

( EMI )

# TEST REPORT

**REPORT NUMBER : TR 99-0074**

**APPLICANT : KYUSHU MATSUSHITA ELECTRIC CO.,LTD**  
**Network Telecom Division**

**MODEL NUMBER : KX-DP702**

**REGULATION : FCC Rules and Regulations Part 15**  
**Subpart B-Unitentional Radiators**

**ISSUE DATE : February 21, 2000**

**Kyushu Matsushita Electric Test Lab**  
**EMC Center**

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**KME**

**TABLE OF CONTENTS**

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|                                                                                  | Page |
|----------------------------------------------------------------------------------|------|
| SECTION 1. EMI TEST REPORT ON EUT .....                                          | 3    |
| SECTION 2. TEST CERTIFICATION .....                                              | 3    |
| SECTION 3. TEST RESULTS .....                                                    | 4,5  |
| SECTION 4. DESCRIPTION OF TEST EQUIPMENT                                         |      |
| 4.1 Configuration of Equipment.....                                              | 6    |
| 4.2 EUT and Support Equipment Used.....                                          | 6    |
| 4.3 Cable(s) Used.....                                                           | 7    |
| 4.4 Operating Conditions .....                                                   | 8    |
| 4.5 Any Deviations from, Additions to or Exclusions from.....<br>the Test Method | 8    |
| SECTION 5. PHOTOGRAPHS OF MAXIMUM EMISSION SET-UP .....                          |      |
| 5.1 Radiated Emission                                                            | 9    |
| 5.2 Conducted Emission                                                           | 9    |
| SECTION 6. TEST ARRANGEMENT AND LIST OF INSTRUMENTS .....                        |      |
| 6.1 Radiated Emission                                                            | 10   |
| 6.2 Conducted Emission                                                           | 11   |

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KME TEST LAB EMC CENTER.

**SECTION 1. EMI TEST REPORT ON EUT****APPLICANT INFORMATION**

|                  |                                        |
|------------------|----------------------------------------|
| Company          | : Kyushu Matsushita Electric Co., Ltd. |
|                  | Network Telecom Division               |
| Address          | : 1-62, 4-Chome, Minoshima             |
|                  | Hakata-ku, Fukuoka 812-8531, Japan     |
| Telephone number | : TEL 092-477-1347 (+81-92-477-1347)   |
| Fax number       | : FAX 092-477-1310 (+81-92-477-1310)   |

**DESCRIPTION OF TEST ITEM**

|                        |                          |
|------------------------|--------------------------|
| Kind of equipment      | : Camera Unit            |
| Condition of equipment | : Pre-Production         |
| Type                   | : Desk-top Type          |
| Trademark              | : Panasonic              |
| FCC ID                 | : ---                    |
| Model number           | : KX-DP702 with PSLP1170 |
| Serial number          | : ES1                    |
| Power Supply           | : AC 120V 60Hz           |

**TEST PERFORMED**

|                |                                             |
|----------------|---------------------------------------------|
| Location       | : Kyushu Matsushita Electric Test Lab       |
|                | EMC Center Semi Anechoic Chamber            |
|                | (FCC File No.:31040/SIT/1300F2)             |
| Address        | : 441-13 Nagahasu Tateishi, Tosu            |
|                | Saga 841-8585, Japan                        |
| Receipt date   | : February 15, 2000                         |
| Test date      | : February 15, 2000                         |
| Regulation     | : FCC Rules and Regulations Part 15 Class B |
| Test procedure | : ANSI C63.4-1992                           |

**SECTION 2. TEST CERTIFICATION**

## 1. Measurement Results

The results obtained from The measuring of the above mentioned device are as shown in the attached sheets. The results in this report apply only to the sample(s) tested.

## 2. Summary of results

Test sample complies with FCC Rules and Regulations  
Part 15 Subpart B-Unintentional Radiators(Class B).  
Worst Margin (Radiated Emission)--72.023MHz (H) 6.2dB (at page 4)  
Worst Margin(Conducted Emission)--1.2500MHz 4.2dB (at page 5)

## 3. These test results are traceable to the National and International Standards.

## 4. Measurement Uncertainty, at time of test, and at least 95% Confidence, was estimated to be as follows:

Radiated Emission Measurement : 5.46dB(3m)(30-300MHz)  
4.76dB(3m)(300-1000MHz)  
Conducted Emission Measurement: 2.40dB(0.09-1MHz)  
2.63dB(1-30MHz)

Issue Date : February 21, 2000

Reviewed by : M. Horie

Certifying  
Manager : H. Hara

# RADIATED EMISSION

## SECTION 3. TEST RESULTS EMISSION

### 3.1 Radiated Emission

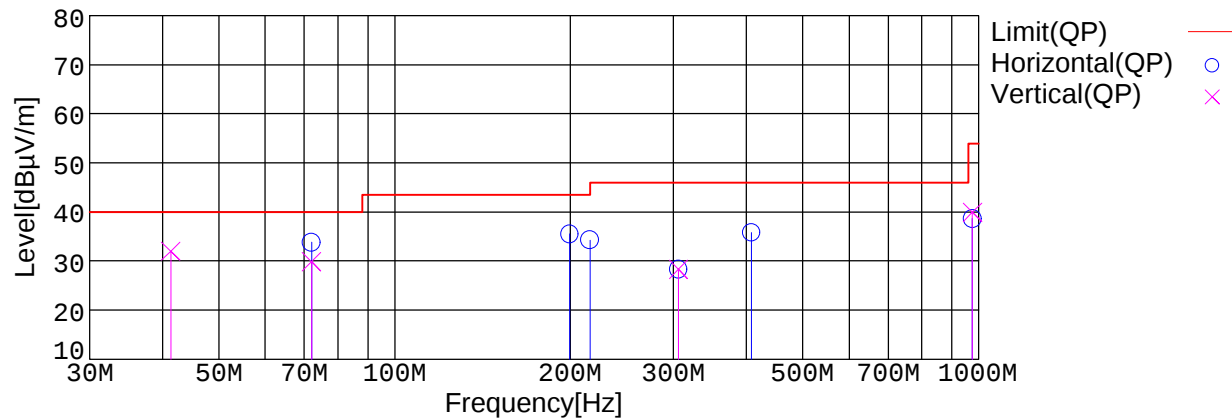
Model Name : Camera Unit  
model No. : KX-DP702  
Serial No. : ES1  
Operator : M.Horie  
Points : 10  
Detector : QP  
RBW : 120kHz

### Test condition of instrument

Date : 2000/2/15 14:27  
Temperature : 22deg  
Humidity : 30%  
EUT Warm-up Time : 30minutes  
Distance : 3m  
Test Mode : Pan and Tilt Mode  
Comment : AC 120V 60Hz  
Level=Emission Level=Meter Reading  
Antenna Factor+Cable Loss(Cable,PreAmp)

The measurement was radiated the worst emissions condition.

Limit: [FCC Part 15] Class B<3m>



| Frequency [MHz] | Meter Reading (QP) [dBμV] | Ant. Type | Antenna Factor [dB/m] | Cable & Preamp [dB] | Level(QP) [dBμV/m] | Angle[°] | Height [cm] | Pola. | Limit [dBμV/m] | Margin [dB] |
|-----------------|---------------------------|-----------|-----------------------|---------------------|--------------------|----------|-------------|-------|----------------|-------------|
| 41.344          | 42.2                      | BC        | 15.7                  | -25.9               | 32.0               | 260      | 101         | Vert. | 40.0           | 8.0         |
| 72.023          | 51.5                      | BC        | 7.5                   | -25.2               | 33.8               | 250      | 283         | Hori. | 40.0           | 6.2         |
| 72.023          | 47.6                      | BC        | 7.5                   | -25.2               | 29.9               | 295      | 125         | Vert. | 40.0           | 10.1        |
| 199.447         | 41.9                      | BC        | 16.8                  | -23.2               | 35.5               | 254      | 179         | Hori. | 43.5           | 8.0         |
| 216.061         | 40.5                      | BC        | 16.8                  | -23.0               | 34.3               | 206      | 169         | Hori. | 46.0           | 11.7        |
| 306.113         | 34.3                      | LP        | 16.3                  | -22.3               | 28.3               | 168      | 110         | Hori. | 46.0           | 17.7        |
| 306.113         | 34.3                      | LP        | 16.3                  | -22.3               | 28.3               | 176      | 195         | Vert. | 46.0           | 17.7        |
| 408.094         | 40.3                      | LP        | 17.8                  | -22.3               | 35.8               | 20       | 100         | Hori. | 46.0           | 10.2        |
| 975.788         | 32.9                      | LP        | 25.1                  | -19.4               | 38.6               | 232      | 121         | Hori. | 53.9           | 15.3        |
| 975.788         | 34.2                      | LP        | 25.1                  | -19.4               | 39.9               | 87       | 102         | Vert. | 53.9           | 14.0        |

BC: Biconical

LP: Log-peri

## LINE CONDUCTION

## 3.2 AC LINE Conducted Emission

Model Name : Camera Unit  
 model No. : KX-DP702  
 Serial No. : ES1  
 Operator : M.HORIE  
 Points : 24  
 Detector : QP  
 RBW : 10kHz

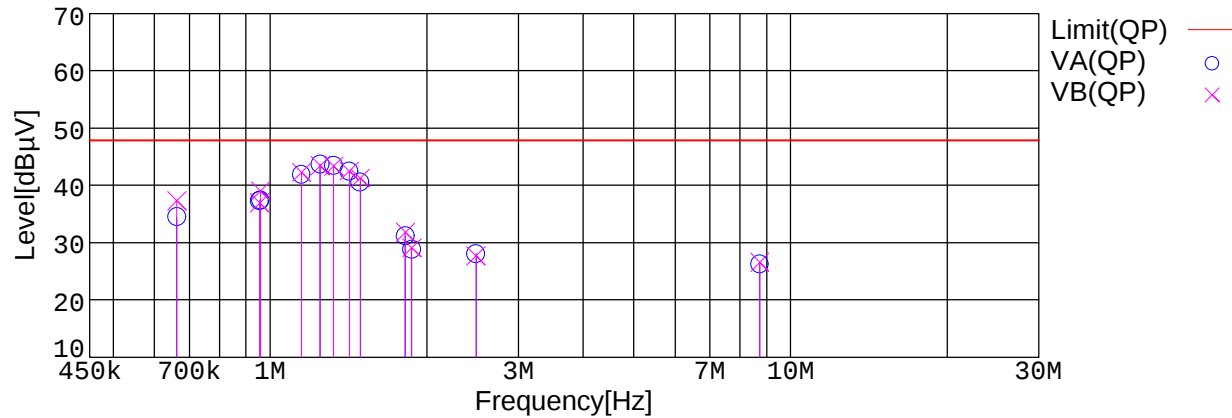
## Test condition of instrument

Date : 2000/2/15 18:30  
 Temperature : 20deg  
 Humidity : 30%  
 EUT Warm-up Time : 30minutes

Test Mode : Pan and Tilt Mode  
 Comment : AC 120V 60Hz  
 Level = Emission Level  
 =Meter Reading+Factor(LISN,Cable)

The measurement was conducted the worst emissions condition.

Limit: [FCC Part15] Class B



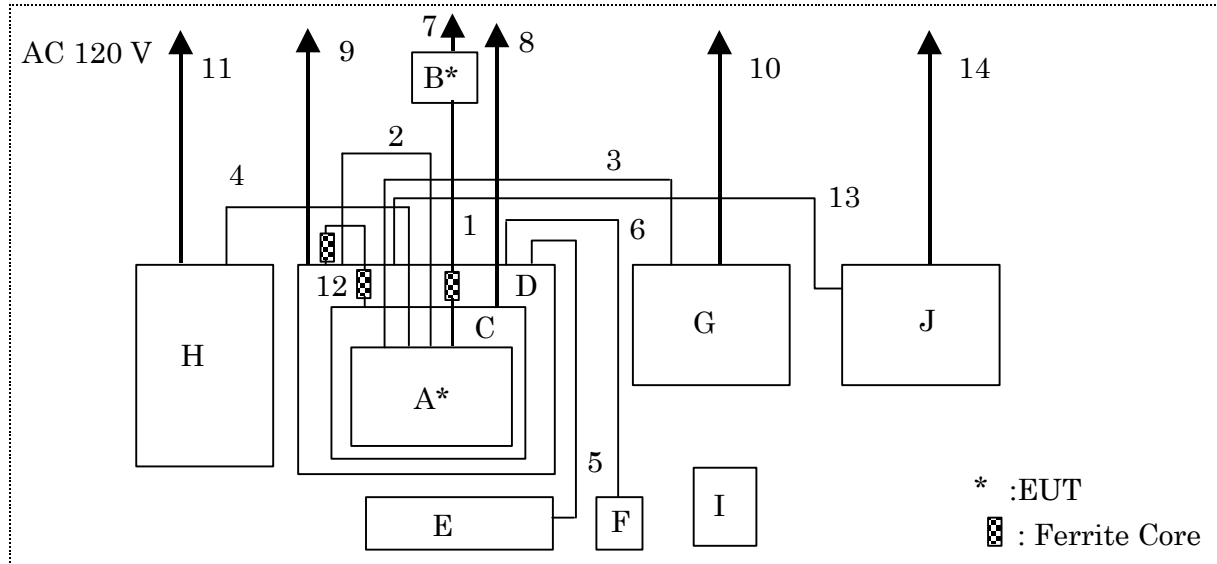
| Frequency[MHz] | Meter Reading (QP)[dBμV] | Factor[dB] | Level(QP) [dBμV] | Line | Limit[dBμV] | Margin[dB] |
|----------------|--------------------------|------------|------------------|------|-------------|------------|
| 0.6624         | 34.4                     | 0.1        | 34.5             | VA   | 47.9        | 13.4       |
| 0.9557         | 37.2                     | 0.1        | 37.3             | VA   | 47.9        | 10.6       |
| 0.9595         | 37.3                     | 0.1        | 37.4             | VA   | 47.9        | 10.5       |
| 1.1497         | 41.8                     | 0.1        | 41.9             | VA   | 47.9        | 6.0        |
| 1.2500         | 43.6                     | 0.1        | 43.7             | VA   | 47.9        | 4.2        |
| 1.3260         | 43.3                     | 0.1        | 43.4             | VA   | 47.9        | 4.5        |
| 1.4200         | 42.2                     | 0.2        | 42.4             | VA   | 47.9        | 5.5        |
| 1.4900         | 40.4                     | 0.2        | 40.6             | VA   | 47.9        | 7.3        |
| 1.8200         | 31.0                     | 0.2        | 31.2             | VA   | 47.9        | 16.7       |
| 1.8724         | 28.6                     | 0.2        | 28.8             | VA   | 47.9        | 19.1       |
| 2.4880         | 27.8                     | 0.2        | 28.0             | VA   | 47.9        | 19.9       |
| 8.7298         | 25.9                     | 0.3        | 26.2             | VA   | 47.9        | 21.7       |
| 0.6624         | 37.2                     | 0.1        | 37.3             | VB   | 47.9        | 10.6       |
| 0.9557         | 36.8                     | 0.1        | 36.9             | VB   | 47.9        | 11.0       |
| 0.9595         | 38.9                     | 0.1        | 39.0             | VB   | 47.9        | 8.9        |
| 1.1497         | 42.1                     | 0.1        | 42.2             | VB   | 47.9        | 5.7        |
| 1.2500         | 43.3                     | 0.1        | 43.4             | VB   | 47.9        | 4.5        |
| 1.3260         | 43.3                     | 0.1        | 43.4             | VB   | 47.9        | 4.5        |
| 1.4200         | 42.3                     | 0.2        | 42.5             | VB   | 47.9        | 5.4        |
| 1.4900         | 41.1                     | 0.2        | 41.3             | VB   | 47.9        | 6.6        |
| 1.8200         | 31.6                     | 0.2        | 31.8             | VB   | 47.9        | 16.1       |
| 1.8724         | 28.9                     | 0.2        | 29.1             | VB   | 47.9        | 18.8       |
| 2.4880         | 27.5                     | 0.2        | 27.7             | VB   | 47.9        | 20.2       |
| 8.7298         | 26.3                     | 0.3        | 26.6             | VB   | 47.9        | 21.3       |

## SECTION 4. DESCRIPTION OF TEST EQUIPMENTS

### 4.1 CONSTRUCTION OF EQUIPMENT

The Construction of EUT during the test as follows.

#### System configuration



Symbols or number assigned to equipment or cables on this diagram is used on tables in section 4.2 to 4.3.

### 4.2 EUT AND SUPPORT EQUIPMENT USED

The EUT was supported by the following equipments during the test.  
 Indication in the following left side column corresponds to section 4.1.

|   | Item                       | Model No.<br>[Manufacturer]                | Serial No.   | FCC ID         |
|---|----------------------------|--------------------------------------------|--------------|----------------|
| A | Camera Unit<br>[EUT]       | KX-DP702<br>[KME]                          | ES(No.1)     | ---            |
| B | Camera AC Adaptor<br>[EUT] | PSLP1170<br>[Yokogawa Elecyrice Cor.]      | ES(No.1)     | ---            |
| C | PC Monitor                 | P1528JB<br>[DELL]                          | 45921A2L4K44 | BGB SD5561C    |
| D | Personal Computer          | Optiplex GXL 5100<br>[DELL]                | SONH8        | E2KSTNGRD      |
| E | Key Board                  | SK-D100M<br>[DELL]                         | M9601-002312 | GYUR93SK       |
| F | Mouse                      | Mouse Port Compatible<br>Mouse 2.0A [DELL] | 1463826      | C3KSMP1        |
| G | VCR                        | AG-W1-P<br>[Panasonic]                     | F6TC00317    | Verification   |
| H | TV Monitor                 | TX-28WG25X<br>[Panasonic]                  | ED6310007    | ---            |
| I | Remote Control Unit        | PSLP1149<br>[SMK]                          | -----        | ---            |
| J | Dot Printer                | KX-P2135<br>[Panasonic]                    | 4HMCNB85276  | ACJ526KX-P2130 |

**4.3 CABLE(s) USED**

The following cable(s) was used for the test.

Indication number in the following left side column corresponds to Section 4.1

| Number | Name                           | Length | Shield | Con-<br>nector | Ferrite<br>core |
|--------|--------------------------------|--------|--------|----------------|-----------------|
| 1      | Camera AC Adaptor Cable        | 1.8m   | Yes    | Metal          | 1               |
| 2      | Camera Control Cable (RS-232C) | 1.5m   | Yes    | Metal          | None            |
| 3      | Composite Video Cable          | 1.5m   | Yes    | Metal          | None            |
| 4      | S-Video Cable                  | 2.0m   | Yes    | Metal          | None            |
| 5      | Key Board Cable                | 1.2m   | Yes    | Metal          | None            |
| 6      | Mouse Cable                    | 1.9m   | Yes    | Metal          | None            |
| 7      | Camera AC Adaptor AC Cable     | 1.8m   | None   | Plastic        | None            |
| 8      | PC Monitor AC Cable            | 1.8m   | None   | Plastic        | None            |
| 9      | Personal Computer AC Cable     | 1.8m   | None   | Plastic        | None            |
| 10     | VCR AC Cable                   | 1.8m   | None   | Plastic        | None            |
| 11     | TV Monitor AC Cable            | 1.8m   | None   | Plastic        | None            |
| 12     | RGB PC Monitor Cable           | 1.75m  | Yes    | Metal          | 2               |
| 13     | Printer Cable                  | 2.4m   | Yes    | Metal          | None            |
| 14     | Printer AC Cable               | 1.8m   | None   | Plastic        | None            |

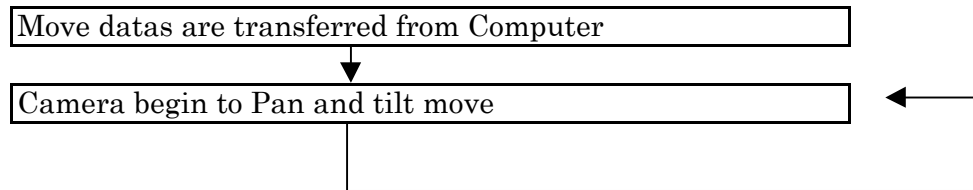
#### 4.4 OPERATING CONDITIONS

The EUT was operated under the following conditions during the test.

##### TEST PROGRAM

Pan and Tilt mode

Cycle time 7s



#### 4.5 Any deviations from, additions to or exclusions from the test method

No deviation.

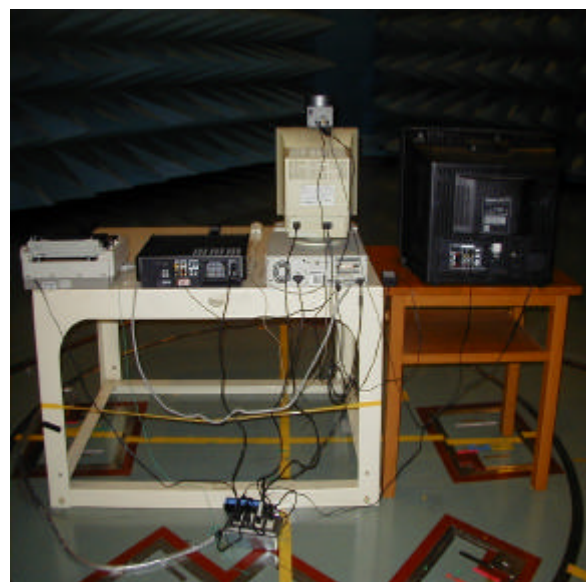
## SECTION 5. PHOTOGRAPHS OF MAXIMUM EMISSION SET-UP

### 5.1 Radiated Emission Test

Test setup in accordance with ANSI C63.4-1992



(Front view)



(Rear view)

### 5.2 Conducted Emission Test

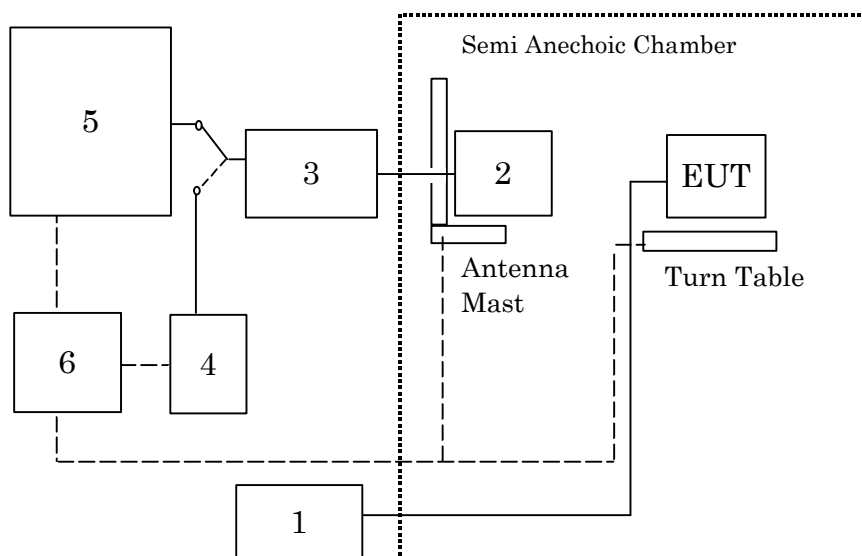
Test setup in accordance with ANSI C63.4-1992



(Front view)



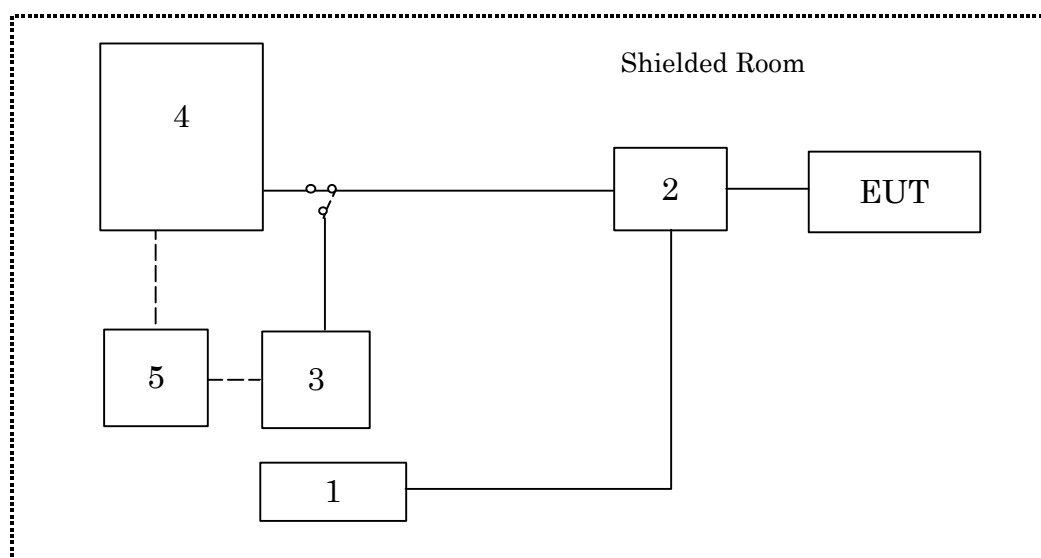
(Side view)



|   | Apparatus                 | Model No.<br>(Manufacture)                                     | Spec.                                                                               | Calibration                                  |                                      | Serial No.                                     |
|---|---------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------|------------------------------------------------|
|   |                           |                                                                |                                                                                     | date                                         | Interval                             |                                                |
| 1 | 3 or 1 phase<br>AC SUPPLY | * FUK-23749-1<br>(NF)                                          | 50/60Hz<br>MAX<br>3 Phase 460V, 1Phase 265V<br>3 Phase 36 kVA, 1 Phase 12 kVA       | ---                                          | ---                                  | ---                                            |
| 2 | Antenna                   | VHA9103<br>UHA9105<br>* BBA9106<br>* UHALP9107<br>(Shwarzbeck) | 30-300MHz (Dipole)<br>300-1000MHz(Dipole)<br>30-300MHz(Broad)<br>300-1000MHz(Broad) | Oct.1999<br>Oct.1999<br>Oct.1999<br>Oct.1999 | 1 year<br>1 year<br>1 year<br>1 year | VHA91031457<br>UHA91052101<br>91031448<br>1729 |
| 3 | Pre-Amplifier             | *8447D (hp)                                                    | 0.1-1300MHz                                                                         | Oct.1999                                     | 1 year                               | 2727A05946                                     |
| 4 | Spectrum<br>Analyzer      | R3371A<br>(Advantest)                                          | 100Hz-26.5GHz                                                                       | Oct.1999                                     | 1 year                               | 68630014                                       |
| 5 | EMI Receiver              | *ESVS10<br>(R&S)                                               | 20-1000MHz<br>(CISPR16)                                                             | Oct.1999                                     | 1 year                               | 844594/005                                     |
| 6 | Personal<br>Computer      | PC340 (IBM)                                                    | ---                                                                                 | ---                                          | ---                                  | ---                                            |
| - | Semi-Anechoic<br>Chamber  | * 3m method(NSA)<br>(RIKEN)                                    | 30-1000MHz                                                                          | Sep.1999                                     | 1year                                | ---                                            |
| - | Cable                     | * EMF174-178<br>* EMF188<br>EMF184                             | 30-1000MHz<br>30-1000MHz<br>30-1000MHz                                              | Nov.1999<br>Nov.1999<br>Nov.1999             | 1year<br>1year<br>1year              | ---<br>---<br>---                              |
| - | SW BOX                    | * PSU (R&S)                                                    | ---                                                                                 | Nov.1999                                     | 1year                                | 843526/008                                     |

\* Used for final test

## 6.2 Conducted Emission



|   | Apparatus                 | Model No.<br>(Manufacture)                      | Spec.                                                                                                                             | Calibration          |                   | Serial No.           |
|---|---------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------|----------------------|
|   |                           |                                                 |                                                                                                                                   | date                 | Interval          |                      |
| 1 | 3 or 1 phase<br>AC SUPPLY | FUK-23749-1<br>(NF)<br><br>*FUK-23749-3<br>(NF) | 50/60Hz<br>MAX<br>3 Phase 460 V<br>1 Phase 265 V<br>MAX<br>3 Phase 36 kVA<br>1 Phase 12 kVA<br>MAX 1 Phase 264 V<br>1 Phase 4 kVA | ---<br>---<br>---    | ---<br>---<br>--- | ---<br>---<br>---    |
| 2 | LISN                      | *KNW407<br>(KYORITSU)                           | 1 Phase 250 V /15A<br>0.15-30MHz<br>(CISPR 16)                                                                                    | Oct.1999<br>Sep.1998 | 1 year<br>3 year  | 8-1345-3<br>8-1345-4 |
| 3 | Spectrum<br>Analyzer      | R3261C<br>(Advantest)                           | 9kHz-2.6GHz                                                                                                                       | Nov.1998             | 3 year            | 61720502             |
| 4 | EMI Receiver              | *ESHS10<br>(R&S)                                | 9KHz-30MHz<br><br>(CISPR 16)                                                                                                      | Oct.1999             | 1 year            | 844077/017           |
| 5 | Personal<br>Computer      | *PC340<br>(IBM)                                 | ---                                                                                                                               | ---                  | ---               | ---                  |
| - | Shielded Room             | * ---<br>(RIKEN)                                | 0.15-30MHz                                                                                                                        | ---                  | ---               | ---                  |
| - | Cable                     | *EMF164,165,167<br>EMF166                       | 0.15-30MHz<br>0.15-30MHz                                                                                                          | Oct.1999<br>Oct.1999 | 1year<br>1year    | ---<br>---           |
| - | SW BOX                    | *PSU (R&S)                                      | ---                                                                                                                               | Oct.1999             | 1year             | ---                  |
| - | R.F.Fuse                  | *MP612(ANRITSU)                                 | ---                                                                                                                               | Oct.1999             | 1year             | ---                  |
| - | 50ohm Terminator          | * ---                                           | ---                                                                                                                               | Jan.2000             | 1year             | ---                  |

\* Used for final test