ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test report file number	**: E018R-003**
Applicant	**: MAX MEDIA INC.**
Address	**: 327-14, Dangjung-Dong, Kunpo-City, Kyounggi-Do, 435-030, Korea**
Manufacturer	**: MAX MEDIA INC.**
Address	**: 327-14, Dangjung-Dong, Kunpo-City, Kyounggi-Do, 435-030, Korea**
Type of Equipment	**: TFT LCD MONITOR (Class B Computing Device Peripheral)**
FCC ID	**: PBF-MF181M**
Model / Type No.	**: MF181M,**
Multiple Model/ Type No.	**: NL181 (for NID System Inc.)**
Serial number	**: N/A**
Total page of Report	**: 13 pages (including this page)**
Date of Incoming	**: June 06, 2001**
Date of Issuing	**: August 09, 2001**

SUMMARY

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

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

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

Prepared by: G. W. Lee/ Assist. Chief Engineer

Reviewed by: Y. K. Kwon/ Chief Engineer

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ONETECH Corp.

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1. VERIFICATION OF COMPLIANCE

-. APPLICANT : MAX MEDIA INC.

-. ADDRESS : 327-14, Dangjung-Dong, Kunpo-City, Kyounggi-Do, 435-030, Korea

-. CONTACT PERSON : Mr. Jeong-Hun, Kim / Engineering Manager

-. TELEPHONE NO : 82-2-563-0999

-. MODEL NO/NAME : MF181M

-. SERIAL NUMBER : N/A

-. DATE : August 09, 2001

DEVICE TYPE	Peripheral Device for Class B Computing Device - Unintentional Radiator
E.U.T. DESCRIPTION	TFT LCD MONITOR
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
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 MAX MEDIA INC., Model MF181M (referred to as the EUT in this report) is an 18.1" TFT LCD MONITOR that is connected a computer. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic
IMAGE DISPAY TYPE	ACTIVE MATRIX COLOR TFT LCD
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	12 MHz, 14.318 MHz, 24.576 MHz
INPUT FREQUENCY	HORIZONTAL: 31~60kHz / VERTICAL: 56~75 Hz
MAX RESOLUTION	SXGA 1280 x 1024 @ 75Hz
NUMBER OF LAYERS	4 Layers (Main B'd), 1 Layer (Power B'd), 2 Layers (Others B'd)
POWER REQUIREMENT	DC12V from AC/DC Adapter
EXTERNAL CONNECTOR	Analog VGA INPUT (15pin D-SUB), Mini-Din for S-Video Signal, RCA Jack for Video Signal and DC Input Jack

Model Differences:

The difference(s) compared to the EUT is as follows:

		Model Differences
Basic Model	MF181M	-
Added Model	NL181	Only type designation for NID System Inc.

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	FCC ID	Description	Connected to
MF181M	MAX MEDIA INC.	PBF-MF181M	TFT LCD MONITOR (EUT)	PC
LSE9901B1260	LI SHIN	N/A	AC/DC ADAPTER	EUT
DCM	DELL COMPUTER	DoC	PC	-
SKR-1032	SEJIN Elec.	GJJSKR-1032B	KEYBOARD	PC
OK-720	A4 TECH	DOC	MOUSE	PC
GHV-S9990	GOLDSTAR	DOC	VCR	EUT
2225C	HP	DSI6XU2225	PRINTER	PC
020-0470	CARDINAL	GDE0196	MODEM	PC

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 12, 1999. (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
LCD PANEL	LG PHILIPS	LM181E1	N/A
MAIN LOGIC B'D	MAX MEDIA INC.	NIDSX-5020	N/A
INVERTER BOARD	DS PLUS	DS-1008NA	N/A
KEY CONTROL BOARD	MAX MEDIA INC.	MF151S	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 EUT has select switch for video input signals, Analog Video Input, RCA Input and S-Video Input, but the EUT cannot display Analog Video signal and video signal from VCR simultaneously because of resolution. So the EUT was tested at each mode.

The investigated resolution mode of the EUT was at 1280 x 1024 at 75Hz.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
TFT LCD MONITOR (EUT)	N	N	1.2(P), 1.5(D), 1.2(D)
AC/DC ADAPTER	N	N/A	1.2(P)
PC	N	-	1.5(P)
KEYBOARD	N/A	Y	1.2(D)
MOUSE	N/A	Y	1.2(D)
VCR	N	N	1.2(D)
MODEM	N	Y	1.5(P), 1.5(D)
PRINTER	N	Y	1.5(P), 1.5(D)

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* The marked “(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 (EUT)	Y	BOTH END	Y	BOTH END
AC/DC ADAPTER	Y	EUT END	Y	EUT END
PC	-	-	-	-
KEYBOARD	N	N/A	Y	PC END
MOUSE	N	N/A	Y	PC END
VCR	N	N/A	Y	BOTH END
MODEM	N	N/A	Y	BOTH END
PRINTER	N	N/A	Y	BOTH 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)
"H" characters at Resolution: 640x480	
"H" characters at Resolution: 800x600	
"H" characters at Resolution: 1024x768	
"H" characters at Resolution: 1280 x 1024	X
Video Signal Display from VCR	

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
"H" characters at Resolution: 640x480	
"H" characters at Resolution: 800x600	
"H" characters at Resolution: 1024x768	
"H" characters at Resolution: 1280 x 1024	X
Video Signal Display from VCR	

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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 : 55 % Temperature : 23°C

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

Type of Test : CLASS B

Result : PASSED BY -8.87 dB at 3.42 MHz

EUT : TFT LCD MONITOR Date: July 13, 2001

Operating Condition : Resolution 1280 X 1024 mode

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)
1.00	36.59	NEUTRAL	48.00	-11.41
1.47	38.62	NEUTRAL	48.00	-9.38
2.06	38.32	NEUTRAL	48.00	-9.68
2.71	38.81	NEUTRAL	48.00	-9.19
3.42	39.13	HOT	48.00	-8.87
4.72	36.52	HOT	48.00	-11.48

Line Conducted Emission Tabulated Data

Tested by: Young-Min Choi / Project Engineer

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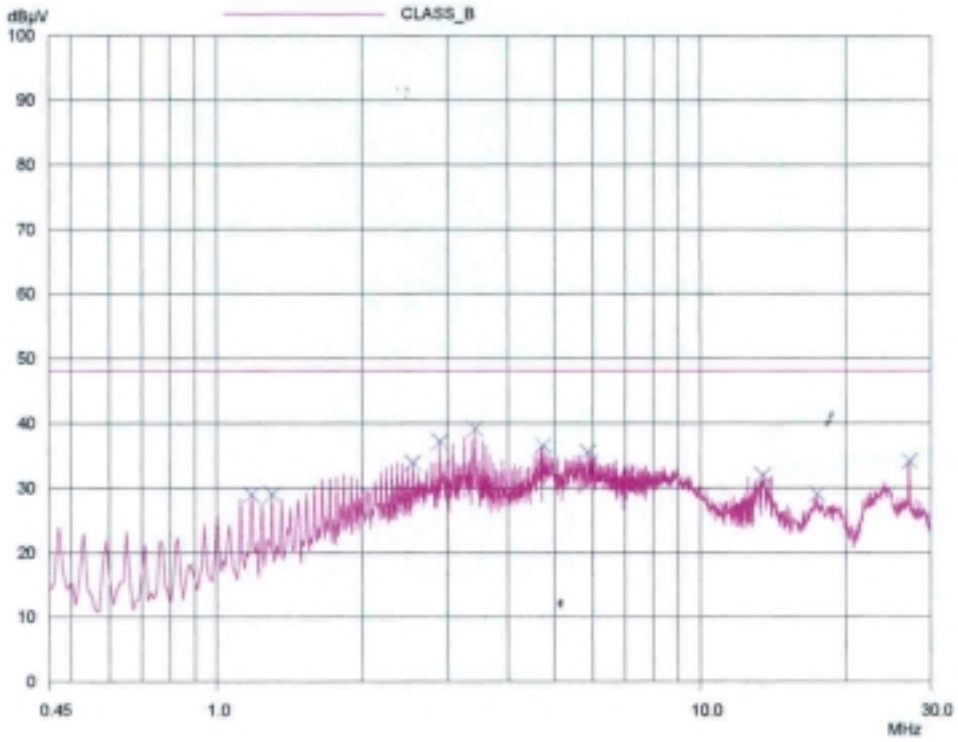
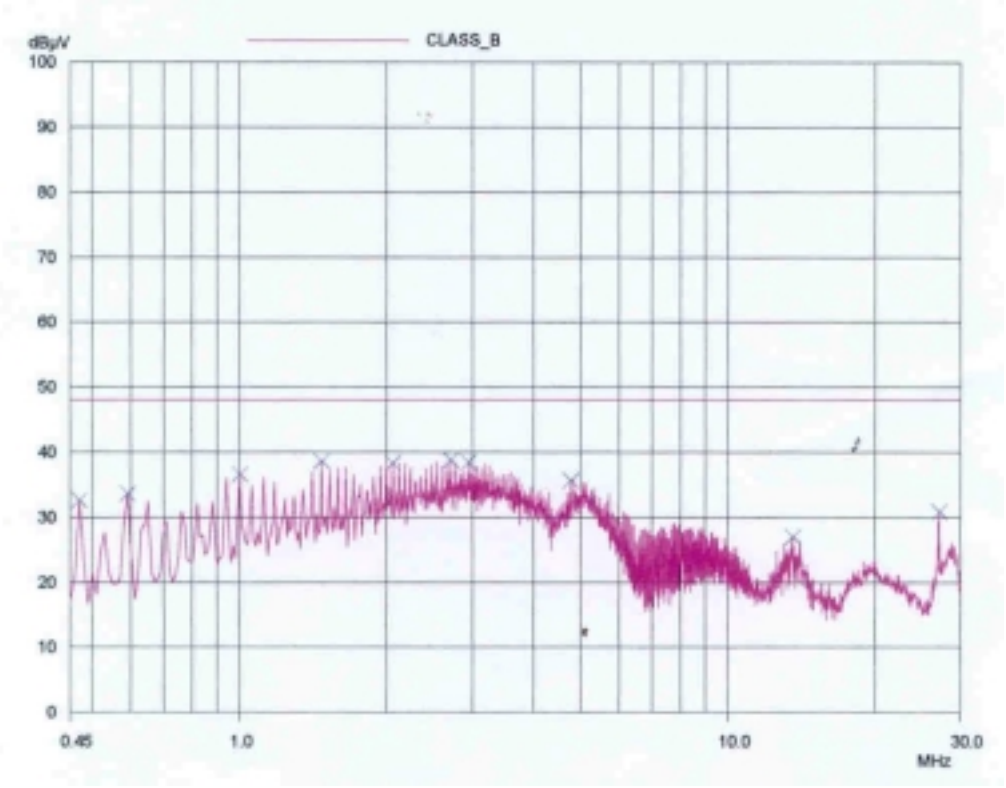


HOT LINE



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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 : 55 % Temperature : 23 °C

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

Type of Test : CLASS B

Result : PASSED BY –3.89 dB at 560.20 MHz

EUT : TFT LCD MONITOR Date: July 23, 2001

Operating Condition : Resolution 1280X1024 mode

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

Distance : 3 Meter

Radiated Emissions		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)
42.97	15.90	V	11.58	0.86	28.34	40.00	-11.66
139.52	17.00	V	12.68	1.31	30.99	43.50	-12.51
150.44	17.30	V	13.43	1.35	32.08	43.50	-11.42
161.24	20.50	V	14.26	1.39	36.15	43.50	-7.35
204.00	17.90	H	11.60	1.59	31.09	43.50	-12.41
214.80	23.60	H	11.78	1.65	37.03	43.50	-6.47
246.80	21.20	H	12.32	1.81	35.33	46.00	-10.67
376.40	17.30	V	15.53	2.39	35.22	46.00	-10.78
429.40	18.90	V	16.48	2.49	37.87	46.00	-8.13
449.40	16.80	V	16.92	2.55	36.27	46.00	-9.73
560.20	20.70	V	18.60	2.81	42.11	46.00	-3.89
698.00	17.50	V	20.97	3.30	41.77	46.00	-4.23
752.00	13.30	V	20.73	3.52	37.55	46.00	-8.45

Radiated Emissions Tabulated Data

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Tested by: Young-Min Choi / Project 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	ESHS 10	834467/007	APR/01	12MONTH	■
3.	Spectrum analyzer	HP	8568B	3109A05456	APR/01	12MONTH	■
4.	RF preselector	HP	85685A	3107A01264	APR/01	12MONTH	■
5.	Quasi-Peak Adapter	HP	85650A	3107A01542	APR/01	12MONTH	■
6.	Loop Antenna	EMCO	6502	9108-2668	DEC/01	12MONTH	
7.	Dipole Antenna	EMCO	3121C	9107-745	JUN/01	12MONTH	
8.	Biconical antenna	EMCO	3104C	9109-4441 9109-4443 9109-4444	APR/01	12MONTH	■
9.	Log Periodic antenna	EMCO	3146	9109-3213 9109-3214 9109-3217	APR/01	12MONTH	■
10.	LISN	EMCO	3825/2	9109-1867 9109-1869	JUN/01	12MONTH	■
11.	Computer System Hard disk drive	HP	98581C 9153C	98543A CMC762Z9153	N/A N/A	N/A N/A	■ ■
12.	Plotter	HP	7475A	30052 22986	N/A	N/A	■
13.	Position Controller	EMCO	1090	9107-1038	N/A	N/A	■
14.	Turn Table	EMCO	1080-1.21	9109-1576	N/A	N/A	■
15.	Antenna Master	EMCO	1070-1	9109-1624	N/A	N/A	■

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