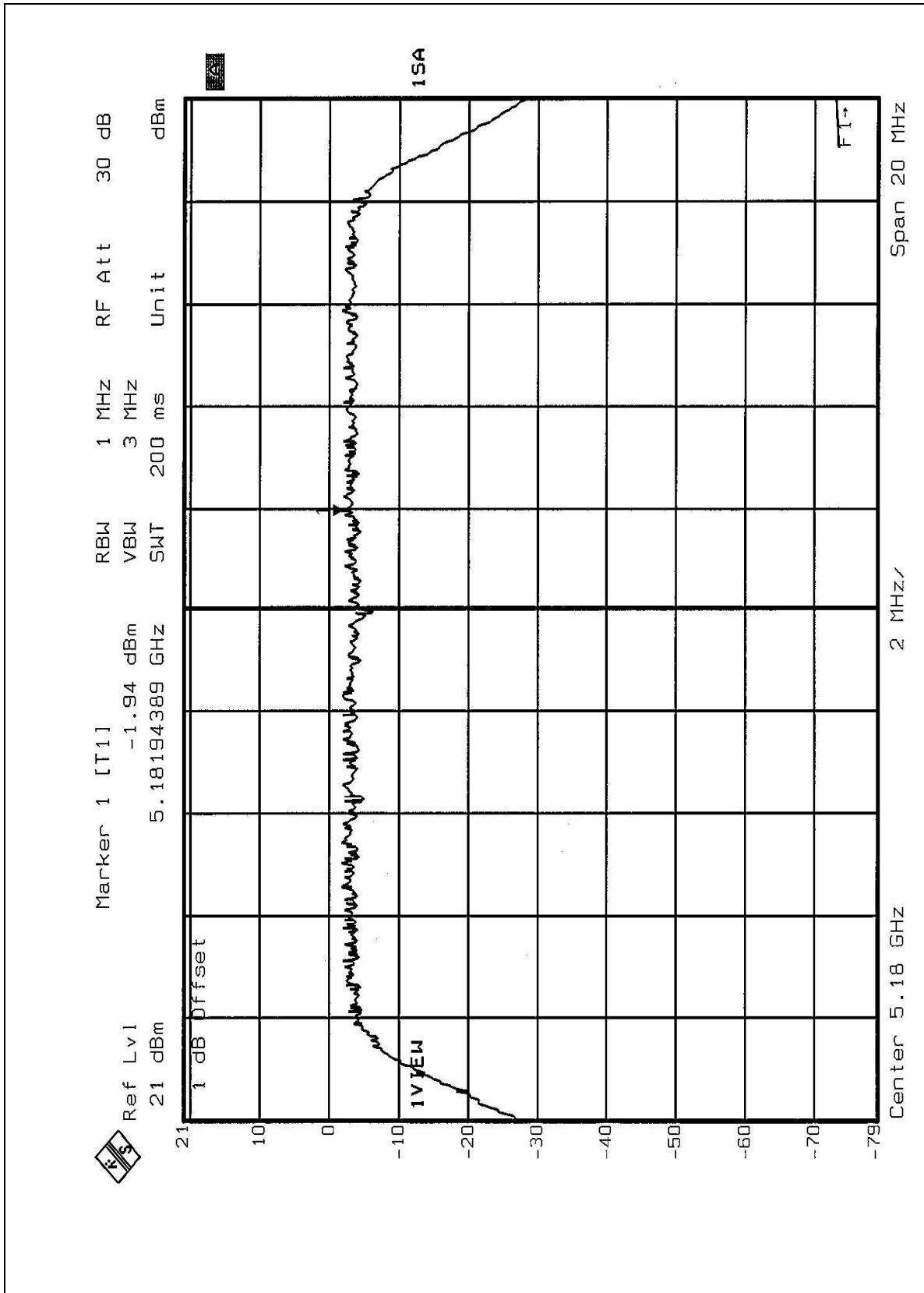


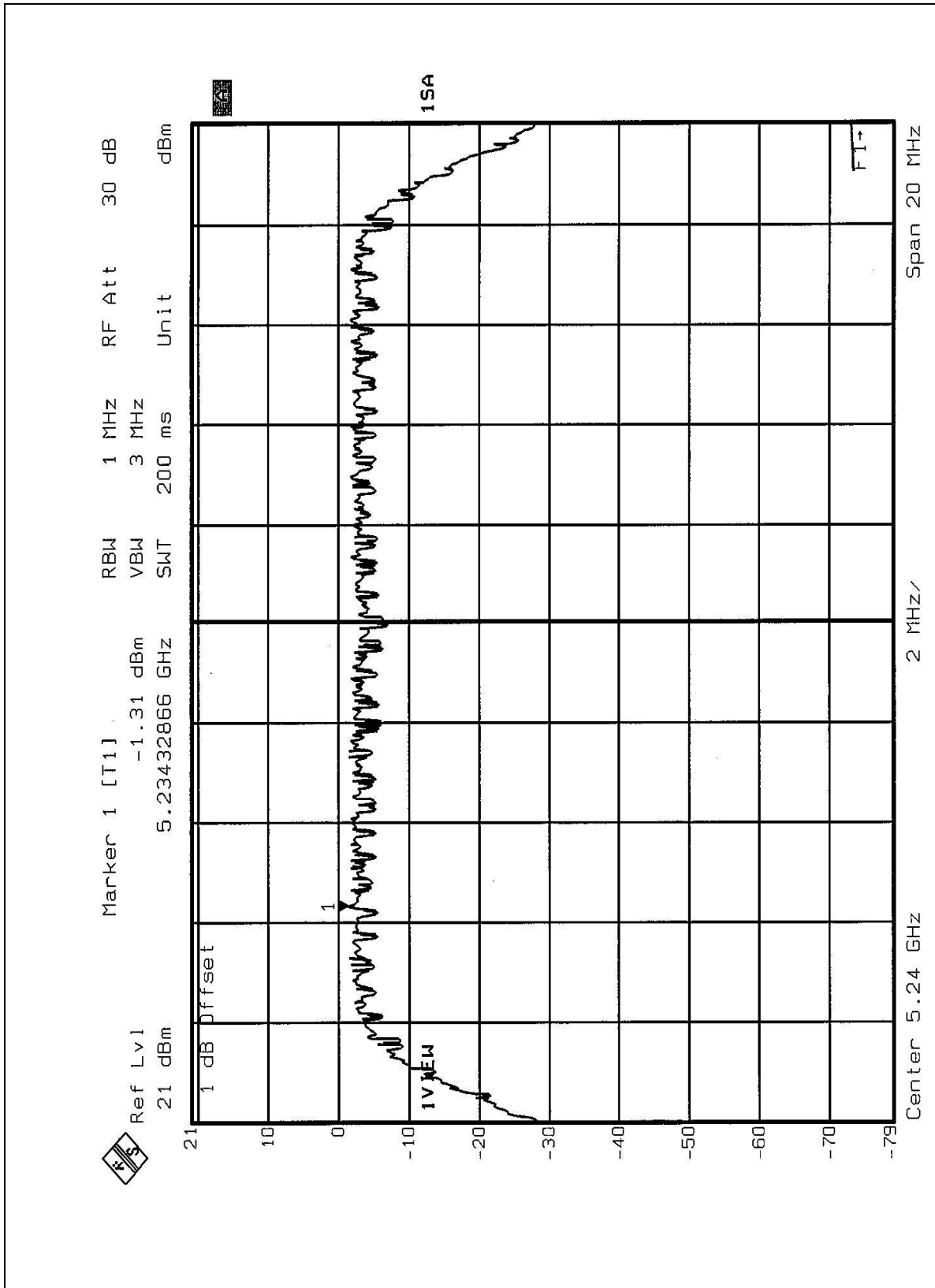


CHANNEL 1



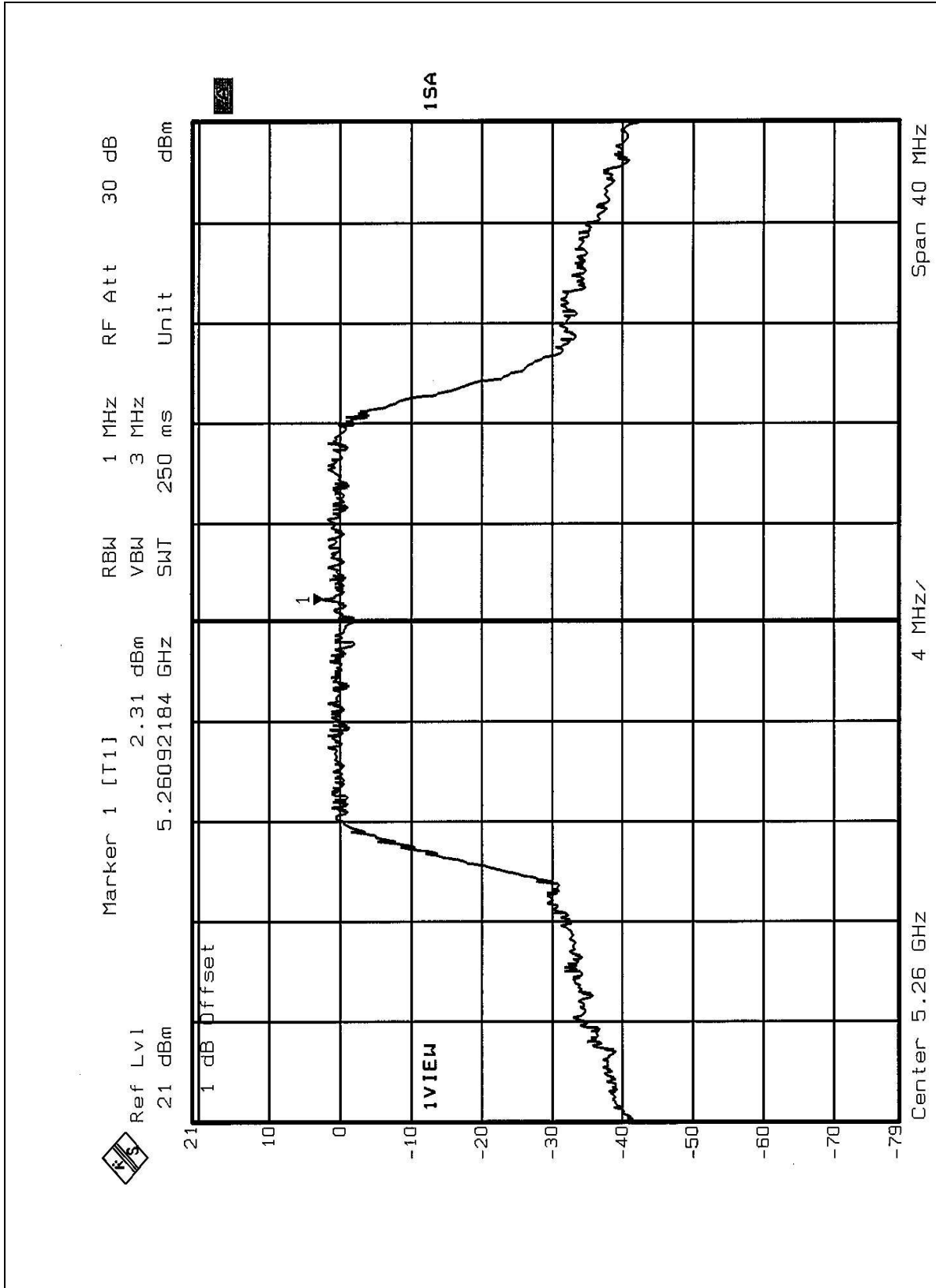


CHANNEL 4



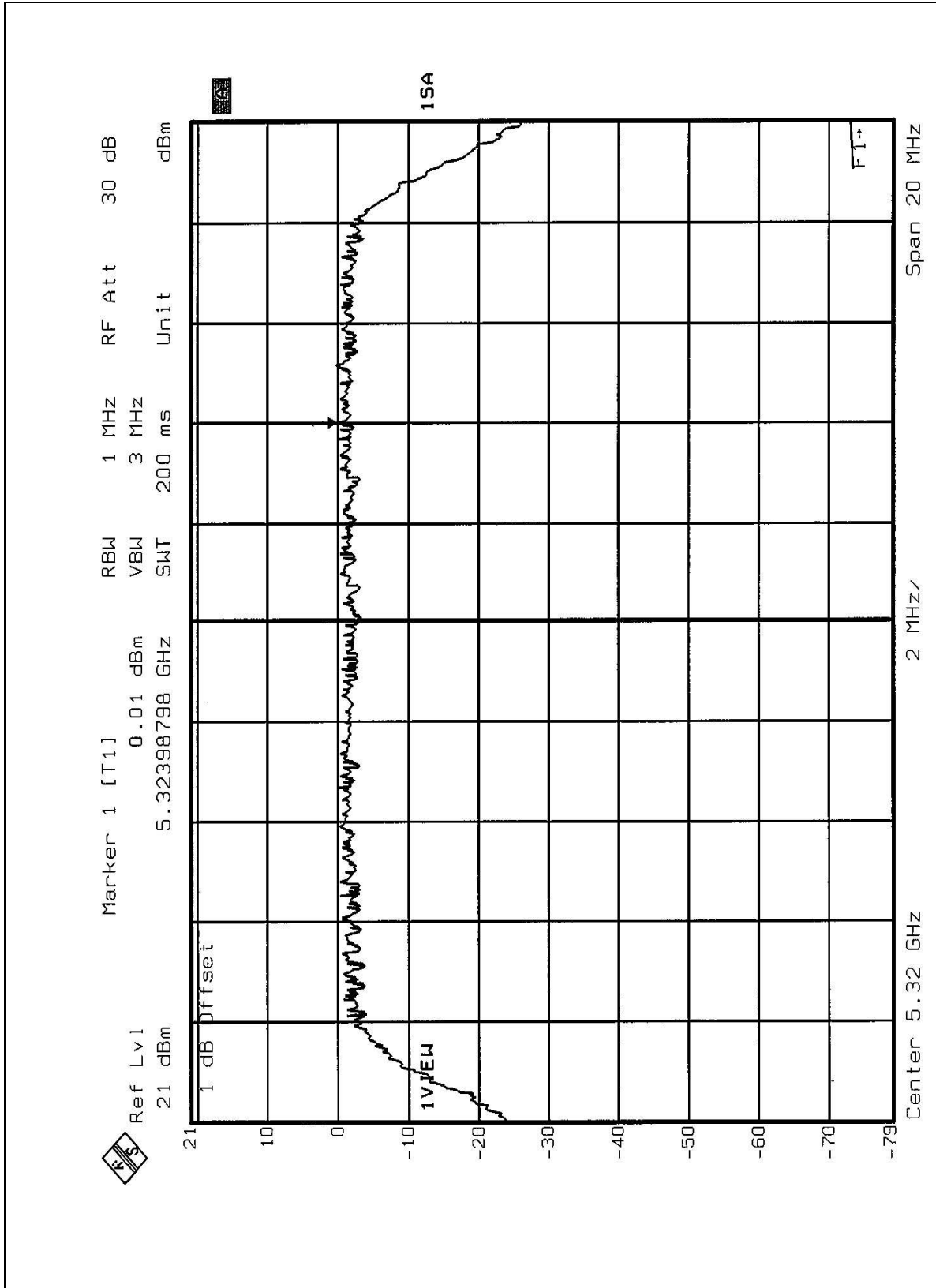


CHANNEL 5



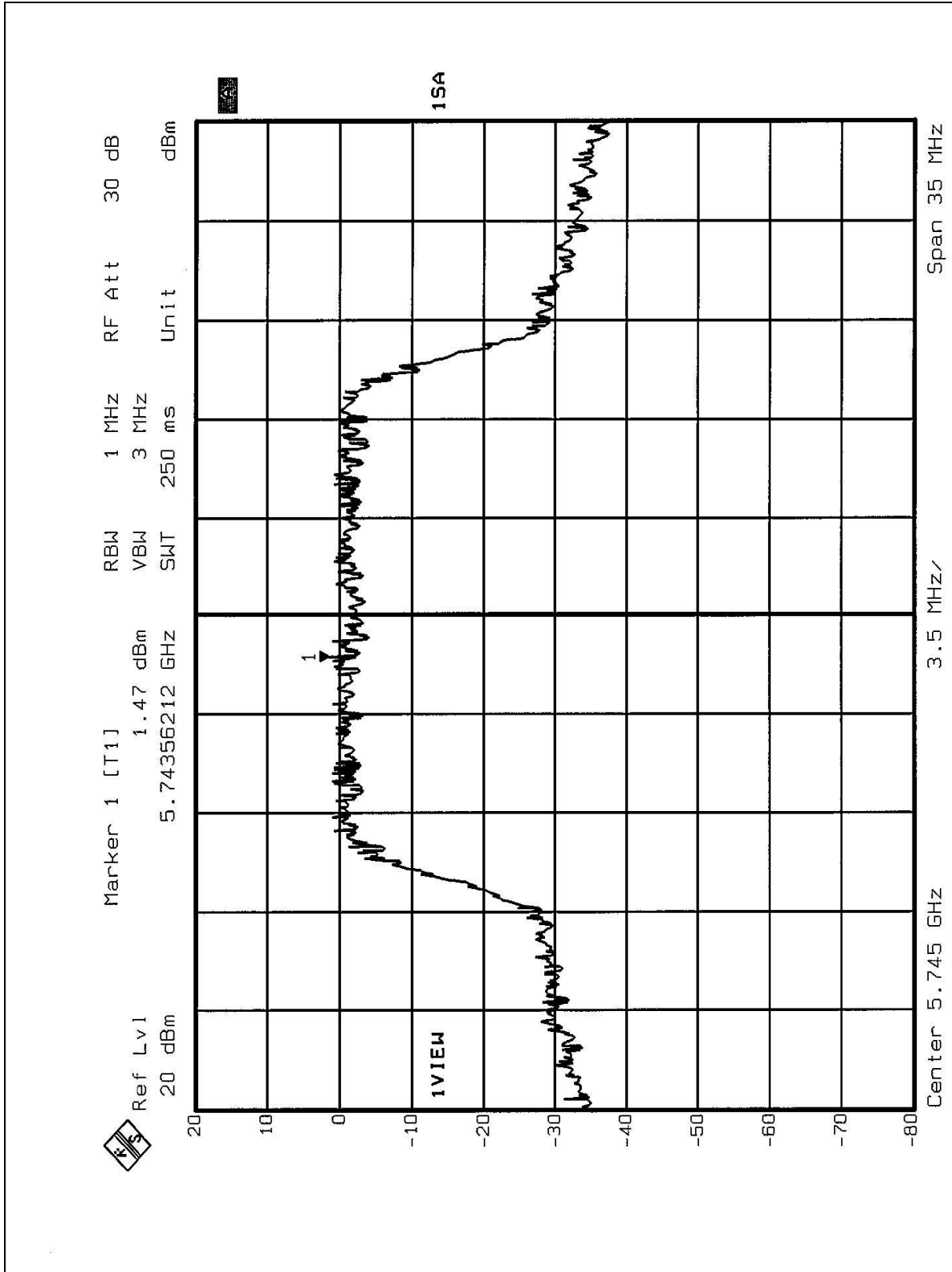


CHANNEL 8



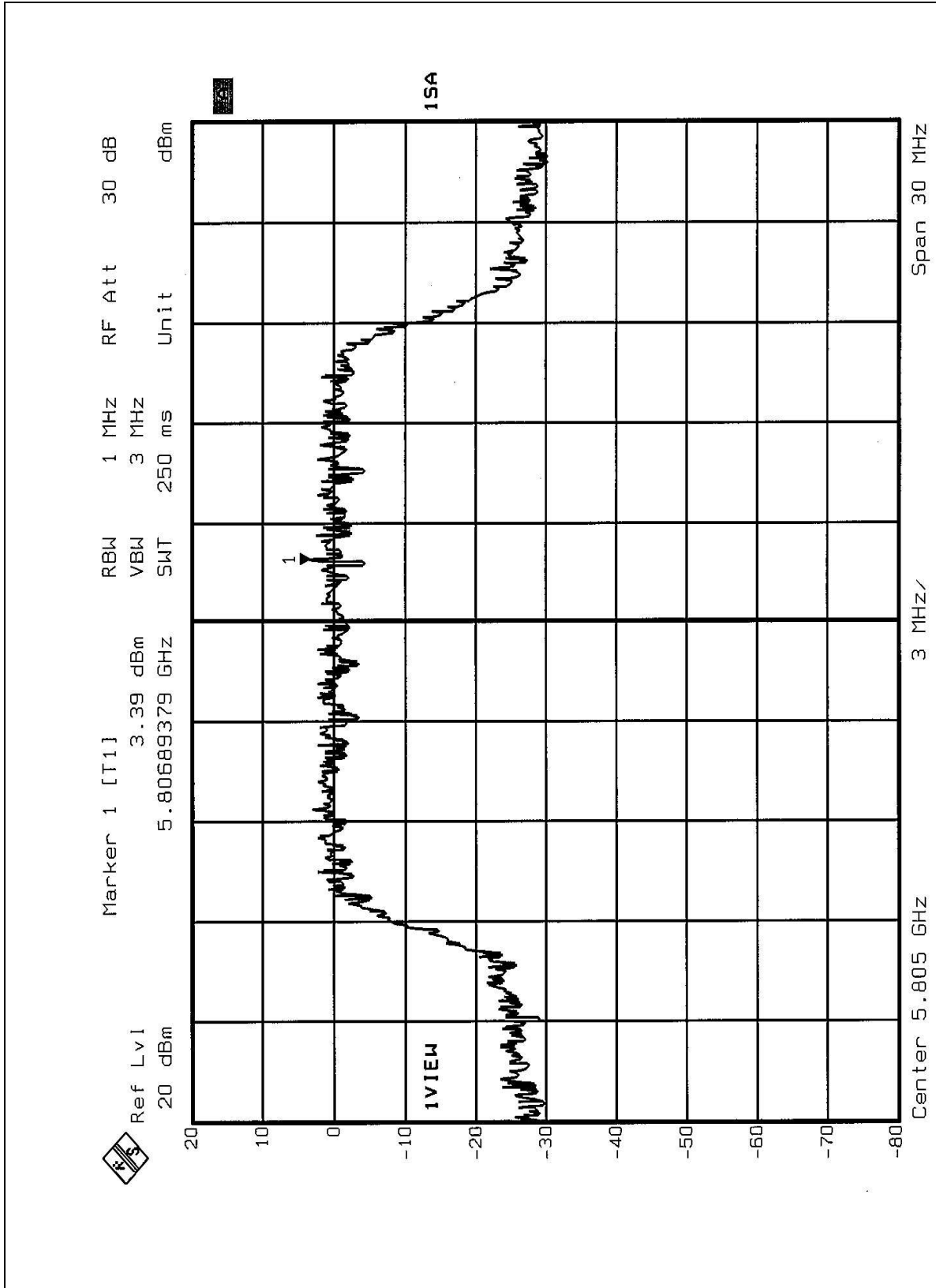


CHANNEL 9





CHANNEL 12



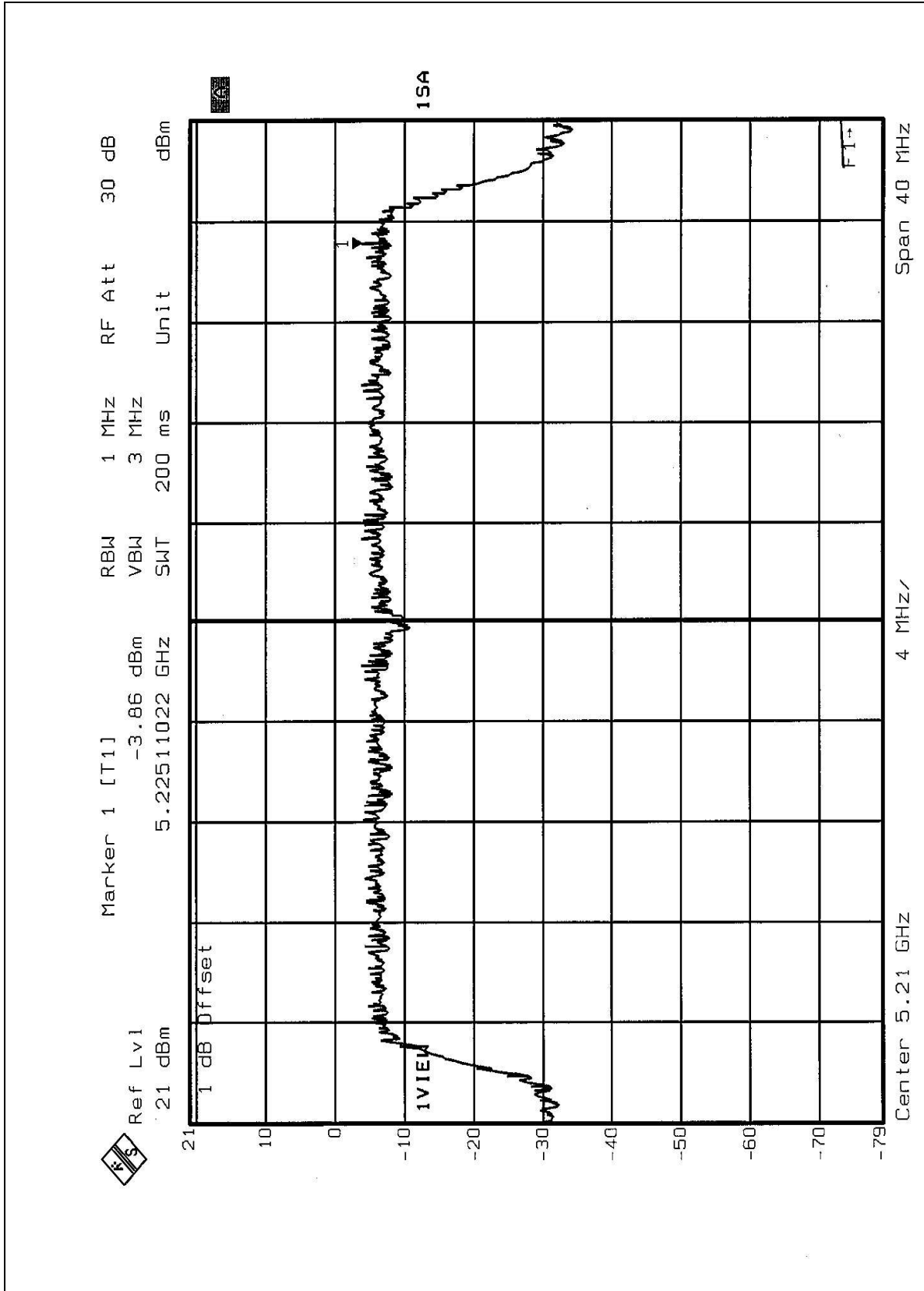


EUT	IEEE 802.11a WLAN Access Point	MODEL	DWL-5000AP
MODE	Turbo	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26 deg. C, 52%RH, 1005 hPa	TESTED BY	Steven Lu

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1 MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5210	-3.86	4	PASS
2	5250	-3.59	4	PASS
3	5290	-2.16	11	PASS
4	5760	-5.59	17	PASS
5	5800	-9.67	17	PASS

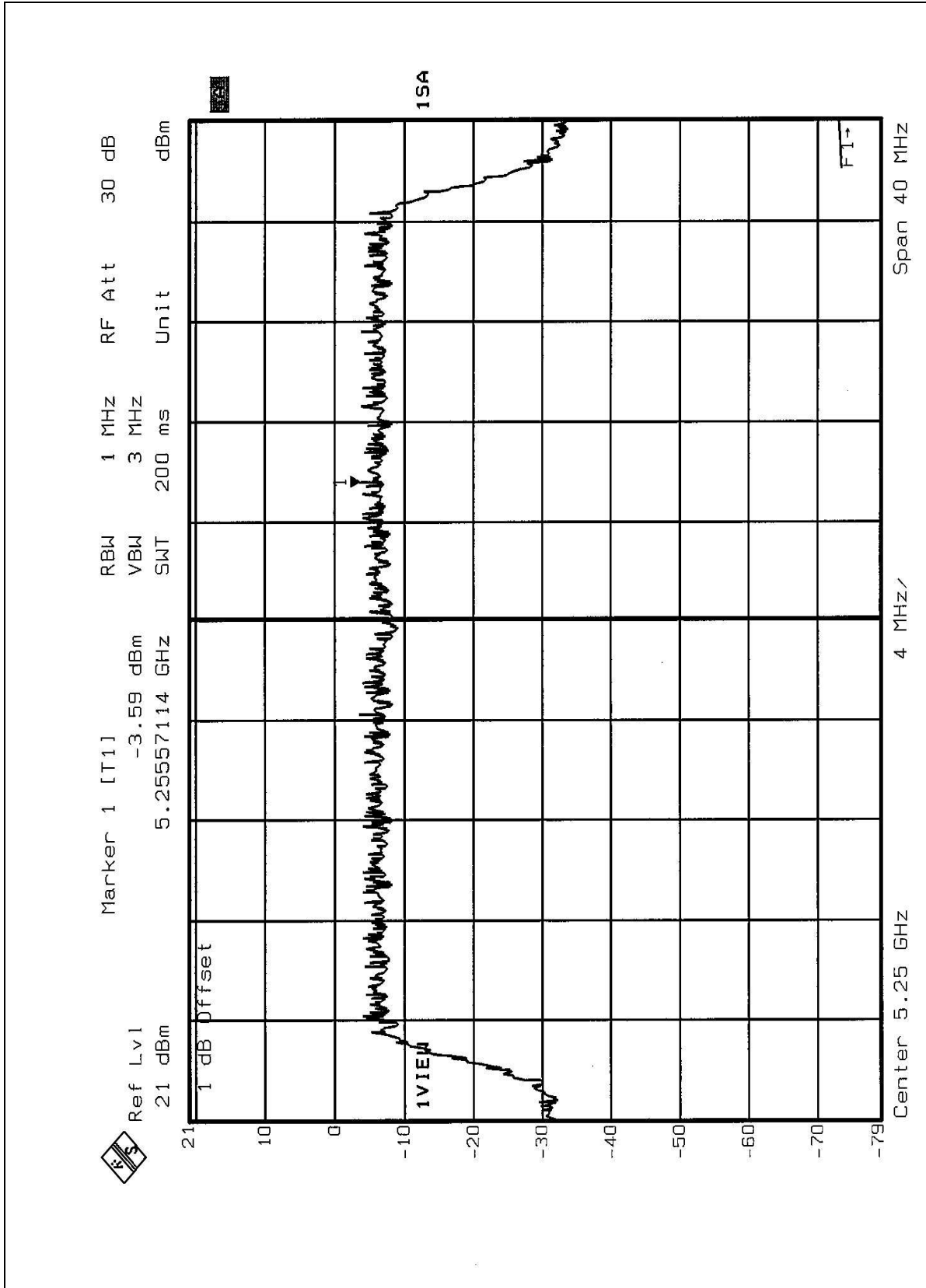


CHANNEL 1



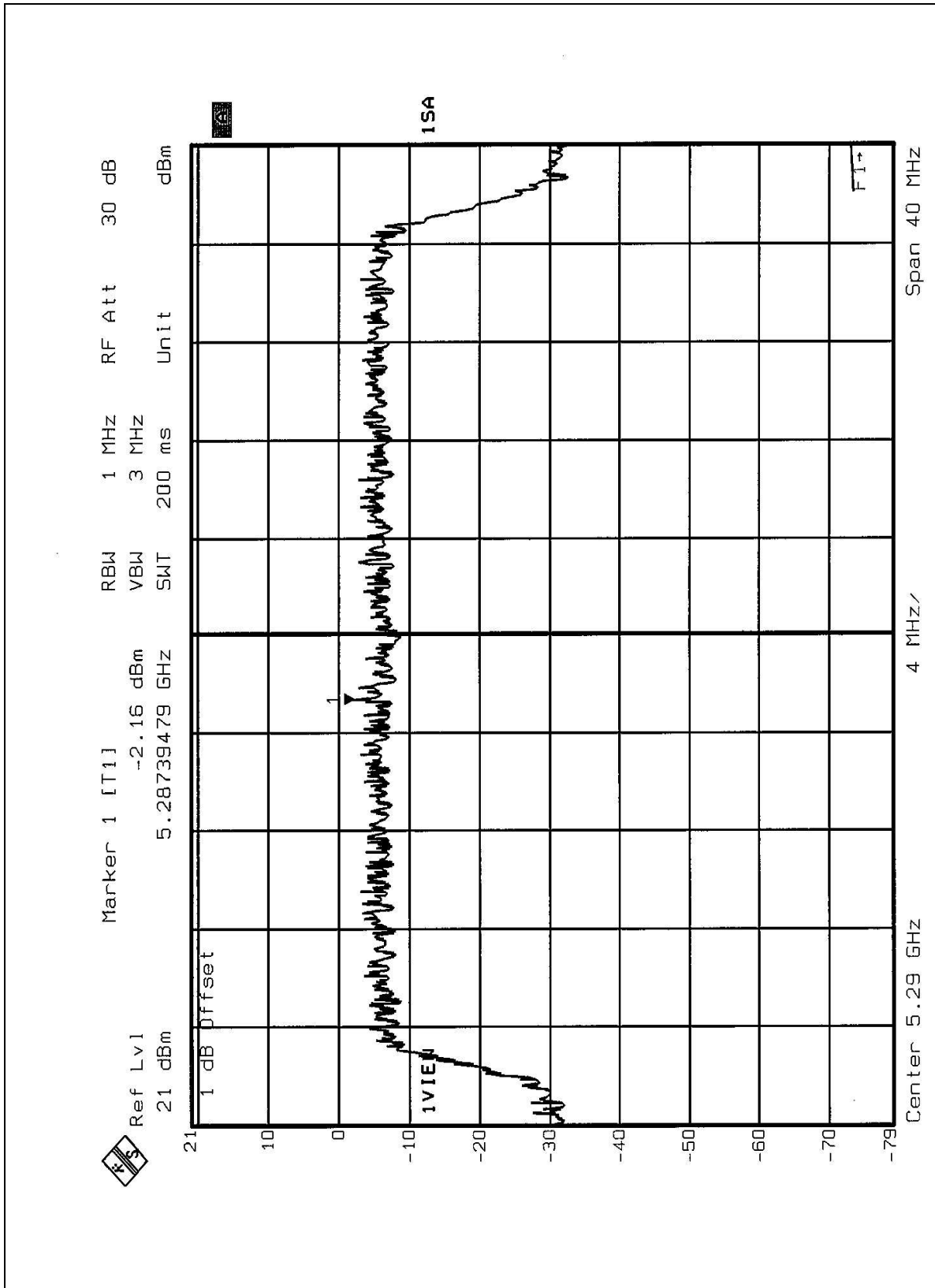


CHANNEL 2



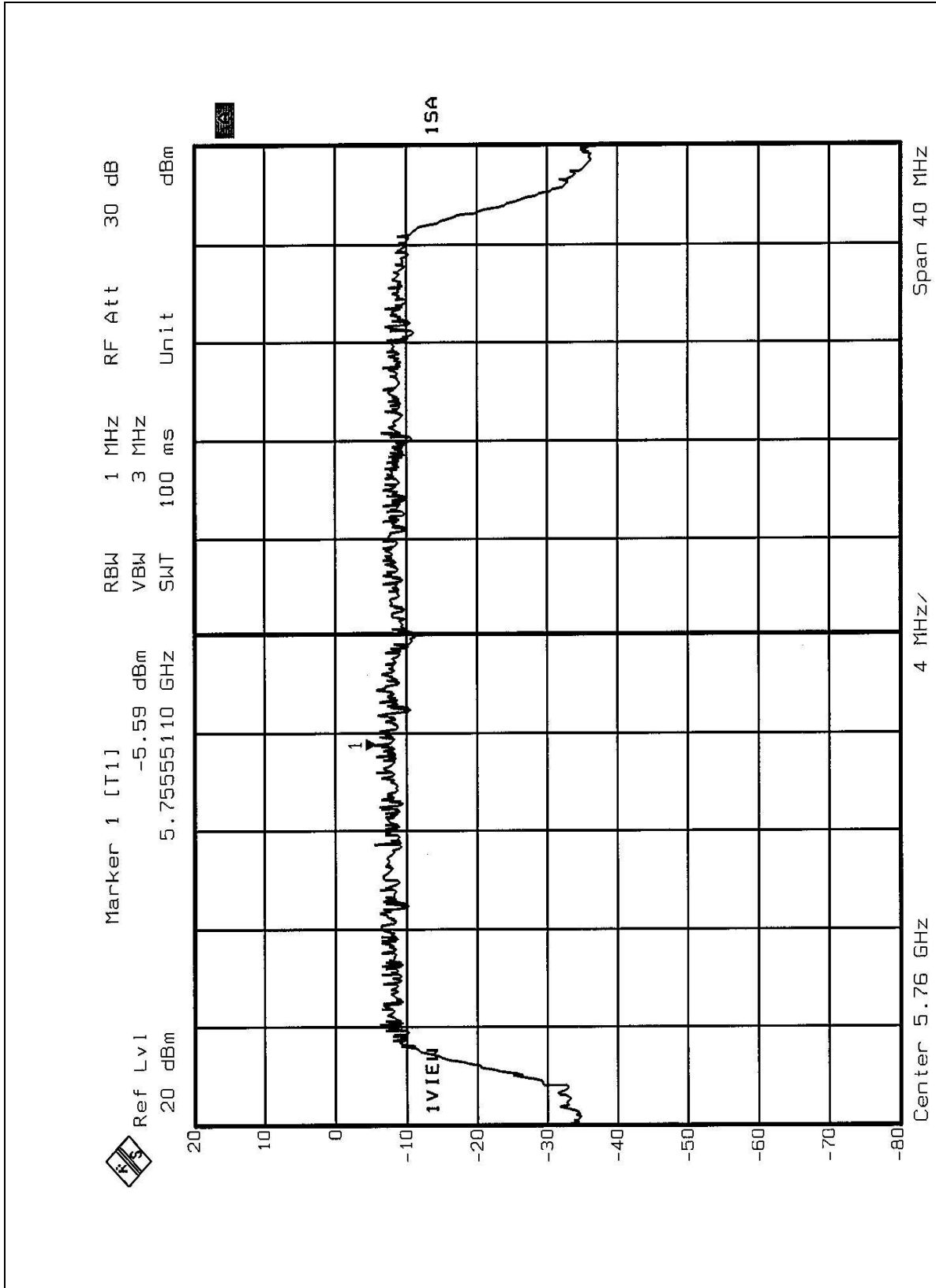


CHANNEL 3



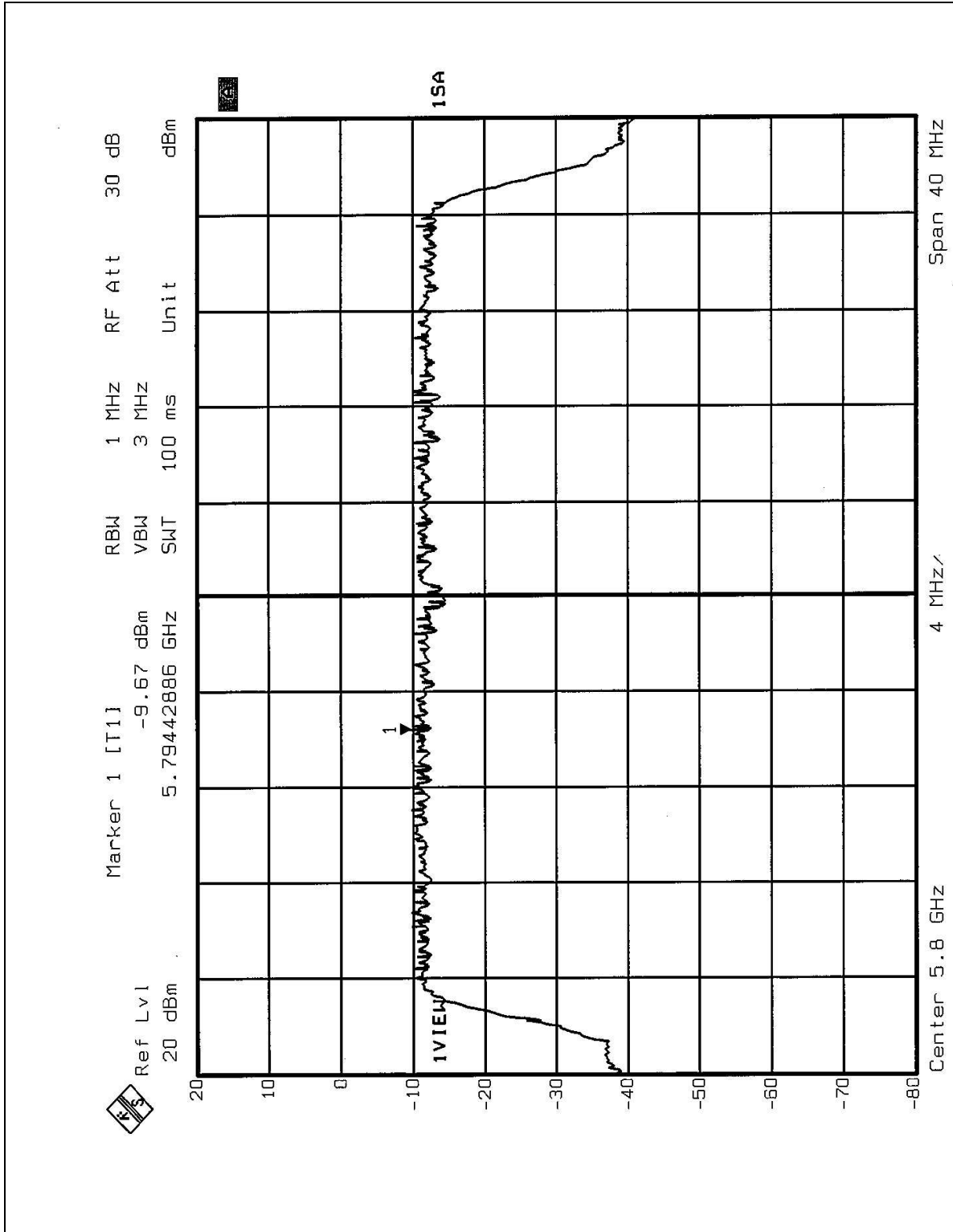


CHANNEL 4





CHANNEL 5





4.6 EFFECTIVE ISOTROPIC RADIATED POWER SPURIOUS EMISSIONS MEASUREMENT

4.6.1 LIMITS OF EFFECTIVE ISOTROPIC RADIATED POWER SPURIOUS EMISSIONS MEASUREMENT

- (1) For transmitters operating in the 5.15 – 5.25 GHz band:
All emissions outside of the 5.15 – 5.25 GHz band shall not exceed an EIRP of -27dBm/MHz .
- (2) For transmitters operating in the 5.25 – 5.35 GHz band:
All emissions outside of the 5.25 – 5.35 GHz band shall not exceed an EIRP of -27dBm/MHz .
- (3) For transmitters operating in the 5.725 – 5.825 GHz band:
All emissions operating within the frequency range from the band edge 10 MHz above or below the band edge shall not exceed an EIRP of -17dBm/MHz ; for frequencies 10 MHz or greater above or below the band edge shall not exceed an EIRP of -27dBm/MHz .

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* ROHDE & SCHWARZ Spectrum Analyzer	FSEK30	100049	July 17, 2002
ROHDE & SCHWARZ Signal Generator	68247B	984703	May 31, 2003
* EMCO Horn Antenna	3115	5623	May 23, 2003
* EMCO Horn Antenna	3115	5619	May 22, 2003
MITEQ Preamplifier	AMF-4D-0051	692677	Jun. 22, 2002
MITEQ Preamplifier	AFS33-18002	690751	NA
Broadband Horn Antenna	BBHA 9170	147	May 30, 2003
Broadband Horn Antenna	BBHA 9170	148	May 31, 2003

NOTE:

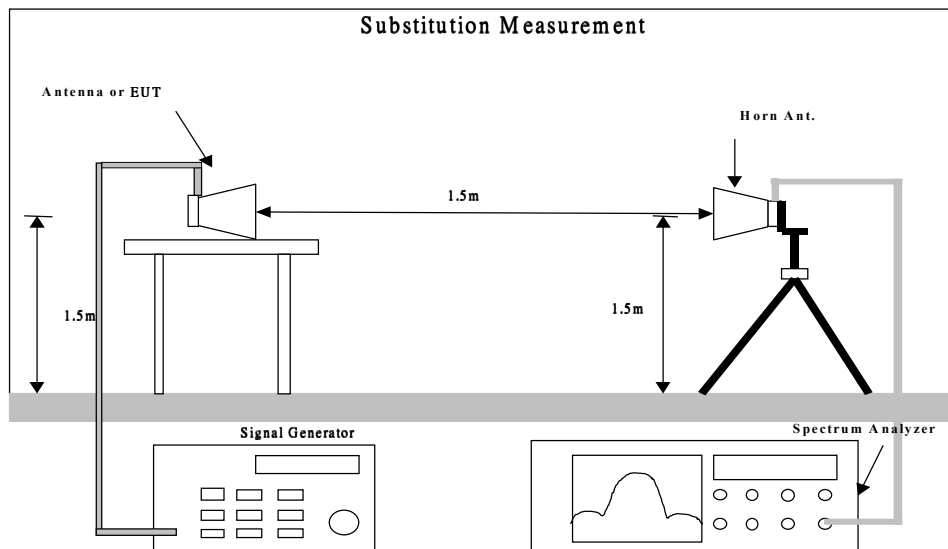
1. The measurement uncertainty is less than $\pm 2.6\text{dB}$, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.



4.6.3 TEST PROCEDURE

6. The EUT was placed on the top of a rotating table 1.5 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.
7. The EUT was set 1.5 meters away from the receiving antenna, which was mounted on antenna tower and its position at 1.5 m above the ground.
8. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading and recorded the value.
9. The EUT is replaced by a horn antenna connected to a signal generator tuned to the frequency of emission and with the same radiation nature.
10. The radiated power can be calculated via the factor and antenna gain.
11. Repeat step 1-6 for horizontal polarization.

4.6.4 TEST SETUP



4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.5



4.6.6 TEST RESULTS

EUT	IEEE 802.11a WLAN Access Point	MODEL	DWL-5000AP
MODE	Normal Mode	CHANNEL	1
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Steven Lu		

EIRP SPURIOUS EMISSION LEVEL					
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin	Remark
5149.11	V	-34.2	-27.0	-7.24	
10357.92	V	-29.5	-27.0	-2.5	
10362.89	H	-37.8	-27.0	-10.8	
15539.50	-	-	-	-	NOTE
20720.00	-	-	-	-	NOTE
25887.47	H	-52.5	-27.0	-25.5	

NOTE: The emissions appearing in the restricted Bands shall not exceed the general limits of 15.209.



EUT	IEEE 802.11a WLAN Access Point	MODEL	DWL-5000AP
MODE	Normal Mode	CHANNEL	4
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Steven Lu		

EIRP SPURIOUS EMISSION LEVEL					
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin	Remark
10477.43	H	-37.3	-27.0	-10.3	
10481.20	V	-32.8	-27.0	-5.8	
15720.00	-	-	-	-	NOTE
20953.69	-	-	-	-	NOTE
26230.46	H	-52.6	-27.0	-25.6	
26262.53	V	-51.5	-27.0	-24.5	

NOTE: The emissions appearing in the restricted Bands shall not exceed the general limits of 15.209.



EUT	IEEE 802.11a WLAN Access Point	MODEL	DWL-5000AP
MODE	Normal Mode	CHANNEL	5
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Steven Lu		

EIRP SPURIOUS EMISSION LEVEL					
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin	Remark
10521.52	V	-31.2	-27.0	-4.2	
10523.13	H	-35.7	-27.0	-8.7	
15780.00	-	-	-	-	NOTE
21044.71	-	-	-	-	NOTE
26238.98	H	-54.1	-27.0	-27.1	
26379.76	V	-52.5	-27.0	-25.5	

NOTE: The emissions appearing in the restricted Bands shall not exceed the general limits of 15.209.



EUT	IEEE 802.11a WLAN Access Point	MODEL	DWL-5000AP
MODE	Normal Mode	CHANNEL	8
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Steven Lu		

EIRP SPURIOUS EMISSION LEVEL

Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin	Remark
5350.30	V	-30.6	-27.0	-3.6	
10640.00	-	-	-	-	NOTE
15960.00	-	-	-	-	NOTE
21282.20	-	-	-	-	NOTE
26551.50	H	-51.4	-27.0	-24.4	
26624.25	V	-49.2	-27.0	-22.2	

NOTE: The emissions appearing in the restricted Bands shall not exceed the general limits of 15.209.



EUT	IEEE 802.11a WLAN Access Point	MODEL	DWL-5000AP
MODE	Normal Mode	CHANNEL	9
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Steven Lu		

EIRP SPURIOUS EMISSION LEVEL

Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin	Remark
5724.34	V	-19.61	-17.0	-2.6	
11476.45	-	-	-	-	NOTE
17232.29	V	-39.6	-27.0	-12.6	
17235.00	H	-50.0	-27.0	-23.0	
22980.00	-	-	-	-	NOTE
28725.00	-	-	-	-	NOTE

NOTE: The emissions appearing in the restricted Bands shall not exceed the general limits of 15.209.



EUT	IEEE 802.11a WLAN Access Point	MODEL	DWL-5000AP
MODE	Normal Mode	CHANNEL	12
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Steven Lu		

EIRP SPURIOUS EMISSION LEVEL

Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin	Remark
5825.20	V	-19.56	-17.0	-2.6	
11610.00	-	-	-	-	NOTE
17405.38	H	-46.7	-27.0	-19.7	
17419.81	V	-45.6	-27.0	-18.6	
23286.83	V	-54.6	-27.0	-27.6	
23303.57	H	-55.3	-27.0	-28.3	

NOTE: The emissions appearing in the restricted Bands shall not exceed the general limits of 15.209.



EUT	IEEE 802.11a WLAN Access Point	MODEL	DWL-5000AP
MODE	Turbo Mode	CHANNEL	1
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Steven Lu		

EIRP SPURIOUS EMISSION LEVEL

Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin	Remark
5149.87	V	-37.3	-27.0	-10.3	
10416.69	V	-36.1	-27.0	-9.1	
10422.71	H	-38.8	-27.0	-11.8	
15627.39	-	-	-	-	NOTE
20825.37	-	-	-	-	NOTE
26049.20	V	-52.8	-27.0	-25.8	
26173.85	H	-51.8	-27.0	-24.8	

NOTE: The emissions appearing in the restricted Bands shall not exceed the general limits of 15.209.



EUT	IEEE 802.11a WLAN Access Point	MODEL	DWL-5000AP
MODE	Turbo Mode	CHANNEL	3
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Steven Lu		

EIRP SPURIOUS EMISSION LEVEL

Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin	Remark
5350.33	V	-36.3	-27.0	-9.3	
10582.10	H	-37.4	-27.0	-10.4	
10586.91	V	-35.2	-27.0	-8.2	
15873.91	-	-	-	-	NOTE
21193.47	-	-	-	-	NOTE
26474.05	H	-52.5	-27.0	-25.5	
26496.99	V	-48.1	-27.0	-21.1	

NOTE: The emissions appearing in the restricted Bands shall not exceed the general limits of 15.209.



EUT	IEEE 802.11a WLAN Access Point	MODEL	DWL-5000AP
MODE	Turbo Mode	CHANNEL	4
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Steven Lu		

EIRP SPURIOUS EMISSION LEVEL					
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin	Remark
5724.53	V	-27.2	-17.0	-10.2	
11521.00	-	-	-	-	NOTE
17280.70	V	-45.5	-27.0	-18.5	
17282.71	H	-50.2	-27.0	-23.2	
23035.79	-	-	-	-	NOTE
28800.00	-	-	-	-	NOTE

NOTE: The emissions appearing in the restricted Bands shall not exceed the general limits of 15.209.



EUT	IEEE 802.11a WLAN Access Point	MODEL	DWL-5000AP
MODE	Turbo Mode	CHANNEL	5
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK)
ENVIRONMENTAL CONDITIONS	25 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Steven Lu		

EIRP SPURIOUS EMISSION LEVEL

Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin	Remark
5825.07	V	-24.53	-17.0	-7.53	
11594.29	-	-	-	-	NOTE
17469.54	V	-51.4	-27.0	-24.4	
17598.30	H	-52.3	-27.0	-25.3	
23209.52	V	-54.3	-27.0	-27.3	
23388.18	H	-53.5	-27.0	-26.5	
29000.00	-	-	-	-	NOTE

NOTE: The emissions appearing in the restricted Bands shall not exceed the general limits of 15.209.



4.7 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of -30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ANRITSU SPECTRUM ANALYZER	MS2667C	M10281	Mar. 15, 2003
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W901030	Jun. 13, 2002

NOTE:

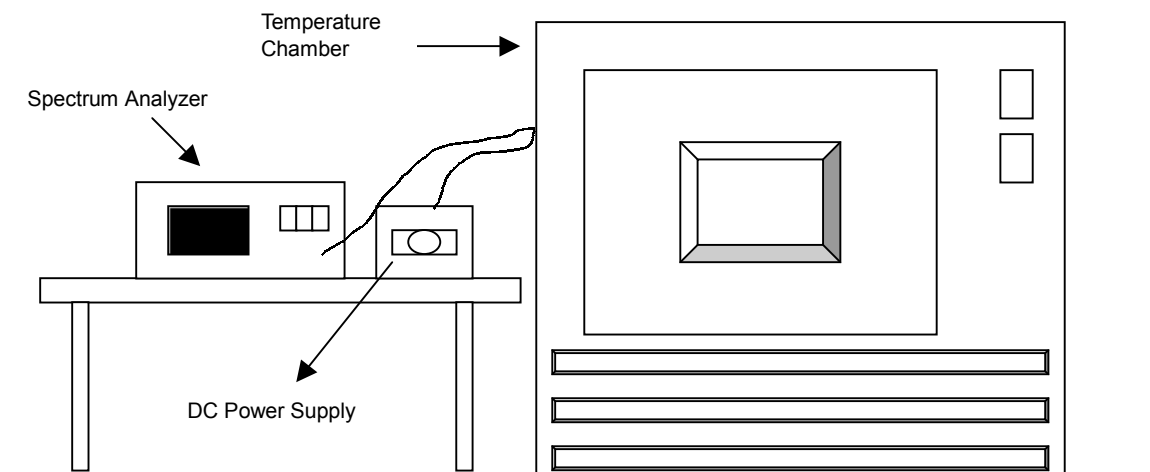
The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.

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

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.4 TEST SETUP



4.6.5 EUT OPERATING CONDITION

Same as Item 4.1.5



4.6.6 TEST RESULTS

Operating frequency: 5180MHz								Limit : ± 0.02%							
Temp. (°C)	Power supply (VDC)	2 minute		5 minute		10 minute									
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)								
50	126.5	5180.0116	-0.000224	5180.0129	-0.000249	5180.0135	-0.000261								
	110.0	5180.0110	-0.000212	5180.0120	-0.000232	5180.0130	-0.000251								
	93.5	5180.0114	-0.000220	5180.0128	-0.000247	5180.0132	-0.000255								
40	126.5	5179.9823	0.000342	5179.9830	0.000328	5179.9830	0.000328								
	110.0	5179.9823	0.000342	5179.9829	0.000330	5179.9832	0.000324								
	93.5	5179.9823	0.000342	5179.9829	0.000330	5179.9832	0.000324								
30	126.5	5179.9752	0.000479	5179.9756	0.000471	5179.9756	0.000471								
	110.0	5179.9748	0.000486	5179.9752	0.000479	5179.9752	0.000479								
	93.5	5179.9748	0.000486	5179.9752	0.000479	5179.9754	0.000475								
20	126.5	5179.9672	0.000633	5179.9672	0.000633	5179.9674	0.000629								
	110.0	5179.9674	0.000629	5179.9674	0.000629	5179.9674	0.000629								
	93.5	5179.9674	0.000629	5179.9672	0.000633	5179.9674	0.000629								
10	126.5	5179.9676	0.000625	5179.9678	0.000622	5179.9674	0.000629								
	110.0	5179.9676	0.000625	5179.9678	0.000622	5179.9672	0.000633								
	93.5	5179.9676	0.000625	5179.9678	0.000622	5179.9672	0.000633								
0	126.5	5179.9735	0.000512	5179.9735	0.000512	5179.9740	0.000502								
	110.0	5179.9733	0.000515	5179.9737	0.000508	5179.9738	0.000506								
	93.5	5179.9733	0.000515	5179.9737	0.000508	5179.9738	0.000506								
-10	126.5	5179.9836	0.000317	5179.9836	0.000317	5179.9840	0.000309								
	110.0	5179.9834	0.000320	5179.9836	0.000317	5179.9838	0.000313								
	93.5	5179.9834	0.000320	5179.9836	0.000317	5179.9840	0.000309								
-20	126.5	5180.0001	-0.000002	5180.0004	-0.000008	5180.0007	0.000014								
	110.0	5180.0001	-0.000002	5180.0006	-0.000012	5180.0009	-0.000017								
	93.5	5180.0001	-0.000002	5180.0004	-0.000008	5180.0008	-0.000015								
-30	126.5	5180.0114	-0.000220	5180.0115	-0.000222	5180.0118	-0.000228								
	110.0	5180.0113	-0.000218	5180.0116	-0.000224	5180.0118	-0.000228								
	93.5	5180.0112	-0.000216	5180.0114	-0.000220	5180.0120	-0.000232								



4.8 BAND EDGES MEASUREMENT

4.8.1 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.

4.8.2 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 with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

4.8.3 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.8.4 TEST RESULTS

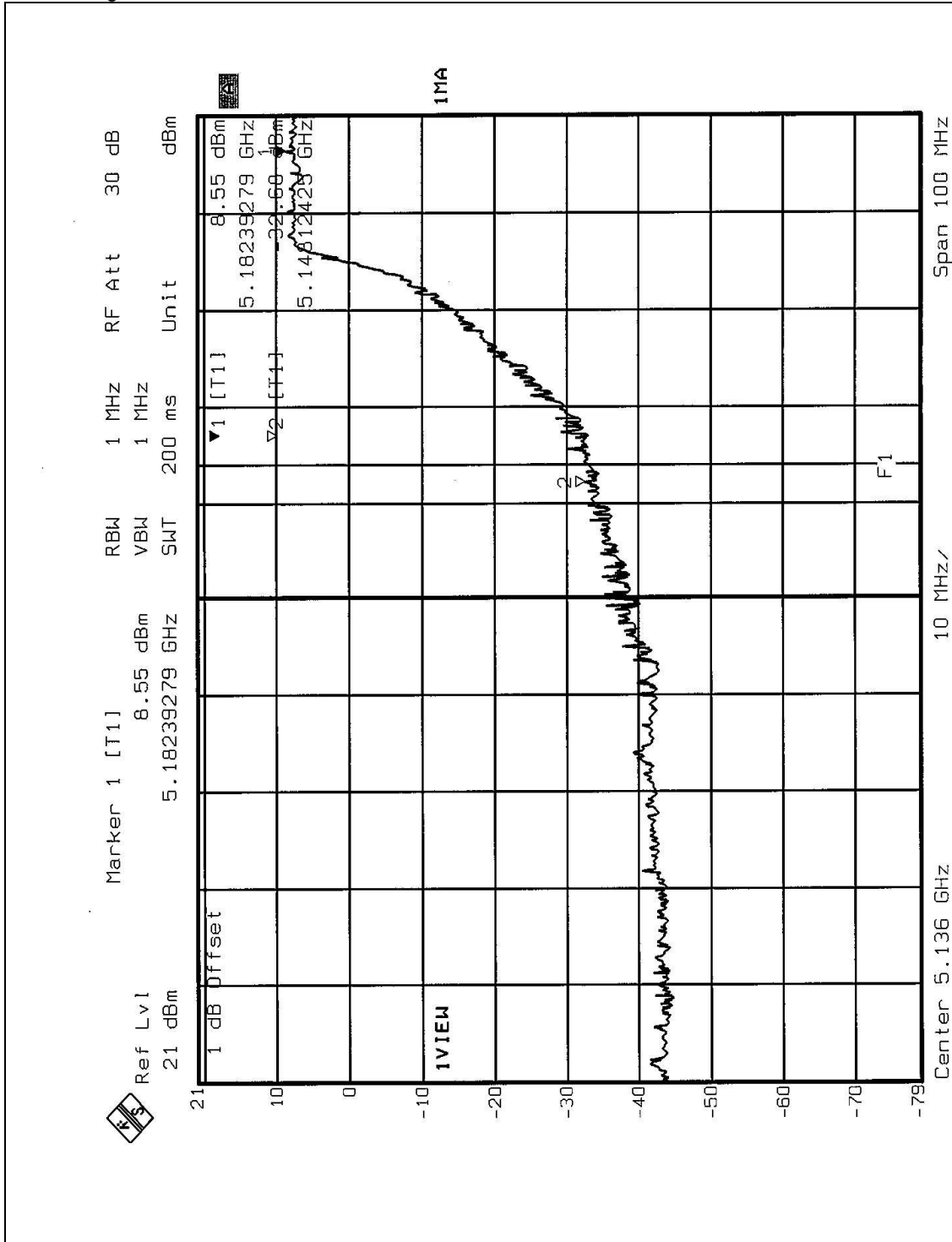
For signals in the restricted bands above and below the 5.15 to 5.35 GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak filed strength of the intentional signal made on the OATS to calculate the field strength of the unintentional signals.

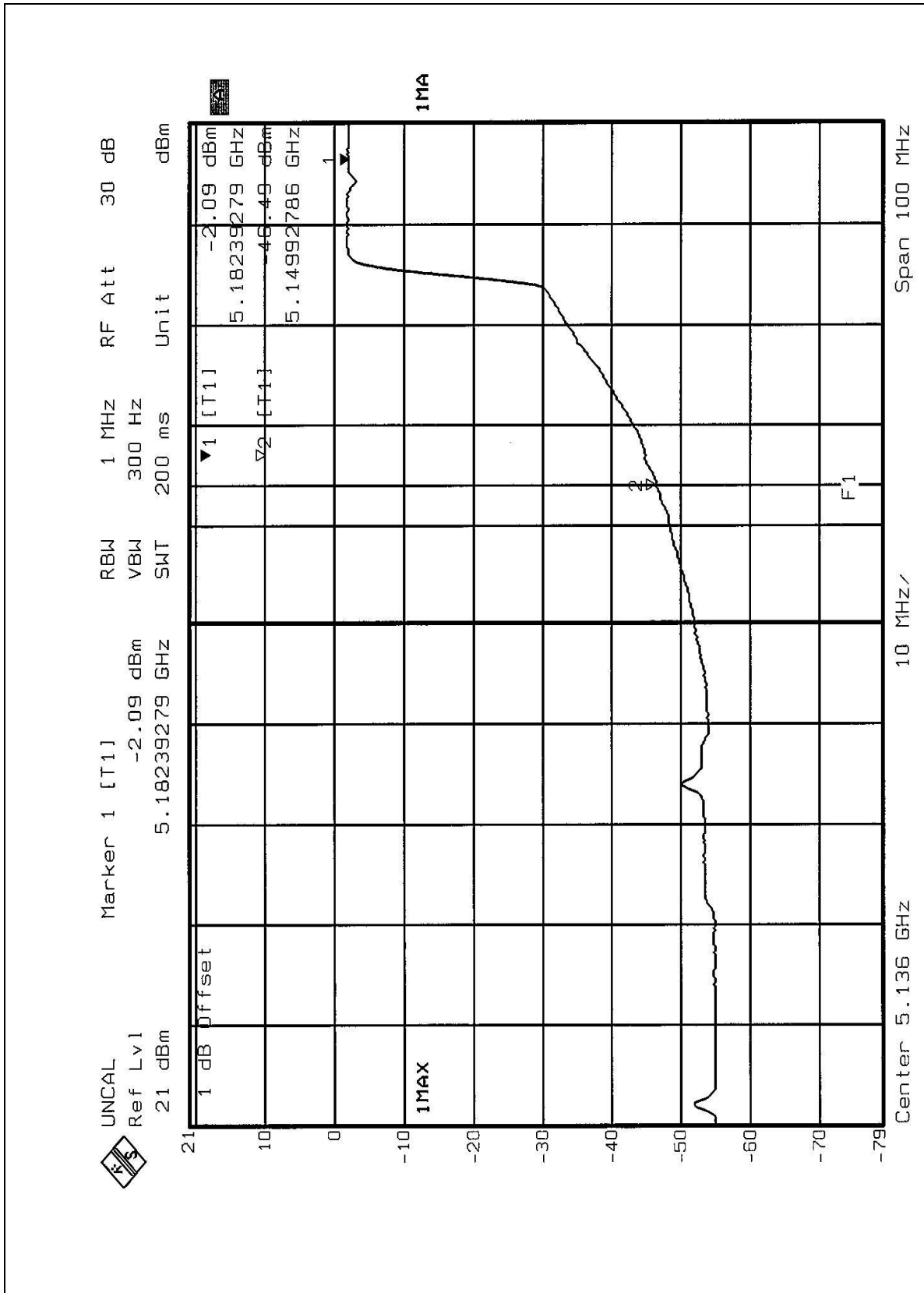
The spectrum plots (Peak RBW=VBW=1MHz; Average RBW=1MHz, VBW=300Hz) are attached on the following 8 pages.



Normal Mode : Channel 1 (5180 MHz)

The band edge emission plot on the following 2 pages shows 41.23dBc (Peak) / 44.4dBc (Average) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 (normal mode) is 93.2dBuV/m, so the maximum field strength in restrict band is $93.2 - 44.4 = 48.8$ dBuV/m which is under 54 dBuV/m limit.

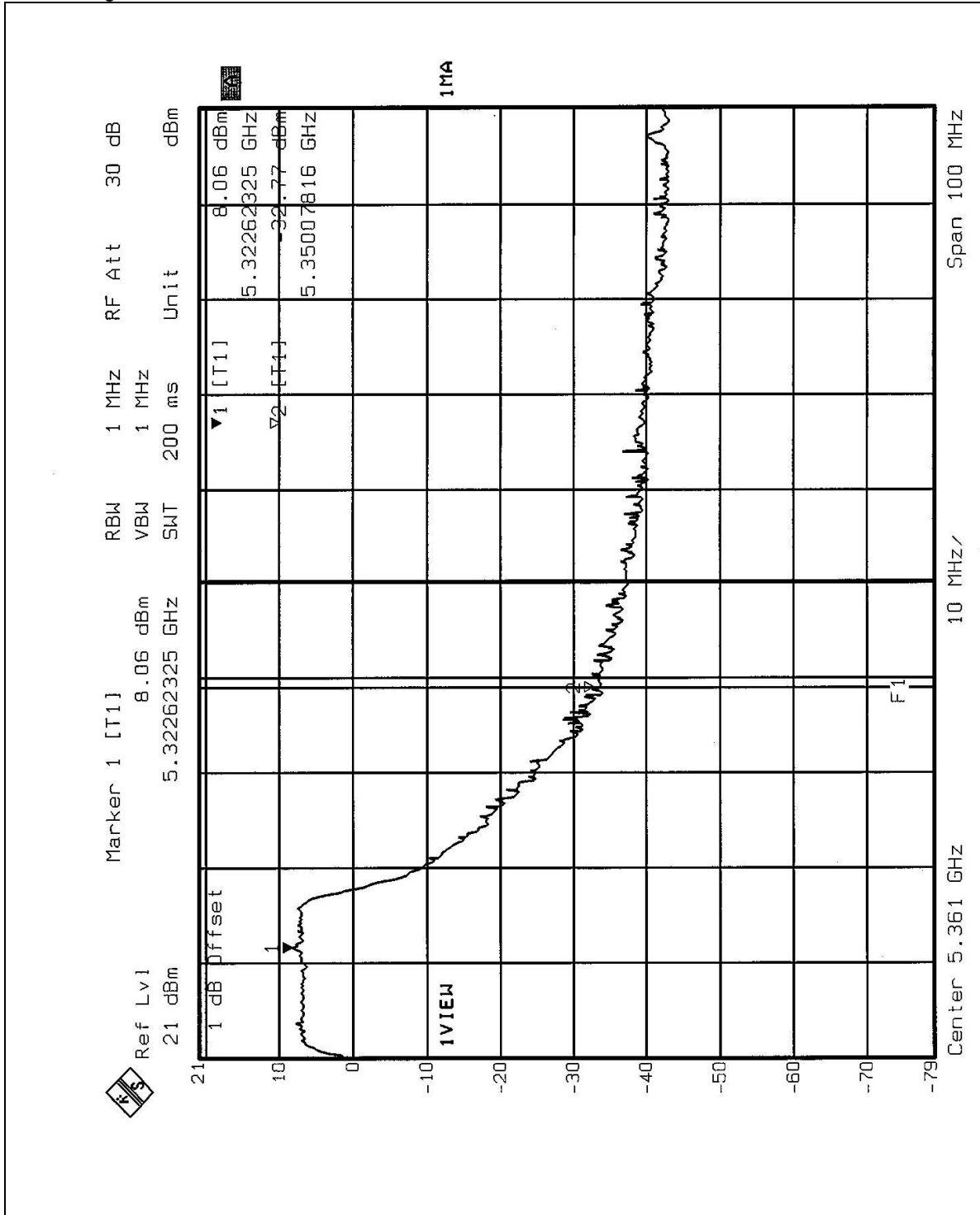


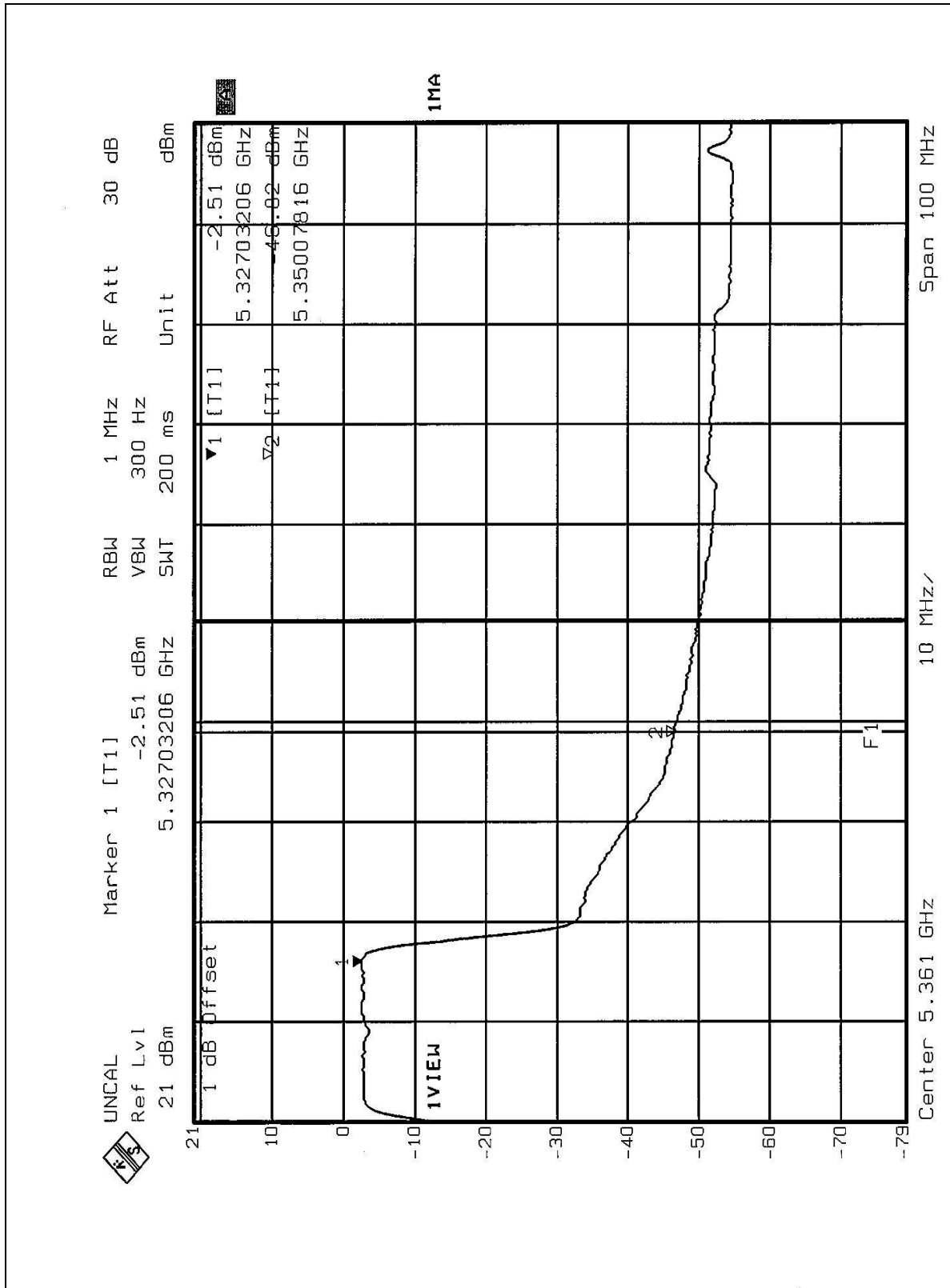




Normal Mode : Channel 8 (5320 MHz)

The band edge emission plot on the following 2 pages shows 40.83dBc (Peak) / 44.3dBc (Average) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 (normal mode) is 95.4dBuV/m, so the maximum field strength in restrict band is $95.4 - 44.3 = 51.1$ dBuV/m which is under 54 dBuV/m limit.

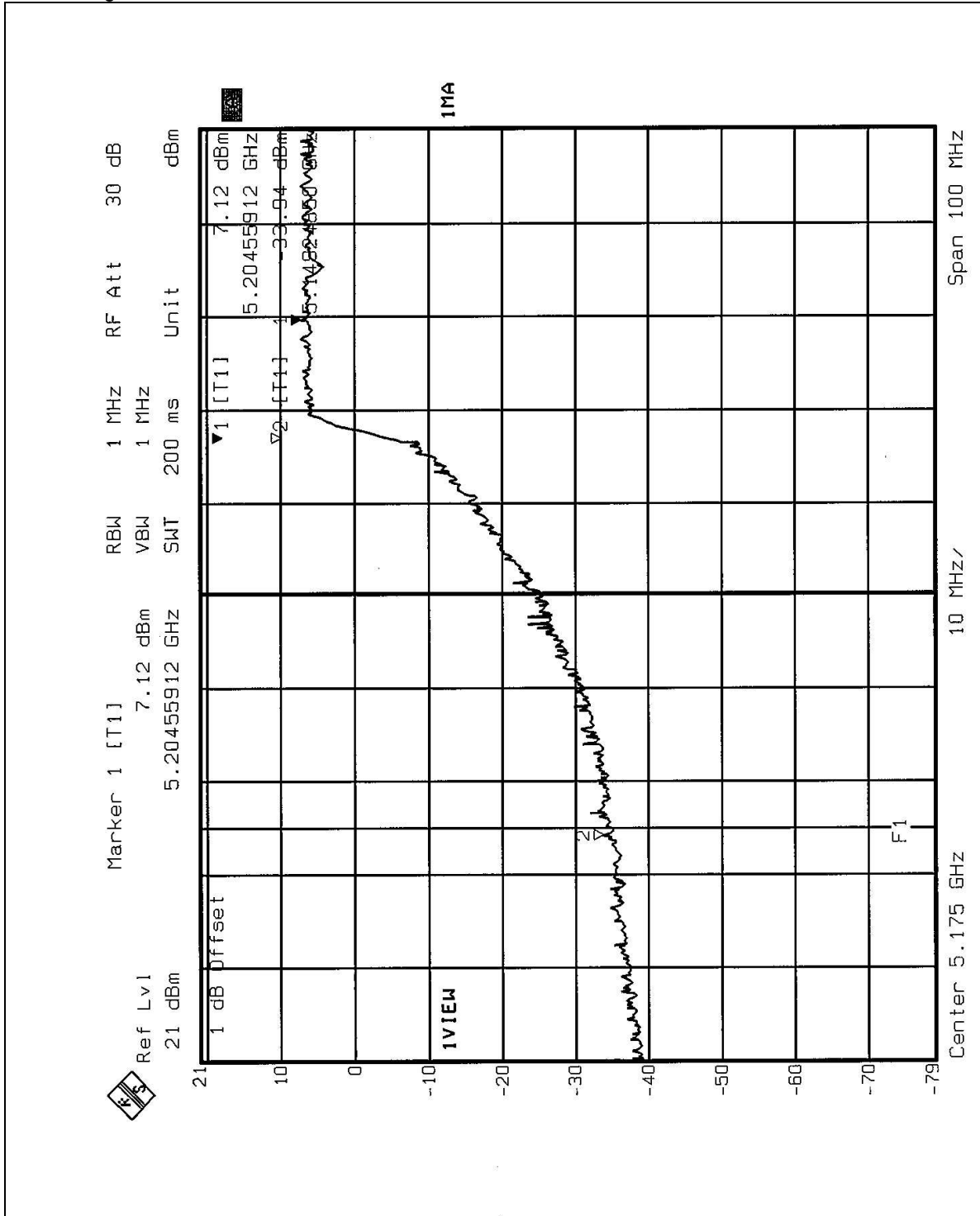


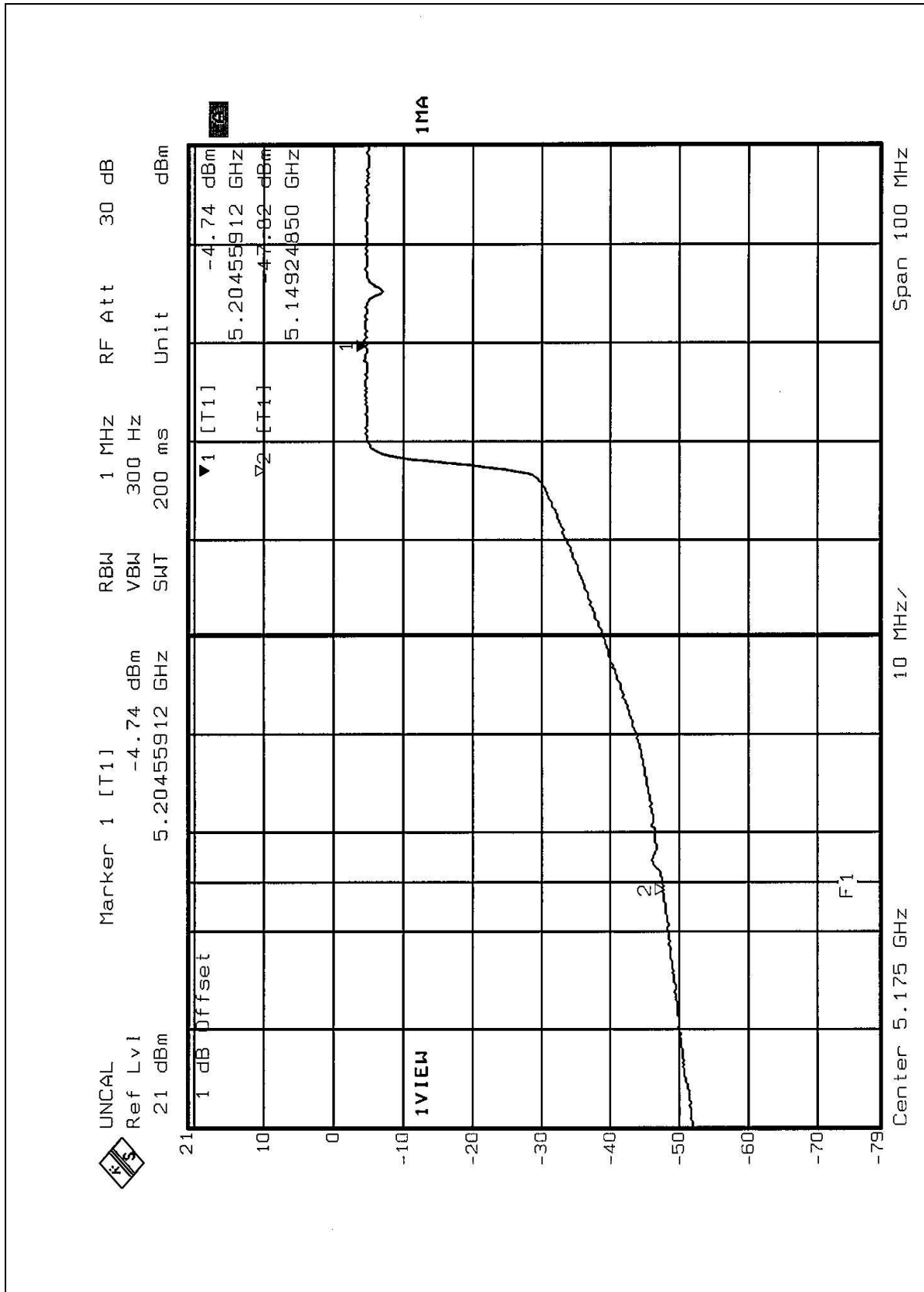




Turbo Mode : Channel 1 (5210 MHz)

The band edge emission plot on the following 2 pages shows 41.06dBc (Peak) / 43.1dBc (Average) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 (normal mode) is 92.4dBuV/m, so the maximum field strength in restrict band is $92.4 - 43.1 = 49.3$ dBuV/m which is under 54 dBuV/m limit.

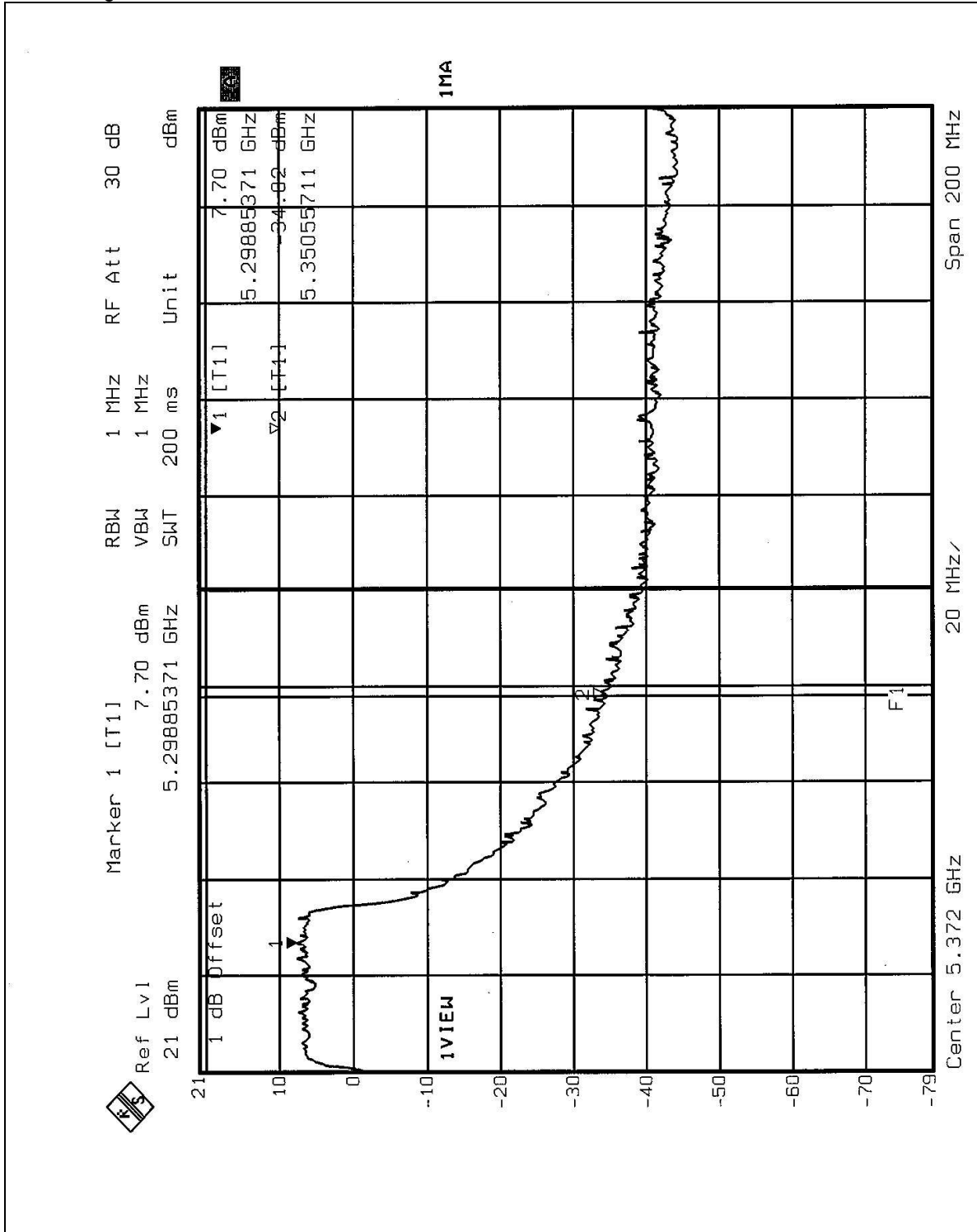


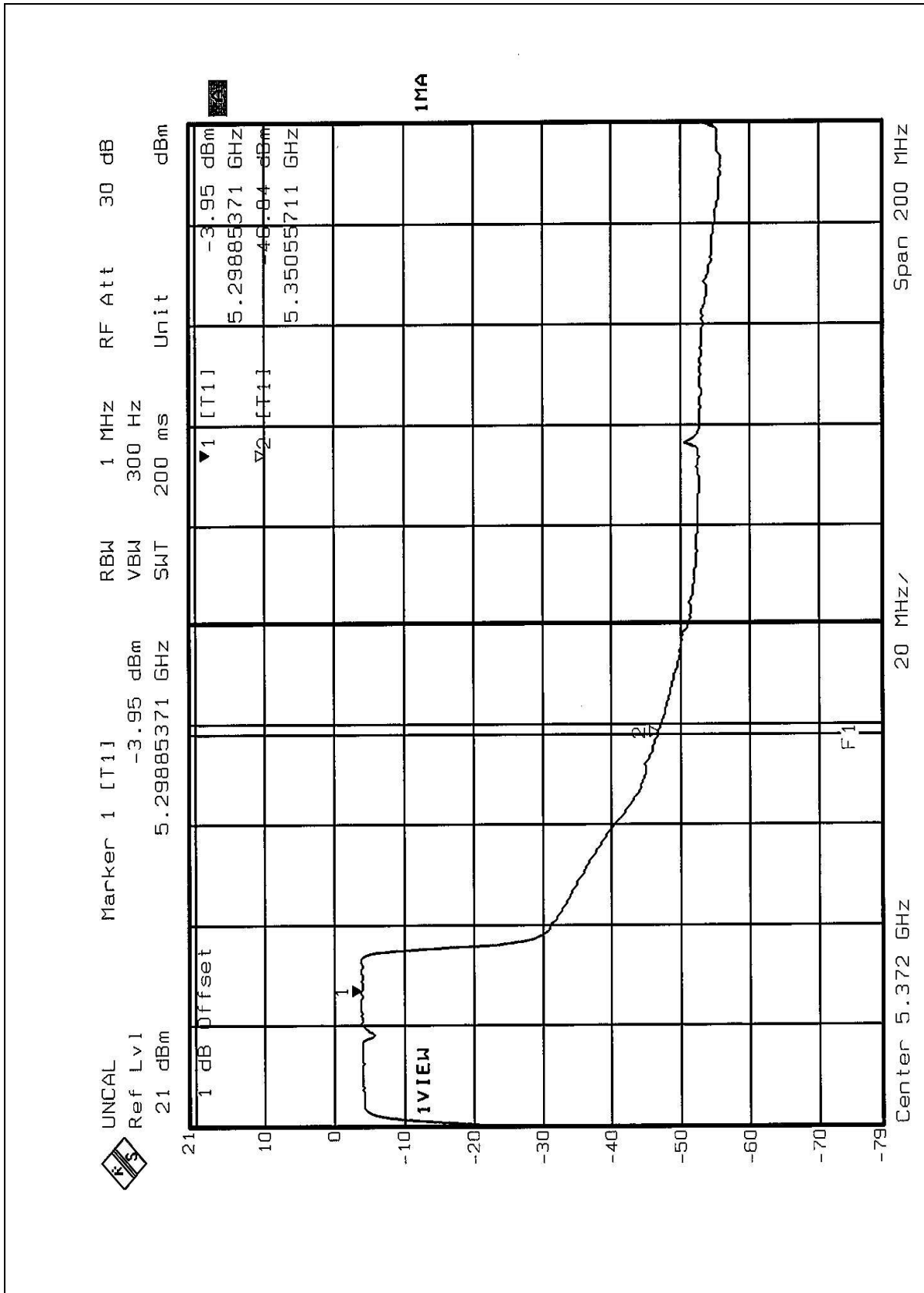




Turbo Mode : Channel 3 (5290 MHz)

The band edge emission plot on the following 2 pages shows 41.7dBc (Peak) / 42.9dBc (Average) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 (normal mode) is 92.0dBuV/m, so the maximum field strength in restrict band is 92.0-42.9=49.1 dBuV/m which is under 54 dBuV/m limit.







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 15.407(a), 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.

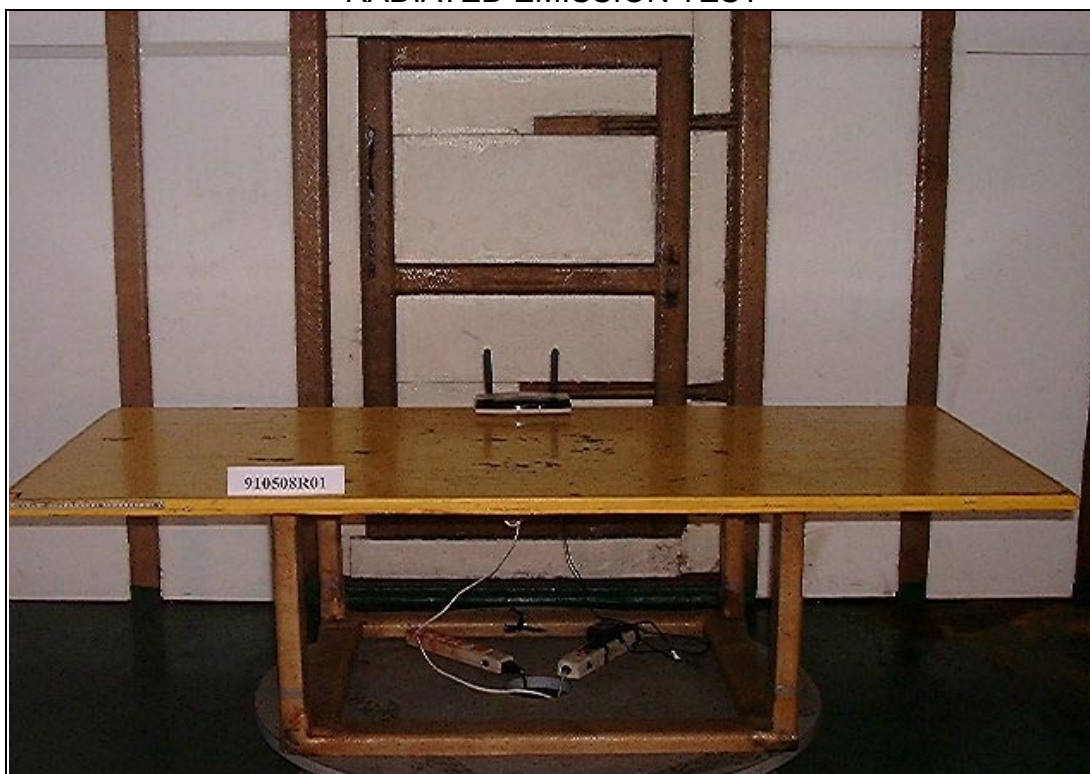
4.9.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Dipole Antenna. The antenna connector for the device is MMCX Antenna. And the maximum Gain of this antenna is only 3.5dBi.

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.