

## TEST REPORT

Issue Date: Feb.15,2005

Roland Report No. : RJA02404

Manufacturer : Roland Corporation  
5-3, Shinmiyakoda 1-chome, Hamamatsu, Shizuoka, 431-2103 JAPAN  
PHONE (053) 428-5095, FAX (053) 428-5097

Description of Device : Digital Piano

a) Category : Class B personal computers & peripherals

b) FCC ID : SOPKR107

c) Trade Name : Roland

d) Model No. : KR107

e) Serial No. : Sample #1

f) Date of Manufacture : Dec. 18, 2004

g) Power Supply : 117 V AC 60 Hz

h) EUT Grounding : None

Regulation Applied and Measurement Procedure : ■ FCC Rules and Regulations Part 15 Subpart B  
ANSI C63.4-2003

Measurement Results : The results obtained from the measuring of the above-mentioned device are as shown in the attached sheets.

Test Result : Passed

Approved by:



Hideki Toyono  
Producer  
Roland Corp. Piano Development Dept.

Issued by:



Masaru Kudoh  
Roland Corp. Piano Development Dept.

## 1. TEST CONDITIONS

1.1 AC Powerline Conducted Emissions (0.15 – 30 MHz)

## 1.1.1 Test Location:

Roland Corporation, Miyakoda Testing Laboratory  
5-3, Shinmiyakoda 1-chome, Hamamatsu, Shizuoka, 431-2103 JAPAN  
PHONE (053) 428-5095, FAX (053) 428-5097

Shielded Room

## 1.1.2 Measuring Instrument(s) Used:

Description	Manufacturer	Model No.	Serial No.	Last Cal.	Interval
LISN (for EUT)	Kyoritsu	KNW-407	8-532-8	Aug. 9, 2004	1 Year
LISN (for Peripherals)	Kyoritsu	KNW-407	8-1512-2	Aug. 9, 2004	1 Year
Field Strength Meter	Rohde & Schwarz	ESHS10	100002	Aug. 10, 2004	1 Year
Spectrum Analyzer	Hewlett Packard	E7402A	US39150157	Aug. 14, 2004	1 Year
Transient Limiter (for Spectrum Analyzer)	Agilent Technologies	11947A	3107A03236	Aug. 19, 2004	1 Year
Pulse Limiter (for Field Strength Meter)	Rohde & Schwarz	ESH3-Z2	100018	Aug. 19, 2004	1 Year
Termination (50 Ω)	Stack Electronics	T1302	-	Aug. 18, 2004	1 Year

## 1.1.3 Setting of Field Strength Meter:

Quasi-Peak Detector  
IF Bandwidth : 10 kHz  
Average Detector  
IF Bandwidth : 10 kHz

## 1.1.4 Environmental Conditions:

Temperature : 22.8°C  
Humidity : 18.7%

## 1.1.5 Date of Measurement:

Jan.13,2005

## 1.1.6 Note:

## 1.2 Radiated Emissions (30 – 1000 MHz)

### 1.2.1 Test Location:

Roland Corporation, Miyakoda Testing Laboratory  
5-3, Shinmiyakoda 1-chome, Hamamatsu, Shizuoka, 431-2103 JAPAN  
PHONE (053) 428-5095, FAX (053) 428-5097

Open Field Test Site

### 1.2.2 Measuring Instrument(s) Used:

Description	Manufacturer	Model No.	Serial No.	Last Cal.	Interval
Field Strength Meter	Rohde & Schwarz	ESCS30	100154	Aug. 10, 2004	1 Year
Spectrum Analyzer	Hewlett Packard	8546A	3807A00432	Aug. 16, 2004	1 Year
Biconical Antenna	Schwarzbeck	BBA9106	2229	Aug. 11, 2004	1 Year
Log-Periodic Antenna	Schwarzbeck	UHALP9108-A	0364	Aug. 11, 2004	1 Year
Pre Amplifier	Hewlett Packard	8447D	2648A04740	Aug. 9, 2004	1 Year
Antenna Pad 6 dB (for Biconical Antenna)	Anritsu	MP721B	6200313790	Aug. 10, 2004	1 Year
Antenna Pad 6 dB (for Log-Periodic Antenna)	Anritsu	MP721B	6200313788	Aug. 10, 2004	1 Year

### 1.2.3 Setting of Field Strength Meter:

Quasi-Peak Detector  
IF Bandwidth : 120 kHz

### 1.2.4 Environmental Conditions:

Temperature : 18°C  
Humidity : 30%

### 1.2.5 Date of Measurement:

Jan.21,2005

### 1.2.6 Note:

### 1.3 Radiated Emissions (1 – 2 GHz)

#### 1.3.1 Test Location:

Roland Corporation, Miyakoda Testing Laboratory  
5-3, Shinmiyakoda 1-chome, Hamamatsu, Shizuoka, 431-2103 JAPAN  
PHONE (053) 428-5095, FAX (053) 428-5097

Open Field Test Site

#### 1.3.2 Measuring Instrument(s) Used:

Description	Manufacturer	Model No.	Serial No.	Last Cal.	Interval
Field Strength Meter	Rohde & Schwarz	ESCS30	100154	Aug. 10, 2004	1 Year
Spectrum Analyzer	Hewlett Packard	8546A	3807A00432	Aug. 16, 2004	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120A	379	Aug. 12, 2004	1 Year
Pre Amplifier	Agilent Technologies	8449B	3008A01690	Aug. 18, 2004	1 Year

#### 1.3.3 Setting of Spectrum Analyzer:

Peak Detector  
IF Bandwidth : 1 MHz  
Average Detector  
IF Bandwidth : 1 MHz

#### 1.3.4 Environmental Conditions:

Temperature : 18°C  
Humidity : 30%

#### 1.3.5 Date of Measurement:

Jan.21,2005

#### 1.3.6 Note:

2.1 The Equipment Under Test (EUT) consists of:

Description	Manufacturer	Model No.	Serial No.	FCC ID
Digital Piano	Roland	KR107	Sample #1	SOPKR107
Digital Piano Stand	Roland	KSC-30	Sample #1	N/A

2.2 The measurement was carried out with the following equipment(s) connected:

Description	Manufacturer	Model No.	Serial No.	FCC ID
Personal Computer	DELL	DHP	7W2Y71X	DoC Approved
VGA Display	SAMSUNG	GH15LS	NB15HMEW9034 85T	DoC Approved
Mouse	DELL	63618-OEM	1795193-61003	DoC Approved
Keyboard	DELL	SK-8110	CN-07N247- 38842-33Q-1H91	DoC Approved
Software Protect Key	Rainbow Technologies	SENTINEL	-	IVZSPRO1188
Video Monitor	Matsushita	TH-14G1	UC8550898	N/A
Audio Monitor	BOSS	MA-12AV	ZC96420	N/A
Music Player	Roland	MT-300S	ZP84826	N/A
Headphones	Roland	RH-25	-	N/A
Headphones	Roland	RH-25	-	N/A
Memory Module	Roland	M-UF128	Sample #1	DoC Approved
Floppy Disk Drive	Roland	FD-01	Sample #1	DoC Approved
Expression Pedal	Roland	EV-5	LI37127	N/A
Microphone	Roland	DR-10	-	N/A

2.3 Operating Conditions of the EUT:

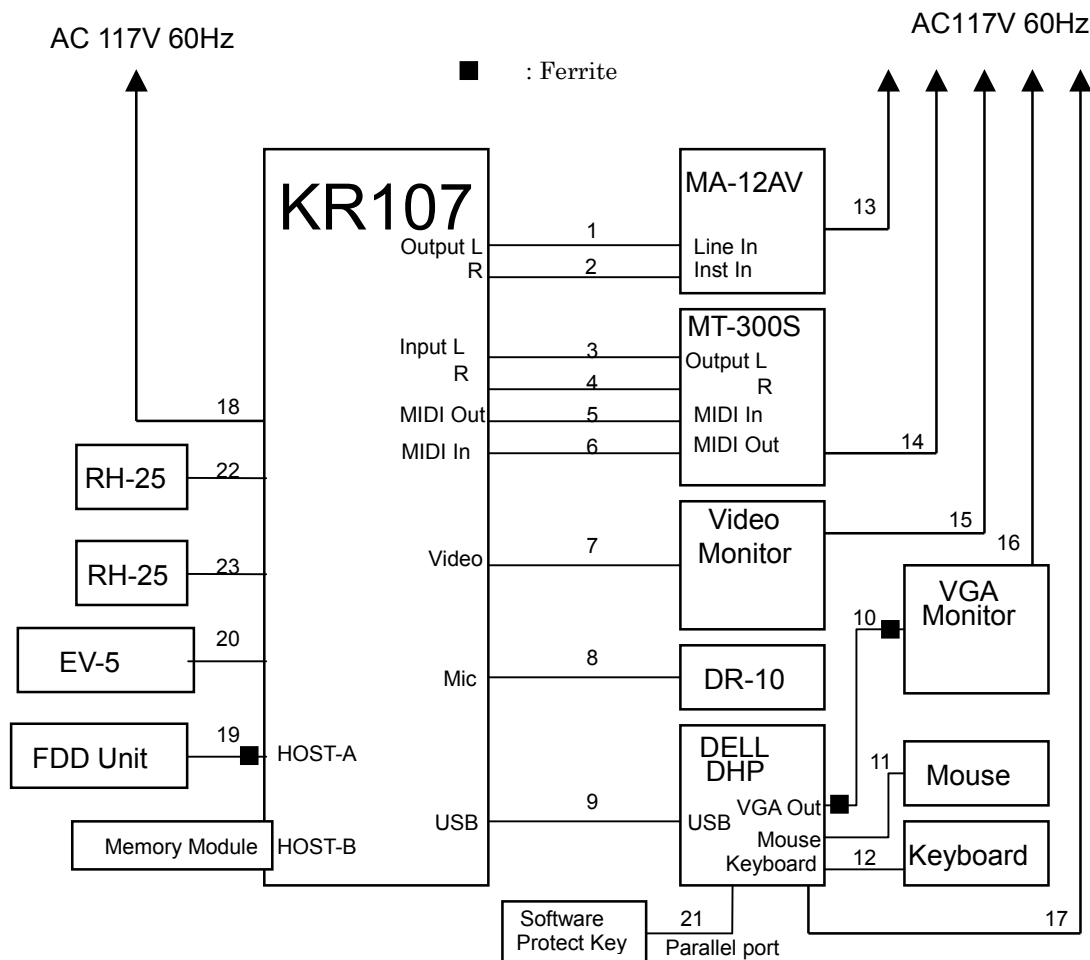
The song data (02-Yukara\_01.wav) was loaded and played and the MIDI data "1\_16.mid" played by the Model DHP was inputted into the EUT. And also the MIDI data "1\_16.mid" played by the MT-300S was inputted into the EUT.

The "H" characters, as per ANSI C63.4-1992, was displayed on the screen of the Video Monitor TH-14G1 and the VGA Monitor GH15LS.

2.4 Type of Interface Cable(s):

Cable No.	Description	Shielded	Ferrite Core	Connector	Length
1	Audio Cable	Yes	No	Non-Metal	2.5m
2	Audio Cable	Yes	No	Non-Metal	2.5m
3	Audio Cable	Yes	No	Non-Metal	2.5m
4	Audio Cable	Yes	No	Non-Metal	2.5m
5	MIDI Cable	Yes	No	Non-Metal	2.5m
6	MIDI Cable	Yes	No	Non-Metal	2.5m
7	Video Cable	Yes	No	Non-Metal	3.0m
8	Mic Cable	Yes	No	Non-Metal	4.5m
9	USB Cable	Yes	No	Non-Metal	3.0m
10	VGA Cable	Yes	Yes	Metal	1.8m
11	Mouse Cable	Yes	No	Non-Metal	1.8m
12	Keyboard Cable	Yes	No	Non-Metal	2.1m
13	AC Power Cable (Monitor Speaker)	No	No	Non-Metal	2.5m
14	AC Power Cable (Music Player)	No	No	Non-Metal	2.5m
15	AC Power Cable (Video Monitor)	No	No	Non-Metal	1.9m
16	AC Power Cable (VGA Monitor)	No	No	Non-Metal	1.9m
17	AC Power Cable (Personal Computer)	No	No	Non-Metal	1.9m
18	AC Power Cable (EUT)	No	No	Non-Metal	2.5m
19	FDD Cable	Yes	Yes	Non-Metal	0.6m
20	Expression Pedal Cable	Yes	No	Non-Metal	1.3m
21	Parallel Cable (Software Protect Key)	No	No	Non-Metal	1.0m
22	Headphones Cable	No	No	Non-Metal	2.5m
23	Headphones Cable	No	No	Non-Metal	2.5m

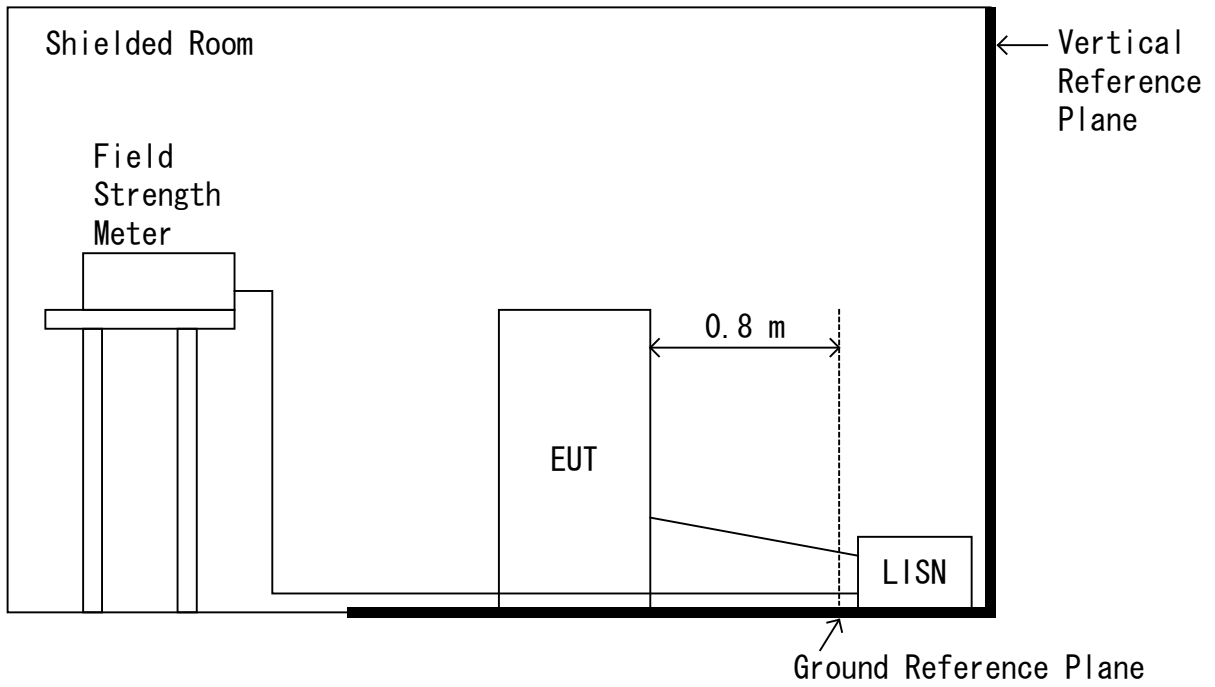
2.5 Arrangement of the Interface Cable(s):



3. TEST SET-UP

3.1 AC Powerline Conducted Emissions (0.15 – 30 MHz)

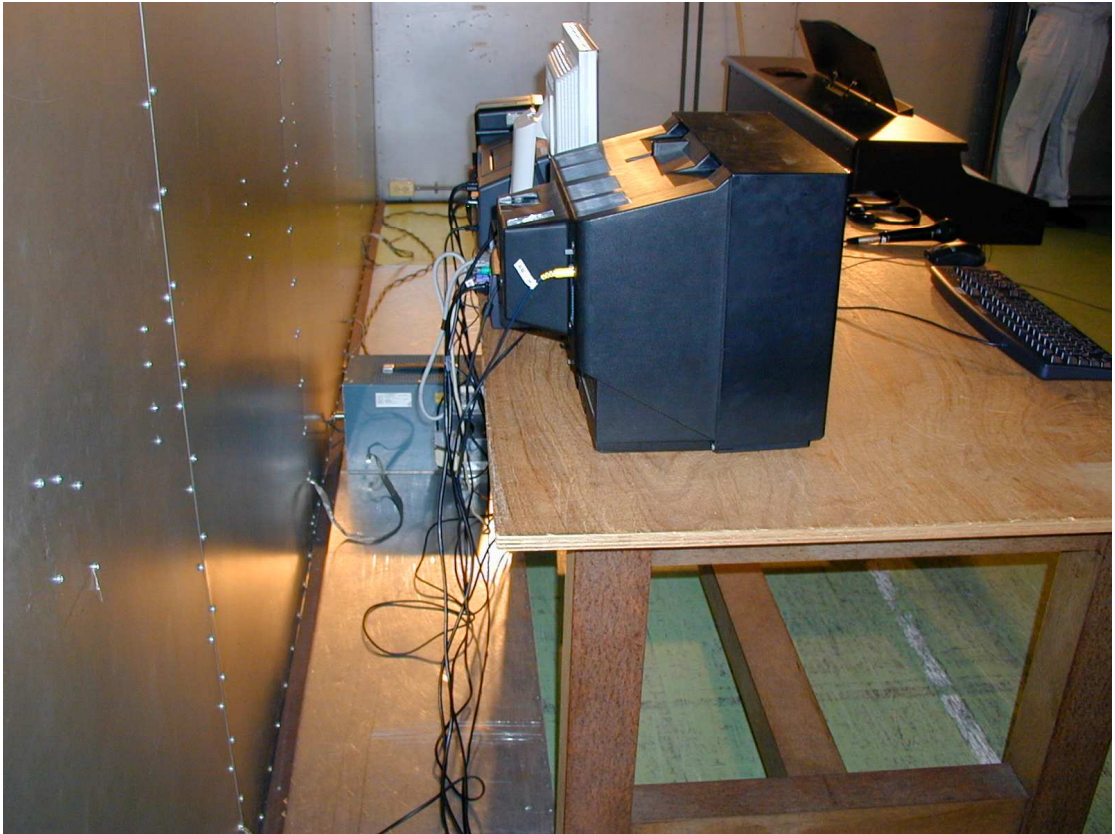
3.1.1 Test Set-up Sketch:



3.1.2 Photograph(s) of Maximum Emission Set-up:



Front View



Left Side View

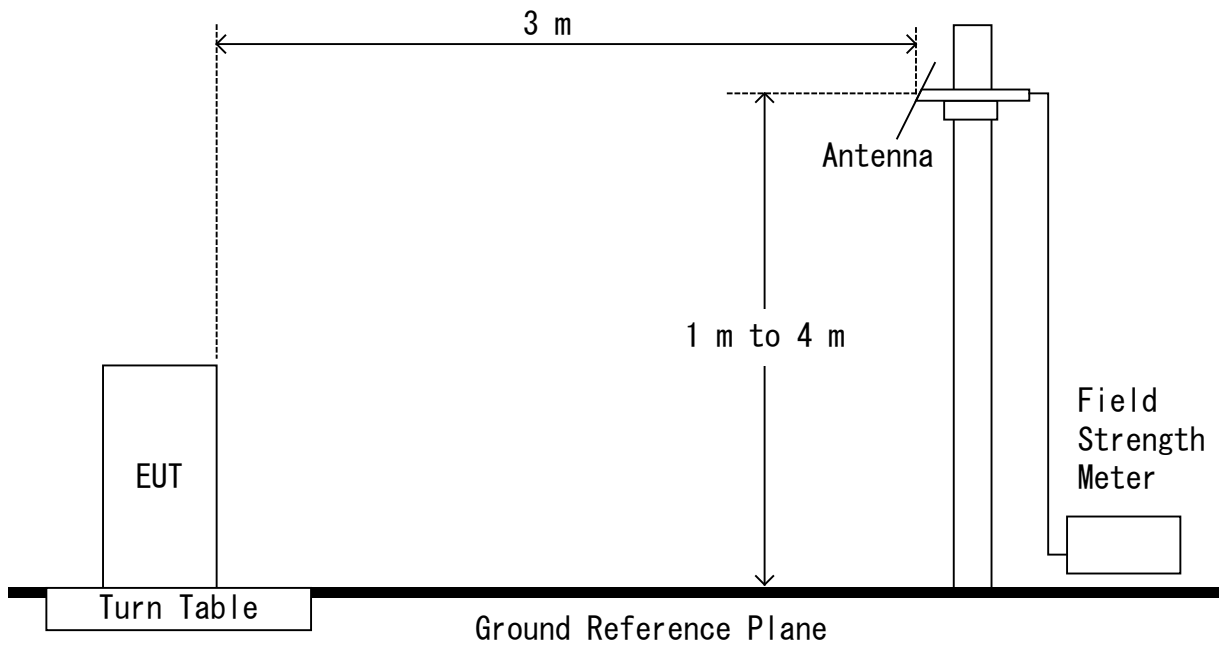


Right Side View



### 3.2 Radiated Emissions (30 – 1000 MHz)

#### 3.2.1 Test Set-up Sketch:



#### 3.2.2 Photograph(s) of Maximum Emission Set-up



Front View



Rear View



Side View

## AC POWERLINE CONDUCTED EMISSIONS

Model No.: KR107

Date: Jan.13, 2005

Temp.: 22.8

Humi.: 18.7 %

Frequency MHz	Correction Factor dB	Kind of Detector QP/AVE	Meter Reading		Limit dB(uV)	Disturbance Level		Margin	
			V-A dB(uV)	V-B dB(uV)		V-A dB(uV)	V-B dB(uV)	V-A dB	V-B dB
0.15	0.2	QP	49.3	48.7	66.0	49.5	48.9	16.5	17.1
0.15	0.2	AVE	29.3	33.6	56.0	29.5	33.8	26.5	22.2
0.16	0.2	QP	49.2	49.3	65.6	49.4	49.5	16.2	16.1
0.16	0.2	AVE	38.7	42.6	55.6	38.9	42.8	16.7	12.8
0.17	0.2	QP	50.6	50.2	64.8	50.8	50.4	14.1	14.5
0.17	0.2	AVE	39.0	43.3	54.9	39.2	43.5	15.7	11.4
0.19	0.1	QP	48.4	48.2	64.1	48.5	48.3	15.6	15.8
0.19	0.1	AVE	32.7	36.2	54.1	32.8	36.3	21.3	17.8
0.20	0.1	QP	47.5	48.0	63.5	47.6	48.1	15.9	15.4
0.20	0.1	AVE	40.0	43.3	53.5	40.1	43.4	13.4	10.1
2.09	0.2	QP	25.4	25.4	56.0	25.6	25.6	30.4	30.4
2.09	0.2	AVE	21.0	21.1	46.0	21.2	21.3	24.8	24.7
2.14	0.2	QP	34.8	35.1	56.0	35.0	35.3	21.0	20.7
2.14	0.2	AVE	31.1	31.2	46.0	31.3	31.4	14.7	14.6
2.15	0.2	QP	34.0	34.2	56.0	34.2	34.4	21.8	21.6
2.15	0.2	AVE	30.0	30.2	46.0	30.2	30.4	15.8	15.6
10.59	0.6	QP	34.5	30.3	60.0	35.1	30.9	24.9	29.1
10.59	0.6	AVE	30.1	25.1	50.0	30.7	25.7	19.3	24.3

(Ver. 2004.12.24)

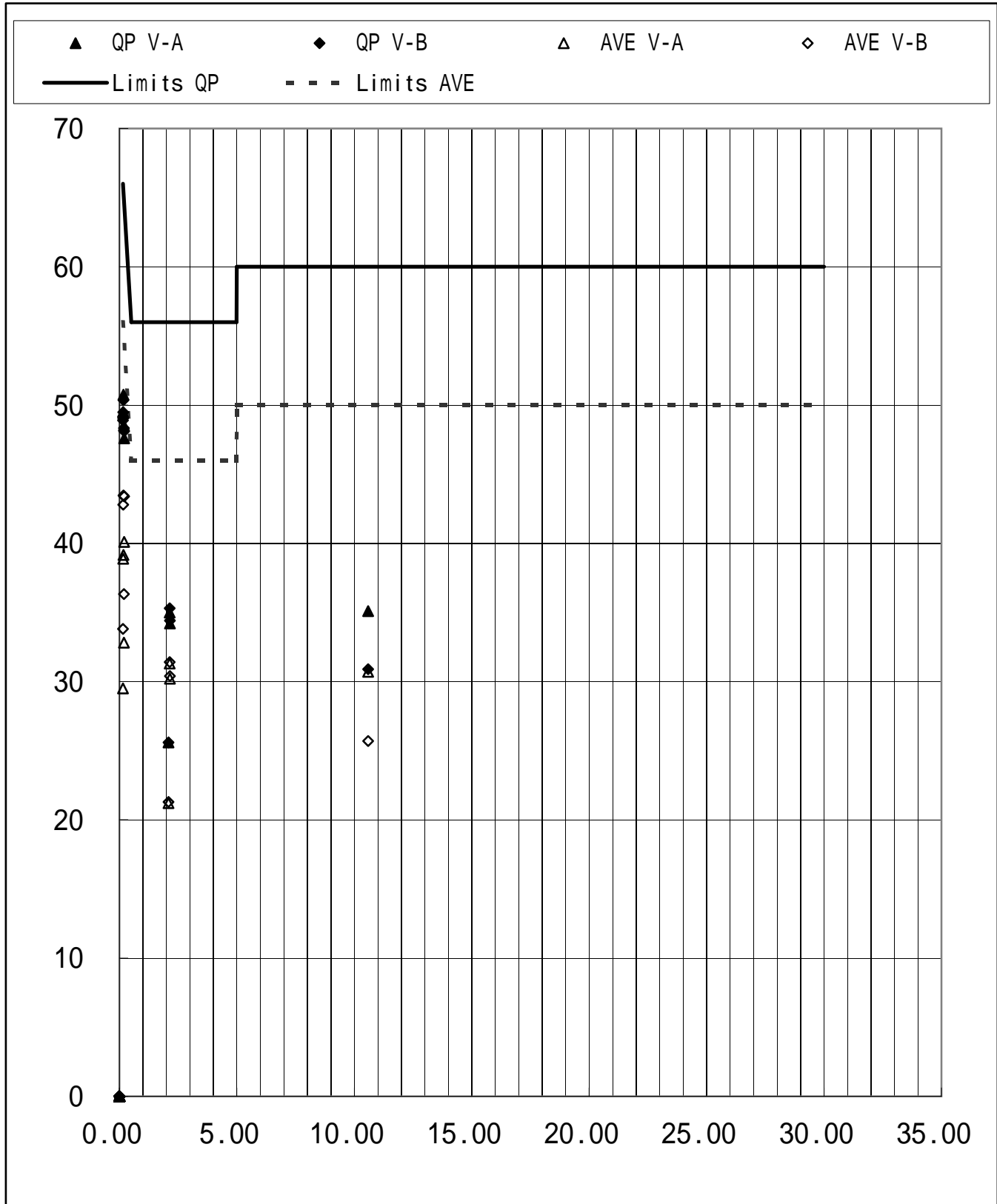
- Notes: 1) The correction factor contains the LISN factor, cable loss and insertion loss of pulse limiter.  
 2) V-A: One end & Ground ; V-B: The other end & Ground  
 3) QP: Quasi-Peak Detector ; AVE: Average Detector  
 4) The symbol of (-) means that disturbance voltage could not be measured.

Tested by:

Masaru Kudoh

AC POWERLINE CONDUCTED EMISSIONS

Model No.: KR107



RADIATED EMISSIONS

Model No.: KR107

Date: Jan. 21,2005

Temp.: 18      Humi.: 30 %

Frequency MHz	Corr. Factor dB	Meter Reading at 3 m		Limit dB(uV/m)	Emission Level at 3 m		Horizontal		Vertical		Margin	
		Horizontal dB(uV)	Vertical dB(uV)		Horizontal dB(uV/m)	Vertical dB(uV/m)	Table Angle Deg.	Antenna Height m	Table Angle Deg.	Antenna Height m	Horizontal dB	Vertical dB
72.00	-13.6	42.9	44.0	40.0	29.3	30.4	127	2.90	130	1.00	10.7	9.6
96.00	-10.7	44.9	44.0	43.5	34.2	33.3	84	3.48	141	1.00	9.3	10.2
119.99	-6.0	36.5	42.3	43.5	30.5	36.3	163	2.71	101	1.00	13.0	7.2
132.00	-5.2	36.9	39.4	43.5	31.7	34.2	255	3.56	179	1.00	11.8	9.3
144.00	-4.4	33.2	36.1	43.5	28.8	31.7	88	2.11	34	1.00	14.7	11.8
192.00	-1.9	31.6	37.0	43.5	29.7	35.1	126	1.64	346	1.00	13.8	8.4
197.99	-1.6	30.4	36.2	43.5	28.8	34.6	43	1.79	337	1.00	14.7	8.9
221.97	-1.2	33.4	33.3	46.0	32.2	32.1	108	2.10	312	1.00	13.8	13.9
225.07	-1.2	33.1	35.8	46.0	31.9	34.6	124	2.71	312	1.00	14.1	11.4
240.00	-1.0	34.6	34.6	46.0	33.6	33.6	75	1.51	144	1.00	12.4	12.4
263.99	0.0	31.6	35.4	46.0	31.6	35.4	285	1.36	43	1.00	14.4	10.6
329.98	-3.0	40.5	39.6	46.0	37.5	36.6	171	1.38	43	1.00	8.5	9.4
336.00	-2.8	33.9	34.1	46.0	31.1	31.3	351	1.47	339	2.53	14.9	14.7
528.00	1.7	34.6	35.5	46.0	36.3	37.2	38	1.00	91	1.00	9.7	8.8
576.00	3.0	35.8	31.5	46.0	38.8	34.5	262	1.00	16	1.16	7.2	11.5
593.97	3.4	28.2	27.8	46.0	31.6	31.2	82	1.00	119	1.29	14.4	14.8
659.97	4.6	28.0	30.2	46.0	32.6	34.8	60	3.06	110	1.00	13.4	11.2
725.90	5.6	26.1	26.8	46.0	31.7	32.4	219	1.00	55	1.07	14.3	13.6
745.10	5.9	33.1	32.7	46.0	39.0	38.6	212	1.00	170	1.00	7.0	7.4
857.96	8.1	23.9	26.4	46.0	32.0	34.5	0	1.00	216	3.78	14.0	11.5
923.96	9.6	28.7	30.1	46.0	38.3	39.7	80	1.07	67	1.39	7.7	6.3
1055.96	-10.5	38.9	44.0	54.0	28.4	33.5	146	1.67	318	1.00	25.6	20.5
1121.95	-9.9	41.3	44.7	54.0	31.4	34.8	106	1.21	121	1.55	22.6	19.2
1151.52	-9.7	34.5	41.3	54.0	24.8	31.6	158	1.00	123	1.55	29.2	22.4
1199.82	-9.7	39.9	41.9	54.0	30.2	32.2	212	1.00	346	1.34	23.8	21.8
1253.95	-9.1	38.3	43.8	54.0	29.2	34.7	44	1.00	145	1.00	24.8	19.3
1286.98	-8.8	37.0	41.5	54.0	28.2	32.7	217	1.00	68	1.00	25.8	21.3
1354.72	-8.4	41.2	39.9	54.0	32.8	31.5	107	1.19	1	1.56	21.2	22.5
1422.45	-8.3	37.3	38.1	54.0	29.0	29.8	7	1.00	127	1.00	25.0	24.2
1549.44	-7.9	39.7	40.8	54.0	31.8	32.9	359	1.00	5	1.21	22.2	21.1
1557.92	-7.9	34.8	38.6	54.0	26.9	30.7	88	1.05	3	1.65	27.1	23.3

(Ver. 2004.12.24)

- Notes: 1) The correction factor contains the antenna factor, cable loss and any other loss.  
 2) The symbol of (-) means that disturbance voltage could not be measured.

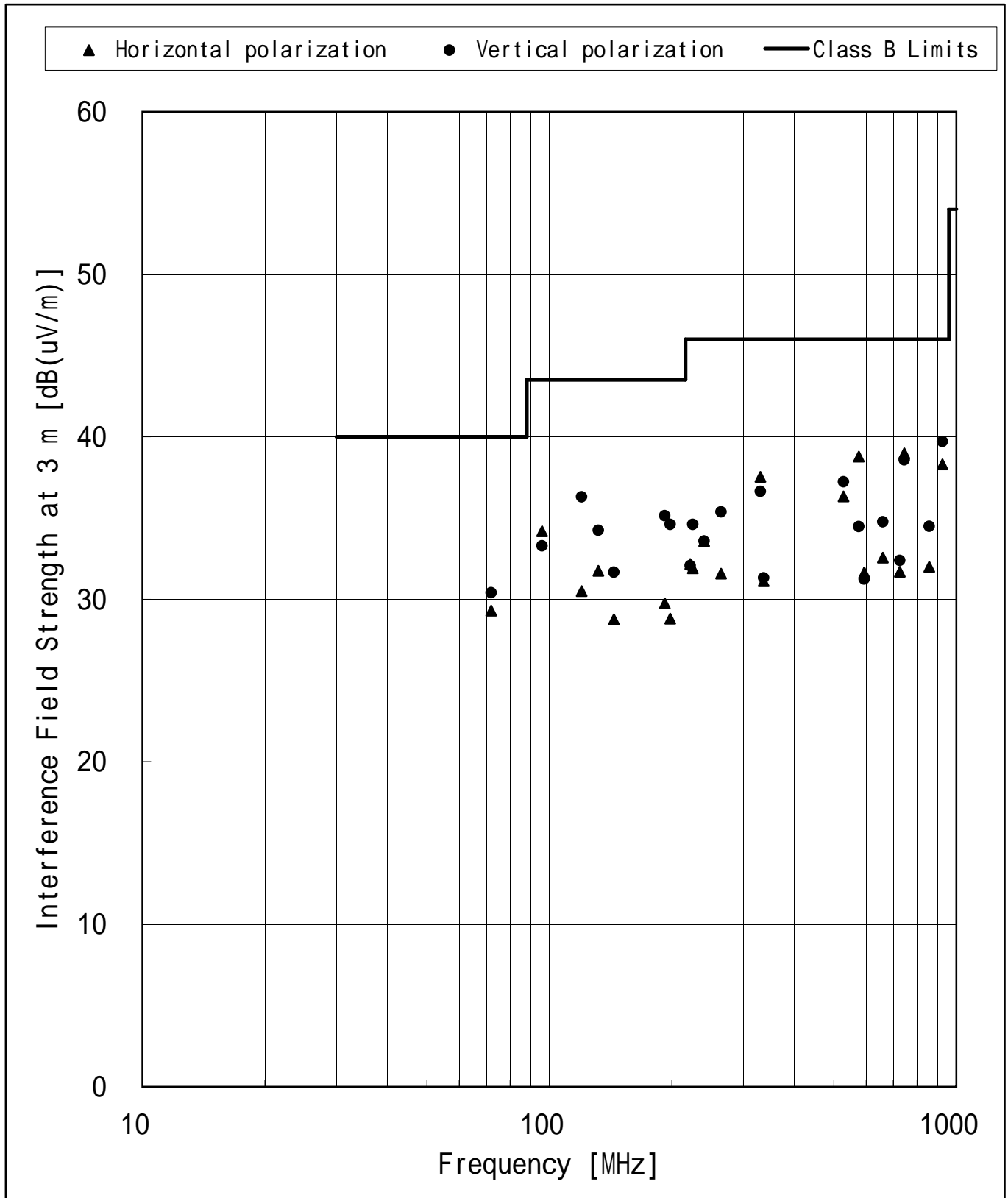
Tested by:

---

Masaru Kudoh

RADIATED EMISSIONS

Model No.: KR107



RADIATED EMISSIONS

Model No.: KR107

