

Application for FCC Certificate
On Behalf of
LG Electronics U.S.A., Inc.

Network Monitor

Model No.: N1941WT

Serial No.: 902NDJX8Y548

FCC ID : BEJN1941WT

Prepared For : LG Electronics U.S.A., Inc.
1000 Sylvan Avenue, Englewood Cliffs,
NJ 07632, United States

Prepared By : Audix Technology (Shanghai) Co., Ltd.
3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

Tel: +86-21-64955500
Fax: +86-21-64955491

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Date of Test : Mar 23, 2009
Date of Report : Mar 30, 2009

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TEST REPORT FOR FCC CERTIFICATE

Applicant : LG Electronics U.S.A., Inc.
Manufacturer : LG Electronics Nanjing Display Co., Ltd.
EUT Description : Network Monitor
(A) Model No. : N1941WT
(B) Serial No. : 902NDJX8Y548
(C) Power Supply : 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2008
AND ANSI C63.4-2003*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B (Class B) and ICES-003, Issue 4 February 2004 (CISPR 22:2002) limits both radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT (M/N: N1941WT; S/N: 902NDJX8Y548) which was tested in 3m anechoic chamber Mar 23, 2009 is technically compliance with the FCC official limits also.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

This report contains data that are not covered by the NVLAP accreditation.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Mar 23, 2009 Date of Report : Mar 30, 2009

Producer : Alan He
ALAN HE / Assistant

Review : Sammy Chen
SAMMY CHEN / Assistant Manager

AUDIX[®] For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

Signatory : Byron Kwo
Authorized Signature EMC BYRON KWO/ Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description of Test Item	Standard	Limits	Results
EMISSION			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2008 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2008 AND ANSI C63.4-2003	15.109(a) Class B	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	Network Monitor
Type of EUT	:	☒ Production ☐ Pre-product ☐ Pro-type
Model No.	:	N1941WT
Serial No.	:	902NDJX8Y548
Real Power	:	20.00W
Applicant	:	LG Electronics U.S.A., Inc. 1000 Sylvan Avenue, Englewood Cliffs, NJ 07632, United States
Manufacturer	:	LG Electronics Nanjing Display Co., Ltd. No.346, Yao Xin Road, Economic & Technical Development Zone, Nanjing, China
LCD Panel	:	Manufacturer : LG Display M/N : LM185WH1 (TL) (C1)
Max Resolution	:	X-PORT 1440*900@60Hz
D-Sub Cable #1	:	Shielded, Detachable, 1.85m, with two cores on cable
D-Sub Cable #2	:	Shielded, Detachable, 1.85m, with two cores in connector
STP Cable	:	Shielded, Detachable, 5.00m, with two cores on cable
Power Cord	:	Unshielded, Detachable, 1.80m
Note	:	After evaluation, the D-Sub cable#1 was used in the test for it will cause the maximum emission.

Remark:

The EUT is a Network Monitor which input/output ports as follows:

- | | |
|----------------------------|---|
| (1) One D-Sub Port | : Connected with PC |
| (2) One X-PORT | : Connected with PC (X550 Port on the PCI Card) |
| (3) One PS/2 Keyboard Port | : Connected with Keyboard |
| (4) One PS/2 Mouse Port | : Connected with Mouse |

- (5) One Earphone Port : Connected with Earphone
- (6) One AC In Port : Connected with Power

2.2 Peripherals

2.2.1 PC

Manufacturer : HP
Model Number : dx6120MT
Serial Number : CNG53004J2
Power Cord : Unshielded, Detachable, 1.8m
Certificate : FCC DoC; CE/EMC; VCCI; C-Tick; UL
BSMI (R33001) 3C (A000111)
MIC (E-A011-04-2659(B))

2.2.2 Printer

Manufacturer : HP
Model Number : C3990A
Serial Number : JPZX020487
Data Cable : Shielded, Detachable, 1.5m
Certificate : GS, CE/EMC, C-Tick, FCC DoC

2.2.3 Keyboard #1

Manufacturer : Microsoft
Model Number : RT2300
Serial Number : 7668200662248
Data Cable : Shielded, Undetachable, 1.8m
Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick,
BSMI

2.2.4 Keyboard #2

Manufacturer : Logitech
Model Number : Y-SAM64
Serial Number : SY807UK
Data Cable : Shielded, Undetachable, 1.8m
Certificate : CE/EMC, FCC DoC, C-Tick, BSMI

2.2.5 Mouse #1

Manufacturer : Microsoft
Model Number : RT2300
Serial Number : 6965712071551
Data Cable : Shielded, Undetachable, 1.85m.
Certificate : FCC DoC, VCCI, CE/EMC, MIC, GS

2.2.6 Mouse #2

Manufacturer : HP
Model Number : SBF96
Serial Number : 417441-001
Data Cable : Shielded, Undetachable, 1.85m.
Certificate : FCC DoC, VCCI, CE/EMC, C-Tick, BSMI

2.2.7 Modem

Manufacturer : TP-LINK
Model Number : TM-EC5658V
Serial Number : 07123301053
Data Cable : Shielded, Detachable, 1.8m
Certificate : FCC DoC, CE/EMC, CCC

2.2.8 Earphone

Manufacturer : SIOMY
Model Number : SM-430
Serial Number : N/A
Data Cable : Shielded, Detachable, 2.0m

2.2.9 X550 PCI Card (installed in the PC)

Manufacturer : NComputing Inc.
Model Number : X550 PCI Card (500-0035)
Serial Number : X550K8AB2 10009133
Certificate : FCC DoC, CE/EMC

2.3 Description of Test Facility

Site Description (Semi-Anechoic Chamber) : Sept. 17, 1998 file on
July 26, 2006 Renewed
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046, USA

Name of Firm : Audix Technology (Shanghai) Co., Ltd.

Site Location : 3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

NVLAP Lab Code : 200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty: U = 1.26 dB
Radiated Emission Expanded Uncertainty : U = 3.02 dB

3 CONDUCTED EMISSION TEST

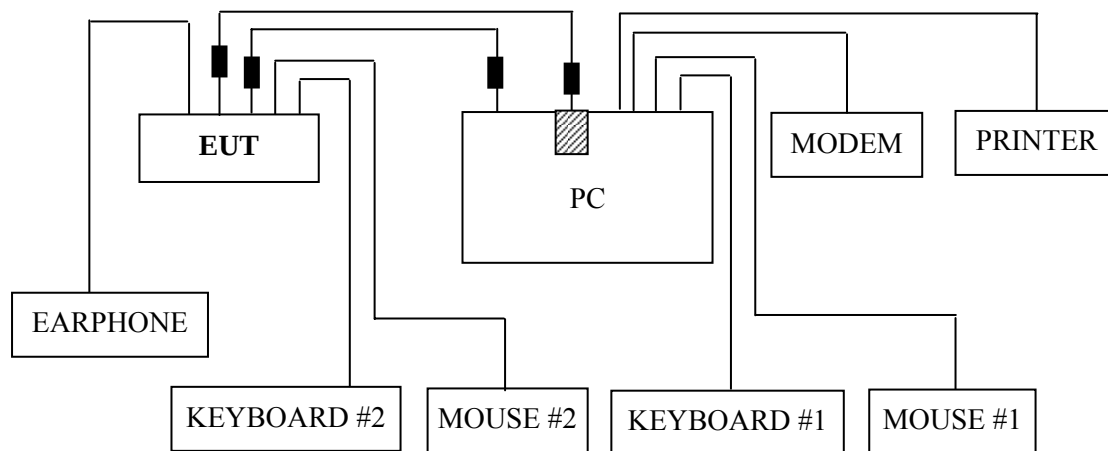
3.1.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

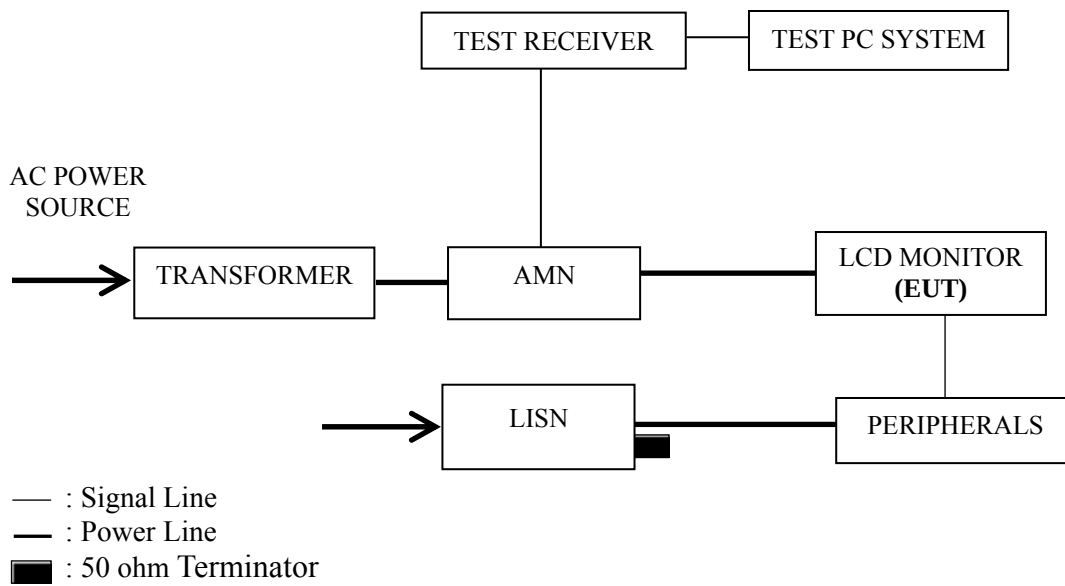
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Nov 21, 2008	Nov 21, 2009
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Apr 02, 2008	Apr 02, 2009
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 02, 2008	Apr 02, 2009
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 19, 2009	Sep 19, 2009
5.	50 Ω Terminator	Anritsu	BNC	001	Apr 02, 2008	Apr 02, 2009
6.	Software	Audix	E3	SET00200 9804M592	--	--

3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



3.2.2 Conducted Disturbance Test Setup



3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)]

Frequency Range (MHz)	Limits dB (μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50
NOTE 1 – The lower limit shall apply at the transition frequencies. NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz		

3.4 Test Configuration

The EUT (listed in Sec.2.1) and the peripherals (listed in Sec 2.2) were installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner that tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT and peripherals as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipments and the EUT.

3.5.3 Set the contrast & brightness of EUT to maximum.

3.5.4 PC system ran the self-test program “EMC Test” by windows XP and sent “H” characters to EUT through graphic card, the EUT’s screen displayed and filled with “H” pattern by its resolution (Via D-Sub & X-PORt Input).

3.5.5 In X- PORT mode, PC system played music and sent audio signal to EUT through the X- PORT of EUT.

3.5.6 Repeat above procedure from 3.5.3 to 3.5.5 for difference test mode.

3.5.7 The other peripherals devices were driven and operated during the test.

3.5.8 The test modes are as follows:

Test Mode
D-Sub 640*480@60Hz
D-Sub 1024*768@60Hz
D-Sub 1360*768@60Hz
X-PORt 800*600@72Hz
X-PORt 1024*768@60Hz
X-PORt 1440*900@60Hz

3.6 Test Procedures

The EUT and peripherals were connected to the power mains through an Artificial Mains Network (AMN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line (Line & Neutral) were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to ANSI C63.4:2003 during conducted emission test.

The bandwidth of R&S Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7.

3.7 Test Results

< PASS >

The frequency and amplitude of the highest conducted emission relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

Test Mode	Data Page
D-Sub 640*480@60Hz	P12
D-Sub 1024*768@60Hz	P13
D-Sub 1360*768@60Hz	P14
X-PORT 800*600@72Hz	P15
X-PORT 1024*768@60Hz	P16
X-PORT 1440*900@60Hz	P17

NOTE 1 – Factor = Cable Loss + AMN Factor.

NOTE 2 – Emission Level = Meter Reading + Factor.

NOTE 3 – “QP” means “Quasi-Peak” values, “AV” means “Average” values.

NOTE 4 – The worst case is for D-Sub 640*480@60Hz test mode. The worst emission is detected at 0.197 MHz (Quasi-Peak value) with corrected signal level of 50.43 dB (μV) (limit is 63.76 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : Network Monitor Temperature : 18°C

Model No. : N1941WT Humidity : 48%RH

Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : D-Sub 640*480@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.197	49.56	0.20	49.76	63.76	14.00	QP
	0.262	40.06	0.21	40.27	61.38	21.11	
	1.172	34.80	0.27	35.07	56.00	20.93	
	1.374	35.43	0.28	35.71	56.00	20.29	
	9.451	34.75	0.59	35.34	60.00	24.66	
	25.321	44.04	0.91	44.95	60.00	15.05	
	0.197	39.52	0.20	39.72	53.76	14.04	AV
	0.262	30.53	0.21	30.74	51.38	20.64	
	1.172	24.79	0.27	25.06	46.00	20.94	
	1.374	25.86	0.28	26.14	46.00	19.86	
	9.451	24.17	0.59	24.76	50.00	25.24	
	25.321	34.56	0.91	35.47	50.00	14.53	
Neutral	0.197	50.23	0.20	50.43	63.76	13.33	QP
	0.264	41.37	0.22	41.59	61.29	19.70	
	1.172	35.28	0.24	35.52	56.00	20.48	
	1.374	32.56	0.25	32.81	56.00	23.19	
	9.451	35.10	0.59	35.69	60.00	24.31	
	28.302	43.84	0.72	44.56	60.00	15.44	
	0.197	40.13	0.20	40.33	53.76	13.43	AV
	0.264	31.26	0.22	31.48	51.29	19.81	
	1.172	25.49	0.24	25.73	46.00	20.27	
	1.374	22.26	0.25	22.51	46.00	23.49	
	9.451	25.81	0.59	26.40	50.00	23.60	
	28.302	33.22	0.72	33.94	50.00	16.06	

TEST ENGINEER: WENCY YANG

EUT : Network Monitor Temperature : 18°C

Model No. : N1941WT Humidity : 48%RH

Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : D-Sub 1024*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.197	49.82	0.20	50.02	63.76	13.74	QP
	0.262	40.15	0.21	40.36	61.38	21.02	
	1.172	37.34	0.27	37.61	56.00	18.39	
	1.374	32.16	0.28	32.44	56.00	23.56	
	9.204	35.13	0.60	35.73	60.00	24.27	
	25.055	42.35	0.90	43.25	60.00	16.75	
	0.197	39.21	0.20	39.41	53.76	14.35	AV
	0.262	30.26	0.21	30.47	51.38	20.91	
	1.172	27.34	0.27	27.61	46.00	18.39	
	1.374	22.46	0.28	22.74	46.00	23.26	
	9.204	25.84	0.60	26.44	50.00	23.56	
	25.055	32.36	0.90	33.26	50.00	16.74	
Neutral	0.197	49.62	0.20	49.82	63.76	13.94	QP
	0.262	40.74	0.21	40.95	61.38	20.43	
	1.172	35.92	0.24	36.16	56.00	19.84	
	1.762	29.80	0.25	30.05	56.00	25.95	
	9.011	34.18	0.58	34.76	60.00	25.24	
	27.708	41.87	0.72	42.59	60.00	17.41	
	0.197	39.68	0.20	39.88	53.76	13.88	AV
	0.262	30.26	0.21	30.47	51.38	20.91	
	1.172	25.46	0.24	25.70	46.00	20.30	
	1.762	19.83	0.25	20.08	46.00	25.92	
	9.011	24.66	0.58	25.24	50.00	24.76	
	27.708	31.46	0.72	32.18	50.00	17.82	

TEST ENGINEER: WENCY YANG

EUT : Network Monitor Temperature : 18°C

Model No. : N1941WT Humidity : 48%RH

Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : D-Sub 1360*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.197	49.74	0.20	49.94	63.76	13.82	QP
	0.262	40.65	0.21	40.86	61.38	20.52	
	1.172	37.50	0.27	37.77	56.00	18.23	
	1.374	31.43	0.28	31.71	56.00	24.29	
	9.204	33.50	0.60	34.10	60.00	25.90	
	25.055	42.96	0.90	43.86	60.00	16.14	
	0.197	39.35	0.20	39.55	53.76	14.21	AV
	0.262	30.26	0.21	30.47	51.38	20.91	
	1.172	27.46	0.27	27.73	46.00	18.27	
	1.374	21.26	0.28	21.54	46.00	24.46	
	9.204	23.49	0.60	24.09	50.00	25.91	
	25.055	32.64	0.90	33.54	50.00	16.46	
Neutral	0.197	49.36	0.20	49.56	63.76	14.20	QP
	0.262	40.60	0.21	40.81	61.38	20.57	
	1.172	36.29	0.24	36.53	56.00	19.47	
	1.374	30.28	0.25	30.53	56.00	25.47	
	9.204	33.91	0.59	34.50	60.00	25.50	
	25.864	41.89	0.71	42.60	60.00	17.40	
	0.197	38.99	0.20	39.19	53.76	14.57	AV
	0.262	31.03	0.21	31.24	51.38	20.14	
	1.172	26.48	0.24	26.72	46.00	19.28	
	1.374	20.35	0.25	20.60	46.00	25.40	
	9.204	23.35	0.59	23.94	50.00	26.06	
	25.864	31.46	0.71	32.17	50.00	17.83	

TEST ENGINEER: WENCY YANG

EUT : Network Monitor Temperature : 18°C

Model No. : N1941WT Humidity : 48%RH

Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : X-PORT 800*600@72Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.197	49.18	0.20	49.38	63.76	14.38	QP
	0.262	40.41	0.21	40.62	61.38	20.76	
	1.172	29.56	0.27	29.83	56.00	26.17	
	1.568	29.84	0.29	30.13	56.00	25.87	
	9.204	36.38	0.60	36.98	60.00	23.02	
	24.790	43.48	0.89	44.37	60.00	15.63	
	0.197	39.46	0.20	39.66	53.76	14.10	AV
	0.262	30.06	0.21	30.27	51.38	21.11	
	1.172	19.46	0.27	19.73	46.00	26.27	
	1.568	19.75	0.29	20.04	46.00	25.96	
	9.204	26.48	0.60	27.08	50.00	22.92	
	24.790	33.26	0.89	34.15	50.00	15.85	
Neutral	0.197	49.83	0.20	50.03	63.76	13.73	QP
	0.262	40.38	0.21	40.59	61.38	20.79	
	0.914	30.72	0.23	30.95	56.00	25.05	
	1.628	30.15	0.25	30.40	56.00	25.60	
	9.451	35.55	0.59	36.14	60.00	23.86	
	25.864	43.94	0.71	44.65	60.00	15.35	
	0.197	39.62	0.20	39.82	53.76	13.94	AV
	0.262	30.31	0.21	30.52	51.38	20.86	
	0.914	20.15	0.23	20.38	46.00	25.62	
	1.628	20.46	0.25	20.71	46.00	25.29	
	9.451	25.49	0.59	26.08	50.00	23.92	
	25.864	33.64	0.71	34.35	50.00	15.65	

TEST ENGINEER: WENCY YANG

EUT : Network Monitor Temperature : 18°C

Model No. : N1941WT Humidity : 48%RH

Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : X-PORT 1024*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.197	49.13	0.20	49.33	63.76	14.43	QP
	0.262	40.07	0.21	40.28	61.38	21.10	
	1.172	28.88	0.27	29.15	56.00	26.85	
	1.698	29.37	0.28	29.65	56.00	26.35	
	9.204	35.76	0.60	36.36	60.00	23.64	
	24.529	43.83	0.88	44.71	60.00	15.29	
	0.197	39.43	0.20	39.63	53.76	14.13	AV
	0.262	30.15	0.21	30.36	51.38	21.02	
	1.172	18.75	0.27	19.02	46.00	26.98	
	1.698	19.46	0.28	19.74	46.00	26.26	
	9.204	25.64	0.60	26.24	50.00	23.76	
	24.529	33.64	0.88	34.52	50.00	15.48	
Neutral	0.197	49.82	0.20	50.02	63.76	13.74	QP
	0.262	40.64	0.21	40.85	61.38	20.53	
	0.984	30.43	0.23	30.66	56.00	25.34	
	1.762	29.38	0.25	29.63	56.00	26.37	
	9.204	34.89	0.59	35.48	60.00	24.52	
	25.055	43.41	0.70	44.11	60.00	15.89	
	0.197	39.49	0.20	39.69	53.76	14.07	AV
	0.262	30.32	0.21	30.53	51.38	20.85	
	0.984	20.15	0.23	20.38	46.00	25.62	
	1.762	19.75	0.25	20.00	46.00	26.00	
	9.204	25.03	0.59	25.62	50.00	24.38	
	25.055	33.46	0.70	34.16	50.00	15.84	

TEST ENGINEER: WENCY YANG

EUT : Network Monitor Temperature : 18°C

Model No. : N1941WT Humidity : 48%RH

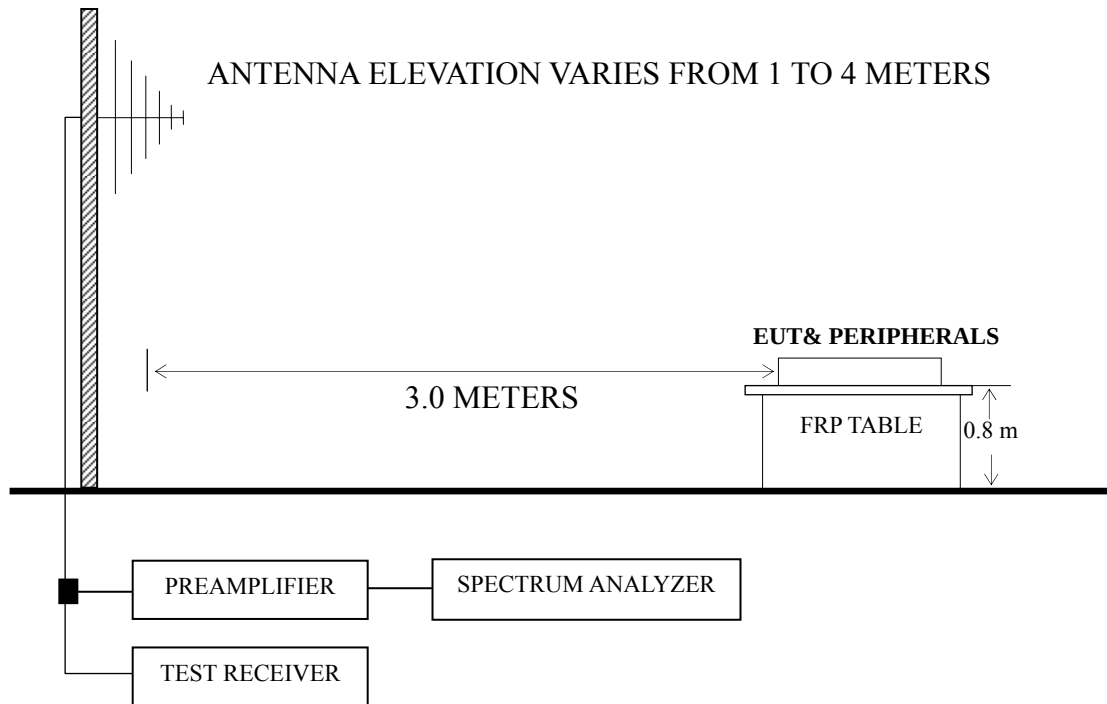
Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : X-PORT 1440*900@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.197	48.11	0.20	48.31	63.76	15.45	QP
	0.262	40.06	0.21	40.27	61.38	21.11	
	1.172	29.46	0.27	29.73	56.00	26.27	
	1.762	29.87	0.28	30.15	56.00	25.85	
	9.204	36.20	0.60	36.80	60.00	23.20	
	25.055	44.05	0.90	44.95	60.00	15.05	
	0.197	38.49	0.20	38.69	53.76	15.07	AV
	0.262	30.37	0.21	30.58	51.38	20.80	
	1.172	19.57	0.27	19.84	46.00	26.16	
	1.762	19.79	0.28	20.07	46.00	25.93	
	9.204	26.19	0.60	26.79	50.00	23.21	
	25.055	34.36	0.90	35.26	50.00	14.74	
Neutral	0.197	49.64	0.20	49.84	63.76	13.92	QP
	0.262	40.11	0.21	40.32	61.38	21.06	
	1.172	29.46	0.24	29.70	56.00	26.30	
	1.568	30.14	0.26	30.40	56.00	25.60	
	9.451	36.26	0.59	36.85	60.00	23.15	
	25.321	43.87	0.70	44.57	60.00	15.43	
	0.197	39.63	0.20	39.83	53.76	13.93	AV
	0.262	30.23	0.21	30.44	51.38	20.94	
	1.172	19.68	0.24	19.92	46.00	26.08	
	1.568	20.64	0.26	20.90	46.00	25.10	
	9.451	26.64	0.59	27.23	50.00	22.77	
	25.321	33.50	0.70	34.20	50.00	15.80	

TEST ENGINEER: WENCY YANG

4.2.2 Radiated emission test setup



■ : 50 ohm Coaxial Switch

4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)]

Frequency (MHz)	Distance (m)	Field strength limits	
		($\mu\text{V/m}$)	dB ($\mu\text{V/m}$)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB ($\mu\text{V/m}$) = 20 log Emission Level ($\mu\text{V/m}$)

NOTE 2 - The tighter limit applies at the band edges.

NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

NOTE 4 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz and Average value detector above 1GHz.

NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT

4.4 Test Configuration

The configuration of the EUT and peripherals are same as those used in conducted emission test.

Please refer to Sec.3.4.

4.5 Operating Condition of EUT

Same as conducted emission test which is listed in Sec.3.5, except for the test setup replaced by Sec.4.2.

4.6 Test Procedures

The EUT and peripherals were placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) was used as receiving antenna. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4:2003 requirements during radiated emission test.

The I.F. bandwidth of Test Receiver R&S ESVS10 was set at 120 kHz below 1GHz and The Spectrum Agilent E7405A was set at 1MHz above 1GHz.

The frequency range from 30 MHz to 1000MHz was checked for all test modes.

The frequency range from 1 GHz to 2 GHz was checked for X-PORT 1440*900@60Hz modes.

The test modes were done on radiated disturbance test and all the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Test Mode	Data Page
D-Sub 640*480@60Hz	P22
D-Sub 1024*768@60Hz	P23
D-Sub 1360*768@60Hz	P24
X-PORT 800*600@72Hz	P25
X-PORT 1024*768@60Hz	P26
X-PORT 1440*900@60Hz	P27

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading. (< 1GHz)

NOTE 2 – Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading.(> 1GHz)

NOTE 3 – The emission levels that are 20dB below the official limit are not reported.

NOTE 4 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 5 – All reading are Quasi-Peak values below or equal to 1GHz and Peak values above 1GHz. For measurements above 1 GHz, the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

NOTE 6 – The worst case is for X-PORT 1440*900@60Hz test mode. The worst emission at horizontal polarization was detected at 70.740 MHz with corrected signal level of 33.74 dB (μV/m) (limit is 40.00dB (μV/m)), when the antenna was 1.0 m height and the turntable was at 70°. The worst emission at vertical polarization was detected at 522.500 MHz with corrected signal level of 43.61 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 225°.

EUT : Network Monitor Temperature : 22°C

Model No. : N1941WT Humidity : 60%RH

Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : D-Sub 640*480@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	30.970	8.03	19.03	0.57	27.63	40.00	12.37
	141.550	18.88	12.01	0.91	31.80	43.50	11.70
	224.000	20.25	11.85	1.17	33.27	46.00	12.73
	297.720	22.28	13.86	1.54	37.68	46.00	8.32
	520.820	16.26	18.18	2.43	36.87	46.00	9.13
	586.780	11.39	19.06	2.56	33.01	46.00	12.99
Vertical	33.880	14.93	17.44	0.61	32.98	40.00	7.02
	85.290	21.45	8.66	0.86	30.97	40.00	9.03
	189.080	20.88	10.24	1.05	32.17	43.50	11.33
	297.720	18.29	13.86	1.54	33.69	46.00	12.31
	521.790	22.77	18.18	2.43	43.38	46.00	2.62
	586.780	16.50	19.06	2.56	38.12	46.00	7.88

TEST ENGINEER: TOM SI

EUT : Network Monitor Temperature : 22°C

Model No. : N1941WT Humidity : 60%RH

Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : D-Sub 1024*768@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	150.280	18.85	11.25	0.93	31.03	43.50	12.47
	235.640	19.29	12.36	1.22	32.87	46.00	13.13
	295.780	18.89	13.84	1.52	34.25	46.00	11.75
	376.290	16.12	15.99	1.93	34.04	46.00	11.96
	518.880	16.94	18.15	2.42	37.51	46.00	8.49
	902.030	7.04	21.70	3.52	32.26	46.00	13.74
Vertical	38.730	19.84	14.62	0.67	35.13	40.00	4.87
	295.780	21.65	13.84	1.52	37.01	46.00	8.99
	376.290	18.81	15.99	1.93	36.73	46.00	9.27
	450.980	19.12	17.23	2.22	38.57	46.00	7.43
	518.670	22.10	18.15	2.42	42.67	46.00	3.33
	591.630	21.10	19.11	2.58	42.79	46.00	3.21

TEST ENGINEER: TOM SI

EUT : Network Monitor Temperature : 22°C

Model No. : N1941WT Humidity : 60%RH

Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : D-Sub 1360*768@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	30.970	8.58	19.03	0.57	28.18	40.00	11.82
	85.290	18.57	8.66	0.86	28.09	40.00	11.91
	141.550	20.83	12.01	0.91	33.75	43.50	9.75
	224.000	20.36	11.85	1.17	33.38	46.00	12.62
	294.810	22.48	13.82	1.52	37.82	46.00	8.18
	514.030	16.57	18.06	2.42	37.05	46.00	8.95
Vertical	32.910	16.93	17.95	0.60	35.48	40.00	4.52
	132.820	16.87	12.40	0.90	30.17	43.50	13.33
	188.110	20.53	10.20	1.04	31.77	43.50	11.73
	293.840	20.16	13.79	1.50	35.45	46.00	10.55
	521.660	22.20	18.18	2.43	42.81	46.00	3.19
	586.780	16.53	19.06	2.56	38.15	46.00	7.85

TEST ENGINEER: TOM SI

EUT : Network Monitor Temperature : 22°C

Model No. : N1941WT Humidity : 60%RH

Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : X-PORT 800*600@72Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	82.380	21.78	8.19	0.86	30.83	40.00	9.17
	200.720	17.60	10.74	1.08	29.42	43.50	14.08
	274.440	17.33	13.43	1.40	32.16	46.00	13.84
	335.550	17.55	14.90	1.73	34.18	46.00	11.82
	384.050	14.70	16.17	1.98	32.85	46.00	13.15
	639.160	15.05	19.39	2.79	37.23	46.00	8.77
Vertical	63.950	22.82	6.56	0.84	30.22	40.00	9.78
	198.780	17.79	10.64	1.08	29.51	43.50	13.99
	364.650	15.80	15.73	1.89	33.42	46.00	12.58
	455.830	14.86	17.32	2.24	34.42	46.00	11.58
	547.980	16.72	18.55	2.49	37.76	46.00	8.24
	639.160	19.13	19.39	2.79	41.31	46.00	4.69

TEST ENGINEER: TOM SI

EUT : Network Monitor Temperature : 22°C

Model No. : N1941WT Humidity : 60%RH

Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : X-PORT 1024*768@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	70.740	26.05	6.58	0.87	33.50	40.00	6.50
	203.630	26.19	10.85	1.10	38.14	43.50	5.36
	297.720	19.10	13.86	1.54	34.50	46.00	11.50
	522.760	14.93	18.21	2.43	35.57	46.00	10.43
	588.720	11.75	19.09	2.56	33.40	46.00	12.60
	757.500	10.39	20.30	3.22	33.91	46.00	12.09
Vertical	32.910	17.97	17.95	0.60	36.52	40.00	3.48
	48.430	22.74	9.62	0.76	33.12	40.00	6.88
	165.800	20.45	10.33	0.97	31.75	43.50	11.75
	293.840	17.69	13.79	1.50	32.98	46.00	13.02
	514.980	22.10	18.09	2.42	42.61	46.00	3.39
	587.750	21.06	19.06	2.56	42.68	46.00	3.32

TEST ENGINEER: TOM SI

EUT : Network Monitor Temperature : 22°C

Model No. : N1941WT Humidity : 60%RH

Serial No. : 902NDJX8Y548 Date of Test : Mar 23, 2009

Test Mode : X-PORT 1440*900@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	70.740	26.29	6.58	0.87	--	33.74	40.00	6.26	QP
	200.720	18.90	10.74	1.08	--	30.72	43.50	12.78	
	224.000	18.77	11.85	1.17	--	31.79	46.00	14.21	
	293.840	18.97	13.79	1.50	--	34.26	46.00	11.74	
	521.790	15.97	18.18	2.43	--	36.58	46.00	9.42	
	830.250	7.70	21.01	3.38	--	32.09	46.00	13.91	
	1058.000	61.42	22.79	3.96	37.54	50.63	74.00	23.37	PK
	1280.000	54.48	24.36	4.33	36.99	46.18	74.00	27.82	
	1544.000	57.10	26.07	4.81	36.44	51.54	74.00	22.46	
	1704.000	55.58	26.67	5.11	36.16	51.20	74.00	22.80	
	1835.000	52.06	27.08	5.22	35.94	48.42	74.00	25.58	
	1938.000	47.14	27.76	5.27	35.79	44.38	74.00	29.62	
Vertical	32.910	17.15	17.95	0.60	--	35.70	40.00	4.30	QP
	82.380	20.58	8.19	0.86	--	29.63	40.00	10.37	
	212.360	19.07	11.26	1.13	--	31.46	43.50	12.04	
	298.690	18.75	13.88	1.54	--	34.17	46.00	11.83	
	447.100	16.41	17.17	2.22	--	35.80	46.00	10.20	
	522.500	23.00	18.18	2.43	--	43.61	46.00	2.39	
	1023.000	50.23	22.54	3.88	37.63	39.02	74.00	34.98	PK
	1260.000	57.26	24.19	4.30	37.03	48.72	74.00	25.28	
	1435.000	51.20	25.41	4.63	36.65	44.59	74.00	29.41	
	1565.000	54.04	26.22	4.85	36.40	48.71	74.00	25.29	
	1804.000	51.89	26.90	5.20	35.99	48.00	74.00	26.00	
	1968.000	48.67	27.91	5.28	35.74	46.12	74.00	27.88	

TEST ENGINEER: TOM SI

5 DEVIATION TO TEST SPECIFICATIONS

None.

6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Specifications (mm)	Manufacturer	Location
Sponge	3940TKK094W	90*10*1	EXPAN	See Internal Photos 15
Sponge	3940TKK094D	70*9*1	EXPAN	See Internal Photos 15