



TEST REPORT

Report No. : AB018583-1 Date : 2002 January 10

Client : Precise Int'l (H.K.) Ltd.
Flat E, 3/F., Block 4, Golden Dragon Ind. Center,
182-190 Tai Lin Pai Road, Kwai Chung,
N. T., Hong Kong.

Sample Description : Sample stated to be Wireless Door Chime (Transmitter).
Model No. : MSR#7077, E-1909, E-1908, 301, 302
Rating : 1 x 12 V battery
No. of sample(s) : One(1) piece ***

Date Received : 2001 December 20.

Test Period : 2001 December 20 – 2002 January 08.

Test Requested : FCC Part 15 Certification

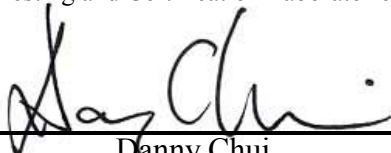
Test Method : FCC Rules and Regulations Part 15 – May 2001
ANSI C63.4 – 1992

Test Result : See attached sheet(s) from page 2 to 10.

Conclusion : The submitted sample was found to comply with requirement of FCC
Part 15 Subpart C.

For and on behalf of
CMA Testing and Certification Laboratories

Authorized Signature : _____


Danny Chui
EMC Engineer – EL. Division

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1 General Information

1.1 General Description

The equipment under test (EUT) is a transmitter for a wireless door chime operating at 313.7747 MHz which is controlled by a crystal. The EUT is powered by a 12 V dc button cell. There is only a single button in the center of the EUT. When the button is pressed once, it transmit a radio frequency and the door bell (receiver) will be sounded. No more signal is transmitted when the button is released.

The brief circuit description is listed as follows :

- IC1 and associated circuit act as encoder
- Q1 and associated circuit act as oscillator and amplifier

The model EL-1909, EL-1908, 301 and 302 are the same as model MSR#7077 in hardware aspect. The difference in model numbers serves as marketing strategy.

1.2 Related Submittal Grants

This is a single application for certification of a transmitter. The receiver of this transmitter is authorized by Certification procedure.



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1.3 Location of the test site

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 1992. An Open Area Testing Site is set up for investigation and located at :

Top of the Roof, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
New Territories,
Hong Kong.

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 1992. A double shielded room is located at :

Roof Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
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New Territories,
Hong Kong.



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1.4 List of measuring equipment

| Equipment | Manufacturer | Model No. | Serial No. | Calibration Certification No. | Calibration Date | Calibration Due Date |
|-------------------|--------------|-----------|------------|-------------------------------------|---------------------|-------------------------|
| EMI Test Receiver | R&S | ESCS30 | 100001 | 20-69223 | Mar. 21, 2001 | Sept. 20, 2002 |
| Broadband Antenna | Schaffner | CBL6113B | 2718 | AC1753 | Dec. 15, 2000 | Jun. 14, 2002 |
| Signal Generator | IFR | 2023B | 202302/938 | Nil | Oct. 23, 2000 | Apr. 22, 2002 |
| LISN | R&S | ESH3-Z5 | 100010 | 20-70405 | Mar. 29, 2001 | Sept. 28, 2002 |
| Pulse Limiter | R&S | ESH3-Z2 | 100001 | 20-73194 | May 2, 2001 | Nov. 1, 2002 |



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2 Description of the radiated emission test

2.1 Test Procedure

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 1992.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

2.2 Test Result

The fundamental emission was based on measurements employing the peak detector on the open area test site.

The harmonic emissions are based on measurements employing the CISPR quasi-peak detector for frequencies below 1000MHz and average detector data for frequencies over 1000MHz.

*Emissions appearing within the restricted bands shall follow the requirement of section 15.205 and the corresponding limits are based on the requirement of section 15.209.

It was found that the EUT meet the FCC requirement.



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2.3 Radiated Emission Measurement Data

**Radiated emission
pursuant to
the requirement of FCC Part 15 subpart C**

| Frequency (MHz) | Polarity (H/V) | Reading at 3m (dB μ V/m) | Antenna and Cable factor (dB) | Field Strength (dB μ V/m) | Limit at 3m (dB μ V/m) | Margin (dB) |
|--------------------|-------------------|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------|----------------|
| 313.775 | H | 33.7 | 14.5 | 48.2 | 75.5 | -27.3 |
| 627.654 | H | 15.6 | 20.8 | 36.4 | 55.5 | -9.6 |
| 941.431 | H | 13.2 | 23.4 | 36.6 | 55.5 | -9.4 |
| 1256.027 | H | 11.2 | 26.2 | 37.4 | 55.5 | -16.6 |
| *1570.028 | H | 11.9 | 28.7 | 40.6 | 54.0 | -13.4 |
| 1882.479 | H | 12.5 | 31.3 | 43.8 | 55.5 | -10.2 |



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3 Description of the Line-conducted Test

3.1 Test Procedure

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 1992. The EUT was setup as described in the procedures, and both lines were measured.

3.2 Test Result

No measurement is required as the EUT is a battery-operated product.

3.3 Graph and Table of Conducted Emission Measurement Data

Not Applicable



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4 Photograph

4.1 Photographs of the Test Setup for Radiated Emission and Conduction Emission

For electronic filing, the photos are saved with filename TSup1.jpg to TSup2.jpg

4.2 Photographs of the External and Internal Configurations of the EUT

For electronic filing, the photos are saved with filename ExtPho1 to ExtPho2 and IntPho1 to IntPho2.

5 Supplementary document

The following document were submitted by applicant, and for electronic filing, the document are saved with the following filenames:

| Document | Filename |
|-------------------------|-----------------|
| ID Label/Location | LabelSmpl.pdf |
| Block Diagram | BlkDia.pdf |
| Schematic Diagram | Schem.pdf |
| Users Manual | UserMan.pdf |
| Operational Description | OpDes.pdf |

5.1 Bandwidth

For electronic filing, the bandwidth plot is saved with filename TestRpt.2.pdf which shows that the fundamental emission is confirmed in the specified band.

The plot shows the fundamental emission when modulated. From the plot, the bandwidth is observed to be 50 kHz, at 20 dBc. The bandwidth limit is 784.437 kHz. Therefore, the unit meets the requirement of Section 15.231(C).

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6 Appendices

| | | |
|-----|--|---------|
| A1. | Photos of the set-up of Radiated Emissions | 1 page |
| A2. | Photos of External Configurations | 1 page |
| A3. | Photos of Internal Configurations | 1 page |
| A4. | ID Label/Location | 1 page |
| A5. | Block Diagram | 1 page |
| A6. | Schematic Diagram | 1 page |
| A7. | Users Manual | 2 pages |
| A8. | Bandwidth | 1 page |
| A9. | Operation Description | 1 page |

***** End of Report *****