

**MATSUSHITA-KOTOBUKI  
ELECTRONICS INDUSTRIES LTD.**

MATSUYAMA DIVISION

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Page 1 of 18 pages

## **TEST REPORT**

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REPORT NUMBER : MKM01F-009

APPLICANT : Matsushita-Kotobuki  
Electronics Industries, Ltd.

MODEL NUMBER : CW-8571-B

FCC ID : IUO9TB091CRB

Regulation : FCC Part15B Class B

Conducted Emission Test  
Radiated Emission Test

Matsushita-Kotobuki Electronics Ind., Ltd.  
Matsuyama Division

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**SECTION 1. TEST CERTIFICATION****APPLICANT INFORMATION**

Company : Matsushita-Kotobuki Electronics Industries, Ltd.  
Address : 8-1, Furujin-machi, Takamatsu-city, Kagawa-ken,  
760-0025 Japan

**GRANTEE INFORMATION**

Company : Matsushita-Kotobuki Electronics Industries, Ltd.  
Division / Section : Matsuyama Division Legal Affairs Sec.  
Address : 2131-1 Minamikata, Kawauchi-cho, Onsen-gun,  
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Telephone number : +81 89 966 2111  
Fax number : +81 89 966 5733  
Contact person : Kenji Matsugi

**DESCRIPTION OF TEST ITEM**

Kind of equipment : DVD-ROM & CD-R/RW Drive  
Trademark : Matsushita-Kotobuki  
FCC ID : IUO9TB091CRB  
Model number : CW-8571-B  
Serial number : 1116XXA00010

**TEST PERFORMED**

|                      |                                                   |
|----------------------|---------------------------------------------------|
| FCC Registration No. | : 90793                                           |
| Test started         | : February 15, 2001                               |
| Test completed       | : February 15, 2001                               |
| Purpose of test      | : FCC Docket 87-389                               |
| Regulation           | : FCC Part 15B Class B<br>Unintentional Radiators |
| Test setup           | : ANSI C63.4 -1992                                |

Report file number : MKM01F-009

Report issue date : February 15, 2001

Test engineer : Shinji Yamauchi *S. Yamauchi*

Report approved by : Hisayuki Honda *H. Honda*  
[ Manager ]

This equipment complies with above standard or regulation under the test condition or test configuration shown on this test report.

## SECTION 2. EQUIPMENT UNDER TEST

The equipment under test (EUT) consists of the following equipment.

Indication in the following left side column corresponds to section 5.

| Symbol | Item                       | Model No. | Serial No.   | FCC ID       | Manufacturer                                  |
|--------|----------------------------|-----------|--------------|--------------|-----------------------------------------------|
| A)     | DVD-ROM<br>& CD-R/RW Drive | CW-8571-B | 1116XXA00010 | IUO9TB091CRB | Matsushita-Kotobuki<br>Electronics Ind., Ltd. |

Power ratings of EUT : +5V DC, 1.0A / +12V DC, 2.0A

### 2.1 Port(s) / Connector(s) :

IDE Bus Connector(40pin), Head Phone Jack(Stereo Mini Plug),  
Audio Out Connector(4pin), Digital Audio Out Connector(2pin), DC IN Connector(4pin)

### 2.2 Oscillator(s) / Crystal(s) :

| Oscillator     | Operating<br>Frequency | Board name | Remarks                     |
|----------------|------------------------|------------|-----------------------------|
| 33.86 MHz      | 45.16 MHz              | Main PCB   | Optical Disc Controller     |
| 33.86 MHz      | 45.16 MHz              | Main PCB   | CPU                         |
| 300 MHz / typ. | 300 MHz / typ.         | Pick Up    | High Frequency Module (CD)  |
| 400 MHz / typ. | 400 MHz / typ.         | Pick Up    | High Frequency Module (DVD) |

### SECTION 3. SUPPORT EQUIPMENT USED

The EUT has been supported by the following equipment during these tests.  
Indication in the following left side column corresponds to section 5.

| Symbol | Item                           | Model No.        | Serial No.   | FCC ID                    | Manufacturer        |
|--------|--------------------------------|------------------|--------------|---------------------------|---------------------|
| B)     | Interface Card                 | LMEP0345A        | None         | IUO9TB035CRI              | Matsushita-Kotobuki |
| C)     | Host Computer                  | OptiPlex GXa DCS | SPHWX        | Declaration of Conformity | DELL                |
| D)     | Head Phone                     | RP-HT28          | None         | N.A.                      | Panasonic           |
| E)     | Stereo Radio Cassette Recorder | RX-F5            | None         | ACJ9TBRX-F5               | Panasonic           |
| F)     | Keyboard                       | SK-1000REW       | M970911905   | GYUR36SK                  | DELL                |
| G)     | Color Display                  | 14MVX            | 5103         | ABL9679001CD              | HITACHI             |
| H)     | Printer                        | 3630A            | 3219A17397   | BSD8533630A               | HEWLETT PACKARD     |
| I)     | Modem                          | C202A            | 010489       | BKM552C202A               | EPSON               |
| J)     | Mouse                          | M-S34-6MD        | ID75BCIF1MON | DZL211029                 | COMPAQ              |

## SECTION 4. CABLE(S) USED

The following cable(s) was used for testing. Indication number in the following left side column corresponds to section 5.

| Number | Name                      | Length | Shield | From                               | To                                |
|--------|---------------------------|--------|--------|------------------------------------|-----------------------------------|
| 1)     | 40Pin Flat cable          | 0.4 m  | None   | DVD-ROM Drive<br>Plastic connector | Host Computer                     |
| 2)     | Audio cable               | 0.4 m  | None   | DVD-ROM Drive<br>Plastic connector | Interface Card                    |
| 3)     | Digital Audio cable       | 0.4 m  | None   | DVD-ROM Drive<br>Plastic connector | Interface Card                    |
| 4)     | DC Power cable            | 0.4 m  | None   | DVD-ROM Drive                      | Host Computer                     |
| 5)     | Head Phone cable          | 1.5 m  | None   | DVD-ROM Drive<br>Plastic connector | Head Phone                        |
| 6)     | Audio cable               | 1.0 m  | None   | Interface Card                     | Stereo Radio<br>Cassette Recorder |
| 7)     | Audio cable               | 1.0 m  | None   | Interface Card                     | Stereo Radio<br>Cassette Recorder |
| 8)     | Keyboard I/F cable        | 1.9 m  | Yes    | Host Computer<br>Metal connector   | Keyboard                          |
| 9)     | Video Signal<br>I/F cable | 1.4 m  | Yes    | Host Computer<br>Metal connector   | Color Display                     |

None :

All cables are not attached ferrite core.

The following cable(s) was used for testing. Indication number in the following left side column corresponds to section 5.

| Number | Name                                             | Length | Shield | From                              | To           |
|--------|--------------------------------------------------|--------|--------|-----------------------------------|--------------|
| 10)    | Mouse cable                                      | 1.8 m  | None   | Host Computer<br>Metal connector  | Mouse        |
| 11)    | Parallel I/F cable                               | 1.5 m  | Yes    | Host Computer<br>Metal connector  | Printer      |
| 12)    | RS-232C I/F cable                                | 1.1 m  | Yes    | Host Computer<br>Metal connector  | Modem        |
| 13)    | Power cord for<br>Host Computer                  | 1.9 m  | Yes    | Host Computer                     | Power Source |
| 14)    | Power cord for Stereo<br>Radio Cassette Recorder | 1.9 m  | None   | Stereo Radio<br>Cassette Recorder | Power Source |
| 15)    | Power cord for<br>Color Display                  | 1.9 m  | None   | Color Display                     | Power Source |
| 16)    | Power cord for Printer                           | 2.0 m  | None   | Printer                           | AC Adapter   |
| 17)    | Power cord for Printer                           | 2.0 m  | None   | AC Adapter                        | Power Source |
| 18)    | Power cord for Modem                             | 1.9 m  | None   | Modem                             | Power Source |

None :

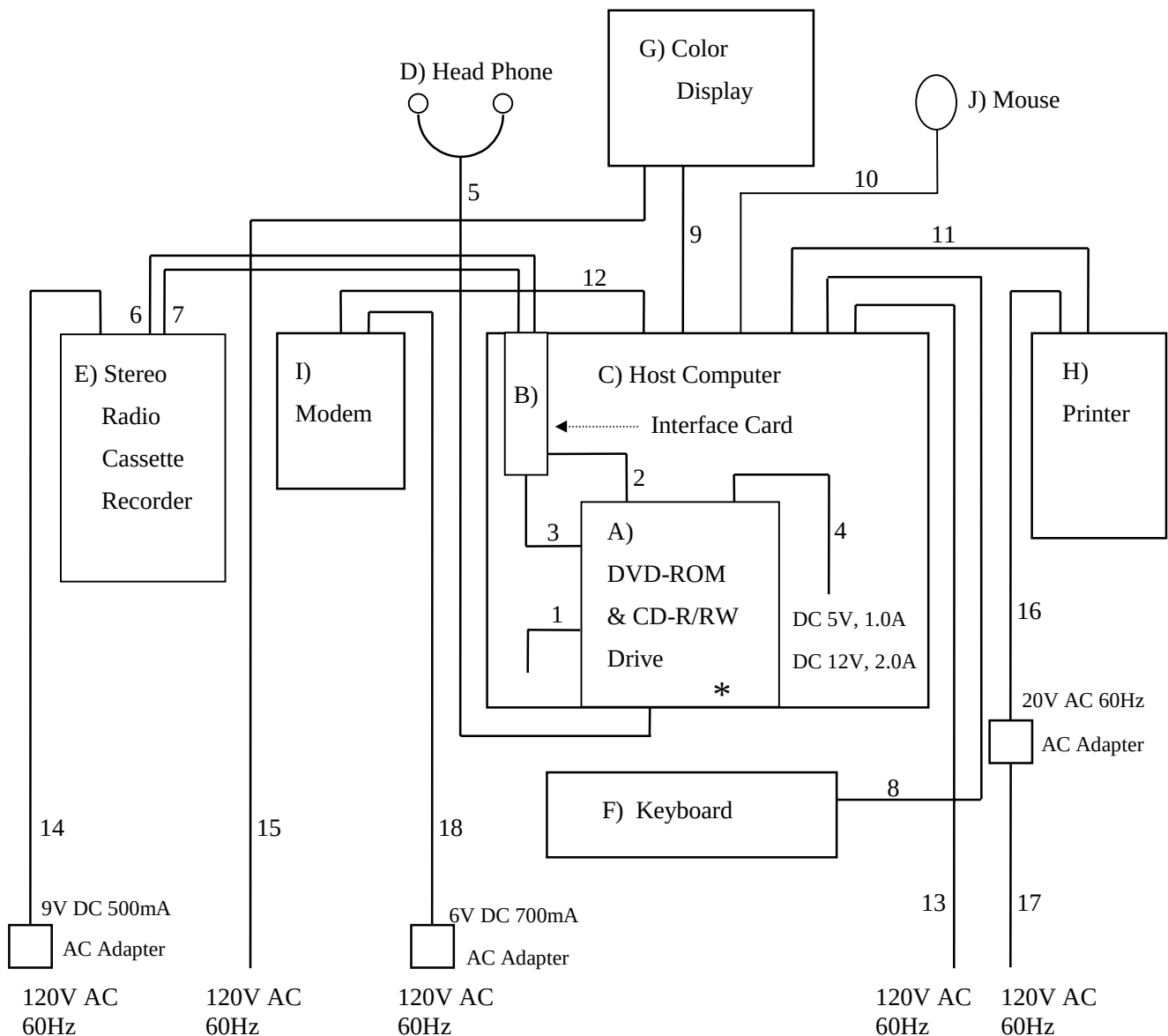
All cables are not attached ferrite core.

## SECTION 5. CONSTRUCTION OF EQUIPMENT

The construction of EUT during testing is as follows.

### System configuration

\*: EUT



Symbol or numbers assigned to equipment or cables on this diagram are corresponded to the symbols or numbers assigned to equipment or cables on tables in Sections 2 to 4.

## SECTION 6. OPERATING CONDITIONS

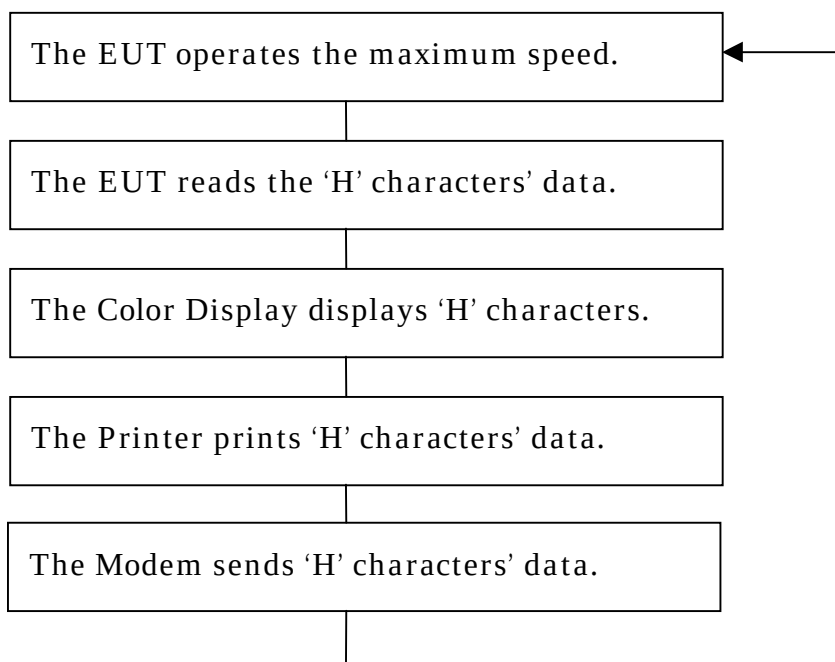
The EUT has been operated under the following conditions during the tests.

### 6.1 Operating condition

The tests have been carried out under Read mode.

### 6.2 Operation flow

Performed following operations continuously.



## SECTION 7. TEST PROCEDURE(S)

Tests have been carried out with the test procedure(s) drawn up by our laboratory which is in accordance with the following test procedure(s).

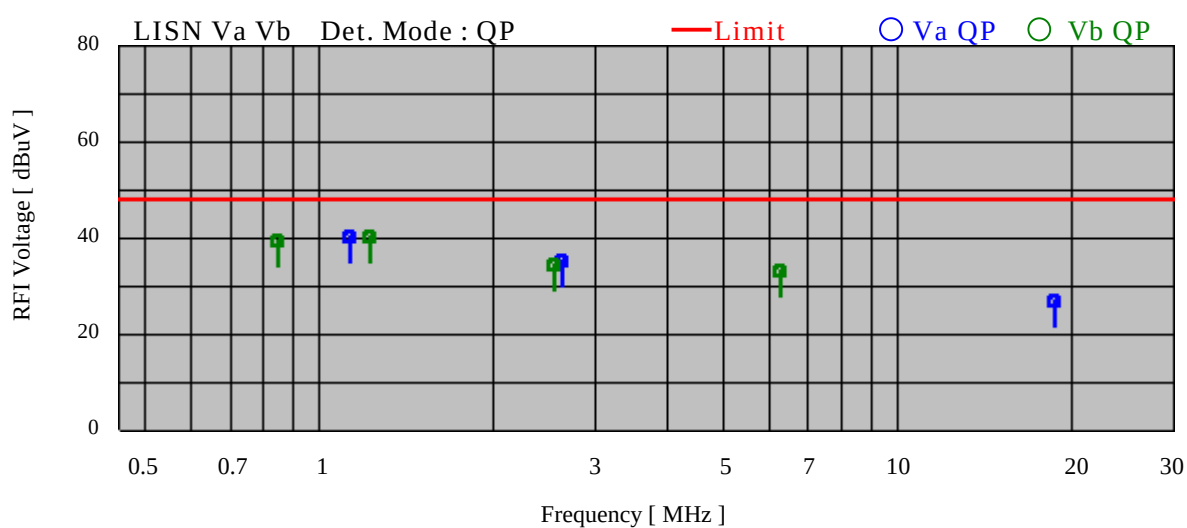
| Test item          | Test procedure used | Scanned frequency range |
|--------------------|---------------------|-------------------------|
| Conducted Emission | ANSI C63.4-1992     | 0.45 - 30 MHz           |
| Radiated Emission  | ANSI C63.4-1992     | 30 - 2000 MHz           |

## SECTION 8. EVALUATION OF TEST RESULTS

### 8.1 Conducted Emission Test

|                    |                           |
|--------------------|---------------------------|
| Product Name       | : DVD-ROM & CD-R/RW Drive |
| Model No.          | : CW-8571-B               |
| Serial No.         | : 1116XXA00010            |
| Power Supply       | : 120V / 60Hz             |
| Test Mode          | : DVD-ROM Read mode       |
| Temp / Humi / Pres | : 15 °C / 33% / 1015hPa   |
| Operator           | : S. Yamauchi             |

| No | Freq.<br>[ MHz ] | Reading Level  |                | Factor<br>[ dB ] | Emission Level |               | Limit<br>[ dBuV ] | Margin<br>[ dB ] |
|----|------------------|----------------|----------------|------------------|----------------|---------------|-------------------|------------------|
|    |                  | Va<br>[ dBuV ] | Vb<br>[ dBuV ] |                  | Va<br>[ MHz ]  | Vb<br>[ MHz ] |                   |                  |
| 1  | 0.853            | ----           | 39.1           | 0.1              | ----           | 39.2          | 48.0              | 8.8              |
| 2  | 1.136            | 40.0           | ----           | 0.1              | 40.1           | ----          | 48.0              | 7.9              |
| 3  | 1.234            | ----           | 40.0           | 0.2              | ----           | 40.2          | 48.0              | 7.8              |
| 4  | 2.561            | ----           | 34.1           | 0.2              | ----           | 34.3          | 48.0              | 13.7             |
| 5  | 2.648            | 34.9           | ----           | 0.2              | 35.1           | ----          | 48.0              | 12.9             |
| 6  | 6.287            | ----           | 32.5           | 0.3              | ----           | 32.8          | 48.0              | 15.2             |
| 7  | 6.287            | 32.5           | ----           | 0.3              | 32.8           | ----          | 48.0              | 15.2             |
| 8  | 18.810           | 25.7           | ----           | 0.9              | 26.6           | ----          | 48.0              | 21.4             |



## 8.2 Radiated Emission Test

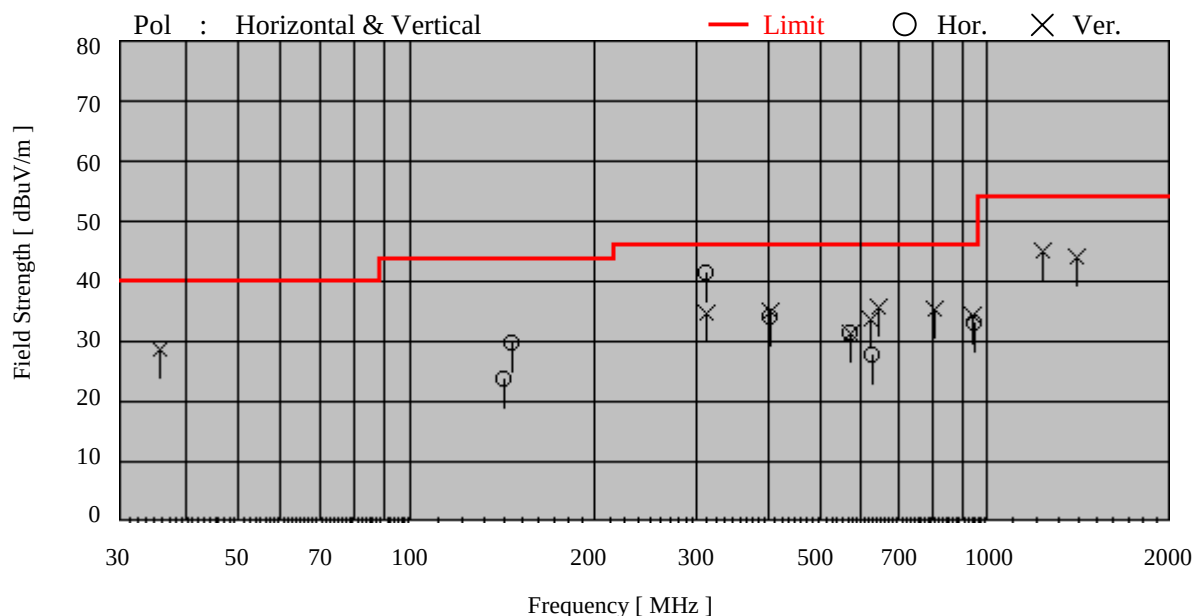
|                    |                           |
|--------------------|---------------------------|
| Product Name       | : DVD-ROM & CD-R/RW Drive |
| Model No.          | : CW-8571-B               |
| Serial No.         | : 1116XXA00010            |
| Power Supply       | : 120V / 60Hz             |
| Test Mode          | : DVD-ROM Read mode       |
| Temp / Humi / Pres | : 15 °C / 33% / 1015hPa   |
| Operator           | : S. Yamauchi             |

[ Quasi Peak mode ]

| No | Freq.<br>[ MHz ] | Reading Level |      | Factor<br>[ dB ] | Emission Level |      | Limit<br>[ dBuV/m ] | Margin<br>[ dB ] |
|----|------------------|---------------|------|------------------|----------------|------|---------------------|------------------|
|    |                  | Hor.          | Ver. |                  | Hor.           | Ver. |                     |                  |
|    |                  | [ dBuV ]      |      |                  | [ dBuV/m ]     |      |                     |                  |
| 1  | 36.003           | ----          | 10.4 | 18.4             | ----           | 28.8 | 40.0                | 11.2             |
| 2  | 140.030          | 7.4           | ---- | 16.2             | 23.6           | ---- | 43.5                | 19.9             |
| 3  | 144.032          | 13.4          | ---- | 16.3             | 29.7           | ---- | 43.5                | 13.8             |
| 4  | 313.128          | 21.3          | ---- | 20.0             | 41.3           | ---- | 46.0                | 4.7              |
| 5  | 313.215          | ----          | 14.6 | 20.0             | ----           | 34.6 | 46.0                | 11.4             |
| 6  | 403.398          | ----          | 14.7 | 20.4             | ----           | 35.1 | 46.0                | 10.9             |
| 7  | 403.456          | 13.6          | ---- | 20.4             | 34.0           | ---- | 46.0                | 12.0             |
| 8  | 576.517          | ----          | 7.2  | 24.0             | ----           | 31.2 | 46.0                | 14.8             |
| 9  | 576.518          | 7.3           | ---- | 24.0             | 31.3           | ---- | 46.0                | 14.7             |
| 10 | 626.477          | ----          | 8.8  | 25.0             | ----           | 33.8 | 46.0                | 12.2             |
| 11 | 627.367          | 2.8           | ---- | 25.7             | 27.8           | ---- | 46.0                | 18.2             |
| 12 | 644.354          | ----          | 10.5 | 25.3             | ----           | 35.8 | 46.0                | 10.2             |
| 13 | 806.692          | ----          | 8.3  | 27.1             | ----           | 35.4 | 46.0                | 10.6             |
| 14 | 939.400          | ----          | 5.6  | 28.8             | ----           | 35.4 | 46.0                | 11.6             |
| 15 | 949.545          | 4.1           | ---- | 29.1             | 33.2           | ---- | 46.0                | 12.8             |

[ Peak mode ]

| No | Freq.<br>[ MHz ] | Reading Level |      | Factor<br>[ dB ] | Emission Level |      | Limit<br>[ dBuV/m ] | Margin<br>[ dB ] |
|----|------------------|---------------|------|------------------|----------------|------|---------------------|------------------|
|    |                  | Hor.          | Ver. |                  | Hor.           | Ver. |                     |                  |
|    |                  | [ dBuV ]      |      |                  | [ dBuV/m ]     |      |                     |                  |
| 1  | 1213             | ----          | 15.6 | 29.4             | ----           | 45.0 | 54.0                | 9.0              |
| 2  | 1390             | ----          | 13.8 | 30.2             | ----           | 44.0 | 54.0                | 10.0             |



### 8.3 Conclusion

This test report clearly shows that the EUT is in compliance with the FCC Part 15B, Class B specification.

The minimum margins to the limits are as follows:

|                        |        |    |             |
|------------------------|--------|----|-------------|
| Conduction measurement | 7.8 dB | at | 1.234 MHz   |
| Radiation measurement  | 4.7 dB | at | 313.128 MHz |

## 8.4 Sample Calculations

### 8.4.1 Conducted Emission

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Example @ 1.234 MHz

$$\begin{array}{rcl}
 \text{Emission Level} & = & \text{Meter Reading} \\
 & + & \text{A.M.N. Factor} \\
 & & \begin{array}{r} 40.0 \text{ dBuV} \\ + 0.2 \text{ dB} \\ \hline = 40.2 \text{ dBuV} \end{array}
 \end{array}$$

$$\begin{array}{rcl}
 \text{Margin} & = & \text{Limit} \\
 & - & \text{Emission Level} \\
 & & \begin{array}{r} 48.0 \text{ dBuV} \\ - 40.2 \text{ dBuV} \\ \hline = 7.8 \text{ dB} \end{array}
 \end{array}$$


---

A.M.N. : Artificial Mains Network = Line Impedance Stabilization Network (LISN)

### 8.4.2 Radiated Emission

---

Example @ 313.128 MHz

$$\begin{array}{rcl}
 \text{Emission Level} & = & \text{Meter Reading} \\
 & + & \text{Factor} \\
 \text{( Factor = Antenna Factor + Cable Loss )} & & \begin{array}{r} 21.3 \text{ dBuV} \\ + 20.0 \text{ dB} \\ \hline = 41.3 \text{ dBuV/m} \end{array}
 \end{array}$$

$$\begin{array}{rcl}
 \text{Margin} & = & \text{Limit} \\
 & - & \text{Emission Level} \\
 & & \begin{array}{r} 46.0 \text{ dBuV/m} \\ - 41.3 \text{ dBuV/m} \\ \hline = 4.7 \text{ dB} \end{array}
 \end{array}$$


---

## SECTION 9. PHOTOGRAPHS OF TEST SET-UP

Test setup in accordance with ANSI C63.4-1992

### 9.1 Conducted Emission Test



Front View



Rear view

### 9.2 Radiated Emission Test



Front View



Rear view

Note : Maintaining 10cm spacing between all the equipment cabinets.

SECTION 10. INSTRUMENTS USED FOR TEST

| Instrument                                                                    | Model No. | Serial No. | Manufacturer    | Last cal. | Period |
|-------------------------------------------------------------------------------|-----------|------------|-----------------|-----------|--------|
| EMI Test Receiver                                                             | 85462A    | 3520A00241 | Hewlett Packard | 8/2000    | 1 Year |
| RF Filter Section                                                             | 85460A    | 3448A00210 | Hewlett Packard | 8/2000    | 1 Year |
| Biconical Antenna                                                             | BBA9106   | None       | Schwarzbeck     | 3/2000    | 1 Year |
| Logperiodic Antenna                                                           | UHALP9107 | 1623       | Schwarzbeck     | 3/2000    | 1 Year |
| Double Ridged Antenna                                                         | 3115      | 9702-5139  | EMCO            | 7/2000    | 1 Year |
| Artificial Mains Network(AMN)<br>= Line Impedance Stabilization Network(LISN) |           |            |                 |           |        |
|                                                                               | ESH3-Z5   | 840062/024 | Schwarzbeck     | 7/2000    | 1 Year |
| Artificial Mains Network(AMN)<br>= Line Impedance Stabilization Network(LISN) |           |            |                 |           |        |
|                                                                               | ESH3-Z5   | 840062/028 | Schwarzbeck     | 8/2000    | 1 Year |

## SECTION 11. PRECISION

Tolerances of the measuring instruments are shown on below.

- |                                  |                                                                      |
|----------------------------------|----------------------------------------------------------------------|
| 1. Antenna factor                | $\pm 2.0$ dB                                                         |
| 2. Cable loss                    | $\pm 1.0$ dB                                                         |
| 3. EMI test receiver             | $\pm 2.0$ dB                                                         |
| 4. Artificial Mains Network(AMN) | impedance $\pm 20\%$<br>= Line Impedance Stabilization Network(LISN) |
| 5. Site Attenuation              | $\pm 4.0$ dB                                                         |

Repeatability and reproducibility about maximum emission setup are not specified herein.

## SECTION 12. VALIDITY TEST REPORT

12.1 The test result of this report is effective for equipment under test itself and under the test configuration described on the report.

12.2 This test report does not assure that whether the test result taken in other testing laboratory is compatible or reproducible to the test result on this report or not.

12.3 Copying of this report without permission is prohibited.