



ELECTROMAGNETIC RESEARCH INSTITUTE



EMI TEST REPORT

Emission of electromagnetic disturbance

Test Report No. : ERI-FCC03-0055
Equipment : LCD Monitor/HDTV
Name of basic model: DX170WHD-CP01
Family model : N/A
Manufacturer : Digix Technology Co., Ltd.
Applicant : Digix Technology Co., Ltd.
Tested date : 2003. 8. 22
Issued date : 2003. 8. 26
Test results : PASS
Test Standards : FCC Part 15 Subpart B (Class B)
/digital devices & peripherals (PC mode)
/ Verification (TV mode)

Test Procedure and Items:

- AC Power line Conducted emissions measurement : ANSI C63.4-1992
- Radiated emissions measurement : ANSI C63.4-1992

Tested by: GWEON, HUR

Approved by: UK-CHO, RIM

The results in this report apply only to the sample tested.
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CONTENTS

1. CLIENT INFORMATION
2. LABORATORY INFORMATION
3. EQUIPMENT UNDER TEST INFORMATION(EUT)
 - 3.1 Identification of the EUT
 - 3.2 Additional information about the EUT
 - 3.3 Peripheral equipment
4. CONTINUOUS DISTURBANCE VOLTAGE, MAIN TERMINAL
 - 4.1 Operating environment
 - 4.2 Test set-up and test procedures
 - 4.3 Test instrument
 - 4.4 Test results
5. RADIATED DISTURBANCE & Voltage at the antenna terminals.
 - 5.1 Operating environment
 - 5.2 Test set-up
 - 5.3 Test conditions
 - 5.4 Test instrument
 - 5.5 Test results(PC mode)
 - 5.6 Test results(TV Tuner mode)
 - 5.7 Test results(TV- Voltage at the Antenna terminals)

APPENDIX

(N/A)

1. CLIENT INFORMATION

The EUT has been tested by request of :

Company : Digix Technology Co., Ltd.
Address : #953-7, Shinjung-Dong, Yangcheon-Gu, Seoul, Korea.
Name of contact : Eric Lim, Senior Engineer.
Telephone : + 82-2-2600-7563
Facsimile : + 82-2-2600-4346

2. LABORATORY INFORMATION

The 10m full-anechoic chamber and/or EMC facilities are used for these testing.
These facilities were accredited by KOLAS, EK, MIC of Korea and FCC of USA.

Address

ELECTROMAGNETIC RESEARCH INSTITUTE.

66-6, JEIL-RI, YANGJI-MYUN, YOUNGIN-CITY, KYUNGGI-DO, KOREA

Telephone No. : +82-31-336-1186~7

Facsimile No. : +82-31-336-1184

Registered No.

KOLAS : 111

EK : J

MIC : KR0030

FCC Filing No. : 302567

3. EQUIPMENT UNDER TEST INFORMATION (EUT)

3.1 Identification of the EUT

Type of equipment : LCD Monitor/HDTV
Model name : DX170WHD-CP01
Brand name : -
Manufacturer : Digix Technology Co., Ltd.
Address : #953-7, Shinjung-Dong, Yangcheon-Gu, Seoul, Korea.
Telephone : + 82-2-2600-7563
Facsimile : + 82-2-2600-4346
Country of origin : KOREA
Rating : 110V, 60Hz

3.2 Additional information about the EUT

Class B, Family model list; None

3.3 Peripheral equipment

Defined as equipment needed for correct operation of the EUT.

Description	Model No.	Serial No.	Manufacture
AC/DC adaptor	PSCV540103A	030404675B	-
Remote controller	-	-	Digix Technology Co., Ltd.
Note pc	CM2080	5Y17JNZ9R622	LG
Printer	C6427A	CN13V1B1RY	HP
AC/DC adaptor	ADP-60DB	MJD0124068757	DELTA ELECTRONICS
Keyboard	TRI-270	108018385	Solid year Co.,Ltd.
Color TV pattern generator	PM5418TDSI	LD642864	PHILIPS

4. CONTINUOUS DISTURBANCE VOLTAGE, MAIN TERMINAL

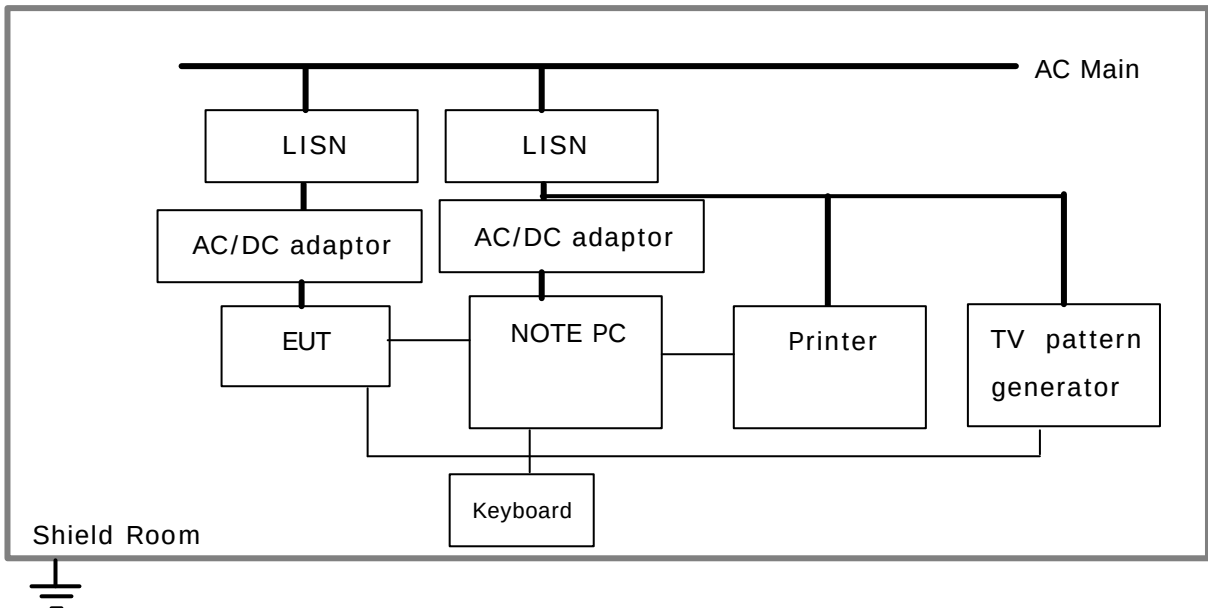
: Frequency range 0.15 MHz to 30 MHz

4.1 Operating environment

Temperature : 20.0 °C

Relative Humidity : 69.0 %

4.2 Test set-up and test procedures



The mains terminal disturbance voltage was measured with the equipment under test(EUT) in a shield room. The EUT was connected to an artificial mains network(LISN) placed on the floor. The EUT was placed on non-metallic table 0.4m above the metallic, grounded floor. The distance to other metallic surface was at least 0.8m.

Amplitude measurements were performed with a quasi-peak detector and an average detector.

Operation condition: During the test, we kept receiving signal from TV pattern generator, and then we have the data came out on the monitor.

4.3 Test instrument

Instrument	Model No	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100021	R&S	2004. 1. 24	X
L.I.S.N.	ESH3-Z5	827246/008	R&S	2004. 3. 19	X
	ESH3-Z5	831887/018	R&S	2004. 3. 19	X
Shield room	8 × 6 × 3.3m/H	-	-	-	X

4.4 Test results

Date of test: Aug 22, 2003.

An overview sweep performed with peak detector & average detector are included in the report **as test reports.**

< Measurement rating : 110V, 60Hz >

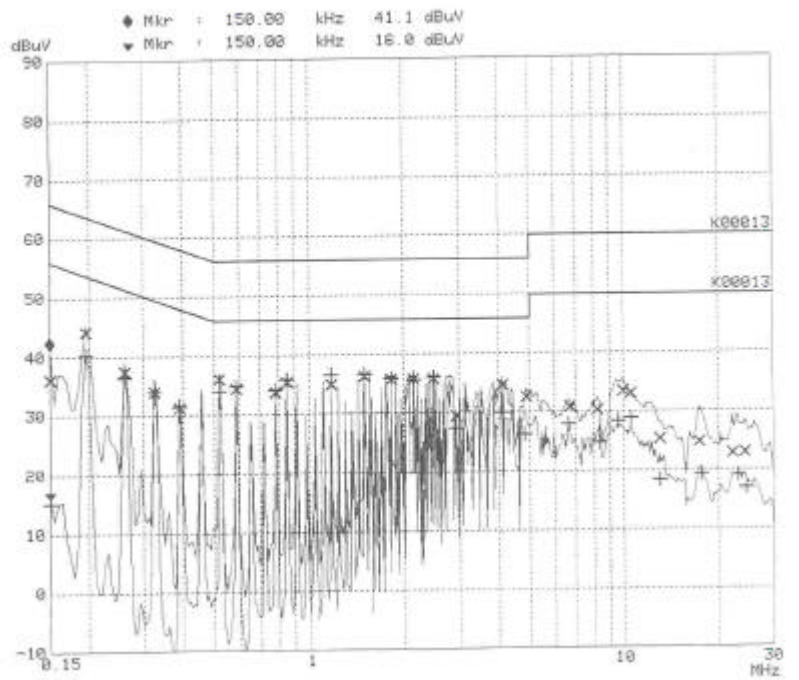
Frequency Range [MHz]	Tested Freq. [MHz]	LISN	Meter Reading		Limits		Margin	
			QP	AV	QP	AV	QP	AV
			[dBuV]		[dBuV]		[dBuV]	
0.15-30	0.195	H	44.2	40.4	63.8	53.8	19.6	13.4
	0.260	H	37.4	36.5	61.4	51.4	24.0	14.9
	0.520	H	36.1	34.2	56.0	46.0	19.9	11.8
	1.500	H	36.4	36.1	56.0	46.0	19.6	9.9
	1.825	H	35.8	35.0	56.0	46.0	20.2	11.0
	2.150	H	35.9	35.6	56.0	46.0	20.1	10.4
	2.480	H	35.8	35.1	56.0	46.0	20.2	10.9
	9.580	N	36.1	31.1	60.0	50.0	23.9	18.9

* <5 : mean less than 5dB

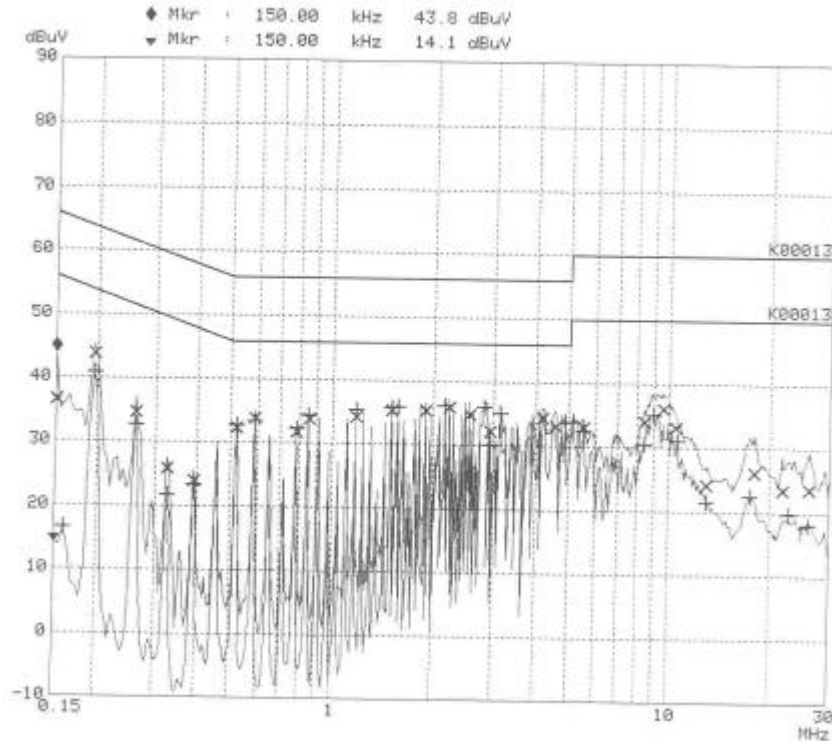
* Other frequency keep over 20dB margin.

Result : Pass

The measured emissions level of the EUT have found the below of the specified limit.



[Live line]



PAGE 1

[Neutral line]

5. RADIATED DISTURBANCE & VOLTAGE AT THE ANTENNA TERMINALS: 30MHz – 1000MHz, 30MHz – 2150MHz

5.1 Operating environment

Temperature : 21.0 °C
Relative Humidity : 73.0 %

5.2 Test set-up

The frequency range investigated was 30 MHz to 1000 MHz.

All readings are quasi-peak unless stated otherwise.

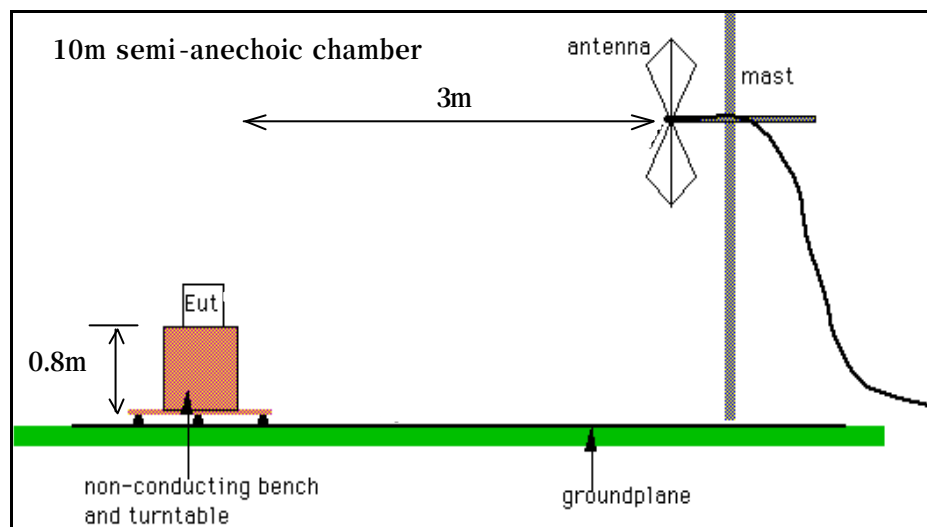
The half-wave dipole antenna was tuned to the frequency found during Preliminary radiated measurements. The EUT, support equipment and Interconnecting cables were re-configured to the set-up to the producing the Maximum emission for the frequency and were placed on top of a 0.8 meter High non-metallic 1 X 1.5 meter table. The EUT, support equipment, and interconnecting cables were re-arranged and manipulated to maximize each EME emission.

The turntable containing the system was rotated the antenna height was varied 1 to 4 meters

and stopped at the azimuth or height producing the maximum emission.

And this device(EUT) was tested in 3 orthogonal planes.

The antenna measured both horizontal and vertical polarization.



<General test set-up for radiated emissions>

5.3 Operation Conditions

During the test, we kept receiving signal from TV pattern generator, and then we have the data came out on the monitor.

5.4 Test instrument

Instrument	Model No.	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100021	R&S	2004. 1. 24	X
L.I.S.N.	ESH3-Z5	827246/008	R&S	2004. 3. 19	X
	ESH3-Z5	831887/018	R&S	2004. 3. 19	X

5.5 Test results(PC mode)

Date of test: Aug 22, 2003.

Tested Frequency	ANT Pol.	Meter Reading	Antenna Factor	Cable Loss	Results	Limits
[MHz]		[A] [dBuV/m]	[B] [dB]	[C] [dB]	[A+B+C] [dBuV/m]	[dBuV/m]
115.10	V	23.90	12.10	2.10	38.10	43.50
121.80	V	21.86	12.44	2.10	36.40	43.50
148.80	V	19.80	14.70	2.40	36.90	43.50
155.60	H	21.80	15.30	2.40	39.50	43.50
169.10	H	17.90	15.70	2.50	36.10	43.50
182.60	H	17.88	16.22	2.60	36.70	43.50
189.30	H	21.20	16.30	2.60	40.10	43.50
196.10	H	18.75	16.35	2.70	37.80	43.50
202.80	H	19.81	16.29	2.80	38.90	43.50
675.00	V	10.31	19.79	5.40	35.50	46.00

Receiving Antenna Mode : **Horizontal, Vertical**

Test site : **10m anechoic chamber**

* <5 : mean less than 5dB

Note : Reading = Test Receiver meter, P= Polarization POL H = Horizontal POL V = Vertical A = Angle, AF = Antenna Factor CL = Cable Loss Result = Field Strength(AF + CL + Reading)

5.6 Test results(TV Tuner mode)

Date of test: Aug 22, 2003.

Band	CH. [NO]	Pic. Freq. [MHz]	Local OSC (MHz)	Freq. [MHz]	Meter reading(a) [dBuV / m]	Total loss(b) [dB]	Results (a) + (b) [dBuV / m]	Limits [dBuV / m]
VLF	2	55.25	Fundamental	101.00	5.8(H)	12.8	18.6	43.5
			Harmonics	202.00	10.2(H)	12.3	22.5	43.5
				303.00	4.2(H)	17.6	21.8	46.0
				404.00	-	21.0	-	46.0
				505.00	-	23.4	-	46.0
				606.00	-	26.4	-	46.0
				707.00	-	28.5	-	46.0
				808.00	-	30.5	-	46.0
				909.00	-	32.7	-	46.0
	4	67.25	Fundamental	108.5	6.8(H)	13.0	19.8	43.5
			Harmonics	217.0	10.0(H)	13.2	23.2	46.0
				325.5	4.5(H)	18.5	23.0	46.0
				434.0	4.5(V)	22.0	26.5	46.0
				542.5	-	25.0	-	46.0
				651.0	-	27.5	-	46.0
				759.5	-	29.8	-	46.0
				868.0	-	31.5	-	46.0
				976.5	-	33.7	-	46.0
	6	83.25	Fundamental	129.00	6.5(H)	12.9	19.4	43.5
			Harmonics	258.00	7.2(H)	15.7	22.9	46.0
				387.00	-	20.5	-	46.0
				516.00	-	24.0	-	46.0
				645.00	-	27.2	-	46.0
				774.00	-	30.0	-	46.0
				903.00	-	32.6	-	46.0
VHF	7	175.25	Fundamental	221.00	1.3(H)	13.1	14.4	46.0
			Harmonics	442.00	1.1(V)	22.3	23.4	46.0
				663.00	-	27.9	-	46.0
				884.00	-	32.0	-	46.0
	10	193.25	Fundamental	239.00	5.9(H)	14.3	20.2	46.0
			Harmonics	478.00	-	22.9	-	46.0
				717.00	-	28.9	-	46.0
				956.00	-	33.4	-	46.0
	13	211.25	Fundamental	257.00	4.5(H)	15.7	20.2	46.0
			Harmonics	514.00	-	23.9	-	46.0
				771.00	-	29.9	-	46.0
UHF	14	471.25	Fundamental	517.00	1.0(H)	24.1	25.1	46.0
	19	501.25	Fundamental	547.00	7.2(H)	25.2	32.4	46.0
	28	555.25	Fundamental	601.00	-	26.3	-	46.0
	36	603.25	Fundamental	649.00	-	27.4	-	46.0
	44	-	Fundamental	697.00	7.1(H)	28.3	35.4	46.0
	53	-	Fundamental	751.00	-	29.8	-	46.0
	61	-	Fundamental	799.00	-	30.4	-	46.0
	69	801.25	Fundamental	847.00	-	31.1	-	46.0

' < ' Means equal or less than

Total loss[dB] : Antenna factor [dB] + Cable loss[dB]

Others

Date of test: Aug 22, 2003.

Tested Frequency	ANT Pol.	Meter Reading	Antenna Factor	Cable Loss	Results	Limits
[MHz]		[A] [dBuV/m]	[B] [dB]	[C] [dB]	[A+B+C] [dBuV/m]	[dBuV/m]
110.50	H	2.50	11.69	2.50	16.69	43.50
156.25	V	10.40	15.30	2.90	28.60	43.50
247.75	H	3.20	17.10	3.50	23.80	46.40
262.75	H	1.20	17.70	3.50	22.40	46.40
371.25	H	4.50	14.31	3.80	22.61	46.40
555.25	H	6.50	18.16	5.00	29.66	46.40

* Receiving Antenna Mode : **Horizontal, Vertical**

* Test distance: **3m** (10m Anechoic Chamber)

* <5 : mean less than 5dB

Note : Reading = Test Receiver meter, P= Polarization $\angle$ POL H = Horizontal POL V = Vertical A = Angle, AF = Antenna Factor CL = Cable Loss Result = Field Strength(AF + CL+ Reading)

5.7 Test results<Test mode: TV- Voltage at the Antenna terminals >

Date of test: Aug 22, 2003.

Band	CH. [NO]	Pic. Freq. [MHz]	Local OSC (MHz)	Freq. [MHz]	Meter reading(a) [dBuV/m]	MPL loss(b) [dB]	Results (a) + (b) [dBuV/m]	Limits [dBuV/m]
VLF	2	55.25	Fundamental	101.00	-	6.8	-	51.8
			Harmonics	202.00	-	6.8	-	51.8
				303.00	-	6.8	-	51.8
				404.00	-	6.8	-	51.8
				505.00	1.4	6.8	8.2	51.8
				606.00	2.0	6.8	8.8	51.8
				707.00	0.2	6.8	7.0	51.8
				808.00	9.7	6.8	16.5	51.8
				909.00	6.1	6.8	12.9	51.8
	4	67.25	Fundamental	108.5	-	6.8	-	51.8
			Harmonics	217.0	-	6.8	-	51.8
				325.5	-	6.8	-	51.8
				434.0	-	6.8	-	51.8
				542.5	-	6.8	-	51.8
				651.0	-	6.8	-	51.8
				759.5	-	6.8	-	51.8
				868.0	-	6.8	-	51.8
				976.5	-	6.8	-	51.8
	6	83.25	Fundamental	129.00	-	6.8	-	51.8
			Harmonics	258.00	-	6.8	-	51.8
				387.00	-	6.8	-	51.8
				516.00	-	6.8	-	51.8
				645.00	-	6.8	-	51.8
				774.00	9.0	6.8	15.8	51.8
				903.00	9.6	6.8	16.4	51.8
VHF	7	175.25	Fundamental	221.00	1.2	6.8	8.0	51.8
			Harmonics	442.00	7.5	6.8	14.3	51.8
				663.00	2.0	6.8	8.8	51.8
				884.00	-	6.8	-	51.8
	10	193.25	Fundamental	239.00	2.8	6.8	9.6	51.8
			Harmonics	478.00	13.6	6.8	20.4	51.8
				717.00	-	6.8	-	51.8
				956.00	-	6.8	-	51.8
	13	211.25	Fundamental	257.00	3.9	6.8	10.7	51.8
			Harmonics	514.00	10.4	6.8	17.2	51.8
				771.00	1.4	6.8	8.2	51.8
UHF	14	471.25	Fundamental	517.00	2.4	6.8	9.2	51.8
	19	501.25	Fundamental	547.00	1.4	6.8	8.2	51.8
	28	555.25	Fundamental	601.00	4.9	6.8	11.7	51.8
	36	603.25	Fundamental	649.00	11.3	6.8	18.1	51.8
	44	-	Fundamental	697.00	10.7	6.8	17.5	51.8
	53	-	Fundamental	751.00	7.9	6.8	14.7	51.8
	61	-	Fundamental	799.00	-	6.8	-	51.8
	69	801.25	Fundamental	846.90	9.4	6.8	16.2	51.8

' < ' Means equal or less than

MPL loss[dB] : Matching pad Loss + Cable Loss