FCC TEST REPORT

REPORT NO.: RF910731R01
MODEL NO.: BT-0002M-3
BT-0002M-3A
BT-0002M-3B
RECEIVED: July 31, 2002
TESTED: Aug. 2 ~ Aug. 7, 2002

APPLICANT: CC&C TECHNOLOGIES INC.

ADDRESS: 8F, 150, Jian Yi Road, Chung Ho City, Taipei, Taiwan, R.O.C.

ISSUED BY: Advance Data Technology Corporation

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

0528
ILAC MRA

Lab Code: 200102-0

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1 CERTIFICATION

PRODUCT :	Bluetooth USB Dongle
BRAND NAME :	CC&C
MODEL NO. :	BT-0002M-3 BT-0002M-3A BT-0002M-3B
APPLICANT :	CC&C TECHNOLOGIES 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 Aug. 2, 2002 to Aug. 7, 2002. 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 : Emily Lu , DATE : August 28, 2002
Emily Lu

APPROVED BY : Alan Lane , DATE : August 28, 2002
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 Limit: 48dBuV	PASS	Meet the requirement of limit Minimum passing margin is –19.31dBuV at 0.170 MHz
15.247(a)(1)(I)-(ii)	Number of Hopping Frequency Used Spec.: At least 75 channels	PASS	Meet the requirement of limit
15.247(a)(1)(ii)	Dwell Time on Each Channel Spec. : Max. 0.4 second within 30 second	PASS	Meet the requirement of limit
15.247(a)(1)(I)-(ii)	Hopping Channel Separation Spec. : Min. 25 kHz or 20 dB bandwidth	PASS	Meet the requirement of limit
15.247(a)(2)	Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System Spec.: Max. 1 MHz	PASS	Meet the requirement of limit
15.247(b)	Maximum Peak Output Power Spec.: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Transmitter Radiated Emissions Spec.: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is –7.6dBuV at 360.00MHz
15.247(c)	Band Edge Measurement	PASS	Meet the requirement of limit

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Bluetooth USB Dongle
MODEL NO.	BT-0002M-3 BT-0002M-3A BT-0002M-3B
POWER SUPPLY	5.0VDC from host equipment
MODULATION TYPE	FHSS (GFSK)
FREQUENCY RANGE	2402MHz ~ 2480MHz
NUMBER OF CHANNEL	79
OUTPUT POWER	1.61dBm
ANTENNA TYPE	Patch Antenna
DATA CABLE	NA
I/O PORTS	USB port
ASSOCIATED DEVICES	NA

NOTE:

1. Three models mentioned above are identical except for their model numbers.

2. For a more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Bluetooth USB Dongle. 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, 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	NOTEBOOK	DELL	PP01L	TW-09C748-12800-19O-B220	FCC DoC APPROVED
2	MODEM	ACEEX	1414	980020503	IFAXDM1414
3	PRINTER	EPSON	LQ-300+	DCGY017096	FCC DoC APPROVED

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

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

4 TEST PROCEDURES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

Notes:

1. The lower limit shall apply at the transition frequencies.
2. 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	Jul. 23, 2003
ROHDE & SCHWARZ 200-A Four-line V-Network	ENV4200	830326/018	Oct. 25, 2002
* ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Dec. 2, 2002
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Dec. 2, 2002
EMCO-L.I.S.N. (for peripheral)	3825/2	90031627	Jul. 23, 2003
Software	Cond-V2L	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C05.01	Jul. 23, 2003
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-305	Feb. 20, 2003
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-306	Feb. 20, 2003
Shielded Room	Site 5	ADT-C05	NA
VCCI Site Registration No.	Site 5	C-1093	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. The test was performed in ADT Open Site No. 5.

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.

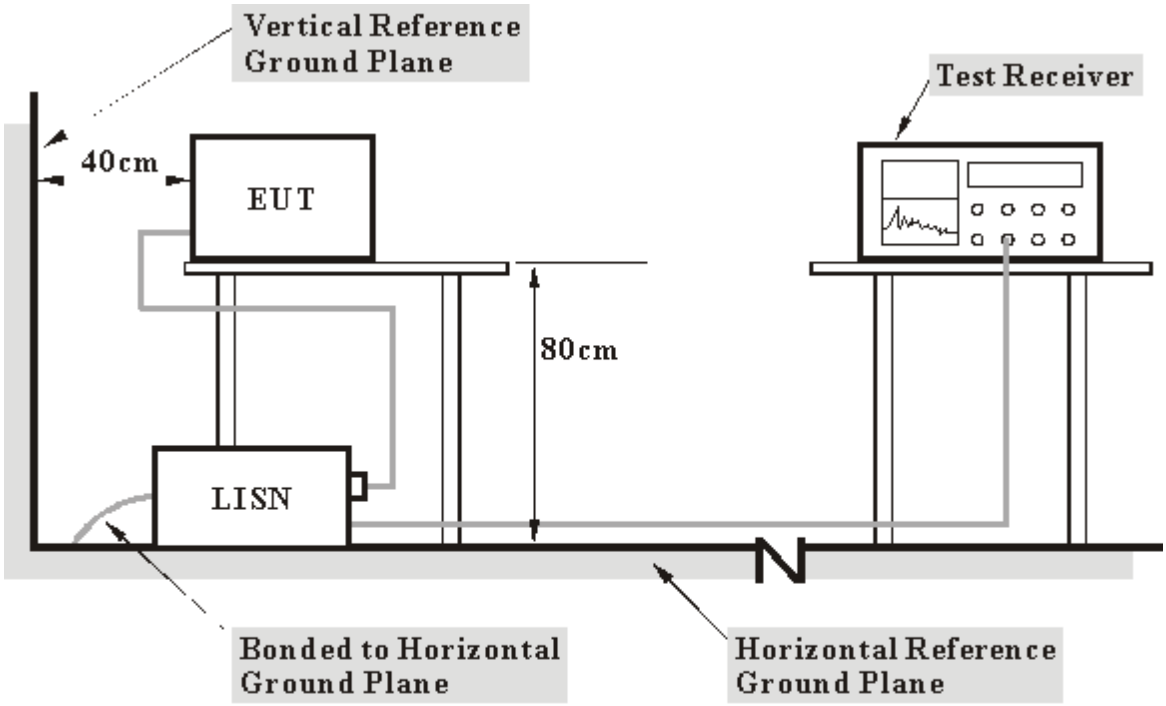
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150 kHz to 30 MHz 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.

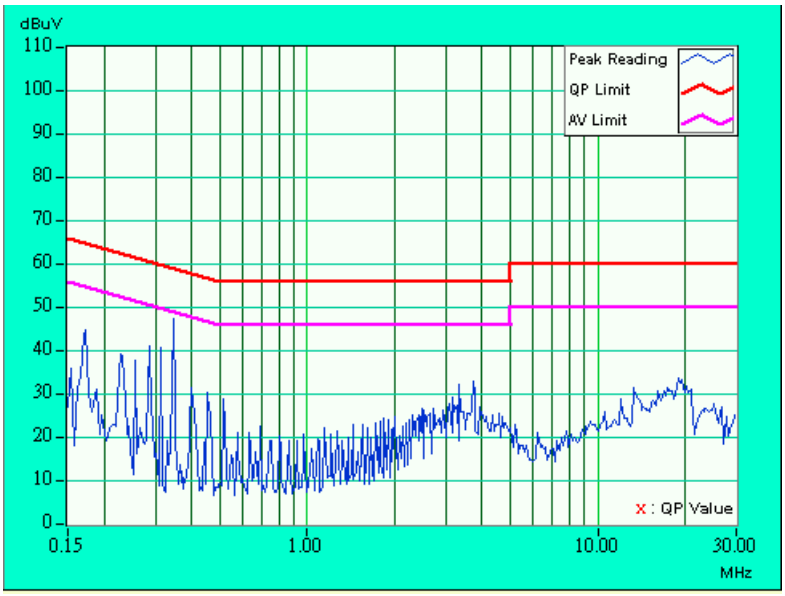
4.1.6 TEST RESULTS

EUT	Bluetooth USB Dongle	**MODEL**	BT-0002M-3
MODE	Channel 0	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	35 deg. C, 50%RH, 1005 hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	43.45	-	43.55	-	64.98	54.98	-21.43	-
2	0.287	0.10	33.71	-	33.81	-	60.62	50.62	-26.81	-
3	0.345	0.10	32.99	-	33.09	-	59.07	49.07	-25.98	-
4	0.400	0.10	30.57	-	30.67	-	57.85	47.85	-27.18	-
5	4.756	0.43	21.11	-	21.54	-	56.00	46.00	-34.46	-
6	19.555	0.97	20.61	-	21.58	-	60.00	50.00	-38.42	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

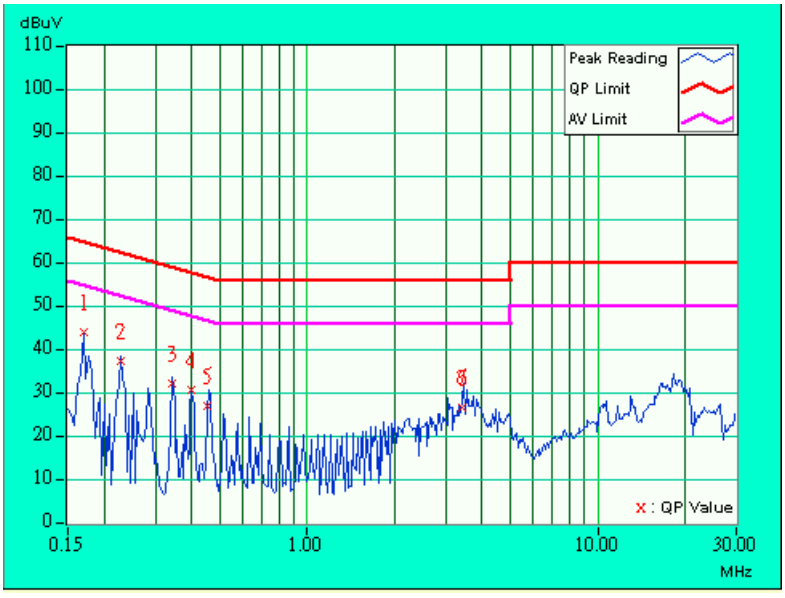


EUT	Bluetooth USB Dongle	**MODEL**	BT-0002M-3
MODE	Channel 0	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	35 deg. C, 50%RH, 1005 hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	43.80	-	43.90	-	64.98	54.98	-21.08	-
2	0.228	0.10	37.27	-	37.37	-	62.52	52.52	-25.15	-
3	0.341	0.10	31.95	-	32.05	-	59.17	49.17	-27.12	-
4	0.400	0.10	30.54	-	30.64	-	57.85	47.85	-27.21	-
5	0.455	0.11	26.79	-	26.90	-	56.79	46.79	-29.89	-
6	3.432	0.27	26.47	-	26.74	-	56.00	46.00	-29.26	-
7	3.432	0.27	26.21	-	26.48	-	56.00	46.00	-29.52	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

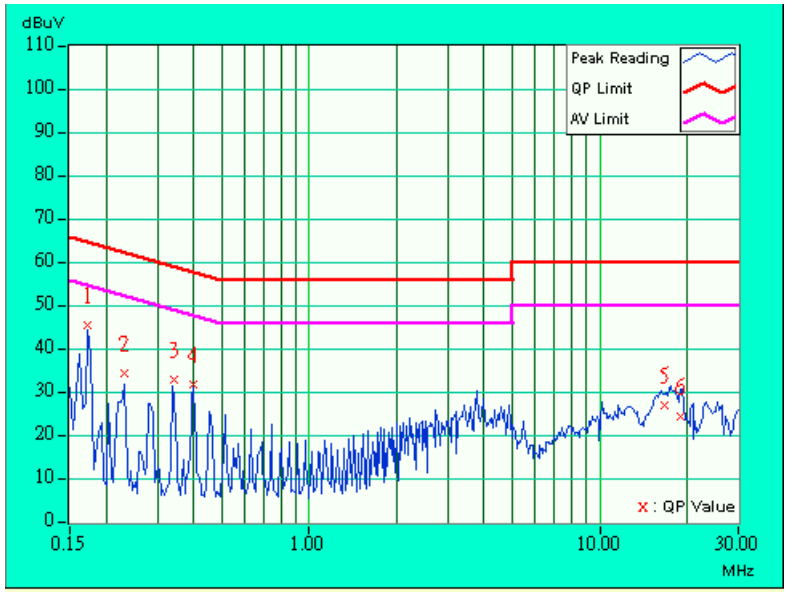


EUT	Bluetooth USB Dongle	**MODEL**	BT-0002M-3
MODE	Channel 39	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	35 deg. C, 50%RH, 1005 hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.173	0.10	44.54	-	44.64	-	64.79	54.79	-20.15	-
2	0.232	0.10	33.64	-	33.74	-	62.38	52.38	-28.64	-
3	0.344	0.10	31.85	-	31.95	-	59.11	49.11	-27.16	-
4	0.400	0.10	30.86	-	30.96	-	57.85	47.85	-26.89	-
5	16.695	0.80	25.96	-	26.76	-	60.00	50.00	-33.24	-
6	19.094	0.95	23.60	-	24.55	-	60.00	50.00	-35.45	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

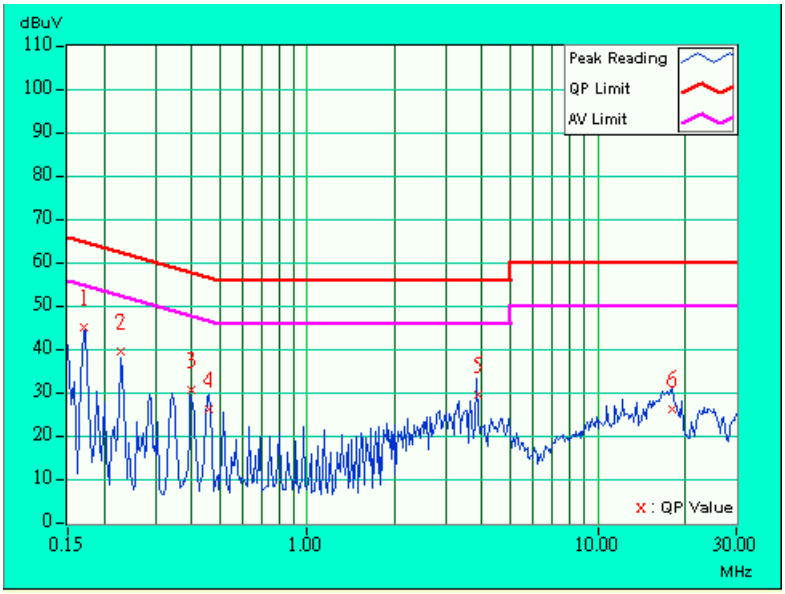


EUT	Bluetooth USB Dongle	**MODEL**	BT-0002M-3
MODE	Channel 39	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	35 deg. C, 50%RH, 1005 hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value [dB (Uv)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	44.53	-	44.63	-	64.98	54.98	-20.35	-
2	0.228	0.10	38.85	-	38.95	-	62.52	52.52	-23.57	-
3	0.400	0.10	30.20	-	30.30	-	57.85	47.85	-27.55	-
4	0.459	0.11	25.77	-	25.88	-	56.72	46.72	-30.84	-
5	3.874	0.29	28.99	-	29.28	-	56.00	46.00	-26.72	-
6	18.070	0.68	25.54	-	26.22	-	60.00	50.00	-33.78	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

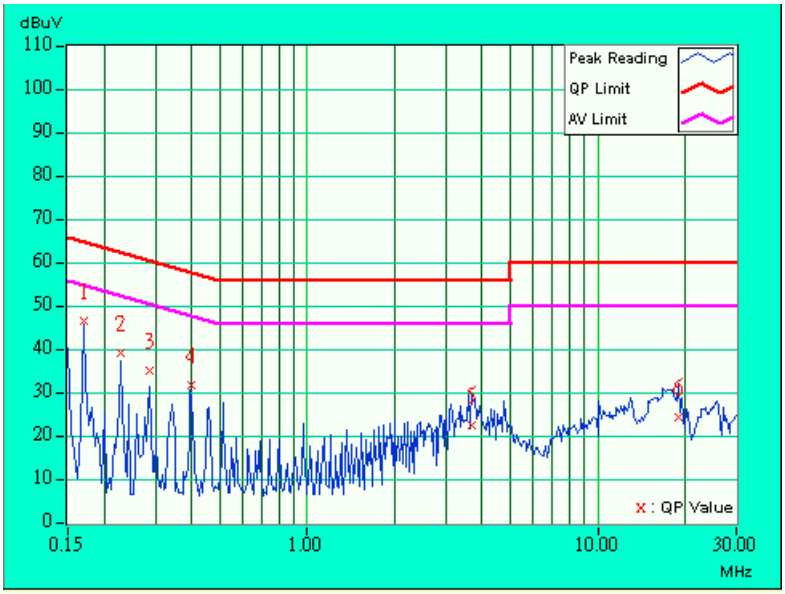


EUT	Bluetooth USB Dongle	**MODEL**	BT-0002M-3
MODE	Channel 78	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	35 deg. C, 50%RH, 1005 hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	45.57	-	45.67	-	64.98	54.98	-19.31	-
2	0.228	0.10	38.33	-	38.43	-	62.52	52.52	-24.09	-
3	0.287	0.10	34.27	-	34.37	-	60.62	50.62	-26.25	-
4	0.400	0.10	30.78	-	30.88	-	57.85	47.85	-26.97	-
5	3.703	0.37	21.83	-	22.20	-	56.00	46.00	-33.80	-
6	18.914	0.93	23.44	-	24.37	-	60.00	50.00	-35.63	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

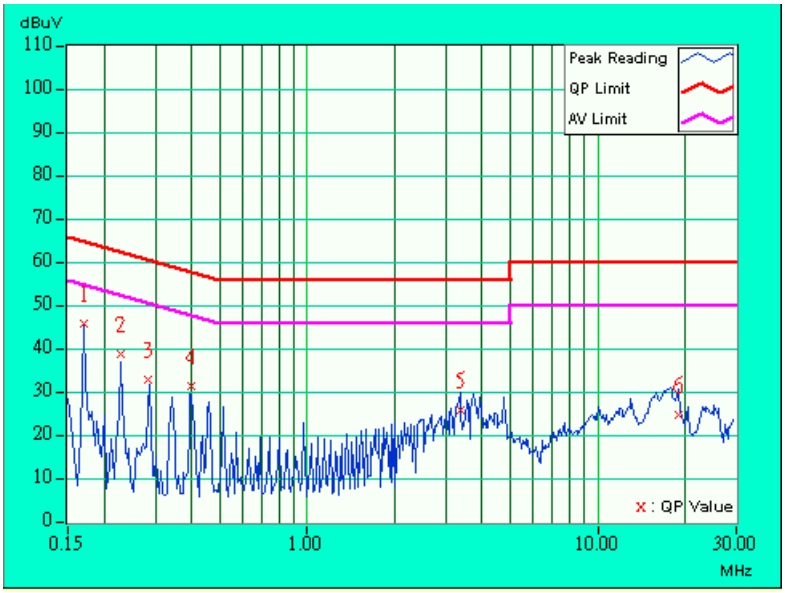


EUT	Bluetooth USB Dongle	**MODEL**	BT-0002M-3
MODE	Channel 78	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neurral (N)
ENVIRONMENTAL CONDITIONS	35 deg. C, 50%RH, 1005 hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	45.29	-	45.39	-	64.98	54.98	-19.59	-
2	0.228	0.10	38.13	-	38.23	-	62.52	52.52	-24.29	-
3	0.283	0.10	32.37	-	32.47	-	60.73	50.73	-28.26	-
4	0.400	0.10	30.74	-	30.84	-	57.85	47.85	-27.01	-
5	3.367	0.27	25.19	-	25.46	-	56.00	46.00	-30.54	-
6	18.906	0.73	24.09	-	24.82	-	60.00	50.00	-35.18	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.



4.2 NUMBER OF HOPPING FREQUENCY USED

4.2.1 LIMIT OF HOPPING FREQUENCY USED

At least 75 hopping frequencies, and should be equally spaced.

4.2.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

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.

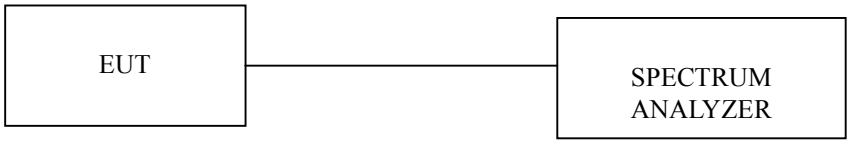
4.2.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Set the SA on MaxHold Mode, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been recorded.
4. Set the SA on View mode and then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

4.2.4 DEVIATION FROM TEST STANDARD

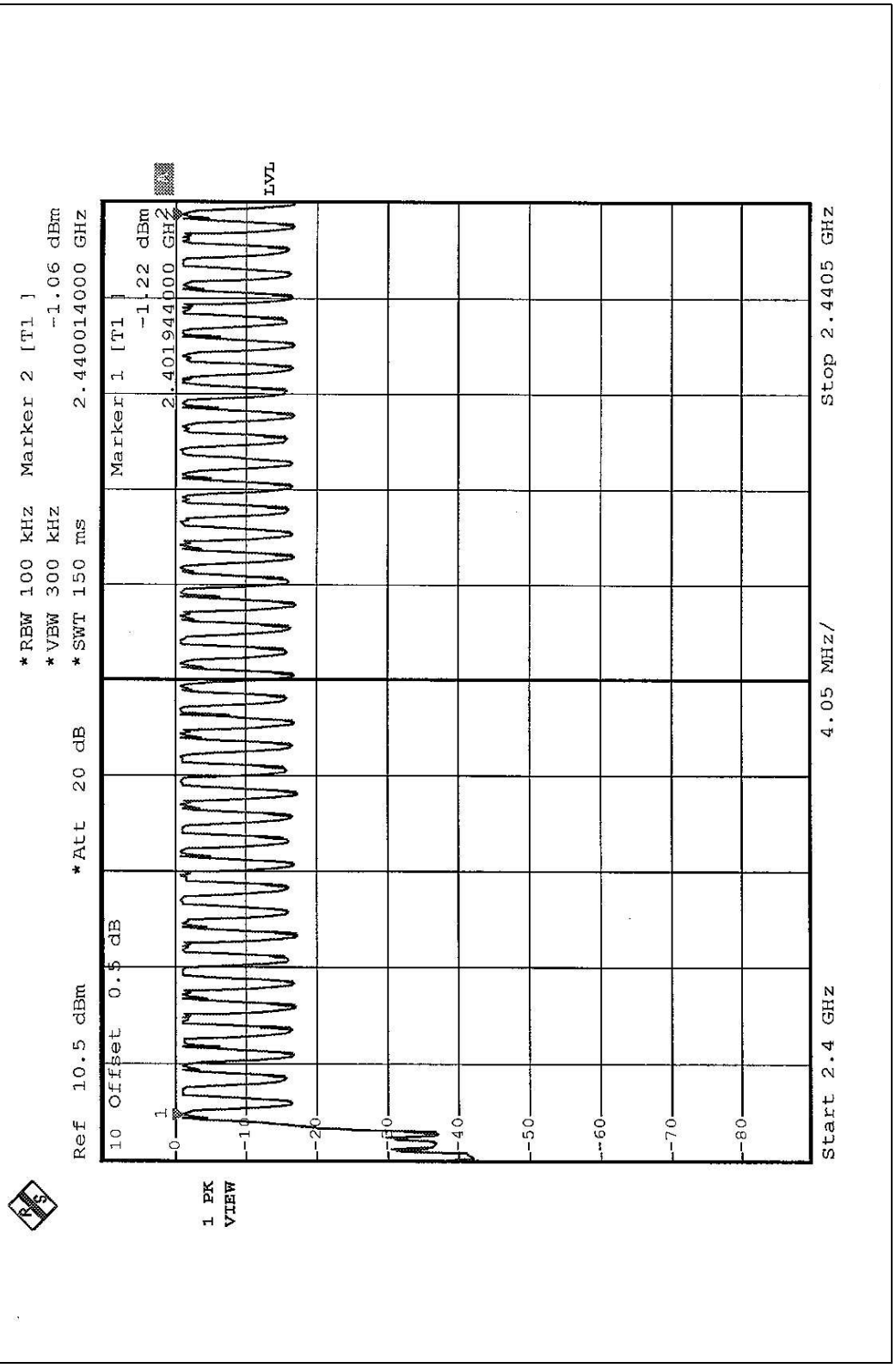
No deviation

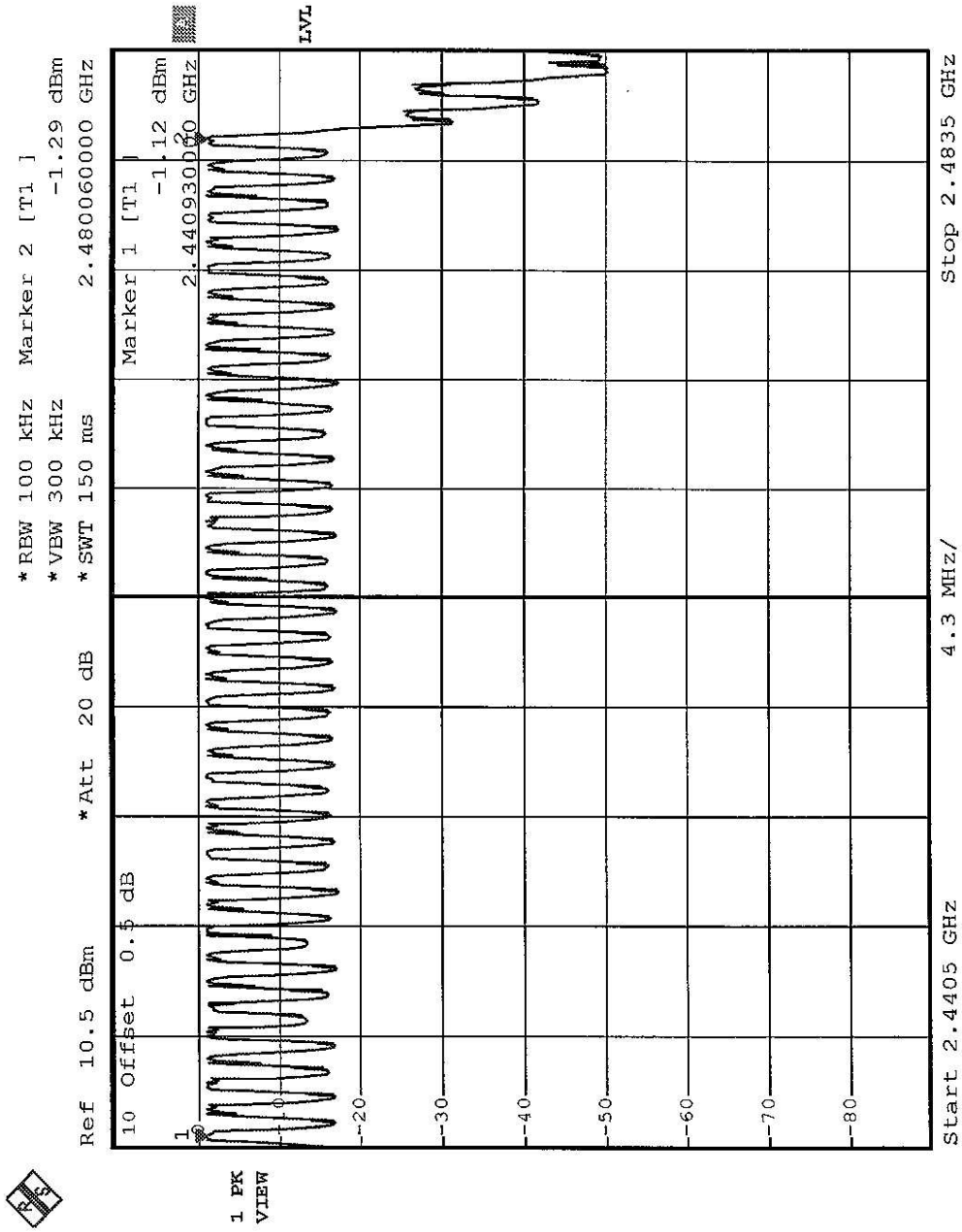
4.2.5 TEST SETUP



4.2.6 TEST RESULTS

There are 79 hopping frequencies in the hopping mode. Please refer to next two pages for the test result. On the plots, it shows that the hopping frequencies are equally spaced.


RBW 100 kHz
VBW 300 kHz
SWT 150 ms
Marker 2 [T1]
-1.06 dBm
2.440014000 GHz
Marker 1 [T1]
-1.22 dBm
2.401944000 GHz
Ref 10.5 dBm
Offset 0.5 dB
Att 20 dB
LVL
1 PK
VIEW
Start 2.4 GHz
4.05 MHz/
Stop 2.4405 GHz


RBW 100 kHz
VBW 300 kHz
SWT 150 ms
Marker 2 [T1]
-1.29 dBm
2.480060000 GHz
Marker 1 [T1]
-1.12 dBm
2.440930000 GHz
Ref 10.5 dBm
Offset 0.5 dB
Att 20 dB
LVL
1 PK
VIEW
Start 2.4405 GHz
4.3 MHz/
Stop 2.4835 GHz

4.3 DWELL TIME ON EACH CHANNEL

4.3.1 LIMIT OF DWELL TIME USED

For FHSS, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period. For hybrid systems, the average time of occupancy on any frequency should not exceed 0.4 seconds within a time period in seconds equal to the number of hopping frequencies employed multiplied by 0.4.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

NOTES:

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 PROCEDURES

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of SA on any frequency be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
4. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
5. Repeat above procedures until all frequencies measured were complete.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP

4.3.6 TEST RESULTS

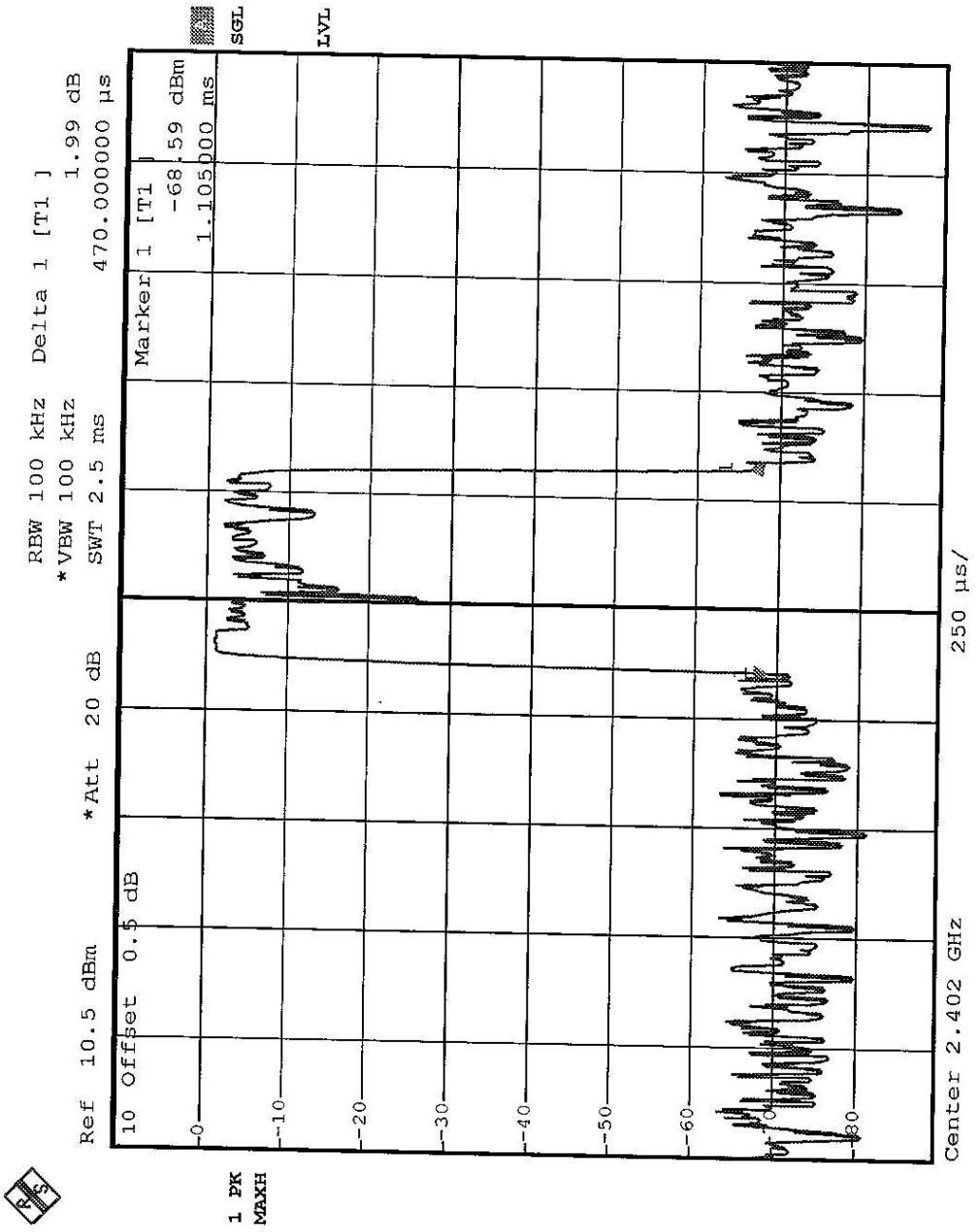
CHANNEL	DWELL TIME
0	285.57ms
39	288.61ms
78	285.57ms

Note : This product is averagely hopped on 79 frequencies. The maximum hopping rate is 500 hops/sec. The longest pulse duration is 475.00 μ sec.

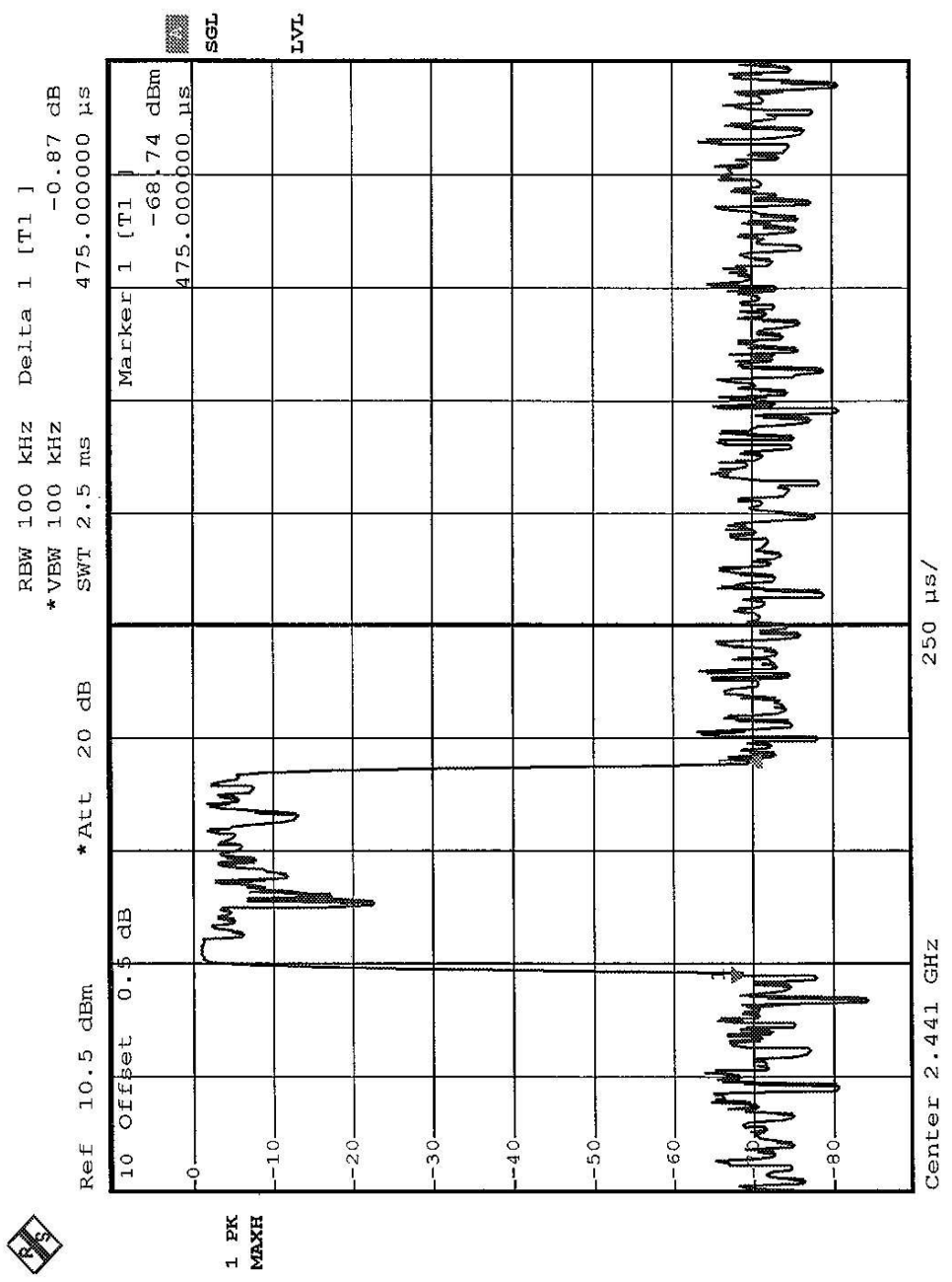
So, the longest Dwell Time = 475.00 μ sec x 1600 ÷ 79 x 30 = 288.61 msec. which is smaller than 0.4sec.

Test plots of the transmitting time slot are shown on next three pages.

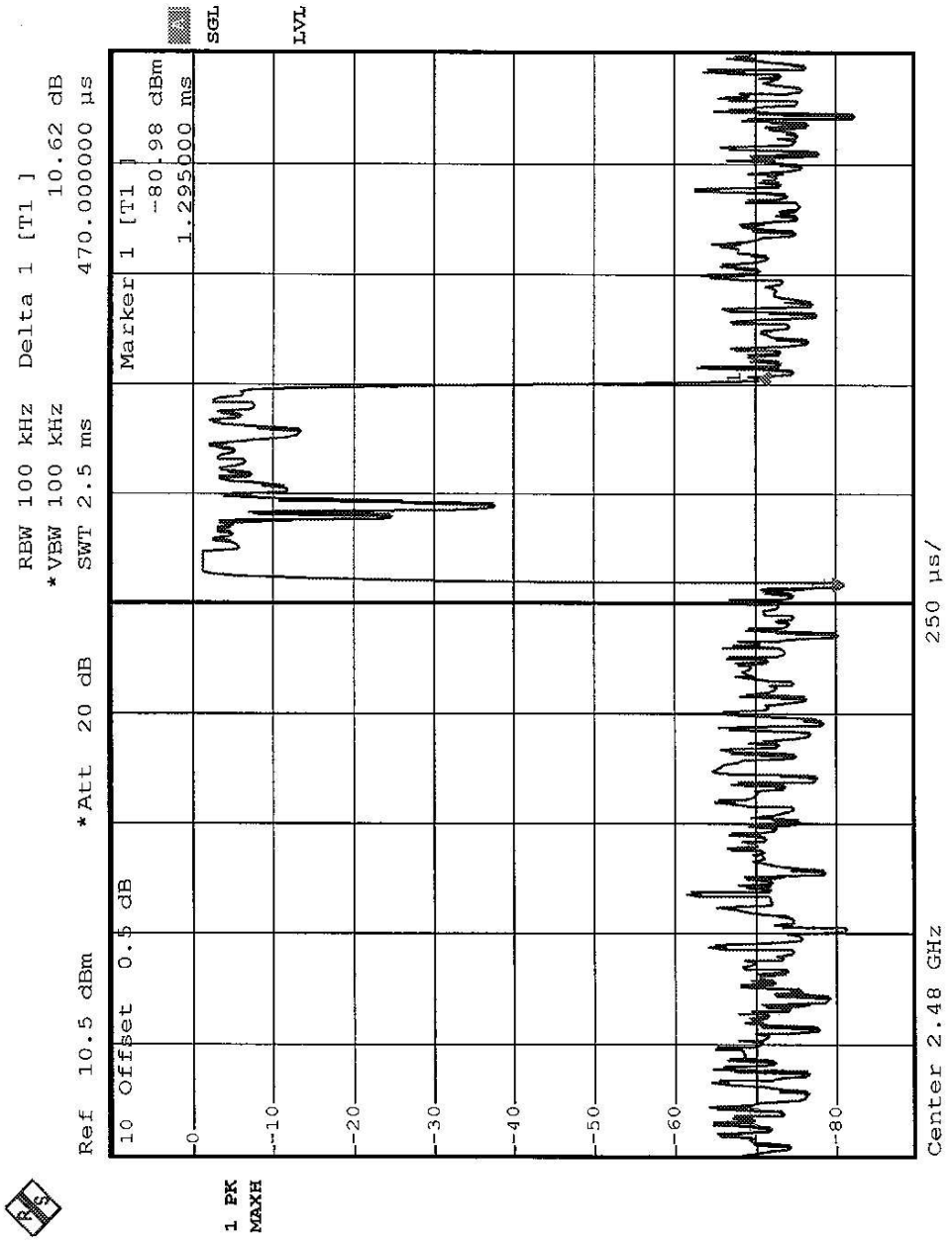
Channel 0


RBW 100 kHz
*VBW 100 kHz
Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
SWT 2.5 ms
Delta 1 [T1]
1.99 dB
470.000000 µs
Marker 1 [T1]
-68.59 dBm
1.105000 ms
SGL
LVL
1 PK
MAXH
Center 2.402 GHz
250 µs/

Channel 39


RBW 100 kHz
*VBW 100 kHz
SWT 2.5 ms
Delta 1 [T1]
-0.87 dB
475.000000 µs
Marker 1 [T1]
-68.74 dBm
475.000000 µs
SGL
LVL
Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
1 PK
MAXH
250 µs/
Center 2.441 GHz

Channel 78


RBW 100 kHz
*VBW 100 kHz
SWT 2.5 ms
Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
Marker 1 [T1]
-80.98 dBm
1.295000 ms
Delta 1 [T1]
10.62 dB
470.000000 µs
SGL
LVL
1 PK
MAXH
Center 2.48 GHz
250 µs/

4.4 CHANNEL BANDWIDTH

4.4.1 LIMITS OF CHANNEL BANDWIDTH

For frequency hopping system operating in the 2400-2483.5 MHz and 5725-5850 MHz bands, the maximum 20 dB bandwidth of the hopping channel is 1 MHz.

4.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

NOTES:

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 PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP

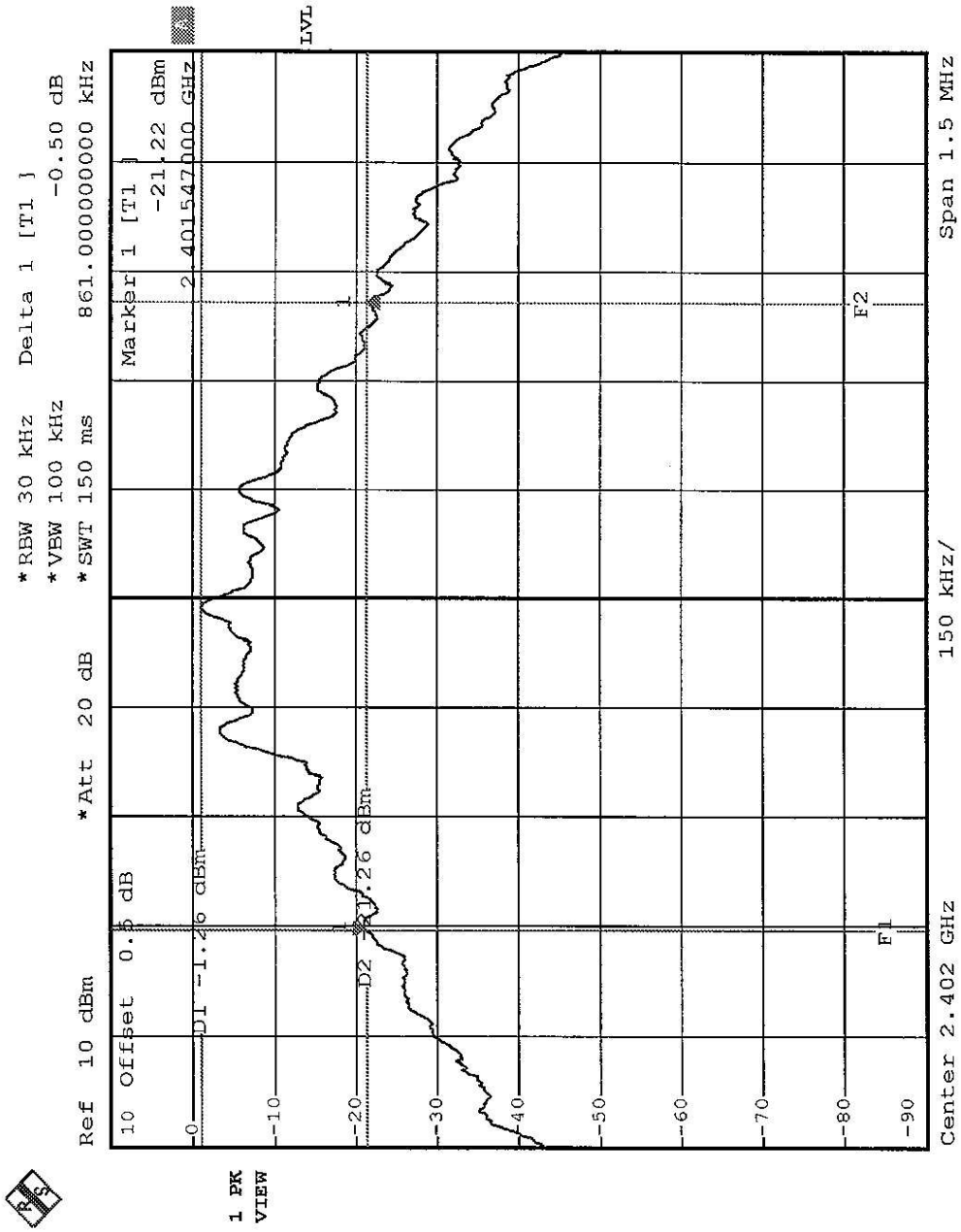
4.4.6 EUT OPERATING CONDITION

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

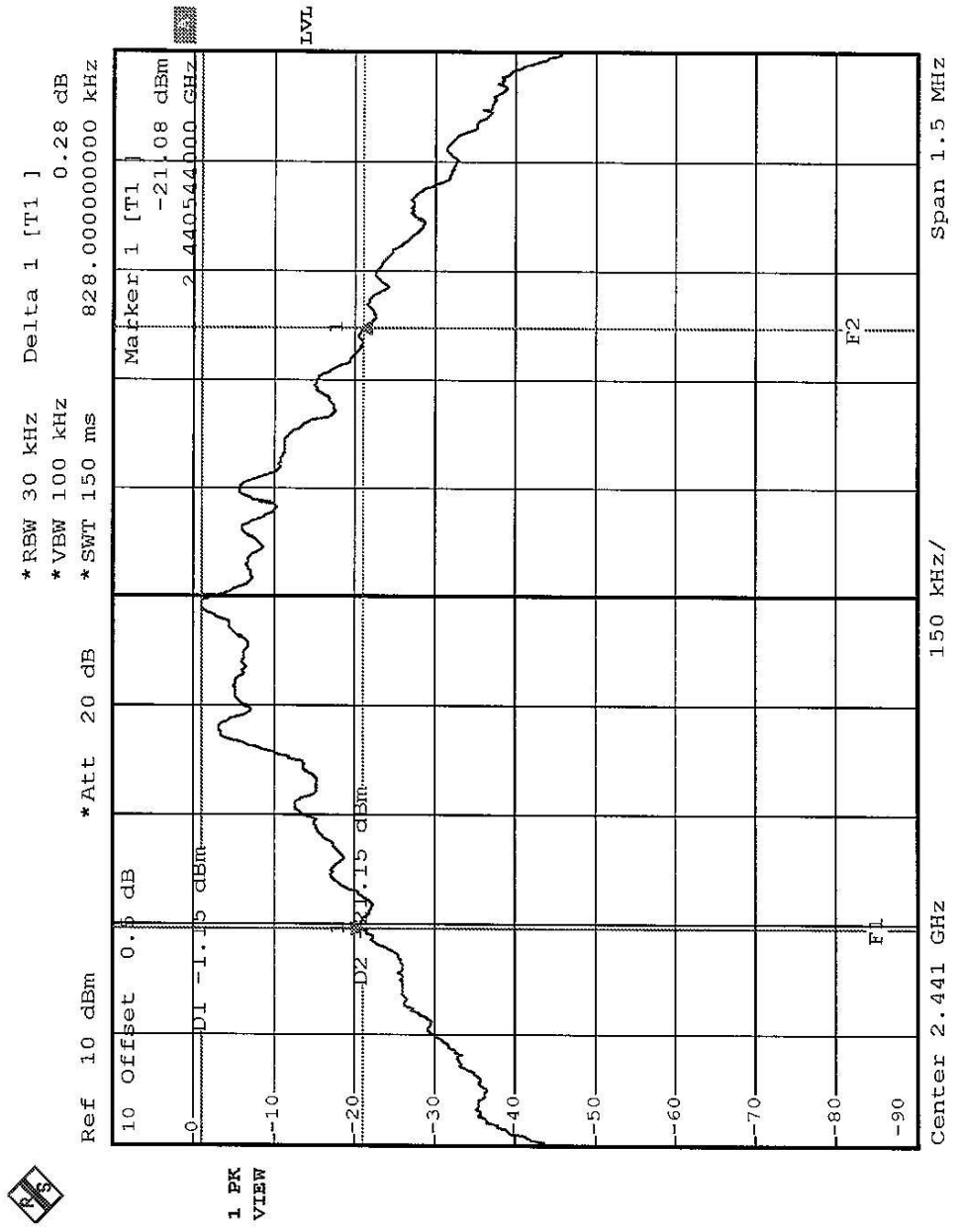
4.4.7 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (kHz)	MAXIMUM LIMIT (MHz)	PASS/FAIL
0	2402	861.00	1	PASS
39	2441	828.00	1	PASS
78	2480	837.00	1	PASS

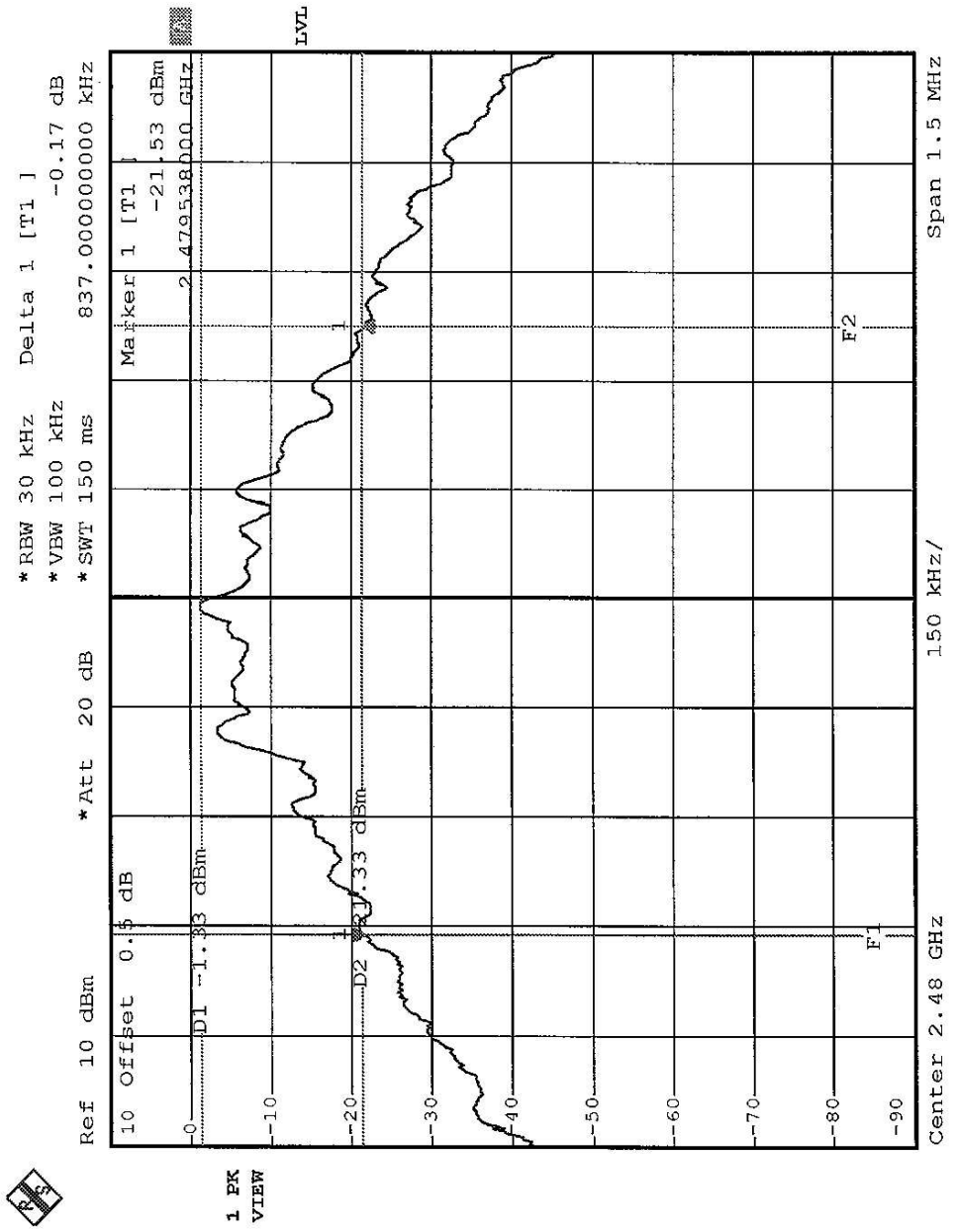
Channel 0


Ref 10 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 30 kHz
*VBW 100 kHz
*SWT 150 ms
Delta 1 [T1]
-0.50 dB
861.000000000 kHz
Marker 1 [T1]
-21.22 dBm
2.401547000 GHz
LVL
D1 -1.26 dBm
D2 -21.26 dBm
F1
F2
1 PK
VIEW
Center 2.402 GHz
150 kHz/
Span 1.5 MHz

Channel 39


*RBW 30 kHz
*VBW 100 kHz
*SWT 150 ms
Delta 1 [T1]
0.28 dB
828.000000000 kHz
Marker 1 [T1]
-21.08 dBm
2.440544000 GHz
Ref 10 dBm
10 Offset 0.6 dB
*Att 20 dB
D1 -1.15 dBm
D2 -21.15 dBm
Center 2.441 GHz
150 kHz/
Span 1.5 MHz
F1
F2
1 PK
VIEW
LVL

Channel 78


RBW 30 kHz
VBW 100 kHz
SWT 150 ms
Delta 1 [T1]
-0.17 dB
837.000000000 kHz
Marker 1 [T1]
-21.53 dBm
2.479538000 GHz
Ref 10 dBm
Offset 0.5 dB
Att 20 dB
D1 -1.33 dBm
D2 -21.33 dBm
F1
F2
Center 2.48 GHz
150 kHz/
Span 1.5 MHz
1 PK
VIEW

4.5 HOPPING CHANNEL SEPARATION

4.5.1 LIMIT OF HOPPING CHANNEL SEPARATION

At least 25KHz or 20dB bandwidth (whichever is greater).

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

NOTES:

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.

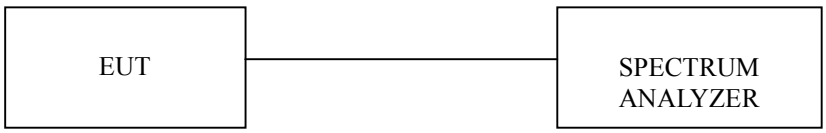
4.5.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
3. By using the MaxHold function record the separation of two adjacent channels.
4. Measure the frequency difference of these two adjacent channels by SA MARK function. And then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP

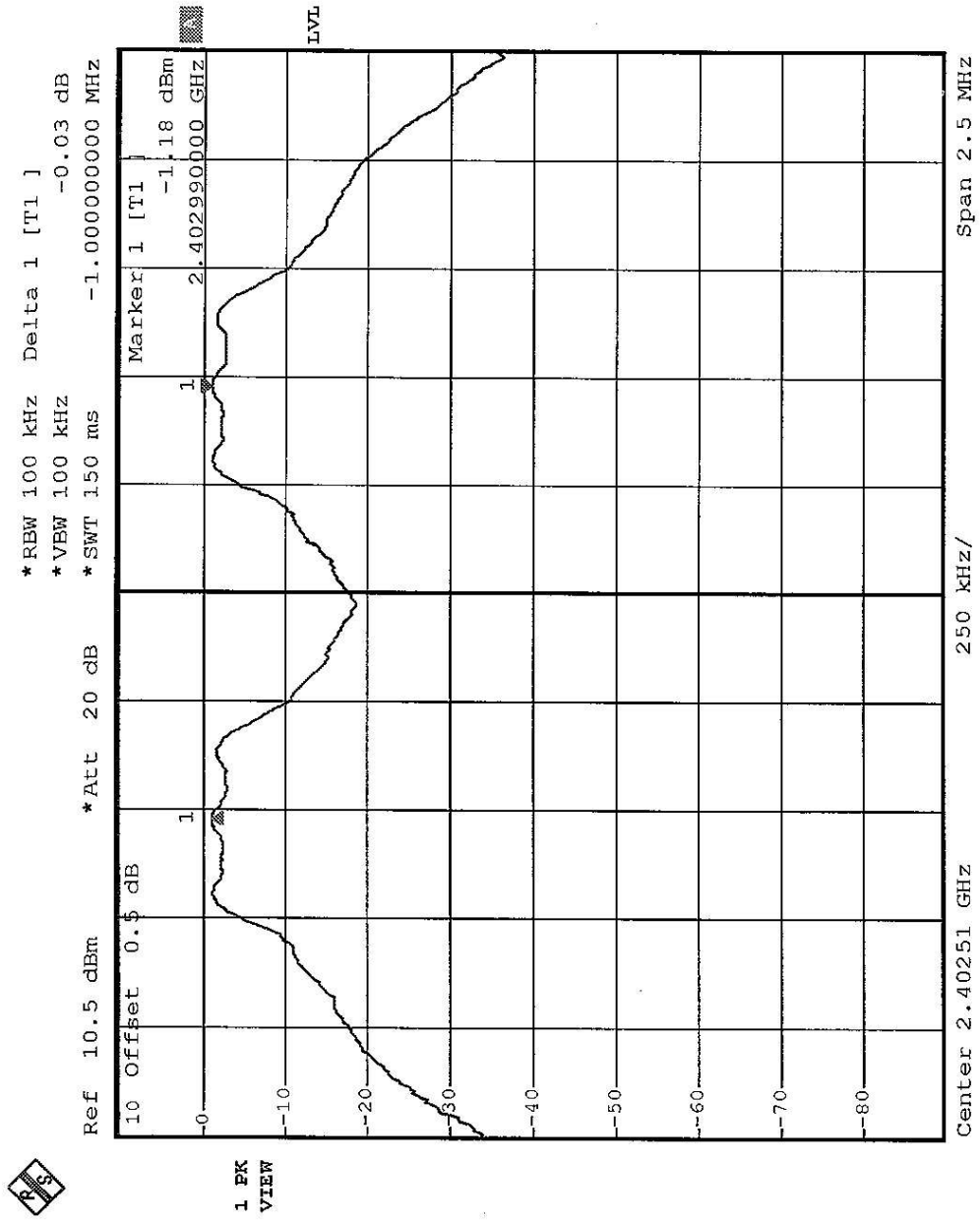


4.5.6 TEST RESULTS

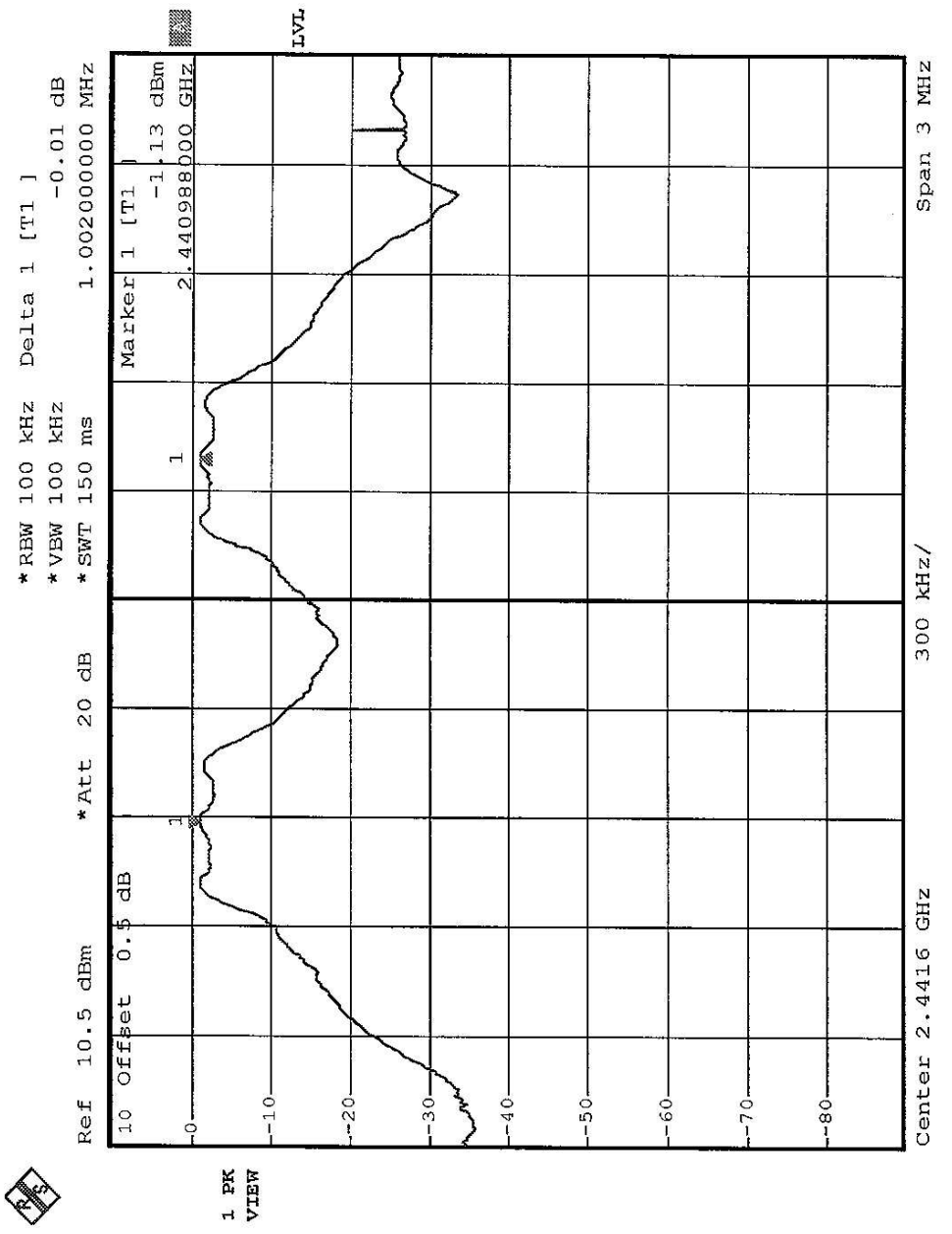
Channel	Frequency (MHz)	Adjacent Channel Separation	Minimum Limit (kHz)	Pass / Fail
0	2402	1MHz	861.00	PASS
39	2441	1MHz	828.00	PASS
78	2480	1MHz	837.00	PASS

The minimum limit is 20dB bandwidth. Test results please refer to next three pages.

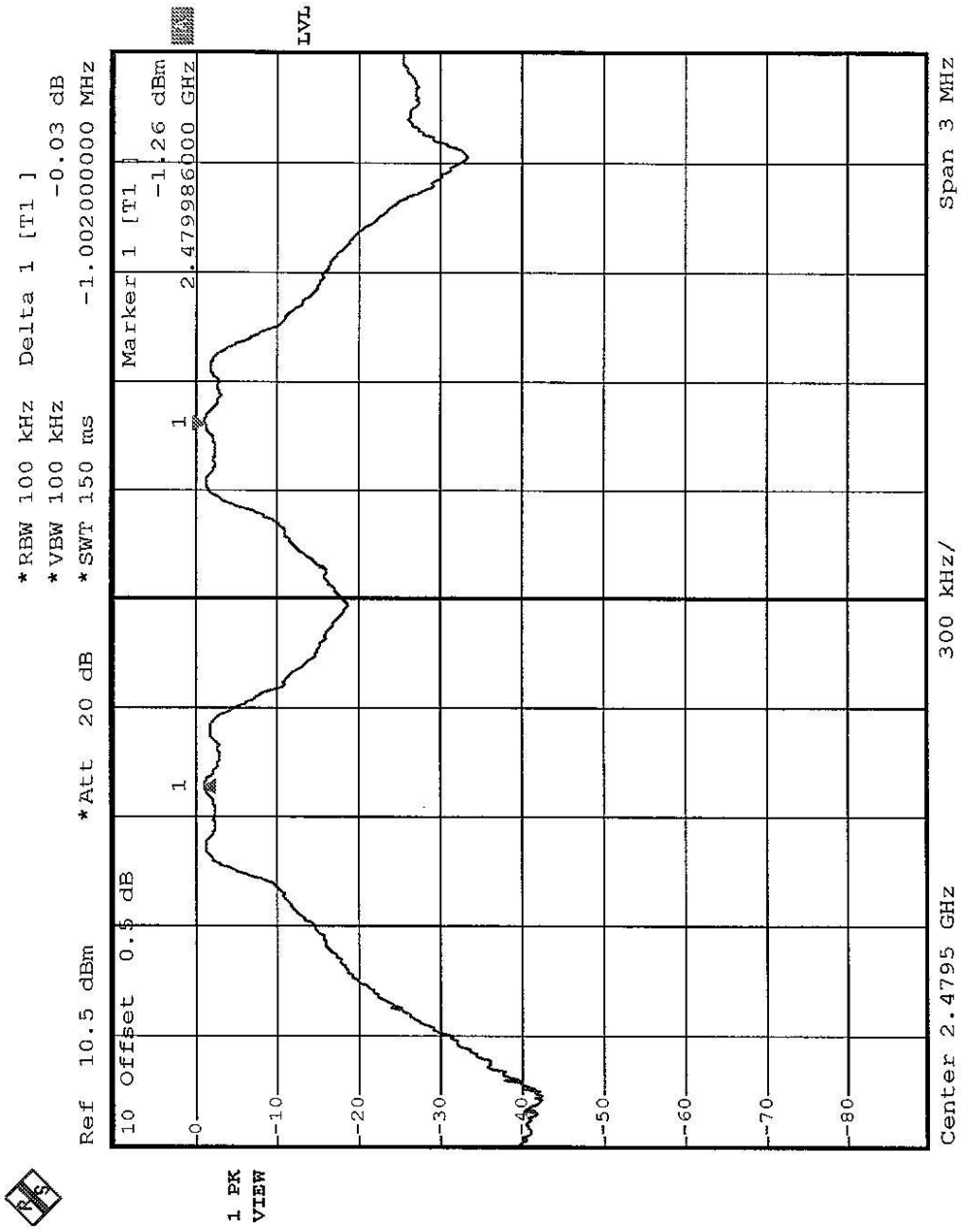
Channel 0


RBW 100 kHz
VBW 100 kHz
SWT 150 ms
Delta 1 [T1]
-0.03 dB
-1.00000000 MHz
Marker 1 [T1]
-1.18 dBm
2.40290000 GHz
Ref 10.5 dBm
Offset 0.5 dB
Att 20 dB
LVL
1 PK
VIEW
Center 2.40251 GHz
250 kHz/
Span 2.5 MHz

Channel 39


RBW 100 kHz
VBW 100 kHz
SWT 150 ms
Delta 1 [T1]
-0.01 dB
1.002000000 MHz
Marker 1 [T1]
-1.13 dBm
2.440988000 GHz
Ref 10.5 dBm
Offset 0.5 dB
Att 20 dB
Center 2.4416 GHz
300 kHz/
Span 3 MHz
1 PK
VIEW
LVL

Channel 78


RBW 100 kHz
VBW 100 kHz
SWT 150 ms
Delta 1 [T1]
-0.03 dB
-1.002000000 MHz
Marker 1 [T1]
-1.26 dBm
2.479986000 GHz
Ref 10.5 dBm
Offset 0.5 dB
Att 20 dB
LVL
1 PK
VIEW
Center 2.4795 GHz
300 kHz/
Span 3 MHz

4.6 MAXIMUM PEAK OUTPUT POWER

4.6.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Limit of Maximum Peak Output Power Measurement is 30dBm.

4.6.2 INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

NOTES:

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.

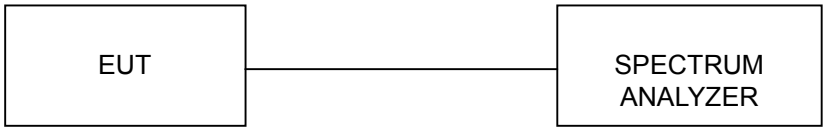
4.6.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. The center frequency of the spectrum analyzer is set to the fundamental frequency and using 3 MHz RBW and 3 MHz VBW.
4. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
5. Repeat above procedures until all frequencies measured were complete.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



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

4.6.6 EUT OPERATING CONDITION

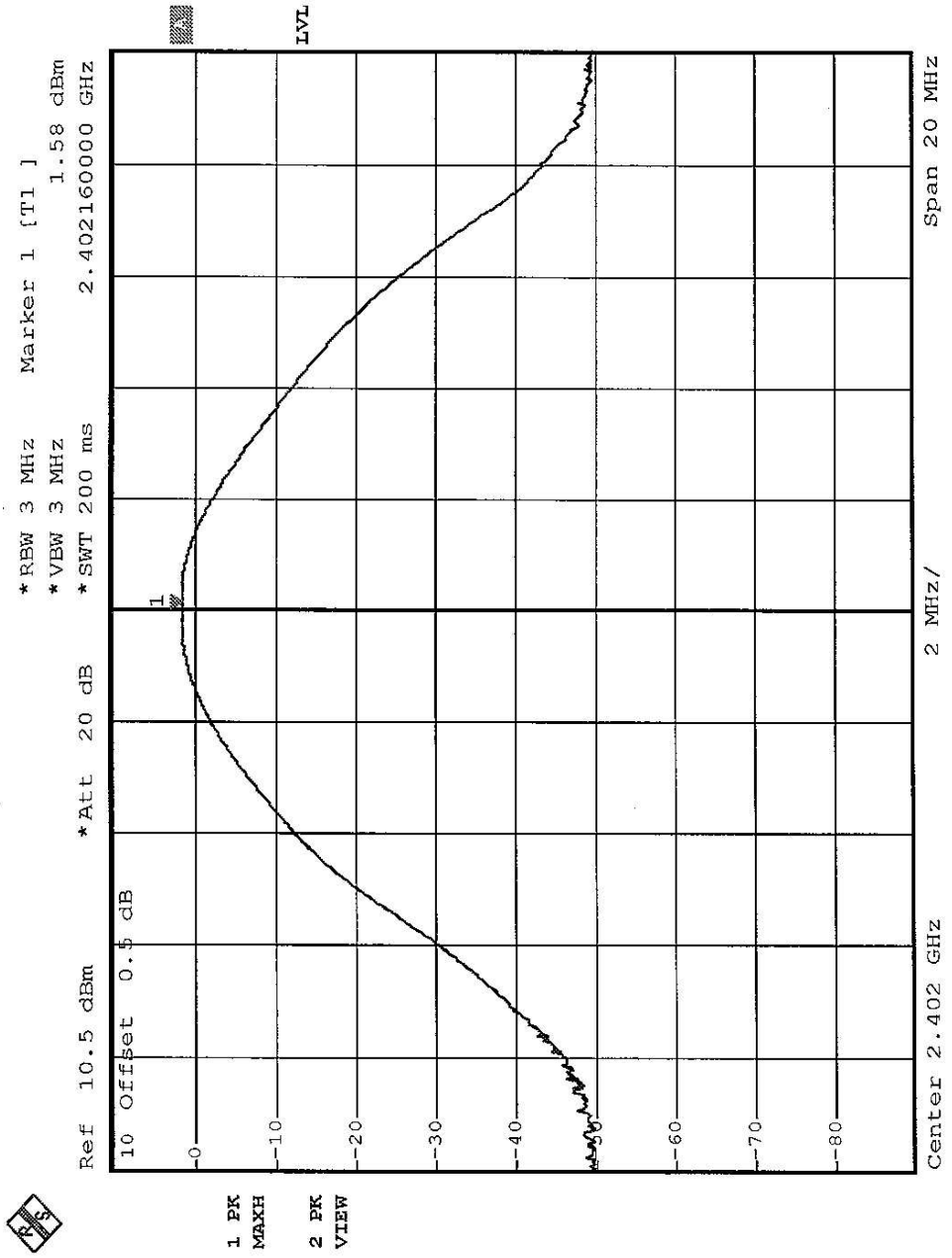
The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

4.6.7 TEST RESULTS

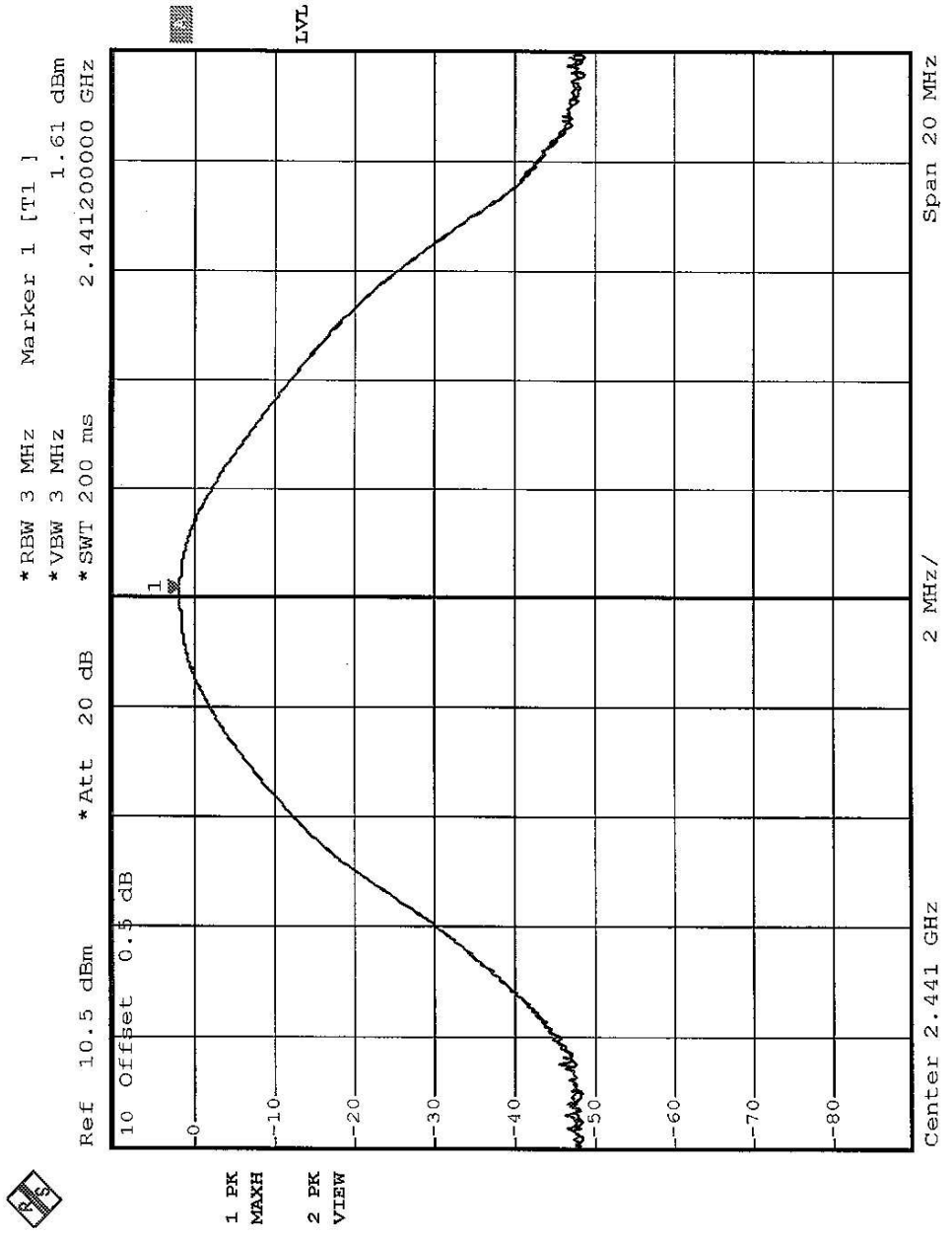
Output Power to Antenna:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
0	2402	1.58	30	PASS
39	2441	1.61	30	PASS
78	2480	1.46	30	PASS

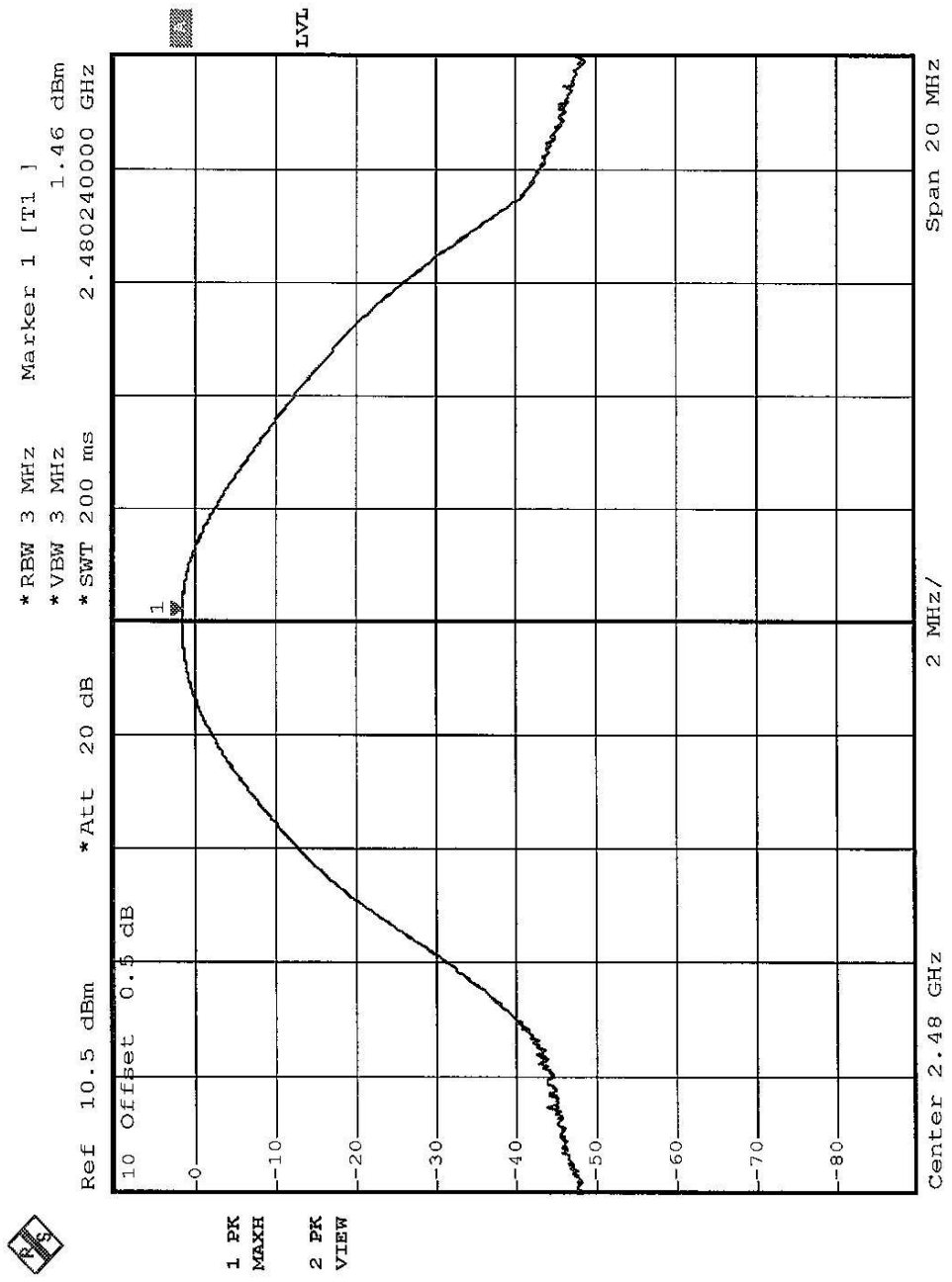
Channel 0


Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 3 MHz
*VBW 3 MHz
*SWT 200 ms
Marker 1 [T1]
1.58 dBm
2.402160000 GHz
LVL
Center 2.402 GHz
2 MHz/
Span 20 MHz
1 PK
MAXH
2 PK
VIEW

Channel 39


Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 3 MHz
*VBW 3 MHz
*SWT 200 ms
Marker 1 [T1]
1.61 dBm
2.441200000 GHz
1 PK MAXH
2 PK VIEW
Center 2.441 GHz
2 MHz/
Span 20 MHz

Channel 78


Ref 10.5 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 3 MHz
*VBW 3 MHz
*SWT 200 ms
Marker 1 [T1]
1.46 dBm
2.480240000 GHz
LVL
1 PK MAXH
2 PK VIEW
Center 2.48 GHz
2 MHz/
Span 20 MHz
0
-10
-20
-30
-40
-50
-60
-70
-80

4.7 RADIATED EMISSION MEASUREMENT

4.7.1 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.

4.7.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8590L	3544A01176	May 13, 2003
* HP Preamplifier	8447D	2944A08485	Oct. 30, 2002
* HP Preamplifier	8449B	3008A01201	Dec. 06, 2002
* HP Preamplifier	8449B	3008A01292	Aug. 7, 2003
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Jan. 27, 2003
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 23, 2002
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 2, 2003
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	Jul. 3, 2003
* EMCO Horn Antenna	3115	9312-4192	Apr. 9, 2003
* EMCO Turn Table	1060	1115	NA
* SHOSHIN Tower	AP-4701	A6Y005	NA
* Software	AS61D4	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Jan. 25, 2003
* TIMES RF cable	LMR-600	CABLE-ST5-01	Jul. 12, 2003
Open Field Test Site	Site 5	ADT-R05	Jul. 19, 2003
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 if tested.

5. The test was performed in ADT Open Site No. 5.

4.7.3 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.

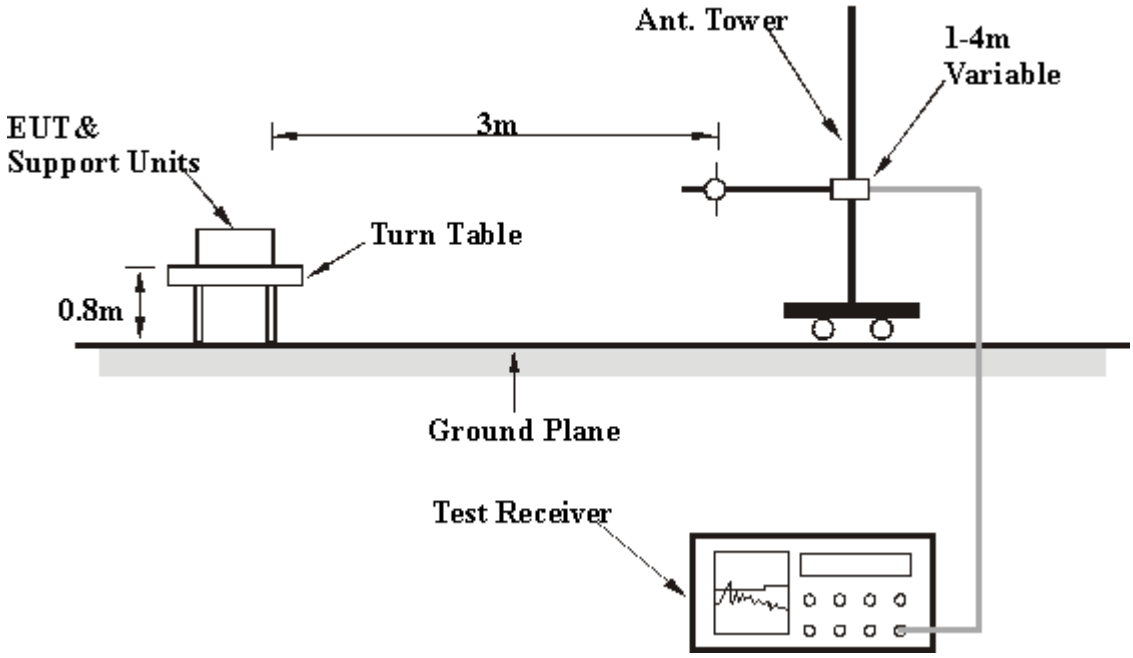
NOTE:

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.

4.7.4 DEVIATION FROM TEST STANDARD

No deviation

4.7.5 TEST SETUP



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

4.7.6 TEST RESULTS

Digital Portion:

EUT	Bluetooth USB Dongle	**MODEL**	BT-0002M-3
MODE	Channel 78	**FREQUENCY RANGE**	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	35 deg. C, 60%RH, 1050 hPa	**TESTED BY**: Bunny Yao	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	84.00	26.0 QP	40.00	-14.00	1.52H	152	16.65	7.63	1.71	0.00	-9.35
2	144.00	32.8 QP	43.50	-10.70	1.75H	184	19.62	10.58	2.60	0.00	-13.18
3	205.00	33.5 QP	43.50	-10.00	1.63H	204	20.61	9.25	3.64	0.00	-12.90
4	210.00	34.5 QP	43.50	-9.00	1.63H	278	21.25	9.54	3.71	0.00	-13.26
5	216.00	31.5 QP	43.50	-12.00	1.63H	135	17.72	9.97	3.81	0.00	-13.79
6	232.00	30.8 QP	46.00	-15.20	1.76H	2	15.94	10.84	4.02	0.00	-14.86
7	240.00	31.8 QP	46.00	-14.20	1.81H	233	16.23	11.41	4.16	0.00	-15.57
8	272.00	28.8 QP	46.00	-17.20	1.14H	275	11.61	12.53	4.66	0.00	-17.19
9	360.00	32.0 QP	46.00	-14.00	1.49H	126	11.65	14.58	5.77	0.00	-20.35
10	460.00	28.6 QP	46.00	-17.40	1.62H	184	4.96	16.53	7.11	0.00	-23.65
11	525.00	32.9 QP	46.00	-13.10	1.65H	274	7.52	17.59	7.79	0.00	-25.39
12	590.00	35.0 QP	46.00	-11.00	1.37H	1	8.10	18.48	8.42	0.00	-26.91

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	180.00	30.0 QP	43.50	-13.50	1.19V	287	17.67	8.91	3.42	0.00	-12.33
2	240.00	27.5 QP	46.00	-18.50	1.40V	111	11.93	11.41	4.16	0.00	-15.57
3	272.00	28.0 QP	46.00	-18.00	1.30V	146	10.81	12.53	4.66	0.00	-17.19
4	336.00	29.3 QP	46.00	-16.70	1.36V	240	9.93	13.92	5.45	0.00	-19.38
5	360.00	38.4 QP	46.00	-7.60	1.56V	206	18.05	14.58	5.77	0.00	-20.36
6	460.00	32.5 QP	46.00	-13.50	1.52V	103	8.86	16.53	7.11	0.00	-23.65
7	525.00	33.8 QP	46.00	-12.20	1.25V	63	8.42	17.59	7.79	0.00	-25.38

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.

4.7.7 TEST RESULTS

RF Portion :

EUT	Bluetooth USB Dongle	**MODEL**	BT-0002M-3
MODE	Channel 0	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 60%RH, 1050 hPa	**TESTED BY**: Bunny Yao	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*2402.00	90.0 PK			1.33H	287	57.25	27.67	5.10	0.00	-32.77
2	*2402.00	67.1 AV			1.33H	287	34.37	27.67	5.10	0.00	-32.77
3	4804.00	54.4 PK	74.00	-19.60	1.22H	243	50.30	31.52	7.23	34.63	-4.13
4	4804.00	40.6 AV	54.00	-13.40	1.22H	243	36.50	31.52	7.23	34.63	-4.12

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*2402.00	65.6 AV			1.24V	87	32.80	27.67	5.10	0.00	-32.77
2	*2402.00	87.1 PK			1.24V	87	54.36	27.67	5.10	0.00	-32.77
3	4802.00	41.1 AV	54.00	-12.90	1.51V	250	36.98	31.45	7.27	34.64	-4.08
4	4802.00	56.5 PK	74.00	-17.50	1.51V	250	52.37	31.45	7.27	34.64	-4.08

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

EUT	Bluetooth USB Dongle	**MODEL**	BT-0002M-3
MODE	Channel 39	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 60%RH, 1050 hPa	**TESTED BY**: Bunny Yao	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*2441.00	87.9 PK			1.37H	283	55.00	27.81	5.08	0.00	-32.89
2	*2441.00	65.9 AV			1.37H	283	33.00	27.81	5.08	0.00	-32.89
3	4882.00	55.4 PK	74.00	-18.60	1.04H	243	51.26	31.59	7.21	34.63	-4.18
4	4882.00	42.2 AV	54.00	-11.80	1.37H	283	46.37	31.59	7.21	34.63	-4.18

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*2441.00	79.6 PK			1.51V	346	46.70	27.81	5.08	0.00	-32.89
2	*2441.00	60.6 AV			1.51V	346	27.66	27.81	5.08	0.00	-32.90
3	4882.00	53.7 PK	74.00	-20.30	1.57V	223	49.50	31.59	7.21	34.63	-4.17
4	4882.00	40.9 AV	54.00	-13.10	1.57V	223	36.77	31.59	7.21	34.63	-4.17

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

EUT	Bluetooth USB Dongle	MODEL	BT-0002M-3
MODE	Channel 78	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 60%RH, 1050 hPa	TESTED BY: Bunny Yao	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*2480.00	87.0 PK			1.34H	98	54.00	27.96	5.06	0.00	-33.01
2	*2480.00	65.5 AV			1.34H	98	32.50	27.96	5.06	0.00	-33.01
3	4960.00	41.5 AV	54.00	-12.50	1.17H	161	37.10	31.72	7.26	34.61	-4.38
4	4960.00	56.4 PK	74.00	-17.60	1.17H	161	52.00	31.72	7.26	34.61	-4.38

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (DbuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*2480.00	84.6 PK			1.48V	2	51.60	27.96	5.06	0.00	-33.01
2	*2480.00	63.2 AV			1.48V	2	30.20	27.96	5.06	0.00	-33.01
3	4960.00	40.2 AV	54.00	-13.80	1.28V	275	35.81	31.72	7.26	34.61	-4.38
4	4960.00	53.0 PK	74.00	-21.00	1.28V	275	48.67	31.72	7.26	34.61	-4.39

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

4.8 BAND EDGES MEASUREMENT

4.8.1 LIMITS OF BAND EDGES MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100KHz RB).

4.8.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

NOTES:

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.

4.8.3 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.

4.8.4 DEVIATION FROM TEST STANDARD

No deviation

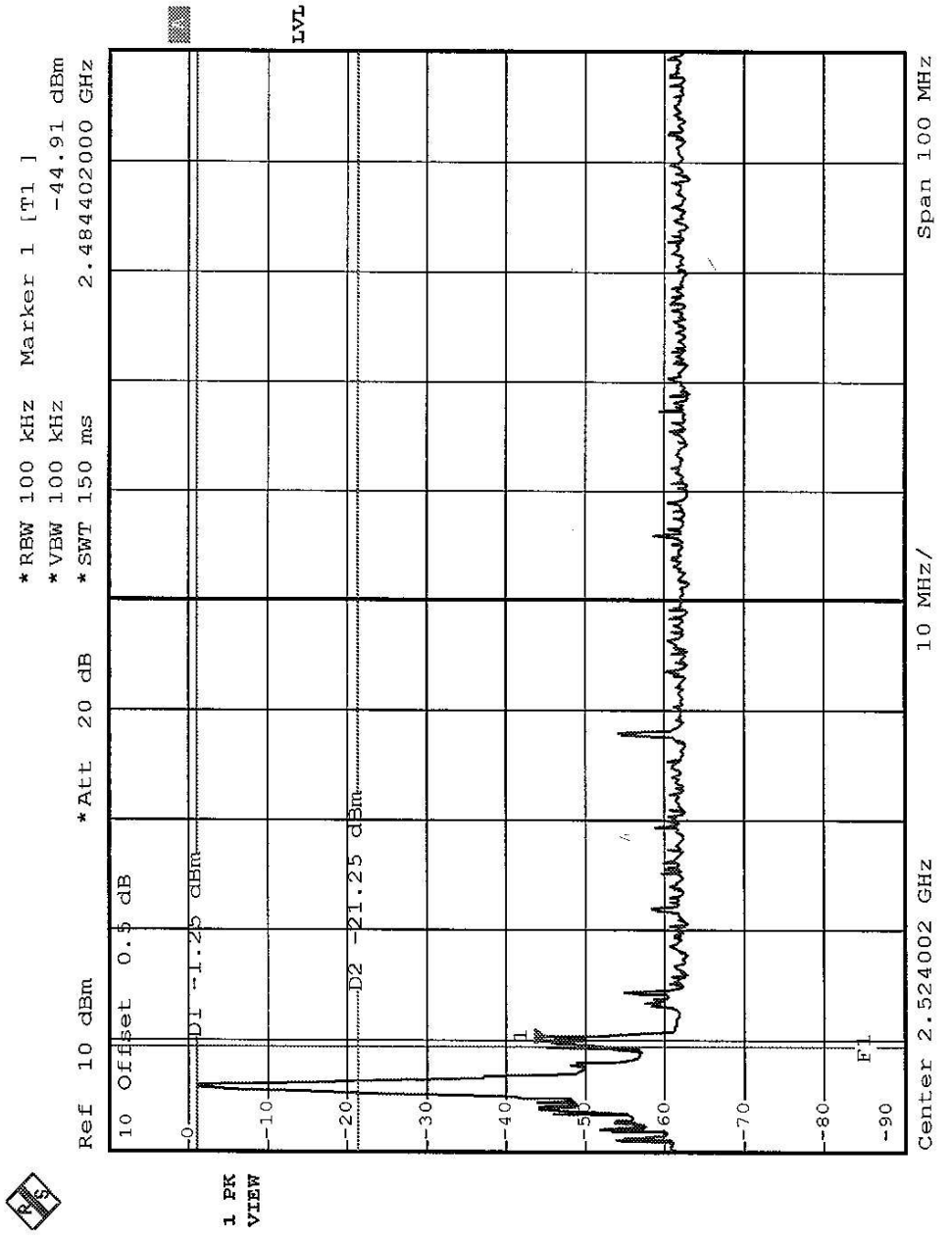
4.8.5 EUT OPERATING CONDITION

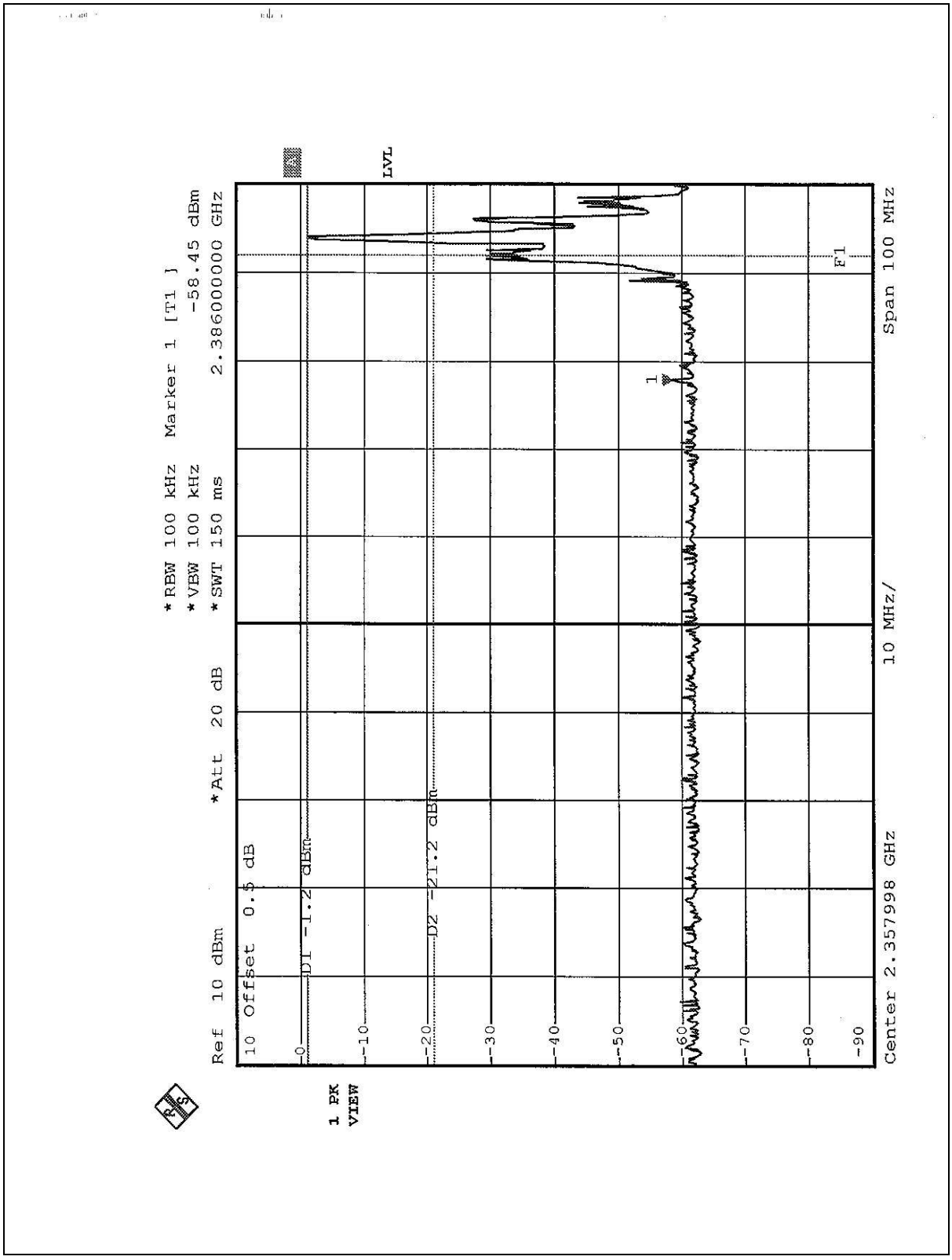
The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

4.8.6 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 43.66dB / 57.25dB delta between carrier maximum power and local maximum emission in restrict band (2.4844GHz / 2.3860GHz). The emission of carrier strength list in the test result of channel 78 at the item 4.7.7 (Page 54) is 65.5dBuV/m, so the maximum field strength in restrict band is 65.5-43.66=21.84dBuV/m which is under 54 dBuV/m limit.


RBW 100 kHz
VBW 100 kHz
SWT 150 ms
Marker 1 [T1]
-44.91 dBm
2.484402000 GHz
Ref 10 dBm
Offset 0.5 dB
Att 20 dB
D1 -1.25 dBm
D2 -21.25 dBm
1 PK
VIEW
Center 2.524002 GHz
10 MHz/
Span 100 MHz


Ref 10 dBm
10 Offset 0.5 dB
*Att 20 dB
*RBW 100 kHz
*VBW 100 kHz
*SWT 150 ms
Marker 1 [T1]
-58.45 dBm
2.386000000 GHz
D1 -1.2 dBm
D2 -21.2 dBm
1 PK
VIEW
Center 2.357998 GHz
10 MHz/
Span 100 MHz
1VL
F1

4.9 ANTENNA REQUIREMENT

4.9.1 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 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

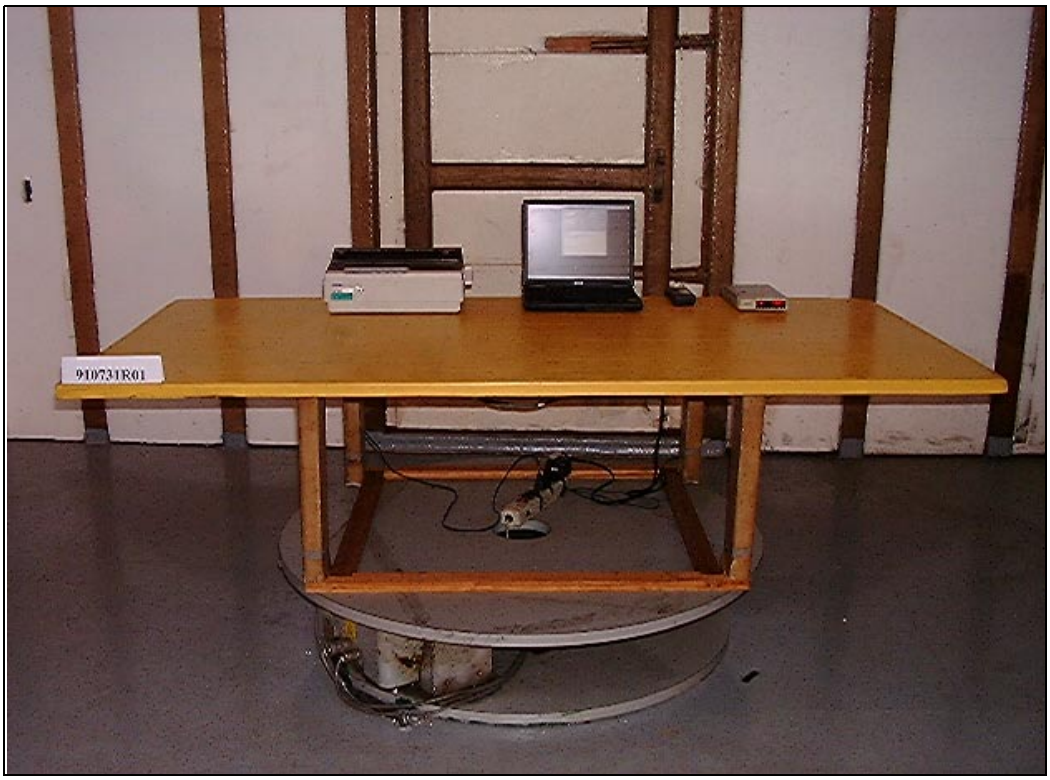
4.9.2 ANTENNA CONNECTED CONSTRUCTION

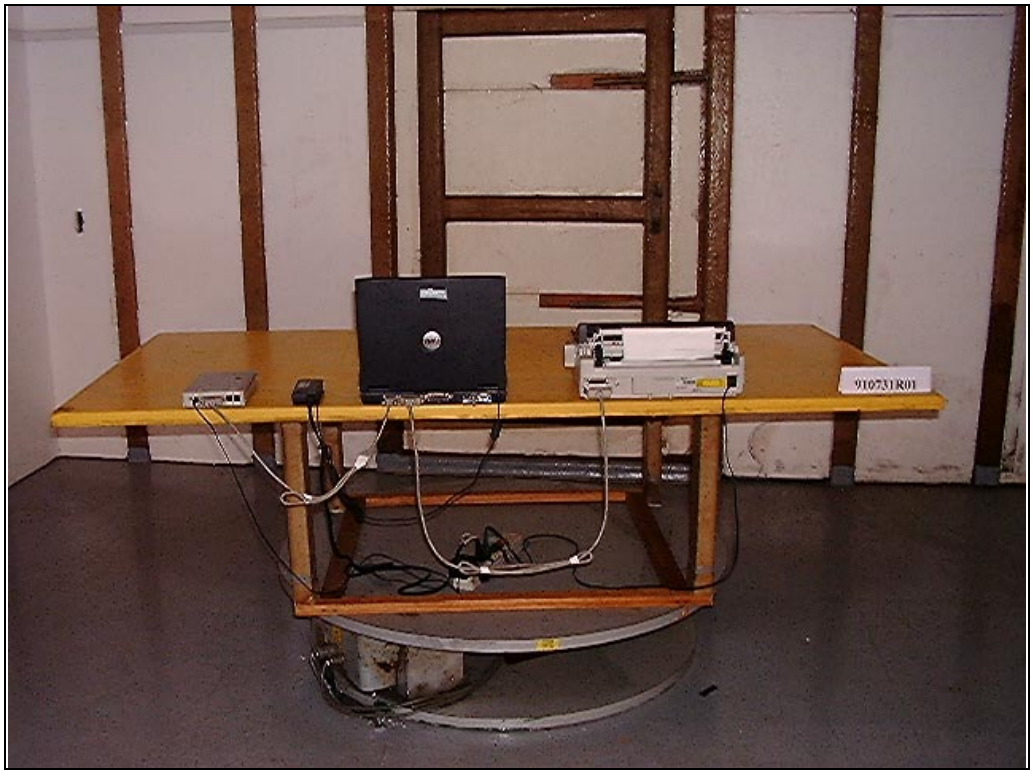
The antenna used in this product is Patch Antenna. There is no antenna connector. The maximum Gain of this antenna is only 1dBi.

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