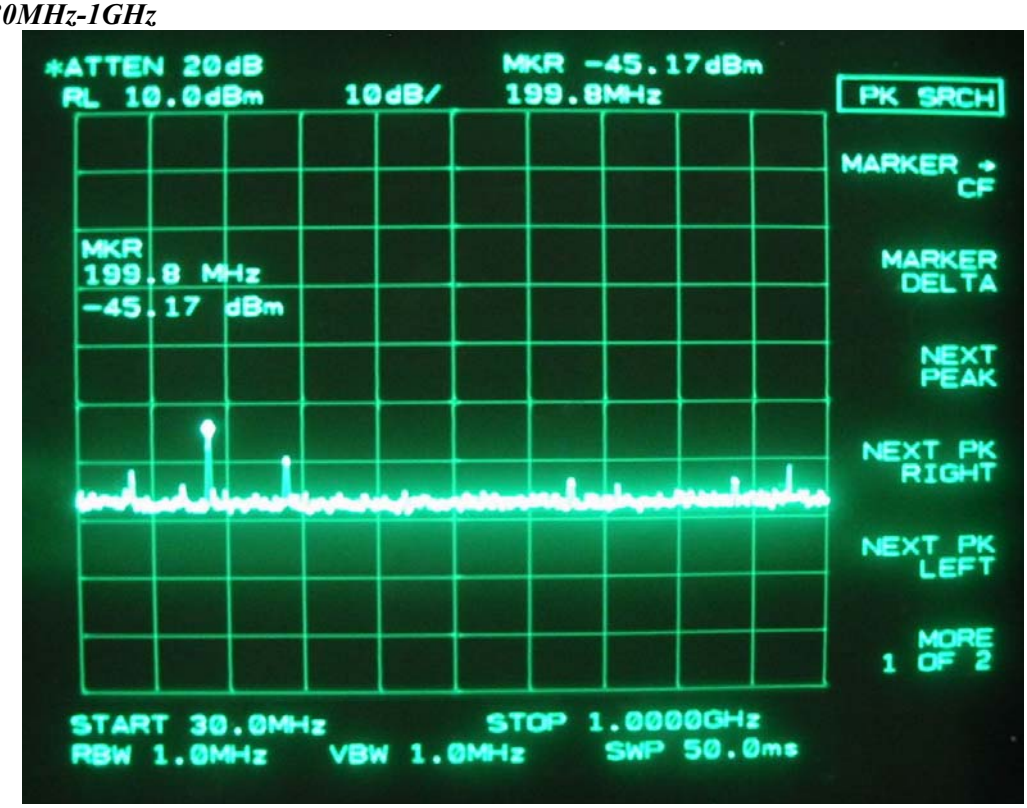
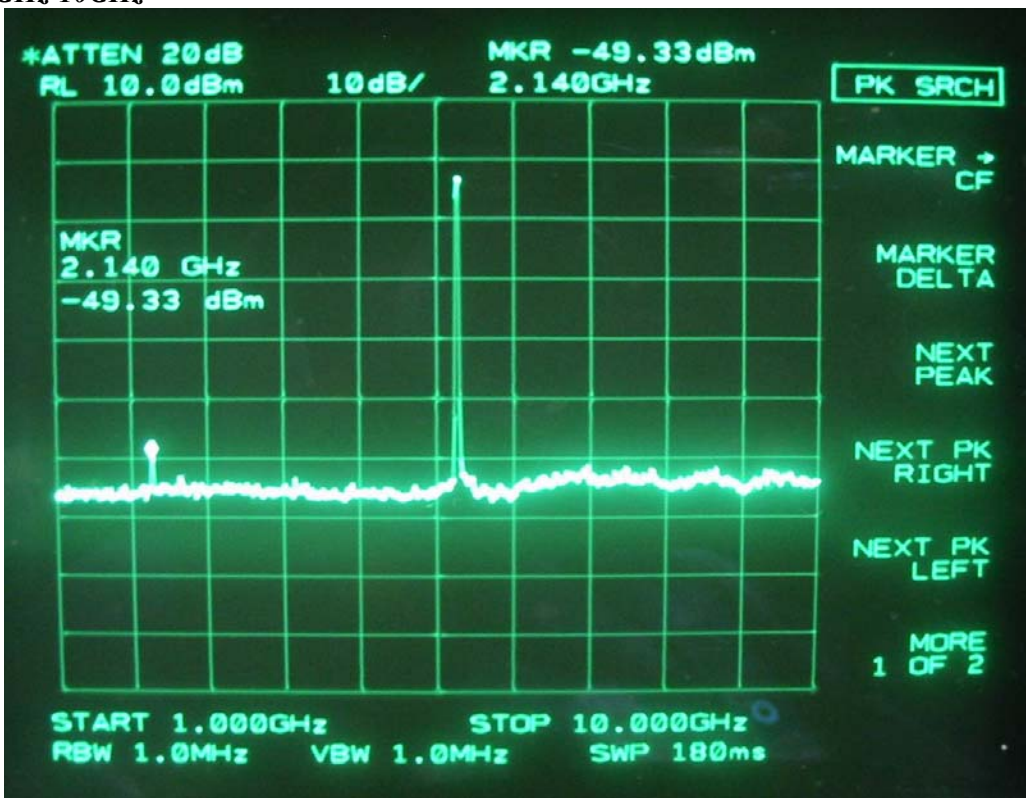
IEEE 802.11a, 5745MHz (Antenna#1)

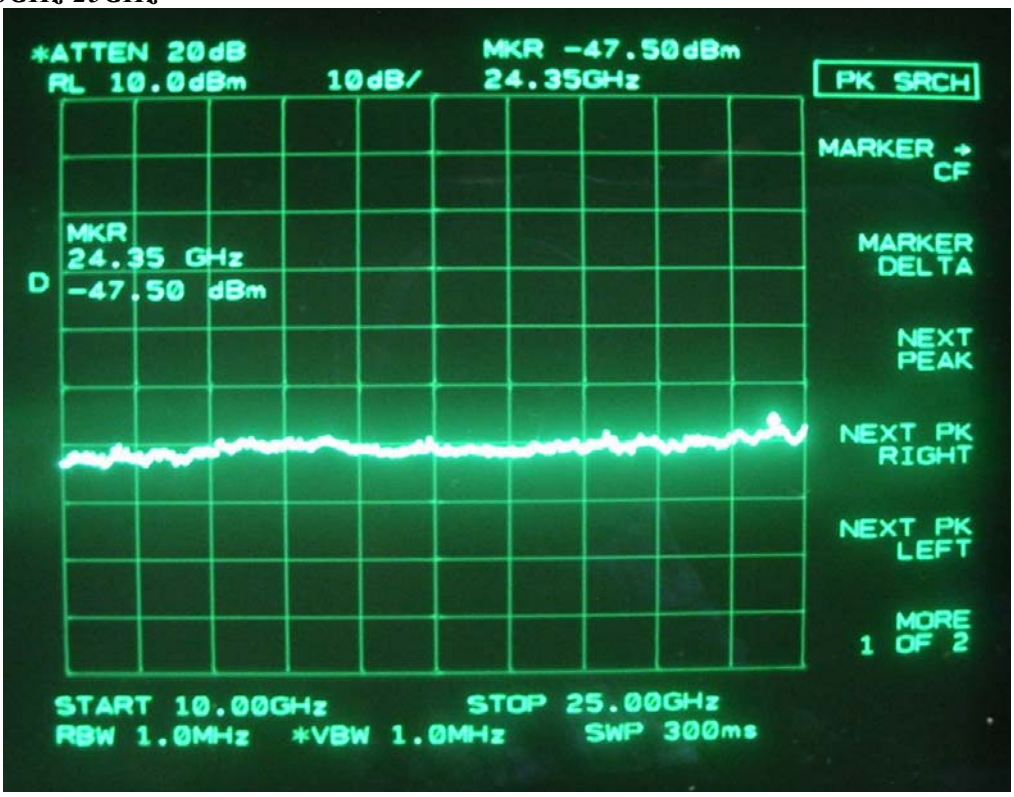
30MHz-1GHz



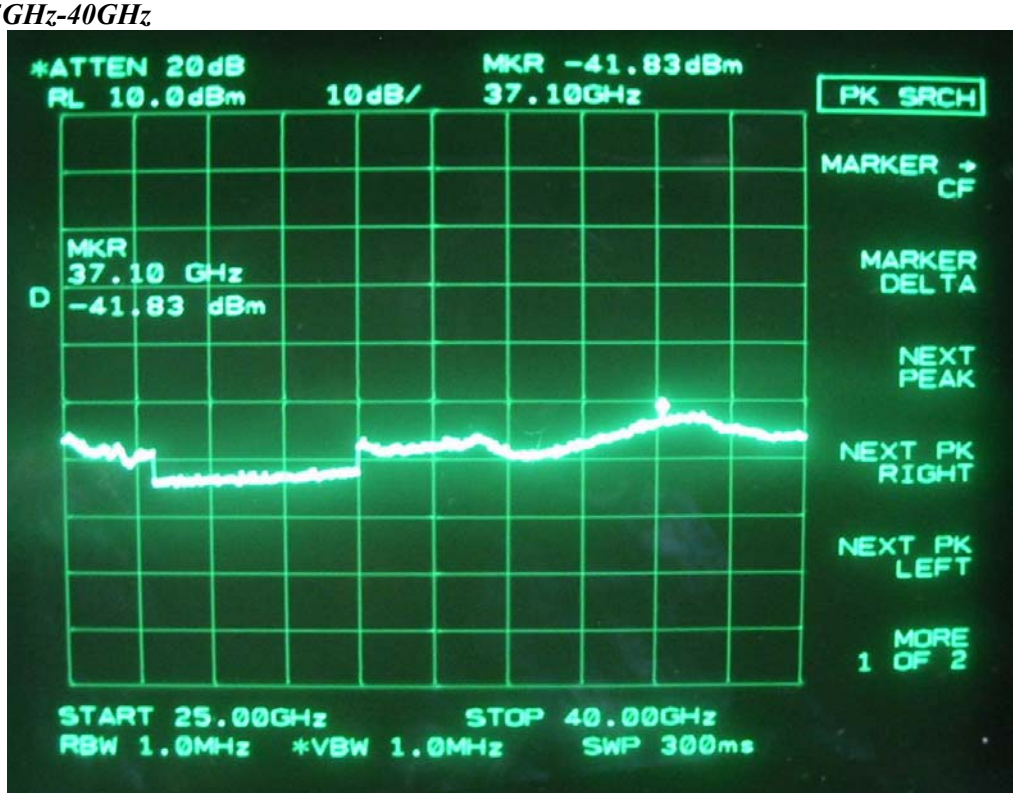
1GHz-10GHz



10GHz-25GHz

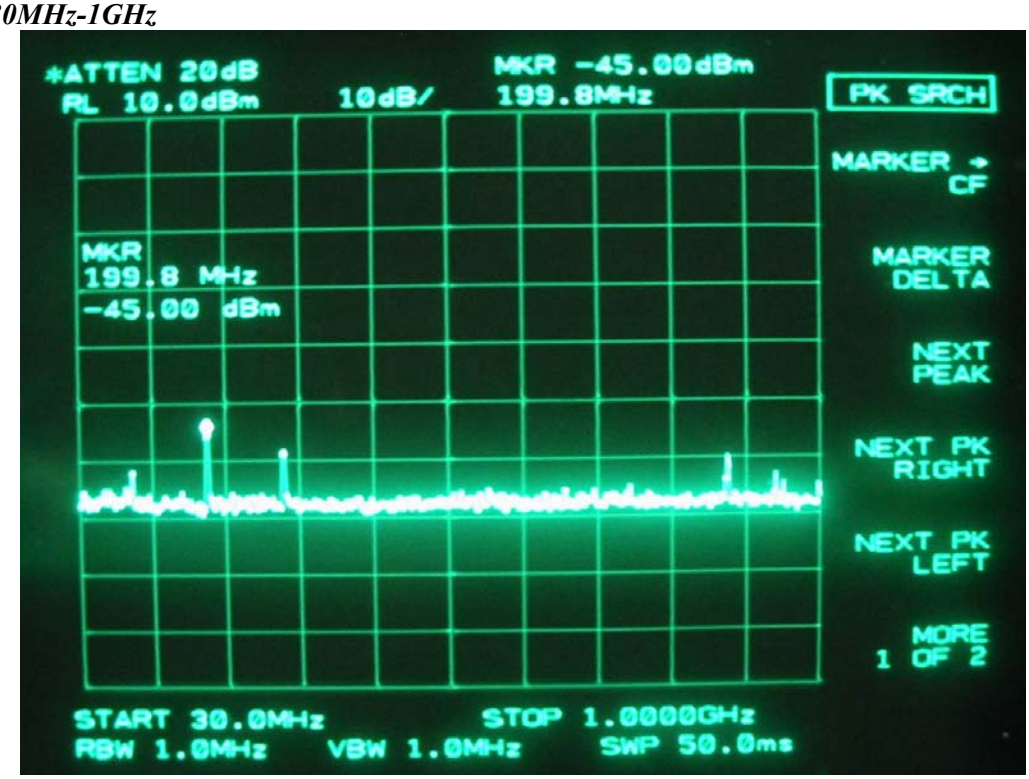


25GHz-40GHz

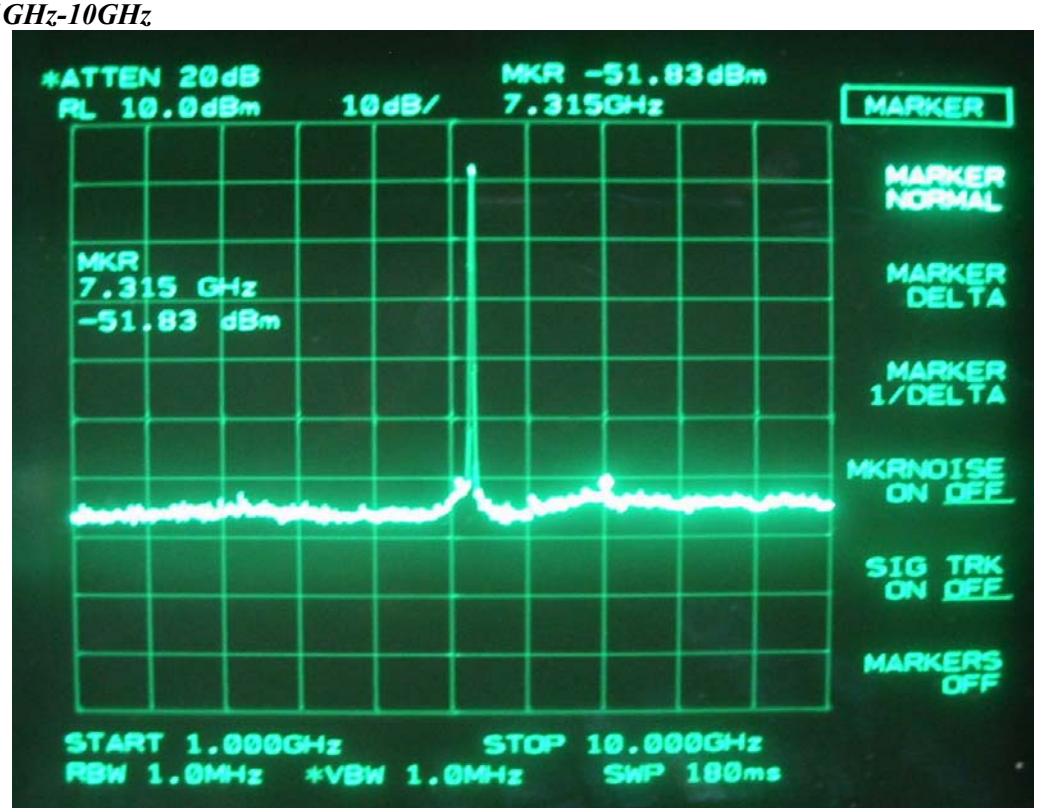


IEEE 802.11a, 5745MHz (Antenna#2)

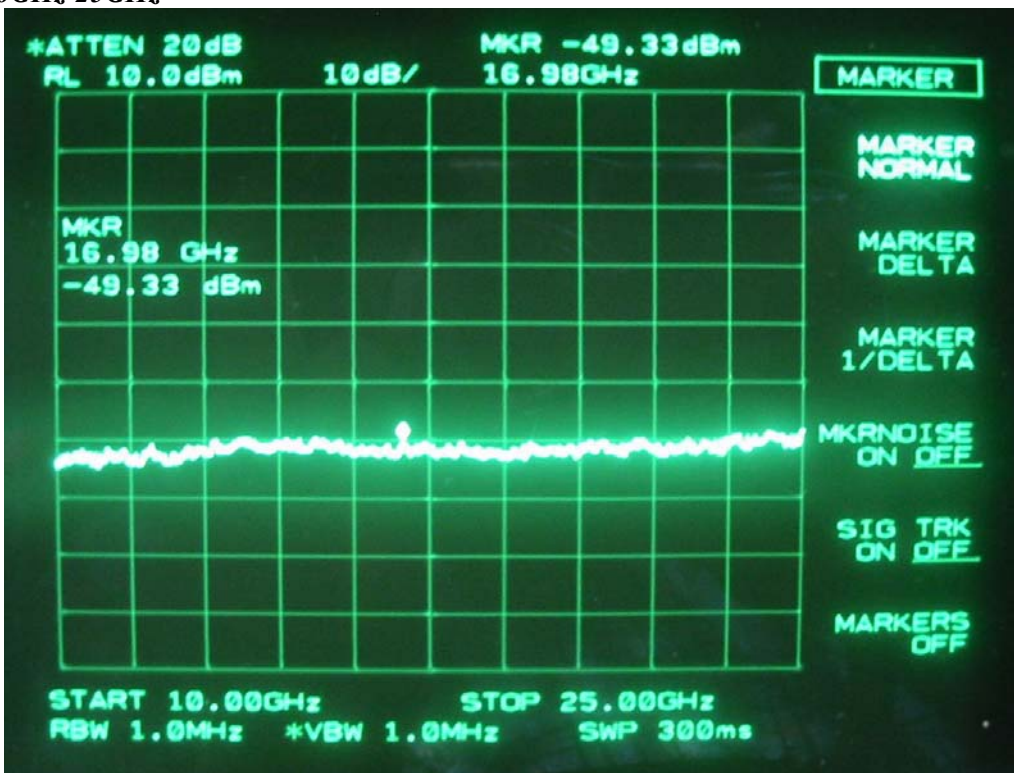
30MHz-1GHz



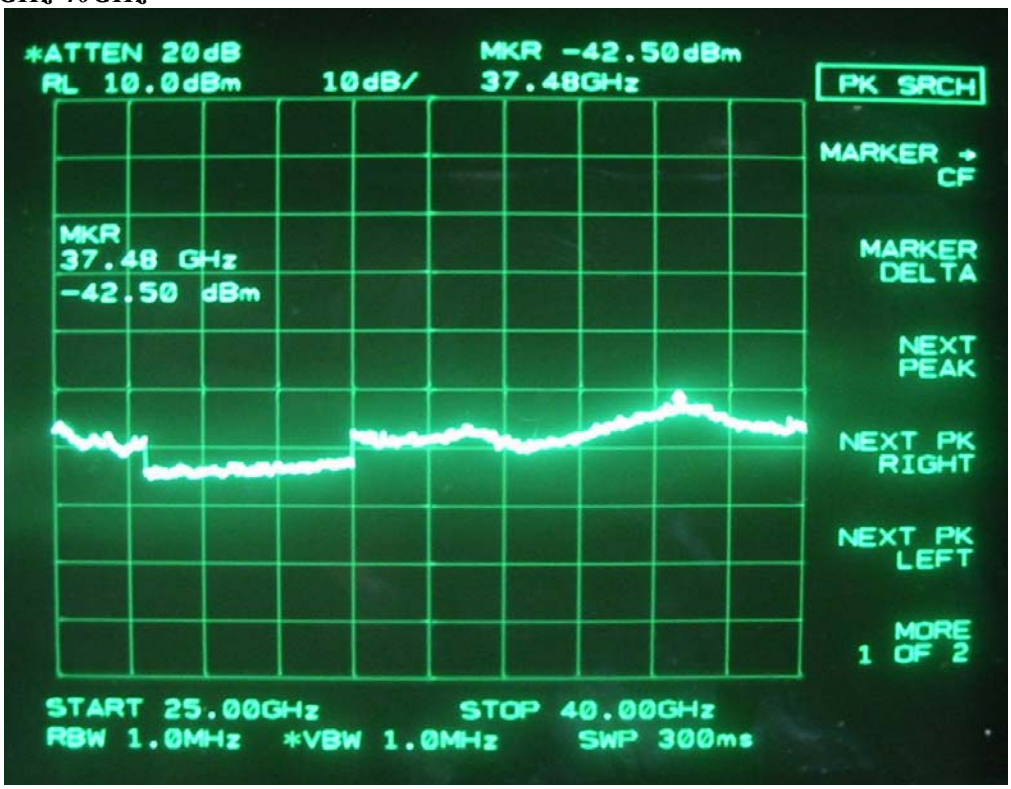
1GHz-10GHz



10GHz-25GHz

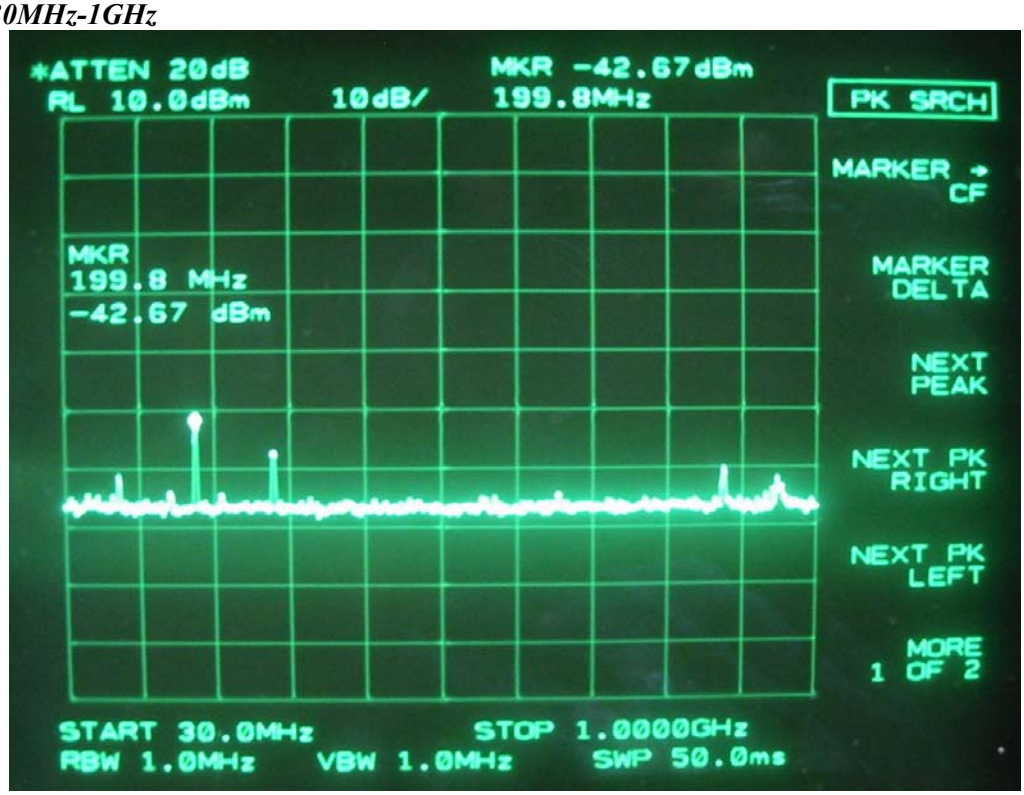


25GHz-40GHz

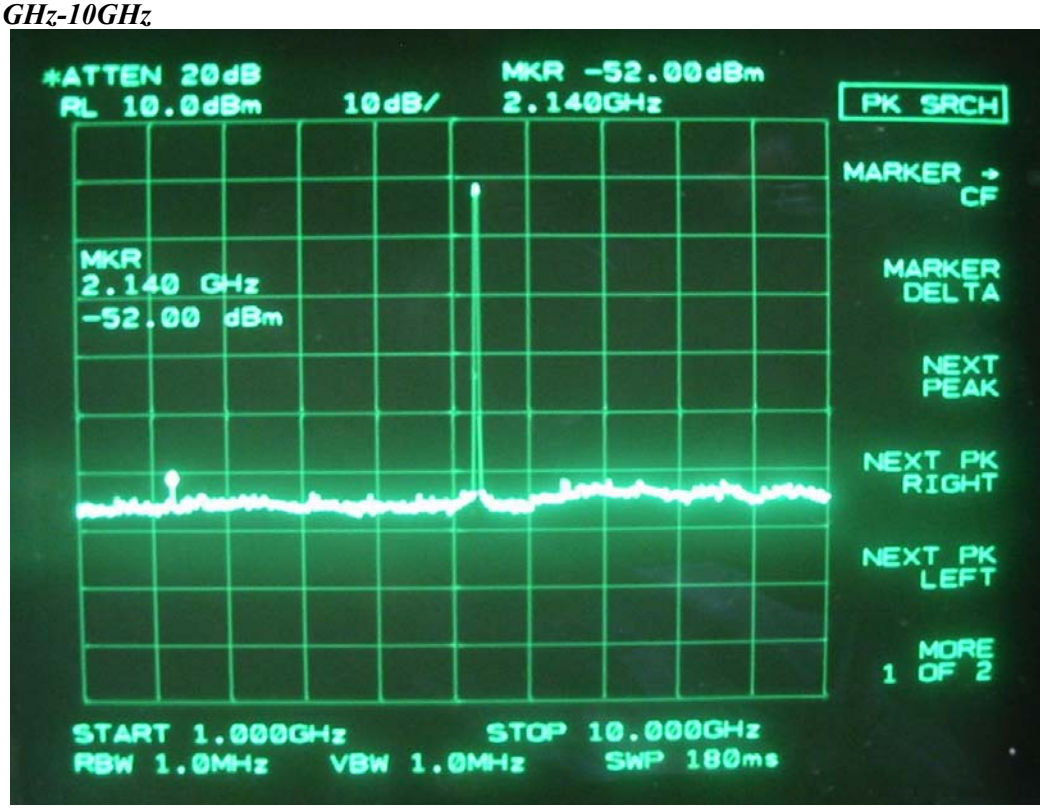


IEEE 802.11a, 5785MHz (Antenna#1)

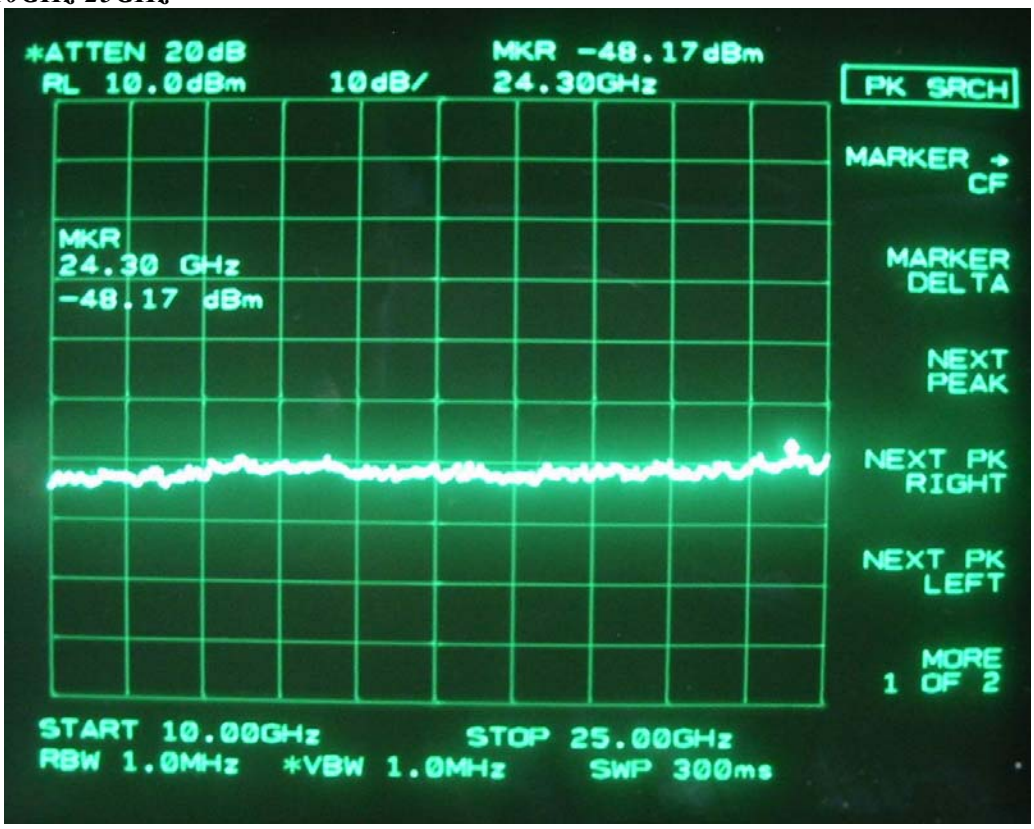
30MHz-1GHz



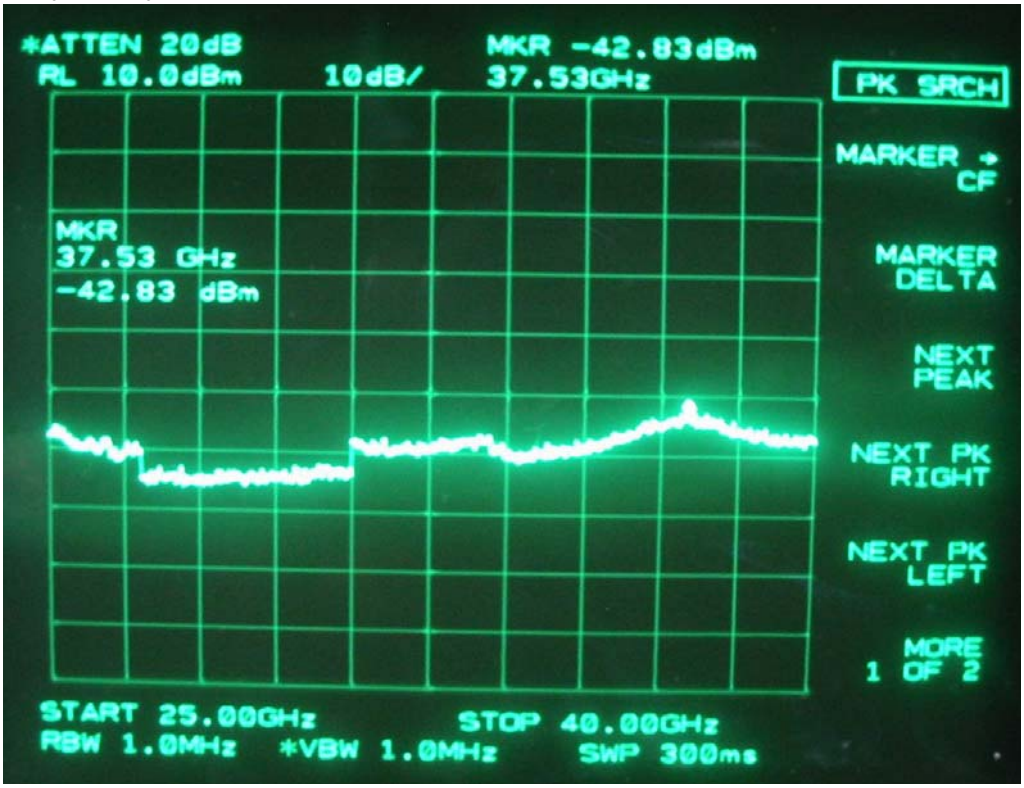
1GHz-10GHz



10GHz-25GHz

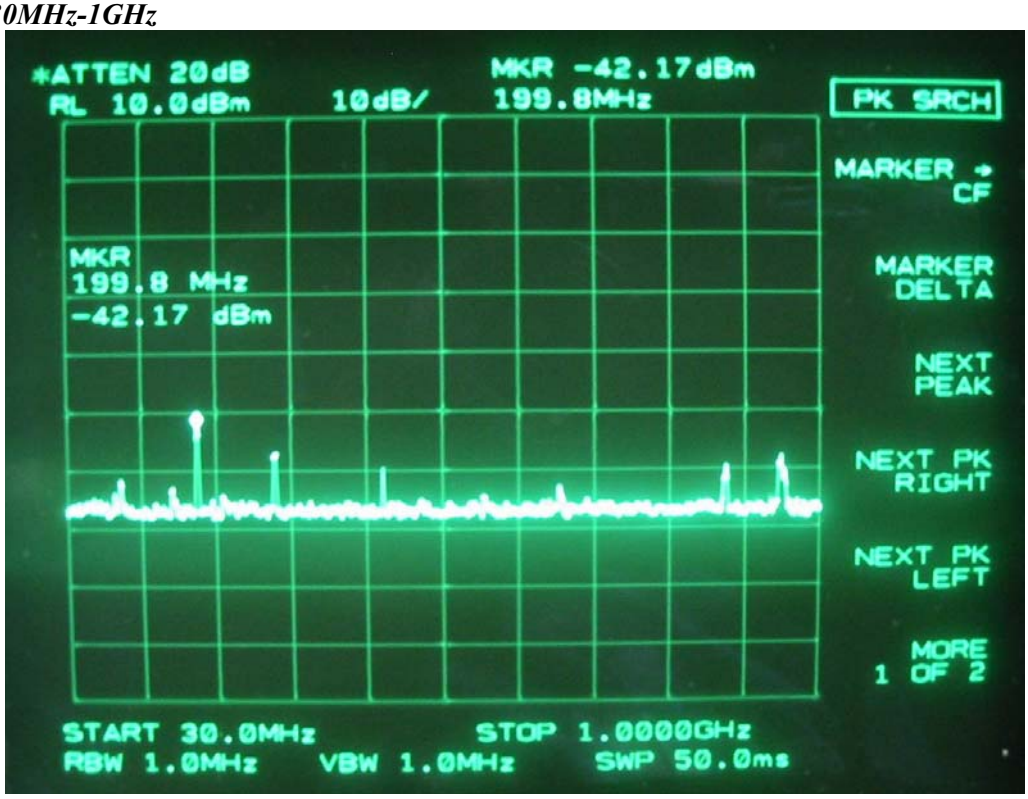


25GHz-40GHz

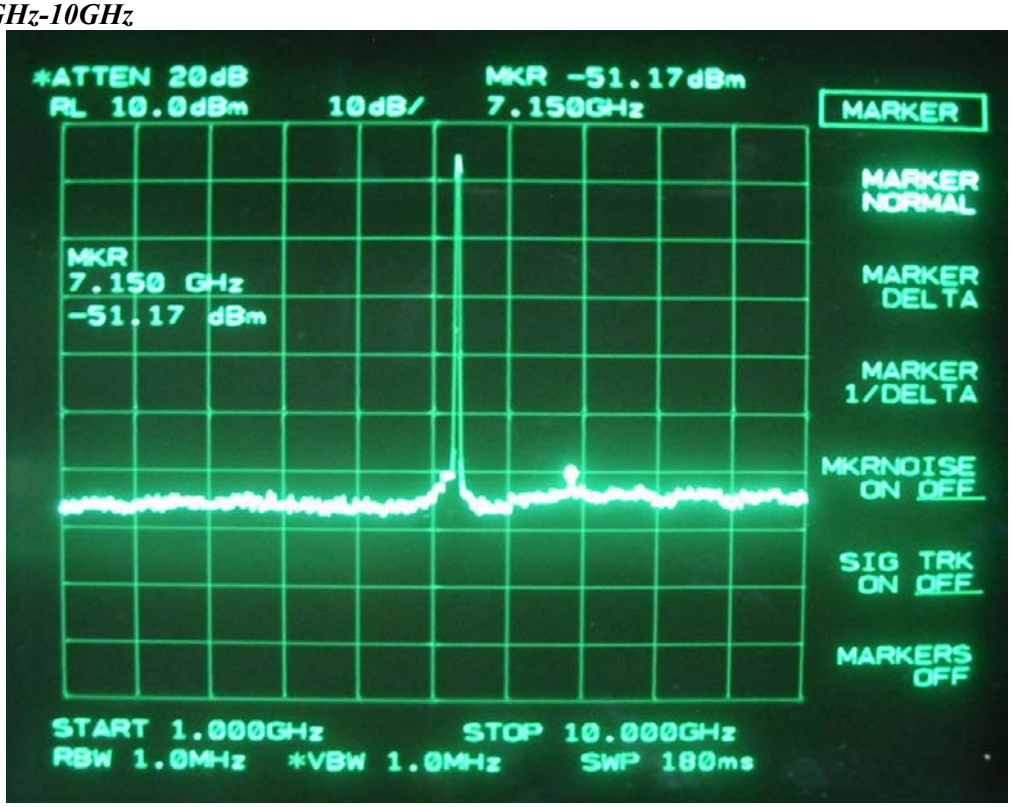


IEEE 802.11a, 5785MHz (Antenna#2)

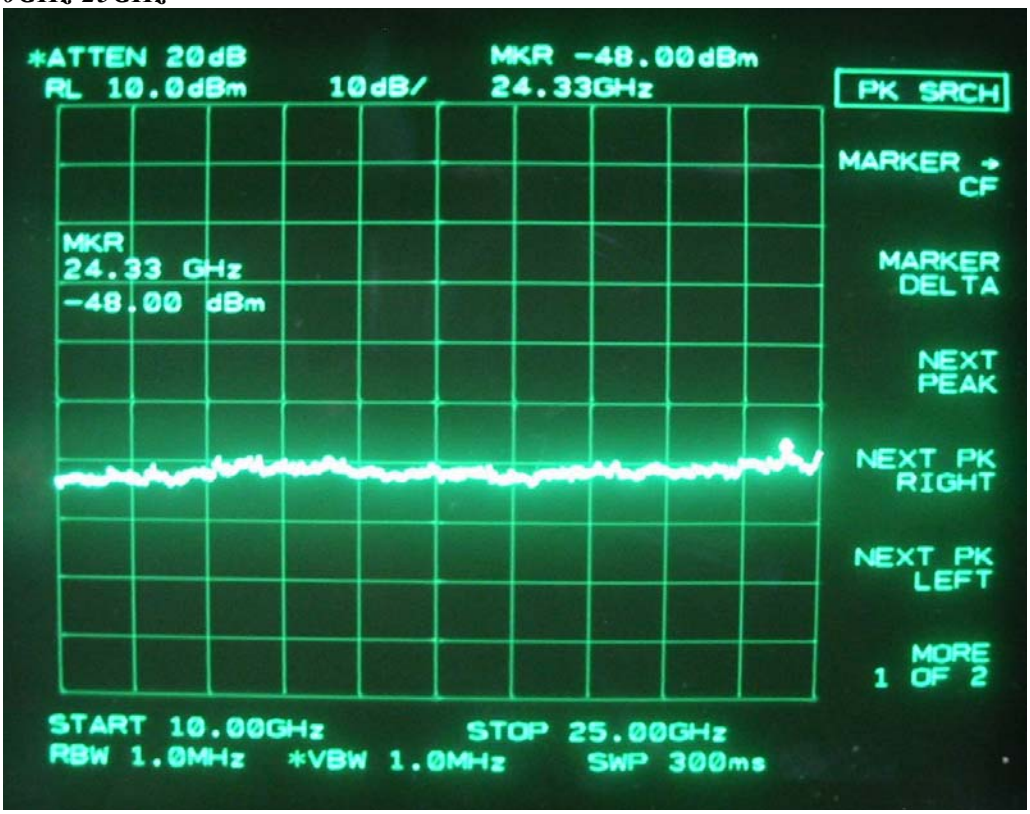
30MHz-1GHz



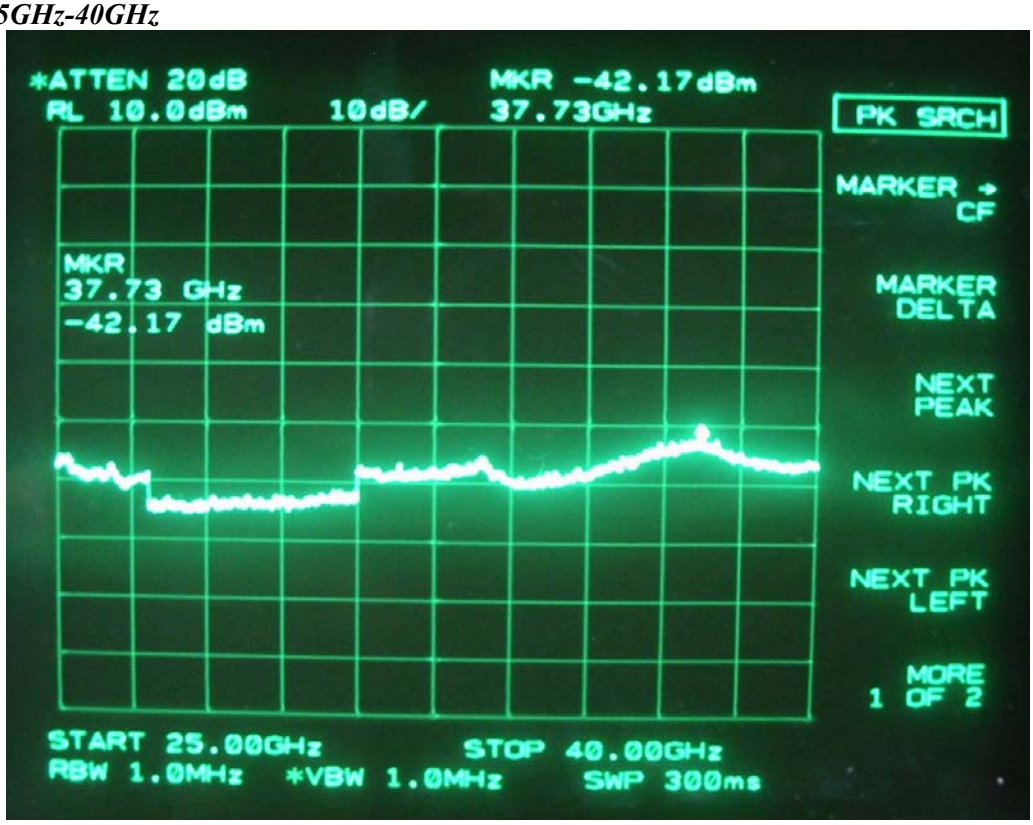
1GHz-10GHz



10GHz-25GHz

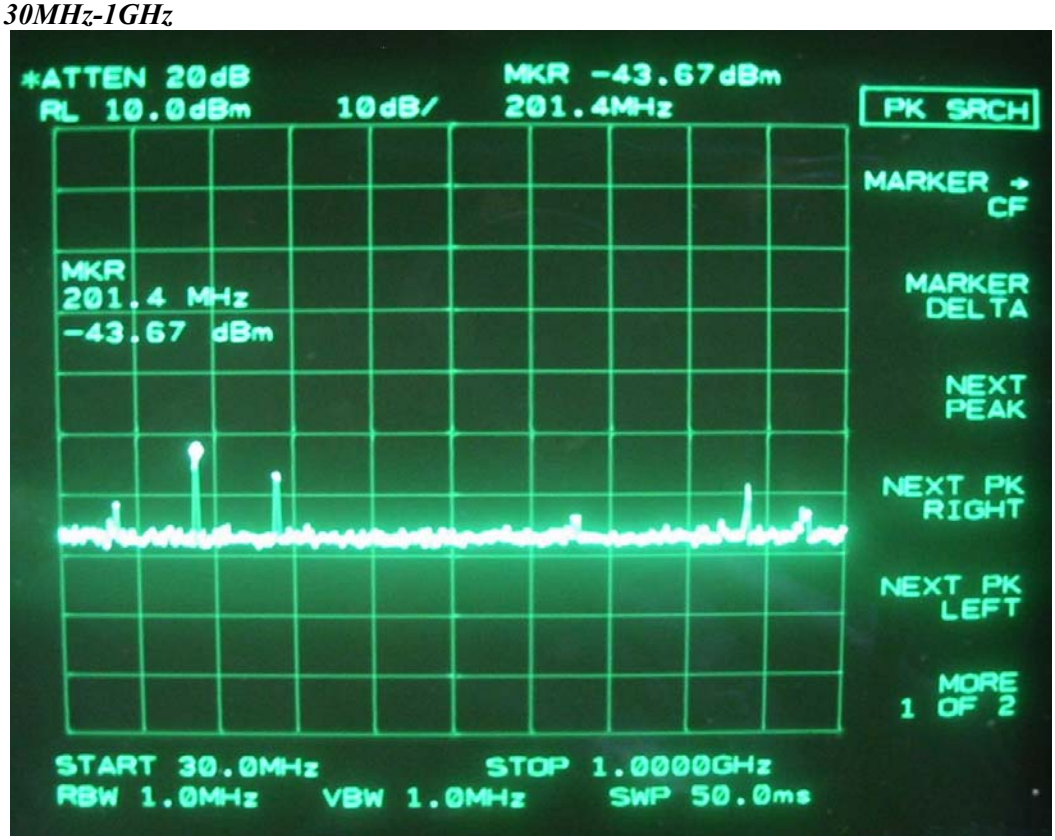


25GHz-40GHz

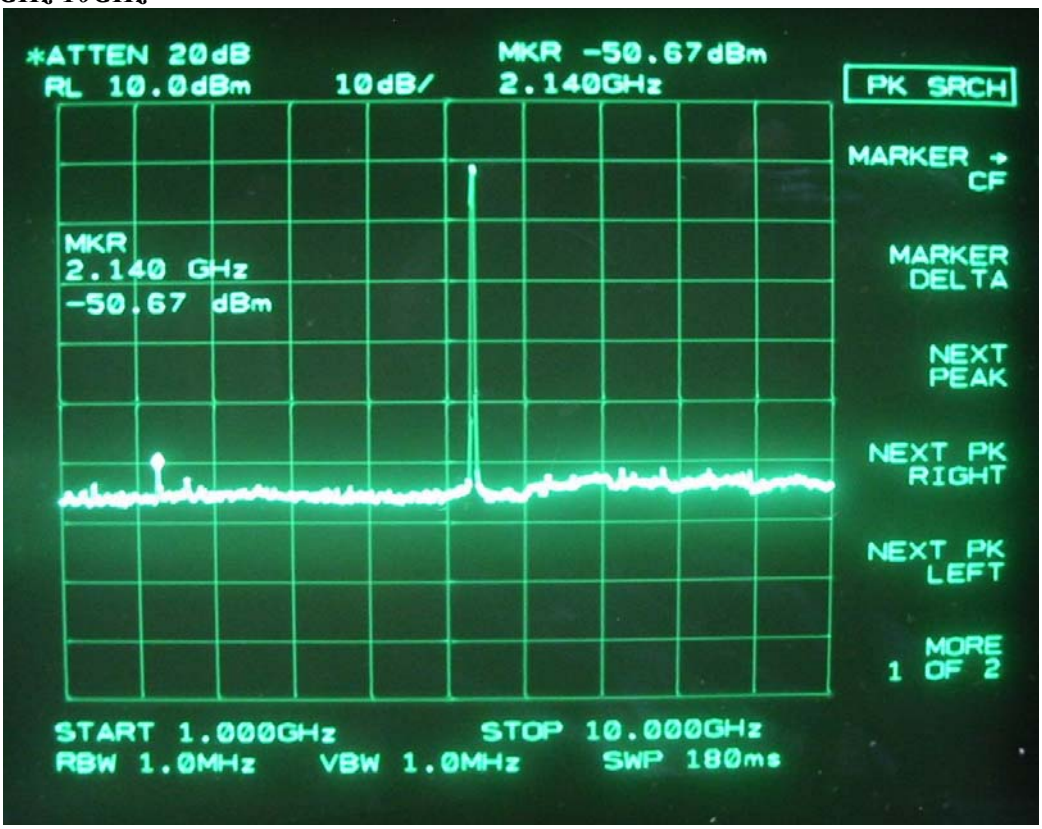


IEEE 802.11a, 5805MHz (Antenna#1)

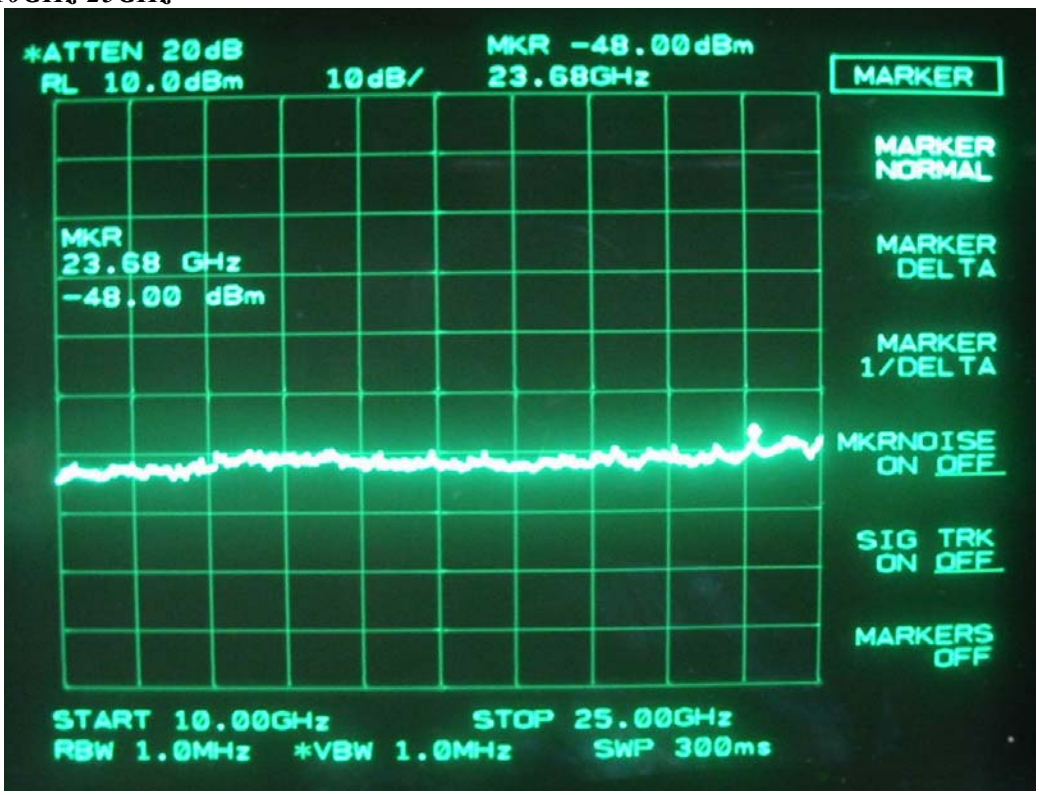
30MHz-1GHz



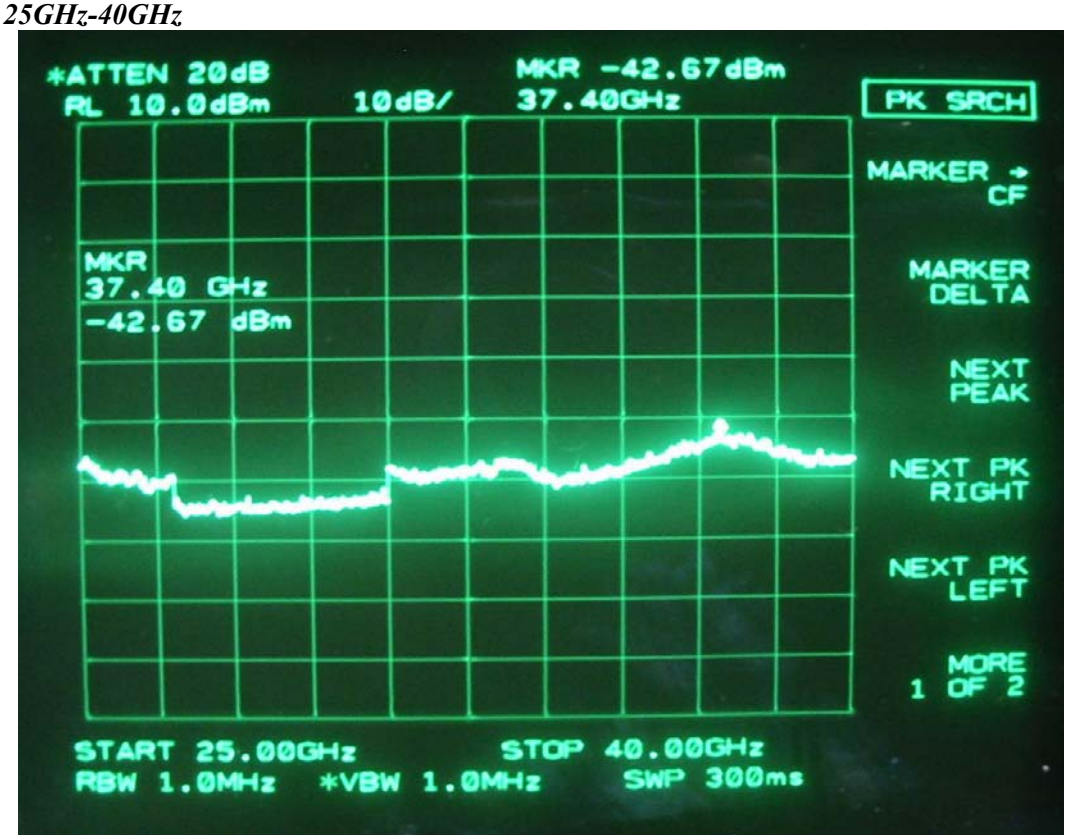
1GHz-10GHz



10GHz-25GHz

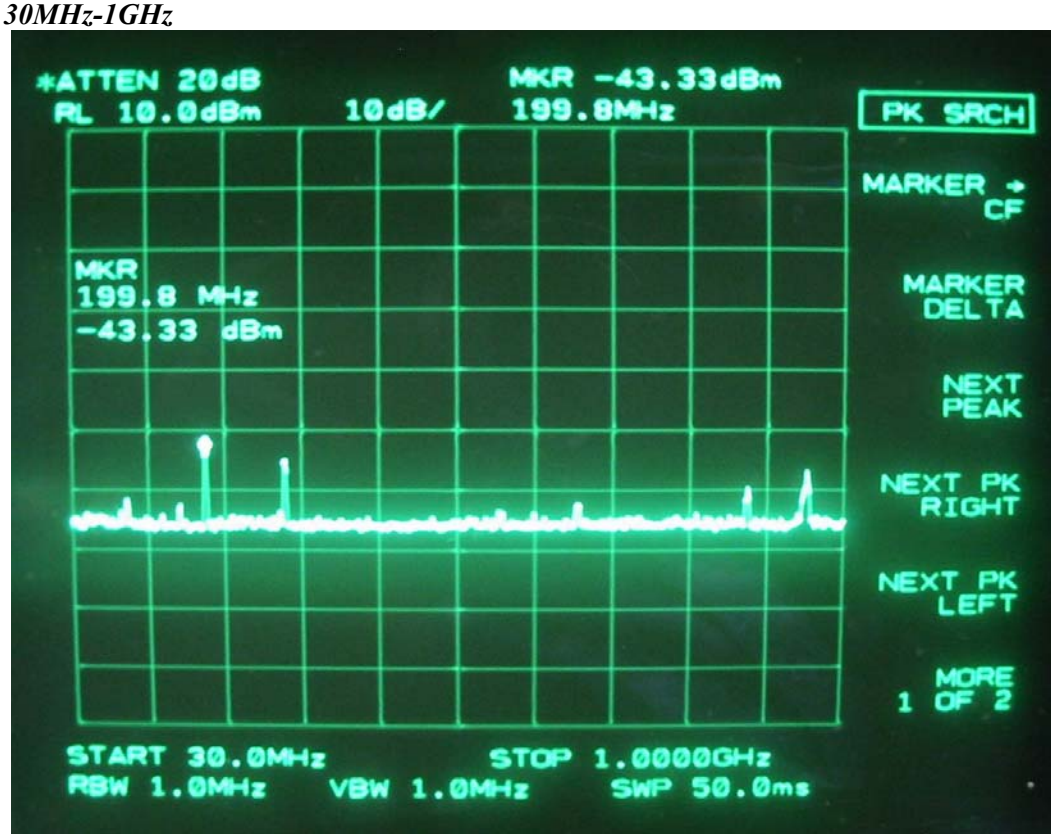


25GHz-40GHz

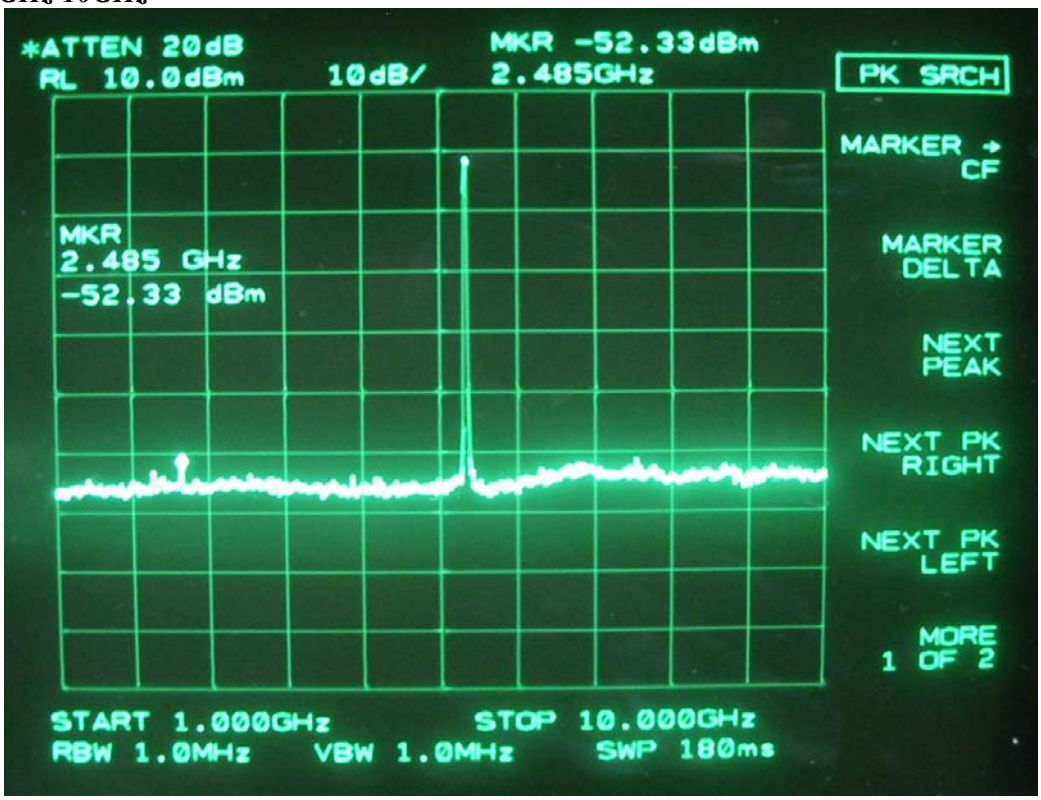


IEEE 802.11a, 5805MHz (Antenna#2)

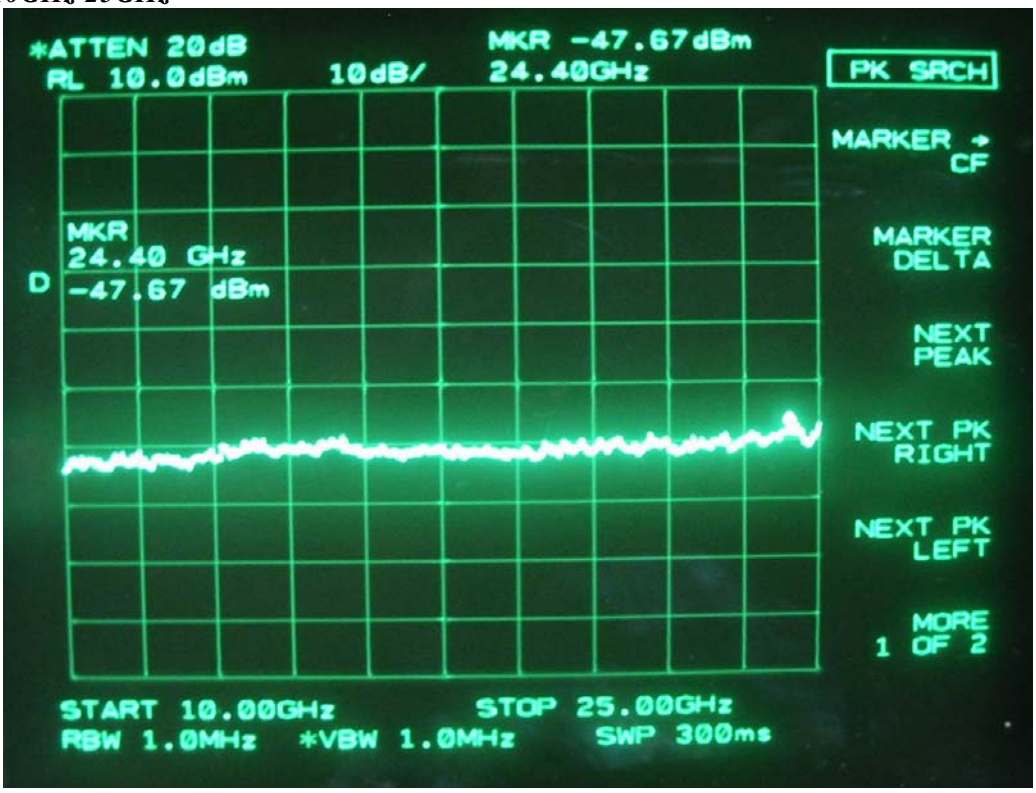
30MHz-1GHz



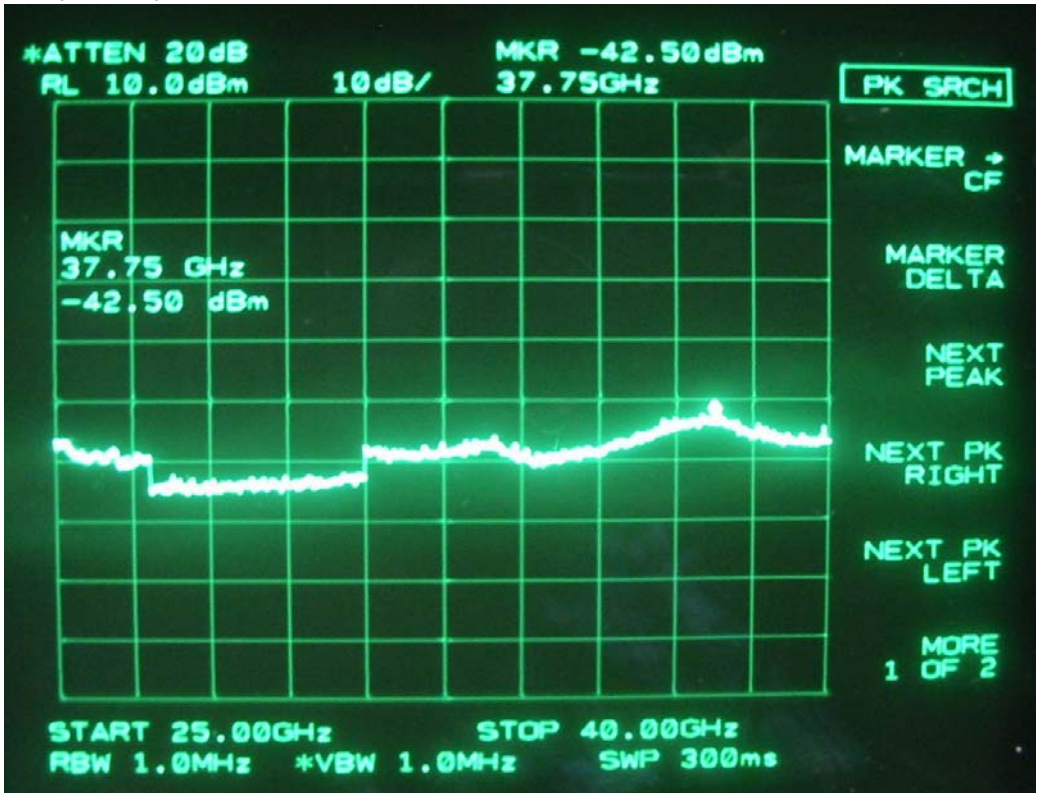
1GHz-10GHz



10GHz-25GHz

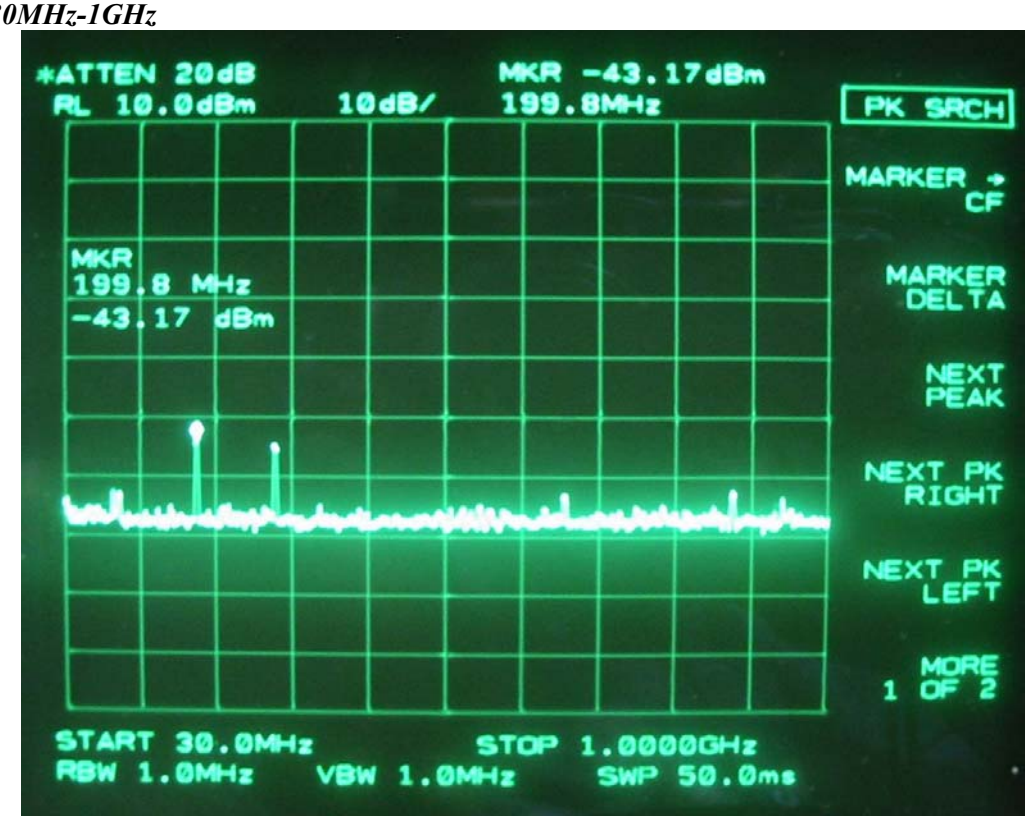


25GHz-40GHz

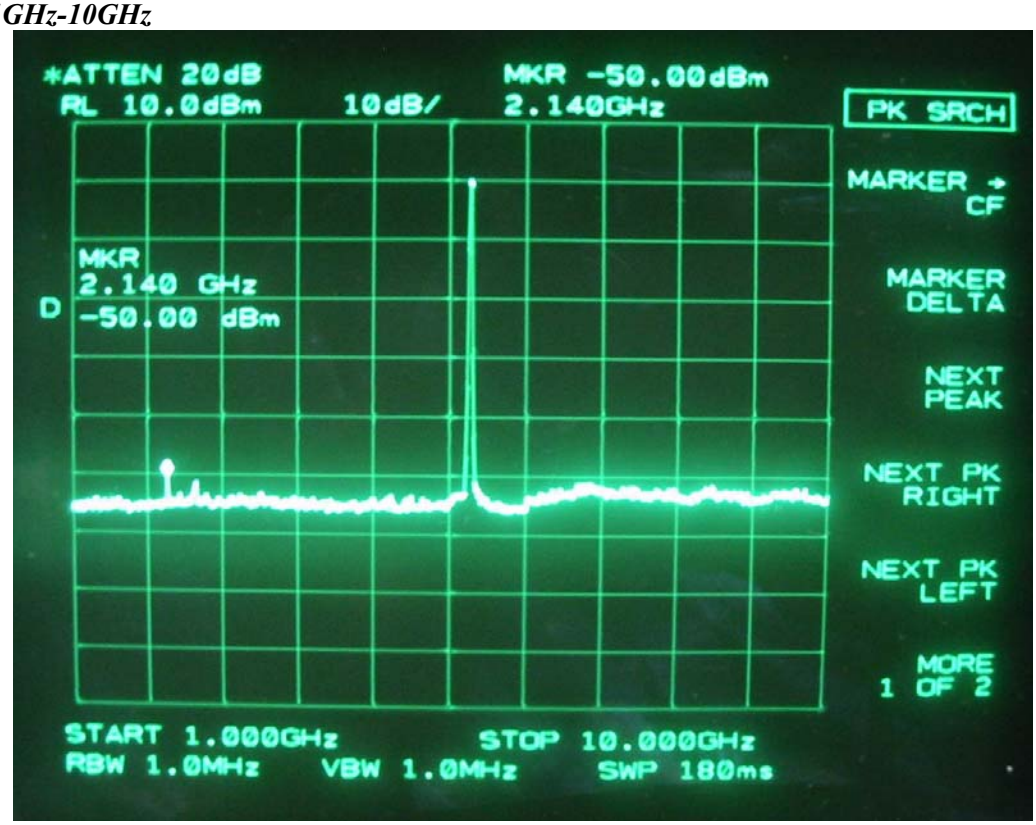


IEEE 802.11a 20M, 5745MHz (Antenna#1)

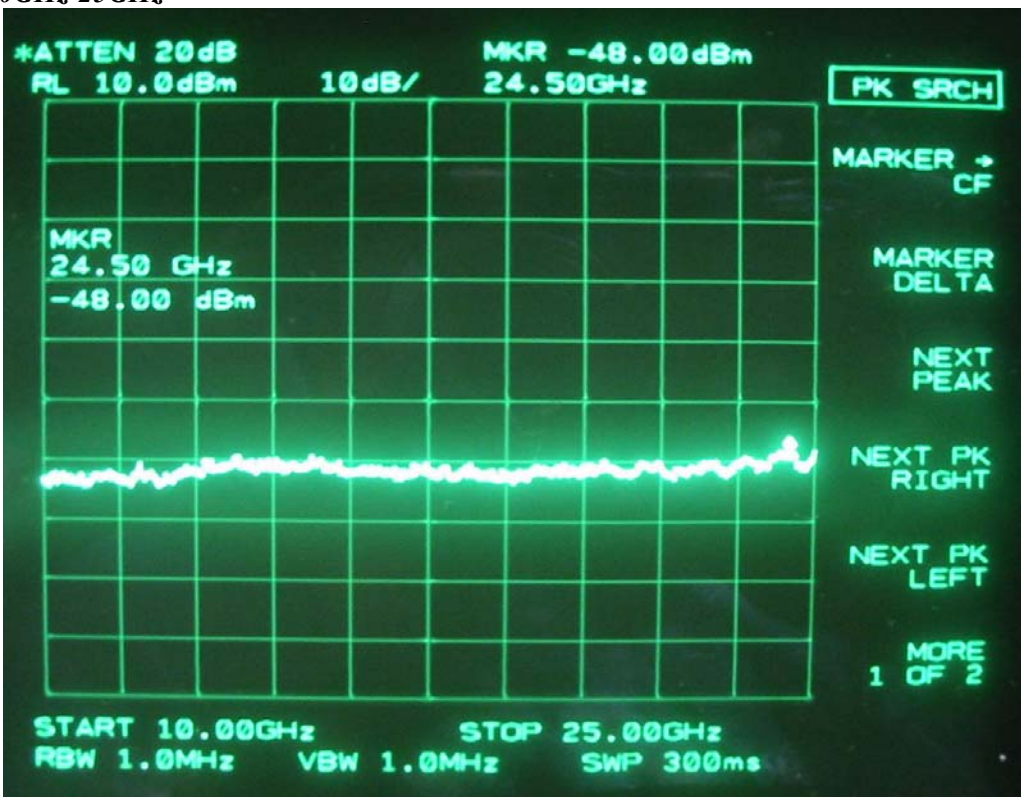
30MHz-1GHz



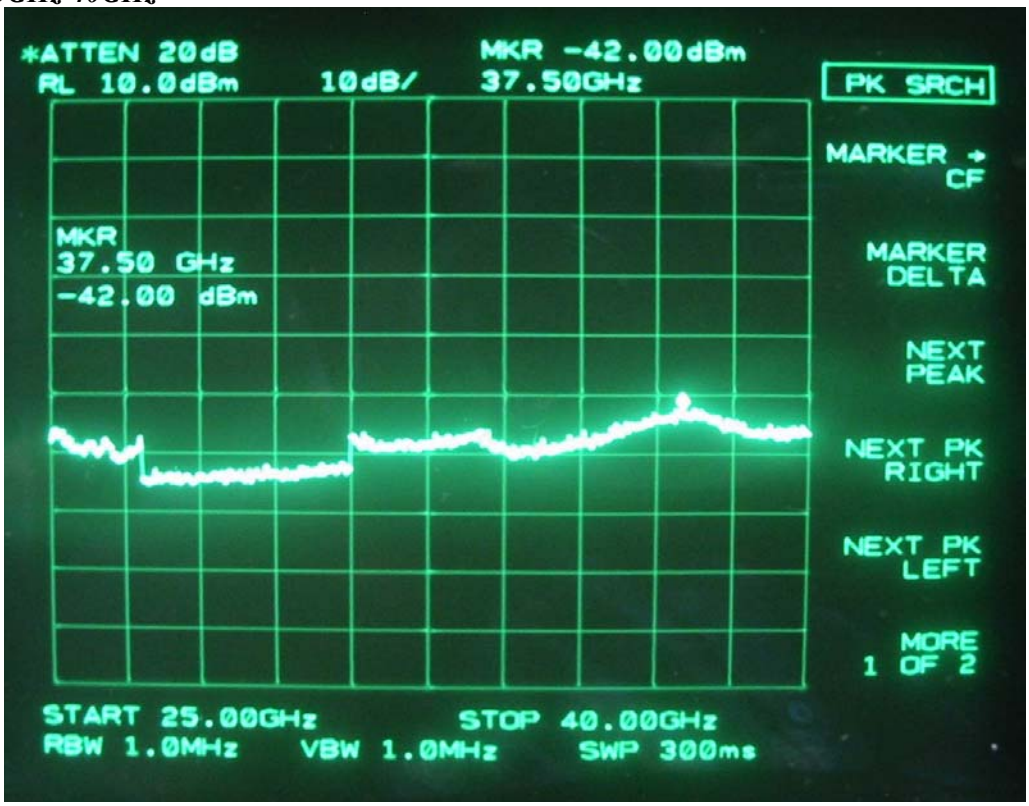
1GHz-10GHz



10GHz-25GHz

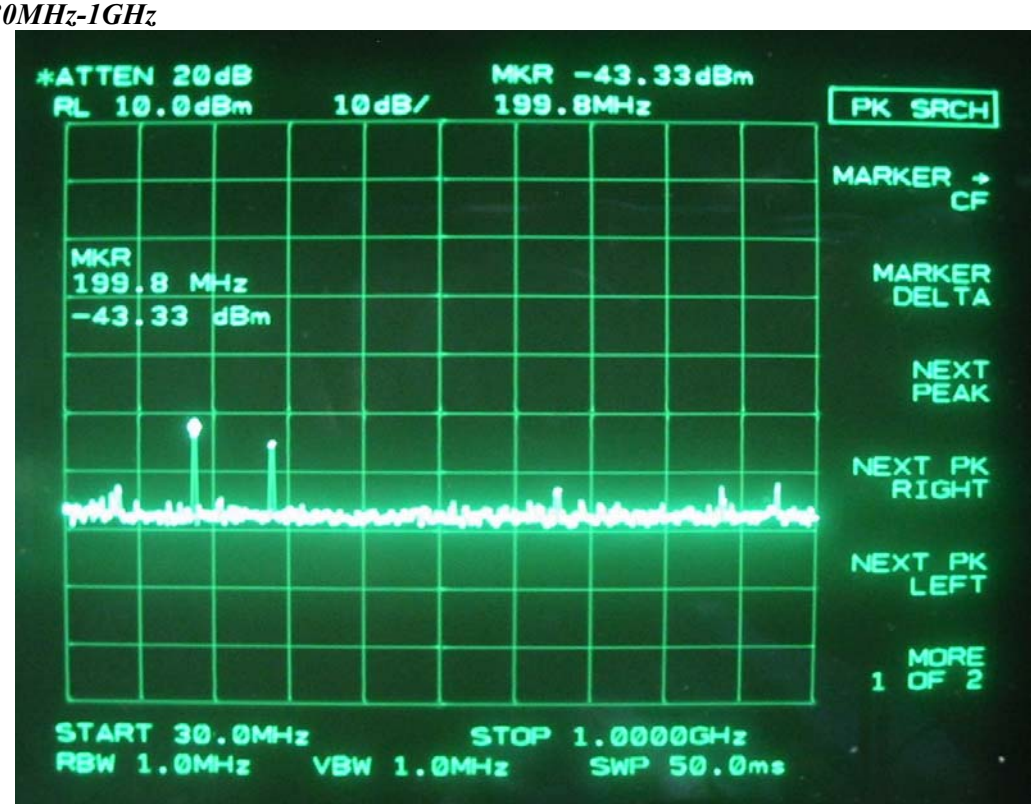


25GHz-40GHz

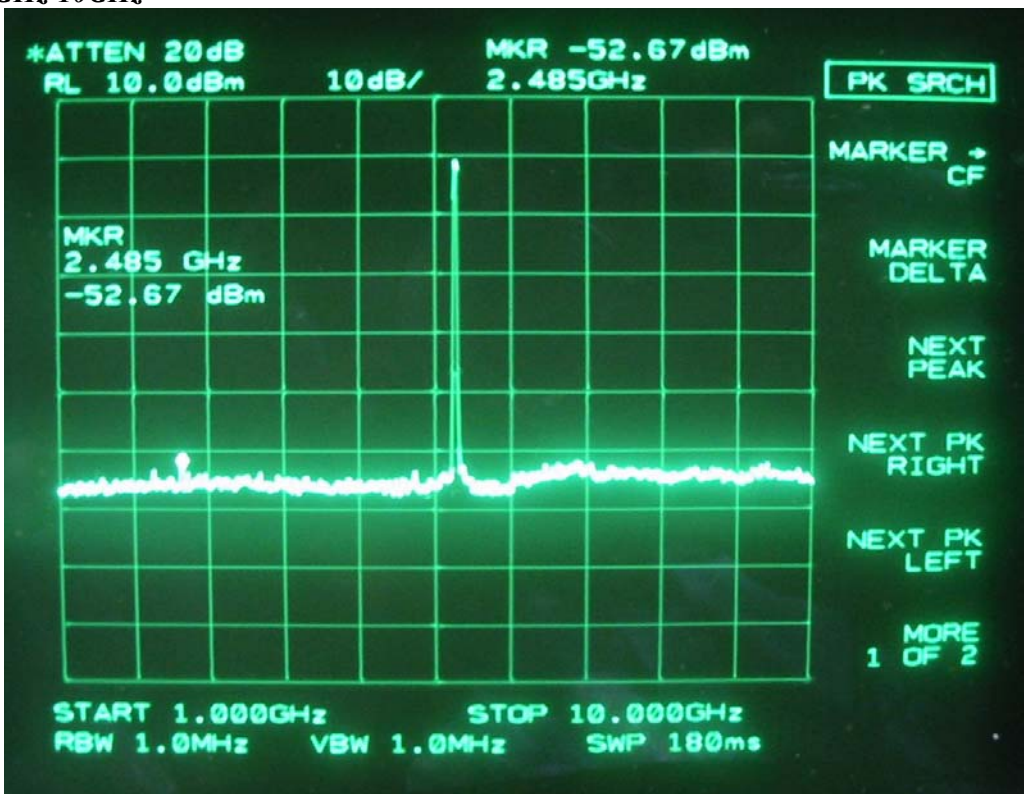


IEEE 802.11a 20M, 5745MHz (Antenna#2)

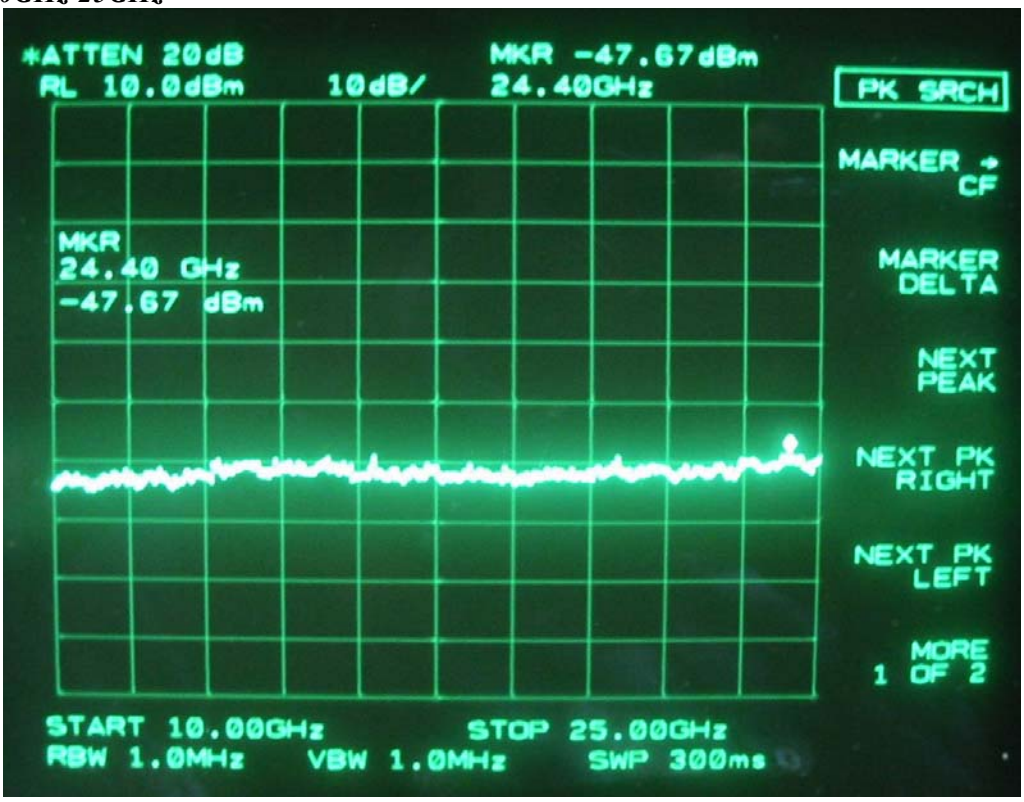
30MHz-1GHz



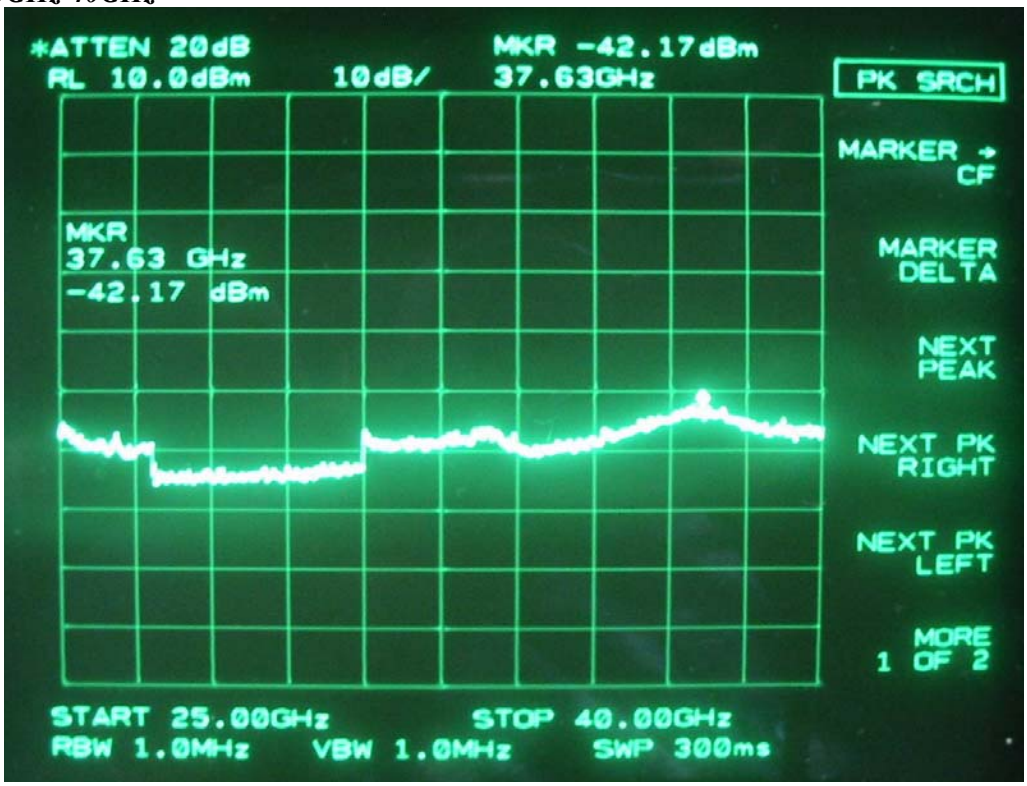
1GHz-10GHz



10GHz-25GHz

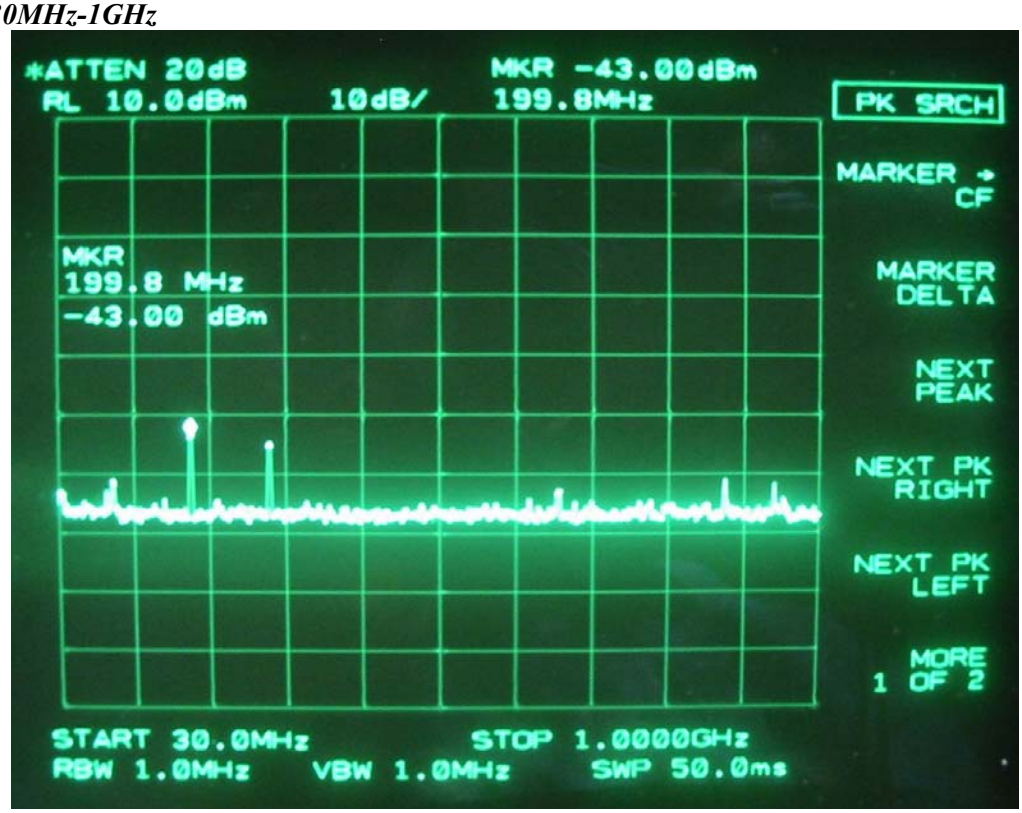


25GHz-40GHz

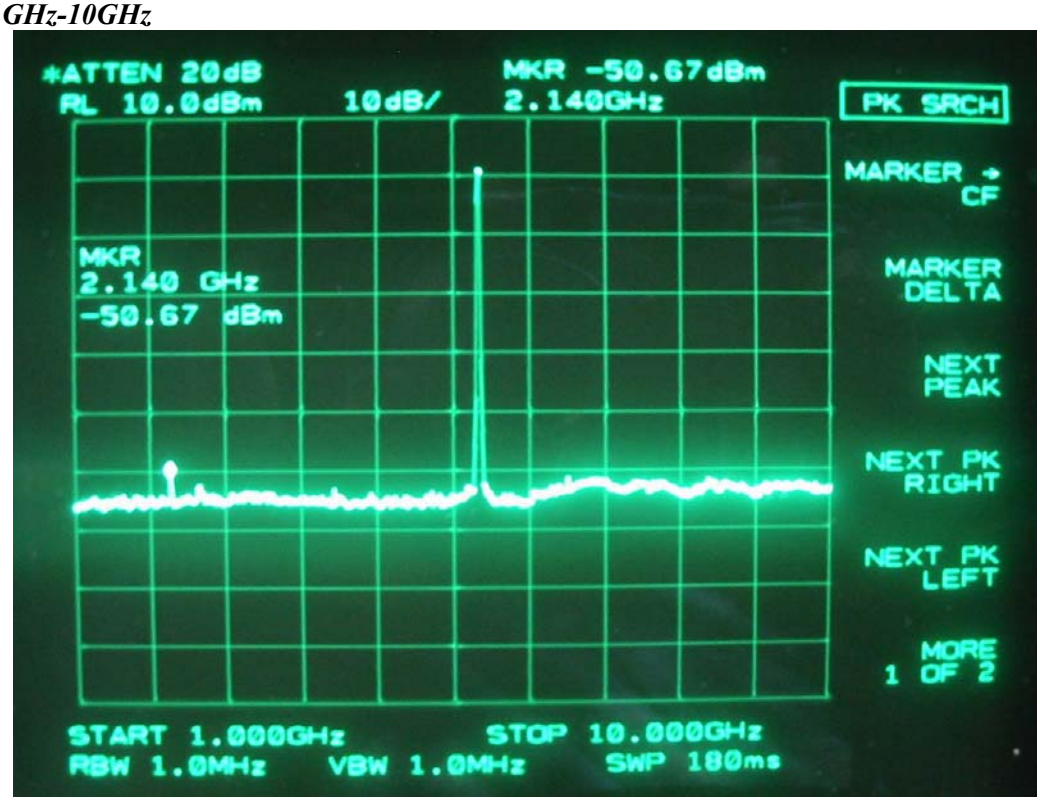


IEEE 802.11a 20M, 5785MHz (Antenna#1)

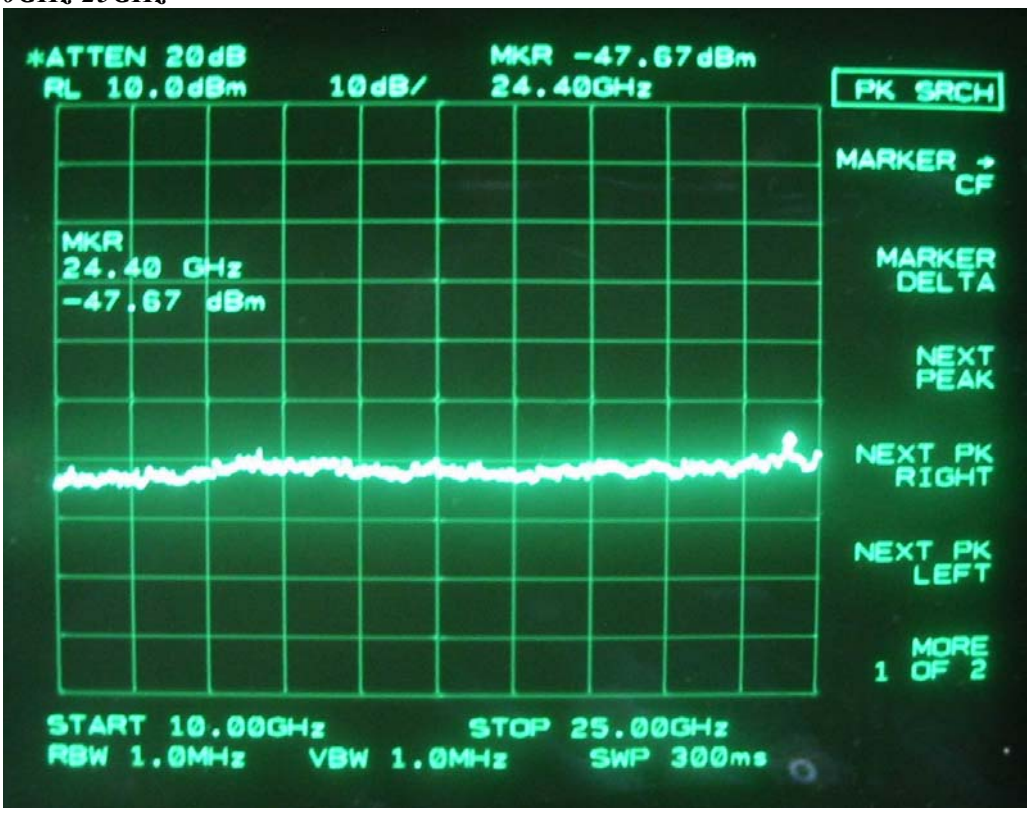
30MHz-1GHz



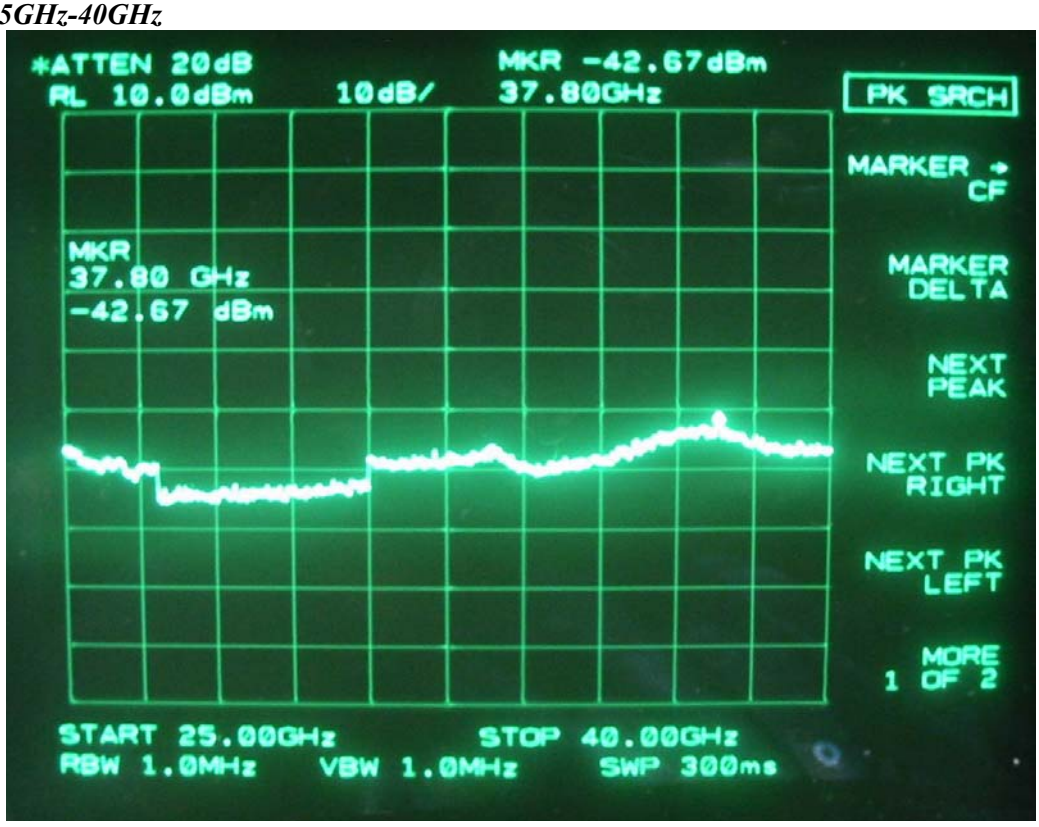
1GHz-10GHz



10GHz-25GHz

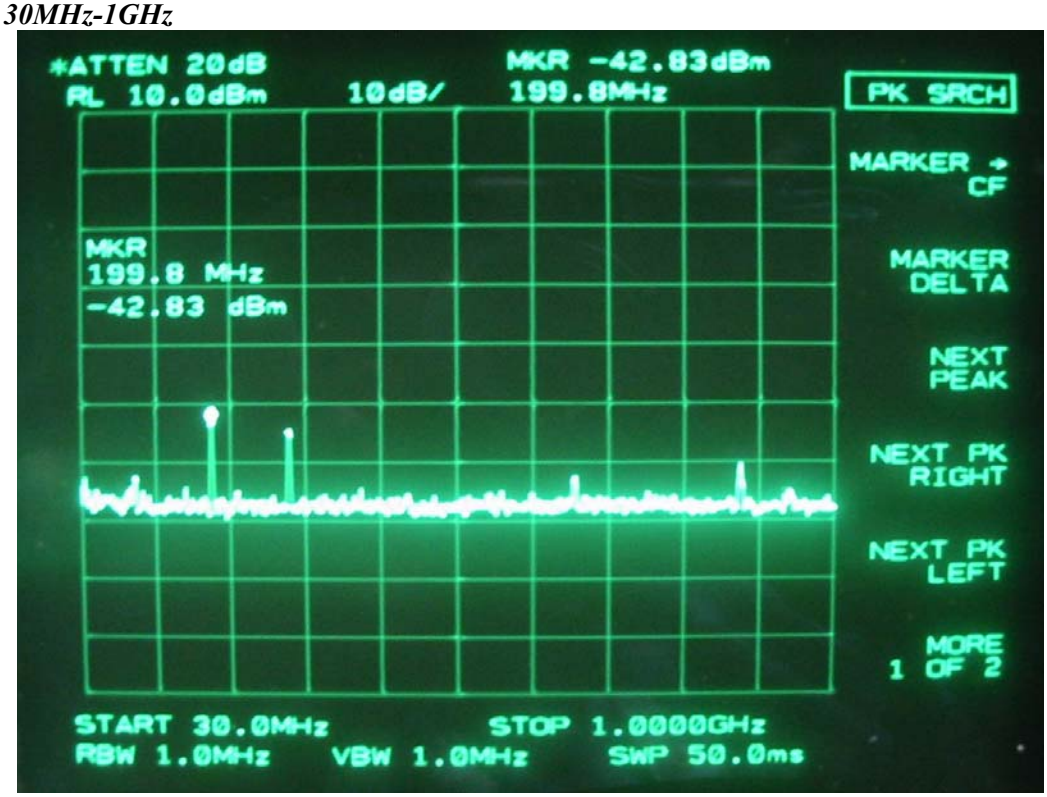


25GHz-40GHz

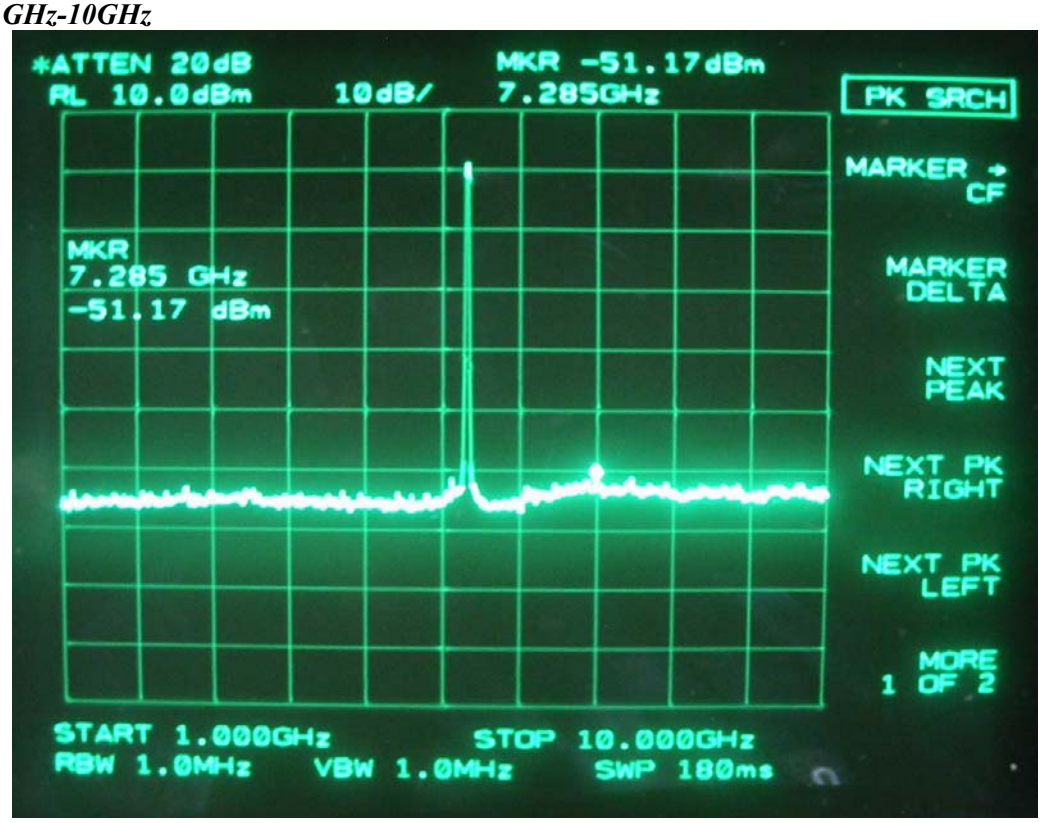


IEEE 802.11a 20M, 5785MHz (Antenna#2)

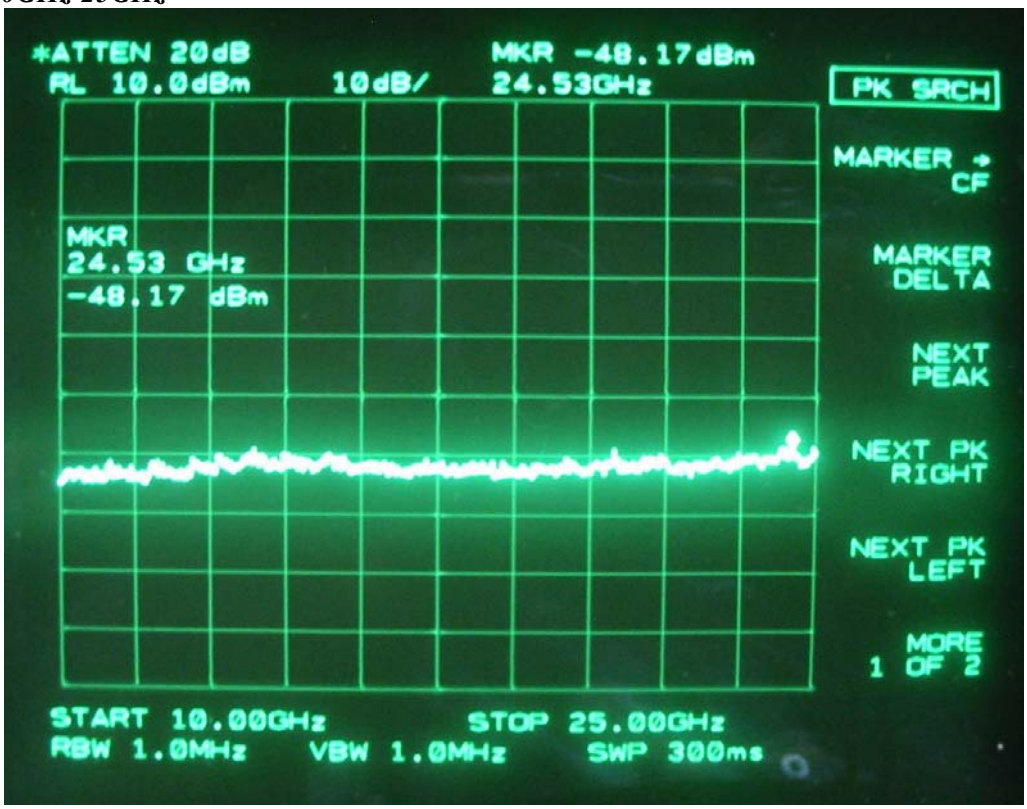
30MHz-1GHz



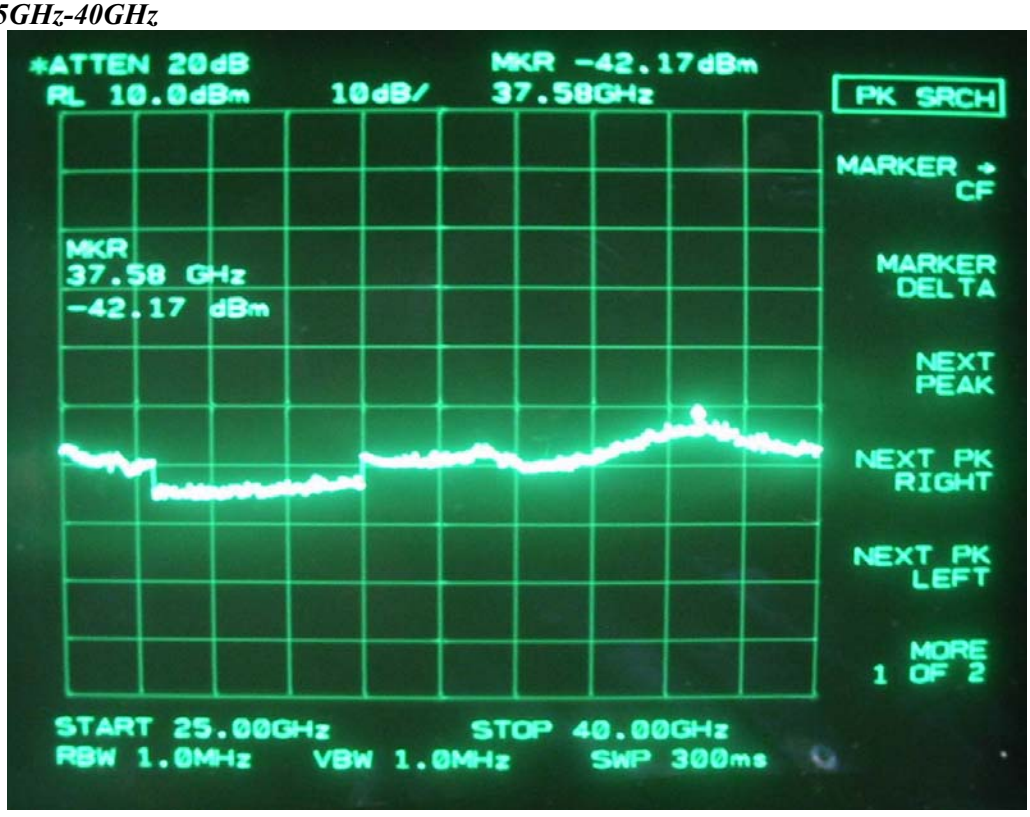
1GHz-10GHz



10GHz-25GHz

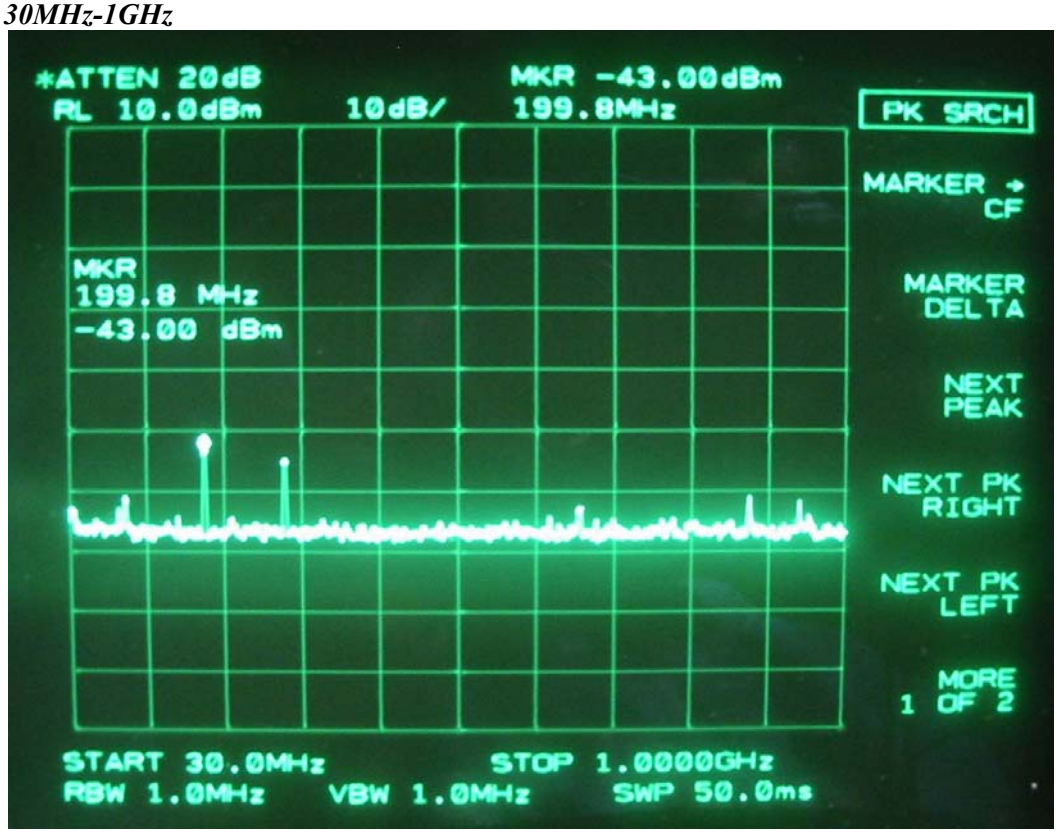


25GHz-40GHz

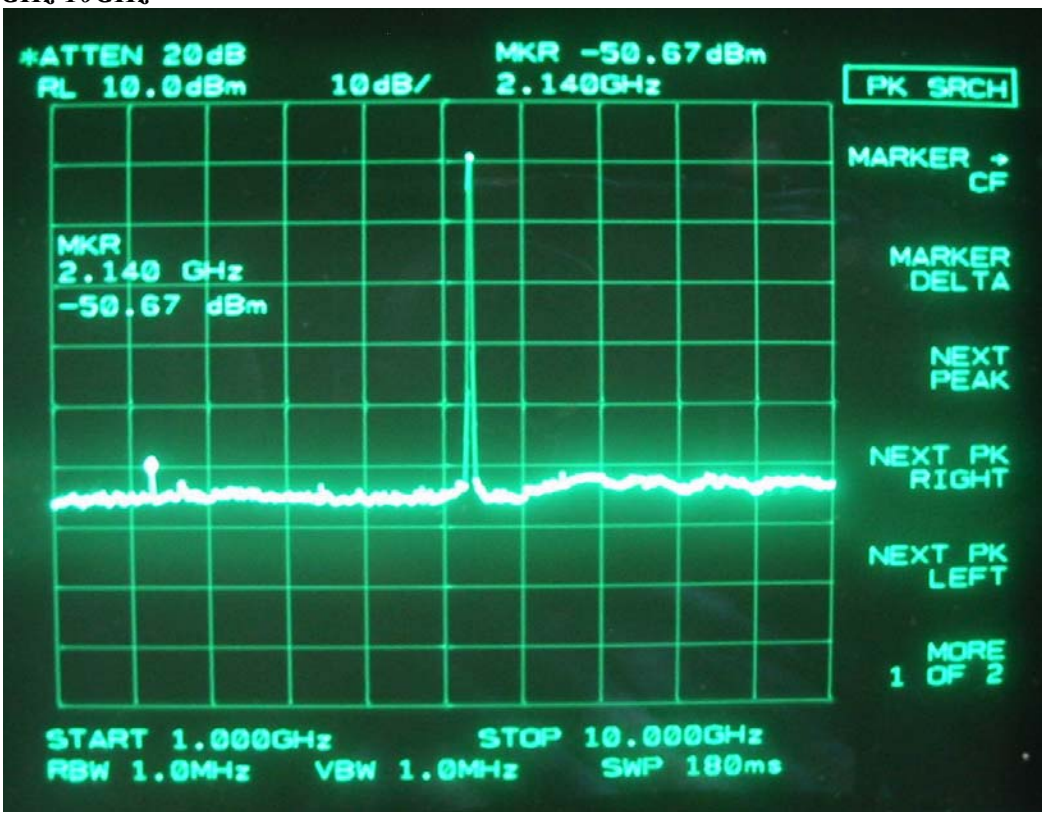


IEEE 802.11a 20M, 5805MHz (Antenna#1)

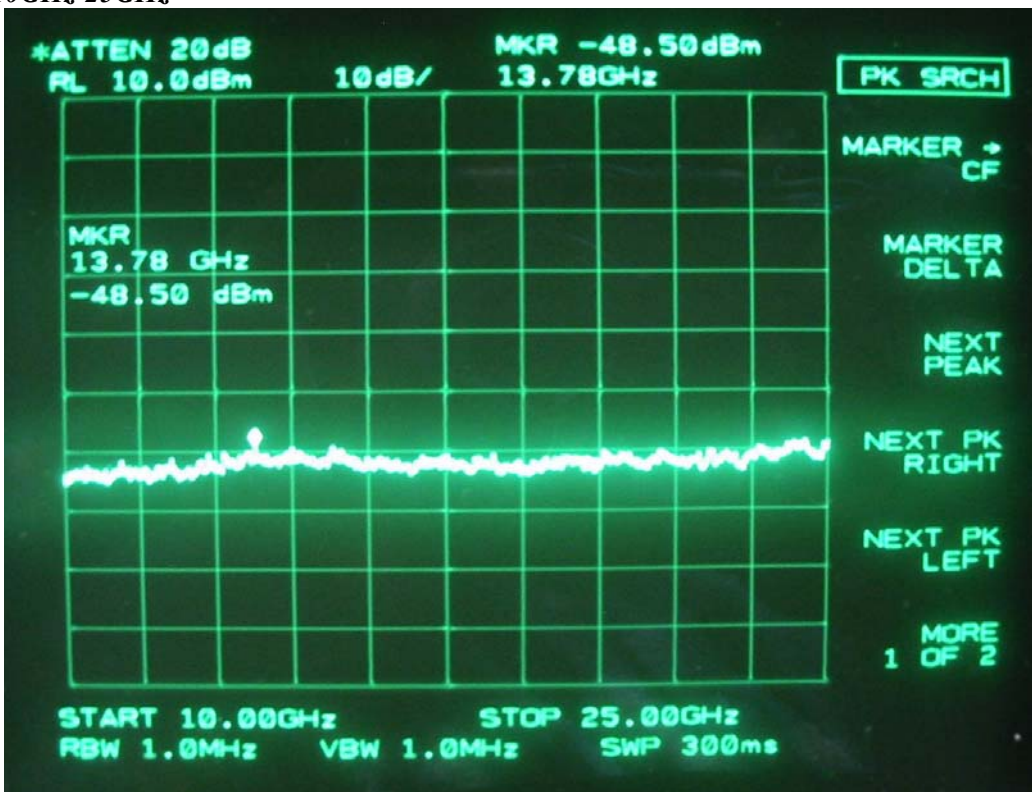
30MHz-1GHz



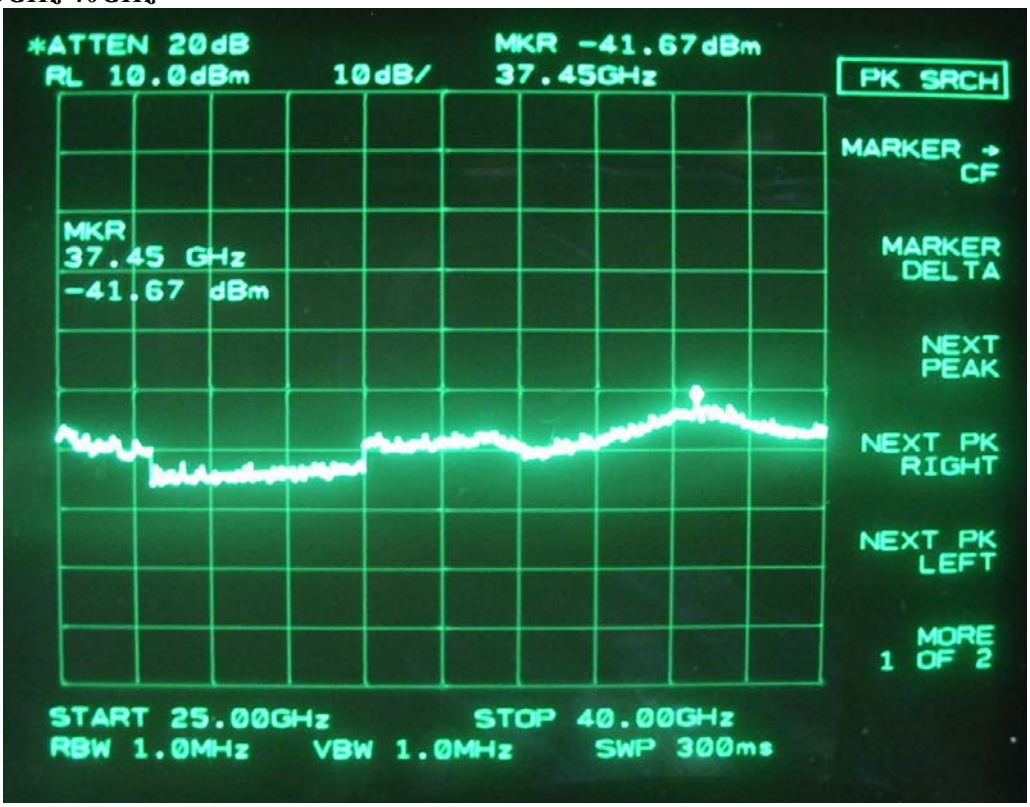
1GHz-10GHz



10GHz-25GHz

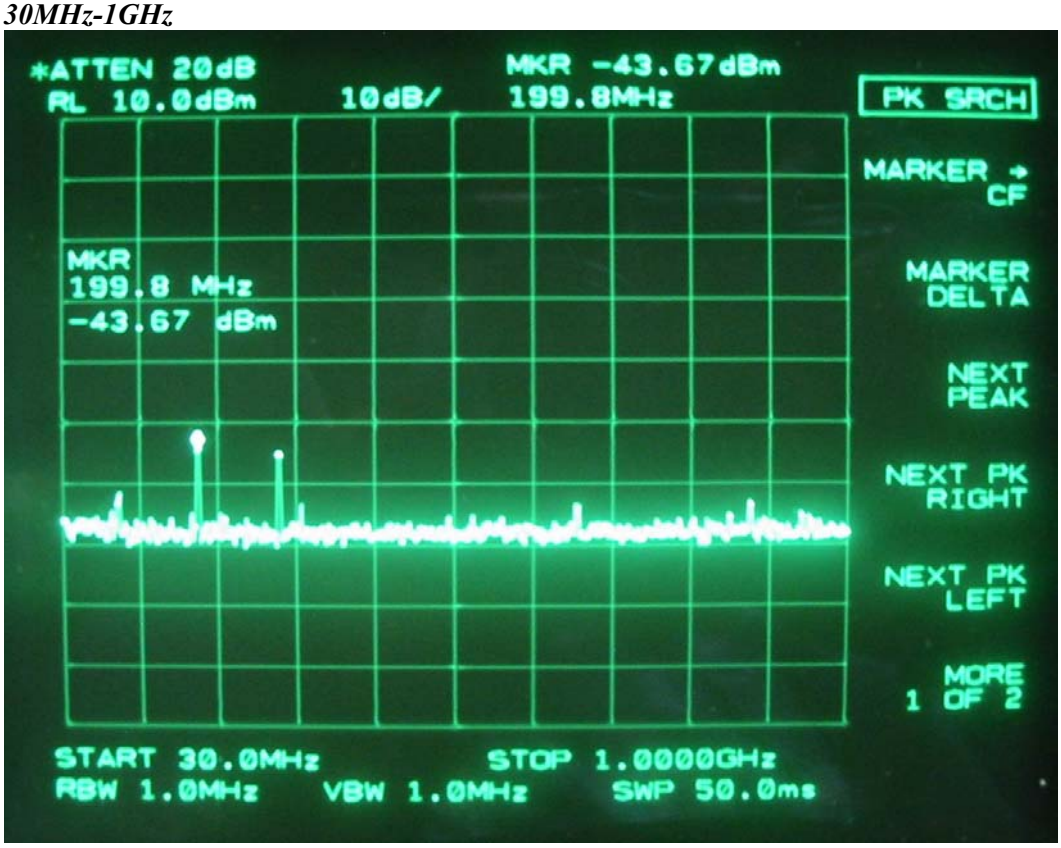


25GHz-40GHz

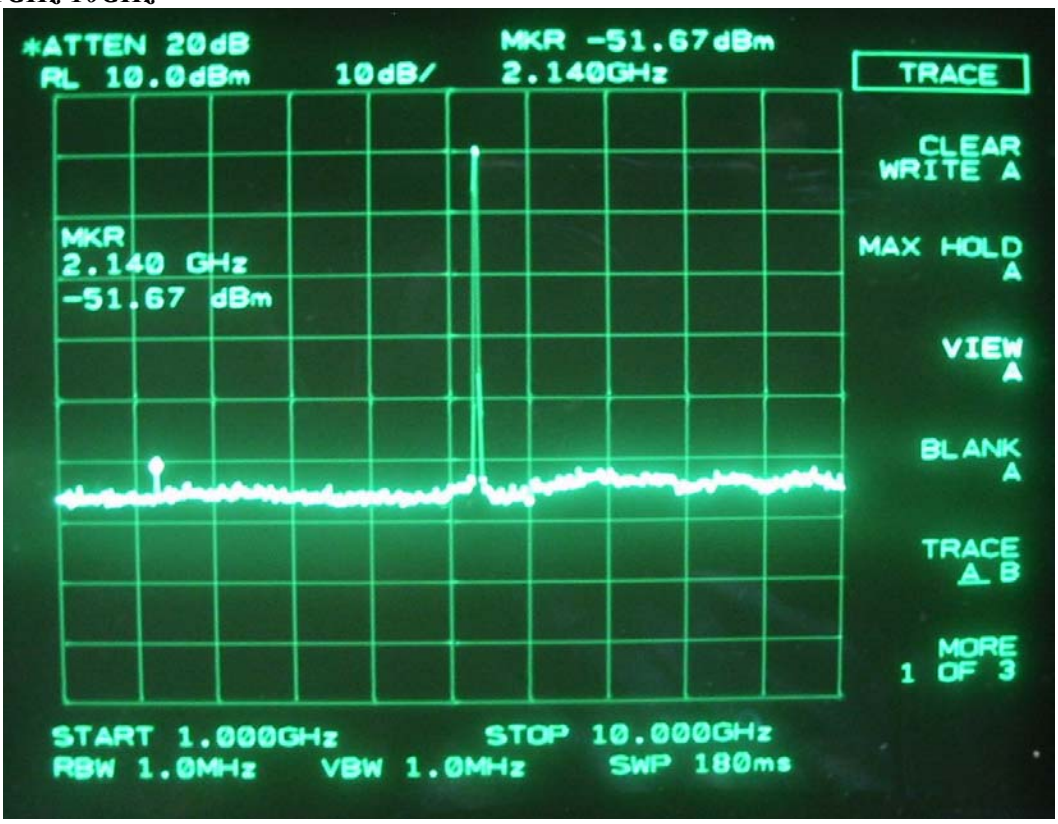


IEEE 802.11a 20M, 5805MHz (Antenna#2)

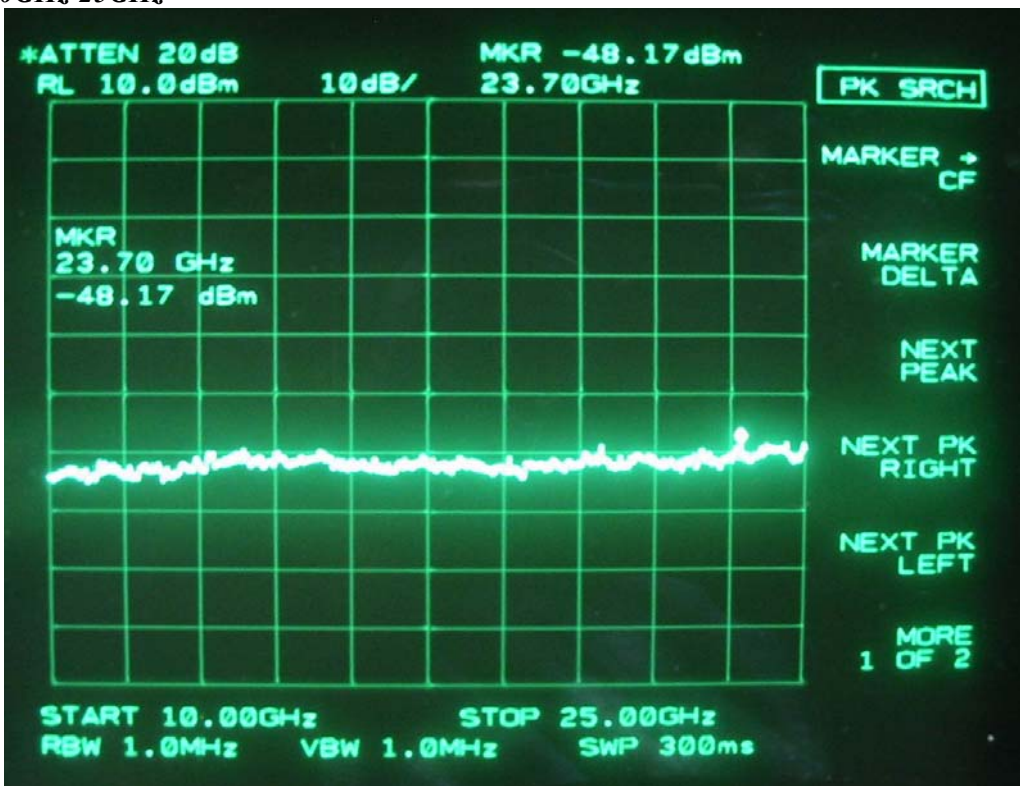
30MHz-1GHz



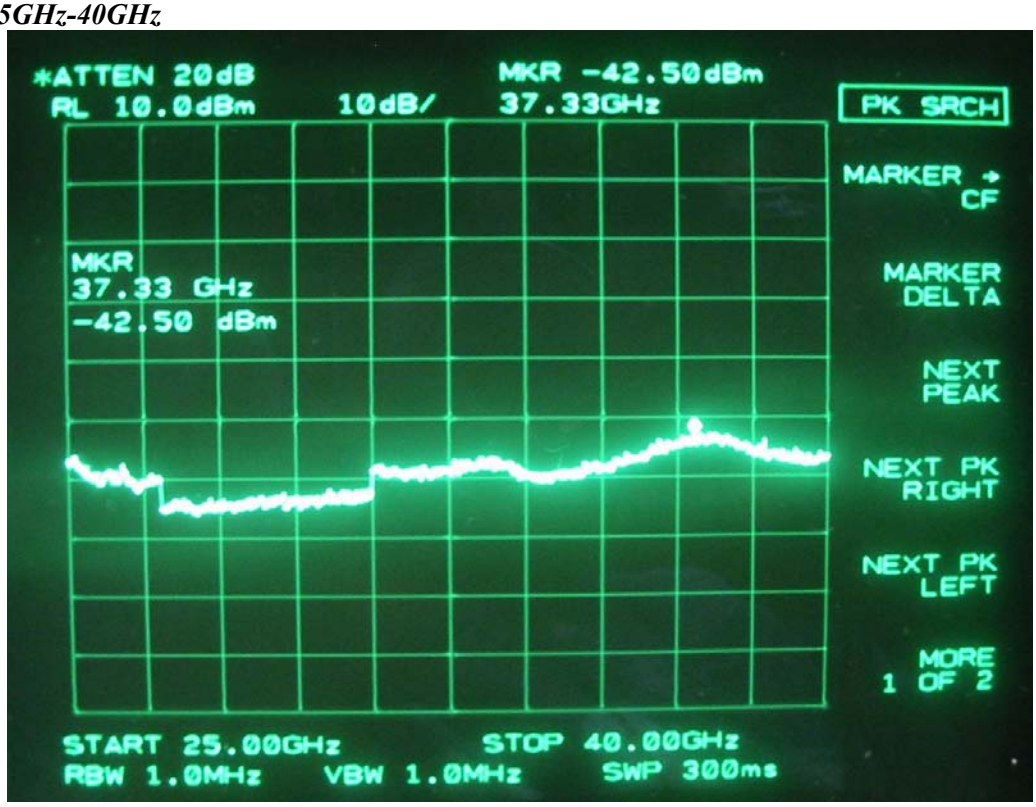
1GHz-10GHz



10GHz-25GHz

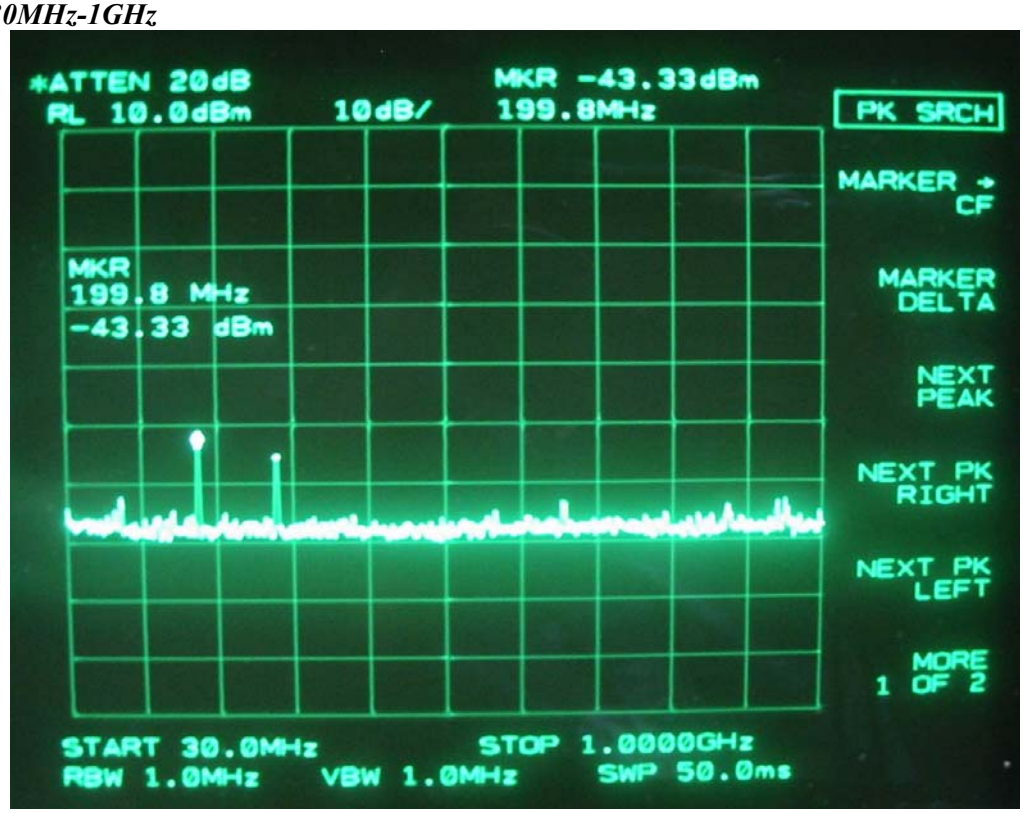


25GHz-40GHz

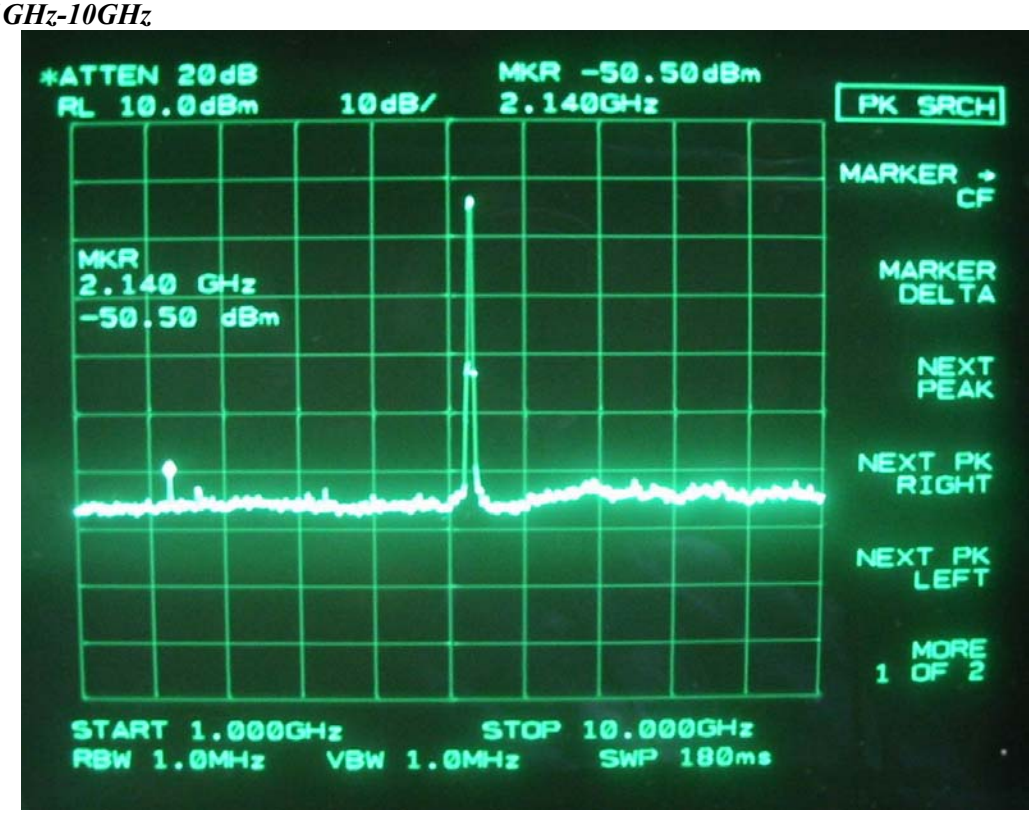


IEEE 802.11a 40M, 5755MHz (Antenna#1)

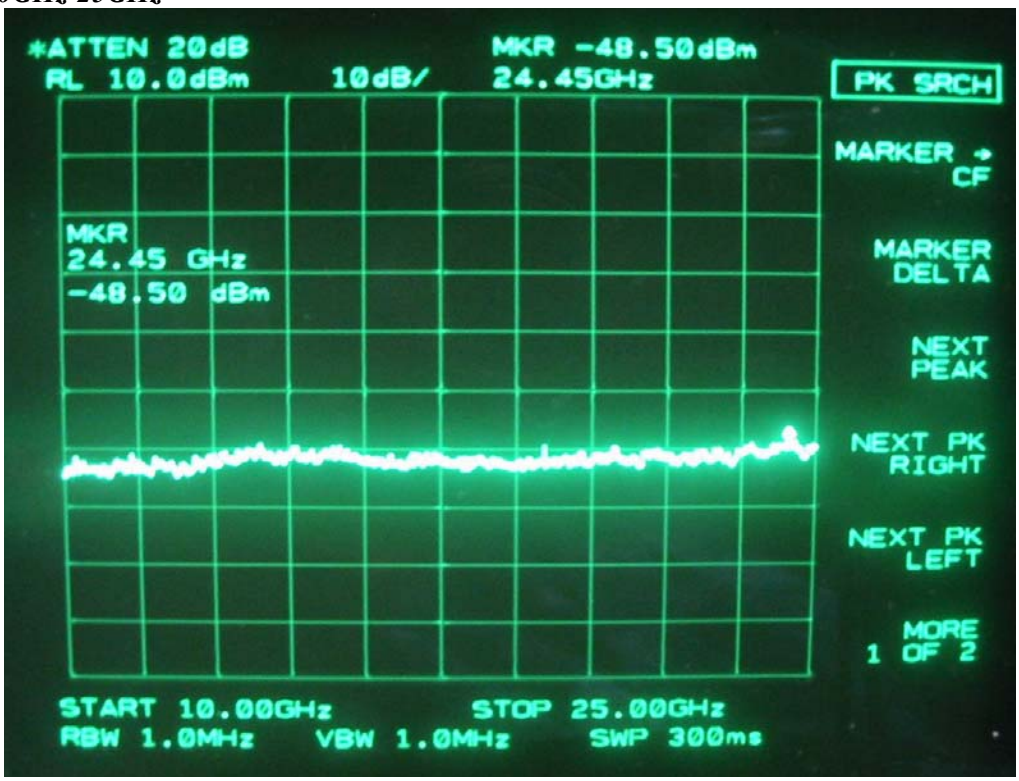
30MHz-1GHz



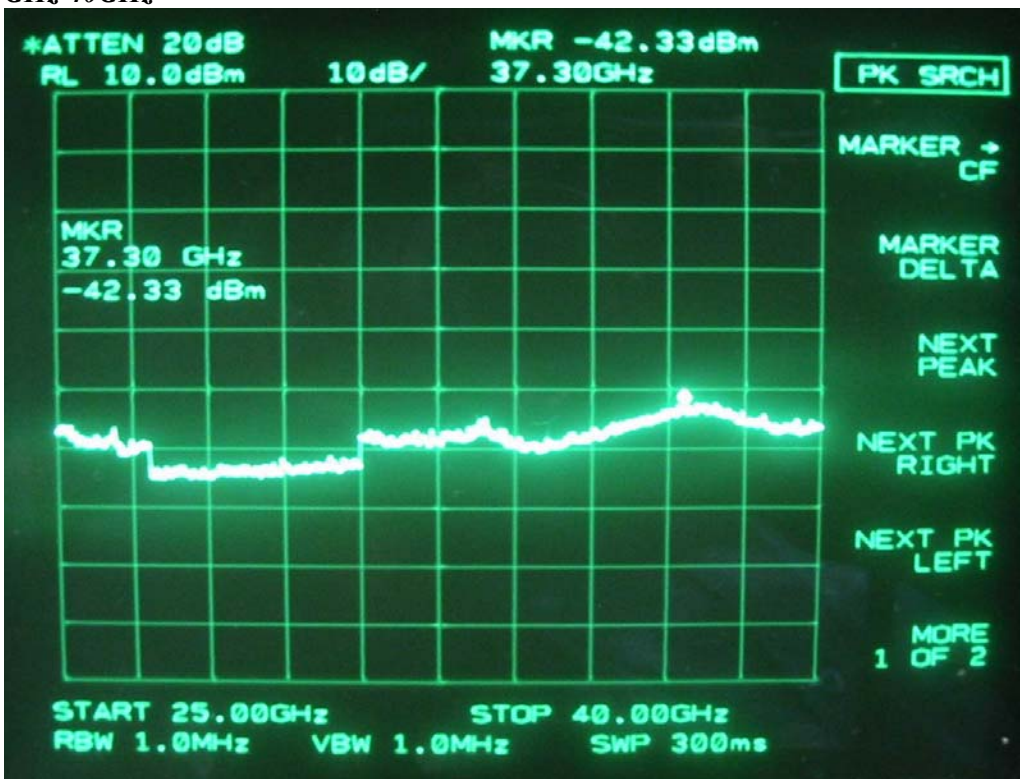
1GHz-10GHz



10GHz-25GHz

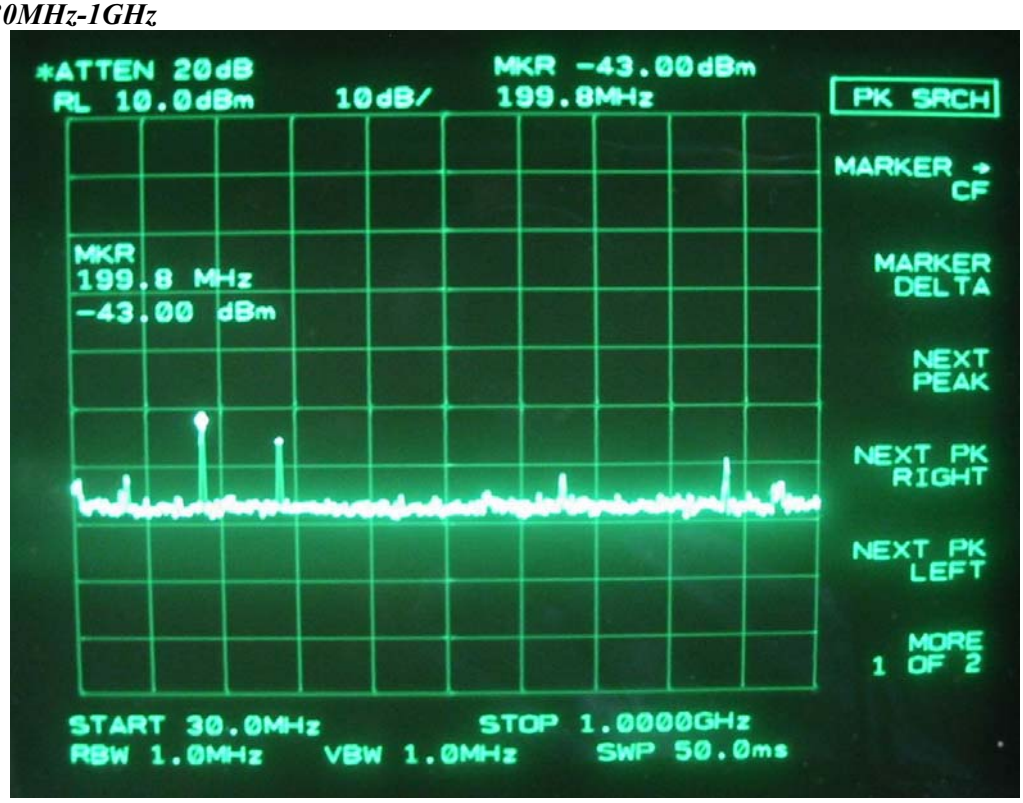


25GHz-40GHz

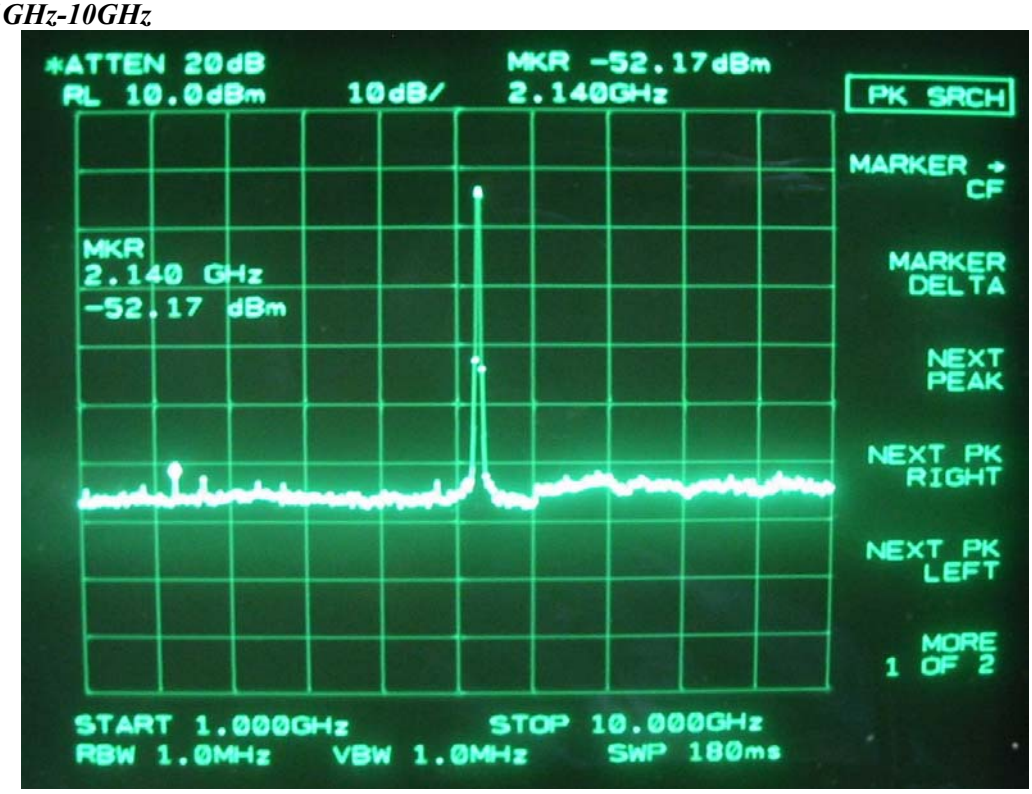


IEEE 802.11a 40M, 5755MHz (Antenna#2)

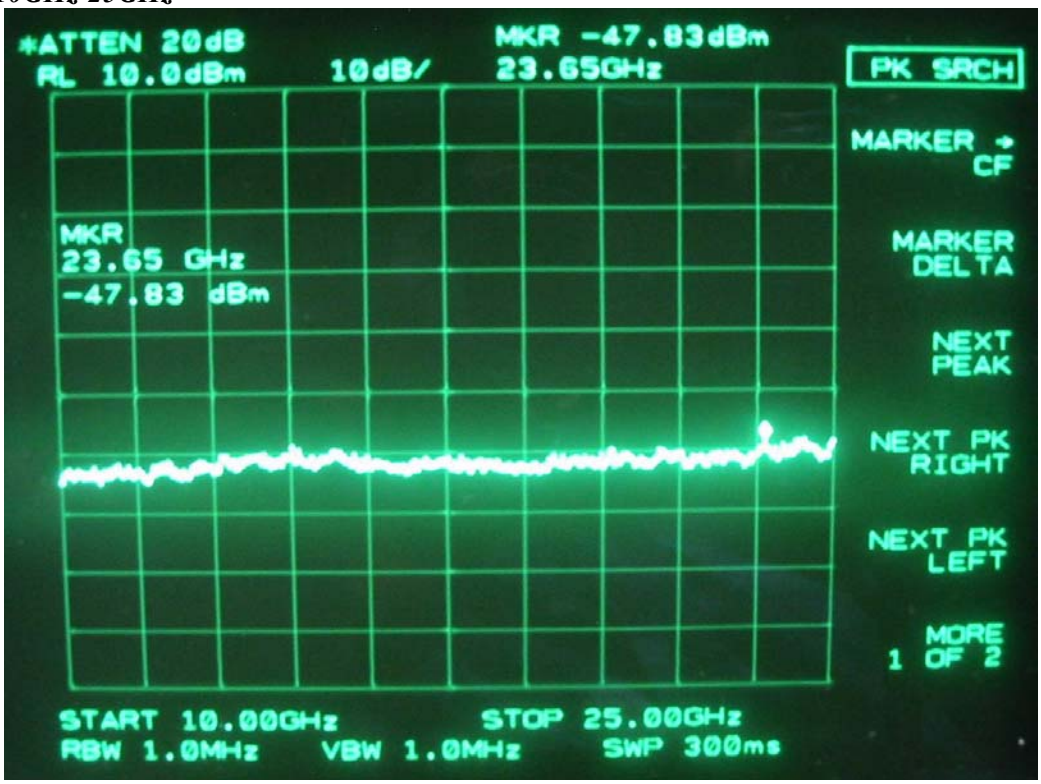
30MHz-1GHz



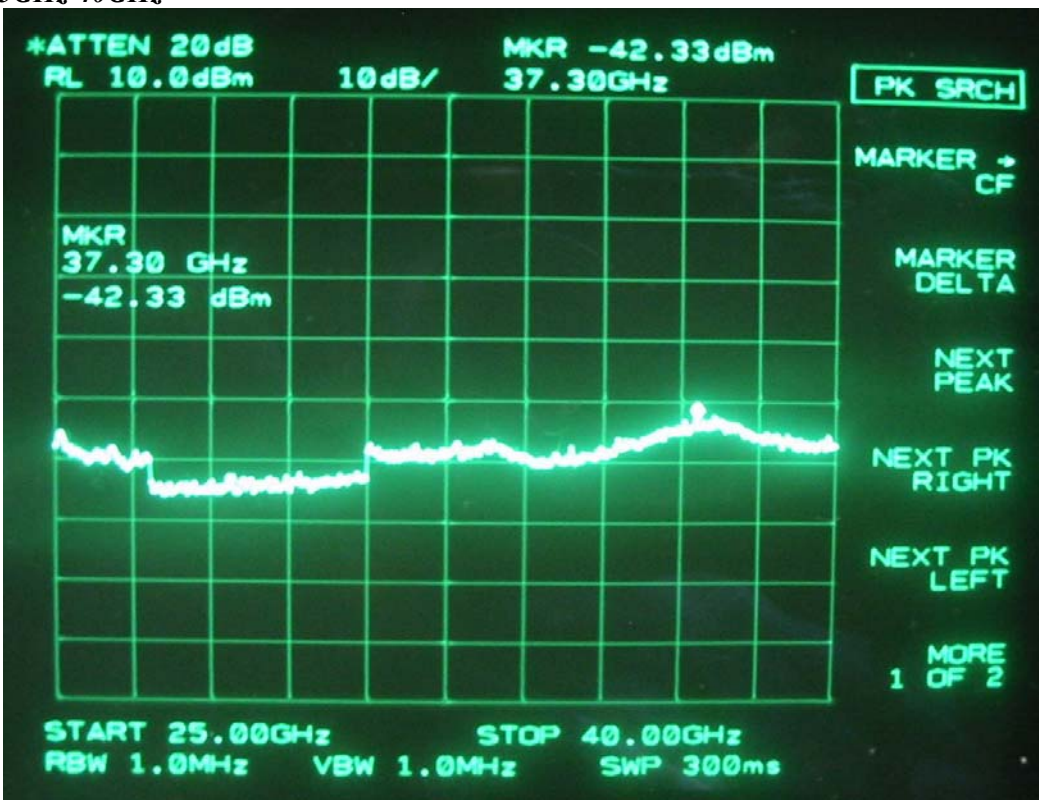
1GHz-10GHz



10GHz-25GHz

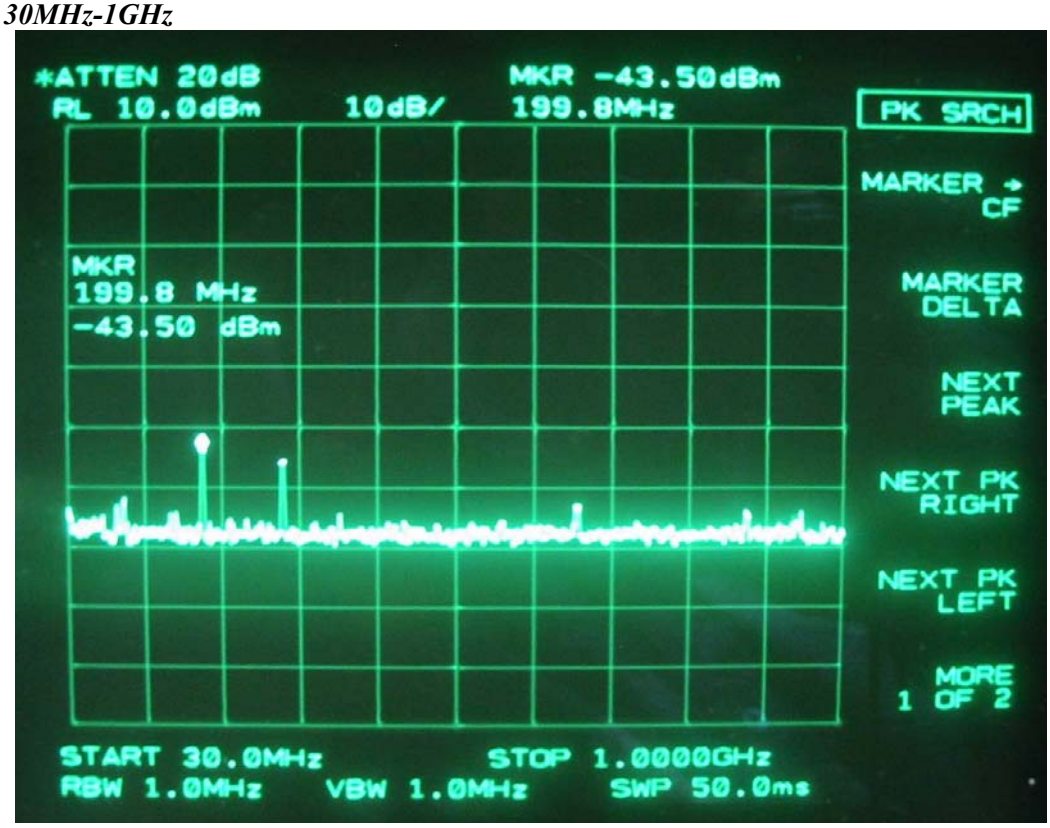


25GHz-40GHz

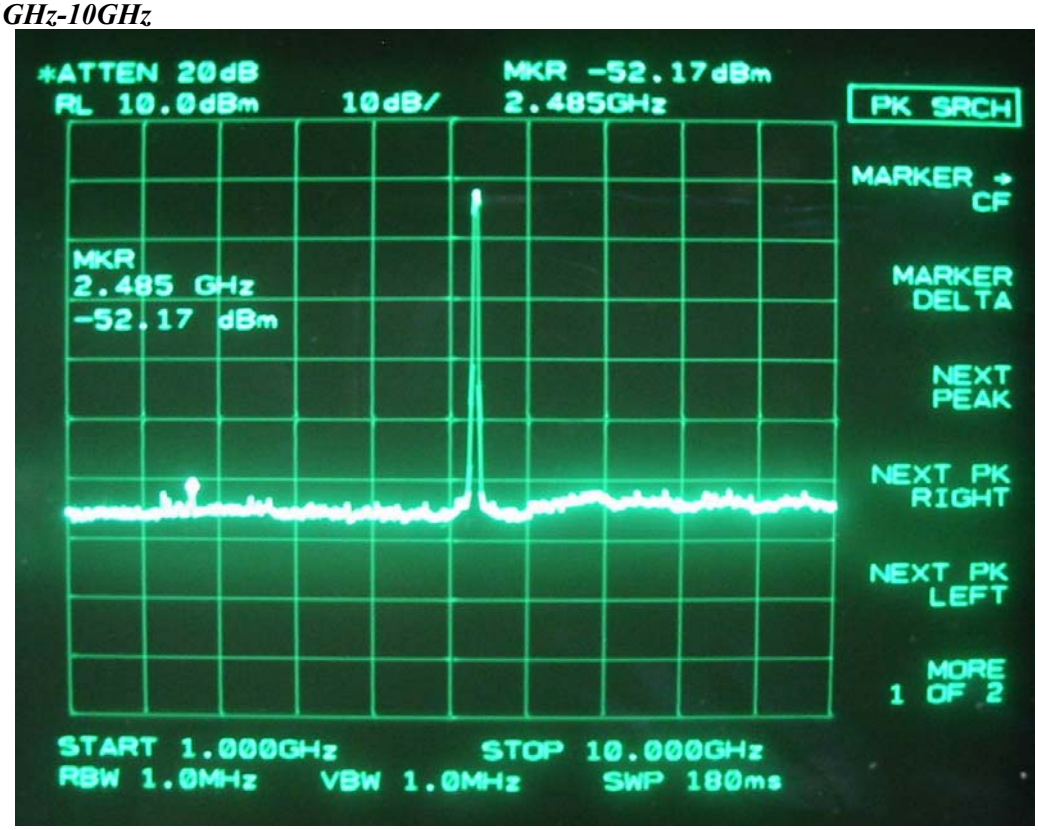


IEEE 802.11a 40M, 5795MHz (Antenna#1)

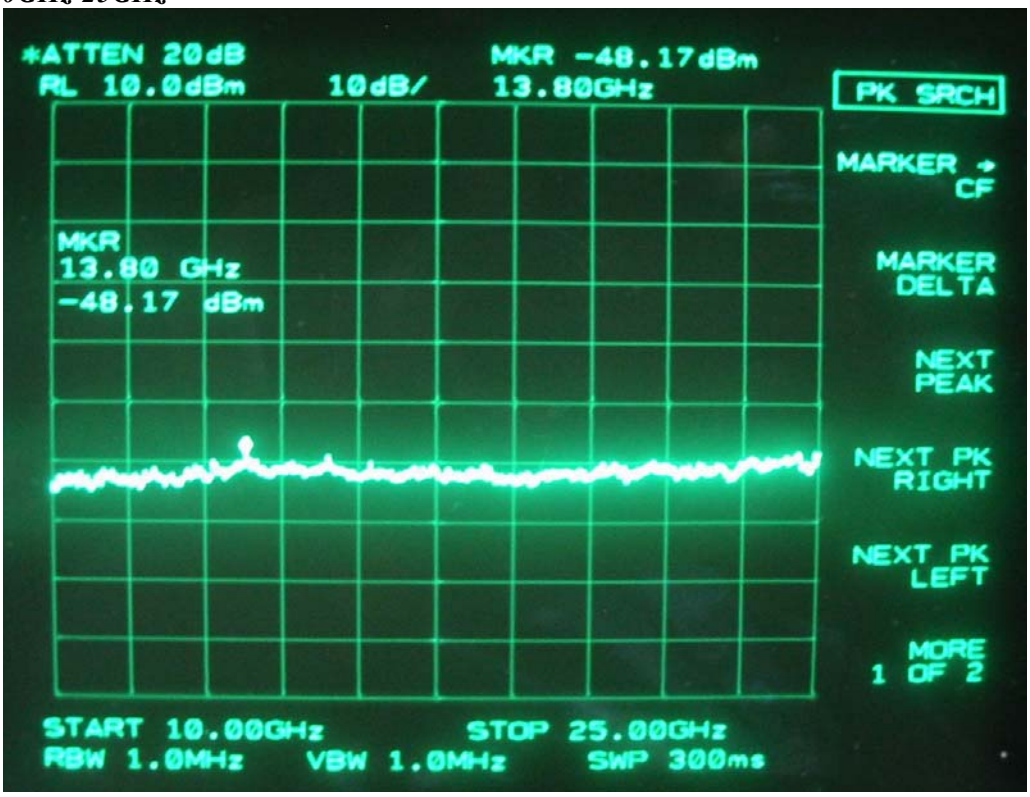
30MHz-1GHz



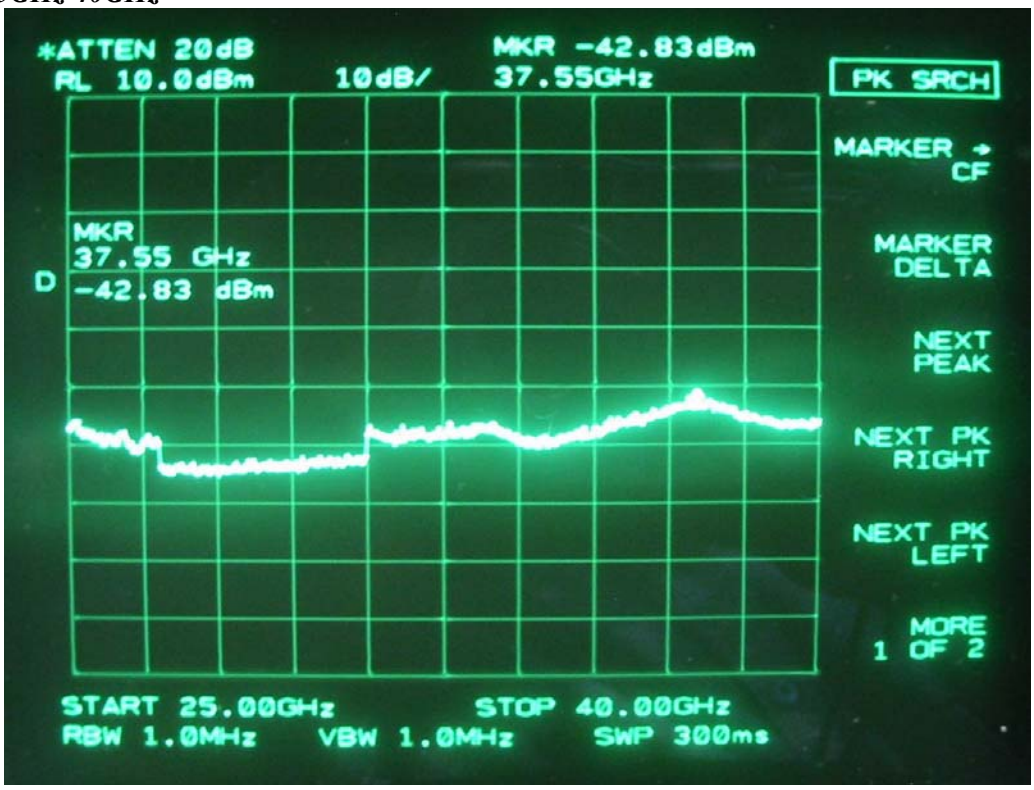
1GHz-10GHz



10GHz-25GHz

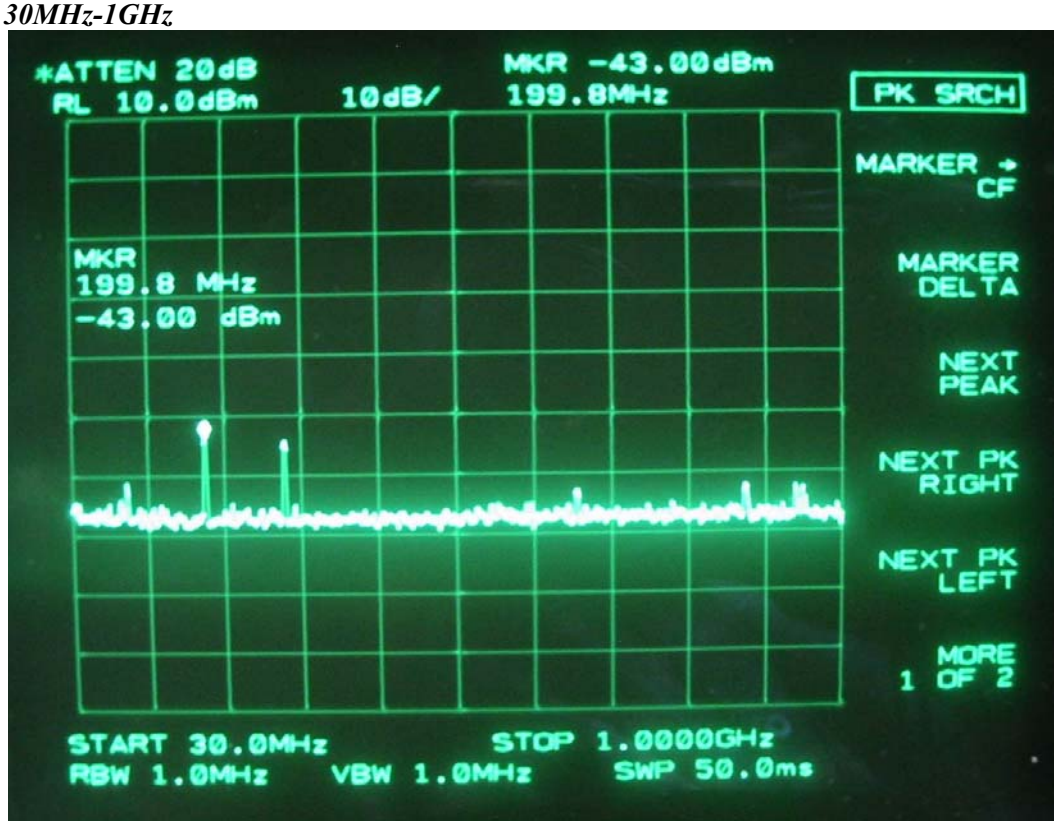


25GHz-40GHz

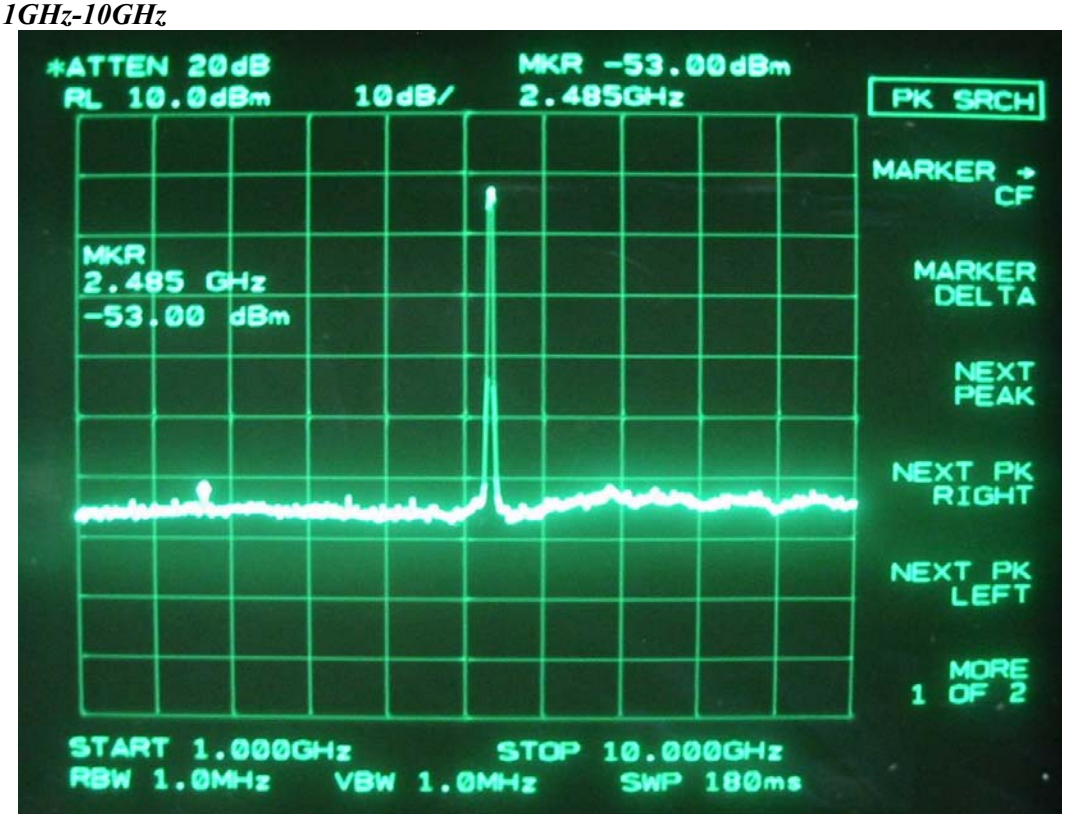


IEEE 802.11a 40M, 5795MHz (Antenna#2)

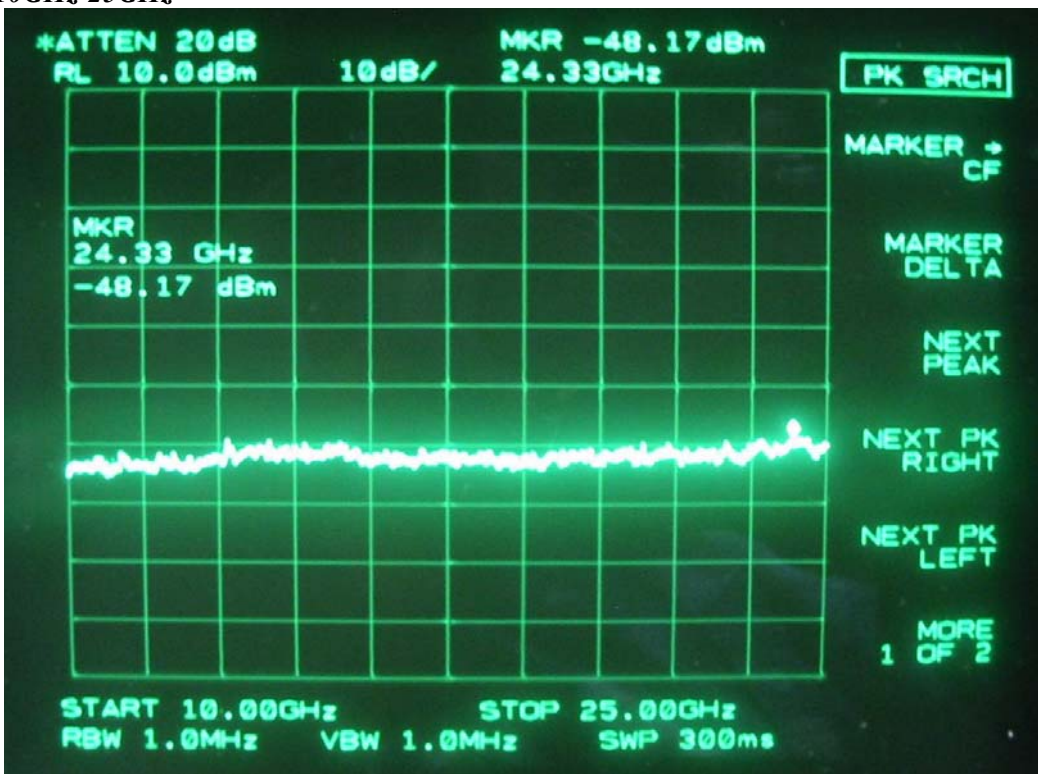
30MHz-1GHz



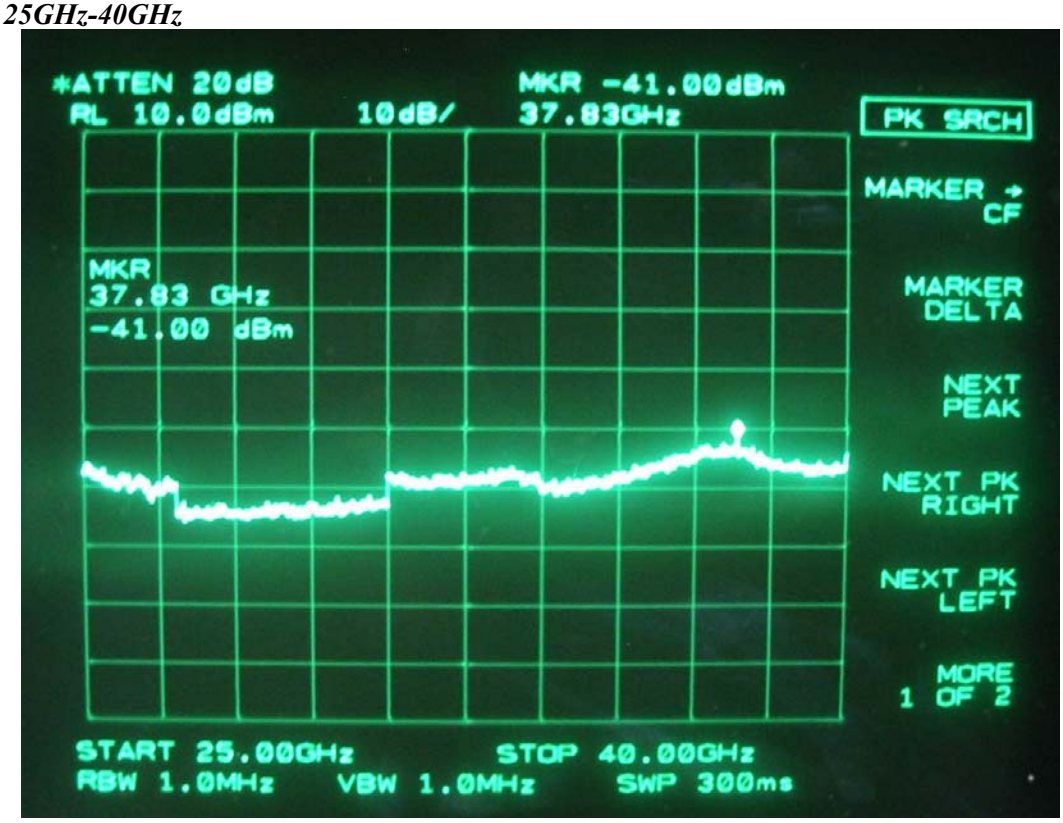
1GHz-10GHz



10GHz-25GHz



25GHz-40GHz



9.2 Bandedge

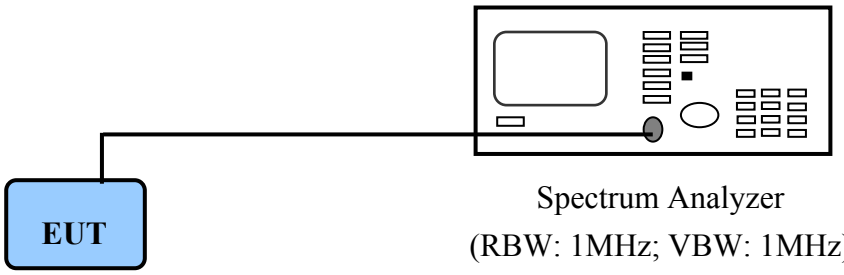
Limit: The provisions of Section 15.205 apply to intentional radiators operating under this section.

9.2.1 Test Condition & Setup

The tests below are running with the EUT transmitter set at high power mode. The EUT is needed to force selection of output power level and channel number. While testing, the EUT was set to transmit continuously and to be tested by the contact manner with the spectrum analyzer.

We perform this section by the conducted manner. If the emissions fall in the restricted bands stated in the Part15.205(a) must also comply with the radiated emission limits specified in Part15.209(a). (Peak mode: RBW=VBW=1MHz, Average mode: RBW=1MHz; VBW=10Hz)
The following pages show our observations referring to the channel lowest and highest respectively.

9.2.2 Test Instruments Configuration



PC to control the EUT at maximal power output and channel number and set antenna kit

9.2.3 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.	Next time
Spectrum Analyzer	MS2665C	ANRITSU	6200175476	12/19/09

This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of 5150Mhz ~ 5350Mhz.

The emissions recorded in the restricted band is do comply with the Part 15.209(a) – as below.

IEEE 802.11a

Antenna#1

Frequency	*Amplitude* *Peak / Ave.*		*Cable Loss*	*Corrected Amplitude* *Peak / Ave.*		*Limit* *Peak / Ave.*		*Margin*
MHz	*dBμV*		*dB*	*dBμV/m*		*dBμV/m*		*dB*
5150.00	63.33	47.50	1.50	61.83	46.00	73.96	53.96	-7.96
5350.00	56.33	43.67	1.50	54.83	42.17	73.96	53.96	-11.79

Antenna#2

Frequency	*Amplitude* *Peak / Ave.*		*Cable Loss*	*Corrected Amplitude* *Peak / Ave.*		*Limit* *Peak / Ave.*		*Margin*
MHz	*dBμV*		*dB*	*dBμV/m*		*dBμV/m*		*dB*
5150.00	58.17	46.83	1.50	56.67	45.33	73.96	53.96	-8.63
5350.00	53.67	43.17	1.50	52.17	41.67	73.96	53.96	-12.29

IEEE 802.11a 20M

Antenna#1

Frequency	*Amplitude* *Peak / Ave.*		*Cable Loss*	*Corrected Amplitude* *Peak / Ave.*		*Limit* *Peak / Ave.*		*Margin*
MHz	*dBμV*		*dB*	*dBμV/m*		*dBμV/m*		*dB*
5150.00	57.83	44.83	1.50	56.33	43.33	73.96	53.96	-10.63
5350.00	53.33	43.00	1.50	51.83	41.50	73.96	53.96	-12.46

Antenna#2

Frequency	*Amplitude* *Peak / Ave.*		*Cable Loss*	*Corrected Amplitude* *Peak / Ave.*		*Limit* *Peak / Ave.*		*Margin*
MHz	*dBμV*		*dB*	*dBμV/m*		*dBμV/m*		*dB*
5150.00	55.17	44.00	1.50	53.67	42.50	73.96	53.96	-11.46
5350.00	53.67	42.17	1.50	52.17	40.67	73.96	53.96	-13.29

IEEE 802.11a 40M

Antenna#1

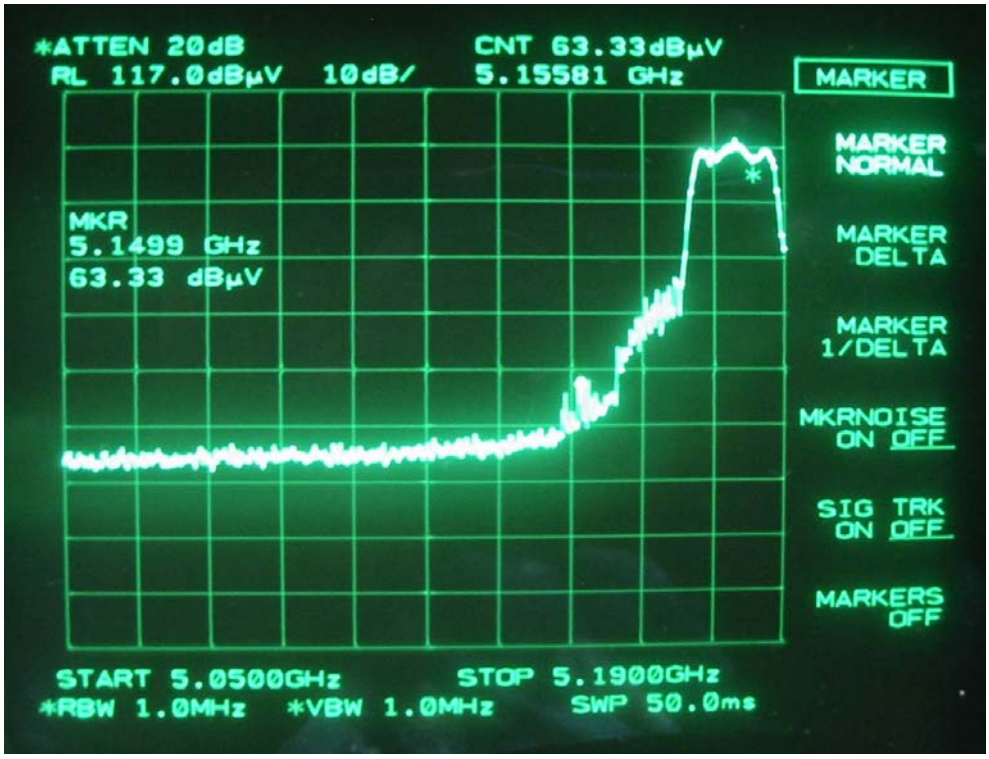
Frequency	*Amplitude* *Peak / Ave.*		*Cable Loss*	*Corrected Amplitude* *Peak / Ave.*		*Limit* *Peak / Ave.*		*Margin*
MHz	*dBμV*		*dB*	*dBμV/m*		*dBμV/m*		*dB*
5150.00	64.67	49.17	1.50	63.17	47.67	73.96	53.96	-6.29
5350.00	54.83	44.00	1.50	53.33	42.50	73.96	53.96	-11.46

Antenna#2

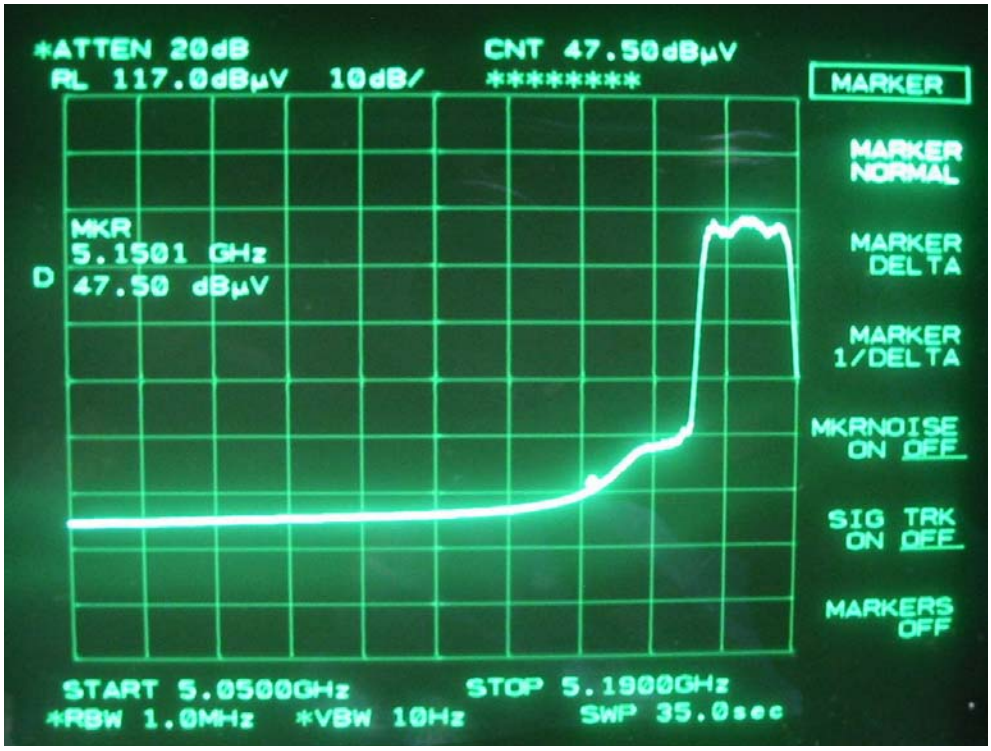
Frequency	*Amplitude* *Peak / Ave.*		*Cable Loss*	*Corrected Amplitude* *Peak / Ave.*		*Limit* *Peak / Ave.*		*Margin*
MHz	*dBμV*		*dB*	*dBμV/m*		*dBμV/m*		*dB*
5150.00	56.67	43.83	1.50	55.17	42.33	73.96	53.96	-11.63
5350.00	65.33	49.00	1.50	63.83	47.50	73.96	53.96	-6.46

9.2.4 Test Result of Bandedge

IEEE 802.11a, 5180MHz (Antenna#1)

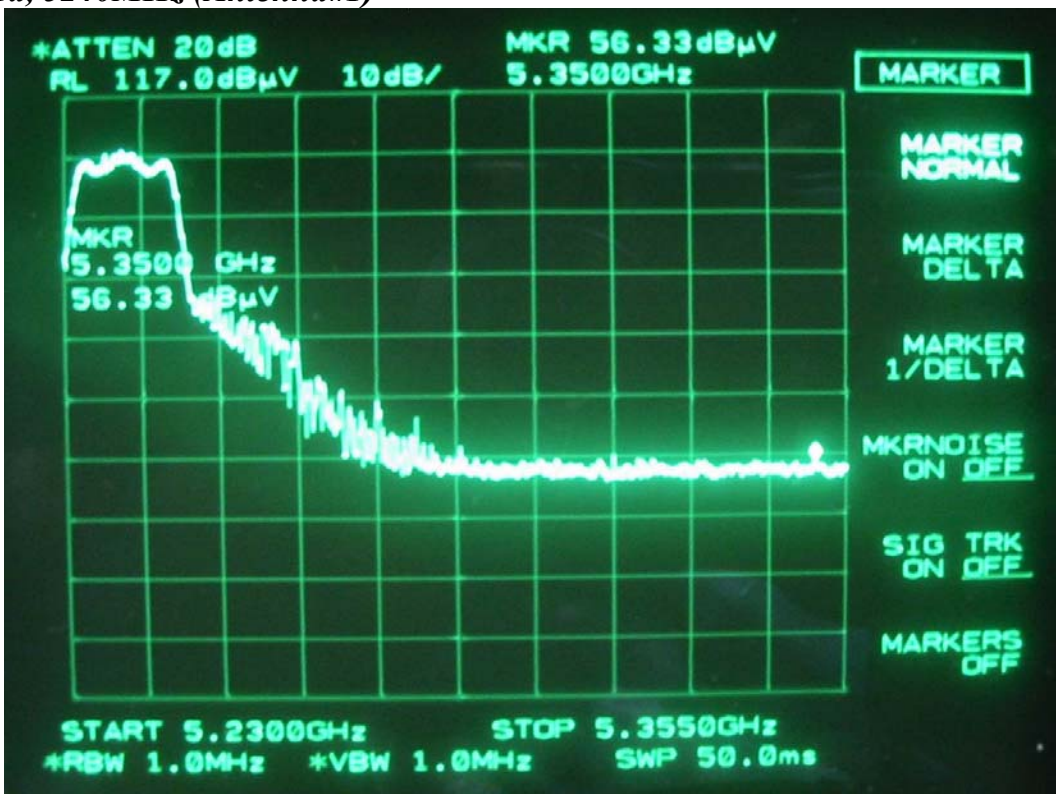


Peak

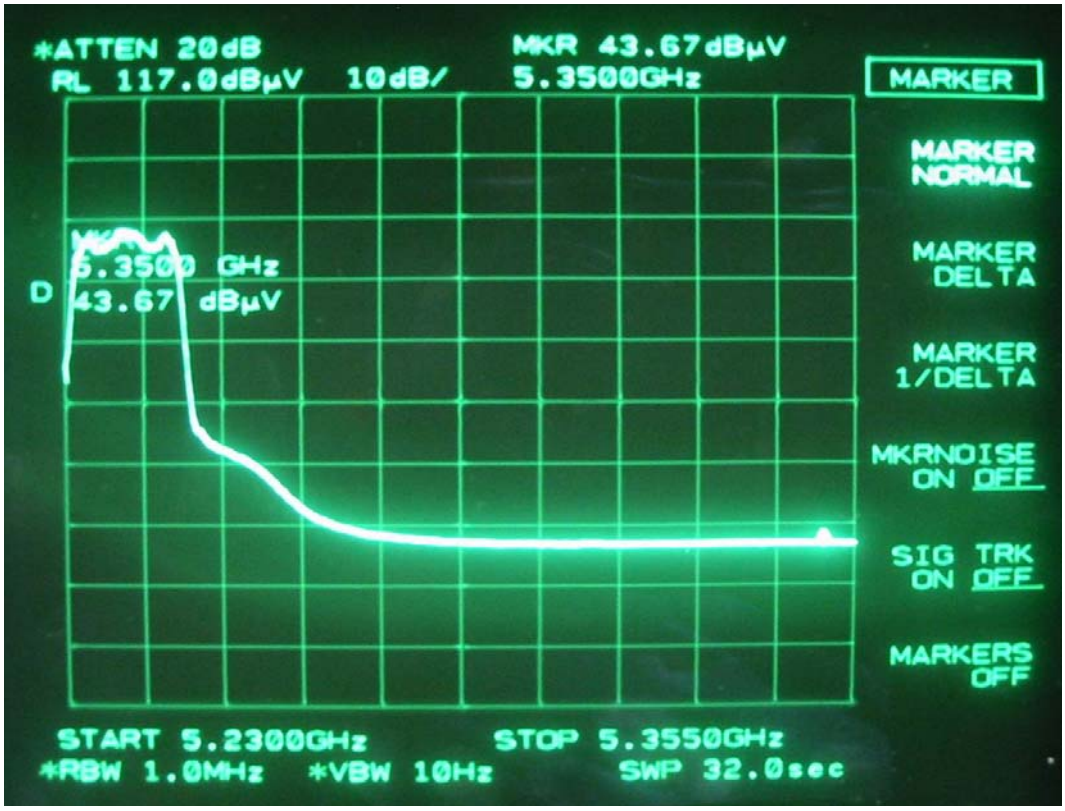


Avg

IEEE 802.11a, 5240MHz (Antenna#1)

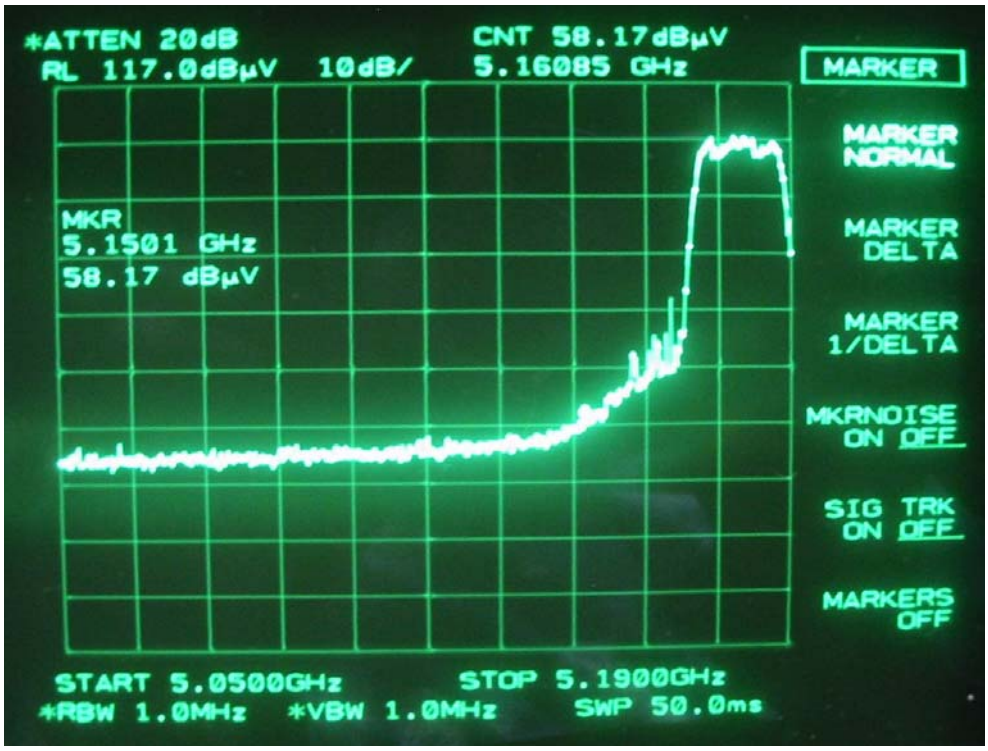


Peak

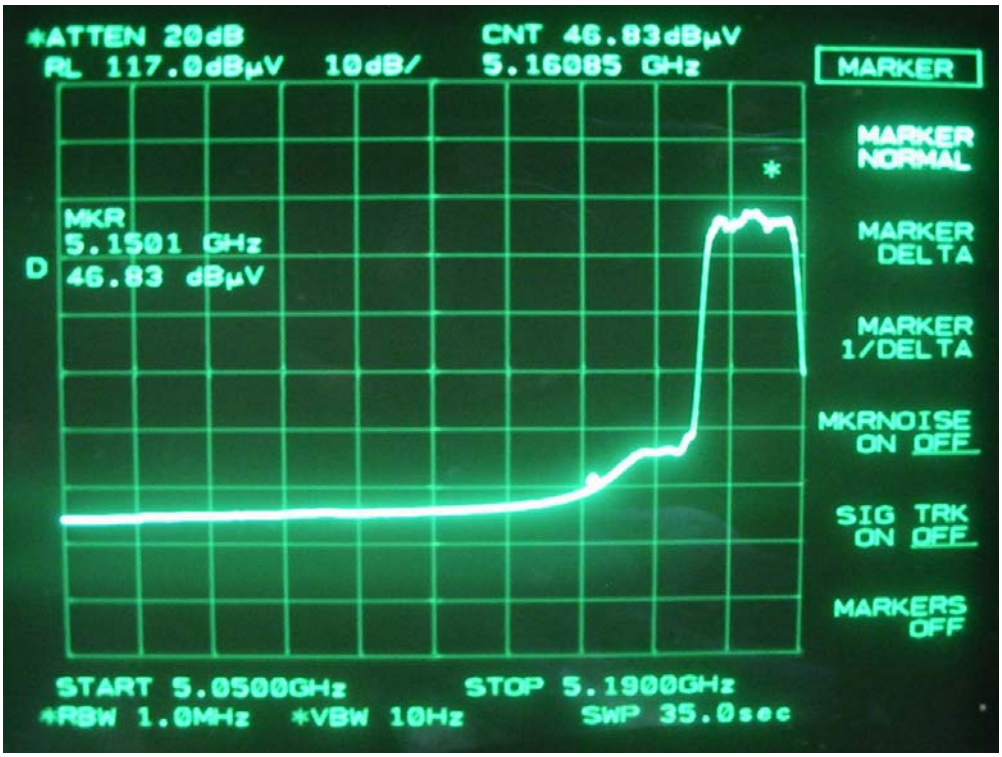


Avg

IEEE 802.11a, 5180MHz (Antenna#2)

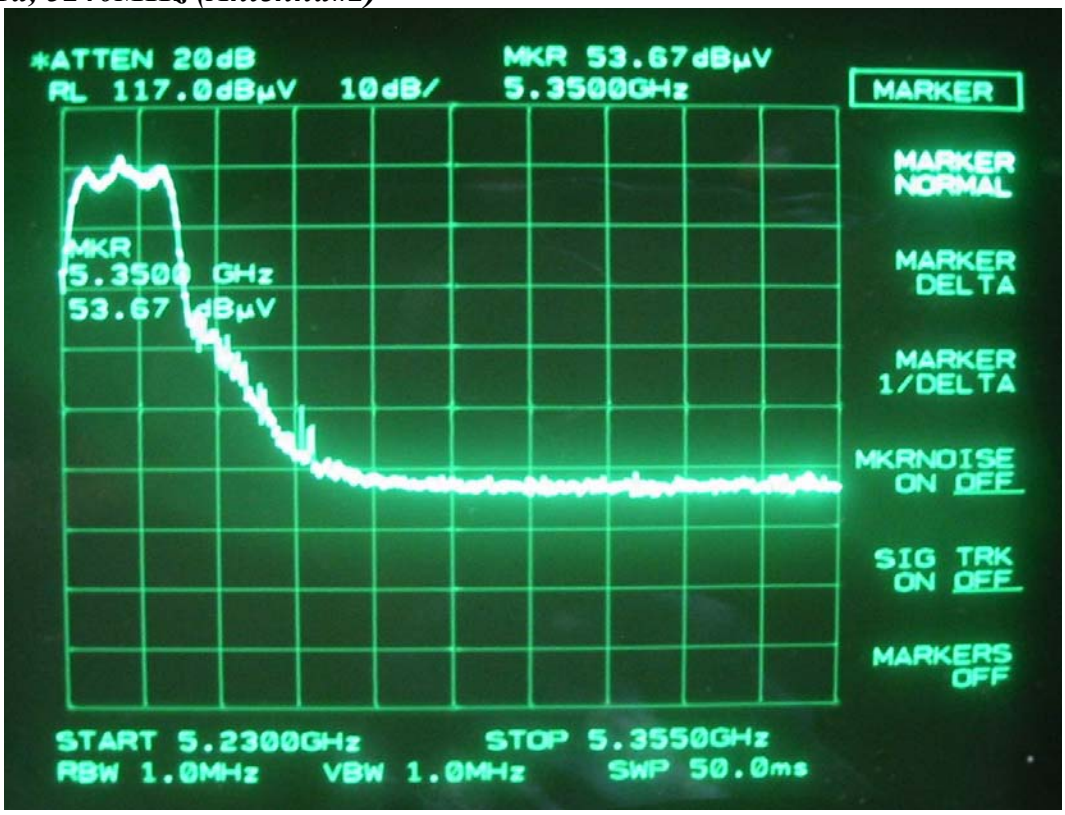


Peak

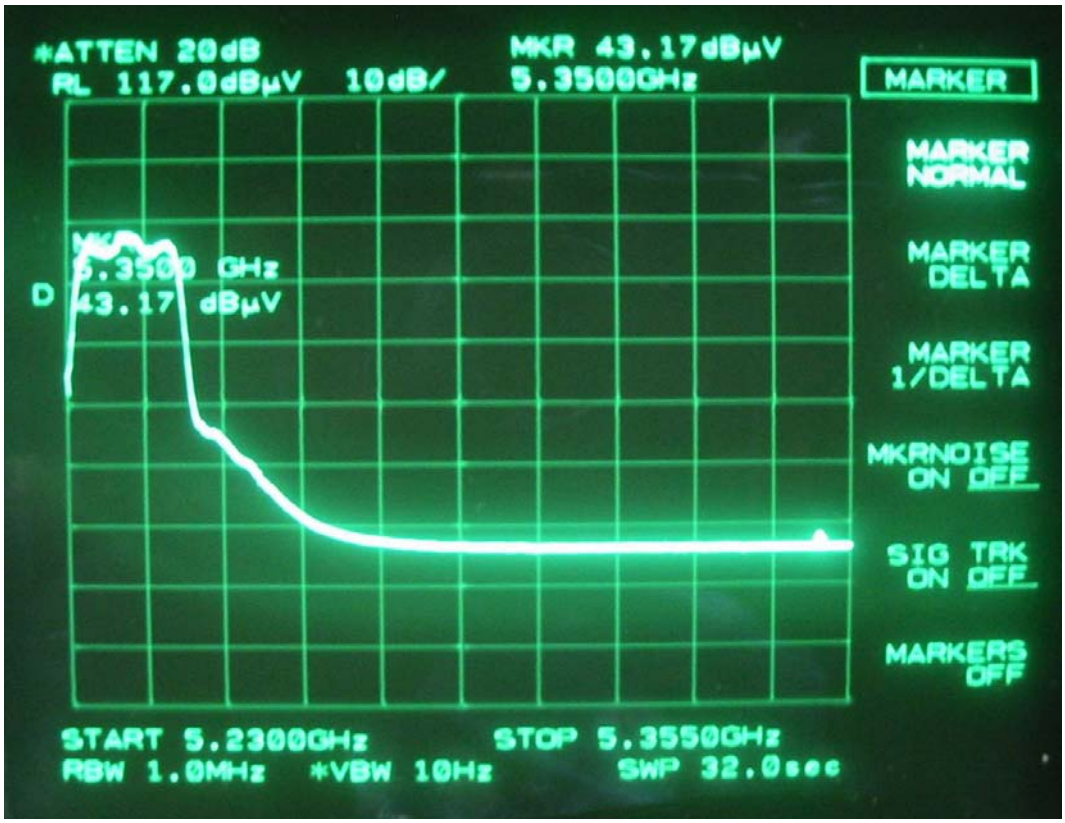


Avg

IEEE 802.11a, 5240MHz (Antenna#2)

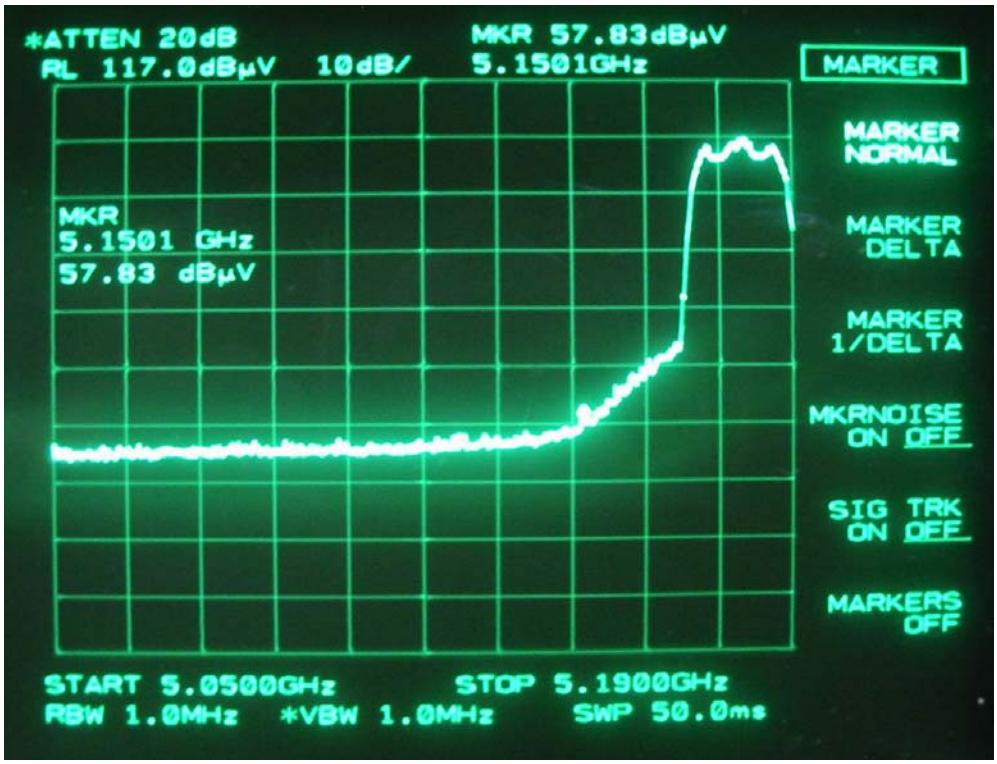


Peak

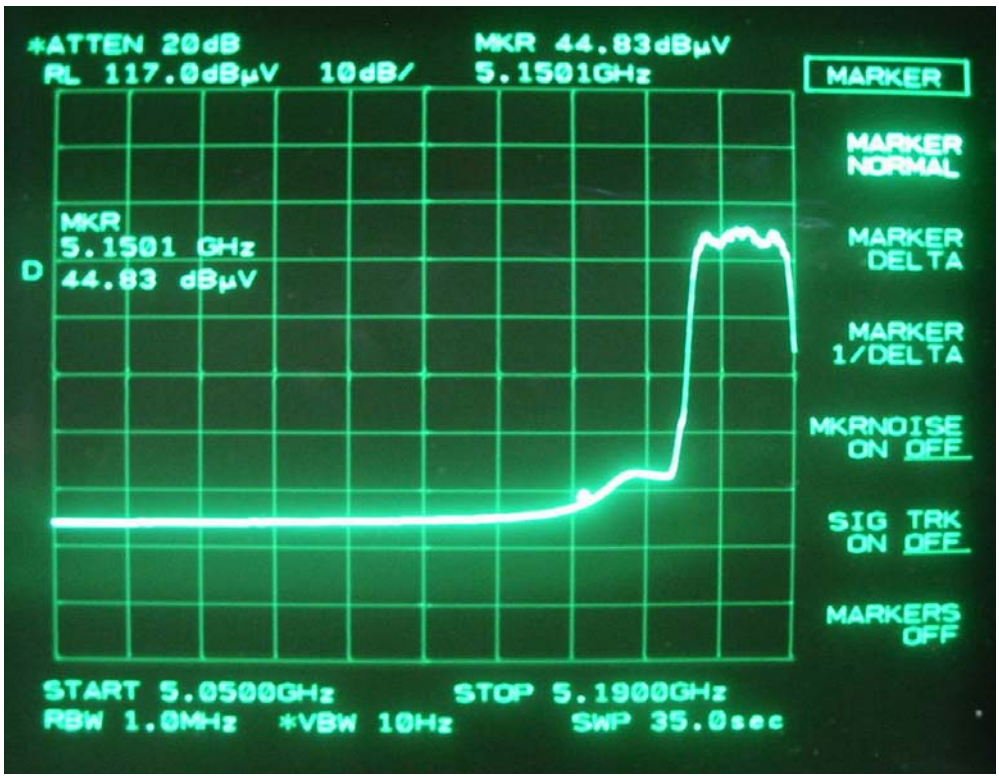


Avg

IEEE 802.11a 20M, 5180MHz (Antenna#1)

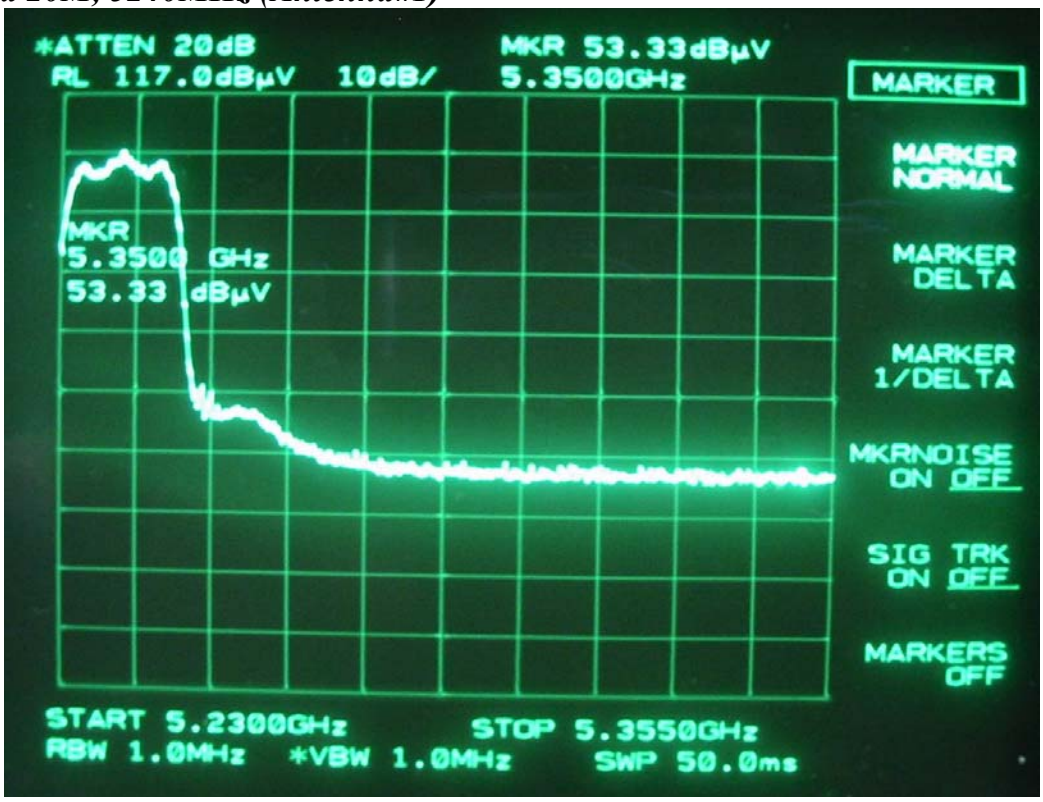


Peak

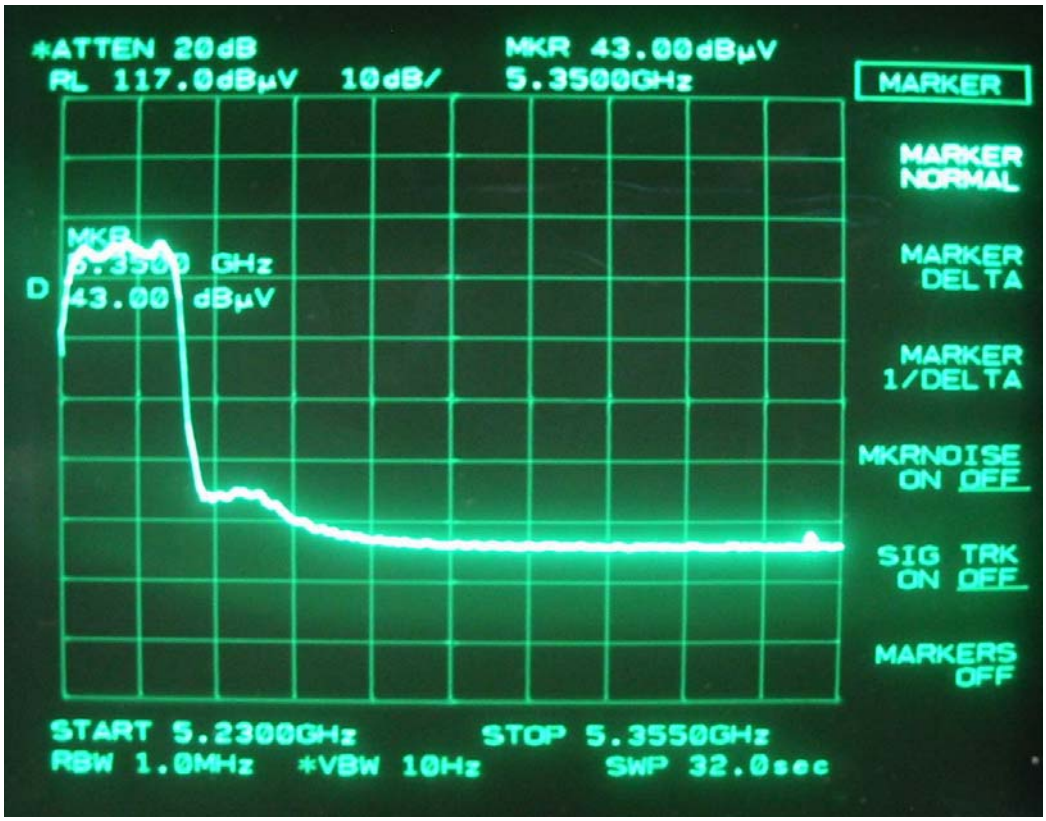


Avg

IEEE 802.11a 20M, 5240MHz (Antenna#1)

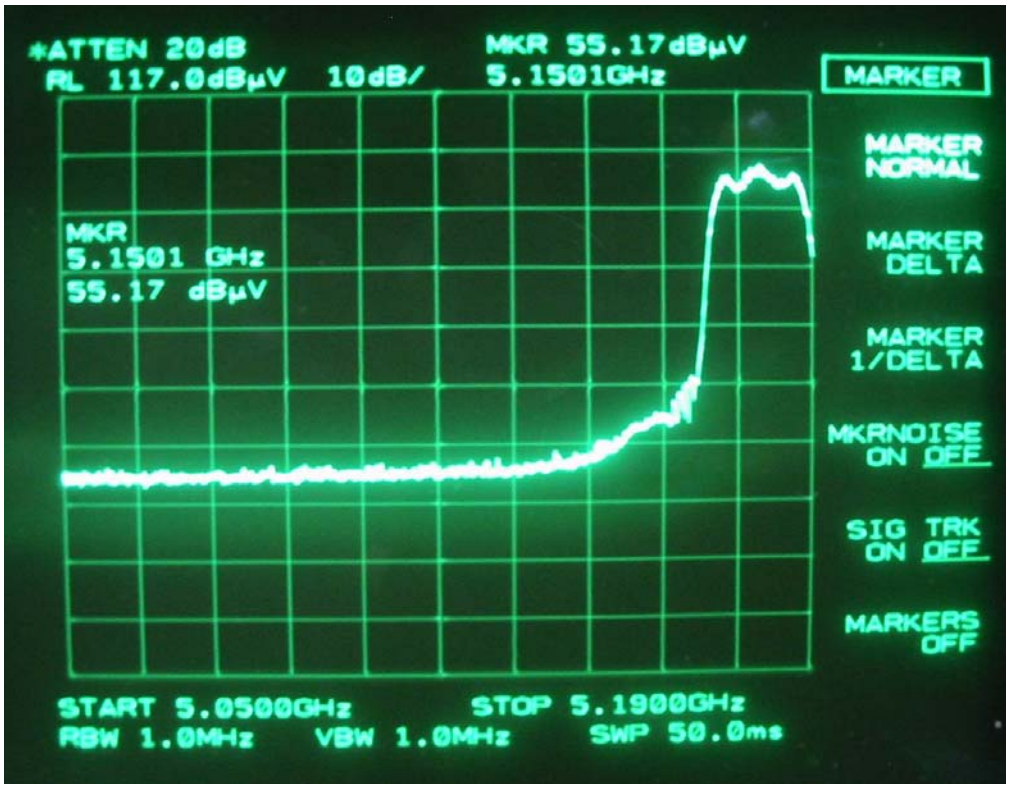


Peak

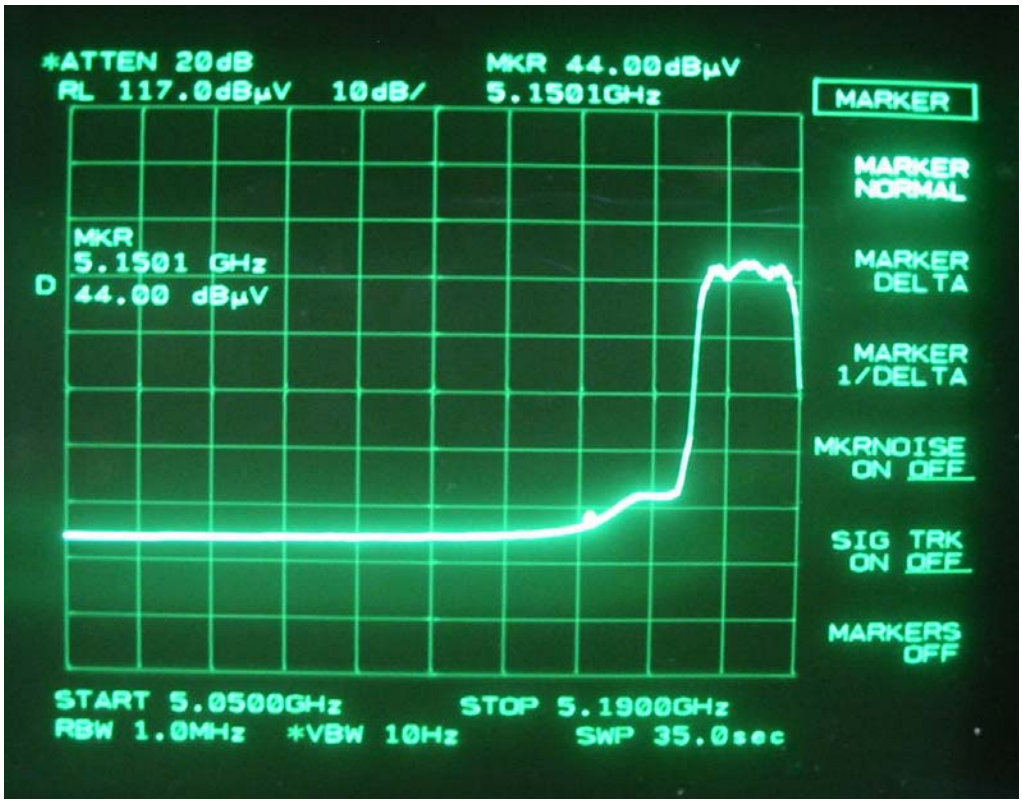


Avg

IEEE 802.11a 20M, 5180MHz (Antenna#2)

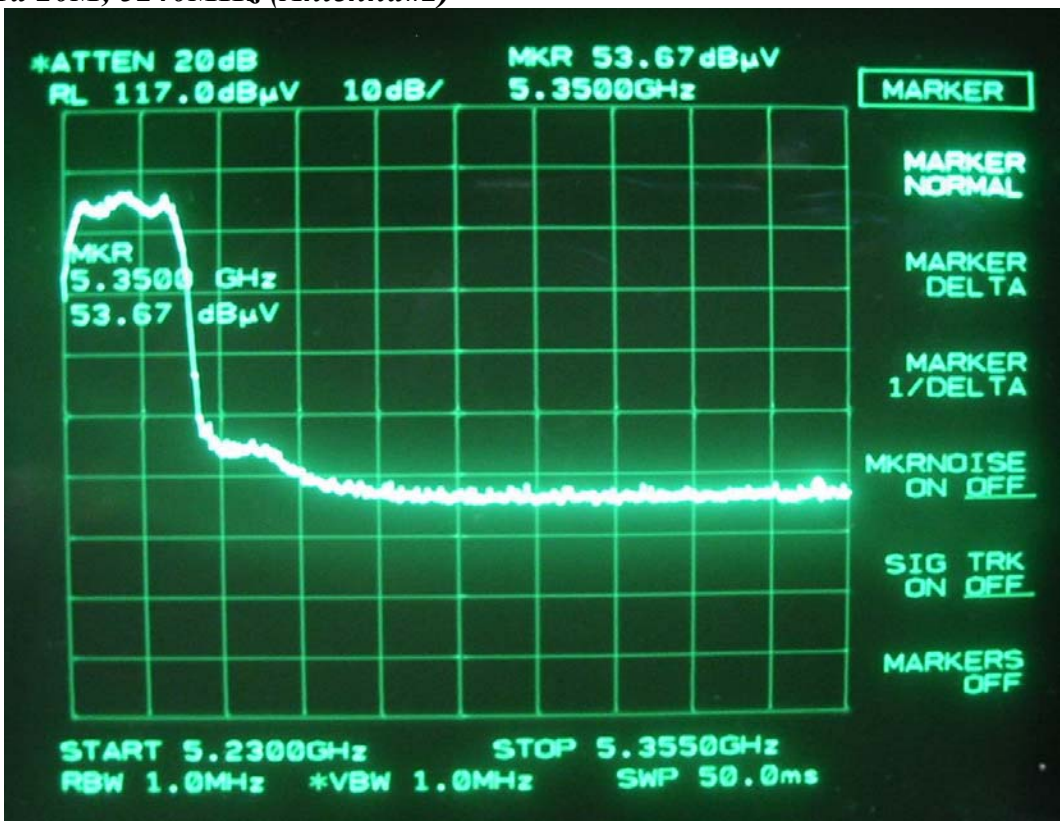


Peak

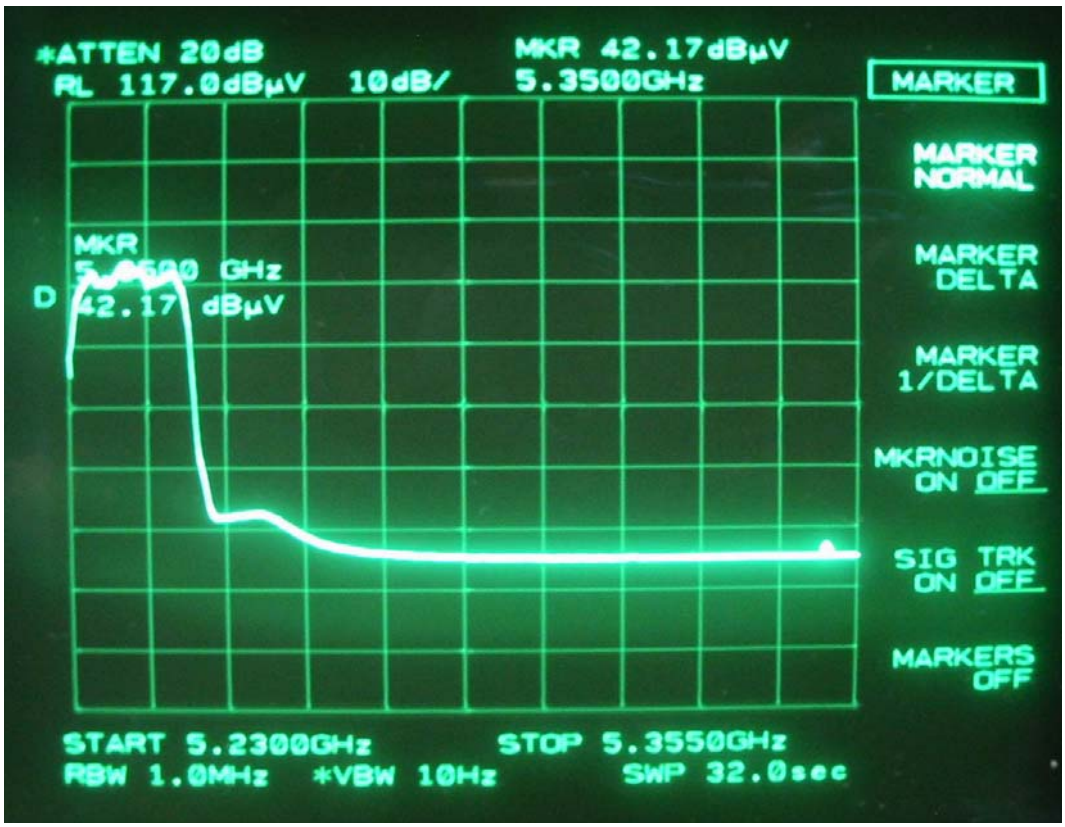


Avg

IEEE 802.11a 20M, 5240MHz (Antenna#2)

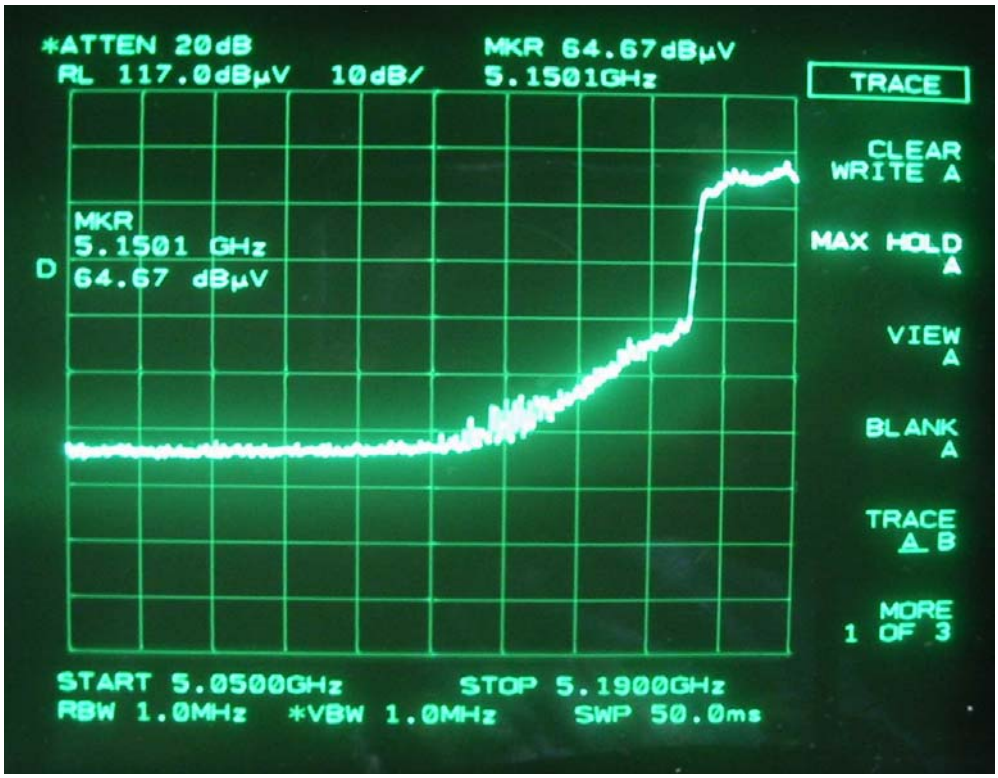


Peak



Avg

IEEE 802.11a 40M, 5190MHz (Antenna#1)



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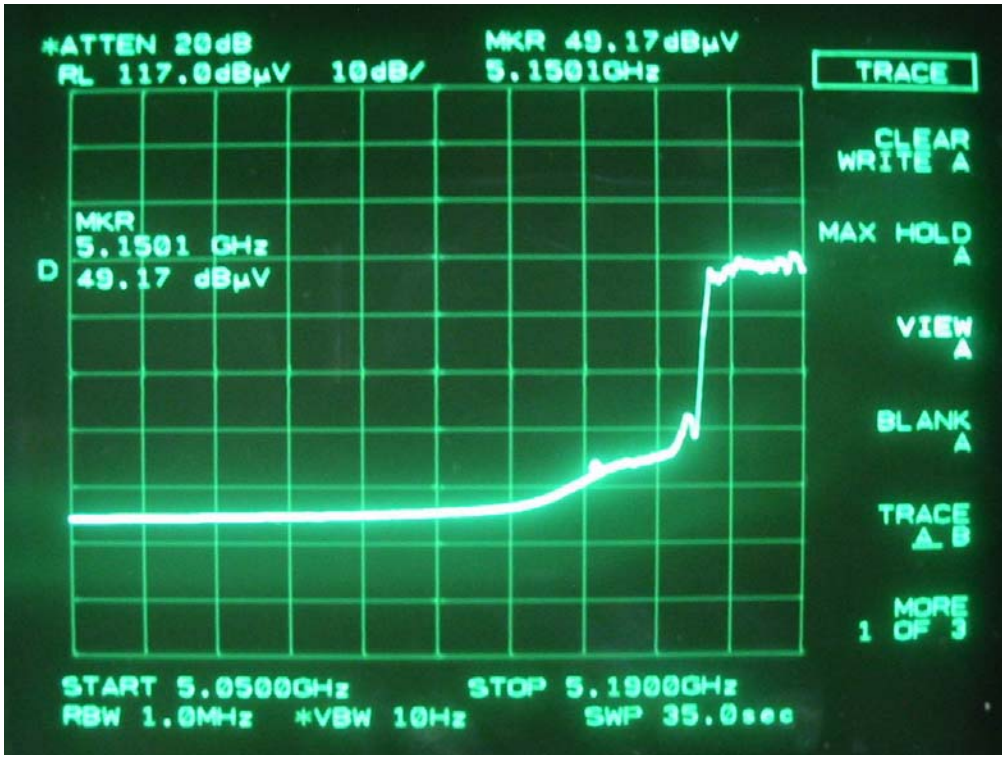
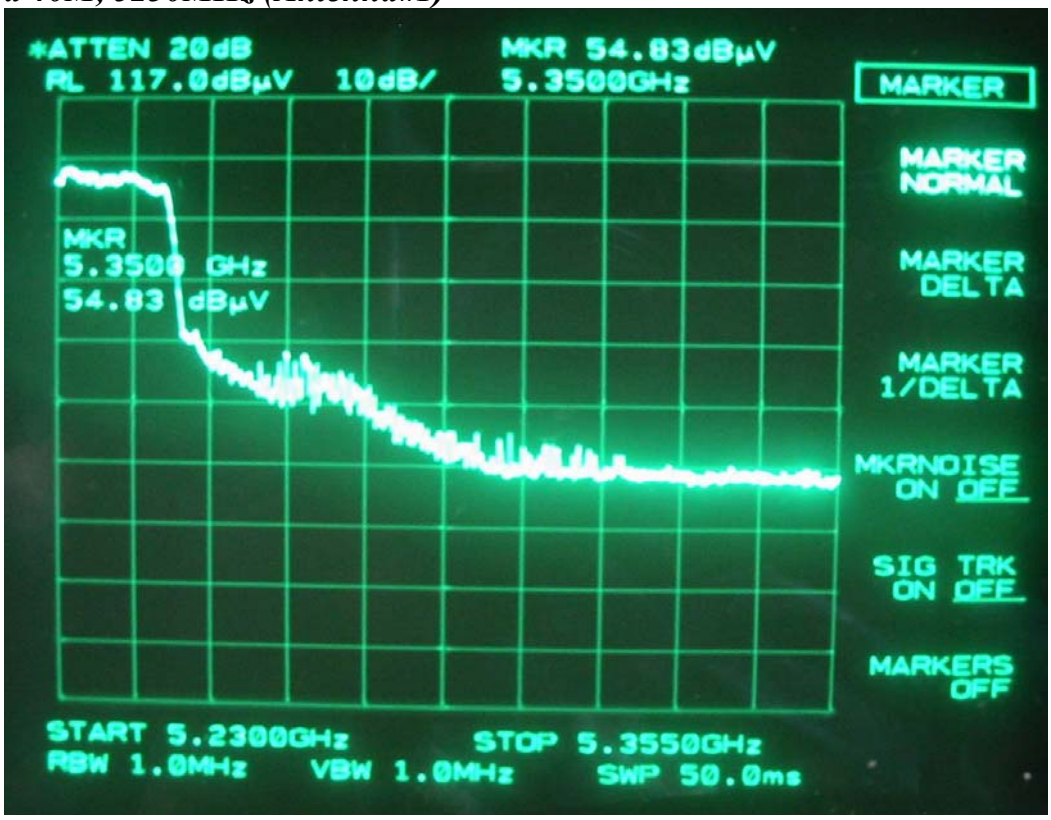


Avg

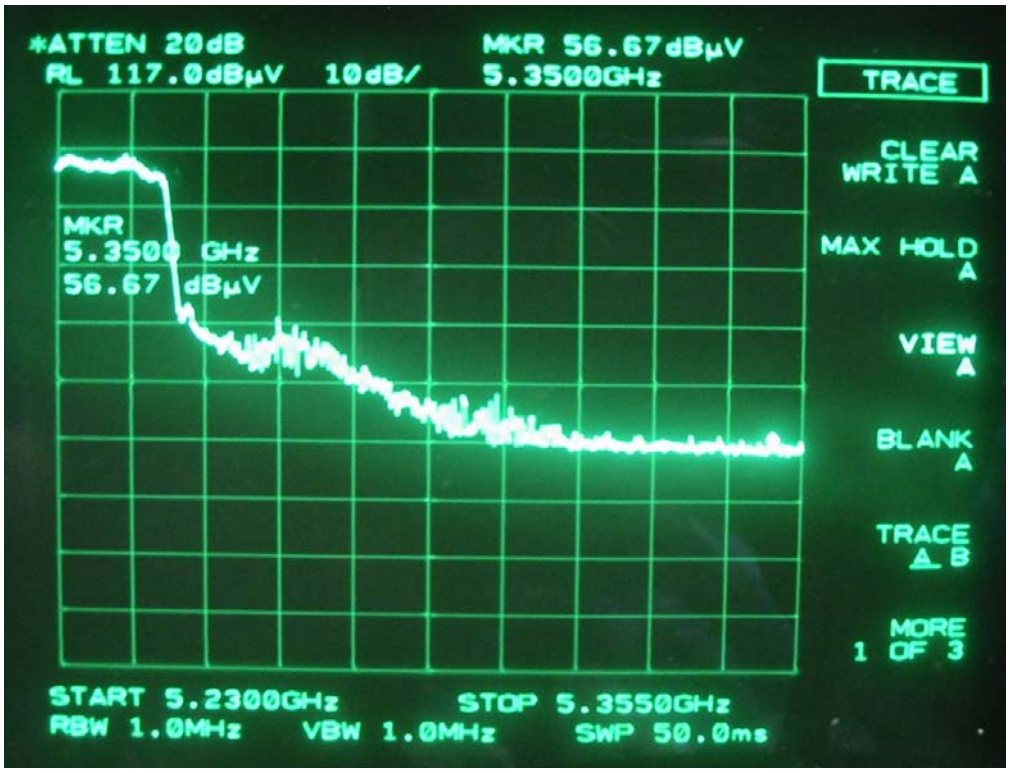
IEEE 802.11a 40M, 5230MHz (Antenna#1)



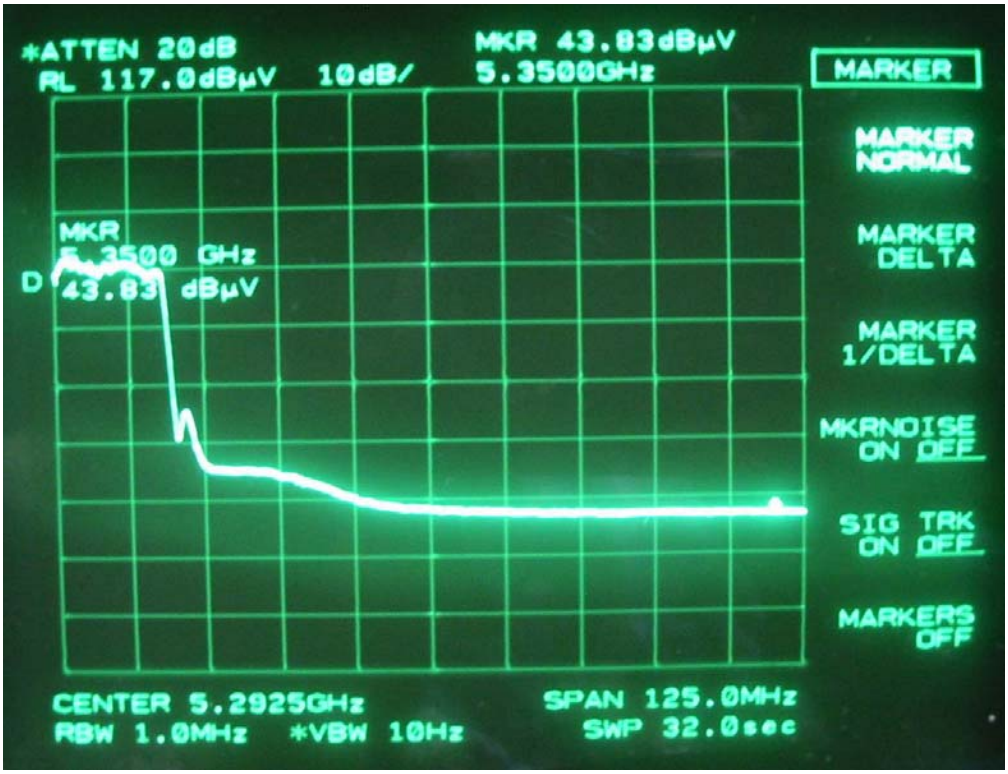
Peak

Avg

IEEE 802.11a 40M, 5190MHz (Antenna#2)

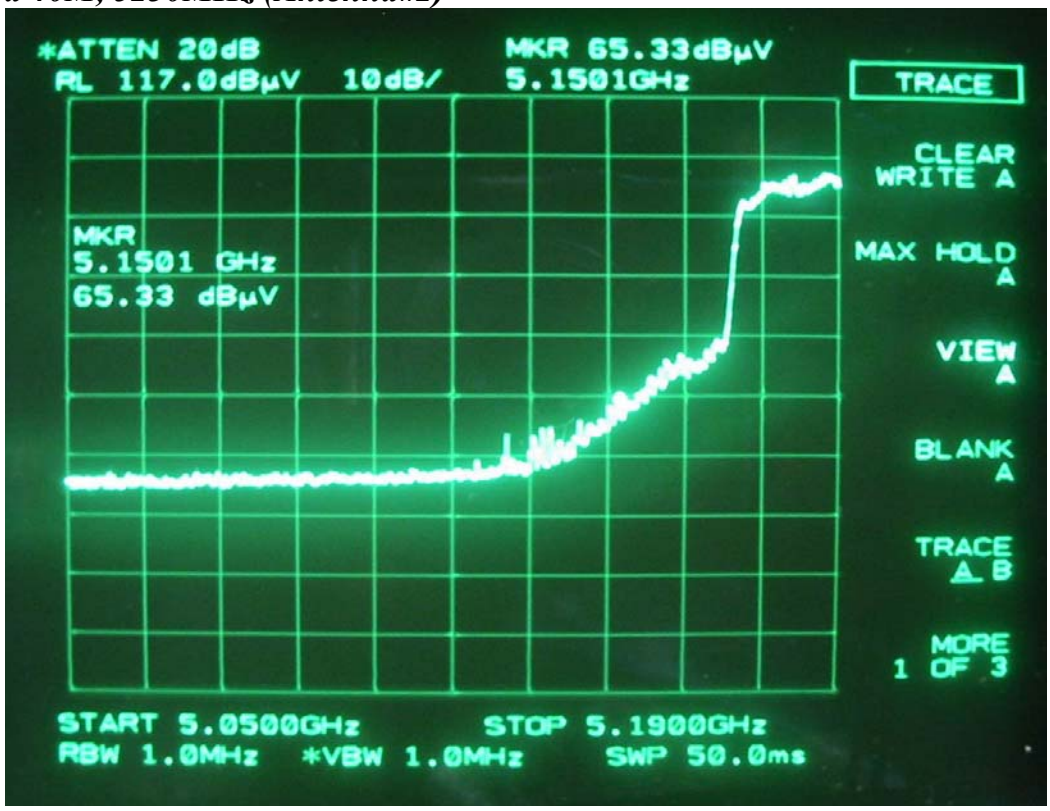


Peak



Avg

IEEE 802.11a 40M, 5230MHz (Antenna#2)



Peak

Avg

X. Section 15.407(g)(1): Frequency Stability Tolerance Measurement

10.1 Rules and Specification Limits

Limit: Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual or IEEE802.11a specification.

The frequency tolerance of the transmitter shall be ±20 ppm (IEEE802.11a specification).

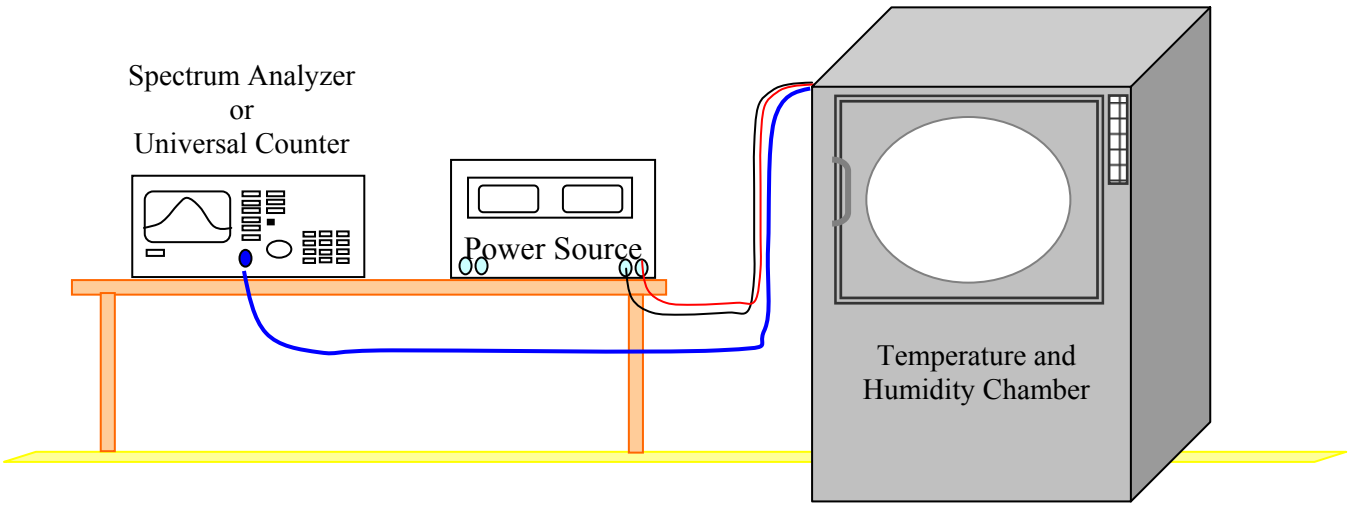
10.2 Measurement Condition & Setup with Temperature Variation

1. Place the EUT in the chamber, powered in its normal operation.
2. Set the temperature of the chamber -10 degree Centigrade. Allow the equipment to stabilize at that temperature.
3. Measured the carrier frequency (un-modulation) using preamplifier and frequency counter/ Spectrum Analyzer.
4. Repeated procedures 1 to 3 from -30 to 50 degree Centigrade at internals of 10 degree.

10.3 List of Measurement Instruments with Temperature Variation List of test Instrument

Instrument Name	Model No.	Brand	Serial No.	Next time
Spectrum Analyzer	MS2665C	ANRITSU	6200175476	12/19/09
Universal Counter	5313A	HP	356A11550	12/07/07
Temperature and Humidity Chamber	THS-ML1	King Son	240	12/26/07

10.4 Measurement Configuration of Temperature Variation Test:



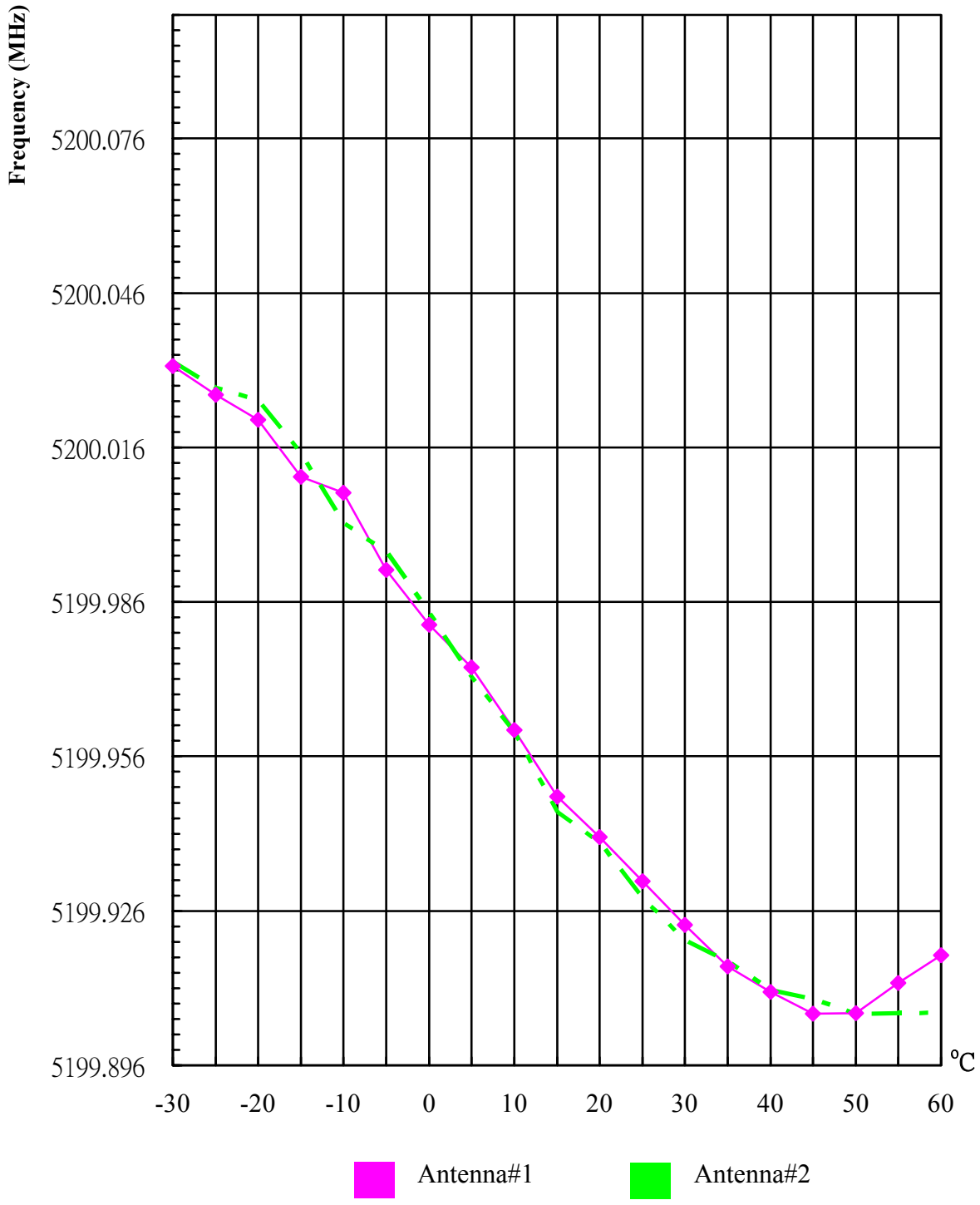
10.5 Measurement Result with Temperature Variation

A table is presented which illustrates compliance with the rule where the center frequency is 5200.000000MHz.

Temperature Variation Table

Temperature (Centigrade)	*Frequency (MHz)*	
	Antenna#1	*Antenna#2*
-30	5200.031760	5200.032620
-25	5200.026180	5200.027550
-20	5200.021320	5200.025160
-15	5200.010270	5200.014810
-10	5200.007210	5200.001260
-5	5199.992210	5199.99570
0	5199.981570	5199.983830
5	5199.973290	5199.971440
10	5199.961090	5199.960680
15	5199.948220	5199.945140
20	5199.940340	5199.939280
25	5199.931780	5199.928560
30	5199.923300	5199.920320
35	5199.915180	5199.916140
40	5199.910240	5199.910710
45	5199.906010	5199.908950
50	5199.906090	5199.905930
55	5199.912060	5199.906160
60	5199.917350	5199.906230
Max Deviation (MHz)	0.09399	0.09407
Max Tolerance (ppm)	18.07	18.09

Chart 10.1 Temperatuer Variation Vs. Frequency



A table is presented which illustrates compliance with the rule where the center frequency is 5785.000000MHz.

Temperature Variation Table

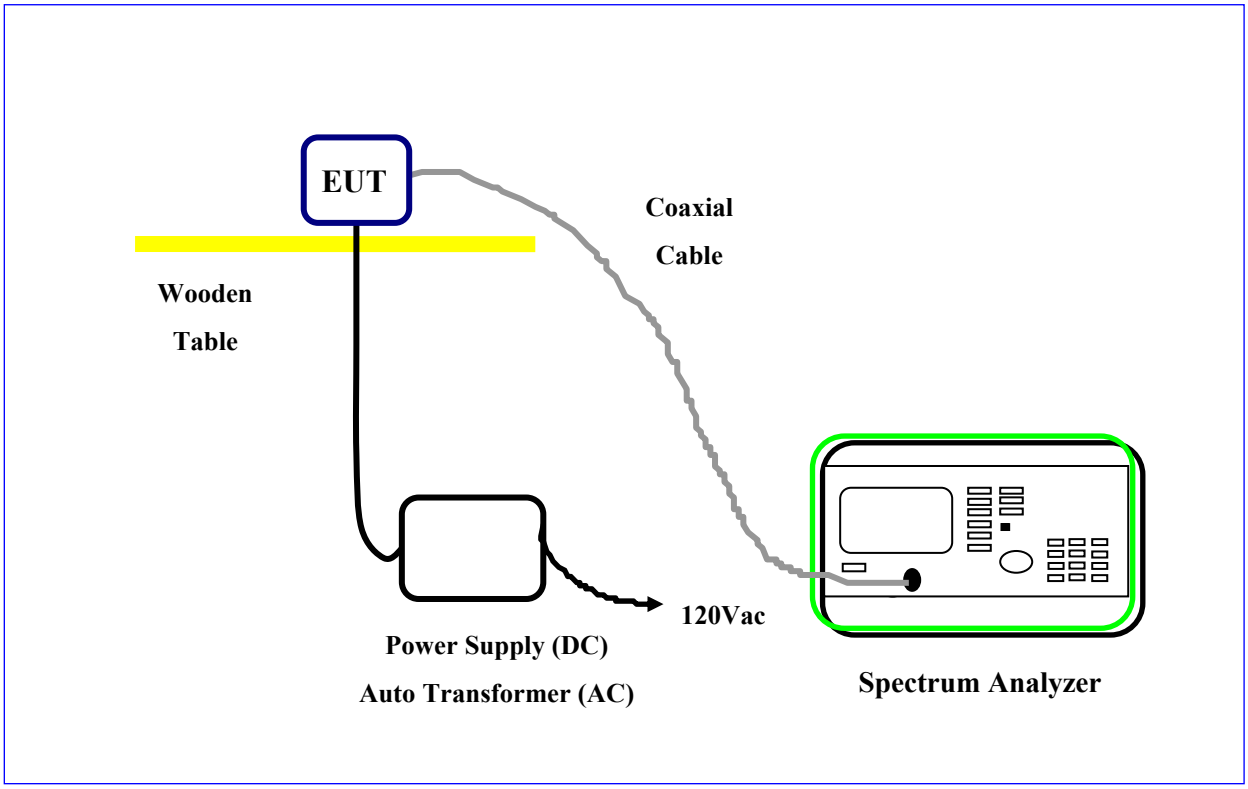
Temperature (Centigrade)	*Frequency (MHz)*	
	Antenna#1	*Antenna#2*
-30	5785.031240	5785.030870
-25	5785.029790	5785.028710
-20	5785.027830	5785.026220
-15	5785.019680	5785.018790
-10	5785.010140	5785.005220
-5	5785.007230	5785.000510
0	5784.980760	5784.982050
5	5784.965670	5784.967410
10	5784.958020	5784.958240
15	5784.944610	5784.946750
20	5784.932140	5784.933480
25	5784.926180	5784.925310
30	5784.912790	5784.913030
35	5784.904560	5784.906710
40	5784.898420	5784.899520
45	5784.896510	5784.897010
50	5784.895240	5784.895760
55	5784.895180	5784.895560
60	5784.895120	5784.894950
Max Deviation (MHz)	0.10488	0.10505
Max Tolerance (ppm)	18.13	18.16

Chart 10.2 Temperatuer Variation Vs. Frequency

10.6 Measurement Condition & Setup with Voltage Variation

1. Attached the power line of the power supply to the power position of the EUT.
2. Tuned the output power level to power source 85 %, 100%, 115% of the normal operation power of EUT.
3. Recorded the frequency with a frequency counter / .Spectrum Analyzer

10.7 Configuration of Voltage Variation Test



10.8 Measurement Result with Voltage Variation

Frequency Stability of Voltage Variation Measurement Table

Supply Voltage (Volt)	*Frequency (MHz)*	
	Antenna#1	*Antenna#2*
102 (85%)	5199.935120	5199.930660
120 (100%)	5199.936410	5199.930120
138 (115%)	5199.935860	5199.930180
Max Deviation (MHz)	0.06488	0.06982
Max Tolerance (ppm)	12.48	13.43

Frequency Stability of Voltage Variation Measurement Table

Supply Voltage (Volt)	*Frequency (MHz)*	
	Antenna#1	*Antenna#2*
102 (85%)	5784.928150	5784.926910
120 (100%)	5784.927440	5784.926140
138 (115%)	5784.928730	5784.927560
Max Deviation (MHz)	0.07256	0.07386
Max Tolerance (ppm)	12.54	12.77

Chart 10.3 Voltage Variation Vs. Frequency

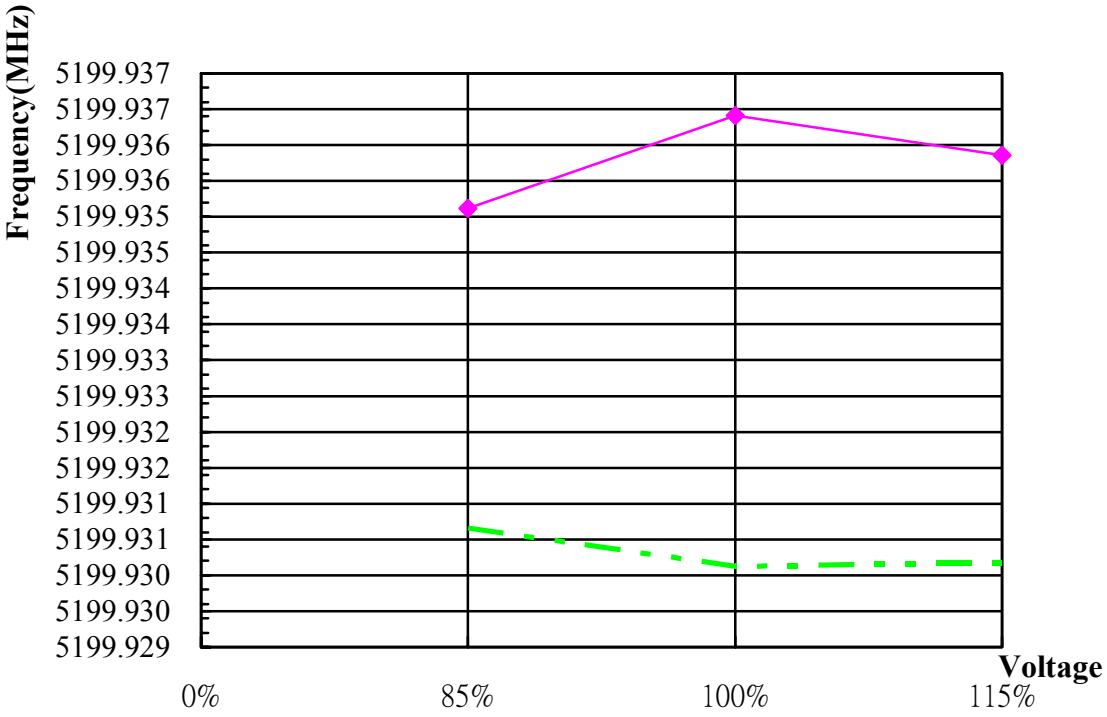


Chart 10.4 Voltage Variation Vs. Frequency