

EXHIBIT E



JAPAN QUALITY ASSURANCE ORGANIZATION
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FCC ID:NYOSIS-01B

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REPORT OF MEASUREMENTS

Date : June 19, 1998
Issue in : Tokyo, Japan

JOA APPLICATION NO.: 80-80180

1. Applicant : SHINCHANG ELECTRICS CO., LTD.
734-2, Wonshi-dong, Ansan-si,
Kyungki-do, Korea
2. Manufacturer : SHINCHANG ELECTRICS CO., LTD.
734-2, Wonshi-dong, Ansan-si,
Kyungki-do, Korea
3. Description of Equipment : Immobilizer
a) FCC ID : NYOSIS-01B
b) Trade Name : HYUNDAI
c) Model No. : SIS-01B
d) Power Supply : 12.0 VDC
4. Applicable Rule : FCC Rules & Regulations Part 15
Subpart C (June 23, 1989)
5. Place of Measurement : JQA EMC Engineering Dept.
6. Date of Measurement : June 13, 1998
7. Total Pages of This Report : 11 (including this page)
8. I certify that I am authorized to sign for the report and that all the statement in this report and in the exhibits hereto are true and correct to the best my knowledge and belief.

Takaharu Hada, Manager
Testing Div.
EMC Engineer Dept.

1. Radiated Field Strength and Harmonic Emission: [§15.209]

Measurement Method Employed: The field strength measurements of the immobilizer system fundamental and harmonics radiation were made at the distance of 30 meters away from the system under test which was placed on the wooden turntable 0.8 meter in height.

The receiving loop antenna was positioned with its plane vertical at 30 meters from the system and rotated about its vertical axis for maximum response at each azimuth about the system.

The center of loop antenna was set to 1 meter above ground. The wooden turntable was rotated through 360 degrees and the system under test was tested by positioned three orthogonal planes, to obtain the highest reading on the field strength meter.

The results were shown the maximum value.

Measurement Results:

Operating Frequency : 134 kHz
Distance of Measurement : 30 meters

Frequency (MHz)	Antenna Factor (dB)	Meter Reading (dB/uV)	Field Strength (dB/uV/m)
0.134	10.7	< 32.0	< 42.7
0.268	10.6	< 32.0	< 42.6
0.402	10.6	< 32.0	< 42.6
0.536	10.6	< 32.0	< 42.6
0.670	10.6	< 32.0	< 42.6
0.804	10.5	< 32.0	< 42.5
0.938	10.4	< 32.0	< 42.4
1.072	10.4	< 32.0	< 42.4
1.206	10.5	< 32.0	< 42.5
1.340	10.5	< 32.0	< 42.5

Since, the fundamental field strength was found undetectable weak of the field strength meter.

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The distance of measurements was reduced to 10 meters.

Operating Frequency : 134 kHz
Distance of Measurement : 10 meters

Frequency (MHz)	Antenna Factor (dB)	Meter Reading (dB/uV)	Field Strength (dB/uV/m)
0.134	10.7	51.2	61.9
0.268	10.6	< 32.0	< 42.6
0.402	10.6	< 32.0	< 42.6
0.536	10.6	< 32.0	< 42.6
0.670	10.6	< 32.0	< 42.6
0.804	10.5	< 32.0	< 42.5
0.938	10.4	< 32.0	< 42.4
1.072	10.4	< 32.0	< 42.4
1.206	10.5	< 32.0	< 42.5
1.340	10.5	< 32.0	< 42.5

For fundamental, field strength was extrapolated to distance 300 meters using the formula that field strength varies as the inverse distance square (40 dB per decade of distance).

Calculation :

$$61.9 \text{ dB/uV/m} - 20\log_{10} \left(\frac{300}{20} \right)^2 =$$

$$61.10 \text{ dB/uV/m} - 59.1 \text{ dB} = 2.8 \text{ dB/uV/m at 300 meters}$$

$$\text{Limits for fundamental} = 20\log_{10} (2400/F) \quad F = \text{Frequency in kHz}$$

$$= 20\log_{10} (2400/134) = 25.1 \text{ dB/uV/m}$$

Measuring Instruments Setting :

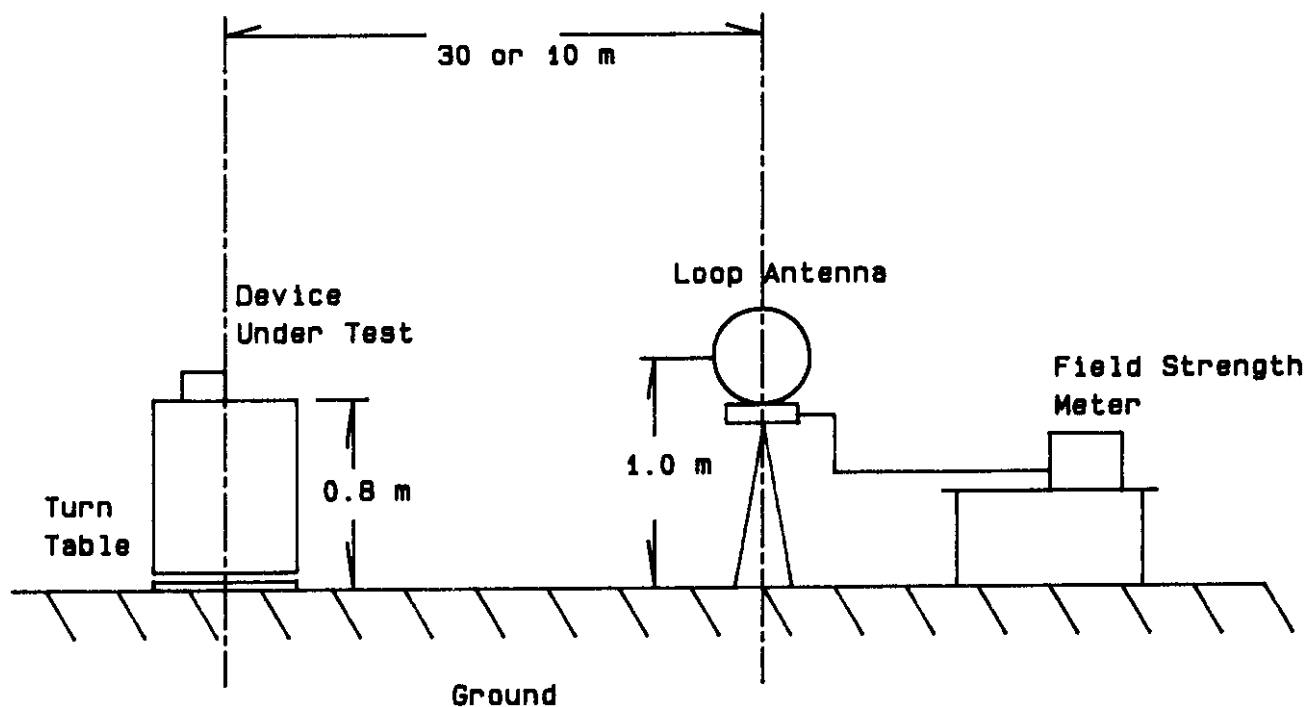
Frequency Range : 110 kHz to 490 kHz
Detector Function : Average
IF Bandwidth : 10 kHz

Frequency Range : 536.8 kHz to 134.2 kHz
Detector Function : CISPR QP
IF Bandwidth : 9 kHz

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Measurement Set Up for up to 30 MHz



2. Radiated Spurious Emissions [§15.209]

Frequency (MHz)	Antenna Factor (dB)	MeterReading		Field strength at 3 m	
		Horiz. (dB/uV)	Vert. (dB/uV)	Horiz. (uV/m)	Vert. (uV/m)
30.000	19.3	< -2.0	12.0	< 7.3	36.7
40.000	15.7	< -2.0	13.2	< 4.8	27.9
50.000	12.7	10.6	26.0	14.6	86.1
60.000	9.8	11.6	24.4	11.7	51.3
70.000	7.6	0.7	16.0	2.6	15.1
78.500	8.2	24.6	30.6	43.7	87.1
88.000	10.1	3.1	14.9	4.6	17.8
102.900	12.5	11.5	21.4	15.8	49.5
115.200	14.3	9.0	15.8	14.6	32.0
120.100	14.9	6.4	12.5	11.6	23.4
137.800	16.9	2.0	5.0	8.8	12.4
154.300	18.3	14.5	9.5	43.7	24.5
171.500	19.6	14.8	10.0	52.5	30.2
188.600	20.6	19.8	14.0	104.7	53.7
206.500	21.6	17.3	10.5	88.1	40.3
222.900	22.2	20.8	15.5	141.3	76.7
240.000	22.3	6.0	3.0	26.0	18.4
257.200	22.2	19.8	16.3	125.9	84.1
291.500	23.5	18.6	12.0	127.4	59.6
325.600	20.8	1.5	< -2.0	13.0	< 8.7
445.800	23.7	3.9	< -2.0	24.0	< 12.2
531.600	25.2	0.9	< -2.0	20.2	< 14.5
565.800	25.9	0.5	< -2.0	20.9	< 15.7
600.000	26.5	< -2.0	< -2.0	16.8	or less
800.000	30.2	< -2.0	< -2.0	25.7	or less
1000.000	33.8	< -2.0	< -2.0	38.9	or less

- Note: 1. The spectrum was checked from 30 MHz to 1000 MHz.
All emissions not listed were found to be more than 20 dB below the limits.
2. The symbol of "<" means "or less".
3. The cable loss was included in the antenna factor.
average limits.
4. Sample calculation :

at 78.500 MHz

$$10(Af+Mr)/20 = 10(8.2+30.6)/20 = 87.1 \text{ uV/m}$$

Where,

Af = Antenna Factor including the cable loss.

Mr = Meter Reading

5. Measuring Instrument Setting:

(1) Below 1000 MHz

Detector function : CISPR quasi-peak

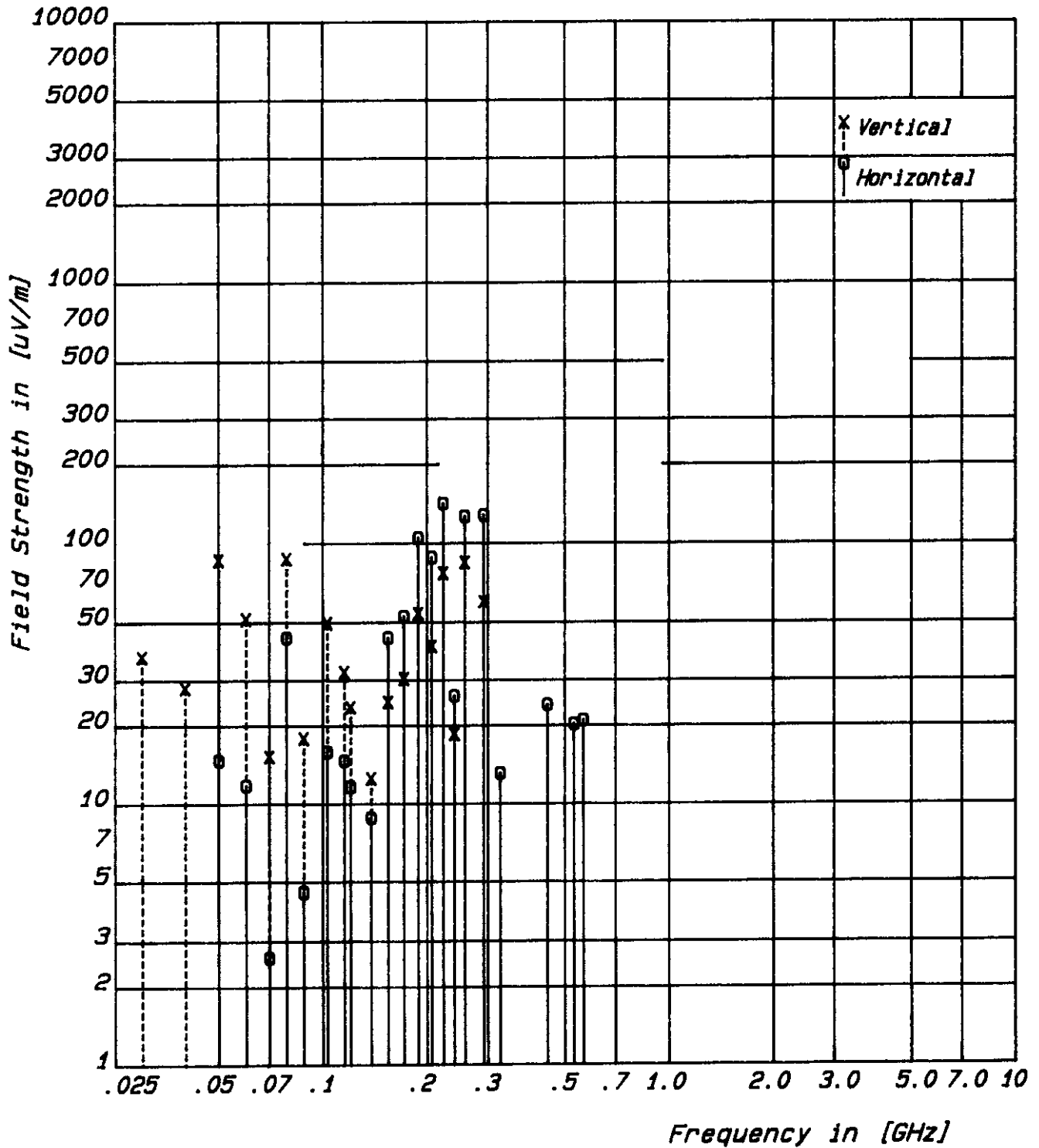
IF Bandwidth : 120 kHz

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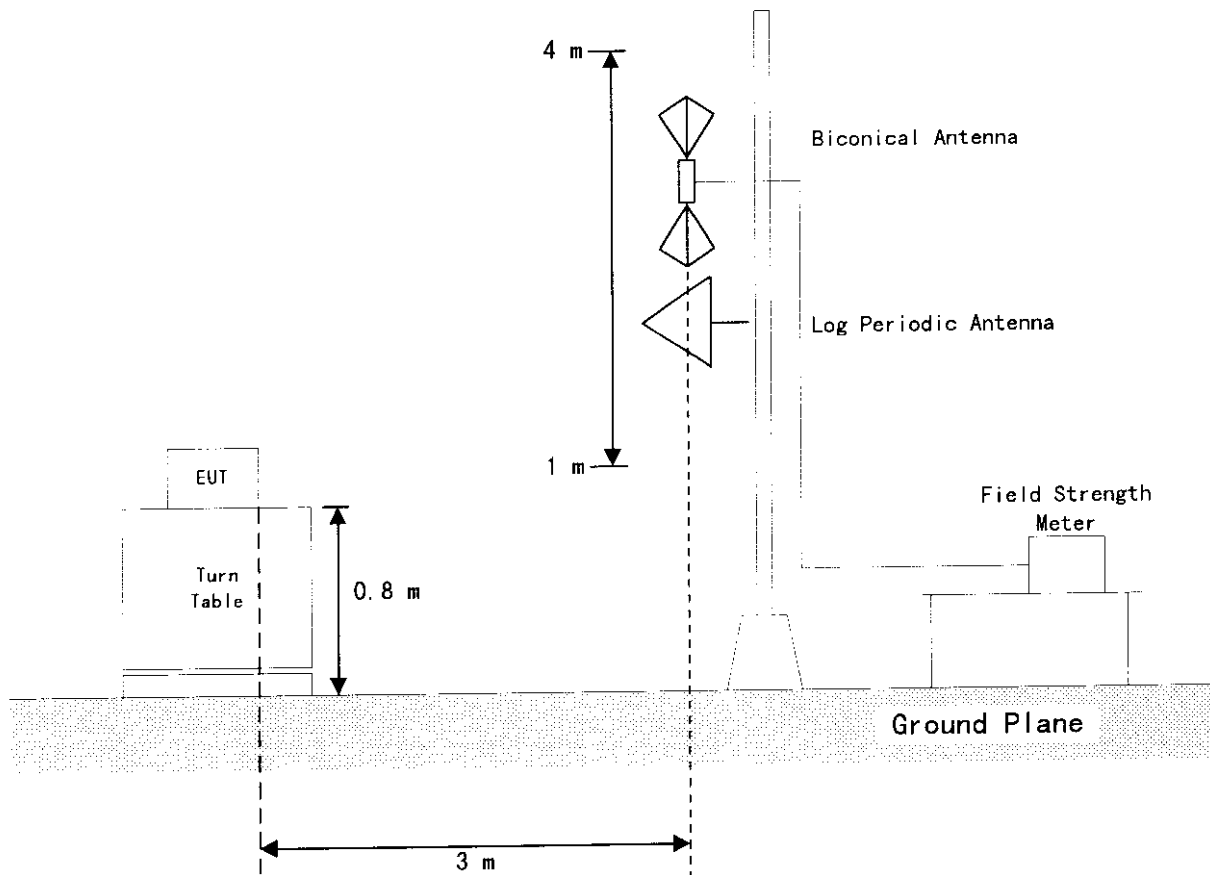
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Radiated Spurious Emission Measurement

FCC ID : NYOSIS-01B



MEASUREMENT SET-UP FOR RADIATED EMISSIONS



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LIST OF MEASUREMENT EQUIPMENT

<u>Equipment (Model No.)</u>	<u>Manufacturer</u>	<u>Date of Cal.</u>
1. Field Strength Meter		
ESH3	Rohde & Schwarz	April 1998
2. Field Strength Meter		
ESV	Rohde & Schwarz	April 1998
3. DC Power Supply		
PAB 18-2.5DU	KIKUSUI ELECTRONICS CORP	--
4. Biconical Antenna		
BBA9106	Schwarzbeck	April 1998
5. Log-periodic Antenna		
UHALP9107	Schwarzbeck	April 1998