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	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.

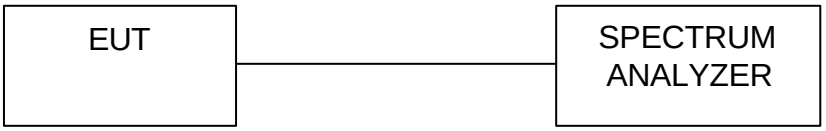
4.5.3 TEST PROCEDURE

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

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

Same as 4.3.6

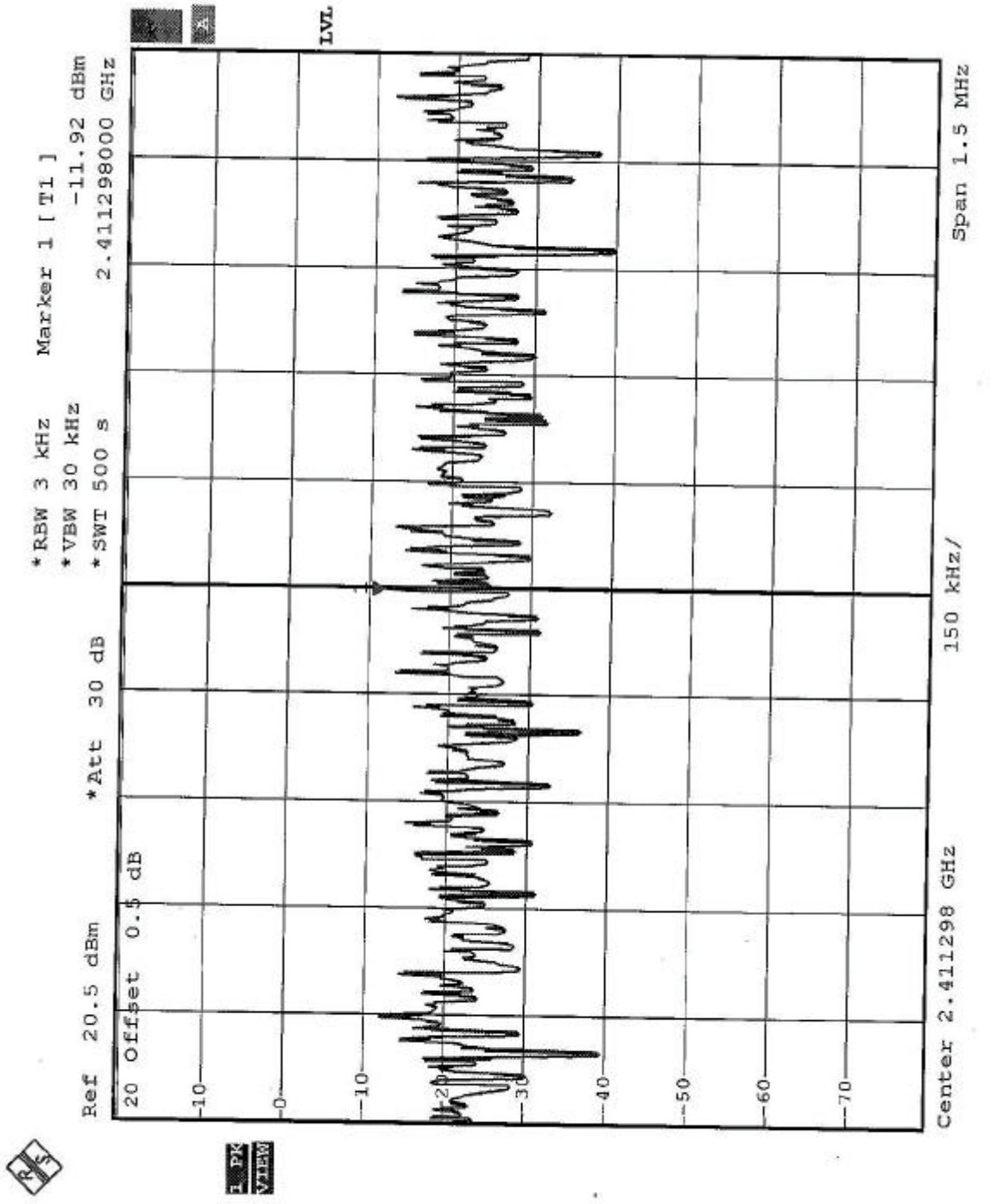
4.5.7 TEST RESULTS

EUT	802.11g Access Point	**MODEL**	DWL-G700AP
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TEST MODE**	CCK
ENVIRONMENTAL CONDITIONS	24deg. C, 63%RH, 991hPa	**TESTED BY**	Steven Lu

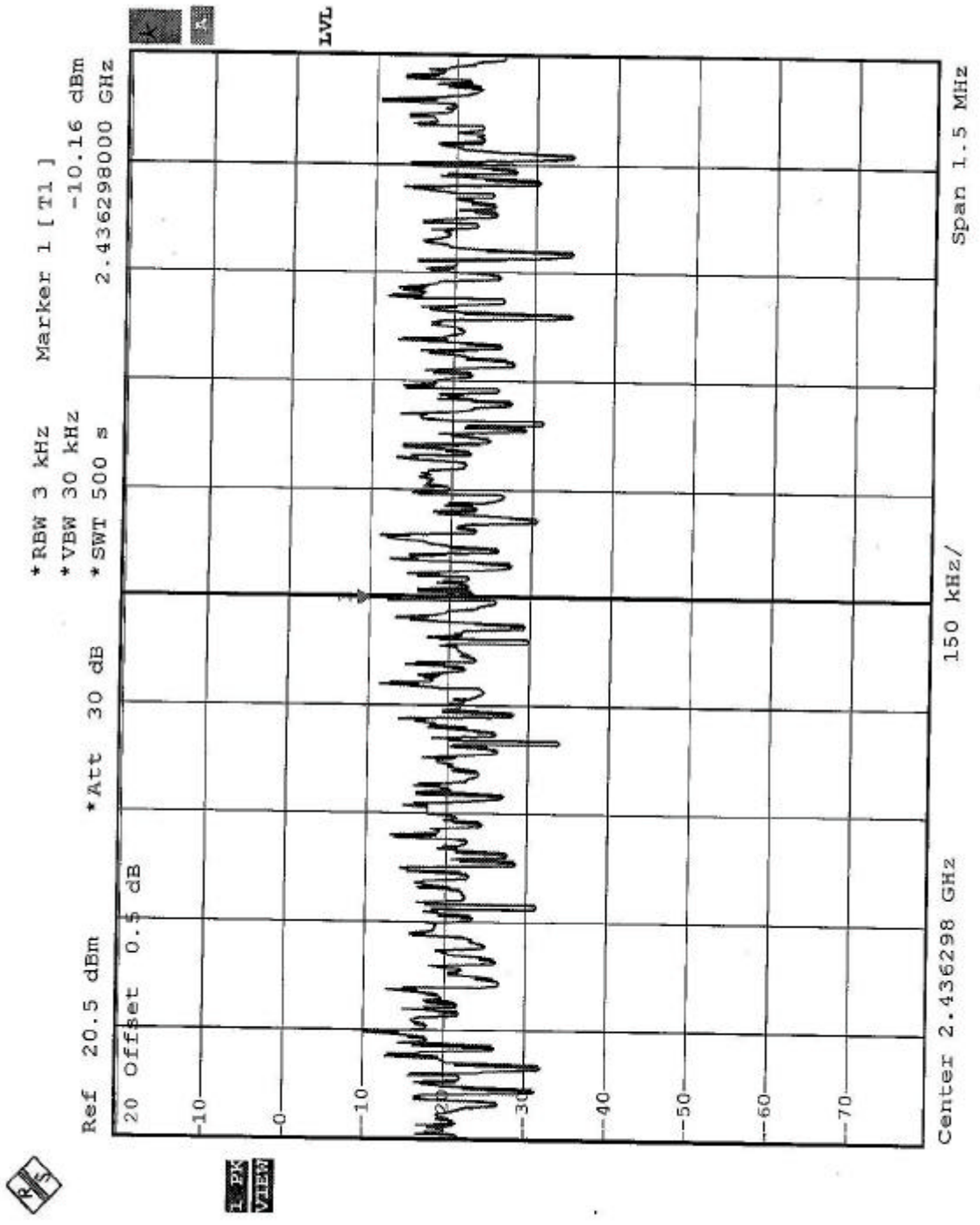
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-11.92	8	PASS
6	2437	-10.16	8	PASS
11	2462	-10.71	8	PASS

*(The test data is in accordance with ADT Report No.: RF930209R02.)

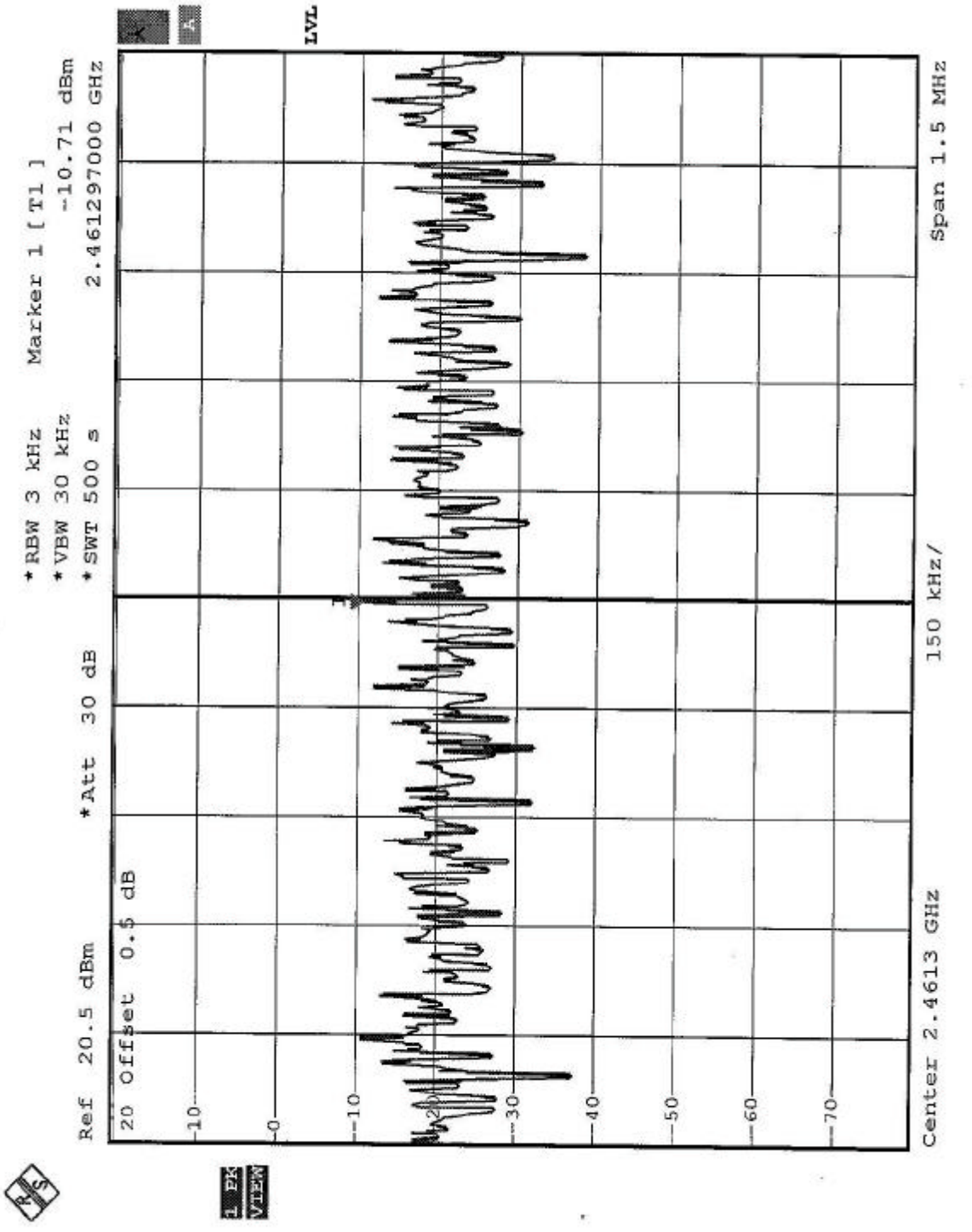
CH1


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-11.92 dBm
2.411298000 GHz
Center 2.411298 GHz
150 kHz/
Span 1.5 MHz
1 PK
VIEW

CH6


LVL
Marker 1 [T1]
-10.16 dBm
2.436298000 GHz
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
*Att 30 dB
Offset 0.5 dB
Ref 20.5 dBm
Span 1.5 MHz
150 kHz/
Center 2.436298 GHz
1 PK
VIEW

CH11

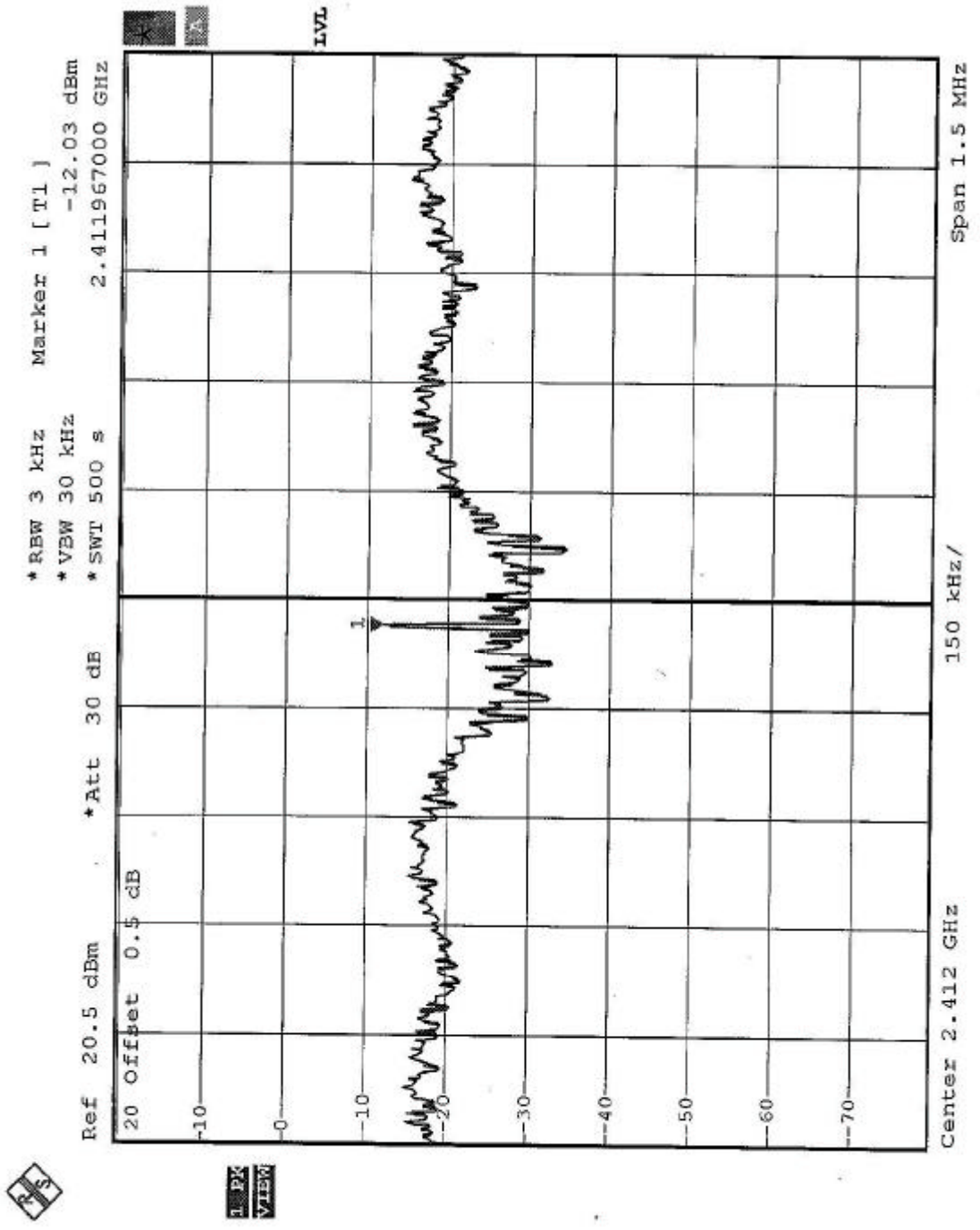

Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-10.71 dBm
2.461297000 GHz
LVL
Center 2.4613 GHz
150 kHz/
Span 1.5 MHz
1 PK
VIEW

EUT	802.11g Access Point	**MODEL**	DWL-G700AP
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TEST MODE**	OFDM
ENVIRONMENTAL CONDITIONS	24deg. C, 63%RH, 991hPa	**TESTED BY**	Steven Lu

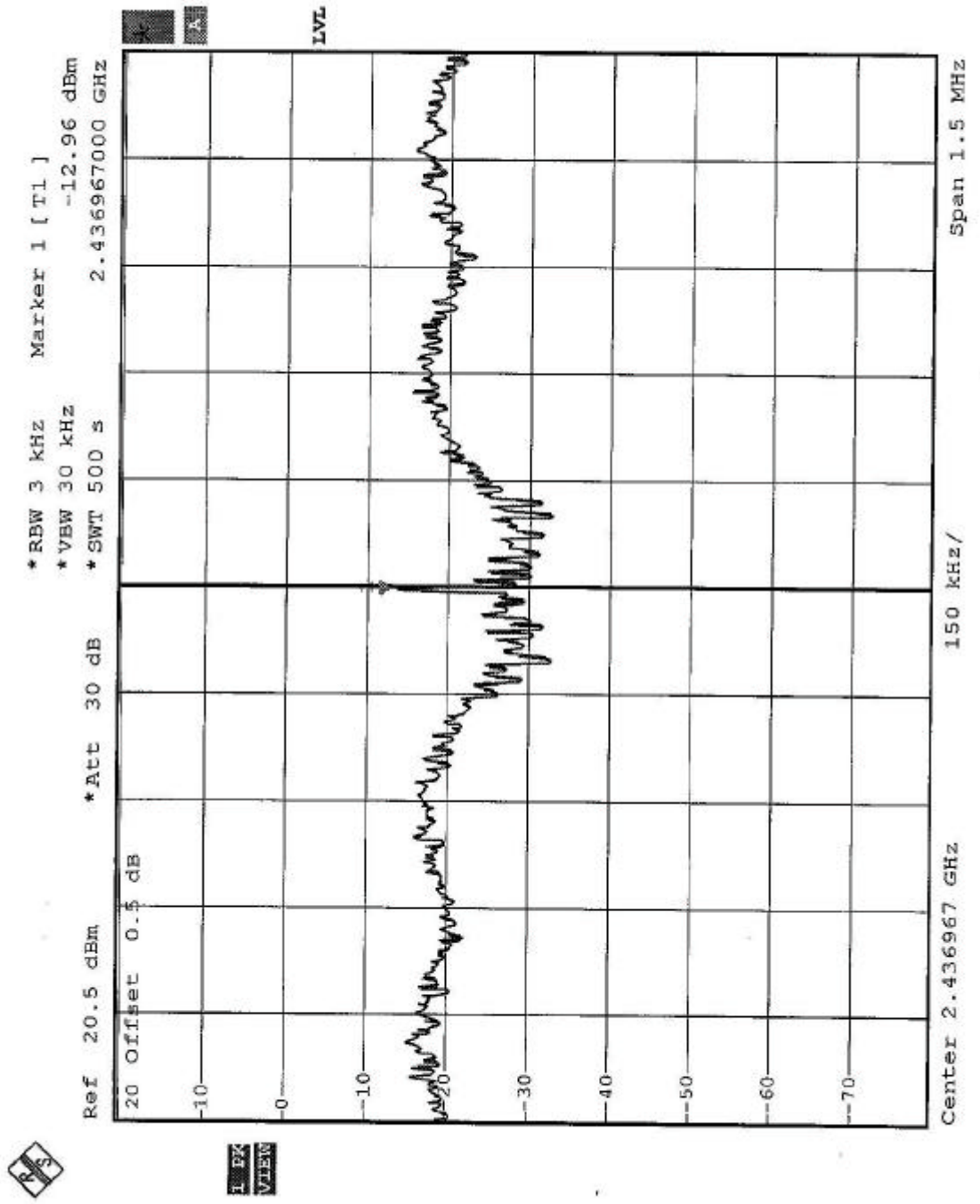
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-12.03	8	PASS
6	2437	-12.96	8	PASS
11	2462	-13.94	8	PASS

*(The test data is in accordance with ADT Report No.: RF930209R02.)

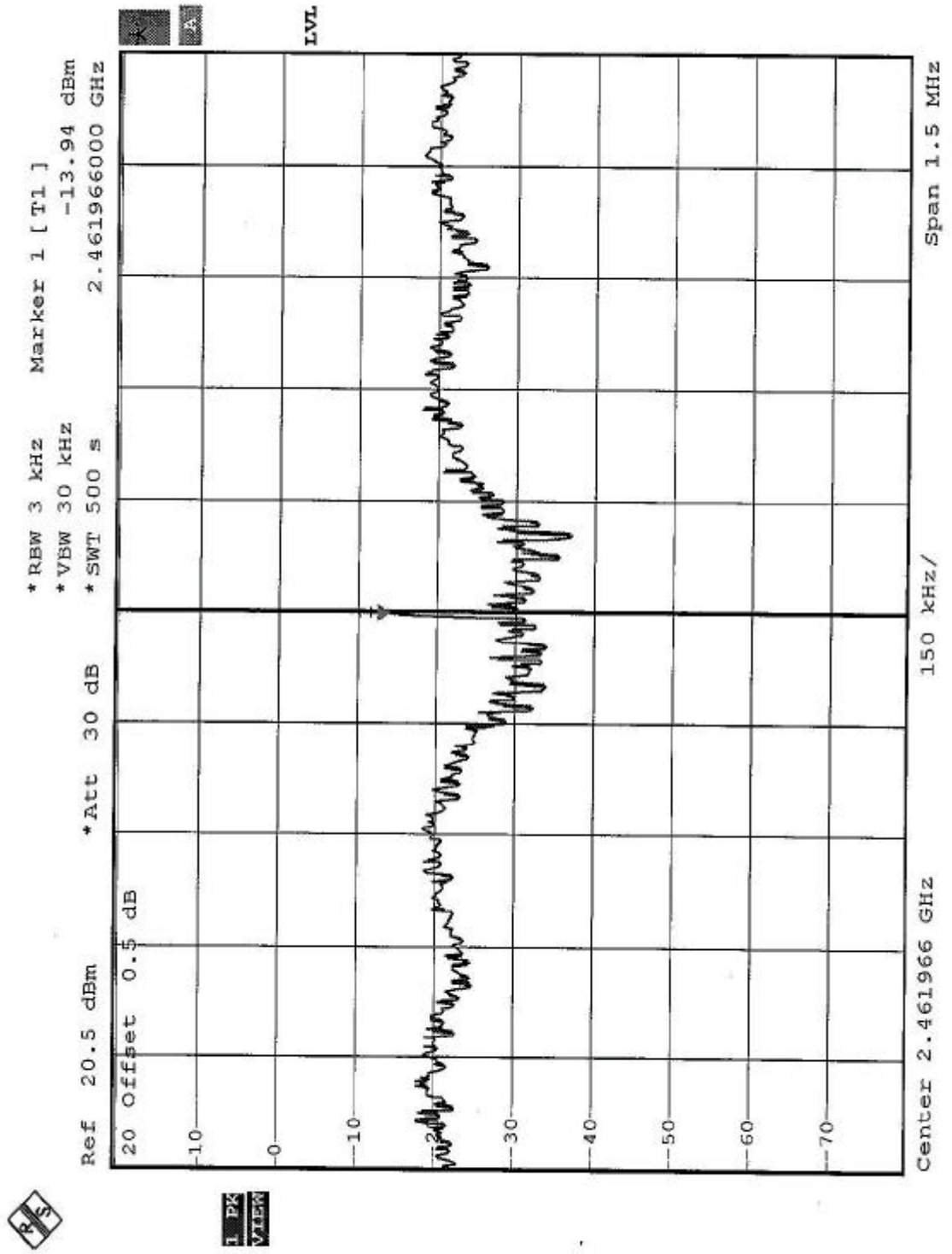
CH1


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-12.03 dBm
2.411967000 GHz
Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
Center 2.412 GHz
150 kHz/
Span 1.5 MHz
1 PK
VIEW

CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-12.96 dBm
2.436967000 GHz
Ref 20.5 dBm
Offset 0.5 dB
Att 30 dB
Center 2.436967 GHz
150 kHz/
Span 1.5 MHz
LVL

CH11


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-13.94 dBm
2.461966000 GHz
LVL
Center 2.461966 GHz
150 kHz/
Span 1.5 MHz
1 PK VIEW

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	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.

4.6.3 TEST PROCEDURE

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

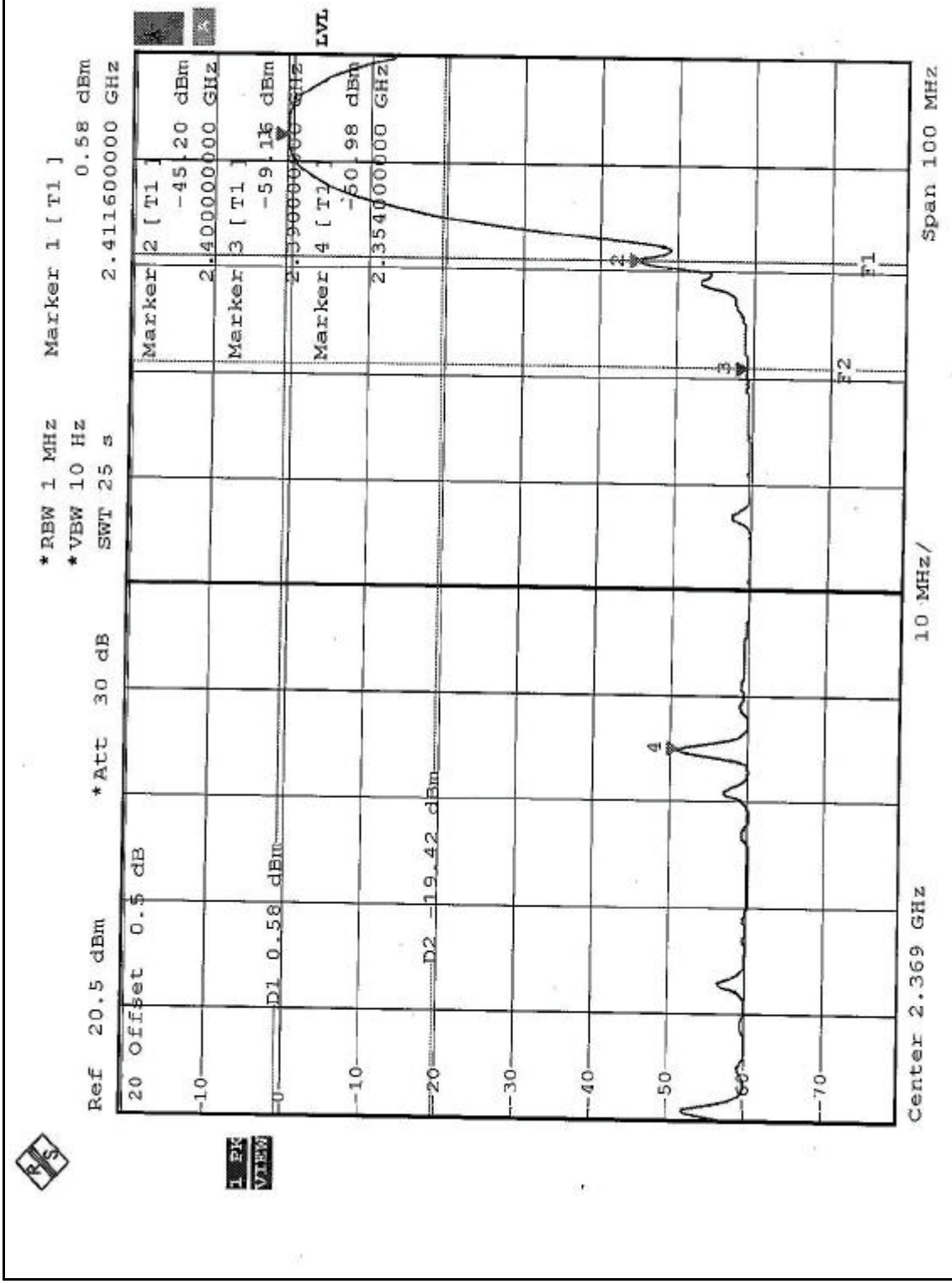
4.6.6 TEST RESULTS (FOR CCK)

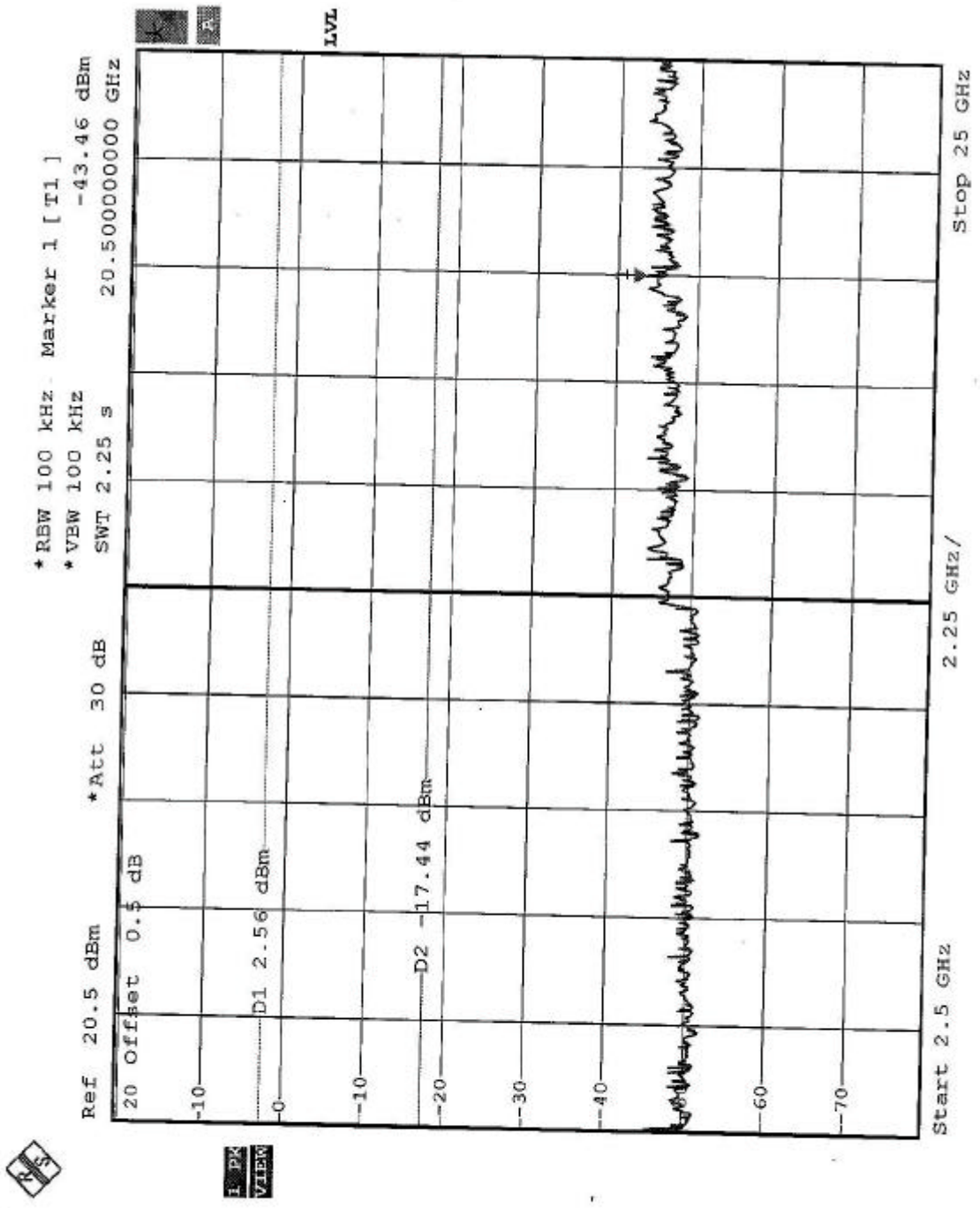
The spectrum plots are attached on the following 4 pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

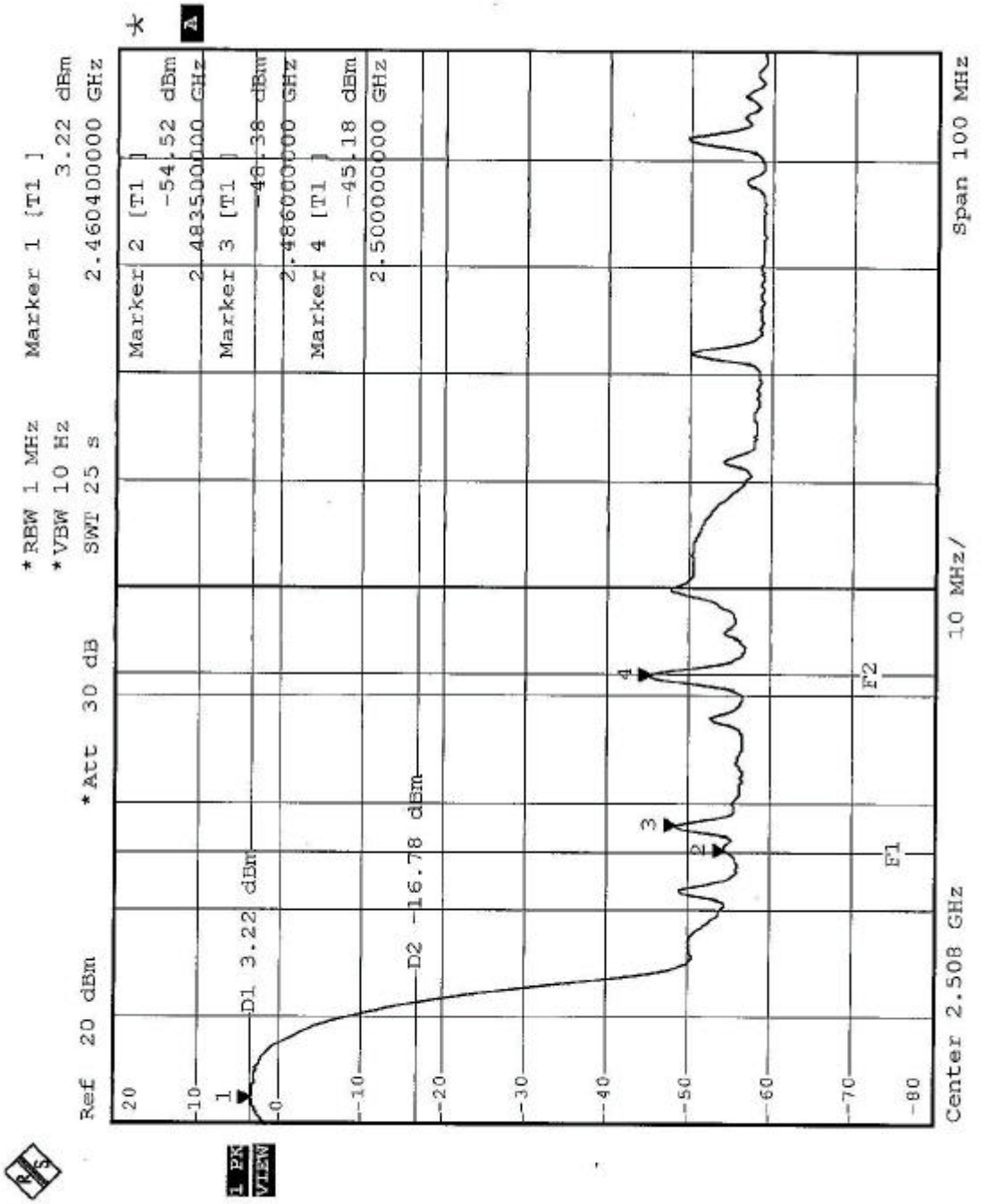
NOTE 1:
The band edge emission plot on the following 1-2 pages shows 51.56dB delta between carrier maximum power and local maximum emission in restrict band (2.3540GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.9 is 103.77dBuV/m, so the maximum field strength in restrict band is 103.77-51.56=52.21dBuV/m which is under 54dBuV/m limit.

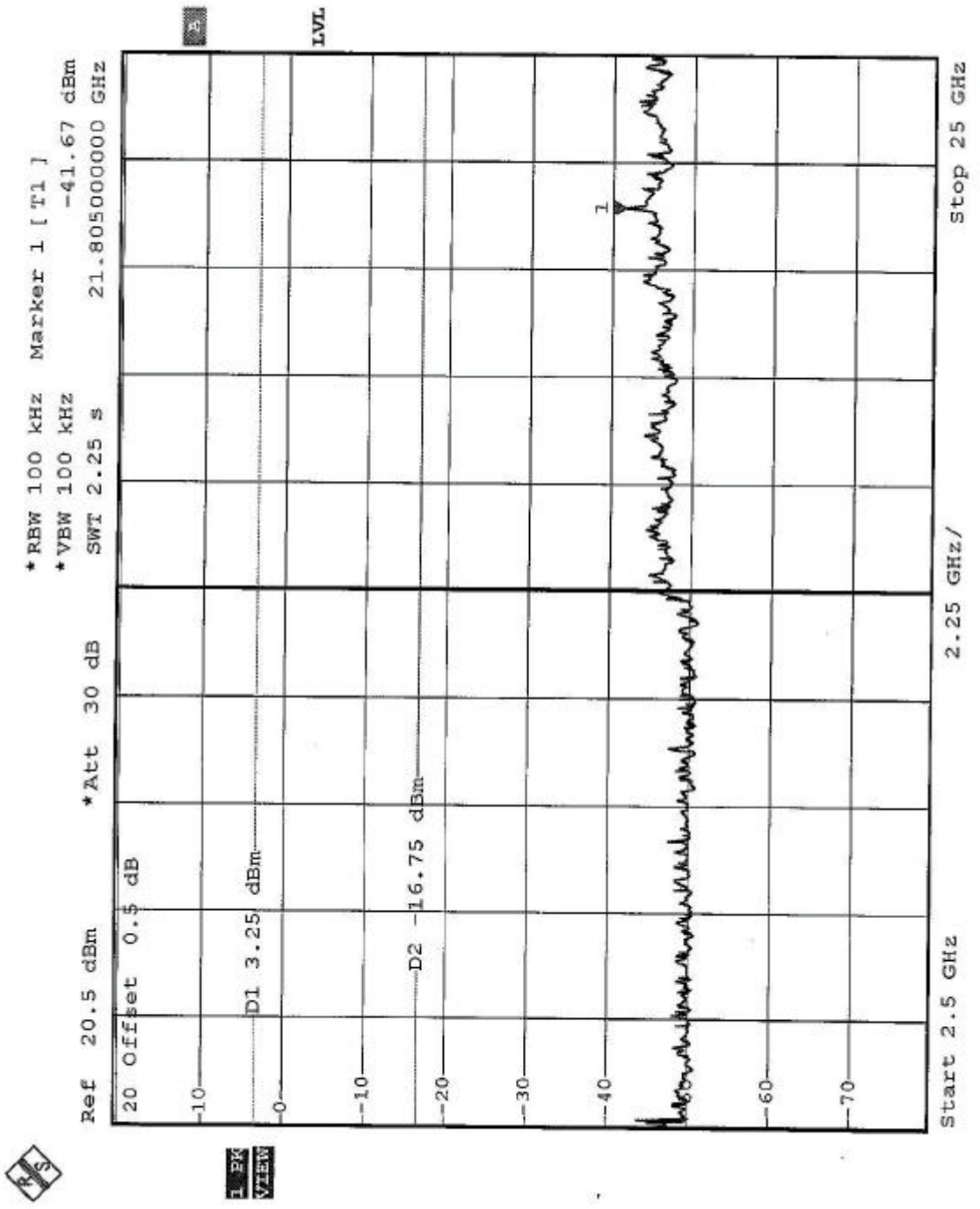
NOTE 2:
The band edge emission plot on the following 3-4 pages shows 48.40dB delta between carrier maximum power and local maximum emission in restrict band (2.5000GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.9 is 101.47dBuV/m, so the maximum field strength in restrict band is 101.47-48.40=53.07dBuV/m which is under 54dBuV/m limit.

*(The test data is in accordance with ADT Report No.: RF930209R02.)


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
0.58 dBm
2.411600000 GHz
Marker 2 [T1]
-45.20 dBm
2.400000000 GHz
Marker 3 [T1]
-59.13 dBm
2.390000000 GHz
Marker 4 [T1]
-50.98 dBm
2.354000000 GHz
D1 0.58 dBm
D2 -19.42 dBm
LVL
Center 2.369 GHz
10 MHz/
Span 100 MHz
1 PK
VIEW


RBW 100 kHz
VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-43.46 dBm
20.500000000 GHz
Ref 20.5 dBm
Offset 0.5 dB
Att 30 dB
D1 2.56 dBm
D2 -17.44 dBm
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz
1 PK
VIEW


Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
3.22 dBm
2.460400000 GHz
Marker 2 [T1]
-54.52 dBm
2.483500000 GHz
Marker 3 [T1]
-40.38 dBm
2.486000000 GHz
Marker 4 [T1]
-45.18 dBm
2.500000000 GHz
D1 3.22 dBm
D2 -16.78 dBm
F1
F2
Center 2.508 GHz
10 MHz/
Span 100 MHz
1 PK
VIEW


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-41.67 dBm
21.805000000 GHz
D1 3.25 dBm
D2 -16.75 dBm
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz
1 PK
VIEW
LVL

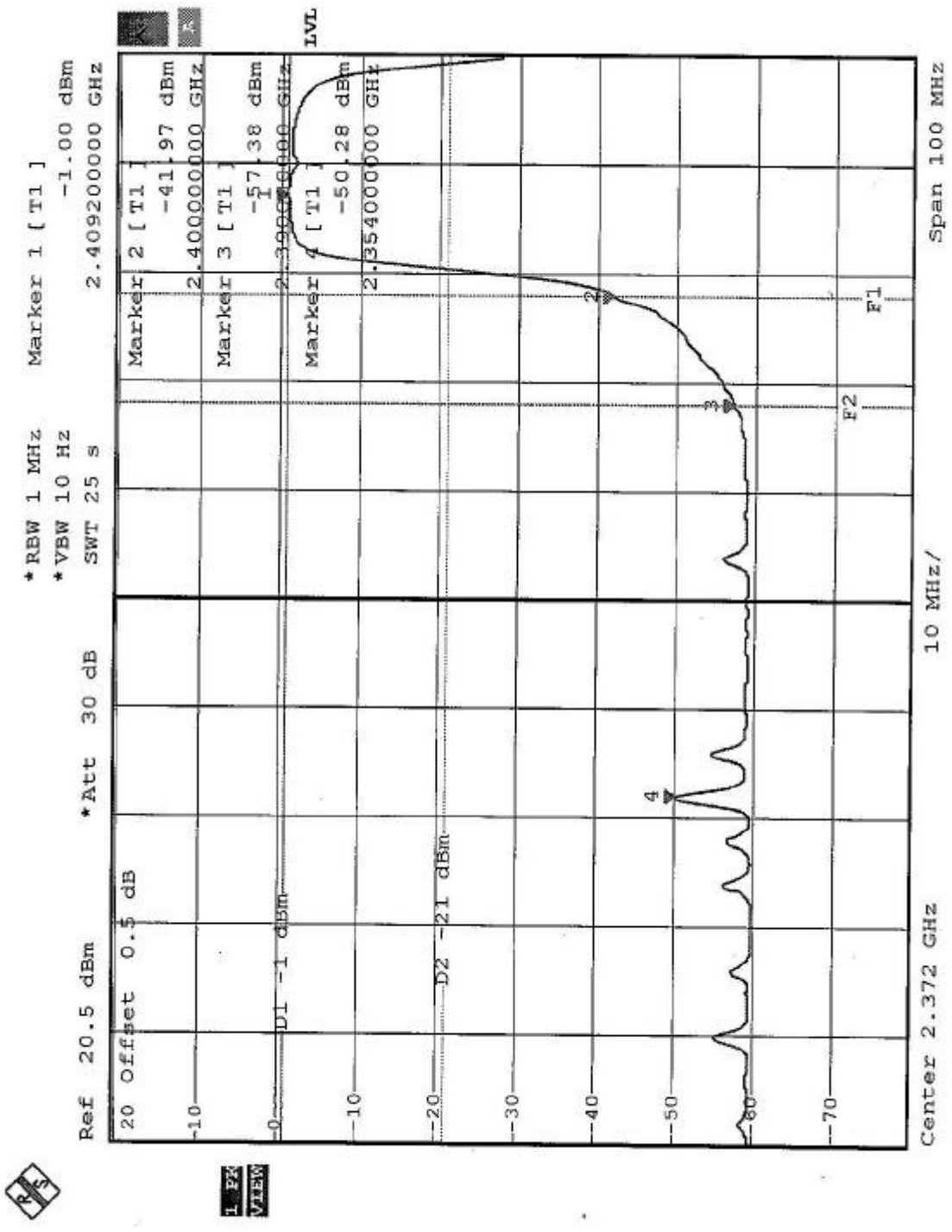
4.6.7 TEST RESULTS (FOR OFDM)

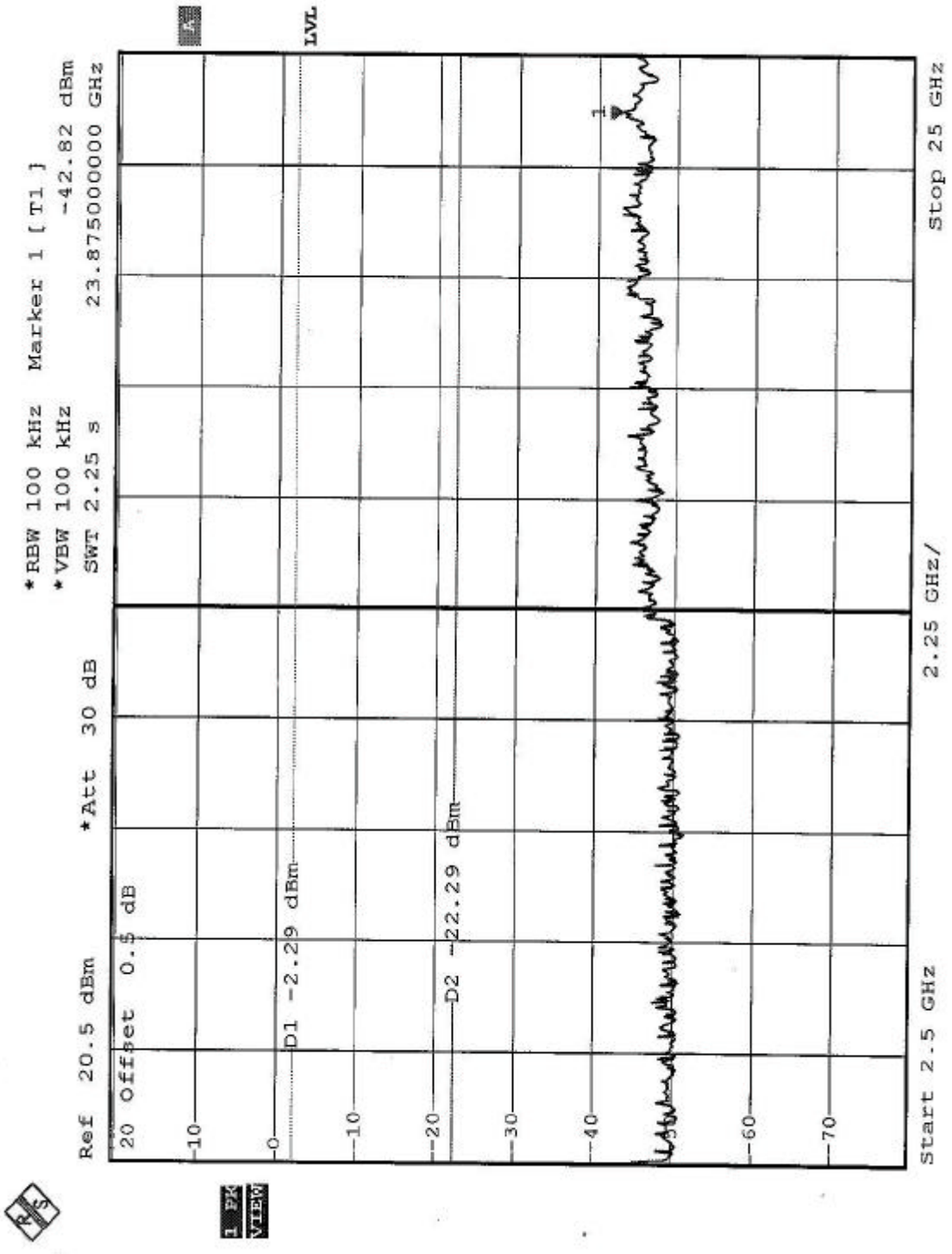
The spectrum plots are attached on the following 4 pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

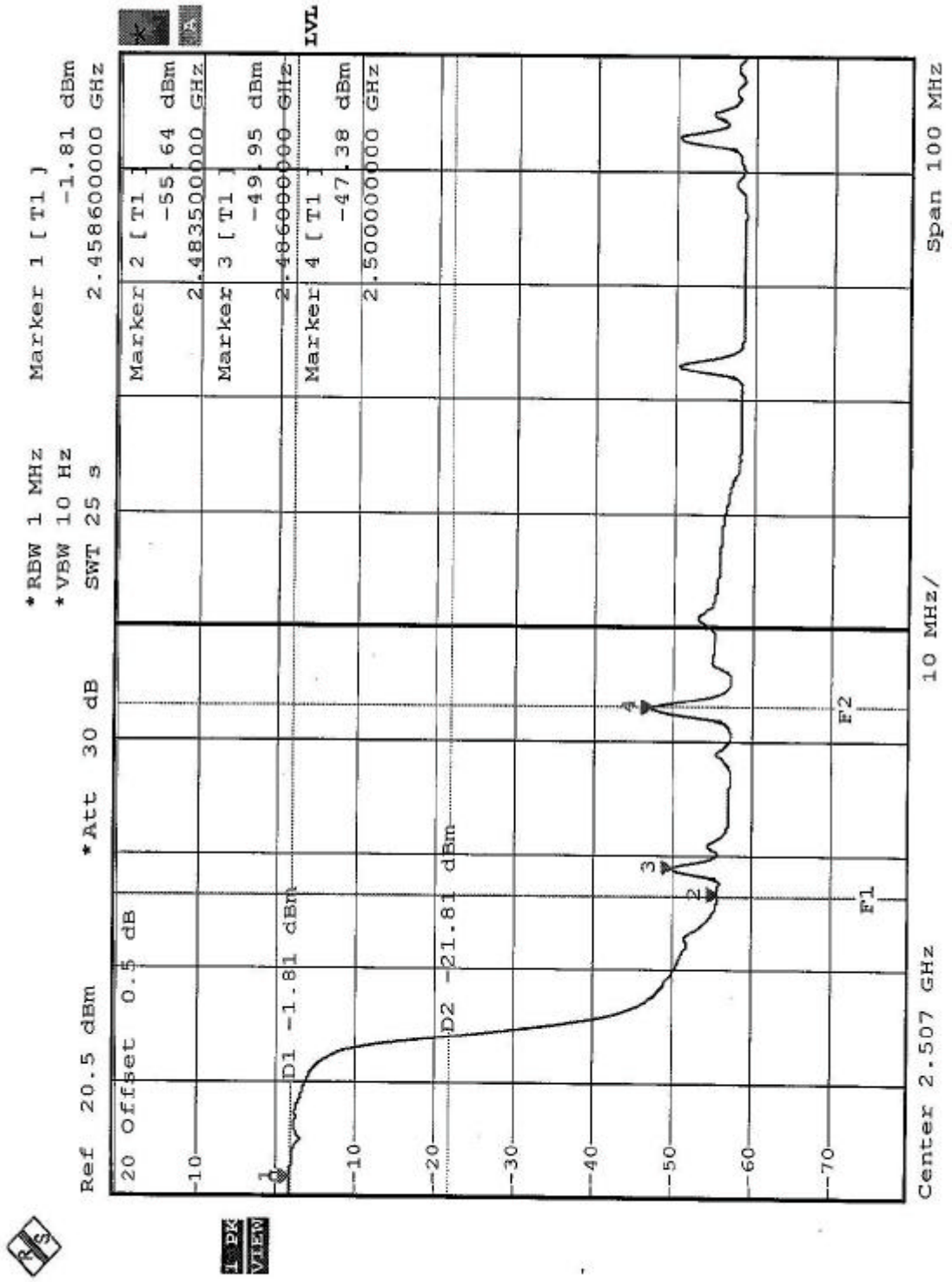
NOTE 1:
The band edge emission plot on the following 1-2 pages shows 49.28dB delta between carrier maximum power and local maximum emission in restrict band (2.3540GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.10 is 96.84dBuV/m, so the maximum field strength in restrict band is 96.84-49.28=47.56dBuV/m which is under 54dBuV/m limit.

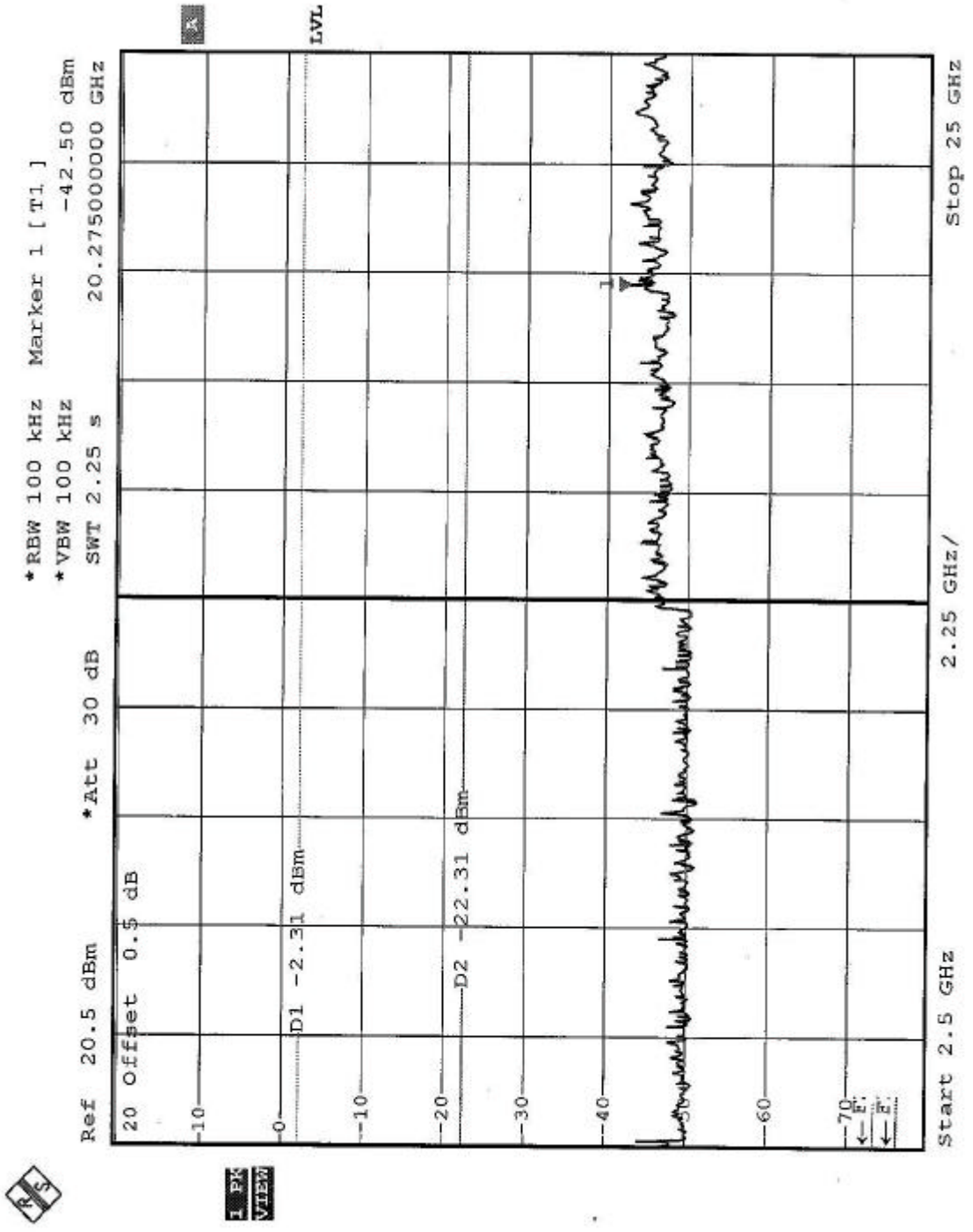
NOTE 2:
The band edge emission plot on the following 3-4 pages shows 45.57dB delta between carrier maximum power and local maximum emission in restrict band (2.5000GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.10 is 96.91dBuV/m, so the maximum field strength in restrict band is 96.91-45.57=51.34dBuV/m which is under 54dBuV/m limit.

*(The test data is in accordance with ADT Report No.: RF930209R02.)


RBW 1 MHz
VBW 10 Hz
SWT 25 s
Att 30 dB
Offset 0.5 dB
Ref 20.5 dBm
Marker 1 [T1]
-1.00 dBm
2.409200000 GHz
Marker 2 [T1]
-41.97 dBm
2.400000000 GHz
Marker 3 [T1]
-57.38 dBm
2.390000000 GHz
Marker 4 [T1]
-50.28 dBm
2.354000000 GHz
D1 -1 dBm
D2 -21 dBm
LVL
F1
F2
Center 2.372 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-42.82 dBm
23.875000000 GHz
Ref 20.5 dBm
20 offset 0.5 dB
*Att 30 dB
D1 -2.29 dBm
D2 -22.29 dBm
LVL
1 PK
VIEW
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-1.81 dBm
2.458600000 GHz
Marker 2 [T1]
-55.64 dBm
2.483500000 GHz
Marker 3 [T1]
-49.95 dBm
2.486000000 GHz
Marker 4 [T1]
-47.38 dBm
2.500000000 GHz
Ref 20.5 dBm
Offset 0.5 dB
Att 30 dB
D1 -1.81 dBm
D2 -21.81 dBm
F1
F2
Center 2.507 GHz
10 MHz/
Span 100 MHz
1 PK VIEW


*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-42.50 dBm
20.275000000 GHz
Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
LVL
D1 -2.31 dBm
D2 -22.31 dBm
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz

4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna type used in this product is Dipole & PIFA Antenna with Reverse SMA antenna connector. The maximum Gain of this antenna is only 2.0dBi.

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, Radio, Telecom 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, UL, A2LA
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, DGT
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	CERTIS(MOU)

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. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:
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Fax: 886-3-3185050

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Fax: 886-3-3270892

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