EMI TESTING REPORT

EUT : WIRELESS LAN CARD

MODEL : FULLINK2000

FCC ID : ODWFULLINK2000

PREPARED FOR :

FullTek Technology Co., Ltd.

3F, No. 8, Lane 130, Min Chuan Rd.,

Hsintien City, Taipei Hsien 231,

Taiwan, R.O.C.

PREPARED BY :

SPECTRUM RESEARCH & TESTING LABORATORY INC.
NO. 101-10, LING 8, SHAN-TONG LI CHUNG-LI CITY,
TAOYUAN, TAIWAN, R. O. C.
TEL : (03) 4987684 FAX : (03) 4986528

TABLE OF CONTENTS

1. TEST REPORT CERTIFICATION

APPLICANT : FullTek Technology Co., Ltd.

ADDRESS : 3F, No. 8, Lane 130, Min Chuan Rd.,
Hsintien City, Taipei Hsien 231,
Taiwan, R. O. C.

EUT DESCRIPTION : WIRELESS LAN CARD

(A) POWER SUPPLY : FROM ADAPTOR

(B) MODEL : FULLINK2000

(C) FCC ID : ODWFULLINK2000

FINAL TEST DATE : 03/24/1999

MEASUREMENT PROCEDURE USED :

* PART 15 SUBPART C OF FCC RULES AND REGULATIONS (47 CFR PART 15)
* ANSI C63.4 - 1992
* TEST PROCEDURE AND DATA ARE TRACEABLE TO NIST / USA.

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 : Tom Chuang DATE 3/24/99

SUPERVISOR : Jesse Ho DATE 3/24/99

APPROVED BY : Johnson Ho DATE 3/24/99

2. TEST STATEMENT

2.1 TEST STATEMENT

To whom it may concern,

This letter is to explain the test condition of this project. The EUT be tested as the following status.

The EUT is a spread spectrum wireless Lan card.

Frequency — Channel 1 : 2.412GHz
Channel 6 : 2.437GHz
Channel 11: 2.462GHz

The data was shown in this report reflects the worst – case data for the condition as listed above.
Please disregard any other oricessir (s) speed shown in this user manual.

2.2 DEPARTURE FROM DOCUMENT POLICIES, PROCEDURE OR SPECIFICATIONS , THE STATEMNT

A . DID HAVE
Any departure from document policies & procedures or from specifications.
Yes _____, No ____√____ .
If yes , the description as below.

B . The certificate and report shall not be reproduced except in full , without the written approval of SRT laboratory.

C . The report must not be used by the client to claim product endorsement by NVLAP or any agency the government.

3. EUT MODIFICATIONS

The following accessories were added to the EUT during testing :

No modifications by SRT Lab.

4. MODIFICATION LETTER

This section contains the following documents :

A. Letter of modifications

富研科技股份有限公司
FULLTEK TECHNOLOGY CO., LTD.
台北縣 231 新店市民權路 130 巷 8 號 3 樓
3F, No.8, Lane 130, Min Chuan Rd. Hsintien City, Taipei Hsien 231,Taiwan R.O.C.
TEL: 886-2-22193878 FAX: 886-2-22193879

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

To whom it may concern :

This is to serve as proper written authorization that Spectrum Research and Testing Laboratory, Inc., 1603 Skinners Turn Road, Owings, Maryland 20736, will act as our representative in all matters relating to FCC applications for equipment approval. This includes the signing of all related documents, the transmitting of required fees, and receiving correspondence and notifications from the FCC. All acts performed by Spectrum Research and Testing Laboratory, Inc., especially modifications to our equipment under testing will be carried out on our behalf.

Meantime, the applicant certifies that in the case of an individual applicant (e.g., corporation), no party to the applicant is subject to a denial of federal benefits, that includes FCC benefits, pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862. For a definition of a "party" for these purposes see 47 C.F.R. 1.2002(b).

If you have any questions regarding our applications for equipment approval, please contact Spectrum Research and Testing Laboratory, Inc. by calling (301) 855-2262.

Reapectfully,

Alex Lin
(Name,Surname)

President
(Position/Title)

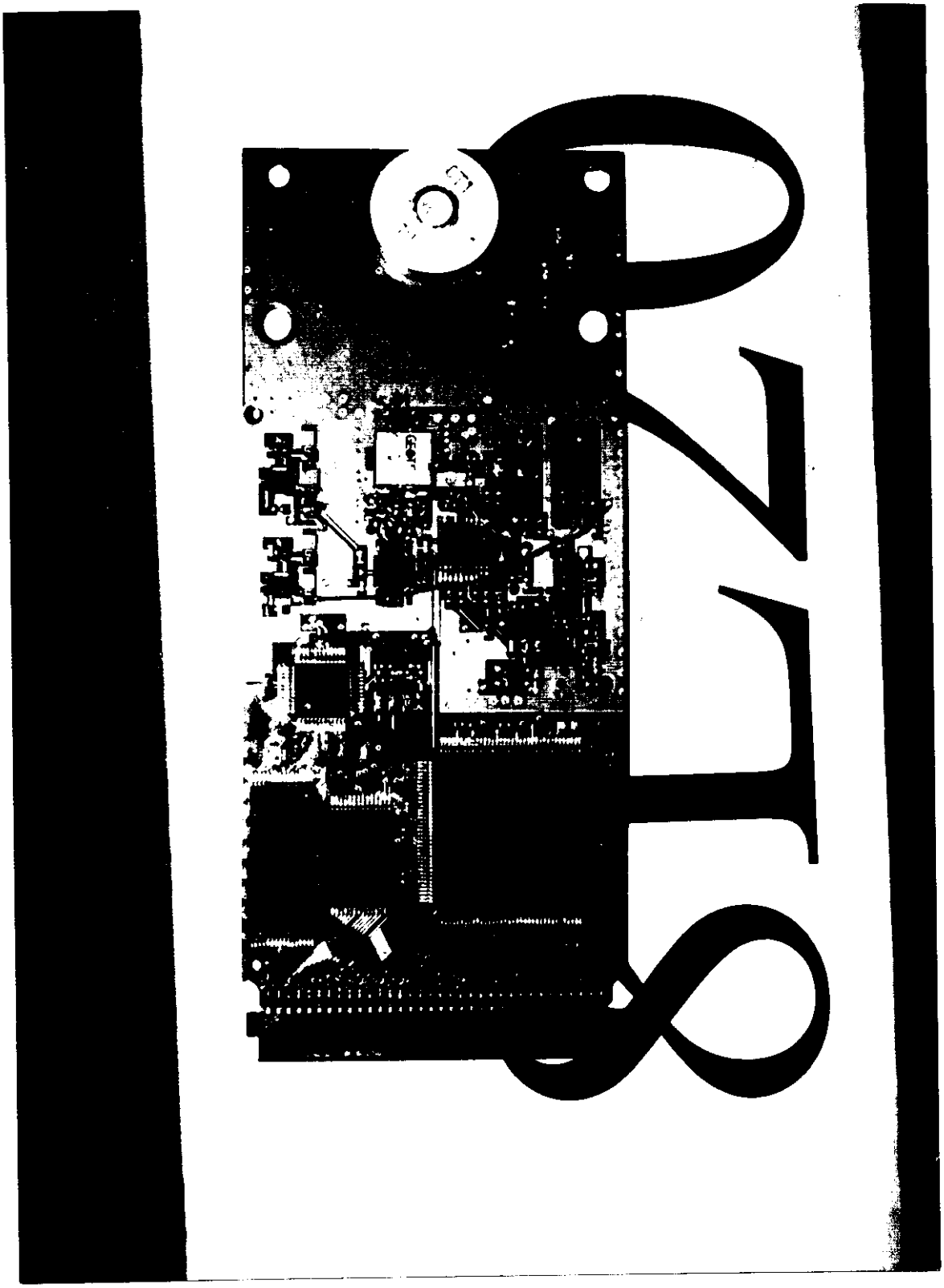
DATE : 1-7'99

Effective Dates :

From Jan. 1, 99 to Dec. 31, 99

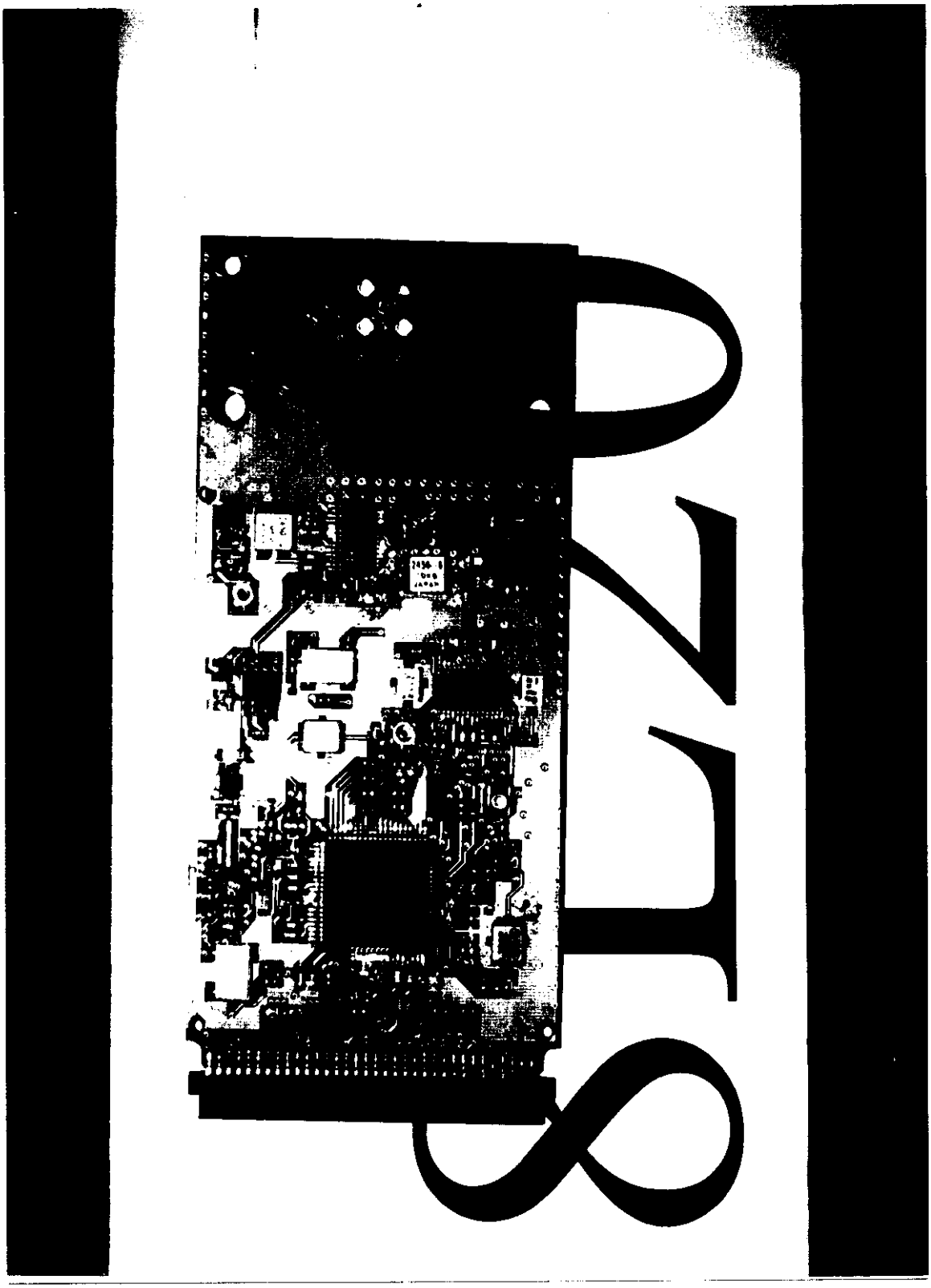
11. PHOTOS OF TESTING

A. EUT MAIN BOARD COMPONENT SIDE



11. PHOTOS OF TESTING

B. EUT MAIN BOARD SOLDER SIDE



Class B Certification Application

CLASS B CERTIFICATION APPLICATION
UNDER PART15, SUBPART C

EUT : WIRELESS LAN CARD
MODEL : FULLINK2000
FCC ID : ODWFULLINK2000

SRT REPORT # T8L20-1

PREPARED FOR :

FullTek Technology Co., Ltd.
3F, No. 8, Lane 130, Min Chuan Rd.,
Hsintien City, Taipei Hsien 231,
Taiwan, R.O.C.

富研科技股份有限公司
FULLTEK TECHNOLOGY CO., LTD.
台北縣 231 新店市民權路 130 巷 8 號 3 樓
3F, No.8, Lane 130, Min Chuan Rd. Hsintien City, Taipei Hsien 231,Taiwan R.O.C.
TEL: 886-2-22193878 FAX: 886-2-22193879

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

To whom it may concern :

This is to serve as proper notice that our company agrees to make all modifications to FCC ID : ODWFULLINK2000 as listed in section 3.0 of modification to submitted by Spectrum Research and Testing Laboratory, Inc.

Respectfully,

Alan Li
(Name, Surname)

President
(Position/Title)

Effective Dates :

From Jan 1.'99 to Dec. 31.'99

DATE : 1-9'99

FCC/DECLARATION OF CONFORMITY(DoC)

For the following equipment:

Product name : WIRELESS LAN CARD

Model : FULLINK2000

Trade name : FULLTEK TECHNOLOGY CO., LTD.

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:

Achates International, Inc.
(Company Name)

18406 Honeylocust Circle,
(Company Address1)

Gaithersburgh, MD 20879
(Company Address2)

TEL: 301-208-8888 FAX: 301-309-1580 e-mail: achatesinc@aol.com

Alex Liu (Name) Manager (Title)

Alex (Signature) 3/25/99 (Date)

SRT Report# :	FT8L20
Signature :	
Date :	3/24/99

5. CONDUCTED POWER LINE TEST

5 . 1 TEST EQUIPMENT

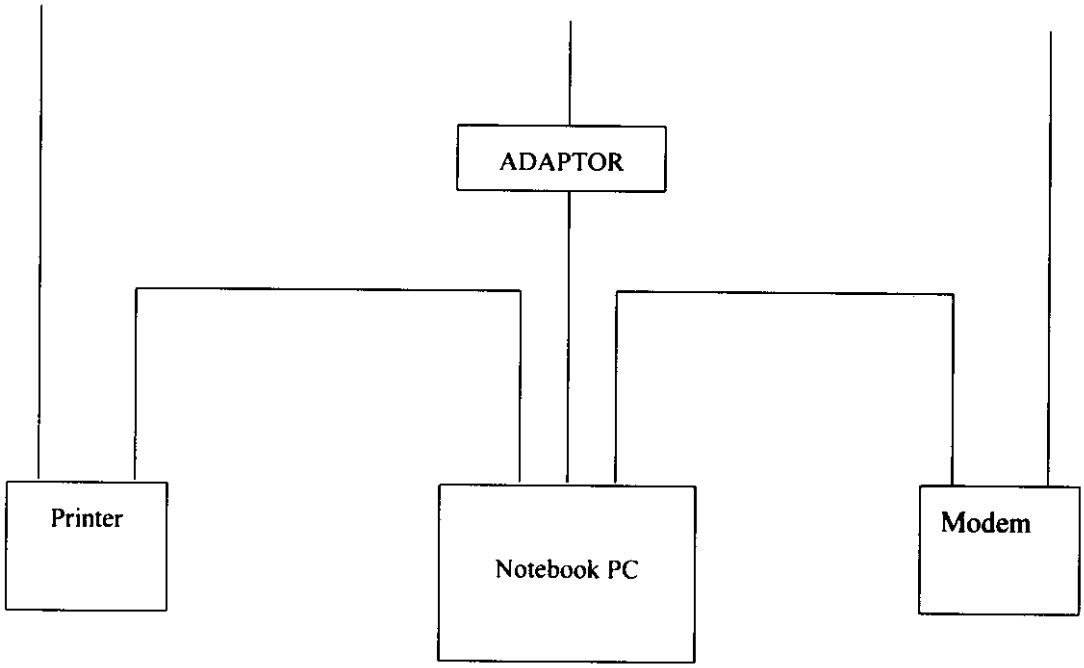
The following test equipment were used during the conducted power line test :

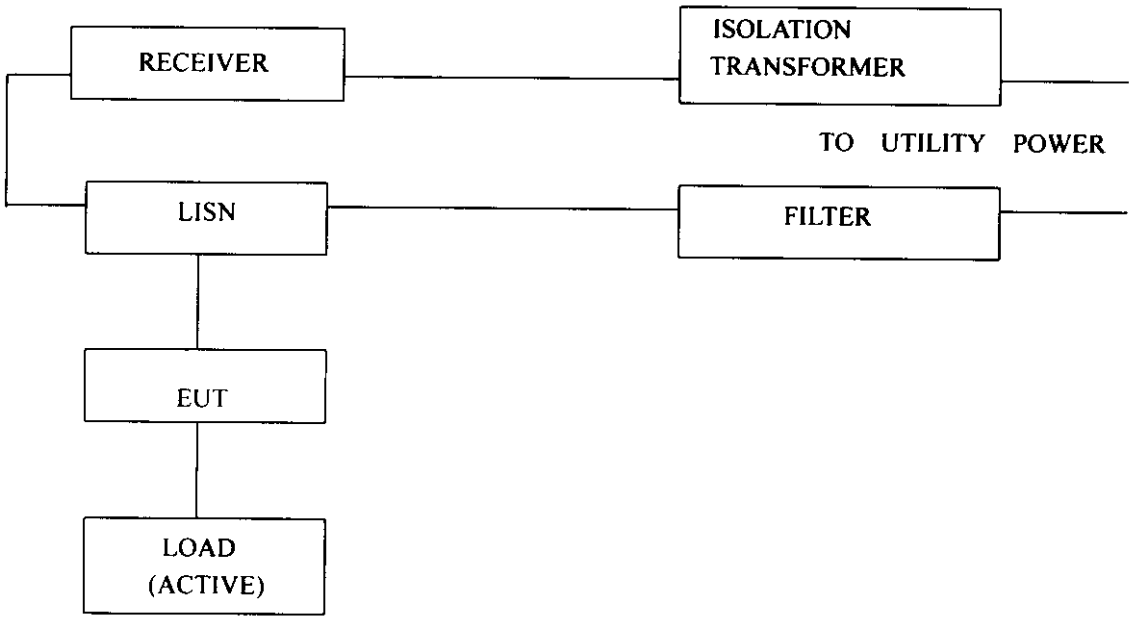
EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DATE OF CALIBRATION/ CAL. CERTIFICATE	DUE DATE
SPECTRUM ANALYZER	9 KHz TO 1 GHz	HP	8590L/ 3624A01317	AUGUST , 1998 ETC	1Y
EMI TEST RECEIVER	9 KHz TO 30 MHz	ROHDE & SCHWARZ	ESHS30/ 826003/008	AUGUST , 1998 ETC	1Y
LISN	50 uH, 50 ohm	SOLAR ELECTRONICS	9252-50-R24-BNC/ 951315	AUGUST , 1998 ETC	1Y
LISN	50uH, 50 ohm	SOLAR ELECTRONICS	9252-50-R24-BNC/ 951315	AUGUST , 1998 ETC	1Y
SIGNAL GENERATOR	9 KHz TO 1080 MHz	ROHDE & SCHWARZ	SMY01/ 841104/019	APRIL , 1998 ITRI	1Y
POWER CONVERTER	0 TO 300 VAC VAC 47-500 Hz	AFC	AFC-1KW/ 850510	APRIL , 1998 SRT	1Y

5 . 2 TEST PROCEDURE

The EUT was tested according to ANSI C63.4 - 1992. The frequency spectrum from 0.45 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 uHenry 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.

5.3 TEST SETUP





5.4 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.

A. EUT

DEVICE	MANUFACTURER	MODEL	FCC ID
WIRELESS LAN CARD	FULLTEK TECHNOLOGY CO., LTD.	FULLINK2000	ODWFULLINK2000

B. INTERNAL DEVICES

DEVICE	MANUFACTURER	MODEL	FCC ID
N/A			

C. PERIPHERALS

DEVICE	MANUFACTURER	MODEL # SERIAL #	FCCID / DoC	CABLE
PRINTER	HP	2225C	BS46XU225C	POWER-UNS DATA-S
MODEM	SMARTEAM	103/212A	EF56A103/212A	POWER-UNS DATA-S
NOTEBOOK PC	HITACHI	TNB-5900	BJMTNB5900	POWER-UNS
ADAPTOR	HITACHI	PC-AP5310	DoC	POWER-UNS

- REMARK :

(1). cable - uns : unshielded
s : shielded

(2). cables - All 1m or greater in length – bundled according to ANSI C63.4 – 1992.

5.5 EUT OPERATING CONDITION

Operating condition is according to ANSI C63.4 - 1992.

1. Card_off.exe

   Functional description

   Turns the card power off, disables the address widows and exits gracefully.

2. Card_on.exe

   Functional description

   If an Intel/Vadem compatible PCIC is found then the PCIC is programmed with the following information (based on the information in the PC_CARD.CFG file:) pc card slot number, io base address & size, attribute memory segment & size, common memory segment & size and IRO.

5.6 CONDUCTED POWER LINE EMISSION LIMIT

FREQUENCY RANGE (MHz)	[illegible]	[illegible]
0.45 - 1.705	1000 uV	250 uV
1.705 - 30	3000 uV	250 uV

NOTE : In the above table, the toghter limit 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 readinges are QUASI - PEAK VALUES with a resolution bandwidth of 9 KHz.

TEMPERATURE : 24 °C HUMIDITY : 56 %RH

FREQUENCY (MHz)	LINE1 (uV)	LINE2 (uV)	LIMIT (uV)
0.46	16.22	31.99	250
3.52	20.18	33.50	250
14.6	*	33.50	250
17.6	45.19	*	250
20.6	*	67.61	250
23.3	64.57	*	250

REMARKS : (1). * = measurement does not apply for this frequency
(2). uncertainty in conducted emission measured is <+/-2dB
(3). any departure from specification : N/A

SIGNED BY TESTING ENGINEER : Taylor auth

6. RADIATED EMISSION TEST

6.1 TEST EQUIPMENT

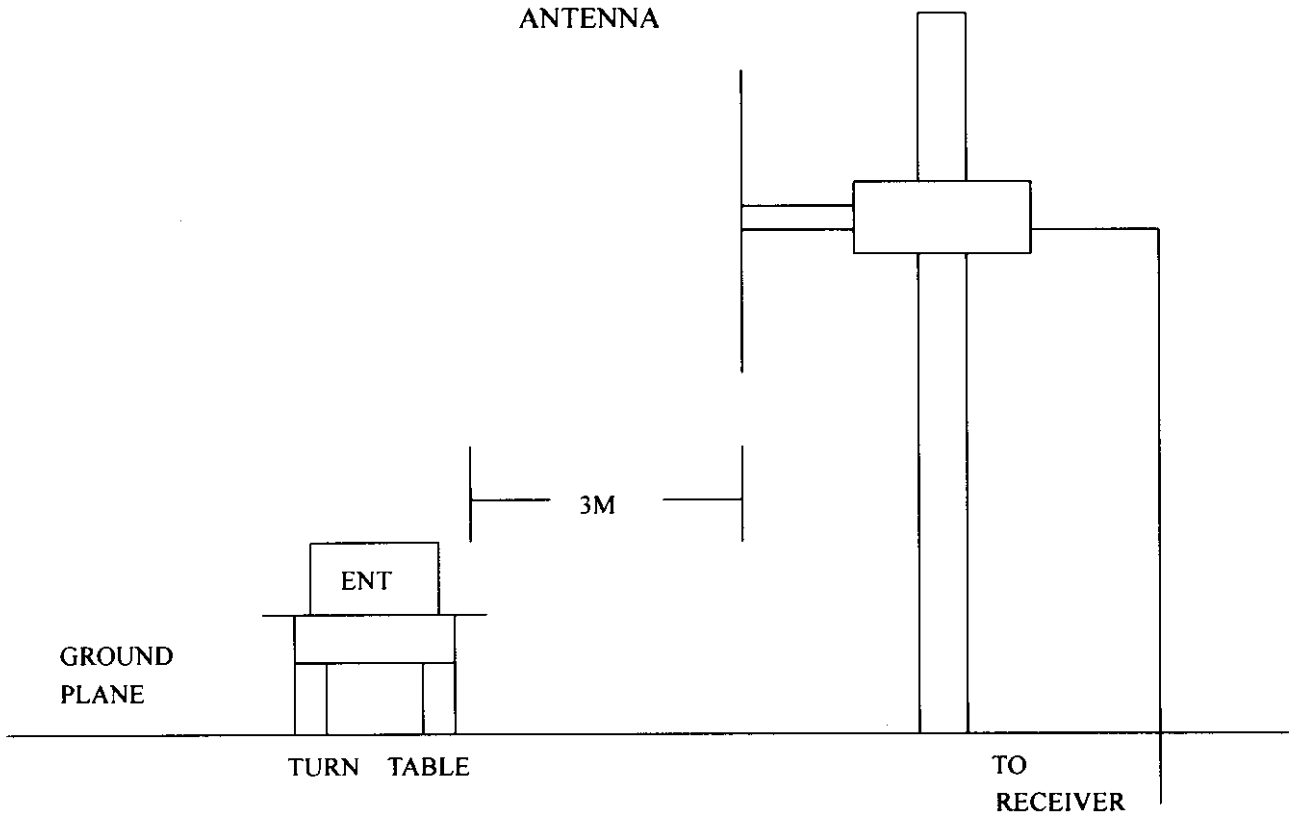
THE FOLLOWING TEST EQUIPMENT WERE USED DURING THE RADIATED EMISSION TEST :

EQUIPMENT / FACILITIES	SPECIFICAT-IONS	MANUFACTUR-ER	MODEL #/ SERIAL #	LAST CALIBRATION DATE	
RECEIVER	20 MHz TO 1000 MHz	R & S	ESVS30/ 841977/03	APRIL, 1998 ITRI	1Y
SPECTRUM ANALYZER	100 Hz TO 1500 MHz	HP	8568B/ 3019A05294	OCT. , 1998 ETC	1Y
SPECTRUM ANALYZER	9 KHz TO 22 GHz	HP	8593E/ 3322A00670	APRIL, 1998 ITRI	1Y
SPECTRUM ANALYZER	100 Hz TO 1000 MHz	IFR	A-7550/ 2684/1248	JULY, 1998 ETC	1Y
SPECTRUM ANALYZER	9 KHz TO 26.5 GHz	HP	8593E/ 3710A03220	DEC., 1998 ETC	1Y
SIGNAL GENERATOR	9 KHz TO 1080 MHz	ROHDE & SCHWARZ	SMY01/ 841104/019	APRIL, 1998 ITRI	1Y
DIPOLE ANTENNA	28 MHz TO 1000 MHz	EMCO	3121C/ 9003-535	SEP., 1998 SRT	1Y
DIPOLE ANTENNA	28 MHz TO 1000 MHz	EMCO	3121C/ 9611-1239	NOV., 1998 SRT	1Y
BI-LOG ANTENNA	26 MHz TO 2000 MHz	EMCO	3142/ 9608-1073	NOV., 1998 SRT	1Y
BI-LOG ANTENNA	26 MHz TO 1100 MHz	EMCO	3143/ 9509-1152	SEP., 1998 SRT	1Y
PRE-AMPLIFIER	0.1 MHz TO 1300 MHz	HP	8447D/ 2944A08402	APRIL, 1998 ITRI	1Y
PRE-AMPLIFIER	0.1 MHz TO 1300 MHz	HP	8447D/ 2944A06412	AUGUST, 1998 ETC	1Y
HORN ANTENNA	1 GHz TO 18 GHz	EMCO	3115/ 9612-3619	JAN. 1999 EMCO	1Y
HORN ANTENNA	18 GHz TO 26.5 GHz	EMCO	3116/	MAY 1998 EMCO	1Y

6 . 2 TEST PROCEDURE

(1).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 / SRT.
(2).The EUT, peripheralls were put on the turntable which table size is 1m x 1.5 m, table heigh 0.8 m. All set up is according to ANSI C63.4-1992.
(3).The frequency spectrum from 30 MHz to 24.5 GHz was investigated. All readings from 30 MHz to 1 GHz are QUASI-PEAK values with a resolution bandeidth of 120 KHz. All readings are above 1 GHz, PEAK values with a resolution bandwidth of 1 MHz. Measurements were made at 3 meters or 1 meters (abover 2 GHz).
(4). The antenna heigh were varied from 1 m to 4 m heigh to find the maximum emission for each frequency.
(5). The antenna polarization : vertical polarization and horizontal polarization.

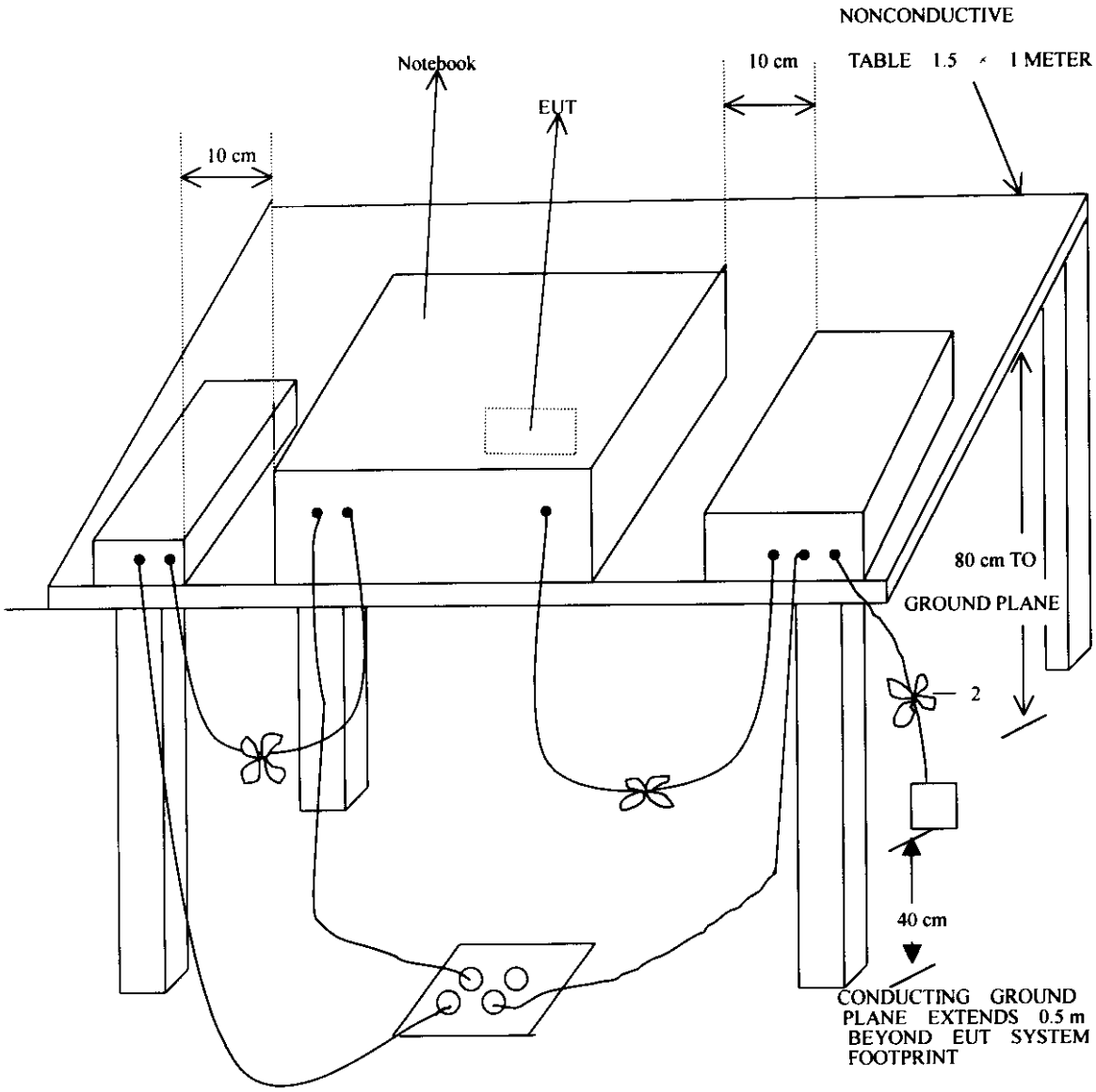
6 . 3 RADIATED TEST SET-UP



6.3 RADIATED TEST SET-UP

ANSI

ELECTRICAL AND ELECTRONIC EQUIIPMENT IN THE RANGE IN THE RANGE OF 9 KHz TO 40 GHz C63.4-1992



NVLAP Accredited

FCC Approved

6.4 CONFIGURATION OF THE THE EUT

Same as section 5.4 of this report

6.5 EUT OPERATING CONDITION

Same as section 5.5 of this report.

6.6 REDIATED EMISSION LIMIT

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below :

CLASS B

FREQUENCY (MHz)	DISTANCE (m)	FIELD STRENGTH(uV/m)
30 - 88	3	100
88 - 216	3	150
216 - 960	3	200
ABOVE 960	3	500

NOTE : 1. In the emission tables above, the toghter 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 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are QUASI-PEAK VALUES with a resolution bandwidth of 120 KHz. Measurements were made at 3 meters. The measurements above 1 GHz with a resolution bandwidth of 1 MHz are PEAK READING at a distance of 3 meters.

TEMPERATURE : 24 °C HUMIDITY : 56 %RH

FREQ. (MHz)	CABLE LOSS (dB)	ANT. FACTOR (dB)	READING (dBuV)		EMISSION (uV)		LMTS (uV)
			HORIZ	VERT	HORIZ	VERT	
165.9741	1.1	10.3	22.3	*	48.42	*	150
199.9899	1.2	12.2	21.5	22.8	55.59	64.57	150
233.4156	1.3	13.4	21.8	18.1	66.83	43.65	200
300.1352	1.6	15.0	*	20.5	*	71.61	200
535.1379	1.8	19.5	20.4	19.1	121.6	104.7	200
936.8355	3.0	24.5	15.1	13.6	134.9	113.5	200

REMARKS : (1). *= measurement does not apply for this frequency.

(2). uncertainty in radiated emission measured is <+/-4dB

(3). any departure from specification : N/A

(4). sample calculation

20 log (emission) uV/m = cable loss(dB)+factor(dB)+reading(dBuV/m)

SIGNED BY TESTING ENGINEER : Taylor auth

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 1meters.

TEMPERATURE : 24 °C HUMIDITY : 56 %RH

FREQ. (MHz)	CABLE LOSS (dB)	ANT. FACTOR (dB)	READING (dBuV)		EMISSION (dBuV)		LMTS (dBuV)
			HORIZ	VERT	HORIZ	VERT	
2132.00	7.00	29.40	24.78	29.78	61.18	66.18	70.38
2412.00	7.50	29.10	53.78	56.98	90.38	93.58	*
4264.00	8.20	34.00	*	*	*	*	54.00
4824.00	8.40	34.00	4.20	5.80	46.70	48.30	54.00
7236.00	9.50	37.30	*	*	*	*	54.00
9648.00	11.00	39.50	*	*	*	*	54.00

REMARKS : (1). *= measurement does not apply for this frequency.

(2). uncertainty in radiated emission measured is <+/-4dB

(3). any departure from specification : N/A

(4). sample calculation

20 log (emission) uV/m = cable loss(dB)+factor(dB)+reading(dBuV/m)

(5). Ch 1 : 2.412GHz

SIGNED BY TESTING ENGINEER : Taylor auth

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 1meters.

TEMPERATURE : 24 °C HUMIDITY : 56 %RH

FREQ. (MHz)	CABLE LOSS (dB)	ANT. FACTOR (dB)	READING (dBuV)		EMISSION (dBuV)		LMTS (dBuV)
			HORIZ	VERT	HORIZ	VERT	
2154.00	7.00	29.40	21.69	30.80	58.09	67.20	69.47
2437.00	7.60	29.10	52.77	56.80	89.47	93.50	*
4314.00	8.20	34.00	*	*	*	*	54.00
4874.00	8.40	34.10	*	6.77	*	49.27	54.00
7311.00	9.50	37.30	*	*	*	*	54.00
9748.00	11.00	39.50	*	*	*	*	54.00

REMARKS : (1). *= measurement does not apply for this frequency.

(2). uncertainty in radiated emission measured is <+/-4dB

(3). any departure from specification : N/A

(4). sample calculation

20 log (emission) uV/m = cable loss(dB)+factor(dB)+reading(dBuV/m)

(5). Ch 6 : 2.437GHz

SIGNED BY TESTING ENGINEER : Taylor anth

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 1meters.

TEMPERATURE : 24 °C HUMIDITY : 56 %RH

FREQ. (MHz)	CABLE LOSS (dB)	ANT. FACTOR (dB)	READING (dBuV)		EMISSION (dBuV)		LMTS (dBuV)
			HORIZ	VERT	HORIZ	VERT	
2182.00	7.00	29.40	*	25.31	*	61.71	62.92
2462.00	7.60	29.10	46.22	52.29	82.92	88.99	*
2742.00	7.70	29.50	23.78	*	60.98	*	62.92
4364.00	8.20	34.00	*	*	*	*	54.00
4924.00	8.40	34.10	5.1	5.30	47.6	47.80	54.00
9848.00	11.00	39.50	*	*	*	*	54.00

REMARKS : (1). *= measurement does not apply for this frequency.

(2). uncertainty in radiated emission measured is <+/-4dB

(3). any departure from specification : N/A

(4). sample calculation

20 log (emission) uV/m = cable loss(dB)+factor(dB)+reading(dBuV/m)

(5). Ch 11 : 2.462GHz

SIGNED BY TESTING ENGINEER : Taylor with

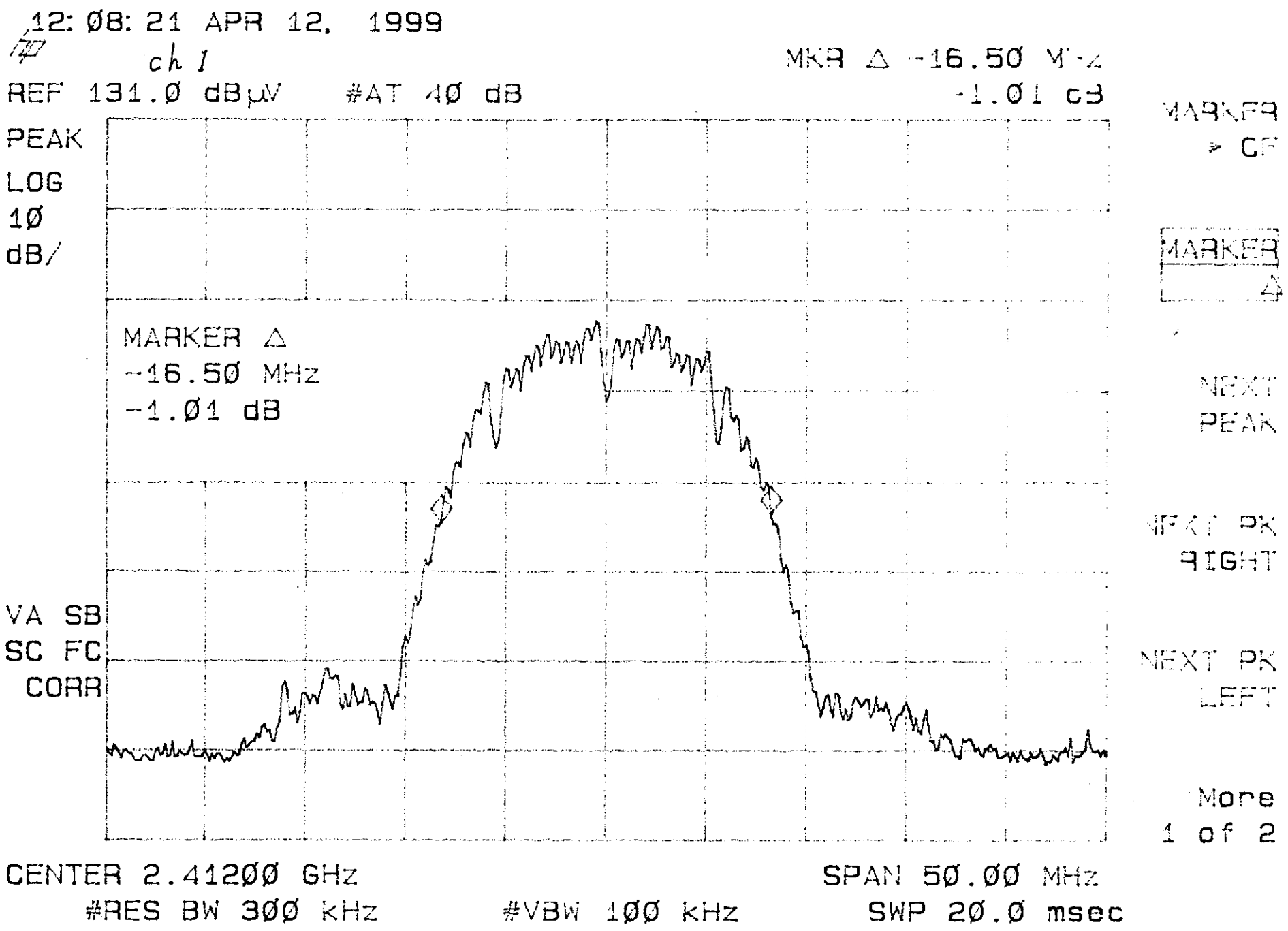
7. Bandwidth

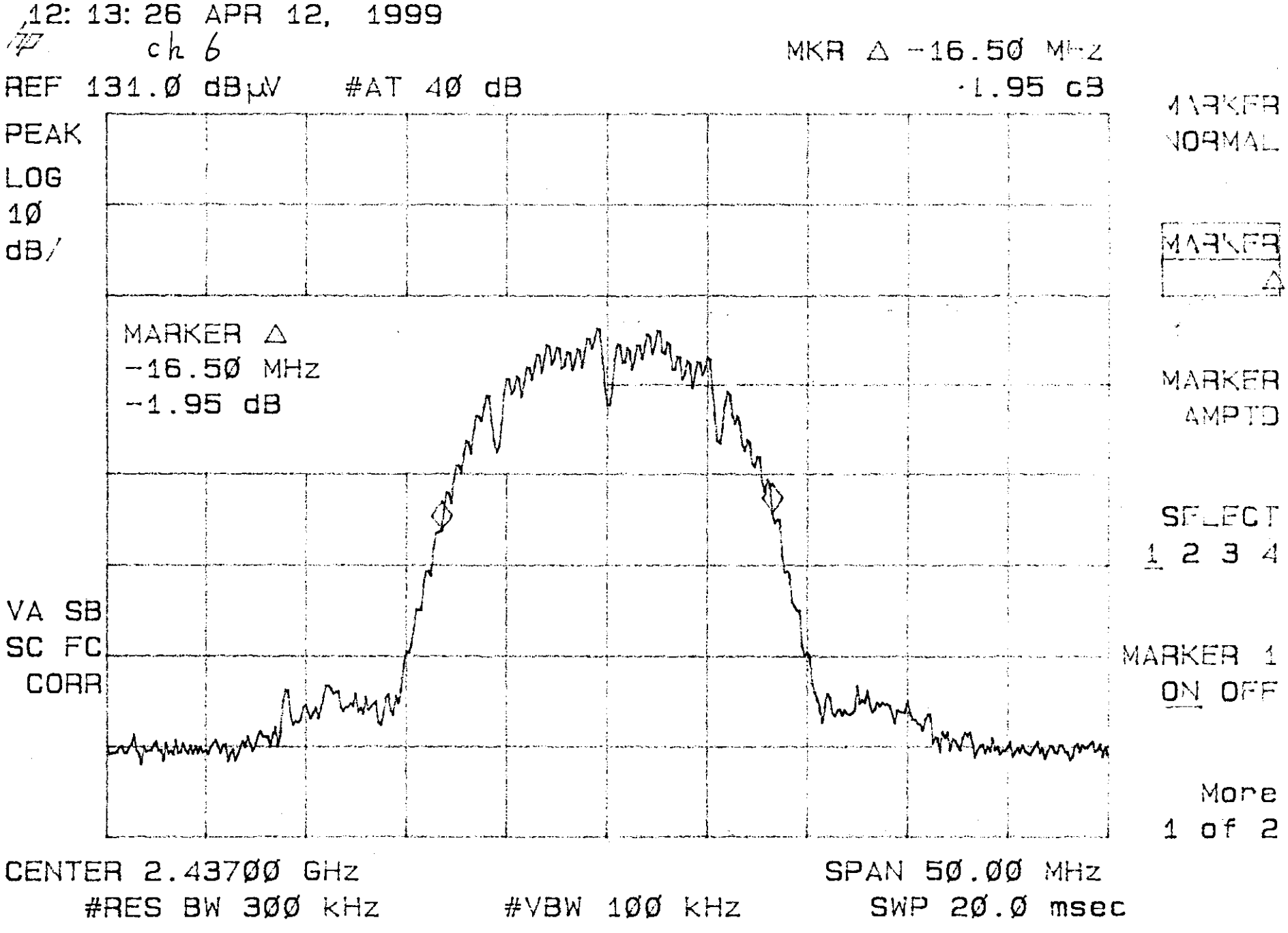
7.1 Limit

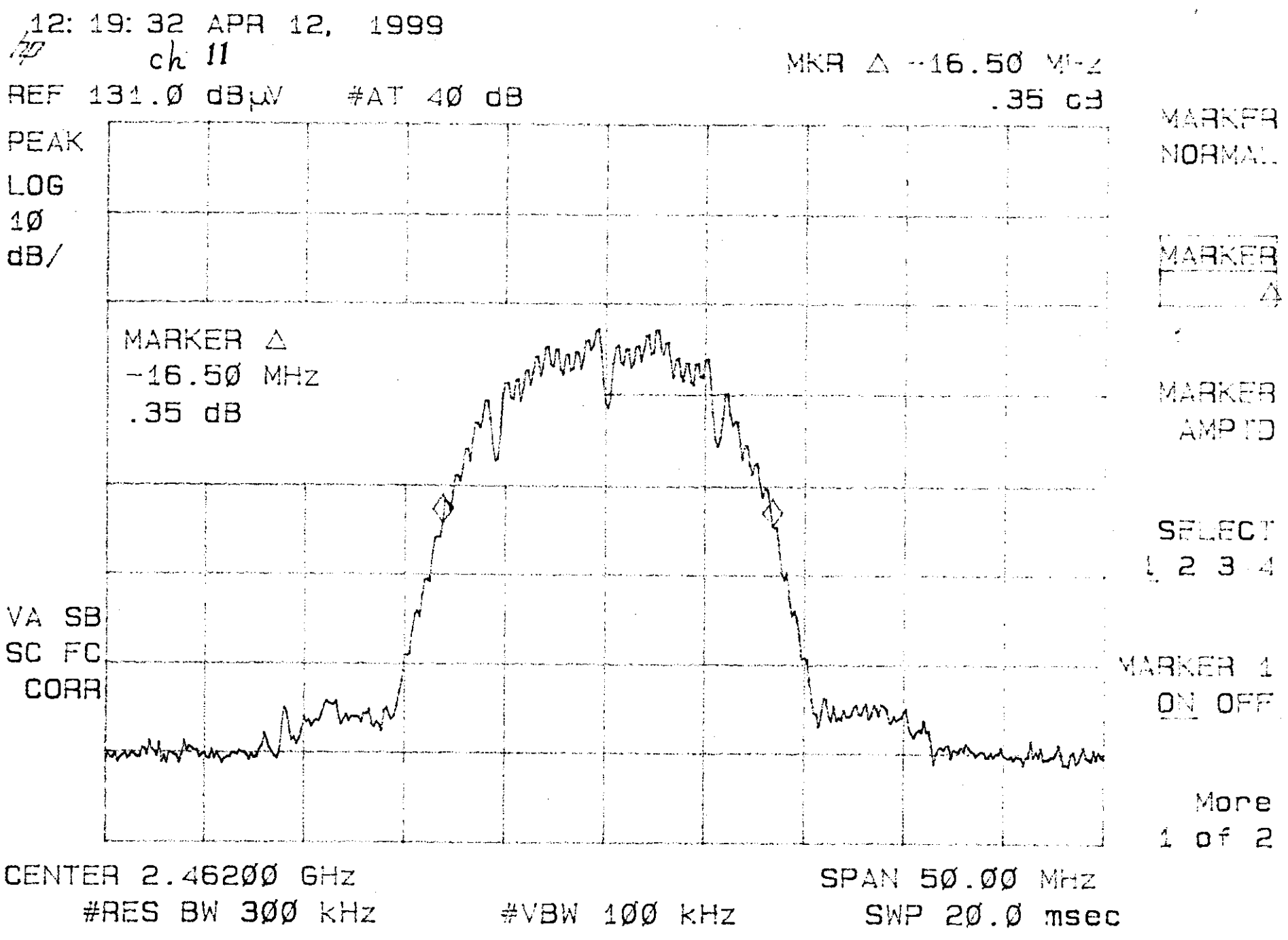
Minimum 6dB bandwidth = 100MHz

7.2 Test Result

Please see attached plotter.


12: 08: 21 APR 12, 1999
ch 1
MKR Δ -16.50 MHz
REF 131.0 dBμV
#AT 40 dB
-1.01 dB
PEAK
LOG
10
dB/
MARKER Δ
-16.50 MHz
-1.01 dB
MARKER
NEXT
PEAK
NEXT PK
RIGHT
NEXT PK
LEFT
More
1 of 2
VA SB
SC FC
CORR
CENTER 2.412000 GHz
SPAN 50.00 MHz
#RES BW 300 kHz
#VBW 100 kHz
SWP 20.0 msec


12: 13: 26 APR 12, 1999
ch 6
MKR Δ -16.50 MHz
REF 131.0 dBμV
#AT 40 dB
-1.95 dB
MARKER
NORMAL
PEAK
LOG
10
dB/
MARKER Δ
-16.50 MHz
-1.95 dB
MARKER
MARKER
AMPTD
SELECT
1 2 3 4
VA SB
SC FC
CORR
MARKER 1
ON OFF
More
1 of 2
CENTER 2.437000 GHz
SPAN 50.00 MHz
#RES BW 300 kHz
#VBW 100 kHz
SWP 20.0 msec


12: 19: 32 APR 12, 1999
ch 11
MKR Δ -16.50 MHz
.35 dB
REF 131.0 dBμV
#AT 40 dB
PEAK
LOG
10
dB/
MARKER Δ
-16.50 MHz
.35 dB
MARKER
NORMAL
MARKER
Δ
MARKER
AMPTD
SELECT
1 2 3 4
VA SB
SC FC
CORR
MARKER 1
ON OFF
More
1 of 2
CENTER 2.462000 GHz
#RES BW 300 kHz
#VBW 100 kHz
SPAN 50.00 MHz
SWP 20.0 msec

8. Peak Power

8.1 Limit

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

8.2 Test Result

a. $P = \frac{E^2}{30G}$

$E = 93.28dB\mu V$,

$G = 2.15$

$\Rightarrow P = \frac{(93.28dB\mu V)^2}{30 \text{ X } 2.15}$

$= 0.033mw$

$= -14.8dBm$

Limit = 1w

$\therefore P < 1w$

Test result : Pass

b. Peak power output is -14.8dBm.

c. Antenna gain is about 2.15dBi.

d. Total EIRP is -12.65dBm.

9. Power Spectral Density

9.1 Test Equipment

HP 8593E Spectrum Analyzer (9KHz ~ 26.5GHz).

9.2 Test Procedure

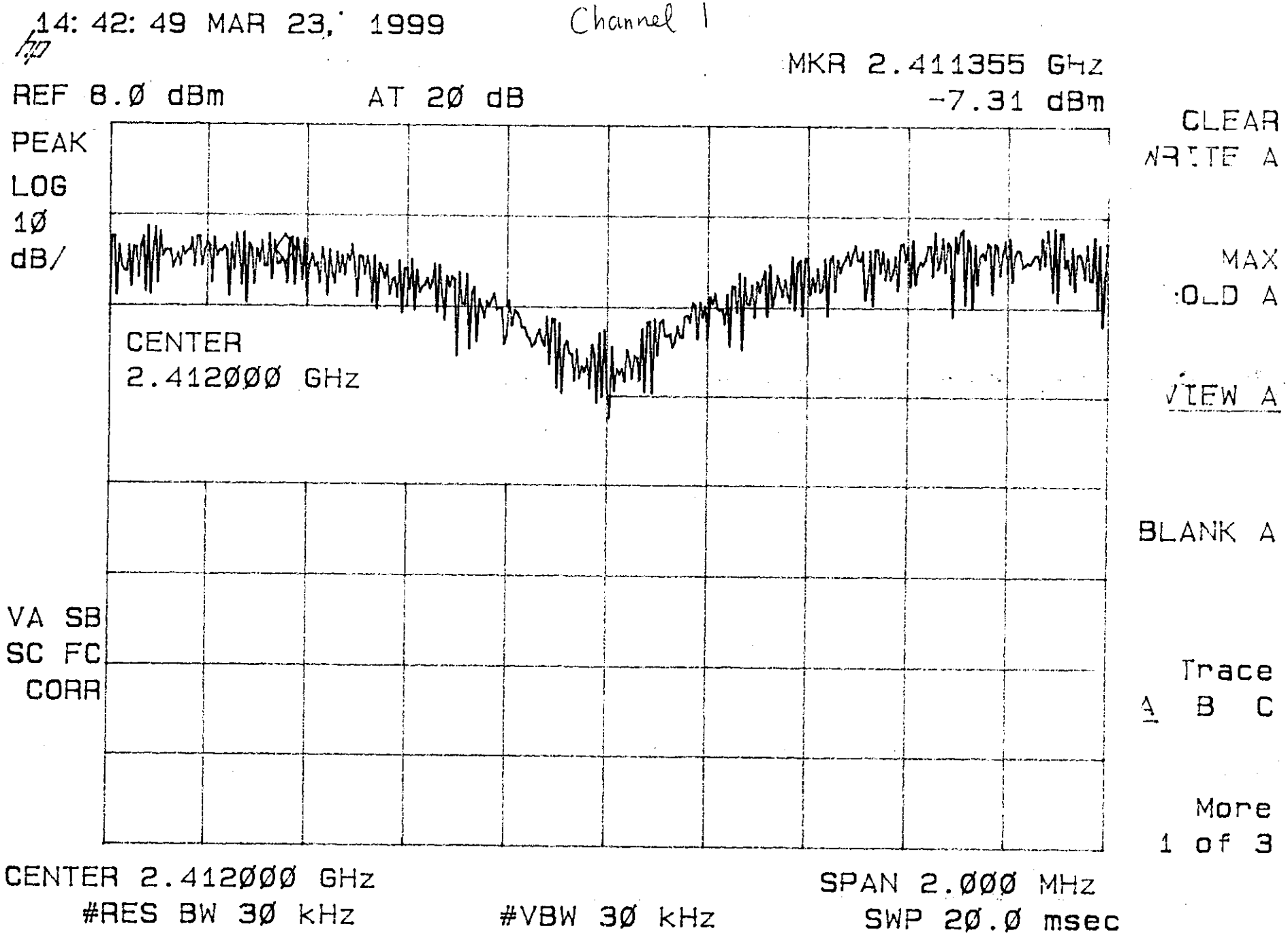
Set the test condition as below:
Resolution Bandwidth : 30KHz
SPAN : 2MHz
Sweep time : 667seconds

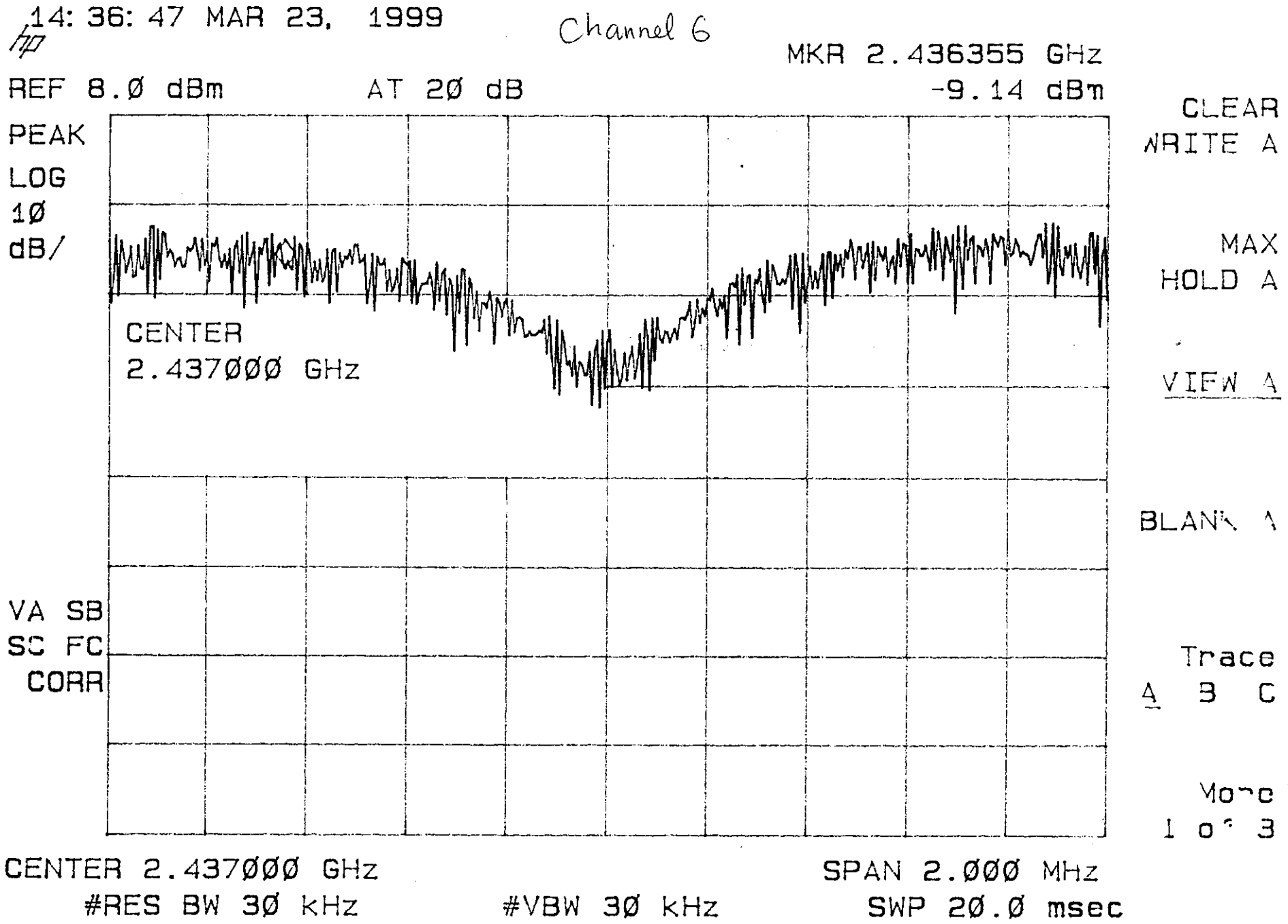
9.3 Limit

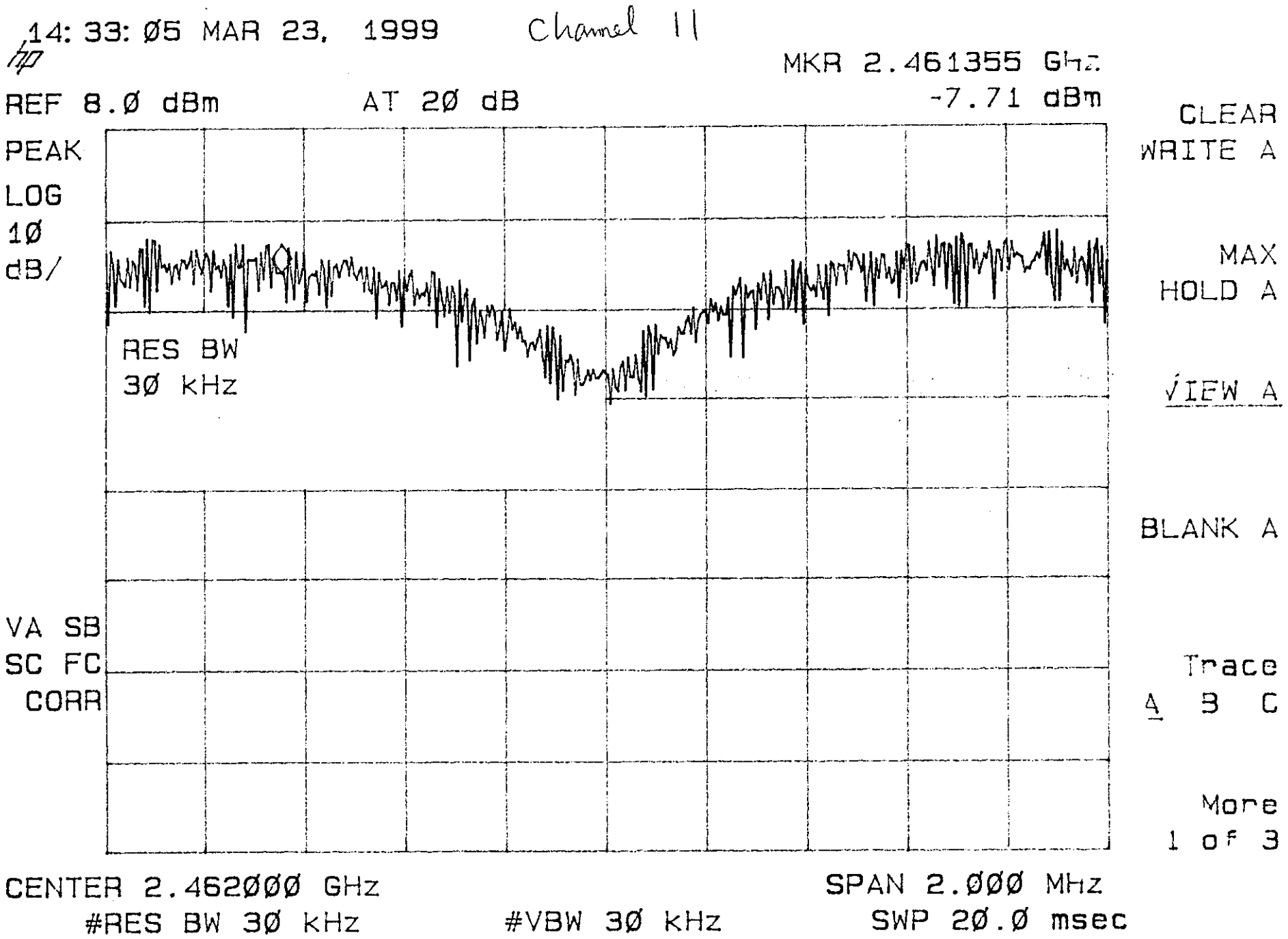
The limit is 8dBm

9.4 Test Result

Please see attached plotter.
All data are under 8dBm.


14: 42: 49 MAR 23, 1999
Channel 1
MKR 2.411355 GHz
REF 8.Ø dBm
AT 2Ø dB
-7.31 dBm
CLEAR
WRITE A
PEAK
LOG
1Ø
dB/
MAX
OLD A
CENTER
2.412ØØØ GHz
VIEW A
BLANK A
VA SB
SC FC
CORR
Trace
A B C
More
1 of 3
CENTER 2.412ØØØ GHz
SPAN 2.ØØØ MHz
#RES BW 3Ø kHz
#VBW 3Ø kHz
SWP 2Ø.Ø msec


14: 36: 47 MAR 23, 1999
Channel 6
MKR 2.436355 GHz
REF 8.Ø dBm
AT 2Ø dB
-9.14 dBm
CLEAR
WRITE A
PEAK
LOG
1Ø
dB/
MAX
HOLD A
CENTER
2.437ØØØ GHz
VIEW A
BLANK A
VA SB
SC FC
CORR
Trace
A B C
Mode
1 of 3
CENTER 2.437ØØØ GHz
SPAN 2.ØØØ MHz
#RES BW 3Ø kHz
#VBW 3Ø kHz
SWP 2Ø.Ø msec

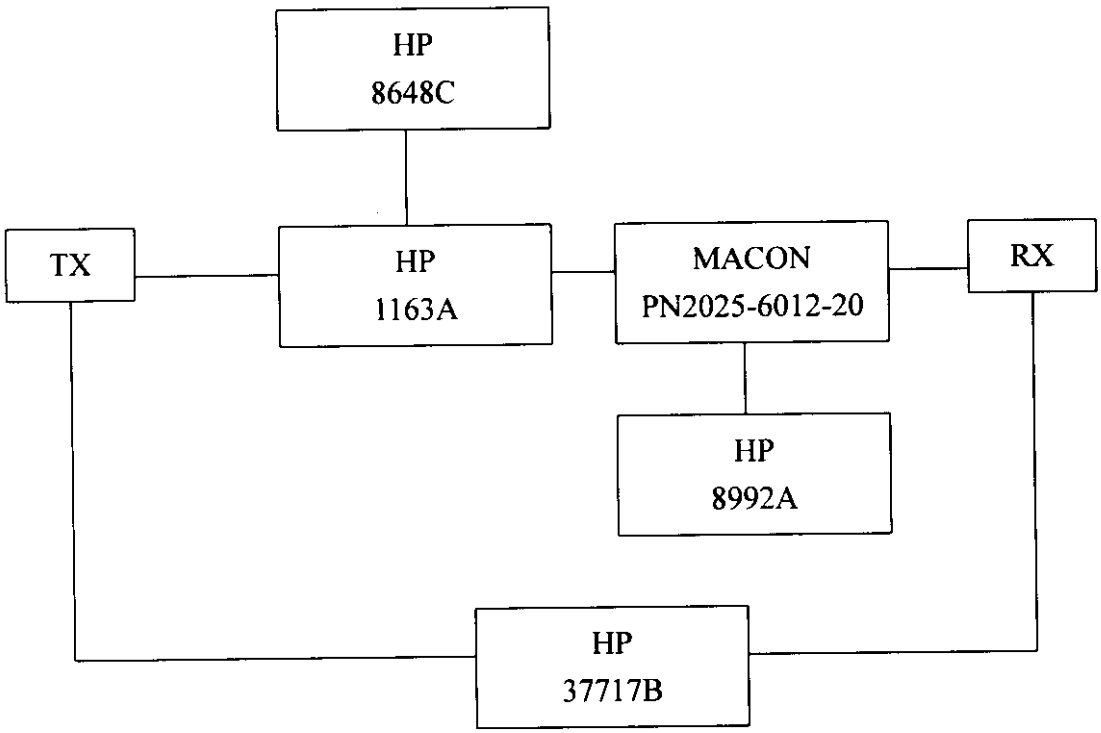

14: 33: Ø5 MAR 23, 1999
Channel 11
MKR 2.461355 GHz
REF 8.Ø dBm
AT 2Ø dB
-7.71 dBm
PEAK
LOG
1Ø
dB/
RES BW
3Ø kHz
CLEAR
WRITE A
MAX
HOLD A
VIEW A
BLANK A
VA SB
SC FC
CORR
Trace
A B C
More
1 of 3
CENTER 2.462ØØØ GHz
SPAN 2.ØØØ MHz
#RES BW 3Ø kHz
#VBW 3Ø kHz
SWP 2Ø.Ø msec

10. Processing Gain

10.1 Test Equipment

Equipment	Manufacturer	Model#	Cal. date
Jamming Signal Generator	HP	8648C	9/22
Power divider	HP	11636A	9/22
Conpler	MACON	PN2025-6012-20	9/22
Power Meter	HP	8992A	10/16
Communication Analyzer	HP	37717B	9/5

10.2 Test set-up



10.3 Test Procedure

1. TX power on.
2. Jamming signal power off.
3. Test TX power.
4. Jamming signal power on.
5. Adjust centeral frequency.
6. Adjust jamming signal power then communication analyzer will show BER $\leqq 10^{-5}$
7. TX power off.
8. Check jaming power.
9. Compare the jamming signal power and TX power.
10. Change frequency, each step is 50KHz.

10.4 Test Limit

1. S/N + J/S + L $\geqq$ 10dB.
2. BER is small or equal than 10^{-5}.
3. 20% error is allowed.

10.5 Test Result

1. When BER is less then 10^{-5}, the S/N is 9.8dB for BPSK.
2. All processing gain are over 10dB. So, all can meet FCC limits.

*** Channel: 1**

*** Center frequency: 2412MHz**

*** Test step: 50KHz/step**

*** Test range: 2401.00MHz to 2424.95MHz**

*** Test condition**

TX	ON	ON	OFF
Jamming	OFF	ON	ON
DBm	-15.82	-10.00	Below table

Processing Gain = $(S/N)_0$ + Mj + Lsys ≧ 10dB
$(S/N)_0$: when BER is less than or equal 10^{-5}, the $(S/N)_0$ is 9.8dB for BPSK
Lsys : -10.00 – (-15.82) = 5.82dB
Mj = J/S, S = -15.82dBm
If J is over –21.44dBm, Processing Gain (PG) will over 10dB

*** Test result: all J signals are over –21.44dBm**
so, all PG ≧ 10dB

*** Channel: 1** **Center Frequency: 2412MHz**

Jamming Frequency (MHz)	Jamming Power (dBm)
2400.00	10.4
.05	10.0
.10	9.7
.15	9.4
.20	9.0
.25	8.8
.30	8.5
.35	8.4
.40	8.1
.45	7.5
.50	7.0
.55	6.6
.60	6.2
.65	5.8
.70	5.7
.75	5.4
.80	5.3
.85	5.1
.90	5.0
.95	4.7
2401.00	4.6
.05	4.3
.10	4.0
.15	4.0
.20	3.9
.25	3.9
.30	3.8
.35	3.9
.40	3.9
.45	3.9
.50	4.0
.55	3.9
.60	3.9
.65	3.9
.70	3.9
.75	4.0
.80	3.8
.85	3.9
.90	3.9
.95	3.9

Jamming Frequency (MHz)	Jamming Power (dBm)
2402.00	4.0
.05	3.9
.10	3.7
.15	3.6
.20	3.4
.25	3.2
.30	3.2
.35	3.3
.40	3.4
.45	3.3
.50	3.2
.55	2.9
.60	2.8
.65	2.6
.70	2.6
.75	2.1
.80	1.9
.85	1.6
.90	1.4
.95	1.1
2403.00	0.9
.05	0.7
.10	0.2
.15	0.2
.20	0.1
.25	-0.2
.30	-0.2
.35	-0.4
.40	-0.5
.45	-0.6
.50	-0.7
.55	-0.7
.60	-0.8
.65	-1.0
.70	-1.3
.75	-1.3
.80	-1.2
.85	-1.4
.90	-1.7
.95	-1.7

* Channel: 1

Jamming Frequency (MHz)	Jamming Power (dBm)
2404.00	-1.5
.05	-1.9
.10	-1.8
.15	-1.8
.20	-1.9
.25	-1.9
.30	-1.9
.35	-1.9
.40	-2.1
.45	-2.1
.50	-2.5
.55	-2.6
.60	-2.7
.65	-2.9
.70	-3.1
.75	-3.2
.80	-3.3
.85	-3.6
.90	-3.6
.95	-3.7
2405.00	-3.6
.05	-3.7
.10	-3.7
.15	-3.9
.20	-4.1
.25	-4.2
.30	-4.4
.35	-4.5
.40	-4.6
.45	-4.8
.50	-4.9
.55	-5.1
.60	-5.3
.65	-5.4
.70	-5.4
.75	-5.5
.80	-5.6
.85	-5.6
.90	-5.6
.95	-5.7

Center Frequency: 2412MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2406.00	-5.6
.05	-5.6
.10	-5.5
.15	-5.4
.20	-5.2
.25	-4.9
.30	-4.7
.35	-4.1
.40	-4.0
.45	-4.0
.50	-3.8
.55	-3.7
.60	-3.7
.65	-3.7
.70	-3.8
.75	-4.4
.80	-4.6
.85	-4.6
.90	-4.7
.95	-4.7
2407.00	-4.8
.05	-4.8
.10	-4.8
.15	-4.9
.20	-4.9
.25	-4.9
.30	-5.0
.35	-5.1
.40	-5.0
.45	-4.9
.50	-5.0
.55	-5.1
.60	-5.2
.65	-5.4
.70	-5.4
.75	-5.6
.80	-5.8
.85	-5.8
.90	-5.8
.95	-5.8

* Channel: 1

Jamming Frequency (MHz)	Jamming Power (dBm)
2408.00	-6.4
.05	-6.5
.10	-6.7
.15	-6.9
.20	-7.1
.25	-7.2
.30	-7.3
.35	-7.4
.40	-7.5
.45	-7.5
.50	-7.5
.55	-7.6
.60	-7.7
.65	-7.7
.70	-7.7
.75	-7.9
.80	-8.0
.85	-7.9
.90	-7.9
.95	-8.0
2409.00	-7.4
.05	-7.3
.10	-7.2
.15	-7.1
.20	-6.8
.25	-6.6
.30	-6.4
.35	-6.2
.40	-5.6
.45	-5.4
.50	-5.1
.55	-5.0
.60	-4.8
.65	-4.6
.70	-4.5
.75	-4.3
.80	-4.0
.85	-3.8
.90	-3.9
.95	-4.1

Center Frequency: 2412MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2410.00	-4.1
.05	-4.3
.10	-4.5
.15	-4.6
.20	-5.2
.25	-5.4
.30	-5.6
.35	-5.6
.40	-5.4
.45	-5.5
.50	-5.4
.55	-5.5
.60	-5.8
.65	-6.4
.70	-6.7
.75	-6.7
.80	-6.7
.85	-6.8
.90	-6.5
.95	-6.6
2411.00	-5.8
.05	-6.4
.10	-6.7
.15	-7.0
.20	-7.4
.25	-7.6
.30	-7.8
.35	-8.0
.40	-8.0
.45	-7.8
.50	-7.8
.55	-7.5
.60	-7.0
.65	-7.3
.70	-6.7
.75	-6.8
.80	-6.9
.85	-7.2
.90	-7.3
.95	-7.2

* Channel: 1

Jamming Frequency (MHz)	Jamming Power (dBm)
241200	-6.9
.05	-6.3
.10	-6.2
.15	-5.4
.20	-4.9
.25	-4.6
.30	-3.7
.35	-3.1
.40	-2.6
.45	-3.3
.50	-3.7
.55	-3.4
.60	-4.2
.65	-4.7
.70	-5.4
.75	-5.4
.80	-5.3
.85	-4.4
.90	-3.8
.95	-3.7
2413.00	-2.9
.05	-2.6
.10	-2.8
.15	-2.9
.20	-3.1
.25	-4.4
.30	-4.7
.35	-4.6
.40	-4.9
.45	-5.2
.50	-5.3
.55	-5.6
.60	-6.7
.65	-6.9
.70	-7.3
.75	-7.5
.80	-7.7
.85	-7.8
.90	-7.8
.95	-7.9

Center Frequency: 2412MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2414.00	-7.5
.05	-7.4
.10	-7.7
.15	-7.8
.20	-7.7
.25	-7.7
.30	-8.0
.35	-8.0
.40	-7.6
.45	-7.5
.50	-7.9
.55	-7.5
.60	-7.3
.65	-7.0
.70	-6.9
.75	-6.6
.80	-6.6
.85	-6.4
.90	-6.2
.95	-5.7
2415.00	-5.4
.05	-4.9
.10	-4.7
.15	-4.7
.20	-4.3
.25	-4.4
.30	-4.2
.35	-4.2
.40	-4.3
.45	-4.5
.50	-4.4
.55	-4.9
.60	-5.1
.65	-5.3
.70	-5.6
.75	-5.8
.80	-6.6
.85	-6.6
.90	-5.8
.95	-6.0

*** Channel: 1** **Center Frequency: 2412MHz**

Jamming Frequency (MHz)	Jamming Power (dBm)
2416.00	-5.5
.05	-5.5
.10	-5.6
.15	-5.5
.20	-5.5
.25	-5.6
.30	-5.8
.35	-6.6
.40	-6.5
.45	-6.6
.50	-6.8
.55	-6.9
.60	-7.0
.65	-7.3
.70	-7.4
.75	-7.5
.80	-7.5
.85	-7.6
.90	-7.6
.95	-7.5
2417.00	-7.5
.05	-7.3
.10	-7.2
.15	-6.8
.20	-6.7
.25	-6.3
.30	-5.3
.35	-4.6
.40	
.45	
.50	
.55	
.60	
.65	
.70	
.75	
.80	
.85	
.90	
.95	

Jamming Frequency (MHz)	Jamming Power (dBm)
.00	
.05	
.10	
.15	
.20	
.25	
.30	
.35	
.40	
.45	
.50	
.55	
.60	
.65	
.70	
.75	
.80	
.85	
.90	
.95	
.00	
.05	
.10	
.15	
.20	
.25	
.30	
.35	
.40	
.45	
.50	
.55	
.60	
.65	
.70	
.75	
.80	
.85	
.90	
.95	

* Channel: 1

Jamming Frequency (MHz)	Jamming Power (dBm)
.00	
.05	
.10	
.15	
.20	
.25	
.30	
.35	
.40	
.45	
.50	
.55	
.60	
.65	
.70	
.75	
.80	
.85	
.90	
.95	
2417.00	
.05	
.10	
.15	
.20	
.25	
.30	
.35	
.40	-4.6
.45	-4.7
.50	-4.8
.55	-4.7
.60	-4.5
.65	-4.5
.70	-4.1
.75	-5.1
.80	-5.0
.85	-5.0
.90	-4.8
.95	-4.8

Center Frequency: 2412MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2418.00	-4.7
.05	-4.5
.10	-4.0
.15	-4.0
.20	-3.9
.25	-3.7
.30	-3.5
.35	-3.5
.40	-3.4
.45	-3.3
.50	-3.1
.55	-3.1
.60	-2.9
.65	-2.8
.70	-2.8
.75	-2.7
.80	-2.7
.85	-2.8
.90	-2.7
.95	-2.8
2419.00	-2.8
.05	-2.8
.10	-2.9
.15	-2.9
.20	-3.25
.25	-2.9
.30	-3.0
.35	-2.9
.40	-2.9
.45	-2.8
.50	-2.6
.55	-2.5
.60	-2.6
.65	-2.2
.70	-2.3
.75	-2.2
.80	-2.2
.85	-2.2
.90	-2.3
.95	-2.1

*** Channel: 1** **Center Frequency: 2412MHz**

Jamming Frequency (MHz)	Jamming Power (dBm)
2420.00	-2.1
.05	-2.2
.10	-2.0
.15	-2.0
.20	-1.7
.25	-1.4
.30	-1.2
.35	-1.2
.40	-1.0
.45	-0.4
.50	-0.2
.55	-0.1
.60	0.0
.65	0.3
.70	0.6
.75	0.8
.80	0.9
.85	0.8
.90	1.2
.95	1.4
2421.00	1.5
.05	1.6
.10	1.8
.15	2.0
.20	2.2
.25	2.4
.30	2.7
.35	3.0
.40	3.4
.45	3.3
.50	3.2
.55	3.8
.60	3.9
.65	4.4
.70	4.4
.75	4.5
.80	4.7
.85	4.8
.90	4.8
.95	4.9

Jamming Frequency (MHz)	Jamming Power (dBm)
2422.00	4.7
.05	4.6
.10	5.0
.15	4.9
.20	4.8
.25	4.7
.30	4.7
.35	4.7
.40	5.1
.45	5.1
.50	5.0
.55	5.3
.60	6.2
.65	6.8
.70	6.7
.75	6.6
.80	6.9
.85	7.1
.90	7.2
.95	7.1
2423.00	7.5
.05	7.8
.10	7.7
.15	7.9
.20	8.0
.25	8.3
.30	8.5
.35	8.7
.40	9.1
.45	9.3
.50	9.6
.55	9.9
.60	10.1
.65	10.3
.70	10.5
.75	10.7
.80	10.9
.85	11.3
.90	11.8
.95	12.1

*** Channel: 1** **Center Frequency: 2412MHz**

Jamming Frequency (MHz)	Jamming Power (dBm)
.00	
.05	
.10	
.15	
.20	
.25	
.30	
.35	
.40	
.45	
.50	
.55	
.60	
.65	
.70	
.75	
.80	
.85	
.90	
.95	
2424.00	12.1
.05	12.4
.10	12.6
.15	13.3
.20	14.0
.25	14.2
.30	14.8
.35	15.4
.40	15.9
.45	16.3
.50	16.6
.55	16.8
.60	17.0
.65	17.8
.70	19.9
.75	21.0
.80	21.0
.85	21.0
.90	21.0
.95	21.0

Jamming Frequency (MHz)	Jamming Power (dBm)
.00	
.05	
.10	
.15	
.20	
.25	
.30	
.35	
.40	
.45	
.50	
.55	
.60	
.65	
.70	
.75	
.80	
.85	
.90	
.95	
.00	
.05	
.10	
.15	
.20	
.25	
.30	
.35	
.40	
.45	
.50	
.55	
.60	
.65	
.70	
.75	
.80	
.85	
.90	
.95	

*** Channel: 6**

*** Center frequency: 2437MHz**

*** Test step: 50KHz/step**

*** Test range: 2426.00MHz to 2449.95MHz**

*** Test condition**

TX	ON	ON	OFF
Jamming	OFF	ON	ON
DBm	-14.75	-10.90	Below table

Processing Gain = $(S/N)_0$ + Mj + Lsys ≧ 10dB
$(S/N)_0$: when BER is less than or equal 10^{-5}, the $(S/N)_0$ is 9.8dB for BPSK
Lsys : -10.90 – (-14.75) = 3.85dB
Mj = J/S, S = -14.75dBm
If J is over –18.40dBm, Processing Gain (PG) will over 10dB

*** Test result: all J signals are over –18.40dBm**
so, all PG ≧ 10dB

* Channel: 6

Jamming Frequency (MHz)	Jamming Power (dBm)
2426.00	2.6
.05	2.3
.10	2.0
.15	1.9
.20	1.7
.25	1.6
.30	1.5
.35	1.4
.40	1.4
.45	1.1
.50	1.3
.55	1.2
.60	1.0
.65	0.6
.70	0.7
.75	0.7
.80	0.5
.85	0.6
.90	0.5
.95	0.3
2427.00	0.5
.05	0.5
.10	0.6
.15	0.7
.20	0.5
.25	0.4
.30	0.3
.35	0.1
.40	0.0
.45	-0.1
.50	-0.6
.55	-0.8
.60	-0.9
.65	-0.9
.70	-1.2
.75	-1.3
.80	-1.3
.85	-1.4
.90	-1.5
.95	-1.6

Center Frequency: 2437MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2428.00	-0.3
.05	-0.6
.10	-0.7
.15	-1.0
.20	-1.3
.25	-1.6
.30	-1.8
.35	-1.8
.40	-2.5
.45	-2.7
.50	-2.6
.55	-2.9
.60	-3.2
.65	-3.3
.70	-3.7
.75	-3.8
.80	-3.9
.85	-4.2
.90	-4.3
.95	-4.4
2429.00	-4.3
.05	-4.6
.10	-5.0
.15	-5.1
.20	-5.1
.25	-5.2
.30	-5.4
.35	-5.5
.40	-5.7
.45	-5.9
.50	-5.9
.55	-6.0
.60	-6.0
.65	-6.1
.70	-6.1
.75	-6.2
.80	-6.1
.85	-6.2
.90	-6.0
.95	-6.1

* Channel: 6

Jamming Frequency (MHz)	Jamming Power (dBm)
2430.00	-6.1
.05	-6.1
.10	-6.3
.15	-6.1
.20	-6.1
.25	-6.1
.30	-6.2
.35	-6.2
.40	-6.4
.45	-6.4
.50	-6.6
.55	-6.9
.60	-6.8
.65	-7.1
.70	-7.1
.75	-7.2
.80	-7.2
.85	-7.3
.90	-7.4
.95	-7.5
2431.00	-7.6
.05	-7.7
.10	-7.7
.15	-7.5
.20	-7.5
.25	-7.2
.30	-6.7
.35	-6.6
.40	-6.6
.45	-6.6
.50	-6.6
.55	-6.5
.60	-6.5
.65	-6.4
.70	-6.3
.75	-6.7
.80	-6.9
.85	-7.0
.90	-7.2
.95	-7.4

Center Frequency: 2437MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2432.00	-7.3
.05	-7.3
.10	-7.2
.15	-7.2
.20	-7.0
.25	-7.0
.30	-7.0
.35	-6.9
.40	-6.9
.45	-6.8
.50	-6.8
.55	-6.8
.60	-6.7
.65	-6.5
.70	-6.9
.75	-6.8
.80	-6.5
.85	-6.8
.90	-6.8
.95	-6.9
2433.00	-6.7
.05	-6.8
.10	-7.1
.15	-7.3
.20	-7.4
.25	-7.6
.30	-7.6
.35	-7.8
.40	-7.8
.45	-7.9
.50	-8.2
.55	-8.1
.60	-7.7
.65	-7.6
.70	-7.7
.75	-7.9
.80	-8.0
.85	-8.3
.90	8.8
.95	-9.5

* Channel: 6

Jamming Frequency (MHz)	Jamming Power (dBm)
2434.00	-9.6
.05	-9.4
.10	-9.7
.15	-9.9
.20	-9.6
.25	-9.4
.30	-9.0
.35	-8.5
.40	-8.3
.45	-8.1
.50	-7.8
.55	-7.7
.60	-7.4
.65	-7.1
.70	-7.0
.75	-6.9
.80	-6.7
.85	-6.3
.90	-6.0
.95	-5.9
2435.00	-6.3
.05	-6.0
.10	-6.2
.15	-6.4
.20	-6.6
.25	-6.5
.30	-6.6
.35	-6.7
.40	-6.8
.45	-6.7
.50	-6.6
.55	-6.8
.60	-6.9
.65	-6.7
.70	6.9
.75	-7.0
.80	-7.0
.85	-6.5
.90	-6.1
.95	-6.8

Center Frequency: 2437MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2436.00	-6.2
.05	-6.1
.10	-6.4
.15	-6.6
.20	-7.0
.25	-7.3
.30	-7.6
.35	-7.7
.40	-7.9
.45	-8.1
.50	-8.1
.55	-7.8
.60	-8.0
.65	-8.1
.70	-8.8
.75	-8.7
.80	-9.1
.85	-9.6
.90	-9.8
.95	-9.7
2437.00	-9.7
.05	-8.7
.10	-8.5
.15	-8.4
.20	-8.2
.25	-7.6
.30	-7.5
.35	-7.1
.40	-6.7
.45	-6.7
.50	-7.0
.55	-6.6
.60	-6.7
.65	-7.0
.70	-7.6
.75	-7.5
.80	-7.4
.85	-6.5
.90	-5.9
.95	-5.8

* Channel: 6

Jamming Frequency (MHz)	Jamming Power (dBm)
2438.00	-5.3
.05	-4.8
.10	-4.4
.15	-4.4
.20	-4.2
.25	-5.3
.30	-6.2
.35	-6.2
.40	-6.2
.45	-6.5
.50	-6.5
.55	-6.7
.60	-7.0
.65	-7.5
.70	-7.4
.75	-7.9
.80	-8.0
.85	-7.8
.90	-7.9
.95	-8.1
2439.00	-7.6
.05	-7.7
.10	-7.9
.15	-8.3
.20	-8.7
.25	-9.1
.30	-9.3
.35	-9.6
.40	-9.7
.45	-9.9
.50	-10.3
.55	-10.0
.60	-10.1
.65	-9.9
.70	-9.9
.75	-9.7
.80	-9.4
.85	-9.3
.90	-9.2
.95	-8.8

Center Frequency: 2437MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2440.00	-8.7
.05	-8.3
.10	-8.0
.15	-7.8
.20	-7.5
.25	-7.4
.30	-7.3
.35	-7.4
.40	-7.3
.45	-7.3
.50	-7.8
.55	-7.8
.60	-7.4
.65	-7.3
.70	-7.2
.75	-7.3
.80	-7.0
.85	-7.2
.90	-7.0
.95	-6.8
2441.00	-6.7
.05	-6.1
.10	-6.2
.15	-6.3
.20	-6.3
.25	-6.2
.30	-6.4
.35	-6.5
.40	-6.6
.45	-6.7
.50	-7.0
.55	-7.2
.60	-7.3
.65	-7.4
.70	-7.7
.75	-7.8
.80	-8.2
.85	-8.1
.90	-8.3
.95	-8.4

* Channel: 6

Center Frequency: 2437MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2442.00	-8.5
.05	-8.5
.10	-8.3
.15	-8.2
.20	-8.3
.25	-8.3
.30	-7.5
.35	-7.5
.40	-7.5
.45	-7.6
.50	-7.6
.55	-7.4
.60	-7.3
.65	-7.1
.70	-6.9
.75	-7.6
.80	-7.9
.85	-7.8
.90	-7.8
.95	-7.7
2443.00	-7.7
.05	-7.7
.10	-7.5
.15	-7.2
.20	-7.0
.25	-6.6
.30	-6.5
.35	-6.5
.40	-6.3
.45	-6.1
.50	-5.8
.55	-5.8
.60	-5.7
.65	-6.0
.70	-5.5
.75	-5.4
.80	-5.3
.85	-5.2
.90	-5.3
.95	-5.1

Jamming Frequency (MHz)	Jamming Power (dBm)
2444.00	-5.4
.05	-5.5
.10	-5.4
.15	-5.3
.20	-5.4
.25	-5.4
.30	-5.3
.35	-5.4
.40	-5.2
.45	-5.1
.50	-4.9
.55	-4.7
.60	-4.5
.65	-4.5
.70	-4.4
.75	-4.4
.80	-4.4
.85	-4.4
.90	-4.4
.95	-4.4
2445.00	-4.4
.05	-4.6
.10	-4.3
.15	-4.3
.20	-4.1
.25	-3.8
.30	-3.4
.35	-3.5
.40	-3.1
.45	-2.7
.50	-2.6
.55	-2.5
.60	-2.2
.65	-2.1
.70	-1.8
.75	-1.6
.80	-1.7
.85	-1.4
.90	-1.3
.95	-1.0

*** Channel: 6** **Center Frequency: 2437MHz**

Jamming Frequency (MHz)	Jamming Power (dBm)
2446.00	-0.9
.05	-0.6
.10	-0.5
.15	-0.4
.20	-0.3
.25	-0.0
.30	0.7
.35	0.8
.40	0.8
.45	1.1
.50	1.3
.55	1.7
.60	1.9
.65	1.9
.70	1.9
.75	2.2
.80	2.3
.85	2.2
.90	2.4
.95	2.6
2447.00	2.3
.05	2.2
.10	2.5
.15	2.0
.20	2.1
.25	2.4
.30	2.2
.35	2.5
.40	2.9
.45	3.3
.50	3.4
.55	3.5
.60	3.7
.65	4.4
.70	4.4
.75	4.0
.80	4.8
.85	4.9
.90	4.9
.95	4.8

Jamming Frequency (MHz)	Jamming Power (dBm)
2448.00	5.4
.05	5.7
.10	5.7
.15	5.7
.20	6.0
.25	6.2
.30	6.2
.35	6.0
.40	6.8
.45	7.0
.50	6.9
.55	7.1
.60	7.3
.65	7.4
.70	7.4
.75	7.5
.80	7.7
.85	8.0
.90	11.2
.95	11.7
2449.00	12.1
.05	12.6
.10	13.1
.15	13.2
.20	13.2
.25	13.9
.30	14.6
.35	15.0
.40	15.7
.45	16.0
.50	16.3
.55	16.0
.60	21.0
.65	21.0
.70	21.0
.75	21.0
.80	21.0
.85	21.0
.90	21.0
.95	21.0

*** Channel: 11**

*** Center frequency: 2462MHz**

*** Test step: 50KHz/step**

*** Test range: 2451.00MHz to 2474.95MHz**

*** Test condition**

TX	ON	ON	OFF
Jamming	OFF	ON	ON
DBm	-13.95	-10.50	Below table

Processing Gain = $(S/N)_0$ + Mj + Lsys ≧ 10dB
$(S/N)_0$: when BER is less than or equal 10^{-5}, the $(S/N)_0$ is 9.8dB for BPSK
Lsys : -10.50 – (-13.95) = 3.45dB
Mj = J/S, S = -13.95dBm
If J is over –17.20dBm, Processing Gain (PG) will over 10dB

*** Test result: all J signals are over –17.20dBm**
so, all PG ≧ 10dB

*** Channel: 11** **Center Frequency: 2462MHz**

Jamming Frequency (MHz)	Jamming Power (dBm)
2451.00	4.4
.05	4.0
.10	3.8
.15	4.0
.20	4.1
.25	3.6
.30	2.8
.35	2.5
.40	2.6
.45	2.8
.50	3.2
.55	3.0
.60	2.8
.65	2.4
.70	2.3
.75	2.2
.80	2.1
.85	2.1
.90	2.2
.95	2.3
2452.00	2.3
.05	2.6
.10	2.5
.15	2.3
.20	2.2
.25	2.2
.30	2.2
.35	2.2
.40	2.2
.45	2.0
.50	1.9
.55	1.7
.60	1.6
.65	1.5
.70	1.3
.75	1.0
.80	1.1
.85	0.9
.90	0.9
.95	1.0

Jamming Frequency (MHz)	Jamming Power (dBm)
2453.00	0.8
.05	0.8
.10	0.7
.15	0.7
.20	0.6
.25	0.5
.30	0.5
.35	0.4
.40	0.1
.45	0.0
.50	-0.1
.55	-0.7
.60	-0.9
.65	-0.9
.70	-1.3
.75	-1.2
.80	-1.4
.85	-1.5
.90	-1.7
.95	-1.8
2454.00	-1.7
.05	-1.9
.10	-2.0
.15	-2.1
.20	-2.3
.25	-2.4
.30	-2.5
.35	-2.6
.40	-2.7
.45	-2.7
.50	-2.7
.55	-2.8
.60	-2.8
.65	-2.7
.70	-2.7
.75	-2.8
.80	-2.9
.85	-2.8
.90	-2.9
.95	-3.0

*** Channel: 11** **Center Frequency: 2462MHz**

Jamming Frequency (MHz)	Jamming Power (dBm)
2455.00	-3.0
.05	-3.0
.10	-3.1
.15	-3.2
.20	-3.1
.25	-3.3
.30	-3.3
.35	-3.3
.40	-3.5
.45	-3.6
.50	-3.7
.55	-3.7
.60	-3.8
.65	-4.0
.70	-4.2
.75	-4.2
.80	-4.3
.85	-4.3
.90	-4.4
.95	-4.4
2456.00	-3.5
.05	-3.7
.10	-3.8
.15	-3.8
.20	-3.8
.25	-3.7
.30	-3.7
.35	-3.5
.40	-3.4
.45	-3.3
.50	-3.3
.55	-3.4
.60	-3.5
.65	-3.5
.70	-3.4
.75	-3.5
.80	-3.7
.85	-3.9
.90	-3.8
.95	-3.9

Jamming Frequency (MHz)	Jamming Power (dBm)
2457.00	-4.0
.05	-3.9
.10	-4.0
.15	-4.2
.20	-3.9
.25	-3.8
.30	-3.8
.35	-3.7
.40	-3.4
.45	-3.5
.50	-3.5
.55	-3.5
.60	-3.6
.65	-3.6
.70	-3.7
.75	-3.8
.80	-3.8
.85	-3.9
.90	-3.9
.95	-4.1
2458.00	-4.1
.05	-4.2
.10	-4.3
.15	-4.4
.20	-4.4
.25	-4.4
.30	-4.4
.35	-4.5
.40	-4.7
.45	-4.8
.50	-4.8
.55	-4.8
.60	-4.9
.65	-5.0
.70	-4.7
.75	-5.1
.80	-5.3
.85	-5.4
.90	-5.5
.95	-5.7

* Channel: 11 Center Frequency: 2462MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2459.00	-5.4
.05	-5.3
.10	-5.1
.15	-5.4
.20	-5.4
.25	-5.2
.30	-5.1
.35	-4.9
.40	-4.8
.45	-4.5
.50	-4.2
.55	-4.0
.60	-3.7
.65	-3.5
.70	-3.4
.75	-3.7
.80	-2.9
.85	-2.8
.90	-2.4
.95	-2.1
2460.00	-2.8
.05	-2.8
.10	-2.9
.15	-3.3
.20	-3.3
.25	-3.5
.30	-3.4
.35	-3.1
.40	-3.0
.45	-3.0
.50	-3.4
.55	-3.0
.60	-3.1
.65	-2.8
.70	-3.0
.75	-2.9
.80	-3.0
.85	-2.1
.90	-2.0
.95	-2.7

Jamming Frequency (MHz)	Jamming Power (dBm)
2461.00	-3.3
.05	-4.2
.10	-4.3
.15	-4.5
.20	-4.2
.25	-4.3
.30	-4.8
.35	-4.8
.40	-4.8
.45	-4.7
.50	-5.1
.55	-4.5
.60	-4.6
.65	-5.1
.70	-5.2
.75	-6.0
.80	-6.2
.85	-6.3
.90	-6.4
.95	-6.4
2462.00	-5.4
.05	-5.4
.10	-5.5
.15	-5.3
.20	-5.0
.25	-4.6
.30	-4.4
.35	-3.7
.40	-3.2
.45	-3.1
.50	-2.7
.55	-2.8
.60	-2.8
.65	-2.6
.70	-2.9
.75	-3.0
.80	-2.3
.85	-1.8
.90	-1.8
.95	-1.9

* Channel: 11

Jamming Frequency (MHz)	Jamming Power (dBm)
2463.00	-1.5
.05	-1.5
.10	-1.8
.15	-1.9
.20	-2.1
.25	-2.6
.30	-2.6
.35	-2.4
.40	-2.5
.45	-2.7
.50	-2.5
.55	-3.0
.60	-3.5
.65	-4.1
.70	-4.2
.75	-4.5
.80	-4.5
.85	-4.4
.90	-4.2
.95	-4.3
2464.00	-4.5
.05	-4.7
.10	-4.6
.15	-4.7
.20	-5.0
.25	-5.3
.30	-5.9
.35	-6.1
.40	-6.1
.45	-6.4
.50	-6.3
.55	-6.2
.60	-6.2
.65	-6.2
.70	-6.2
.75	-6.1
.80	-6.1
.85	-5.7
.90	-5.5
.95	-5.4

Center Frequency: 2462MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2465.00	-5.1
.05	-4.8
.10	-4.7
.15	-4.5
.20	-4.1
.25	-4.0
.30	-3.6
.35	-3.5
.40	-3.9
.45	-4.1
.50	-3.9
.55	-4.1
.60	-4.2
.65	-4.2
.70	-4.2
.75	-4.2
.80	-4.3
.85	-4.3
.90	-4.1
.95	-4.1
2466.00	-4.0
.05	-3.9
.10	-4.1
.15	-4.0
.20	-3.9
.25	-4.0
.30	-3.9
.35	-3.8
.40	-3.9
.45	-4.2
.50	-4.4
.55	-4.6
.60	-5.0
.65	-5.2
.70	-5.3
.75	-5.4
.80	-5.5
.85	-5.6
.90	-5.7
.95	-5.9

* Channel: 11

Jamming Frequency (MHz)	Jamming Power (dBm)
2467.00	-5.9
.05	-5.9
.10	-5.9
.15	-5.6
.20	-4.8
.25	-4.6
.30	-4.2
.35	-4.3
.40	-4.2
.45	-4.3
.50	-4.5
.55	-4.0
.60	-3.8
.65	-3.7
.70	-3.8
.75	-4.3
.80	-4.2
.85	-4.3
.90	-4.2
.95	-4.1
2468.00	-3.9
.05	-3.8
.10	-3.8
.15	-3.7
.20	-3.8
.25	-3.5
.30	-3.3
.35	-3.2
.40	-3.0
.45	-3.1
.50	-2.7
.55	-2.5
.60	-2.5
.65	-2.3
.70	-2.1
.75	-2.2
.80	-1.9
.85	-1.8
.90	-1.8
.95	-1.8

Center Frequency: 2462MHz

Jamming Frequency (MHz)	Jamming Power (dBm)
2469.00	-2.0
.05	-2.0
.10	-2.0
.15	-2.1
.20	-2.1
.25	-2.2
.30	-2.2
.35	-2.3
.40	-2.0
.45	-1.9
.50	-1.7
.55	-1.7
.60	-1.5
.65	-1.4
.70	-1.5
.75	-1.5
.80	-1.4
.85	-1.3
.90	-1.4
.95	-1.3
2470.00	-1.4
.05	-1.3
.10	-1.2
.15	-1.0
.20	-0.9
.25	-0.9
.30	-0.8
.35	-0.3
.40	-0.3
.45	0.0
.50	0.1
.55	0.3
.60	0.3
.65	0.6
.70	0.8
.75	0.9
.80	1.0
.85	1.2
.90	1.4
.95	1.4

*** Channel: 11** **Center Frequency: 2462MHz**

Jamming Frequency (MHz)	Jamming Power (dBm)
2471.00	1.8
.05	1.9
.10	2.2
.15	2.3
.20	2.5
.25	2.6
.30	2.9
.35	3.1
.40	3.4
.45	3.9
.50	4.1
.55	4.3
.60	5.0
.65	5.3
.70	5.3
.75	5.4
.80	5.6
.85	5.5
.90	5.8
.95	5.7
2472.00	5.6
.05	6.0
.10	6.0
.15	6.0
.20	5.9
.25	6.1
.30	6.1
.35	6.9
.40	7.1
.45	7.3
.50	7.2
.55	6.9
.60	7.4
.65	7.5
.70	7.6
.75	7.8
.80	8.1
.85	8.2
.90	8.1
.95	8.1

Jamming Frequency (MHz)	Jamming Power (dBm)
2473.00	8.3
.05	8.8
.10	8.9
.15	9.1
.20	9.5
.25	9.8
.30	9.9
.35	9.9
.40	10.2
.45	10.4
.50	10.5
.55	10.6
.60	10.6
.65	10.7
.70	10.7
.75	10.9
.80	11.3
.85	11.5
.90	12.4
.95	12.7
2474.00	13.3
.05	14.1
.10	14.3
.15	14.7
.20	15.0
.25	15.4
.30	15.9
.35	16.3
.40	17.3
.45	17.9
.50	21.0
.55	21.0
.60	21.0
.65	21.0
.70	21.0
.75	21.0
.80	21.0
.85	21.0
.90	21.0
.95	21.0