Report No.	G2815084
Specifications Test Method	FCC Part 15, Class B ANSI C63.4 1992
Applicant address	2/F, 101 Feenliau St., Nei-hu Dist., Taipei 114, Taiwan, R.O.C.
Applicant	GlobLink Technology Inc.
Items tested Model No.	Wireless Gamepad for Computer GP1010 (Sample#G28084, Tx)
Results Date	**Compliance** (As detailed within this report) 03/06/2002 (month / day / year) (Sample received) 03/07/2002 (month / day / year) (Test)
Prepared by	Project Engineer
Authorized by	General Manager (Frank Tsai)
Issue date	*April 15, 2002* (month / day / year)
Modifications	**None**
Tested by	Training Research Co., Ltd.
Office at	2, Lane 194, Huan-Ho Street, Hsichih, Taipei Hsien 221, Taiwan
Chamber at	2, Lane 194, Huan-Ho Street, Hsichih, Taipei Hsien 221, Taiwan

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(1) ***This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.***

(2) ***This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.***

★ ***NVLAP LAB CODE: 200174-0***

★ ***FCC ID: OR7GP1010***

Contents

Chapter 1 Introduction

Description of EUT

EUT	**:**	Wireless Gamepad for Computer
Model No.	**:**	GP1010
FCC ID	**:**	OR7GP1010
Frequency Range	**:**	26.96 – 27.28 MHz
Operating Frequency	**:**	27.124MHz (1 channel w/ 12 bit security ID)
Power Type	**:**	Powered by three AAA size batteries

Test method

All measurements contained in this report were performed according to the techniques described in Measurement procedure ANSI C63.4 – 1992.

Pretest was carries out in order to find which that the emission of operating mode

While testing, the EUT set in (27.124MHz) and continuously transmitting which transmitted the maximum emission.

Before the measurement, pretest are carried out in all the orthogonal plane. The final measurement is carried in the plane which exhibit the worst case of emission

The test placement as the photographs showed is the worst case emission placed. (If the emission is close to the ambient, the resolution BW and view resolution will be reduced and the data will be recorded by detection of maximum hold peak mode.)

The testing configuration of test setup is showing in the next page.

Configuration of test setup (Transmitter)

EUT (Tx)

Connections of Support Equipment

PC:

*Serial port --- an external modem
*Printer port --- a printer
*Monitor port --- a monitor
*Keyboard port --- a keyboard
*Mouse port --- a mouse
*USB A port --- **EUT**
*USB B port --- a USB gamepad
(Each port on PC is connected with suitable device)

Connections of EUT

Power by Batteries:

*Insert three AAA batteries into the battery.

List of Support Equipment

PC	**:**	**HP Brio 85xx 6/350**
Model No.	:	D6928A
Serial No.	:	SG91801552
FCC ID	:	N/A (DoC Approved)
檢磁	:	3872H013
Power type	:	100 ~ 230VAC / 50 ~ 60Hz, 5A, Switching
Power cord	:	Non-shielded, 2.33m long, Plastic, No ferrite core
Monitor	**:**	**HP 15’ Color Monitor**
Model No.	:	D2827A
Serial No.	:	KR91379759
FCC ID	:	C5F7NFCMC1518X
檢磁	:	3872B039
Power type	:	110 ~ 240 VAC / 50 ~ 60 Hz, Switching
Power cord	:	Shielded, 1.83m long, No ferrite core
Data cable	:	Shielded, 1.46m long, with two ferrite cores
Keyboard	**:**	**HP**
Model No.	:	SK-2501K
Serial No.	:	MR81008879
FCC ID	:	GYUR38SK
檢磁	:	3862A621
Power type	:	By PC
Data cable	:	Shielded, 1.73m long, with ferrite core
Mouse	**:**	**HP**
Model No.	:	M-S34
Serial No.	:	LZB90910464
FCC ID	:	DZL211029
檢磁	:	4862A011
Power type	:	By PC
Power cord	:	Non-shielded, 1.88m long, No ferrite core

Modem	**:**	**ACEEX**
Model No.	:	XDM41414
Serial No.	:	964111217
FCC ID	:	IFAXDM1414
Power type	:	Linear
Power cord	:	Non-shielded, 1.9m long, No ferrite cord
Data cable	:	RS232, Shielded, 1.2m long, No ferrite core
		RJ11C x 2, 7’ long non-shielded, No ferrite core

Printer	**:**	**HP**
Model No.	:	C2184A
Serial No.	:	SG55T1P1KY
FCC ID	:	N/A, DoC Approved
Power type	:	Linear
Power cord	:	Non-shielded, 1.90m long, No ferrite core
Data cable	:	Shielded, 1.8m long, No ferrite core

USB Mouse	**:**	**Logitech**
Model No.	:	M-BA47
Serial No.	:	LZE92250027
FCC ID	:	N/A, Doc Approved
檢磁	:	4872A220
Power type	:	Powered by PC
Power Cable	:	Shielded, 1.5m long, Plastic hoods, No ferrite bead

GAMEPED	**:**	**Logitech**
Model No.	:	G-YA ARC2
FCC ID	:	N/A, Doc Approval
Power type	:	Powered by PC
Power Cable	:	Shielded, 3m long, No ferrite bead data cable

Chapter 2 Radiated Emission Test

Test Condition and Setup (Harmonic and Spurious Emission)

Pretest: Prior to the final test, the EUT is placed in an anechoic chamber, and scan from 27MHz to 1GHz. This is done to ensure the radiation exactly emits form the EUT. The devices rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit, after those pretest, the y-axis operation is found to be the maximum and the following results were carried with the z-axis.

Final test: Final radiation measurements is made on a **3 – meter** anechoic chamber.. The EUT's maximum emission of radiation is placed on a nonconductive table, which is 0.8m height, the top surface is 1.0 x 1.5 meter. All placement is according to ANSI C63.4 - 1992.

The spectrum is examined from 27MHz to 1000MHz measured by HP spectrum.

The whole range Antenna is used to measure frequency from 27 MHz to 1GHz. The final test is used the spectrum analyzer.

Measure more than six top marked frequencies generated form pretest by computer step by step at each frequency. The EUT is rotated 360 degrees, and antenna is raised and lowered from 1 to 4 meters to find the maximum emission levels. The antenna is used with both horizontal and vertical polarization.

Appropriated preamplifier, which is made by TRC is used for improving sensitivity and precautions is taken to avoid overloading. The spectrum analyzer' s 6dB bandwidth is set to 120 kHz, and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambient, the tester will recheck the data and the corrected data will be written in the test data sheet. If the emission is just within the ambient, the data from shield room will be taken as the final data.

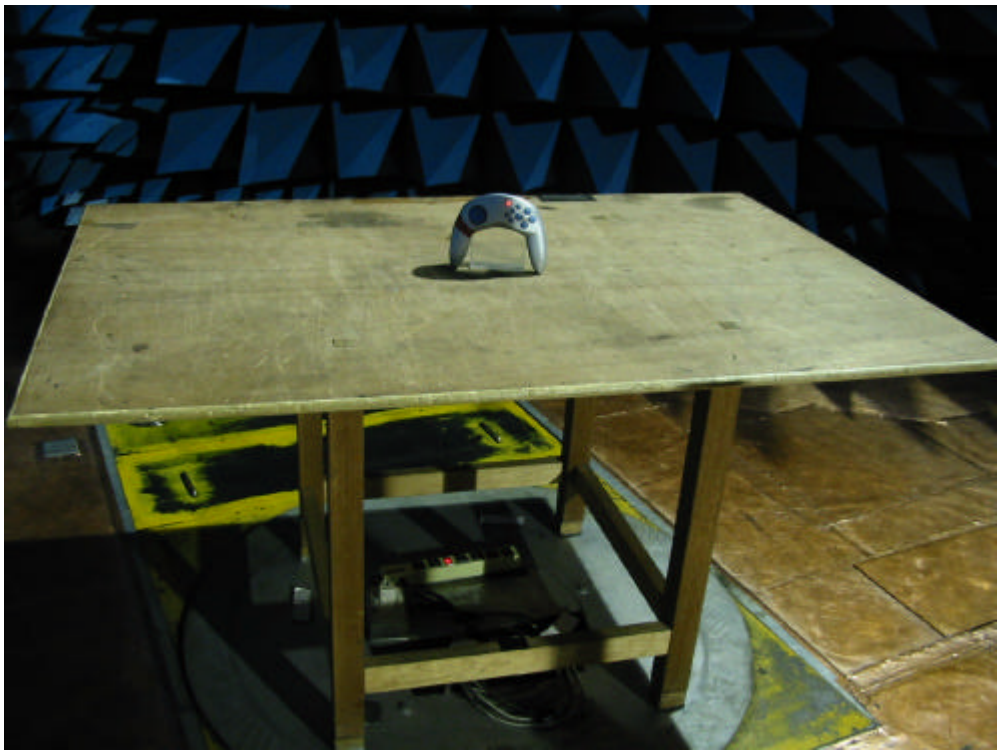
List of test Instrument

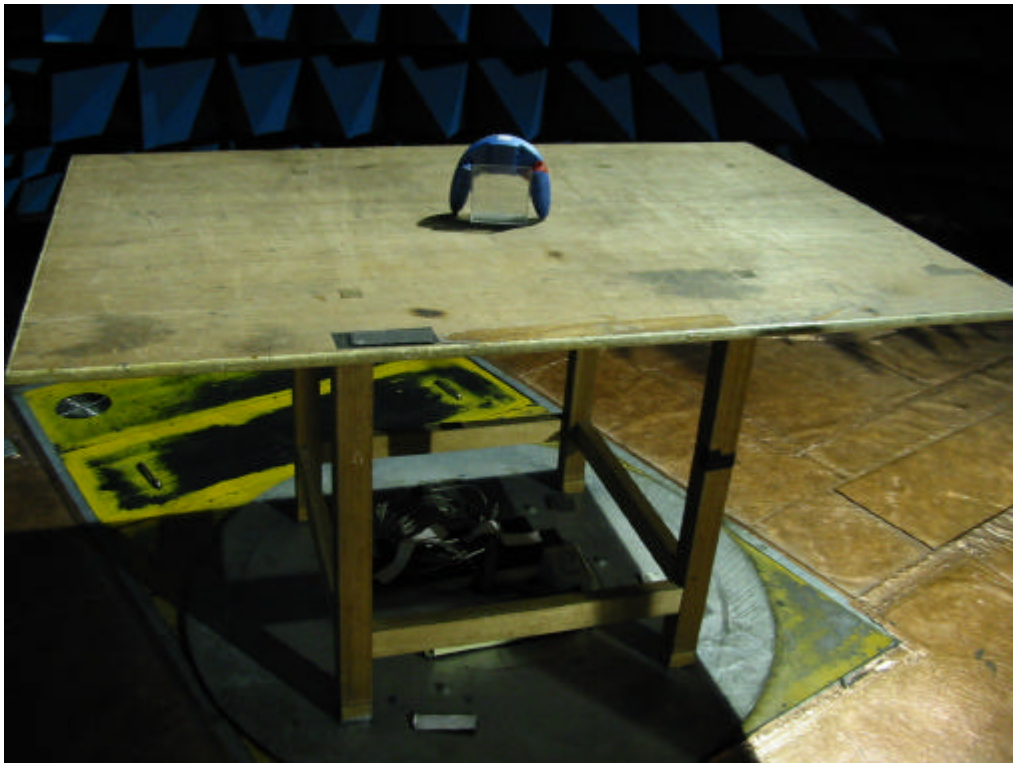
				Calibration Date	
Instrument Name	Model No.	Brand	Serial No.	Last time	Next time
EMI Receiver	8546A	H P	3520A00242	06/29/01	06/29/02
RF Filter Section	85460A	H P	3448A00217	06/29/01	06/29/02
Bi-log Antenna	CBL6141A	Schaffner	4206	03/09/02	03/09/03
Switch/Control Unit (> 30MHz)	3488A	HP	N/A	11/20/01	11/20/02
Auto Switch Box (> 30MHz)	ASB-01	TRC	9904-01	11/20/01	11/20/02
Spectrum Analyzer	8564E	HP	US36433002	08/01/01	08/01/02
Microwave Preamplifier	83051A	HP	3232A00347	08/01/01	08/01/02
Horn Antenna	3115	EMCO	9704 – 5178	08/01/01	08/01/02
Anechoic Chamber (cable calibrated together)				05/20/01	05/20/02

The level of confidence of 95% , the uncertainty of measurement of radiated emission is ± 4.96 dB .

Test Result : Pass (Appendix A)

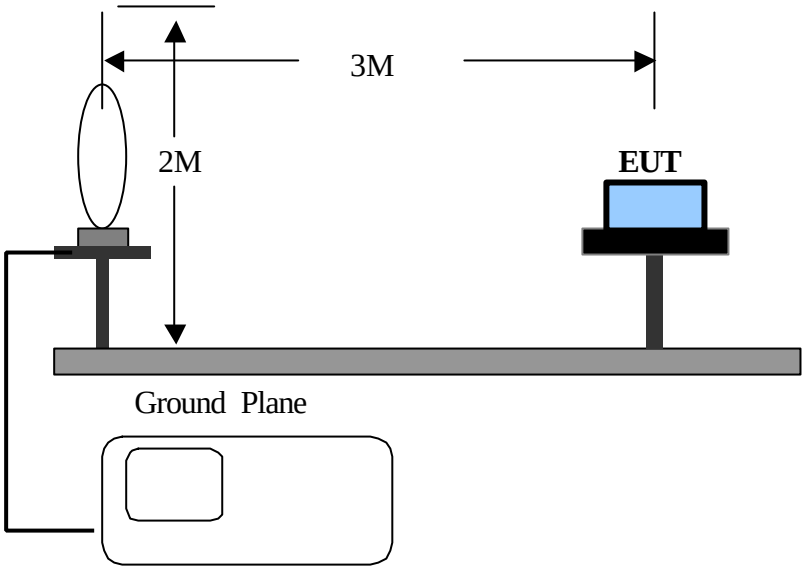
Radiated Test Placement: (Photographs)





Peak Power Measurement of Fundamental Frequency

Test Setup



HP 8546A Spectrum Analyzer

(Below 30MHz: RBW=10KHz & VBW=10KHz, Detector mode: Average.)

Test Procedure

a. Set the Loop ANT. height 1m., vertical ,and rotate the ANT to find the azimuth of the highest emission and record the reading.

b. Keep the ANT. azimuth and turn the EUT 360 degree and record the highest emission.

c. Raise the ANT to 2 meters and repeat set a and b.

d. Change the ANT Horizontal and repeat a to c.

e. Record the most highest reading in test report.

List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.	Last time	Next time
EMI Receiver	8546A	H P	3520A00242	06/29/01	06/29/02
RF Filter Section	85460A	H P	3448A00217	06/29/01	06/29/02
Active Loop Antenna	6502	EMCO	2777	07/20/01	07/20/02

Test Result : Pass (Appendix B)

Appendix A

Harmonic and Spurious Emission Test Result: (Horizontal)

Test Conditions:

Testing room : Temperature : 24 ° C Humidity : 72 % RH

Testing site : Temperature : 27 ° C Humidity : 78 % RH

Frequency	**Reading Amplitude**	**Ant. Height**	**Table**	**Correction Factors**	**Corrected Amplitude**	**Class B Limit**	**Margin**
MHz	dBμV/m	m	degree	dB/m	dBμV/m	dBμV/m	dB
121.680	8.38	2.44	86	-14.28	22.66	43.50	-20.84
240.000	12.62	1.00	29	-15.53	28.15	46.00	-17.85
369.450	7.92	1.00	94	-19.41	27.33	46.00	-18.67
581.970	13.12	1.00	114	-24.75	37.87	46.00	-8.13
665.110	9.68	1.00	111	-26.26	35.94	46.00	-10.06
697.800	5.06	1.00	154	-26.86	31.92	46.00	-14.08

Note:

1.Margin = Amplitude – limit, *if margin is minus means under limit.*

2.Corrected Amplitude = Reading Amplitude + Correction Factors

3.Correction factor = Antenna factor + (Cable Loss – Amplitude gain)

(For example : 30MHz correction factor = 15.5 + (–15.26) = 0.24 dB/m)

Harmonic and Spurious Emission Test Result: (Vertical)

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B Limit	Margin
MHz	dBμV/m	m	degree	dB/m	dBμV/m	dBμV/m	dB
30.720	4.41	1.00	46	-23.19	27.60	40.00	-12.40
43.010	13.81	1.00	44	-17.55	31.36	40.00	-8.64
67.590	13.50	1.00	4	-9.75	23.25	40.00	-16.75

Appendix B

Fundamental Emission Test Result:

Frequency: 27. 124MHz					
Antenna Polarity	**Reading Amplitude**	**Correction Factors**	**Corrected Amplitude**	**Limit**	**Margin**
	dBμV	dB	dBμV/m	dBμV/m	dB
Vertical	54.56	12.00	66.56	80.00	-13.44
Horizontal	60.35	12.00	72.35	80.00	-7.65
Horizontal > Vertical					

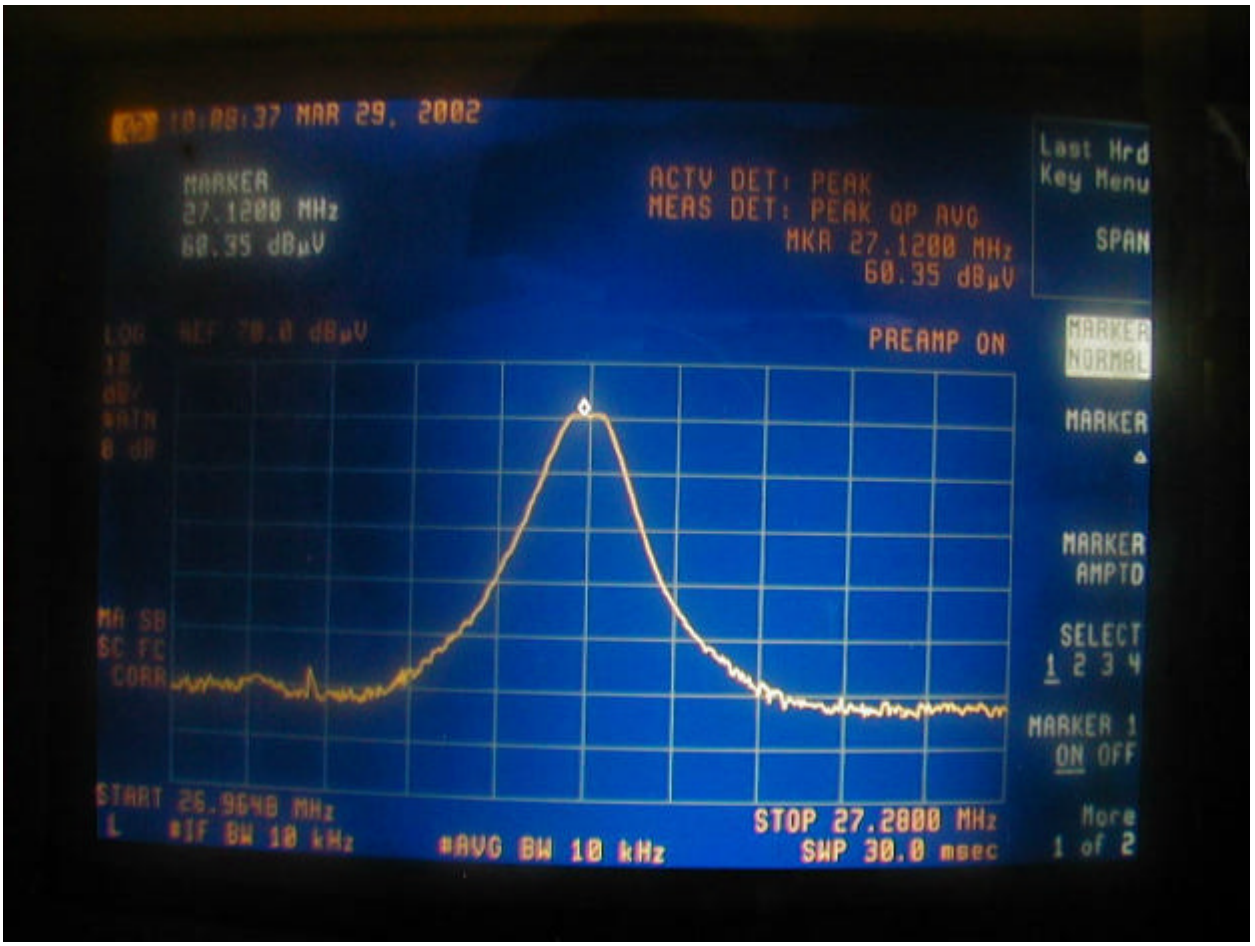
Note:

1. Correction Factors = Antenna factors + Cable loss - Amplifier
2. Corrected Amplitude = Reading Amplitude + Correction Factors
3. Margin = Corrected Amplitude - Limited

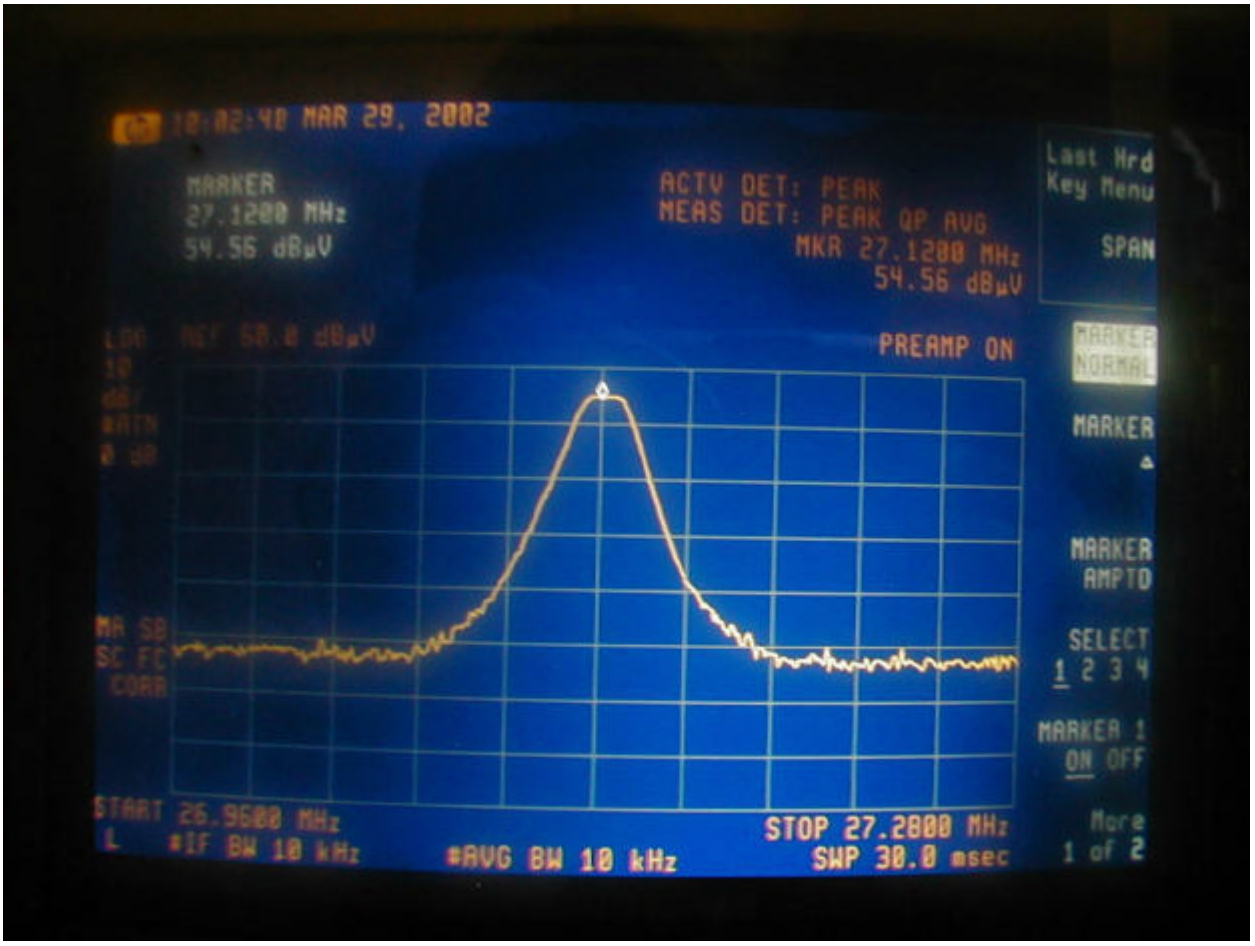
Appendix C

Band Edge of Measurement: (Frequency Band: 26.96MHz ~ 27.28MHz)

Horizontal



Vertical


10:02:40 MAR 29, 2002
MARKER
27.1200 MHz
54.56 dBµV
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 27.1200 MHz
54.56 dBµV
Last Hrd Key Menu
SPAN
PREAMP ON
MARKER NORMAL
MARKER
MARKER AMPTD
SELECT
1 2 3 4
MARKER 1
ON OFF
More 1 of 2
START 26.9600 MHz
#IF BW 10 kHz
#AVG BW 10 kHz
STOP 27.2800 MHz
SWP 30.0 msec