



JQA File No. : 400-50749

Issue Date : February 7, 2006

Page 1 of 34

## **EMI TEST REPORT**

JQA File No. : 400-50749

Model No. : 0517

Type of Equipment : Radio Controlled Toy  
(Transmitter)

Regulations Applied : CFR 47 FCC Rules and Regulations Part 15

FCC ID : CVT0517

Applicant : NIKKO CO., LTD.

Address : 1-7-14, Mizumoto, Katsushika-ku,  
Tokyo 125-0032, Japan

Manufacturer : ZINTECH TOYS MANUFACTURING LTD.

Address : The Sixth Economical Develop District, Li Uk,  
Wusha, Changan, Dongguan, Guangdong

Received date of EUT : February 1, 2006

**Final Judgment : Passed**

Test results in this report are obtained in use of equipment that is traceable to National Institute of Advanced Industrial Science and Technology (AIST) of Japan and National Institute of Information and Communications Technology(NICT) of Japan.

The test results only respond to the tested sample. This report should not be reproduced except in full, without the written approval of JQA EMC Engineering Dept. Testing Div.

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## TABLE OF CONTENTS

|                                                 | Page           |
|-------------------------------------------------|----------------|
| <b>1 Documentation</b>                          |                |
| 1.1 Test Regulation                             | <u>3</u>       |
| 1.2 General Information                         | <u>3</u>       |
| 1.3 Test Condition                              | <u>4 – 8</u>   |
| 1.4 EUT Modifications / Deviation from Standard | <u>9</u>       |
| 1.5 Test results                                | <u>10</u>      |
| 1.6 Summary                                     | <u>11</u>      |
| 1.7 Test Configuration / Operation of EUT       | <u>12</u>      |
| 1.8 EUT Arrangement(Drawing)                    | <u>13</u>      |
| 1.9 Preliminary Test and Test-setup (Drawings)  | <u>14 – 19</u> |
| 1.10 EUT Arrangement (Photographs)              | <u>20 – 21</u> |
| <b>2 Test Data</b>                              |                |
| 2.1 AC Power Line Conducted Emission            | <u>N/A</u>     |
| 2.2 Radiated Emission (Electric Field)          | <u>22 – 23</u> |
| 2.3 Frequency Stability                         | <u>N/A</u>     |
| 2.4 Occupied Bandwidth                          | <u>24 – 30</u> |
| <b>3 Appendix</b>                               |                |
| Test instruments List                           | <u>31 – 34</u> |

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## **1 DOCUMENTATION**

### **1.1 TEST REGULATION**

FCC Rules and Regulations Part 15 Subpart A and C Intentional Radiators

#### **Test procedure :**

AC power line conducted emission, radiated emission, frequency stability and occupied bandwidth tests were performed according to the procedures in ANSI C63.4-2003.

### **1.2 GENERAL INFORMATION**

#### **1.2.1 Test facility :**

- 1) Test Facility located at EMC Engineering Dept. Testing Div. :
  - No.2 and 3 Anechoic Chambers( 3 meters Site ).
  - Shielded Enclosure.
- 2) EMC Engineering Dept. Testing Div. is recognized under the National Voluntary Laboratory accreditation Program for satisfactory compliance established in title 15, Part 285 Code of Federal Regulations.  
NVLAP Lab Code : 200189-0

#### **1.2.2 Description of the Equipment Under Test (EUT) :**

- |                                      |                                                 |
|--------------------------------------|-------------------------------------------------|
| 1) Type of Equipment                 | : Radio Controlled Toy<br>(Transmitter)         |
| 2) Product Type                      | : Production                                    |
| 3) Category                          | : Low Power Communication Device<br>Transmitter |
| 4) EUT Authorization                 | : Certification                                 |
| 5) FCC ID                            | : CVT0517                                       |
| 6) Trade Name                        | : NIKKO                                         |
| 7) Model No.                         | : 0517                                          |
| 8) Operating Frequency Range         | : 27.145 MHz                                    |
| 9) Highest Frequency Used in the EUT | : 27.145 MHz                                    |
| 10) Serial No.                       | : None                                          |
| 11) Date of Manufacture              | : None                                          |
| 12) Power Rating                     | : DC 9.0V(Battery)                              |
| 13) EUT Grounding                    | : None                                          |

#### **1.2.3 Definitions for symbols used in this test report :**

- x   - indicates that the listed condition, standard or equipment is applicable for this report.
- indicates that the listed condition, standard or equipment is not applicable for this report.

### 1.3 TEST CONDITION

#### 1.3.1 The measurement of the AC Power Line Conducted Emission

☐ - was performed in the following test site.

☒ - was not applicable.

##### Test location :

Safety & EMC Center EMC Engineering Dept. Testing Div.  
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573, Japan

☐ - Shielded Enclosure

☐ - Anechoic Chamber No. 2 (portable Type)

##### Used test instruments :

| Type                | Number of test instruments<br>(Refer to Appendix) |
|---------------------|---------------------------------------------------|
| Test Receiver       | N/A                                               |
| Spectrum Analyzer   | N/A                                               |
| Cable               | N/A                                               |
| AMN(for EUT)        | N/A                                               |
| AMN(for Peripheral) | N/A                                               |
| Termination         | N/A                                               |

### 1.3.2 The measurement of the Radiated Emission(9 kHz - 30 MHz)

  x   - was performed in the following test site.

      - was not applicable.

#### Test location :

Safety & EMC Center EMC Engineering Dept. Testing Div.  
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573, Japan

  x   - Anechoic Chamber No. 2 (3 meters)

      - Anechoic Chamber No. 3 (3 meters)

#### Validation of Site Attenuation :

1) Last Confirmed Date : N/A

2) Interval : N/A

#### Used test instruments :

| Type          | Number of test instruments<br>(Refer to Appendix) |
|---------------|---------------------------------------------------|
| Test Receiver | 8                                                 |
| Antenna       | 21                                                |
| Cable         | 43                                                |

### 1.3.3 The measurement of the Radiated Emission(30 MHz - 1000 MHz)

  x   - was performed in the following test site.

      - was not applicable.

#### Test location :

Safety & EMC Center EMC Engineering Dept. Testing Div.  
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573, Japan

  x   - Anechoic Chamber No. 2 (3 meters)

      - Anechoic Chamber No. 3 (3 meters)

#### Validation of Site Attenuation :

1) Last Confirmed Date :March, 2005

2) Interval :1 year

#### Used test instruments :

| Type          | Number of test instruments<br>(Refer to Appendix) |
|---------------|---------------------------------------------------|
| Test Receiver | 11                                                |
| Antenna       | 26, 28                                            |
| Cable         | 38                                                |
| RF Amplifier  | N/A                                               |

#### 1.3.4 The measurement of the Radiated Emission(Above 1000 MHz)

- ☐ - was performed in the following test site.  
☒ - was not applicable.

##### Test location :

Safety & EMC Center EMC Engineering Dept. Testing Div.  
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573, Japan

- ☐ - No. 2 site (3 meters)  
☐ - No. 3 site (3 meters)

##### Validation of Site Attenuation :

- 1) Last Confirmed Date :March, 2005  
2) Interval :1 year

##### Used test instruments :

| Type               | Number of test instruments<br>(Refer to Appendix) |
|--------------------|---------------------------------------------------|
| Test Receiver      | N/A                                               |
| Spectrum Analyzer  | N/A                                               |
| Cable              | N/A                                               |
| Antenna            | N/A                                               |
| RF Amplifier       | N/A                                               |
| Band Reject Filter | N/A                                               |
| High Pass Filter   | N/A                                               |

**1.3.5 The measurement of the Frequency Stability**    - was performed.  x   - was not applicable.**Used test instruments :**

| Type              | Number of test instruments<br>(Refer to Appendix) |
|-------------------|---------------------------------------------------|
| Frequency Counter | N/A                                               |
| Oven              | N/A                                               |
| DC Power Supply   | N/A                                               |

**1.3.6 The measurement of the Occupied Bandwidth**  x   - was performed.    - was not applicable.**Used test instruments :**

| Type              | Number of test instruments<br>(Refer to Appendix) |
|-------------------|---------------------------------------------------|
| Test Receiver     | 13                                                |
| Spectrum Analyzer | N/A                                               |
| Cable             | 47                                                |
| Antenna           | 22                                                |

## 1.4 EUT MODIFICATION / Deviation from Standard

### 1.4.1 EUT MODIFICATION

- ☒ - No modifications were conducted by JQA to achieve compliance to Class B levels.  
☐ - To achieve compliance to Class B levels, the following changes were made by JQA during the compliance test.

The modifications will be implemented in all production models of this equipment.

Applicant :

Date :

Typed Name :

Position :

### 1.4.2 Deviation from Standard:

- ☒ - No deviations from the standard described in clause 1.1.  
☐ - The following deviations were employed from the standard described in clause 1.1:

\_\_\_\_\_  
\_\_\_\_\_

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**1.5 TEST RESULTS**

**AC Power Line Conducted Emission**                           - Applicable                        x   - NOT Applicable

The requirements are                           - PASSED                           - NOT PASSED

Remarks :

**Radiated Emission [§15.227]**                        x   - Applicable                           - NOT Applicable

The requirements are                        x   - PASSED                           - NOT PASSED

Remarks:

**Frequency Stability**                           - Applicable                        x   - NOT Applicable

The requirements are                           - PASSED                           - NOT PASSED

Remarks:

**Occupied Bandwidth [§15.215(c)]**                        x   - Applicable                           - NOT Applicable

The requirements are                        x   - PASSED                           - NOT PASSED

Remarks:

## 1.6 SUMMARY

### General Remarks :

The EUT was tested according to the requirements of FCC Rules and Regulations Part 15 Subpart A and C under the test configuration, as shown in clause 1.7 to 1.10. The conclusion for the test items which are required by the applied regulation is indicated under the final judgment.

### Final Judgment :

The "as received" sample;

- x   - fulfill the test requirements of the regulation mentioned on clause 1.1.
- fulfill the test requirements of the regulation mentioned on clause 1.1, but with certain qualifications.
- doesn't fulfill the test regulation mentioned on clause 1.1.

Begin of testing : February 3, 2006

End of testing : February 6, 2006

- JAPAN QUALITY ASSURANCE ORGANIZATION -  
Approved by:

Signatories:  
Issued by:



Masaaki Takahashi  
Senior Manager  
JQA EMC Engineering Dept.



Shigeru Osawa  
Assistant Manager  
JQA EMC Engineering Dept.

## **1.7 TEST CONFIGURATION / OPERATION OF EUT**

### **1.7.1 Test Configuration**

**The equipment under test (EUT) consists of :**

| Item                                  | Manufacturer                       | Model No. | FCC ID  | Serial No. |
|---------------------------------------|------------------------------------|-----------|---------|------------|
| Radio Controlled Toy<br>(Transmitter) | ZINTECH TOYS<br>MANUFACTURING LTD. | 0517      | CVT0517 | None       |

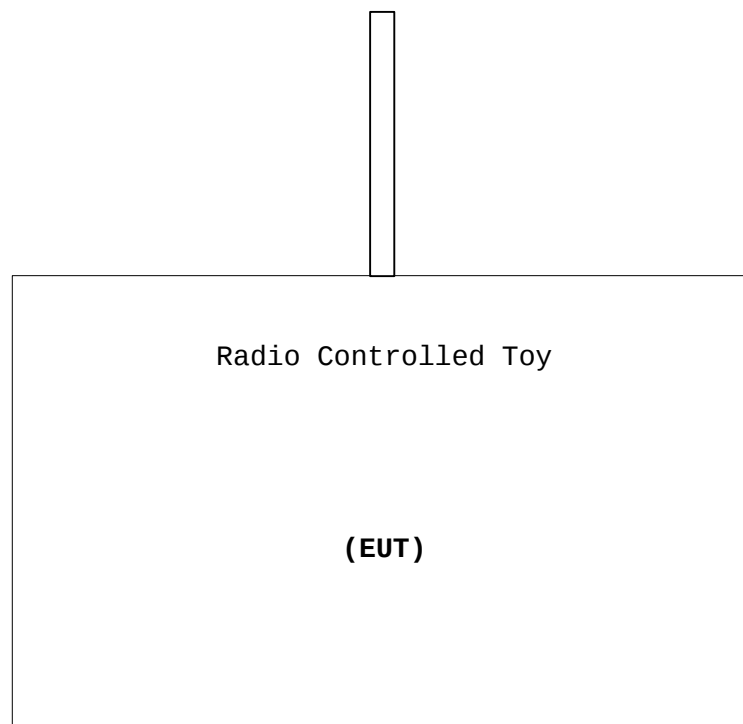
### **1.7.2 Operating condition**

Power supply Voltage : 9.0 VDC(Battery)  
The tests have been carried out the following mode.  
1) TX mode (27.145 MHz)

### **1.7.3 Generating and Operating frequency of EUT**

27.145 MHz

## 1.8 EUT ARRANGEMENT (DRAWINGS)



## 1.9 PRELIMINARY TEST AND TEST-SETUP (DRAWINGS)

### 1.9.1 AC Power Line Conducted Emission ( 150 kHz - 30 MHz ) :

According to description of ANSI C63.4-2003 sec.13.1.3.1, the AC power line preliminary conducted emissions measurements were carried out.

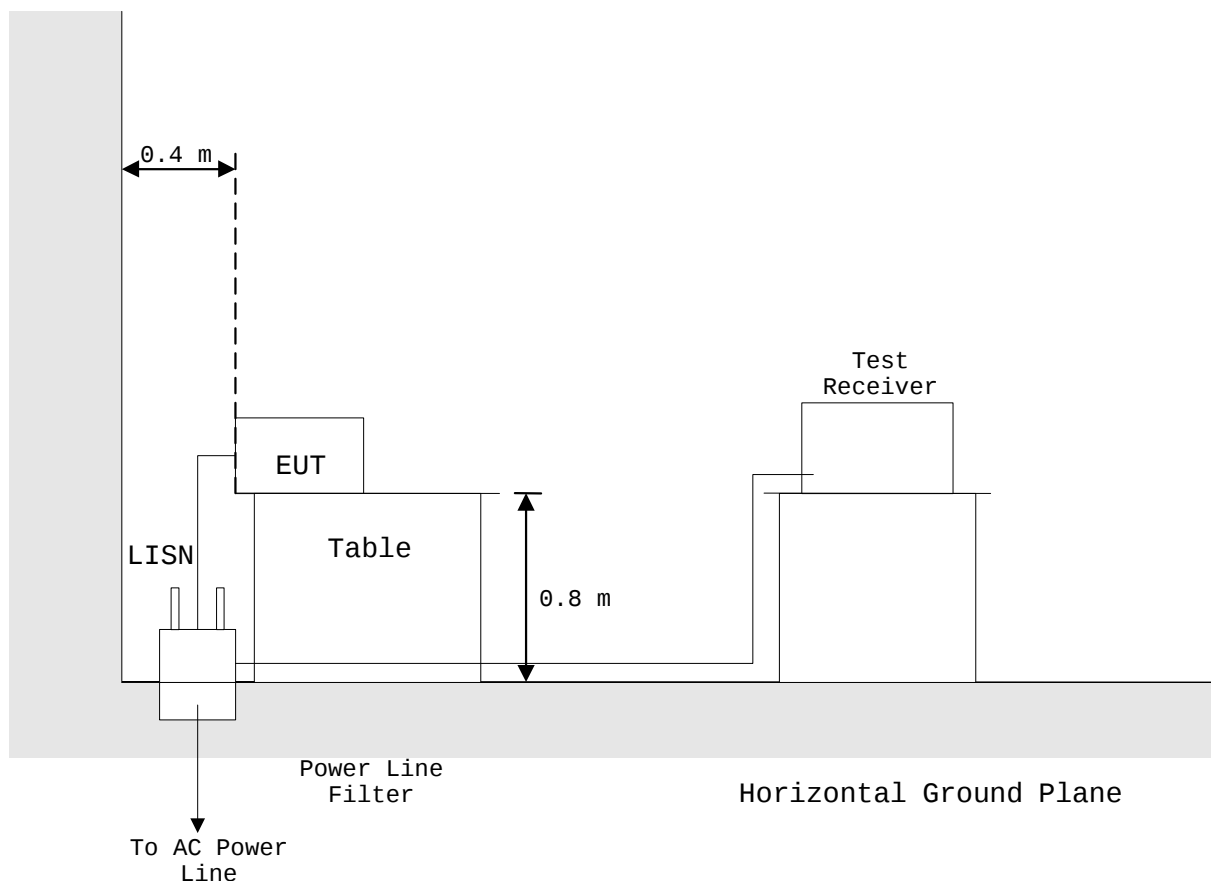
The preliminary conducted measurements were performed using the spectrum analyzer to observe the emission characteristics of the EUT.

The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for final AC power line conducted emissions measurements.

### Shielded Enclosure

#### - Side View -

Vertical  
Ground  
Plane

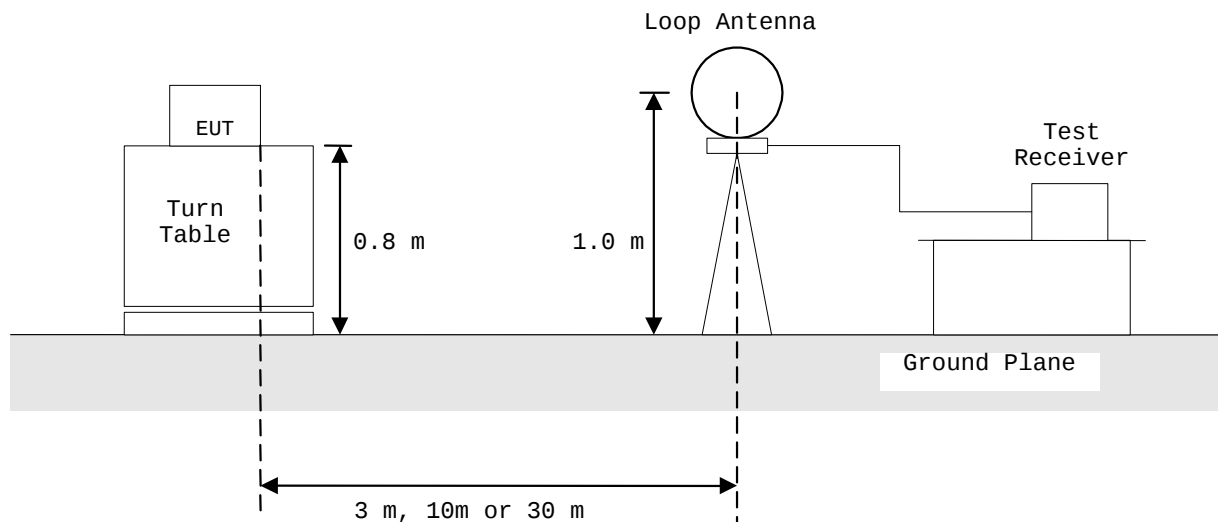


### 1.9.2 Radiated Emission ( 9 kHz - 30 MHz ) :

According to description of ANSI C63.4-2003 sec.13.1.4.1, the preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements.

#### - Side View -



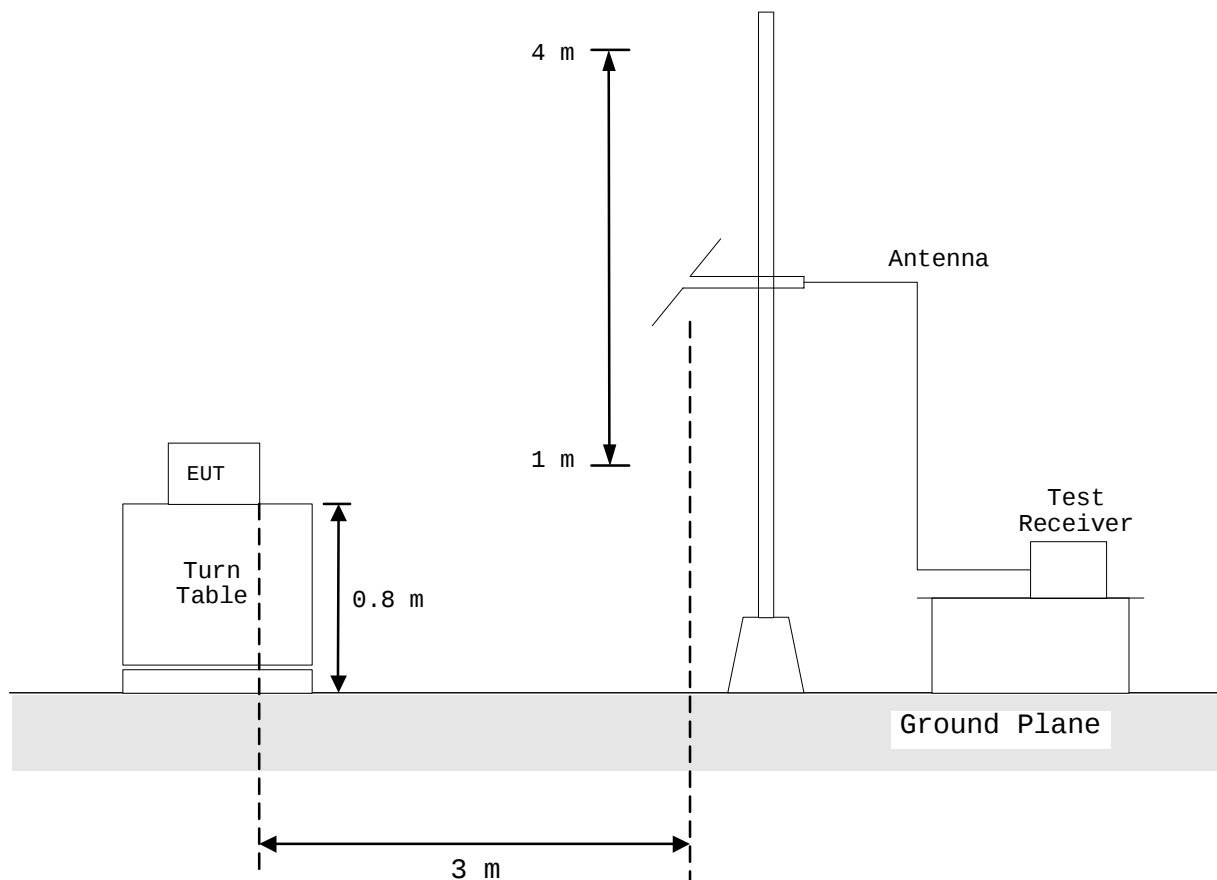
**1.9.3 Radiated Emission ( 30 MHz - 1000 MHz ) :**

According to description of ANSI C63.4-2003 sec.13.1.4.1, the preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements.

**Anechoic Chamber**

- Side View -



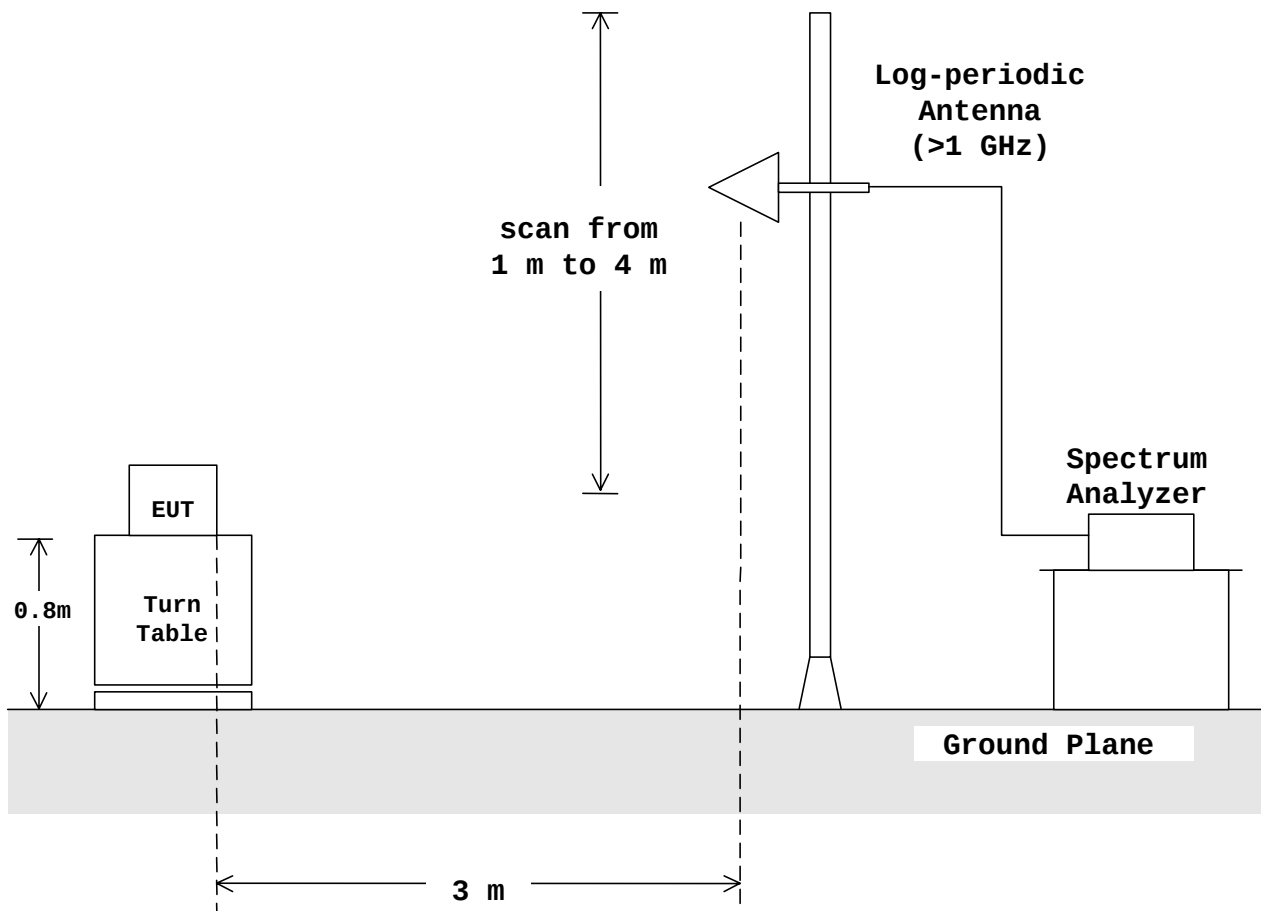
#### 1.9.4 Radiated Emission (Above 1 GHz) :

According to description of ANSI C63.4-2003 sec.13.1.4.1, the preliminary radiated emissions measurements were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements.

#### Anechoic Chamber

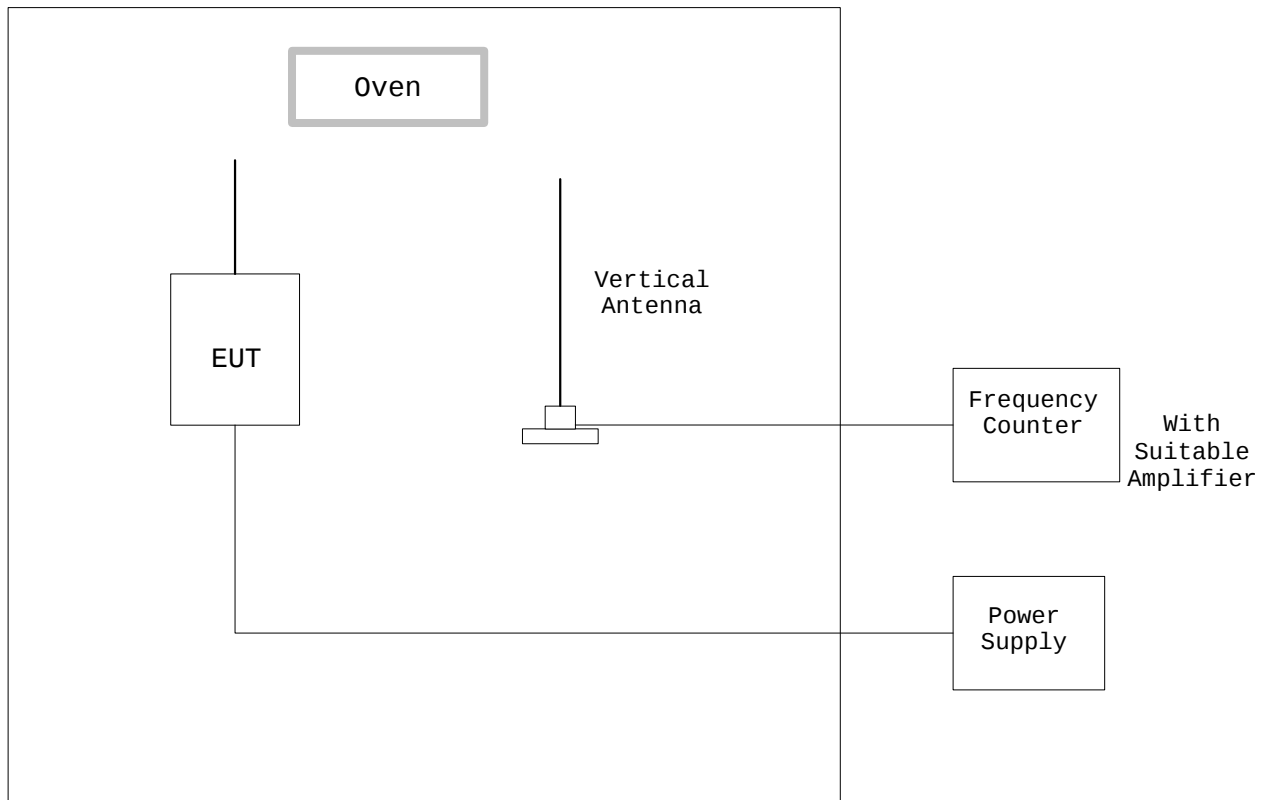
- Side View -



### 1.9.5 Frequency Stability :

According to description of ANSI C63.4-2003 sec.13.1.5 and sec.13.1.6, the frequency stability measurements were carried out. By using frequency counter with suitable RF amplifier, the carrier frequency of the transmitter under test was measured with a temperature variation of  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  at the normal supply voltage, and if required, with a variation in the primary voltage from 85 % to 115 % the rated supply voltage at the temperature of  $+20^{\circ}\text{C}$ .

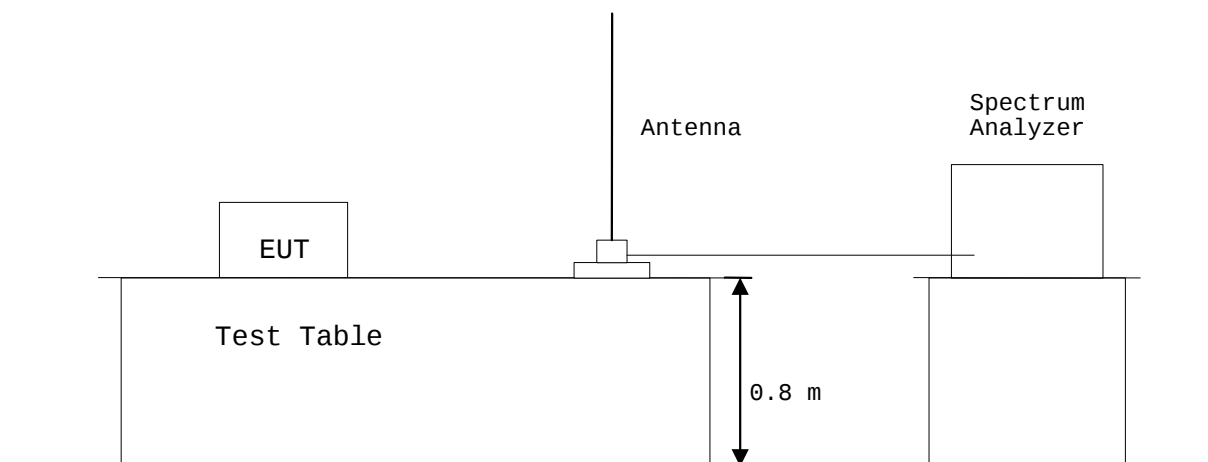
These measurements were carried out after allow sufficient time (approximately 1 hour) for the temperature of the chamber to stabilize.



#### 1.9.6 Occupied Bandwidth :

According to description of ANSI C63.4-2003 sec.13.1.7, the occupied bandwidth measurements were carried out. By using a spectrum analyzer with a vertical antenna for picking up the signal, the measurements of the emission were made under the transmitting modes of the EUT.

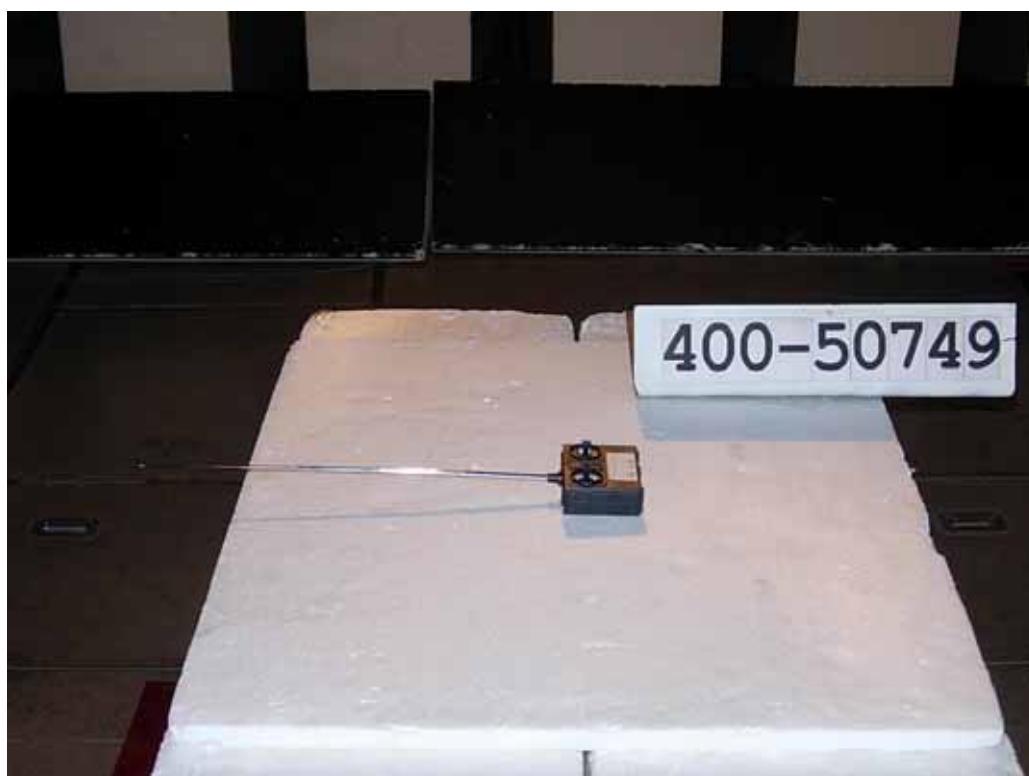
The resolution bandwidth of spectrum analyzer was set to the value specified in sec.13.1.7.



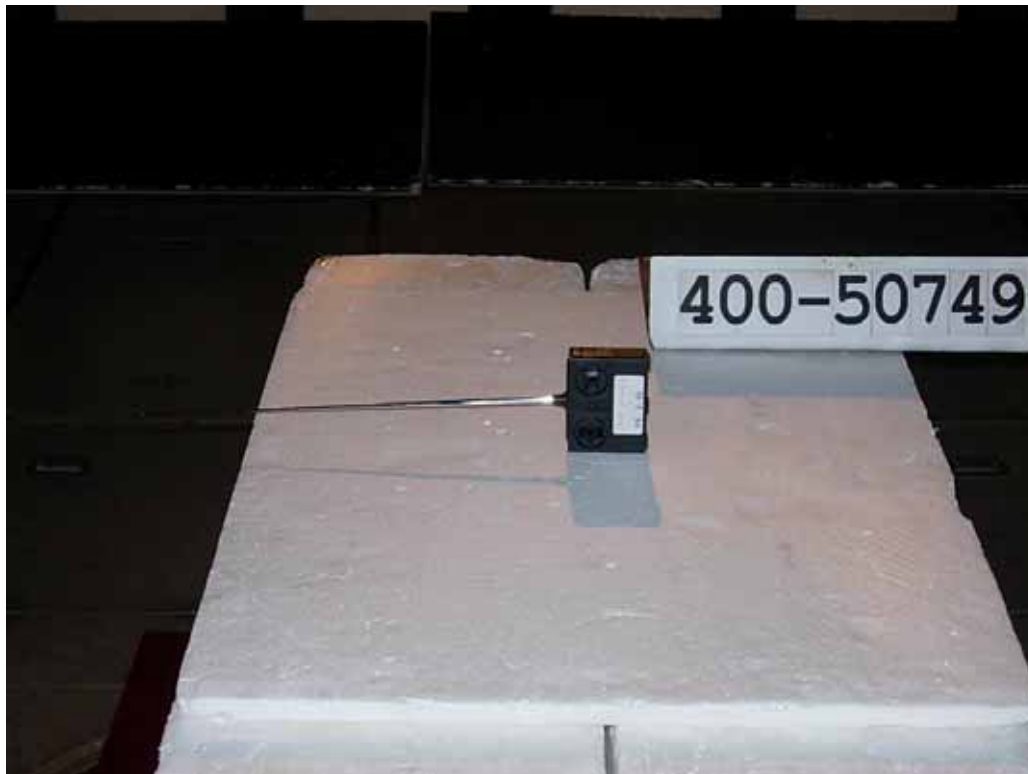
## 1.10 TEST ARRANGEMENT (PHOTOGRAPHS)

### PHOTOGRAPHS OF EUT CONFIGURATION FOR RADIATED EMISSIONS MEASUREMENT

Photograph present configuration with maximum emission



**PHOTOGRAPHS OF EUT CONFIGURATION FOR RADIATED EMISSIONS MEASUREMENT**  
Photograph present configuration with maximum emission



## 2 TEST DATA

### 2.1 AC Power Line Conducted Emissions

Note : This test was not applicable.

### 2.2 Radiated Emissions Measurement

Operating Frequency : 27.145 MHz  
 Distance of Measurement : 3.0 meters

Date : February 3, 2006

Temp. : 24 °C Humi. : 40 %

| Frequency<br>(MHz) | P-A<br>Factor<br>(dB) | Antenna Factor<br>(dB) | Polarization | Meter Reading<br>(dBuV) |      |      | Limits<br>(dBuV/m) |       | Emission Levels<br>(dBuV/m) |      | Margins<br>(dB) |      |
|--------------------|-----------------------|------------------------|--------------|-------------------------|------|------|--------------------|-------|-----------------------------|------|-----------------|------|
|                    |                       |                        |              | QP                      | AV   | Peak | QP/AV              | Peak  | QP/AV                       | Peak | QP/AV           | Peak |
| 27.1               | 0.0                   | 1.5                    |              | -                       | 66.1 | 71.8 | 80.0               | 100.0 | 67.6                        | 73.3 | 12.4            | 26.7 |
| 54.3               | 0.0                   | 9.9                    | V            | 22.5                    | -    | -    | 40.0               | -     | 32.4                        | -    | 7.6             | -    |
| 81.4               | 0.0                   | 7.9                    | V            | 4.9                     | -    | -    | 40.0               | -     | 12.8                        | -    | 27.2            | -    |
| 108.6              | 0.0                   | 12.3                   | H            | 1.1                     | -    | -    | 43.5               | -     | 13.4                        | -    | 30.1            | -    |
| 135.7              | 0.0                   | 15.0                   | H            | < 0.0                   | -    | -    | 43.5               | -     | < 15.0                      | -    | > 28.5          | -    |
| 162.9              | 0.0                   | 16.5                   | H            | 0.2                     | -    | -    | 43.5               | -     | 16.7                        | -    | 26.8            | -    |
| 190.0              | 0.0                   | 17.5                   | H            | 0.5                     | -    | -    | 43.5               | -     | 18.0                        | -    | 25.5            | -    |
| 217.2              | 0.0                   | 18.5                   | H            | 0.7                     | -    | -    | 46.0               | -     | 19.2                        | -    | 26.8            | -    |
| 244.3              | 0.0                   | 19.4                   | H            | 2.3                     | -    | -    | 46.0               | -     | 21.7                        | -    | 24.3            | -    |
| 271.5              | 0.0                   | 20.2                   | H            | 4.4                     | -    | -    | 46.0               | -     | 24.6                        | -    | 21.4            | -    |
| 298.6              | 0.0                   | 21.7                   | H            | 8.2                     | -    | -    | 46.0               | -     | 29.9                        | -    | 16.1            | -    |
| 325.7              | 0.0                   | 18.1                   | H            | 13.8                    | -    | -    | 46.0               | -     | 31.9                        | -    | 14.1            | -    |
| 352.9              | 0.0                   | 18.3                   | H            | 10.3                    | -    | -    | 46.0               | -     | 28.6                        | -    | 17.4            | -    |
| 380.0              | 0.0                   | 18.7                   | H            | 7.8                     | -    | -    | 46.0               | -     | 26.5                        | -    | 19.5            | -    |
| 407.2              | 0.0                   | 19.2                   | H            | 2.6                     | -    | -    | 46.0               | -     | 21.8                        | -    | 24.2            | -    |
| 434.3              | 0.0                   | 19.8                   | H            | < 0.0                   | -    | -    | 46.0               | -     | < 19.8                      | -    | > 26.2          | -    |

Notes :

- 1) The spectrum was checked from 27.145 MHz to 1000 MHz.
- 2) The cable loss is included in the antenna factor.
- 3) The symbol of "<" means "or less".
- 4) The symbol of ">" means "or greater".
- 5) A sample calculation(QP/AV) was made at 27.145 (MHz).  
 $PA + Af + Mr = 0 + 1.5 + 66.1 = 67.6 \text{ (dBuV/m)}$   
 PA = Peak to Average Factor(P-A Factor)  
 Af = Antenna Factor  
 Mr = Meter Reading

6) Measuring Instrument Setting :

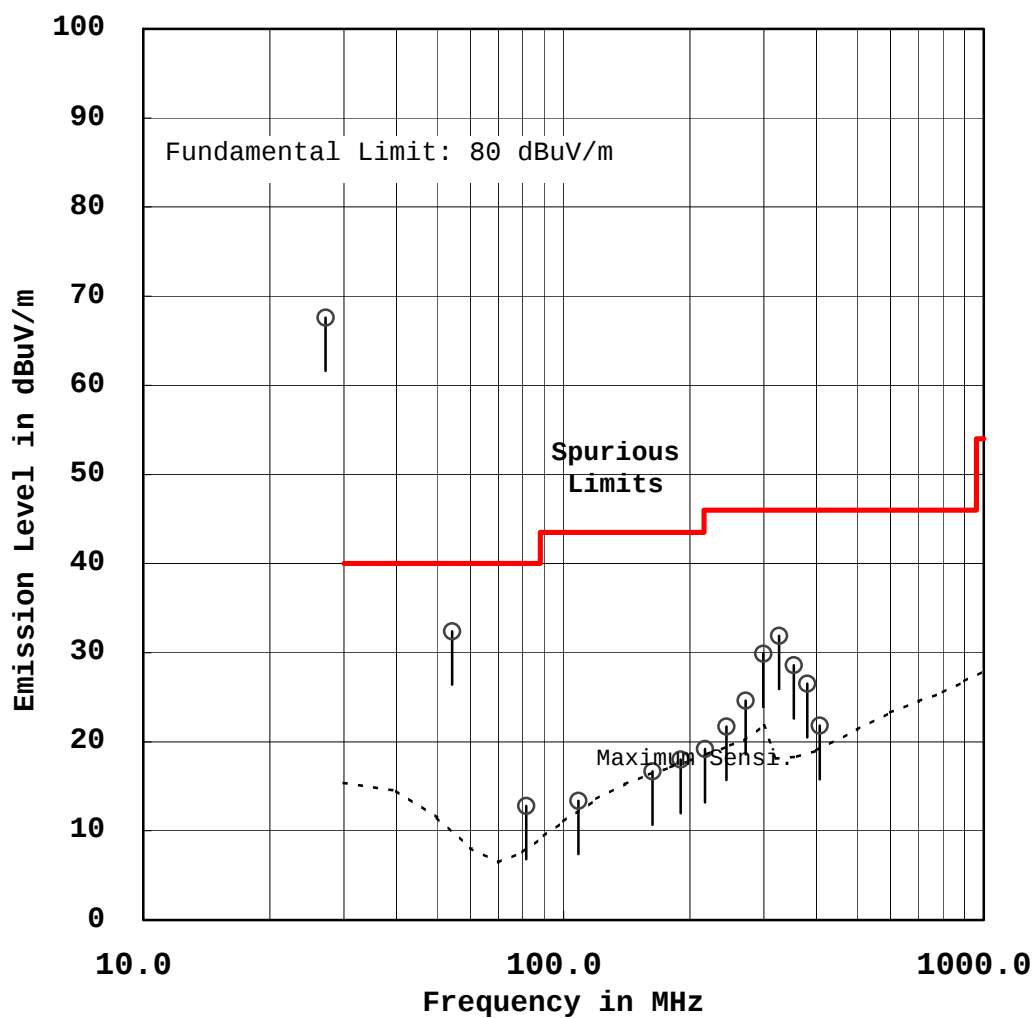
| Detector function | Resolution Bandwidth | Video Bandwidth |
|-------------------|----------------------|-----------------|
| Quasi-peak(QP)    | 120 kHz              | -               |
| Average(AV)       | 120 kHz              | -               |
| Peak              | 120 kHz              | -               |

Tested by : M. Takahashi  
 Masanori Takahashi  
 Testing Engineer

## RADIATED EMISSION MEASUREMENT

Model No. : 0517

Standard : CFR 47 FCC Rules Part 15 0 QP/AV  
 Operating Frequency(MHz) : 27.145



## 2.3 Frequency Stability

Note : This test was not applicable.

## 2.4 Occupied Bandwidth Measurement

Date : February 6, 2006  
Temp.: 23 °C Humi.: 48 %

### Measurements Results :

Refer to the attached graphs.

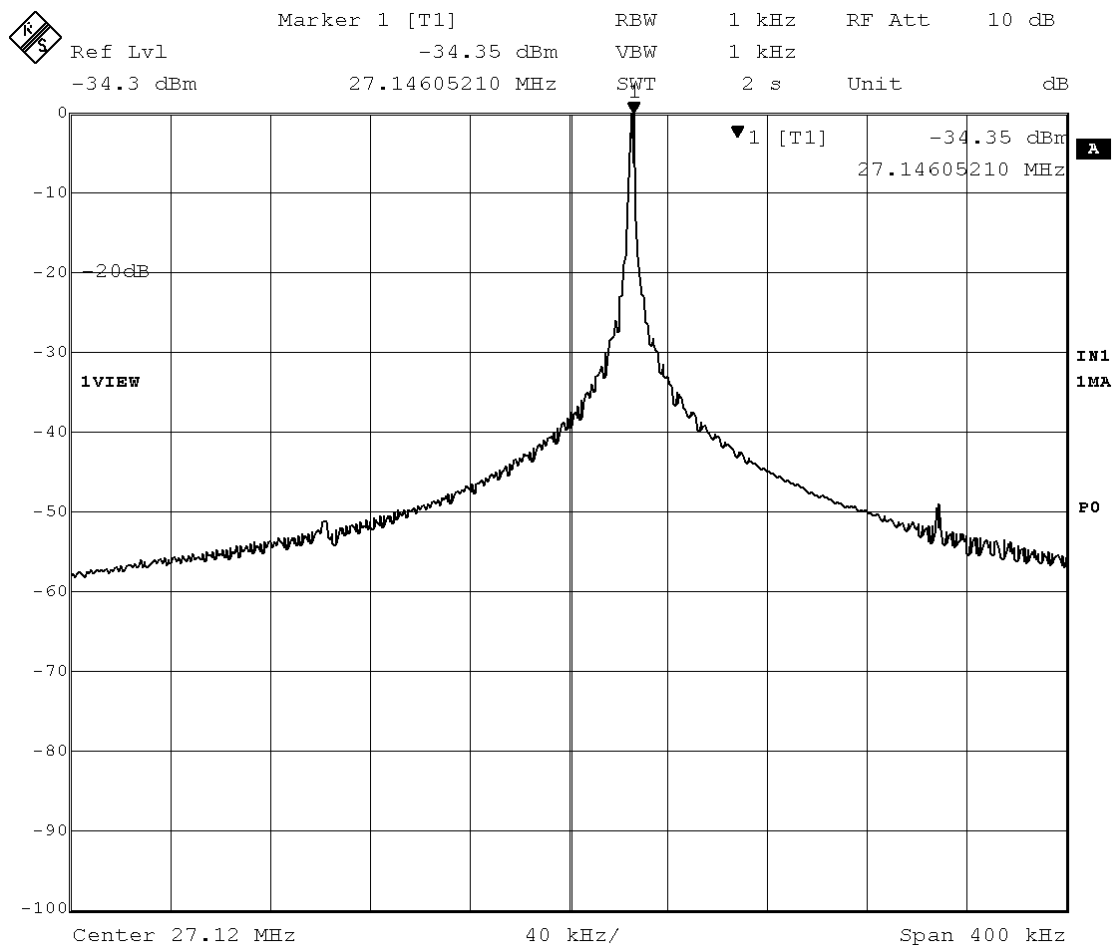
Tested by : M. Takahashi  
Masanori Takahashi  
Testing Engineer

# Emission Limitation

FCC ID : CVT0517

Model : 0517

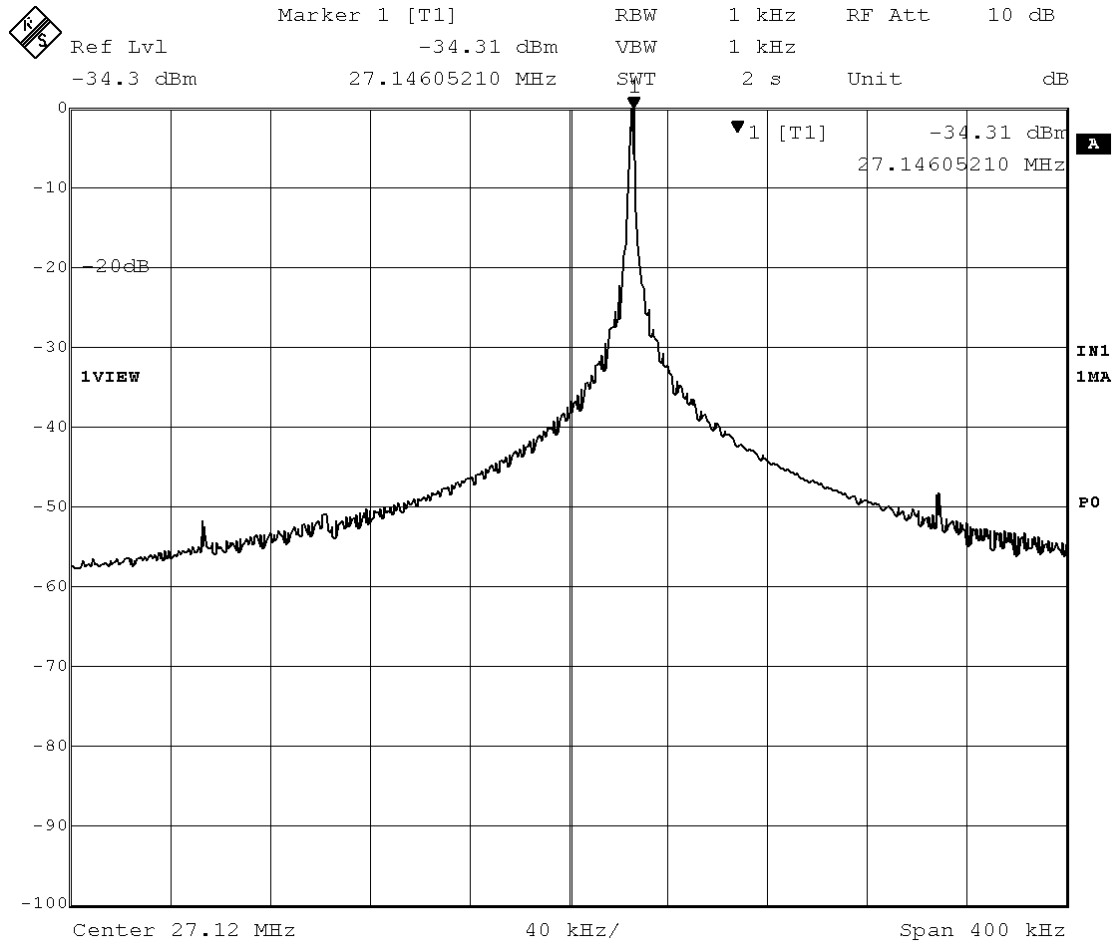
Mode of EUT : Forward



## Emission Limitation

FCC ID : CVT0517  
 Model : 0517

Mode of EUT : Forward Left

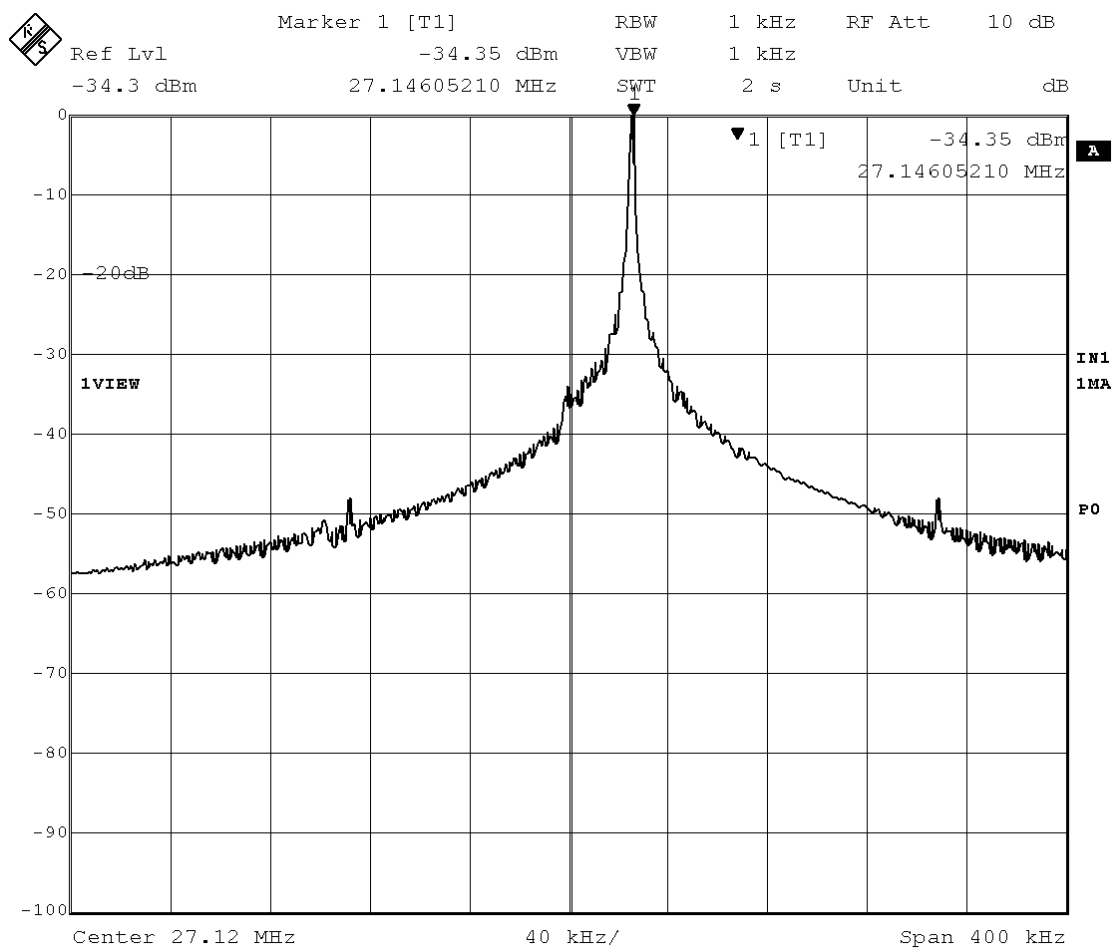


## Emission Limitation

FCC ID : CVT0517

Model : 0517

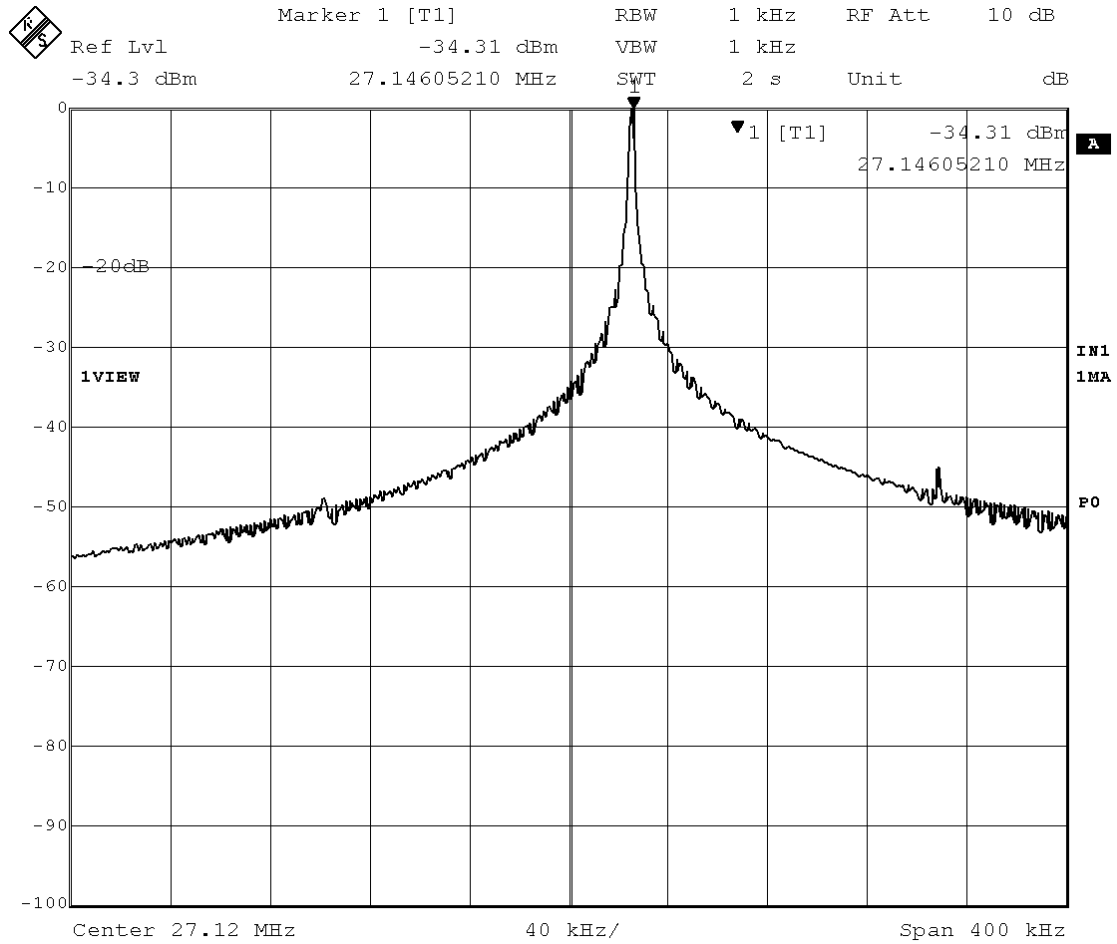
Mode of EUT : Forward Right



## Emission Limitation

FCC ID : CVT0517  
 Model : 0517

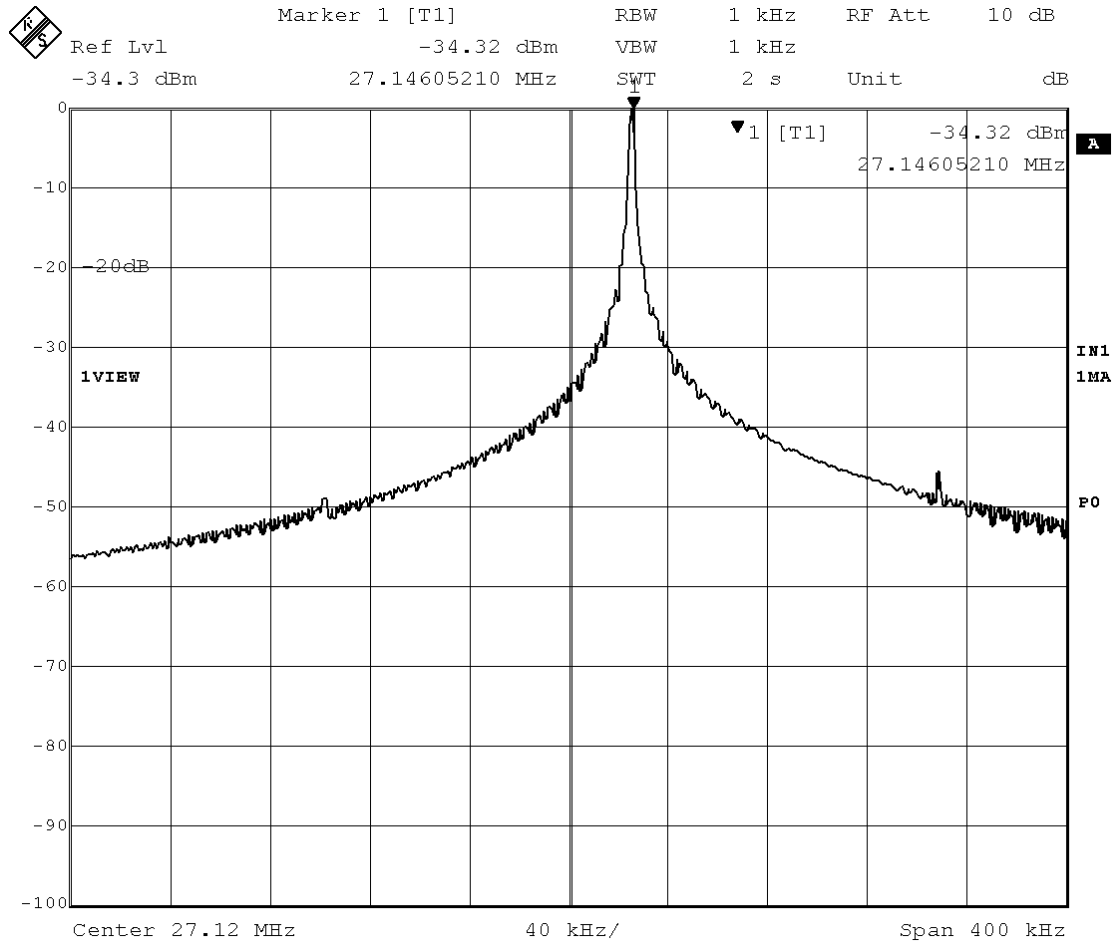
Mode of EUT : Reverse



## Emission Limitation

FCC ID : CVT0517  
 Model : 0517

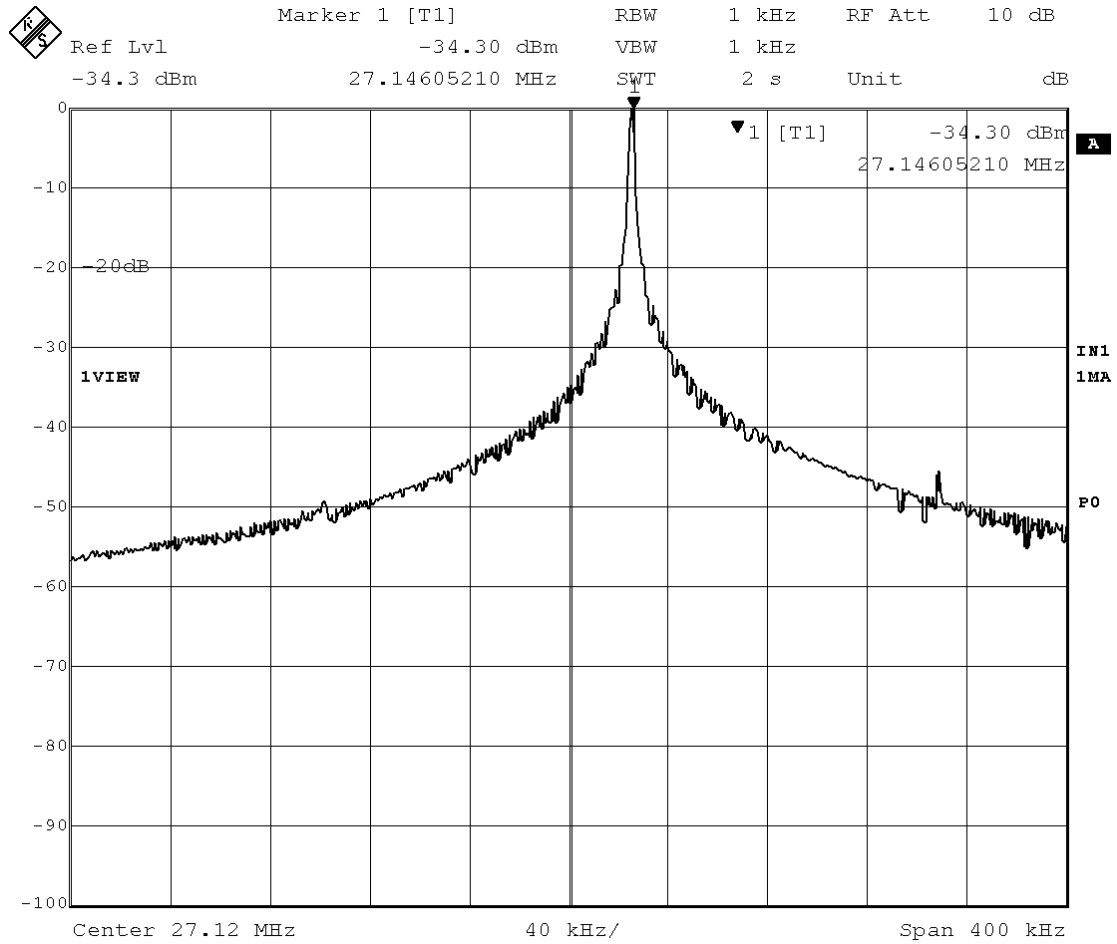
Mode of EUT : Reverse Left



## Emission Limitation

FCC ID : CVT0517  
 Model : 0517

Mode of EUT : Reverse Right



# Appendix

## Test Instruments List

30-Jan-2006

| No                                   | Type                | Model        | Manufacturer     | Serial                    | ID           | Last Cal. | Interval |
|--------------------------------------|---------------------|--------------|------------------|---------------------------|--------------|-----------|----------|
| <b><u>Test Facilities:</u></b>       |                     |              |                  |                           |              |           |          |
| 1                                    | Anechoic Chamber A  | -            | TDK              | -                         | 800-01-502E0 | Mar 2005  | 1 Year   |
| 2                                    | Anechoic Chamber B  | -            | TDK              | -                         | 800-01-503E0 | Mar 2005  | 1 Year   |
| 3                                    | Shield Room A       | -            | TDK              | -                         | 800-01-501E0 | -         | -        |
| 4                                    | Shield Room B       | -            | Ray Proof        | -                         | 800-01-010E0 | -         | -        |
| 5                                    | Shield Room C       | -            | TDK              | -                         | 800-01-504E0 | -         | -        |
| 6                                    | Shield Room D       | -            | Emerson          | -                         | 800-01-022E0 | -         | -        |
| 7                                    | Shield Room E       | -            | TDK              | -                         | 800-01-505E0 | -         | -        |
| <b><u>Measuring Instruments:</u></b> |                     |              |                  |                           |              |           |          |
| 8                                    | Test Receiver       | ESH2         | Rohde & Schwarz  | 880370/016                | 119-01-503E0 | May 2005  | 1 Year   |
| 9                                    | Test Receiver       | ESH3         | Rohde & Schwarz  | 881460/030                | 119-01-023E0 | May 2005  | 1 Year   |
| 10                                   | Test Receiver       | ESHS10       | Rohde & Schwarz  | 835871/004                | 119-01-505E0 | Apr 2005  | 1 Year   |
| 11                                   | Test Receiver       | ESVS10       | Rohde & Schwarz  | 826148/002                | 119-03-504E0 | Apr 2005  | 1 Year   |
| 12                                   | Test Receiver       | ESVS10       | Rohde & Schwarz  | 832699/001                | 119-03-506E0 | Apr 2005  | 1 Year   |
| 13                                   | Test Receiver       | ESI26        | Rohde & Schwarz  | 100043                    | 119-03-511E0 | Aug 2005  | 1 Year   |
| 14                                   | Spectrum Analyzer   | R3182        | Advantest        | 120600581                 | 122-02-521E0 | Mar 2005  | 1 Year   |
| 15                                   | Spectrum Analyzer   | 8566B        | Hewlett Packard  | 2140A01091                | 122-02-501E0 | Oct 2005  | 1 Year   |
| 16                                   | RF Pre-selector     | 85685A       | Hewlett Packard  | 2648A00522                | 122-02-503E0 | Oct 2005  | 1 Year   |
| 17                                   | Spectrum Analyzer   | 8566B        | Hewlett Packard  | 2747A05855                | 122-02-517E0 | Apr 2005  | 1 Year   |
| 18                                   | RF Pre-selector     | 85685A       | Hewlett Packard  | 2901A00933                | 122-02-519E0 | Apr 2005  | 1 Year   |
| 19                                   | Spectrum Analyzer   | R3132        | Advantest        | 120500072                 | 122-02-520E0 | Sep 2005  | 1 Year   |
| 20                                   | Spectrum Analyzer   | R3132        | Advantest        | 150400998                 | 122-02-523E0 | Jul 2005  | 1 Year   |
| 65                                   | Power Meter         | 436A         | Hewlett Packard  | 1725A01930                | 100-02-501E0 | Apr 2005  | 1 Year   |
| 66                                   | Power Sensor        | 8482A        | Hewlett Packard  | 1551A01013                | 100-02-501E0 | Apr 2005  | 1 Year   |
| 67                                   | Power Sensor        | 8485A        | Hewlett Packard  | 2942A08969                | 100-04-021E0 | Apr 2005  | 1 Year   |
| 68                                   | FM Linear Detector  | MS61A        | Anritsu          | M77486                    | 123-02-008E0 | Oct 2005  | 1 Year   |
| 69                                   | Level Meter         | ML422C       | Anritsu          | M87571                    | 114-02-501E0 | Jun 2005  | 1 Year   |
| 70                                   | Measuring Amplifier | 2636         | B & K            | 1614851                   | 082-01-502E0 | May 2005  | 1 Year   |
| 75                                   | Frequency Counter   | 53131A       | Hewlett Packard  | 3546A11807                | 102-02-075E0 | May 2005  | 1 Year   |
| 83                                   | FFT Analyzer        | R9211C       | Advantest        | 02020253                  | 122-02-506E0 | Jun 2005  | 1 Year   |
| 84                                   | Noise Meter         | MN-446       | Meguro           | 53030478                  | 082-01-144E0 | Apr 2005  | 1 Year   |
| 86                                   | Peak Power Analyzer | 8990A/84815A | Hewlett Packard  | 3220A00486/<br>3227A00118 | 100-02-016E0 | Apr 2005  | 1 Year   |
| <b><u>Antennas:</u></b>              |                     |              |                  |                           |              |           |          |
| 21                                   | Loop Antenna        | HFH2-Z2      | Rohde & Schwarz  | 881058/62                 | 119-05-033E0 | May 2005  | 1 Year   |
| 22                                   | Dipole Antenna      | KBA-511      | Kyoritsu         | 0-170-1                   | 119-05-506E0 | Oct 2005  | 1 Year   |
| 23                                   | Dipole Antenna      | KBA-511A     | Kyoritsu         | 0-201-13                  | 119-05-504E0 | Oct 2005  | 1 Year   |
| 24                                   | Dipole Antenna      | KBA-611      | Kyoritsu         | 0-147-14                  | 119-05-507E0 | Oct 2005  | 1 Year   |
| 25                                   | Dipole Antenna      | KBA-611      | Kyoritsu         | 0-170-1                   | 119-05-505E0 | Oct 2005  | 1 Year   |
| 26                                   | Biconical Antenna   | BBA9106      | Schwarzbeck      | VHA91031150               | 119-05-111E0 | Nov 2005  | 1 Year   |
| 27                                   | Biconical Antenna   | BBA9106      | Schwarzbeck      | -                         | 119-05-078E0 | Nov 2005  | 1 Year   |
| 28                                   | Log-peri. Antenna   | UHALP9107    | Schwarzbeck      | -                         | 119-05-079E0 | Nov 2005  | 1 Year   |
| 29                                   | Log-peri. Antenna   | UHALP9107    | Schwarzbeck      | -                         | 119-05-110E0 | Nov 2005  | 1 Year   |
| 30                                   | Log-peri. Antenna   | HL025        | Rohde & Schwarz  | 340182/015                | 119-05-100E0 | Jan 2006  | 1 Year   |
| 31                                   | Horn Antenna        | 3115         | EMC Test Systems | 6442                      | 119-05-514E0 | Jan 2006  | 2 Year   |
| 32                                   | Horn Antenna        | 3116         | EMC Test Systems | 2547                      | 119-05-515E0 | May 2005  | 2 Year   |

30-Jan-2006

| No                        | Type                             | Model              | Manufacturer             | Serial     | ID           | Last Cal. | Interval |
|---------------------------|----------------------------------|--------------------|--------------------------|------------|--------------|-----------|----------|
| <b><u>Cables:</u></b>     |                                  |                    |                          |            |              |           |          |
| 38                        | RF Cable                         | 5D-2W              | Fujikura                 | -          | 155-21-001E0 | Feb 2005  | 1 Year   |
| 39                        | RF Cable                         | 5D-2W              | Fujikura                 | -          | 155-21-002E0 | Feb 2005  | 1 Year   |
| 40                        | RF Cable                         | 3D-2W              | Fujikura                 | -          | 155-21-005E0 | Apr 2005  | 1 Year   |
| 41                        | RF Cable                         | 3D-2W              | Fujikura                 | -          | 155-21-006E0 | Apr 2005  | 1 Year   |
| 42                        | RF Cable                         | 3D-2W              | Fujikura                 | -          | 155-21-007E0 | Apr 2005  | 1 Year   |
| 43                        | RF Cable                         | RG213/U            | Rohde & Schwarz          | -          | 155-21-010E0 | Apr 2005  | 1 Year   |
| 44                        | RF Cable(10m)                    | S 04272B           | Suhner                   | -          | 155-21-011E0 | May 2005  | 1 Year   |
| 45                        | RF Cable(1.5m 18GHz)             | S 04272B           | Suhner                   | -          | 155-21-012E0 | May 2005  | 1 Year   |
| 46                        | RF Cable(1m 18GHz)               | SUCOFLEX           | Suhner                   | -          | 155-21-013E0 | May 2005  | 1 Year   |
| 47                        | RF Cable(1m N)                   | S 04272B           | Suhner                   | -          | 155-21-015E0 | Jun 2005  | 1 Year   |
| 48                        | RF Cable(1m 26GHz)               | SUCOFLEX 104E      | Suhner                   | 14543/4E   | 155-21-016E0 | Dec 2005  | 1 Year   |
| 49                        | RF Cable(4m 26GHz)               | SUCOFLEX           | Suhner                   | 190630     | 155-21-017E0 | Dec 2005  | 1 Year   |
| 50                        | RF Cable(10m)                    | F130-S1S1-394      | MEGA PHASE               | 10510      | 155-21-018E0 | Dec 2005  | 1 Year   |
| 51                        | RF Cable(7m)                     | 3D-2W              | Fujikura                 | -          | 155-21-009E0 | Apr 2005  | 1 Year   |
| 52                        | RF Cable(7m)                     | RG223/U            | Suhner                   | -          | 155-21-021E0 | May 2005  | 1 Year   |
| 140                       | RF Cable(0.5m)                   | G 04233 D-10       | Suhner                   | -          | 155-21-022E0 | Jun 2005  | 1 Year   |
| <b><u>Networks:</u></b>   |                                  |                    |                          |            |              |           |          |
| 33                        | LISN                             | KNW-407            | Kyoritsu                 | 8-833-6    | 149-04-052E0 | Apr 2005  | 1 Year   |
| 34                        | LISN                             | KNW-407            | Kyoritsu                 | 8-855-2    | 149-04-055E0 | Apr 2005  | 1 Year   |
| 35                        | LISN                             | KNW-407            | Kyoritsu                 | 8-1130-6   | 149-04-092E0 | Apr 2005  | 1 Year   |
| 36                        | LISN                             | KNW-242C           | Kyoritsu                 | 8-837-13   | 149-04-054E0 | Apr 2005  | 1 Year   |
| 37                        | Absorbing Clamp                  | MDS21              | Luthi                    | 03293      | 119-06-506E0 | Aug 2005  | 1 Year   |
| <b><u>Amplifiers:</u></b> |                                  |                    |                          |            |              |           |          |
| 53                        | AF Amplifier                     | P-500L             | Accuphase                | BOY806     | 127-01-501E0 | Feb 2005  | 1 Year   |
| 54                        | RF Amplifier                     | WJ-6882-814        | Watkins-Johnson          | 0414       | 127-04-017E0 | Jun 2005  | 1 Year   |
| 55                        | RF Amplifier                     | WJ-5315-556        | Watkins-Johnson          | 106        | 127-04-006E0 | Jun 2005  | 1 Year   |
| 56                        | RF Amplifier                     | WJ-5320-307        | Watkins-Johnson          | 645        | 127-04-005E0 | Jun 2005  | 1 Year   |
| 57                        | RF Amplifier                     | JS4-00102600-28-5A | MITEQ                    | 669167     | 127-04-502E0 | Apr 2005  | 1 Year   |
| <b><u>Generators:</u></b> |                                  |                    |                          |            |              |           |          |
| 58                        | Function Generator               | 3325B              | Hewlett Packard          | 2847A03284 | 118-08-124E0 | Jul 2005  | 1 Year   |
| 59                        | Function Generator               | VP-7422A           | Matsushita Communication | 050351E122 | 118-08-503E0 | Jul 2005  | 1 Year   |
| 60                        | Signal Generator                 | 8664A              | Hewlett Packard          | 3035A00140 | 118-03-014E0 | Jun 2005  | 1 Year   |
| 61                        | Signal Generator                 | 8664A              | Hewlett Packard          | 3438A00756 | 118-04-502E0 | Jun 2005  | 1 Year   |
| 62                        | Signal Generator                 | 6061A              | Gigatronics              | 5130593    | 118-04-024E0 | Mar 2005  | 1 Year   |
| 141                       | TV Pattern Generator             | PM5418TNSI         | Philips Consumer         | LO609096   | 118-06-101E0 | Oct 2005  | 1 Year   |
| 142                       | TV Signal Generator              | LSG-221B           | Leader                   | 9070008    | 118-03-011E0 | Jun 2005  | 1 Year   |
| 143                       | TV Signal Generator              | LSG-221B           | Leader                   | 0957702    | 118-03-015E0 | Jun 2005  | 1 Year   |
| 144                       | IRE RF Standard Signal Generator | 463                | Shibasoku                | M-61231    | 118-06-015E0 | Jun 2005  | 1 Year   |
| 145                       | OFDM IF Modulator                | 3509A-001          | Eiden Co., Ltd.          | EC93522    | 118-06-504E0 | Nov 2005  | 1 Year   |
| 146                       | DVB-T Modulator                  | 3500BB-002         | Eiden Co., Ltd.          | EC93527    | 118-06-505E0 | Nov 2005  | 1 Year   |
| 147                       | 8VSB Modulator                   | 3313B-002          | Eiden Co.                | EC93339    | 118-06-506E0 | Nov 2005  | 1 Year   |
| 148                       | QAM Modulator                    | 3317C-BJ2          | Eiden Co.                | EC93516    | 118-06-507E0 | Nov 2005  | 1 Year   |
| 149                       | All Channel up Convertor         | 4222A-002          | Eiden Co.                | EC93510    | 118-06-508E0 | Nov 2005  | 1 Year   |

|                |                                  |                |                         |            |              |           | 30-Jan-2006 |
|----------------|----------------------------------|----------------|-------------------------|------------|--------------|-----------|-------------|
| No             | Type                             | Model          | Manufacturer            | Serial     | ID           | Last Cal. | Interval    |
| <b>Others:</b> |                                  |                |                         |            |              |           |             |
| 63             | Termination(50)                  | -              | Suhner                  | -          | 154-06-501E0 | Jan 2006  | 1 Year      |
| 64             | Termination(50)                  | -              | Suhner                  | -          | 154-06-502E0 | Jan 2006  | 1 Year      |
| 71             | Microphone                       | 4134           | B & K                   | 1253497    | 147-01-502E0 | May 2005  | 1 Year      |
| 72             | Preamplifier                     | 2639           | B & K                   | 1268763    | 127-01-504E0 | -         | -           |
| 73             | Pistonphone                      | 4220           | B & K                   | 1165008    | 147-02-501E0 | Mar 2005  | 1 Year      |
| 74             | Artificial Mouth                 | 4227           | B & K                   | 1274869    | -            | -         | -           |
| 76             | Oven                             | -              | Ohnishi                 | -          | 023-02-018E0 | May 2005  | 1 Year      |
| 77             | DC Power Supply                  | 6628A          | Hewlett Packard         | 3224A00284 | 072-05-503E0 | Jun 2005  | 1 Year      |
| 78             | Band RejectFilter                | BRM12294       | Micro-tronics           | 003        | 149-01-501E0 | Jan 2006  | 1 Year      |
| 79             | High Pass Filter                 | F-100-4000-5-R | RLC Electronics         | 0149       | 149-01-502E0 | Feb 2005  | 1 Year      |
| 80             | Attenuator                       | 43KC-10        | Anritsu                 | -          | 148-03-506E0 | Feb 2005  | 1 Year      |
| 81             | Attenuator                       | 43KC-20        | Anritsu                 | -          | 148-03-507E0 | Feb 2005  | 1 Year      |
| 82             | Attenuator                       | 355D           | Hewlett Packard         | 219-10782  | 148-03-065E0 | Apr 2005  | 1 Year      |
| 85             | RF Detector                      | 75KC-50        | Anritsu                 | 305002     | 100-02-506E0 | Jul 2005  | 1 Year      |
| 150            | Matching Pad                     | ZT-130         | Tamagawa                | 1013366    | 155-03-504E0 | Jun 2005  | 1 Year      |
| 151            | Matching Pad                     | ZT-130         | Tamagawa                | 1013367    | 155-03-505E0 | Jun 2005  | 1 Year      |
| 152            | Matching Pad                     | 12N50/75B      | Wiltron                 | 93008      | 155-03-062E0 | Jun 2005  | 1 Year      |
| 153            | Attenuation Pad                  | UFA-01         | Tamagawa                | -          | 148-03-511E0 | Jun 2005  | 1 Year      |
| 154            | Attenuation Pad                  | 1-10           | Weinschel               | AU1302     | 148-03-110E0 | Jun 2005  | 1 Year      |
| 155            | Attenuation Pad                  | 1-6            | Weinschel               | AD8054     | 148-03-069E0 | Jun 2005  | 1 Year      |
| 156            | Combining Network                | 1870A          | Weinschel               | 635A       | 086-02-016E0 | Jun 2005  | 1 Year      |
| 157            | Electronic Polymeter             | PM-20          | TOA Denpa Kogyo         | C58214     | 114-01-003E0 | Jun 2005  | 1 Year      |
| 158            | 400Hz Band Pass Filter           | -              | JEIC                    | -          | 149-02-016E0 | Nov 2005  | 1 Year      |
| 159            | Automatic Noise Figure Indicator | ENF-2005       | ELENA Electronics       | 79436      | 118-17-501E0 | Feb 2005  | 1 Year      |
| 160            | Solid-state Noise Source         | MC1100         | Microwave Semiconductor | 998        | 118-17-501E0 | Feb 2005  | 1 Year      |
| 161            | Isolation Transformer            | KIT-5601       | Kyoritsu                | 8-1520-2   | 155-03-502E0 | Jul 2005  | 1 Year      |
| 162            | Isolation Transformer            | D-65396        | Erika Fiedler           | 32         | 155-03-506E0 | Jul 2005  | 1 Year      |