1. Section 15.247(b)

The power output is less than 1 Watt as shown below:

Power = (E V/m x d) squared / 30
1 dBμV/ = 20 log (μV/m)

so our reading of 106.09 dBμV/m = 201604.4 μV/m = 0.201604 V/m

Power = (0.201604 V/m x 3)squared / 30 = 0.0126 Watt

2. Corrected label on PC peripheral portion of the device for Declaration of Conformity

Due to size limitations, the following text is or will be placed in a prominent location in the user's manual:

FOR HOME OR OFFICE USE

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

3. Table of Measured Hopping Frequencies

There are 79 hopping channel frequencies. The corrected measured hopping frequencies from channel 1 to 10, 13 to 81 are located on TABLE 1, which follows. On TABLE 2, you'll find 16, pseudo-random hopping sequences labeled 1 through 16. You'll note that each of the 16 sequences has a channel 1, does not have a channel 82 and has excluded channels 11 and 12. This leaves 79 hopping channel frequencies per each pseudo-random sequence.

Each pseudo-random sequence is read as follows, taking sequence number 1 as an example:

{69,18,59,1,61,72,63,77,7,34,62,35,74,36,46,39,
67,66,28,40,17,32,23,65,25,71,30,64,58,43,33,57,
52,4,16,78,60,3,53,21,5,56,68,37,14,47,75,80,
22,19,81,38,2,24,79,8,27,13,49,44,31,15,42,70,
51,55,48,29,9,73,54,20,6,41,26,50,45,10,76},

All numbers in the table are given in MHz. The first number in the table is 69. This corresponds to channel 69, which is 2,469 MHz. The device would then hop to channel 18, corresponding to 2,418 MHz. Next would be channels 59, 1, 61,72...until the end of the table is reached, which is channel 76. These channels correspond to 2459, 2401, 2461, 2472...2476 MHz respectively. Each table thus hops through all 79 channels. A device that is programmed to pseudo-random sequence number 1 would continuously hop through these 79 channels.

Table 1

MEASURED HOPPING FREQUENCIES								
Channel	Designed Frequency (MHz)	Measured Frequency (MHz)	Channel	Designed Frequency (MHz)	Measured Frequency (MHz)	Channel	Designed Frequency (MHz)	Measured Frequency (MHz)
1	2401	2401.125	29	2429	2429.113	57	2457	2457.125
2	2402	2402.113	30	2430	2430.113	58	2458	2458.125
3	2403	2403.125	31	2431	2431.113	59	2459	2459.113
4	2404	2404.113	32	2432	2432.113	60	2460	2460.113
5	2405	2405.113	33	2433	2433.113	61	2461	2461.125
6	2406	2406.113	34	2434	2434.125	62	2462	2462.113
7	2407	2407.113	35	2435	2435.113	63	2463	2463.125
8	2408	2408.113	36	2436	2436.113	64	2464	2464.125
9	2409	2409.113	37	2437	2437.113	65	2465	2465.138
10	2410	2410.113	38	2438	2438.113	66	2466	2466.113
*11	Excluded	Excluded	39	2439	2439.113	67	2467	2467.125
*12	Excluded	Excluded	40	2440	2440.113	68	2468	2468.113
13	2413	2413.113	41	2441	2441.113	69	2469	2469.113
14	2414	2414.113	42	2442	2442.113	70	2470	2470.125
15	2415	2415.113	43	2443	2443.113	71	2471	2471.125
16	2416	2416.113	44	2444	2444.113	72	2472	2472.113
17	2417	2417.113	45	2445	2445.113	73	2473	2473.125
18	2418	2418.113	46	2446	2446.113	74	2474	2474.138
19	2419	2419.113	47	2447	2447.113	75	2475	2475.125
20	2420	2420.113	48	2448	2448.125	76	2476	2476.125
21	2421	2421.113	49	2449	2449.125	77	2477	2477.113
22	2422	2422.113	50	2450	2450.125	78	2478	2478.113
23	2423	2423.125	51	2451	2451.113	79	2479	2479.113
24	2424	2424.113	52	2452	2452.125	80	2480	2480.113
25	2425	2425.125	53	2453	2453.113	81	2481	2481.113
26	2426	2426.125	54	2454	2454.125			
27	2427	2427.113	55	2455	2455.125			
28	2428	2428.125	56	2456	2456.125			

***Channel 11 and 12 are excluded** because the receiver experiences reduced sensitivity because of an internal oscillator which has harmonics on the boundary of these channels. The internal oscillators fundamental is 120.588 MHz. The 20th harmonic of this oscillator is at 2411.76 MHz.

Table 2

```
//
// CHANNELS.C
//
// These channel numbers are in MHz within the 2.4GHz ISM band.
// The actual frequency in MHz is 2400 + channel.
//
// DO NOT MODIFY THIS FILE, IT HAS BEEN SUBMITTED TO THE FCC.
//
// Seed = 896983946
//
#define MAX_TABLES 16
#define MAX_CHANNELS 79

extern int ChannelTables[MAX_TABLES][MAX_CHANNELS] = {

    {69,18,59,1,61,72,63,77,7,34,62,35,74,36,46,39,
    67,66,28,40,17,32,23,65,25,71,30,64,58,43,33,57,
    52,4,16,78,60,3,53,21,5,56,68,37,14,47,75,80,
    22,19,81,38,2,24,79,8,27,13,49,44,31,15,42,70,
    51,55,48,29,9,73,54,20,6,41,26,50,45,10,76},

    {69,59,61,63,7,62,74,46,67,28,17,23,25,30,58,33,
    52,16,60,53,5,68,14,75,22,81,2,79,27,49,31,42,
    51,48,9,54,6,26,45,76,18,1,72,77,34,35,36,39,
    66,40,32,65,71,64,43,57,4,78,3,21,56,37,47,80,
    19,38,24,8,13,44,15,70,55,29,73,20,41,50,10},

    {69,1,63,34,74,39,28,32,25,64,33,4,60,21,68,47,
    22,38,79,13,31,70,48,73,6,50,76,59,72,7,35,46,
    66,17,65,30,43,52,78,53,56,14,80,81,24,27,44,42,
    55,9,20,26,10,18,61,77,62,36,67,40,23,71,58,57,
    16,3,5,37,75,19,2,8,49,15,51,29,54,41,45},

    {69,61,7,74,67,17,25,58,52,60,5,14,22,2,27,31,
    51,9,6,45,18,72,34,36,66,32,71,43,4,3,56,47,
    19,24,13,15,55,73,41,10,59,63,62,46,28,23,30,33,
    16,53,68,75,81,79,49,42,48,54,26,76,1,77,35,39,
    40,65,64,57,78,21,37,80,38,8,44,70,29,20,50},

    {69,72,62,39,17,71,33,78,5,47,81,8,31,55,54,50,
    18,63,35,67,32,30,57,60,56,75,38,27,15,48,20,45,
    59,77,74,66,23,64,52,3,68,80,2,13,42,29,6,10,
    1,7,36,28,65,58,4,53,37,22,24,49,70,9,41,76,
    61,34,46,40,25,43,16,21,14,19,79,44,51,73,26},

    {69,63,74,28,25,33,60,68,22,79,31,48,6,76,72,35,
    66,65,43,78,56,80,24,44,55,20,10,61,62,67,23,58,
    16,5,75,2,49,51,54,45,1,34,39,32,64,4,21,47,
    38,13,70,73,50,59,7,46,17,30,52,53,14,81,27,42,
    9,26,18,77,36,40,71,57,3,37,19,8,15,29,41},

    {69,77,46,32,58,78,68,19,27,70,54,10,72,74,40,30,
    4,5,80,79,15,9,50,1,62,66,25,57,53,47,2,44,
    48,41,18,7,39,23,43,60,37,81,13,51,20,76,63,36,
    17,64,16,56,22,8,42,73,45,61,35,28,71,52,21,75,
    24,31,29,26,59,34,67,65,33,3,14,38,49,55,6},

    {69,7,67,25,52,5,22,27,51,6,18,34,66,71,4,56,
    19,13,55,41,59,62,28,30,16,68,81,49,48,26,1,35,
    40,64,78,37,38,44,29,50,61,74,17,58,60,14,2,31,
    9,45,72,36,32,43,3,47,24,15,73,10,63,46,23,33,
```

Table 2 (cont'd)

53,75,79,42,54,76,77,39,65,57,21,80,8,70,20},

9 {69,34,28,64,60,47,79,70,6,59,35,17,43,53,80,27,
55,26,61,36,23,57,5,19,49,29,45,63,39,25,4,68,
38,31,73,76,7,66,30,78,14,24,42,20,18,62,40,58,
3,75,8,51,41,1,74,32,33,21,22,13,48,50,72,46,
65,52,56,81,44,9,10,77,67,71,16,37,2,15,54},

10 {69,62,17,33,5,81,31,54,18,35,32,57,56,38,15,20,
59,74,23,52,68,2,42,6,1,36,65,4,37,24,70,41,
61,46,25,16,14,79,51,26,72,39,71,78,47,8,55,50,
63,67,30,60,75,27,48,45,77,66,64,3,80,13,29,10,
7,28,58,53,22,49,9,76,34,40,43,21,19,44,73},

11 {69,35,23,4,14,8,48,10,34,17,57,68,24,51,50,77,
28,43,5,38,42,41,72,67,64,53,19,31,20,1,46,71,
60,80,49,73,18,74,65,16,47,27,29,76,62,32,52,37,
79,55,45,7,40,33,56,2,70,26,63,66,58,21,81,15,
6,61,39,30,3,22,44,54,59,36,25,78,75,13,9},

12 {69,74,25,60,22,31,6,72,66,43,56,24,55,10,62,23,
16,75,49,54,1,39,64,21,38,70,50,7,17,52,14,27,
9,18,36,71,3,19,15,41,63,28,33,68,79,48,76,35,
65,78,80,44,20,61,67,58,5,2,51,45,34,32,4,47,
13,73,59,46,30,53,81,42,26,77,40,57,37,8,29},

13 {69,36,30,21,2,55,76,74,71,53,38,51,10,35,25,3,
81,70,45,62,65,60,19,42,50,34,23,78,22,15,26,7,
32,16,80,31,41,77,17,4,75,44,6,63,40,52,47,49,
20,72,28,57,14,13,54,61,66,33,37,27,73,1,67,43,
68,8,9,59,39,58,56,79,29,18,46,64,5,24,48},

14 {69,46,58,68,27,54,72,40,4,80,15,50,62,25,53,2,
48,18,39,43,37,13,20,63,17,16,22,42,45,35,71,21,
24,29,59,67,33,14,49,6,77,32,78,19,70,10,74,30,
5,79,9,1,66,57,47,44,41,7,23,60,81,51,76,36,
64,56,8,73,61,28,52,75,31,26,34,65,3,38,55},

15 {69,39,33,47,31,50,35,30,56,27,20,77,23,3,2,29,
1,28,4,22,70,76,46,43,14,44,26,62,71,5,8,54,
63,32,60,38,48,59,66,52,80,42,10,36,58,37,49,41,
34,25,21,79,73,72,17,78,81,55,18,67,57,75,15,45,
74,64,68,13,6,7,65,53,24,9,61,40,16,19,51},

16 {69,67,52,22,51,18,66,4,19,55,59,28,16,81,48,1,
40,78,38,29,61,17,60,2,9,72,32,3,24,73,63,23,
53,79,54,77,65,21,8,20,7,25,5,27,6,34,71,56,
33,41,62,30,68,49,26,35,64,37,44,50,74,58,14,31,
45,36,43,47,15,10,46,33,75,42,76,39,57,80,70}

};

4. How is the first frequency for transmission determined? Where does the next transmission begin if the previous sequence doesn't hop through all the available channels?

The first frequency for transmission is the first frequency in our table of hopping frequencies. As explained above in #3, each device would hop through 79 channels. Depending upon which of the 16 pseudo-random sequence tables the device is programmed to, the next frequency corresponds to the next number in the table. In table number 2, for example, the device begins at 2469 MHz, then hops to 2459, 2461, 2463...2410 MHz respectively. The device always hops through all channels of its given pseudo-random sequence.

5. Section 15.247(a)1 indicates that the system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

What is the receiver input bandwidth?
The receiver input bandwidth is 1MHz.

How does the receiver shift frequencies and determine which frequency to shift in order to synchronize with this transmitter?
The receiver shifts frequencies in the same manner that the transmitter shifts frequencies. During synchronization, the receiver hops through the channel sequence backwards until it acquires the synchronization.

6. An amended application (731) form that lists the lowest and highest operating frequency and the output power of this device in items 8(a) and 8(b) of Section IV of the application, respectively. These should agree with the measured frequencies and power from the test report.

See Form 731, which follows.

7. Manufacturer of the Spread Spectrum Chip

Motorola is the manufacturer of the spread spectrum chip.

1. Section 15.247(a)(1)

Channel separation frequency measurement is 0.99 MHz complied in Section 15.247(a)(1). See the plot attached on next page.

CHANNEL SEPARATION		
Channel	**Receiver Resolution Bandwidth (kHz)**	**Measured Channel Separation Frequency (MHz)**
80	100	0.99 MHz

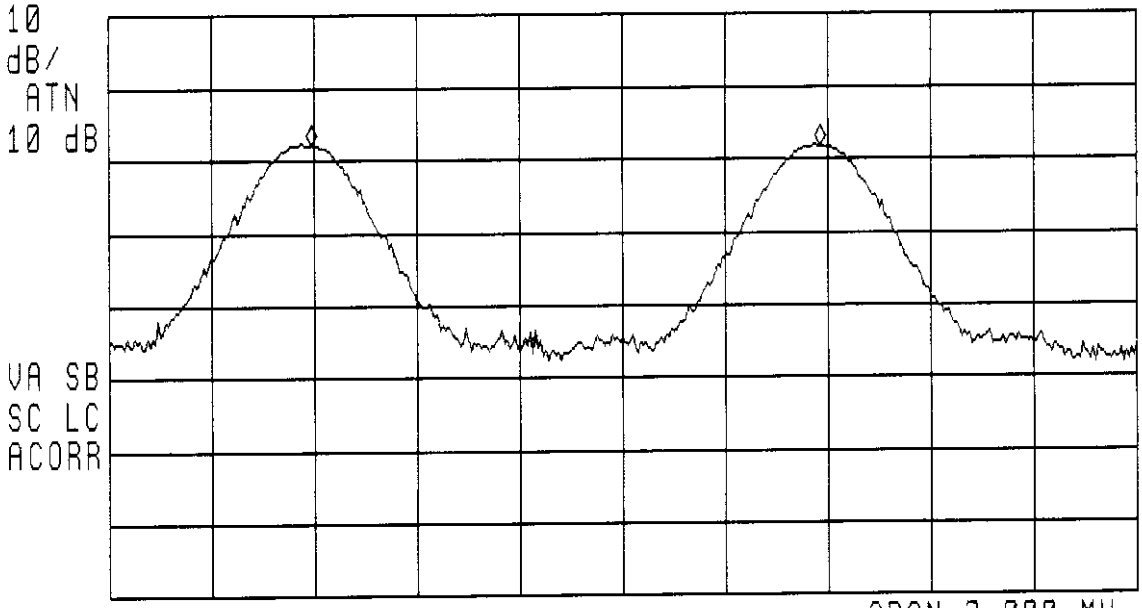
TEST INSTRUMENT USED			
Test Equipment	**Manufacturer/ Model No.**	**Serial No.**	**Last Cal.**
Horn Antenna	EMCO 3115	N/A	02/15/98
EMI Receiver	HP 8546A	3650A00363	11/04/97
RF Filter	HP 85460A	3704A00349	11/04/97

15:17:55 SEP 14, 1998

CHANNEL SEPARATION

MARKER Δ
990 kHz
-.38 dB

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKRΔ 990 kHz
-.38 dB



CENTER 2.480770 GHz
SPAN 2.000 MHz
#IF BW 100 kHz
#AVG BW 300 kHz
SWP 20.0 msec

2. Section 15.247(a)(1)(ii) 20dB Bandwidth of the hopping channel is 1 MHz

The maximum 20dB bandwidth of the hopping channel is 1 MHz according to Section 15.247(a)(1)(ii). Refer to the graphs attached on next page.

Channel	Frequency (MHz)	Receiver Resolution Bandwidth (kHz)	Measured 20dB Bandwidth of the Hopping Channel
Low	2.401140	100	450 kHz
Middle	2.442140	100	460 kHz
High	2.481155	100	430 kHz

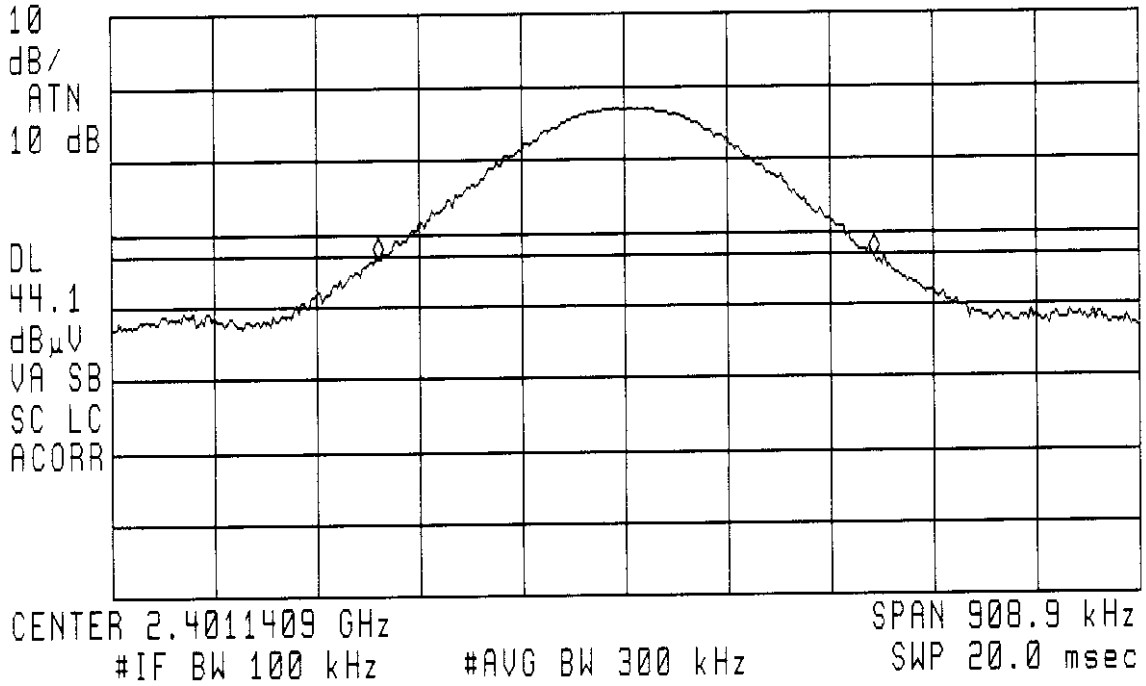
TEST INSTRUMENT USED			
Test Equipment	**Manufacturer/ Model No.**	**Serial No.**	**Last Cal.**
Horn Antenna	EMCO 3115	N/A	02/15/98
EMI Receiver	HP 8546A	3650A00363	11/04/97
RF Filter	HP 85460A	3704A00349	11/04/97

14:59:20 SEP 14, 1998 LOW CHANNEL

20dB BANDWIDTH OF THE HOPPING CHANNEL 1MHz

MARKER Δ
438.5 kHz
-.15 dB

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKRΔ 438.5 kHz
-.15 dB

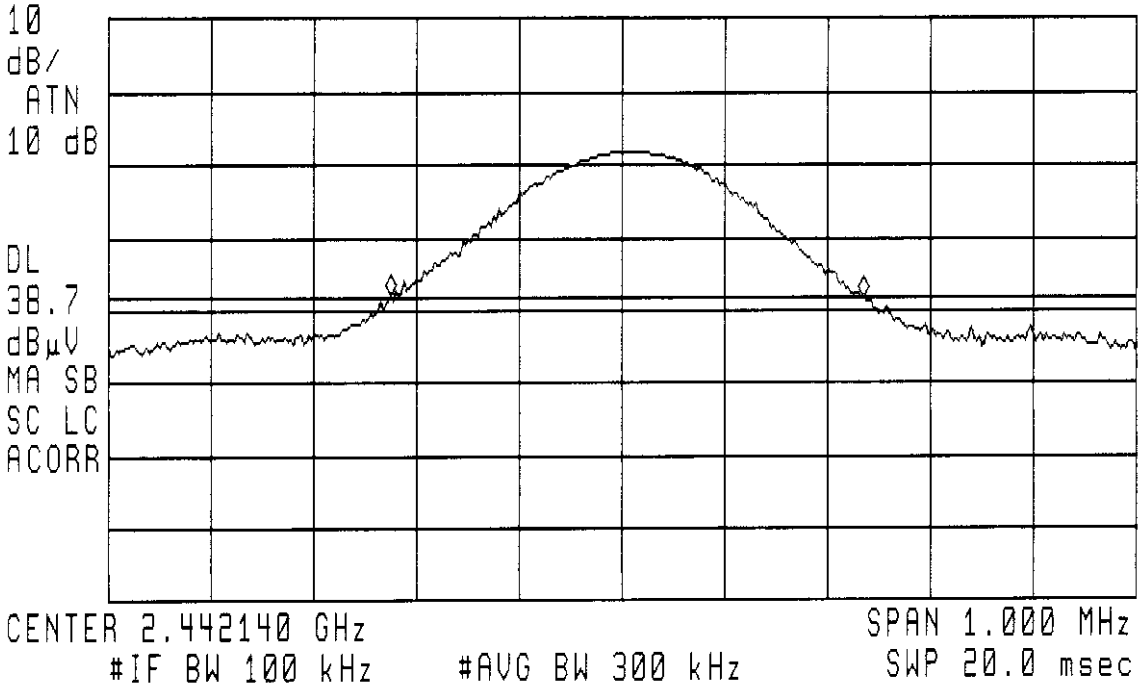


15:05:01 SEP 14, 1998 MID CHANNEL

20dB BANDWIDTH OF THE HOPPING CHANNEL ▮MHz

MARKER Δ
460 kHz
-.10 dB

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKRΔ 460 kHz
-.10 dB

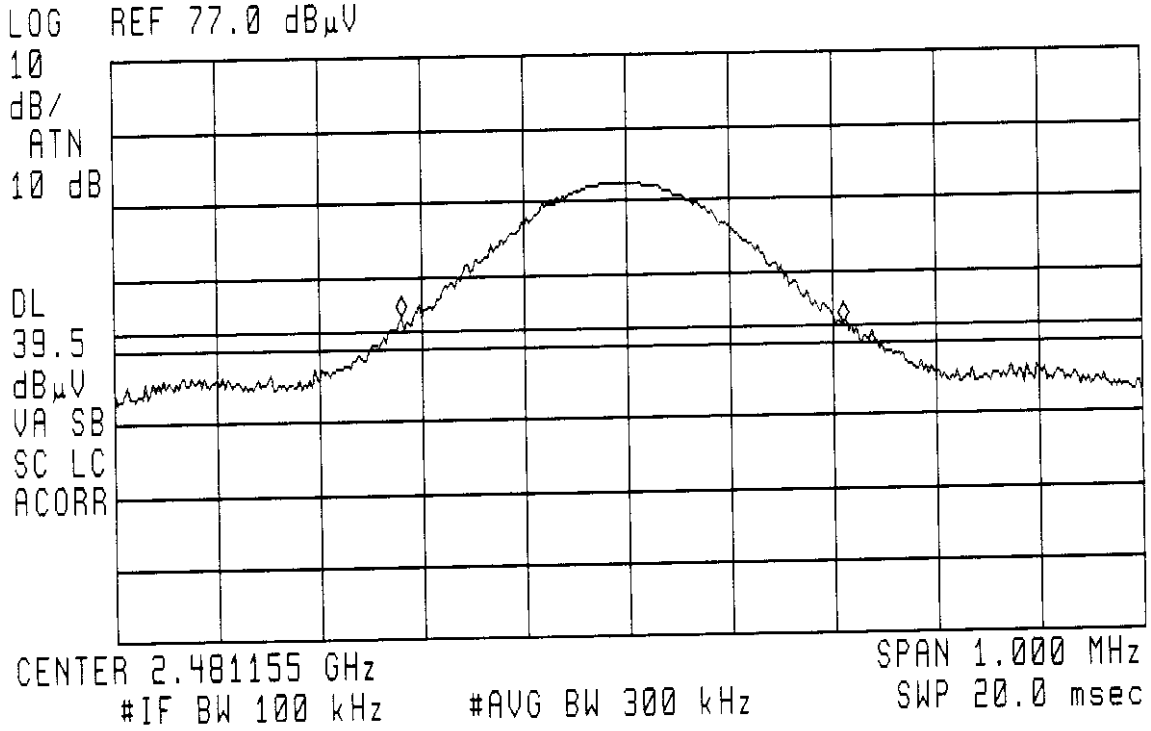


15:10:45 SEP 14, 1998 HIGH CHANNEL

20dB BANDWIDTH OF THE HOPPING CHANNEL 1MHz

MARKER Δ
430 kHz
-1.58 dB

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKRΔ 430 kHz
-1.58 dB

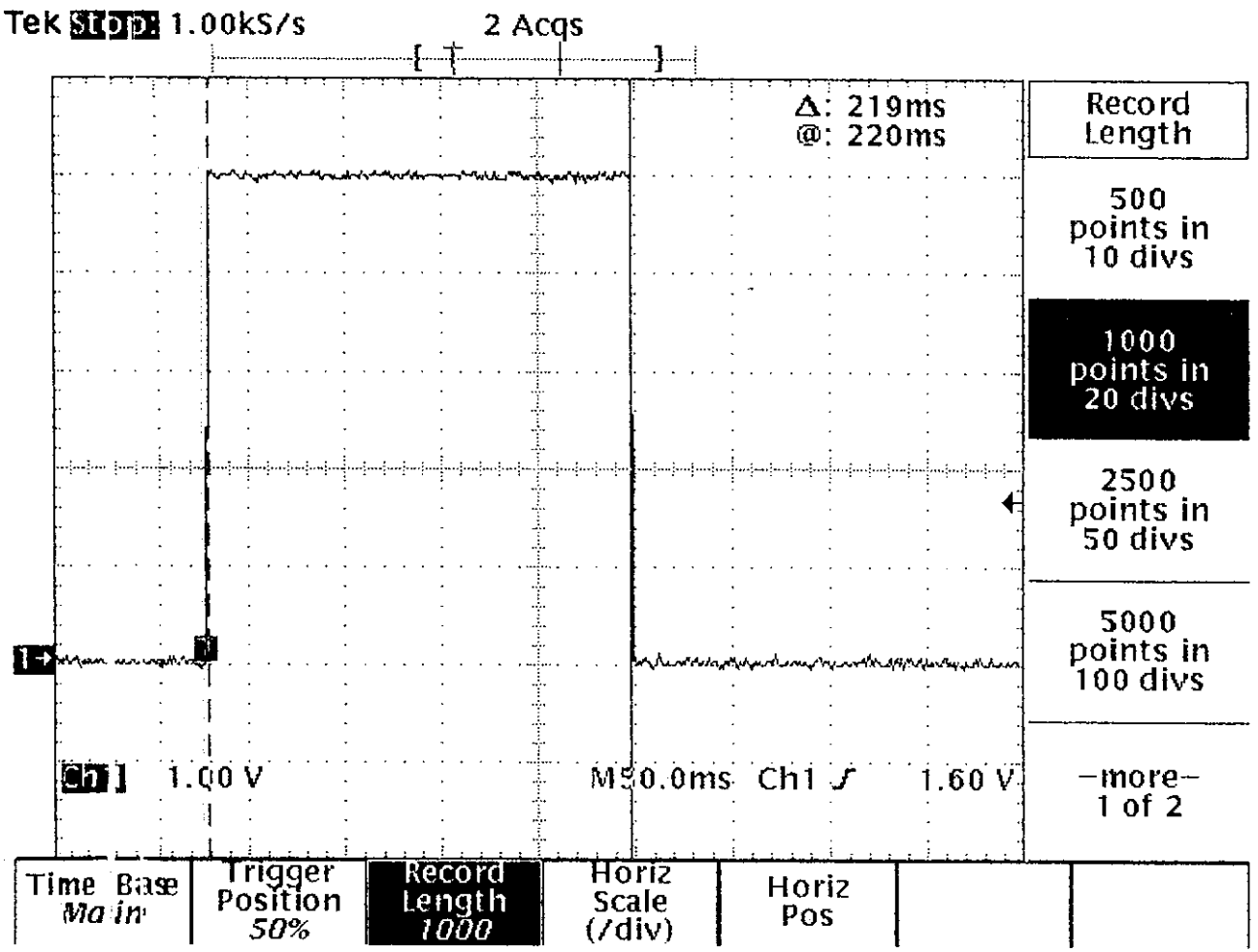


3. Section 15.247(a)(1)(ii) Dwell Time Requirement

The following plot shows the channel dwell time. The plot shows a digital signal that changes state every time a new channel is hopped to.

The time between the state changes and dwell time is 219ms which is not greater than 400ms. Refer to the plot attached on next page.

TEST INSTRUMENT USED			
Test Equipment	**Manufacturer/ Model No.**	**Serial No.**	**Last Cal.**
Oscilloscope	Tektronix TDS360	B0120065	04/11/98


Tek Stop: 1.00kS/s
2 Acqs
Δ: 219ms
@: 220ms
Record Length
500 points in 10 divs
1000 points in 20 divs
2500 points in 50 divs
5000 points in 100 divs
–more–
1 of 2
Ch 1 1.00 V
M 50.0ms Ch1 ƒ 1.60 V
Time Base Main
Trigger Position 50%
Record Length 1000
Horiz Scale (/div)
Horiz Pos
CHANNEL DWELL TIME

4. Section 15.247(b)(1)(ii) Output Power Requirement

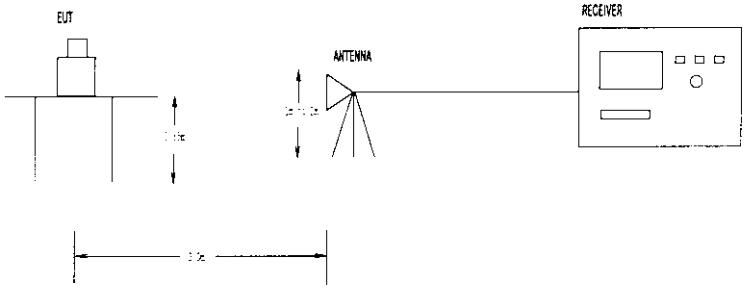
Output power requirement. The highest reading (High Channel) is actual reading 106.09dBμV/m at 3 meters:
106.09dBμV/m + 9.54dB = 115.54 dBμV/m
115.54 dBμV/m ≈6.5mWatt which is less than 1 Watt

5. Section 15.247 (c)

Radiated Emissions 2nd harmonic which falls within a restricted band as defined in 15.205 (a) complies with Section 15.209(a) as indicated in the table below:

OUT-OF-BAND MEASUREMENTS							
AVERAGE							
	Frequency (GHz)	Polarization (V/H)	Within Restricted Band (Y/N?)	Corrected Average [dBμV/m)]	Limit [dBμV/m)]	Delta, Average [dB]	Correction Factor [dB]
LOW	4.799999	V	Y	51.06	53.9	-2.84	13.77
(Channel 1)	4.799904	H	Y	51.09	53.9	-2.81	13.77
MEDIUM	4.883919	V	Y	49.39	53.9	-4.51	13.77
(Channel 39)	4.883913	H	Y	50.46	53.9	-3.44	13.77
HIGH	4.965946	V	Y	49.87	53.9	-4.03	13.77
(Channel 80)	4.965946	H	Y	50.37	53.9	-3.53	13.77

Out-of-Band Measurement Test Set-up



The EUT was set-up inside an anechoic chamber. The EUT was then programmed in predetermined frequencies (Low, Medium, and High channels) for which data was gathered. In this mode, the individual channels were checked for the 20dB bandwidths, spurious, and modulation products emission. Finally, the fundamental frequency harmonics were checked recording the maximum peak and average levels while moving the antenna between one and two meters.

TEST INSTRUMENT USED			
Test Equipment	**Manufacturer/ Model No.**	**Serial No.**	**Last Cal.**
Horn Antenna	EMCO 3115	N/A	02/15/98
EMI Display	Rohde & Schwarz ESMI	825035/005	04/07/98
EMI Receiver	Rohde & Schwarz ESMI	849937/004	04/07/98
Amplifier	Instruments For Industry, Inc. CMX10001 100kHz-2GHz	A349-0497	04/07/98
Amplifier	HP 8449A 2-22GHz	2749A00138	04/01/98

6. Section 15.247(a)(1)(ii) Hopping Frequency Operating

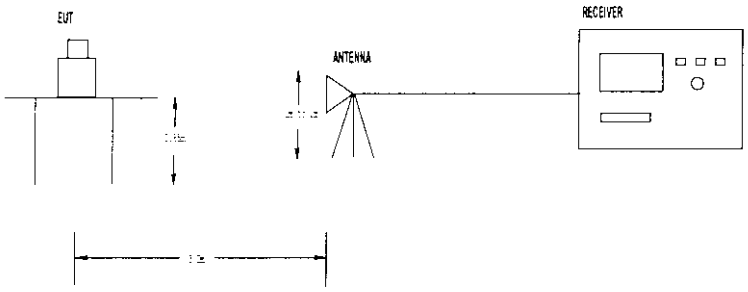
There are 79 hopping channels from 01 to 10, 13 to 81. See the plot attached on next page

The channel number denotes the lower frequency of the channel band 2400 MHz.

MEASURED HOPPING FREQUENCIES								
Channel	**Designed Frequency (MHz)**	**Measured Frequency (MHz)**	**Channel**	**Designed Frequency (MHz)**	**Measured Frequency (MHz)**	**Channel**	**Designed Frequency (MHz)**	**Measured Frequency (MHz)**
1	2401	2401.125	**29**	2429	2429.113	**57**	2457	2457.125
2	2402	2402.113	**30**	2430	2430.113	**58**	2458	2458.125
3	2403	2403.125	**31**	2431	2431.113	**59**	2459	2459.113
4	2404	2404.113	**32**	2432	2432.113	**60**	2460	2460.113
5	2405	2405.113	**33**	2433	2433.113	**61**	2461	2461.125
6	2406	2406.113	**34**	2434	2434.125	**62**	2462	2462.113
7	2407	2407.113	**35**	2435	2435.113	**63**	2463	2463.125
8	2408	2408.113	**36**	2436	2436.113	**64**	2464	2464.125
9	2409	2409.113	**37**	2437	2437.113	**65**	2465	2465.138
10	2410	2410.113	**38**	2438	2438.113	**66**	2466	2466.113
***11**	Excluded	Excluded	**39**	2439	2439.113	**67**	2467	2467.125
***12**	Excluded	Excluded	**40**	2440	2440.113	**68**	2468	2468.113
13	2413	2413.113	**41**	2441	2441.113	**69**	2469	2469.113
14	2414	2414.113	**42**	2442	2442.113	**70**	2470	2470.125
15	2415	2415.113	**43**	2443	2443.113	**71**	2471	2471.125
16	2416	2416.113	**44**	2444	2444.113	**72**	2472	2472.113
17	2417	2417.113	**45**	2445	2445.113	**73**	2473	2473.125
18	2418	2418.113	**46**	2446	2446.113	**74**	2474	2474.138
19	2419	2419.113	**47**	2447	2447.113	**75**	2475	2475.125
20	2420	2420.113	**48**	2448	2448.125	**76**	2476	2476.125
21	2421	2421.113	**49**	2449	2449.125	**77**	2477	2477.113
22	2422	2422.113	**50**	2450	2450.125	**78**	2478	2478.113
23	2423	2423.125	**51**	2451	2451.113	**79**	2479	2479.113
24	2424	2424.113	**52**	2452	2452.125	**80**	2480	2480.113
25	2425	2425.125	**53**	2453	2453.113	**81**	2481	2481.113
26	2426	2426.125	**54**	2454	2454.125			
27	2427	2427.113	**55**	2455	2455.125			
28	2428	2428.125	**56**	2456	2456.125			

***Channel 11 and 12 are excluded** because the receiver experiences reduced sensitivity because of an internal oscillator which has harmonics on the boundary of these channels. The internal oscillators fundamental is 120.588 MHz. The 20th harmonic of this oscillator is at 2411.76 MHz.

Figure of Fundamental Frequency Harmonics Test Set-up



TEST INSTRUMENT USED			
Test Equipment	**Manufacturer/ Model No.**	**Serial No.**	**Last Cal.**
Horn Antenna	EMCO 3115	N/A	02/15/98
EMI Receiver	HP 8546A	3650A00363	11/04/97
RF Filter	HP 85460A	3704A00349	11/04/97

7. Resolution Bandwidth and Video Bandwidth

Resolution Bandwidth and Video Bandwidth of the peak and average measurement above 1 GHz is 1 MHz.

Average measurements were made using the average detector function built into the EMI Receiver.

8. Section 15.247(a)

The receiver channel bandwidth is controlled by mixing a synthesized reference frequency with received signal. The synthesized reference frequency is set according to the current selected channel.

Channel synchronization is accomplished by changing channels at pre-determined times. The transmitter and receiver change channels simultaneously at these intervals. The channel hopping scheme is unrelated to the data transfer mechanism so it is possible that repeated packets be sent on different channels.

```
//
// CHANNELS.C
//
// The channel number denotes the lower frequency of the channel band - 2400
MHz.  e.g., Channel 03 is centered between 2403 MHz and 2404 MHz.
//
// DO NOT MODIFY THIS FILE, IT HAS BEEN SUBMITTED TO THE FCC.
//
// Seed = 896983946
//
#define MAX_TABLES 16
#define MAX_CHANNELS 79

extern int ChannelTables[MAX_TABLES][MAX_CHANNELS] = {

      {69,18,59,82,61,72,63,77,7,34,62,35,74,36,46,39,
      67,66,28,40,17,32,23,65,25,71,30,64,58,43,33,57,
      52,4,16,78,60,3,53,21,5,56,68,37,14,47,75,80,
      22,19,81,38,2,24,79,8,27,13,49,44,31,15,42,70,
      51,55,48,29,9,73,54,20,6,41,26,50,45,10,76},

      {69,59,61,63,7,62,74,46,67,28,17,23,25,30,58,33,
      52,16,60,53,5,68,14,75,22,81,2,79,27,49,31,42,
      51,48,8,54,6,26,45,76,18,82,72,77,34,35,36,39,
      66,40,32,65,71,64,43,57,4,78,3,21,56,37,47,80,
      19,38,24,8,13,44,15,70,55,29,73,20,41,50,10},

      {69,82,63,34,74,39,28,32,25,64,33,4,60,21,68,47,
      22,38,79,13,31,70,48,73,6,50,76,59,72,7,35,46,
      66,17,65,30,43,52,78,53,56,14,80,81,24,27,44,42,
      55,9,20,26,10,18,61,77,62,36,67,40,23,71,58,57,
      16,3,5,37,75,19,2,8,49,15,51,29,54,41,45},

      {69,61,7,74,67,17,25,58,52,60,5,14,22,2,27,31,
      51,9,6,45,18,72,34,36,66,32,71,43,4,3,56,47,
      19,24,13,15,55,73,41,10,59,63,62,46,28,23,30,33,
      16,53,68,75,81,79,49,42,48,54,26,76,82,77,35,39,
      40,65,64,57,78,21,37,80,38,8,44,70,29,20,50},

      {69,72,62,39,17,71,33,78,5,47,81,8,31,55,54,50,
      18,63,35,67,32,30,57,60,56,75,38,27,15,48,20,45,
      59,77,74,66,23,64,52,3,68,80,2,13,42,29,6,10,
      82,7,36,28,65,58,4,53,37,22,24,49,70,9,41,76,
      61,34,46,40,25,43,16,21,14,19,79,44,51,73,26},

      {69,63,74,28,25,33,60,68,22,79,31,48,6,76,72,35,
      66,65,43,78,56,80,24,44,55,20,10,61,62,67,23,58,
      16,5,75,2,49,51,54,45,82,34,39,32,64,4,21,47,
      38,13,70,73,50,59,7,46,17,30,52,53,14,81,27,42,
      9,26,18,77,36,40,71,57,3,37,19,8,15,29,41},

      {69,77,46,32,58,78,68,19,27,70,54,10,72,74,40,30,
      4,5,80,79,15,9,50,82,62,66,25,57,53,47,2,44,
      48,41,18,7,39,23,43,60,37,81,13,51,20,76,63,36,
      17,64,16,56,22,8,42,73,45,61,35,28,71,52,21,75,
      24,31,29,26,59,34,67,65,33,3,14,38,49,55,6},
```

```
        {69,7,67,25,52,5,22,27,51,6,18,34,66,71,4,56,
        19,13,55,41,59,62,28,30,16,68,81,49,48,26,82,35,
        40,64,78,37,38,44,29,50,61,74,17,58,60,14,2,31,
        9,45,72,36,32,43,3,47,24,15,73,10,63,46,23,33,
        53,75,79,42,54,76,77,39,65,57,21,80,8,70,20},

        {69,34,28,64,60,47,79,70,6,59,35,17,43,53,80,27,
        55,26,61,36,23,57,5,19,49,29,45,63,39,25,4,68,
        38,31,73,76,7,66,30,78,14,24,42,20,18,62,40,58,
        3,75,8,51,41,82,74,32,33,21,22,13,48,50,72,46,
        65,52,56,81,44,9,10,77,67,71,16,37,2,15,54},

        {69,62,17,33,5,81,31,54,18,35,32,57,56,38,15,20,
        59,74,23,52,68,2,42,6,82,36,65,4,37,24,70,41,
        61,46,25,16,14,79,51,26,72,39,71,78,47,8,55,50,
        63,67,30,60,75,27,48,45,77,66,64,3,80,13,29,10,
        7,28,58,53,22,49,9,76,34,40,43,21,19,44,73},

        {69,35,23,4,14,8,48,10,34,17,57,68,24,51,50,77,
        28,43,5,38,42,41,72,67,64,53,19,31,20,82,46,71,
        60,80,49,73,18,74,65,16,47,27,29,76,62,32,52,37,
        79,55,45,7,40,33,56,2,70,26,63,66,58,21,81,15,
        6,61,39,30,3,22,44,54,59,36,25,78,75,13,9},

        {69,74,25,60,22,31,6,72,66,43,56,24,55,10,62,23,
        16,75,49,54,82,39,64,21,38,70,50,7,17,52,14,27,
        9,18,36,71,3,19,15,41,63,28,33,68,79,48,76,35,
        65,78,80,44,20,61,67,58,5,2,51,45,34,32,4,47,
        13,73,59,46,30,53,81,42,26,77,40,57,37,8,29},

        {69,36,30,21,2,55,76,74,71,53,38,51,10,35,25,3,
        81,70,45,62,65,60,19,42,50,34,23,78,22,15,26,7,
        32,16,80,31,41,77,17,4,75,44,6,63,40,52,47,49,
        20,72,28,57,14,13,54,61,66,33,37,27,73,82,67,43,
        68,8,9,59,39,58,56,79,29,18,46,64,5,24,48},

        {69,46,58,68,27,54,72,40,4,80,15,50,62,25,53,2,
        48,18,39,43,37,13,20,63,17,16,22,42,45,35,71,21,
        24,29,59,67,33,14,49,6,77,32,78,19,70,10,74,30,
        5,79,9,82,66,57,47,44,41,7,23,60,81,51,76,36,
        64,56,8,73,61,28,52,75,31,26,34,65,3,38,55},

        {69,39,33,47,31,50,35,30,56,27,20,77,23,3,2,29,
        82,28,4,22,70,76,46,43,14,44,26,62,71,5,8,54,
        63,32,60,38,48,59,66,52,80,42,10,36,58,37,49,41,
        34,25,21,79,73,72,17,78,81,55,18,67,57,75,15,45,
        74,64,68,13,6,7,65,53,24,9,61,40,16,19,51},

        {69,67,52,22,51,18,66,4,19,55,59,28,16,81,48,82,
        40,78,38,29,61,17,60,2,9,72,32,3,24,73,63,23,
        53,79,54,77,65,21,8,20,7,25,5,27,6,34,71,56,
        13,41,62,30,68,49,26,35,64,37,44,50,74,58,14,31,
        45,36,43,47,15,10,46,33,75,42,76,39,57,80,70}
};
```

9. Section 15.247(b)(4) Safety Statement

RF safety operating and warning instructions appear in the operator's manual as follows:

In order to avoid extended periods of exposure to RF emissions, the operator of this device should maintain a separation distance from the transmitting antenna of at least 20 cm.

Disclaimer Notice

When government drawing, specification, or other data are used for any purpose other than in connection with a definitely related government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawing, specifications, or other data, is not to be regarded by implication or otherwise in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell patented invention that may in any way be related thereto.

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ADMINISTRATIVE DATA

Test Sample	*: HomeFree ISA Card*
Manufacturer	*: Diamond Multimedia Systems Inc.*
Part Number	*: N/A*
Telephone	*: (360) 604-1439*
Fax	*: (360) 604-1401*

EUT Description

Diamond Multimedia Systems Inc. HomeFree ISA Card (referred to as the EUT in this report) is a device designed enables two or more PCs to communicate without wires. With HomeFree, computers located in your home or small office can share your fastest Internet connection, share a printer, exchange files and play multi-player games. It can transmit data through walls and between floors of a typical home or apartment at distance up to 150 feet, and at speeds exceeding one megabit per second. HomeFree is a snap to install, easy to use, and very affordable.

Antenna and ground system are designed on the circuit board.

Test Summary

The Electromagnetic Compatibility requirements on Model HomeFree ISA Card for this test are stated below.

Test Summary (CFR 15.247)			
Specifications	*Requirement*	*Results*	*Attachments*
CFR15.247. a.1	*Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.*	*Complied*	*A and B*
CFR15.247.a.1.ii	*Frequency hopping systems operating in the 2400-2483.5 MHz bands shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.*	*Complied*	*C* *D* *E*
CFR15.247.b.1	*For frequency hopping systems operating in the 2400-2483.5 MHz or 5725-5850 MHz band and for all direct sequence systems: 1 watt.*	*Complied*	*F*
CFR15.247.c	*In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, base on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c).*	*Complied*	*G*

CFR15.35b	On any frequency or frequencies above 1GHz, unless otherwise stated, the radiated limits shown are based on the use of measurement instrumentation employing an average detector function. When average radiated emission measurements are specified in the regulations, including emission measurements below 1000MHz, there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated. Unless otherwise specified, measurements above 1000MHz shall be performed using a minimum resolution bandwidth of 1MHz. Measurements of AC power line conducted emissions are performed using a CISPR quasi-peak detector, even for device for which average radiated emission measurements are specified	Complied	G
CFR15.247.g	Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the systems, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition , a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.	Complied	H
CFR15.203	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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may designed the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall	Complied	I

<table>
<tr><td></td><td>be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.</td><td></td><td></td></tr>
<tr><td>CFR15.207.a</td><td>For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 450 kHz to 30 MHz shall not exceed 250 microvolts. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.</td><td>Complied</td><td>J</td></tr>
<tr><td>CFR15.209.a</td><td>Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

<table><tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr><tr><td>0.009-0.490.....</td><td>2400/F(kHz)</td><td>300</td></tr><tr><td>0.490-1.705.....</td><td>24000/F(kHz)</td><td>30</td></tr><tr><td>1.705-30.0.....</td><td>30</td><td>30</td></tr><tr><td>30-88.....</td><td>100**</td><td>3</td></tr><tr><td>88-216.....</td><td>150**</td><td>3</td></tr><tr><td>216-960.....</td><td>200**</td><td>3</td></tr><tr><td>Above 960.....</td><td>500</td><td>3</td></tr></table>
**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§15.230 and 15.241.</td><td>Complied</td><td>K</td></tr>
</table>

Test Location

EMC Compliance Management Group is located at 670 National Ave., Mountain View, CA 94043, USA.

Accreditation Bodies

EMC Compliance Management Group is a fully accredited Test Laboratory for ITE, ISM and Telecommunications Products.

ASSESSMENT SERVICES

Laboratory Assessment #: 14082, Approved by Assessment Services, A U. K. Competent Body, as meeting the requirements of EN45001and ISO Guide 25.

FC

In compliance with the site registration requirements of Section 2.948 of the FCC Rules to perform EMI measurements for the general public.

NVLAP®

Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code # 200068-0.

VCI

Registered in accordance with Japanese VCCI Regulations.

Video Mode Justification

The system was tested in the 640x480 graphic mode. This mode was used to collect the included data.

EUT Exercise Software

A client supplied software contained in the floppy disk, and was used to exercise during conducted and radiated testing, no other data was transmitted to the EUT during testing.

Equipment Modification

Any modification installed previous to testing by Diamond Multimedia Systems Inc. will be incorporated in each production model sold or leased in United Stated of America.

No modification were installed by EMC Compliance Management Group.

Configuration of Tested System

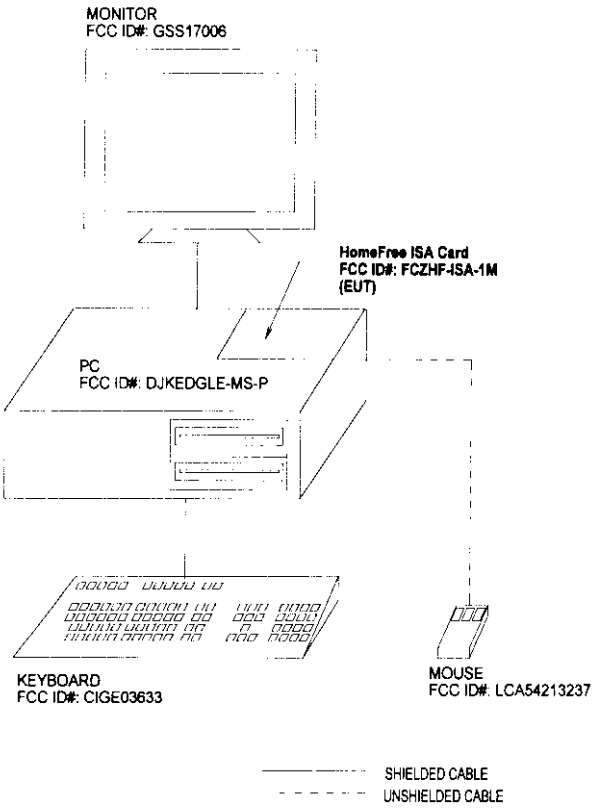
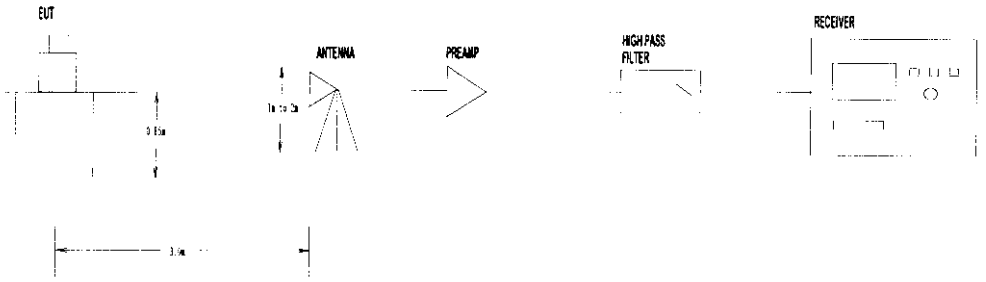


Figure of Fundamental Frequency Harmonics Test Set-up



ATTACHMENT A - CHANNEL SEPARATION & CHANNEL ALGORITHM PART 15.247.a.1

Channel Separation

There are 85 hopping channels carries frequencies separated by a minimum 20 dB bandwidth of the hopping channel, whichever is greater.

The system complies with Part 15.247.a.1, the hopping channel frequencies are selected at the system hopping rate from pseudorandomly ordered list of hopping frequencies.

Channel Algorithm

Eighty five frequencies are picked within 2400-2483.5 MHz band. The lower 7 bits of the high byte are used to determine the starting point of the sequence in the table. The starting point and the next 84 elements in the table construct the sequence. If the sequence reaches the end of the table, it wraps around the table to get more elements. The lower 7 bits of the low byte are used to determine the current position in the sequence. If the current is outside the sequence, 50 is subtracted from it until it is inside the sequence.

ATTACHMENT B - EQUAL USAGE OF THE FREQUENCY ON AVERAGE PART 15.247.a.1

Equal usage of the frequency on average

Eighty five frequencies are picked within 2400-2483.5 MHz band. Each channel is evenly spaced 1MHz apart.

Channel Synchronization

The system chooses the same sequence and the same starting point and the same time to transmit. They will continue to interface each other; after they lost sync with their bases, they will pick a different sequence. The randomization of timing of remote transmissions also will help to get through. Also, the base will recognize the high failure rate and instruct the remote to move to a different point in the sequence to resolve the conflict.

#define MAXTABLE 16
#define MAXCHANNELS 79

Channel Tables [MAXTABLES] [MAXCHANNELS] = {

```
{69,18,59,82,61,72,63,77,7,34,62,35,74,36,46,39,
67,66,28,40,17,32,23,65,25,71,30,64,58,43,33,57,
52,4,16,78,60,3,53,21,5,56,68,37,14,47,75,80,
22,19,81,38,2,24,79,8,27,13,49,44,31,15,42,70,
51,55,48,29,9,73,54,20,6,41,26,50,45,10,76},

{69,59,61,63,7,62,74,46,67,28,17,23,25,30,58,33,
52,16,60,53,5,68,14,75,22,81,2,79,27,49,31,42,
51,48,9,54,6,26,45,76,18,82,72,77,34,35,36,39,
66,40,32,65,71,64,43,57,4,78,3,21,56,37,47,80,
19,38,24,8,13,44,15,70,55,29,73,20,41,50,10},

{69,82,63,34,74,39,28,32,25,64,33,4,60,21,68,47,
22,38,79,13,31,70,48,73,6,50,76,59,72,7,35,46,
66,17,65,30,43,52,78,53,56,14,80,81,24,27,44,42,
55,9,20,26,10,18,61,77,62,36,67,40,23,71,58,57,
16,3,5,37,75,19,2,8,49,15,51,29,54,41,45},

{69,61,7,74,67,17,25,58,52,60,5,14,22,2,27,31,
51,9,6,45,18,72,34,36,66,32,71,43,4,3,56,47,
19,24,13,15,55,73,41,10,59,63,62,46,28,23,30,33,
16,53,68,75,81,79,49,42,48,54,26,76,82,77,35,39,
40,65,64,57,78,21,37,80,38,8,44,70,29,20,50},

{69,72,62,39,17,71,33,78,5,47,81,8,31,55,54,50,
18,63,35,67,32,30,57,60,56,75,38,27,15,48,20,45,
59,77,74,66,23,64,52,3,68,80,2,13,42,29,6,10,
82,7,36,28,65,58,4,53,37,22,24,49,70,9,41,76,
61,34,46,40,25,43,16,21,14,19,79,44,51,73,26},

{69,63,74,28,25,33,60,68,22,79,31,48,6,76,72,35,
66,65,43,78,56,80,24,44,55,20,10,61,62,67,23,58,
16,5,75,2,49,51,54,45,82,34,39,32,64,4,21,47,
38,13,70,73,50,59,7,46,17,30,52,53,14,81,27,42,
9,26,18,77,36,40,71,57,3,37,19,8,15,29,41},

{69,77,46,32,58,78,68,19,27,70,54,10,72,74,40,30,
4,5,80,79,15,9,50,82,62,66,25,57,53,47,2,44,
48,41,18,7,39,23,43,60,37,81,13,51,20,76,63,36,
17,64,16,56,22,8,42,73,45,61,35,28,71,52,21,75,
24,31,29,26,59,34,67,65,33,3,14,38,49,55,6},
```

```
        {69,7,67,25,52,5,22,27,51,6,18,34,66,71,4,56,
        19,13,55,41,59,62,28,30,16,68,81,49,48,26,82,35,
        40,64,78,37,38,44,29,50,61,74,17,58,60,14,2,31,
        9,45,72,36,32,43,3,47,24,15,73,10,63,46,23,33,
        53,75,79,42,54,76,77,39,65,57,21,80,8,70,20},

        {69,34,28,64,60,47,79,70,6,59,35,17,43,53,80,27,
        55,26,61,36,23,57,5,19,49,29,45,63,39,25,4,68,
        38,31,73,76,7,66,30,78,14,24,42,20,18,62,40,58,
        3,75,8,51,41,82,74,32,33,21,22,13,48,50,72,46,
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        {69,62,17,33,5,81,31,54,18,35,32,57,56,38,15,20,
        59,74,23,52,68,2,42,6,82,36,65,4,37,24,70,41,
        61,46,25,16,14,79,51,26,72,39,71,78,47,8,55,50,
        63,67,30,60,75,27,48,45,77,66,64,3,80,13,29,10,
        7,28,58,53,22,49,9,76,34,40,43,21,19,44,73},

        {69,35,23,4,14,8,48,10,34,17,57,68,24,51,50,77,
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        60,80,49,73,18,74,65,16,47,27,29,76,62,32,52,37,
        79,55,45,7,40,33,56,2,70,26,63,66,58,21,81,15,
        6,61,39,30,3,22,44,54,59,36,25,78,75,13,9},

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        32,16,80,31,41,77,17,4,75,44,6,63,40,52,47,49,
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        24,29,59,67,33,14,49,6,77,32,78,19,70,10,74,30,
        5,79,9,82,66,57,47,44,41,7,23,60,81,51,76,36,
        64,56,8,73,61,28,52,75,31,26,34,65,3,38,55},

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        63,32,60,38,48,59,66,52,80,42,10,36,58,37,49,41,
        34,25,21,79,73,72,17,78,81,55,18,67,57,75,15,45,
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        53,79,54,77,65,21,8,20,7,25,5,27,6,34,71,56,
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        45,36,43,47,15,10,46,33,75,42,76,39,57,80,70}
};
```

Channel	Freq. (GHz)
0	2.400
1	2.401
2	2.402
3	2.403
4	2.404
5	2.405
6	2.406
7	2.407
8	2.408
9	2.409
10	2.410
11	2.411
12	2.412
13	2.413
14	2.414
15	2.415
16	2.416
17	2.417
18	2.418
19	2.419
20	2.420
21	2.421
22	2.422
23	2.423
24	2.424
25	2.425
26	2.426
27	2.427
28	2.428
29	2.429
30	2.430
31	2.431
32	2.432
33	2.433
34	2.434
35	2.435
36	2.436
37	2.437
38	2.438
39	2.439
40	2.440
41	2.441
42	2.442
43	2.443
44	2.444

Channel	Freq. (GHz)
45	2.445
46	2.446
47	2.447
48	2.448
49	2.449
50	2.450
51	2.451
52	2.452
53	2.453
54	2.454
55	2.455
56	2.456
57	2.457
58	2.458
59	2.459
60	2.460
61	2.461
62	2.462
63	2.463
64	2.464
65	2.465
66	2.466
67	2.467
68	2.468
69	2.469
70	2.470
71	2.471
72	2.472
73	2.473
74	2.474
75	2.475
76	2.476
77	2.477
78	2.478
79	2.479
80	2.480
81	2.481
82	2.482

ATTACHMENT D - BANDWIDTH MEASUREMENT
PART 15.247.a.1.ii

Operating in the 2400-2483.5 MHz, the maximum 20 dB bandwidth of the hopping channel is 1 MHz.

ATTACHMENT E - CHANNEL DWELL TIME REQUIREMENT PART 15.247.a.1.ii

Operating in the 2400-2483.5 MHz, the channel dwell time 400 msec maximum set by timer complies with Part 15.247.a.1.ii.

ATTACHMENT F - OUTPUT POWER MEASUREMENT
PART 15.247.a.1.ii

The maximum output power operating in the 2400-2483.5 MHz band is 1 watt.

ATTACHMENT G - OUT-OF-BAND EMISSION TEST RESULTS
PART 15.247.c, 15.35.b

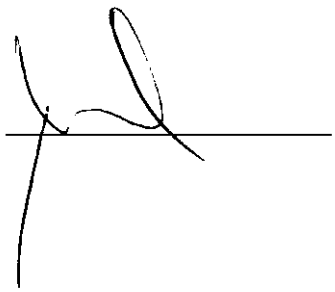
CLIENT:	Diamond Multimedia Systems, Inc.	**TEST REFERENCE:**	FCC Part 15 Subpart C Section 15.247.c, 15.35.b
EUT MODEL:	HomeFree ISA Card	**PRODUCT:**	Wireless Communication Systems PCs
SERIAL NO.:	Engineering sample	**EUT DESIGNATION:**	Home and Office
TEMPERATURE:	19°C	**HUMIDITY:**	35%
ATM PRESSURE:	1017 Mbar	**GROUNDING:**	Through power cord
TESTED BY:	Paul F. Chen	**DATE OF TEST:**	05/29/98

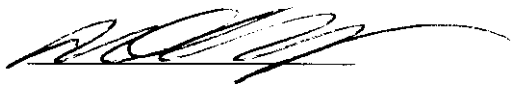
TEST METHOD:	ANSI C63.4 1992
TEST PROCEDURE:	The EUT was set-up inside an anechoic chamber. The EUT was then program in the predetermined frequency (Low, Medium, and High channels) for which data was gathered. In this mode, the individual channels were checked for the 20dB bandwidths, spurious, and modulation products emission. Finally, the fundamental frequency harmonics are checked recording the maximum average level while moving the antenna between one and two meters.
TEST VOLTAGE:	120VAC @ 60Hz
RESULTS:	Comply with Part 15.247, there are no significant spurious emission or modulation products generated by the EUT within and beyond 100kHz of the fundamental transmitter frequency. All harmonics of the fundamental transmitter frequencies meet 54 dBμV/m. No harmonics are present beyond the fourth harmonics. (refer to data below).
M.U.:	Freq. ± $2x10^{-7}$ x Center Freq., Amp ± 2.6 dB

TEST RESULTS - PEAK							
LOW (Channel 0)	Frequency (GHz)	Polarization (V/H)	Within Restricted Band (Y/N?)	Corrected Peak [dBμV/m)]	Limit [dBμV/m)]	Delta, Peak [dB]	Correction Factor [dB]
	4.799999	V	Y	51.06	53.9	-2.84	13.77
	4.799904	H	Y	51.09	53.9	-2.81	13.77
MEDIUM (Channel 42)	4.883919	V	Y	49.39	53.9	-4.51	13.77
	4.883913	H	Y	50.46	53.9	-3.44	13.77
HIGH (Channel 84)	4.965946	V	Y	49.87	53.9	-4.03	13.77
	4.965946	H	Y	50.37	53.9	-3.53	13.77

TEST RESULTS - AVERAGE							
LOW (Channel 0)	Frequency (GHz)	Polarization (V/H)	Within Restricted Band (Y/N?)	Corrected Average [dBμV/m)]	Limit [dBμV/m)]	Delta, Average [dB]	Correction Factor [dB]
	4.799999	V	Y	51.06	53.9	-2.84	13.77
	4.799904	H	Y	51.09	53.9	-2.81	13.77
MEDIUM (Channel 42)	4.883919	V	Y	49.39	53.9	-4.51	13.77
	4.883913	H	Y	50.46	53.9	-3.44	13.77
HIGH (Channel 84)	4.965946	V	Y	49.87	53.9	-4.03	13.77
	4.965946	H	Y	50.37	53.9	-3.53	13.77

Test Equipment	Manufacturer/ Model No.	Serial No.	Last Cal.
EMI Display	Rohde & Schwarz ESMI	825035/005	04/07/98
EMI Receiver	Rohde & Schwarz ESMI	849937/004	04/07/98
Function Generator	Goldstar FG-8002	5071750	N/A
Field Monitor	Amplifier Research FM5004	21414	N/A
Signal Generator	HP 8657A	N/A	N/A
Monitor	Viewsonic VCDTS21353-1M	JL72867152	N/A
Keyboard	IBM M	P52G9700	N/A
Mouse	HP M-S34	N/A	N/A
Amplifier	Instruments For Industry, Inc. CMX10001	A349-0497	N/A
Positioning Controller	EMCO 1060-2 511	9407-1748	N/A
Positioning Controller	EMCO 1051-12	9407-1827	N/A
PC	Gateway2000 BABY AT	4053494	N/A
Antenna	Chase CBL6112A	2274	11/15/97

SIGNED: 

REVIEWED: 

ATTACHMENT H - STATEMENT
PART 15.247.g

The system included both transmitter and receiver, transmitter is presented continuous data (or information) stream. Also, a system employing short transmission burst complied with the definition of a frequency hopping system and distribute its transmissions in 0 to 84 channels operating in the 2400-2483.5 MHz band.

ATTACHMENT J - CONDUCTED EMISSIONS
PART 15.207.a

CLIENT:	Diamond Multimedia Systems, Inc.	**TEST REFERENCE:**	FCC Part 15 Subpart C Section 15.207(a)
EUT MODEL:	HomeFree ISA Card	**PRODUCT:**	Wireless Communication Systems PCs
SERIAL NO.:	Engineering sample	**EUT DESIGNATION:**	Home and Office
TEMPERATURE:	19°C	**HUMIDITY:**	35%
ATM PRESSURE:	1017 Mbar	**GROUNDING:**	Through power cord
TESTED BY:	Paul F. Chen	**DATE OF TEST:**	05/29/98
TEST METHOD:	ANSI C63.4 1992		
TEST PROCEDURE:	The EUT is set up according to the guideline of ANSI C63.4 for conducted emissions. The EUT is then plugged into a Line Impedance Stabilization Network (LISN) and an EMI receiver peak scan is made at the frequency measurement range. The six highest significant peaks are then marked, and these signals are then quasi-peaked. The frequency range investigated is from 450kHz to 30MHz.		
TEST VOLTAGE:	120AC @ 60Hz		
RESULTS:	The EUT meet the requirements of test reference for Conducted Emissions on both line by 1.7 dB of Quasi-Peak detector.		
M.U.:	Freq. $\pm 2x10^{-7}$ x Center Freq., Amp $\pm$ 2.6 dB		

Test Equipment	Manufacturer/ Model	Serial No.	Last Cal.
EMI Receiver	HP 8546A	3650A00363	11/04/97
RF Filter	HP 85460A	3704A00349	11/04/97
LISN	EMCO 3825/2	109804	04/16/98

Line	Frequency [MHz]	Corrected QP Reading [dB(μV)]	Delta QP [dB]	Limited QP Reading [dB(μV)]
L1	5.10	46.3	-1.7	48.0
L1	7.22	45.4	-2.6	48.0
L1	26.00	43.7	-4.3	48.0
L2	5.21	45.7	-2.3	48.0
L2	7.44	44.7	-3.3	48.0
L2	921.91	44.6	-3.4	48.0

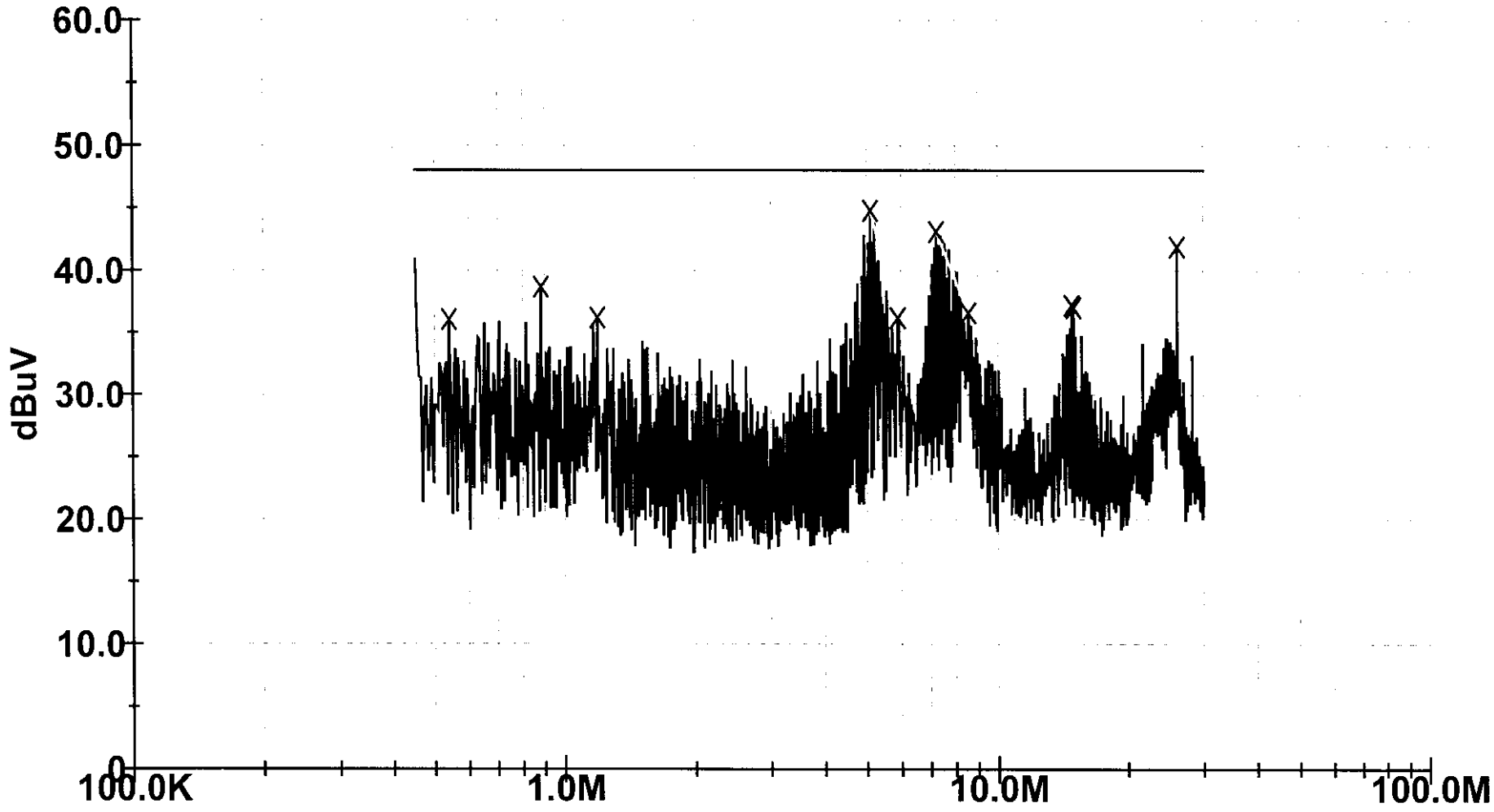
SIGNED: 

REVIEWED: 

EMC Compliance Management Group

120VAC/60Hz, Line 1

1. Conducted Emission for FCC15 Class B



Home Free Card

Diamond

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EMC Compliance Management Group
120VAC/60Hz, Line 1
1. Conducted Emission for FCC15 Class B

Home Free Card

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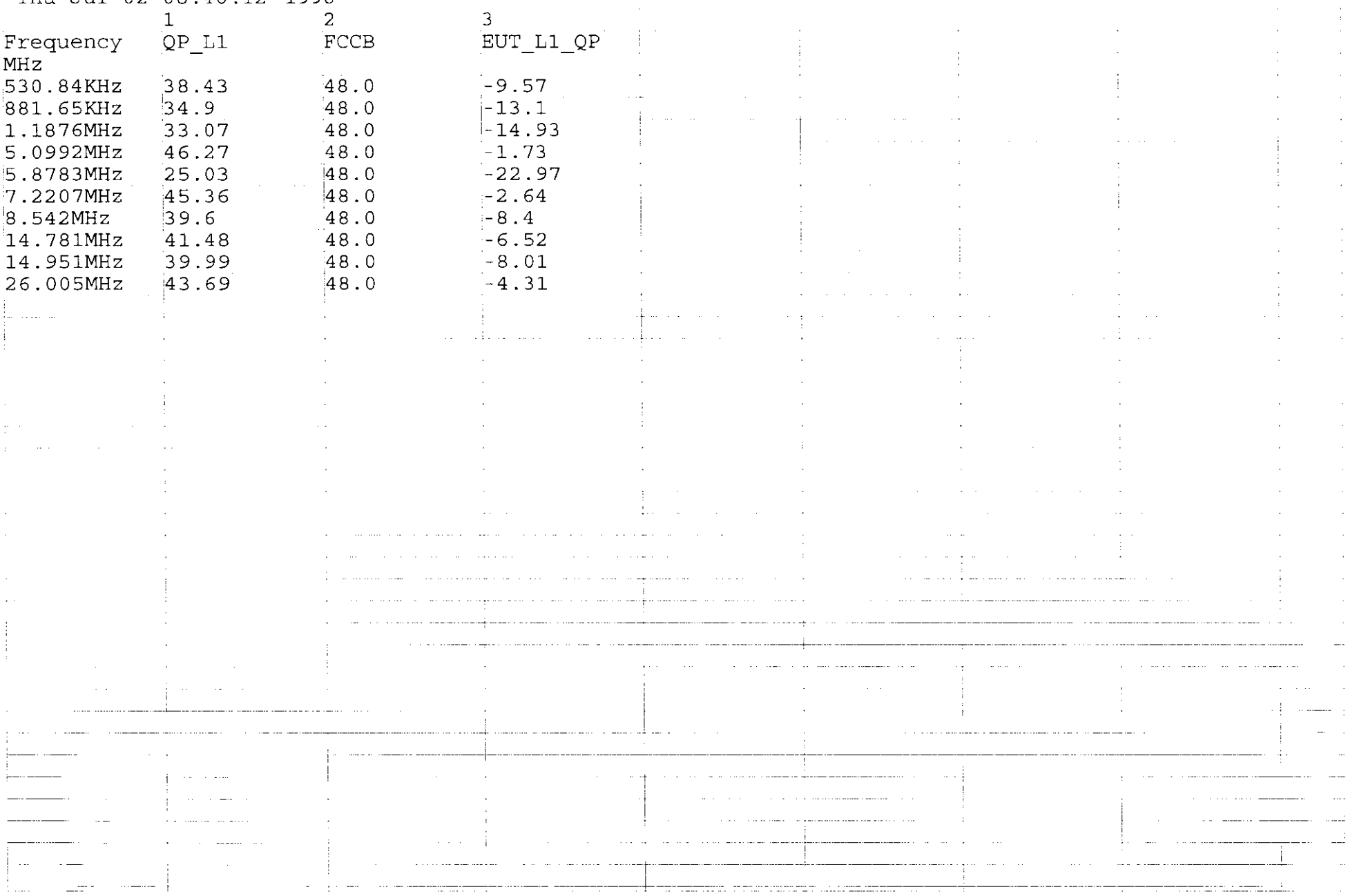
Thu Jul 02 08:40:12 1998

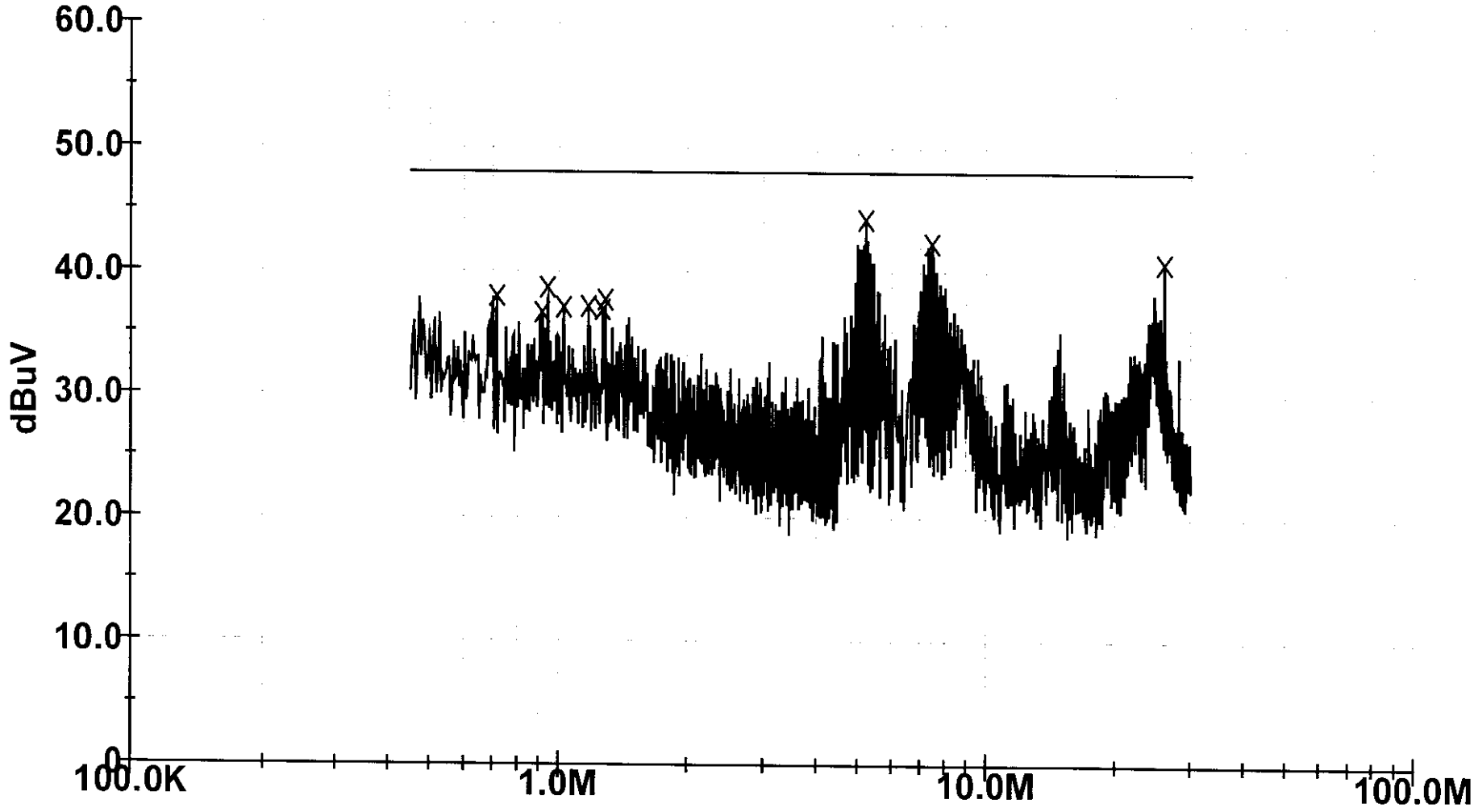
Frequency MHz	1 QP_L1	2 FCCB	3 EUT_L1_QP
530.84KHz	38.43	48.0	-9.57
881.65KHz	34.9	48.0	-13.1
1.1876MHz	33.07	48.0	-14.93
5.0992MHz	46.27	48.0	-1.73
5.8783MHz	25.03	48.0	-22.97
7.2207MHz	45.36	48.0	-2.64
8.542MHz	39.6	48.0	-8.4
14.781MHz	41.48	48.0	-6.52
14.951MHz	39.99	48.0	-8.01
26.005MHz	43.69	48.0	-4.31



EMC Compliance Management Group

120VAC/60Hz, Line 2

2. Conducted Emission for FCC15 Class B



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Home Free Card

Diamond

EMC Compliance Management Group
120VAC/60Hz, Line 2
2. Conducted Emission for FCC15 Class B

Home Free Card

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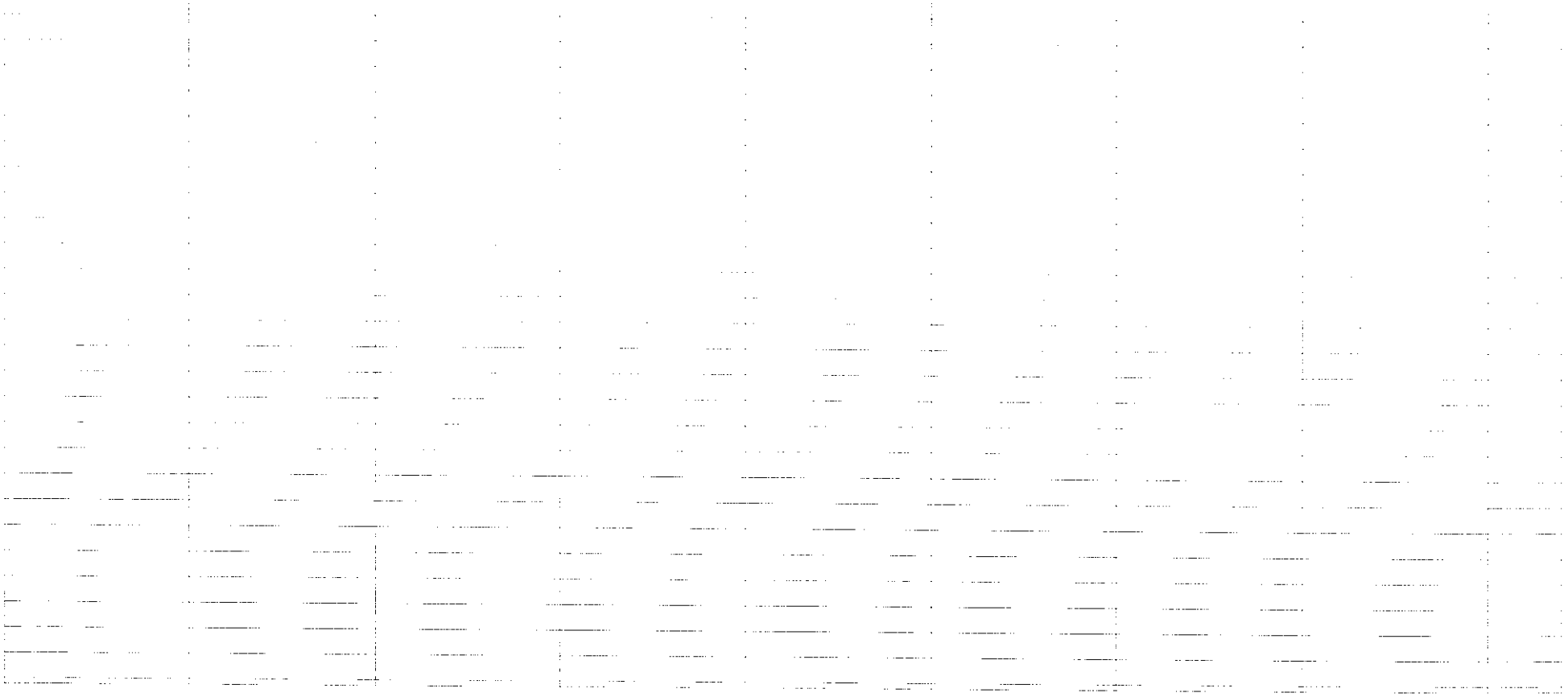
Thu Jul 02 08:40:13 1998

Frequency MHz	1 QP_L2	2 FCCB	3 EUT_L2_QP
705.99KHz	38.16	48.0	-9.84
921.91KHz	44.58	48.0	-3.42
937.25KHz	36.47	48.0	-11.53
1.0291MHz	34.83	48.0	-13.17
1.1664MHz	35.67	48.0	-12.33
1.2556MHz	34.84	48.0	-13.16
1.2778MHz	33.81	48.0	-14.19
5.2096MHz	45.74	48.0	-2.26
7.4426MHz	44.68	48.0	-3.32
26.005MHz	43.94	48.0	-4.06



ATTACHMENT K - RADIATED EMISSION
PART 15.247.c, 15.209.a, 15.35.b

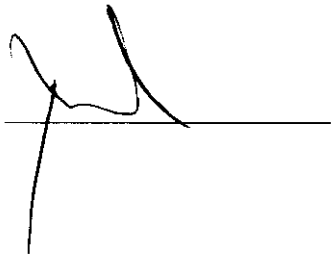
CLIENT:	Diamond Multimedia Systems, Inc.	**TEST REFERENCE:**	FCC Part 15 Subpart C Section 15.247.c /15.209.a
EUT MODEL:	HomeFree ISA Card	**PRODUCT:**	Wireless Communication Systems PCs
SERIAL NO.:	Engineering sample	**EUT DESIGNATION:**	Home and Office
TEMPERATURE:	19°C	**HUMIDITY:**	35%
ATM PRESSURE:	1017 Mbar	**GROUNDING:**	Through power cord
TESTED BY:	Paul F. Chen	**DATE OF TEST:**	05/29/98

TEST METHOD:	ANSI C63.4 1992
TEST PROCEDURE:	The EUT is set up according to the guidelines of ANSI C63.4 for radiated emissions. An EMI receiver peak scan is made at the frequency measurement range (prescan) in an anechoic chamber. Signal discrimination is then performed and the significant peaks marked. These peaks are then quasi-peaked for final test at the open area test site. The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor is given as follows: The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the measured reading. The basic equation with a sample calculation is as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain
TEST VOLTAGE:	120VAC @ 60Hz
RESULTS:	The EUT meet the requirements of test reference for Radiated Emissions on both polarities by 6.7 dB at 240.17 MHz in the range of 30MHz to 2000MHz.
M.U.:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp $\pm$ 2.6 dB

Frequency [MHz]	Polarity [V/H]	Corrected Reading [dB(μV)]	Delta, QP [dB]	3 Meters Limit [dB(μV)]	Correction Factor [dB]
240.17	H	39.3	-6.7	46.0	14.3
38.74	V	32.4	-7.6	40.0	15.9
300.26	V	38.4	-7.6	46.0	15.2
240.17	V	37.2	-8.8	46.0	14.3
193.45	H	34.3	-9.2	43.5	12.0
180.29	V	34.1	-9.4	43.5	11.5

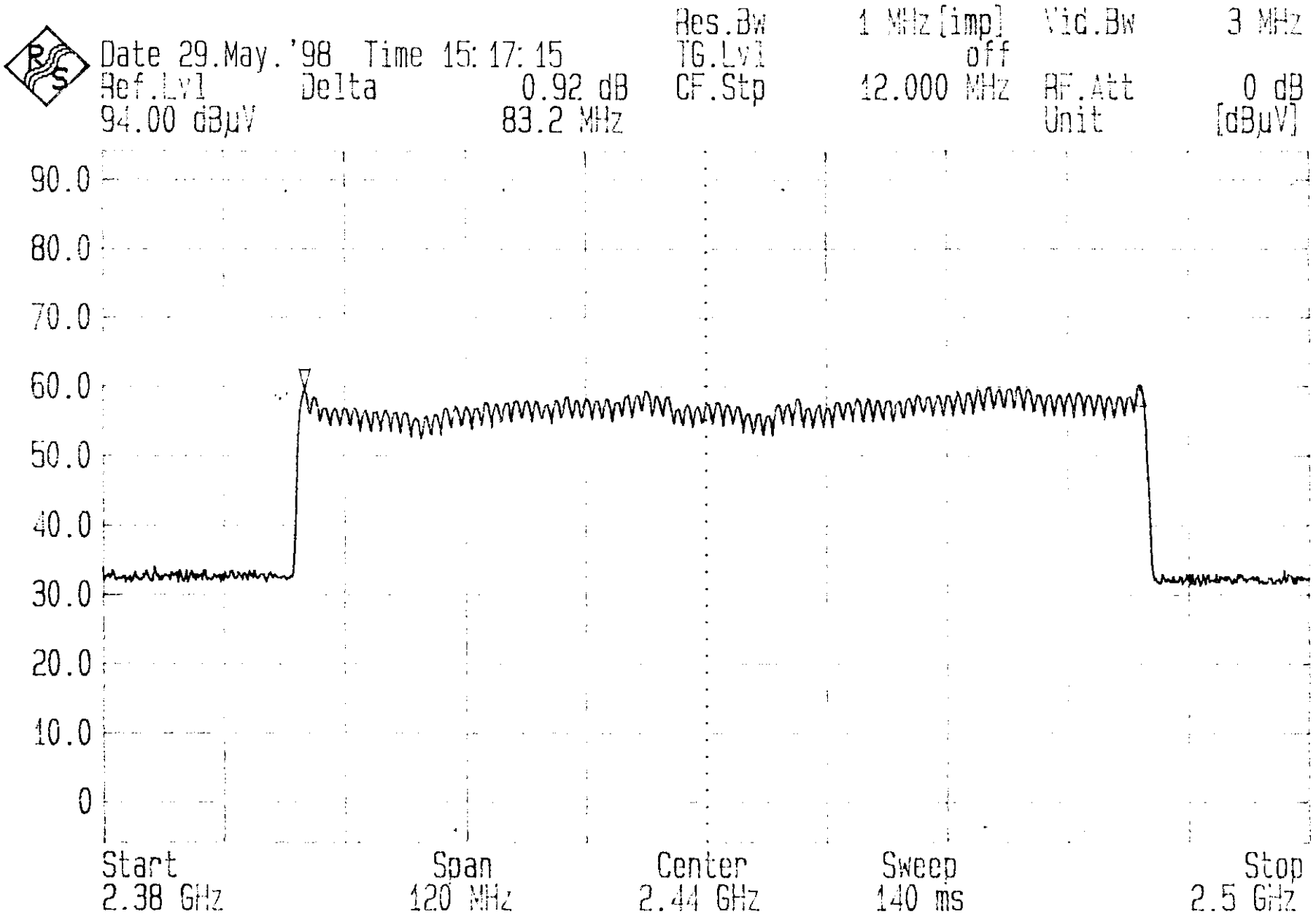
Note: All reading are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.

Test Equipment	Manufacturer/ Model No.	Serial No.	Last Cal.
EMI Display	Rohde & Schwarz ESMI	825035/005	04/07/98
EMI Receiver	Rohde & Schwarz ESMI	849937/004	04/07/98
Function Generator	Goldstar FG-8002	5071750	N/A
Field Monitor	Amplifier Research FM5004	21414	N/A
Signal Generator	HP 8657A	N/A	N/A
Monitor	Viewsonic VCDTS21353-1M	JL72867152	N/A
Keyboard	IBM M	P52G9700	N/A
Mouse	HP M-S34	N/A	N/A
Amplifier	Instruments For Industry, Inc. CMX10001	A349-0497	N/A
Positioning Controller	EMCO 1060-2 511	9407-1748	N/A
Positioning Controller	EMCO 1051-12	9407-1827	N/A
PC	Gateway2000 BABY AT	4053494	N/A
Antenna	Chase CBL6112A	2274	11/15/97

SIGNED: 

REVIEWED: 

PHOTOGRAPHS & ILLUSTRATIONS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Vid.Bw 3 MHz
TG.Lvl off
Ref.Lvl Delta 0.92 dB
CF.Stp 12.000 MHz
RF.Att 0 dB
94.00 dBµV 83.2 MHz
Unit [dBµV]
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0
Start 2.38 GHz
Span 120 MHz
Center 2.44 GHz
Sweep 140 ms
Stop 2.5 GHz