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## ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

Test report file number : E00NR-027

Applicant : MAX MEDIA INC.

Address : 327-14, Dangjung-Dong, Kunpo-City, Kyunggi-Do, 435-832, Korea

Manufacturer : MAX MEDIA INC.

Address : 327-14, Dangjung-Dong, Kunpo-City, Kyunggi-Do, 435-832, Korea

Type of Equipment : 15.1" TFT LCD MONITOR (CLASS B COMPUTING DEVICE PERIPHERAL)

FCC ID : PBF-MF151S

Model / Type No. : MF151S

Serial number : N/A

Total page of Report : 13 pages (including this page)

Date of Incoming : September 04, 2000

Date of issuing : November 17, 2000

### SUMMARY

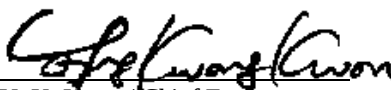
The equipment complies with the regulation; FCC PART 15 SUBPART B §15.101

This test report contains only the result 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:

  
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Reviewed by:

  
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EMC Dept.  
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## 1. VERIFICATION OF COMPLIANCE

APPLICANT : MAX MEDIA INC.  
ADDRESS : 327-14, Dangjung-Dong, Kunpo-City, Kyunggi-Do, 435-832, Korea  
CONTACT PERSON : Jeong-Hun, Kim / Engineering Manager  
TELEPHONE NO : 82-2-563-0999  
FCC ID : PBF-MF151S  
MODEL NO/NAME : MF151S  
SERIAL NUMBER : N/A  
DATE : November 17, 2000

|                                                      |                                                                         |
|------------------------------------------------------|-------------------------------------------------------------------------|
| DEVICE TYPE                                          | Peripheral Device for Class B Computing Device - Unintentional Radiator |
| E.U.T. DESCRIPTION                                   | 15.1" 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 §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 MAX MEDIA INC., Model MF151S (referred to as the EUT in this report) is a 15.1" TFT LCD MONITOR which is connected a computer. Product specification described herein was obtained from product data sheet or user's manual.

|                                              |                                                                 |
|----------------------------------------------|-----------------------------------------------------------------|
| CHASSIS TYPE                                 | Plastic                                                         |
| LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz) | 14.318 MHz, 24.000MHz                                           |
| POWER REQUIREMENT                            | DC12V, 3.5A from AC/DC Adapter                                  |
| MAX RESOLUTION                               | XGA 1024 x 768 @ 75Hz                                           |
| NUMBER OF LAYERS                             | 4 Layers (Main B'd), 2 Layers (Power Jack B'd, Key Control B'd) |
| EXTERNAL CONNECTOR                           | VGA INPUT (15pin D-SUB), DC IN                                  |

### Model Differences:

-. The difference(s) compared to the EUT is as follows: 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    | FCC ID       | Description                 | Connected to |
|-----------|-----------------|--------------|-----------------------------|--------------|
| MF151S    | MAX MEDIA INC.  | PBF-MF151S   | 15.1" TFT LCD MONITOR (EUT) | PC           |
| F1650K    | ILAN ELEC. LTD. | N/A          | AC/DC ADAPTER               | EUT          |
| TC-PA1000 | TAIL MEDIA      | LIZ-TCPA1000 | PC                          | -            |
| SKR-1032  | SEJIN Elec.     | GJJSKR-1032B | KEYBOARD                    | PC           |
| OK-720    | A4 TECH         | DOC          | MOUSE                       | PC           |
| 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 |
|-------------------|----------------|-------------------|--------|
| MAIN LOGIC B'D    | MAX MEDIA INC. | MF151S            | N/A    |
| POWER JACK B'D    | MAX MEDIA INC. | LAMP              | 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.

#### 3.3 Cable Description

|                             | Power Cord<br>Shielded (Y/N) | I/O cable Shielded<br>(Y/N) | Length (M)      |
|-----------------------------|------------------------------|-----------------------------|-----------------|
| 15.1" TFT LCD MONITOR (EUT) | N                            | N                           | 1.2(P), 1.5(D)  |
| AC/DC ADAPTER               | N                            | N                           | 1.5(P), 1.2(D)  |
| PC                          | N                            | -                           | 1.5(P)          |
| KEYBOARD                    | N/A                          | Y                           | 1.2 (D)         |
| MOUSE                       | N/A                          | Y                           | 1.2(D)          |
| MODEM                       | N                            | Y                           | 1.5(P), 1.5(D)  |
| PRINTER                     | N                            | Y                           | 1.5(P), 1.5 (D) |

\* The marked "(P)" means the Power Cable.



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### 3.4 Noise Suppression Parts on Cable

|                             | Ferrite Bead<br>(Y/N) | Location | Metal Hood<br>(Y/N) | Location |
|-----------------------------|-----------------------|----------|---------------------|----------|
| 15.1" TFT LCD MONITOR (EUT) | Y                     | BOTH END | Y                   | BOTH END |
| AC/DC ADAPTER               | Y                     | EUT END  | Y                   | EUT END  |
| PC                          | -                     | -        | -                   | -        |
| KEYBOARD                    | Y                     | PC END   | Y                   | PC END   |
| MOUSE                       | N                     | N/A      | Y                   | PC 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) |
|----------------------|-------------------------------------------------------|
| Resolution: 640x480  |                                                       |
| Resolution: 800x600  |                                                       |
| Resolution: 1024x768 | X                                                     |

### 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: 640x480  |                                                       |
| Resolution: 800x600  |                                                       |
| Resolution: 1024x768 | X                                                     |



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## 5. FINAL RESULT OF MEASUREMENT

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 : 22°C  
Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107  
Type of Test : CLASS B  
Result : PASSED BY -5.87 dB at 4.22 MHz

EUT : 15.1" TFT LCD MONITOR Date: September 18, 2000  
Operating Condition : Resolution 1024X768 mode  
Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

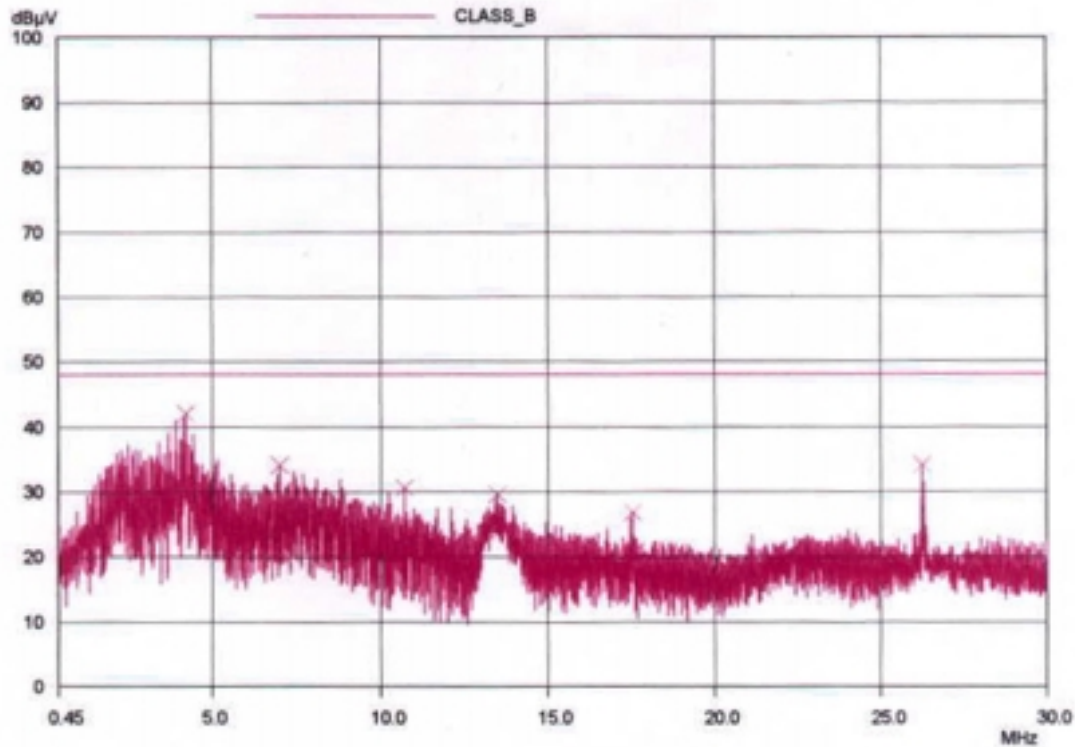
| Power Line Conducted Emission |                     |           | FCC CLASS B     |                |
|-------------------------------|---------------------|-----------|-----------------|----------------|
| Frequency<br>(MHz)            | Amplitude<br>(dBuV) | Conductor | Limit<br>(dBuV) | Margin<br>(dB) |
| 4.22                          | 42.13               | NEUTRAL   | 48.00           | -5.87          |
| 7.00                          | 34.12               | NEUTRAL   | 48.00           | -13.88         |
| 10.70                         | 30.67               | NEUTRAL   | 48.00           | -17.33         |
| 13.48                         | 29.64               | NEUTRAL   | 48.00           | -18.36         |
| 17.53                         | 26.87               | NEUTRAL   | 48.00           | -21.13         |
| 26.23                         | 34.13               | NEUTRAL   | 48.00           | -13.87         |

Line Conducted Emission Tabulated Data

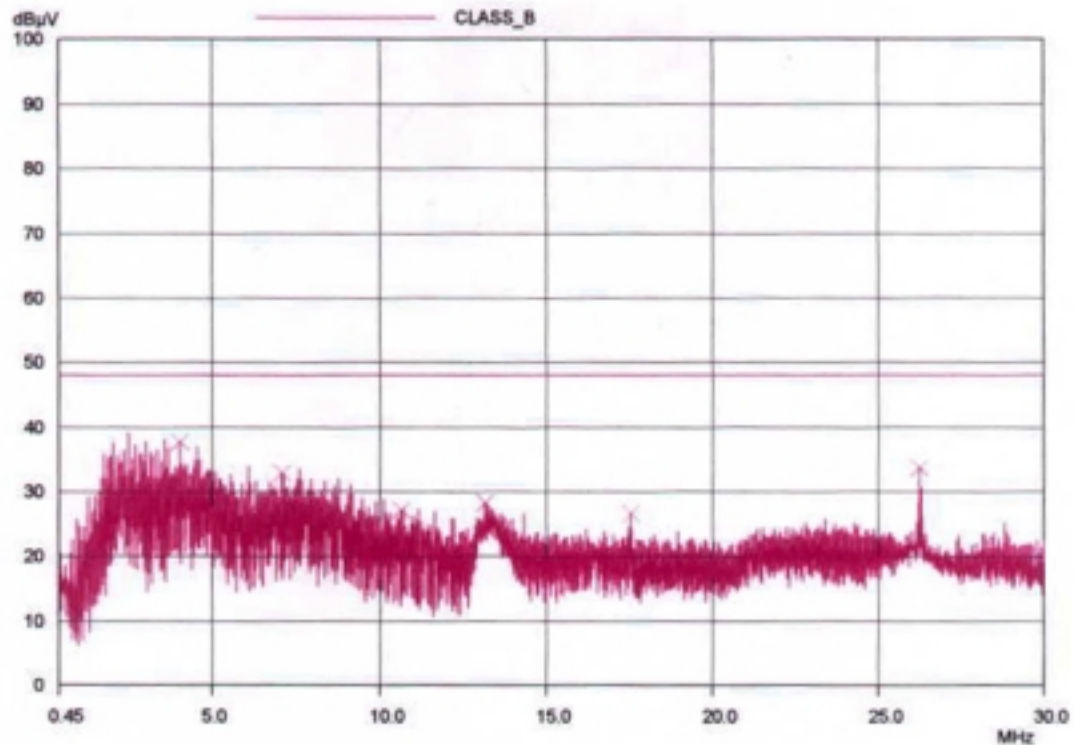
Measuring by: Seung Hyun, Nam / Test Engineer



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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 : 56 % Temperature : 22 °C  
Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109  
Type of Test : CLASS B  
Result : PASSED BY -5.11 dB at 82.68 MHz

EUT : 15.1" TFT LCD MONITOR Date: October 28, 2000  
Operating Condition : Resolution 1024X768 mode  
Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)  
Distance : 3 Meter

| Radiated Emissions |                | Ant  | Correction Factors |               | Total            | FCC CLASS B       |                |
|--------------------|----------------|------|--------------------|---------------|------------------|-------------------|----------------|
| Freq.<br>(MHz)     | Amp.<br>(dBuV) | Pol. | Ant.<br>(dBuV/m)   | Cable<br>(dB) | Amp.<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
| 55.12              | 18.10          | V    | 10.77              | 0.98          | 29.85            | 40.00             | -10.15         |
| 68.90              | 25.00          | V    | 7.58               | 1.00          | 33.58            | 40.00             | -6.42          |
| 75.80              | 20.60          | V    | 6.30               | 1.00          | 27.90            | 40.00             | -12.10         |
| 82.68              | 27.00          | H    | 6.84               | 1.05          | 34.89            | 40.00             | -5.11          |
| 89.56              | 25.94          | V    | 8.38               | 1.10          | 35.42            | 43.50             | -8.08          |
| 117.17             | 18.40          | V    | 13.13              | 1.22          | 32.75            | 43.50             | -10.75         |
| 124.00             | 18.30          | V    | 13.20              | 1.25          | 32.75            | 43.50             | -10.75         |
| 137.80             | 19.50          | V    | 12.73              | 1.30          | 33.53            | 43.50             | -9.97          |
| 172.26             | 18.39          | H    | 15.34              | 1.43          | 35.16            | 43.50             | -8.34          |
| 186.08             | 13.50          | V    | 16.27              | 1.48          | 31.25            | 43.50             | -12.25         |
| 206.60             | 21.50          | H    | 11.64              | 1.60          | 34.74            | 43.50             | -8.76          |
| 220.40             | 18.40          | H    | 11.87              | 1.68          | 31.95            | 46.00             | -14.05         |
| 227.40             | 20.40          | H    | 11.99              | 1.71          | 34.10            | 46.00             | -11.90         |
| 241.20             | 25.30          | H    | 12.22              | 1.78          | 39.30            | 46.00             | -6.70          |
| 248.00             | 17.90          | H    | 12.34              | 1.82          | 32.06            | 46.00             | -13.94         |
| 255.00             | 17.20          | H    | 12.72              | 1.84          | 31.76            | 46.00             | -14.24         |
| 331.20             | 17.00          | H    | 15.21              | 2.18          | 34.39            | 46.00             | -11.61         |
| 379.40             | 17.40          | H    | 15.56              | 2.40          | 35.36            | 46.00             | -10.64         |
| 413.20             | 12.90          | V    | 16.12              | 2.46          | 31.48            | 46.00             | -14.52         |
| 447.60             | 13.40          | V    | 16.88              | 2.54          | 32.82            | 46.00             | -13.18         |

Radiated Emissions Tabulated Data

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Measuring 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                          | SEP/00   | 12MONTH | ■   |
| 2.  | Test receiver        | R/S  | ESHS10    | 834467/007                          | APRIL/00 | 12MONTH | ■   |
| 3.  | Spectrum analyzer    | HP   | 8568B     | 3026A0226                           | SEP/00   | 12MONTH | ■   |
| 4.  | RF preselector       | HP   | 85685A    | 3107A01264                          | SEP/00   | 12MONTH | ■   |
| 5.  | Quasi-Peak Adapter   | HP   | 85650A    | 3107A01542                          | SEP/00   | 12MONTH | ■   |
| 6.  | Dipole Antenna       | EMCO | 3121C     | 9107-745                            | JUN/00   | 12MONTH |     |
| 7.  | Biconical antenna    | EMCO | 3104C     | 9109-4441<br>9109-4443<br>9109-4444 | MAR/00   | 12MONTH | ■   |
| 8.  | Log Periodic antenna | EMCO | 3146      | 9109-3213<br>9109-3214<br>9109-3217 | MAR/00   | 12MONTH | ■   |
| 9.  | LISN                 | EMCO | 3825/2    | 9109-1867<br>9109-1869              | FEB/00   | 12MONTH | ■   |
| 10. | RF Amplifier         | HP   | 8447F     | 3113A04554                          | JUN/00   | N/A     |     |
| 11. | Spectrum Analyzer    | HP   | 8591A     | 3131A02312                          | APR/00   | 12MONTH |     |
| 12. | Computer System      | HP   | 98581C    | 98543A                              | N/A      | N/A     | ■   |
|     | Hard disk drive      |      | 9153C     | CMC762Z9153                         | 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     | ■   |