

FACTORY CONTROL NO. : FVD-99-F002  
FCC ID. : ACJ93312141

**COSMOS**

FACTORY CONTROL NO. : FVD-99-F003  
FCC ID. : GSS19005

NVLAP LAB CODE: 200151-0

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Test Report No. E19958

## MEASUREMENT/TECHNICAL REPORT

### FCC PART 15, Class B (ANSI C63.4:1992)

Issued: December 24, 1998

Name and Address of: Matsushita Electric Industrial Co., Ltd.  
the Client 6-4-1 Tsujidomotomachi, Fujisawa-shi, Kanagawa-ken, 251-0043 Japan  
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Test Item: CRT Display Monitor / USB Pedestal

Identification: TX-D9S55U / TY-LD67AZ

Serial No.: FX8640003 / None

FCC ID: ACJ93312141 & GSS19005

Sample No.: 1 / 2

Sample Receipt Date: December 22, 1998

Test Result: PASS

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## 1. General Information

### 1.1 Product Description

The Matsushita Electric Industrial Co., Ltd., Model TX-D9S55U and TY-LD67AZ (referred to as the EUT1 and EUT2 in this report) is a CRT Display Monitor and USB Pedestal.

Rated input voltage is AC 120V.

EUT is featuring a 10 MHz processor.

We chose and measured TX-D9S55U as representative model in family machines because it was the same circuit construction and performance as them. The following was family machines.

Model TX-D9S55NM, TX-D9S55, TX-D9S55\*\*\*\*\*, VCDTS21476-1\*

### 1.2 Related Submittal(s)/Grant(s)

Related Submittal Grant is not conered in this report.

### 1.3 Tested System Details

The FCC IDs for all equipment, plus descriptions of all cables used in the tested system(including inserted cards, which have grants) are:

| Model No. | Serial No. | FCC ID                           | Description          | Cable Description                                                                                                                  |
|-----------|------------|----------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------|
| TX-D9S55U | FX8640003  | ACJ93312141<br>GSS19005<br>(Doc) | EUT1                 | AC Power Cord<br>0.6m Unshielded (3P)<br>Video I/F Cable<br>1.8m Shielded (D-Sub = BNC)<br>Monitor Control Cable<br>0.65m Shielded |
| TY-LD67AZ | None       | Doc                              | EUT2                 | AC Power Cord<br>1.8m Unshielded (3P)<br>USB Data Cable<br>1.8m Shielded                                                           |
| D4553A    | SG71403712 | Doc                              | Personal<br>Computer | AC Power Cord<br>1.8m Unshielded (3P)                                                                                              |

**1. General Information (Continued)****1.3 Tested System Details (Continued)**

The FCC IDs for all equipment, plus descriptions of all cables used in the tested system(including inserted cards, which have grants) are:

| Model No.                        | Serial No.    | FCC ID       | Description | Cable Description                                                           |
|----------------------------------|---------------|--------------|-------------|-----------------------------------------------------------------------------|
| C4565A                           | SG73I140TZ    | B94C4555X    | Printer     | AC Power Cord<br>1.8m Unshielded (3P)<br>Printer I/F Cable<br>3.0m Shielded |
| RT6656TWJP                       | 52971785      | AQ6-MTN4C15  | Keyboard    | Keyboard I/F Cable<br>1.8m Shielded                                         |
| M-S34                            | LZB74709274   | DZL211029    | Mouse       | Mouse I/F Cable<br>1.8m Shielded                                            |
| FM-9648                          | None          | DK4FM9648R   | Modem       | Modem I/F Cable<br>2.4m Shielded                                            |
| AM-12830                         | None          | N/A          | AC Adaptor  | AC Power Cord<br>1.9m Unshielded (2P)                                       |
| EMC-S3906                        | 0000031       | EW4ECM-S3906 | USB Mouse   | USB Mouse Cable<br>1.8m Shielded                                            |
| EMC-S3906                        | 0000036       | EW4ECM-S3906 | USB Mouse   | USB Mouse Cable<br>1.8m Shielded                                            |
| EMC-S3906                        | 0000052       | EW4ECM-S3906 | USB Mouse   | USB Mouse Cable<br>1.8m Shielded                                            |
| EMC-S3906                        | 0000065       | EW4ECM-S3906 | USB Mouse   | USB Mouse Cable<br>1.8m Shielded                                            |
| Stealth 3D<br>3400XL/<br>DIAMOND | 5160800003131 | FTUPCI30208  | Video Card  | None                                                                        |

## 1. General Information (Continued)

### 1.4 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4:1992. Radiated testing was performed at an antenna to EUT distance of 10 meters. Final Result was converted in 3m, using  $20 \log 10m / 3m$ .

### 1.5 Test Facility

The open area test site, Cosmos EMC Lab., and conducted measurement facility used to the radiated data is located at 543 Shimesasu, Watarai-cho, Watarai-gun, Mie-ken, 516-2119, Japan. This site has been fully described in a report dated May 23, 1996 submitted to FCC, and accepted in a letter dated July 10, 1996 (31040/SIT 1300F2).

## 2. System Test Configuration

### 2.1 Justification

EUT was measured by max radiation mode user specified. ("H" Pattern)

The measurement was conducted for the resolution  $640 \times 480$  (Dot Clock Frequency: 25.17 MHz, Horizontal Frequency: 31.5 kHz, Vertical Frequency: 60 Hz) and  $1600 \times 1200$  (Dot Clock Frequency: 202.5 MHz, Horizontal Frequency: 93.8 kHz, Vertical Frequency: 75 Hz).

The Video I/F Cable was conducted in D-Sub = D-Sub 1.5m length and D-Sub = D-Sub 1.8m length D-Sub = D-Sub 3.0m length and D-Sub = BNC 1.8m length. Following was the worst condition;

|                    | Resolution                                                                                                            | Video I/F Cable            |
|--------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------|
| Conducted Emission | $640 \times 480$<br>Dot Clock Frequency: 25.17 MHz,<br>Horizontal Frequency: 31.5 kHz,<br>Vertical Frequency: 60 Hz   | D-Sub = BNC<br>1.8m length |
| Radiated Emission  | $1600 \times 1200$<br>Dot Clock Frequency: 202.5 MHz,<br>Horizontal Frequency: 93.8 kHz,<br>Vertical Frequency: 75 Hz | D-Sub = BNC<br>1.8m length |

### 2.2 EUT Exercise Software

EUT did not exercise program during radiated and conducted testing.

### 2.3 Special Accessories

This cable model and part numbers are instructed with their installation manual.

### 2.4 Equipment Modifications

No equipment modification to achieve compliance to Class B levels was done during test.

## 2. System Test Configuration (Continued)

### 2.5 Configuration of Tested System (Continued)

#### Conducted Emission

- 1) EUT2 was put on the Personal Computer.
- 2) EUT1 was put on the EUT2.
- 3) Video Card was inserted in Personal Computer.
- 4) Personal Computer and Printer located at 0.1m intervals.
- 5) Personal Computer and Modem located at 0.1m intervals.
- 6) Keyboard and Mouse located at 0.1m intervals.
- 7) Keyboard and USB Mouse (S/N: 0000031) located at 0.1m intervals.
- 8) USB Mouse (S/N: 0000031) and USB Mouse (S/N: 0000036) located at 0.1m intervals.
- 9) USB Mouse (S/N: 0000036) and USB Mouse (S/N: 0000052) located at 0.1m intervals.
- 10) USB Mouse (S/N: 0000052) and USB Mouse (S/N: 0000065) located at 0.1m intervals.
- 11) EUT2 was connected to Artificial-Mains Network (Model ESH2-Z5) by the AC Power Cord.  
Extended Cord was folded at the center of Cord by 0.3m length,  
and the Cord was hung in the middle between ground and table.
- 12) EUT1 was connected to EUT2 by the AC Power Cord.
- 13) Personal Computer was connected to Artificial-Mains Network (Model MN2050B)  
by the AC Power Cord.
- 14) Printer was connected to Artificial-Mains Network (Model MN2050B)  
by the AC Power Cord.  
Extended Cord was folded at the center of Cord by 0.4m length,  
and the Cord was hung in the middle between ground and table.
- 15) AC Adaptor was connected to Artificial-Mains Network (Model MN2050B).
- 16) Modem was connected to AC Adaptor by the AC Power Cord.
- 17) EUT2 was connected to Video Card by the Video I/F Cable.  
Extended Cable was folded at the center of Cable by 0.4m length,  
and the Cable was hung in the middle between ground and table.
- 18) Personal Computer was connected to Printer by the Printer Cable.  
Extended Cable was folded at the center of Cable by 0.4m length,  
and the Cable was hung in the middle between ground and table.
- 19) Personal Computer was connected to Modem by the Modem I/F Cable.  
Extended Cable was folded at the center of Cable by 0.4m length,  
and the Cable was hung in the middle between ground and table.
- 20) Personal Computer was connected to Keyboard by the Keyboard I/F Cable.
- 21) Personal Computer was connected to Mouse by the Mouse I/F Cable.
- 22) EUT1 was connected to EUT2 by the Monitor Control Cable.
- 23) EUT2 was connected to Personal Computer by the USB Data Cable.  
Extended Cable was folded at the center of Cable by 0.4m length,  
and the Cable was hung in the middle between ground and table.

## 2. System Test Configuration (Continued)

### 2.5 Configuration of Tested System (Continued)

#### Conducted Emission (Continued)

- 24) EUT2 was connected to USB Mouse (S/N: 0000031) by the USB Mouse Cable.
- 25) EUT2 was connected to USB Mouse (S/N: 0000036) by the USB Mouse Cable.
- 26) EUT2 was connected to USB Mouse (S/N: 0000052) by the USB Mouse Cable.
- 27) EUT2 was connected to USB Mouse (S/N: 0000065) by the USB Mouse Cable.

#### Radiated Emission

- 1) EUT2 was put on the Personal Computer.
- 2) EUT1 was put on the EUT2.
- 3) Video Card was inserted in Personal Computer.
- 4) Personal Computer and Printer located at 0.1m intervals.
- 5) Personal Computer and Modem located at 0.1m intervals.
- 6) Keyboard and Mouse located at 0.1m intervals.
- 7) Keyboard and USB Mouse (S/N: 0000031) located at 0.1m intervals.
- 8) USB Mouse (S/N: 0000031) and USB Mouse (S/N: 0000036) located at 0.1m intervals.
- 9) USB Mouse (S/N: 0000036) and USB Mouse (S/N: 0000052) located at 0.1m intervals.
- 10) USB Mouse (S/N: 0000052) and USB Mouse (S/N: 0000065) located at 0.1m intervals.
- 11) EUT2 was connected to Power Supply by the AC Power Cord.  
Extended Cord was folded at the center of Cord by 0.3m length,  
and the Cord was hung in the middle between ground and table.
- 12) EUT1 was connected to EUT2 by the AC Power Cord.
- 13) Personal Computer was connected to Power Supply by the AC Power Cord.  
Extended Cord was folded at the center of Cord by 0.4m length,  
and the Cord was hung in the middle between ground and table.
- 14) Printer was connected to Power Supply by the AC Power Cord.  
Extended Cord was folded at the center of Cord by 0.4m length,  
and the Cord was hung in the middle between ground and table.
- 15) AC Adaptor was connected to Power Supply.
- 16) Modem was connected to AC Adaptor by the AC Power Cord.  
Extended Cord was folded at the center of Cord by 0.4m length,  
and the Cord was hung in the middle between ground and table.
- 17) EUT2 was connected to Video Card by the Video I/F Cable.  
Extended Cable was folded at the center of Cable by 0.4m length,  
and the Cable was hung in the middle between ground and table.
- 18) Personal Computer was connected to Printer by the Printer Cable.  
Extended Cable was folded at the center of Cable by 0.4m length,  
and the Cable was hung in the middle between ground and table.
- 19) Personal Computer was connected to Modem by the Modem I/F Cable.  
Extended Cable was folded at the center of Cable by 0.4m length,  
and the Cable was hung in the middle between ground and table.

## 2. System Test Configuration (Continued)

### 2.5 Configuration of Tested System (Continued)

#### Radiated Emission (Continued)

- 20) Personal Computer was connected to Keyboard by the Keyboard I/F Cable.
- 21) Personal Computer was connected to Mouse by the Mouse I/F Cable.
- 22) EUT1 was connected to EUT2 by the Monitor Control Cable.
- 23) EUT2 was connected to Personal Computer by the USB Data Cable.  
Extended Cable was folded at the center of Cable by 0.4m length,  
and the Cable was hung in the middle between ground and table.
- 24) EUT2 was connected to USB Mouse (S/N: 0000031) by the USB Mouse Cable.
- 25) EUT2 was connected to USB Mouse (S/N: 0000036) by the USB Mouse Cable.
- 26) EUT2 was connected to USB Mouse (S/N: 0000052) by the USB Mouse Cable.
- 27) EUT2 was connected to USB Mouse (S/N: 0000065) by the USB Mouse Cable.

## 2. System Test Configuration (Continued)

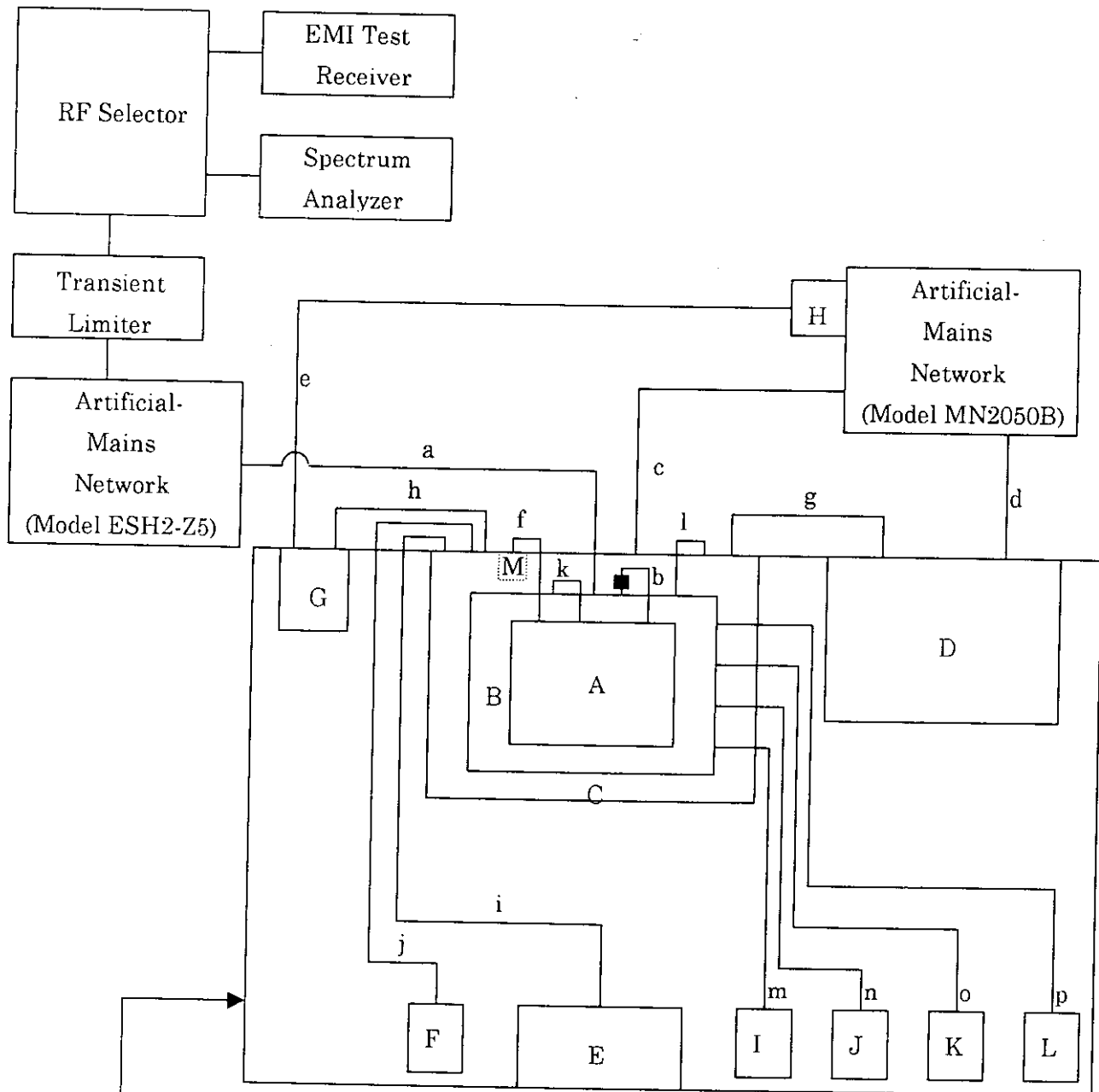
### 2.5 Configuration of Tested System (Continued)

| Instrument |                          | Cord / Cable |                                             |
|------------|--------------------------|--------------|---------------------------------------------|
| A)         | EUT1                     | a)           | AC Power Cord 1.8m Unshielded               |
| B)         | EUT2                     | b)           | AC Power Cord 0.6m Unshielded               |
| C)         | Personal Computer        | c)           | AC Power Cord 1.8m Unshielded               |
| D)         | Printer                  | d)           | AC Power Cord 1.8m Unshielded               |
| E)         | Keyboard                 | e)           | AC Power Cord 1.9m Unshielded               |
| F)         | Mouse                    | f)           | Video I/F Cable 1.8m Shielded (D-Sub = BNC) |
| G)         | Modem                    | g)           | Printer I/F Cable 3.0m Shielded             |
| H)         | AC Adaptor               | h)           | Modem I/F Cable 2.4m Shielded               |
| I)         | USB Mouse (S/N: 0000031) | i)           | Keyboard I/F Cable 1.8m Shielded            |
| J)         | USB Mouse (S/N: 0000036) | j)           | Mouse I/F Cable 1.8m Shielded               |
| K)         | USB Mouse (S/N: 0000052) | k)           | Monitor Control Cable 0.65m Shielded        |
| L)         | USB Mouse (S/N: 0000065) | l)           | USB Data Cable 1.8m Shielded                |
| M)         | Video Card               | m)           | USB Mouse Cable 1.8m Shielded               |
|            |                          | n)           | USB Mouse Cable 1.8m Shielded               |
|            |                          | o)           | USB Mouse Cable 1.8m Shielded               |
|            |                          | p)           | USB Mouse Cable 1.8m Shielded               |

## 2. System Test Configuration (Continued)

### 2.5 Configuration of Tested System (Continued)

#### Conducted Emission



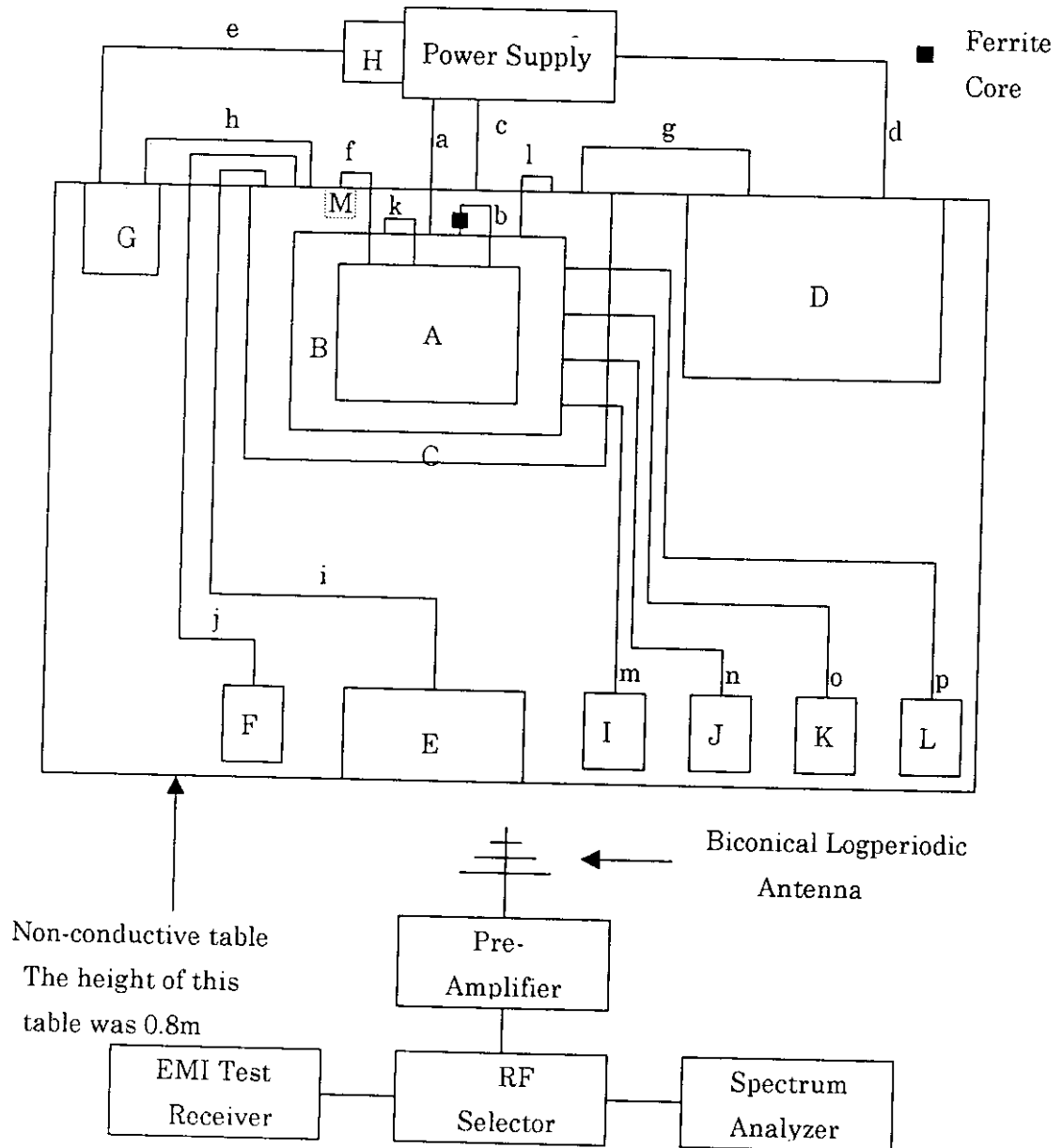
Non-conductive table  
The height of this  
table was 0.8m

■ Ferrite  
Core

## 2. System Test Configuration (Continued)

### 2.5 Configuration of Tested System (Continued)

#### Radiated Emission



#### 4. Conducted Emission Data

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

|              | Frequency<br>(MHz) | Measured *<br>(dB $\mu$ V) | Limit<br>(dB $\mu$ V) |
|--------------|--------------------|----------------------------|-----------------------|
| Neutral Line | 0.50867            | 41.8                       | 48.0                  |
| Neutral Line | 2.03105            | 35.1                       | 48.0                  |
| Neutral Line | 11.88092           | 37.7                       | 48.0                  |
| Neutral Line | 14.31562           | 37.7                       | 48.0                  |
| Neutral Line | 15.63648           | 38.3                       | 48.0                  |
| Neutral Line | 17.26055           | 38.4                       | 48.0                  |
| L Line       | 0.50729            | 41.5                       | 48.0                  |
| L Line       | 0.91212            | 30.9                       | 48.0                  |
| L Line       | 2.03106            | 35.3                       | 48.0                  |
| L Line       | 16.33848           | 39.6                       | 48.0                  |
| L Line       | 17.15161           | 39.1                       | 48.0                  |
| L Line       | 27.80360           | 34.2                       | 48.0                  |

\* All readings are quasi-peak unless stated otherwise.

#### Environment:

Temperature 15 °C  
Humidity 30 %

#### Tested Personnel:

Tester Signature Hiroshi Wakabayashi

Typed/Printed Name Hiroshi Wakabayashi

## 5. Radiated Emission Data

The following data lists the significant emission frequencies, measured levels, correction factor (includes cable and antenna corrections), the corrected reading, plus the limit. Explanation of the Correction Factor is given in paragraph.

| Frequency<br>(MHz) | Polarity<br>(H/V) | Receiver *<br>Reading<br>(dB $\mu$ V) | Correction<br>Factor<br>(dB/m) | Corrected<br>Reading<br>(dB $\mu$ V/m) | 3 Meter<br>Limit<br>(dB $\mu$ V/m) |
|--------------------|-------------------|---------------------------------------|--------------------------------|----------------------------------------|------------------------------------|
| 47.999             | Vertical          | 49.9                                  | -18.1                          | 31.8                                   | 40.0                               |
| 119.985            | Vertical          | 49.0                                  | -15.6                          | 33.4                                   | 43.5                               |
| 202.180            | Vertical          | 49.2                                  | -17.8                          | 31.4                                   | 43.5                               |
| 248.815            | Vertical          | 49.1                                  | -14.5                          | 34.6                                   | 46.0                               |
| 310.994            | Vertical          | 50.1                                  | -12.7                          | 37.4                                   | 46.0                               |
| 326.539            | Vertical          | 49.8                                  | -12.3                          | 37.5                                   | 46.0                               |

\*All readings are quasi-peak unless stated otherwise, with an IF bandwidth of 120 kHz, along with an 1 S sweep time. A video filter was not used.

### Environment:

Temperature 15 °C  
Humidity 30 %

### Tested Personnel:

Tester Signature Hiroshi Wakabayashi

Typed/Printed Name Hiroshi Wakabayashi

## 5. Radiated Emission Data (Continued)

### Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

AG = Amplifier Gain

Assume a receiver reading of 52.5 dBuV is obtained. The Antenna Factor of 7.4 and a Cable Factor of 1.1 is added. The Amplifier Gain of 29 dB is subtracted, giving a field strength of 32 dBuV/m. The 32 dBuV/m value was mathematically converted to its corresponding level in uV/m.

$$FS = 52.5 + 7.4 + 1.1 - 29 = 32 \text{ dBuV/m}$$

$$\text{Level in uV/m} = \text{Common Antilogarithm} [(32 \text{ dBuV/m})/20] = 39.8 \text{ uV/m}$$

## 6. List of Test and Measurement Instruments

## Conducted Emission

| Manufacturer                 | Instruments                 | Model /<br>Type  | Serial No.   | Calibration Date<br>Next Calibration |
|------------------------------|-----------------------------|------------------|--------------|--------------------------------------|
| ROHDE &<br>SCHWARZ           | Spectrum Analyzer           | FSB /<br>DISPLAY | 838497/005 / | May, 1998                            |
|                              |                             |                  | 838301/009   | May, 1999                            |
| ROHDE &<br>SCHWARZ           | EMI Test Receiver           | ESHS10           | 842121/012   | May, 1998<br>May, 1999               |
| ROHDE &<br>SCHWARZ           | Artificial-Mains<br>Network | ESH2-Z5          | 842210/010   | May, 1998<br>May, 1999               |
| CHASE ELECTRONICS<br>LIMITED | Artificial-Mains<br>Network | MN2050B          | 1140         | May, 1998<br>May, 1999               |

## Radiated Emission

| Manufacturer                 | Instruments                      | Model /<br>Type  | Serial No.   | Calibration Date<br>Next Calibration |
|------------------------------|----------------------------------|------------------|--------------|--------------------------------------|
| ROHDE &<br>SCHWARZ           | Spectrum Analyzer                | FSB /<br>DISPLAY | 838497/005 / | May, 1998                            |
|                              |                                  |                  | 838301/009   | May, 1999                            |
| ROHDE &<br>SCHWARZ           | EMI Test Receiver                | ESVS10           | 842122/014   | May, 1998<br>May, 1999               |
| CHASE ELECTRONICS<br>LIMITED | Pre-Amplifier                    | CPA9231          | 3045         | February, 1998<br>February, 1999     |
| CHASE ELECTRONICS<br>LIMITED | Biconical Logperiodic<br>Antenna | CBL6111A         | 1732         | May, 1998<br>May, 1999               |

7. The Treatment of Uncertainty In EMC Measurement

Uncertainty Budget

|                                      |          |
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## 7.1 Radiated Emission

Measurement of vertically polarised field strength between 30 dB  $\mu$  V/m and 60 dB  $\mu$  V/m over the frequency range 30 MHz to 1 GHz on an open area test site at 10m and 30m

| Contribution                                                                                                                                              | Probability Distribution | Uncertainty $\pm$ [dB] |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------|-------|
|                                                                                                                                                           |                          | Logperiodic Antenna    |       |
|                                                                                                                                                           |                          | 10m                    | 30m   |
| Ambient Signals                                                                                                                                           |                          | —                      | —     |
| Antenna factor calibration                                                                                                                                | normal [k = 2]           | 1.0                    | 1.0   |
| Cable loss calibration                                                                                                                                    | normal [k = 2]           | 0.5                    | 0.8   |
| Receiver specification                                                                                                                                    | rectangular              | 1.5                    | 1.5   |
| Antenna directivity                                                                                                                                       | rectangular              | 0.2                    | 0     |
| Antenna factor variation with height                                                                                                                      | rectangular              | 1.0                    | 1.0   |
| Antenna phase centre variation                                                                                                                            | rectangular              | 0.2                    | 0.1   |
| Antenna factor frequency interpolation                                                                                                                    | rectangular              | 0.2                    | 0.2   |
| Measurement distance variation                                                                                                                            | rectangular              | 0.4                    | 0.2   |
| Site imperfections                                                                                                                                        | rectangular              | 1.5                    | 1.5   |
| Mismatch<br>Receiver VRC: $\Gamma_1 = 0.2$<br>Antenna VRC: $\Gamma_g = 0.67$ [Bi] 0.3 [Lp]<br>Uncertainty limits $20\text{Log} [1 \pm \Gamma_1 \Gamma_g]$ | U-shaped                 | 0.5                    | 0.5   |
| System repeatability [previous assessment of $s(q_k)$ from 5 repeats, 1 reading on EUT]                                                                   | Std Deviation            | 0.5                    | 0.5   |
| Repeatability of EUT*                                                                                                                                     |                          | —                      | —     |
| Combined standard uncertainty $u_c$ [y]                                                                                                                   | normal                   | 1.617                  | 1.612 |
| Expanded uncertainty U                                                                                                                                    | normal [k = 2]           | 3.234                  | 3.224 |

**7.1 Radiated Emission (Continued)**

Calculation for 10m biconical Logperiodic antenna, positive value:

$$u_c [y] = \sqrt{\left(\frac{1.0}{2}\right)^2 + \left(\frac{0.7}{2}\right)^2 + \frac{1.5^2 + 0.3^2 + 1.0^2 + 0.1^2 + 0.2^2 + 0.2^2 + 1.5^2}{3} + \frac{1.1^2}{2} + 0.5^2}$$

k=2:

$$U = 2 u_c [y] = 2 \times \pm 1.617 = \pm 3.234 \text{ dB}$$

## 7.2 Conducted Emission

Measurement of conducted emissions between 30 dB  $\mu$  V and 60 dB  $\mu$  V over the frequency range 9 kHz to 30 MHz .

| Contribution                                                                                                                                                   | Probability Distribution | Uncertainty [ $\pm$ dB] |                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------|------------------|
|                                                                                                                                                                |                          | 9 kHz - 150 kHz         | 150 kHz - 30 MHz |
| Receiver specification                                                                                                                                         | rectangular              | 1.3                     | 1.3              |
| LISN coupling specification                                                                                                                                    | rectangular              | 1.3                     | 1.3              |
| Cable and input attenuator calibration                                                                                                                         | normal (k = 2)           | 0.3                     | 0.5              |
| Mismatch<br>Receiver VRC: $\Gamma_1 = 0.03$<br>LISN VRC: $\Gamma_g = 0.8$ [9 kHz] 0.2 [30 MHz]<br>Uncertainty limits $20\text{Log } (1 \pm \Gamma_1 \Gamma_g)$ | U-shaped                 | 0.2                     | 0.05             |
| System repeatability [previous assessment of $s(q_k)$ from 10 repeats, 1 reading on EUT]                                                                       | Standard dev.            | 0.2                     | 0.35             |
| Repeatability of EUT*                                                                                                                                          |                          | —                       | —                |
| Combined standard uncertainty $u_c$ [y]                                                                                                                        | normal                   | 1.12                    | 1.13             |
| Expanded uncertainty U                                                                                                                                         | normal (k = 2)           | 2.24                    | 2.26             |

Calculation for 9 kHz to 150 kHz range:

$$u_c [y] = \pm \sqrt{\frac{1.3^2 + 1.3^2}{3} + \left(\frac{0.3}{2}\right)^2 + \frac{0.2^2}{2} + 0.2^2} = \pm 1.12 \text{ dB}$$

k=2:

$$U = 2 \times u_c [y] = 2 \times \pm 1.12 = \pm 2.24 \text{ dB}$$

8. Attachment

- User Manual

\*\*\*\*\* Cosmos Corp. \*\*\*\*\*  
<<< Conducted Emission >>>

24 December, 1998 10:07  
Page 1

Model : TX-D9S55U  
Serial No. : FX8640003  
Standard : FCC Part 15 Class B  
Condition File : FCC-B  
Remark : Operated ("H" Pattern)  
: EUT2; M/N: TY-LD67AZ, S/N: None, AC 120 V, 60 Hz  
: 640 X 480, FH:31.5 kHz, fV: 60 Hz  
: Video I/F Cable: D-Sub=BNC 1.8m length  
AC Power : 120 V 60 Hz  
Temperature : 15 deg.  
Humidity : 30 %  
Operator : H. Wakabayashi

\*\*\*\*\* Results \*\*\*\*\*

| No.     | Frequency [MHz] | Reading [dBuV] | c.f. [dB] | Result [dBuV] | Limit [dBuV] | Margin [dB] |
|---------|-----------------|----------------|-----------|---------------|--------------|-------------|
| Phase N |                 |                |           |               |              |             |
| 1       | 0.50867         | 31.0           | 10.8      | 41.8          | 48.0         | 6.2         |
| 2       | 2.03105         | 24.5           | 10.6      | 35.1          | 48.0         | 12.9        |
| 3       | 11.88092        | 27.1           | 10.6      | 37.7          | 48.0         | 10.3        |
| 4       | 14.31562        | 26.7           | 11.0      | 37.7          | 48.0         | 10.3        |
| 5       | 15.63648        | 27.1           | 11.2      | 38.3          | 48.0         | 9.7         |
| 6       | 17.26055        | 26.9           | 11.5      | 38.4          | 48.0         | 9.6         |

\*\*\*\*\* Cosmos Corp. \*\*\*\*\*  
<<< Conducted Emission >>>

24 December, 1998 09:58  
Page 1

Model : TX-D9S55U  
Serial No. : FX8640003  
Standard : FCC Part 15 Class B  
Condition File : FCC-B  
Remark : Operated ("H" Pattern)  
: EUT2; M/N: TY-LD67A2, S/N: None, AC 120 V, 60 Hz  
: 640 X 480, fH:31.5 kHz, fV: 60 Hz  
: Video I/F Cable: D-Sub=BNC 1.8m length  
AC Power : 120 V 60 Hz  
Temperature : 15 deg.  
Humidity : 30 %  
Operator : H. Wakabayashi

\*\*\*\*\*  
----- Results -----  
\*\*\*\*\*

| No. | Frequency [MHz] | Reading [dBuV] | c.f. [dB] | Result [dBuV] | Limit [dBuV] | Margin [dB] |
|-----|-----------------|----------------|-----------|---------------|--------------|-------------|
| 1   | 0.50729         | 30.7           | 10.8      | 41.5          | 48.0         | 6.5         |
| 2   | 0.91212         | 20.1           | 10.8      | 30.9          | 48.0         | 17.1        |
| 3   | 2.03106         | 24.7           | 10.6      | 35.3          | 48.0         | 12.7        |
| 4   | 16.33848        | 28.2           | 11.4      | 39.6          | 48.0         | 8.4         |
| 5   | 17.15161        | 27.6           | 11.5      | 39.1          | 48.0         | 8.9         |
| 6   | 27.80360        | 21.3           | 12.9      | 34.2          | 48.0         | 13.8        |

\*\*\*\*\*Cosmos Corp\*\*\*\*\*Radiated Emission >>>

23 December, 1998 12:54  
Page 1

Model : TX-D9S55U  
Serial No. : FX8640003  
Standard : FCC Part 15 Class B 10m  
Condition File : 10m  
Condition : Operated ("H" Pattern)  
Remarks : EUT2; M/N: TY-LD67AZ, S/N: None, AC 120 V, 60 Hz  
: 1600 X 1200, fH: 93.8 kHz, fV: 75 Hz  
: Video I/F Cable: D-Sub=BNC 1.8m length  
AC Power : 120 V 60 Hz  
Temperature : 15 deg.  
Humidity : 30 %  
Operator : H. Wakabayashi

\*\*\*\*\*Final Result -----

### QP

#### - Horizontal Polarization -

| No. | Frequency<br>[MHz] | Reading<br>[dBuV] | c.f.<br>[dB] | Result<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] |
|-----|--------------------|-------------------|--------------|--------------------|-------------------|----------------|
| 1   | 159.996            | 35.6              | -16.6        | 19.0               | 33.5              | 14.5           |

#### - Vertical Polarization -

| No. | Frequency<br>[MHz] | Reading<br>[dBuV] | c.f.<br>[dB] | Result<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] |
|-----|--------------------|-------------------|--------------|--------------------|-------------------|----------------|
| 2   | 47.999             | 39.9              | -18.1        | 21.8               | 30.0              | 8.2            |
| 3   | 119.985            | 39.0              | -15.6        | 23.4               | 33.5              | 10.1           |
| 4   | 202.180            | 39.2              | -17.8        | 21.4               | 33.5              | 12.1           |
| 5   | 233.270            | 38.6              | -15.7        | 22.9               | 36.0              | 13.1           |
| 6   | 248.815            | 39.1              | -14.5        | 24.6               | 36.0              | 11.4           |
| 7   | 295.449            | 36.4              | -13.1        | 23.3               | 36.0              | 12.7           |
| 8   | 310.994            | 40.1              | -12.7        | 27.4               | 36.0              | 8.6            |
| 9   | 326.539            | 39.8              | -12.3        | 27.5               | 36.0              | 8.5            |

FACTORY CONTROL NO. : FVD-99-F003

FCC ID : ACJ93312141

Supplementary Information

1. This model : VCDTS21476-1\* is 19" color multi scan monitor which is designed to be used as the video terminal for a personal computer, and has no TV tuner.
2. The statement required in the section 15.19 is marked in the nameplate.
3. The warning statement required in the section 15.21, 15.27 and 15.105(b) indicated in the draft operating instruction manual enclosed in the same carton.  
  
Please refer to the draft of the attached operating instruction manual.
4. VCDTS21476-1\* employs the detachable signal connecting cable for D-sub with two ferrite cores , the detachable power supply cord without ferrite core, USB data cable and monitor control cable without ferrite core.