PK	74.00	-16.26	1.62 V	352	18.64	39.10
3	#5150.00	47.01 AV	54.00	-6.99	1.62 V	352	7.91	39.10
4	*5180.00	104.81 PK			1.62 V	352	65.64	39.17
4	*5180.00	94.08 AV			1.62 V	352	54.91	39.17
5	6906.00	53.00 PK	68.30	-15.30	1.30 V	84	11.49	41.51
6	10360.00	60.65 PK	68.30	-7.65	1.17 V	121	15.36	45.29

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “#”The radiated frequency falling in the restricted band.

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Normal Mode	**CHANNEL**	4
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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)
1	*5240.00	102.01 PK			1.27 H	235	62.83	39.18
1	*5240.00	91.94 AV			1.27 H	235	52.76	39.18
2	6986.00	54.59 PK	68.30	-13.71	1.04 H	299	12.89	41.70
3	10480.00	66.22 PK	68.30	-2.08	1.36 H	210	20.14	46.08

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)
1	#1440.00	47.98 PK	74.00	-26.02	1.11 V	52	20.11	27.87
1	#1440.00	45.57 AV	54.00	-8.43	1.11 V	52	17.70	27.87
2	*5240.00	108.82 PK			1.37 V	72	69.64	39.18
2	*5240.00	97.96 AV			1.37 V	72	58.78	39.18
3	6986.00	54.21 PK	68.30	-14.09	1.31 V	82	12.51	41.70
4	10480.00	65.84 PK	68.30	-2.46	1.49 V	257	19.75	46.08

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “#”The radiated frequency falling in the restricted band.

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Normal Mode	**CHANNEL**	5
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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)
1	1260.00	42.83 PK	68.30	-25.47	1.11 H	2	15.62	27.21
2	*5260.00	103.21 PK			1.19 H	100	64.05	39.16
2	*5260.00	93.19 AV			1.19 H	100	54.03	39.16
3	7013.00	54.16 PK	68.30	-14.14	1.16 H	30	12.31	41.85
4	10520.00	66.99 PK	68.30	-1.31	1.39 H	209	20.83	46.16
5	#15780.00	62.30 PK	74.00	-11.70	1.11 H	296	15.04	47.25
5	#15780.00	49.37 AV	54.00	-4.63	1.11 H	296	2.11	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)
1	1440.00	47.92 PK	74.00	-26.08	1.10 V	93	20.05	27.87
2	*5260.00	109.87 PK			1.11 V	71	70.71	39.16
2	*5260.00	98.77 AV			1.11 V	71	59.61	39.16
3	7013.00	53.52 PK	68.30	-14.78	1.48 V	74	11.67	41.85
4	10520.00	64.15 PK	68.30	-4.15	1.20 V	301	18.00	46.16
5	#15780.00	64.55 PK	74.00	-9.45	1.00 V	211	17.29	47.25
5	#15780.00	51.38 AV	54.00	-2.62	1.00 V	211	4.12	47.25

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “#”The radiated frequency falling in the restricted band.

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Normal Mode	**CHANNEL**	8
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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)	Antenna Factor (dB)
1	1260.00	41.70 PK	68.30	-26.60	1.00 H	42	14.49	27.21
2	3546.00	42.89 PK	68.30	-25.41	1.00 H	233	7.04	35.85
3	*5320.00	104.01 PK			1.25 H	231	64.86	39.15
3	*5320.00	93.38 AV			1.25 H	231	54.23	39.15
4	7093.00	55.17 PK	68.30	-13.13	1.34 H	198	12.65	42.52
5	#10640.00	65.70 PK	74.00	-8.30	1.29 H	313	19.47	46.23
5	#10640.00	52.34 AV	54.00	-1.66	1.29 H	313	6.11	46.23
6	#15960.00	57.35 PK	74.00	-16.65	1.27 H	219	12.39	44.96
6	#15960.00	47.37 AV	54.00	-6.63	1.27 H	219	2.41	44.96

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)
1	1260.00	45.40 PK	68.30	-22.90	1.28 V	235	18.19	27.21
2	*5320.00	110.87 PK			1.09 V	80	71.72	39.15
2	*5320.00	100.75 AV			1.09 V	80	61.60	39.15
3	#5350.00	61.25 PK	74.00	-12.75	1.09 V	80	22.05	39.20
3	#5350.00	51.13 AV	54.00	-2.87	1.09 V	80	11.93	39.20
4	7093.00	54.20 PK	68.30	-14.10	1.29 V	77	11.68	42.52
5	#10640.00	66.41 PK	74.00	-7.59	1.55 V	239	20.18	46.23
5	#10640.00	52.31 AV	54.00	-1.69	1.55 V	239	6.08	46.23
6	#15960.00	59.60 PK	74.00	-14.40	1.54 V	144	14.64	44.96
6	#15960.00	46.78 AV	54.00	-7.22	1.54 V	144	1.82	44.96

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “#”The radiated frequency falling in the restricted band.

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Normal Mode	**CHANNEL**	9
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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	1260.00	43.63 PK	74.00	-30.37	1.00 H	248	16.42	27.21
2	#3830.00	49.90 PK	74.00	-24.10	1.05 H	126	13.56	36.34
2	#3830.00	41.82 AV	54.00	-12.18	1.05 H	126	5.48	36.34
3	*5745.00	104.24 PK			1.22 H	227	63.34	40.90
3	*5745.00	93.30 AV			1.22 H	227	52.40	40.90
4	#7659.00	49.60 PK	74.00	-24.40	1.14 H	328	6.35	43.25
4	#7659.00	45.58 AV	54.00	-8.42	1.14 H	328	2.33	43.25
5	#11490.00	61.46 PK	74.00	-12.54	1.33 H	250	14.08	47.38
5	#11490.00	49.45 AV	54.00	-4.55	1.33 H	250	2.07	47.38

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#1080.00	46.48 PK	74.00	-27.52	1.00 V	244	19.85	26.63
1	#1080.00	43.75 AV	54.00	-10.25	1.00 V	244	17.12	26.63
2	#3830.00	51.20 PK	74.00	-22.80	1.57 V	360	14.86	36.34
2	#3830.00	44.29 AV	54.00	-9.71	1.57 V	360	7.95	36.34
3	*5745.00	108.62 PK			1.00 V	83	67.72	40.90
3	*5745.00	98.68 AV			1.00 V	83	57.78	40.90
4	#7659.00	54.44 PK	74.00	-19.56	1.21 V	33	11.19	43.25
4	#7659.00	42.23 AV	54.00	-11.77	1.21 V	33	-1.02	43.25
5	#11490.00	58.16 PK	74.00	-15.84	1.50 V	302	10.78	47.38
5	#11490.00	45.88 AV	54.00	-8.12	1.50 V	302	-1.50	47.38

NOTE:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB).
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * " : Fundamental frequency.
6. "#"The radiated frequency falling in the restricted band.
7. The limit value is defined as per 15.247

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Normal Mode	**CHANNEL**	11
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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	1260.00	43.30 PK	74.00	-30.70	1.02 H	247	16.09	27.21
2	#3856.00	50.03 PK	74.00	-23.97	1.04 H	124	13.60	36.43
2	#3856.00	41.89 AV	54.00	-12.11	1.04 H	124	12.11	36.43
3	*5785.00	103.66 PK			1.09 H	218	62.61	41.05
3	*5785.00	93.22 AV			1.09 H	218	52.17	41.05
4	#7713.00	55.13 PK	74.00	-18.87	1.15 H	60	11.72	43.41
4	#7713.00	45.34 AV	54.00	-8.66	1.15 H	60	1.93	43.41
5	#11570.00	63.05 PK	74.00	-10.95	1.16 H	249	15.58	47.47
5	#11570.00	50.79 AV	54.00	-3.21	1.16 H	249	3.32	47.47

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	#1440.00	47.98 PK	74.00	-26.02	1.10 V	50	20.11	27.87
1	#1440.00	45.34 AV	54.00	-8.66	1.10 V	50	17.47	27.87
2	#3856.00	51.32 PK	74.00	-22.68	1.05 V	276	14.89	36.43
2	#3856.00	46.66 AV	54.00	-7.34	1.05 V	276	10.23	36.43
3	*5785.00	111.87 PK			1.10 V	15	70.82	41.05
3	*5785.00	101.67 AV			1.10 V	15	60.62	41.05
4	#11570.00	58.38 PK	74.00	-15.62	1.09 V	254	10.91	47.47
4	#11570.00	46.03 AV	54.00	-7.97	1.09 V	254	-1.44	47.47

NOTE:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB).
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * " : Fundamental frequency.
6. "#"The radiated frequency falling in the restricted band.
7. The limit value is defined as per 15.247

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Normal Mode	**CHANNEL**	13
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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	1260.00	43.04 PK	74.00	-30.96	1.00 H	228	15.83	27.21
2	#3883.00	44.71 PK	74.00	-29.29	1.18 H	236	8.19	36.52
2	#3883.00	40.99 AV	54.00	-13.01	1.18 H	236	4.47	36.52
3	*5825.00	102.30 PK			1.20 H	219	61.35	40.95
3	*5825.00	92.67 AV			1.20 H	219	51.72	40.95
4	#11650.00	63.44 PK	74.00	-10.56	1.17 H	248	15.72	47.72
4	**#11650.00**	**52.06 AV**	**54.00**	**-1.94**	**1.17 H**	**248**	**4.34**	**47.72**

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#1440.00	48.07 PK	74.00	-25.93	1.10 V	51	20.20	27.87
1	#1440.00	45.35 AV	54.00	-8.65	1.10 V	51	17.48	27.87
2	#3883.00	53.06 PK	74.00	-20.94	1.18 V	284	16.54	36.52
2	#3883.00	48.54 AV	54.00	-5.46	1.18 V	284	12.02	36.52
3	*5825.00	110.44 PK			1.19 V	10	69.49	40.95
3	*5825.00	99.45 AV			1.19 V	10	58.50	40.95
4	#11650.00	59.27 PK	74.00	-14.73	1.28 V	239	11.55	47.72
4	#11650.00	47.11 AV	54.00	-6.89	1.28 V	239	-0.61	47.72

NOTE:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB).
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * " : Fundamental frequency.
6. "#"The radiated frequency falling in the restricted band.
7. The limit value is defined as per 15.247

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Turbo Mode	**CHANNEL**	1
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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)
1	1260.00	42.66 PK	68.30	-25.64	1.09 H	9	15.45	27.21
2	#5150.00	57.39 PK	74.00	-16.61	1.34 H	225	18.29	39.10
2	#5150.00	47.09 AV	54.00	-6.91	1.34 H	225	7.99	39.10
3	*5210.00	102.52 PK			1.34 H	225	63.31	39.21
3	*5210.00	92.24 AV			1.34 H	225	53.03	39.21
4	6946.00	54.13 PK	68.30	-14.17	1.20 H	195	12.52	41.61
5	10420.00	65.06 PK	68.30	-3.24	1.34 H	195	19.29	45.77

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)
1	1260.00	45.26 PK	68.30	-23.04	1.29 V	54	18.05	27.21
2	#5150.00	60.56 PK	74.00	-13.44	1.05 V	219	21.46	39.10
2	#5150.00	50.37 AV	54.00	-3.63	1.05 V	219	11.27	39.10
3	*5210.00	105.71 PK			1.05 V	220	66.50	39.21
3	*5210.00	95.52 AV			1.05 V	220	56.31	39.21
4	6946.00	52.43 PK	68.30	-15.87	1.30 V	83	10.82	41.61
5	10420.00	65.46 PK	68.30	-2.84	1.52 V	234	19.69	45.77

NOTE:

1. Emission level = Raw value+ Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “#”The radiated frequency falling in the restricted band.

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Turbo Mode	**CHANNEL**	2
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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)
1	#1440.00	43.59 PK	74.00	-30.41	1.09 H	314	15.72	27.87
1	#1440.00	37.71 AV	54.00	-16.29	1.09 H	314	9.84	27.87
2	*5250.00	101.18 PK			1.19 H	98	62.01	39.17
2	*5250.00	91.26 AV			1.19 H	98	52.09	39.17
3	7000.00	54.57 PK	68.30	-13.73	1.26 H	300	12.83	41.74
4	10500.00	64.59 PK	68.30	-3.71	1.33 H	312	18.40	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)
1	1260.00	44.81 PK	68.30	-23.49	1.31 V	222	17.60	27.21
2	*5250.00	107.87 PK			1.16 V	67	68.70	39.17
2	*5250.00	97.25 AV			1.16 V	67	58.08	39.17
3	10500.00	63.29 PK	68.30	-5.01	1.26 V	300	17.10	46.19

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “#”The radiated frequency falling in the restricted band.

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Turbo Mode	**CHANNEL**	3
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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)
1	1260.00	42.98 PK	68.30	-25.32	1.12 H	360	15.77	27.21
2	3526.00	49.69 PK	68.30	-18.61	1.05 H	189	13.90	35.79
3	*5290.00	101.90 PK			1.21 H	193	62.77	39.13
3	*5290.00	92.25 AV			1.21 H	193	53.12	39.13
4	7053.00	54.72 PK	68.30	-13.58	1.24 H	297	12.54	42.18
5	10580.00	66.52 PK	68.30	-1.78	1.39 H	244	20.45	46.07

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)
1	1260.00	45.27 PK	68.30	-23.03	1.30 V	54	18.06	27.21
2	*5290.00	109.50 PK			1.10 V	74	70.37	39.13
2	*5290.00	99.26 AV			1.10 V	74	60.13	39.13
3	#5350.00	59.56 PK	74.00	-14.44	1.10 V	74	20.36	39.20
3	#5350.00	49.32 AV	54.00	-4.68	1.10 V	74	10.12	39.20
4	7053.00	53.19 PK	68.30	-15.11	1.26 V	243	11.01	42.18
5	10580.00	62.26 PK	68.30	-6.04	1.36 V	253	16.19	46.07

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “#”The radiated frequency falling in the restricted band.

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Turbo Mode	**CHANNEL**	4
FREQUENCY RANGE	1 ~40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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)
1	1260.00	43.84 PK	74.00	-30.16	1.04 H	246	16.63	27.21
2	#3839.00	49.60 PK	74.00	-24.40	1.05 H	122	13.23	36.37
2	#3839.00	42.05 AV	54.00	-11.95	1.05 H	122	5.68	36.37
3	*5760.00	102.05 PK			1.21 H	222	61.09	40.96
3	*5760.00	92.35 AV			1.21 H	222	51.39	40.96
4	#7679.00	55.61 PK	74.00	-18.39	1.30 H	57	12.27	43.33
4	#7679.00	45.41 AV	54.00	-8.59	1.30 H	57	2.07	43.33
5	#11520.00	59.06 PK	74.00	-14.94	1.14 H	296	11.64	47.41
5	#11520.00	47.17 AV	54.00	-6.83	1.14 H	296	-0.25	47.41

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	#1440.00	47.66 PK	74.00	-26.34	1.12 V	106	19.79	27.87
1	#1440.00	45.66 AV	54.00	-8.34	1.12 V	106	17.79	27.87
2	#3840.00	51.94 PK	74.00	-22.06	1.21 V	283	15.57	36.38
2	#3840.00	46.53 AV	54.00	-7.47	1.21 V	283	10.16	36.38
3	*5760.00	106.69 PK			1.03 V	119	65.73	40.96
3	*5760.00	97.08 AV			1.03 V	119	56.12	40.96
4	#11520.00	57.84 PK	74.00	-16.16	1.14 V	210	10.42	47.41
4	#11520.00	45.42 AV	54.00	-8.58	1.14 V	210	-2.00	47.41

NOTE:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB).
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * " : Fundamental frequency.
6. "#"The radiated frequency falling in the restricted band.
7. The limit value is defined as per 15.247

EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Turbo Mode	**CHANNEL**	5
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Match Tsui		

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)
1	1260.00	43.50 PK	74.00	-30.50	1.00 H	243	16.29	27.21
2	#3866.00	51.48 PK	74.00	-22.52	1.05 H	121	15.02	36.46
2	#3866.00	44.44 AV	54.00	-9.56	1.05 H	121	7.98	36.46
3	*5800.00	101.75 PK			1.39 H	225	60.64	41.11
3	*5800.00	92.31 AV			1.39 H	225	51.20	41.11
4	#7733.00	55.46 PK	74.00	-18.54	1.18 H	83	12.06	43.40
4	#7733.00	45.61 AV	54.00	-8.39	1.18 H	83	2.21	43.40
5	#11600.00	62.08 PK	74.00	-11.92	1.31 H	249	14.58	47.50
5	#11600.00	49.39 AV	54.00	-4.61	1.31 H	249	1.89	47.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	#1440.00	47.65 PK	74.00	-26.35	1.10 V	110	19.78	27.87
1	#1440.00	45.66 AV	54.00	-8.34	1.10 V	110	17.79	27.87
2	#3866.00	53.09 PK	74.00	-20.91	1.20 V	282	16.63	36.46
2	#3866.00	47.94 AV	54.00	-6.06	1.20 V	282	11.48	36.46
3	*5800.00	109.14 PK	74.00	35.14	1.00 V	18	68.03	41.11
3	*5800.00	99.97 AV	54.00	45.97	1.00 V	18	58.86	41.11
4	#11600.00	57.78 PK	74.00	-16.22	1.01 V	160	10.28	47.50
4	#11600.00	45.24 AV	54.00	-8.76	1.01 V	160	-2.26	47.50

NOTE:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB).
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “ * “ : Fundamental frequency.
6. “#”The radiated frequency falling in the restricted band.
7. The limit value is defined as per 15.247

FOR FREQUENCY 5.15~5.35GHz

5.3 PEAK TRANSMIT POWER MEASUREMENT

5.3.1 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
5.725 – 5.825GHz	The lesser of 1W (30dBm) or 17dBm + 10logB

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

5.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

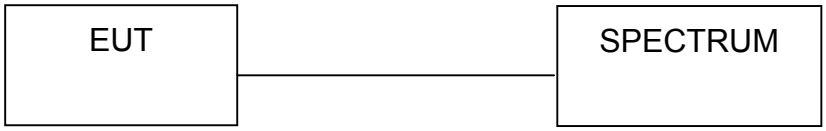
5.3.3 TEST PROCEDURE

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.

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

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

5.3.7 TEST RESULTS

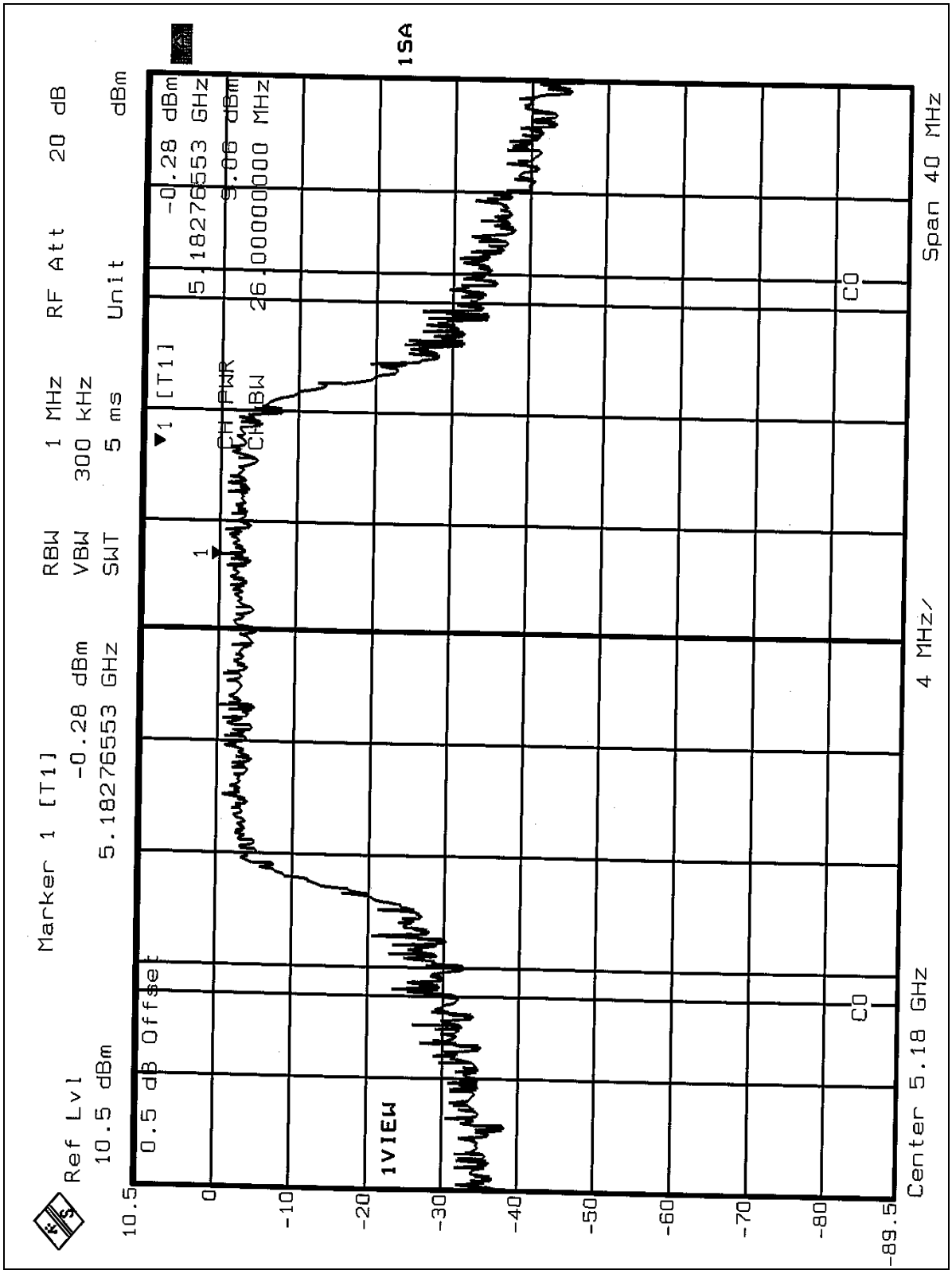
EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 991hPa	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	8.072	9.07	17.00	25.88	PASS
4	5240	10.162	10.07	17.00	25.53	PASS
5	5260	15.922	12.02	24.00	26.02	PASS
8	5320	20.137	13.04	24.00	25.67	PASS

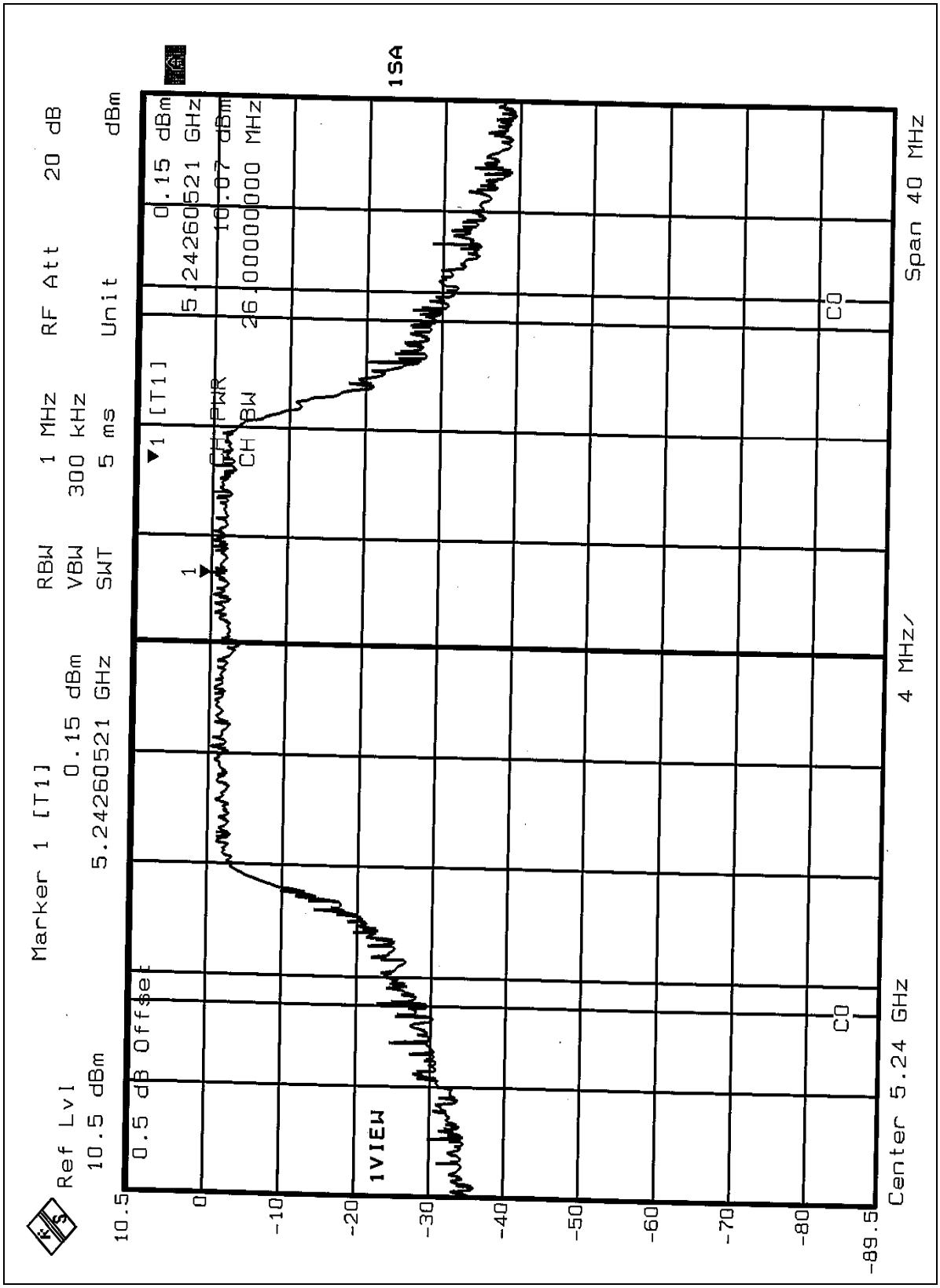
NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

Peak Power Output:

CH1



CH4


Ref Lvl
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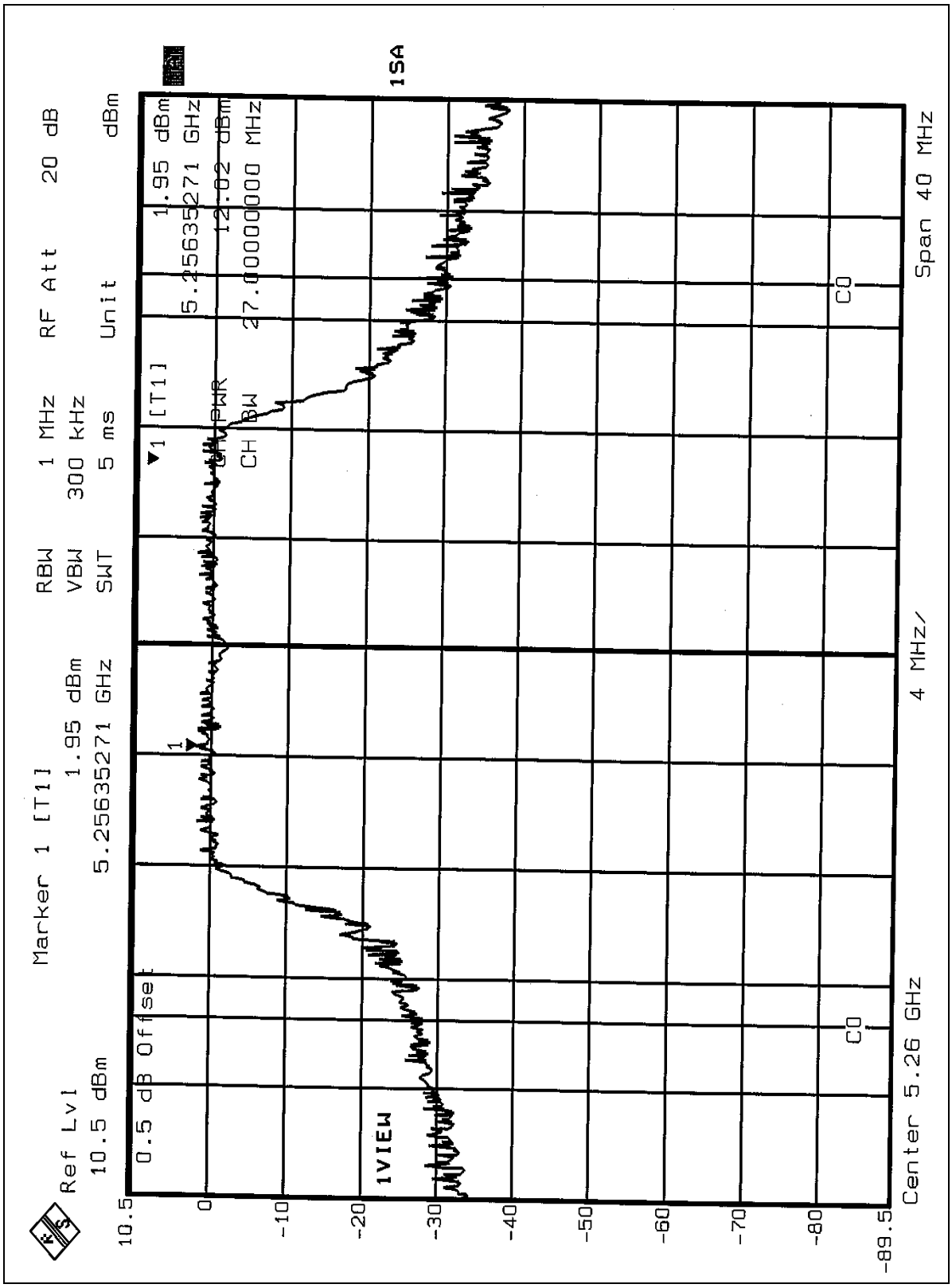
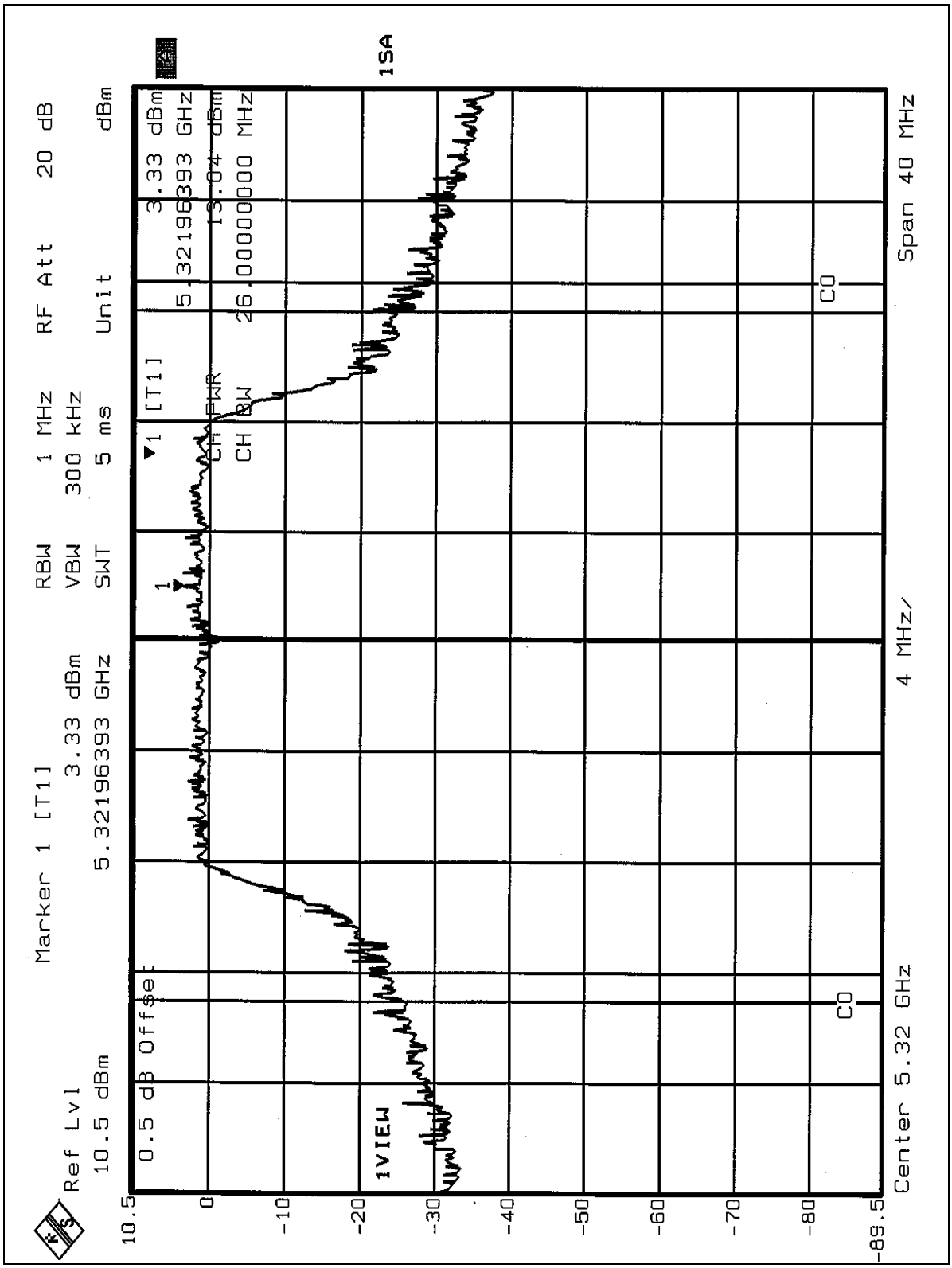
Marker 1 [T1]
0.15 dBm
5.24260521 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1 [T1]
0.15 dBm
5.24260521 GHz
CH PWR 10.07 dBm
CH BW 26.0000000 MHz
1SA
1VIEW
Center 5.24 GHz
4 MHz/
Span 40 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

CH5


Ref Lvl
10.5 dBm
0.5 dB Offset
Marker 1 [T1]
1.95 dBm
5.25635271 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1 [T1]
1.95 dBm
5.25635271 GHz
CH PWR 12.02 dBm
CH BW 27.00000000 MHz
1VIEW
1SA
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5
Center 5.26 GHz
4 MHz/
Span 40 MHz

CH8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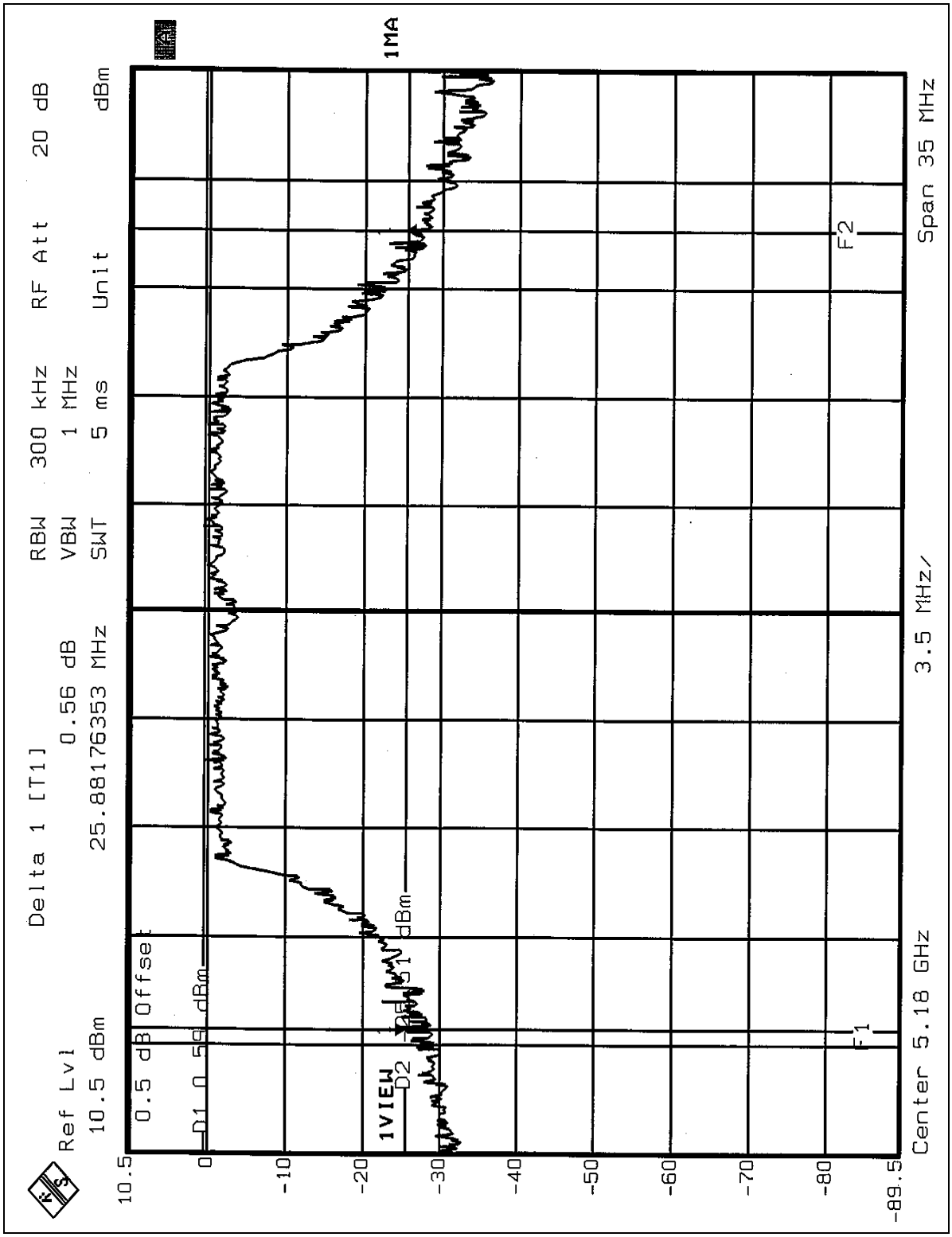
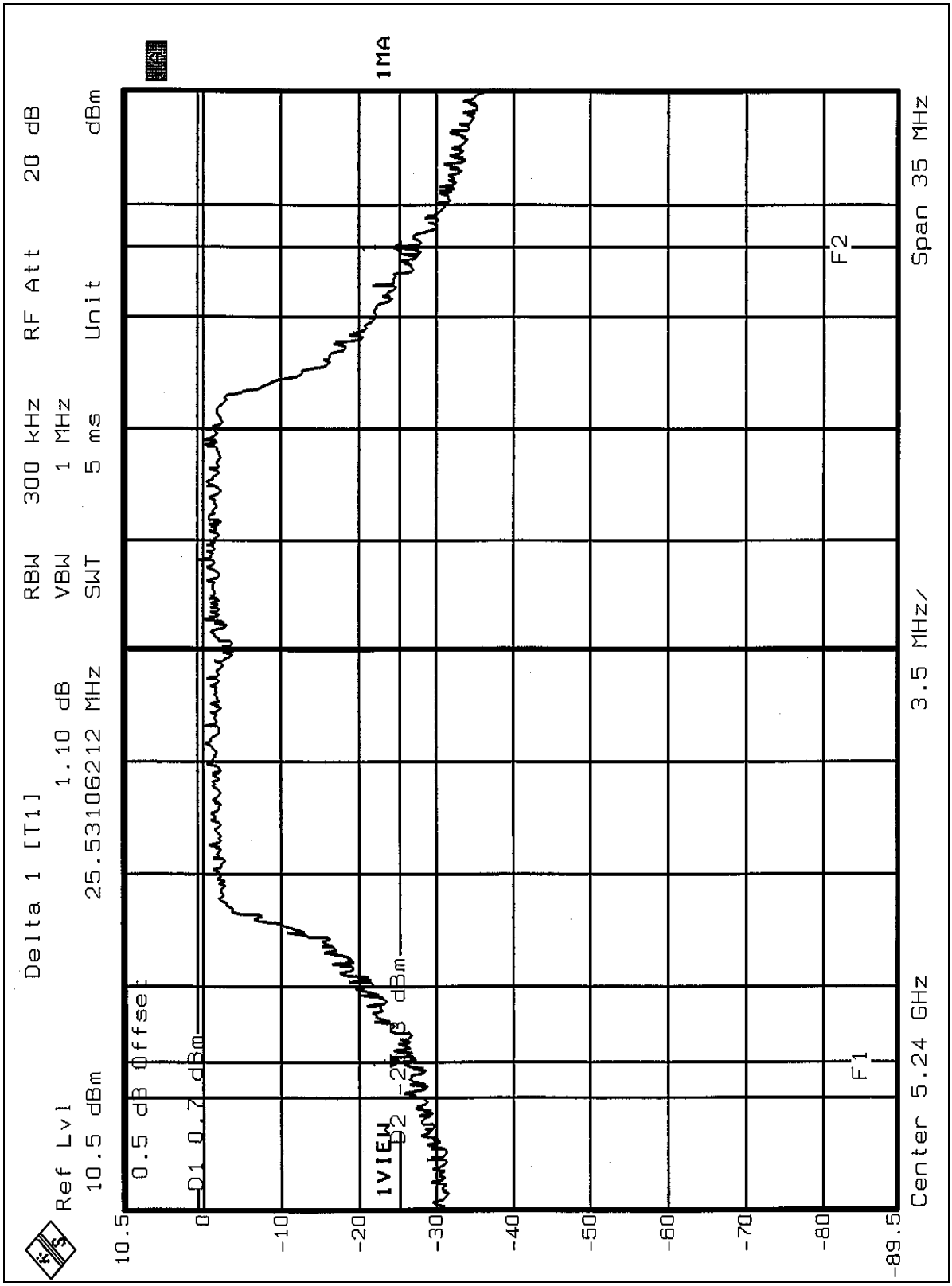
0.5 dB Offset
Marker 1 [T1]
3.33 dBm
5.32196393 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1SA
1VIEW
▼1 [T1]
CH PWR 3.33 dBm
CH BW 5.32196393 GHz
13.04 dBm
26.00000000 MHz
Center 5.32 GHz
4 MHz/
Span 40 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

26dB Occupied Bandwidth:

CH1



CH4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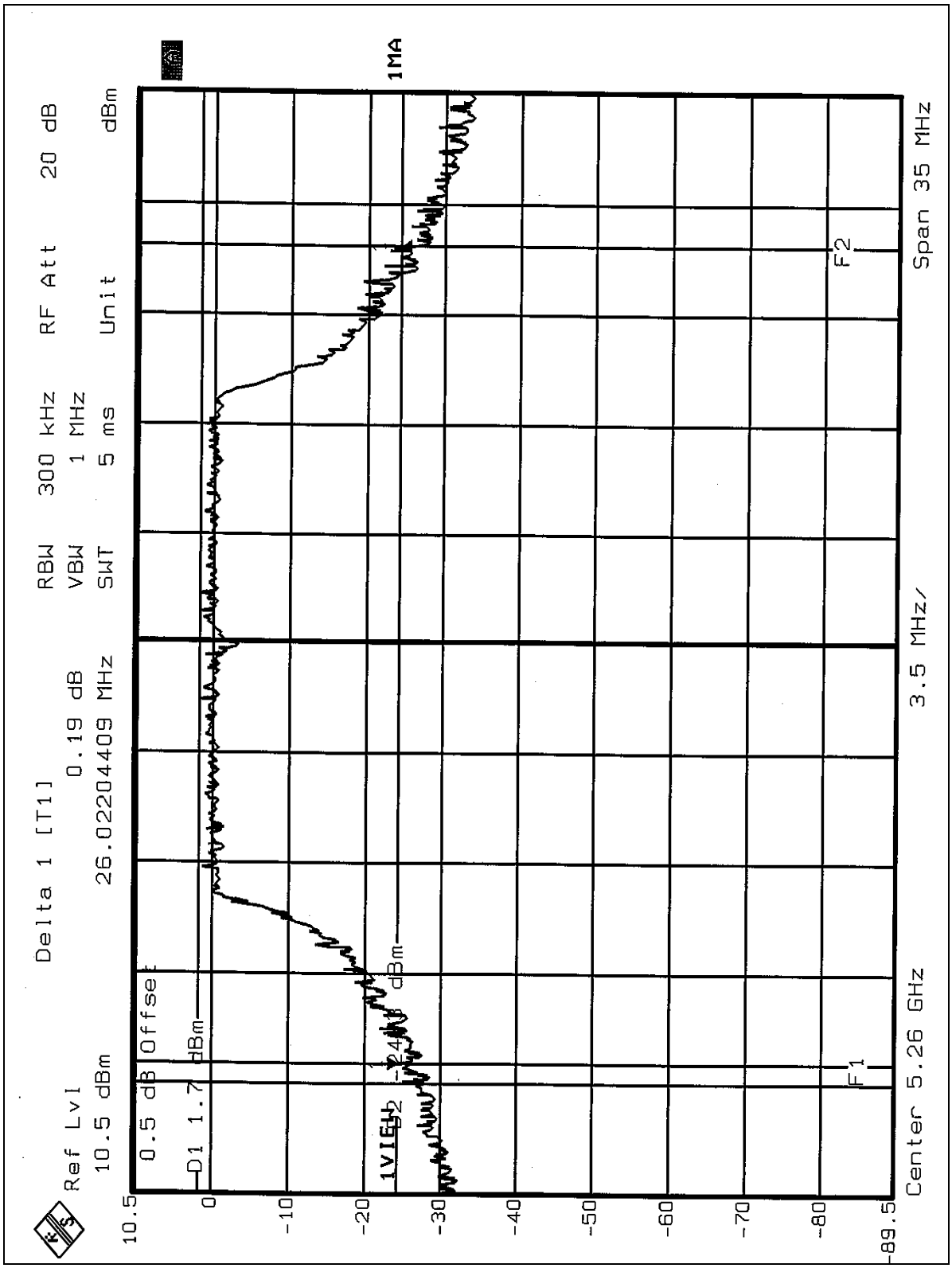
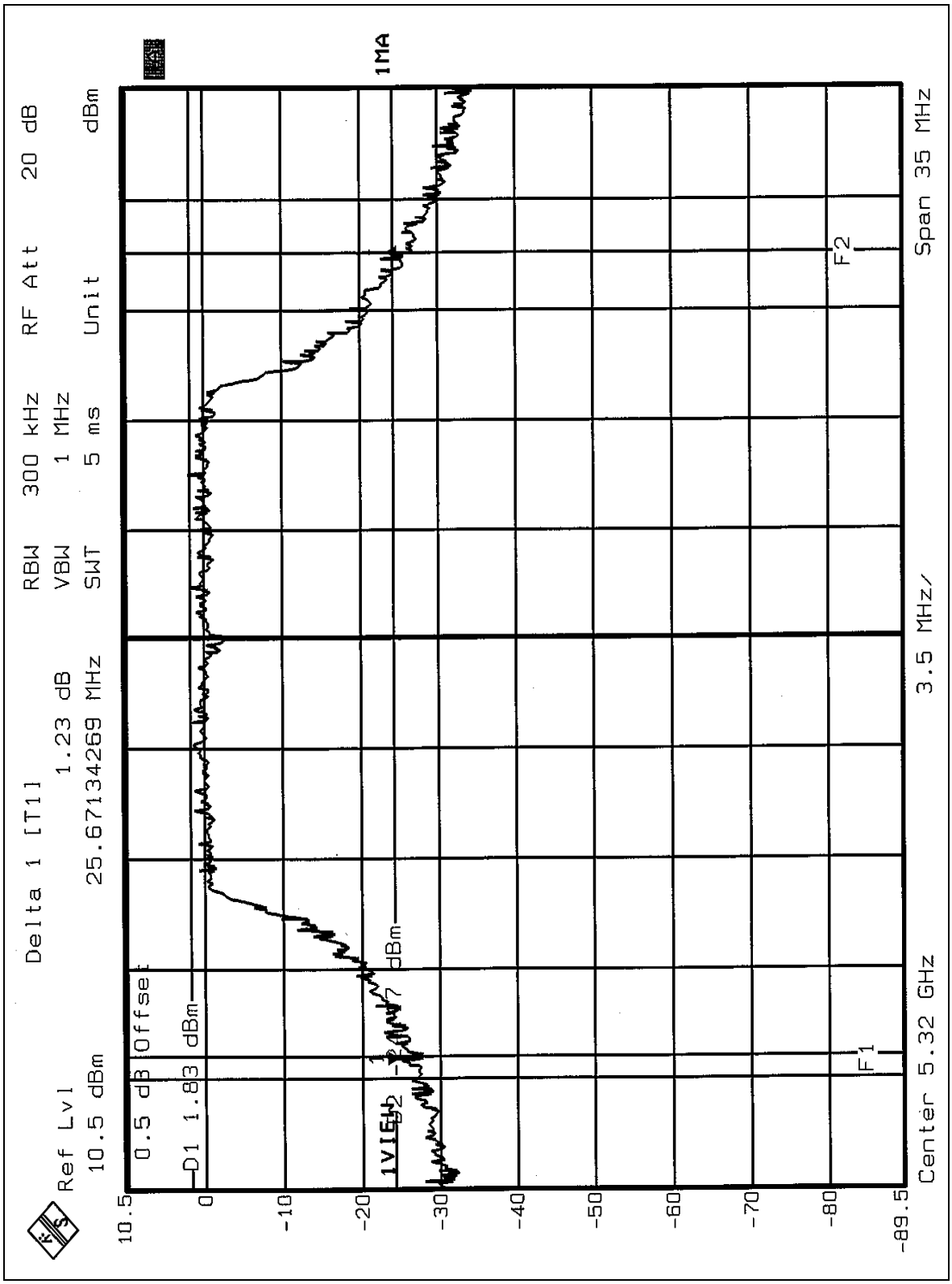
10.5 dBm
0.5 dB Offset
D1 0.7 dBm
Delta 1 [T1]
1.10 dB
25.53106212 MHz
RBW 300 kHz
VBW 1 MHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1MA
1VIEW
D2 -2.3 dBm
F1
F2
Center 5.24 GHz
3.5 MHz/
Span 35 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

CH5


Ref Lvl
10.5 dBm
Delta 1 [T1]
0.19 dB
26.02204409 MHz
RBW 300 kHz
VBW 1 MHz
SWT 5 ms
RF Att 20 dB
Unit dBm
0.5 dB Offset
D1 1.7 dBm
1VIEW
1MA
F1
F2
Center 5.26 GHz
3.5 MHz/
Span 35 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

CH8


Ref Lvl
10.5 dBm
0.5 dB Offset
D1 1.83 dBm
Delta 1 [T1]
1.23 dB
25.67134269 MHz
RBW 300 kHz
VBW 1 MHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1MA
1VIEW
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5
F1
F2
Center 5.32 GHz
3.5 MHz/
Span 35 MHz

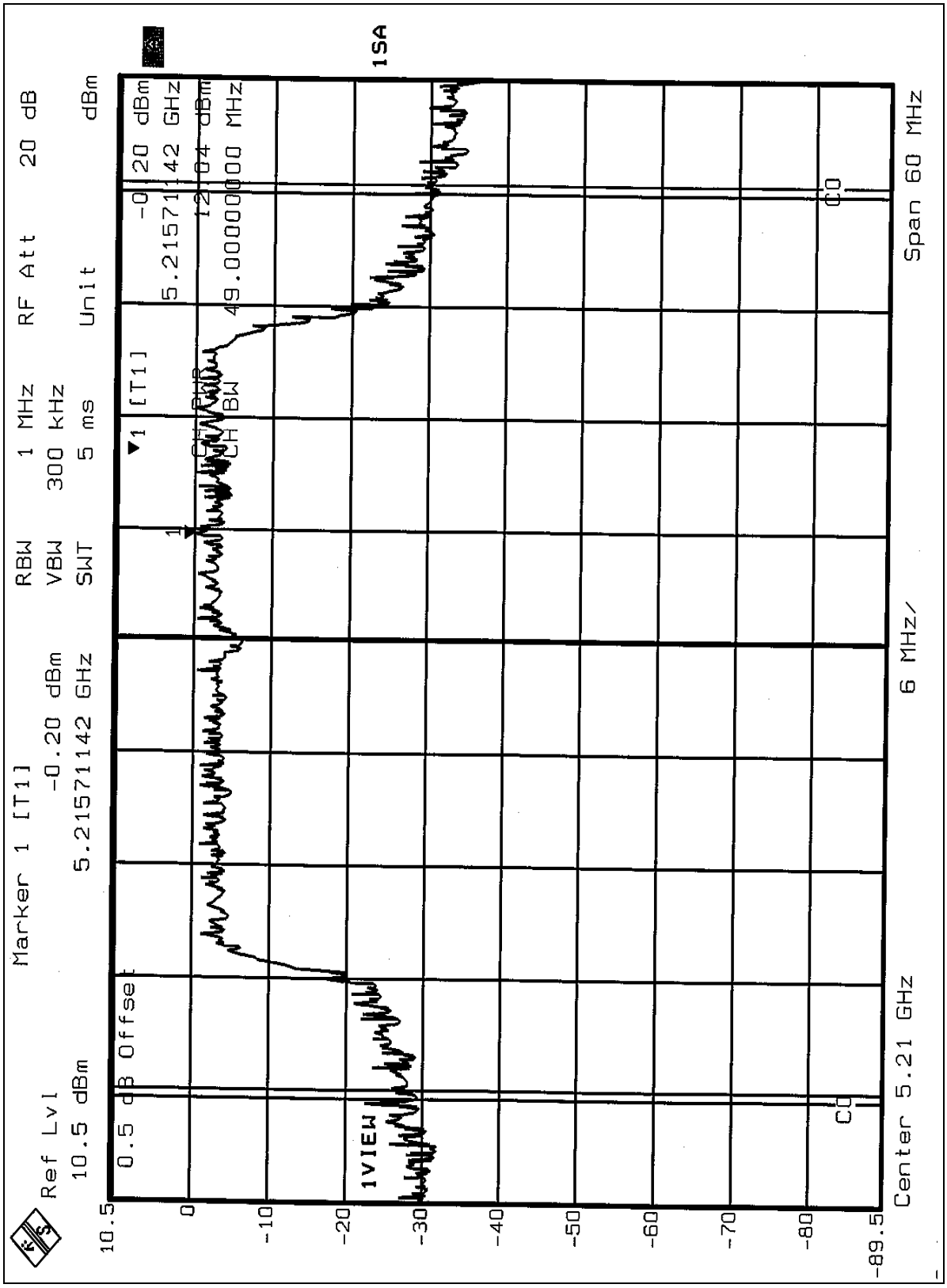
EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 991hPa	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5210	15.996	12.04	17.00	48.46	PASS
2	5250	20.091	13.03	17.00	48.94	PASS
3	5290	20.230	13.06	24.00	48.34	PASS

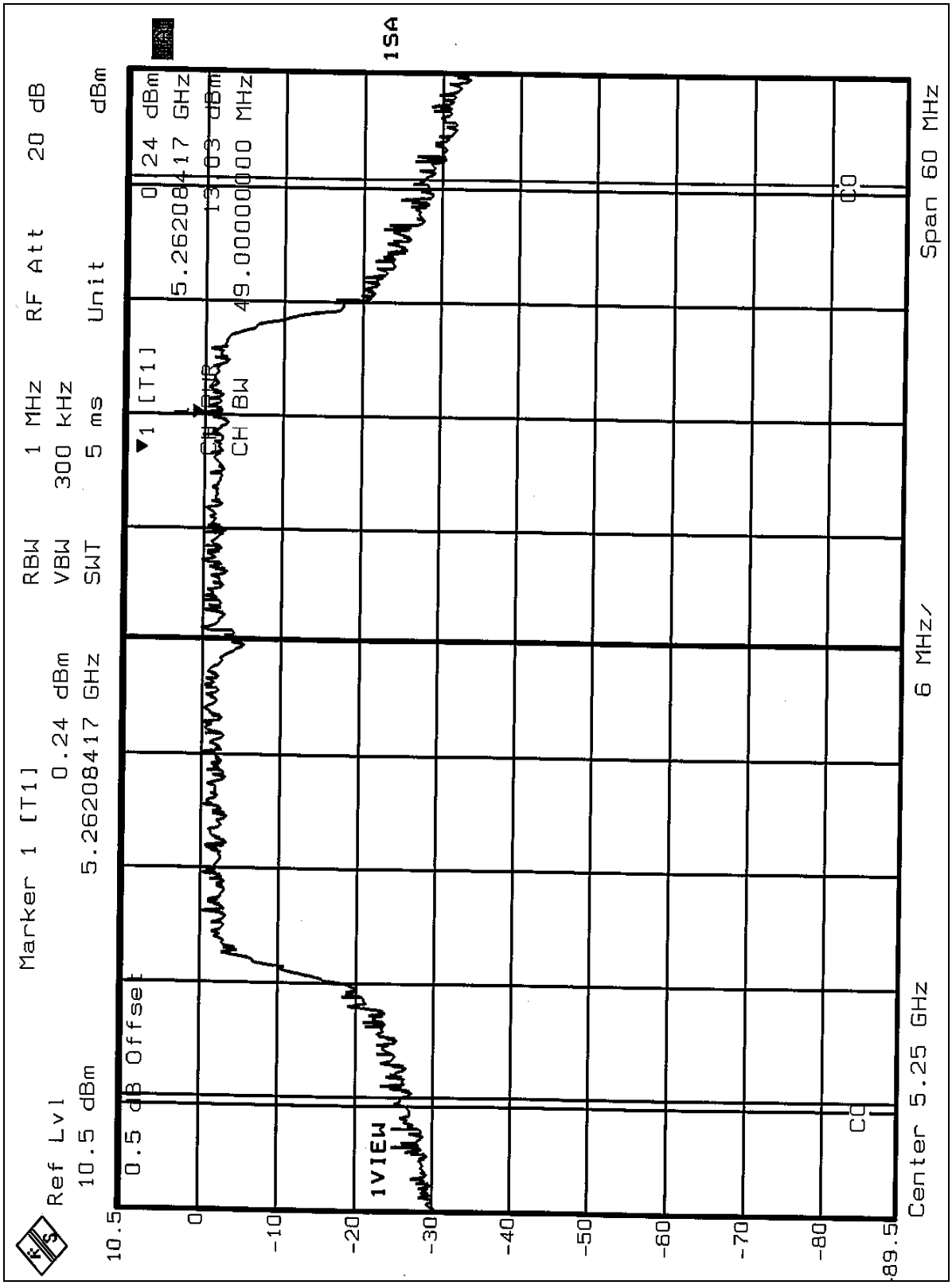
NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

Peak Power Output:

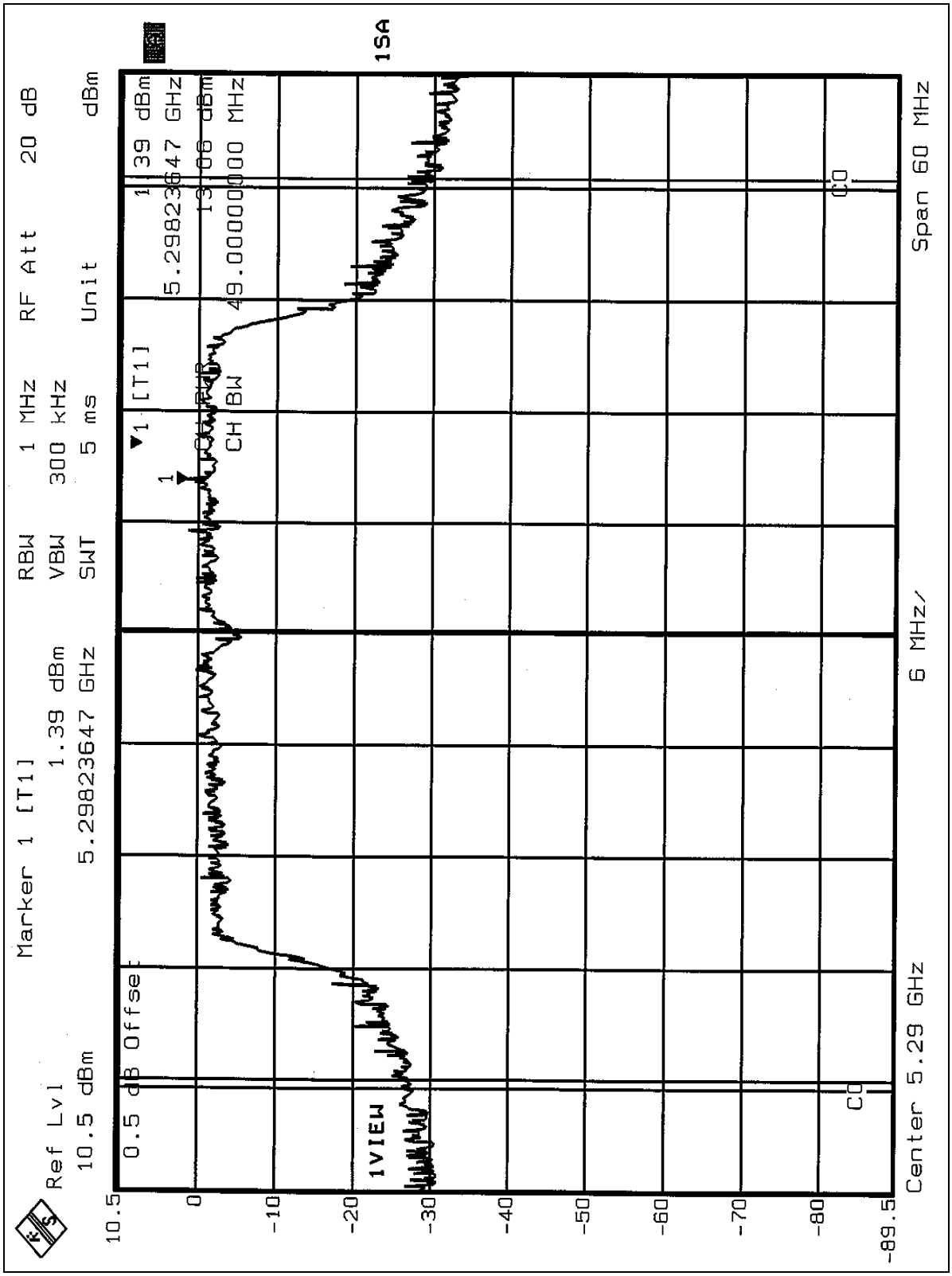
CH1



CH2

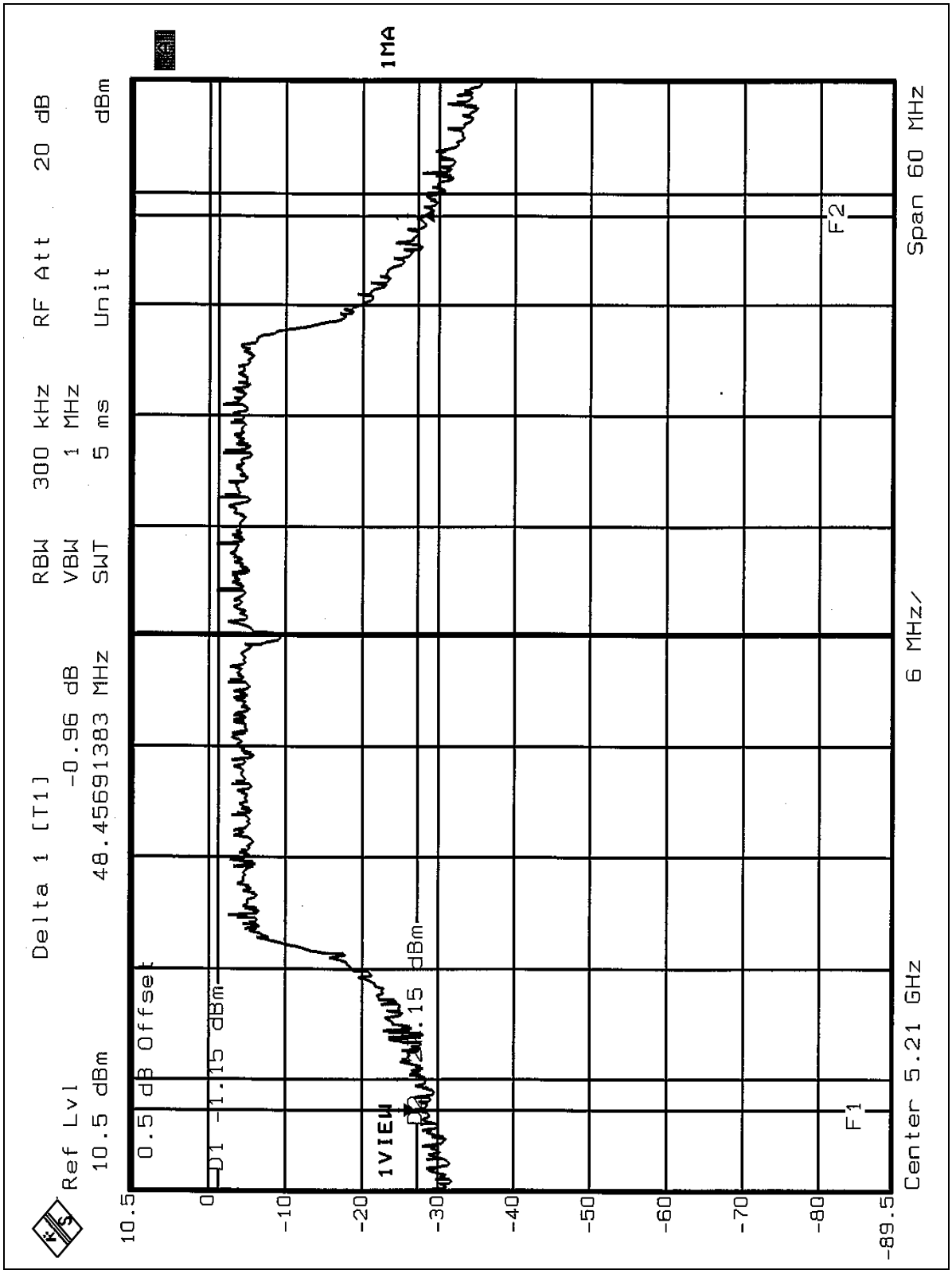

Ref Lvl
10.5 dBm
0.5 dB Offset
Marker 1 [T1]
0.24 dBm
5.26208417 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1 [T1]
0.24 dBm
5.26208417 GHz
13.03 dBm
49.00000000 MHz
CH BW
1SA
1VIEW
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5
Center 5.25 GHz
6 MHz/
Span 60 MHz

CH3

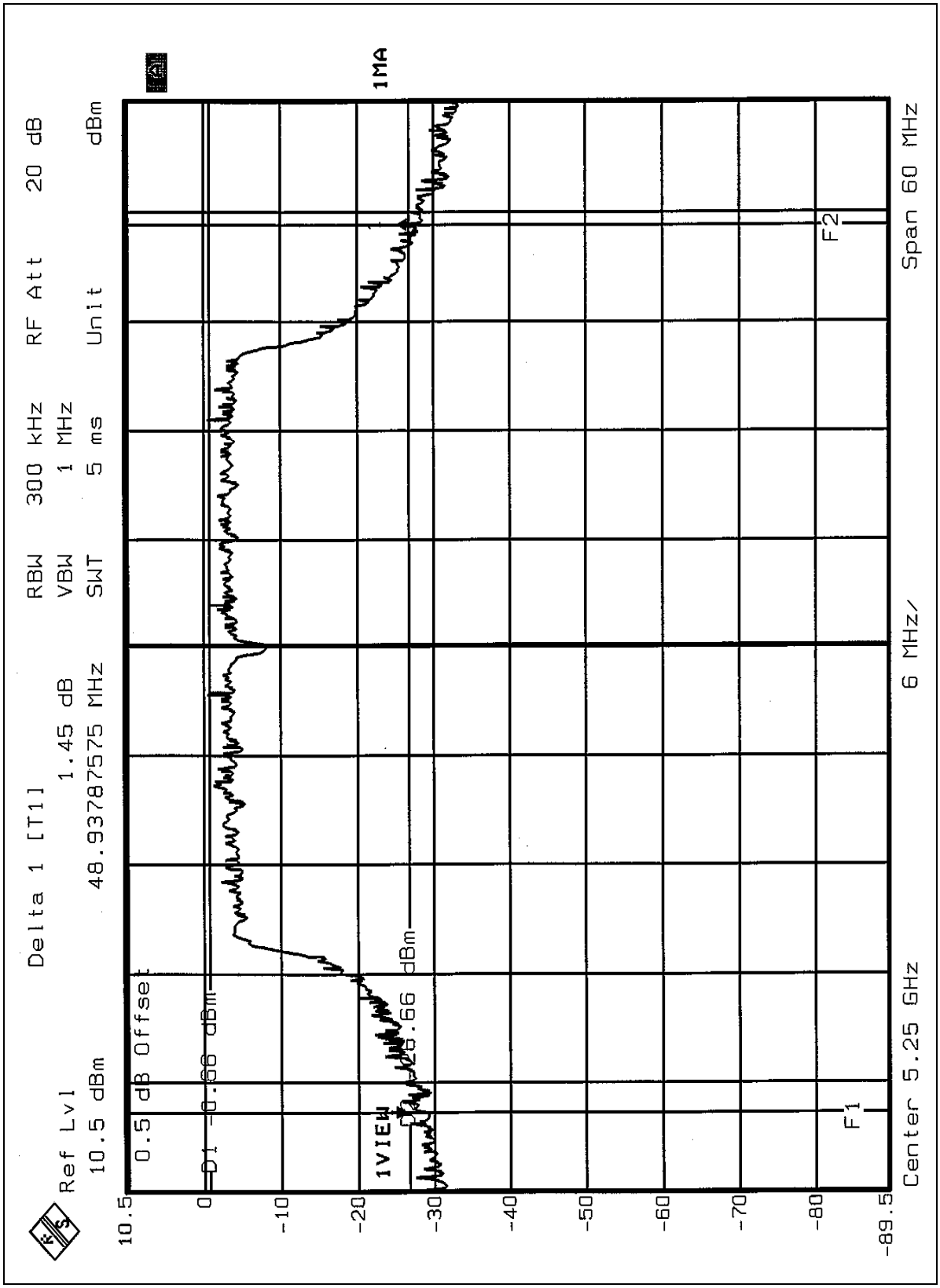

Ref Lvl
10.5 dBm
0.5 dB Offset
Marker 1 [T1]
1.39 dBm
5.29823647 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1 [T1]
1.39 dBm
5.29823647 GHz
CH BW 49.00000000 MHz
1SA
1VIEW
Center 5.29 GHz
6 MHz/
Span 60 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

26dB Occupied Bandwidth:

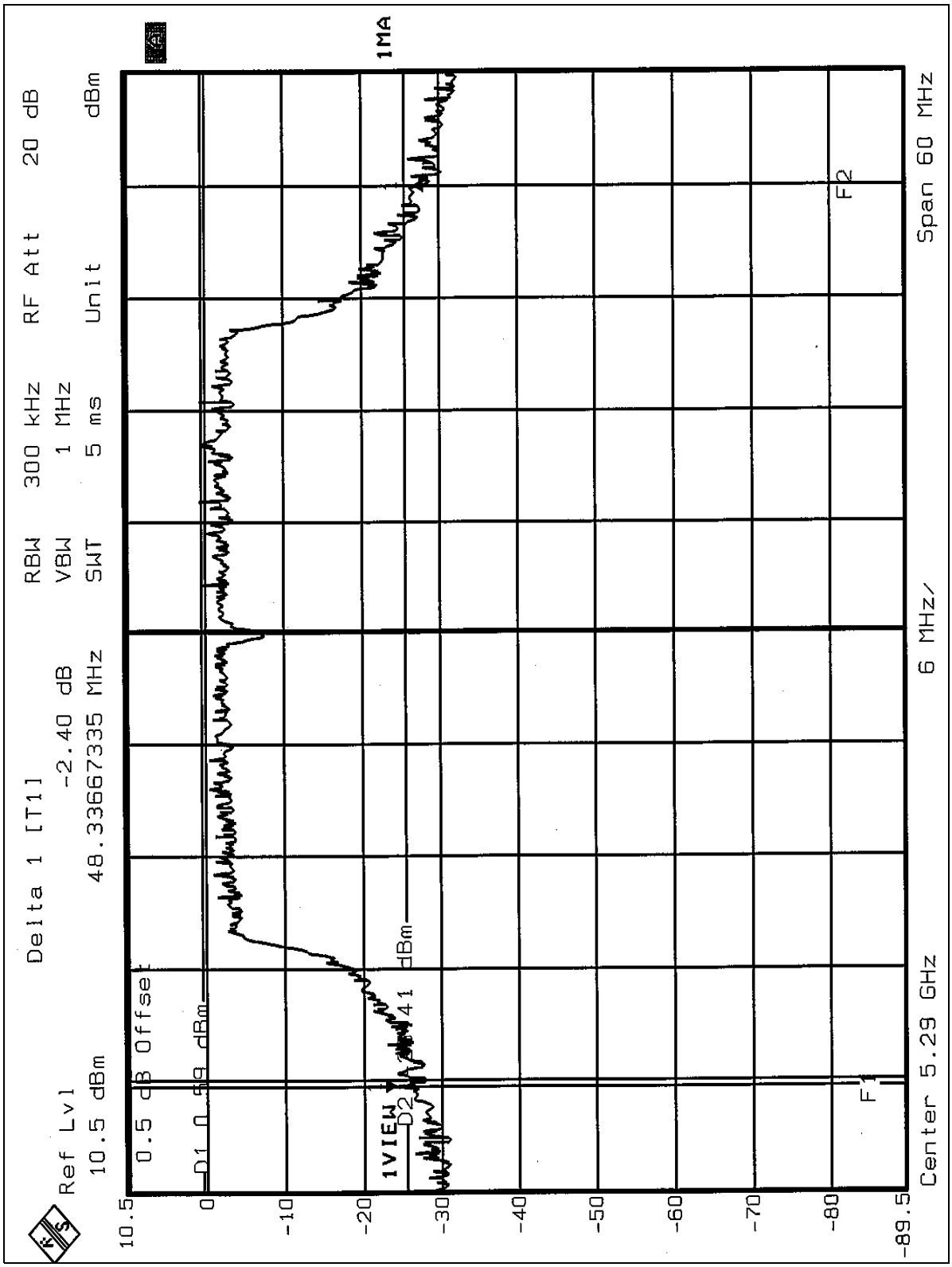
CH1



CH2


Ref Lvl
10.5 dBm
0.5 dB Offset
D1 -0.66 dBm
Delta 1 [T1]
1.45 dB
48.93787575 MHz
RBW 300 kHz
VBW 1 MHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1MA
1VIEW
-28.66 dBm
F1
F2
Center 5.25 GHz
6 MHz/
Span 60 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

CH3


Ref Lvl
10.5 dBm
0.5 dB Offset
D1 0.59 dBm
Delta 1 [T1]
-2.40 dB
48.33667335 MHz
RBW 300 kHz
VBW 1 MHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1MA
1VIEW
D2 -41 dBm
F1
F2
Center 5.29 GHz
6 MHz/
Span 60 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

5.4 PEAK POWER EXCURSION MEASUREMENT

5.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

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

5.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

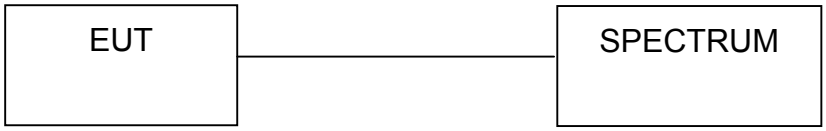
5.4.3 TEST PROCEDURE

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.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP



5.4.6 EUT OPERATING CONDITIONS

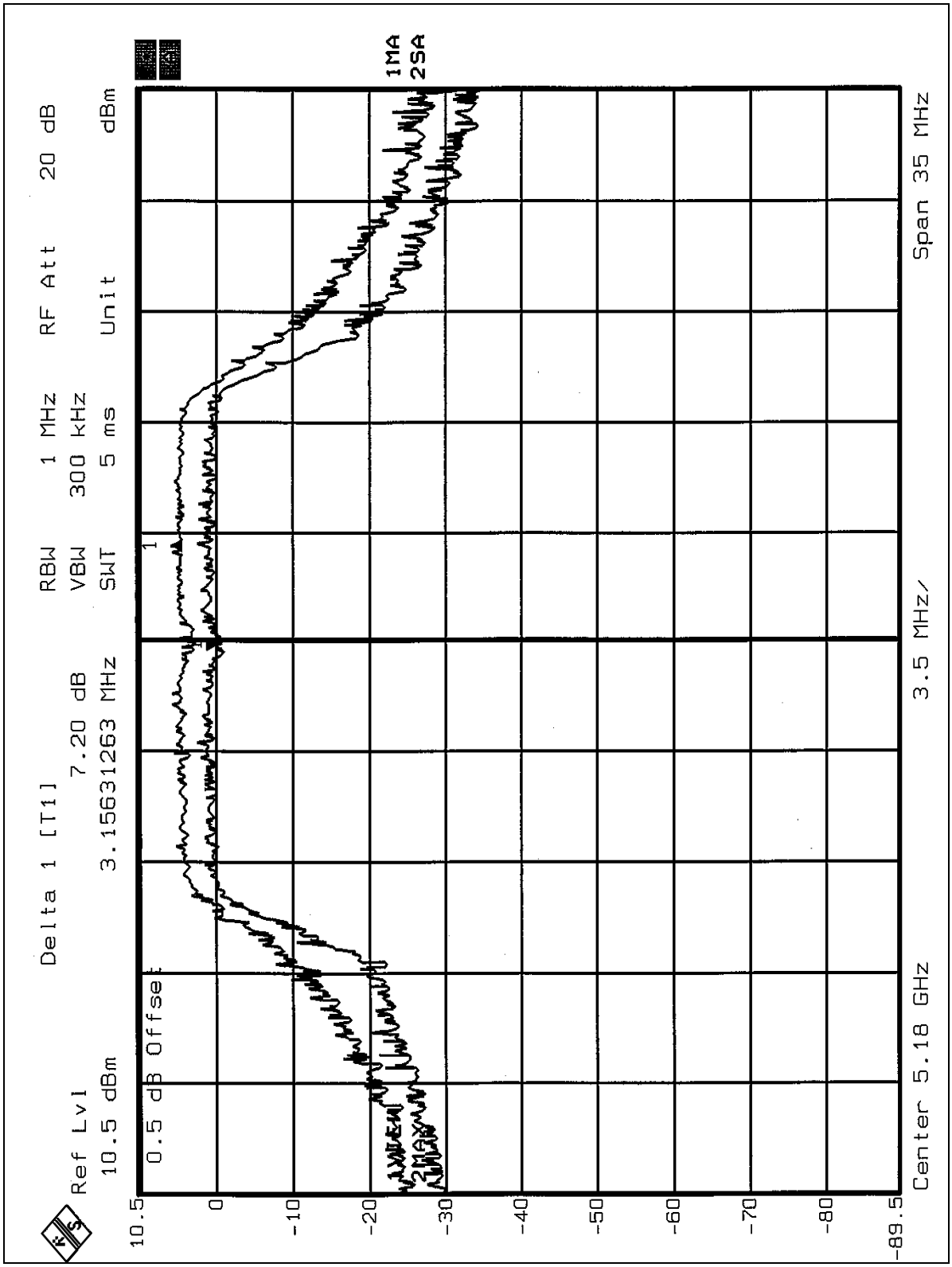
The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

5.4.7 TEST RESULTS

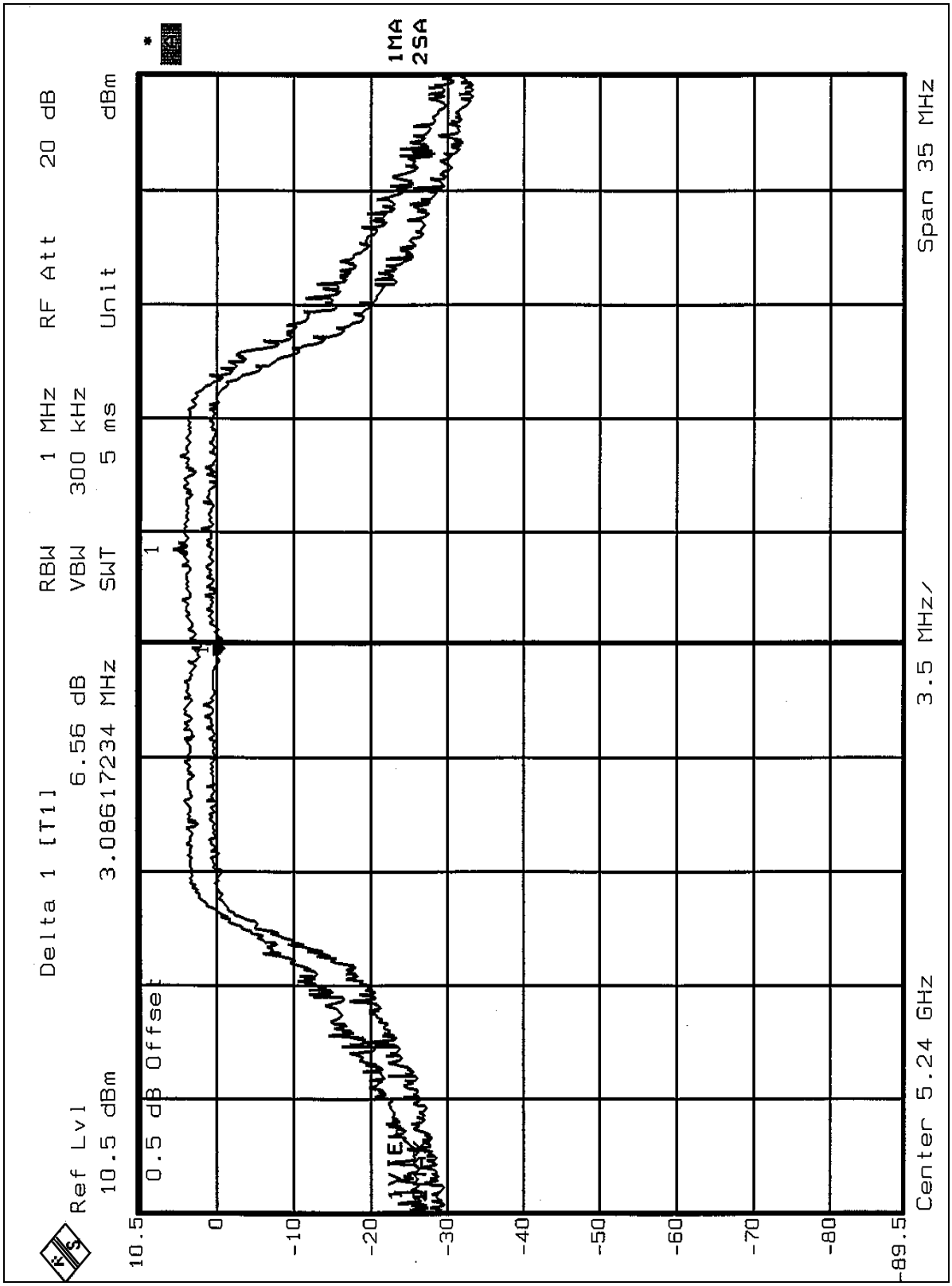
EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 991hPa	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	7.20	13	PASS
4	5240	6.56	13	PASS
5	5260	7.46	13	PASS
8	5320	6.65	13	PASS

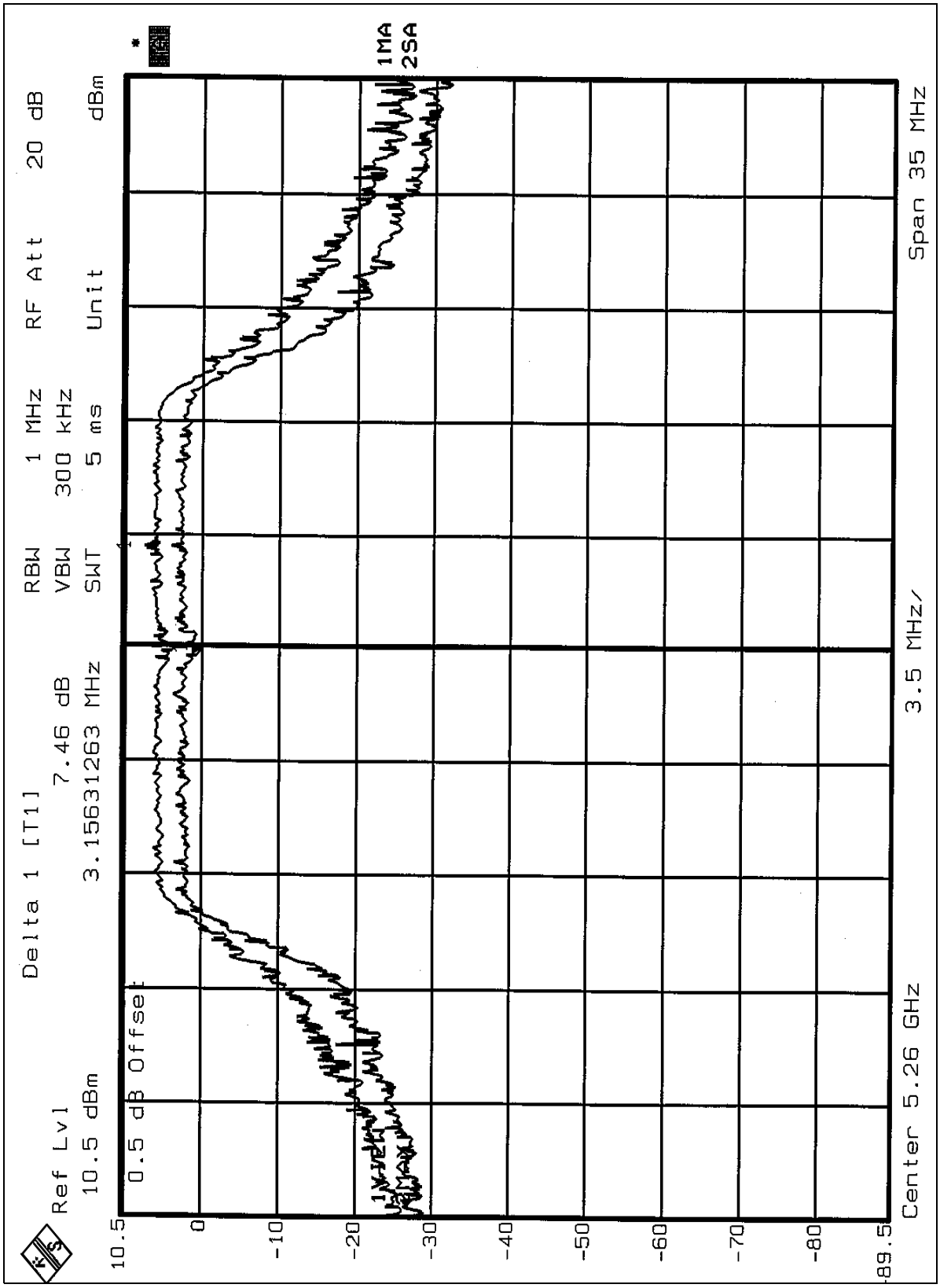
CH1


Ref Lvl
10.5 dBm
0.5 dB Offset
Delta 1 [T1]
3.15631263 MHz
7.20 dB
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1MA
2SA
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5
Center 5.18 GHz
3.5 MHz/
Span 35 MHz

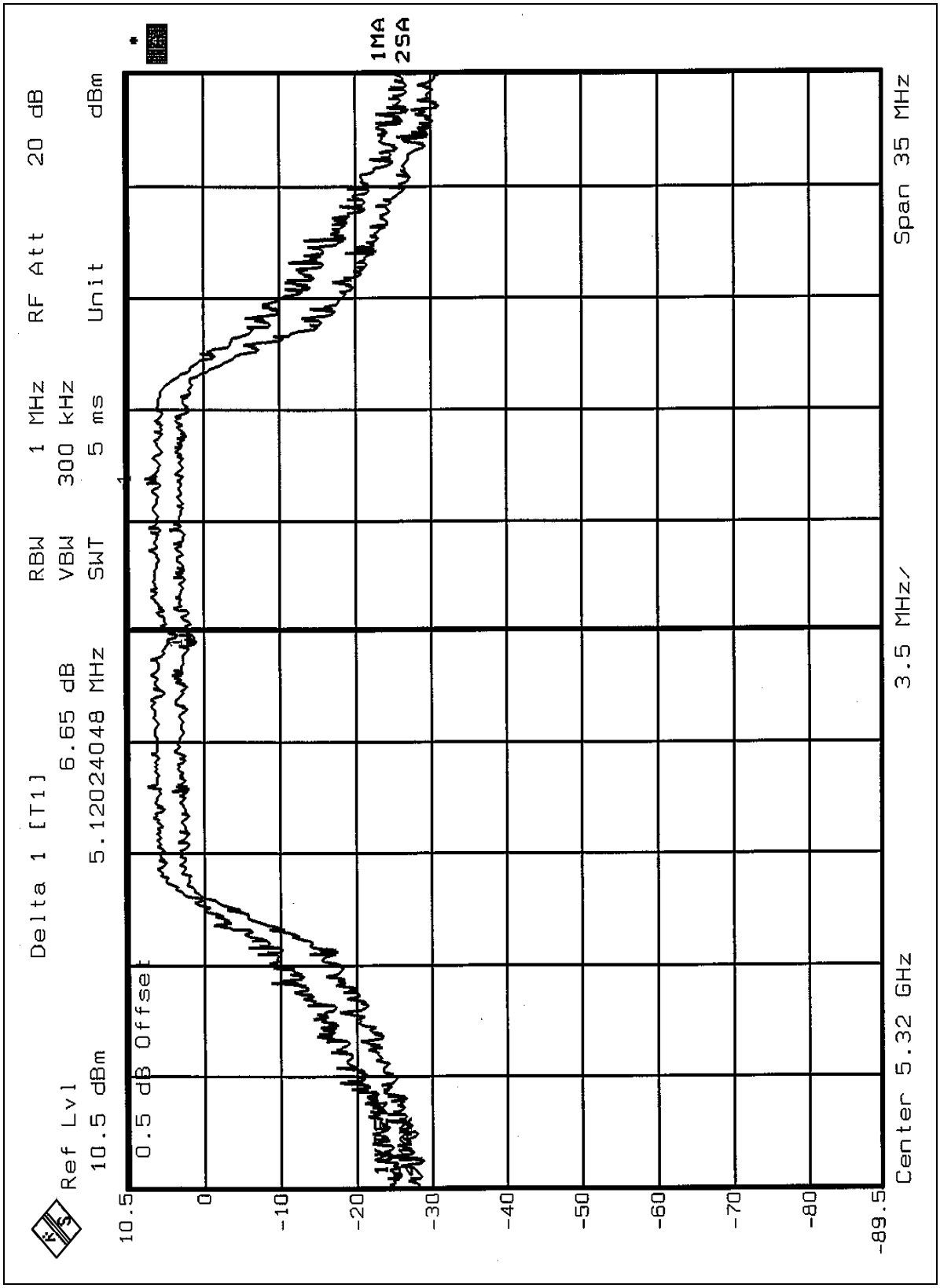
CH4


Ref Lvl
10.5 dBm
0.5 dB Offset
Delta 1 [T1]
6.56 dB
3.08617234 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1MA
2SA
Center 5.24 GHz
3.5 MHz/
Span 35 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

CH5


Ref Lvl
10.5 dBm
0.5 dB Offset
Delta 1 [T1]
7.46 dB
3.15631263 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1MA
2SA
Center 5.26 GHz
3.5 MHz/
Span 35 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

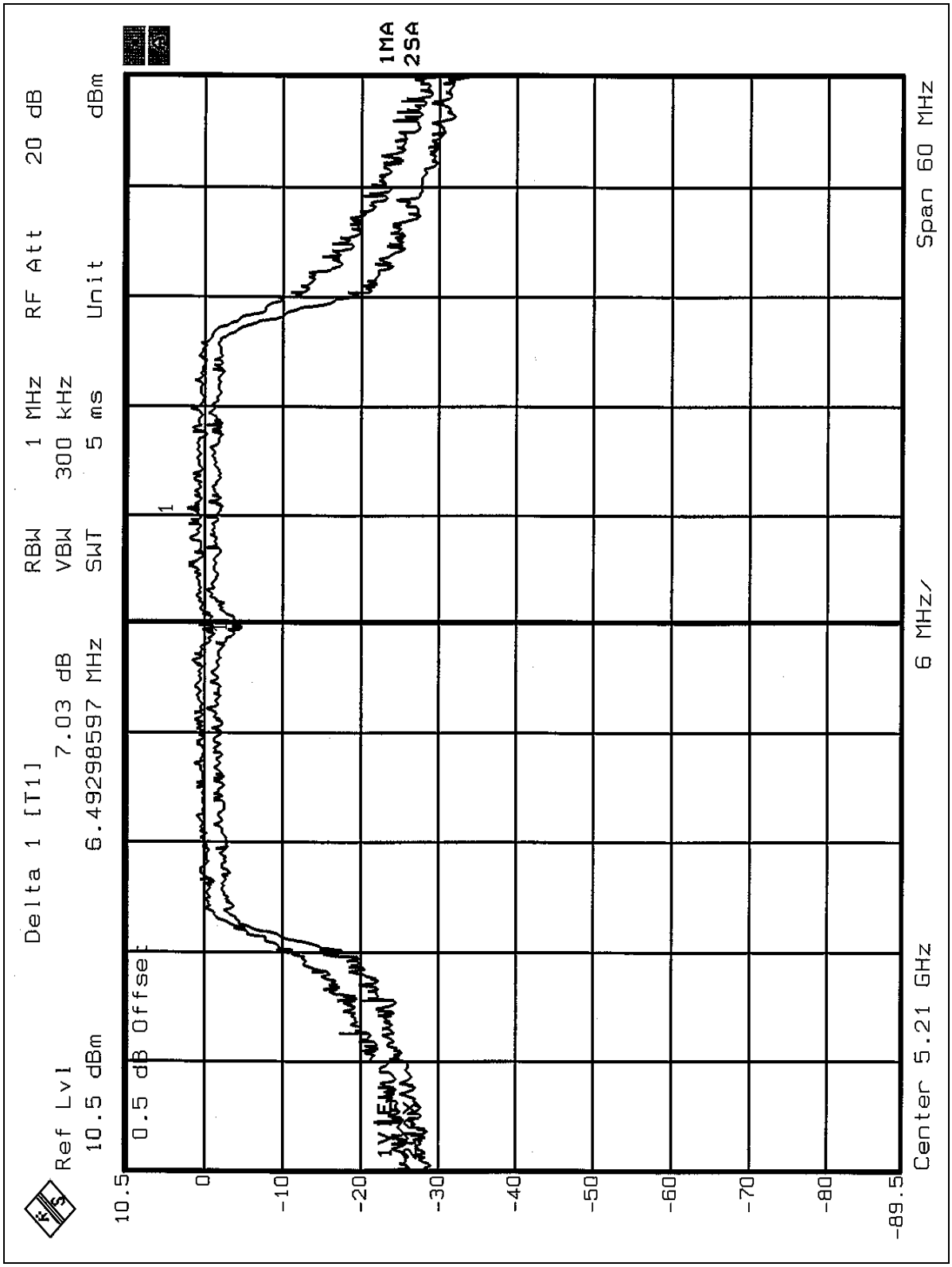
CH8


Ref Lvl
10.5 dBm
0.5 dB Offset
Delta 1 [T1]
6.65 dB
5.12024048 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1MA
2SA
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5
Center 5.32 GHz
3.5 MHz/
Span 35 MHz

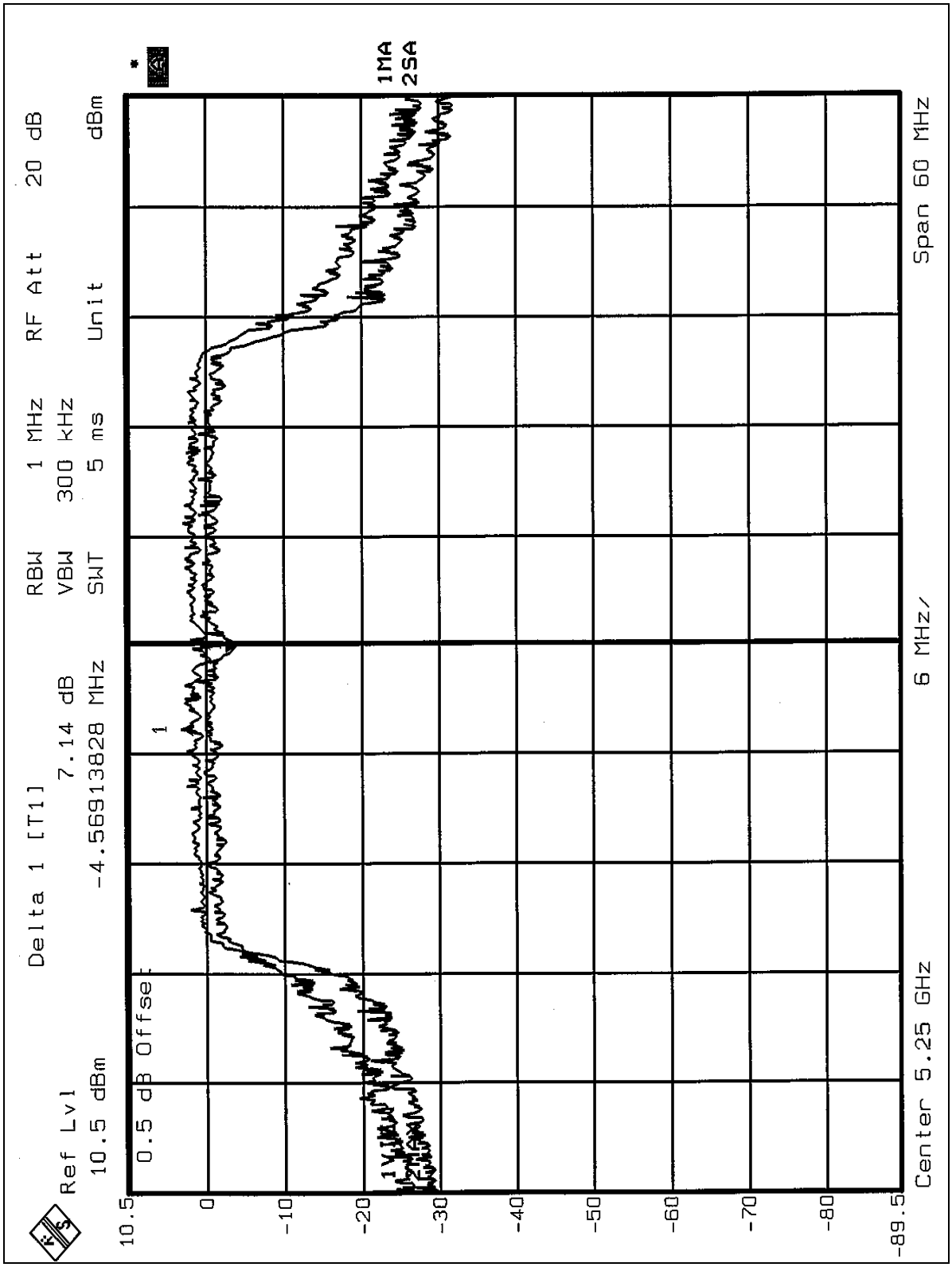
EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 991hPa	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5210	7.03	13	PASS
2	5250	7.14	13	PASS
3	5290	7.43	13	PASS

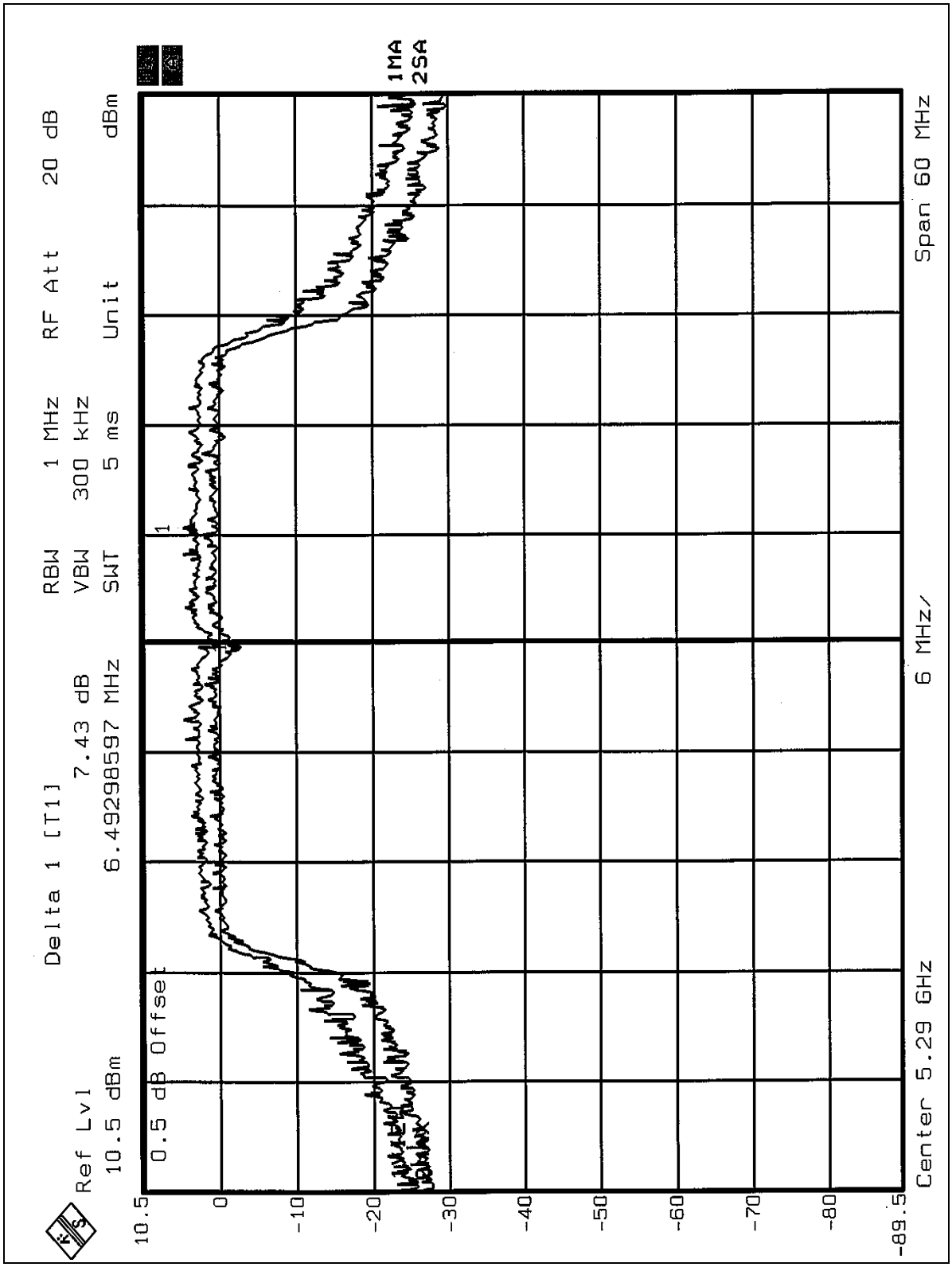
CH1


Ref Lvl
10.5 dBm
0.5 dB Offset
Delta 1 [T1]
6.49298597 MHz
7.03 dB
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1MA
2SA
Center 5.21 GHz
6 MHz/
Span 60 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

CH2


Ref Lvl
10.5 dBm
0.5 dB Offset
Delta 1 [T1]
-4.56913828 MHz
7.14 dB
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1MA
2SA
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5
Center 5.25 GHz
6 MHz/
Span 60 MHz

CH3


Ref Lvl
10.5 dBm
0.5 dB Offset
Delta 1 [T1]
7.43 dB
6.49298597 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm
1MA
2SA
Center 5.29 GHz
6 MHz/
Span 60 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

5.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

5.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

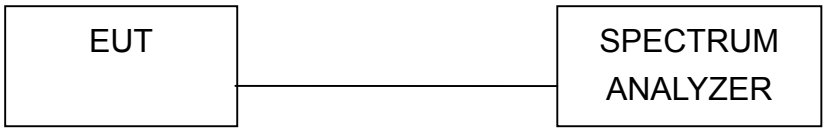
5.5.3 TEST PROCEDURES

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.

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITIONS

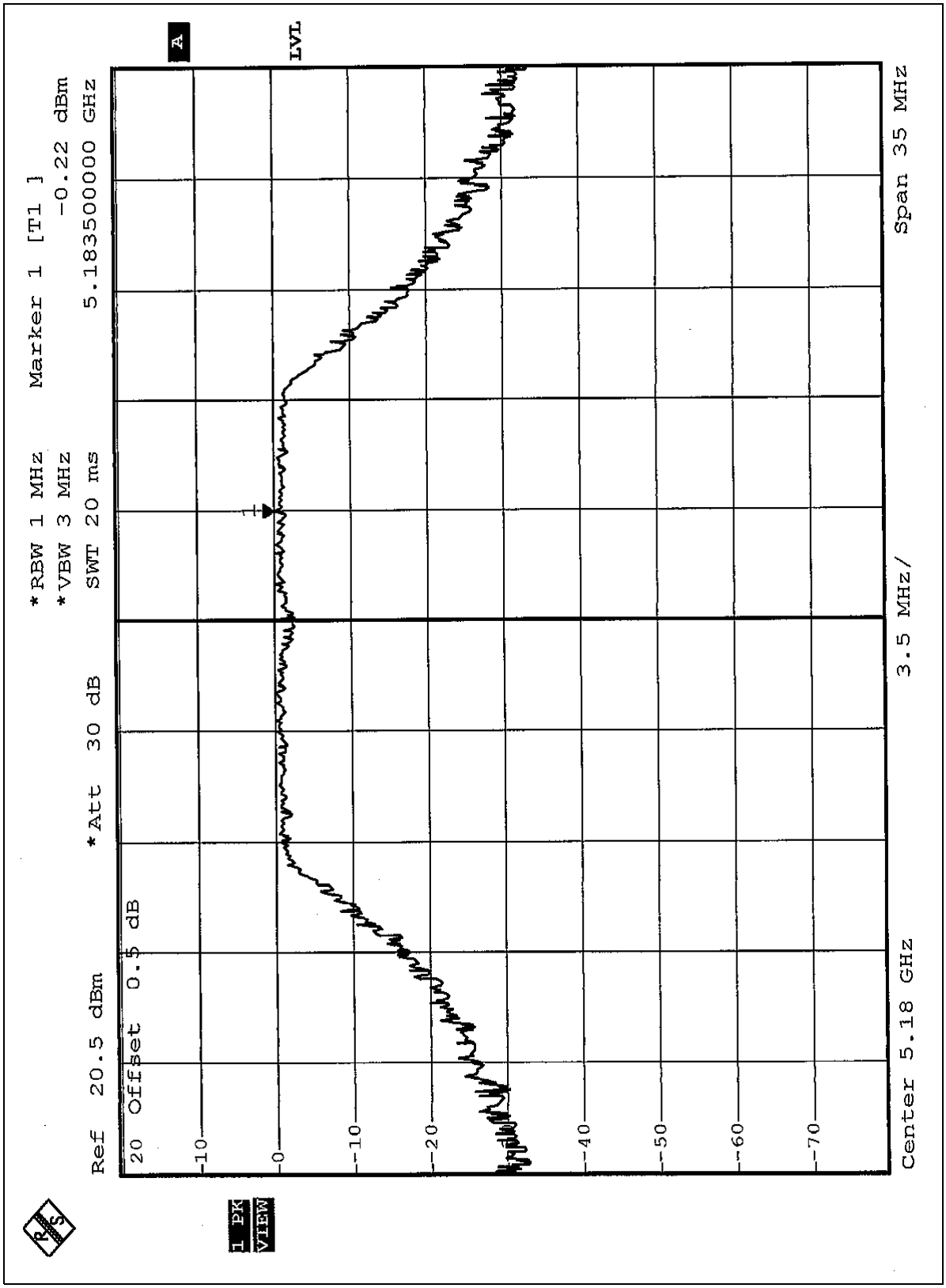
Same as 5.3.6

5.5.7 TEST RESULTS

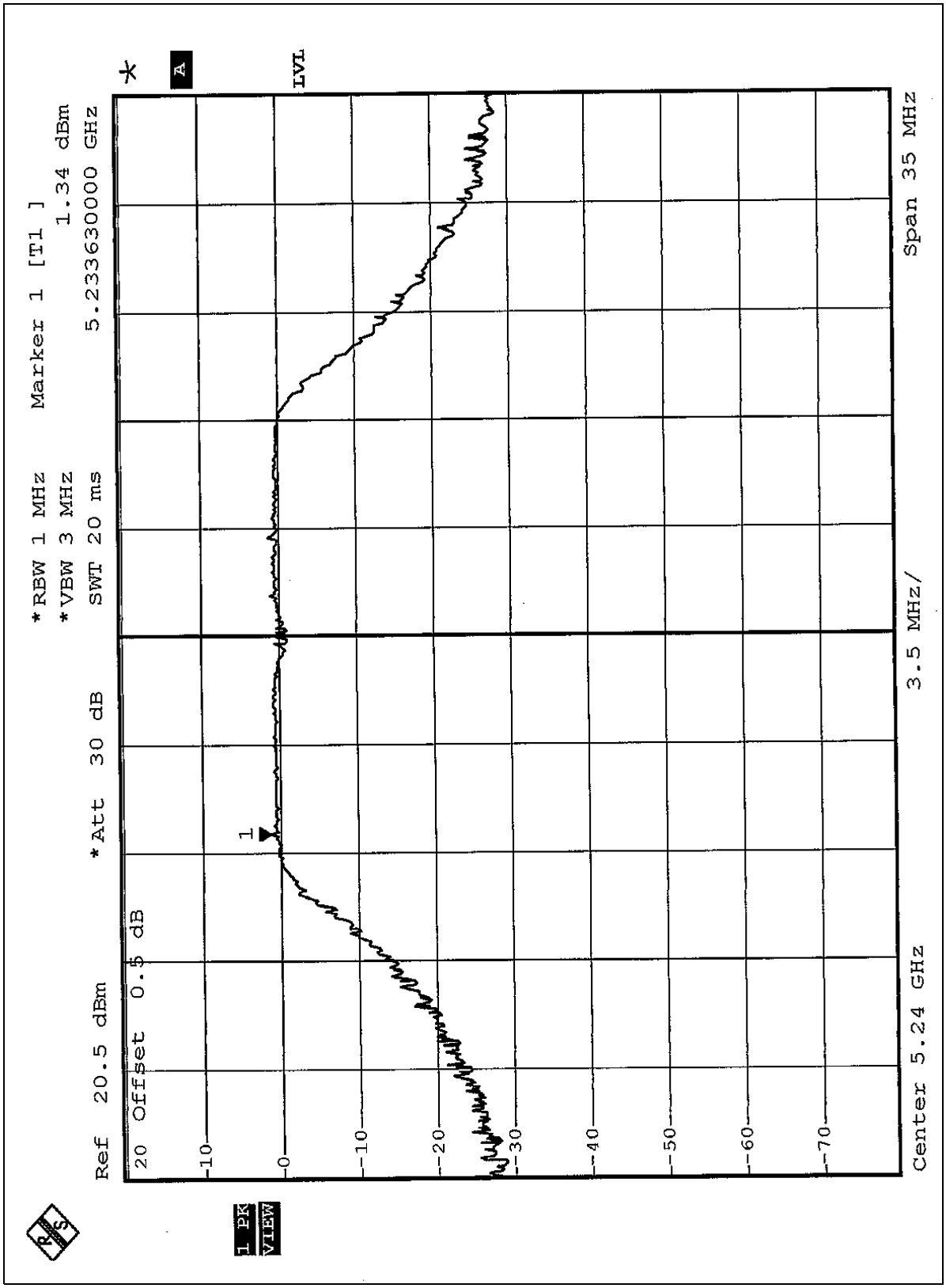
EUT	Wireless A/G Game Adapter	**MODEL**	WGA54AG
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	-0.22	4	PASS
4	5240	1.34	4	PASS
5	5260	2.17	11	PASS
8	5320	3.24	11	PASS

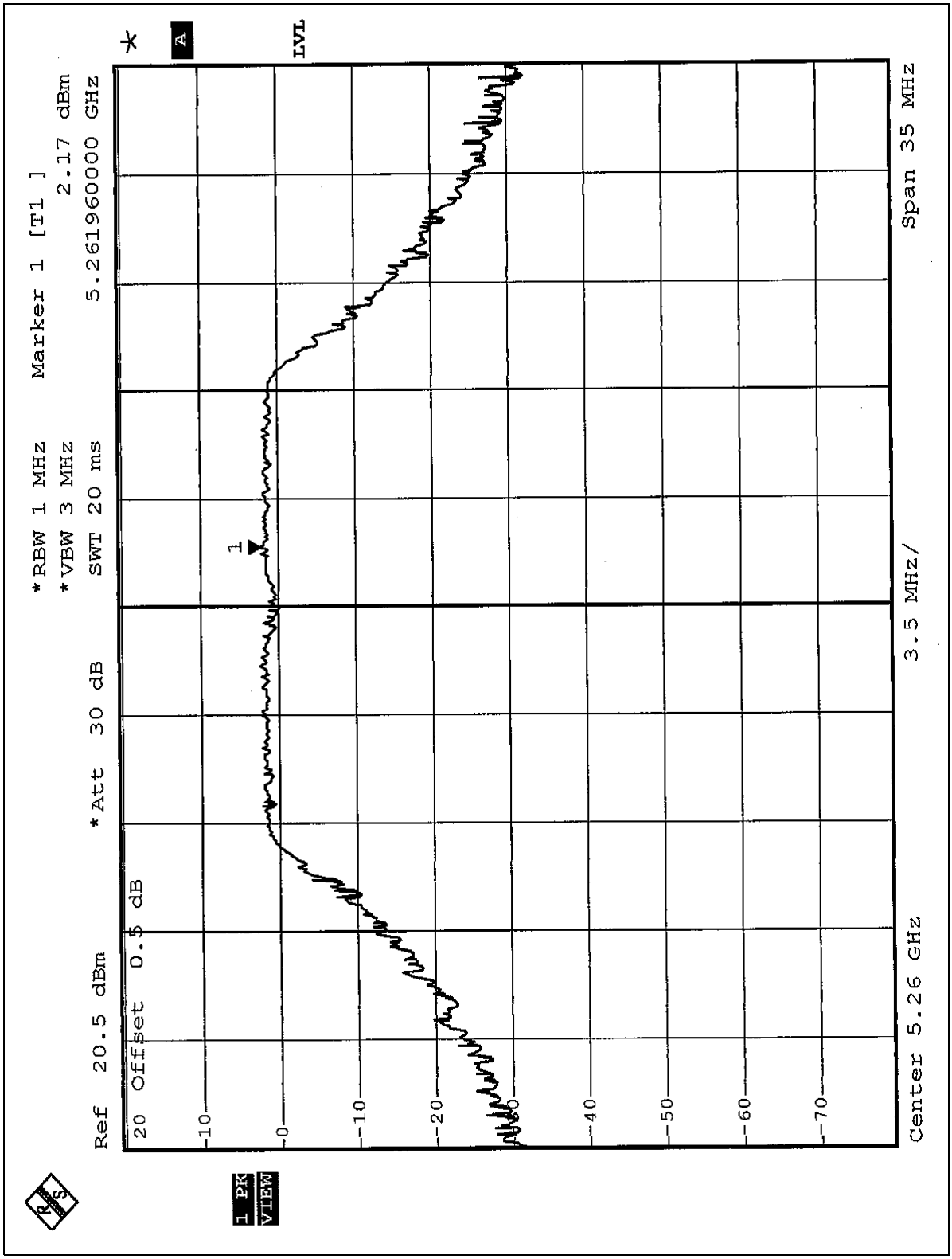
CH1


Ref 20.5 dBm
Offset 0.5 dB
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-0.22 dBm
5.183500000 GHz
A
LVL
1 PK
VIEW
Center 5.18 GHz
3.5 MHz/
Span 35 MHz
20
10
0
-10
-20
-40
-50
-60
-70

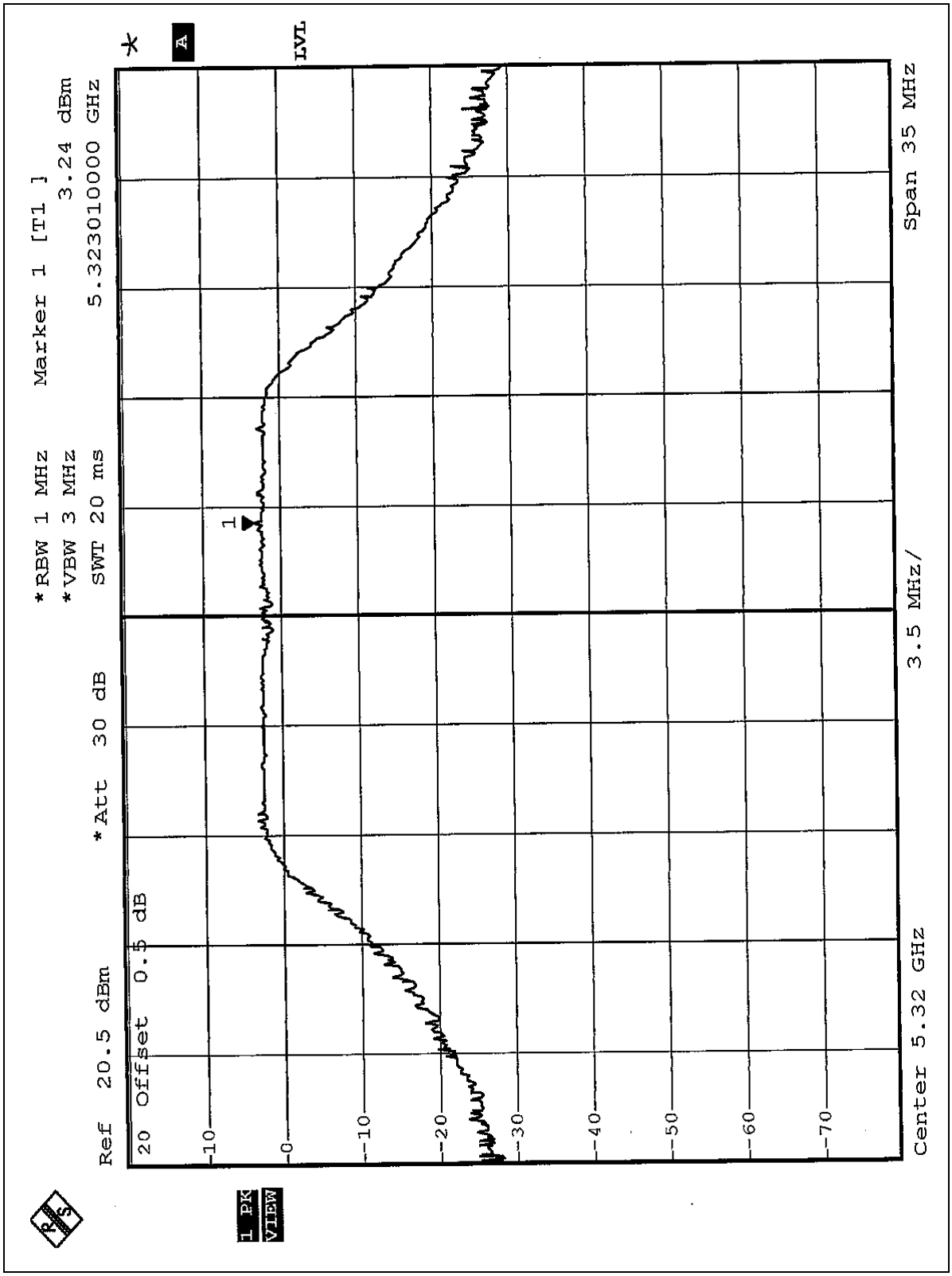
CH4


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
1.34 dBm
5.23363000 GHz
1 PK
VIEW
A
LVL
Center 5.24 GHz
3.5 MHz/
Span 35 MHz

CH5


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
2.17 dBm
5.261960000 GHz
1 PK
VIEW
A
LVL
Center 5.26 GHz
3.5 MHz/
Span 35 MHz

CH8


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
3.24 dBm
5.323010000 GHz
1 PK
VIEW
A
LVL
Center 5.32 GHz
3.5 MHz/
Span 35 MHz