FCC TEST REPORT

REPORT NO.: RF920213R01A
MODEL NO.: GL2554MP-0A
RECEIVED: Mar. 14, 2003
TESTED: Feb. 18 ~ Mar. 4, 2003

APPLICANT: GLOBAL SUN Technology, Inc.

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ISSUED BY: Advance Data Technology Corporation

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0528
ILAC MRA

Lab Code: 200102-0

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1. CERTIFICATION

PRODUCT : 5.0/2.4GHz Wireless Network Mini PCI

BRAND NAME : GLOBAL SUN

MODEL NO. : GL2554MP-0A

APPLICANT : GLOBAL SUN Technology, Inc.

STANDARDS : 47 CFR Part 15, Subpart C (Section 15.247), Subpart E (Section 15.407), ANSI C63.4-1992

We, **Advance Data Technology Corporation**, hereby certify that one sample of the designation has been tested in our facility from Feb. 18 ~ Mar. 4, 2003. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

CHECKED BY: Rennie Wang, **DATE:** March 21, 2003

Rennie Wang

APPROVED BY: for, **DATE:** March 21, 2003

Dr. Alan Lane
Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	**Test Type and Limit**	**Result**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is –14.57dBuV at 0.17MHz
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 –1.3dBuV at 6336.00MHz
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

APPLIED STANDARD: 47 CFR Part 15, Subpart E			
Standard Section	**Test Type**	**Result**	**REMARK**
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is –16.49dBuV at 0.17MHz
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 –1.8dBuV at 5825.00MHz
15.407(a/1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	5.0/2.4GHz Wireless Network Mini PCI
MODEL NO.	GL2554MP-0A
POWER SUPPLY	3.3VDC from host equipment
MODULATION	BPSK, QPSK, CCK, OFDM
TRANSFER RATE	up to 54Mbps
FREQUENCY RANGE	802.11b and draft 802.11g: 2412~2462MHz 802.11a: 5.15~5.35GHz and 5.725~5.825GHz
NUMBER OF CHANNEL	802.11b and draft 802.11g: 11 802.11a: 12
CHANNEL SPACING	802.11b and draft 802.11g: 5MHz 802.11a: 20MHz
OUTPUT POWER	802.11b and draft 802.11g: 16.81dBm 802.11a: 16.91dBm
DATA CABLE	NA
ANTENNA TYPE	Dipole antenna
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. This report is issued as a supplementary report to the original report with no. RF920213R01. And the model in this report is identical to the original application model.
2. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11g technology.
3. IEEE 802.11a, 802.11b, and Draft 802.11g Compliant.
4. There are two Dipole antennas provided to this EUT. One is for antenna gain with 1.5dBi and another is for antenna gain with 2dBi.
5. For more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

For 802.11b and draft 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.
2. Above 1GHz, the channel 1, 6, and 11 were tested individually.
3. Transfer rate of 11Mbps with CCK technique and 54Mbps with OFDM technique, the worst case, was chosen for final test.
4. For “Radiated Emission Measurement” test, the test result A is for antenna gain with 2dBi, and the test result B is for antenna gain with 1.5dBi.

For 802.11a: Twelve channels are provided to this EUT.

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

NOTE:

1. The EUT was transmitting at full power on the specified channel with a duty cycle of 99% (maximum allowed).
2. The EUT allows data rates of up to 54Mbps and was tested at 6Mbps data rate that produced the highest output power.
3. Channel 1, 4, 5, 8, 9 and 12 are the closest frequencies to the band edge, were chosen for final test.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a 5.0/2.4GHz Wireless Network Mini PCI. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 15, Subpart C. (15.247),
Subpart E (15.407). ANSI C63.4 : 1992

All tests 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	Dell	PP01L	TW-09C748-12800-19O-B220	FCC DoC Approved
2	PRINTER	EPSON	LQ-300+	DCGY017096	FCC DoC Approved
3	MODEM	ACEEX	1414	980020569	IFAXDM1414

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.2m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core
3	1.2 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.

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

4. TEST TYPES AND RESULTS (FOR PART 802.11b & draft 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
ROHDE & SCHWARZ Test Receiver	ESCS30	847793/022	Mar. 12, 2003
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	828075/003	July 23, 2003
ROHDE & SCHWARZ 200-A Four-line V-Network	ENV4200	830326/018	Oct. 30, 2003
* ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Nov. 29, 2003
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Nov. 29, 2003
EMCO-L.I.S.N. (for peripheral)	3825/2	90031627	July 23, 2003
Software	Cond-V2M1	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C05.01	July 19, 2003
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-305	Feb. 23, 2004
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-306	Feb. 23, 2004

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. "*": These equipment are used for conducted telecom port test only (if tested).
3. The test was performed in ADT Shielded Room No. 5.
4. The VCCI Site Registration No. is C-1093.

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.

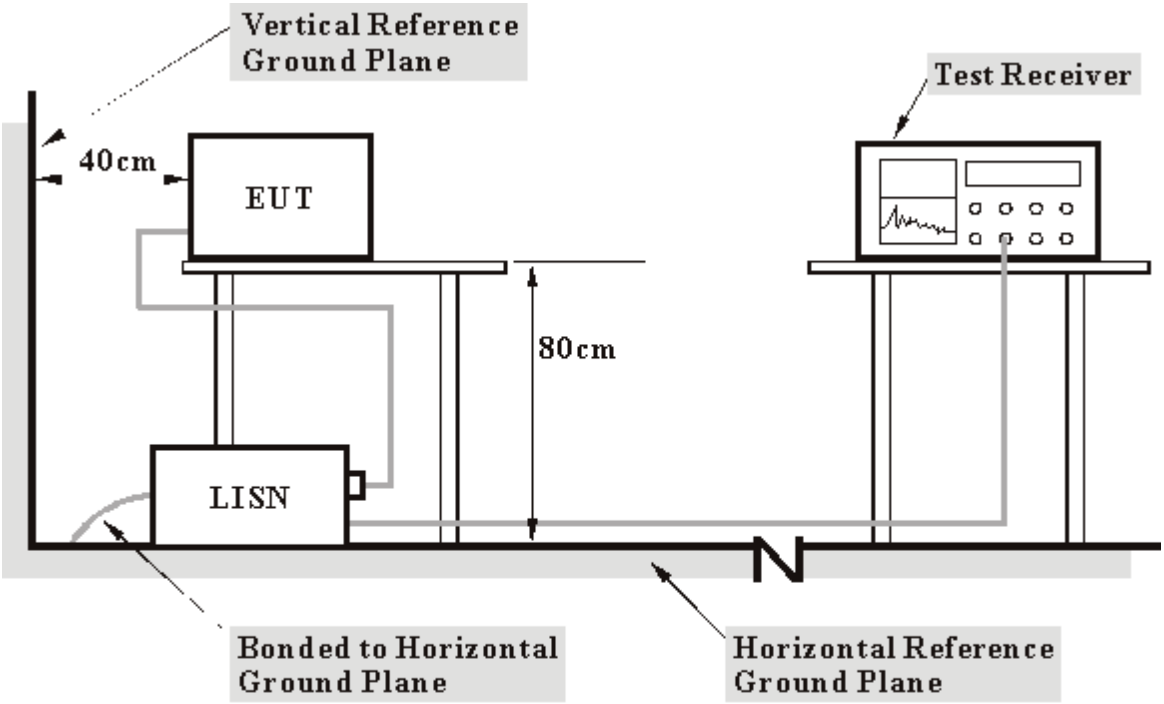
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

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

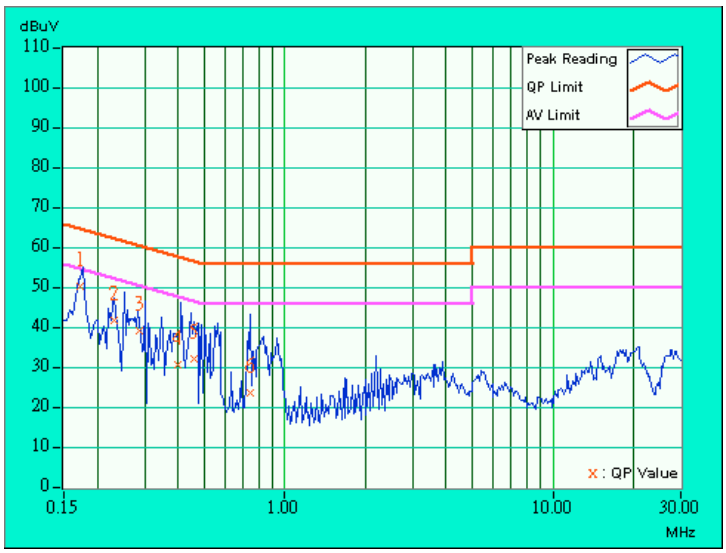
a. Plug the EUT into the computer system placed on a testing table.
b. The computer system ran a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency.
c. The computer system sent "H" messages to its screen.
d. The computer system sent “H” messages to modem.
e. The computer system sent "H" messages to printer, and the printer prints them on paper.

4.1.7 TEST RESULTS

EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
TEST MODE	CCK & OFDM	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	22deg. C, 68%RH, 1005hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Cody Chang		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.174	0.10	50.12	-	50.22	-	64.79	54.79	-14.57	-
2	0.232	0.10	41.82	-	41.92	-	62.38	52.38	-20.46	-
3	0.287	0.10	39.10	-	39.20	-	60.61	50.61	-21.41	-
4	0.400	0.10	30.60	-	30.70	-	57.85	47.85	-27.15	-
5	0.459	0.11	32.23	-	32.34	-	56.72	46.72	-24.38	-
6	0.744	0.16	23.37	-	23.53	-	56.00	46.00	-32.47	-

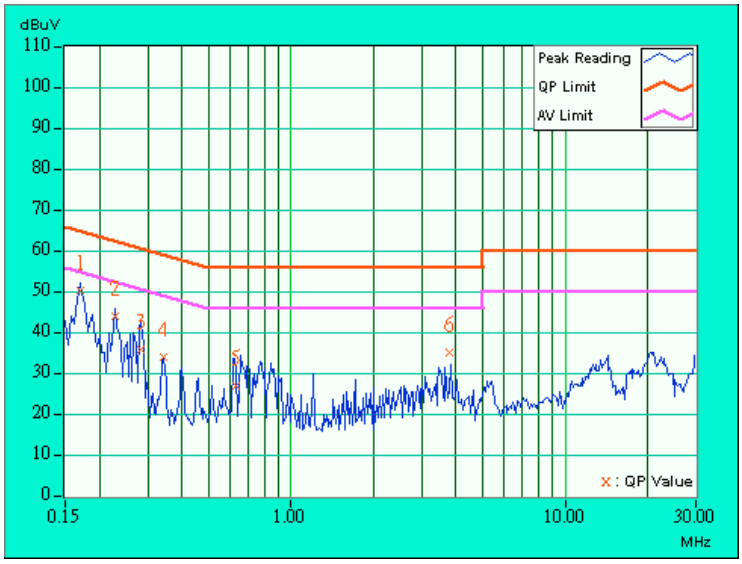
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
TEST MODE	CCK & OFDM	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	22deg. C, 68%RH, 1005hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Cody Chang		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	49.96	-	50.06	-	64.98	54.98	-14.92	-
2	0.228	0.10	43.92	-	44.02	-	62.52	52.52	-18.50	-
3	0.283	0.10	35.66	-	35.76	-	60.73	50.73	-24.97	-
4	0.341	0.10	33.77	-	33.87	-	59.17	49.17	-25.30	-
5	0.626	0.14	26.93	-	27.07	-	56.00	46.00	-28.93	-
6	3.770	0.29	35.03	-	35.32	-	56.00	46.00	-20.68	-

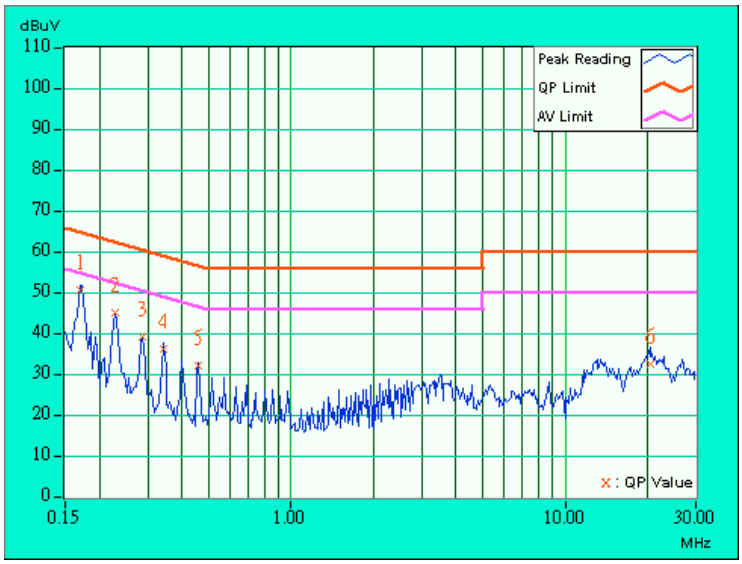
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 6	**6dB BANDWIDTH**	9 kHz
TEST MODE	CCK & OFDM	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	22deg. C, 68%RH, 1005hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Cody Chang		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	49.54	-	49.64	-	64.98	54.98	-15.34	-
2	0.228	0.10	43.98	-	44.08	-	62.52	52.52	-18.44	-
3	0.287	0.10	38.22	-	38.32	-	60.62	50.62	-22.30	-
4	0.341	0.10	35.18	-	35.28	-	59.17	49.17	-23.89	-
5	0.459	0.11	31.21	-	31.32	-	56.72	46.72	-25.40	-
6	20.375	1.11	31.47	-	32.58	-	60.00	50.00	-27.42	-

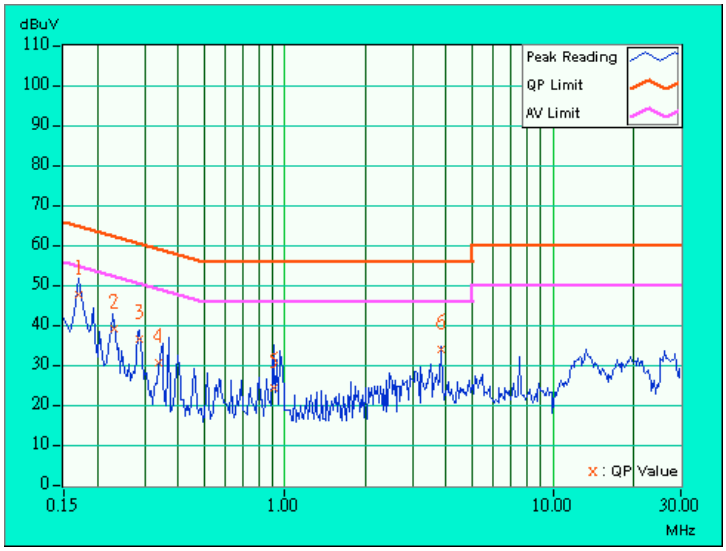
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 6	**6dB BANDWIDTH**	9 kHz
TEST MODE	CCK & OFDM	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	22deg. C, 68%RH, 1005hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Cody Chang		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	47.45	-	47.55	-	64.98	54.98	-17.43	-
2	0.232	0.10	38.99	-	39.09	-	62.38	52.38	-23.29	-
3	0.287	0.10	36.21	-	36.31	-	60.62	50.62	-24.31	-
4	0.340	0.10	30.53	-	30.63	-	59.20	49.20	-28.57	-
5	0.915	0.19	24.31	-	24.50	-	56.00	46.00	-31.50	-
6	3.836	0.29	33.94	-	34.23	-	56.00	46.00	-21.77	-

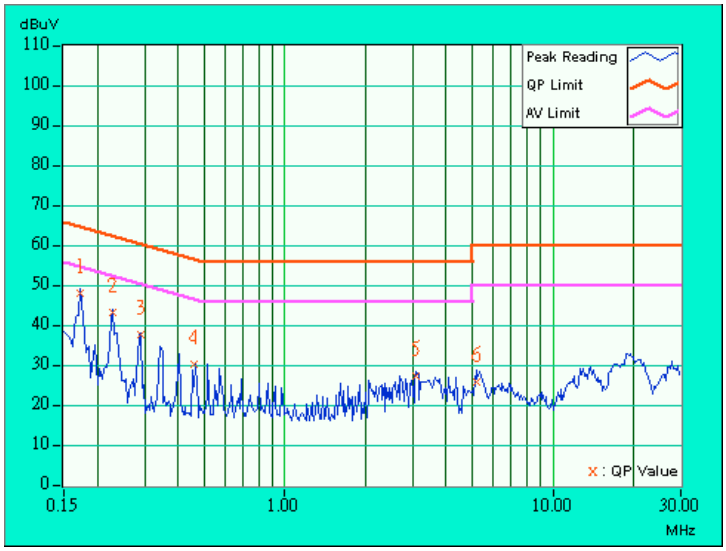
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
TEST MODE	CCK & OFDM	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	22deg. C, 68%RH, 1005hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Cody Chang		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.173	0.10	47.85	-	47.95	-	64.79	54.79	-16.84	-
2	0.228	0.10	42.78	-	42.88	-	62.52	52.52	-19.64	-
3	0.289	0.10	37.44	-	37.54	-	60.54	50.54	-23.00	-
4	0.460	0.11	30.09	-	30.20	-	56.69	46.69	-26.49	-
5	3.098	0.31	27.09	-	27.40	-	56.00	46.00	-28.60	-
6	5.168	0.44	25.43	-	25.87	-	60.00	50.00	-34.13	-

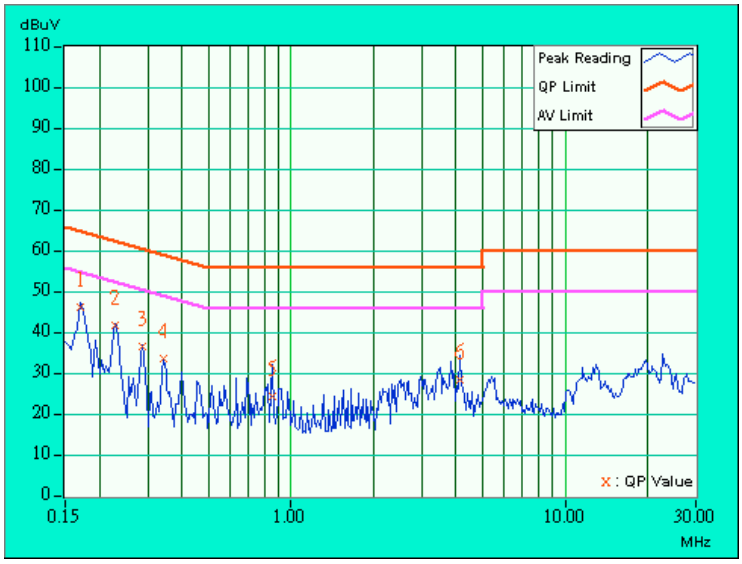
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
TEST MODE	CCK & OFDM	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	22deg. C, 68%RH, 1005hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Cody Chang		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	46.08	-	46.18	-	64.98	54.98	-18.80	-
2	0.228	0.10	41.50	-	41.60	-	62.52	52.52	-20.92	-
3	0.287	0.10	36.46	-	36.56	-	60.62	50.62	-24.06	-
4	0.341	0.10	33.37	-	33.47	-	59.17	49.17	-25.70	-
5	0.860	0.18	24.03	-	24.21	-	56.00	46.00	-31.79	-
6	4.125	0.30	28.08	-	28.38	-	56.00	46.00	-27.62	-

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.



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
* HP Spectrum Analyzer	8590L	3544A01176	May 13, 2003
* HP Preamplifier	8447D	2944A08485	Apr. 29, 2003
* HP Preamplifier	8449B	3008A01201	Dec. 01, 2003
* HP Preamplifier	8449B	3008A01292	Aug. 07, 2003
*Spectrum Analyzer	8593E	3926A04191	Mar. 28, 2003
*Test Receiver	ESI7	838496/016	Feb. 23, 2004
SCHAFFNER Tunable Dipole Antenna SCHWARZBECK Tunable Dipole Antenna	VHBA 9123 UHA 9105	459 977	Nov. 22, 2003
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 02, 2003
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	July 03, 2003
* EMCO Horn Antenna	3115	9312-4192	Apr. 09, 2003
* EMCO Turn Table	1060	1115	NA
* SHOSHIN Tower	AP-4701	A6Y005	NA
* Software	ADT_Radiated _V5.09	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Jul. 11. 2003
* TIMES RF cable	LMR-600	CABLE-ST5-01	Jul. 11. 2003

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. "*" = These equipment are used for the final measurement.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The test was performed in ADT Open Site No. 5.
5. The VCCI Site Registration No. is R-1039.
6. The VCCI Site Registration No. is R-1626.

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 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

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

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

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

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

f. If the emission level of the EUT in peak mode was 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.

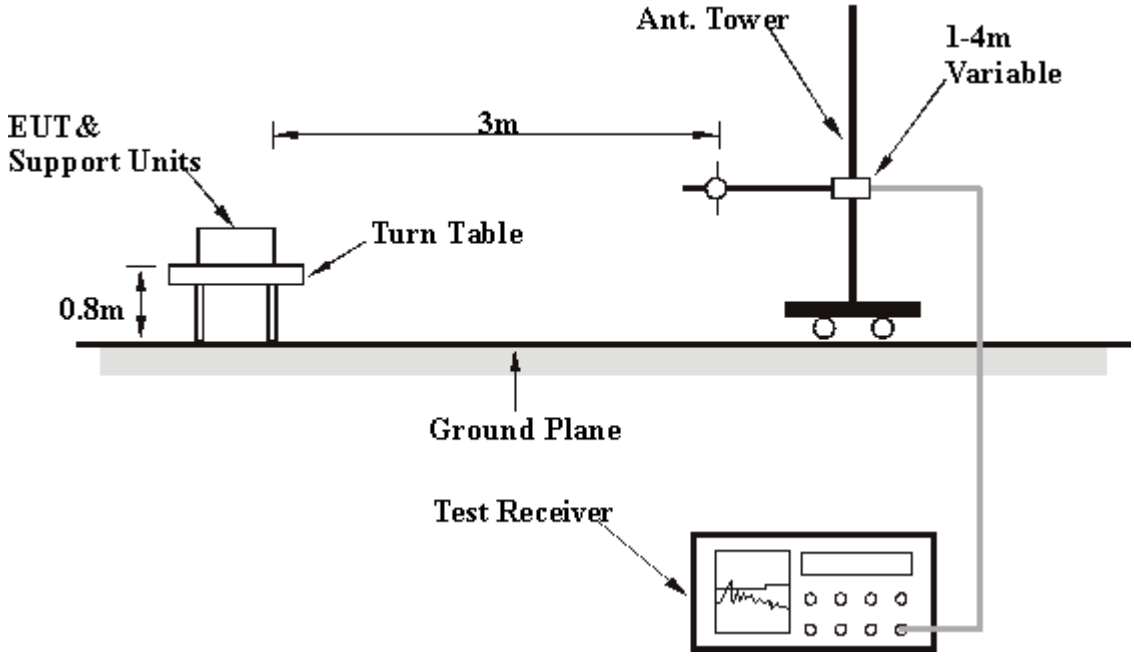
NOTE:

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 300 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 (A)

EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 11	**FREQUENCY RANGE**	Below 1000 MHz
TEST MODE	CCK & OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	160.02	29.3 QP	43.50	-14.20	1.59 H	248	18.50	10.80
2	256.00	36.3 QP	46.00	-9.70	1.15 H	180	19.90	16.40
3	288.02	37.1 QP	46.00	-8.90	1.42 H	165	20.50	16.60
4	320.01	34.2 QP	46.00	-11.80	1.12 H	4	17.00	17.20
5	352.01	39.3 QP	46.00	-6.70	1.30 H	215	21.50	17.70
6	384.01	28.2 QP	46.00	-17.80	1.24 H	116	9.60	18.70
7	479.99	28.9 QP	46.00	-17.10	1.04 H	32	8.30	20.60
8	511.99	27.9 QP	46.00	-18.10	1.24 H	174	6.80	21.20
9	543.98	28.8 QP	46.00	-17.20	1.18 H	271	7.80	21.10
10	640.00	29.2 QP	46.00	-16.80	1.04 H	0	6.40	22.80
11	704.01	29.8 QP	46.00	-16.20	1.28 H	3	6.70	23.10
12	735.99	35.4 QP	46.00	-10.60	1.43 H	208	11.50	23.80
13	799.99	32.5 QP	46.00	-13.50	1.47 H	358	7.60	24.90

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	128.00	30.0 QP	43.50	-13.50	1.24 V	55	17.00	13.00
2	480.00	29.4 QP	46.00	-16.60	1.36 V	77	8.80	20.60
3	576.00	29.9 QP	46.00	-16.10	1.27 V	154	8.00	21.90
4	608.00	32.0 QP	46.00	-14.00	1.27 V	65	9.30	22.70
5	640.00	31.5 QP	46.00	-14.50	1.17 V	358	8.80	22.80
6	703.99	31.9 QP	46.00	-14.10	1.31 V	339	8.90	23.10
7	736.00	31.9 QP	46.00	-14.10	1.50 V	99	8.10	23.80
8	799.99	31.0 QP	46.00	-15.00	1.03 V	4	6.10	24.90

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 1	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	CCK	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2412.00	91.0 PK			1.27 H	335	59.30	31.80
1	*2412.00	84.3 AV			1.27 H	335	52.50	31.80
2	3168.00	43.3 PK	74.00	-30.70	1.05 H	47	9.40	33.90
3	4824.00	55.9 PK	74.00	-18.10	1.00 H	117	17.60	38.30
3	4824.00	42.1 AV	54.00	-11.90	1.00 H	117	3.80	33.90
4	6336.00	50.6 PK	71.00	-20.40	1.42 H	33	9.60	41.00
4	6336.00	39.1 AV	64.30	-25.20	1.42 H	33	-1.90	38.30
5	7236.00	53.0 PK	74.00	-21.00	1.15 H	154	8.90	44.10
5	7236.00	40.0 AV	54.00	-14.00	1.15 H	154	-4.10	41.00

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	*2412.00	100.9 PK			1.16 V	254	69.20	31.80
1	*2412.00	92.2 AV			1.16 V	254	60.50	31.80
2	3168.00	42.6 PK	74.00	-31.40	1.00 V	74	8.70	33.90
3	4824.00	56.5 PK	74.00	-17.50	1.55 V	19	18.20	38.30
3	4824.00	41.5 AV	54.00	-12.50	1.55 V	19	3.20	33.90
4	6336.00	54.1 PK	80.90	-20.80	1.42 V	33	13.10	41.00
4	6336.00	51.1 AV	72.20	-21.10	1.42 V	33	10.10	38.30
5	7235.00	52.9 PK	74.00	-21.10	1.31 V	8	8.80	44.10
5	7235.00	41.0 AV	54.00	-13.00	1.31 V	8	-3.10	41.00

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 6	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	CCK	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2437.00	93.2 PK			1.52 H	277	61.30	31.90
1	*2437.00	84.5 AV			1.52 H	277	52.60	31.90
2	3168.00	43.5 PK	74.00	-30.50	1.18 H	74	9.50	33.90
3	4874.00	56.9 PK	74.00	-17.10	1.13 H	24	18.20	38.60
3	4874.00	42.6 AV	54.00	-11.40	1.13 H	24	4.00	33.90
4	6336.00	53.0 PK	73.20	-20.20	1.07 H	11	12.00	41.00
4	6336.00	49.1 AV	64.50	-15.40	1.07 H	11	8.10	38.60
5	7311.00	52.4 PK	74.00	-21.60	1.25 H	38	8.40	44.00
5	7311.00	39.9 AV	54.00	-14.10	1.25 H	38	-4.10	41.00

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	*2437.00	99.2 PK			1.51 V	71	67.30	31.90
1	*2437.00	90.3 AV			1.51 V	71	58.40	31.90
2	3168.00	44.8 PK	74.00	-29.20	1.15 V	12	10.90	33.90
3	4874.00	59.8 PK	74.00	-14.20	1.18 V	74	21.20	38.60
3	4874.00	43.8 AV	54.00	-10.20	1.18 V	74	5.20	33.90
4	6336.00	53.1 PK	79.20	-26.10	1.03 V	63	12.10	41.00
4	6336.00	49.8 AV	70.30	-20.50	1.03 V	63	8.80	38.60
5	7311.00	52.9 PK	74.00	-21.10	1.08 V	55	8.90	44.00
5	7311.00	40.9 AV	54.00	-13.10	1.08 V	55	-3.10	41.00
6	9747.00	53.9 PK	74.00	-20.10	1.37 V	32	8.60	45.30
6	9747.00	42.9 AV	54.00	-11.10	1.37 V	32	-2.40	44.00

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 11	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	CCK	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2462.00	94.2 PK			1.32 H	275	62.20	32.10
1	*2462.00	86.5 AV			1.32 H	275	54.50	32.10
2	3168.00	43.6 PK	74.00	-30.40	1.25 H	81	9.70	33.90
3	4924.00	59.8 PK	74.00	-14.20	1.24 H	72	20.90	38.80
3	4924.00	43.6 AV	54.00	-10.40	1.24 H	72	4.70	33.90
4	6336.00	52.1 PK	74.20	-22.10	1.05 H	78	11.10	41.00
4	6336.00	48.8 AV	66.50	-17.70	1.05 H	78	7.80	38.80
5	7386.00	53.8 PK	74.00	-20.20	1.51 H	45	9.50	44.40
5	7386.00	43.0 AV	54.00	-11.00	1.51 H	45	-1.30	41.00

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	*2462.00	98.2 PK			1.53 V	81	66.20	32.10
1	*2462.00	92.0 AV			1.53 V	81	60.00	32.10
2	3168.00	42.5 PK	74.00	-31.50	1.05 V	97	8.60	33.90
3	4924.00	63.2 PK	74.00	-10.80	1.00 V	214	24.40	38.80
3	4924.00	48.2 AV	54.00	-5.80	1.00 V	214	9.30	33.90
4	6336.00	53.6 PK	78.20	-24.60	1.42 V	11	12.60	41.00
4	6336.00	50.1 AV	72.00	-21.90	1.42 V	11	9.10	38.80
5	7386.00	53.9 PK	74.00	-20.10	1.46 V	24	9.60	44.40
5	7386.00	44.4 AV	54.00	-9.60	1.46 V	24	0.10	41.00

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 1	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2412.00	86.9 PK			1.00 H	282	55.10	31.80
1	*2412.00	76.4 AV			1.00 H	282	44.60	31.80
2	3168.00	44.2 PK	74.00	-29.80	1.18 H	63	10.30	33.90
3	4824.00	48.8 PK	74.00	-25.20	1.52 H	74	10.50	38.30
4	6336.00	52.5 PK	66.90	-14.40	1.71 H	40	11.50	41.00
4	6336.00	48.4 AV	56.40	-8.00	1.71 H	40	7.40	33.90
5	7310.00	52.7 PK	74.00	-21.30	1.32 H	4	8.70	44.00
5	7310.00	43.1 AV	54.00	-10.90	1.32 H	4	-0.90	38.30

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	*2412.00	93.1 PK			1.13 V	328	61.40	31.80
1	*2412.00	85.0 AV			1.13 V	328	53.30	31.80
2	3168.00	43.2 PK	74.00	-30.80	1.29 V	75	9.30	33.90
3	4824.00	49.3 PK	74.00	-24.70	1.15 V	324	11.00	38.30
4	6336.00	57.1 PK	73.10	-16.00	1.35 V	226	16.10	41.00
4	6336.00	52.1 AV	65.00	-12.90	1.35 V	226	11.10	33.90
5	7236.00	54.5 PK	74.00	-19.50	1.38 V	74	10.40	44.10
5	7236.00	44.0 AV	54.00	-10.00	1.38 V	74	-0.10	38.30

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 6	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2437.00	87.7 PK			1.61 H	297	55.80	31.90
1	*2437.00	77.8 AV			1.61 H	297	45.90	31.90
2	3168.00	43.6 PK	74.00	-30.40	1.15 H	24	9.70	33.90
3	4874.00	48.6 PK	74.00	-25.40	1.28 H	36	10.00	38.60
4	6336.00	51.0 PK	67.70	-16.70	1.34 H	65	10.00	41.00
4	6336.00	47.5 AV	57.80	-10.30	1.34 H	65	6.50	33.90
5	7310.00	52.9 PK	74.00	-21.10	1.05 H	74	8.90	44.00
5	7310.00	43.2 AV	54.00	-10.80	1.05 H	74	-0.80	38.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	95.6 PK			1.05 V	323	63.70	31.90
1	*2437.00	86.4 AV			1.05 V	323	54.50	31.90
2	3168.00	45.8 PK	74.00	-28.20	1.05 V	47	11.90	33.90
3	4874.00	47.1 PK	74.00	-26.90	1.15 V	41	8.50	38.60
4	6336.00	51.4 PK	75.60	-24.20	1.53 V	88	10.40	41.00
4	6336.00	48.0 AV	66.40	-18.40	1.53 V	88	7.00	33.90
5	7311.00	51.9 PK	74.00	-22.10	1.07 V	78	7.90	44.00
5	7311.00	41.1 AV	54.00	-12.90	1.07 V	78	-2.90	38.60

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 11	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2463.00	83.3 PK			1.19 H	254	51.30	32.10
1	*2463.00	73.9 AV			1.19 H	254	41.90	32.10
2	3168.00	44.3 PK	74.00	-29.70	1.14 H	74	10.40	33.90
3	4924.00	49.9 PK	74.00	-24.10	1.45 H	35	11.00	38.80
4	6336.00	56.1 PK	74.00	-17.90	1.14 H	74	15.10	41.00
4	6336.00	52.7 AV	54.00	-1.30	1.14 H	74	11.70	33.90
5	7389.00	51.8 PK	74.00	-22.20	1.71 H	130	7.40	44.40
5	7389.00	41.1 AV	54.00	-12.90	1.71 H	130	-3.30	38.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2463.00	93.5 PK			1.33 V	311	61.50	32.10
1	*2463.00	85.5 AV			1.33 V	311	53.40	32.10
2	3168.00	41.6 PK	74.00	-32.40	1.05 V	74	7.70	33.90
3	4924.00	53.7 PK	74.00	-20.30	1.18 V	90	14.80	38.80
3	4924.00	40.1 AV	54.00	-13.90	1.18 V	90	1.20	33.90
4	6336.00	55.8 PK	74.00	-18.20	1.24 V	36	14.80	41.00
4	6336.00	52.1 AV	54.00	-1.90	1.24 V	36	11.10	38.80
5	7389.00	53.3 PK	74.00	-20.70	1.04 V	52	8.90	44.40
5	7389.00	41.3 AV	54.00	-12.70	1.04 V	52	-3.10	41.00

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

4.2.8 TEST RESULTS (B)

EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 11	**FREQUENCY RANGE**	Below 1000 MHz
TEST MODE	CCK & OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	160.00	30.3 QP	43.50	-13.20	1.35 H	345	19.40	10.80
2	224.00	37.7 QP	46.00	-8.30	1.11 H	15	24.50	13.20
3	256.00	40.6 QP	46.00	-5.40	1.34 H	4	24.30	16.40
4	288.00	42.8 QP	46.00	-3.20	1.14 H	162	26.20	16.60
5	320.01	38.5 QP	46.00	-7.50	1.09 H	5	21.40	17.20
6	352.01	40.5 QP	46.00	-5.50	1.32 H	300	22.80	17.70
7	384.01	31.9 QP	46.00	-14.10	1.02 H	1	13.20	18.70
8	416.01	31.4 QP	46.00	-14.60	1.22 H	306	12.10	19.30
9	575.98	35.3 QP	46.00	-10.70	1.63 H	2	13.40	21.90
10	735.98	38.0 QP	46.00	-8.00	1.36 H	4	14.10	23.80
11	799.98	34.0 QP	46.00	-12.00	1.21 H	3	9.10	24.90
12	959.98	30.5 QP	46.00	-15.50	1.05 H	206	5.60	24.90

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	160.00	27.2 QP	43.50	-16.30	1.05 V	46	16.40	10.80
2	256.00	30.3 QP	46.00	-15.70	1.32 V	308	13.90	16.40
3	288.00	34.7 QP	46.00	-11.30	1.83 V	10	18.00	16.60
4	320.00	31.5 QP	46.00	-14.50	1.29 V	0	14.30	17.20
5	384.00	27.3 QP	46.00	-18.70	1.09 V	191	8.70	18.70
6	480.00	27.4 QP	46.00	-18.60	1.27 V	16	6.80	20.60
7	576.00	37.2 QP	46.00	-8.80	1.21 V	3	15.30	21.90
8	608.00	33.1 QP	46.00	-12.90	1.04 V	119	10.40	22.70
9	640.00	33.9 QP	46.00	-12.10	1.71 V	105	11.10	22.80
10	736.00	35.2 QP	46.00	-10.80	1.31 V	354	11.40	23.80

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 1	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	CCK	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2412.00	102.0 PK			1.48 H	84	69.30	32.80
1	*2412.00	95.0 AV			1.48 H	84	62.30	32.80
2	3168.00	42.2 PK	74.00	-31.80	1.53 H	61	8.40	33.80
3	4824.00	54.9 PK	74.00	-19.10	1.45 H	104	17.90	36.90
3	4824.00	44.1 AV	54.00	-9.90	1.45 H	104	7.10	33.80
4	6336.00	58.1 PK	82.00	-23.90	1.77 H	91	19.00	39.10
4	6336.00	55.3 AV	75.00	-19.70	1.77 H	91	16.20	36.90
5	7236.00	53.3 PK	74.00	-20.70	1.35 H	38	11.90	41.40
5	7236.00	42.8 AV	54.00	-11.20	1.35 H	38	1.40	39.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2412.00	112.0 PK			1.00 V	86	79.30	32.80
1	*2412.00	103.0 AV			1.00 V	86	70.30	32.80
2	3168.00	46.2 PK	74.00	-27.80	1.15 V	65	12.40	33.80
3	4824.00	59.9 PK	74.00	-14.10	1.25 V	283	22.90	36.90
3	4824.00	46.0 AV	54.00	-8.00	1.25 V	283	9.10	33.80
4	6336.00	59.1 PK	92.00	-32.90	1.02 V	52	20.00	39.10
4	6336.00	56.5 AV	83.00	-26.50	1.02 V	52	17.40	36.90
5	7236.00	52.8 PK	74.00	-21.20	1.09 V	74	11.40	41.40
5	7236.00	41.3 AV	54.00	-12.70	1.09 V	74	-0.10	39.10

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 6	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	CCK	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2437.00	103.1 PK			1.21 H	320	70.30	32.80
1	*2437.00	95.8 AV			1.21 H	320	63.00	32.80
2	3168.00	45.4 PK	74.00	-28.60	1.36 H	17	11.60	33.80
3	4874.00	57.1 PK	74.00	-16.90	1.56 H	71	19.90	37.10
3	4874.00	44.5 AV	54.00	-9.50	1.56 H	71	7.30	33.80
4	6336.00	58.6 PK	83.10	-24.50	1.15 H	62	19.50	39.10
4	6336.00	55.5 AV	75.80	-20.30	1.15 H	62	16.40	37.10
5	7308.00	53.9 PK	74.00	-20.10	1.23 H	52	12.40	41.50
5	7308.00	44.8 AV	54.00	-9.20	1.23 H	52	3.30	39.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	111.7 PK			1.00 V	97	78.90	32.80
1	*2437.00	106.1 AV			1.00 V	97	73.30	32.80
2	3168.00	44.2 PK	74.00	-29.80	1.36 V	251	10.40	33.80
3	4874.00	64.1 PK	74.00	-9.90	1.27 V	298	26.90	37.10
3	4874.00	50.1 AV	54.00	-3.90	1.27 V	298	12.90	33.80
4	6336.00	58.3 PK	91.70	-33.40	1.02 V	76	19.20	39.10
4	6336.00	56.1 AV	86.10	-30.00	1.02 V	76	17.00	37.10
5	7311.00	54.9 PK	74.00	-19.10	1.15 V	81	13.40	41.50
5	7311.00	45.4 AV	54.00	-8.60	1.15 V	81	3.90	39.10

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 11	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	CCK	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2462.00	105.0 PK			1.01 H	72	72.10	32.90
1	*2462.00	95.9 AV			1.01 H	72	63.00	32.90
2	3168.00	44.2 PK	74.00	-29.80	1.75 H	81	10.40	33.80
3	4924.00	57.3 PK	74.00	-16.70	1.41 H	81	19.90	37.30
3	4924.00	43.3 AV	54.00	-10.70	1.41 H	81	5.90	33.80
4	6336.00	57.1 PK	85.00	-27.90	1.24 H	36	18.00	39.10
4	6336.00	55.1 AV	75.90	-20.80	1.24 H	36	16.00	37.30
5	7387.00	53.2 PK	74.00	-20.80	1.05 H	47	11.50	41.70
5	7387.00	43.5 AV	54.00	-10.50	1.05 H	47	1.80	39.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	110.2 PK			1.07 V	171	77.30	32.90
1	*2462.00	103.2 AV			1.07 V	171	70.30	32.90
2	3168.00	43.4 PK	74.00	-30.60	1.15 V	68	9.60	33.80
3	4924.00	60.5 PK	74.00	-13.50	1.46 V	52	23.20	37.30
3	4924.00	44.8 AV	54.00	-9.20	1.46 V	52	7.40	33.80
4	6336.00	57.1 PK	80.20	-23.10	1.39 V	84	18.00	39.10
4	6336.00	54.5 AV	73.20	-18.70	1.39 V	84	15.40	37.30
5	7386.00	54.0 PK	74.00	-20.00	1.25 V	74	12.30	41.70
5	7386.00	44.5 AV	54.00	-9.50	1.25 V	74	2.80	39.10

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 1	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2412.00	97.6 PK			1.21 H	270	64.80	32.80
1	*2412.00	87.4 AV			1.21 H	270	54.60	32.80
2	3168.00	43.1 PK	74.00	-30.90	1.25 H	74	9.30	33.80
3	4824.00	46.9 PK	74.00	-27.10	1.15 H	304	9.90	36.90
4	6336.00	58.2 PK	77.60	-19.40	1.51 H	34	19.10	39.10
4	6336.00	56.2 AV	67.40	-11.20	1.51 H	34	17.10	33.80
5	7235.00	50.3 PK	74.00	-23.70	1.58 H	48	8.80	41.40
5	7235.00	40.4 AV	54.00	-13.60	1.58 H	48	-1.10	36.90

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	*2412.00	104.6 PK			1.04 V	89	71.80	32.80
1	*2412.00	95.5 AV			1.04 V	89	62.70	32.80
2	3168.00	43.0 PK	74.00	-31.00	1.38 V	73	9.20	33.80
3	4824.00	48.4 PK	74.00	-25.60	1.51 V	34	11.40	36.90
4	6336.00	59.2 PK	84.60	-25.40	1.12 V	34	20.10	39.10
4	6336.00	56.2 AV	75.50	-19.30	1.12 V	34	17.10	33.80
5	7236.00	49.4 PK	74.00	-24.60	1.15 V	85	7.90	41.40

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 6	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2437.00	100.5 PK			1.02 H	74	67.70	32.80
1	*2437.00	91.6 AV			1.02 H	74	58.80	32.80
2	3168.00	44.2 PK	74.00	-29.80	1.32 H	56	10.40	33.80
3	4874.00	45.4 PK	74.00	-28.60	1.42 H	30	8.20	37.10
4	6336.00	59.3 PK	80.50	-21.20	1.11 H	38	20.20	39.10
4	6336.00	48.2 AV	71.60	-23.40	1.11 H	38	9.10	33.80
5	7312.00	49.7 PK	74.00	-24.30	1.10 H	35	8.10	41.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	103.3 PK			1.27 V	258	70.50	32.80
1	*2437.00	96.1 AV			1.27 V	258	63.30	32.80
2	3168.00	41.9 PK	74.00	-32.10	1.25 V	74	8.10	33.80
3	4874.00	45.3 PK	74.00	-28.70	1.42 V	82	8.20	37.10
4	6336.00	58.6 PK	83.30	-24.70	1.42 V	77	19.50	39.10
4	6336.00	55.9 AV	76.10	-20.20	1.42 V	77	16.80	33.80
5	7311.00	50.0 PK	74.00	-24.00	1.33 V	87	8.40	41.50
5	7311.00	-999.0 AV	54.00	-999.00	1.33 V	87	-999.00	37.10

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	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
MODE	Channel 11	**FREQUENCY RANGE**	Above 1000 MHz
TEST MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
TESTED BY	Gary Chang		

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	*2463.00	98.9 PK			1.52 H	142	66.10	32.90
1	*2463.00	90.2 AV			1.52 H	142	57.40	32.90
2	3168.00	43.1 PK	74.00	-30.90	1.55 H	72	9.30	33.80
3	4924.00	47.6 PK	74.00	-26.40	1.67 H	24	10.20	37.30
4	6336.00	57.2 PK	78.90	-21.70	1.12 H	35	18.10	39.10
4	6336.00	55.6 AV	70.20	-14.60	1.12 H	35	16.50	33.80
5	7386.00	49.7 PK	74.00	-24.30	1.15 H	64	8.10	41.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2463.00	102.4 PK			1.01 V	284	69.50	32.90
1	*2463.00	95.7 AV			1.01 V	284	62.80	32.90
2	3168.00	44.2 PK	74.00	-29.80	1.22 V	34	10.40	33.80
3	4924.00	51.9 PK	74.00	-22.10	1.50 V	36	14.60	37.30
3	4924.00	41.6 AV	54.00	-12.40	1.50 V	36	4.20	33.80
4	6336.00	58.2 PK	82.40	-24.20	1.04 V	76	19.10	39.10
4	6336.00	55.6 AV	75.70	-20.10	1.04 V	76	16.50	37.30
5	7386.00	50.2 PK	74.00	-23.80	1.24 V	74	8.60	41.70

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	FSEK30	100049	July 24, 2003

NOTE: The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.

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

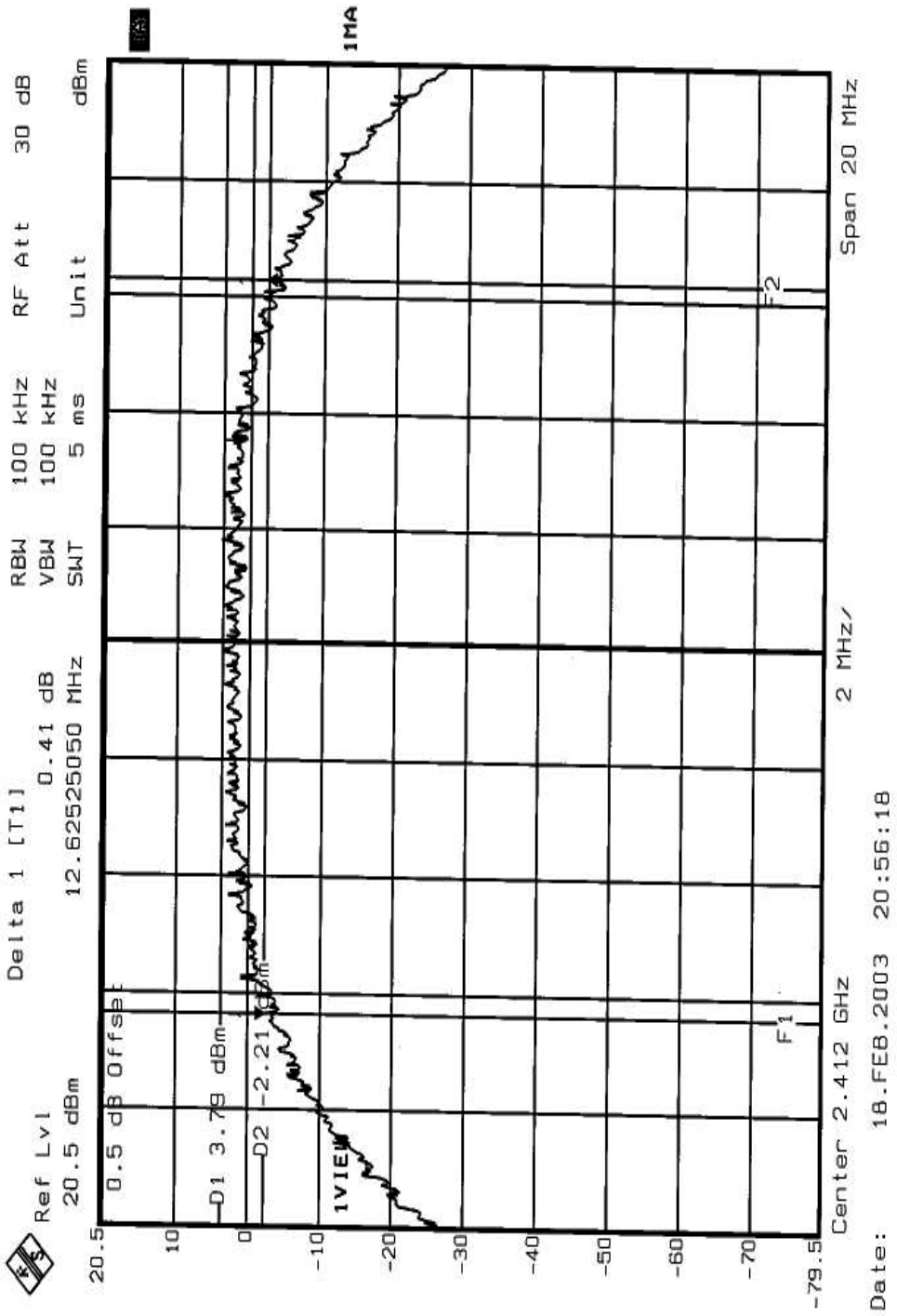
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

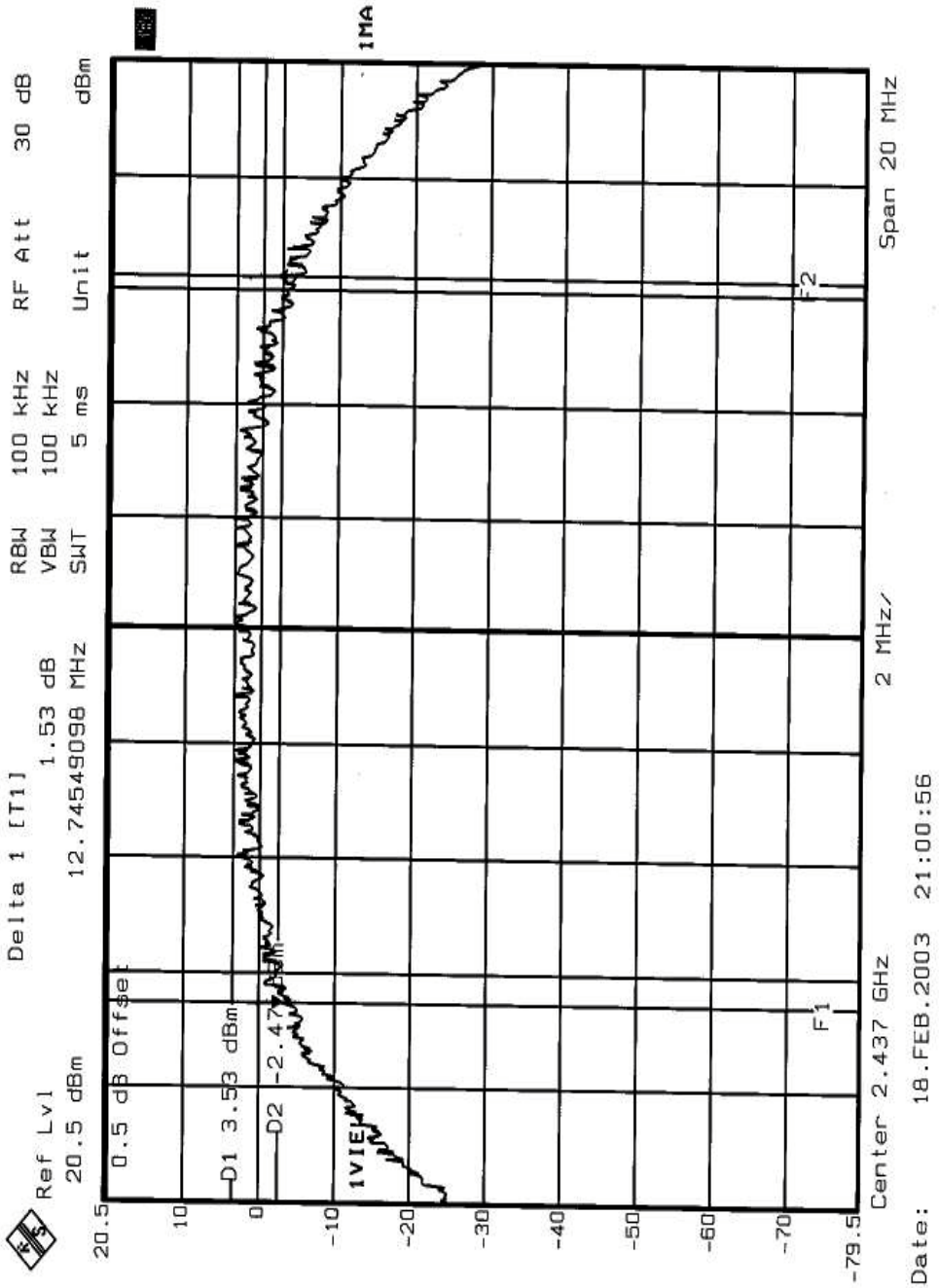
EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg. C, 65%RH, 1005hPa
TEST MODE	CCK	**TESTED BY**	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	12.63	0.5	PASS
6	2437	12.75	0.5	PASS
11	2462	12.38	0.5	PASS

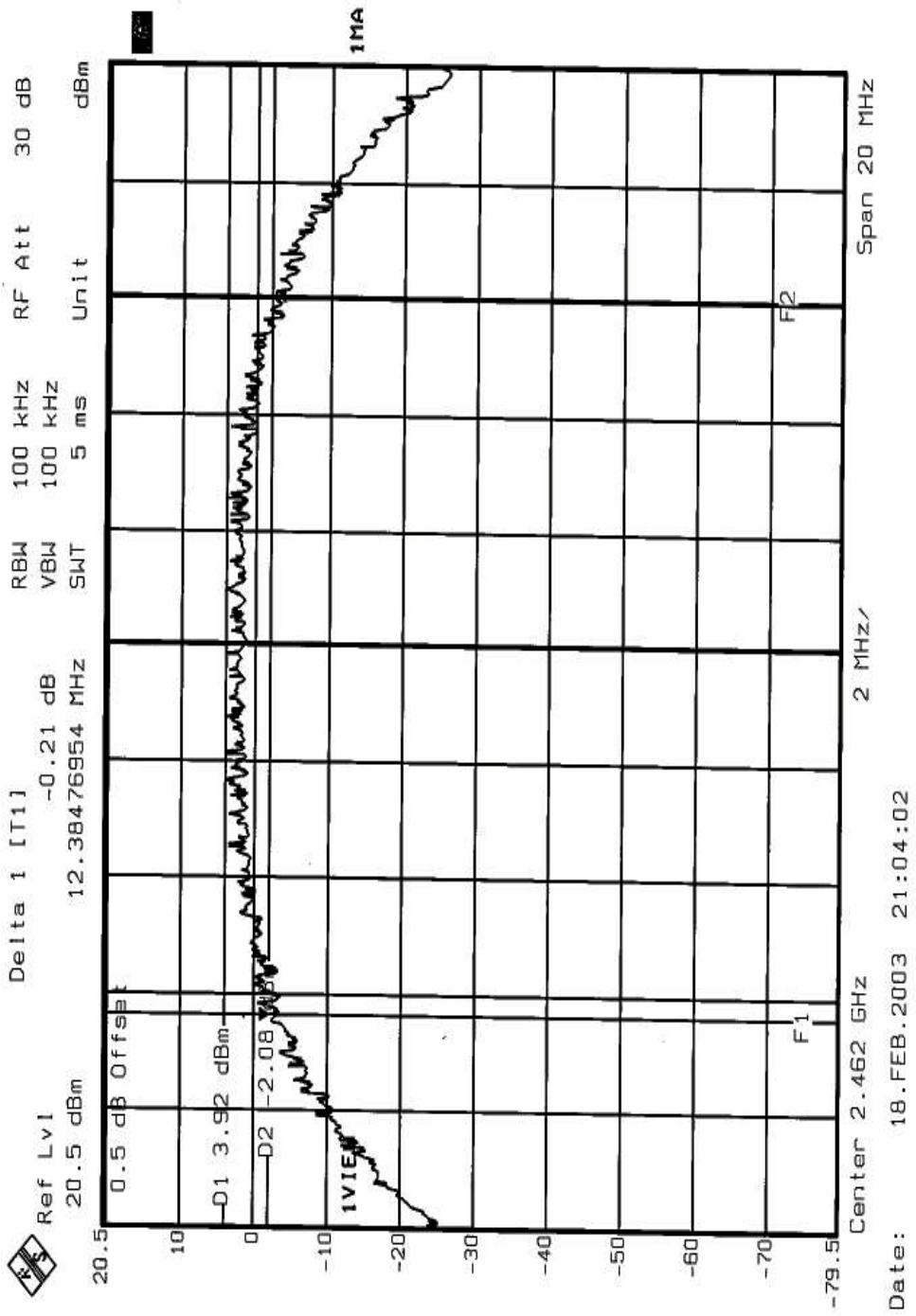
CH1


Ref Lvl
20.5 dBm
0.5 dB Offset
D1 3.79 dBm
D2 -2.21 dBm
Delta 1 [T1]
0.41 dB
12.6252050 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
F1
F2
Center 2.412 GHz
2 MHz/
Span 20 MHz
Date: 18.FEB.2003 20:56:18

CH6


Ref Lvl
20.5 dBm
0.5 dB Offset
Delta 1 [T1]
1.53 dB
12.74549098 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
D1 3.53 dBm
D2 -2.47 dBm
1VIEW
F1
F2
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.437 GHz
2 MHz/
Span 20 MHz
Date: 18.FEB.2003 21:00:56

CH11

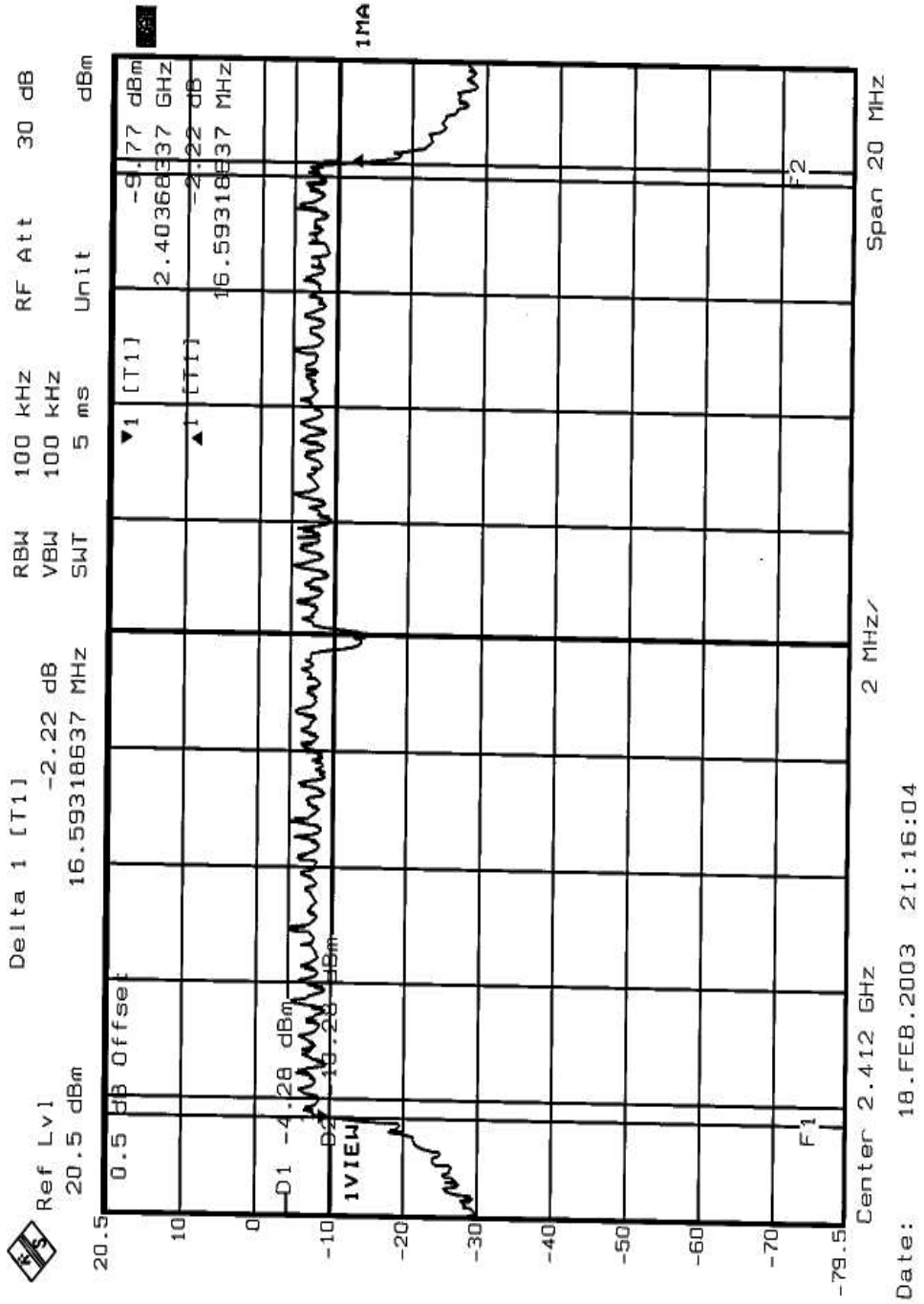

Ref Lvl
20.5 dBm
0.5 dB Offset
Delta 1 [T1]
-0.21 dB
12.38476954 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
D1 3.92 dBm
D2 -2.08 dBm
1MA
1VIEW
F1
F2
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.462 GHz
2 MHz/
Span 20 MHz
Date: 18.FEB.2003 21:04:02

4.3.8 TEST RESULTS

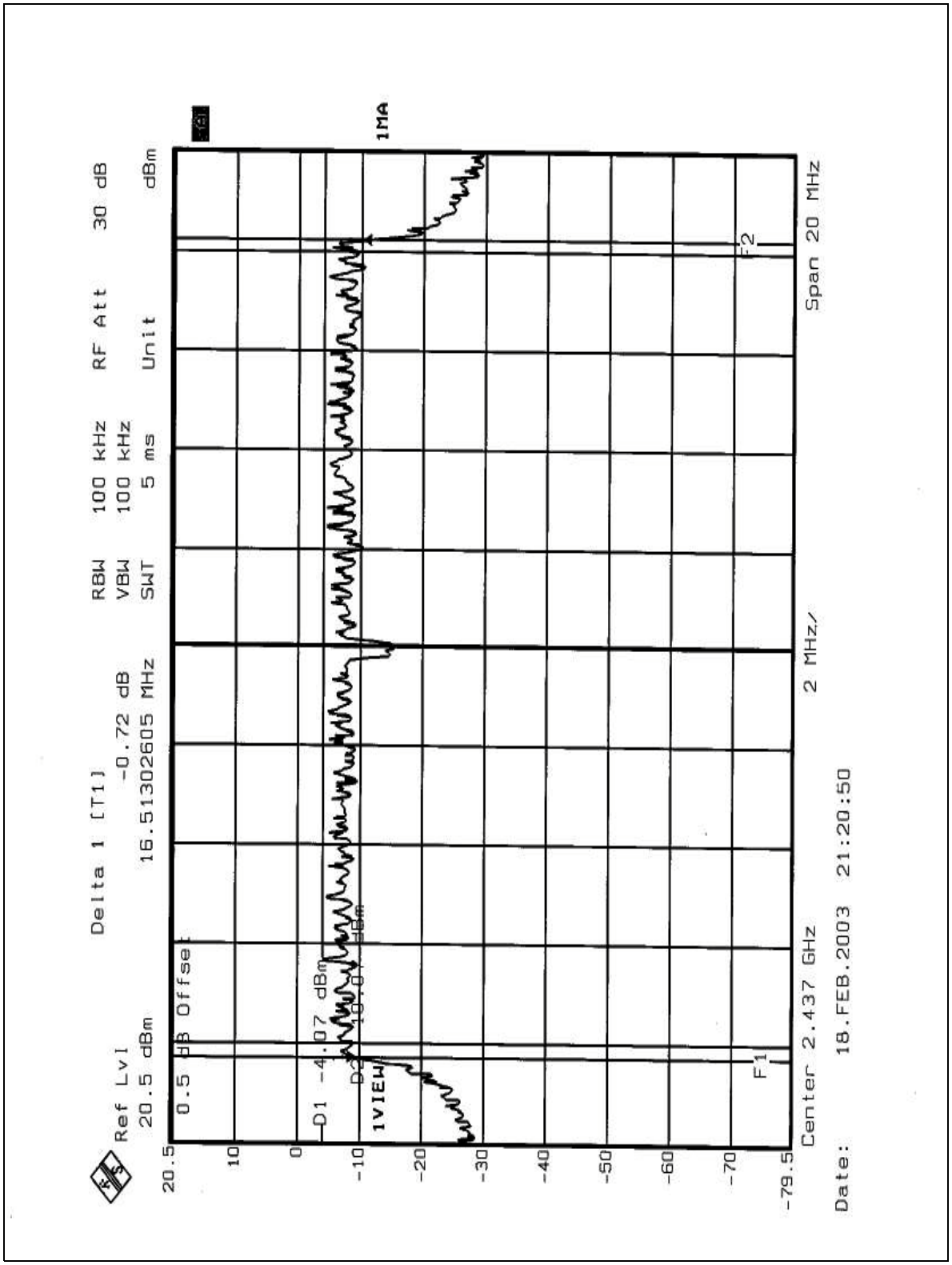
EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg. C, 65%RH, 1005hPa
TEST MODE	OFDM	**TESTED BY**	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.59	0.5	PASS
6	2437	16.51	0.5	PASS
11	2462	16.47	0.5	PASS

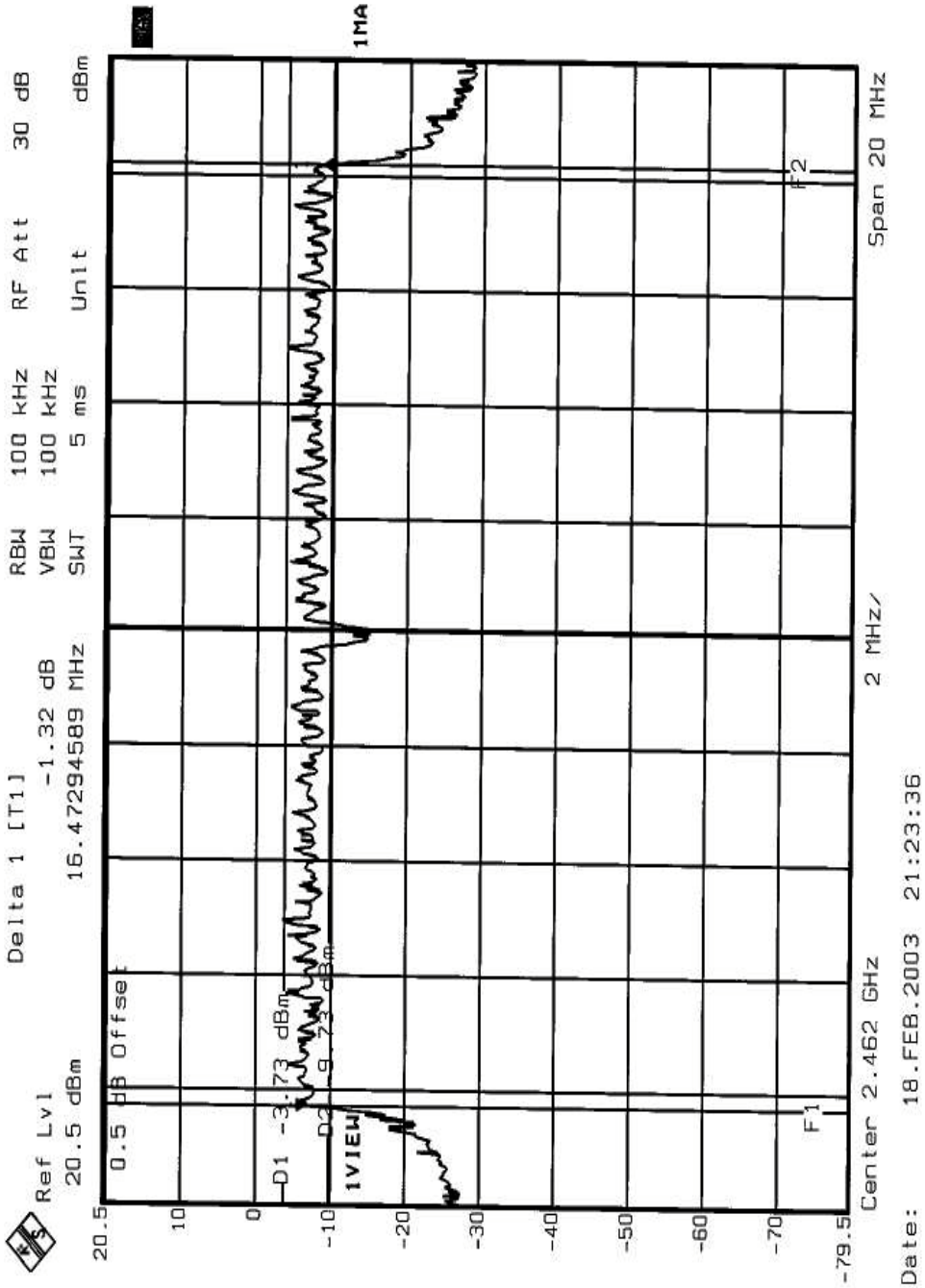
CH1


Ref Lvl
20.5 dBm
0.5 dB Offset
Delta 1 [T1]
-2.22 dB
16.59318637 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
-9.77 dBm
2.40368637 GHz
1 [T1]
-2.22 dB
16.59318637 MHz
1MA
D1 -4.28 dBm
D2 10.28 dBm
1VIEW
F1
F2
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.412 GHz
2 MHz/
Span 20 MHz
Date: 18.FEB.2003 21:16:04

CH6


Ref Lvl
20.5 dBm
0.5 dB Offset
Delta 1 [T1]
-0.72 dB
16.51302605 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
D1 -4.07 dBm
1VIEW
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
Date: 18.FEB.2003 21:20:50

CH11


Ref Lvl
20.5 dBm
0.5 dB Offset
Delta 1 [T1]
-1.32 dB
16.4729589 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
D1 -3.73 dBm
D2 9.73 dBm
1VIEW
F1
F2
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.462 GHz
2 MHz/
Span 20 MHz
Date: 18.FEB.2003 21:23:36

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
PEAK POWER SENSOR	E9327A	US40440722	July 30, 2003
POWER METER	E4416A	GB41291118	July 30, 2003

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

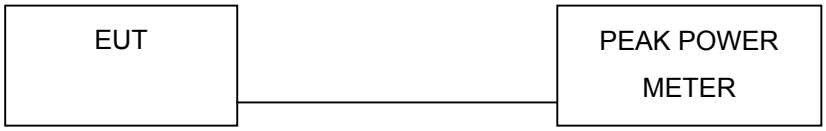
4.4.3 TEST PROCEDURES

The transmitter output was connected to the peak power meter.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg. C, 65%RH, 1005hPa
TEST MODE	CCK	**TESTED BY**	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	16.73	30	PASS
6	2437	16.67	30	PASS
11	2462	16.61	30	PASS

4.4.8 TEST RESULTS

EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg. C, 65%RH, 1005hPa
TEST MODE	OFDM	**TESTED BY**	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	16.81	30	PASS
6	2437	16.74	30	PASS
11	2462	16.71	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
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

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

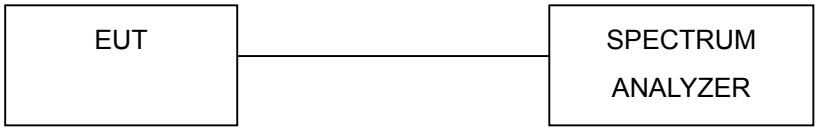
4.5.3 TEST PROCEDURE

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

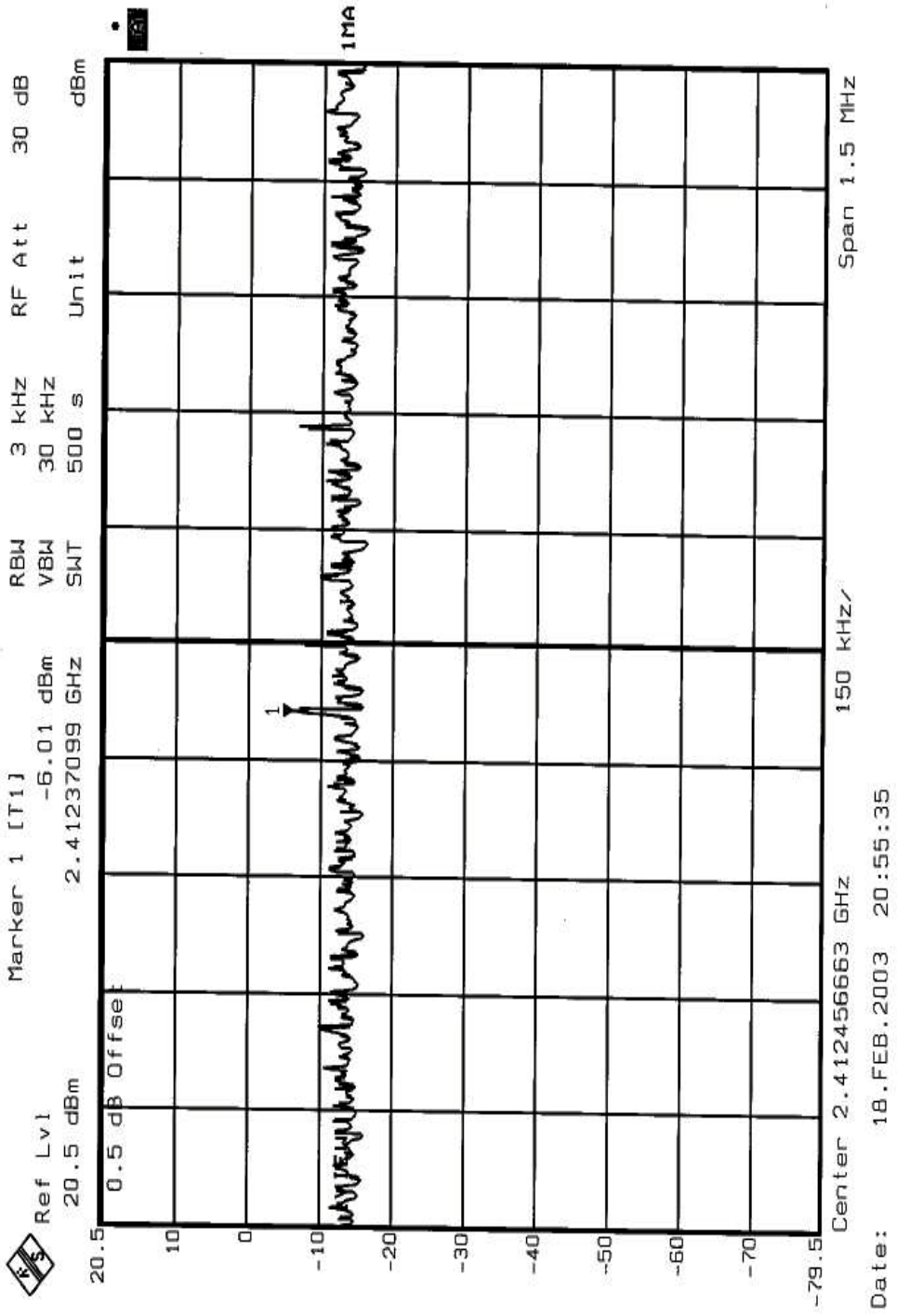
Same as Item 4.3.6

4.5.7 TEST RESULTS

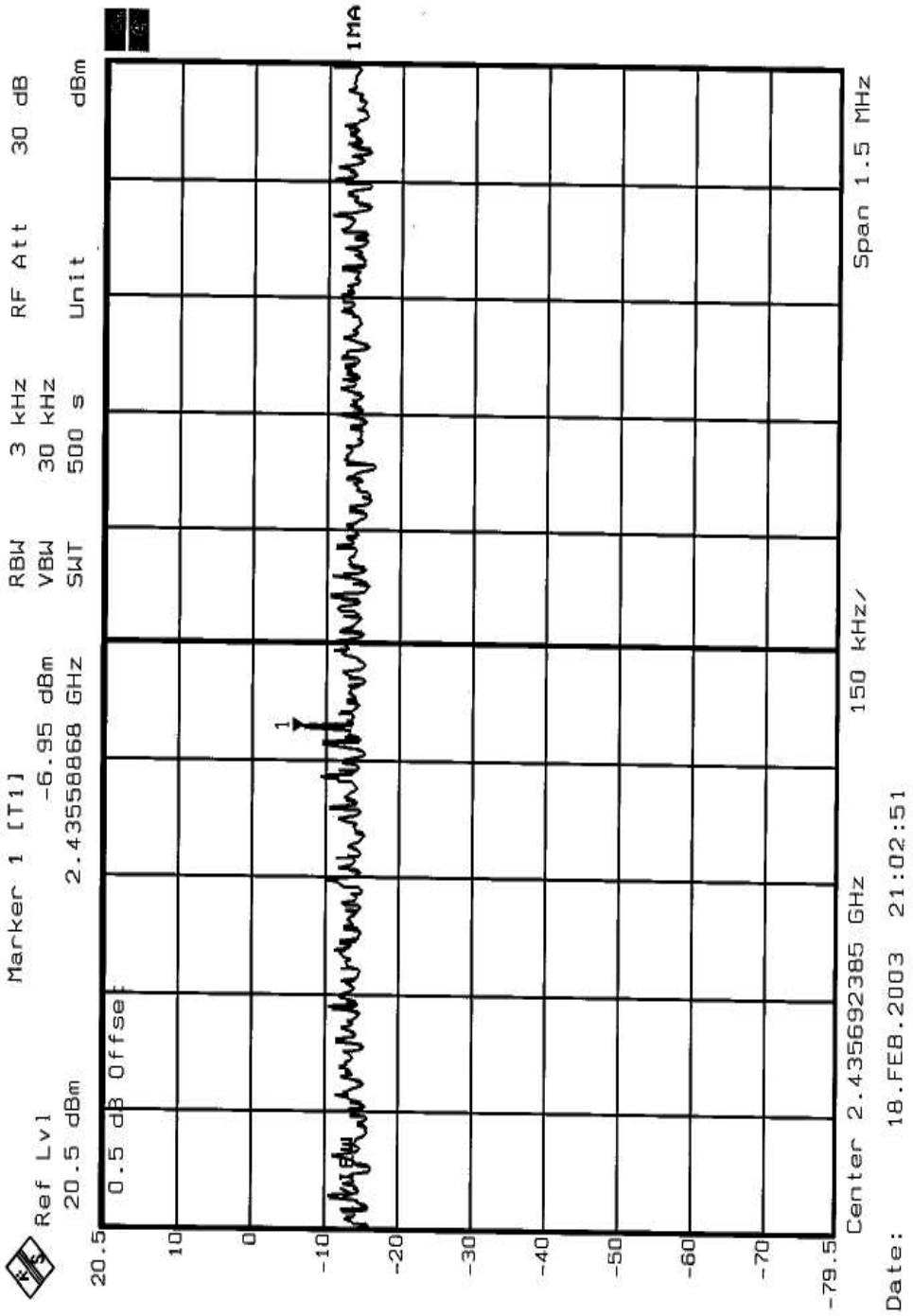
EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg. C, 65%RH, 1005hPa
TEST MODE	CCK	**TESTED BY**	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-6.01	8	PASS
6	2437	-6.95	8	PASS
11	2462	-8.51	8	PASS

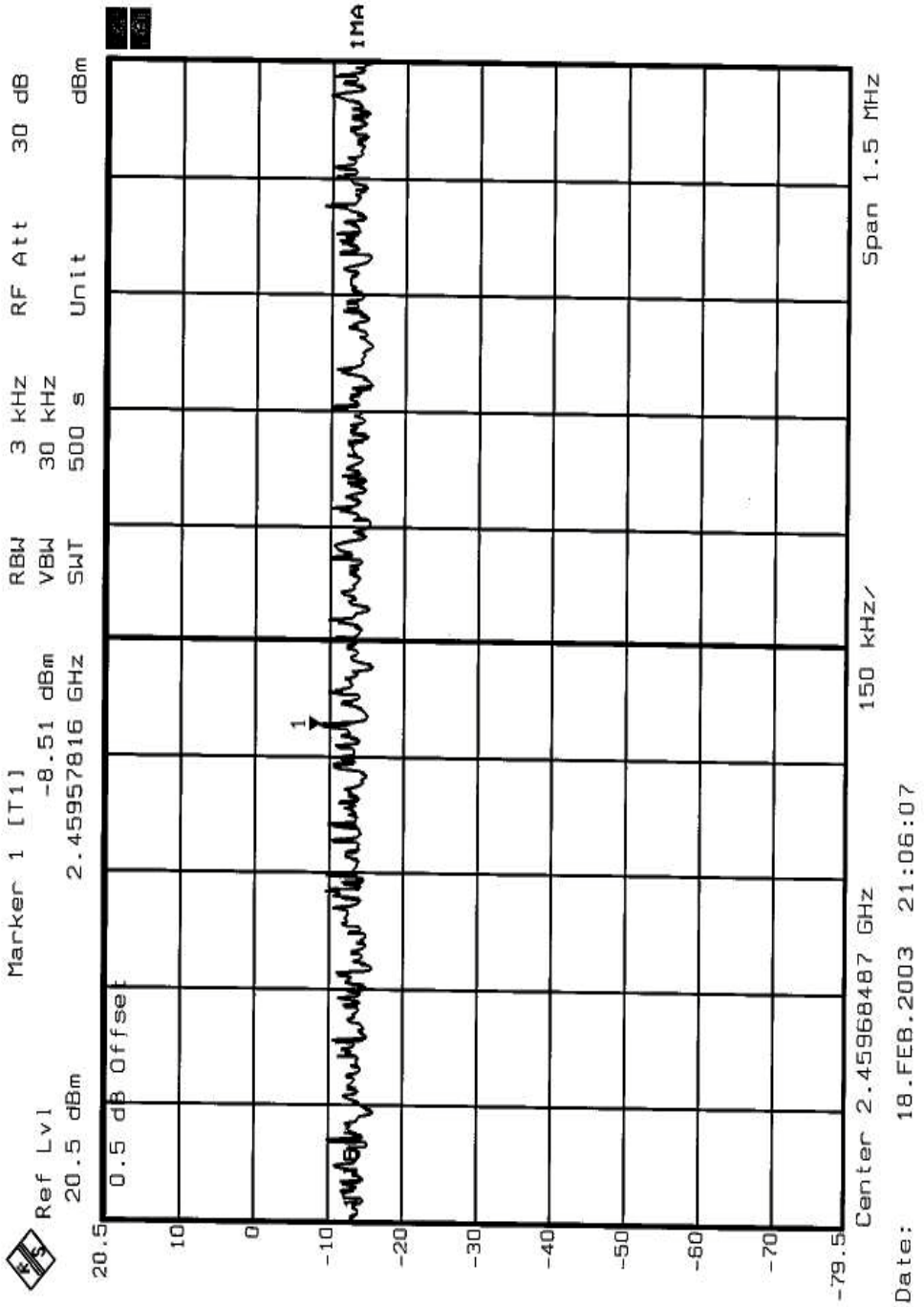
CH1


Ref Lvl
20.5 dBm
0.5 dB Offset
Marker 1 [T1]
-6.01 dBm
2.41237099 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1MA
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.412456663 GHz
150 kHz/
Span 1.5 MHz
Date: 18.FEB.2003 20:55:35

CH6


Ref Lvl
20.5 dBm
0.5 dB Offset
Marker 1 [T1]
-6.95 dBm
2.43558868 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1MA
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.435692385 GHz
150 kHz/
Span 1.5 MHz
Date: 18.FEB.2003 21:02:51

CH11

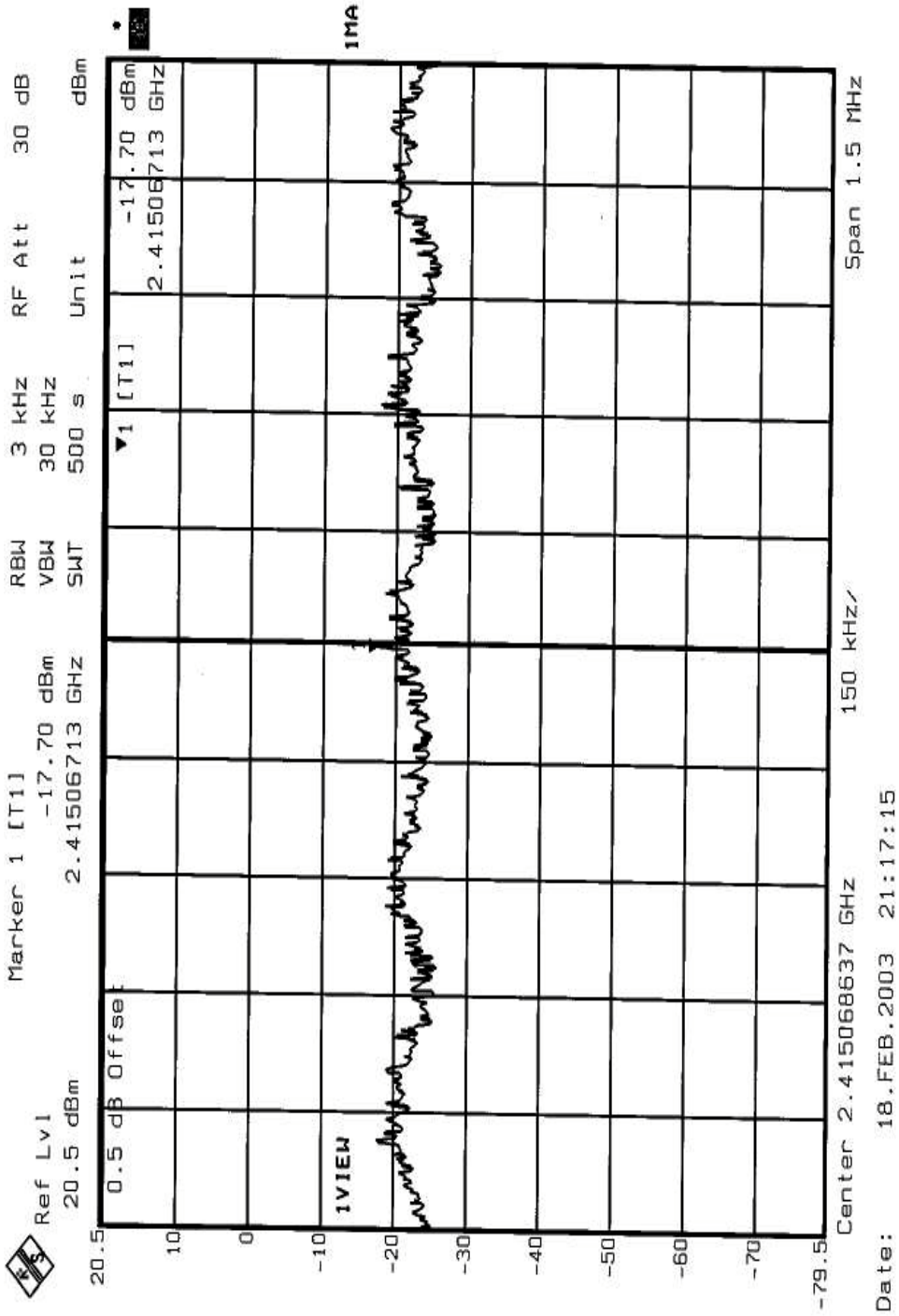

Ref Lvl
20.5 dBm
0.5 dB Offset
Marker 1 [T1]
-8.51 dBm
2.45957816 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1MA
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.45968487 GHz
150 kHz/
Span 1.5 MHz
Date: 18.FEB.2003 21:06:07

4.5.8 TEST RESULTS

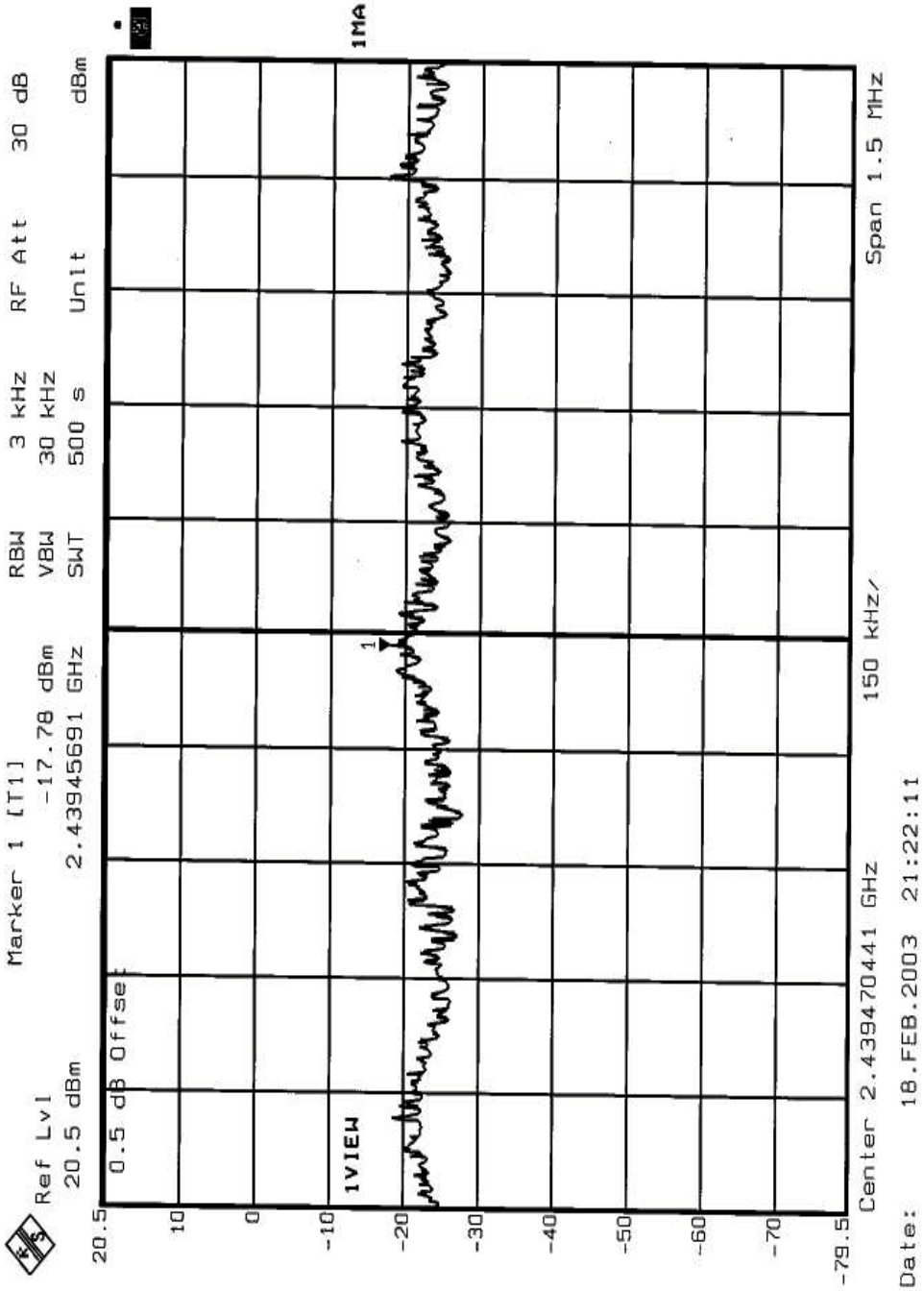
EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg. C, 65%RH, 1005hPa
TEST MODE	OFDM	**TESTED BY**	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-17.70	8	PASS
6	2437	-17.78	8	PASS
11	2462	-17.64	8	PASS

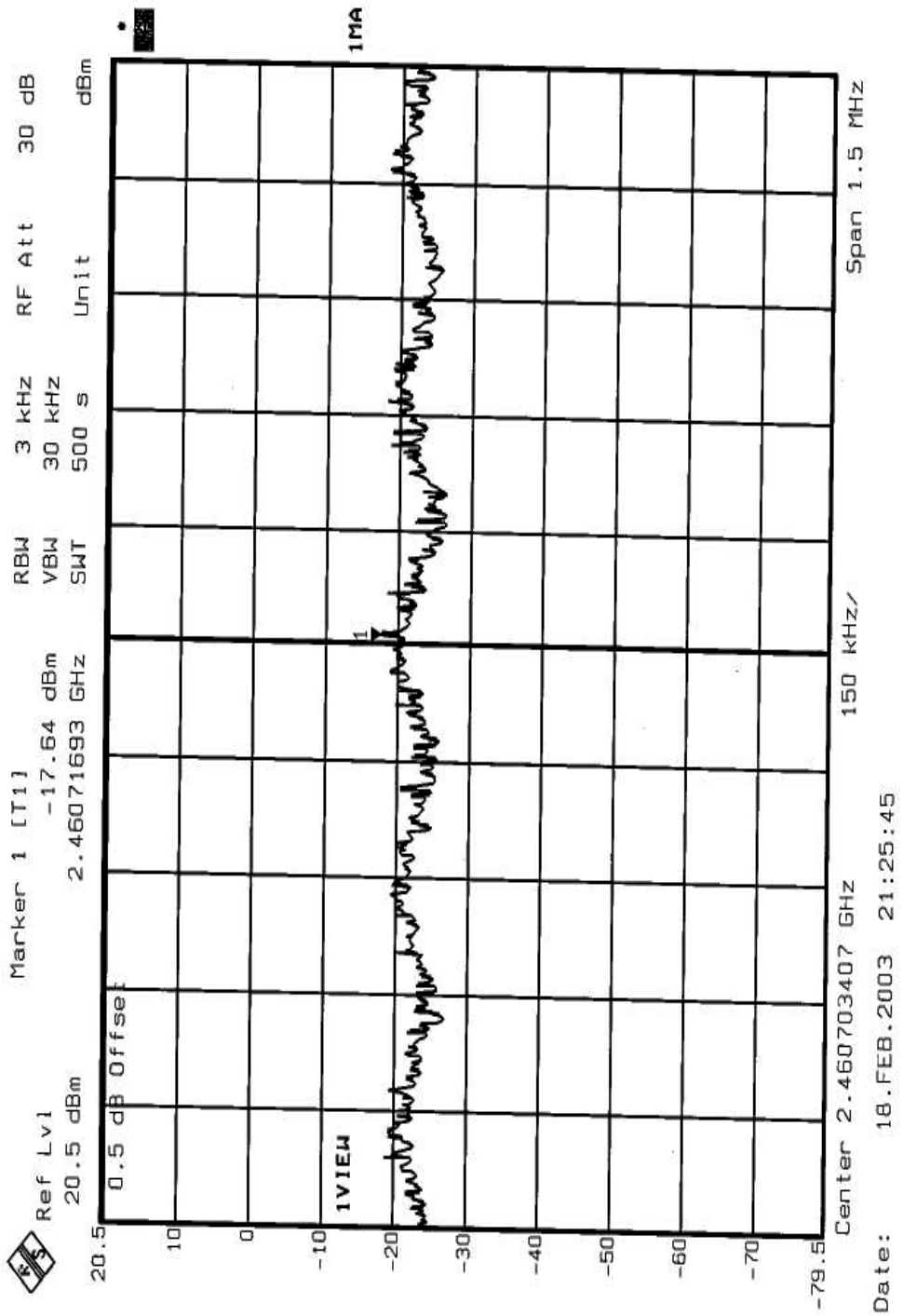
CH1


Ref Lvl
20.5 dBm
0.5 dB Offset
Marker 1 [T1]
-17.70 dBm
2.41506713 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1VIEW
1MA
▼1 [T1]
-17.70 dBm
2.41506713 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.415068637 GHz
150 kHz/
Span 1.5 MHz
Date: 18.FEB.2003 21:17:15

CH6


Ref Lvl
20.5 dBm
0.5 dB Offset
Marker 1 [T1]
-17.78 dBm
2.43945691 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1MA
1VIEW
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.43947044 1 GHz
150 kHz/
Span 1.5 MHz
Date: 18.FEB.2003 21:22:11

CH11


Ref Lvl
20.5 dBm
0.5 dB Offset
Marker 1 [T1]
-17.64 dBm
2.46071693 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1MA
1VIEW
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.460703407 GHz
150 kHz/
Span 1.5 MHz
Date: 18.FEB.2003 21:25:45

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
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

NOTE: The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.

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 300Hz with suitable frequency span including 100kHz bandwidth from band edge. The band edges was measured and recorded.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

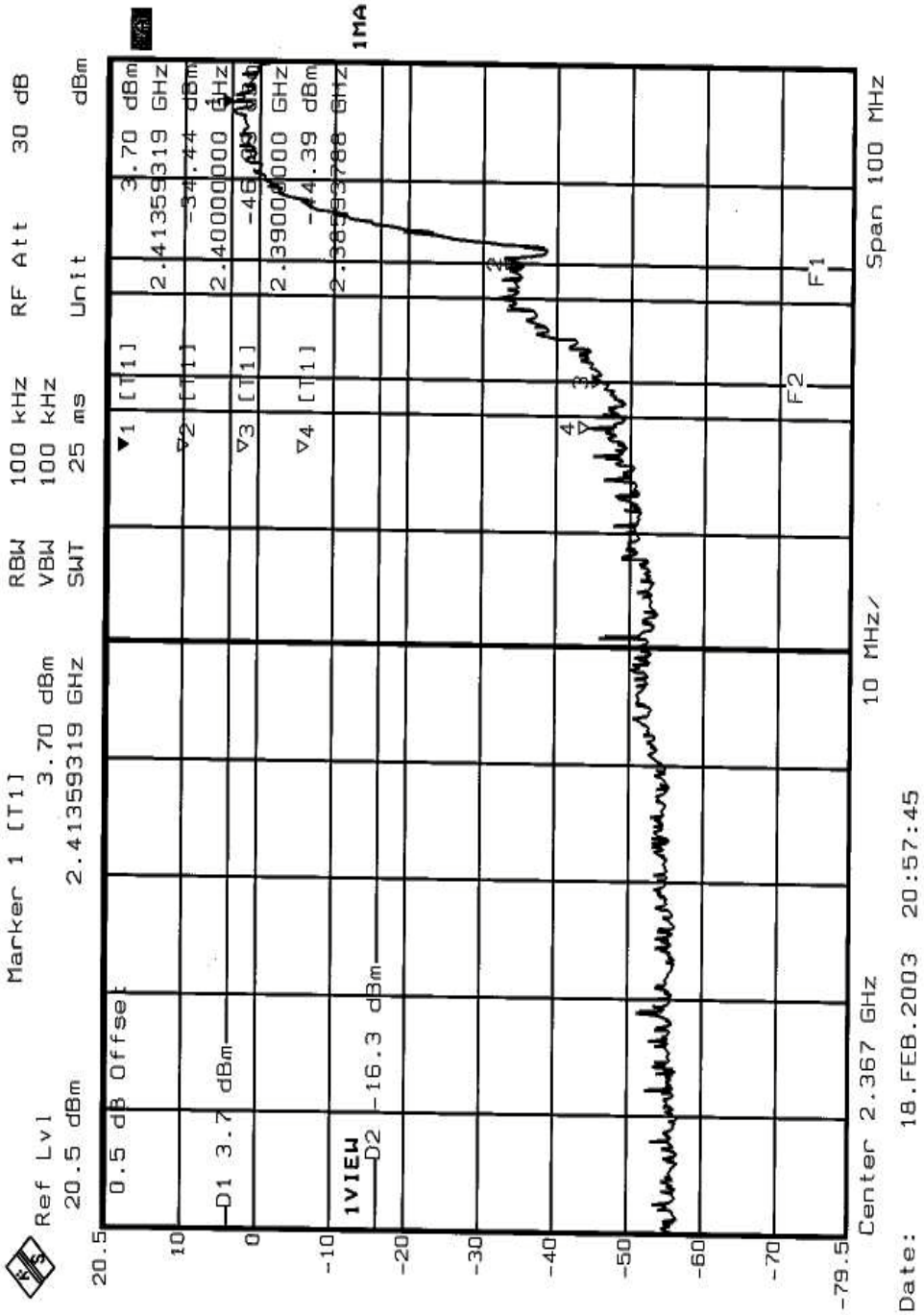
4.6.5 EUT OPERATING CONDITION

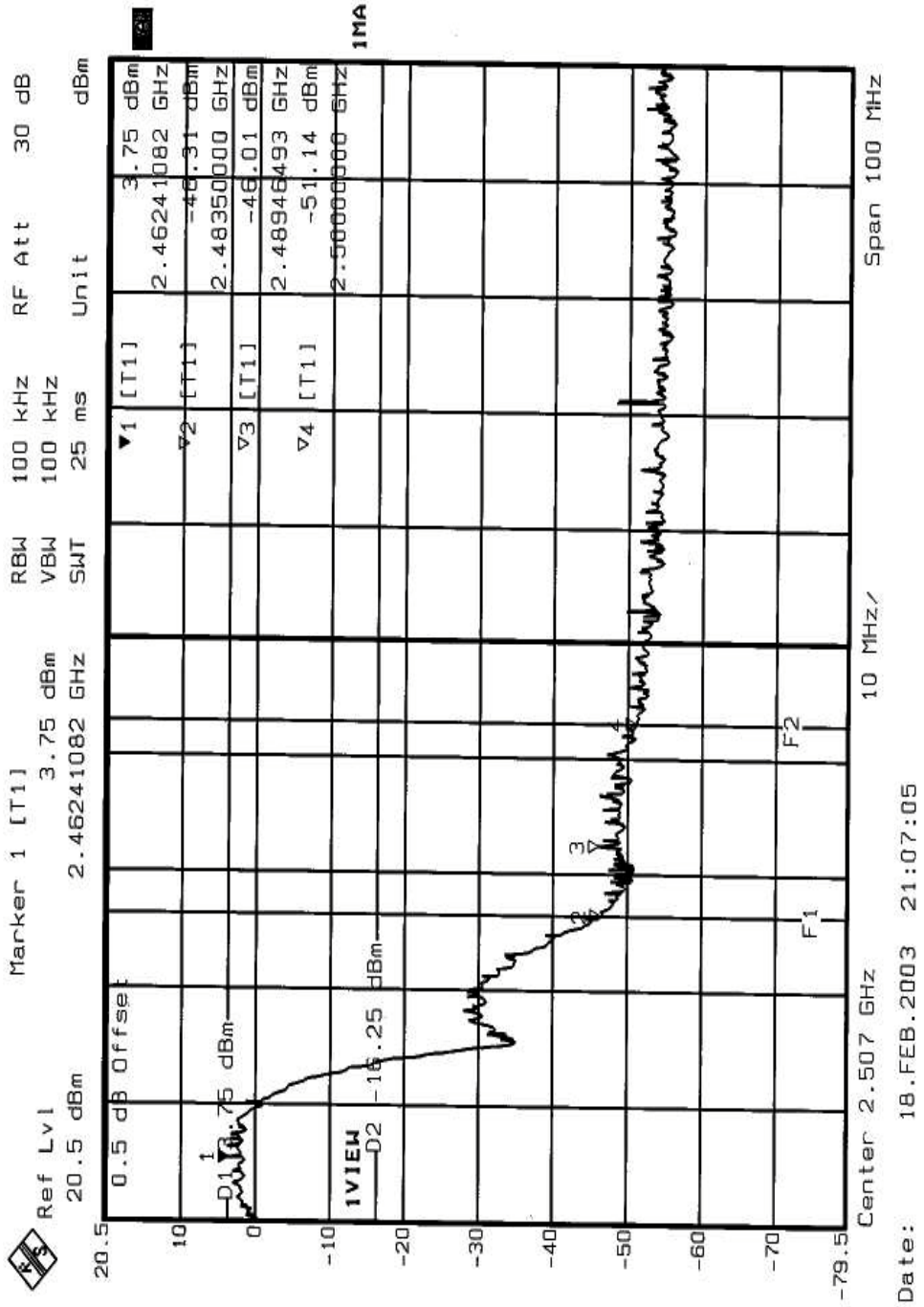
Same as Item 4.3.6

4.6.6 TEST RESULTS

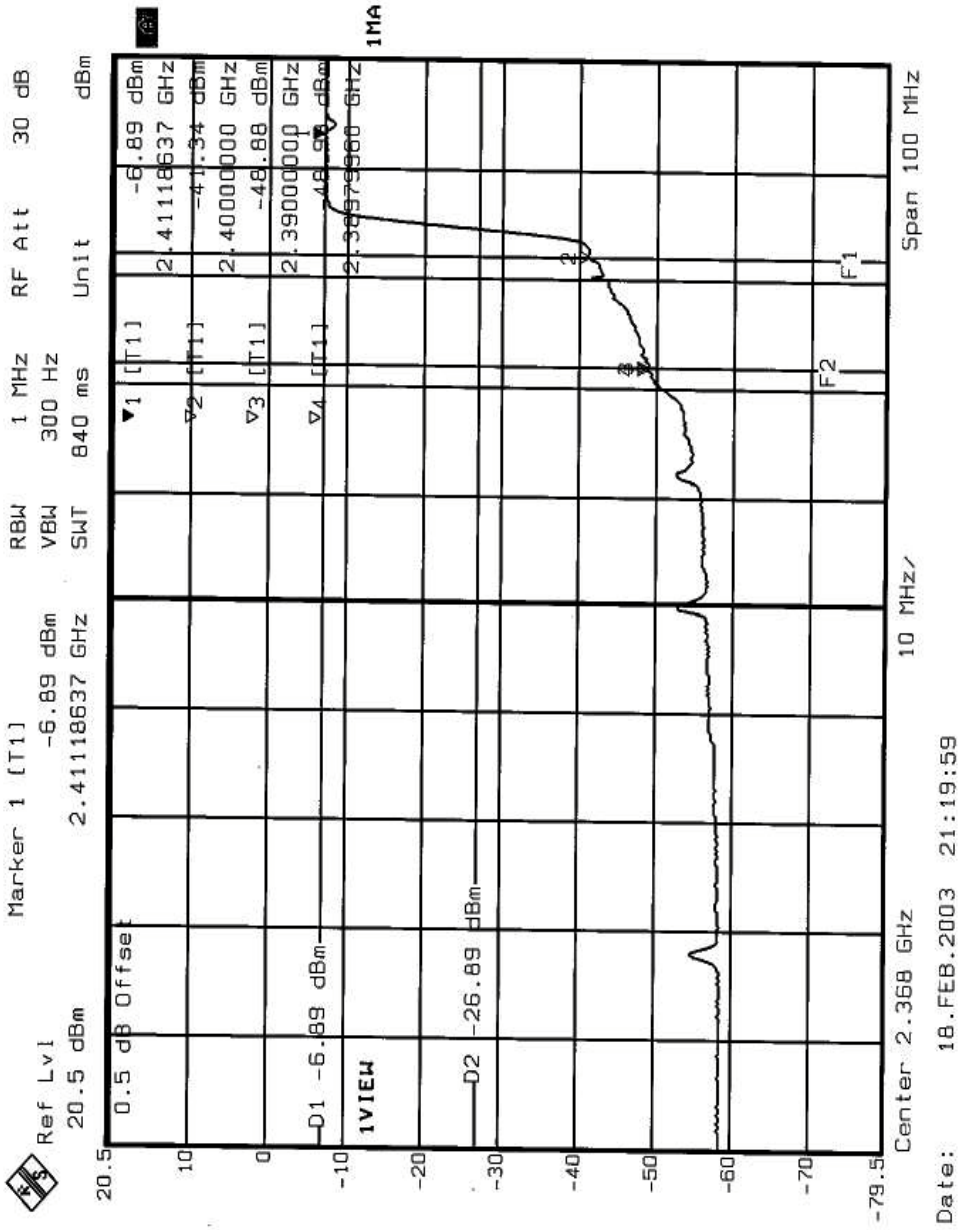
The spectrum plots are attached on the following 2 pages. D2 line indicates the highest level, and D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

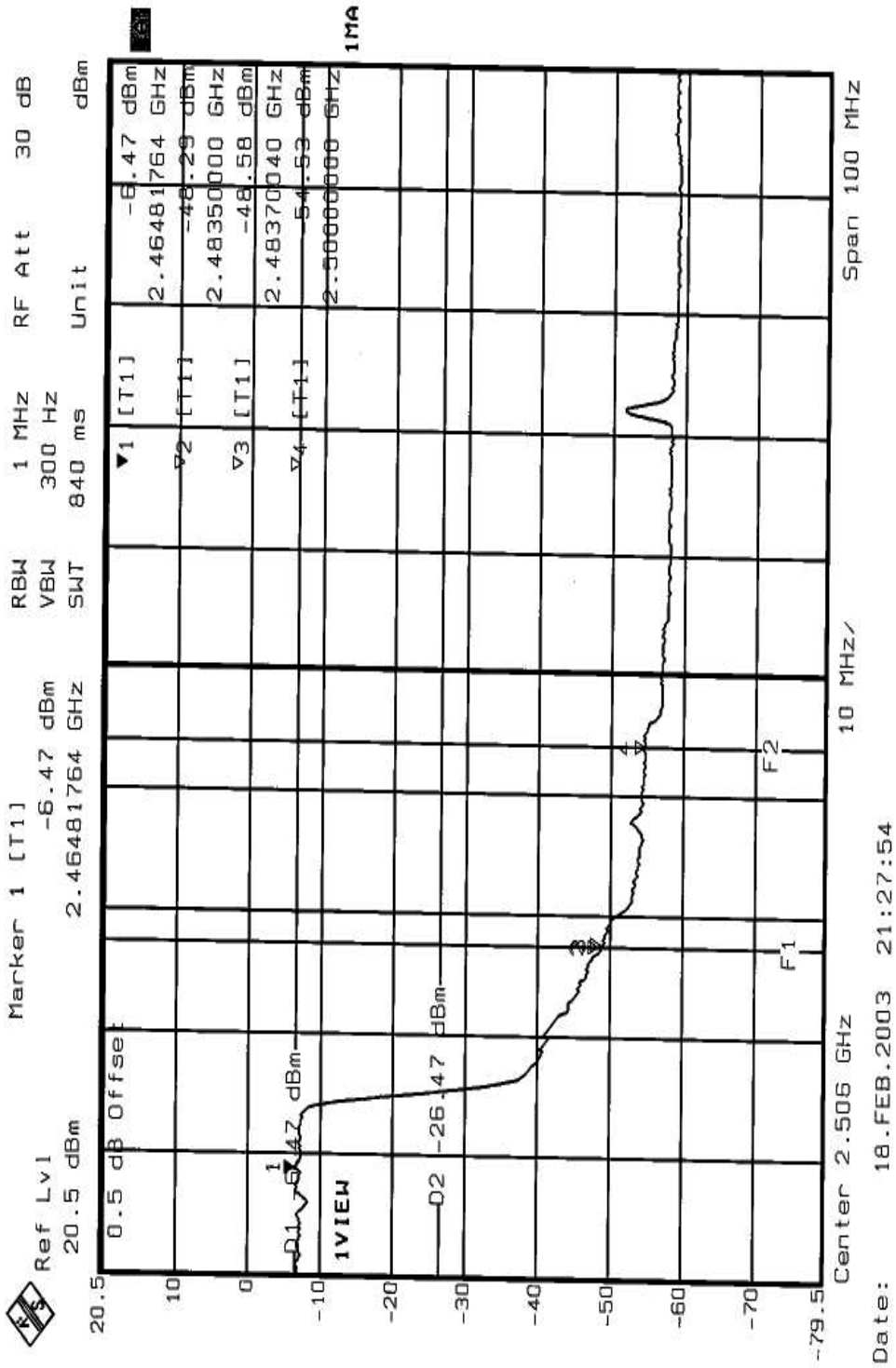
NOTE: The band edge emission plot of CCK technique on the following 2 pages shows 48.09dB / 49.76dB delta between carrier maximum power and local maximum emission in restrict band (2.3859GHz / 2.4894GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.9 (page 35) is 103.2dBuV/m, so the maximum field strength in restrict band is 103.2-49.76=53.44dBuV/m which is under 54dBuV/m limit.


Ref Lvl
20.5 dBm
0.5 dB Offset
D1 3.7 dBm
1VIEW
D2 -16.3 dBm
Marker 1 [T1]
3.70 dBm
2.41359319 GHz
RBW 100 kHz
VBW 100 kHz
SWT 25 ms
RF Att 30 dB
Unit dBm
1MA
Span 100 MHz
10 MHz/
Center 2.367 GHz
Date: 18.FEB.2003 20:57:45


Marker 1 [T1]
3.75 dBm
2.46241082 GHz
Ref Lvl
20.5 dBm
0.5 dB Offset
RBW 100 kHz
VBW 100 kHz
SWT 25 ms
RF Att 30 dB
Unit dBm
1 [T1] 3.75 dBm 2.46241082 GHz
2 [T1] -46.31 dBm 2.48350000 GHz
3 [T1] -46.01 dBm 2.48946493 GHz
4 [T1] -51.14 dBm 2.50000000 GHz
1MA
D1 -16.75 dBm
1VIEW
D2 -16.25 dBm
F1
F2
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.507 GHz
10 MHz/
Span 100 MHz
Date: 18.FEB.2003 21:07:05

NOTE: The band edge emission plot of OFDM technique on the following pages shows 41.99dB / 41.82dB delta between carrier maximum power and local maximum emission in restrict band (2.3900GHz / 2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.9 (page 38) is 95.7dBuV/m, so the maximum field strength in restrict band is 95.7-41.82=53.88dBuV/m which is under 54dBuV/m limit.




Ref Lvl
20.5 dBm
0.5 dB Offset
Marker 1 [T1]
-6.47 dBm
2.46481764 GHz
RBW 1 MHz
VBW 300 Hz
SWT 840 ms
RF Att 30 dB
Unit dBm
1 [T1] -6.47 dBm 2.46481764 GHz
2 [T1] -46.29 dBm 2.48350000 GHz
3 [T1] -48.58 dBm 2.48370040 GHz
4 [T1] -54.53 dBm 2.50000000 GHz
1MA
1VIEW
D1 -6.47 dBm
D2 -26.47 dBm
F1
F2
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.505 GHz
10 MHz/
Span 100 MHz
Date: 18.FEB.2003 21:27:54

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 without connector. The maximum Gain of the antenna is 2dBi.

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
ROHDE & SCHWARZ Test Receiver	ESCS30	847793/022	Mar. 12, 2003
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	828075/003	July 23, 2003
ROHDE & SCHWARZ 200-A Four-line V-Network	ENV4200	830326/018	Oct. 30, 2003
* ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Nov. 29, 2003
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Nov. 29, 2003
EMCO-L.I.S.N. (for peripheral)	3825/2	90031627	July 23, 2003
Software	Cond-V2M1	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C05.01	July 19, 2003
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-305	Feb. 23, 2004
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-306	Feb. 23, 2004

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. "*": These equipment are used for conducted telecom port test only (if tested).
3. The test was performed in ADT Shielded Room No. 5.
4. The VCCI Site Registration No. is C-1093.

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.

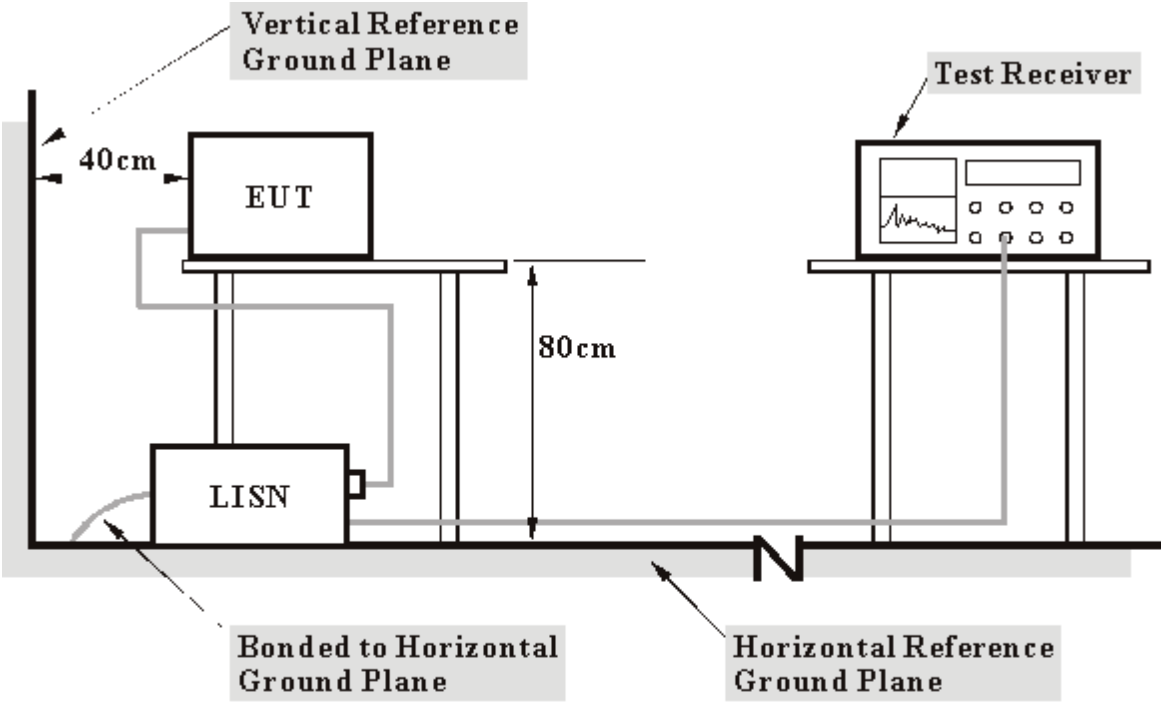
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

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

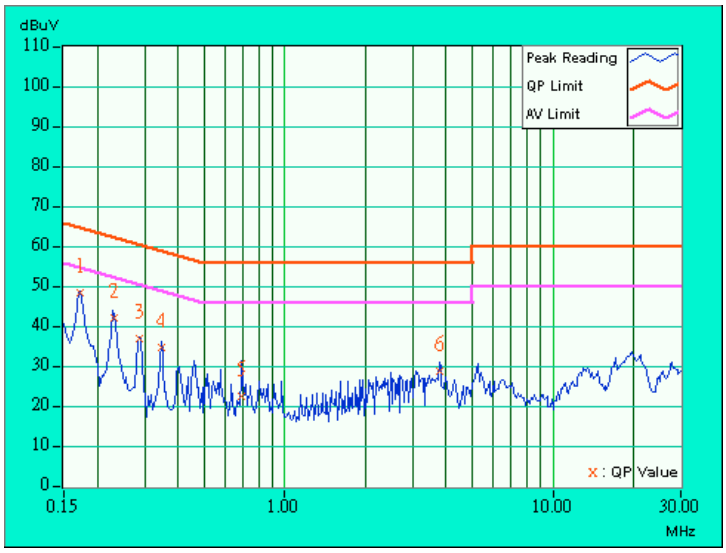
Same as 4.1.6

5.1.7 TEST RESULTS

EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	22deg. C, 68%RH, 1005hPa	**TESTED BY**: Cody Chang	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.173	0.10	48.20	-	48.30	-	64.79	54.79	-16.49	-
2	0.232	0.10	41.86	-	41.96	-	62.38	52.38	-20.42	-
3	0.287	0.10	36.78	-	36.88	-	60.62	50.62	-23.74	-
4	0.345	0.10	34.54	-	34.64	-	59.07	49.07	-24.43	-
5	0.685	0.15	22.36	-	22.51	-	56.00	46.00	-33.49	-
6	3.789	0.38	28.61	-	28.99	-	56.00	46.00	-27.01	-

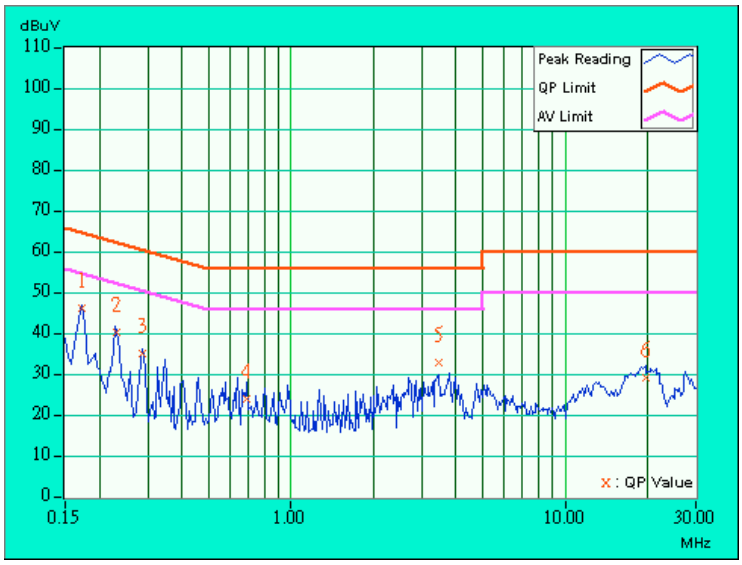
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	22deg. C, 68%RH, 1005hPa	**TESTED BY**: Cody Chang	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.173	0.10	45.67	-	45.77	-	64.79	54.79	-19.02	-
2	0.232	0.10	39.41	-	39.51	-	62.38	52.38	-22.87	-
3	0.287	0.10	34.49	-	34.59	-	60.62	50.62	-26.03	-
4	0.685	0.15	23.44	-	23.59	-	56.00	46.00	-32.41	-
5	3.445	0.27	32.04	-	32.31	-	56.00	46.00	-23.69	-
6	19.602	0.78	28.42	-	29.20	-	60.00	50.00	-30.80	-

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.



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

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

5.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8590L	3544A01176	May 13, 2003
* HP Preamplifier	8447D	2944A08485	Apr. 29, 2003
* HP Preamplifier	8449B	3008A01201	Dec. 01, 2003
* HP Preamplifier	8449B	3008A01292	Aug. 07, 2003
*Spectrum Analyzer	8593E	3926A04191	Mar. 28, 2003
*Test Receiver	ESI7	838496/016	Feb. 23, 2004
SCHAFFNER Tunable Dipole Antenna SCHWARZBECK Tunable Dipole Antenna	VHBA 9123 UHA 9105	459 977	Nov. 22, 2003
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 02, 2003
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	July 03, 2003
* EMCO Horn Antenna	3115	9312-4192	Apr. 09, 2003
* EMCO Turn Table	1060	1115	NA
* SHOSHIN Tower	AP-4701	A6Y005	NA
* Software	ADT_Radiated_V5.09	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Jul. 11. 2003
* TIMES RF cable	LMR-600	CABLE-ST5-01	Jul. 11. 2003

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. "*" = These equipment are used for the final measurement.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The test was performed in ADT Open Site No. 5.
5. The VCCI Site Registration No. is R-1039.

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 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

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

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

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

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

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

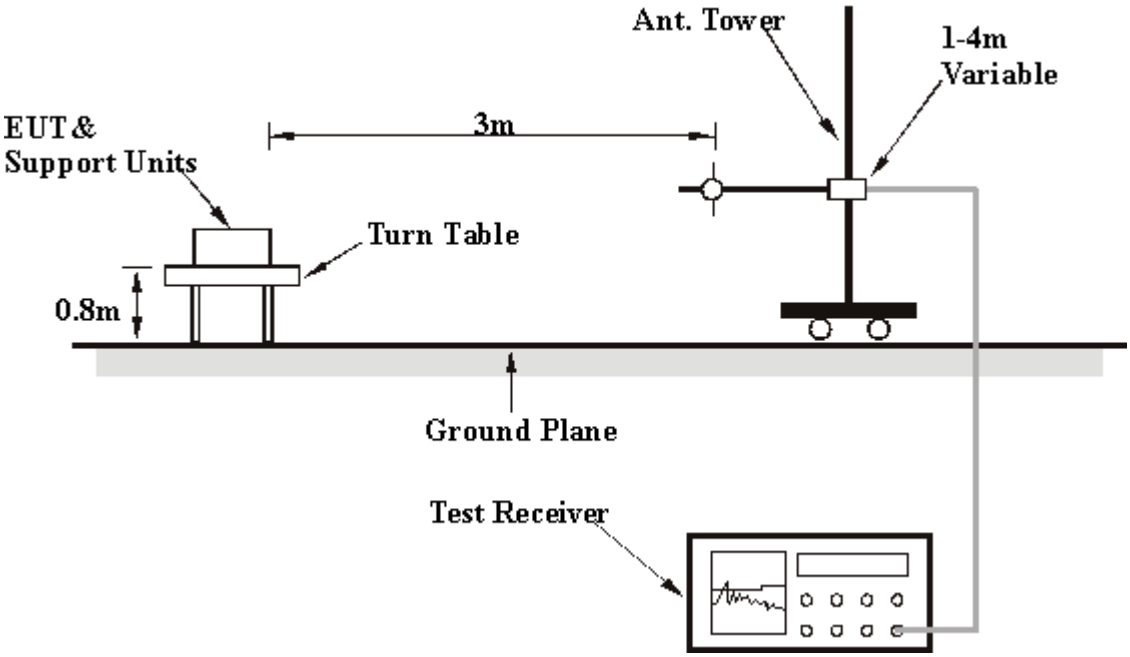
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth 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 300 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 (A)

EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Below 1000MHz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Gary Chang		

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	160.02	29.3 QP	43.50	-14.20	1.59 H	248	18.50	10.80
2	256.00	36.3 QP	46.00	-9.70	1.15 H	180	19.90	16.40
3	288.02	37.1 QP	46.00	-8.90	1.42 H	165	20.50	16.60
4	320.01	34.2 QP	46.00	-11.80	1.12 H	4	17.00	17.20
5	352.01	39.3 QP	46.00	-6.70	1.30 H	215	21.50	17.70
6	384.01	28.2 QP	46.00	-17.80	1.24 H	116	9.60	18.70
7	479.99	28.9 QP	46.00	-17.10	1.04 H	32	8.30	20.60
8	511.99	27.9 QP	46.00	-18.10	1.24 H	174	6.80	21.20
9	543.98	28.8 QP	46.00	-17.20	1.18 H	271	7.80	21.10
10	640.00	29.2 QP	46.00	-16.80	1.04 H	0	6.40	22.80
11	704.01	29.8 QP	46.00	-16.20	1.28 H	3	6.70	23.10
12	735.99	35.4 QP	46.00	-10.60	1.43 H	208	11.50	23.80
13	799.99	32.5 QP	46.00	-13.50	1.47 H	358	7.60	24.90

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	128.00	30.0 QP	43.50	-13.50	1.24 V	55	17.00	13.00
2	480.00	29.4 QP	46.00	-16.60	1.36 V	77	8.80	20.60
3	576.00	29.9 QP	46.00	-16.10	1.27 V	154	8.00	21.90
4	608.00	32.0 QP	46.00	-14.00	1.27 V	65	9.30	22.70
5	640.00	31.5 QP	46.00	-14.50	1.17 V	358	8.80	22.80
6	703.99	31.9 QP	46.00	-14.10	1.31 V	339	8.90	23.10
7	736.00	31.9 QP	46.00	-14.10	1.50 V	99	8.10	23.80
8	799.99	31.0 QP	46.00	-15.00	1.03 V	4	6.10	24.90

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	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	1
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

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	*5180.00	93.9 PK			1.65 H	343	56.20	37.70
1	*5180.00	85.5 AV			1.65 H	343	47.80	37.70
2	10360.00	53.3 PK	68.30	-15.00	1.39 H	11	8.80	44.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5180.00	101.7 PK			1.38 V	346	64.00	37.70
1	*5180.00	91.9 AV			1.38 V	346	54.20	37.70
2	10360.00	55.3 PK	68.30	-13.00	1.05 V	74	10.80	44.50

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. “*” : Fundamental frequency

EUT	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	4
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	94.4 PK			1.52 H	131	56.70	37.70
1	*5240.00	85.6 AV			1.52 H	131	47.90	37.70
2	10480.00	54.5 PK	68.30	-13.80	1.38 H	5	9.50	45.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	99.6 PK			1.34 V	171	61.90	37.70
1	*5240.00	90.9 AV			1.34 V	171	53.20	37.70
2	10480.00	56.5 PK	68.30	-11.80	1.14 V	51	11.50	45.00

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. “*” : Fundamental frequency

EUT	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	5
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5260.00	94.3 PK			1.51 H	196	56.60	37.70
1	*5260.00	84.9 AV			1.51 H	196	47.20	37.70
2	10520.00	53.8 PK	68.30	-14.50	1.20 H	74	8.70	45.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5260.00	102.1 PK			1.00 V	271	64.50	37.70
1	*5260.00	93.9 AV			1.00 V	271	56.20	37.70
2	10520.00	55.2 PK	68.30	-13.10	1.12 V	34	10.10	45.10

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. “*” : Fundamental frequency

EUT	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	8
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	93.7 PK			1.10 H	35	56.00	37.70
1	*5320.00	84.8 AV			1.10 H	35	47.10	37.70
2	#10640.00	55.6 PK	74.00	-18.40	1.10 H	35	10.30	45.20
2	#10640.00	44.9 AV	54.00	-9.10	1.10 H	35	-0.40	45.20

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	100.1 PK			1.11 V	261	62.40	37.70
1	*5320.00	89.9 AV			1.11 V	261	52.20	37.70
2	#10640.00	55.2 PK	74.00	-18.80	1.34 V	81	9.90	45.20
2	#10640.00	44.2 AV	54.00	-9.80	1.34 V	81	-1.10	45.20

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. “*” : Fundamental frequency
6. “# “ : The radiated frequency falling in the restricted band.

EUT	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	9
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

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	5715.00	64.1 PK	68.30	-4.20	1.41 H	81	26.20	37.90
2	5725.00	71.9 PK	78.30	-6.40	1.41 H	81	34.00	37.90
3	*5745.00	94.0 PK			1.32 H	147	56.10	37.90
3	*5745.00	85.6 AV			1.32 H	147	47.60	37.90
4	#11490.00	57.5 PK	74.00	-16.50	1.65 H	71	12.00	45.50
4	#11490.00	46.3 AV	54.00	-7.70	1.65 H	71	0.80	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5715.00	64.9 PK	68.30	-3.40	1.15 V	336	27.00	37.90
2	5725.00	76.4 PK	78.30	-1.90	1.15 V	336	38.50	37.90
3	*5745.00	102.2 PK			1.15 V	336	64.30	37.90
3	*5745.00	91.5 AV			1.15 V	336	53.60	37.90
4	#11490.00	58.5 PK	74.00	-15.50	1.48 V	247	13.00	45.50
4	#11490.00	47.1 AV	54.00	-6.90	1.48 V	247	1.60	45.50

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. “*” : Fundamental frequency
6. “# “ : The radiated frequency falling in the restricted band.

EUT	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	12
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

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	*5805.00	92.3 PK			1.24 H	57	54.30	38.00
1	*5805.00	82.0 AV			1.24 H	57	44.00	38.00
2	5825.00	69.0 PK	78.30	-9.30	1.24 H	57	31.00	38.00
3	5835.00	63.0 PK	68.30	-5.30	1.24 H	57	25.00	38.00
4	#11609.00	58.5 PK	74.00	-15.50	1.35 H	64	13.00	45.50
4	#11609.00	47.0 AV	54.00	-7.00	1.35 H	64	1.50	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5805.00	101.1 PK			1.40 V	97	63.10	38.00
1	*5805.00	91.6 AV			1.40 V	97	53.60	38.00
2	5825.00	76.5 PK	78.30	-1.80	1.40 V	97	38.50	38.00
3	5835.00	65.4 PK	68.30	-2.90	1.40 V	97	27.40	38.00
4	#11609.00	63.1 PK	74.00	-10.90	1.18 V	270	17.60	45.50
4	#11609.00	48.6 AV	54.00	-5.40	1.18 V	270	3.10	45.50

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. “*” : Fundamental frequency
6. “# “ : The radiated frequency falling in the restricted band.

5.2.9 TEST RESULTS (B)

EUT	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Below 1000MHz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Gary Chang		

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	160.00	30.3 QP	43.50	-13.20	1.35 H	345	19.40	10.80
2	224.00	37.7 QP	46.00	-8.30	1.11 H	15	24.50	13.20
3	256.00	40.6 QP	46.00	-5.40	1.34 H	4	24.30	16.40
4	288.00	42.8 QP	46.00	-3.20	1.14 H	162	26.20	16.60
5	320.01	38.5 QP	46.00	-7.50	1.09 H	5	21.40	17.20
6	352.01	40.5 QP	46.00	-5.50	1.32 H	300	22.80	17.70
7	384.01	31.9 QP	46.00	-14.10	1.02 H	1	13.20	18.70
8	416.01	31.4 QP	46.00	-14.60	1.22 H	306	12.10	19.30
9	575.98	35.3 QP	46.00	-10.70	1.63 H	2	13.40	21.90
10	735.98	38.0 QP	46.00	-8.00	1.36 H	4	14.10	23.80
11	799.98	34.0 QP	46.00	-12.00	1.21 H	3	9.10	24.90
12	959.98	30.5 QP	46.00	-15.50	1.05 H	206	5.60	24.90

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	160.00	27.2 QP	43.50	-16.30	1.05 V	46	16.40	10.80
2	256.00	30.3 QP	46.00	-15.70	1.32 V	308	13.90	16.40
3	288.00	34.7 QP	46.00	-11.30	1.83 V	10	18.00	16.60
4	320.00	31.5 QP	46.00	-14.50	1.29 V	0	14.30	17.20
5	384.00	27.3 QP	46.00	-18.70	1.09 V	191	8.70	18.70
6	480.00	27.4 QP	46.00	-18.60	1.27 V	16	6.80	20.60
7	576.00	37.2 QP	46.00	-8.80	1.21 V	3	15.30	21.90
8	608.00	33.1 QP	46.00	-12.90	1.04 V	119	10.40	22.70
9	640.00	33.9 QP	46.00	-12.10	1.71 V	105	11.10	22.80
10	736.00	35.2 QP	46.00	-10.80	1.31 V	354	11.40	23.80

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	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	1
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

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	*5180.00	96.0 PK			1.95 H	99	58.40	37.70
1	*5180.00	86.3 AV			1.95 H	99	48.70	37.70
2	10360.00	53.1 PK	68.30	-15.20	1.22 H	55	8.60	44.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5180.00	100.7 PK			1.33 V	14	63.00	37.70
1	*5180.00	93.1 AV			1.33 V	14	55.40	37.70
2	10360.00	53.7 PK	68.30	-14.60	1.09 V	74	9.20	44.50

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. “*” : Fundamental frequency

EUT	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	4
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	96.0 PK			1.88 H	99	58.40	37.70
1	*5240.00	88.7 AV			1.88 H	99	51.10	37.70
2	10480.00	51.0 PK	68.30	-17.30	1.14 H	36	6.00	45.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	102.2 PK			1.87 V	20	64.50	37.70
1	*5240.00	90.9 AV			1.87 V	20	53.20	37.70
2	10480.00	53.0 PK	68.30	-15.30	1.30 V	62	8.00	45.00

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. “*” : Fundamental frequency

EUT	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	5
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5260.00	97.4 PK			1.24 H	34	59.70	37.70
1	*5260.00	87.2 AV			1.24 H	34	49.50	37.70
2	10520.00	53.8 PK	68.30	-14.50	1.14 H	83	8.70	45.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5260.00	103.3 PK			1.64 V	326	65.60	37.70
1	*5260.00	96.0 AV			1.64 V	326	58.30	37.70
2	10520.00	55.0 PK	68.30	-13.30	1.24 V	34	9.90	45.10

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. “*” : Fundamental frequency

EUT	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	8
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	96.9 PK			1.70 H	261	59.20	37.70
1	*5320.00	88.4 AV			1.70 H	261	50.80	37.70
2	#10640.00	54.0 PK	74.00	-20.00	1.19 H	348	8.80	45.20
2	#10640.00	46.0 AV	54.00	-8.00	1.19 H	348	0.80	45.20

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	101.4 PK			1.43 V	48	63.70	37.70
1	*5320.00	94.9 AV			1.43 V	48	57.20	37.70
2	#10640.00	55.0 PK	74.00	-19.00	1.08 V	2	9.80	45.20
2	#10640.00	46.0 AV	54.00	-8.00	1.08 V	2	0.80	45.20

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. “*” : Fundamental frequency
6. “# “ : The radiated frequency falling in the restricted band.

EUT	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	9
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

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	5715.00	60.9 PK	68.30	-7.40	1.54 H	75	23.00	37.90
2	5725.00	68.9 PK	78.30	-9.40	1.51 H	311	31.00	37.90
3	*5745.00	93.3 PK			1.54 H	75	55.40	37.90
3	*5745.00	86.6 AV			1.54 H	75	48.70	37.90
4	#11495.00	56.2 PK	74.00	-17.80	1.21 H	48	10.70	45.50
4	#11495.00	41.8 AV	54.00	-12.20	1.21 H	48	-3.70	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5715.00	65.9 PK	68.30	-2.40	1.44 V	54	28.00	37.90
2	5725.00	76.3 PK	78.30	-2.00	1.44 V	54	38.40	37.90
3	*5745.00	103.4 PK			1.44 V	54	65.50	37.90
3	*5745.00	96.0 AV			1.44 V	54	58.10	37.90
4	#11495.00	61.2 PK	74.00	-12.80	1.44 V	54	15.70	45.50
4	#11495.00	46.1 AV	54.00	-7.90	1.44 V	54	0.60	45.50

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. “*” : Fundamental frequency
6. “# “ : The radiated frequency falling in the restricted band.

EUT	IEEE 802.11a+b/g WLAN Mini PCI	**MODEL**	GL2554MP-0A
FREQUENCY RANGE	Above 1000 MHz	**CHANNEL**	12
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1050hPa	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
INPUT POWER (SYSTEM)	120Vac, 60Hz	**TESTED BY**	Gary Chang

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	*5805.00	99.4 PK			1.66 H	278	61.40	38.00
1	*5805.00	88.8 AV			1.66 H	278	50.80	38.00
2	5825.00	73.0 PK	78.30	-5.30	1.66 H	278	35.00	38.00
3	5835.00	64.0 PK	68.30	-4.30	1.66 H	278	26.00	38.00
4	#11608.00	60.3 PK	74.00	-13.70	1.62 H	74	14.80	45.50
4	#11608.00	44.9 AV	54.00	-9.10	1.62 H	74	-0.60	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5805.00	105.9 PK			1.43 V	347	67.90	38.00
1	*5805.00	94.9 AV			1.43 V	347	56.90	38.00
2	5825.00	76.4 PK	78.30	-1.90	1.43 V	347	38.40	38.00
3	5835.00	65.0 PK	68.30	-3.30	1.43 V	347	27.00	38.00
4	#11608.00	65.5 PK	74.00	-8.50	1.38 V	257	20.00	45.50
4	#11608.00	50.3 AV	54.00	-3.70	1.38 V	257	4.80	45.50

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. “*” : Fundamental frequency
6. “# “ : The radiated frequency falling in the restricted band.

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
PEAK POWER SENSOR	E9327A	US40440722	July 30, 2003
POWER METER	E4416A	GB41291118	July 30, 2003

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

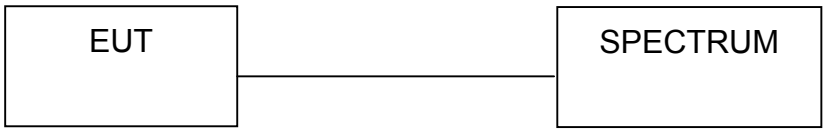
5.3.3 TEST PROCEDURE

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.

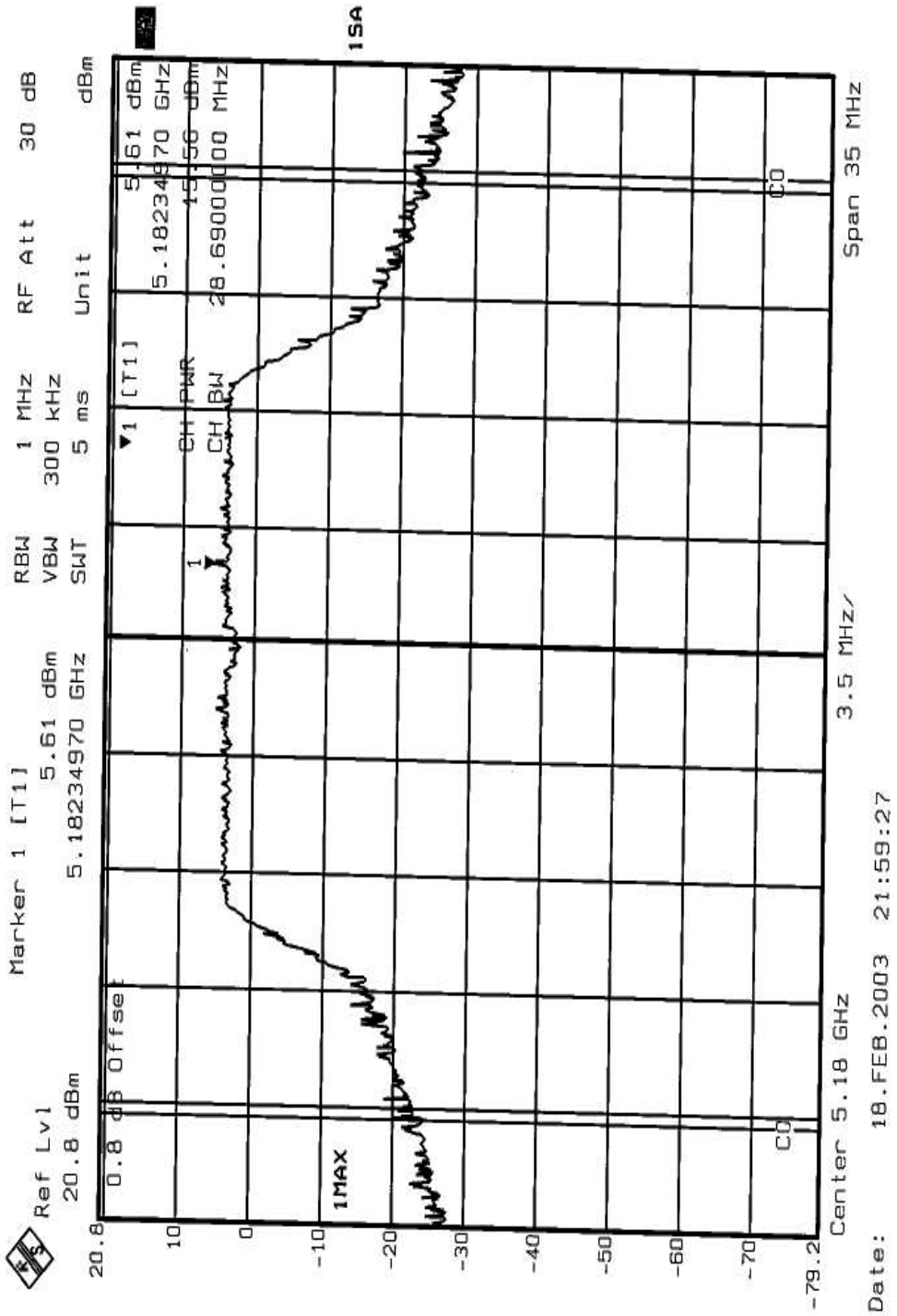
5.3.7 TEST RESULTS

EUT	5.0/2.4GHz Wireless Network Mini PCI	**MODEL**	GL2554MP-0A
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 1005hPa	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
TESTED BY	Steven Lu		

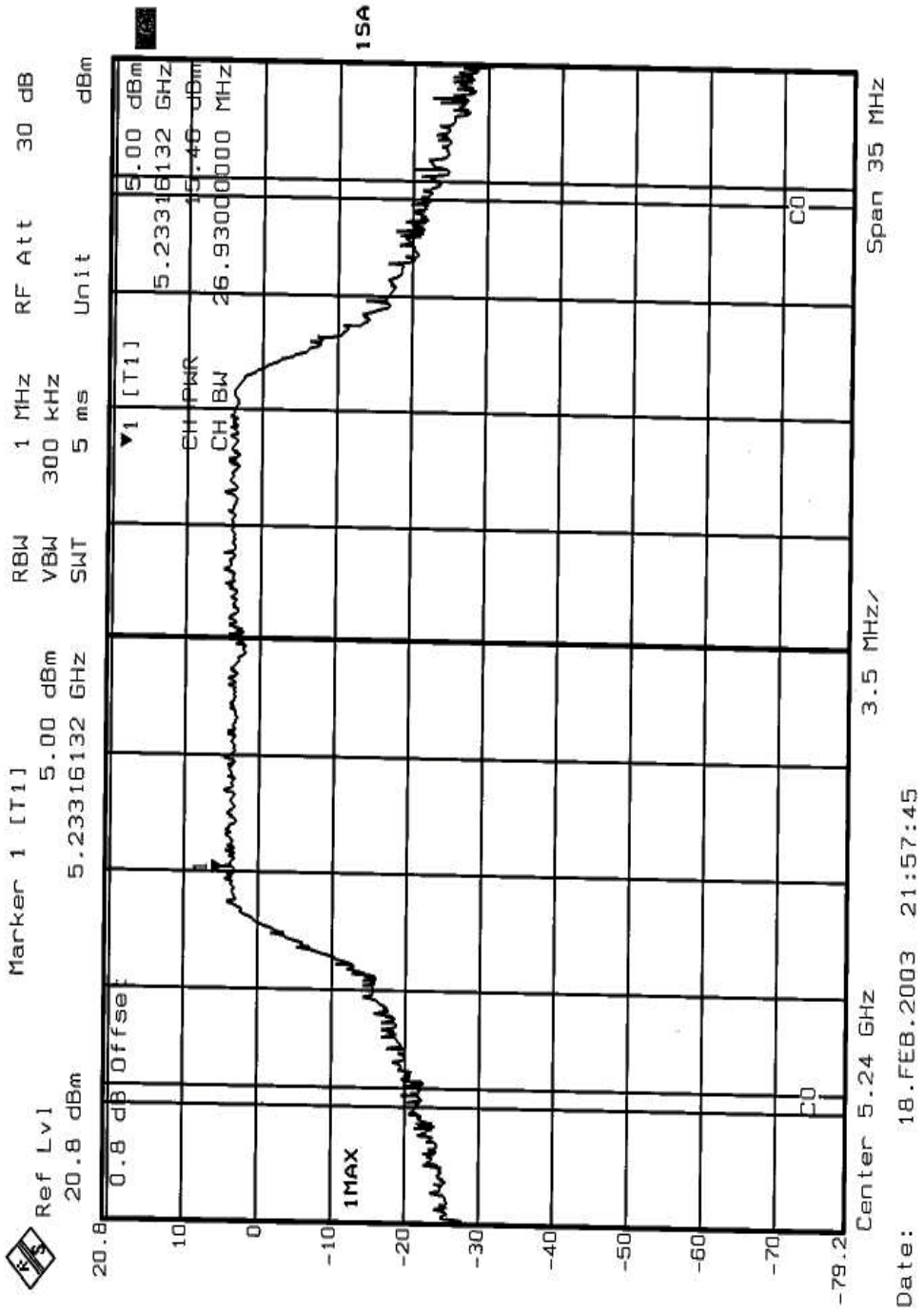
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	15.56	17.00	28.70	PASS
4	5240	15.46	17.00	26.93	PASS
5	5260	16.81	24.00	27.01	PASS
8	5320	16.91	24.00	31.10	PASS
9	5745	15.27	30.00	33.43	PASS
12	5805	14.04	30.00	34.71	PASS

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

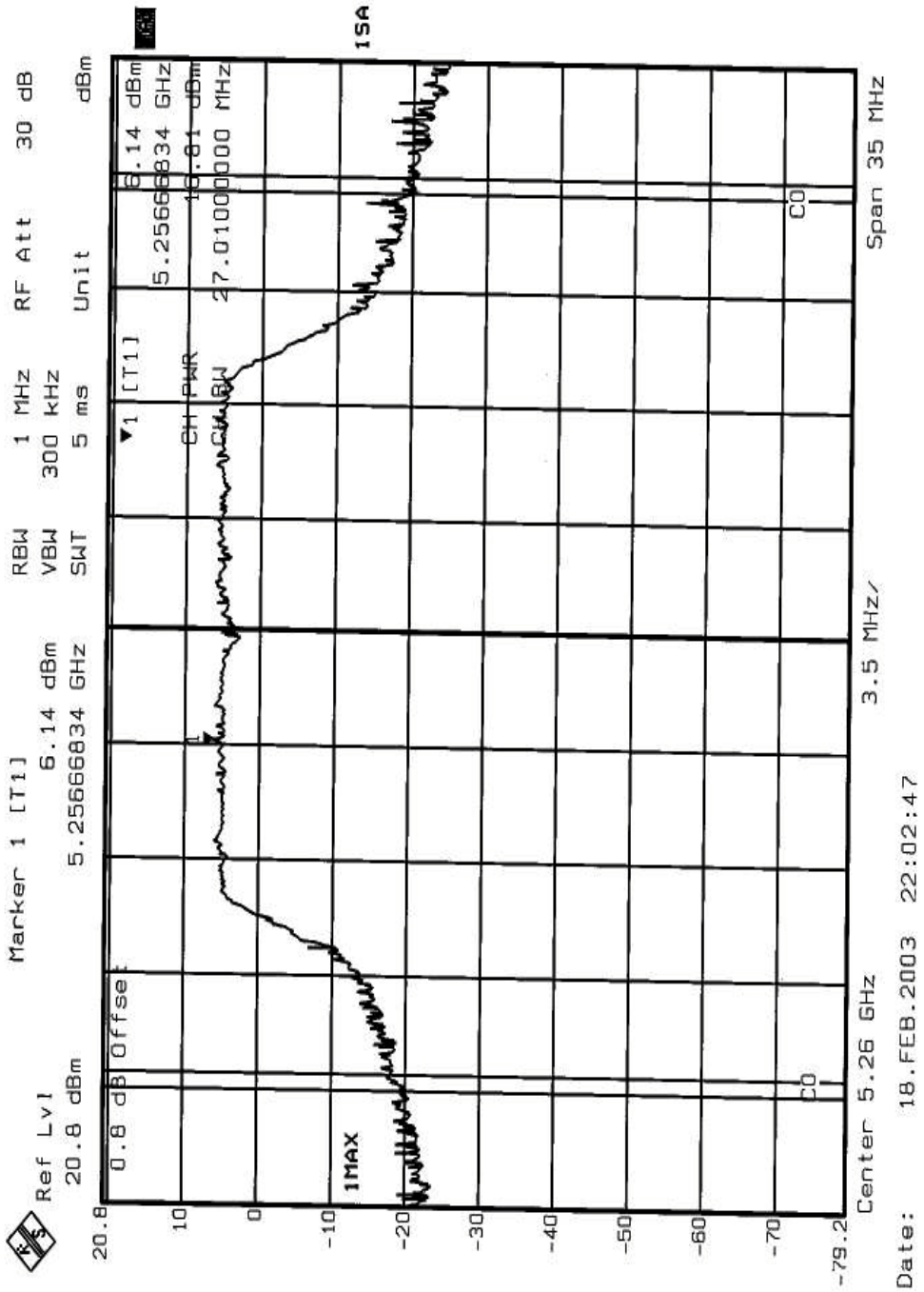
CHANNEL 1


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
5.61 dBm
5.18234970 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MAX
1SA
CO
Center 5.18 GHz
3.5 MHz/
Span 35 MHz
Date: 18.FEB.2003 21:59:27

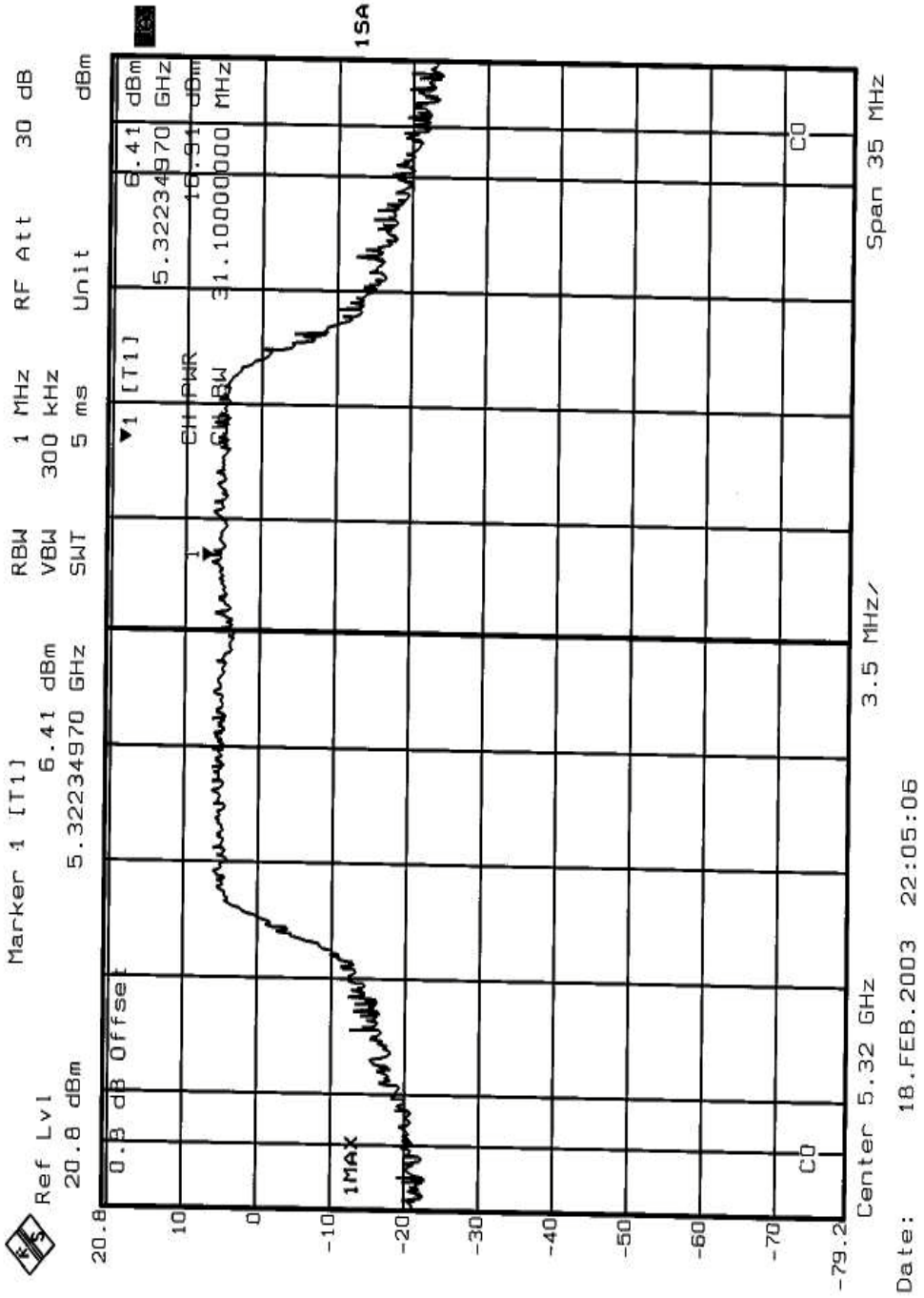
CHANNEL 4


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
5.00 dBm
5.23316132 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
CH PWR 5.00 dBm
CH BW 5.23316132 GHz
26.93000000 MHz
1SA
1MAX
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 5.24 GHz
3.5 MHz/
Span 35 MHz
Date: 18.FEB.2003 21:57:45

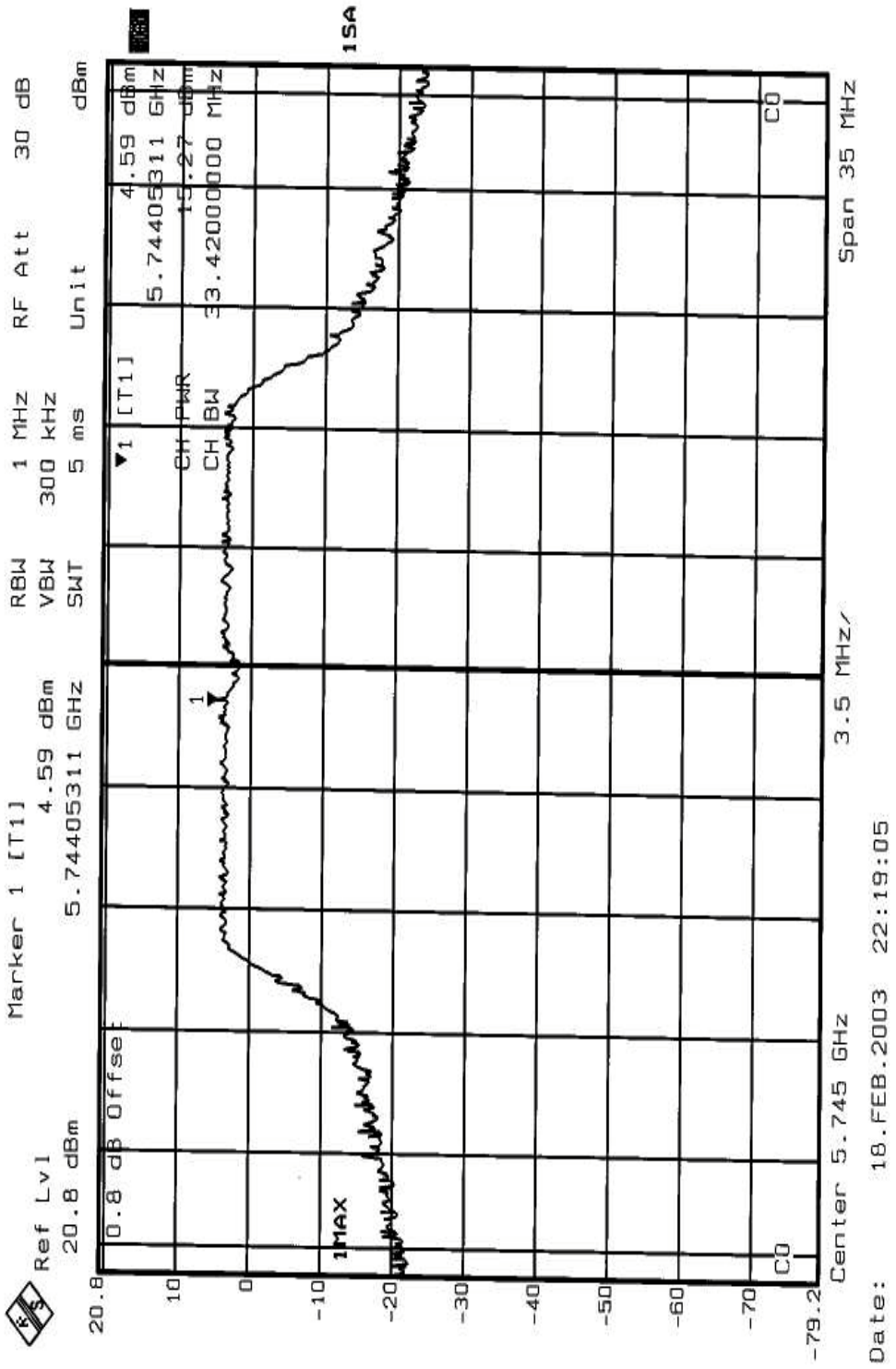
CHANNEL 5


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
6.14 dBm
5.25666834 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
CH PWR 6.14 dBm
CH BW 5.25666834 GHz
10.81 dBm
27.01000000 MHz
1SA
1MAX
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 5.26 GHz
3.5 MHz/
Span 35 MHz
Date: 18.FEB.2003 22:02:47

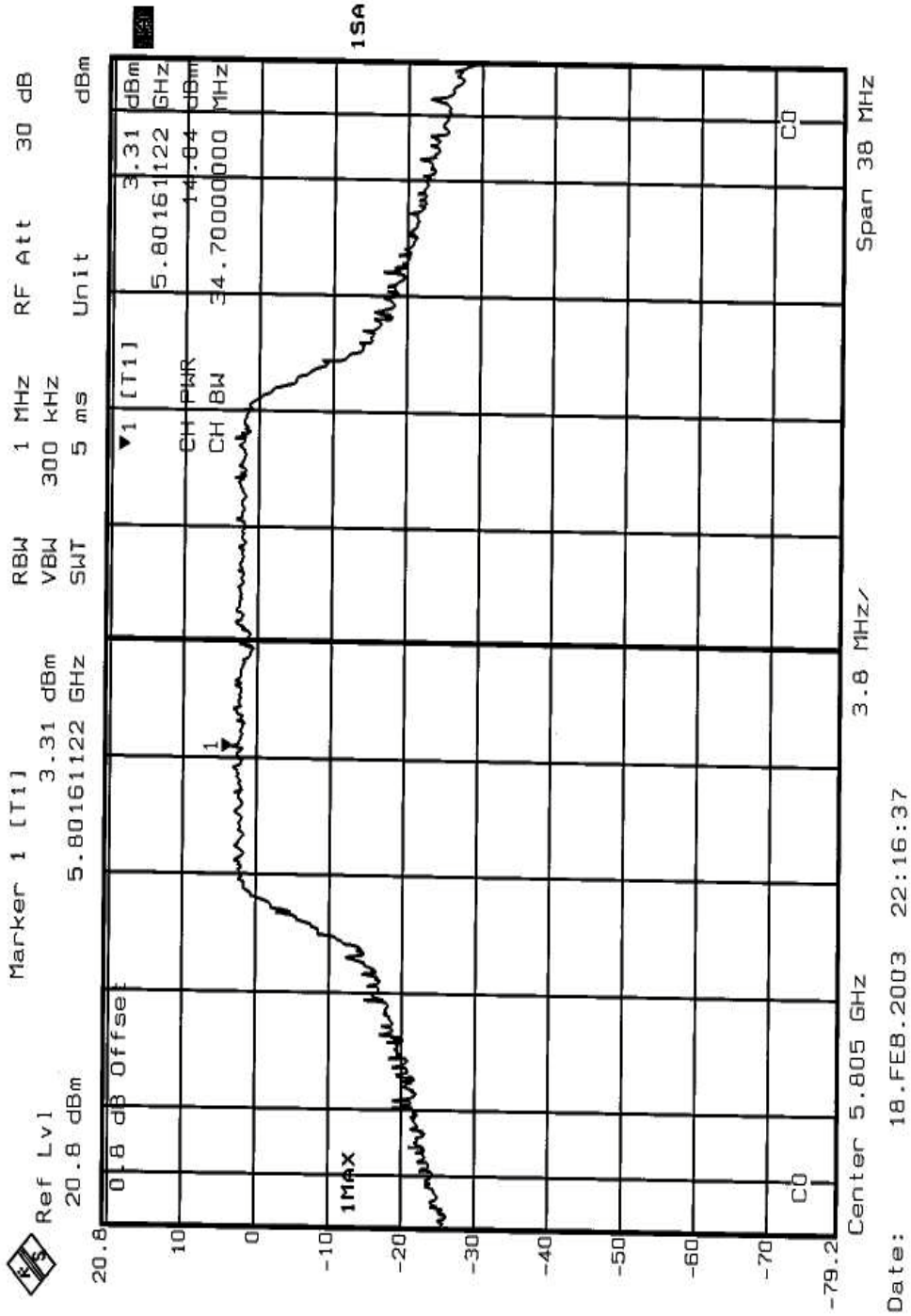
CHANNEL 8


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
6.41 dBm
5.32234970 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
CH PWR 6.41 dBm
5.32234970 GHz
CH BW 16.91 dBm
31.10000000 MHz
1SA
1MAX
CO
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 5.32 GHz
3.5 MHz/
Span 35 MHz
Date: 18.FEB.2003 22:05:06

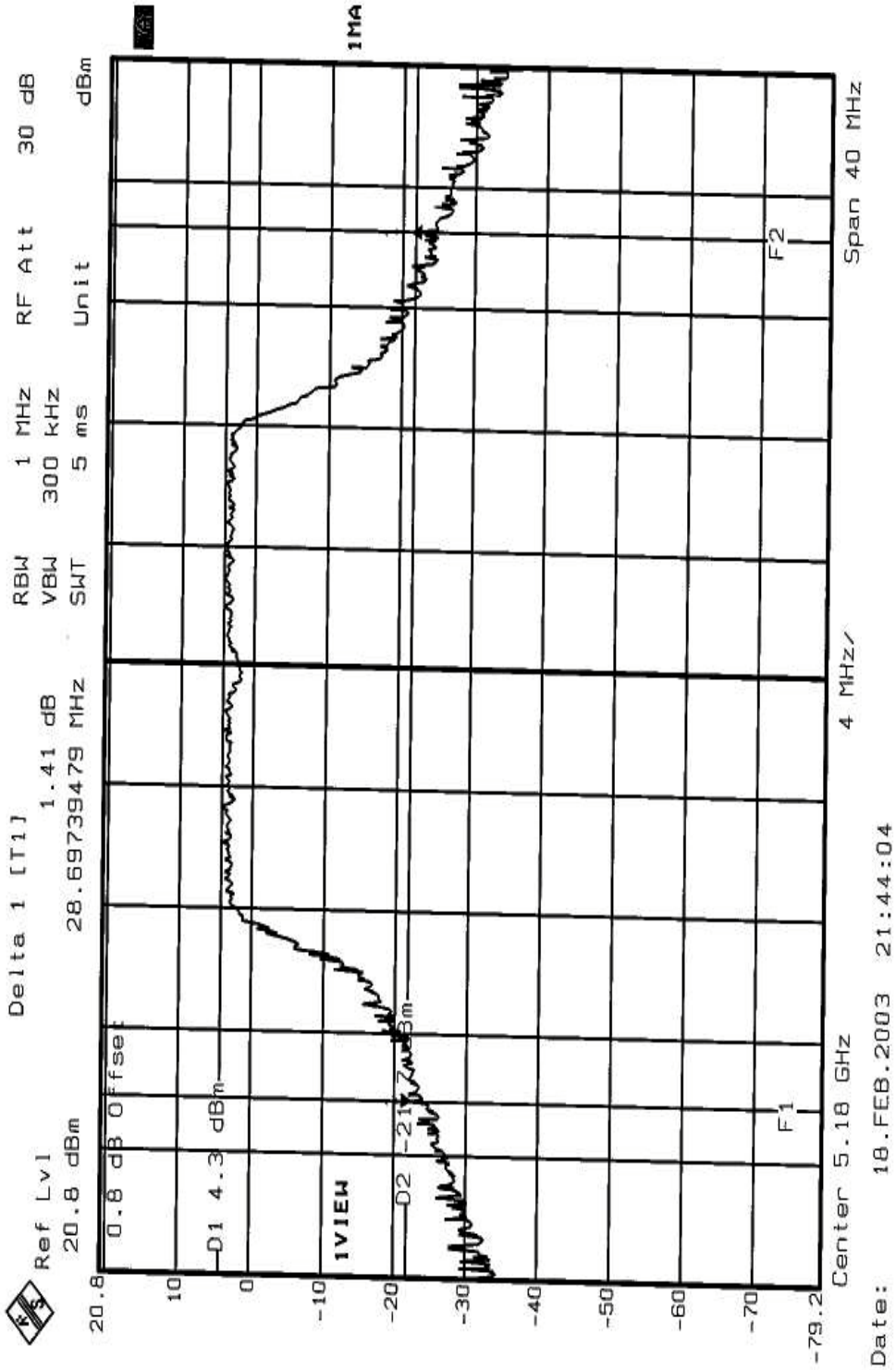
CHANNEL 9


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
4.59 dBm
5.74405311 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
CH PWR 4.59 dBm
CH BW 5.74405311 GHz
15.27 dBm
33.42000000 MHz
1SA
1MAX
CO
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 5.745 GHz
3.5 MHz/
Span 35 MHz
Date: 18.FEB.2003 22:19:05

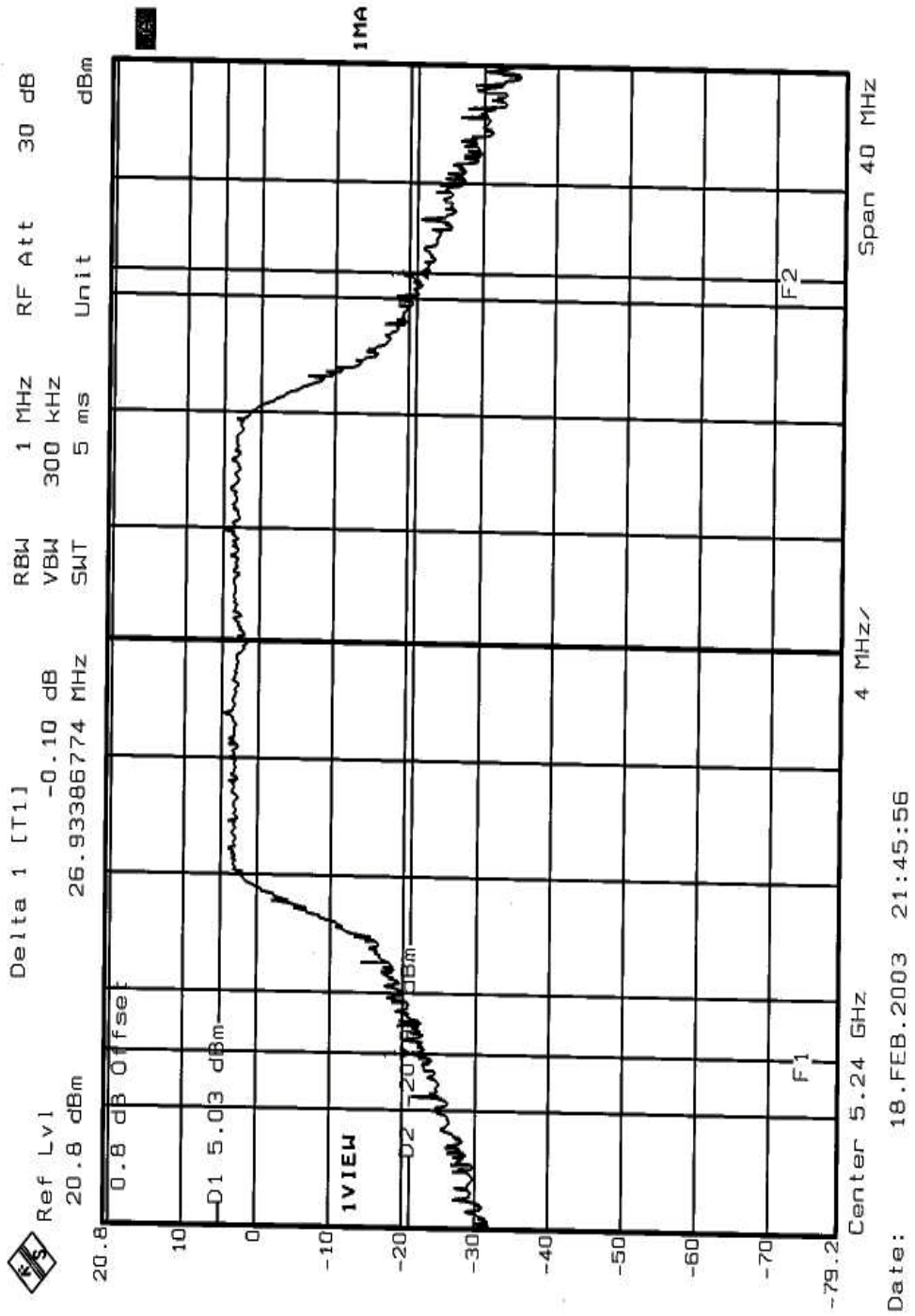
CHANNEL 12


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
3.31 dBm
5.80161122 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
3.31 dBm
5.80161122 GHz
CH PWR 14.04 dBm
CH BW 34.70000000 MHz
1SA
1MAX
CO
Center 5.805 GHz
3.8 MHz/
Span 38 MHz
Date: 18.FEB.2003 22:16:37
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2

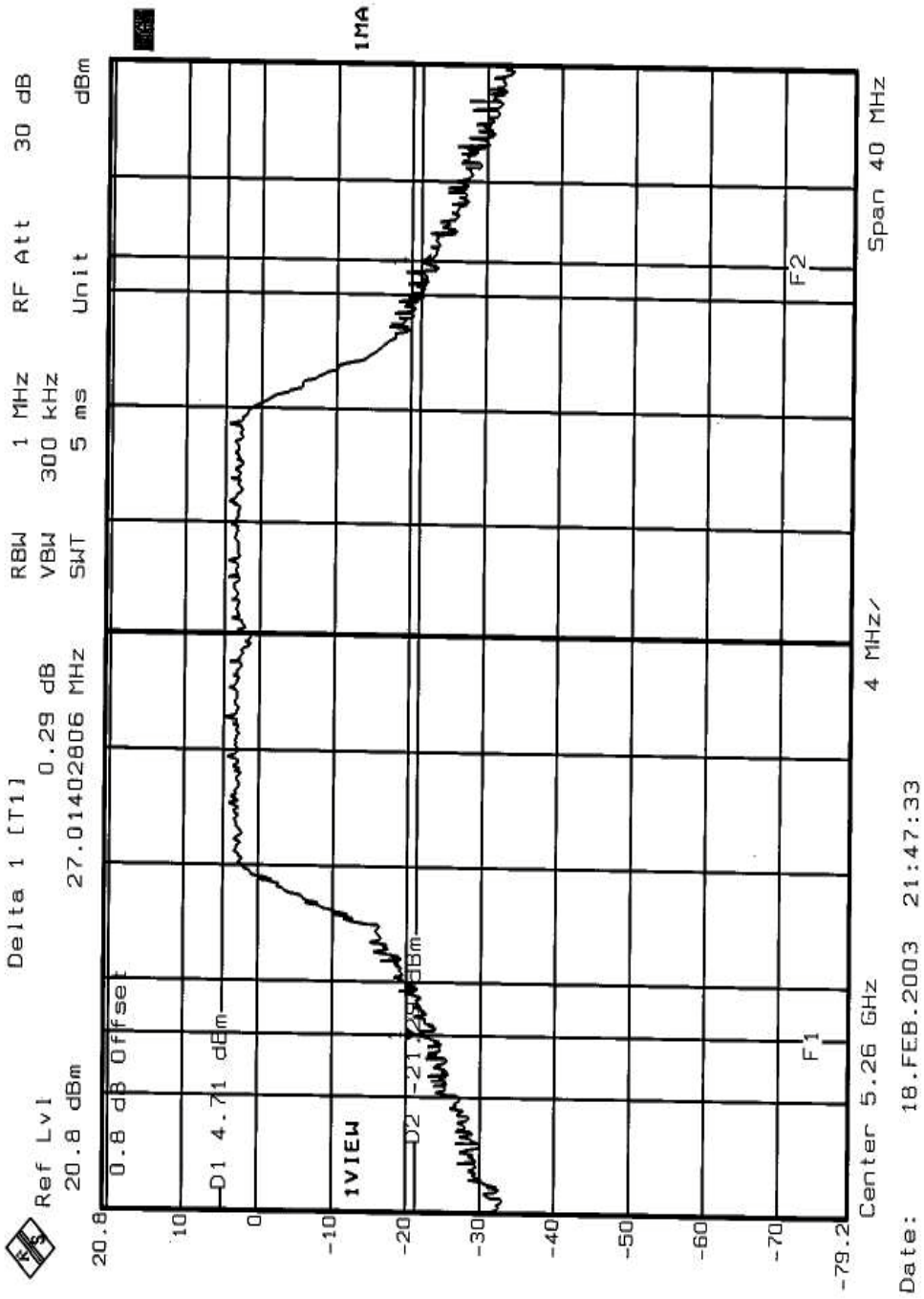
CHANNEL 1


Ref Lvl
20.8 dBm
0.8 dB Offset
D1 4.3 dBm
1VIEW
D2 -21.7 dBm
Delta 1 [T1]
1.41 dB
28.6973947 9 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
F1
F2
Center 5.18 GHz
4 MHz/
Span 40 MHz
Date: 18.FEB.2003 21:44:04

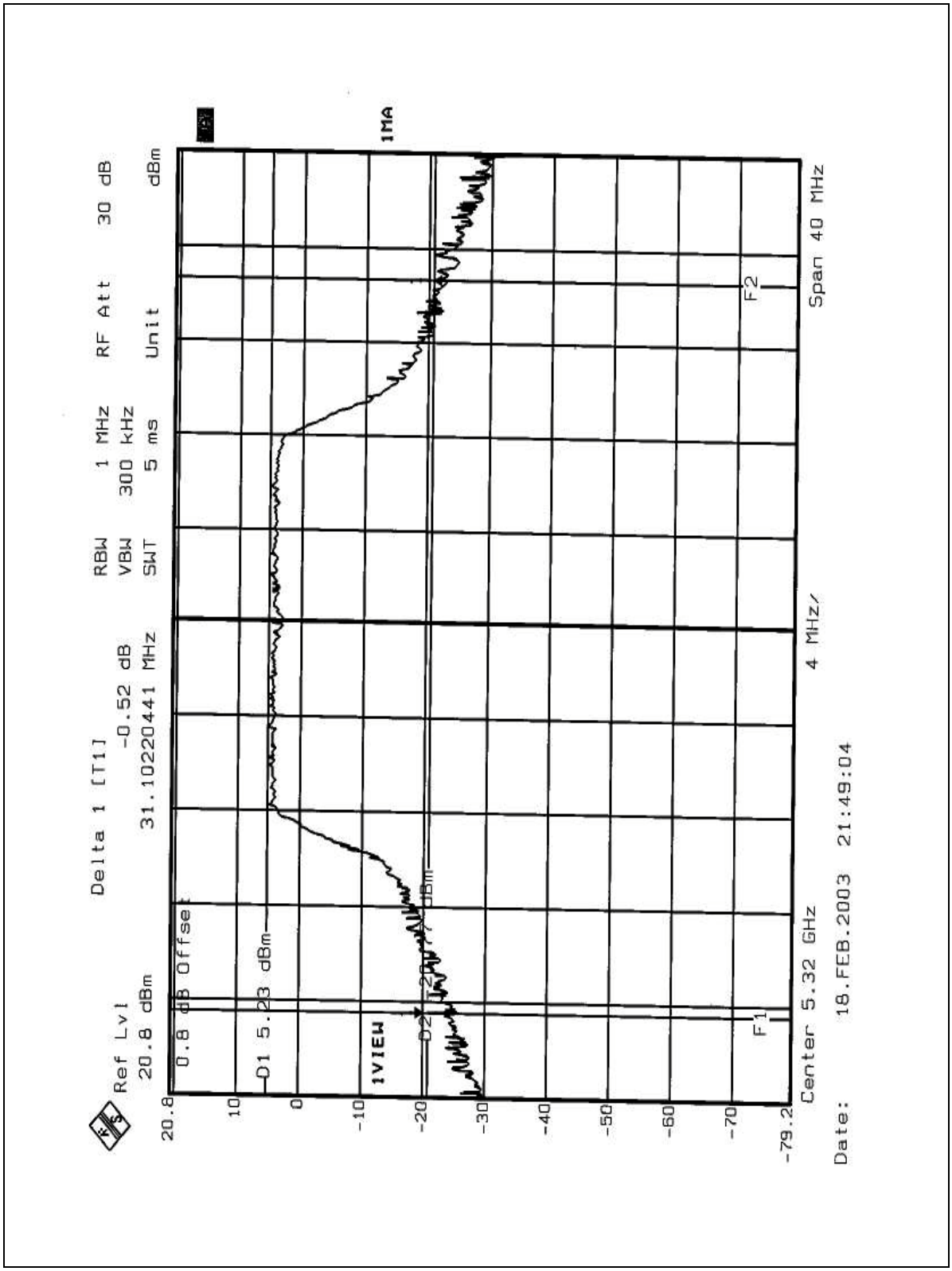
CHANNEL 4


Ref Lvl
20.8 dBm
0.8 dB Offset
D1 5.03 dBm
Delta 1 [T1]
-0.10 dB
26.93386774 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1VIEW
D2 20 dBm
1MA
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz
Date: 18.FEB.2003 21:45:56

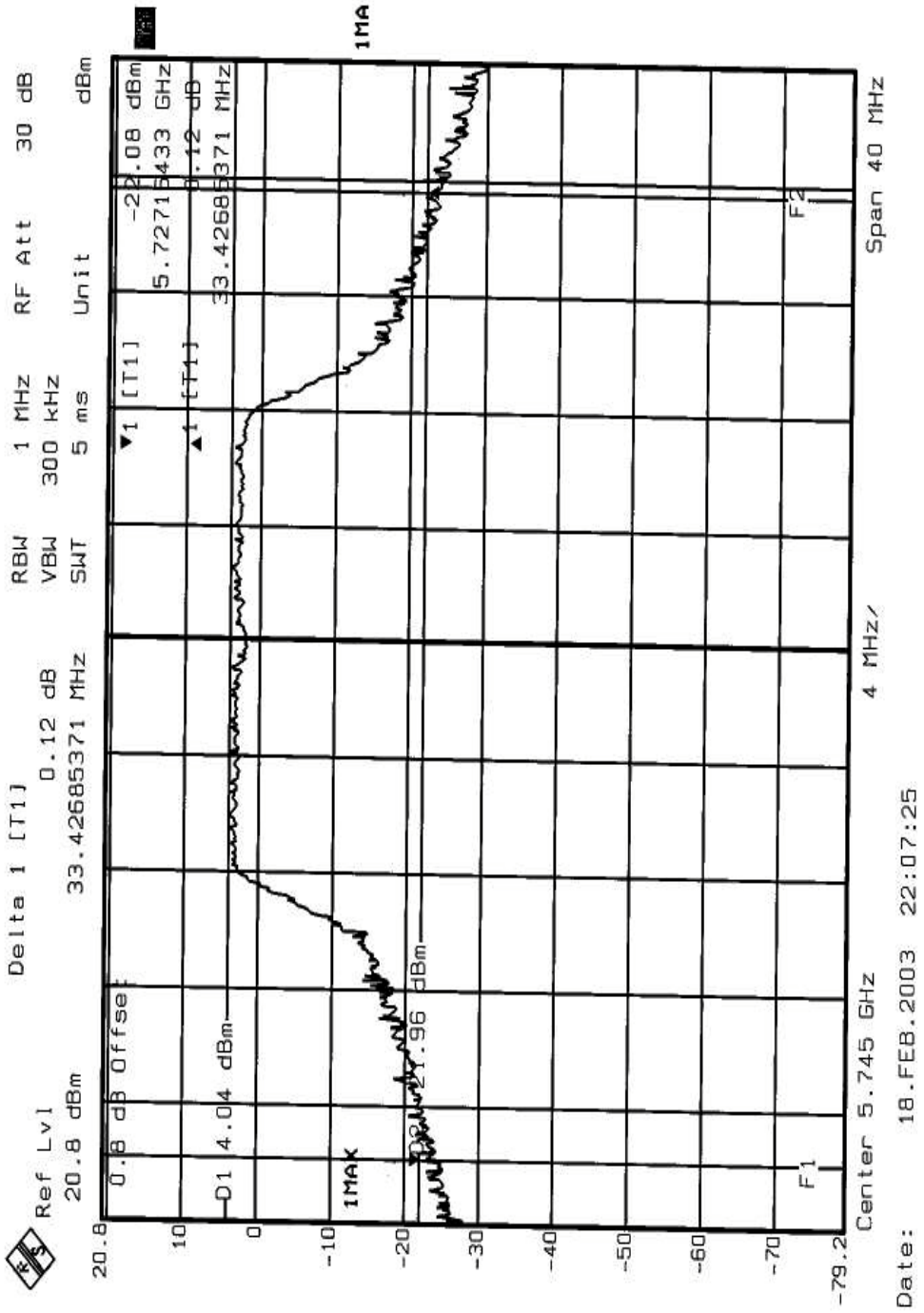
CHANNEL 5


Ref Lvl
20.8 dBm
0.8 dB Offset
Delta 1 [T1]
0.29 dB
27.01402806 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D1 4.71 dBm
D2 -21.29 dBm
F1
F2
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 5.26 GHz
4 MHz/
Span 40 MHz
Date: 18.FEB.2003 21:47:33

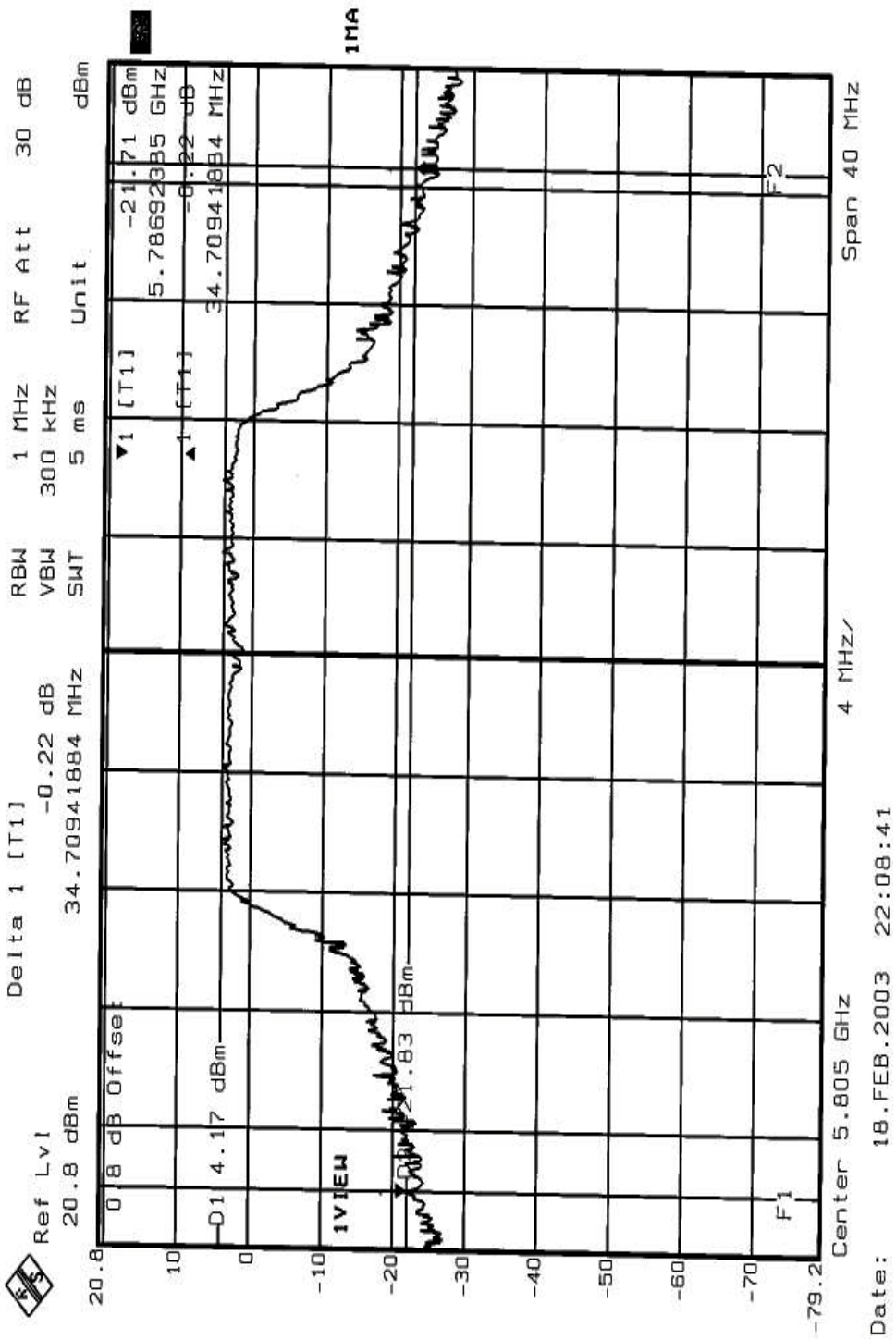
CHANNEL 8


Ref Lvl
20.8 dBm
0.8 dB Offset
D1 5.23 dBm
Delta 1 [T1]
-0.52 dB
31.10220441 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D2 20 dBm
F1
F2
Center 5.32 GHz
4 MHz/
Span 40 MHz
Date: 18.FEB.2003 21:49:04

CHANNEL 9


Ref Lvl
20.8 dBm
0.8 dB Offset
D1 4.04 dBm
1MAK
21.96 dBm
Delta 1 [T1]
0.12 dB
33.42685371 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
-22.08 dBm
5.72716433 GHz
1 [T1]
0.12 dB
33.42685371 MHz
1MA
F2
F1
Span 40 MHz
4 MHz/
Center 5.745 GHz
Date: 18.FEB.2003 22:07:25

CHANNEL 12


Ref Lvl
20.8 dBm
Delta 1 [T1]
-0.22 dB
34.70941884 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1] -21.71 dBm
5.78692385 GHz
1 [T1] -0.22 dB
34.70941884 MHz
1MA
1VIEW
F1
F2
Center 5.805 GHz
4 MHz/
Span 40 MHz
Date: 18.FEB.2003 22:08:41