Attached A

FCC /DECLARATION OF CONFORMITY(DoC)

For the following equipment:

Product Name : WIRELESS LAN CARD

Model : LAN200-FH

Trade Name : COMPUTER & COMMUNICATION LABORATORY

IS herewith confirmed and found to comply with the requirements set up by ANSI C63.4 & FCC Part 15, Class B regulations for the evaluation of electromagnetic compatiblity.

This device complies with PART 15, Class B 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.

The following manufacturer/importer is responsible for this declaration:
INDUSTRIAL TECHNOLOGY RESEARCH INSTITUDE

(Company Name)
CCL M100, 1590-1594, Center Point drive,

(Company Address1)
MILPITAS, CA 95035, U.S.A.

(Company Address2)

TEL: 408-946-3015 FAX: 408-946-3019

Zanlong Deng (Name) Deputy Manager (Title)

Zanlong Deng (Signature) Dec. 10. 1998 (Date)

(A)

11.1.3.4 Synchronizing with a BSS

Upon receipt of an MLME-Join.request, a station shall adopt the BSSID, channel synchronization information, and TSF timer value of the parameters in the request. Upon receipt of Beacon frame from the BSS the MLME shall issue an MLME-Join.confirm indicating the operation was successful. If the JoinFailureTimeout expires prior to the receipt of a Beacon frame from the BSS, the MLME shall issue an MLME-Join.confirm indicating the operation was unssuccessful.

11.1.4 Adjusting Station Timers

In the infrastructure network, stations shall always adopt the timer in a Beacon or Probe Response coming from the AP in their BSS.

In an IBSS, a station shall always adopt the information in the contents of a Beacon or Probe Response frame when that frame contains a matching SSID and the value of the time stamp is later than the station's TSF timer. In response to an MLME-Join.request, a station shall initialize its TSF timer to 0 and shall not transmit a Beacon or Probe Response until it hears a Beacon or Probe Response from a member of the IBSS with a matching SSID.

All Beacon and Probe Response frames carry a Timestamp field. A station receiving such a frame from another station in an IBSS with the same SSID shall compare the Timestamp field with its own TSF time. If the Timestamp field of the received frame is later than its own TSF time, the station shall adopt all parameters contained in the Beacon frame.

11.1.5 Timing Synchronization for Frequency Hopping PHYs

NOTE: This only pertains to stations using a Frequency Hopping PHY.

The TSF described here provides a mechanism for stations in a frequency hopping system to synchronize their transitions from one channel to another (their hops). Every station shall maintain a table of all of the hopping sequences that are used in the system. All of the stations in a BSS shall use the same hopping sequence. Each Beacon and Probe Response includes the channel synchronization information necessary to determine the hop pattern and timing for the BSS.

Stations shall use their TSF timer to time the aCurrentDwellTime. The aCurrentDwellTime is the length of time that stations shall stay on each frequency in their hopping sequence. Once stations are synchronized, they have the same TSF timer value.

Stations in the BSS shall issue an appropriate PLME service primtive for the PHY in use to tune to the next frequency in the hopping sequence whenever:

TSF timer MOD aCurrentDwellTime = 0

11.2 Power Management

11.2.1 Power Management in an Infrastructure Network

Stations changing power management mode shall inform the AP of this fact using the Power Management bits within the Frame Control field of transmitted frames. The AP shall not arbitrarily transmit MSDUs to stations operating in a power-saving mode, but shall buffer MSDUs and only transmit them at designated times.

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Lower Limit	Upper Limit	Regulatory Range	Geography
2.402 GHz	2.480 GHz	2.400-2.4835 GHz	North America*
2.402 GHz	2.480 GHz	2.400-2.4835 GHz	Europe*
2.473 GHz	2.495 GHz	2.471-2.497 GHz	Japan*
2.447 GHz	2.473 GHz	2.445-2.475 GHz	Spain*
2.448 GHz	2.482 GHz	2.4465-2.4835 GHz	France*

Table 36, Operating Frequency Range

* The frequency ranges in this table are subject to the geographic specific regulatory authorities

14.6.4 Number of Operating Channels

The number of transmit and receive frequency channels used for operating the PMD entity is 79 for the US and Europe and 23 channels for Japan. This is more fully defined in Table 38 and Table 39 of 14.6.5.

Minimum*	Hopping Set	Geography
75	79	North America*
20	79	Europe*
Not Applicable	23	Japan*
20	27	Spain*
20	35	France*

Table 37, Number of Operating Channels

* The number of required hopping channels are subject to the geographic specific Regulatory Authorities

14.6.5 Operating Channel Center Frequency

The channel center frequency is defined in sequential 1.0 MHz steps beginning with the first channel, channel 2.402 GHz for the U.S.A. and Europe, as listed in Table 38. The channel centers for Japan, starting at 2.473 GHz with 1 MHz increments, is listed in Table 39.

Channel #	Value	Channel #	Value	Channel #	Value
2	2.402	28	2.428	54	2.454
3	2.403	29	2.429	55	2.455
4	2.404	30	2.430	56	2.456
5	2.405	31	2.431	57	2.457
6	2.406	32	2.432	58	2.458
7	2.407	33	2.433	59	2.459
8	2.408	34	2.434	60	2.460
9	2.409	35	2.435	61	2.461
10	2.410	36	2.436	62	2.462
11	2.411	37	2.437	63	2.463
12	2.412	38	2.438	64	2.464
13	2.413	39	2.439	65	2.465
14	2.414	40	2.440	66	2.466
15	2.415	41	2.441	67	2.467
16	2.416	42	2.442	68	2.468
17	2.417	43	2.443	69	2.469
18	2.418	44	2.444	70	2.470
19	2.419	45	2.445	71	2.471
20	2.420	46	2.446	72	2.472
21	2.421	47	2.447	73	2.473
22	2.422	48	2.448	74	2.474
23	2.423	49	2.449	75	2.475
24	2.424	50	2.450	76	2.476
25	2.425	51	2.451	77	2.477
26	2.426	52	2.452	78	2.478
27	2.427	53	2.453	79	2.479
				80	2.480

Table 38, North American and European Requirements

(Values specified in GHz)

Channel #	Value	Channel #	Value	Channel #	Value
73	2.473	81	2.481	89	2.489
74	2.474	82	2.482	90	2.490
75	2.475	83	2.483	91	2.491
76	2.476	84	2.484	92	2.492
77	2.477	85	2.485	93	2.493
78	2.478	86	2.486	94	2.494
79	2.479	87	2.487	95	2.495
80	2.480	88	2.488	-	-

Table 39, Japan Requirements

(Values specified in GHz)

Channel #	Value	Channel #	Value	Channel #	Value
47	2.447	56	2.456	65	2.465
48	2.448	57	2.457	66	2.466
49	2.449	58	2.458	67	2.467
50	2.450	59	2.459	68	2.468
51	2.451	60	2.460	69	2.469
52	2.452	61	2.461	70	2.470
53	2.453	62	2.462	71	2.471
54	2.454	63	2.463	72	2.472
55	2.455	64	2.464	73	2.473

Table 40, Spain Requirements

(Values specified in GHz)

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

Table 41, France Requirements

(Values specified in GHz)

14.6.6 Occupied Channel Bandwidth

Occupied channel bandwidth shall meet all applicable local geographic regulations for 1 MHz channel spacing. The rate at which the PMD entity will hop at is governed by the MAC. The hop rate is an attribute with a maximum dwell time subject to local geographic regulations.

14.6.7 Minimum Hop Rate

The minimum hop rate shall be governed by the regulatory authorities.

14.6.8 Hop Sequences

The hopping sequence of an individual PMD entity is used to create a pseudo-random hopping pattern utilizing uniformly the designated frequency band. Sets of hopping sequences are used to co-locate multiple PMD entities in similar networks in the same geographic area and to enhance the overall efficiency and throughput capacity of each individual network.

A frequency hopping pattern, Fx , consists of a permutation of all frequency channels defined in Table 38, and Table 39. For a given pattern number, x, the hopping sequence can be written as:

$F_x = \{f_x(1), f_x(2), \ldots f_x(p)\}$

where,

$f_x(i)$ = channel number (as defined in14.6.4) for i^{th} frequency in x^{th} hopping pattern
p = number of frequency channels in hopping pattern (79 for North America/most of Europe, 23 for Japan, 27 for France, 35 for Spain)

Given the hopping pattern number, x, and the index for the next frequency, i (in the range 1 to p), the channel number shall be defined to be:

$f_x(I) = [b(i) + x] \bmod (79) + 2$ in North America and most of Europe, with b(i) defined in Table 42

$= [(i - 1) * x] \bmod (23) + 73$ in Japan.

$= [b(i) + x] \bmod (27) + 47$ in Spain with b(i) defined in Table 43.

$= [b(i) + x] \bmod (35) + 48$ in France with b(i) defined in Table 44.

i	b(i)	i	b(i)	i	b(i)	i	b(i)	i	b(i)	i	b(i)	i	b(i)	i	b(i)
1	0	11	76	21	18	31	34	41	14	51	20	61	48	71	55
2	23	12	29	22	11	32	66	42	57	52	73	62	15	72	35
3	62	13	59	23	36	33	7	43	41	53	64	63	5	73	53
4	8	14	22	24	72	34	68	44	74	54	39	64	17	74	24
5	43	15	52	25	54	35	75	45	32	55	13	65	6	75	44
6	16	16	63	26	69	36	4	46	70	56	33	66	67	76	51
7	71	17	26	27	21	37	60	47	9	57	65	67	49	77	38
8	47	18	77	28	3	38	27	48	58	58	50	68	40	78	30
9	19	19	31	29	37	39	12	49	78	59	56	69	1	79	46
10	61	20	2	30	10	40	25	50	45	60	42	70	28		

Table 42, Base Hopping Sequence b(i) for North America and Most of Europe

i	b(i)	i	b(i)	i	b(i)
1	13	10	19	19	14
2	4	11	8	20	1
3	24	12	23	21	20
4	18	13	15	22	7
5	5	14	22	23	16
6	12	15	9	24	2
7	3	16	21	25	11
8	10	17	0	26	17
9	25	18	6	27	26

Table 43, Base Hopping Sequence b(i) for Spain

i	b(i)	i	b(i)	i	b(i)
1	17	13	31	25	15
2	5	14	20	26	3
3	18	15	29	27	11
4	32	16	22	28	30

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5	23	17	12	29	24
6	7	18	6	30	9
7	16	19	28	31	27
8	4	20	14	32	19
9	13	21	25	33	2
10	33	22	0	34	21
11	26	23	8	35	34
12	10	24	1		

Table 44, Base Hopping Sequence b(i) for France

The sequences are designed to ensure some minimum distance in frequency between contiguous hops. The minimum hop size is 6 MHz for North America and Europe, including Spain and France, and 5 MHz for Japan.

The hopping pattern numbers x are divided into three sets. The sets are designed to avoid prolonged collision periods between different hopping sequences in a set. Hopping sequence sets contain 26 sequences for North America/Europe and 4 sequences per set for Japan:

For North America/most of Europe:
x = {0,3,6,9,12,15,18,21,24,27,30,33,36,39,42,45,48,51,54,57,60,63,66,69,72,75} Set 1
x = {1,4,7,10,13,16,19,22,25,28,31,34,37,40,43,46,49,52,55,58,61,64,67,70,73,76} Set 2
x = {2,5,8,11,14,17,20,23,26,29,32,35,38,41,44,47,50,53,56,59,62,65,68,72,74,77} Set 3

For Japan:
x = {6,9,12,15} Set 1
x = {7,10,13,16} Set 2
x = {8,11,14,17} Set 3

For Spain:
x = {0,3,6,9,12,15,18,21,24} Set 1
x = {1,4,7,10,13,16,19,22,25} Set 2
x = {2,5,8,11,14,17,20,23,26} Set 3

For France:
x = {0,3,6,9,12,15,18,21,24,27,30} Set 1
x = {1,4,7,10,13,16,19,22,25,28,31} Set 2
x = {2,5,8,11,14,17,20,23,26,29,32} Set 3

The three sets of hopping sequences for North America and most of Europe, of 26 patterns each, are listed Tables A, B, and C in Annex B. Similarly, the three sets for Japan, of four patterns each, are listed in Table D in Annex B. The three sets for Spain has nine patterns each. The three sets for France has 11 patterns each. The channel numbers listed under each pattern refer to the actual frequency values listed in Table 38 and Table 39.

14.6.9 Unwanted Emissions

Conformant PMD implementations of this FHSS standard shall limit the emissions that fall outside of the operating frequency range, defined in Table 36 of 14.6.3, to the geographically applicable limits.

14.6.10 Modulation

The minimum set of requirements for a PMD to be compliant with the 802.11 FHSS PHY shall be as follows.

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The PMD shall be capable of operating using 2 level Gaussian Frequency Shift Key (GFSK) modulation with a nominal bandwidth bit-period (BT)=0.5. The PMD shall accept symbols from the set {{1},{0}}from the PLCP. The symbol {1} shall be encoded with a peak deviation of ($+f_{dd}$), giving a peak transmit frequency of (F_C+f_d), which is greater than the carrier center frequency (F_C). The symbol {0} shall be encoded with a peak frequency deviation of ($-f_d$), giving a peak transmit frequency of (F_C-f_d).

An incoming bit stream at 1 Mbit/s will be converted to symbols at Fclk = 1 Msymbols/s as shown in Table 45 below:

1 Mbit/s, 2-GFSK

Symbol	Carrier Deviation
1	1/2 * h2*Fclk
0	-1/2 * h2*Fclk

Table 45, Symbol Encoding into Carrier Deviation

*Note: These deviation values are measured using the center symbol of 7 consecutive symbols of the same value. The instantaneous deviation will vary due to Gaussian pulse shaping.

The deviation factor h2 for 2GFSK (measured as difference between frequencies measured in the middle of 0000 and 1111 patterns encountered in the SFD, divided by 1 MHz) will nominally be 0.32.

The minimum frequency deviation, as shown in Figure 84 below, shall be greater than 110 kHz relative to the nominal center frequency F_C. F_d is the average center frequency of the last 8 bits of the preamble SYNC field, measured as the deviation at the mid symbol. Mid symbol is defined as the point which is midway between the zero crossings derived from a best fit to the last 8 bits of the SYNC field. Maximum deviation is not specified, but modulation is subject to the occupied bandwidth limits of 14.6.5.

The zero crossing error shall be less than ± 1/8 of a symbol period. The zero crossing error is the time difference between the ideal symbol periods and measured crossings of F_C. This is illustrated in Figure 84 below.

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B. Annex - Hopping Sequences (informative)

The following tables pertain to the hopping sequences for North America and ETSI.

Table B-1, Hopping Sequence Set 1

index	0	3	6	9	12	15	18	21	24	27	30	33	36
1	2	5	8	11	14	17	20	23	26	29	32	35	38
2	25	28	31	34	37	40	43	46	49	52	55	58	61
3	64	67	70	73	76	79	3	6	9	12	15	18	21
4	10	13	16	19	22	25	28	31	34	37	40	43	46
5	45	48	51	54	57	60	63	66	69	72	75	78	2
6	18	21	24	27	30	33	36	39	42	45	48	51	54
7	73	76	79	3	6	9	12	15	18	21	24	27	30
8	49	52	55	58	61	64	67	70	73	76	79	3	6
9	21	24	27	30	33	36	39	42	45	48	51	54	57
10	63	66	69	72	75	78	2	5	8	11	14	17	20
11	78	2	5	8	11	14	17	20	23	26	29	32	35
12	31	34	37	40	43	46	49	52	55	58	61	64	67
13	61	64	67	70	73	76	79	3	6	9	12	15	18
14	24	27	30	33	36	39	42	45	48	51	54	57	60
15	54	57	60	63	66	69	72	75	78	2	5	8	11
16	65	68	71	74	77	80	4	7	10	13	16	19	22
17	28	31	34	37	40	43	46	49	52	55	58	61	64
18	79	3	6	9	12	15	18	21	24	27	30	33	36
19	33	36	39	42	45	48	51	54	57	60	63	66	69
20	4	7	10	13	16	19	22	25	28	31	34	37	40
21	20	23	26	29	32	35	38	41	44	47	50	53	56
22	13	16	19	22	25	28	31	34	37	40	43	46	49
23	38	41	44	47	50	53	56	59	62	65	68	71	74
24	74	77	80	4	7	10	13	16	19	22	25	28	31
25	56	59	62	65	68	71	74	77	80	4	7	10	13
26	71	74	77	80	4	7	10	13	16	19	22	25	28
27	23	26	29	32	35	38	41	44	47	50	53	56	59
28	5	8	11	14	17	20	23	26	29	32	35	38	41
29	39	42	45	48	51	54	57	60	63	66	69	72	75
30	12	15	18	21	24	27	30	33	36	39	42	45	48
31	36	39	42	45	48	51	54	57	60	63	66	69	72
32	68	71	74	77	80	4	7	10	13	16	19	22	25
33	9	12	15	18	21	24	27	30	33	36	39	42	45
34	70	73	76	79	3	6	9	12	15	18	21	24	27
35	77	80	4	7	10	13	16	19	22	25	28	31	34
36	6	9	12	15	18	21	24	27	30	33	36	39	42
37	62	65	68	71	74	77	80	4	7	10	13	16	19
38	29	32	35	38	41	44	47	50	53	56	59	62	65
39	14	17	20	23	26	29	32	35	38	41	44	47	50

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index	0	3	6	9	12	15	18	21	24	27	30	33	36
40	27	30	33	36	39	42	45	48	51	54	57	60	63
41	16	19	22	25	28	31	34	37	40	43	46	49	52
42	59	62	65	68	71	74	77	80	4	7	10	13	16
43	43	46	49	52	55	58	61	64	67	70	73	76	79
44	76	79	3	6	9	12	15	18	21	24	27	30	33
45	34	37	40	43	46	49	52	55	58	61	64	67	70
46	72	75	78	2	5	8	11	14	17	20	23	26	29
47	11	14	17	20	23	26	29	32	35	38	41	44	47
48	60	63	66	69	72	75	78	2	5	8	11	14	17
49	80	4	7	10	13	16	19	22	25	28	31	34	37
50	47	50	53	56	59	62	65	68	71	74	77	80	4
51	22	25	28	31	34	37	40	43	46	49	52	55	58
52	75	78	2	5	8	11	14	17	20	23	26	29	32
53	66	69	72	75	78	2	5	8	11	14	17	20	23
54	41	44	47	50	53	56	59	62	65	68	71	74	77
55	15	18	21	24	27	30	33	36	39	42	45	48	51
56	35	38	41	44	47	50	53	56	59	62	65	68	71
57	67	70	73	76	79	3	6	9	12	15	18	21	24
58	52	55	58	61	64	67	70	73	76	79	3	6	9
59	58	61	64	67	70	73	76	79	3	6	9	12	15
60	44	47	50	53	56	59	62	65	68	71	74	77	80
61	50	53	56	59	62	65	68	71	74	77	80	4	7
62	17	20	23	26	29	32	35	38	41	44	47	50	53
63	7	10	13	16	19	22	25	28	31	34	37	40	43
64	19	22	25	28	31	34	37	40	43	46	49	52	55
65	8	11	14	17	20	23	26	29	32	35	38	41	44
66	69	72	75	78	2	5	8	11	14	17	20	23	26
67	51	54	57	60	63	66	69	72	75	78	2	5	8
68	42	45	48	51	54	57	60	63	66	69	72	75	78
69	3	6	9	12	15	18	21	24	27	30	33	36	39
70	30	33	36	39	42	45	48	51	54	57	60	63	66
71	57	60	63	66	69	72	75	78	2	5	8	11	14
72	37	40	43	46	49	52	55	58	61	64	67	70	73
73	55	58	61	64	67	70	73	76	79	3	6	9	12
74	26	29	32	35	38	41	44	47	50	53	56	59	62
75	46	49	52	55	58	61	64	67	70	73	76	79	3
76	53	56	59	62	65	68	71	74	77	80	4	7	10
77	40	43	46	49	52	55	58	61	64	67	70	73	76
78	32	35	38	41	44	47	50	53	56	59	62	65	68
79	48	51	54	57	60	63	66	69	72	75	78	2	5

index	39	42	45	48	51	54	57	60	63	66	69	72	75
1	41	44	47	50	53	56	59	62	65	68	71	74	77
2	64	67	70	73	76	79	3	6	9	12	15	18	21
3	24	27	30	33	36	39	42	45	48	51	54	57	60
4	49	52	55	58	61	64	67	70	73	76	79	3	6
5	5	8	11	14	17	20	23	26	29	32	35	38	41
6	57	60	63	66	69	72	75	78	2	5	8	11	14
7	33	36	39	42	45	48	51	54	57	60	63	66	69
8	9	12	15	18	21	24	27	30	33	36	39	42	45
9	60	63	66	69	72	75	78	2	5	8	11	14	17
10	23	26	29	32	35	38	41	44	47	50	53	56	59
11	38	41	44	47	50	53	56	59	62	65	68	71	74
12	70	73	76	79	3	6	9	12	15	18	21	24	27
13	21	24	27	30	33	36	39	42	45	48	51	54	57
14	63	66	69	72	75	78	2	5	8	11	14	17	20
15	14	17	20	23	26	29	32	35	38	41	44	47	50
16	25	28	31	34	37	40	43	46	49	52	55	58	61
17	67	70	73	76	79	3	6	9	12	15	18	21	24
18	39	42	45	48	51	54	57	60	63	66	69	72	75
19	72	75	78	2	5	8	11	14	17	20	23	26	29
20	43	46	49	52	55	58	61	64	67	70	73	76	79
21	59	62	65	68	71	74	77	80	4	7	10	13	16
22	52	55	58	61	64	67	70	73	76	79	3	6	9
23	77	80	4	7	10	13	16	19	22	25	28	31	34
24	34	37	40	43	46	49	52	55	58	61	64	67	70
25	16	19	22	25	28	31	34	37	40	43	46	49	52
26	31	34	37	40	43	46	49	52	55	58	61	64	67
27	62	65	68	71	74	77	80	4	7	10	13	16	19
28	44	47	50	53	56	59	62	65	68	71	74	77	80
29	78	2	5	8	11	14	17	20	23	26	29	32	35
30	51	54	57	60	63	66	69	72	75	78	2	5	8
31	75	78	2	5	8	11	14	17	20	23	26	29	32
32	28	31	34	37	40	43	46	49	52	55	58	61	64
33	48	51	54	57	60	63	66	69	72	75	78	2	5
34	30	33	36	39	42	45	48	51	54	57	60	63	66
35	37	40	43	46	49	52	55	58	61	64	67	70	73
36	45	48	51	54	57	60	63	66	69	72	75	78	2
37	22	25	28	31	34	37	40	43	46	49	52	55	58
38	68	71	74	77	80	4	7	10	13	16	19	22	25
39	53	56	59	62	65	68	71	74	77	80	4	7	10

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index	39	42	45	48	51	54	57	60	63	66	69	72	75
40	66	69	72	75	78	2	5	8	11	14	17	20	23
41	55	58	61	64	67	70	73	76	79	3	6	9	12
42	19	22	25	28	31	34	37	40	43	46	49	52	55
43	3	6	9	12	15	18	21	24	27	30	33	36	39
44	36	39	42	45	48	51	54	57	60	63	66	69	72
45	73	76	79	3	6	9	12	15	18	21	24	27	30
46	32	35	38	41	44	47	50	53	56	59	62	65	68
47	50	53	56	59	62	65	68	71	74	77	80	4	7
48	20	23	26	29	32	35	38	41	44	47	50	53	56
49	40	43	46	49	52	55	58	61	64	67	70	73	76
50	7	10	13	16	19	22	25	28	31	34	37	40	43
51	61	64	67	70	73	76	79	3	6	9	12	15	18
52	35	38	41	44	47	50	53	56	59	62	65	68	71
53	26	29	32	35	38	41	44	47	50	53	56	59	62
54	80	4	7	10	13	16	19	22	25	28	31	34	37
55	54	57	60	63	66	69	72	75	78	2	5	8	11
56	74	77	80	4	7	10	13	16	19	22	25	28	31
57	27	30	33	36	39	42	45	48	51	54	57	60	63
58	12	15	18	21	24	27	30	33	36	39	42	45	48
59	18	21	24	27	30	33	36	39	42	45	48	51	54
60	4	7	10	13	16	19	22	25	28	31	34	37	40
61	10	13	16	19	22	25	28	31	34	37	40	43	46
62	56	59	62	65	68	71	74	77	80	4	7	10	13
63	46	49	52	55	58	61	64	67	70	73	76	79	3
64	58	61	64	67	70	73	76	79	3	6	9	12	15
65	47	50	53	56	59	62	65	68	71	74	77	80	4
66	29	32	35	38	41	44	47	50	53	56	59	62	65
67	11	14	17	20	23	26	29	32	35	38	41	44	47
68	2	5	8	11	14	17	20	23	26	29	32	35	38
69	42	45	48	51	54	57	60	63	66	69	72	75	78
70	69	72	75	78	2	5	8	11	14	17	20	23	26
71	17	20	23	26	29	32	35	38	41	44	47	50	53
72	76	79	3	6	9	12	15	18	21	24	27	30	33
73	15	18	21	24	27	30	33	36	39	42	45	48	51
74	65	68	71	74	77	80	4	7	10	13	16	19	22
75	6	9	12	15	18	21	24	27	30	33	36	39	42
76	13	16	19	22	25	28	31	34	37	40	43	46	49
77	79	3	6	9	12	15	18	21	24	27	30	33	36
78	71	74	77	80	4	7	10	13	16	19	22	25	28
79	8	11	14	17	20	23	26	29	32	35	38	41	44

Table B-2, Hopping Sequence Set 2

index	1	4	7	10	13	16	19	22	25	28	31	34	37
1	3	6	9	12	15	18	21	24	27	30	33	36	39
2	26	29	32	35	38	41	44	47	50	53	56	59	62
3	65	68	71	74	77	80	4	7	10	13	16	19	22
4	11	14	17	20	23	26	29	32	35	38	41	44	47
5	46	49	52	55	58	61	64	67	70	73	76	79	3
6	19	22	25	28	31	34	37	40	43	46	49	52	55
7	74	77	80	4	7	10	13	16	19	22	25	28	31
8	50	53	56	59	62	65	68	71	74	77	80	4	7
9	22	25	28	31	34	37	40	43	46	49	52	55	58
10	64	67	70	73	76	79	3	6	9	12	15	18	21
11	79	3	6	9	12	15	18	21	24	27	30	33	36
12	32	35	38	41	44	47	50	53	56	59	62	65	68
13	62	65	68	71	74	77	80	4	7	10	13	16	19
14	25	28	31	34	37	40	43	46	49	52	55	58	61
15	55	58	61	64	67	70	73	76	79	3	6	9	12
16	66	69	72	75	78	2	5	8	11	14	17	20	23
17	29	32	35	38	41	44	47	50	53	56	59	62	65
18	80	4	7	10	13	16	19	22	25	28	31	34	37
19	34	37	40	43	46	49	52	55	58	61	64	67	70
20	5	8	11	14	17	20	23	26	29	32	35	38	41
21	21	24	27	30	33	36	39	42	45	48	51	54	57
22	14	17	20	23	26	29	32	35	38	41	44	47	50
23	39	42	45	48	51	54	57	60	63	66	69	72	75
24	75	78	2	5	8	11	14	17	20	23	26	29	32
25	57	60	63	66	69	72	75	78	2	5	8	11	14
26	72	75	78	2	5	8	11	14	17	20	23	26	29
27	24	27	30	33	36	39	42	45	48	51	54	57	60
28	6	9	12	15	18	21	24	27	30	33	36	39	42
29	40	43	46	49	52	55	58	61	64	67	70	73	76
30	13	16	19	22	25	28	31	34	37	40	43	46	49
31	37	40	43	46	49	52	55	58	61	64	67	70	73
32	69	72	75	78	2	5	8	11	14	17	20	23	26
33	10	13	16	19	22	25	28	31	34	37	40	43	46
34	71	74	77	80	4	7	10	13	16	19	22	25	28
35	78	2	5	8	11	14	17	20	23	26	29	32	35
36	7	10	13	16	19	22	25	28	31	34	37	40	43
37	63	66	69	72	75	78	2	5	8	11	14	17	20
38	30	33	36	39	42	45	48	51	54	57	60	63	66
39	15	18	21	24	27	30	33	36	39	42	45	48	51

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index	1	4	7	10	13	16	19	22	25	28	31	34	37
40	28	31	34	37	40	43	46	49	52	55	58	61	64
41	17	20	23	26	29	32	35	38	41	44	47	50	53
42	60	63	66	69	72	75	78	2	5	8	11	14	17
43	44	47	50	53	56	59	62	65	68	71	74	77	80
44	77	80	4	7	10	13	16	19	22	25	28	31	34
45	35	38	41	44	47	50	53	56	59	62	65	68	71
46	73	76	79	3	6	9	12	15	18	21	24	27	30
47	12	15	18	21	24	27	30	33	36	39	42	45	48
48	61	64	67	70	73	76	79	3	6	9	12	15	18
49	2	5	8	11	14	17	20	23	26	29	32	35	38
50	48	51	54	57	60	63	66	69	72	75	78	2	5
51	23	26	29	32	35	38	41	44	47	50	53	56	59
52	76	79	3	6	9	12	15	18	21	24	27	30	33
53	67	70	73	76	79	3	6	9	12	15	18	21	24
54	42	45	48	51	54	57	60	63	66	69	72	75	78
55	16	19	22	25	28	31	34	37	40	43	46	49	52
56	36	39	42	45	48	51	54	57	60	63	66	69	72
57	68	71	74	77	80	4	7	10	13	16	19	22	25
58	53	56	59	62	65	68	71	74	77	80	4	7	10
59	59	62	65	68	71	74	77	80	4	7	10	13	16
60	45	48	51	54	57	60	63	66	69	72	75	78	2
61	51	54	57	60	63	66	69	72	75	78	2	5	8
62	18	21	24	27	30	33	36	39	42	45	48	51	54
63	8	11	14	17	20	23	26	29	32	35	38	41	44
64	20	23	26	29	32	35	38	41	44	47	50	53	56
65	9	12	15	18	21	24	27	30	33	36	39	42	45
66	70	73	76	79	3	6	9	12	15	18	21	24	27
67	52	55	58	61	64	67	70	73	76	79	3	6	9
68	43	46	49	52	55	58	61	64	67	70	73	76	79
69	4	7	10	13	16	19	22	25	28	31	34	37	40
70	31	34	37	40	43	46	49	52	55	58	61	64	67
71	58	61	64	67	70	73	76	79	3	6	9	12	15
72	38	41	44	47	50	53	56	59	62	65	68	71	74
73	56	59	62	65	68	71	74	77	80	4	7	10	13
74	27	30	33	36	39	42	45	48	51	54	57	60	63
75	47	50	53	56	59	62	65	68	71	74	77	80	4
76	54	57	60	63	66	69	72	75	78	2	5	8	11
77	41	44	47	50	53	56	59	62	65	68	71	74	77
78	33	36	39	42	45	48	51	54	57	60	63	66	69
79	49	52	55	58	61	64	67	70	73	76	79	3	6

index	40	43	46	49	52	55	58	61	64	67	70	73	76
1	42	45	48	51	54	57	60	63	66	69	72	75	78
2	65	68	71	74	77	80	4	7	10	13	16	19	22
3	25	28	31	34	37	40	43	46	49	52	55	58	61
4	50	53	56	59	62	65	68	71	74	77	80	4	7
5	6	9	12	15	18	21	24	27	30	33	36	39	42
6	58	61	64	67	70	73	76	79	3	6	9	12	15
7	34	37	40	43	46	49	52	55	58	61	64	67	70
8	10	13	16	19	22	25	28	31	34	37	40	43	46
9	61	64	67	70	73	76	79	3	6	9	12	15	18
10	24	27	30	33	36	39	42	45	48	51	54	57	60
11	39	42	45	48	51	54	57	60	63	66	69	72	75
12	71	74	77	80	4	7	10	13	16	19	22	25	28
13	22	25	28	31	34	37	40	43	46	49	52	55	58
14	64	67	70	73	76	79	3	6	9	12	15	18	21
15	15	18	21	24	27	30	33	36	39	42	45	48	51
16	26	29	32	35	38	41	44	47	50	53	56	59	62
17	68	71	74	77	80	4	7	10	13	16	19	22	25
18	40	43	46	49	52	55	58	61	64	67	70	73	76
19	73	76	79	3	6	9	12	15	18	21	24	27	30
20	44	47	50	53	56	59	62	65	68	71	74	77	80
21	60	63	66	69	72	75	78	2	5	8	11	14	17
22	53	56	59	62	65	68	71	74	77	80	4	7	10
23	78	2	5	8	11	14	17	20	23	26	29	32	35
24	35	38	41	44	47	50	53	56	59	62	65	68	71
25	17	20	23	26	29	32	35	38	41	44	47	50	53
26	32	35	38	41	44	47	50	53	56	59	62	65	68
27	63	66	69	72	75	78	2	5	8	11	14	17	20
28	45	48	51	54	57	60	63	66	69	72	75	78	2
29	79	3	6	9	12	15	18	21	24	27	30	33	36
30	52	55	58	61	64	67	70	73	76	79	3	6	9
31	76	79	3	6	9	12	15	18	21	24	27	30	33
32	29	32	35	38	41	44	47	50	53	56	59	62	65
33	49	52	55	58	61	64	67	70	73	76	79	3	6
34	31	34	37	40	43	46	49	52	55	58	61	64	67
35	38	41	44	47	50	53	56	59	62	65	68	71	74
36	46	49	52	55	58	61	64	67	70	73	76	79	3
37	23	26	29	32	35	38	41	44	47	50	53	56	59
38	69	72	75	78	2	5	8	11	14	17	20	23	26
39	54	57	60	63	66	69	72	75	78	2	5	8	11

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index	40	43	46	49	52	55	58	61	64	67	70	73	76
40	67	70	73	76	79	3	6	9	12	15	18	21	24
41	56	59	62	65	68	71	74	77	80	4	7	10	13
42	20	23	26	29	32	35	38	41	44	47	50	53	56
43	4	7	10	13	16	19	22	25	28	31	34	37	40
44	37	40	43	46	49	52	55	58	61	64	67	70	73
45	74	77	80	4	7	10	13	16	19	22	25	28	31
46	33	36	39	42	45	48	51	54	57	60	63	66	69
47	51	54	57	60	63	66	69	72	75	78	2	5	8
48	21	24	27	30	33	36	39	42	45	48	51	54	57
49	41	44	47	50	53	56	59	62	65	68	71	74	77
50	8	11	14	17	20	23	26	29	32	35	38	41	44
51	62	65	68	71	74	77	80	4	7	10	13	16	19
52	36	39	42	45	48	51	54	57	60	63	66	69	72
53	27	30	33	36	39	42	45	48	51	54	57	60	63
54	2	5	8	11	14	17	20	23	26	29	32	35	38
55	55	58	61	64	67	70	73	76	79	3	6	9	12
56	75	78	2	5	8	11	14	17	20	23	26	29	32
57	28	31	34	37	40	43	46	49	52	55	58	61	64
58	13	16	19	22	25	28	31	34	37	40	43	46	49
59	19	22	25	28	31	34	37	40	43	46	49	52	55
60	5	8	11	14	17	20	23	26	29	32	35	38	41
61	11	14	17	20	23	26	29	32	35	38	41	44	47
62	57	60	63	66	69	72	75	78	2	5	8	11	14
63	47	50	53	56	59	62	65	68	71	74	77	80	4
64	59	62	65	68	71	74	77	80	4	7	10	13	16
65	48	51	54	57	60	63	66	69	72	75	78	2	5
66	30	33	36	39	42	45	48	51	54	57	60	63	66
67	12	15	18	21	24	27	30	33	36	39	42	45	48
68	3	6	9	12	15	18	21	24	27	30	33	36	39
69	43	46	49	52	55	58	61	64	67	70	73	76	79
70	70	73	76	79	3	6	9	12	15	18	21	24	27
71	18	21	24	27	30	33	36	39	42	45	48	51	54
72	77	80	4	7	10	13	16	19	22	25	28	31	34
73	16	19	22	25	28	31	34	37	40	43	46	49	52
74	66	69	72	75	78	2	5	8	11	14	17	20	23
75	7	10	13	16	19	22	25	28	31	34	37	40	43
76	14	17	20	23	26	29	32	35	38	41	44	47	50
77	80	4	7	10	13	16	19	22	25	28	31	34	37
78	72	75	78	2	5	8	11	14	17	20	23	26	29
79	9	12	15	18	21	24	27	30	33	36	39	42	45

Table B-3, Hopping Sequence Set 3

index	2	5	8	11	14	17	20	23	26	29	32	35	38
1	4	7	10	13	16	19	22	25	28	31	34	37	40
2	27	30	33	36	39	42	45	48	51	54	57	60	63
3	66	69	72	75	78	2	5	8	11	14	17	20	23
4	12	15	18	21	24	27	30	33	36	39	42	45	48
5	47	50	53	56	59	62	65	68	71	74	77	80	4
6	20	23	26	29	32	35	38	41	44	47	50	53	56
7	75	78	2	5	8	11	14	17	20	23	26	29	32
8	51	54	57	60	63	66	69	72	75	78	2	5	8
9	23	26	29	32	35	38	41	44	47	50	53	56	59
10	65	68	71	74	77	80	4	7	10	13	16	19	22
11	80	4	7	10	13	16	19	22	25	28	31	34	37
12	33	36	39	42	45	48	51	54	57	60	63	66	69
13	63	66	69	72	75	78	2	5	8	11	14	17	20
14	26	29	32	35	38	41	44	47	50	53	56	59	62
15	56	59	62	65	68	71	74	77	80	4	7	10	13
16	67	70	73	76	79	3	6	9	12	15	18	21	24
17	30	33	36	39	42	45	48	51	54	57	60	63	66
18	2	5	8	11	14	17	20	23	26	29	32	35	38
19	35	38	41	44	47	50	53	56	59	62	65	68	71
20	6	9	12	15	18	21	24	27	30	33	36	39	42
21	22	25	28	31	34	37	40	43	46	49	52	55	58
22	15	18	21	24	27	30	33	36	39	42	45	48	51
23	40	43	46	49	52	55	58	61	64	67	70	73	76
24	76	79	3	6	9	12	15	18	21	24	27	30	33
25	58	61	64	67	70	73	76	79	3	6	9	12	15
26	73	76	79	3	6	9	12	15	18	21	24	27	30
27	25	28	31	34	37	40	43	46	49	52	55	58	61
28	7	10	13	16	19	22	25	28	31	34	37	40	43
29	41	44	47	50	53	56	59	62	65	68	71	74	77
30	14	17	20	23	26	29	32	35	38	41	44	47	50
31	38	41	44	47	50	53	56	59	62	65	68	71	74
32	70	73	76	79	3	6	9	12	15	18	21	24	27
33	11	14	17	20	23	26	29	32	35	38	41	44	47
34	72	75	78	2	5	8	11	14	17	20	23	26	29
35	79	3	6	9	12	15	18	21	24	27	30	33	36
36	8	11	14	17	20	23	26	29	32	35	38	41	44
37	64	67	70	73	76	79	3	6	9	12	15	18	21
38	31	34	37	40	43	46	49	52	55	58	61	64	67
39	16	19	22	25	28	31	34	37	40	43	46	49	52

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index	2	5	8	11	14	17	20	23	26	29	32	35	38
40	29	32	35	38	41	44	47	50	53	56	59	62	65
41	18	21	24	27	30	33	36	39	42	45	48	51	54
42	61	64	67	70	73	76	79	3	6	9	12	15	18
43	45	48	51	54	57	60	63	66	69	72	75	78	2
44	78	2	5	8	11	14	17	20	23	26	29	32	35
45	36	39	42	45	48	51	54	57	60	63	66	69	72
46	74	77	80	4	7	10	13	16	19	22	25	28	31
47	13	16	19	22	25	28	31	34	37	40	43	46	49
48	62	65	68	71	74	77	80	4	7	10	13	16	19
49	3	6	9	12	15	18	21	24	27	30	33	36	39
50	49	52	55	58	61	64	67	70	73	76	79	3	6
51	24	27	30	33	36	39	42	45	48	51	54	57	60
52	77	80	4	7	10	13	16	19	22	25	28	31	34
53	68	71	74	77	80	4	7	10	13	16	19	22	25
54	43	46	49	52	55	58	61	64	67	70	73	76	79
55	17	20	23	26	29	32	35	38	41	44	47	50	53
56	37	40	43	46	49	52	55	58	61	64	67	70	73
57	69	72	75	78	2	5	8	11	14	17	20	23	26
58	54	57	60	63	66	69	72	75	78	2	5	8	11
59	60	63	66	69	72	75	78	2	5	8	11	14	17
60	46	49	52	55	58	61	64	67	70	73	76	79	3
61	52	55	58	61	64	67	70	73	76	79	3	6	9
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63	9	12	15	18	21	24	27	30	33	36	39	42	45
64	21	24	27	30	33	36	39	42	45	48	51	54	57
65	10	13	16	19	22	25	28	31	34	37	40	43	46
66	71	74	77	80	4	7	10	13	16	19	22	25	28
67	53	56	59	62	65	68	71	74	77	80	4	7	10
68	44	47	50	53	56	59	62	65	68	71	74	77	80
69	5	8	11	14	17	20	23	26	29	32	35	38	41
70	32	35	38	41	44	47	50	53	56	59	62	65	68
71	59	62	65	68	71	74	77	80	4	7	10	13	16
72	39	42	45	48	51	54	57	60	63	66	69	72	75
73	57	60	63	66	69	72	75	78	2	5	8	11	14
74	28	31	34	37	40	43	46	49	52	55	58	61	64
75	48	51	54	57	60	63	66	69	72	75	78	2	5
76	55	58	61	64	67	70	73	76	79	3	6	9	12
77	42	45	48	51	54	57	60	63	66	69	72	75	78
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79	50	53	56	59	62	65	68	71	74	77	80	4	7

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28	46	49	52	55	58	61	64	67	70	73	76	79	3
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33	50	53	56	59	62	65	68	71	74	77	80	4	7
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38	70	73	76	79	3	6	9	12	15	18	21	24	27
39	55	58	61	64	67	70	73	76	79	3	6	9	12

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index	41	44	47	50	53	56	59	62	65	68	71	74	77
40	68	71	74	77	80	4	7	10	13	16	19	22	25
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75	8	11	14	17	20	23	26	29	32	35	38	41	44
76	15	18	21	24	27	30	33	36	39	42	45	48	51
77	2	5	8	11	14	17	20	23	26	29	32	35	38
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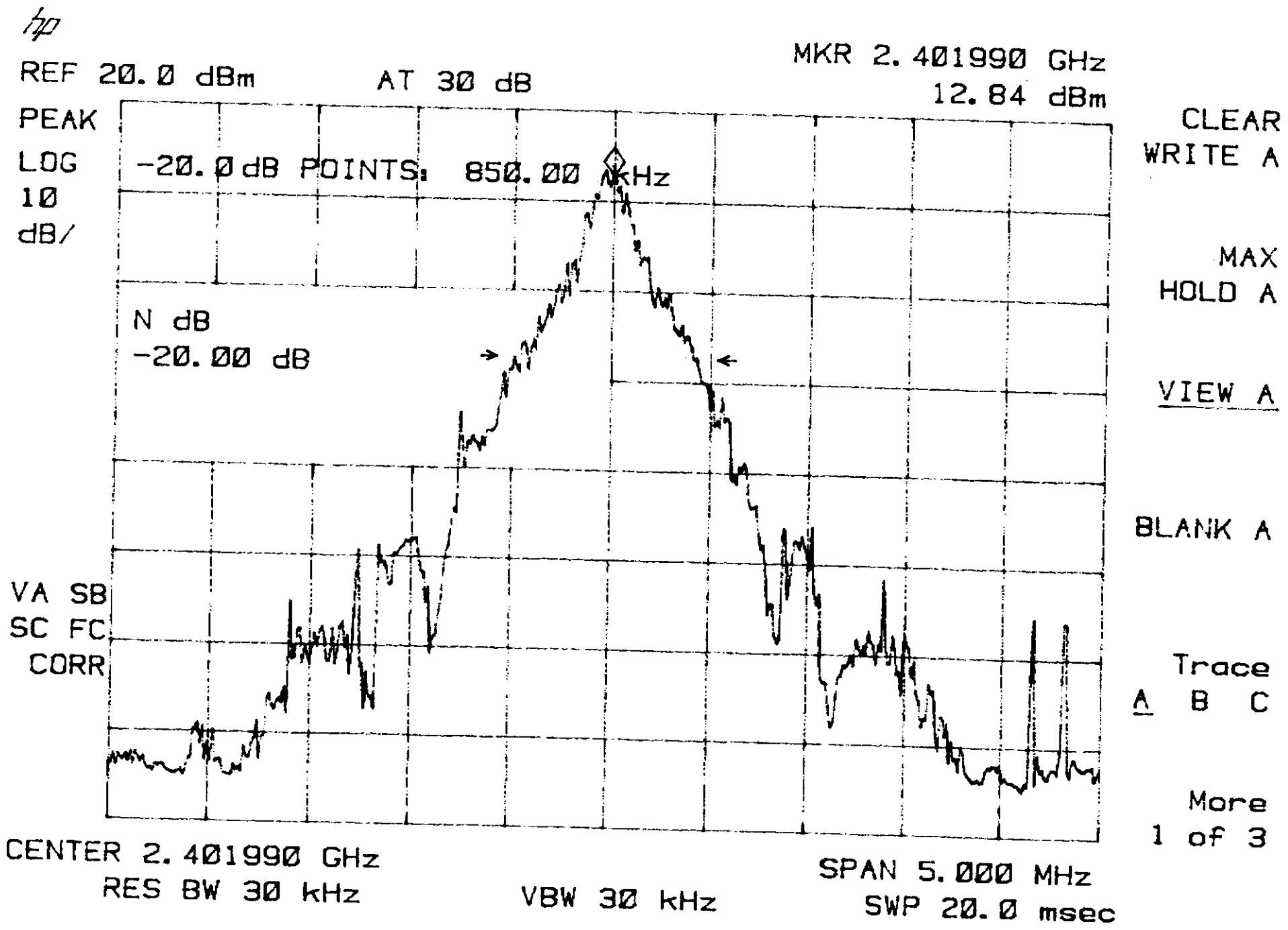
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AT 30 dB
MKR 2.401990 GHz
12.84 dBm
PEAK
LOG
10
dB/
-20.0 dB POINTS: 850.00 kHz
N dB
-20.00 dB
CLEAR
WRITE A
MAX
HOLD A
VIEW A
BLANK A
VA SB
SC FC
CORR
Trace
A B C
More
1 of 3
CENTER 2.401990 GHz
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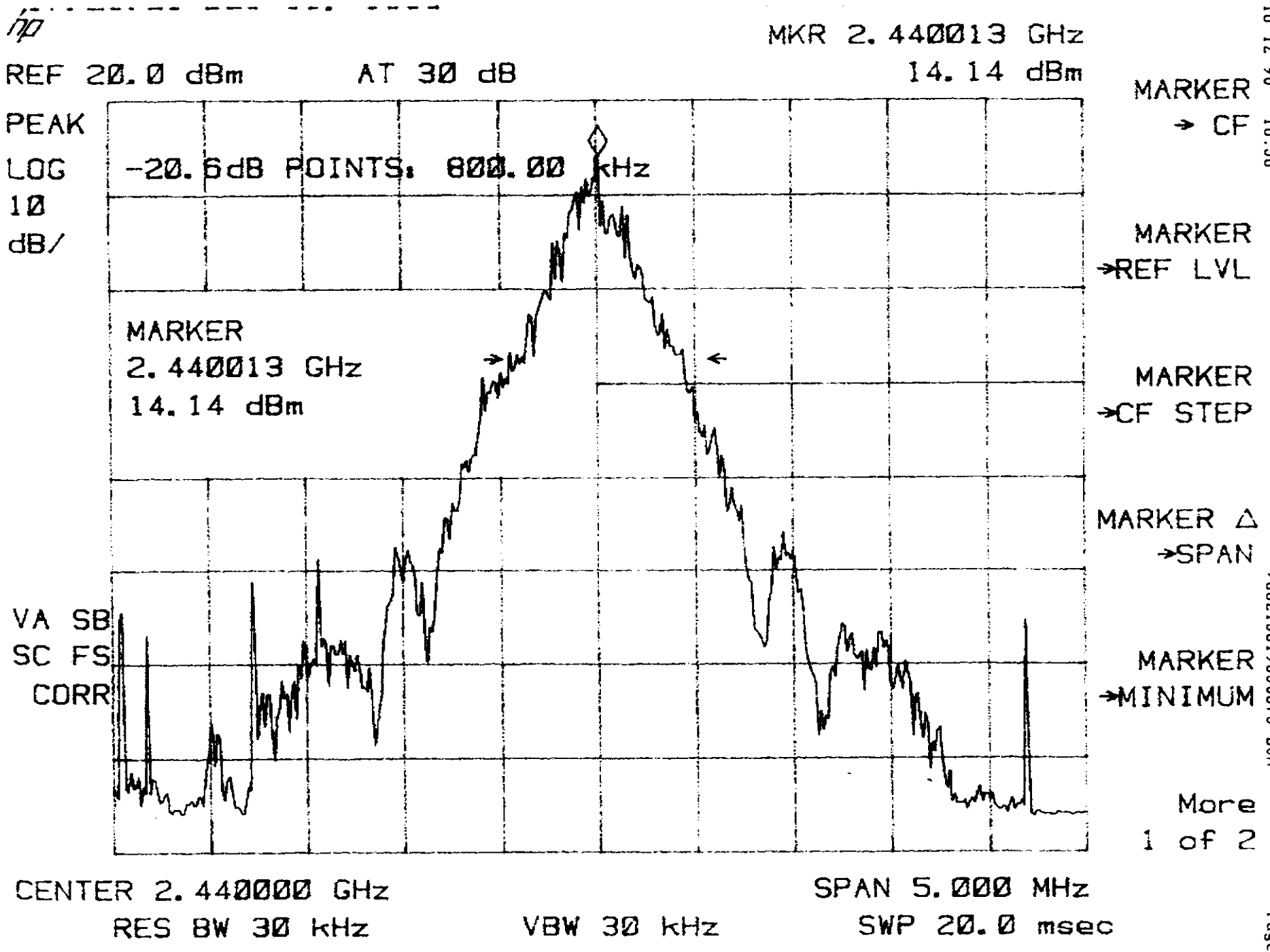
VBW 30 kHz
SPAN 5.000 MHz
SWP 20.0 msec

Attached F



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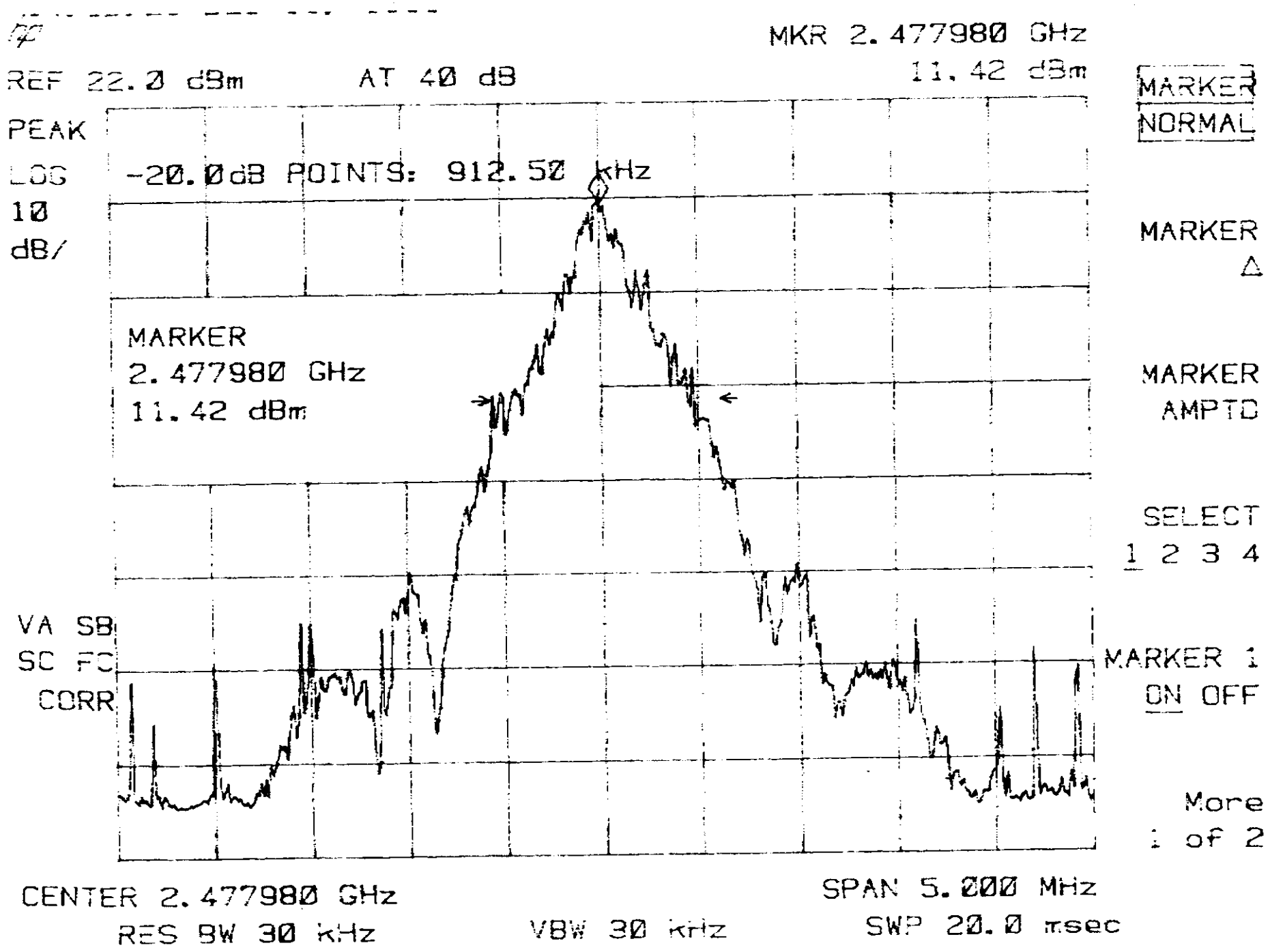

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Page 03

Attached C7

6.7 Radiated Emission Test Result

The frequency spectrum from **30MHz to 2GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at **3** meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of **3** meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading (dBuV)		Emission (uV)		Limits (uV)
			Horizontal	Vertical	Horizontal	Vertical	
69.00	0.90	6.90	23.01	27.42	34.71	57.68	100
120.00	1.40	7.20	23.00	26.00	38.02	53.70	150
149.91	1.40	10.30	19.90	18.24	38.02	31.41	150
200.72	1.70	9.90	27.00	22.34	85.11	49.77	150
266.00	2.00	13.10	24.73	19.51	98.06	53.77	200
711.99	3.40	20.20	19.15	18.41	137.25	126.04	200
780.18	3.30	20.90	14.11	14.75	82.32	88.61	200
902.76	3.90	22.60	10.29	10.99	69.10	74.90	200

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < +2dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4) Sample Calculation :
20 Log(Emission)uV/m Cable Loss(dB) + Factor(dB) + Reading(dBuV/m)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please See 6.2
7). Any Departure from Specification: N/A
8). Channel 6: 2.4020GHz

Signed by Testing Engineer: _____

(G)

6.7 Radiated Emission Test Result

The frequency spectrum from **30MHz to 2GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at **3** meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of **3** meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (MHz)	Cable Loss (dB)	Antenna Factor(dB)	Reading (dBuV)		Emission (uV)		Limits (uV)
			Horizontal	Vertical	Horizontal	Vertical	
69.10	0.90	6.90	25.60	27.30	46.77	56.89	100
120.50	1.40	7.20	23.90	26.80	42.17	58.88	150
200.36	1.70	9.90	27.60	24.30	91.20	62.37	150
260.20	2.00	12.00	25.10	19.30	90.16	46.24	200
712.04	3.40	20.20	18.70	16.20	130.32	97.72	200
901.80	3.90	22.60	13.60	15.10	101.16	120.23	200

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±4dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Sample Calculation:
20 Log(Emission)uV/m=Cable Loss(dB)+Factor(dB)+Reading(dB)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please Sec 6.2
7). Any Departure from Specification: N/A
8). Channel 40: 2.4400GHz

Signed by Testing Engineer: _____

(4)

6.7 Radiated Emission Test Result

The frequency spectrum from **30MHz to 2GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at **3** meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of **3** meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (MHz)	Cable Loss (dB)	Antenna Factor(dB)	Reading (dBuV)		Emission (uV)		Limits (uV)
			Horizontal	Vertical	Horizontal	Vertical	
69.02	0.90	6.90	25.10	26.30	44.16	50.70	100
120.40	1.40	7.20	24.10	26.20	43.15	54.95	150
150.20	1.40	10.30	20.10	22.10	38.90	48.98	150
200.05	1.70	9.90	28.10	22.30	96.61	49.55	150
266.30	2.00	13.10	23.10	17.20	81.28	41.21	200
712.20	3.40	20.20	18.90	16.10	133.35	96.61	200
901.45	3.90	22.60	12.60	11.80	90.16	82.22	200

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±4dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Sample Calculation:
20 Log(Emission)uV/m=Cable Loss(dB)+Factor(dB)+Reading(dB)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please Sec 6.2
7). Any Departure from Specification: N/A
8). Channel 80: 2.4800GHz

Signed by Testing Engineer: _____

6.7 Radiated Emission Test Result

The frequency spectrum from **1GHz to 25GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at 3 meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of 1 meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (GHz)	Cable Loss (dB)	Antenna Factor(dB)	Reading (dBuV)		Emission (dBuV/m)		Limits (dBuV)
			Horizontal	Vertical	Horizontal	Vertical	
2.4020	7.50	29.10	67.50	72.29	104.10	108.89	*
1.5160	6.50	25.40	18.02	18.47	49.92	50.37	54.00
2.4327	7.60	29.40	23.10	27.70	60.10	64.70	84.10
2.4410	7.60	29.40	27.02	33.11	64.02	70.11	84.10
4.8020	8.40	34.10	*	*	*	*	54.00
7.2030	9.50	37.30	*	*	*	*	54.00

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is +/-2dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Sample Calculation :
20 Log(Emission)uV/m=Cable Loss(dB)+Factor(dB)+Reading(dBuV/m)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please See 6.2
7). Any Departure from Specification: N/A
8). Channel 6: 2.4020GHz

Signed by Testing Engineer: _____

(G)

6.7 Radiated Emission Test Result

The frequency spectrum from **1GHz to 25GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at **3** meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of **1** meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (GHz)	Cable Loss (dB)	Antenna Factor(dB)	Reading (dBuV)		Emission (dBuV)		Limits (dBuV)
			Horizontal	Vertical	Horizontal	Vertical	
2.440	7.60	29.40	69.21	72.91	106.21	109.91	*
1.555	6.50	25.40	17.10	16.60	49.00	48.50	54.00
2.433	7.60	29.40	25.50	31.93	62.50	68.93	86.21
2.447	7.60	29.40	27.02	32.31	64.02	69.31	86.21
4.880	8.40	34.10	*	*	*	*	54.00
7.320	9.50	37.30	*	*	*	*	54.00

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±4dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Sample Calculation:
20 Log(Emission)uV/m=Cable Loss(dB)+Factor(dB)+Reading(dB)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please See 6.2
7). Any Departure from Specification: N/A
8). Channel 40: 2.4400GHz

Signed by Testing Engineer: _____

(G)

6.7 Radiated Emission Test Result

The frequency spectrum from **1GHz to 25GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at **3** meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of **1** meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (GHz)	Cable Loss (dB)	Antenna Factor(dB)	Reading (dBuV)		Emission (dBuV)		Limits (dBuV)
			Horizontal	Vertical	Horizontal	Vertical	
2.480	7.60	29.60	62.65	69.05	99.85	106.25	*
1.595	6.50	25.40	16.41	17.35	48.31	49.25	54.00
2.435	7.60	29.10	27.05	28.91	63.75	65.61	79.85
2.440	7.60	29.10	28.22	32.01	64.92	68.71	79.85
4.960	8.40	34.10	*	*	*	*	54.00
7.440	9.50	37.30	*	*	*	*	54.00

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±4dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Sample Calculation:
20 Log(Emission)uV/m=Cable Loss(dB)+Factor(dB)+Reading(dB)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please See 6.2
7). Any Departure from Specification: N/A
8). Channel 80: 2.4800GHz

Signed by Testing Engineer: _____

(G)

EMI Testing Report

EUT: Wireless LAN Card

Model: LAN2GO-FH

FCC ID: FACLAN2GO-FH

Prepared for:

Computer Communication Laboratory

Industrial Technology Research Institute

No. 195-11, Sec.4, Chung-Hsing Road,

Chutung, Hsin-Chu,

Taiwan, R.O.C.

Prepared by:

Spectrum Research & Testing
Laboratory Inc.

1603 Skinners Turn Road
Owings, MD 20736

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1. Test Report Certification

Applicant: Computer & Communication Laboratory

Address: Industrial Technology Research Institute
No. 195-1, Sec. 4, Chung-Hsing Road,
Chutung, Hsin-Chu, Taiwan, R.O.C.

EUT Description: Wireless LAN Card

(A) Power Supply: From personal computer

(B) Model: LAN2GO-FH

(C) FCC ID: FACLAN2GO-FH

Final Tested Date: June 18, 1998

Measurement Procedure Used:
Part 15 Subpart C of FCC rules and regulations (47 CFR Part 15) FCC / ANSI C63.4-1992.

We Hereby Show That:
The measurement shown in the attachment were made in accordance with the procedures indicated, and the energy emitted by the equipment was found to be within the limits applicable.

Testing Engineer: _____ **Date:** 6/18/98
Jesse Ho

Supervisor: _____ **Date:** _____
Linda Chiang

Approved By: _____ **Date:** 6/18/98
Johnson Ho

2. Test Statement

2.1 Antenna Statement

The attached antenna on this PCMCIA card (Direct Sequence Transmitter) Will be:

a. Solder on PCB or
b. The connector will be fixed by strong adhensive material.

2.2 Departure form documented policies, procedures, or specifications:

Were there any departures from documented policies, procedures, or specifications?
No __X__ Yes _____. If yes, please explain.

2.3 Test Statement

The certificate or report shall not be reproduced except in full, without the written approval of **SRT** Lab., This report must not be used by the client to claim product endorsement by **NVLAP** or any agency of the US Government.

3. Modification Letter

This section contains the following documents:

A. Letter of modifications

Industrial Technology Research Institute
Computer & Communication Research Laboratory

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046

Dear Sir/Madam:

This is to serve as proper notice that our company agrees to make all modifiacations to FCC ID ____ FACLAN2GO-FH ____ ____ listed in section 3.0 of the test report submitted by Spectrum Research and Testing Laboratory, Inc.

Respectfully,

Signature

Name: Gerald Wang
Title: Eng.
Date: 6/19/1998

4. EUT Modifications

The following accessories were added to the EUT during testing:

Did not have any modification by SRT Lab.

5. Conducted Power Line Test

5.1 Test Equipment

The following test equipment was used during the conducted power line test:

Equipment	Specification	Manufacturer	Model # / Serial #	Cal. Center /Last Cal. Date	Next Cal. Date
Receiver System	100Hz to 1500MHz	Hewlett Packard	8574A 3001A04931	by Simco June, 97	June, 1998
Receiver System	9KHz to 30MHz	Rohde & Schwartz	ESH3 893517/013	by Simco June, 97	June, 1998
LISN	50uH / 50 Ohms	Solar Corp.	8012-50-R-24-BNC / 924839	by Simco June, 97	June, 1998
LISN	50uH / 50 Ohms	Rohde & Schwartz	ESH3-25 89491/016	by Simco June, 97	June, 1998
Signal Generator	100 KHz to 1024 MHz	Hewlett Packard	8648A 3636a02776	by HP January, 98	January, 1999
Isolation Transformer	N/A	Solar Corp.	7032-1 N/A	N/A	N/A
Anechoic Chamber	N/A	TEC	SRT002 N/A	N/A	N/A
Spectrum Analyzer	100 KHz to 2500 MHz	IFR Corp.	A-8000 1456	by simco June, 97	June, 1998
Spectrum Analyzer	400 KHz to 26.5 GHz	HP	8593E 3710A03220	by HP January, 98	January, 1999
Power Analyzer	16 Amps 650 Volts	AEMC	3930 57204	N/A	N/A
Power Source	0-260VAC 47-500Hz	Interpower	85510510 39310	N/A	N/A
Cable	RG214U	Intercomp	Cable #8	by SRT Lab. January, 98	Jan. 1999
Cable	RG214U	Intercomp	Cable #9	by SRT Lab. January, 98	Jan .1999

5.2 Configuration of the EUT

The **EUT** was configured according to **ANSI C63.4 - 1992**. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

EUT:

Device	Manufacturer	Model #	FCC ID
Wireless LAN Card	Computer & Communication Lab.	LAN2GO-DS	FACLAN2GO-FH

Peripherals:

Device	Manufacturer	Model # / Serial #	FCC ID
Printer	HP	2225C	DSI6XU2225
Modem	Datatronics	1200CK	E2O5OV1200CK
Computer	HP	5500CS	B945500

Remark:

5.2 Configuration of the EUT (Continued)

Cable: All one meter or greater in length – bundled according to **ANSI C63.4 - 1992**

Printer: Power - unshielded supplied with printer
Data - shielded with plastic hoods

Modem: Power - unshielded supplied with modem
Data - shielded with metal hoods

Computer: Power - shielded supplied with NB

Power Adapter: Power - shielded

Internal Device:

Device	Manufacturer	Model #	FCC ID
N/A			

5.3 EUT Operating Condition:

Operating condition is according to **ANSI C63.4 - 1992**. The operating speed of the computer was 100MHz.

1. **EUT power on.**
2. **Run Tx and Rx testing program:**
3. **Put PCMCIA card (EUT) into notebook and set up channel.**
4. **Send signal out.**

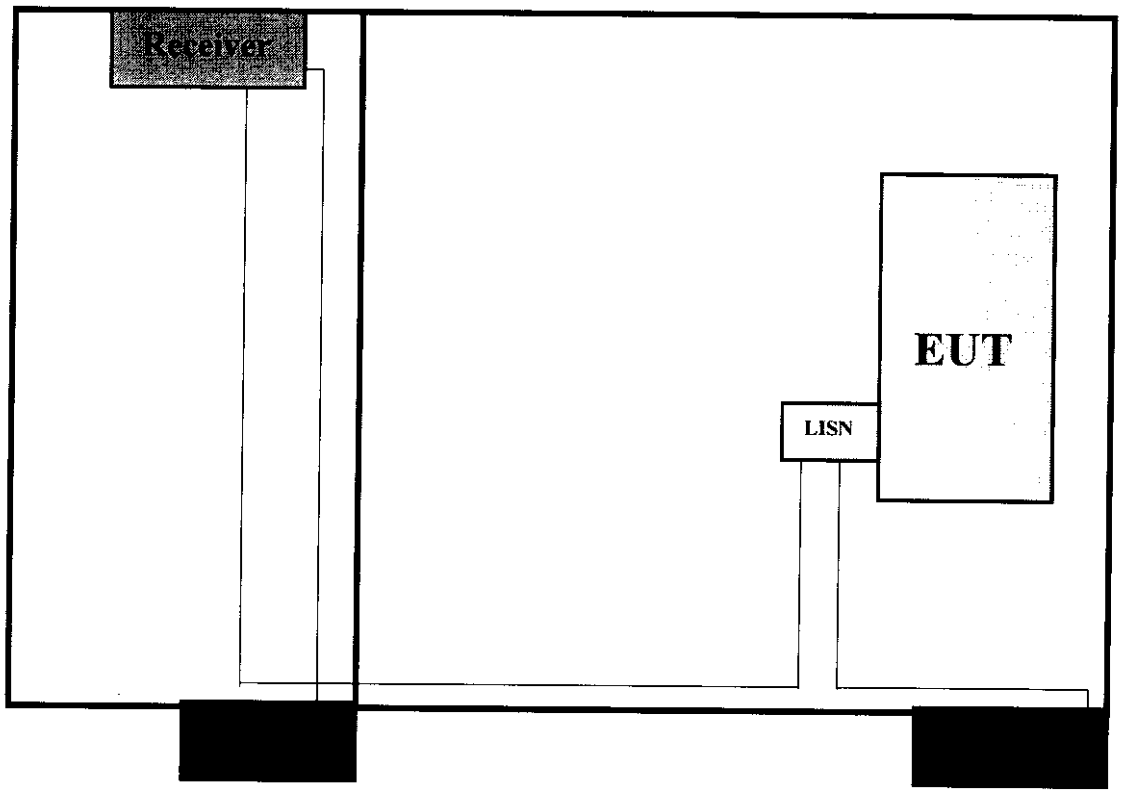
Remark: 1. Three channels were tested.
*** Channel 6: 2.4010GHz**
*** Channel 40: 2.4400GHz**
*** Channel 80: 2.4800GHz**

2. CPU Type: Pentium 100
Clock Chip: 66 MHz

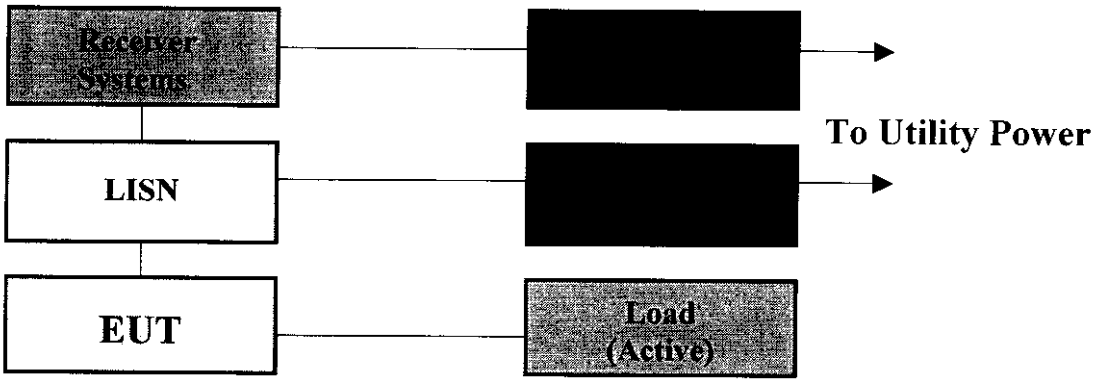
5.4 Test Procedure

The **EUT** was test according to ANSI C63.4 - 1992. The conducted test was performed in an anechoic chamber. The frequency spectrum from 0.45 MHz to 30 MHz was investigated. The LISN used was 50 Ohms/50μHenry as specified by section 5.1 of ANSI C63.4 - 1992.Cables and peripherals were moved to find the maximum emission levels for each frequency.

5.5 Test Setup



Anechoic Chamber Configuration



Wireless LAN Card

Notebook Computer
Printer
Modem

5.6 Conducted Power Line Emission Limit

Frequency Range (MHz)	Class A Limits	Class B Limits
0.450 - 1.705	1000 μV	250 μV
1.705 - 30.00	3000 μV	250 μV

Note: In the above table, the tighter limits applies at the band edges.

5.7 Conducted Power Line Test Result

The frequency spectrum from 0.45 MHz to 30 MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9KHz.

Temperature: 27 °C

Humidity: 65 %RH

Frequency (MHz)	Line 1 (dBuV)	Line 2 (dBuV)	Line 1 (uV)	Line 2 (uV)	Limits (uV)
1.3340	42.50	41.00	133.35	112.20	250
1.4210	43.70	42.50	153.11	133.35	250
1.5070	*	43.10	*	142.89	250
1.5130	44.70	*	171.79	*	250
1.5980	44.90	43.50	175.79	149.62	250
1.6870	44.10	42.10	160.32	127.35	250
1.7740	43.00	41.60	141.25	120.23	250

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±2dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Tesk Equipment Please See 5.1
5). Test Configuration Please See 5.2
6). Any Departure from Specification: N/A
7). Channel 6: 2.4010GHz

Signed by Testing Engineer: _____

5.7 Conducted Power Line Test Result

The frequency spectrum from 0.45 MHz to 30 MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9KHz.

Temperature: 26 °C

Humidity: 60 %RH

Frequency (MHz)	Line 1 (dBuV)	Line 2 (dBuV)	Line 1 (uV)	Line 2 (uV)	Limits (uV)
1.3400	*	42.50	*	133.35	250
1.4270	42.30	43.80	130.32	154.88	250
1.5190	43.20	44.70	144.54	171.79	250
1.6040	*	44.90	*	175.79	250
1.6110	43.70	*	153.11	*	250
1.6870	*	44.20	*	162.18	250
1.6940	42.90	*	139.64	*	250
1.7820	41.70	43.10	121.62	142.89	250
1.8740	40.90	*	110.92	*	250

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±2dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Tesk Equipment Please See 5.1
5). Test Configuration Please See 5.2
6). Any Departure from Specification: N/A
7). Channel 40: 2.4400GHz

Signed by Testing Engineer: _____

5.7 Conducted Power Line Test Result

The frequency spectrum from 0.45 MHz to 30 MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9KHz.

Temperature: 26 °C

Humidity: 60 %RH

Frequency (MHz)	Line 1 (dBuV)	Line 2 (dBuV)	Line 1 (uV)	Line 2 (uV)	Limits (uV)
1.3280	40.10	41.60	101.16	120.23	250
1.4150	41.50	43.60	118.85	151.36	250
1.5000	42.00	43.90	125.89	156.68	250
1.5980	43.40	44.70	147.91	171.79	250
1.6800	41.70	43.40	121.62	147.91	250
1.7670	40.30	42.30	103.51	130.32	250

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±2dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Tesk Equipment Please See 5.1
5). Test Configuration Please See 5.2
6). Any Departure from Specification: N/A
7). Channel 80: 2.4800GHz

Signed by Testing Engineer: _____

6. Radiated Emission Test

6.1 Test Equipment List

The following test equipment was used during the radiated emission test:

Equipment	Specification	Manufacturer	Model # / Serial #	Cal. Center / Last Cal. Date	Next Cal. Date
Receiver Systems	100 Hz to 1500 MHz	Hewlett Packard	8574A 3001A04931	By Simco June, 97	June, 1998
Spectrum Analyzer	100 Hz to 2500 MHz	IFR Corp.	A-8000 1456	By Simco June, 97	June, 1998
Spectrum Analyzer	400 KHz to 26.5 GHz	HP	8593E 3710A03220	By HP Jan, 98	Jan. 1999
Dipole Antenna	28 MHz to 1000 MHz	EMCO	3121C 9505-1136	By EMCO June, 97	June, 1998
Biconical Antenna	20 MHz to 200 MHz	EMCO	3104C 9111-4455	By SRT Lab. May, 1998	May, 1999
Biconical Antenna	30 MHz to 300 MHz	EMCO	3108 2380	By SRT Lab. May, 1998	May, 1999
Log-periodic Antenna	200 MHz to 1000 MHz	EMCO	3146 9002-2687	By SRT Lab. May, 1998	May, 1999
Signal Generator	100 KHz to 1024 MHz	Hewlett Packard	8648A 2923A30924	By HP Jan. 98	Jan, 1999
Preamplifier	100 KHz to 1300 MHz	Hewlett Packard	8447D 2944A06746	By Simco June, 97	June, 1998
Horn Antenna	1000 MHz to 18 GHz	EMCO	3115 3619	By Simco July, 1997	July, 1998
Horn Antenna	18 GHz to 26.5 GHz	EMCO	3116	By EMCO May, 1998	May, 1999
Cable	RG214U	Intercorp	Cable #1	By SRT Lab. Jan. 1998	Jan, 1999
Turntable	0 - 360 Degree	SRT Lab	SRT001	By SRT Lab. June, 1997	June, 1998
Antenna Mast	5 Meters Height	SRT Lab.	SRT001	N/A	N/A

6.2 Configuration of the EUT

Same as section 5.2 of this report.

6.3 EUT Operating Condition

Same as section 5.3 of this report.

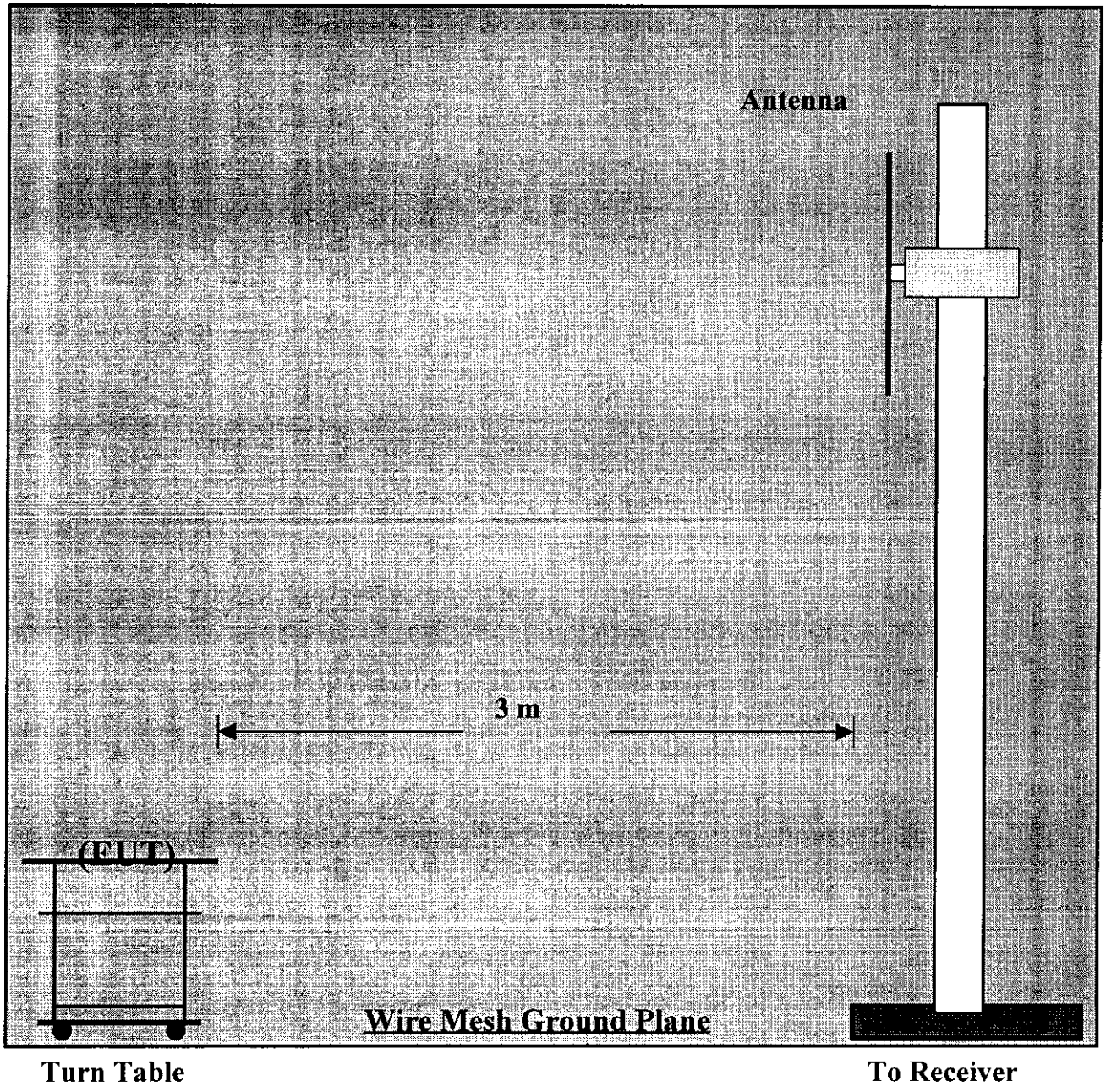
6.4 Test Procedure

The EUT was tested according to **ANSI C63.4 - 1992**. The radiated test was performed at SRT lab's open site. This site is on file with the FCC laboratory division, reference 31040/sit.

The frequency spectrum from 30MHz to 25GHz was investigated. The measurements **under 1000 MHz** with resolution bandwidth of 120KHz are quasi-peak reading made at three using an adjustable dipole antenna. Peripherals, cables, .EUT orientation, and antenna height were varied to find the maximum emission for each frequency.

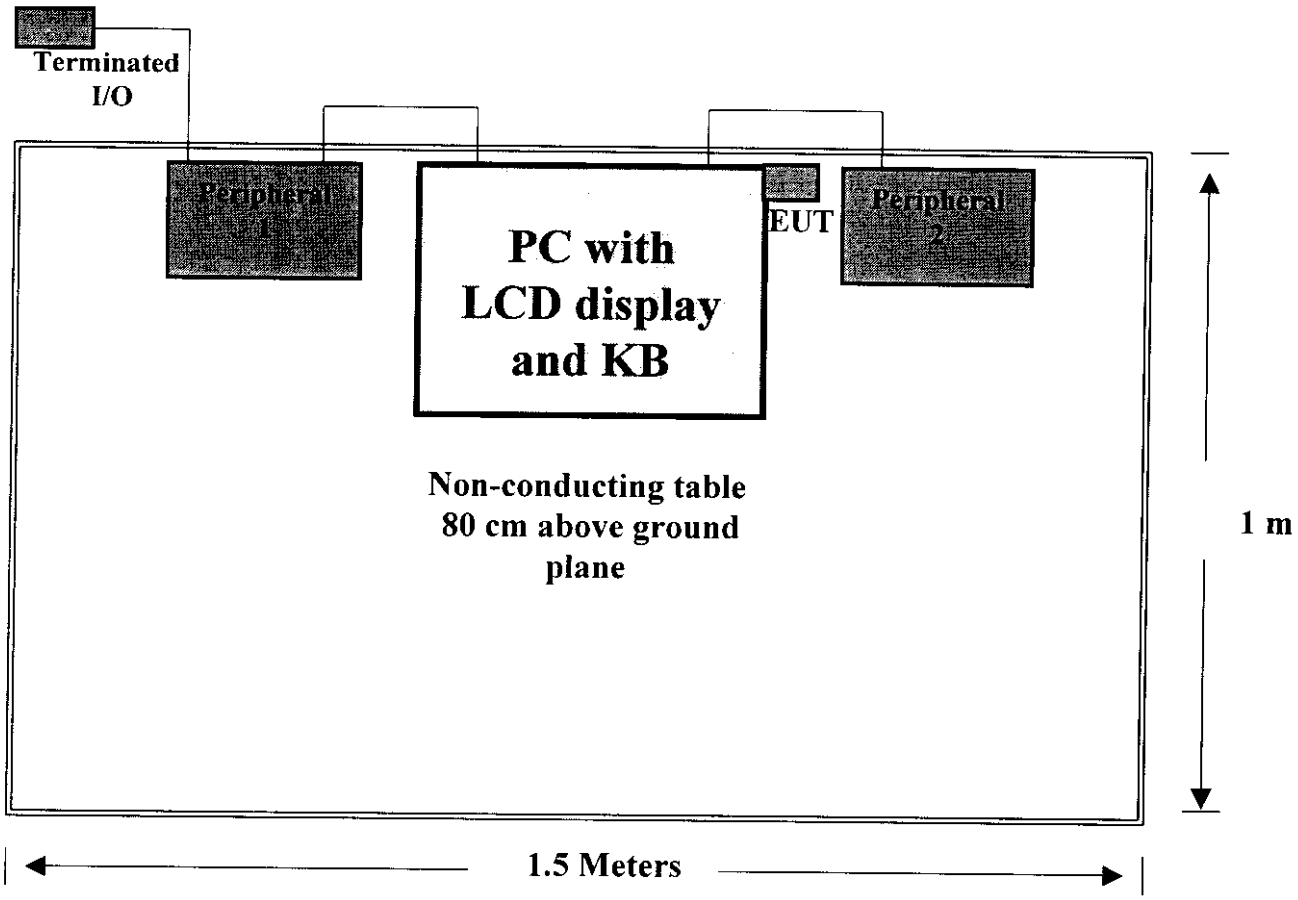
The measurements **above 1000MHz** with a resolution bandwidth of 1MHz are peak reading at a distance of three meters with a horn antenna.

6.5 Radiated Test Setup



6.5 Emission Test Setup (ANSI C63.4 - 1992)

*** Optional For Radiated Tests**



Test configuration for tabletop equipment
(Top View)

- EUT, peripherals, between peripherals the distance is fixed at 10 cm on edge of the turn table.

6.6 Radiated Emission Limit

a. Inside band of spurious: under 20dB of funder metal.

b. Harmonic: * under 2dB of fund.

c. Restricted Band Emission: over 1GHz, the limit is 54dBuV at 3M.

d. Under 1GHz:

Class B

Frequency (MHz)	Distance (m)	Field Strength (μV/m)
30 - 88	3	100
88 - 216	3	150
216 - 960	3	200
Above 960	3	500

Class A

Frequency (MHz)	Distance (m)	Field Strength (μV/m)
30 - 88	3	316.3
88 - 216	3	473.2
216 - 960	3	631.0
Above 960	3	1000.0

Note:

1. In the emission tables above, the tighter limit applies at the band edges.

2. Distance refers to the distance between measuring instrument, antenna and the closest point of any part of the device or system.

6.7 Radiated Emission Test Result

The frequency spectrum from **30MHz to 2GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at **3** meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of **3** meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (MHz)	Cable Loss (dB)	Antenna Factor(dB)	Reading (dBuV)		Emission (uV)		Limits (uV)
			Horizontal	Vertical	Horizontal	Vertical	
50.73	0.80	6.60	24.10	26.50	37.58	49.55	100
120.45	1.40	7.20	21.10	24.80	30.55	46.77	150
200.33	1.70	9.90	26.90	21.80	84.14	46.77	150
259.09	2.00	12.00	22.90	16.10	69.98	31.99	200
711.99	3.40	20.20	18.20	14.60	123.03	81.28	200
780.18	3.30	20.90	12.50	22.80	68.39	85.11	200
902.10	3.90	22.60	11.40	13.10	78.52	95.50	200

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±4dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Sample Calculation:
20 Log(Emission)uV/m=Cable Loss(dB)+Factor(dB)+Reading(dB)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please See 6.2
7). Any Departure from Specification: N/A
8). Channel 40: 2.4400GHz

Signed by Testing Engineer: _____

6.7 Radiated Emission Test Result

The frequency spectrum from **30MHz to 2GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at **3** meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of **3** meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (MHz)	Cable Loss (dB)	Antenna Factor(dB)	Reading (dBuV)		Emission (uV)		Limits (uV)
			Horizontal	Vertical	Horizontal	Vertical	
50.77	0.80	6.60	23.30	25.30	34.28	43.15	100
120.68	1.40	7.20	20.90	25.70	29.85	51.88	150
149.63	1.40	10.30	18.30	20.50	31.62	40.74	150
200.33	1.70	9.90	25.60	18.80	72.44	33.11	150
265.51	2.00	13.10	22.90	15.00	79.43	31.99	200
711.99	3.40	20.20	18.50	14.90	127.35	84.14	200
780.18	3.30	20.90	13.70	12.20	78.52	66.07	200
902.23	3.90	22.60	12.20	12.00	86.10	84.14	200

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±4dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Sample Calculation:
20 Log(Emission)uV/m=Cable Loss(dB)+Factor(dB)+Reading(dB)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please See 6.2
7). Any Departure from Specification: N/A
8). Channel 80: 2.4800GHz

Signed by Testing Engineer: _____

6.7 Radiated Emission Test Result

The frequency spectrum from **1GHz to 25GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at **3** meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of **1** meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (GHz)	Cable Loss (dB)	Antenna Factor(dB)	Reading (dBuV)		Emission (dBuV)		Limits (dBuV)
			Horizontal	Vertical	Horizontal	Vertical	
2.4010	7.50	29.10	69.27	73.27	105.87	109.87	*
1.5160	6.50	25.40	19.88	16.37	51.78	48.27	54.00
2.4327	7.60	29.40	24.06	26.31	61.06	63.31	85.87
2.4410	7.60	29.40	26.88	30.97	63.88	67.97	85.87
4.8020	8.40	34.10	*	*	*	*	54.00
7.2030	9.50	37.30	*	*	*	*	54.00

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±2dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Sample Calculation :
20 Log(Emission)uV/m=Cable Loss(dB)+Factor(dB)+Reading(dBuV/m)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please See 6.2
7). Any Departure from Specification: N/A
8). Channel 6: 2.4010GHz

Signed by Testing Engineer: _____

6.7 Radiated Emission Test Result

The frequency spectrum from **1GHz to 25GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at **3** meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of **1** meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (GHz)	Cable Loss (dB)	Antenna Factor(dB)	Reading (dBuV)		Emission (dBuV)		Limits (dBuV)
			Horizontal	Vertical	Horizontal	Vertical	
2.440	7.60	29.40	67.00	72.28	104.00	109.28	*
1.555	6.50	25.40	16.00	17.38	47.90	49.28	54.00
2.433	7.60	29.40	29.43	32.76	66.43	69.76	84.00
2.447	7.60	29.40	25.00	28.50	62.00	65.50	84.00
4.880	8.40	34.10	*	*	*	*	54.00
7.320	9.50	37.30	*	*	*	*	54.00

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±4dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Sample Calculation:
20 Log(Emission)uV/m=Cable Loss(dB)+Factor(dB)+Reading(dB)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please See 6.2
7). Any Departure from Specification: N/A
8). Channel 40: 2.4400GHz

Signed by Testing Engineer: _____

6.7 Radiated Emission Test Result

The frequency spectrum from **1GHz to 25GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at **3** meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of **1** meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (GHz)	Cable Loss (dB)	Antenna Factor(dB)	Reading (dBuV)		Emission (dBuV)		Limits (dBuV)
			Horizontal	Vertical	Horizontal	Vertical	
2.480	7.60	29.60	58.62	64.60	95.82	101.80	*
1.595	6.50	25.40	16.35	17.12	48.25	49.02	54.00
2.435	7.60	29.10	25.24	29.42	61.94	66.12	75.82
2.440	7.60	29.10	25.72	29.02	62.42	65.72	75.82
4.960	8.40	34.10	*	*	*	*	54.00
7.440	9.50	37.30	*	*	*	*	54.00

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±4dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Sample Calculation:
20 Log(Emission)uV/m=Cable Loss(dB)+Factor(dB)+Reading(dB)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please See 6.2
7). Any Departure from Specification: N/A
8). Channel 80: 2.4800GHz

Signed by Testing Engineer: _____

7. Bandwidth

7.1 Limit

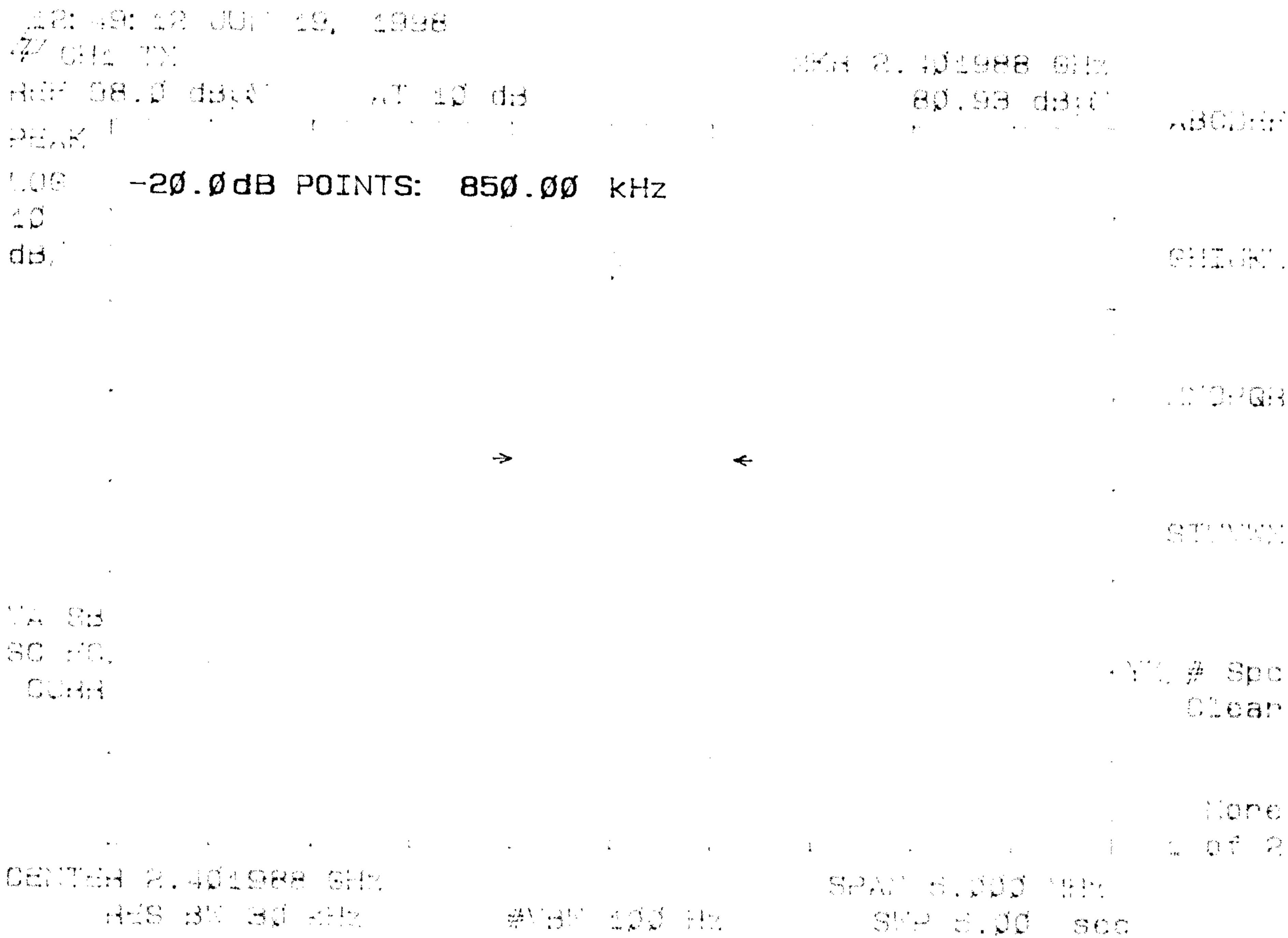
Maximum 20dB bandwidth = 1MHz

7.2 Test Result

Please see attached .

-2Ø.ØdB POINTS: 9ØØ.ØØ kHz

-20.0dB POINTS: 937.50 kHz


12: 49: 12 JUL 19, 1998
80.93 dB
-20.0dB POINTS: 850.00 kHz
LOG
10
dB/
SC
Clear
of 2
CENTER 2.401988 GHz
SWP 5.00 sec

8. Peak Power

8.1 Limit

Peak Power output less than 1w.
EIRP < 36dBm

8.2 Test Result

a. Peak power output is 11dBm.

b. Antenna gain is about 2dBi.

Total EIRP is 13dBm.

9. Chanel Dwell Time

9.1 Limit

No longer than 0.4sec. within 30 second period.

9.2 Result

1. Please see attached.
2. All meet FCC requirement.

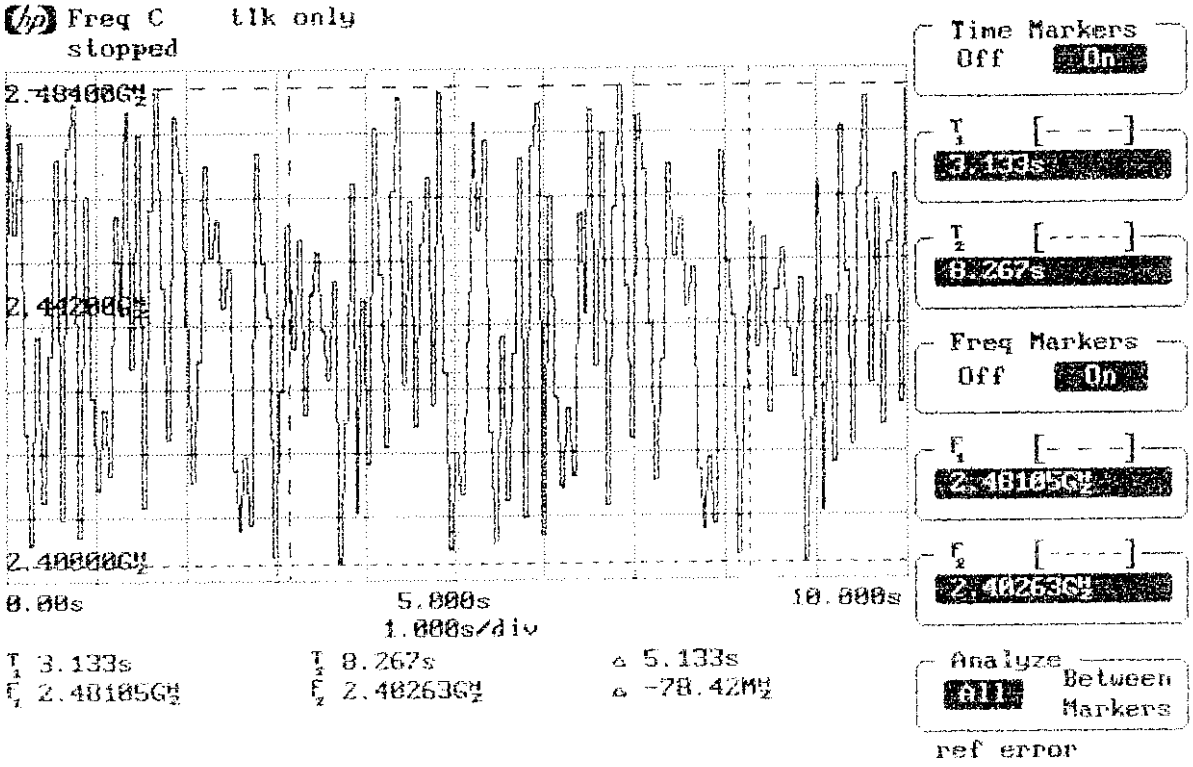
10. Minimum of Channel

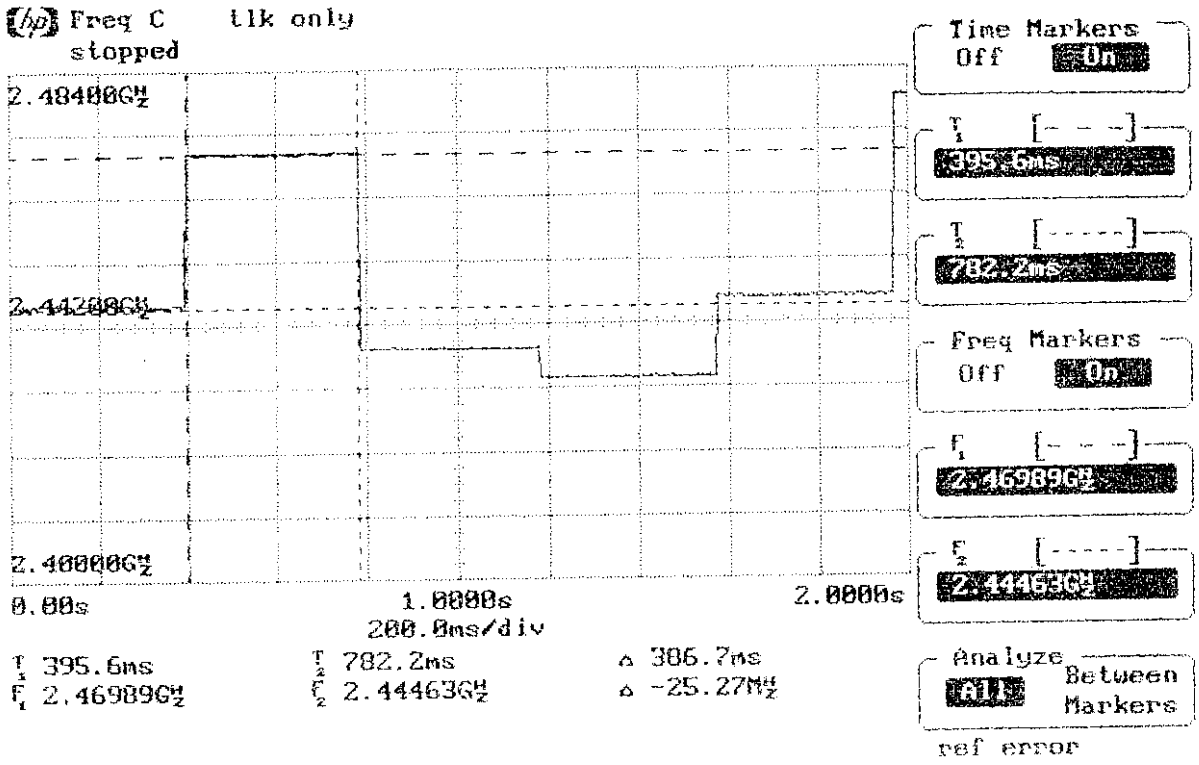
10.1 Limit

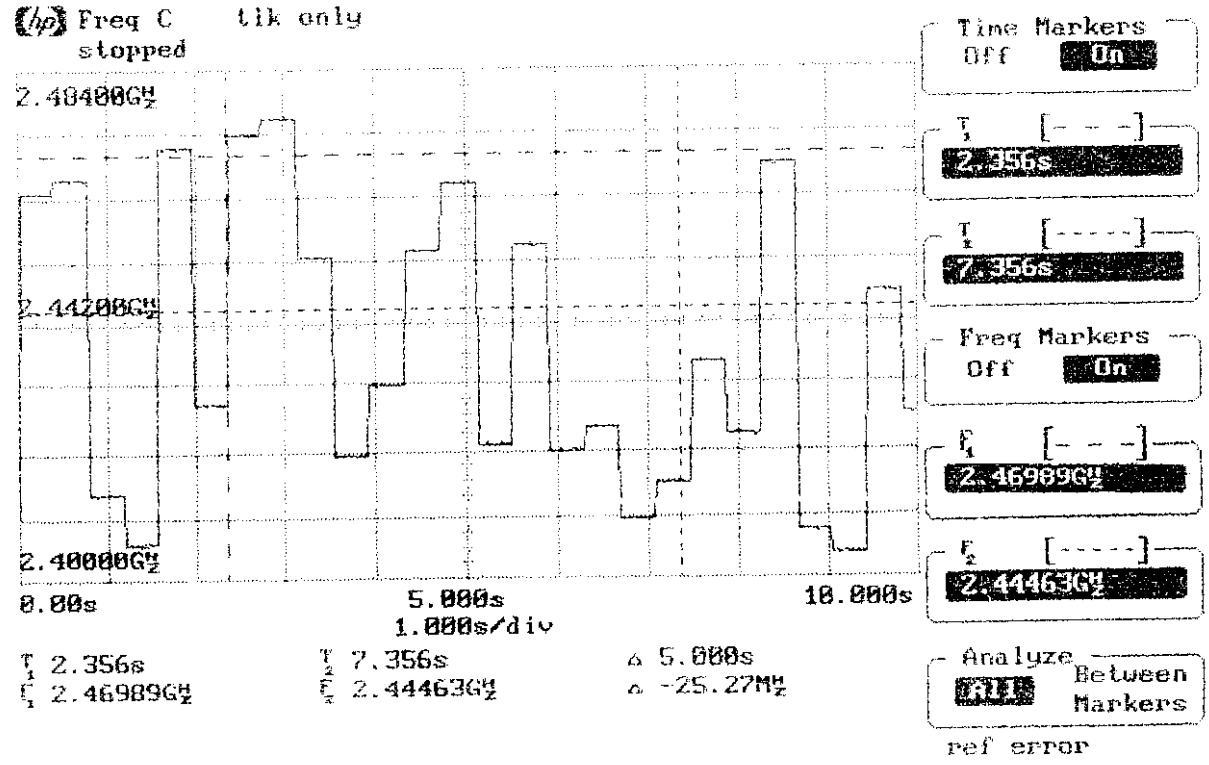
At least 75 channel.

10.2 Result

1. At least 78 channel.
   (Please see attahed plotter)
2. All meet FCC requirement.


Freq C
stopped
tlk only
2.48400GHz
2.44200GHz
2.40000GHz
0.00s
5.000s
1.000s/div
10.000s
Time Markers
Off
On
T1
3.133s
T2
8.267s
Freq Markers
Off
On
F1
2.48185GHz
F2
2.40263GHz
T1 3.133s
T2 8.267s
Δ 5.133s
F1 2.48185GHz
F2 2.40263GHz
Δ -78.42MHz
Analyze
All
Between Markers
ref error


Freq C
stopped
tlk only
2.48400GHz
2.44200GHz
2.40000GHz
0.00s
1.0000s
200.0ms/div
2.0000s
Time Markers
Off
On
T1
395.6ms
T2
782.2ms
Freq Markers
Off
On
F1
2.46989GHz
F2
2.44463GHz
T1 395.6ms
F1 2.46989GHz
T2 782.2ms
F2 2.44463GHz
Δ 386.7ms
Δ -25.27MHz
Analyze
All
Between Markers
ref error


Freq C
stopped
tlk only
2.48400GHz
2.44200GHz
2.40000GHz
0.00s
5.000s
1.000s/div
10.000s
Time Markers
Off
On
T1
2.356s
T2
7.356s
Freq Markers
Off
On
F1
2.46989GHz
F2
2.44463GHz
T1 2.356s
F1 2.46989GHz
T2 7.356s
F2 2.44463GHz
Δ 5.000s
Δ -25.27MHz
Analyze
All
Between Markers
ref error

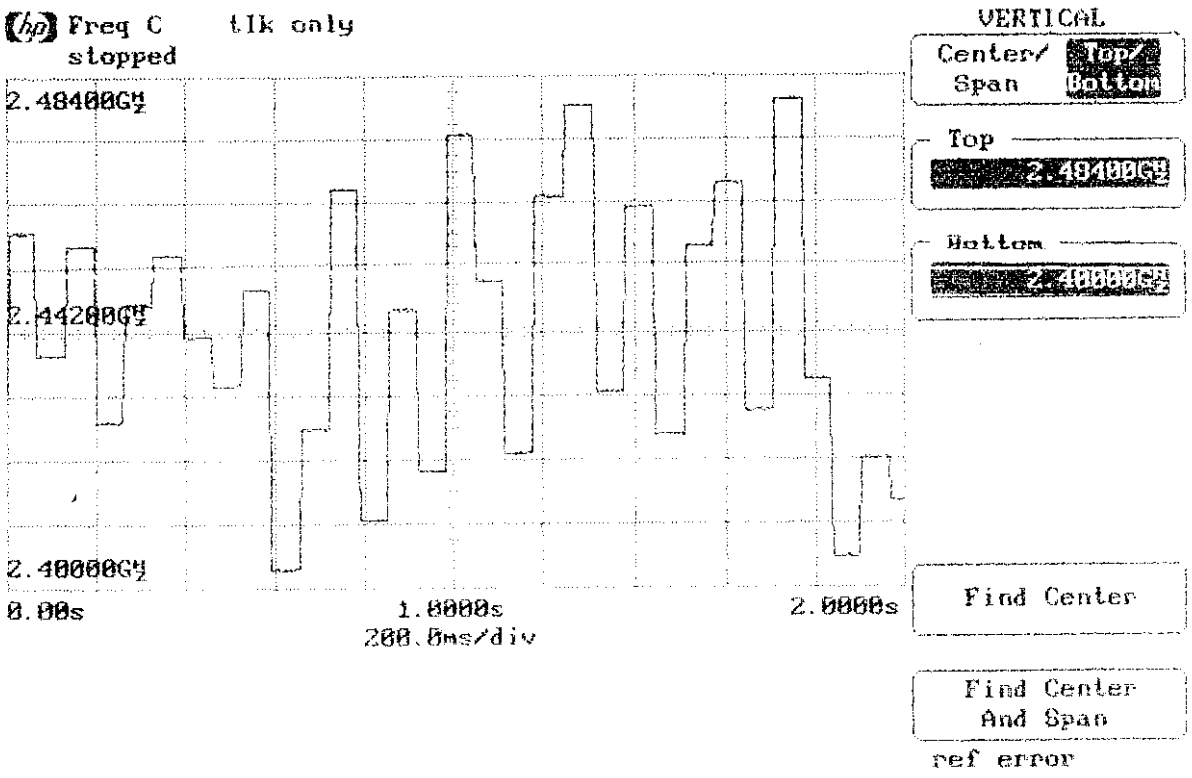
11. Carrier Chanel Separation Requirement

11.1 Limit

Separated by a minimum 25KHz or the 20dB bandwidth of the channel.
(The hopping freq. Seguence will show at attached)

11.2 Result

1. Please see attahed plotter.
2. All meet FCC requirement.


Freq C
stopped
tlk only
2.48400GHz
2.44200GHz
2.40000GHz
0.00s
1.0000s
200.0ms/div
2.0000s
VERTICAL
Center/
Span
Top/
Bottom
Top
2.48400GHz
Bottom
2.40000GHz
Find Center
Find Center
And Span
ref error

6.7 Radiated Emission Test Result

The frequency spectrum from **30MHz to 2GHz** was investigated. The values **under 1GHz** with a resolution bandwidth of 120KHz are quasi-peak reading made at **3** meters. The measurements **above 1GHz** with a resolution bandwidth of 1MHz are peak reading at a distance of **3** meters.

Temperature: 22 °C
Humidity: 50 %RH

Frequency (MHz)	Cable Loss (dB)	Antenna Factor(dB)	Reading (dBuV)		Emission (uV)		Limits (uV)
			Horizontal	Vertical	Horizontal	Vertical	
50.75	0.80	6.60	20.50	26.70	24.83	50.70	100
120.21	1.40	7.20	21.40	25.90	31.62	53.09	150
149.91	1.40	10.30	19.00	19.10	34.28	34.67	150
200.72	1.70	9.90	26.70	20.60	82.22	40.74	150
266.00	2.00	13.10	25.80	17.40	110.92	42.17	200
711.99	3.40	20.20	17.60	15.50	114.82	90.16	200
780.18	3.30	20.90	12.70	14.80	69.98	89.13	200
902.76	3.90	22.60	9.20	11.50	60.95	79.43	200

Remarks: 1). * Measurement does not apply for this frequency.
2). Uncertainty in conducted emission measured is < ±2dB
3). CPU Type: Pentium 100
Clock Chip: 66MHz
4). Sample Calculation :
20 Log(Emission)uV/m=Cable Loss(dB)+Factor(dB)+Reading(dBuV/m)
5). Tesk Equipment Please See 6.1
6). Test Configuration Please See 6.2
7). Any Departure from Specification: N/A
8). Channel 6: 2.4010GHz

Signed by Testing Engineer: _____