

FCC TEST REPORT

REPORT NO.: RF901105R05

MODEL NO.: Solo 1400

RECEIVED: Nov. 5, 2001

TESTED: Nov. 7 ~ Nov. 16, 2001

APPLICANT: QUANTA COMPUTER INC.

ADDRESS: No.188, Wen Hwa 2nd Rd., Kuei Shan Hsiang,
Tao Yuan, Taiwan, R.O.C.

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: 47 14th Lin, Chiapau Tsun, Linko, Taipei,
Taiwan, R.O.C.

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0528
ILAC MRA



Lab Code: 200102-0

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1 CERTIFICATION

PRODUCT : Notebook PC (with 2.4GHz Wireless USB interface card)
BRAND NAME : Gateway
MODEL NO. : Solo 1400
APPLICANT : QUANTA COMPUTER INC.
STANDARDS : 47 CFR Part 15, Subpart C (Section 15.247),
ANSI C63.4-1992,
Canada RSS 210,
New Zealand RFS 29

We, **Advance Data Technology Corporation**, hereby certify that one sample of the designation has been tested in our facility from Nov. 7, 2001 to Nov. 16, 2001, 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.

TESTED BY: Gary Chang, **DATE:** Nov. 19, 2001
Gary Chang

CHECKED BY: Anna Kuo, **DATE:** Nov. 19, 2001
Anna Kuo

APPROVED BY: Alan Lane, **DATE:** Nov. 19, 2001
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
15.107	AC Power Conducted Emission Limit: 48dBuV	PASS	Meet the requirement of limit Minimum passing margin is -6.21 dBuV at 14.958 MHz
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©	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -0.30 dBuV at 2038.00 MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247©	Band Edge Measurement Limit: 20 Db less than the peak value of fundamental frequency	PASS	Meet the requirement of limit

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Notebook PC (with 2.4GHz Wireless USB interface card)
MODEL NO.	Solo 1400
POWER SUPPLY	19VDC from adapter
MODULATION TYPE	DBPSK/DQPSK/CCK (DSSS)
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	12.8 dBm
ANTENNA TYPE	Patch Antenna
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE: 1. For more detailed features description, please refer to the manufacturer's specifications or User's Manual.

2. For detailed construction photo of the host notebook, please refer to the test report with ADT number: D901024A08. (FCC Part 15B)

The EUT was operated with the AC Adapter as follows:

Brand Name:	Gateway
Model No.:	ADP-60DH REV.B
Input Power:	100 – 240V
Output Power:	19V

3.2 DESCRIPTION OF TEST MODES

Eleven channels are provided in 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:

- Below 1 GHz, the channel 1, 6, and 11 were pre-tested in chamber. The channel 11, worst case one, was chosen for final test.
- Above 1 GHz, the channel 1, 6, and 11 were tested individually.
- The EUT is a Notebook PC with 2.4GHz Wireless USB interface card. There are two selections of antennas. Test modes are classified as follows:

Mode	Antenna Type	Manufacturer	Antenna Model	
			Left	Right
1	Patch	Foxconn	FX01A58-00	FX01A59-00
2	Patch	Auden Techno Corp.	CD-2110BH-000	CR-2110BH-100

Test result A is for Mode 1 while test result B is for Mode 2.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless LAN Card. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC CFR 47 Part 15, Subpart C. (15.247),

ANSI C63.4 : 1992, ANSI C63.4-1992,

Canada RSS 210,

New Zealand RFS 29

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	PRINTER	HP	2225C+	3123S97230	DSI6XU2225
2	600Ω Load	NA	NA	NA	NA

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

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

4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class B (dBuV)	
	Quasi-peak	Average
0.45 – 30	48	-

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. All emanations from a class 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

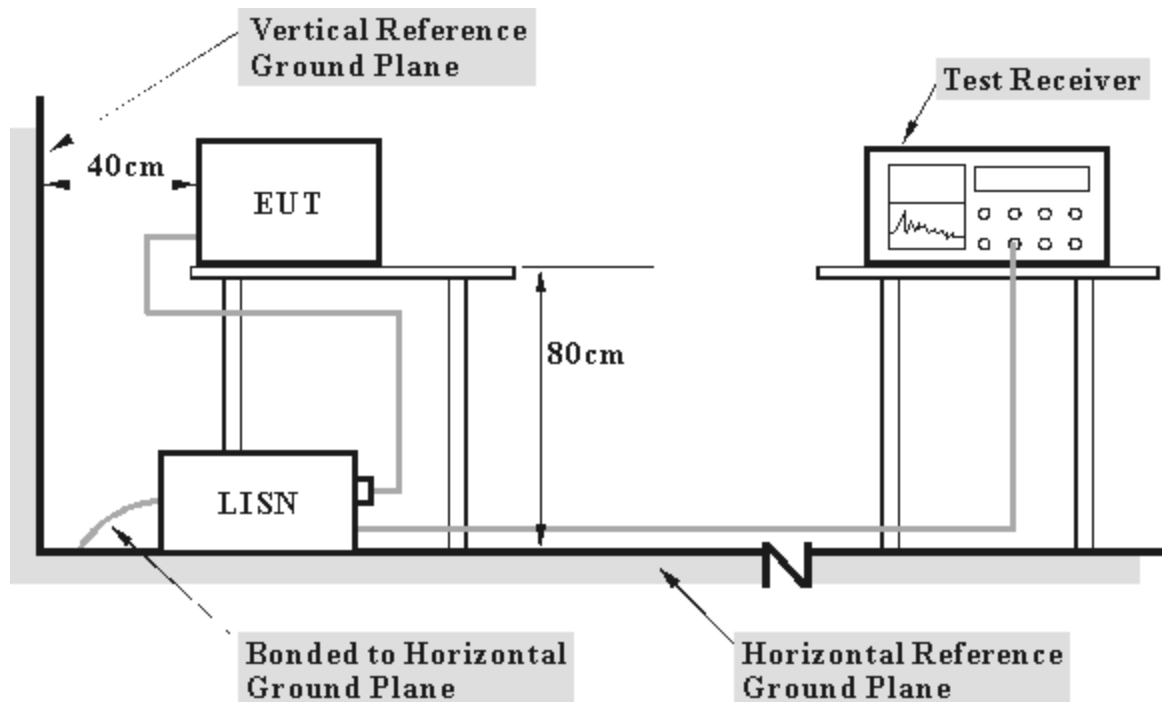
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESHS30	828109/007	July 4, 2002
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	839135/006	July 3, 2002
* ROHDE & SCHWARZ 4-wire ISN	ENY41	837032/016	Nov. 28, 2001
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/016	Dec. 3, 2001
EMCO-L.I.S.N. (for peripheral)	3825/2	9204-1964	July 3, 2002
Software	Cond-V2J	NA	NA
RF cable (JYEBAO)	RG-58A/U	Cable-C02.01	July 5, 2002
HP Terminator (For EMCO LISN)	11593A	E1-01-298	Feb. 20, 2002
HP Terminator (For EMCO LISN)	11593A	E1-01-299	Feb. 20, 2002
Shielded Room	Site 2	ADT-C02	NA
VCCI Site Registration No.	Site 2	C-240	NA

- NOTE:**
1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. “*”: These equipment are used for conducted telecom port test only (if tested).

4.1.3 TEST PROCEDURES

- 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.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 450 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

4.1.4 TEST SETUP



- Note:**
- Support units were connected to second LISN.
 - 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.



4.1.5 EUT OPERATING CONDITIONS

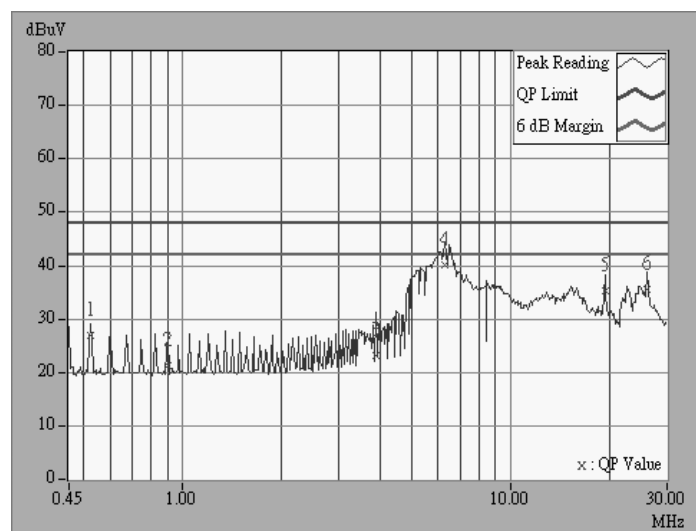
- a. Connected the EUT to a computer system placed on a testing table.
- b. The computer system ran a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency.
- c. The computer system sent "H" messages to its screen.
- d. The computer system sent "H"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

4.1.6 TEST RESULTS(A)

EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	1	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY: Gary 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	0.523	0.10	26.94	-	27.04	-	48.00	-	-20.96	-
2	0.899	0.10	21.23	-	21.33	-	48.00	-	-26.67	-
3	3.901	0.29	23.15	-	23.44	-	48.00	-	-24.56	-
4	6.302	0.38	40.23	-	40.61	-	48.00	-	-7.39	-
5	19.472	0.98	35.23	-	36.21	-	48.00	-	-11.79	-
6	25.995	1.12	35.49	-	36.61	-	48.00	-	-11.39	-

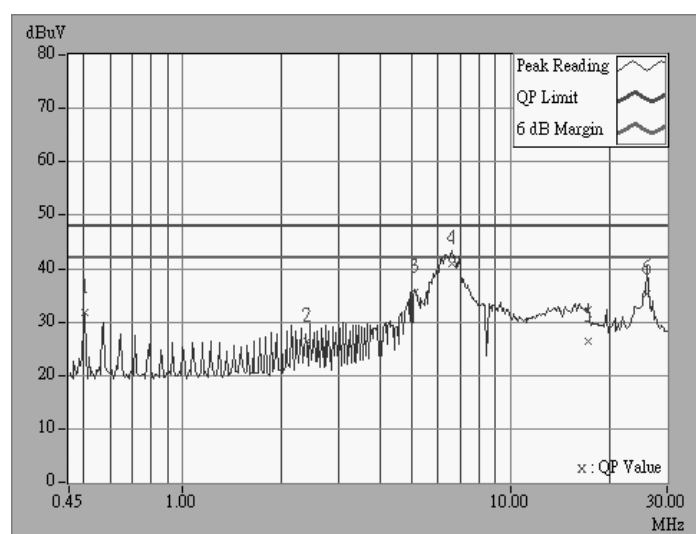
- REMARKS:
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	1	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY: Gary Chang	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.503	0.10	31.75	-	31.85	-	48.00	-	-16.15	-
2	2.402	0.14	26.46	-	26.60	-	48.00	-	-21.40	-
3	5.087	0.32	35.65	-	35.97	-	48.00	-	-12.03	-
4	6.620	0.34	41.06	-	41.40	-	48.00	-	-6.60	-
5	17.201	0.69	26.34	-	27.03	-	48.00	-	-20.97	-
6	25.947	0.92	35.29	-	36.21	-	48.00	-	-11.79	-

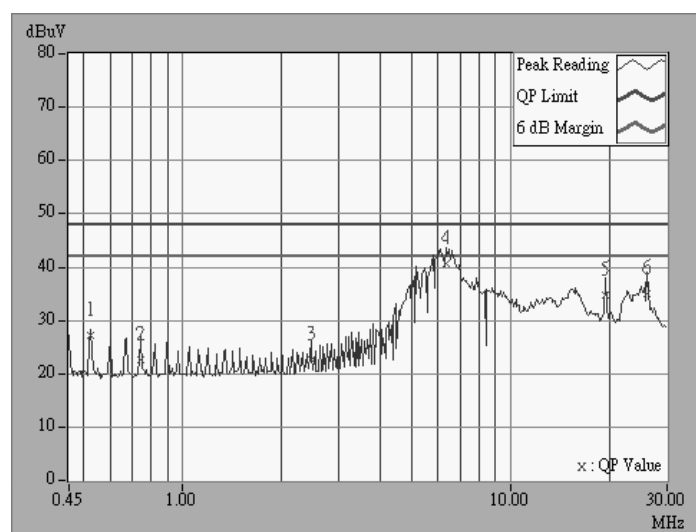
- REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	6	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY: Gary 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	0.522	0.10	27.19	-	27.29	-	48.00	-	-20.71	-
2	0.747	0.10	22.55	-	22.65	-	48.00	-	-25.35	-
3	2.469	0.15	22.54	-	22.69	-	48.00	-	-25.31	-
4	6.358	0.38	40.76	-	41.14	-	48.00	-	-6.86	-
5	19.470	0.98	34.63	-	35.61	-	48.00	-	-12.39	-
6	25.992	1.12	35.01	-	36.13	-	48.00	-	-11.87	-

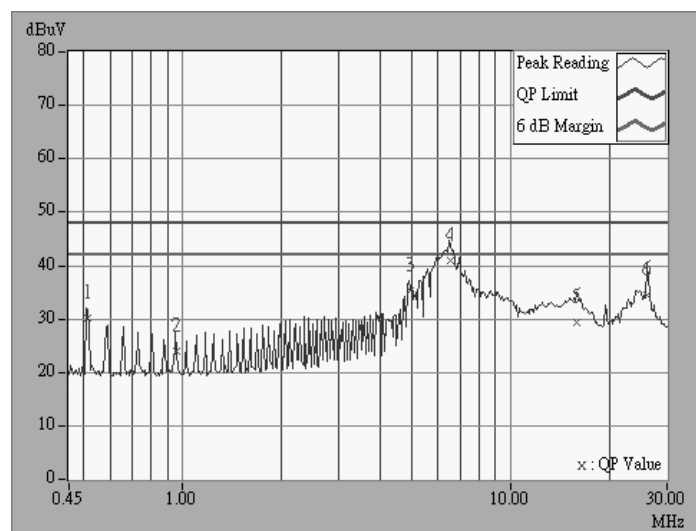
- REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	6	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY: Gary Chang	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]	(dB)	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.513	0.10	30.16	-	30.26	-	48.00	-	-17.74	-
2	0.954	0.10	23.92	-	24.02	-	48.00	-	-23.98	-
3	4.924	0.32	35.17	-	35.49	-	48.00	-	-12.51	-
4	6.548	0.34	40.93	-	41.27	-	48.00	-	-6.73	-
5	15.827	0.63	29.29	-	29.92	-	48.00	-	-18.08	-
6	25.949	0.92	34.47	-	35.39	-	48.00	-	-12.61	-

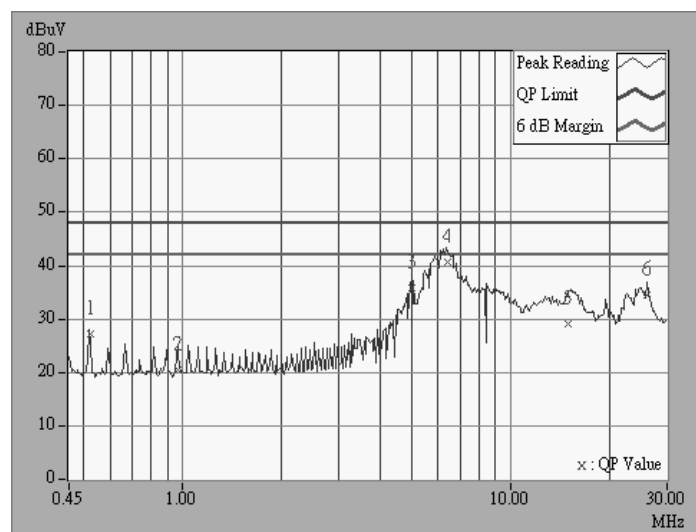
- REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	11	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY: Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.521	0.10	27.19	-	27.29	-	48.00	-	-20.71	-
2	0.966	0.10	20.37	-	20.47	-	48.00	-	-27.53	-
3	4.984	0.33	35.79	-	36.12	-	48.00	-	-11.88	-
4	6.401	0.38	40.75	-	41.13	-	48.00	-	-6.87	-
5	15.041	0.80	29.20	-	30.00	-	48.00	-	-18.00	-
6	25.944	1.12	34.57	-	35.69	-	48.00	-	-12.31	-

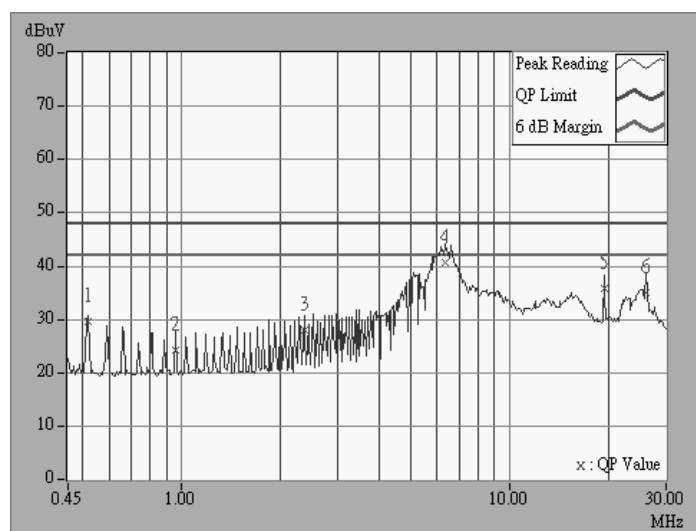
- REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	11	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Netural (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY:	Gary Chang

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.517	0.10	29.73	-	29.83	-	48.00	-	-18.17	-
2	0.961	0.10	24.24	-	24.34	-	48.00	-	-23.66	-
3	2.369	0.14	27.99	-	28.13	-	48.00	-	-19.87	-
4	6.373	0.34	40.57	-	40.91	-	48.00	-	-7.09	-
5	19.472	0.78	35.93	-	36.71	-	48.00	-	-11.29	-
6	25.947	0.92	34.93	-	35.85	-	48.00	-	-12.15	-

- 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.

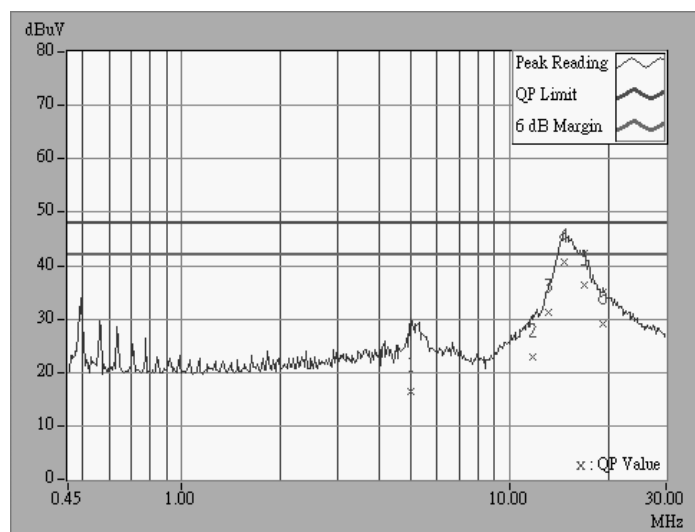


4.1.7 TEST RESULTS(B)

EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	1	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY: Gary 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	5.009	0.33	16.44	-	16.77	-	48.00	-	-31.23	-
2	11.734	0.60	22.77	-	23.37	-	48.00	-	-24.63	-
3	13.142	0.69	31.17	-	31.86	-	48.00	-	-16.14	-
4	14.718	0.78	40.62	-	41.40	-	48.00	-	-6.60	-
5	16.951	0.88	36.27	-	37.15	-	48.00	-	-10.85	-
6	19.325	0.97	29.22	-	30.19	-	48.00	-	-17.81	-

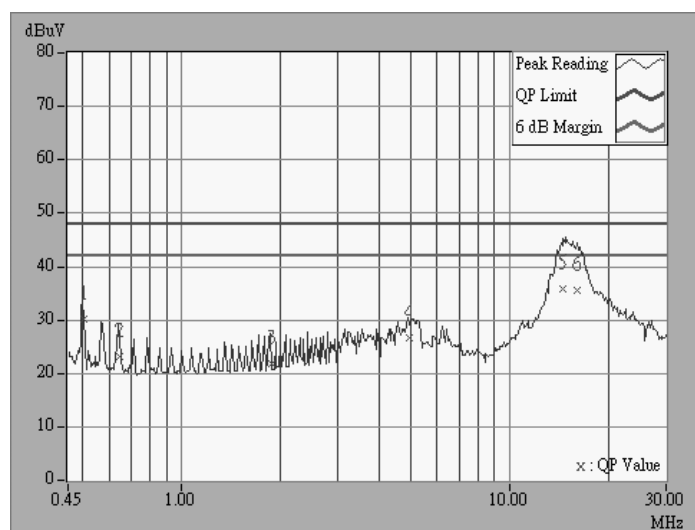
- REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	1	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY: Gary Chang	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]	(dB)	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.504	0.10	30.16	-	30.26	-	48.00	-	-17.74	-
2	0.644	0.10	23.11	-	23.21	-	48.00	-	-24.79	-
3	1.871	0.10	21.89	-	21.99	-	48.00	-	-26.01	-
4	4.963	0.32	26.55	-	26.87	-	48.00	-	-21.13	-
5	14.542	0.58	35.77	-	36.35	-	48.00	-	-11.65	-
6	16.138	0.65	35.62	-	36.27	-	48.00	-	-11.73	-

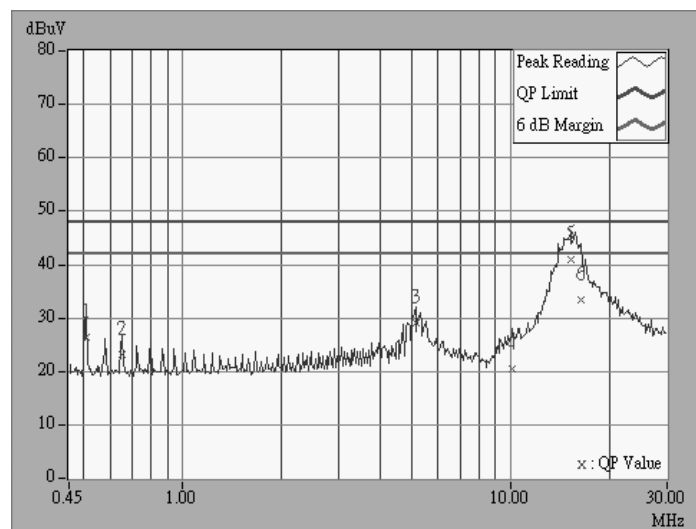
- REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	6	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY: Gary Chang	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]	(dB)	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.510	0.10	26.47	-	26.57	-	48.00	-	-21.43	-
2	0.651	0.10	23.07	-	23.17	-	48.00	-	-24.83	-
3	5.150	0.34	29.20	-	29.54	-	48.00	-	-18.46	-
4	10.159	0.51	20.42	-	20.93	-	48.00	-	-27.07	-
5	15.238	0.81	40.83	-	41.64	-	48.00	-	-6.36	-
6	16.381	0.86	33.38	-	34.24	-	48.00	-	-13.76	-

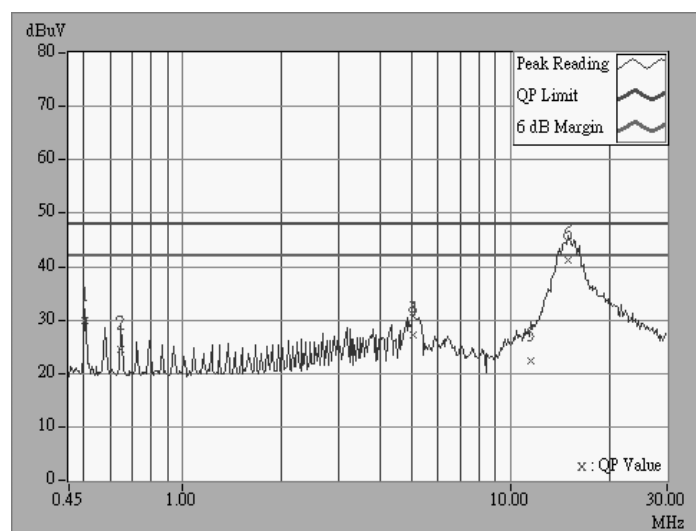
- REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	6	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY: Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.504	0.10	29.88	-	29.98	-	48.00	-	-18.02	-
2	0.648	0.10	24.45	-	24.55	-	48.00	-	-23.45	-
3	5.058	0.32	27.32	-	27.64	-	48.00	-	-20.36	-
4	5.063	0.32	27.30	-	27.62	-	48.00	-	-20.38	-
5	11.500	0.46	22.32	-	22.78	-	48.00	-	-25.22	-
6	14.958	0.60	41.19	-	41.79	-	48.00	-	-6.21	-

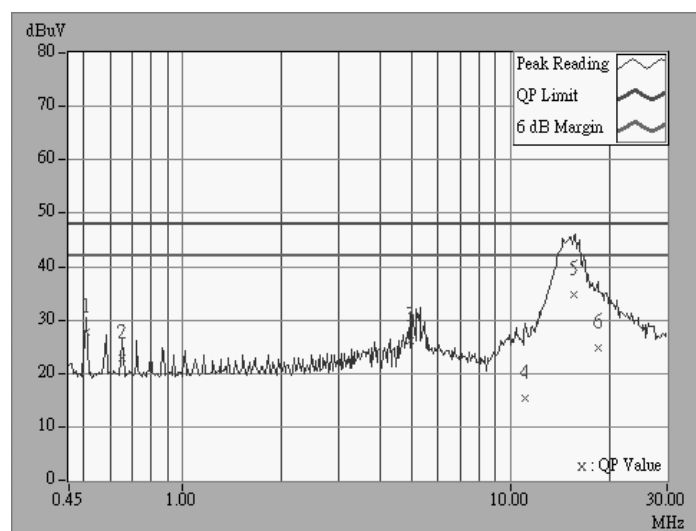
- REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	11	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY: Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.509	0.10	27.61	-	27.71	-	48.00	-	-20.29	-
2	0.655	0.10	23.01	-	23.11	-	48.00	-	-24.89	-
3	4.953	0.33	26.08	-	26.41	-	48.00	-	-21.59	-
4	11.114	0.57	15.35	-	15.92	-	48.00	-	-32.08	-
5	15.657	0.83	34.72	-	35.55	-	48.00	-	-12.45	-
6	18.456	0.94	24.84	-	25.78	-	48.00	-	-22.22	-

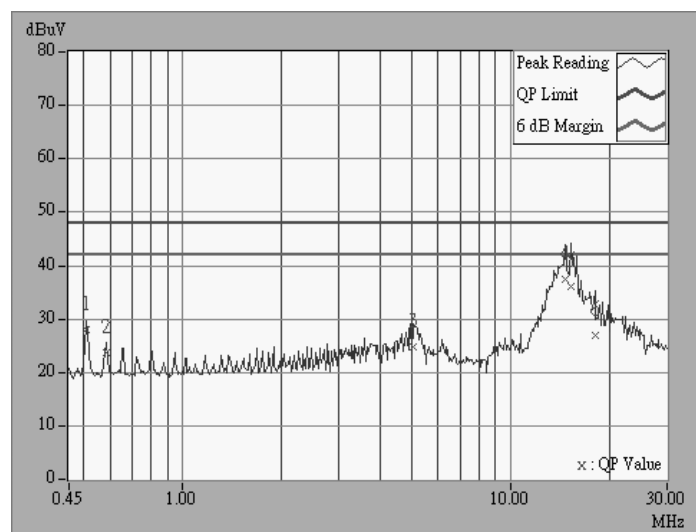
- REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	11	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Netural (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 50%RH, 1005 hPa	TESTED BY: Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.508	0.10	28.07	-	28.17	-	48.00	-	-19.83	-
2	0.583	0.10	23.74	-	23.84	-	48.00	-	-24.16	-
3	5.024	0.32	24.82	-	25.14	-	48.00	-	-22.86	-
4	14.650	0.59	37.40	-	37.99	-	48.00	-	-10.01	-
5	15.299	0.61	35.99	-	36.60	-	48.00	-	-11.40	-
6	18.068	0.72	26.87	-	27.59	-	48.00	-	-20.41	-

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





4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Field strength limits are at the distance of 3 meters, emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field Strength of Fundamental	
	uV/m	dBuV/m
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

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 7, 2002
*HP Preamplifier	8447D	2499A08119	July 11, 2002
* HP Preamplifier	8449B	3008A01201	Dec. 13, 2001
* HP Preamplifier	8449B	3008A01292	Aug. 21, 2002
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Jan. 25, 2002
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 23, 2001
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 2, 2002
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	July 6, 2002
* EMCO Horn Antenna	3115	9312-4192	April 15, 2002
* EMCO Turn Table	1060	1115	NA
* SHOSHIN Tower	AP-4701	A6Y005	NA
* Software	AS61D4	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Aug. 2, 2002
* TIMES RF cable	LMR-600	CABLE-ST5-01	Aug. 2, 2002
Open Field Test Site	Site 5	ADT-R05	July 28, 2002
VCCI Site Registration No.	Site 5	R-1039	NA

NOTE: 1. The measurement uncertainty is less than +/- 3.0dB, which is calculated as per the NAMAS document NIS81.

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

3. "*" = These equipment are used for the final measurement.

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



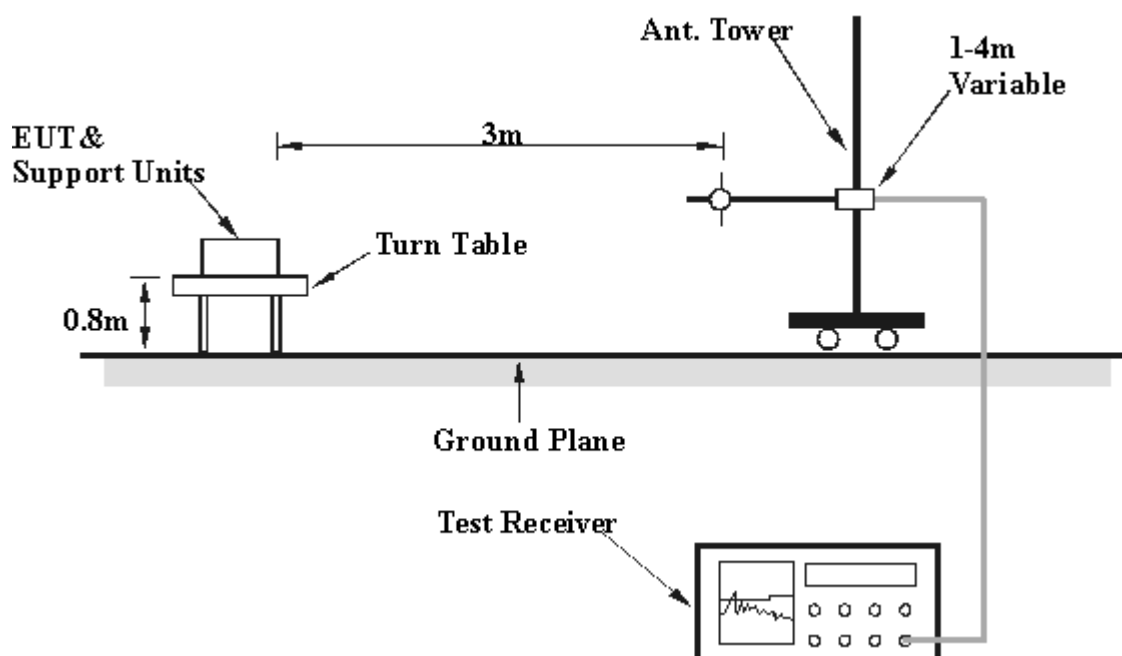
4.2.3 TEST PROCEDURES

- 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 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.

4.2.4 TEST SETUP



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

4.2.5 EUT OPERATING CONDITIONS

Same as 4.1.5.

4.2.6 TEST RESULTS (A)

EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	11	FREQUENCY RANGE	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1005 hPa	TESTED BY: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M											
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	50.00	25.9 QP	40.00	-14.10	1.17H	184	15.40	9.78	0.71	0.00	-10.48
2	120.70	30.9 QP	43.50	-12.60	1.20H	278	18.20	11.65	1.08	0.00	-12.73
3	132.00	33.3 QP	43.50	-10.20	1.10H	151	21.00	11.16	1.13	0.00	-12.29
4	165.00	29.1 QP	43.50	-14.40	1.30H	67	18.40	9.44	1.29	0.00	-10.73
5	195.00	29.8 QP	43.50	-13.70	1.79H	98	19.40	8.96	1.40	0.00	-10.36
6	199.92	28.4 QP	43.50	-15.10	1.27H	304	18.00	8.98	1.42	0.00	-10.41
7	220.00	33.6 QP	46.00	-12.40	1.56H	142	22.00	10.12	1.51	0.00	-11.63
8	227.40	33.1 QP	46.00	-12.90	1.58H	230	21.00	10.55	1.55	0.00	-12.10
9	308.00	33.5 QP	46.00	-12.50	1.11H	204	18.20	13.38	1.91	0.00	-15.29
10	320.00	32.7 QP	46.00	-13.30	1.28H	58	17.10	13.62	1.95	0.00	-15.58
11	396.00	35.7 QP	46.00	-10.30	1.04H	284	17.50	15.96	2.22	0.00	-18.18
12	399.70	34.3 QP	46.00	-11.70	1.22H	62	16.00	16.05	2.23	0.00	-18.29
13	432.00	35.6 QP	46.00	-10.40	1.18H	104	17.00	16.28	2.35	0.00	-18.63
14	440.00	37.1 QP	46.00	-8.90	1.03H	151	18.40	16.32	2.38	0.00	-18.69
15	464.00	35.6 QP	46.00	-10.40	1.00H	94	16.50	16.62	2.44	0.00	-19.05
16	484.00	34.4 QP	46.00	-11.60	1.89H	72	15.00	16.96	2.47	0.00	-19.43
17	529.48	42.7 QP	46.00	-3.30	1.99H	18	22.40	17.66	2.61	0.00	-20.26
18	595.00	34.4 QP	46.00	-11.60	1.15H	140	13.00	18.54	2.82	0.00	-21.36
19	661.00	38.3 QP	46.00	-7.70	1.89H	315	16.00	19.25	3.05	0.00	-22.30
20	731.40	37.1 QP	46.00	-8.90	1.77H	109	14.00	19.85	3.22	0.00	-23.07
21	768.00	37.1 QP	46.00	-8.90	1.22H	292	13.50	20.36	3.28	0.00	-23.65
22	800.00	35.4 QP	46.00	-10.60	1.45H	56	11.40	20.69	3.32	0.00	-24.02
23	864.00	36.1 QP	46.00	-9.90	2.12H	2	12.00	20.57	3.52	0.00	-24.09
24	900.00	37.2 QP	46.00	-8.80	1.20H	71	12.80	20.80	3.58	0.00	-24.39
25	909.00	37.5 QP	46.00	-8.50	1.26H	111	13.00	20.86	3.61	0.00	-24.49
26	933.00	38.8 QP	46.00	-7.20	1.02H	210	14.00	21.06	3.71	0.00	-24.79

- REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) - Antenna Factor (dB) - Cable Factor (dB)
 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level– Limit value.

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	64.90	29.5 QP	40.00	-10.50	1.10V	132	23.00	5.74	0.80	0.00	-6.54
2	120.00	33.7 QP	43.50	-9.80	1.61V	136	21.00	11.65	1.08	0.00	-12.73
3	133.25	41.1 QP	43.50	-2.40	1.13V	291	28.94	11.06	1.14	0.00	-12.19
4	160.00	28.3 QP	43.50	-15.20	1.07V	317	17.40	9.62	1.26	0.00	-10.89
5	194.80	27.4 QP	43.50	-16.10	1.40V	243	17.00	8.96	1.40	0.00	-10.36
6	199.93	28.4 QP	43.50	-15.10	1.00V	257	18.00	8.98	1.42	0.00	-10.40
7	220.00	30.0 QP	46.00	-16.00	1.07V	297	18.40	10.12	1.51	0.00	-11.63
8	336.00	33.3 QP	46.00	-12.70	1.65V	337	17.40	13.92	1.99	0.00	-15.91
9	389.50	34.6 QP	46.00	-11.40	1.59V	225	16.70	15.68	2.20	0.00	-17.88
10	396.00	34.2 QP	46.00	-11.80	1.57V	136	16.00	15.96	2.22	0.00	-18.18
11	432.00	36.6 QP	46.00	-9.40	1.23V	5	18.00	16.28	2.35	0.00	-18.63
12	440.00	34.4 QP	46.00	-11.60	1.19V	67	15.70	16.32	2.38	0.00	-18.70
13	454.00	34.6 QP	46.00	-11.40	1.37V	96	15.70	16.45	2.42	0.00	-18.87
14	464.00	36.1 QP	46.00	-9.90	1.17V	303	17.00	16.62	2.44	0.00	-19.06
15	529.00	40.3 QP	46.00	-5.70	1.30V	358	20.00	17.66	2.61	0.00	-20.27
16	600.00	34.4 QP	46.00	-11.60	2.38V	103	13.00	18.61	2.83	0.00	-21.44
17	602.00	36.3 QP	46.00	-9.70	1.09V	264	14.80	18.64	2.84	0.00	-21.48
18	667.40	34.7 QP	46.00	-11.30	1.45V	110	12.40	19.26	3.07	0.00	-22.32
19	695.40	33.8 QP	46.00	-12.20	1.74V	184	11.40	19.30	3.14	0.00	-22.44
20	730.65	34.8 QP	46.00	-11.20	1.20V	102	11.70	19.85	3.22	0.00	-23.06
21	794.85	35.9 QP	46.00	-10.10	1.20V	328	12.00	20.63	3.31	0.00	-23.94
22	865.00	37.1 QP	46.00	-8.90	1.02V	277	13.00	20.57	3.52	0.00	-24.09
23	909.12	39.5 QP	46.00	-6.50	1.37V	360	15.00	20.88	3.62	0.00	-24.51
24	933.40	34.8 QP	46.00	-11.20	1.32V	18	10.00	21.08	3.73	0.00	-24.81

- REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) - Antenna Factor (dB) - Cable Factor (dB)
 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level– Limit value.

EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	1	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1005 hPa	TESTED BY: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2038.00	53.6 Av	54.00	-0.40	1.03H	3	58.41	25.20	4.86	34.90	4.84
*2	2412.00	95.6 Av			1.02H	294	63.40	27.11	5.10	0.00	-32.21
*3	2412.00	103.6 pk			1.02H	294	71.43	27.11	5.10	0.00	-32.21
4	4076.00	51.1 pk	74.00	-22.9	1.81H	343	48.70	30.13	6.78	34.52	-2.39
5	4824.00	52.5 pk	74.00	-21.5	1.31H	111	48.50	31.43	7.23	34.63	-4.02
6	6113.20	52.3 pk	74.00	-21.7	1.23H	264	45.87	32.80	8.23	34.60	-6.43

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2038.00	53.7 Av	54.00	-0.30	1.02V	358	58.53	25.20	4.86	34.90	4.84
*2	2412.00	102.7 pk			1.41V	43	70.50	27.11	5.10	0.00	-32.22
*3	2412.00	95.2 Av			1.41V	43	63.00	27.11	5.10	0.00	-32.22
4	4076.00	48.4 Av	54.00	-5.60	1.04V	9	46.00	30.13	6.78	34.52	-2.39
5	4076.00	53.4 pk	74.00	-20.6	1.04V	9	51.00	30.13	6.78	34.52	-2.39
6	4824.00	51.7 pk	74.00	-22.3	1.12V	355	47.70	31.43	7.23	34.63	-4.02
7	6113.20	55.4 pk	74.00	-18.6	1.29V	323	49.00	32.80	8.23	34.60	-6.43
8	6113.20	46.6 Av	54.00	-7.40	1.29V	323	40.20	32.80	8.23	34.60	-6.43
9	8151.00	57.5 pk	74.00	-16.5	1.32V	2	46.00	36.66	9.67	34.87	-11.46
10	8151.00	47.5 Av	54.00	-6.50	1.32V	2	36.00	36.66	9.67	34.87	-11.45

- REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) - Antenna Factor (dB) - Cable Factor (dB)
 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level– Limit value.
 6. “*” = Fundamental frequency

EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	6	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1005 hPa	TESTED BY: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2063.00	51.7 Av	54.00	-2.30	1.23H	294	56.25	25.41	4.96	34.90	4.53
2	2063.00	52.9 pk	74.00	-21.1	1.23H	293	57.40	25.41	4.96	34.90	4.53
*3	2437.00	96.1 Av			1.26H	175	63.70	27.33	5.08	0.00	-32.40
*4	2437.00	102.5 pk			1.26H	175	70.10	27.33	5.08	0.00	-32.40
5	4126.00	49.9 pk	74.00	-24.1	1.00H	338	47.40	30.32	6.70	34.56	-2.46
6	4874.00	51.5 pk	74.00	-22.5	1.06H	99	47.40	31.47	7.21	34.63	-4.06
7	6188.20	51.5 pk	74.00	-22.5	1.74H	6	45.00	33.14	8.01	34.60	-6.55

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2063.00	54.1 pk	74.00	-19.9	1.15V	72	58.60	25.41	4.96	34.90	4.53
2	2063.00	52.7 Av	54.00	-1.30	1.15V	72	57.20	25.41	4.96	34.90	4.53
*3	2437.00	99.4 pk			1.48V	351	67.00	27.33	5.08	0.00	-32.40
*4	2437.00	91.4 Av			1.48V	351	59.00	27.33	5.08	0.00	-32.40
5	4126.00	50.5 pk	74.00	-23.5	1.15V	315	48.00	30.32	6.70	34.56	-2.46
6	4874.70	51.3 pk	74.00	-22.7	1.21V	302	47.20	31.47	7.21	34.63	-4.05
7	6188.30	45.5 Av	54.00	-8.50	1.05V	75	39.00	33.14	8.01	34.60	-6.55
8	6188.30	53.5 pk	74.00	-20.5	1.05V	75	47.00	33.14	8.01	34.60	-6.55
9	8250.00	50.7 Av	54.00	-3.30	1.45V	341	38.88	36.71	10.00	34.85	-11.86
10	8250.00	58.9 pk	74.00	-15.1	1.45V	341	47.00	36.71	10.00	34.85	-11.86

- REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) - Antenna Factor (dB) - Cable Factor (dB)
 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level– Limit value.
 - 6.“*” = Fundamental frequency

EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	11	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1005 hPa	TESTED BY: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2088.00	51.7 Av	54.00	-2.30	1.72H	303	56.00	25.62	5.02	34.90	4.26
2	2088.00	53.1 pk	74.00	-20.9	1.72H	303	57.40	25.62	5.02	34.90	4.26
*3	2463.70	92.4 Av			1.88H	16	60.00	27.33	5.08	0.00	-32.40
*4	2463.70	99.9 pk			1.88H	16	67.50	27.33	5.08	0.00	-32.40
5	2485.70	48.3 pk	74.00	-25.7	1.20H	49	50.60	27.54	5.06	34.90	2.32
6	4176.00	49.2 pk	74.00	-24.8	1.68H	7	46.70	30.41	6.68	34.58	-2.52
7	4924.00	51.1 pk	74.00	-22.9	1.32H	314	47.00	31.51	7.21	34.62	-4.10
8	6263.40	46.7 Av	54.00	-7.30	1.52H	322	39.70	33.48	8.13	34.60	-7.01
9	6263.40	55.2 pk	74.00	-18.8	1.52H	322	48.20	33.48	8.13	34.60	-7.01.

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2088.00	52.0 Av	54.00	-2.00	1.00V	351	56.30	25.62	5.02	34.90	4.26
2	2088.00	53.6 pk	74.00	-20.4	1.00V	351	57.85	25.62	5.02	34.90	4.26
*3	2463.70	100.4 pk			1.87V	323	68.00	27.33	5.08	0.00	-32.41
*4	2463.70	93.4 Av			1.87V	323	61.00	27.33	5.08	0.00	-32.41
5	2483.50	48.7 pk	74.00	-25.3	1.17V	200	51.00	27.54	5.06	34.90	2.31
6	4176.00	50.0 pk	74.00	-24.0	1.09V	274	47.50	30.41	6.68	34.58	-2.51
7	4924.00	51.8 pk	74.00	-22.2	1.35V	43	47.70	31.51	7.21	34.62	-4.10
8	6263.20	50.2 Av	54.00	-3.80	1.09V	63	43.20	33.48	8.13	34.60	-7.01
9	6263.20	56.0 pk	74.00	-18.0	1.09V	63	49.00	33.48	8.13	34.60	-7.01.

- REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) - Antenna Factor (dB) - Cable Factor (dB)
 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level– Limit value.
 6. “*” = Fundamental frequency

4.2.7 TEST RESULTS (B)

EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	11	FREQUENCY RANGE	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1005 hPa	TESTED BY: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M											
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	50.00	29.5 QP	40.00	-10.50	1.02H	188	19.00	9.78	0.71	0.00	-10.48
2	119.80	29.7 QP	43.50	-13.80	1.40H	105	17.00	11.65	1.08	0.00	-12.73
3	132.00	29.8 QP	43.50	-13.70	2.51H	103	17.50	11.16	1.13	0.00	-12.29
4	162.70	28.2 QP	43.50	-15.30	1.76H	297	17.40	9.53	1.28	0.00	-10.82
5	194.70	27.6 QP	43.50	-15.90	1.86H	312	17.20	8.96	1.40	0.00	-10.37
6	199.98	28.4 QP	43.50	-15.10	1.20H	289	18.00	8.98	1.42	0.00	-10.41
7	220.00	29.6 QP	46.00	-16.40	1.04H	157	18.00	10.12	1.51	0.00	-11.63
8	265.30	31.8 QP	46.00	-14.20	1.07H	192	17.40	12.75	1.70	0.00	-14.45
9	298.50	32.3 QP	46.00	-13.70	1.02H	50	17.20	13.18	1.88	0.00	-15.07
10	308.00	32.3 QP	46.00	-13.70	1.18H	100	17.00	13.38	1.91	0.00	-15.29
11	396.07	43.8 QP	46.00	-2.20	1.00H	146	25.60	15.96	2.22	0.00	-18.19
12	400.00	40.3 QP	46.00	-5.70	1.14H	127	22.00	16.11	2.24	0.00	-18.36
13	432.00	37.6 QP	46.00	-8.40	1.00H	331	19.00	16.28	2.35	0.00	-18.64
14	440.00	35.7 QP	46.00	-10.30	1.05H	199	17.00	16.32	2.38	0.00	-18.69
15	466.20	35.1 QP	46.00	-10.90	2.29H	127	16.00	16.66	2.44	0.00	-19.10
16	484.00	35.1 QP	46.00	-10.90	1.00H	222	15.70	16.96	2.47	0.00	-19.43
17	529.65	41.3 QP	46.00	-4.70	2.31H	172	21.00	17.66	2.61	0.00	-20.26
18	595.00	38.4 QP	46.00	-7.60	2.00H	307	17.00	18.54	2.82	0.00	-21.36
19	664.43	37.3 QP	46.00	-8.70	1.92H	284	15.00	19.25	3.06	0.00	-22.31
20	730.00	37.1 QP	46.00	-8.90	1.42H	132	14.00	19.85	3.22	0.00	-23.06
21	768.00	36.0 QP	46.00	-10.00	2.10H	31	12.40	20.36	3.28	0.00	-23.64
22	800.00	35.0 QP	46.00	-11.00	1.49H	96	11.00	20.69	3.32	0.00	-24.01
23	864.20	34.5 QP	46.00	-11.50	1.61H	196	10.40	20.57	3.52	0.00	-24.09
24	894.70	35.0 QP	46.00	-11.00	1.46H	333	10.70	20.77	3.57	0.00	-24.35
25	909.00	36.2 QP	46.00	-9.80	1.00H	245	11.70	20.86	3.61	0.00	-24.48
26	933.25	37.8 QP	46.00	-8.20	1.33H	292	13.00	21.06	3.71	0.00	-24.79

- REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) - Antenna Factor (dB) - Cable Factor (dB)
 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level– Limit value.



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	64.20	27.5 QP	40.00	-12.50	1.14V	194	21.00	5.74	0.80	0.00	-6.54
2	120.00	30.2 QP	43.50	-13.30	1.58V	316	17.50	11.65	1.08	0.00	-12.73
3	133.40	39.7 QP	43.50	-3.80	1.32V	114	27.50	11.06	1.14	0.00	-12.19
4	144.00	29.8 QP	43.50	-13.70	1.28V	56	18.00	10.58	1.18	0.00	-11.76
5	159.70	31.0 QP	43.50	-12.50	1.29V	99	20.00	9.74	1.25	0.00	-11.01
6	199.80	27.4 QP	43.50	-16.10	1.15V	147	17.00	8.98	1.42	0.00	-10.40
7	220.00	29.0 QP	46.00	-17.00	1.17V	53	17.40	10.12	1.51	0.00	-11.63
8	266.50	31.1 QP	46.00	-14.90	1.01V	65	16.80	12.61	1.71	0.00	-14.31
9	308.00	31.0 QP	46.00	-15.00	2.19V	30	15.70	13.38	1.91	0.00	-15.29
10	389.62	32.9 QP	46.00	-13.10	1.71V	80	15.00	15.68	2.20	0.00	-17.88
11	396.00	37.6 QP	46.00	-8.40	1.36V	322	19.40	15.96	2.22	0.00	-18.18
12	440.00	34.1 QP	46.00	-11.90	1.28V	284	15.40	16.32	2.38	0.00	-18.69
13	454.60	35.9 QP	46.00	-10.10	1.58V	344	17.00	16.45	2.42	0.00	-18.86
14	464.00	34.1 QP	46.00	-11.90	1.18V	12	15.00	16.62	2.44	0.00	-19.06
15	480.00	34.4 QP	46.00	-11.60	1.16V	75	15.00	16.92	2.47	0.00	-19.39
16	529.00	40.5 QP	46.00	-5.50	1.43V	267	20.20	17.66	2.61	0.00	-20.27
17	624.00	38.3 QP	46.00	-7.70	1.78V	80	16.50	18.91	2.92	0.00	-21.84
18	662.00	37.3 QP	46.00	-8.70	1.14V	279	15.00	19.25	3.05	0.00	-22.31
19	698.80	37.2 QP	46.00	-8.80	1.13V	27	14.70	19.31	3.15	0.00	-22.46
20	730.00	35.1 QP	46.00	-10.90	1.25V	239	12.00	19.85	3.22	0.00	-23.06
21	797.00	35.0 QP	46.00	-11.00	1.67V	194	11.00	20.65	3.32	0.00	-23.97
22	865.00	36.5 QP	46.00	-9.50	2.10V	88	12.40	20.57	3.52	0.00	-24.10
23	909.00	39.2 QP	46.00	-6.80	1.34V	93	14.70	20.86	3.61	0.00	-24.49
24	926.75	35.7 QP	46.00	-10.30	1.02V	275	11.00	21.02	3.69	0.00	-24.72

- REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) - Antenna Factor (dB) - Cable Factor (dB)
 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level– Limit value.

EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	1	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1005 hPa	TESTED BY: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2038.00	53.1 Av	54.00	-0.90	1.48H	104	57.95	25.20	4.86	34.90	4.84
*2	2413.20	94.2 Av			1.08H	11	62.00	27.11	5.10	0.00	-32.22
*3	2413.20	100.6 pk			1.08H	11	68.40	27.11	5.10	0.00	-32.22
4	4076.00	52.4 pk	74.00	-21.6	1.13H	353	50.00	30.13	6.78	34.52	-2.39
5	4824.00	52.2 pk	74.00	-21.8	1.15H	68	48.20	31.43	7.23	34.63	-4.03
6	6113.20	51.4 pk	74.00	-22.6	1.75H	8	45.00	32.80	8.23	34.60	-6.43

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2038.00	53.4 Av	54.00	-0.60	1.15V	15	58.20	25.20	4.86	34.90	4.84
*2	2413.20	99.2 pk			1.17V	328	67.00	27.11	5.10	0.00	-32.21
*3	2413.20	92.6 Av			1.17V	328	60.40	27.11	5.10	0.00	-32.21
4	4076.00	50.2 pk	74.00	-23.8	1.45V	340	47.80	30.13	6.78	34.52	-2.39
5	4824.00	52.0 pk	74.00	-22.0	1.82V	87	48.00	31.43	7.23	34.63	-4.03
6	6113.20	51.4 pk	74.00	-22.6	1.62V	9	45.00	32.80	8.23	34.60	-6.43
7	8150.90	58.5 pk	74.00	-15.5	1.00V	337	47.00	36.66	9.67	34.87	-11.45
8	8150.90	51.3 Av	54.00	-2.70	1.00V	337	39.80	36.66	9.67	34.87	-11.45

- REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) - Antenna Factor (dB) - Cable Factor (dB)
 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level– Limit value.
 6. “*” = Fundamental frequency

EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	6	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1005 hPa	TESTED BY: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2063.00	52.5 pk	74.00	-21.5	1.81H	14	57.00	25.41	4.96	34.90	4.53
*2	2438.50	99.1 pk			1.04H	331	66.74	27.33	5.08	0.00	-32.40
*3	2438.50	93.6 Av			1.04H	331	61.20	27.33	5.08	0.00	-32.40
4	4125.70	51.5 pk	74.00	-22.5	1.02H	351	49.00	30.32	6.70	34.56	-2.46
5	4874.00	51.5 pk	74.00	-22.5	1.75H	70	47.40	31.47	7.21	34.63	-4.06
6	6188.20	54.8 pk	74.00	-19.2	1.19H	4	48.25	33.14	8.01	34.60	-6.55
7	6188.20	44.5 Av	54.00	-9.50	1.19H	4	38.00	33.14	8.01	34.60	-6.55

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2063.00	51.8 Av	54.00	-2.20	1.80V	355	56.32	25.41	4.96	34.90	4.53
*2	2438.50	95.4 Av			1.52V	2	63.00	27.33	5.08	0.00	-32.40.
*3	2438.50	100.7 pk			1.52V	2	68.34	27.33	5.08	0.00	-32.40.
4	4125.70	52.3 pk	74.00	-21.7	1.03V	269	49.80	30.32	6.70	34.56	-2.46
5	4874.00	51.9 pk	74.00	-22.1	1.63V	111	47.80	31.47	7.21	34.63	-4.05
6	6188.30	45.4 Av	54.00	-8.60	1.44V	56	38.90	33.14	8.01	34.60	-6.55
7	6188.30	53.5 pk	74.00	-20.5	1.44V	56	47.00	33.14	8.01	34.60	-6.55

- REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) - Antenna Factor (dB) - Cable Factor (dB)
 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level– Limit value.

EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	Solo 1400
CHANNEL	11	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1005 hPa	TESTED BY: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2088.00	51.7 Av	54.00	-2.30	1.67H	215	56.00	25.62	5.02	34.90	4.26
*2	2463.40	101.4 pk			1.04H	41	69.00	27.33	5.08	0.00	-32.40
*3	2463.40	95.5 Av			1.04H	41	63.10	27.33	5.08	0.00	-32.40
4	2485.70	47.4 pk	74.00	-26.6	1.33H	355	49.70	27.54	5.06	34.90	2.31
5	4176.00	50.7 pk	74.00	-23.3	1.11H	29	48.20	30.41	6.68	34.58	-2.51
6	4924.00	51.7 pk	74.00	-22.3	1.28H	354	47.60	31.51	7.21	34.62	-4.10
7	6263.40	54.0 pk	74.00	-20.0	1.45H	307	47.00	33.48	8.13	34.60	-7.01.
8	6263.40	45.4 Av	54.00	-8.60	1.45H	307	38.40	33.48	8.13	34.60	-7.01

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2088.00	52.5 pk	74.00	-21.5	2.09V	305	56.80	25.62	5.02	34.90	4.26
*2	2463.40	95.9 Av			1.31V	333	63.50	27.33	5.08	0.00	-32.41
*3	2463.40	102.0 pk			1.31V	333	69.58	27.33	5.08	0.00	-32.41
4	2485.40	48.7 pk	74.00	-25.3	1.16V	17	51.00	27.54	5.06	34.90	2.32
5	4176.00	49.9 pk	74.00	-24.1	1.59V	332	47.40	30.41	6.68	34.58	-2.51
6	4924.00	52.2 pk	74.00	-21.8	1.13V	35	48.10	31.51	7.21	34.62	-4.10
7	6263.00	50.5 Av	54.00	-3.50	1.00V	25	43.50	33.48	8.13	34.60	-7.01
8	6263.00	55.0 pk	74.00	-19.0	1.00V	25	48.00	33.48	8.13	34.60	-7.01.

- REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) - Antenna Factor (dB) - Cable Factor (dB)
 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level– Limit value.
 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 17, 2002

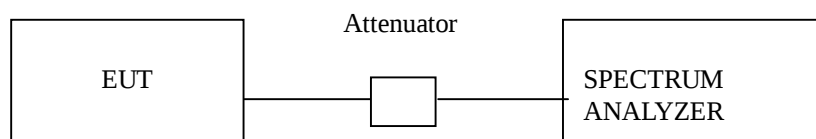
NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3 TEST PROCEDURE

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

4.3.4 TEST SETUP



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

4.3.5 EUT OPERATING CONDITIONS

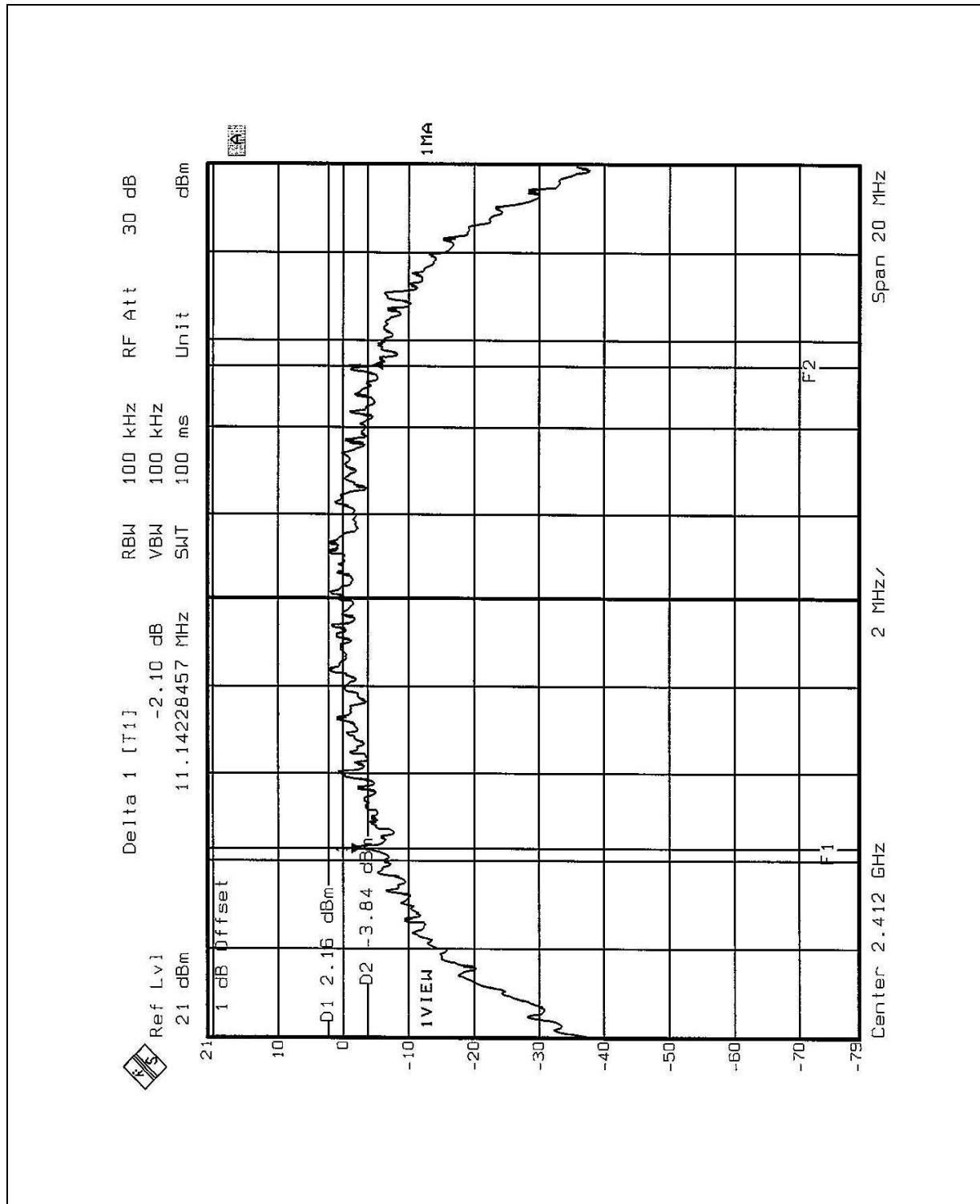
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.6 TEST RESULTS

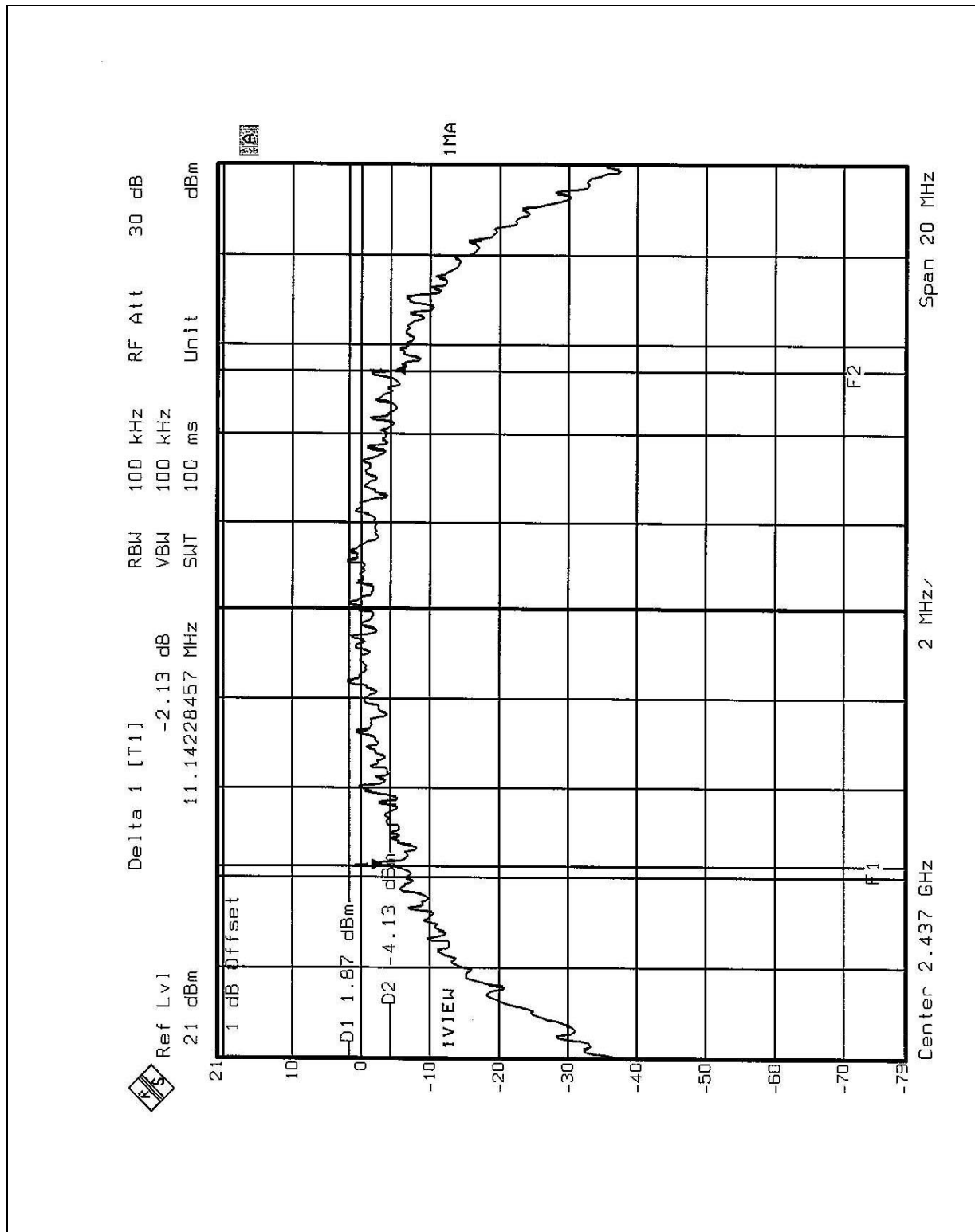
EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	Model	Solo 1400
Environmental Conditions	23 deg. C, 60% RH	Tested By	Gary Chang

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.14	0.5	PASS
6	2437	11.14	0.5	PASS
11	2462	11.14	0.5	PASS

CH1



CH6



Delta 1 [T1]

Ref Lvl 21 dBm

2.04 dB

11.14228457 MHz

1 dB Offset

D1 1.35 dBm

D2 -4.65 dBm

1VIEW

1MA

RBW 100 kHz

VBW 100 kHz

SWT 100 ms

RF Att

Unit dBm

Span 20 MHz

Center 2.462 GHz

2 MHz

30 MHz

F1

F2



4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SINGLE CHANNEL POWER METER	NRVS	100026	Feb. 21, 2002
PEAK POWER SENSOR	NRV-Z32	100013	May 23, 2002

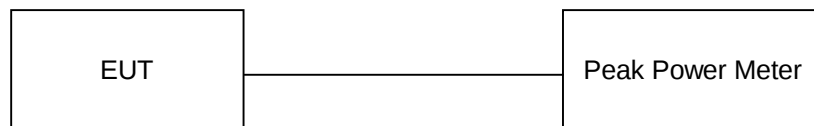
NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. 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 TEST SETUP



4.4.5 EUT OPERATING CONDITIONS

Same as Item 4.3.5

4.4.6 TEST RESULTS

EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	Model	Solo 1400
Environmental Conditions	23 deg. C, 60%RH	Tested By	Gary Chang

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	12.77	30	PASS
6	2437	12.53	30	PASS
11	2462	12.36	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 17, 2002

NOTE:

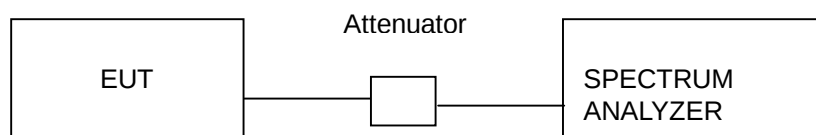
1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

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 3 kHz RBW and 30 kHz 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 TEST SETUP



4.5.5 EUT OPERATING CONDITIONS

Same as 4.3.5

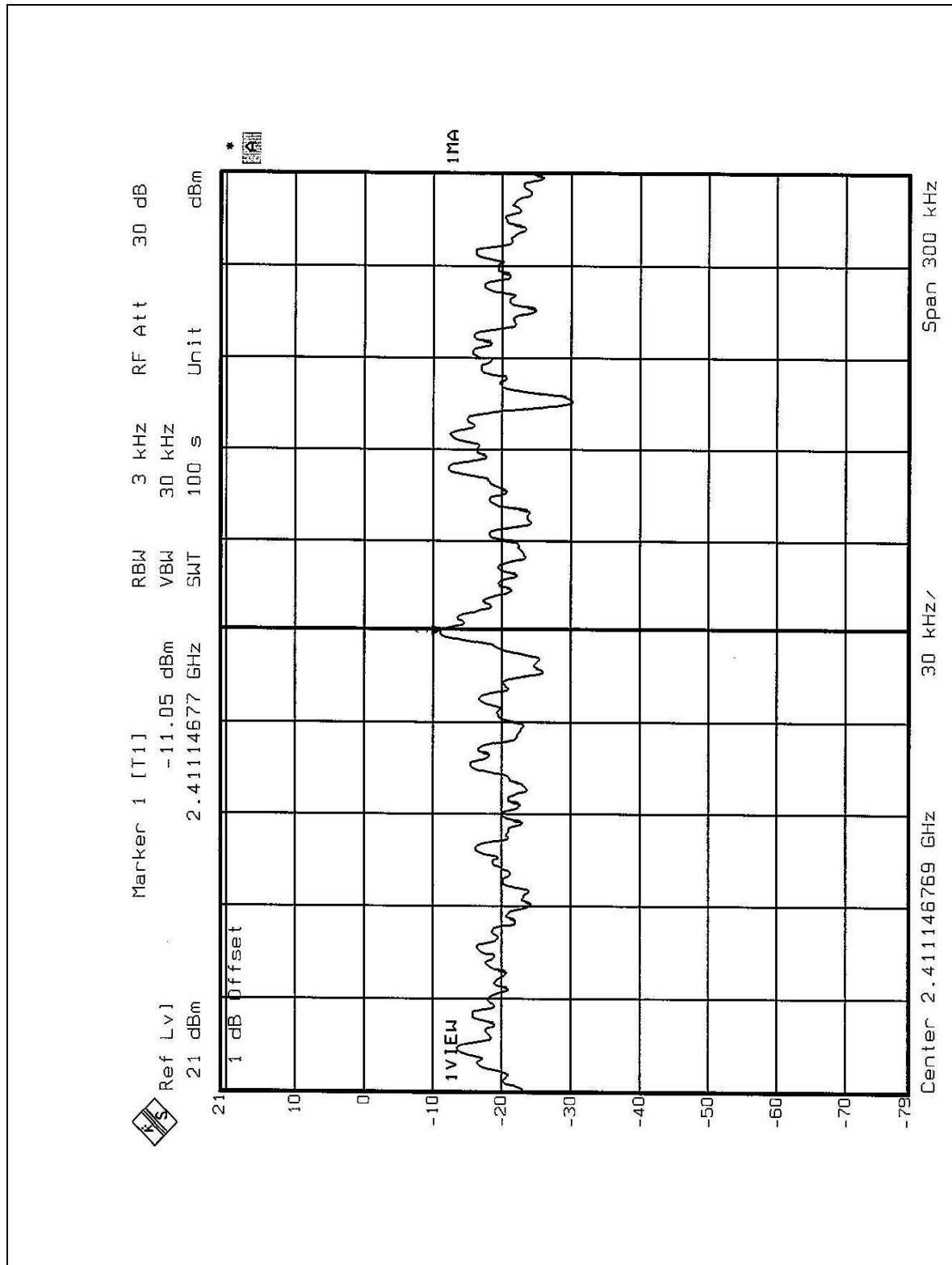


4.5.6 TEST RESULTS

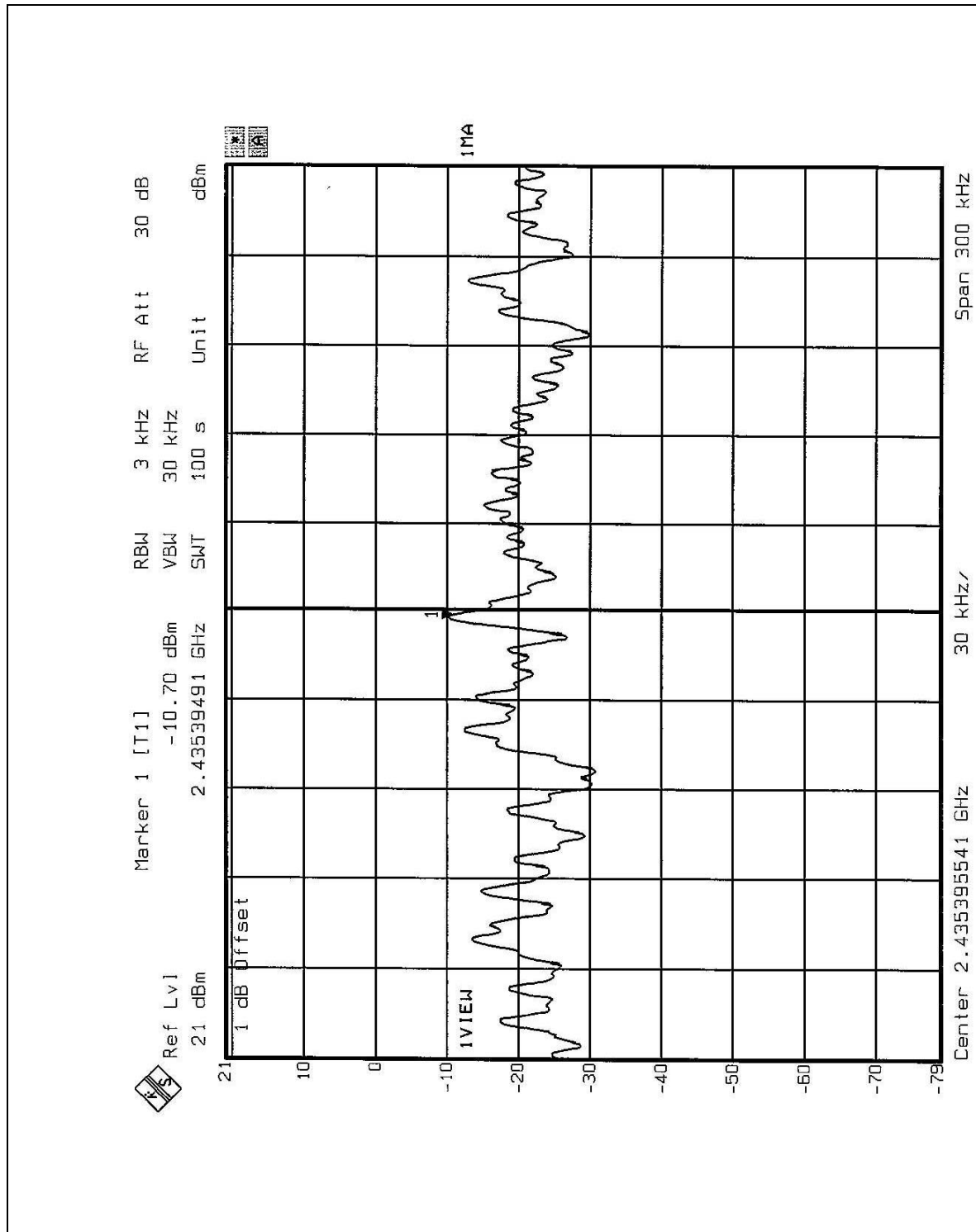
EUT	Notebook PC (with 2.4GHz Wireless USB interface card)	MODEL	SOLO 1400
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23 deg. C, 60%RH, 1005 hPa
TESTED BY: Gary Chang			

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-11.05	8	PASS
6	2437	-10.70	8	PASS
11	2462	-12.57	8	PASS

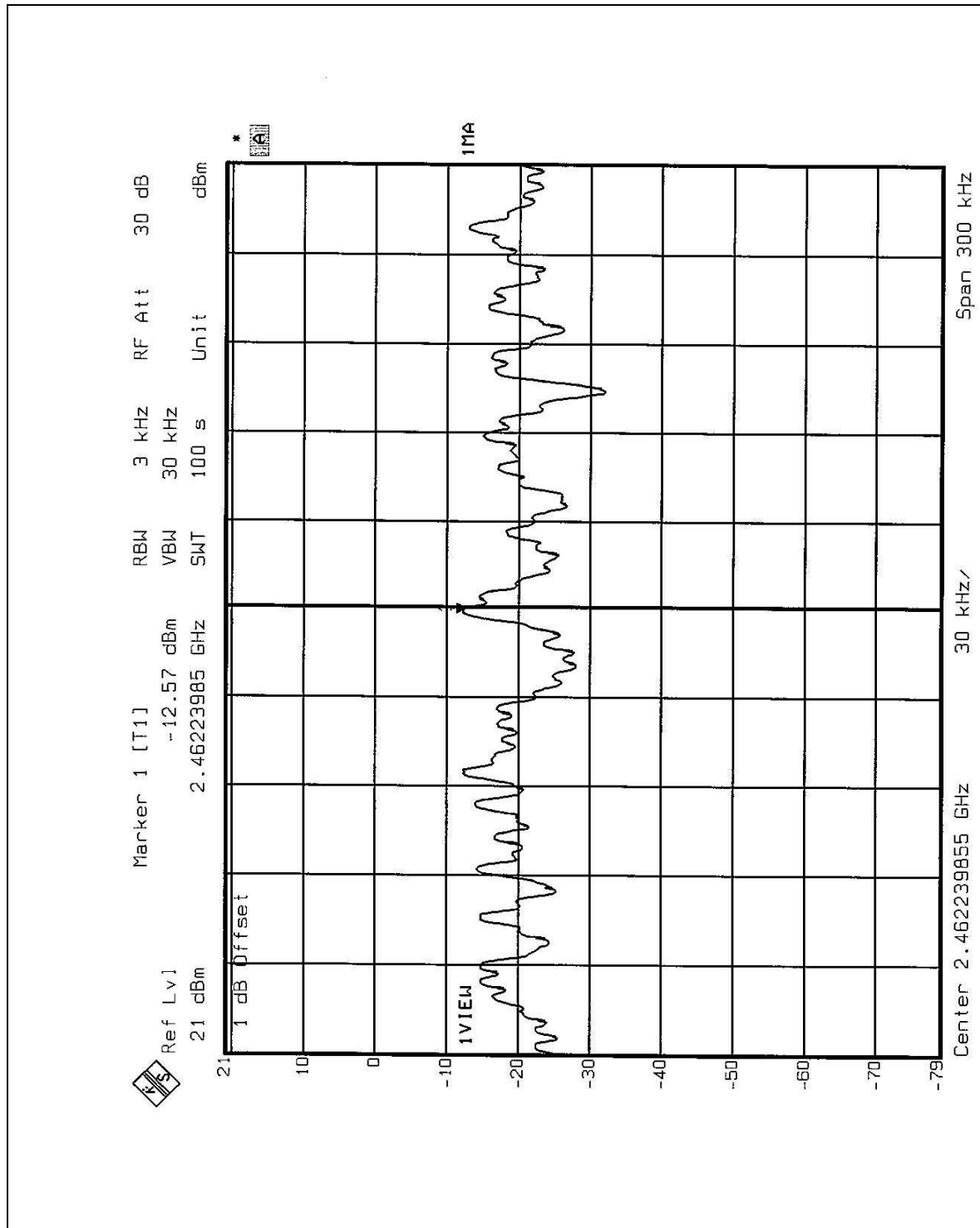
CH1



CH6



CH11





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 17, 2002

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.6.3 TEST PROCEDURE

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



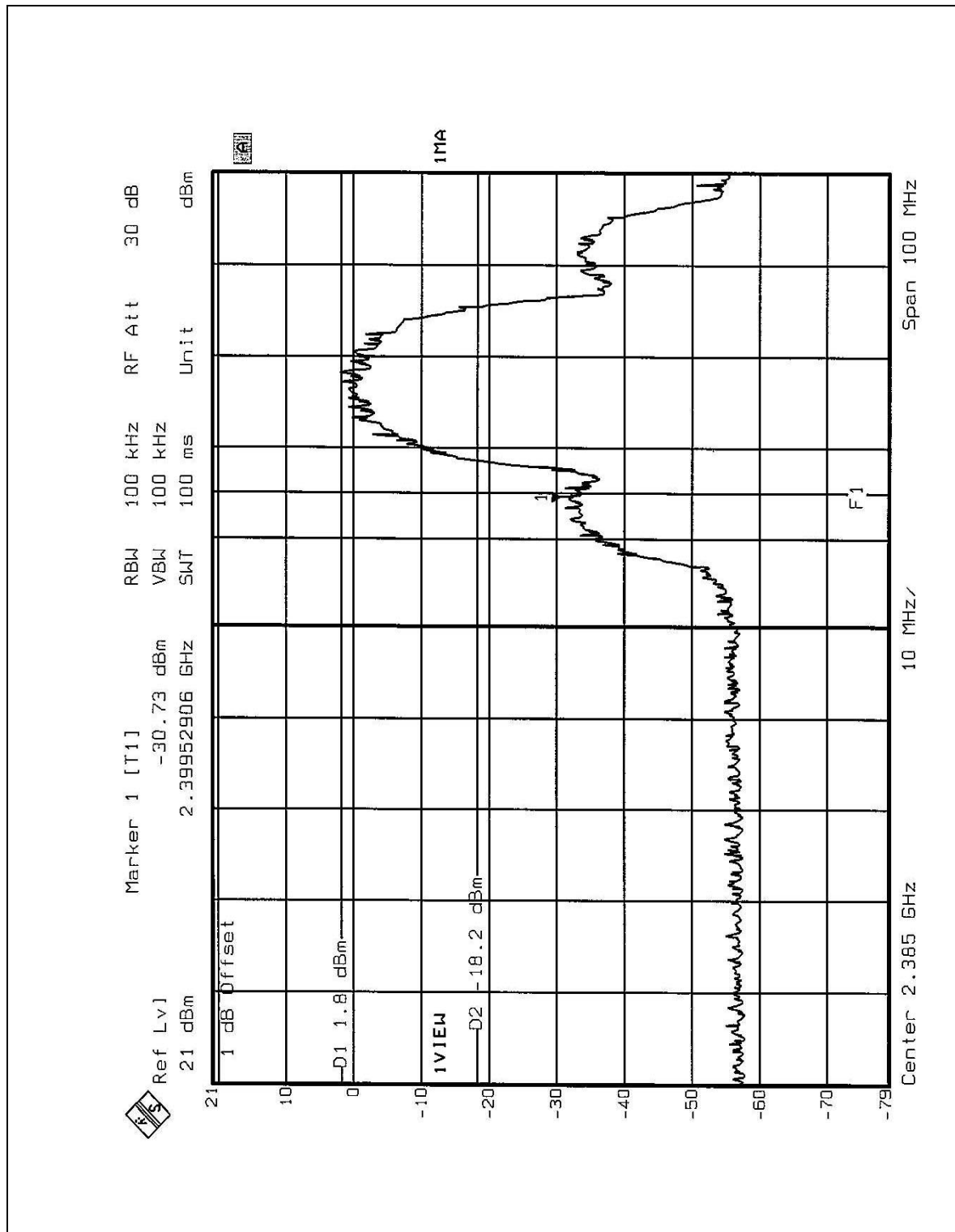
4.6.4 EUT OPERATING CONDITION

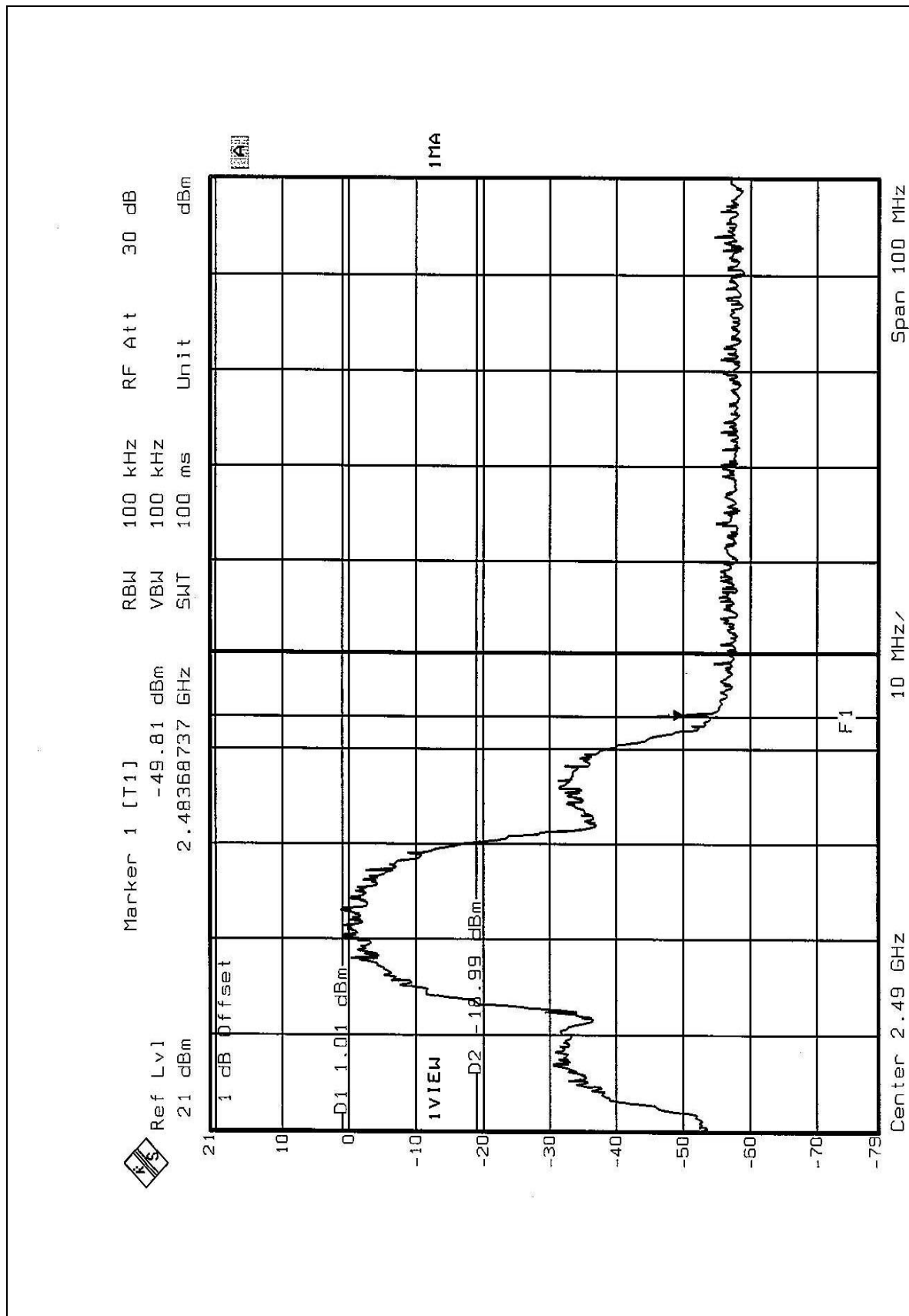
Same as Item 4.3.5

4.6.5 TEST RESULTS

The spectrum plots are attached on the following 2 pages. D2 line indicates the highest level, 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 on the following 2 pages shows 50.82dB delta between carrier maximum power and local maximum emission in restrict band (2.4836GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.6 (Page 37) is 95.9dBuV/m, so the maximum field strength in restrict band is $95.9 - 50.82 = 45.08$ dBuV/m which is under 54 dBuV/m limit.







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

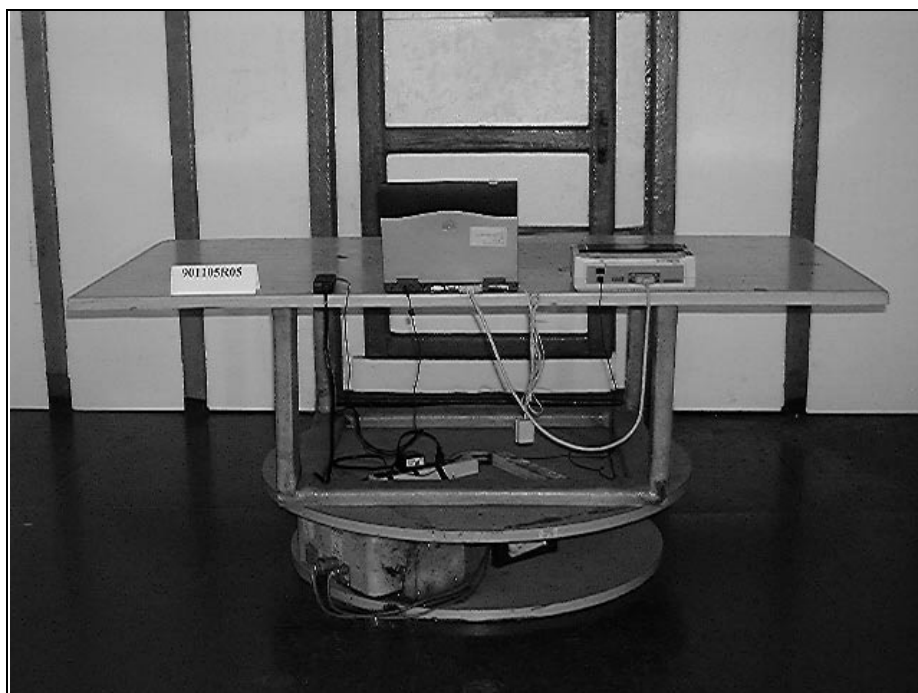
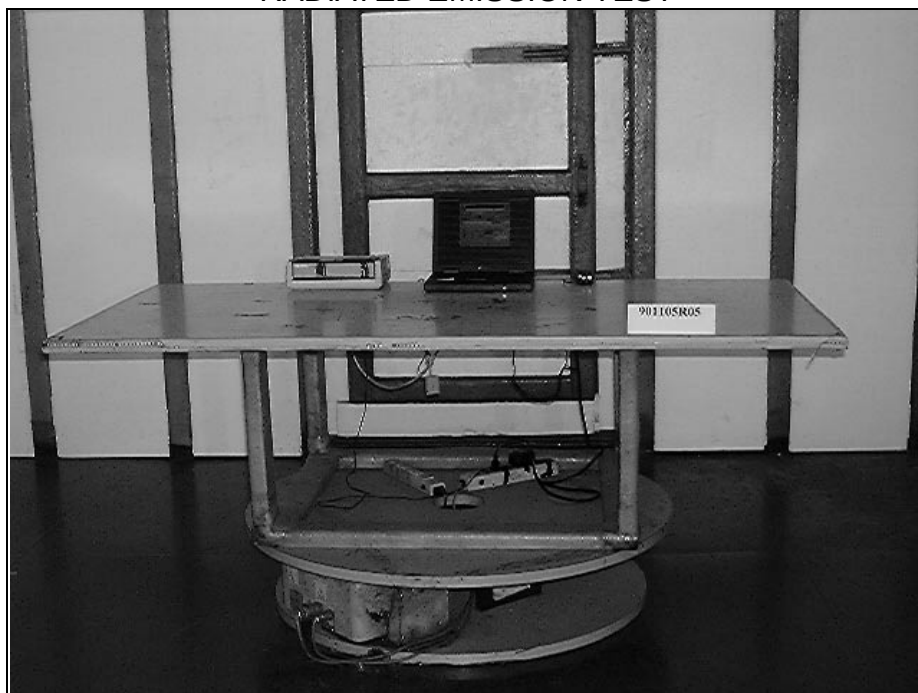
The antenna used in this product is Patch Antenna. The antenna connector is UFL and the maximum Gain of this antenna is only 0dBi.

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST



RADIATED EMISSION TEST





6 INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025, Guide 25 or EN 45001:

USA	FCC, NVLAP
Germany	TUV Rheinlan
Japan	VCCI
New Zealand	MoC
Norway	NEMKO
R.O.C.	BSMI, DGT, CNLA

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml.

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Web Site: www.adt.com.tw

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