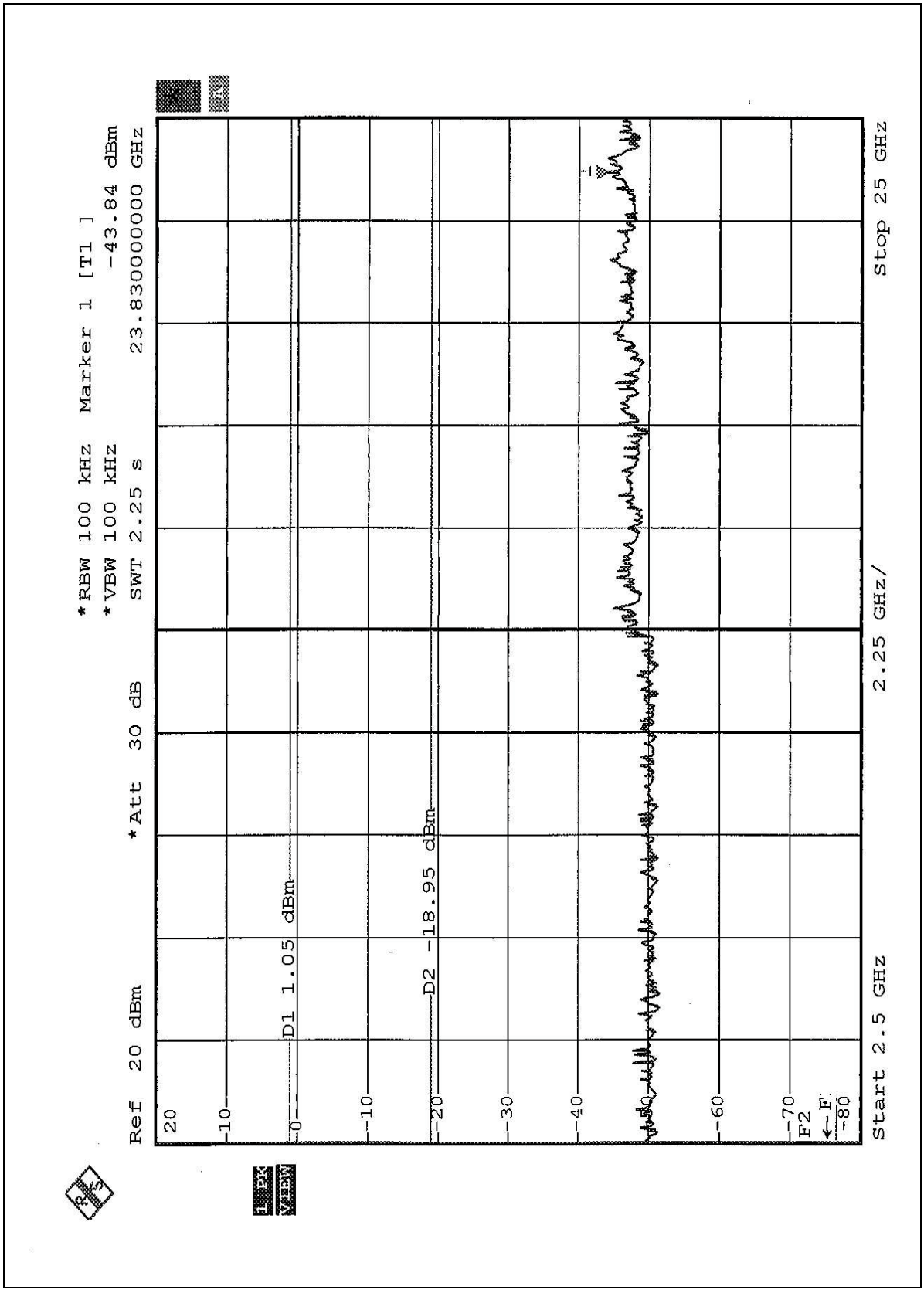
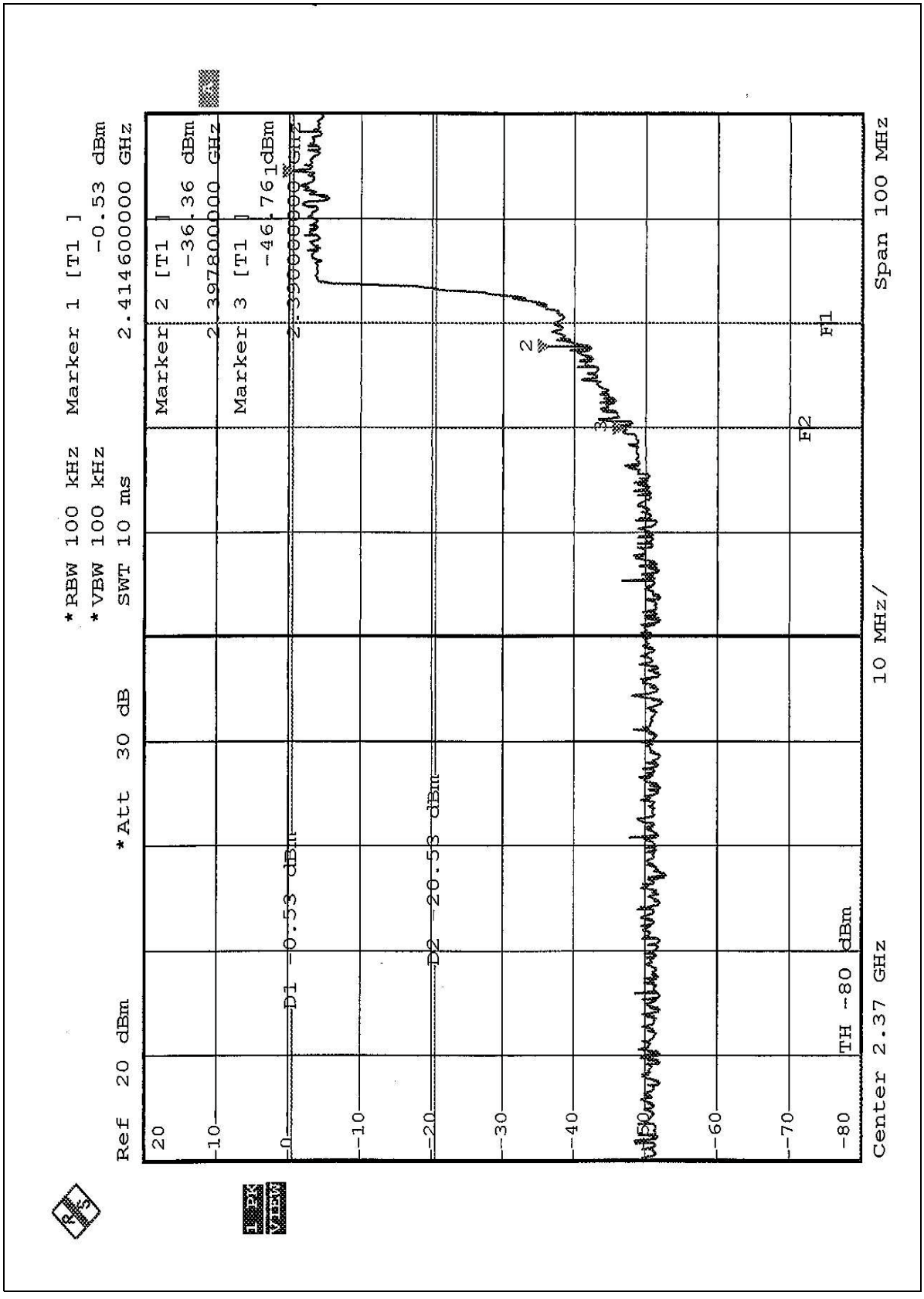
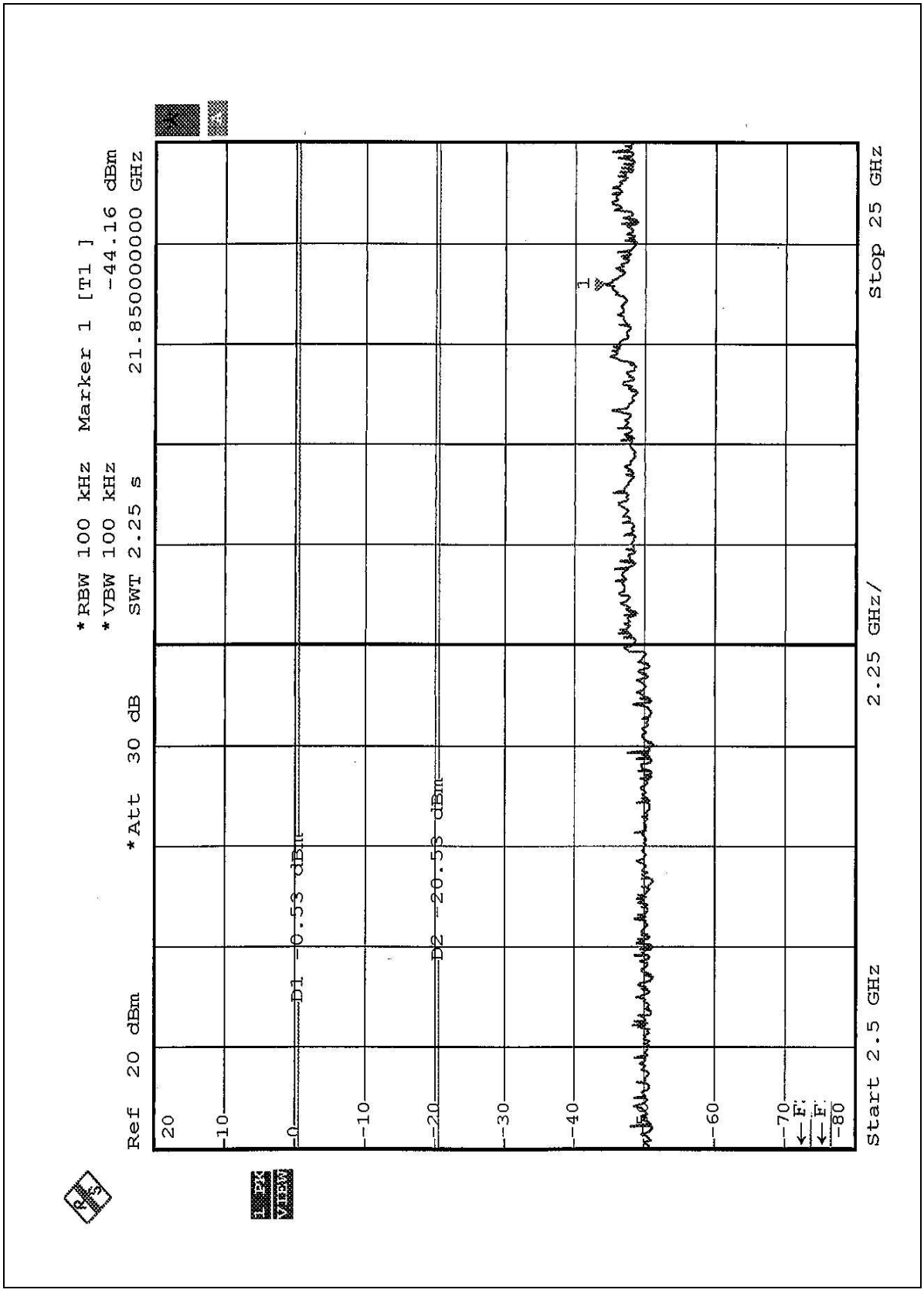
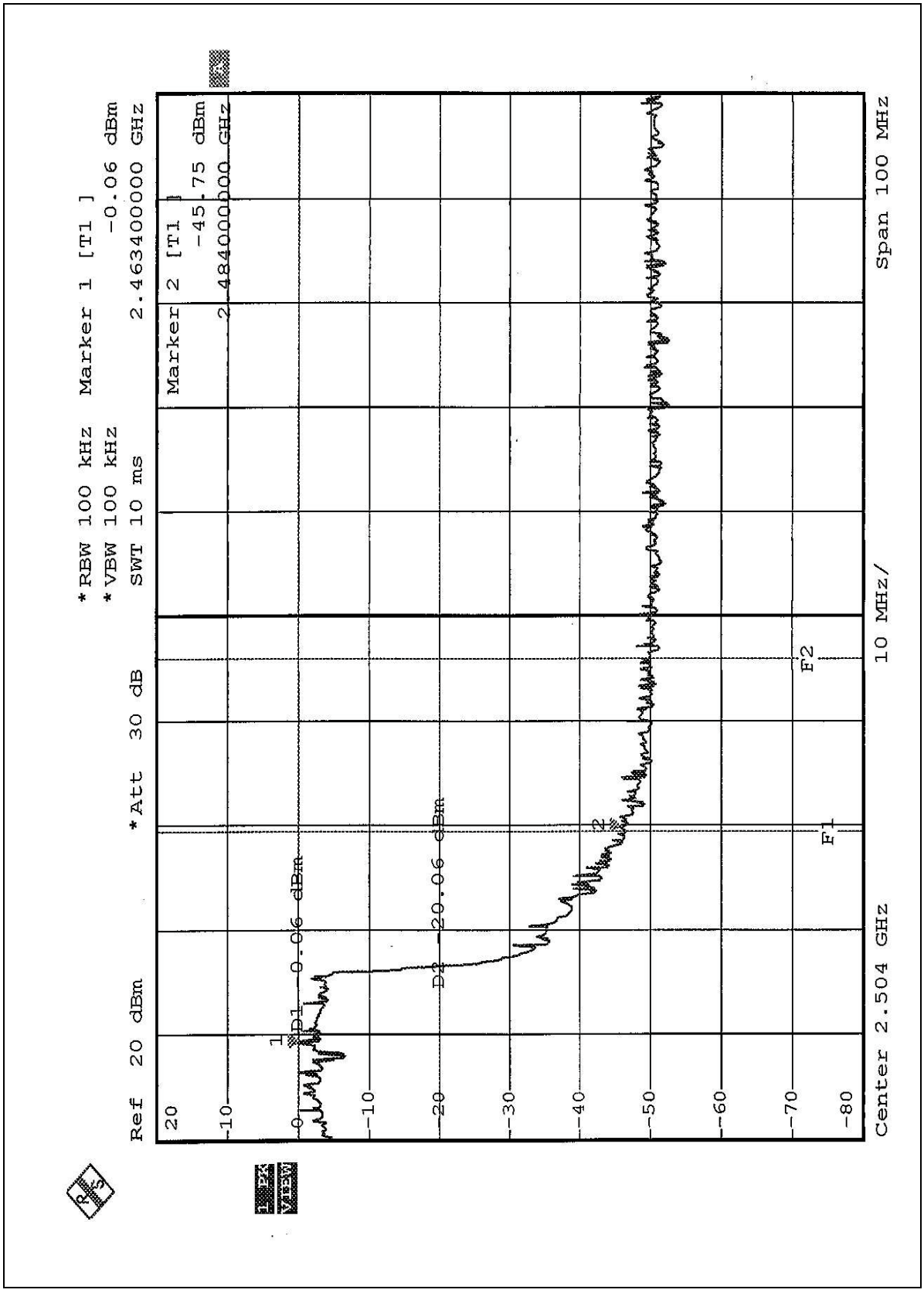
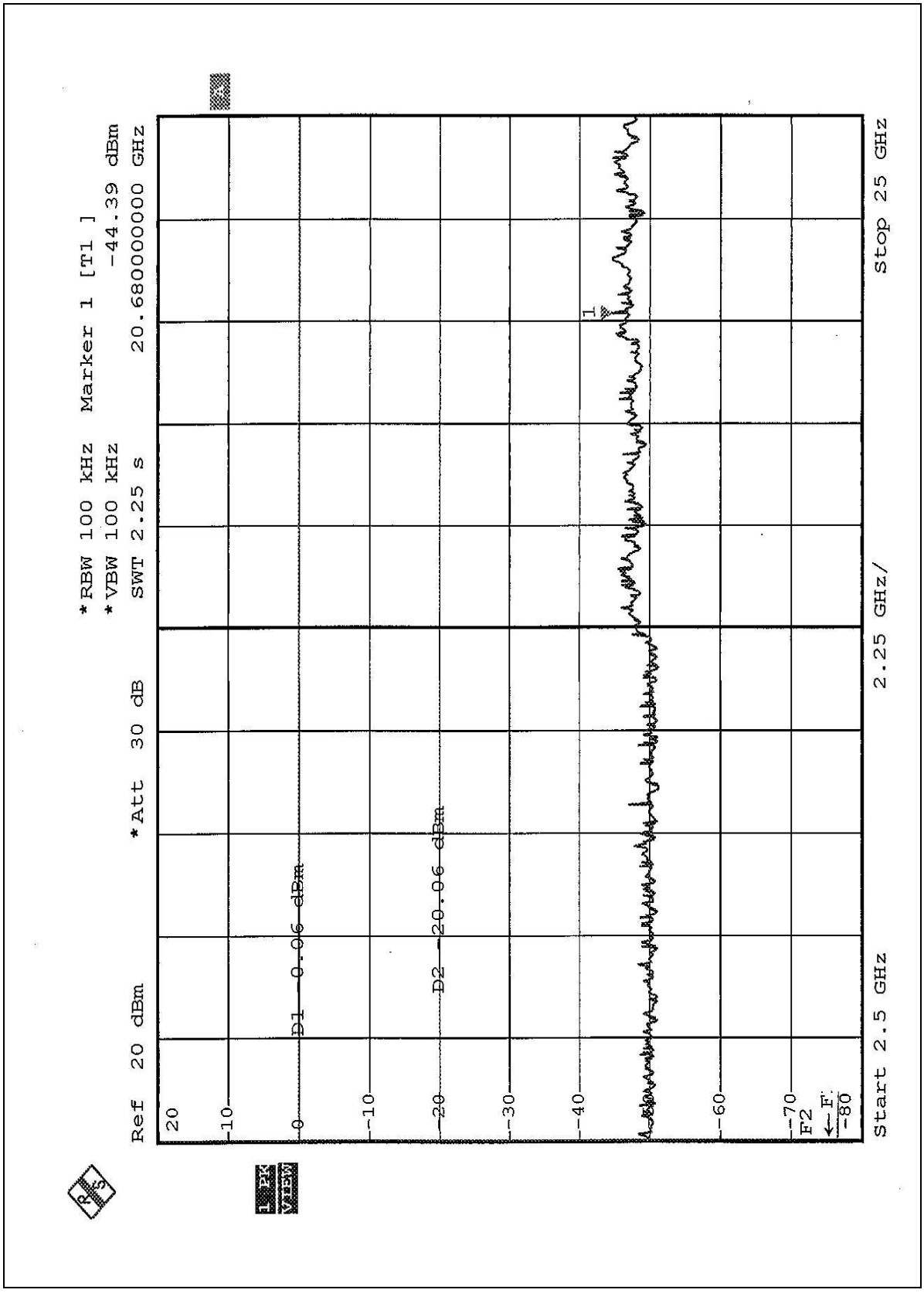

*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-43.84 dBm
23.830000000 GHz
Ref 20 dBm
*Att 30 dB
D1 1.05 dBm
D2 -18.95 dBm
1 PK VIEW
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz
F2


*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-0.53 dBm
2.414600000 GHz
Marker 2 [T1]
-36.36 dBm
2.397800000 GHz
Marker 3 [T1]
-46.76 dBm
2.390000000 GHz
Ref 20 dBm
*Att 30 dB
D1 -0.53 dBm
D2 -20.53 dBm
TH -80 dBm
Center 2.37 GHz
10 MHz/
Span 100 MHz
F1
F2
PK
VIEW


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-44.16 dBm
21.850000000 GHz
D1 -0.53 dBm
D2 -20.53 dBm
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-0.06 dBm
2.463400000 GHz
Marker 2 [T1]
-45.75 dBm
2.484000000 GHz
D1 -0.06 dBm
D2 -20.06 dBm
F1
F2
Center 2.504 GHz
10 MHz/
Span 100 MHz
1 PK
VIEW


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-44.39 dBm
20.680000000 GHz
D1 -0.06 dBm
D2 -20.06 dBm
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz
F2
F1

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 antennas used in this product are Metal PIFA which is main antenna and Metal IFA which is auxiliary antenna with UFL connector. The maximum Gain of the antenna is –3.83dBi.

5. TEST RESULTS (FOR BLUETOOTH FUNCTION)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	838251/021	Jan. 04, 2005
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	100218	Dec. 09, 2004
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100219	Dec. 09, 2004
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100220	Dec. 09, 2004
*ROHDE & SCHWARZ 4-wire ISN	ENY41	837032/016	Nov. 19, 2004
*ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/016	Nov. 19, 2004
Software	Cond-V2M3	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C10.01	May 01, 2004
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010770	Mar. 24, 2004
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010773	Apr. 06, 2004

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. "*": These equipment are used for conducted telecom port test only (if tested).
3. The test was performed in ADT Shielded Room No. 10.
4. The VCCI Site Registration No. is C-1312.

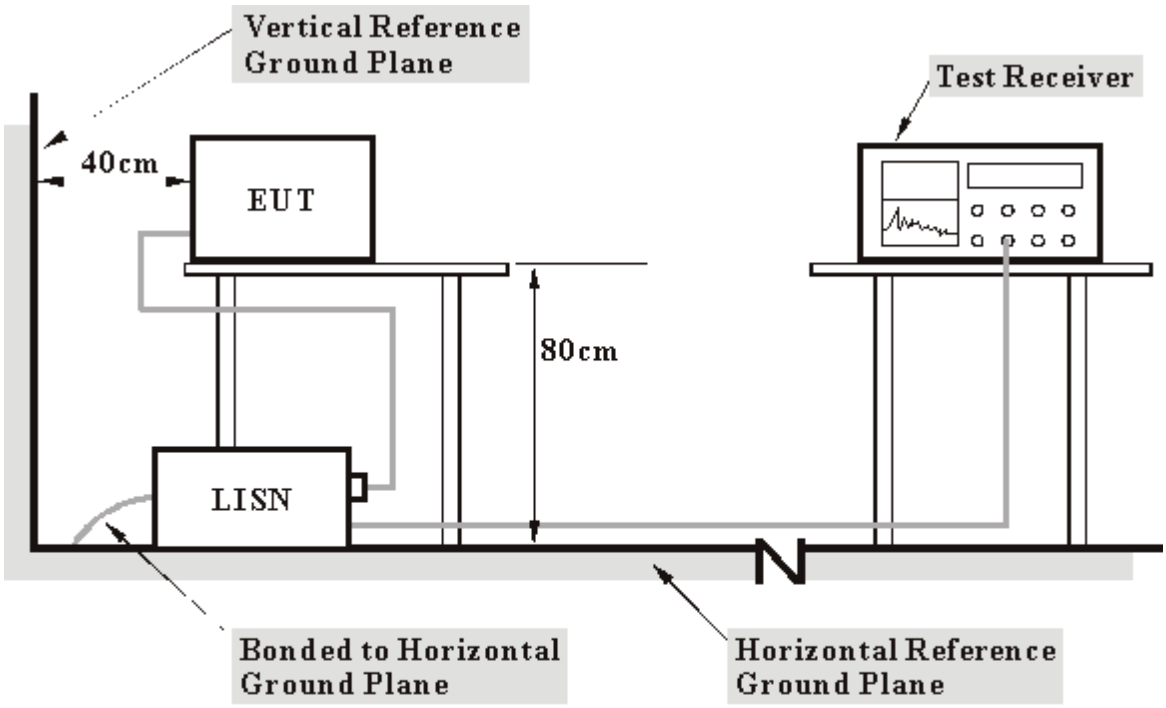
5.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

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

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

5.1.4 TEST SETUP



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

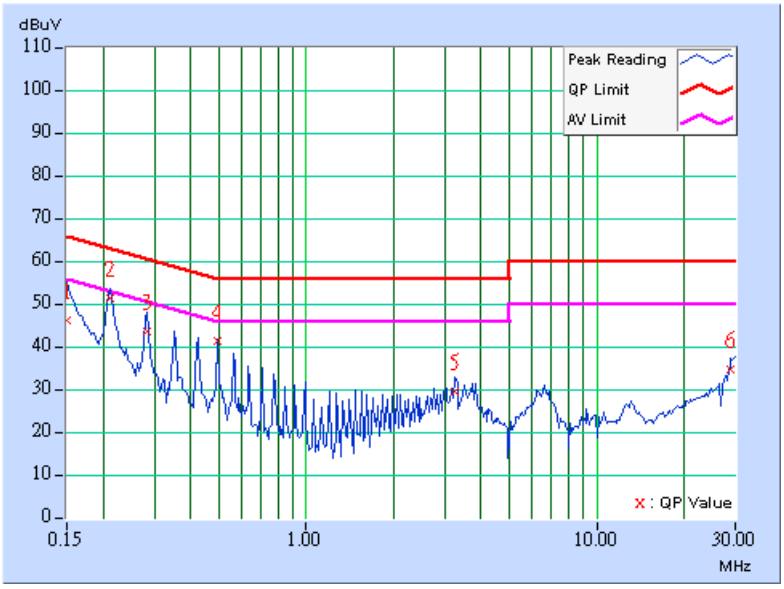
For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

5.1.5 TEST RESULTS

EUT	Wireless LAN 11a/g mini-PCI Adapter	MODEL	WMIB-111AG
CHANNEL	0	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	23deg.C, 65%RH, 991hPa	TESTED BY: Steven Lu	

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	0.150	0.10	45.20	-	45.30	-	66.00	56.00	-20.70	-
2	**0.213**	**0.10**	**50.42**	**-**	**50.52**	**-**	**63.11**	**53.11**	**-12.59**	**-**
3	0.283	0.10	42.59	-	42.69	-	60.73	50.73	-18.04	-
4	0.494	0.12	40.13	-	40.25	-	56.10	46.10	-15.86	-
5	3.246	0.26	28.61	-	28.87	-	56.00	46.00	-27.13	-
6	29.012	1.20	33.50	-	34.70	-	60.00	50.00	-25.30	-

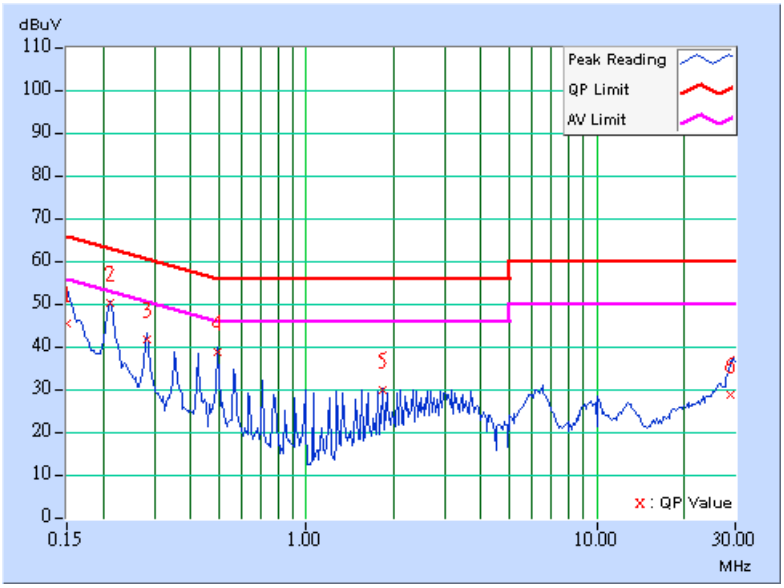
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless LAN 11a/g mini-PCI Adapter	**MODEL**	WMIB-111AG
CHANNEL	0	**6dB BANDWIDTH**	9kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	23deg.C, 65%RH, 991hPa	**TESTED BY:** Steven Lu	

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	0.150	0.10	44.71	-	44.81	-	66.00	56.00	-21.19	-
2	0.213	0.10	49.30	-	49.40	-	63.11	53.11	-13.71	-
3	0.283	0.10	40.97	-	41.07	-	60.73	50.73	-19.66	-
4	0.494	0.12	37.84	-	37.96	-	56.10	46.10	-18.15	-
5	1.836	0.20	29.10	-	29.30	-	56.00	46.00	-26.70	-
6	28.801	1.00	28.07	-	29.07	-	60.00	50.00	-30.93	-

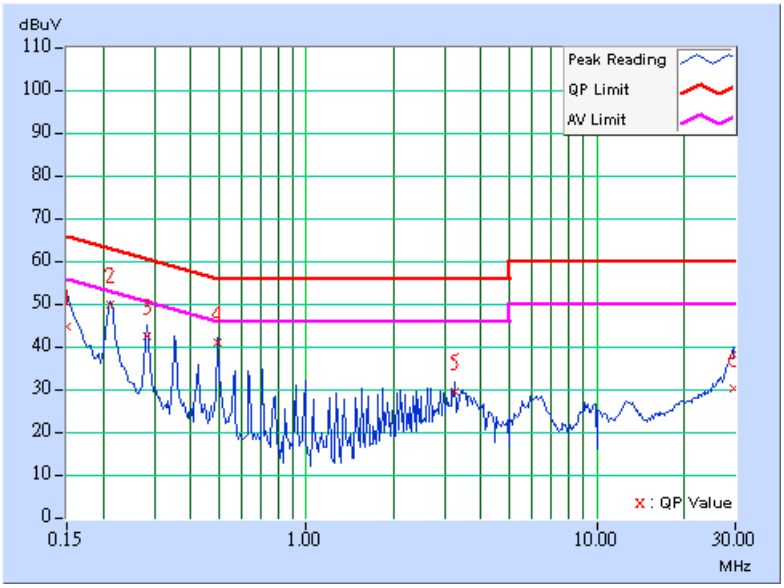
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless LAN 11a/g mini-PCI Adapter	**MODEL**	WMIB-111AG
CHANNEL	39	**6dB BANDWIDTH**	9kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	23deg.C, 65%RH, 991hPa	**TESTED BY:** Steven Lu	

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	0.150	0.10	43.79	-	43.89	-	66.00	56.00	-22.11	-
2	0.213	0.10	48.97	-	49.07	-	63.11	53.11	-14.04	-
3	0.283	0.10	41.48	-	41.58	-	60.73	50.73	-19.15	-
4	0.494	0.12	40.09	-	40.21	-	56.10	46.10	-15.90	-
5	3.250	0.26	28.45	-	28.71	-	56.00	46.00	-27.29	-
6	29.473	1.20	29.08	-	30.28	-	60.00	50.00	-29.72	-

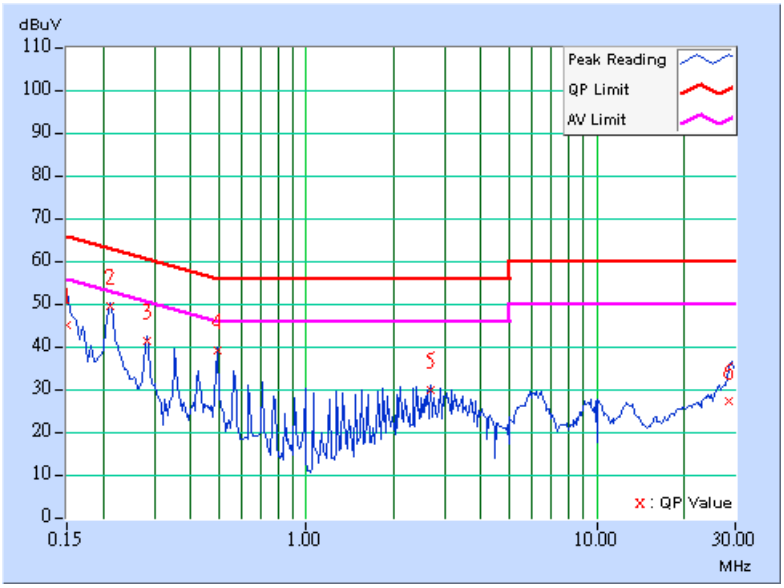
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless LAN 11a/g mini-PCI Adapter	**MODEL**	WMIB-111AG
CHANNEL	39	**6dB BANDWIDTH**	9kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	23deg.C, 65%RH, 991hPa	**TESTED BY:** Steven Lu	

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	0.150	0.10	44.31	-	44.41	-	66.00	56.00	-21.59	-
2	0.213	0.10	48.61	-	48.71	-	63.11	53.11	-14.40	-
3	0.283	0.10	40.61	-	40.71	-	60.73	50.73	-20.02	-
4	0.494	0.12	38.14	-	38.26	-	56.10	46.10	-17.85	-
5	2.684	0.23	28.85	-	29.08	-	56.00	46.00	-26.92	-
6	28.461	1.00	26.24	-	27.24	-	60.00	50.00	-32.76	-

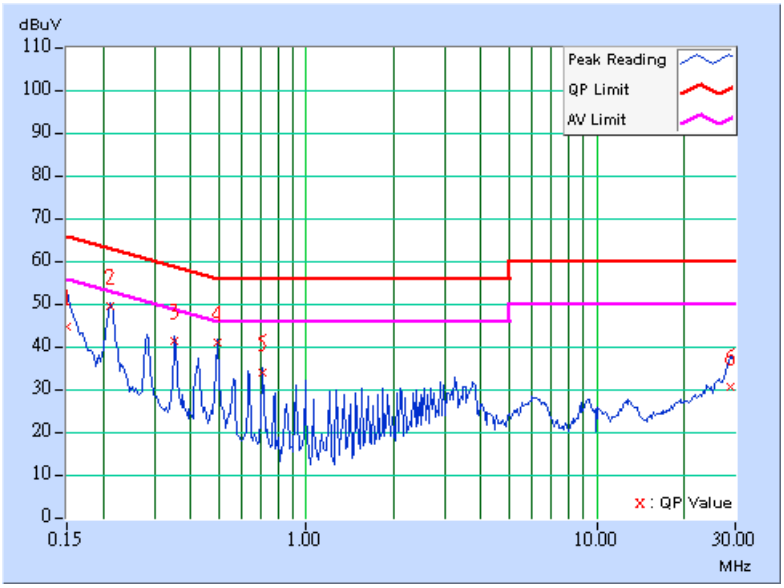
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless LAN 11a/g mini-PCI Adapter	**MODEL**	WMIB-111AG
CHANNEL	78	**6dB BANDWIDTH**	9kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	23deg.C, 65%RH, 991hPa	**TESTED BY:** Steven Lu	

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	0.150	0.10	43.62	-	43.72	-	66.00	56.00	-22.28	-
2	0.213	0.10	48.61	-	48.71	-	63.11	53.11	-14.40	-
3	0.353	0.10	40.34	-	40.44	-	58.89	48.89	-18.45	-
4	0.494	0.12	39.97	-	40.09	-	56.10	46.10	-16.02	-
5	0.709	0.15	33.02	-	33.17	-	56.00	46.00	-22.83	-
6	28.789	1.20	29.44	-	30.64	-	60.00	50.00	-29.36	-

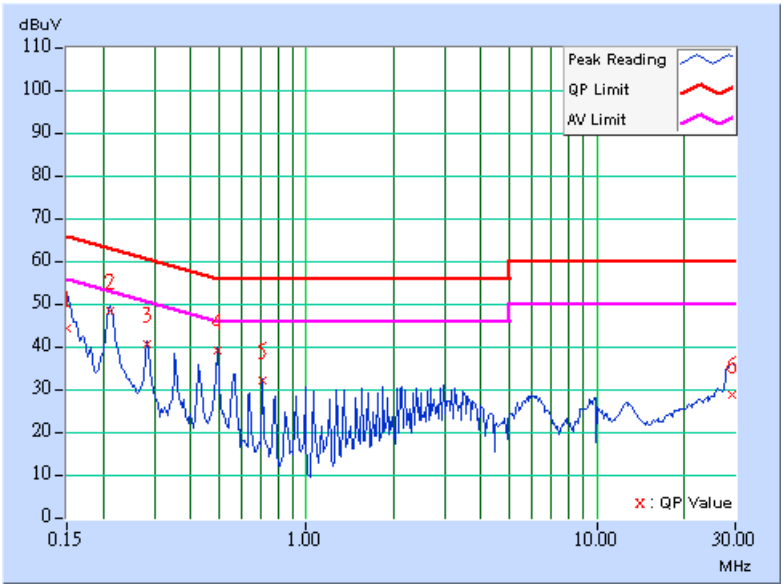
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless LAN 11a/g mini-PCI Adapter	**MODEL**	WMIB-111AG
CHANNEL	78	**6dB BANDWIDTH**	9kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	23deg.C, 65%RH, 991hPa	**TESTED BY:** Steven Lu	

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	0.150	0.10	43.48	-	43.58	-	66.00	56.00	-22.42	-
2	0.213	0.10	47.45	-	47.55	-	63.11	53.11	-15.56	-
3	0.283	0.10	39.67	-	39.77	-	60.73	50.73	-20.96	-
4	0.494	0.12	38.08	-	38.20	-	56.10	46.10	-17.91	-
5	0.709	0.15	31.08	-	31.23	-	56.00	46.00	-24.77	-
6	29.379	1.00	27.86	-	28.86	-	60.00	50.00	-31.14	-

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



5.2 NUMBER OF HOPPING FREQUENCY USED

5.2.1 LIMIT OF HOPPING FREQUENCY USED

At least 15 hopping frequencies, and should be equally spaced.

5.2.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2004

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

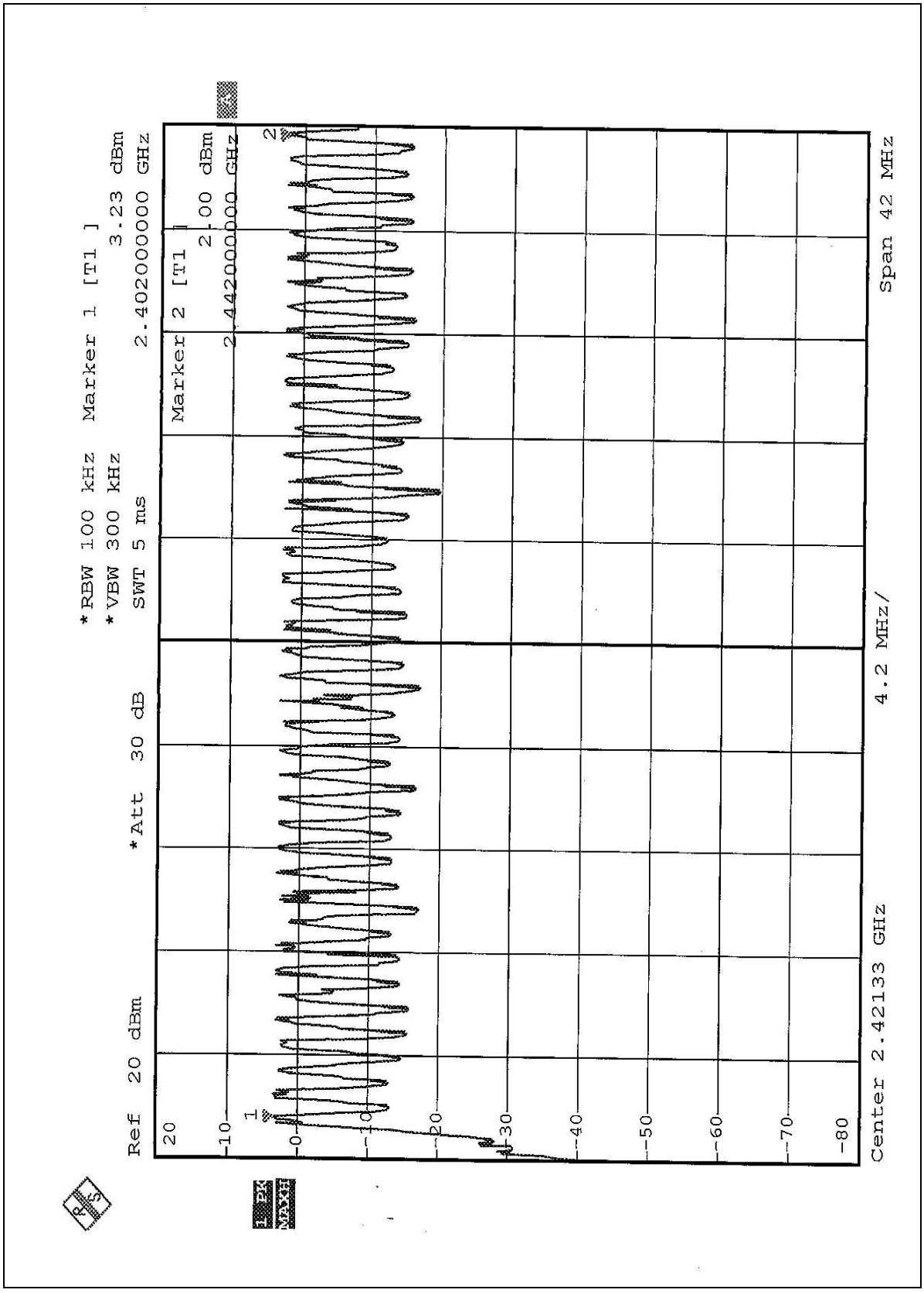
5.2.3 TEST PROCEDURES

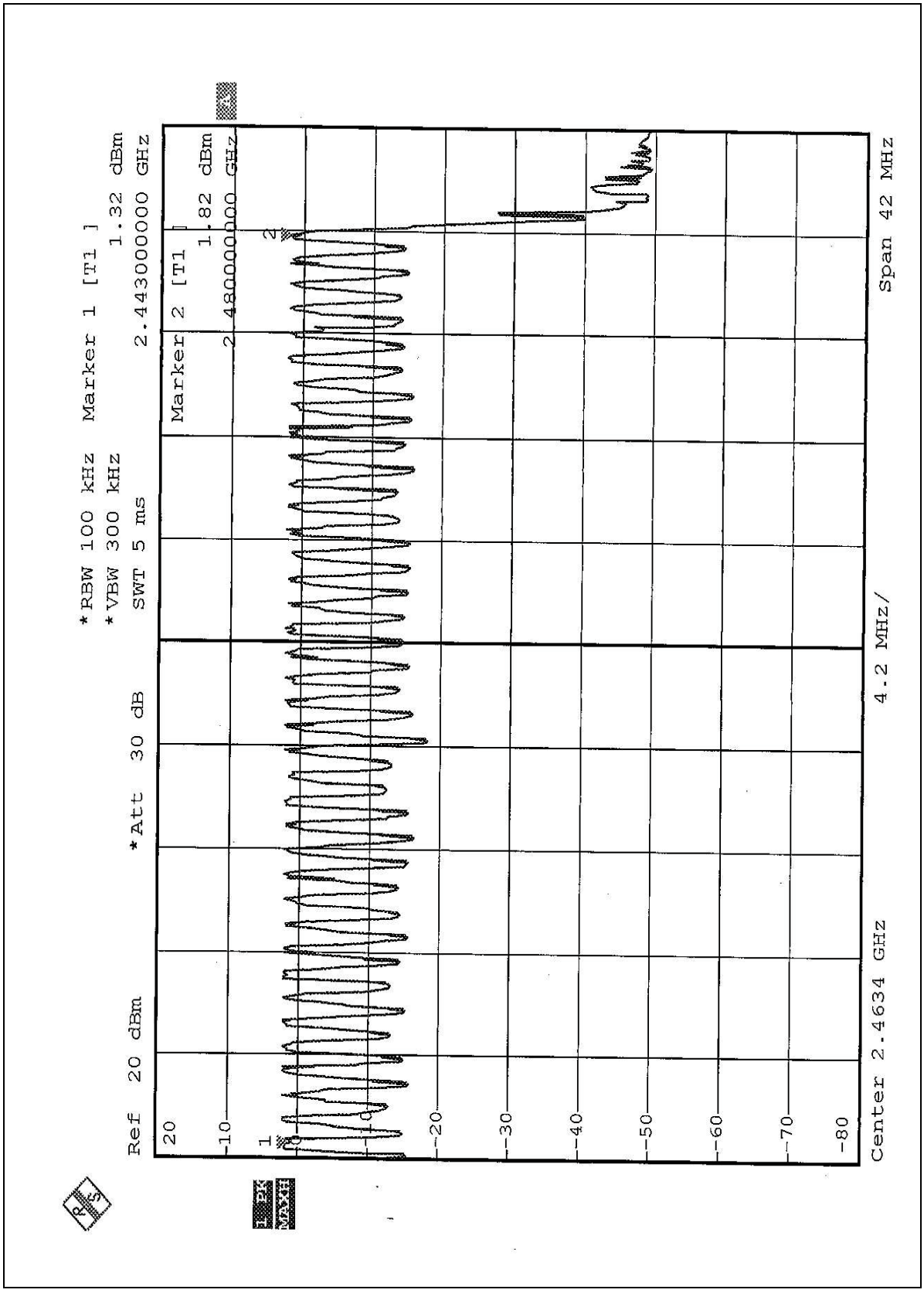
1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and 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.

5.2.4 TEST SETUP

5.2.5 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 5 ms
*Att 30 dB
Ref 20 dBm
Marker 1 [T1]
3.23 dBm
2.402000000 GHz
Marker 2 [T1]
2.00 dBm
2.442000000 GHz
Center 2.42133 GHz
4.2 MHz/
Span 42 MHz
MAXH


Ref 20 dBm
*Att 30 dB
*VBW 300 kHz
*RBW 100 kHz
SWT 5 ms
Marker 1 [T1]
1.32 dBm
2.443000000 GHz
Marker 2 [T1]
1.82 dBm
2.480000000 GHz
Center 2.4634 GHz
4.2 MHz/
Span 42 MHz
PEAK
MAXH

5.3 DWELL TIME ON EACH CHANNEL

5.3.1 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 31.6 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.

5.3.2 TEST INSTRUMENTS

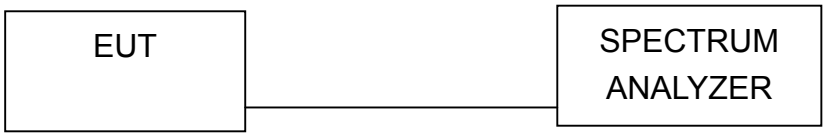
Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2004

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

5.3.3 TEST 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.

5.3.4 TEST SETUP

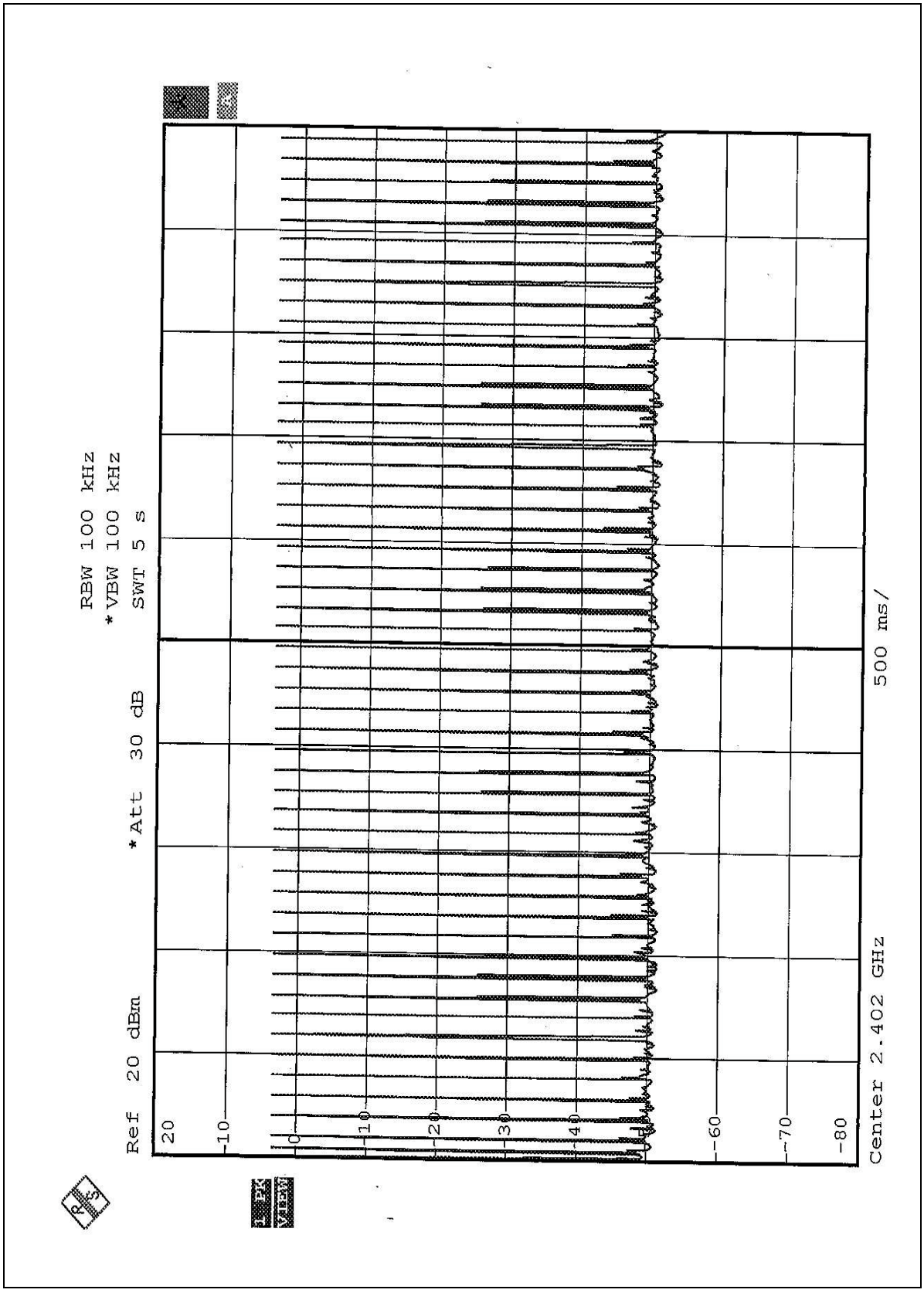


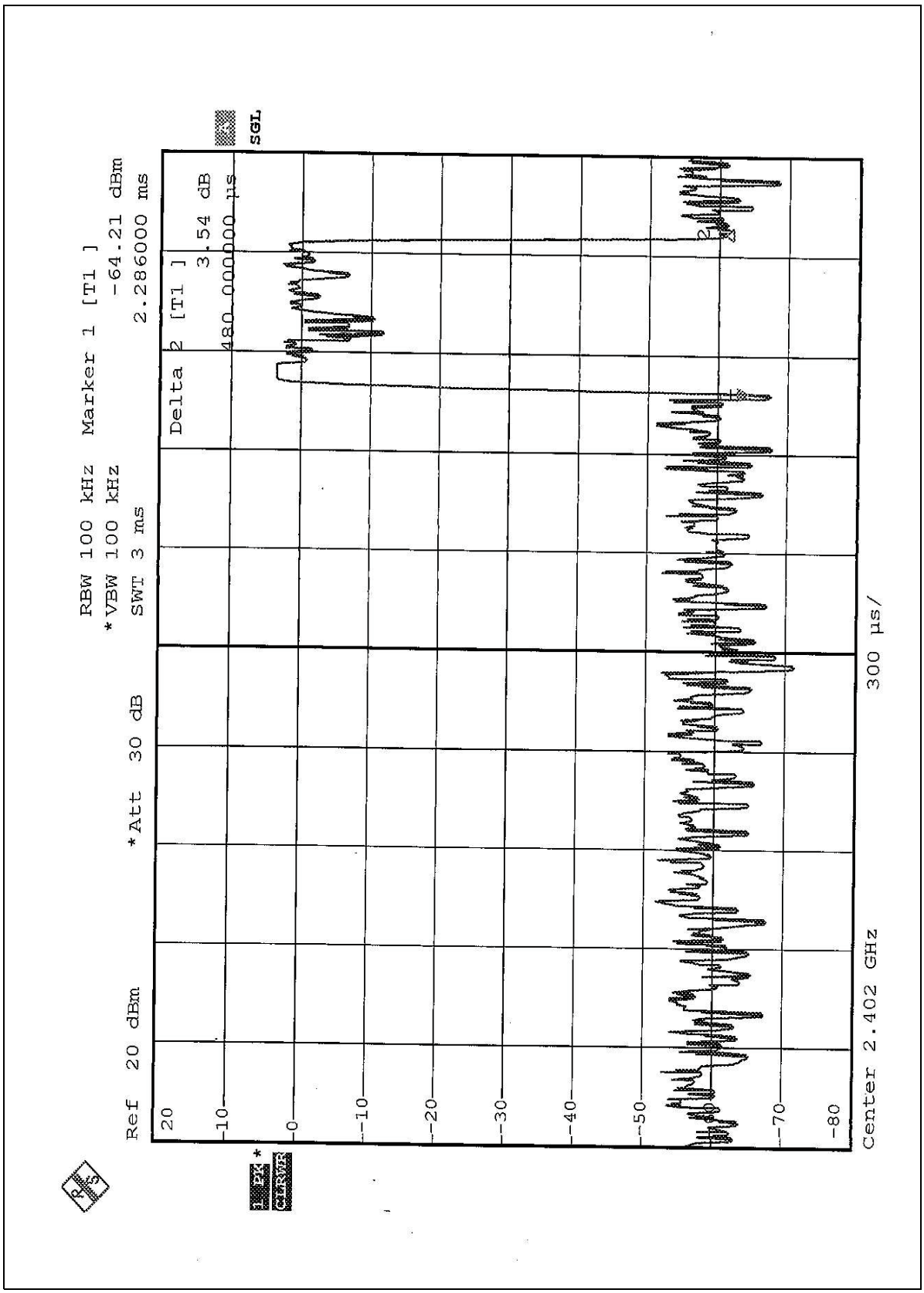
5.3.5 TEST RESULTS

Mode	Number of transmission in a 31.6 (79Hopping*0.4)	Length of transmission time (msec)	Result (msec)	Limit (msec)
DH1	51 times / 5 sec *6.32=322.32 times	0.48	154.71	400
DH3	26 times / 5 sec *6.32=164.32 times	1.74	285.92	400
DH5	17 times / 5 sec *6.32=107.44 times	2.99	321.25	400

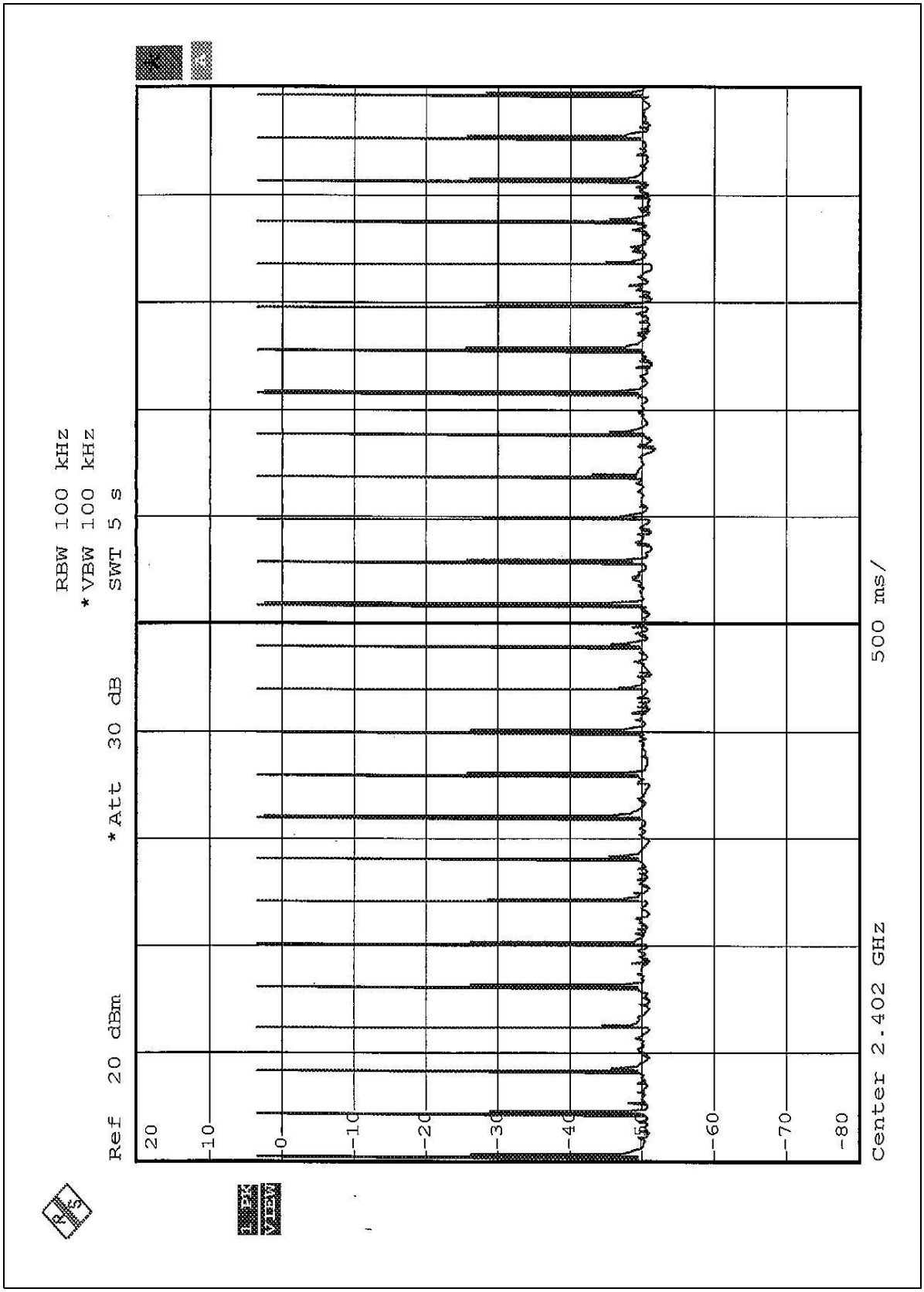
Test plots of the transmitting time slot are shown on next six pages.

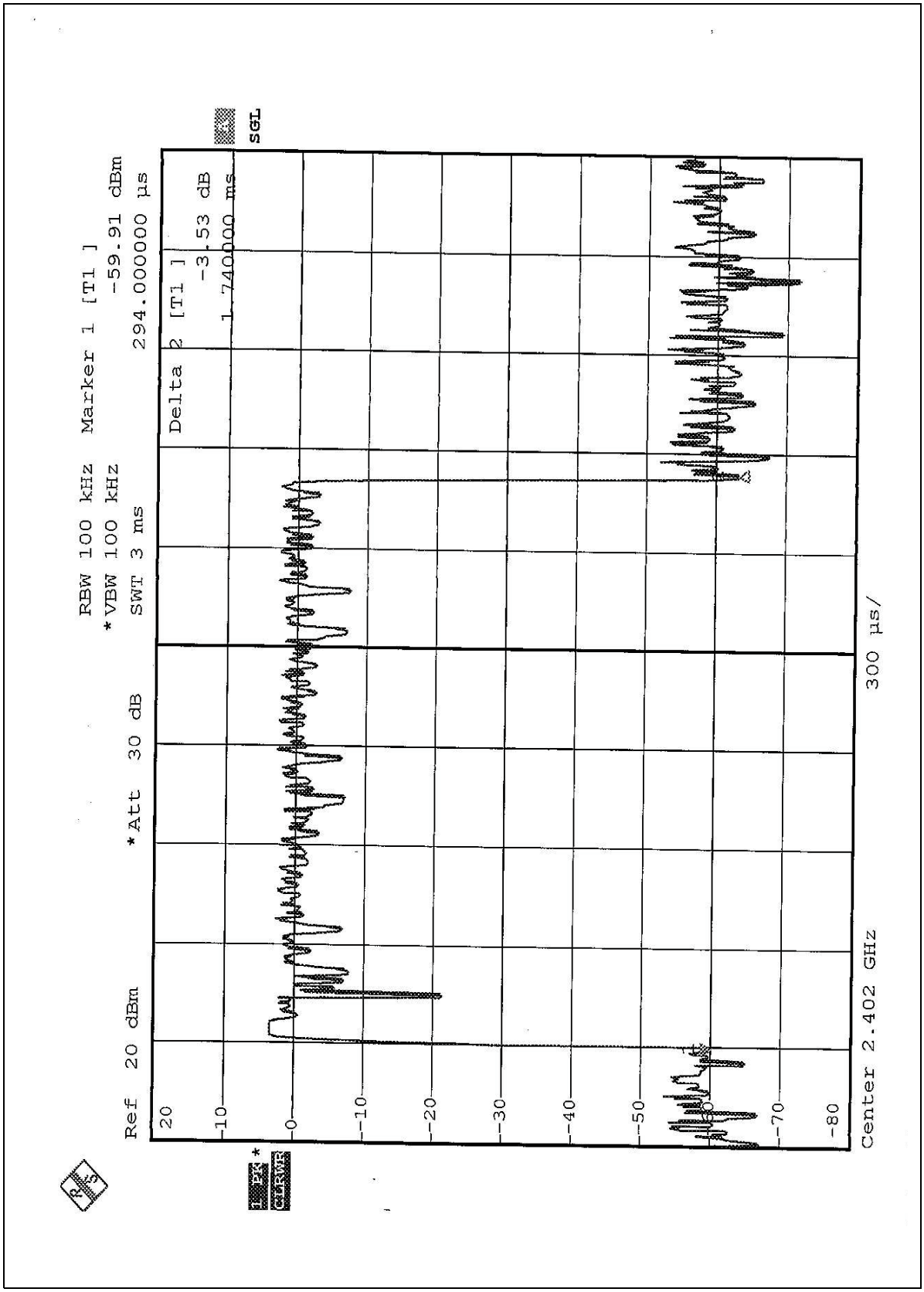
DH 1


RBW 100 kHz
*VBW 100 kHz
SWT 5 s
*Att 30 dB
Ref 20 dBm
Center 2.402 GHz
500 ms/
20
10
0
10
20
30
40
60
70
80
1 PK
2 AVERM

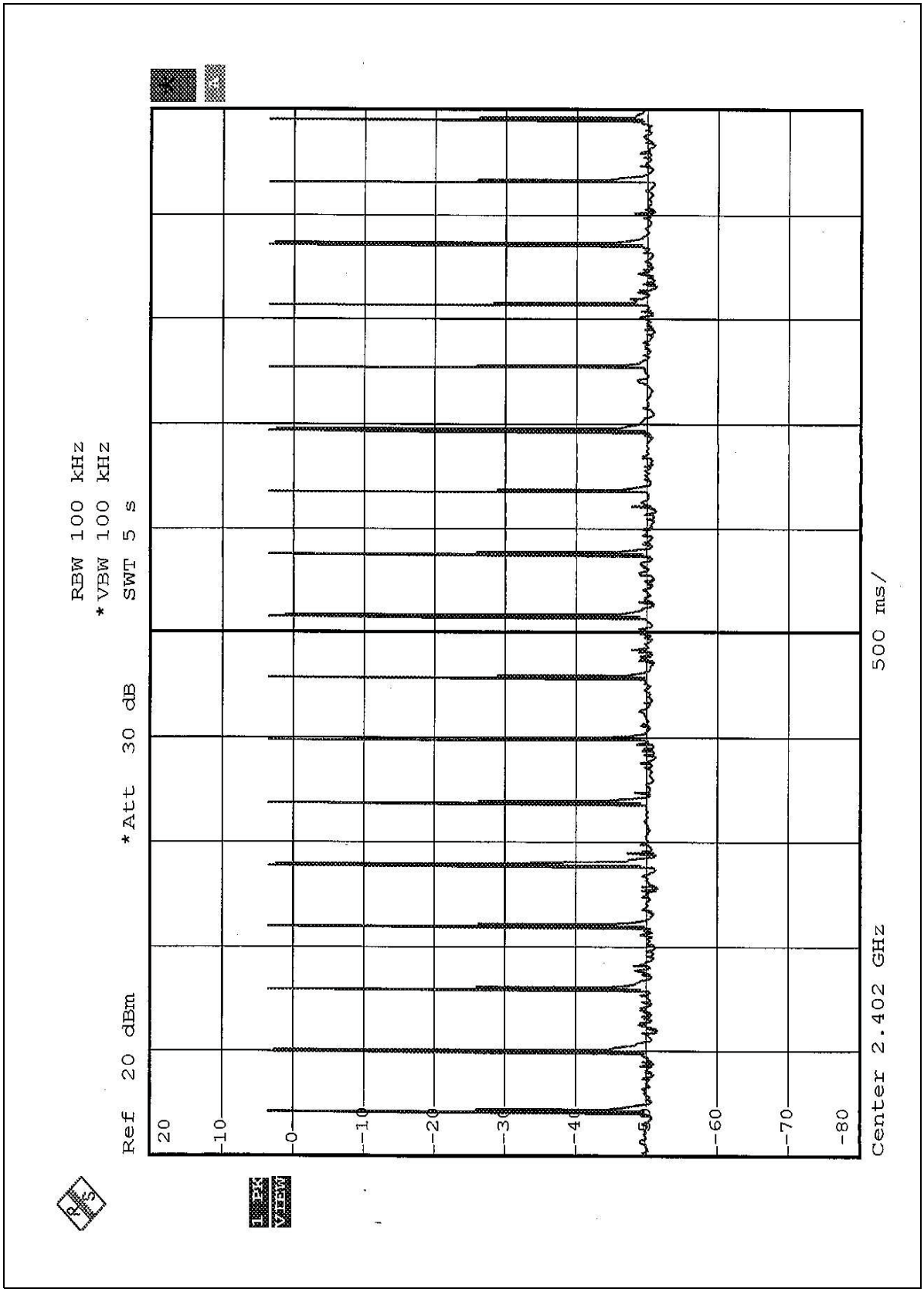

RBW 100 kHz
*VBW 100 kHz
SWT 3 ms
Marker 1 [T1]
-64.21 dBm
2.286000 ms
Delta 2 [T1]
3.54 dB
480.000000 µs
Ref 20 dBm
*Att 30 dB
SGL
Center 2.402 GHz
300 µs/

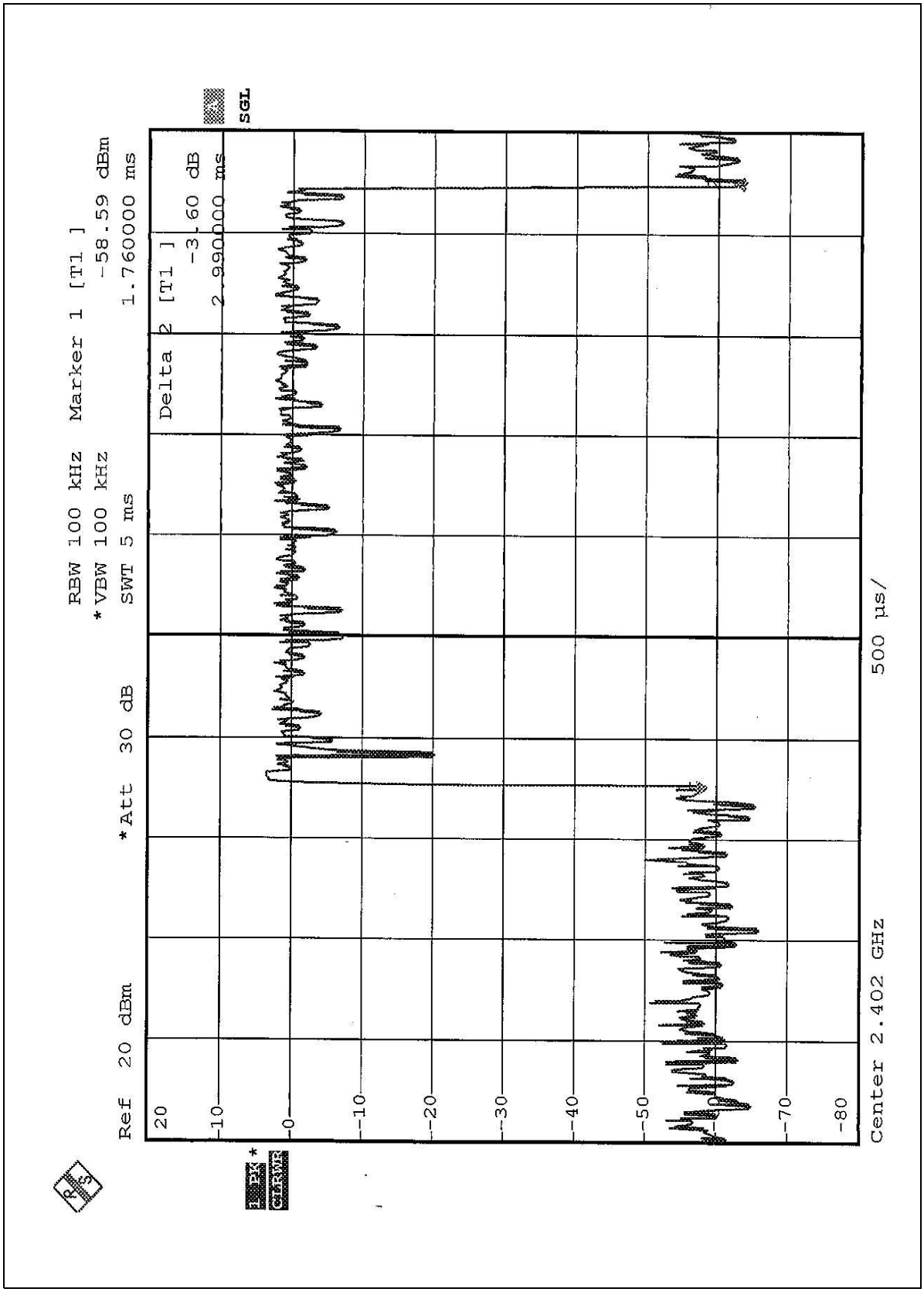
DH 3


RBW 100 kHz
*VBW 100 kHz
SWT 5 s
*Att 30 dB
Ref 20 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
500 ms/
Center 2.402 GHz


RBW 100 kHz
*VBW 100 kHz
SWT 3 ms
Marker 1 [T1]
-59.91 dBm
294.000000 µs
Delta 2 [T1]
-3.53 dB
1.740000 ms
SGL
Ref 20 dBm
*Att 30 dB
Center 2.402 GHz
300 µs/

DH 5


RBW 100 kHz
*VBW 100 kHz
SWT 5 s
*Att 30 dB
Ref 20 dBm
Center 2.402 GHz
500 ms/
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80


RBW 100 kHz
*VBW 100 kHz
Ref 20 dBm
*Att 30 dB
SWT 5 ms
Marker 1 [T1]
-58.59 dBm
1.760000 ms
Delta 2 [T1]
-3.60 dB
2.990000 ms
SGL
Center 2.402 GHz
500 µs/
20
10
0
-10
-20
-30
-40
-50
-70
-80

5.4 CHANNEL BANDWIDTH

5.4.1 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.

5.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2004

NOTES:

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

5.4.3 TEST PROCEDURE

1. 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.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP

5.4.6 EUT OPERATING CONDITION

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

5.4.7 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)	MAXIMUM LIMIT (MHz)	PASS/FAIL
0	2402	837	1	PASS
39	2441	828	1	PASS
78	2480	831	1	PASS