

**FCC PART 15 SUBPART B**  
CERTIFICATION REPORT for E-File

SANYO ELECTRIC CO., LTD.

CD-RW DRIVE

FCC ID: JBQCDR019

Report No.: Z01C-00149

Report Issue Date: June 12, 2000

ZACTA TECHNOLOGY CORPORATION  
YONEZAWA TESTING CENTER

4149-7 Hachimanpara 5-chome  
Yonezawa-shi Yamagata  
992-1128 Japan

**NVLAP**<sup>®</sup>  
Lab code : 200306-0

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## CERTIFICATE COMPLIANCE

ZACTA TECHNOLOGY CORPORATION  
YONEZAWA TESTING CENTER  
4149-7 Hachimanpara 5-chome  
Yonezawa-shi Yamagata 992-1128 Japan

This device was measured pursuant to ANSI C63.4-1992 by Zacta Technology Corporation. The data in this application complies with the applicable technical standards as indicated in the measurements report and FCC Part 15 Class B limits. The EUT complies with section 15.37 "Transition provision for compliance with the rules".

APPLICANT : SANYO ELECTRIC CO., LTD.  
FCC ID : JBQCDR019  
FCC RULE PART : FCC Part 15 Subpart B, Docket 87-389  
EQUIPMENT : Class B  
CLASS  
EUT TYPE : CD-RW Drive  
DATE OF TEST : June 5, 2000  
MEASUREMENT : ANSI C63.4-1992  
TEST RESULT : Complied  
REPORT NO. : Z01C-00149  
REMARKS : No modification was made during testing.  
Internal Interface Cables were Unshielded  
cable

Zacta Technology Corporation certifies that no party to the application is subject to a denial of federal benefits, that includes FCC benefits, pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21U.S.C. 853(a).

Authorized by: Kiyoshi Endo  
Manager of Technical Division

The results in this test report apply only to the samples tested.  
This report shall not be re-produced except in full without the written approval of Zacta Technology Corporation.

## LABORATORY MEASUREMENTS

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### PURSUANT TO PART 15, SUBPART B

COMPANY NAME : SANYO ELECTRIC CO., LTD.  
EUT : CD-RW Drive  
FCC ID : JBQCDR019  
MODEL NO. : CRD-BP1300P  
SERIAL NO. : 38900003  
MAX USED FREQ. : 33.86MHz  
OSC : 20.0MHz, 33.86MHz  
MEASUREMENT : ANSI C63.4-1992  
EQUIPMENT : Class B  
CLASS  
DISTANCE : 3m  
DATE OF TESTS : June 5, 2000  
POWER SUPPLIED : DC +5V, +12V  
REPORT NO. : Z01C-00149

### EUT EXERCISE

The EUT exercise program used during Radiated and Conducted emission testing was designed to exercise the various system components in a manner similar to a typical use. Once loaded, the program sequentially exercised each system component in turn.

### JUSTIFICATION / ENGINEERING COMMENT

- \* The detector function in frequency range of 30MHz-1GHz was set to Quasi-peak mode.
- \* Cables were manipulated to produce the worst-case emissions.
- \* Conducted data of Host PC was reported. (Indirectly connect to the AC power line.)
- \* Accessory used: Audio cable  
IDE cable
- \* All operating mode were tested.
- \* Sufficient warm up time is proved for these testing.

Tested by: Hisatoshi Saito / EMC Engineer

SUMMARY OF TEST DATA

The minimum margins to the limits are as follows:

CONDUCTION DATA

| <u>OPERATING MODE</u> | <u>FREQUENCY</u> | <u>MARGIN</u> |
|-----------------------|------------------|---------------|
| CD READ               | 1.965MHz         | 10.8dB        |
| CD WRITE              | 1.964MHz         | 11.1dB        |
| AUDIO CD READ         | 1.968MHz         | 11.1dB        |
|                       | 2.193MHz         | 11.1dB        |

Note: EUT is not directly connected to the AC power line, therefore the power conduction data of Host PC was reported.

RADIATION DATA

| <u>OPERATING MODE</u> | <u>FREQUENCY</u> | <u>MARGIN</u> |
|-----------------------|------------------|---------------|
| CD READ               | 550.60MHz        | 3.2dB         |
| CD WRITE              | 551.13MHz        | 5.7dB         |
| AUDIO CD READ         | 66.41MHz         | 4.8dB         |

## CONFIGURATION INFORMATION

### DEVICE INFORMATION

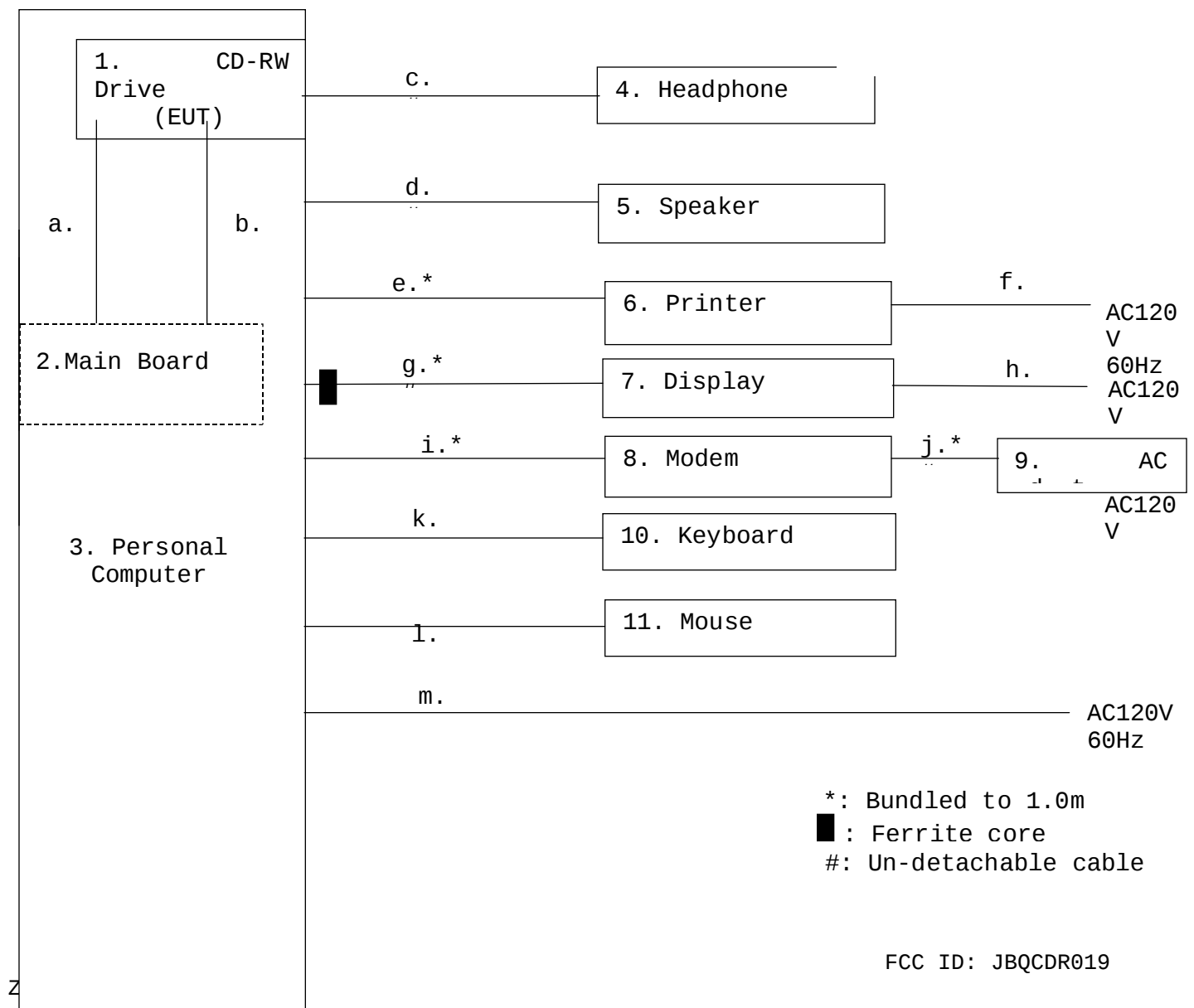
| NO | EQUIPMENT         | COMPANY     | MODEL NO.             | SERIAL NO.        | FCC ID      | COMMENT   |
|----|-------------------|-------------|-----------------------|-------------------|-------------|-----------|
| 1  | CD-RW Drive       | SANYO       | CRD-BP1300P           | 38900003          | JBQCDR019   | EUT       |
| 2  | Main board        | COMPAQ      | N/A                   | N/A               | N/A         |           |
| 3  | Personal Computer | COMPAQ      | 3590                  | 238334-001        | CNT75MEZ6   |           |
| 4  | Headphone         | FISHER      | N/A                   | N/A               | N/A         |           |
| 5  | Speaker           | Panasonic   | RP-SP30               | N/A               | N/A         |           |
| 6  | Printer           | HP          | C4555A                | SG69A1425N        | B94C4555X   |           |
| 7  | Display           | Goldstar    | Studio Works 56i      | 15005G004960      | BEJCS585    |           |
| 8  | Modem             | US Robotics | 839                   | 000839032BK6Y V4J | DoC         |           |
| 9  | AC adapter        | US Robotics | N/A                   | N/A               | N/A         | For Modem |
| 10 | Keyboard          | COMPAQ      | Enhanced III Keyboard | 140536-101        | AQ6ZG-CCC   |           |
| 11 | Mouse             | Microsoft   | PS/2 Compatible Mouse | 858487            | C3K76FPS26C |           |

### CABLES INFORMATION

| NO | CABLE            | LENGTH | SHIELD     |           | Connected Situation |            | COMMENT               |
|----|------------------|--------|------------|-----------|---------------------|------------|-----------------------|
|    |                  | [m]    | Cable      | Connector | From                | To         |                       |
| a  | IDE cable        | 0.7    | Unshielded | Plastic   | EUT                 | Main board |                       |
| b  | Audio cable      | 0.4    | Unshielded | Plastic   | EUT                 | Main board |                       |
| c  | Headphone cable  | 2.0    | Unshielded | Metal     | EUT                 | Headphone  |                       |
| d  | Speaker cable    | 1.0    | Unshielded | Metal     | PC                  | Speaker    |                       |
| e  | Centronics cable | 2.0    | Shielded   | Metal     | PC                  | Printer    | Bundled excess cable. |
| f  | AC power cord    | 2.0    | Shielded   | Plastic   | Printer             | AC outlet  | For Printer           |
| g  | Video cable      | 1.5    | Shielded   | Metal     | PC                  | Display    | Bundled excess cable. |
| h  | AC power cord    | 2.2    | Unshielded | Plastic   | Display             | AC outlet  | For Display           |
| i  | RS232C cable     | 2.0    | Shielded   | Metal     | PC                  | Modem      | Bundled excess        |

|   |                |     |            |         |       |            |           |
|---|----------------|-----|------------|---------|-------|------------|-----------|
|   |                |     | d          |         |       |            | cable.    |
| j | DC cable       | 2.0 | Unshielded | Metal   | Modem | AC adapter | For Modem |
| k | Keyboard cable | 1.5 | Unshielded | Metal   | PC    | Keyboard   | Coiled    |
| l | Mouse cable    | 1.5 | Unshielded | Metal   | PC    | Mouse      |           |
| m | AC power cord  | 2.0 | Shielded   | Plastic | PC    | AC outlet  | For EUT   |

# SYSTEM CONFIGURATION



Comment: Please note that No.7 Display in above diagram is certified with the molded ferrite core on cable.

I/F cable is Un-detachable from display and ferrite core is not added during testing.

## **LABORATORY DESCRIPTION**

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### **DESCRIPTION FOR TEST SITE**

#### **1. LOCATION:**

ZACTA TECHNOLOGY CORPORATION YONEZAWA TESTING CENTER  
4149-7 Hachimanpara 5-chome, Yonezawa-shi Yamagata 992-1128 Japan  
Phone: +81-238-28-2880 Fax: +81-238-28-2888

#### **2. THE NUMBER OF SITE:**

Site name : Site 1, Site 2, Site 3 and Site 4 - Total 4 sites.

#### **3. THE TYPE OF SITE:**

Whether protected site

#### **4. TEST TYPE:**

All sites could perform as follows tests:

- 1) 3/10m Radiation test
- 2) Conduction test

#### **5. FACILITY FILING INFORMATION**

- 1) FCC FINAL SITE FILING: 2.948 Pursuant to ANSI C63.4-1992

| Site name                        | Final filing date |
|----------------------------------|-------------------|
| Site 1, Site 2 Site 3 and Site 4 | March 6, 2000     |

\*3m/10m Radiation & Conduction testing could be performed on each site

- 2) VCCI FINAL SITE FILING: V-5/99.5 Pursuant to VCCI Regulations for Registration of measurement facilities

| Site name | Radiation Registration No. | Conduction Registration No. | Duration of Registration |
|-----------|----------------------------|-----------------------------|--------------------------|
| Site 1    | R-136                      | C-132                       | September 30, 2003       |
| Site 2    | R-137                      | C-133                       | September 30, 2003       |
| Site 3    | R-138                      | C-134                       | September 30, 2003       |
| Site 4    | R-752                      | C-775                       | June 30, 2001            |

- 3) NVLAP ACCREDITATION:

NVLAP CODE: **200306-0**

NVLAP INFORMATION: NVLAP accreditation does not constitute any product endorsement by NVLAP or any agent of the U.S. Government

#### DESCRIPTION OF CONDUCTION TESTING

The line-conducted emissions testing facility is located inside of the site, which used for radiated emissions testing.

A 1 meter x 1.5 meter surface, 0.8 meter height from conducting ground plane wooden table is placed 40 cm away from the vertical conducting surface.

Two 50•/50•H Line Impedance Stabilization Network (LISN) are placed on the conducting ground plane.

The EUT was powered from the KYORITSU LISN and the supports Equipment were another KYORITSU LISN.

50•BNC connector of the KYORITSU LISN (for peripheral) is terminated in 50•.

An isolation transformer has 50A which is large enough to not affect the peak consumption•current by the EUT.

All interconnecting cables more than 1 meter were bundled to 1 meter length.

Sufficient time for the EUT, support equipment, and test equipment were allowed in order for them to warm up to their normal operating condition.

The frequency range was scanned from 450KHz to 30 MHz. The detector function of the test receiver was set to CISPR Quasi-peak mode and the bandwidth was set to 10KHz.

The EUT, support equipment and interconnecting cables were arranged and manipulated to maximize worst emissions for each emission in this test report.

#### DESCRIPTION OF RADIATION TESTING

Measurements: were made at 3 meter using broadband antenna (Biconical Antenna and log-periodic antenna) & Test receiver. Frequency Range: 30MHz - 1GHz was scanned and investigated using receiver. Six highest emissions (Min.) were reported. The test results represents the worst case emissions for each emission with manipulating the EUT, support equipment and interconnecting cables maximize the worst emissions in this test report.

#### Condition:

The detector function of the test receiver was set to CISPR Quasi-peak mode and the bandwidth was set to 120kHz. Sufficient time for the EUT, support equipment, and test equipment were allowed in order for them to warm up to their normal operating condition.

The EUT and support equipment were placed on a top of a 0.8 meter height wooden table.

For Floor-Standing devices, the EUT and all cables were installed on electrical insulating material.

The antenna height was varied 1 to 4 meters and stopped at height producing the maximum emission. The turntable was rotated by 360 degrees and stopped at azimuth of producing the maximum emission.

Interconnecting cables, which are connected to a peripheral, was bundled in center, and its length was not exceeding 1 meter. Each emission was maximized by varying the mode of operation.

**UNCERTAINTY**

**Conducted Emission Test**

|                                                              |              |
|--------------------------------------------------------------|--------------|
| <b>Total Uncertainty @95%min. Confidence<br/>probability</b> | <b>±1.78</b> |
|--------------------------------------------------------------|--------------|

**Radiated Emission Test**

|                                                              |              |              |
|--------------------------------------------------------------|--------------|--------------|
| <b>Total Uncertainty @95%min. Confidence<br/>probability</b> | <b>3m</b>    | <b>10m</b>   |
|                                                              | <b>±2.66</b> | <b>±2.01</b> |

## TEST SITE CONDITION & INSTRUMENTATION

### TEST SITE CONDITION

|                              |                                         |
|------------------------------|-----------------------------------------|
| Test date                    | June 5, 2000                            |
| Site #                       | 3 site                                  |
| Power supply                 | DC +5V, +12V                            |
| Weather                      | Weather: Sunny Temp.: 24• Humidity: 45% |
| Standard                     | ANSI C63.4-1992                         |
| Deviation from The standards | Not applicable                          |

### USED FOR CONDUCTED EMISSION MEASUREMENT

| Equipment                            | Company                         | Model name / Serial No.              | Calibration date | Period |
|--------------------------------------|---------------------------------|--------------------------------------|------------------|--------|
| Spectrum analyzer                    | Hewlett Packard                 | 8568B / 2841A04243                   | Aug. 1999        | 1 year |
| Test Receiver                        | Kyoritsu Electrical Works, Ltd. | KNM-2402 / 4N-220-1                  | Aug. 1999        | 1 year |
| Line Impedance Stabilization Network | Kyoritsu Electrical Works, Ltd. | KNW-242C / 8-1096-3 (For EUT)        | Feb. 2000        | 1 year |
| Line Impedance Stabilization Network | Kyoritsu Electrical Works, Ltd. | KNW-242C / 8-875-19 (For Peripheral) | Mar. 2000        | 1 year |
| Coaxial cable                        | FUJIKURA                        | 8D-2W / H110601#3/15C                | Jun. 1999        | 1 year |

### USED FOR RADIATED DISTURBANCE MEASUREMENT

| Equipment         | Company                         | Model name / Serial No.                   | Calibration date | Period |
|-------------------|---------------------------------|-------------------------------------------|------------------|--------|
| Spectrum analyzer | Hewlett Packard                 | 8568B / 2841A04243                        | Aug. 1999        | 1 year |
| RF Preamplifier   | Anritsu                         | MH648A / M96257                           | Nov. 1999        | 1 year |
| Test Receiver     | Kyoritsu Electrical Works, Ltd. | KNM-5002 / 4N-195-2<br>KCV-6002 / 4-269-2 | Jan. 2000        | 1 year |
| Biconical Antenna | Schwarzbeck                     | BBA9106/VHA9103LE / 02130847              | Jun. 1999        | 1 year |
| Log Periodic      | EMCO                            | 3146 / 3853                               | Jun. 1999        | 1 year |

|                     |                           |                               |           |        |
|---------------------|---------------------------|-------------------------------|-----------|--------|
| Antenna             |                           |                               |           |        |
| Coaxial cable       | FUJIKURA                  | 8D-2W /<br>H110601#3/08R      | Jun. 1999 | 1 year |
| Coaxial cable       | FUJIKURA                  | 10D-SFA/<br>H110601#3/10D-SFA | Jun. 1999 | 1 year |
| Site<br>attenuation | Zacta Technology<br>Corp. | 3 site                        | Dec. 1999 | 1 year |

•Calibration is traceable to NIST or an equivalent standards reference organization.

# SAMPLE OF FIELD STRENGTH CALCULATION

$$\begin{array}{l} \text{dB}\cdot\text{V} \cdot = 20\log_{10} (\cdot\text{V}) \\ \text{dB}\cdot\text{V} \quad / \text{m} \cdot = 20\log_{10} \\ (\cdot\text{V}/\text{m}) \end{array}$$

[Sample Calculation]

## \*CONDUCTION

@ 3.332MHz : Class B limit =  $250\cdot\text{V} = 48.0\text{dB}\cdot\text{V}$

Reading =  $41.6\text{dB}\cdot\text{V}$

Cable Loss + LISN Factor =  $0.2 + 0.5 = 0.7\text{dB}$

Total =  $41.6 + 0.7 = 42.3\text{dB}\cdot\text{V}$

Margin =  $48.0 - 42.3 = 5.7\text{dB}$

5.7 dB below the limit

## \*RADIATION

@ 147.6MHz : Class B limit =  $150\cdot\text{V}/\text{m} = 43.5\text{dB}\cdot\text{V}/\text{m}$

Reading =  $42.8\text{dB}\cdot\text{V}$

Ant. Factor + Cable Loss - Amp. Gain =  $14.2 + 3.0 - 30.0 = -12.8\text{dB}$

Total =  $42.8 - 12.8 = 30.0\text{dB}\cdot\text{V}/\text{m}$

Margin =  $43.5 - 30.0 = 13.5\text{dB}$

13.5 dB below the limit

\*\*\*\*\* CONDUCTION MEASUREMENTS \*\*\*\*\*

STANDARD : FCC Part 15 Subpart B  
CLASS : B

SHEET NO.: 1  
CHART NO.:

DATE OF TEST : 2000/6/5  
TEST SITE : 3  
TEMP. [ ] : 24.0  
HUMIDITY [%] : 45.0  
OPERATOR : HSAIO  
COMPANY NAME : , r , m x n  
EUT : , b c , q v , c , m , r , ...  
MODEL NO. : , b q c , a p p r o o o  
SERIAL NO. : 38900003  
TEST MODE : , b c @ q d , c  
NOTE :

| [QUASI-PEAK]<br>FREQUENCY<br>[MHz] | READING                    |                            | FACTOR<br>[dB] | EMISSION LEVEL             |                            | LIMIT<br>[dBf $\hat{E}$ ] | MARGIN<br>[dB] | * | NOTE |
|------------------------------------|----------------------------|----------------------------|----------------|----------------------------|----------------------------|---------------------------|----------------|---|------|
|                                    | LINE A<br>[dBf $\hat{E}$ ] | LINE B<br>[dBf $\hat{E}$ ] |                | LINE A<br>[dBf $\hat{E}$ ] | LINE B<br>[dBf $\hat{E}$ ] |                           |                |   |      |
| 1363                               | 34.0                       | 33.5                       | 0.2            | 34.2                       | 33.7                       | 48.0                      | 13.8           |   |      |
| 1438                               | 36.0                       | 36.2                       | 0.2            | 36.2                       | 36.4                       | 48.0                      | 11.6           |   |      |
| 1522                               | 35.1                       | 35.9                       | 0.2            | 35.3                       | 36.1                       | 48.0                      | 11.9           |   |      |
| 1965                               | 36.9                       | 37.0                       | 0.2            | 37.1                       | 37.2                       | 48.0                      | 10.8           | * |      |
| 2190                               | 36.2                       | 36.0                       | 0.3            | 36.5                       | 36.3                       | 48.0                      | 11.5           |   |      |
| 2278                               | 35.1                       | 34.3                       | 0.3            | 35.4                       | 34.6                       | 48.0                      | 12.6           |   |      |

\*\*\*\*\* CONDUCTION MEASUREMENTS \*\*\*\*\*

STANDARD : FCC Part15 SubpartB  
CLASS : B

SHEET NO.: 2  
CHART NO.:

DATE OF TEST : 2000/6/5  
TEST SITE : 3  
TEMP. [ ] : 24.0  
HUMIDITY [%] : 45.0  
OPERATOR : HSAIO  
COMPANY NAME : , r , m x n  
EUT : , b c , l q v @ C %  
MODEL NO. : , b q c , l a p p r o o o  
SERIAL NO. : 38900003  
TEST MODE : , b c @ y d s d  
NOTE :

| [QUASI-PEAK]<br>FREQUENCY<br>[MHz] | READING          |                  | FACTOR<br>[dB] | EMISSION LEVEL   |                  | LIMIT<br>[dBμV] | MARGIN<br>[dB] | * | NOTE |
|------------------------------------|------------------|------------------|----------------|------------------|------------------|-----------------|----------------|---|------|
|                                    | LINE A<br>[dBμV] | LINE B<br>[dBμV] |                | LINE A<br>[dBμV] | LINE B<br>[dBμV] |                 |                |   |      |
| 1364                               | 34.5             | 34.2             | 0.2            | 34.7             | 34.4             | 48.0            | 13.3           |   |      |
| 1428                               | 36.3             | 36.1             | 0.2            | 36.5             | 36.3             | 48.0            | 11.5           |   |      |
| 1523                               | 35.3             | 35.8             | 0.2            | 35.5             | 36.0             | 48.0            | 12.0           |   |      |
| 1964                               | 36.7             | 36.2             | 0.2            | 36.9             | 36.4             | 48.0            | 11.1           | * |      |
| 2196                               | 36.0             | 35.8             | 0.3            | 36.3             | 36.1             | 48.0            | 11.7           |   |      |
| 2271                               | 34.9             | 34.3             | 0.3            | 35.2             | 34.6             | 48.0            | 12.8           |   |      |

-The Worst Emission.

FACTOR EISN+CableFactor

Ver1.00 F3#003

\*\*\*\*\* CONDUCTION MEASUREMENTS \*\*\*\*\*

STANDARD : FCC Part15 SubpartB  
CLASS : B

SHEET NO.: 3  
CHART NO.:

DATE OF TEST : 2000/6/5  
TEST SITE : 3  
TEMP. [ ] : 24.0  
HUMIDITY [%] : 45.0  
OPERATOR : H SAIIO  
COMPANY NAME : , r , m x n  
EUT : , b c , q v , c , ...  
MODEL NO. : , b q c , a o p r o o  
SERIAL NO. : 38900003  
TEST MODE : , , t o n , b c , q d , c  
NOTE :

| [QUASI-PEAK]<br>FREQUENCY<br>[MHz] | READING |         | FACTOR | EMISSION LEVEL |         | LIMIT   | MARGIN | * | NOTE |
|------------------------------------|---------|---------|--------|----------------|---------|---------|--------|---|------|
|                                    | LINE A  | LINE B  |        | LINE A         | LINE B  |         |        |   |      |
|                                    | [dBf @] | [dBf @] | [dB]   | [dBf @]        | [dBf @] | [dBf @] | [dB]   |   |      |
| 1361                               | 33.3    | 33.1    | 0.2    | 33.5           | 33.3    | 48.0    | 14.5   |   |      |
| 1437                               | 35.5    | 35.4    | 0.2    | 35.7           | 35.6    | 48.0    | 12.3   |   |      |
| 1524                               | 36.0    | 36.0    | 0.2    | 36.2           | 36.2    | 48.0    | 11.8   |   |      |
| 1968                               | 36.7    | 36.2    | 0.2    | 36.9           | 36.4    | 48.0    | 11.1   | * |      |
| 2193                               | 36.6    | 36.3    | 0.3    | 36.9           | 36.6    | 48.0    | 11.1   | * |      |
| 2271                               | 35.0    | 34.0    | 0.3    | 35.3           | 34.3    | 48.0    | 12.7   |   |      |

-The Worst Emission.

FACTOR EISN+CableFactor

Ver1.00 F3#003

\*\*\*\*\* RADIATION MEASUREMENTS \*\*\*\*\*

STANDARD : FCC Part 15 Subpart B  
CLASS : B  
DISTANCE [m] : 3  
DATE OF TEST : 2000/6/5  
TEST SITE : 3  
TEMP. [ ] : 24.0  
HUMIDITY [%] : 45.0  
OPERATOR : HSAITO  
COMPANY NAME : , r, m, n  
EUT : , b c | q v, c<sub>port</sub>...  
MODEL NO. : , b q c | a q p r q q o  
SERIAL NO. : 38900003  
TEST MODE : , b c @ q d , c  
NOTE :

SHEET NO.: 4  
CHART NO.:

| ANTENNA<br>POL. | HEIGHT<br>[m] | TABLE<br>RADIAN<br>[Deg.] | READING<br>FREQUENCY<br>[MHz] | LEVEL<br>[dBf @ 1m] | FACTOR<br>[dBf @ 1m] | EMISSION<br>LEVEL<br>[dBf @ 1m] | LIMIT<br>[dBf @ 1m] | MARGIN<br>[dB] | * | NOTE |
|-----------------|---------------|---------------------------|-------------------------------|---------------------|----------------------|---------------------------------|---------------------|----------------|---|------|
| HOR/VER         |               |                           |                               |                     |                      |                                 |                     |                |   |      |
| HOR             | 4.0           | 70                        | 55.82                         | 52.7                | -17.6                | 35.1                            | 40.0                | 4.9            |   |      |
| VER             | 1.5           | 190                       | 99.60                         | 56.4                | -18.4                | 38.0                            | 43.5                | 5.5            |   |      |
| HOR             | 2.5           | 300                       | 132.79                        | 45.7                | -14.1                | 31.6                            | 43.5                | 11.9           |   |      |
| VER             | 1.2           | 90                        | 132.79                        | 49.3                | -14.1                | 35.2                            | 43.5                | 8.3            |   |      |
| HOR             | 1.6           | 110                       | 232.41                        | 47.5                | -10.4                | 37.1                            | 46.0                | 8.9            |   |      |
| HOR             | 1.8           | 110                       | 464.80                        | 42.6                | -8.9                 | 33.7                            | 46.0                | 12.3           |   |      |
| VER             | 1.3           | 80                        | 464.82                        | 41.2                | -8.9                 | 32.3                            | 46.0                | 13.7           |   |      |
| HOR             | 2.0           | 0                         | 550.60                        | 49.6                | -6.8                 | 42.8                            | 46.0                | 3.2            | * |      |
| VER             | 2.1           | 340                       | 550.70                        | 49.1                | -6.8                 | 42.3                            | 46.0                | 3.7            |   |      |

-----  
- If the worst emission.

FACTOR Antenna Factor + Cable Loss - Amp Gain

Ver1.00 F3#003

\*\*\*\*\* RADIATION MEASUREMENTS \*\*\*\*\*

STANDARD : FCC Part15 SubpartB  
CLASS : B  
DISTANCE [m] : 3  
DATE OF TEST : 2000/6/5  
TEST SITE : 3  
TEMP. [ ] : 24.0  
HUMIDITY [%] : 45.0  
OPERATOR : H SAIJO  
COMPANY NAME : , f, m x n  
EUT : , b c l q v, c h o r...  
MODEL NO. : , b q c l a o P R Q Q o  
SERIAL NO. : 38900003  
TEST MODE : , b c @ y o s d  
NOTE :

SHEET NO.: 5  
CHART NO.:

| ANTENNA |        | TABLE  | READING   |                  | FACTOR             | EMISSION           | LIMIT              | MARGIN | * | NOTE |
|---------|--------|--------|-----------|------------------|--------------------|--------------------|--------------------|--------|---|------|
| POL.    | HEIGHT | RADIAN | FREQUENCY | LEVEL            |                    | LEVEL              |                    |        |   |      |
| HOR/VER | [m]    | [Deg.] | [MHz]     | [dBf $\hat{E}$ ] | [dBf $\hat{E}/m$ ] | [dBf $\hat{E}/m$ ] | [dBf $\hat{E}/m$ ] | [dB]   |   |      |
| HOR     | 40     | 60     | 66.40     | 51.5             | -20.8              | 30.7               | 40.0               | 9.3    |   |      |
| VER     | 15     | 190    | 99.60     | 46.3             | -18.4              | 27.9               | 43.5               | 15.6   |   |      |
| HOR     | 25     | 300    | 132.79    | 47.4             | -14.1              | 33.3               | 43.5               | 10.2   |   |      |
| VER     | 12     | 350    | 165.99    | 41.3             | -12.1              | 29.2               | 43.5               | 14.3   |   |      |
| HOR     | 18     | 90     | 237.07    | 43.1             | -10.4              | 32.7               | 46.0               | 13.3   |   |      |
| HOR     | 12     | 240    | 464.80    | 44.0             | -8.9               | 35.1               | 46.0               | 10.9   |   |      |
| VER     | 13     | 80     | 464.82    | 42.5             | -8.9               | 33.6               | 46.0               | 12.4   |   |      |
| VER     | 13     | 30     | 550.70    | 44.0             | -6.8               | 37.2               | 46.0               | 8.8    |   |      |
| HOR     | 12     | 230    | 551.13    | 47.1             | -6.8               | 40.3               | 46.0               | 5.7    | * |      |

- If the Worst Emission.

FACTOR Antenna Factor + Cable Loss - Amp Gain

Ver1.00 F3#003

\*\*\*\*\* RADIATION MEASUREMENTS \*\*\*\*\*

STANDARD : FCC Part15 SubpartB  
CLASS : B  
DISTANCE [m] : 3  
DATE OF TEST : 2000/6/5  
TEST SITE : 3  
TEMP.[ ] : 24.0  
HUMIDITY [%] : 45.0  
OPERATOR : H SAITO  
COMPANY NAME : , r , m x n  
EUT : , b c | q v  
MODEL NO. : , b q c | a o p r q q o  
SERIAL NO. : 38900003  
TEST MODE : , , t o n b c q d , c  
NOTE :

SHEET NO.: 6  
CHART NO.:

| ANTENNA |        | TABLE  | READING   |         | FACTOR    | EMISSION  | LIMIT     | MARGIN | * | NOTE |
|---------|--------|--------|-----------|---------|-----------|-----------|-----------|--------|---|------|
| POL.    | HEIGHT | RADIAN | FREQUENCY | LEVEL   |           | LEVEL     |           |        |   |      |
| HOR/VER | [m]    | [Deg.] | [MHz]     | [dBf @] | [dBf @/m] | [dBf @/m] | [dBf @/m] | [dB]   |   |      |
| HOR     | 4.0    | 55     | 66.41     | 56.0    | -20.8     | 35.2      | 40.0      | 4.8    | * |      |
| VER     | 1.5    | 190    | 99.60     | 54.8    | -18.4     | 36.4      | 43.5      | 7.1    |   |      |
| VER     | 1.2    | 215    | 132.79    | 47.6    | -14.1     | 33.5      | 43.5      | 10.0   |   |      |
| HOR     | 1.6    | 110    | 232.41    | 47.4    | -10.4     | 37.0      | 46.0      | 9.0    |   |      |
| VER     | 1.3    | 80     | 464.82    | 43.3    | -8.9      | 34.4      | 46.0      | 11.6   |   |      |
| HOR     | 2.0    | 0      | 550.60    | 46.8    | -6.8      | 40.0      | 46.0      | 6.0    |   |      |
| VER     | 2.1    | 340    | 550.70    | 46.8    | -6.8      | 40.0      | 46.0      | 6.0    |   |      |

-----The Worst Emission.

FACTOR Antenna Factor + Cable Loss - Amp Gain

Ver1.00 F3#003