

REPORT OF MEASUREMENTS

Date : January 28, 1999
Issue in : Tokyo, Japan

JQA APPLICATION NO.: 80-80629

Applicant : U-shin Ltd.
5217, Nakaze, Hamakita-shi,
Shizuoka 434-0012, Japan

Manufacturer : U-shin Ltd.
5217, Nakaze, Hamakita-shi,
Shizuoka 434-0012, Japan

Description of Equipment : Keyless Entry System
(Receiver)

FCC ID : OBIG7071RX
Trade Name : U-shin
Model No. : G7071
Serial No. : -
Tuning Frequency : 315 MHz
Power Supply : 12 VDC


Applicable Rule : FCC Rules & Regulations Part 15
Subpart B (June 23, 1989)

Place of Measurement : JQA EMC Engineering Dept.

Date of Measurement : November 17, 1998

Total Pages of This Report : 7 (including this page)

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.


Shigeru Osawa, Assistant Manager
Testing Div.
EMC Engineering Dept.

1. Radiated Spurious Emissions: [§15.109(a)]

Measurement Method Employed:

Measurements were made under the conditions specified ANSI C63.4.

The field strength measurements of the equipment under test were made at the distance of 3 meters away from the device which was placed on the wooden turntable 0.8 meter in height.

The receiving antenna polarized horizontally was varied from 1 to 4 meters and the wooden turntable was rotated through 360 degrees to obtain the highest reading on the field strength meter.

These measurements were repeated with the receiving antenna polarized vertically.

The internal pre-amplifier was used from 30 MHz up to 2000 MHz.

Measurement Results:

Tuning Frequency : 315 MHz
Distance of Measurement : 3.0 meters

| Frequency (MHz) | Antenna Factor (dB) | Meter Reading | | Field Strength at 3 m | |
|--------------------|---------------------------|-----------------------|---------------------|-----------------------|--------------------|
| | | Horizontal (dB/uV) | Vertical (dB/uV) | Horizontal (uV/m) | Vertical (uV/m) |
| 50.717 | 4.3 | < -5.0 | < -5.0 | < 0.9 | < 0.9 |
| 101.433 | 11.0 | < -5.0 | < -5.0 | < 2.0 | < 2.0 |
| 152.150 | 15.2 | < -5.0 | < -5.0 | < 3.2 | < 3.2 |
| 202.867 | 18.2 | < -5.0 | < -5.0 | < 4.6 | < 4.6 |
| 253.583 | 20.6 | < -5.0 | < -5.0 | < 6.0 | < 6.0 |
| 304.300 | 22.6 | < -5.0 | < -5.0 | < 7.6 | < 7.6 |
| 355.017 | 24.3 | < -5.0 | < -5.0 | < 9.2 | < 9.2 |
| 405.733 | 25.8 | < -5.0 | < -5.0 | < 11.0 | < 11.0 |
| 456.450 | 27.1 | < -5.0 | < -5.0 | < 12.7 | < 12.7 |
| 507.167 | 28.3 | < -5.0 | < -5.0 | < 14.6 | < 14.6 |
| 557.883 | 29.6 | < -5.0 | < -5.0 | < 17.0 | < 17.0 |
| 608.600 | 30.7 | < -5.0 | < -5.0 | < 19.3 | < 19.3 |
| 659.317 | 31.8 | < -5.0 | < -5.0 | < 21.9 | < 21.9 |
| 710.033 | 32.8 | < -5.0 | < -5.0 | < 24.5 | < 24.5 |
| 760.750 | 33.7 | < -5.0 | < -5.0 | < 27.2 | < 27.2 |
| 811.467 | 34.6 | < -5.0 | < -5.0 | < 30.2 | < 30.2 |
| 862.183 | 35.4 | < -5.0 | < -5.0 | < 33.1 | < 33.1 |
| 912.900 | 36.2 | < -5.0 | < -5.0 | < 36.3 | < 36.3 |
| 963.617 | 36.9 | < -5.0 | < -5.0 | < 39.4 | < 39.4 |

- 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.
 4. Sample calculation :

At 50.717 MHz

$$10^{(Af+Mr)/20} = 10^{(-5+4.3)/20} = 0.9 \text{ uV/m}$$

Where,

Af = Antenna Factor including the cable loss.
Mr = Meter Reading

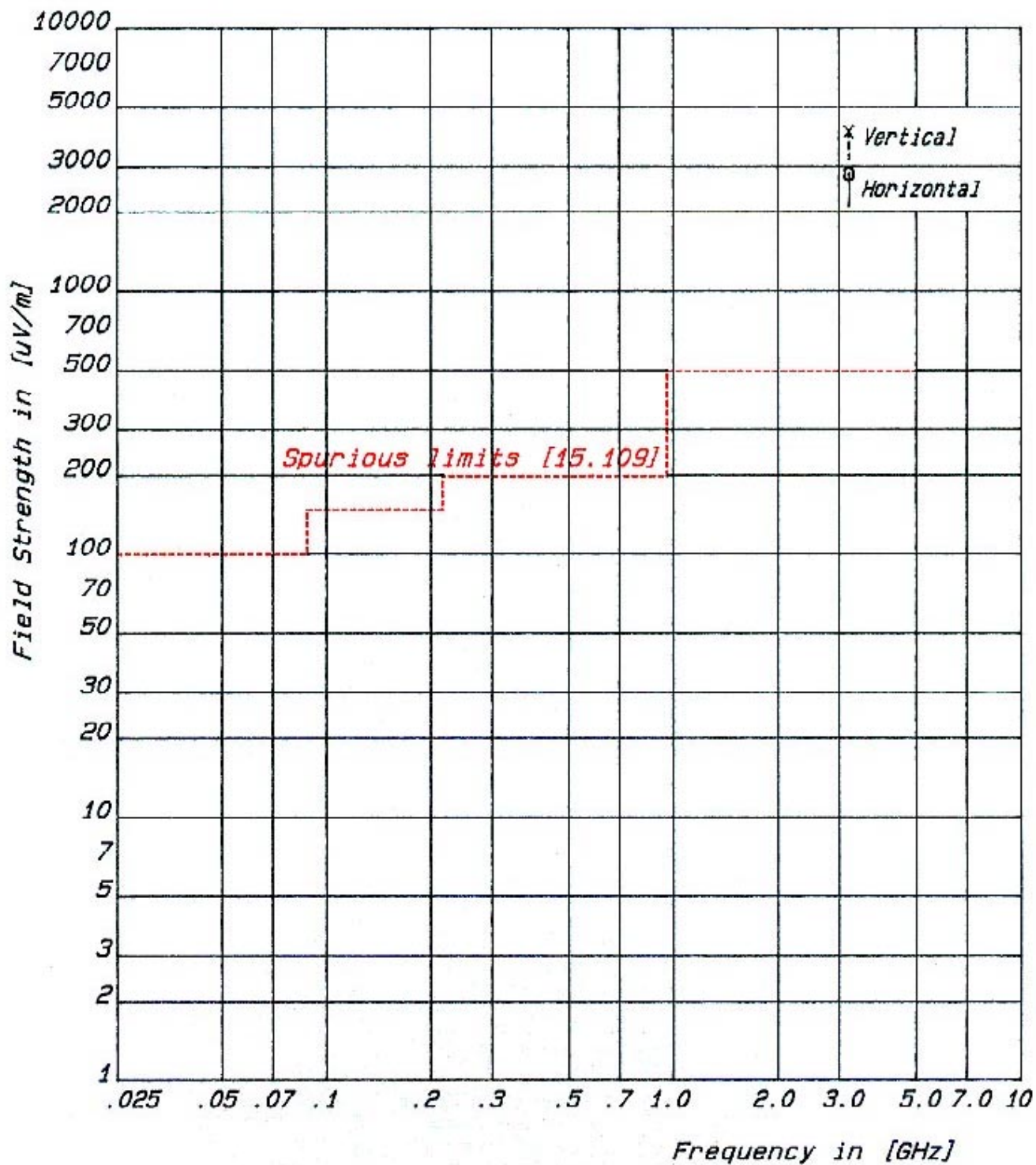
6. Measuring Instrument Setting:

Detector function : CISPR quasi-peak
IF Bandwidth : 120 kHz

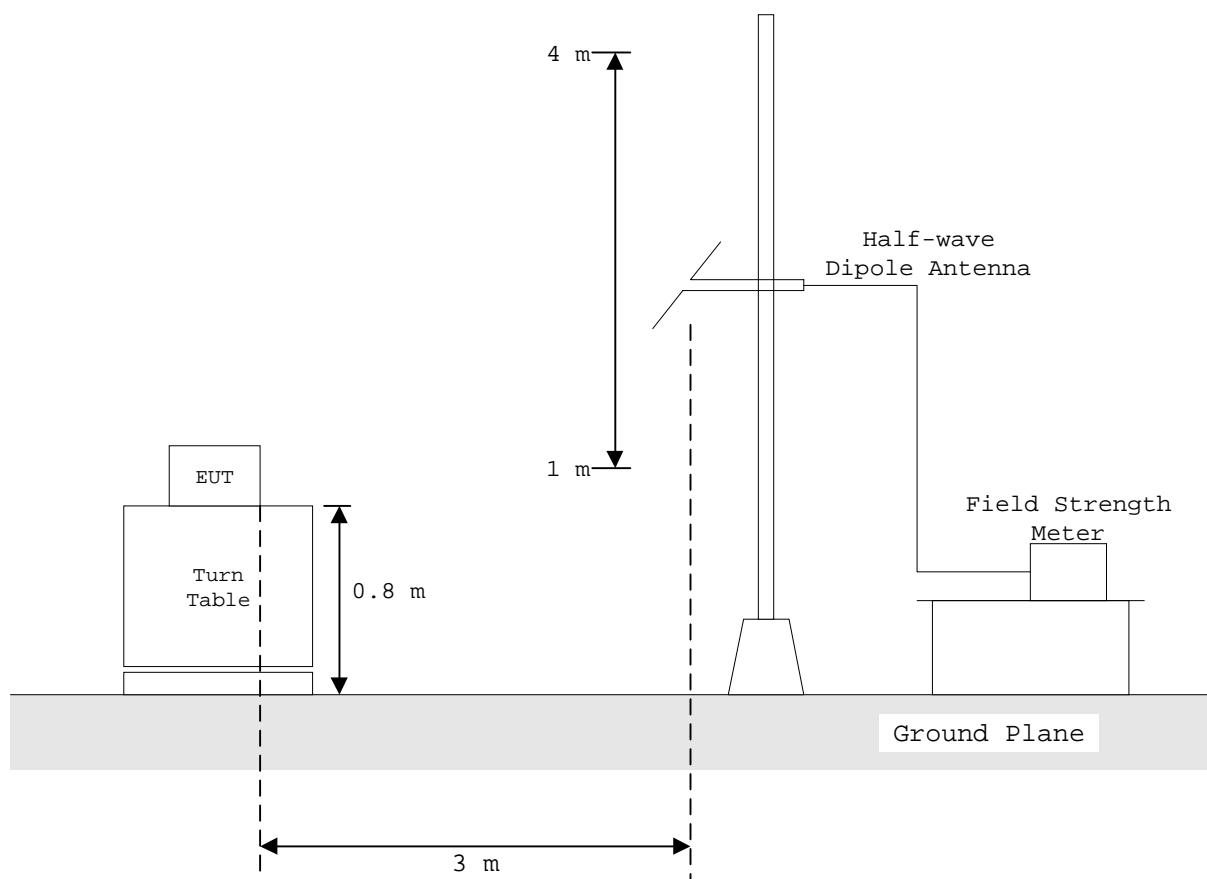
Radiated Spurious Emission Measurement

RX FCC ID : OBIG7071RX

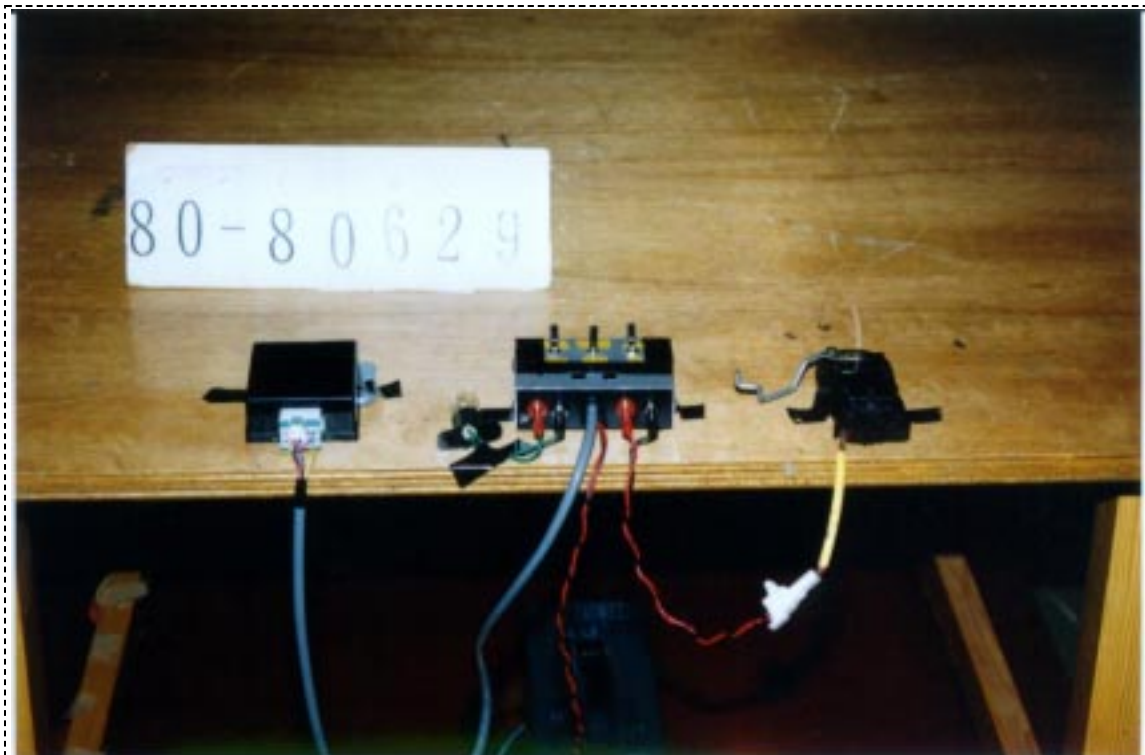
Tuning Frequency: 315.000 MHz



MEASUREMENT SET-UP FOR RADIATED EMISSIONS



Configuration of EUT



LIST OF MEASUREMENT EQUIPMENT

| <u>Equipment (Model No.)</u> | <u>Manufacturer</u> | <u>Date of Cal.</u> |
|------------------------------|---------------------------|---------------------|
| 1. Field Strength Meter | | |
| ESVP | Rohde & Schwarz | May 1998 |
| 2. Tuned Dipole Antenna | | |
| KBA-511 | Kyoritsu Electrical Works | November 1998 |
| KBA-611 | Kyoritsu Electrical Works | November 1998 |