ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test report file number	**: E026R-003**
Applicant	**: iB elecom Co., Ltd.**
Address	**: Rm301, Songlim B/D, 146 Wooman-Dong, Paldal-Gu, Suwon-City, Kyunggi-Do, Korea**
Manufacturer	**: iB elecom Co., Ltd.**
Address	**: Rm301, Songlim B/D, 146 Wooman-Dong, Paldal-Gu, Suwon-City, Kyunggi-Do, Korea**
Type of Equipment	**: TFT LCD Monitor with TV**
FCC ID.	**: QBYIB-1810T**
Model / Type No.	**: IB-1810T**
Serial number	**: N/A**
Total page of Report	**: 13 pages (including this page)**
Date of Incoming	**: May 1, 2002**
Date of issue	**: June 3, 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.

Reviewed by: Youm Kwon. Nam
Y. K. Nam / Assist. Chief Engineer
EMC Dept.
ONETECH Corp.

Approved by: Young Kwang 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	: iB elecom Co., Ltd.
ADDRESS	: Rm301, Songlim B/D, 146 Wooman-Dong, Paldal-Gu, Suwon-City, Kyunggi-Do, Korea
CONTACT PERSON	: Ho, Jeong / Manager
TELEPHONE NO	: +82-31-213-9400
FCC ID	: QBYIB-1810T
MODEL NO/NAME	: IB-1810T
SERIAL NUMBER	: N/A
DATE	: June 3, 2002

DEVICE TYPE	Peripheral Device for Class B Computing Device - UNINTENTIONAL RADIATOR
E.U.T. DESCRIPTION	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 iB elecom Co., Ltd., Model IB-1810T (referred to as the EUT in this report) is a TFT LCD Monitor with TV, which consist of the TV tuner, PC sound input/output 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)	14.318 MHz, 16.00 MHz, 24.576 MHz, 27.00MHz
RESOLUTION	1280 x 1024, 75Hz
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	TAPC-H701F / LG
LCD PANEL Type NO. / MFR	LM181ES / LG Philips
EXTERNAL CONNECTORS	PC Video Input, Tuner connector, Audio input, Video Input, DC Inlet, S-Video, PC Audio Input and Output.

Model Differences:

-. None

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
IB-1810T	iB elecom Co., Ltd.	TFT LCD Monitor with TV (EUT)	QBYIB-1810T	PC
LSE9901B1260	Li Shin International	AC/DC ADAPTER	N/A	EUT
DCM	DELL Computer Corp.	PERSONAL COMPUTER	DoC	N/A
GHV-S9990	GOLDSTAR	VCR	N/A	EUT
SKR-1082	SEJIN Elec.	KEYBOARD	DoC	PC
M-SAS51	LOGITECH	MOUSE	DoC	PC
2225C	HP	PRINTER	DSI6XU2225	PC
020-0470	CARDINAL	MODEM	GDE0196	PC
SMS-015N	Sungil Precision Co., Ltd.	SPEAKER	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	iB elecom Co., Ltd.	1810TP	N/A
INVERTER BOARD	HAN KOOK	6632Z-1804E	N/A
OSD BOARD	iB elecom Co., Ltd.	1810TP-OSD	N/A
D-SUB BOARD	iB elecom Co., Ltd.	1810TP-DUSB	N/A
TUNER BOARD	LG Philips	TAPC-H701F	N/A
LCD PANEL	LG Philips	LM181ES	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, 75Hz.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
TFT LCD Monitor with TV (EUT)	N	Y	1.5(P), 1.2(D)
AC/DC ADAPTER	N	N/A	1.5(P)
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)

* 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
TFT LCD Monitor with TV (EUT)	Y	BOTH END	Y	BOTH END
AC/DC ADAPTER	Y	EUT END	Y	EUT 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

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 : 47 % Temperature : 25°C

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

Type of Test : CLASS B

Result : PASSED BY – 6.69 dB at 3.45 MHz

EUT : TFT LCD Monitor with TV Date : May 15, 2002

Operating Condition : Continuously displayed "H" characters on the screen of EUT, Resolution : 1280 x 1024, 75Hz

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)**
0.49	35.07	NEUTRAL	48.00	-12.93
0.80	35.59	NEUTRAL	48.00	-12.41
3.45	41.31	NEUTRAL	48.00	-6.69
4.23	39.31	HOT	48.00	-8.69
10.30	38.93	HOT	48.00	-9.07
23.63	31.27	NEUTRAL	48.00	-16.73

Line Conducted Emission Tabulated Data

Tested by: Seung-Hyun, Nam / Test Engineer

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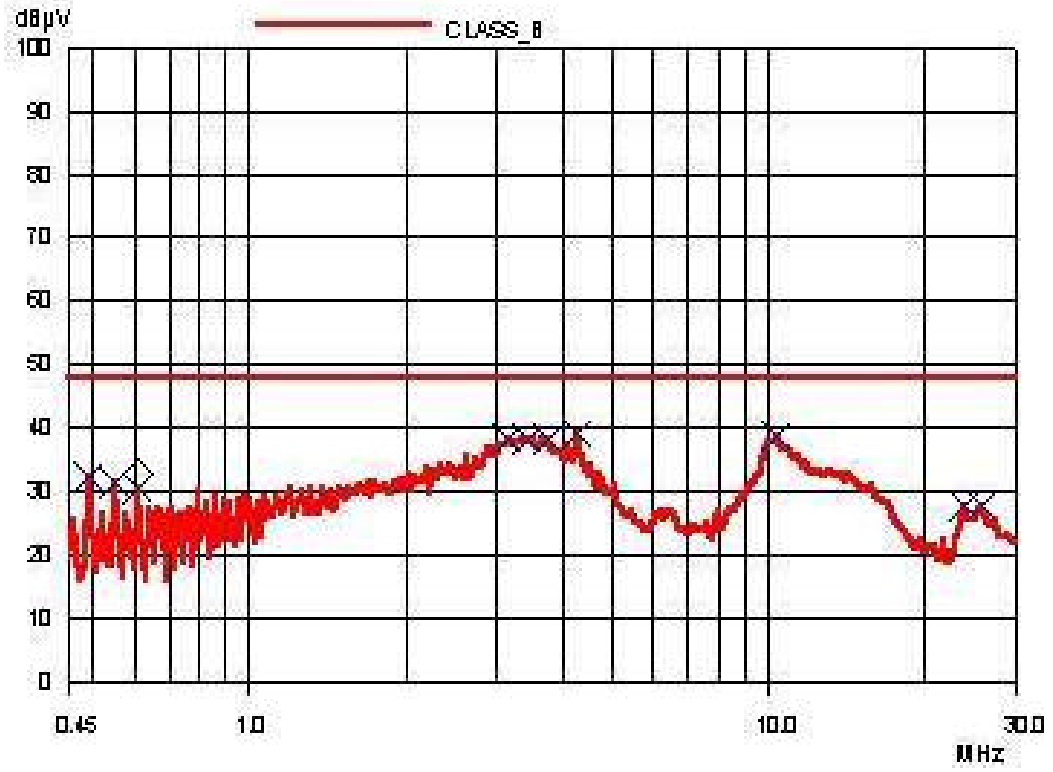
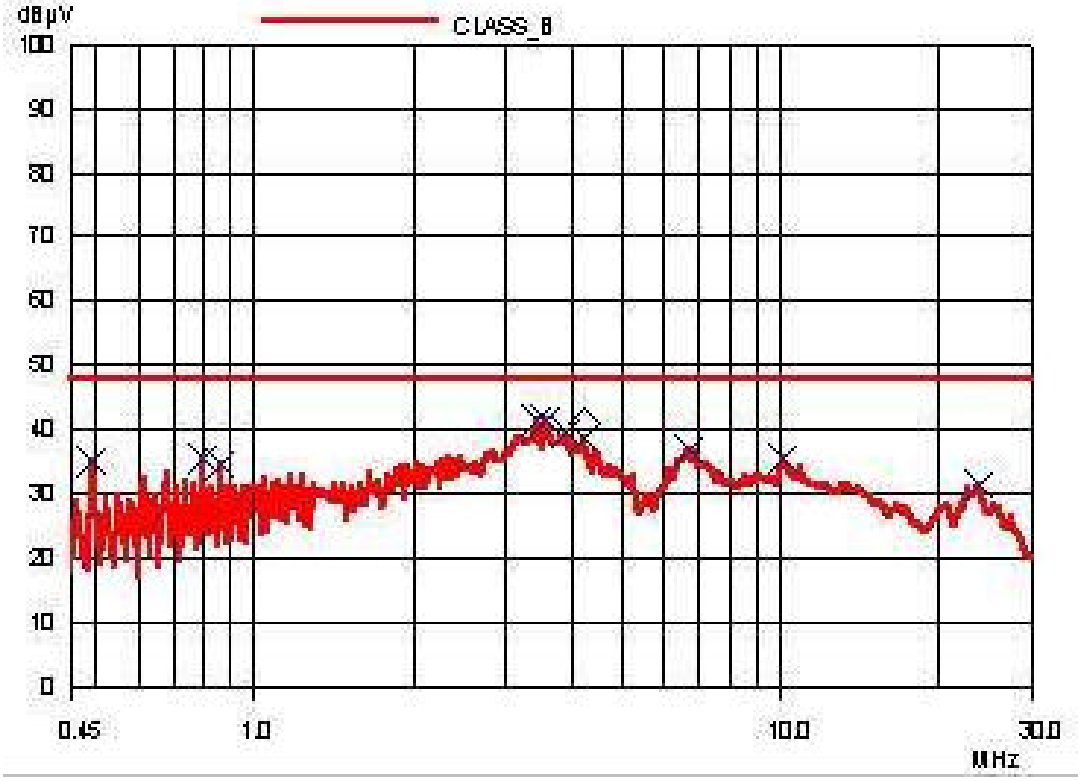


HOT LINE



NEUTRAL LINE

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5.2 Radiated Emission Test

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

Humidity Level : 47 % Temperature : 25°C

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

Type of Test : CLASS B

Result : PASSED BY –6.68 dB at 107.95 MHz

EUT : TFT LCD Monitor with TV Date: May 15, 2002

Operating Condition : Continuously displayed "H" characters on the screen of EUT, Resolution : 1280 x 1024, 75Hz

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)
77.79	18.10	V	6.66	1.00	25.76	40.00	-14.24
107.95	22.11	V	13.52	1.19	36.82	43.50	-6.68
129.46	16.00	V	13.22	1.26	30.48	43.50	-13.02
134.76	20.30	V	13.04	1.29	34.63	43.50	-8.87
161.92	20.17	V	15.15	1.39	36.71	43.50	-6.79
216.00	23.49	H	10.94	1.65	36.08	43.50	-7.42
237.40	24.30	H	11.33	1.76	37.39	46.00	-8.61
248.20	18.30	H	11.79	1.82	31.91	46.00	-14.09
270.00	18.50	H	13.05	1.88	33.43	46.00	-12.57
299.40	22.30	H	14.74	2.00	39.04	46.00	-6.96
324.20	18.20	H	14.88	2.15	35.23	46.00	-10.77
378.60	16.40	H	15.21	2.40	34.01	46.00	-11.99

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/02	12MONTH	■
3.	Spectrum analyzer	HP	8568B	3026A0226	APR/02	12MONTH	■
4.	RF preselector	HP	85685A	3107A01264	APR/02	12MONTH	■
5.	Quasi-Peak Adapter	HP	85650A	3107A01542	APR/02	12MONTH	■
6.	Dipole Antenna	EMCO	3121C	9107-745	JUN/02	12MONTH	
7.	Biconical antenna	EMCO	3104C	9109-4441 9109-4443 9109-4444	APR/02	12MONTH	■
8.	Log Periodic antenna	EMCO	3146	9109-3213 9109-3214 9109-3217	APR/02	12MONTH	■
9.	LISN	EMCO	3825/2	9109-1867 9109-1869	JUL/01	12MONTH	■
10.	RF Amplifier	HP	8447F	3113A04554	JUN/02	N/A	
11.	Spectrum Analyzer	HP	8591A	3131A02312	APR/02	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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