ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test report file number	**: E021R-026**
Applicant	**: Eastern Technology, Inc.**
Address	**: 412 Chongchon-Dong, Pupyong-Gu, Inchon-City, 403-032, Korea**
Manufacturer	**: Eastern Technology, Inc.**
Address	**: 412 Chongchon-Dong, Pupyong-Gu, Inchon-City, 403-032, Korea**
Type of Equipment	**: 18.1" TFT LCD Monitor with TV**
FCC ID.	**: PDKET-1801TA**
Model / Type No.	**: ET-1801TA**
Serial number	**: N/A**
Total page of Report	**: 13 pages (including this page)**
Date of Incoming	**: December 16, 2001**
Date of issue	**: January 21, 2002**

SUMMARY

The equipment complies with the regulation; ***FCC PART 15 CFR 47 SUBPART B, Class B.***

This test report contains only the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

Prepared by: Youm Kwon Nam
Y. K. Nam / Asst. Chief Engineer
EMC Dept.
ONETECH Corp.

Approved by: Y. K. Kwon
Y. K. Kwon / Chief Engineer
EMC Dept.
ONETECH Corp.

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EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Si, Kyungki-Do, 464-860, Korea. (TEL: +82-31-765-8289 FAX: +82-31-766-2904)

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1. VERIFICATION OF COMPLIANCE

APPLICANT	: Eastern Technology, Inc.
ADDRESS	: 412 Chongchon-Dong, Pupyong-Gu, Inchon-City, 403-032, Korea
CONTACT PERSON	: H. K. PARK / Manager
TELEPHONE NO	: +82-32-500-3177
FCC ID	: PDKET-1801TA
MODEL NO/NAME	: ET-1801TA
SERIAL NUMBER	: N/A
DATE	: January 21, 2002

DEVICE TYPE	Peripheral Device for Class B Computing Device -UNINTENTIONAL RADIATOR
E.U.T. DESCRIPTION	18.1" TFT LCD Monitor with TV
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4/1992
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15 SECTION 15.101(CLASS B)
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER OPEN AREA TEST SITE

The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

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2. GENERAL INFORMATION

2.1 Product Description

The Eastern Technology, Inc., Model ET-1801TA (referred to as the EUT in this report) is a 18.1" TFT LCD Monitor with TV, which consist of the TV tuner, DVD input terminal and Audio input/output, S-Video terminal as well as basic PC monitor. The Verification report for the TV Tuner shall be issued with other test report numbers. Product specification described herein was obtained from product data sheet or user' s manual.

CHASSIS TYPE	Plastic – Non coated
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	12.0 MHz, 14.318 MHz, 18.432 MHz, 20.25 MHz
RESOLUTION	1280 x 1024, 80Hz
POWER REQUIREMENT	Input: 100-240VAC, 50/60Hz, 1.5A / Output: 12VDC, 5.0A, 60W
USED AC/DC ADAPTER	LSE9901B1260 manufactured by Li Shin International Enterprise Corp.
NUMBER OF LAYERS	Main Board: 4 Layers, Control Board: 1 Layer Inverter Board: 2 Layers, Tuner Board: 1 Layer
TV TUNER Type NO. / MFR	N15C001Z / WooSung PRE IND. Co., Ltd.
LCD PANEL Type NO. / MFR	LM181ES / LG Philips Ltd.
EXTERNAL CONNECTORS	PC Video Input, Tuner connector, Audio input, Video Input, DC Inlet, S-Video, PC Audio Input, Head Phone Port, Speaker Out

Model Differences:

	Model	**Model Differences**
Basic Model	ET-1801TA	-
Added Model	ET-1801TK	Model Name in Korea
	ET-1801TJ	Model Name in Japan

2.2 Related Submittal(s) / Grant(s)

-. Original submittal only

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2.3 Test System Details

The model numbers for all the equipments which were used in the tested system is:

Model	Manufacturer	Description	FCC ID	Connected to
ET-1801TA	Eastern Technology, Inc.	18.1" TFT LCD Monitor with TV (EUT)	PDKET-1801TA	PC
KDT-3863	KDS	PERSONAL COMPUTER	EVOKDT-3863	N/A
GHV-S9990	GOLDSTAR	VCR	N/A	EUT
BTC-5360	BTC Korea	KEYBOARD	DoC	PC
M-S48a	LOGITECH	MOUSE	JNZ201213	PC
2225C	HP	PRINTER	DSI6XU2225	PC
020-0470	CARDINAL	MODEM	GDE0196	PC
AR-55	ARAM	SPEAKER	N/A	EUT
LSE9901B1260	Li Shin International	AC/DC ADAPTER	N/A	EUT

2.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4/1992. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.5 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do, 464-080, Korea. Description details of test facilities were submitted to the Commission on January 18, 2002. (Registration Number: 92819)

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3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
Main Board	Woosung PRE IND. Co., Ltd.	1801T_MAIN	N/A
LCD Module	LG PHILIPS LTD.	LM181ES	N/A
Tuner Board	Woosung PRE IND. Co., Ltd.	N15C001Z	N/A
Inverter Board	Hankook Tech Co., Ltd.	HK-1700LB	N/A
Control Board	Oh-Sung Electronics Co., Ltd.	1801T_CONTROL	N/A

3.2 EUT exercise Software

The windows program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. This program was included into HOST. Once loaded, this program sequentially exercises each system component in turn. The sequence used is: (1) series of "H" characters are printed on the monitor until the screen is completely full, (2) copy series of "H" characters to mass storage device (if one is used), (3) print series of "H" characters to printer. The complete cycle is repeated continuously.

The investigated resolution mode of the EUT was 1280 x 1024, 80Hz.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
18.1" TFT LCD Monitor with TV (EUT)	N	Y	1.5(P), 1.2(D)
PERSONAL COMPUTER	N	Y	1.5(P), 1.2(D)
VCR	N	N	1.3(P), 1.0(D)
KEYBOARD	N/A	Y	1.2(D)
MOUSE	N/A	Y	1.2(D)
PRINTER	N	Y	1.5(P), 1.2(D)
MODEM	N	Y	1.5(P), 1.2(D)
SPEAKER	N/A	N	1.5(D)
AC/DC ADAPTER	N	N/A	1.2(P)

* The marked "(D)" means the Data Cable and "(P)" means the Power Cable.

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3.4 Noise Suppression Parts on Cable

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
18.1" TFT LCD Monitor with TV (EUT)	Y	BOTH END	Y	BOTH END
PERSONAL COMPUTER	N	N/A	-	-
VCR	N	N/A	Y	BOTH END
KEYBOARD	N	N/A	Y	PC END
MOUSE	N	N/A	Y	PC END
PRINTER	N	N/A	Y	BOTH END
MODEM	N	N/A	Y	BOTH END
SPEAKER	N	N/A	Y	EUT END
AC/DC ADAPTER	Y	EUT END	Y	EUT END

3.5 Equipment Modifications

To achieve compliance to CLASS B levels, the following change(s) was made by ONETECH Corp. during compliance testing:

"There was no Modified items during EMI test"

3.6 Configuration of Test System

Line Conducted Test: The EUT was connected to AC/DC adapter and the adapter was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4/1992 7.2.3 to determine the worse operating conditions.

Radiated Emission Test: Preliminary radiated emission test was conducted using the procedure in ANSI C63.4/1992 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 3 meters open area test site.

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4. PRELIMINARY TEST

4.1 AC Power line Conducted Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Resolution: 640 x 480	
Resolution: 800 x 600	
Resolution: 1024 x 768	
Resolution: 1280 x 1024	X
Video Operation Mode	

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Resolution: 640 x 480	
Resolution: 800 x 600	
Resolution: 1024 x 768	
Resolution: 1280 x 1024	X
Video Operation Mode	

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5. FINAL RESULT OF MEASURMENT

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level.

5.1 Conducted Emission Test

Humidity Level : 40 % Temperature : 18º C

Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107

Type of Test : CLASS B

Result : PASSED BY – 5.34 dB at 10.52 MHz

EUT : 18.1" TFT LCD Monitor with TV Date : January 15, 2002

Operating Condition : Continuously displayed "H" characters on the screen of EUT, Resolution : 1280 x 1024, 80Hz

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

Power Line Conducted Emission			FCC CLASS B	
Frequency (MHz)	**Amplitude (dBuV)**	**Conductor**	**Limit (dBuV)**	**Margin (dB)**
1.93	37.07	HOT	48.00	-10.93
2.86	41.33	HOT	48.00	-6.67
3.05	41.17	HOT	48.00	-6.83
3.59	40.35	NEUTRAL	48.00	-7.65
9.90	41.49	NEUTRAL	48.00	-6.51
10.52	42.66	NEUTRAL	48.00	-5.34

Line Conducted Emission Tabulated Data

Tested by: Seung-Hyun, Nam / Test Engineer

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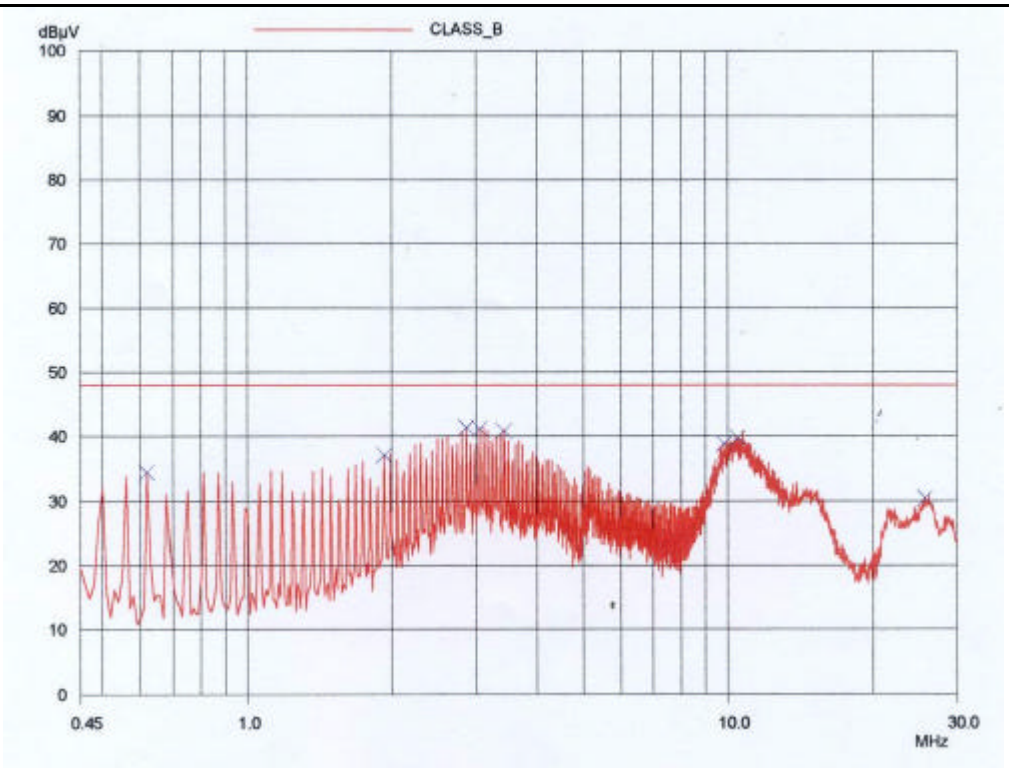
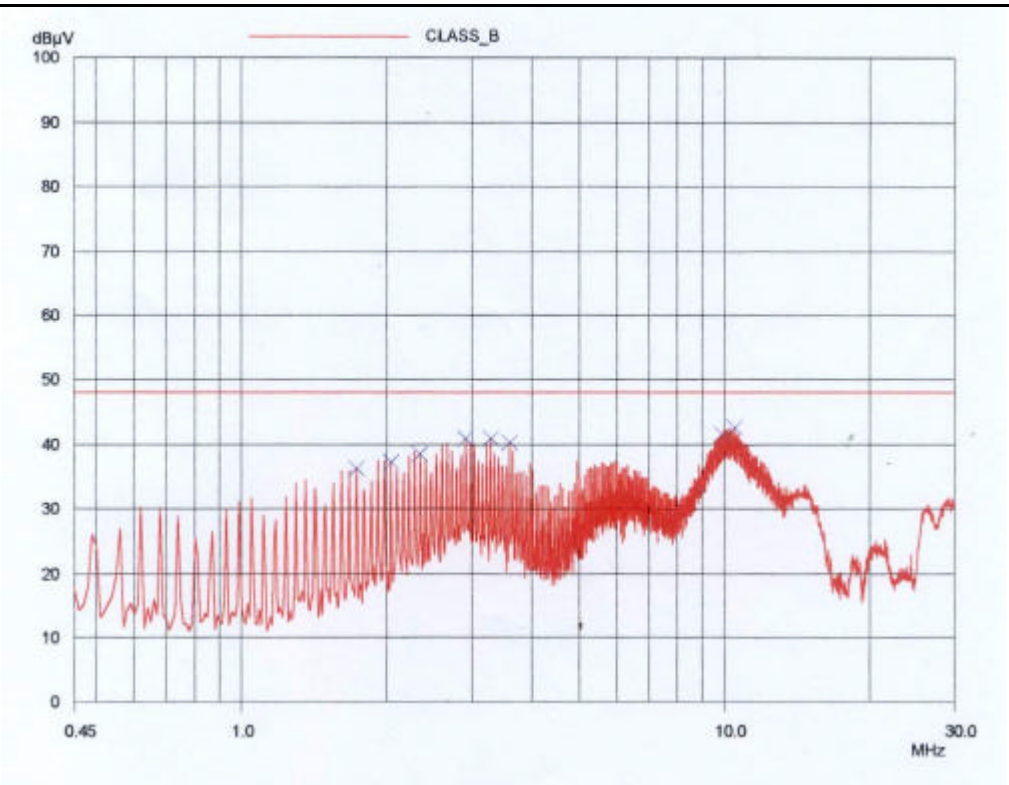


HOT LINE



NEUTRAL LINE

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EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Si, Kyungki-Do, 464-860, Korea. (TEL: +82-31-765-8289 FAX: +82-31-766-2904)

5.2 Radiated Emission Test

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

Humidity Level : 40 % Temperature : 15º C

Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109

Type of Test : CLASS B

Result : PASSED BY –4.06 dB at 194.51 MHz

EUT : 18.1" TFT LCD Monitor with TV Date: January 15, 2002

Operating Condition : Continuously displayed "H" characters on the screen of EUT, Resolution : 1280 x 1024, 80Hz

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)

Distance : 3 Meter

Radiated Emission		Ant	Correction Factors		Total	FCC CLASS B	
Freq. (MHz)	Amp. (dBuV)	Pol.	Ant. (dBuV/m)	Cable (dB)	Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
58.10	20.10	V	10.19	0.98	31.27	40.00	-8.73
151.04	19.10	V	14.04	1.35	34.49	43.50	-9.01
194.51	21.00	V	16.90	1.54	39.44	43.50	-4.06
197.57	17.70	V	16.92	1.56	36.18	43.50	-7.32
226.40	25.20	V	10.74	1.71	37.65	46.00	-8.35
409.40	20.30	V	15.62	2.45	38.37	46.00	-7.63
432.00	18.70	V	16.09	2.50	37.29	46.00	-8.71
454.00	22.40	V	16.58	2.56	41.54	46.00	-4.46
464.00	20.80	V	16.81	2.58	40.19	46.00	-5.81
606.80	17.10	V	18.90	2.93	38.93	46.00	-7.07
670.00	15.30	V	20.54	3.16	39.00	46.00	-7.00
750.00	14.30	H	20.84	3.51	38.65	46.00	-7.35
828.80	16.10	H	21.83	3.77	41.70	46.00	-4.30
928.00	13.90	H	22.78	4.04	40.72	46.00	-5.28
987.20	18.90	H	23.96	4.19	47.05	54.00	-6.95

Radiated Emission Tabulated Data

Tested by: Seung-Hyun, Nam / Test Engineer

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6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+	Meter reading	(dBuV)
+	Cable Loss	(dB)
+	Antenna Factor (Loss)	(dB/meter)
=	Corrected Reading	(dBuV/meter)
-	Specification Limit	(dBuV/meter)
=	dB Relative to Spec	(+/- dB)

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7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVS 10	827864/005	OCT/01	12MONTH	
2.	Test receiver	R/S	ESHS10	834467/007	APR/01	12MONTH	
3.	Spectrum analyzer	HP	8568B	3026A0226	APR/01	12MONTH	
4.	RF preselector	HP	85685A	3107A01264	APR/01	12MONTH	
5.	Quasi-Peak Adapter	HP	85650A	3107A01542	APR/01	12MONTH	
6.	Dipole Antenna	EMCO	3121C	9107-745	JUN/01	12MONTH	
7.	Biconical antenna	EMCO	3104C	9109-4441 9109-4443 9109-4444	MAR/01	12MONTH	
8.	Log Periodic antenna	EMCO	3146	9109-3213 9109-3214 9109-3217	JUN/01	12MONTH	
9.	LISN	EMCO	3825/2	9109-1867 9109-1869	JUN/01	12MONTH	
10.	RF Amplifier	HP	8447F	3113A04554	JUN/01	N/A	
11.	Spectrum Analyzer	HP	8591A	3131A02312	APR/01	12MONTH	
12.	Computer System Hard disk drive	HP	98581C 9153C	98543A CMC762Z9153	N/A N/A	N/A N/A	
13.	Plotter	HP	7475A	30052 22986	N/A	N/A	
14.	Position Controller	EMCO	1090	9107-1038	N/A	N/A	
15.	Turn Table	EMCO	1080-1.21	9109-1576	N/A	N/A	
16.	Antenna Master	EMCO	1070-1	9109-1624	N/A	N/A	

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