

TEST REPORT FOR FCC DOC

for

JETWAY INFORMATION CO., LTD.

Motherboard

Model Number: JNF76R11-NAN01G6(L200)-LF, JNF76-XXXX-YY
(“XX” Stand for: “0-9” or “A-Z”, “Y” Stand for: “0-9” or “A-Z”)

Prepared for : JETWAY INFORMATION CO., LTD.
4F, NO.168, LITEHST, CHUNG HO CITY 235, TAIPEI
TAIWAN R.O.C.

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Date of Test : Feb. 21, 2009

Date of Report : Feb. 24, 2009

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APPENDIX I (Photos of the EUT)

(3 pages)

TEST REPORT FOR FCC COMPLIANCE DECLARATION

Report Number		MTE/CYZ/N9020126
Applicant	Company Name	JETWAY INFORMATION CO., LTD.
	Address	4F, NO.168, LITEHST, CHUNG HO CITY 235, TAIPEI TAIWAN R.O.C.
Manu- facturer1	Company Name	TOP WAY TECHNOLOGY CO., LTD.
	Address	Shang Jin Industrial Zone Jie Kou Village Chang An Town Dong Guan City Guang Dong Province P.R.C.
Manu- facturer2	Company Name	EVER ORIENT TECHNOLOGY CO., LTD.
	Address	Lian He Industrial Park, Nan Yue, Long Gong, ShenZhen, Guang Dong, China
Manu- facturer3	Company Name	RIGHT TRACK ELECTRONIC TECHNOLOGY CO., LTD.
	Address	No.2 West Wordshop, NO.1 District NanChang Industrial Zone, Gushu Village, XiXiang Town, BaoAn, ShenZhen, P.R. China.
Product	Product Name	Motherboard
	Model No.	JNF76R11-NAN01G6(L200)-LF, JNF76-XXXX-YY
	Power Supply	AC 120V/60Hz
	Remark	Use JNF76R11-NAN01G6(L200)-LF does all tests.
Test Result		The EUT was found compliant with the requirement(s) of the standards.
Standard		FCC Rules and Regulations Part 15 Subpart B 2008
<p>*Note The above device has been tested by Most Technology Service Co., Ltd. To determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The test record, data evaluation & Equipment Under Test (EUT) configurations represented are contained in this test report and Most Technology Service Co., Ltd. Is assumed full responsibility for the accuracy and completeness of test. Also, this report shows that the EUT is technically compliant with the requirement of the above standards. This report applies to above tested sample only. This report shall not be reproduced except in full, without written approval of Most Technology Service Co., Ltd., this document may be altered or revised by Most Technology Service Co., Ltd., personal only, and shall be noted in the revision of the document.</p>		
Prepared by		
	Candy Zhang	
Reviewed by		
	Sam Zhong	
Approved by		
	Yvette Zhou(Manager)	
		

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	: Motherboard
Model Number	: JNF76R11-NAN01G6(L200)-LF
Brand Name	: N/A
Applicant	: JETWAY INFORMATION CO., LTD. 4F, NO.168, LITEHST, CHUNG HO CITY 235, TAIPEI TAIWAN R.O.C.
Manufacturer 1	: TOP WAY TECHNOLOGY CO., LTD. Shang Jin Industrial Zone Jie Kou Village Chang An Town Dong Guan City Guang Dong Province P.R.C.
Manufacturer 2	: EVER ORIENT TECHNOLOGY CO., LTD. Lian He Industrial Park, Nan Yue, Long Gong, ShenZhen, Guang Dong, China
Manufacturer 3	: RIGHT TRACK ELECTRONIC TECHNOLOGY CO., LTD. No.2 West Wordshop, NO.1 District NanChang Industrial Zone, Gushu Village, XiXiang Town, BaoAn, ShenZhen, P.R. China.
Date of Test	: Feb. 21, 2009

2. LABORATORY INFORMATION

2.1. Laboratory Name

Most Technology Service Co., Ltd.

2.2. Location

No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China

2.3. Test facility

- 3m Anechoic Chamber : May 1, 2007 File on Federal Communication Commission
Registration Number:490827
- Certificated by VCCI, Japan Sep. 11, 2007
Registration No.:R-2622
- Shielding Room : Certificated by VCCI, Japan Sep.11, 2007
Registration No.:C-2865
- EMC Lab. : Accredited by TUV Rheinland Shenzhen
Audit Report: 17006916001
Sep. 18, 2007
- Accredited by Industry Canada
Registration Number: 7103A-1
May 31, 2007
- Accredited by TIMCO
Registration Number: Q1460
March 28, 2007

2.4. Measurement Uncertainty

No.	Item	Uncertainty
1.	Uncertainty for Conducted Disturbance Test	1.25dB
2.	Uncertainty for Radiated Disturbance Test	3.15dB

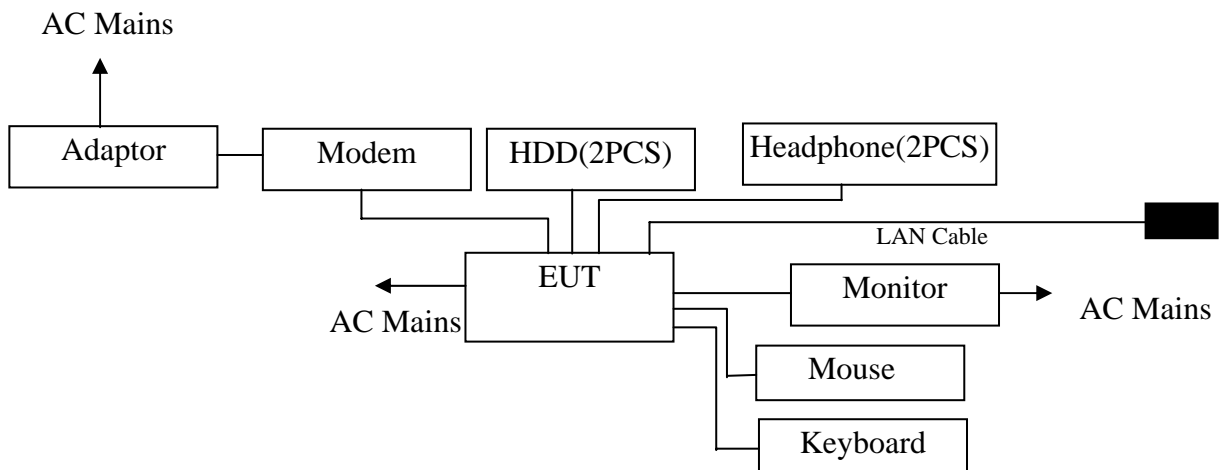
3. SUMMARY OF TEST RESULTS

EMISSION			
Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	FCC Part 15:2008	Class B	PASS
Radiated disturbance	FCC Part 15:2008	Class B	PASS
N/A is an abbreviation for Not Applicable.			

4. BLOCK DIAGRAM OF TEST SETUP

The equipments are installed test to meet ANSI C63.4:2003 requirement and operating in a manner which tends to maximize its emission characteristics in a normal application. EUT was tested in normal configuration (Please See following Block diagrams)

4.1. Block Diagram of connection between EUT and simulation-EMI



(EUT: Motherboard)

5. TEST INSTRUMENT USED

5.1. For Conducted Disturbance at Mains Terminals Emission Test

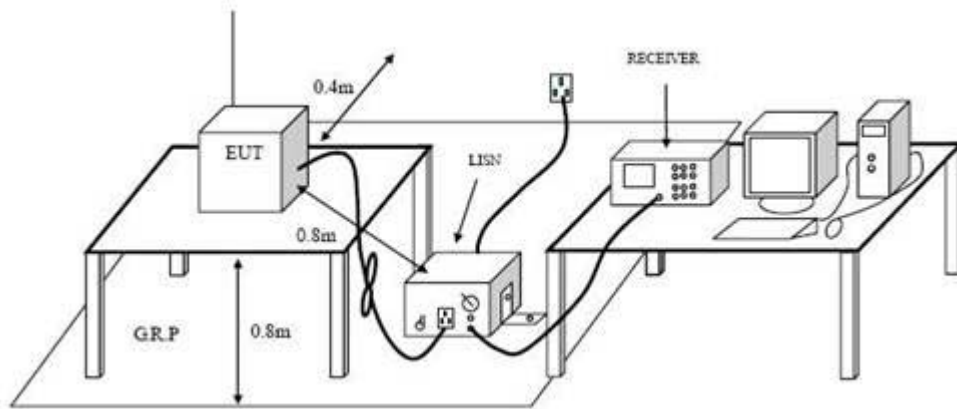
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI	100492	Mar. 15, 08	1 Year
2.	L.I.S.N.	Rohde & Schwarz	ENV216	100093	Mar. 15, 08	1 Year
3.	Coaxial Switch	Anritsu Corp	MP59B	6200283933	Mar. 15, 08	1 Year
4.	Terminator	Hubersuhner	50Ω	No.1	Mar. 15, 08	1 Year
5.	RF Cable	SchwarzBeck	N/A	No.1	Oct. 05, 08	1/2 Year

5.2. For Radiation Test (In Anechoic Chamber)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESPI	101202	Mar. 15, 08	1 Year
2.	Bilog Antenna	Sunol	JB3	A121206	Mar. 15, 08	1 Year
3.	Cable	Resenberger	N/A	NO.1	Oct. 05, 08	1 /2Year
4.	Cable	SchwarzBeck	N/A	NO.2	Oct. 05, 08	1 /2Year
5.	Cable	SchwarzBeck	N/A	NO.3	Oct. 05, 08	1 /2Year
6.	DC Power Filter	DuoJi	DL2×30B	N/A	N/A	N/A
7.	Single Phase Power Line Filter	DuoJi	FNF 202B30	N/A	N/A	N/A
8.	3 Phase Power Line Filter	DuoJi	FNF 402B30	N/A	N/A	N/A

6. CONDUCTED DISTURBANCE AT MAINS TERMINALS TEST

6.1. Configuration of Test System



6.2. Test Standard

FCC Part 15 B:2008

6.3. Power Line Conducted Disturbance at Mains Terminals Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μ V)	Average Level dB(μ V)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

6.4. Operating Condition of EUT

6.4.1. Environmental Conditions:

Ambient Temperature: 26 , Relative Humidity: 60%

6.4.2. Setup the EUT and the simulators as shown on Section 4.1.

6.4.3. Turn on the power of all equipments.

6.4.4. Let the EUT work in test mode (Running PC System) and test it.

6.5. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). This provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4:2003 on conducted Disturbance test.

The bandwidth of test receiver is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked. The test result are reported on Section 6.6.

6.6. Conducted Disturbance at Mains Terminals Test Results

6.6.1. Test Results: **PASS**

6.6.2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

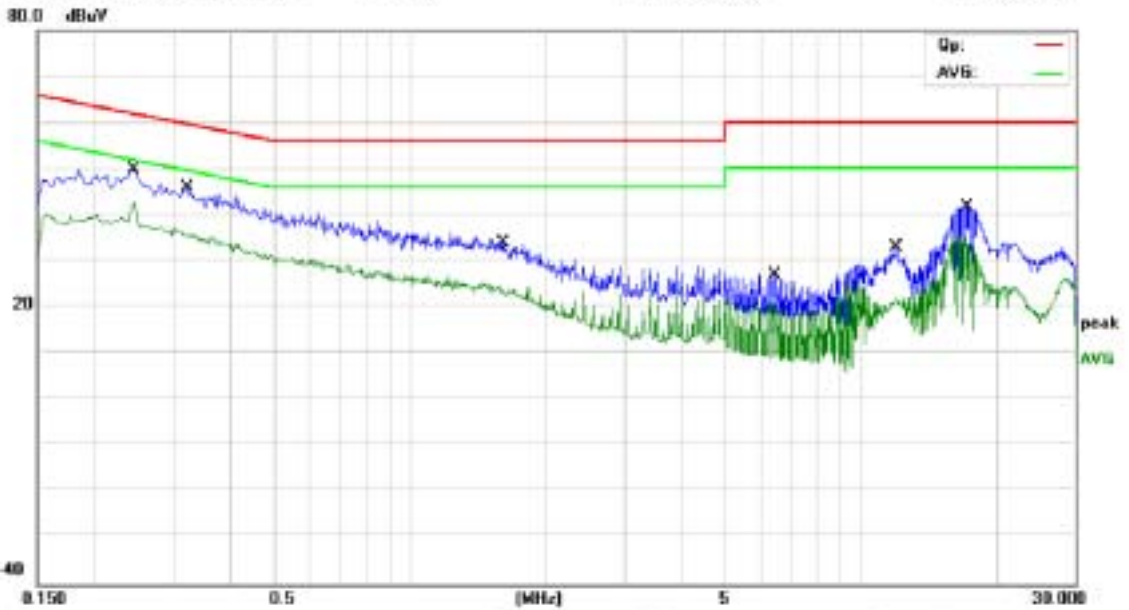
6.6.3. Emission Level= Correct Factor + Reading Level.

6.6.4. All scanning waveforms and test data on the following pages.

6.6.5. Test Engineer: Jack, Test Date: Feb. 21, 2009

Conducted Emission Measurement

File: JNF76R11-NAN01G6(L200)-LF Data: #3 Date: 2009/02/21 Time: 09:20:27



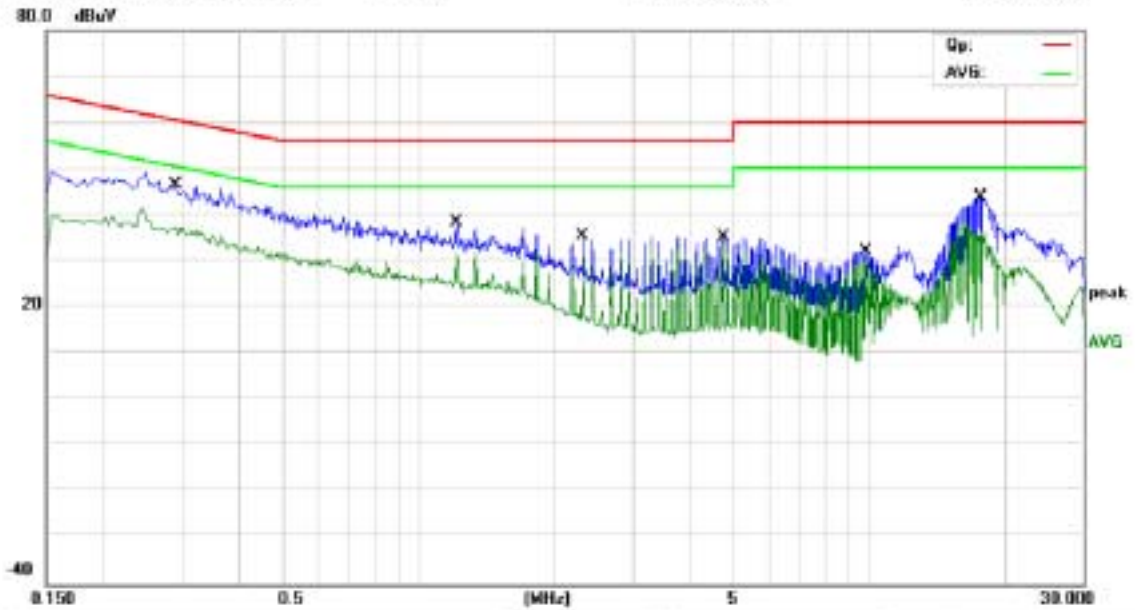
Site: site #1 Phase: **L1** Temperature: 28
 Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
 EUT: Motherboard
 M/N: JNF76R11-NAN01G6(L200)-LF
 Mode: Running PC System
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.2460	38.06	11.69	49.75	61.89	-12.14	QP	
2		0.3220	34.83	11.19	46.02	59.66	-13.64	QP	
3		1.6180	24.48	9.38	33.86	56.00	-22.14	QP	
4		6.4740	16.00	11.12	27.12	60.00	-32.88	QP	
5		12.0100	24.08	9.00	33.08	60.00	-26.92	QP	
6		17.2260	32.76	9.00	41.76	60.00	-18.24	QP	

*:Maximum data x:Over limit !:over margin

Conducted Emission Measurement

File: JNF76R11-NAN01G6(L200)-LF Data: #4 Date: 2009/02/21 Time: 09:26:08



Site: site #1 Phase: **N** Temperature: 28
 Limit: FCC Part15 B Class B QP Power: AC 120V/60Hz Humidity: 60 %
 EUT: Motherboard
 M/N: JNF76R11-NAN01G6(L200)-LF
 Mode: Running PC System
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.2900	35.23	11.40	46.63	60.52	-13.89	QP	
2		1.2220	28.61	9.78	38.39	56.00	-17.61	QP	
3		2.3220	26.27	9.32	35.59	56.00	-20.41	QP	
4		4.7700	23.44	11.77	35.21	56.00	-20.79	QP	
5		9.9060	22.94	9.06	32.00	60.00	-28.00	QP	
6		17.7380	34.86	9.00	43.86	60.00	-16.14	QP	

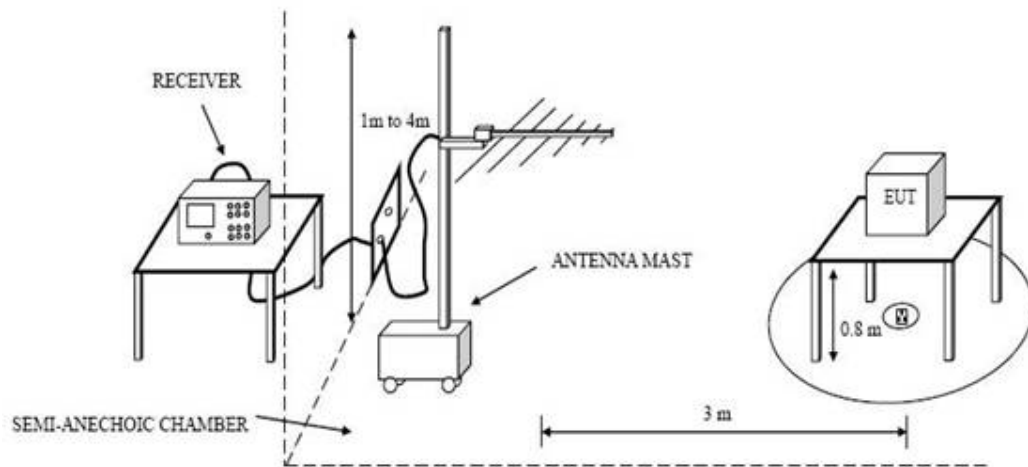
*:Maximum data x:Over limit !:over margin

6.7. Test Setup Photograph



7. RADIATED DISTURBANCE TEST

7.1. Configuration of Test System



7.2. Test Standard

FCC Part 15 B:2008

7.3. Radiated Disturbance Limit

All emanations from a Class B computing devices or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dB μ V/m)
30 ~ 88	3	40.0
88~216	3	43.5
216~960	3	46.0
960 ~ 1000	3	47.0

Note: 1. The lower limit shall apply at the transition frequencies.

2. Distance refers to the distance in meters between the test antenna and the closed point of any part of the EUT.

7.4. Operating Condition of EUT

7.4.1. Environmental Conditions:

Ambient Temperature: 26 , Relative Humidity: 60 %

7.4.2. Setup the EUT and the simulators as shown on Section 4.1.

7.4.3. Turn on the power of all equipments.

7.4.4. Let the EUT work in test mode (Running PC System) and test it.

7.5. Test Procedure

The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 10m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4:2003 on Radiated Disturbance test.

The bandwidth setting on the test receiver is 120 kHz.

The frequency range from 30MHz to 1000MHz is checked. The test result are reported on Section 7.6.

7.6. Radiated Disturbance Test Results

7.6.1. Test Results: **PASS**

7.6.2. Emission Level= Correct Factor + Reading Level.

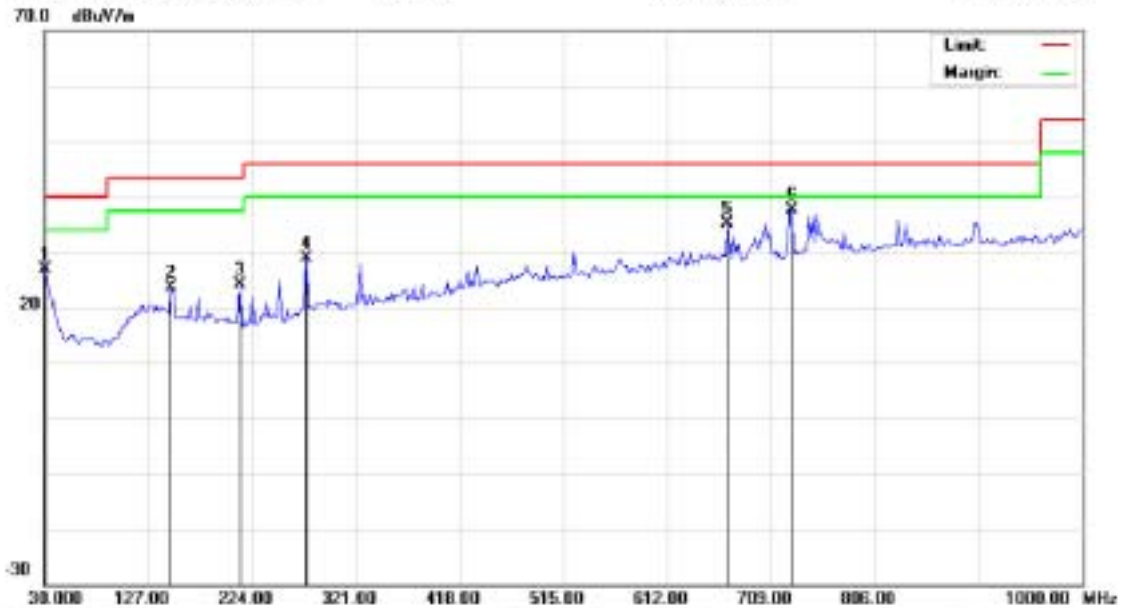
7.6.3. All reading are Quasi-Peak values.

7.6.4. All scanning waveforms and test data on the following pages.

7.6.5. Test Engineer: Jack, Test Date: Feb. 21, 2009

Radiated Emission Measurement

File: JNF76R11-NAN01G6(L200)-LF Data #3 Date: 2009/02/21 Time: 10:17:05



Site: site MOST 3M

Limit: FCC Part15 B 3M Radiation

EUT: Motherboard

M/N: JNF76R11-NAN01G6(L200)-LF

Mode: Running PC System

Note:

Polarization: **Horizontal**

Temperature: 28

Power: AC 120V/60Hz

Humidity: 60 %

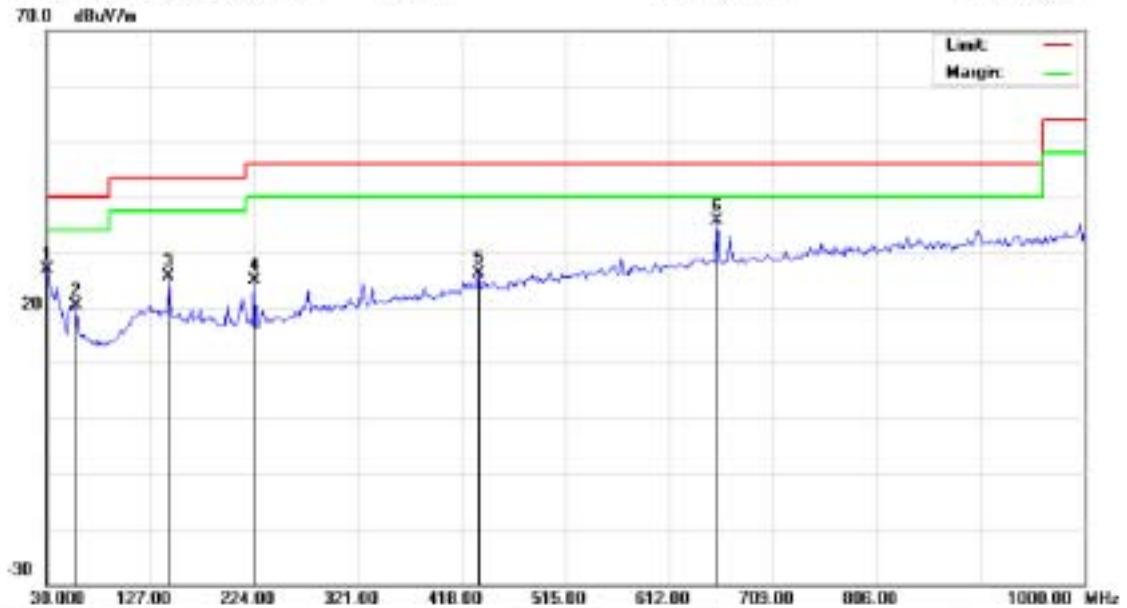
Distance:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		30.0000	5.14	21.80	26.94	40.00	-13.06	QP			
2		148.3400	9.08	14.63	23.71	43.50	-19.79	QP			
3		212.3600	11.24	13.00	24.24	43.50	-19.26	QP			
4		274.4400	12.61	16.17	28.78	46.00	-17.22	QP			
5		668.2600	10.62	24.43	35.05	46.00	-10.95	QP			
6	*	728.4000	12.83	24.85	37.68	46.00	-8.32	QP			

*:Maximum data x:Over limit !:over margin

Radiated Emission Measurement

File: JNF76R11-NAN01G6(L200)-LF Data #4 Date: 2009/02/21 Time: 10:24:10



Site: site MOST 3M

Limit: FCC Part15 B 3M Radiation

EUT: Motherboard

M/N: JNF76R11-NAN01G6(L200)-LF

Mode: Running PC System

Note:

Polarization: **Vertical**

Temperature: 28

Power: AC 120V/60Hz

Humidity: 60 %

Distance:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		30.0000	5.10	21.80	26.90	40.00	-13.10	QP			
2		57.1600	11.69	8.74	20.43	40.00	-19.57	QP			
3		144.4600	10.58	14.93	25.51	43.50	-17.99	QP			
4		224.0000	11.49	13.38	24.87	46.00	-21.13	QP			
5		433.5200	5.70	20.34	26.04	46.00	-19.96	QP			
6	*	656.6200	11.55	24.20	35.75	46.00	-10.25	QP			

*:Maximum data x:Over limit !:over margin

7.7. Test Setup Photograph



APPENDIX I

(Photos of the EUT)

Figure 1
General Appearance of the EUT



Figure 2
General Appearance of the EUT



Figure 3
Components Side of the PCB



Figure 4
Components Side of the PCB



Figure 5
Components Side of the PCB



Figure 6
Components Side of the PCB

