

**Soft Lines International Limited**

Application  
For  
Certification  
**(FCC ID: NLDAP-9FS)**

ISM Equipment – Hair Remover

We hereby certify that the sample of the above item is considered to comply with the  
requirements of FCC Part 18, Subpart C for ISM Equipment  
Mention 47 CFR (10-1-2002)

WO#0314293  
BLC/cyl  
25 September, 2003

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## INTERTEK TESTING SERVICES

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### List of attached file

Exhibit type	File Description	filename
Cover Letter	Letter of Agency	letter.pdf
Test Report	Test Report	report.doc
Test Report	Technical Description	descri.pdf
Test Setup Photo	Config Photo	config photo.doc
Test Report	Conducted Emission Test Result	conducted.pdf
External Photo	External Photo	external photo.doc
Internal Photo	Internal Photo	internal photo.doc
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf

# **INTERTEK TESTING SERVICES**

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## **EXHIBIT 1**

### **GENERAL DESCRIPTION**

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### 1.0 General Description 1.0 General Description

#### 1.1 Product Description 1.1 Product Description

The equipment under test (EUT) is a hair remover . The EUT is operated with 27.125MHz and powered by a 24Va.c. AC adaptor. There are five buttons on the EUT, ON, HI, MED, LO and LIGHT. After turn on the EUT, the setting of the tweezers can be selected (HI, MED and LO). Besides there is a LIGHT button to control the ON/OFF of the light bulb.

The brief circuit description is saved with filename : descri.pdf.

#### 1.2 Related Submittal(s) Grants 1.2 Related Submittal(s) Grants

This is a single application for certification of a consumer ISM equipment.

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### 1.3 Test Methodology1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in MP-5. All measurements were performed in Open Area Test Sites. Preliminary scans were performed in the Open Area Test Sites only to determine worst case modes. For each scan, the procedure for maximizing emissions in Appendices D and E were followed. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

### 1.4 Test Facility1.4 Test Facility

The open area test site and conducted measurement facility used to collect the emission data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC.



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### 1.5 Equipment List

#### 1) Radiated Emission Test for FCC Part 18

Equipment	Registration No.	Manufacturer	Model No.	Serial No.	Calibration Due Date
EMI Test Receiver	EW-0016	R&S	ESVS30	8693342/008	August 14, 2004
Antenna Set	EW-0953	EMCO	3148	9909-1093	June 1, 2004
	EW-0954	EMCO	3104C	9911-4872	June 9, 2004
	EW-1041	EMCO	3104C	0003-4883	September 30, 2004
	EW-1042	EMCO	3148	0001-1109	October 10, 2004
EMI Test Receiver	EW-0017	R&S	ESHS30	842053/002	August 11, 2004

#### 2) Disturbance Voltage Tests for FCC Part 18

Equipment	Registration No.	Manufacturer	Model No.	Serial No.	Calibration Due Date
EMI Test Receiver	EW-0017	R&S	ESHS30	842053/002	August 11, 2004
Absorbing Clamp	EW-0019	R&S	MDS21	828228/006	February 17, 2004
	EW-0613	R&S	MDS21	840031/001	October 30, 2003
LISN	EW-0090	R&S	ESH3-Z5	840731/0013	March 16, 2004

**EXHIBIT 2**  
**SYSTEM TEST CONFIGURATION**

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### 2.0 System Test Configuration 2.0 System Test Configuration

#### 2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in MP-5.

The EUT was powered from a 24V a.c. AC adaptor.

For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

The unit was operated standalone and placed in the center of the turntable.2.1 Justification

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). It was turned ON in Hi RF mode and the hair removing tweezer was activated by a rubber band as the light mode had no RF noise measured. The EUT was placed on turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

#### 2.2 EUT Exercising Software2.2 EUT Exercising Software

There was no special software to exercise the device. Once the EUT is turned on, it emits the RF noise.

#### 2.3 Special Accessories2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

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### 2.4 Equipment Modification2.4 Equipment Modification

Any modifications installed previous to testing by Soft Lines International Limited will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Intertek Testing Services.

### 2.5 Support Equipment List and Description2.5 Support Equipment List and Description

This product was tested in a standalone configuration.

All the items listed under section 2.0 of this report are

*Confirmed by:*

*Billy Chow  
Senior Supervisor  
Intertek Testing Services Hong Kong Ltd.  
Agent for Soft Lines International Limited*



\_\_\_\_\_  
Signature

\_\_\_\_\_  
25 September, 2003

\_\_\_\_\_  
Date

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**EXHIBIT 3**

**EMISSION RESULTS**

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### 3.0 Emission Results3.0 Emission Results

Data is included worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

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### 3.1 Field Strength Calculation3.1 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD + AV$$

where FS = Field Strength in dB $\mu$ V/m

RA = Receiver Amplitude (including preamplifier) in dB $\mu$ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

PD = Pulse Desensitization in dB

AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD + AV$$

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### 3.1 Field Strength Calculation (cont'd) 3.1 Field Strength Calculation (cont)

#### Example

Assume a receiver reading of 62.0 dB $\mu$ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32 dB $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

$$RA = 62.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$PD = 0 \text{ dB}$$

$$AV = -10 \text{ dB}$$

$$FS = 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32 \text{ dB}\mu\text{V/m}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm} [(32 \text{ dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m}$$



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3.2 Radiated Emission Configuration Photograph  
Configuration Photograph

Emission

Worst Case Radiated Emission  
at  
0.014 MHz

For electronic filing, the front view and back view of test configuration photograph is saved with filename: config photo.doc.

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### 3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 29.3 dB

#### **TEST PERSONNEL:**



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*Signature*

Kenneth H. M. Lam, Compliance Engineer

*Typed/Printed Name*

25 September, 2003

*Date*

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## INTERTEK TESTING SERVICES

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Company: Soft Lines International Limited  
Model: emjoi AP-9FS

Date of Test: 20 September, 2003

Table 1

### Radiated Emissions

Frequency (MHz)	Reading (dB $\mu$ V/m)	Distance Factor (dB)	Calculated at 300m (dB $\mu$ V/m)	Limit at 300m (dB $\mu$ V/m)	Margin (dB)
0.014	38.6	-40	-1.4	27.9	-29.3
0.028	37.2	-40	-2.8	27.9	-30.7
0.048	35.4	-40	-4.6	27.9	-32.5
0.052	33.6	-40	-6.4	27.9	-34.3
5.362	32.4	-40	-7.6	27.9	-35.5
17.254	30.5	-40	-9.5	27.9	-37.4
30.481	27.9	-40	-12.1	27.9	-40.0
41.269	30.2	-40	-9.8	27.9	-37.7
60.841	28.6	-40	-11.4	27.9	-39.3

- Notes:
1. Peak Detector Data unless otherwise stated.
  2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
  3. Negative value in the margin column shows emission below limit.

Test Engineer: Kenneth H. M. Lam

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### **3.4 Line Conducted Configuration Photograph**

#### **Worst Case Line-Conducted Configuration**

For electronic filing, the worst case line-conducted configuration photograph are saved with filename: config photo.doc

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### 3.5 Line Conducted Emission Configuration Data

For electronic filing, the graph and data table of the worst case conducted emission is saved with filename: conducted.pdf.

Judgement: Passed

#### **TEST PERSONNEL:**



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*Signature*

Kenneth H. M. Lam, Compliance Engineer  
*Typed/Printed Name*

20 September, 2003  
*Date*

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**EXHIBIT 4**

**EQUIPMENT PHOTOGRAPHS**

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### 4.0 **Equipment Photographs**

For electronic filing, the photographs of the tested EUT are saved with filename: external photo.doc for external photo and internal photo.doc for internal photo.4.0

### **Equipment Photographs**

**EXHIBIT 5**  
**PRODUCT LABELLING**



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### 5.0 **Product Labelling**5.0 **Product Labelling**

For electronic filing, the FCC ID label artwork and the label location are saved with filename: label.pdf

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**EXHIBIT 6**

**TECHNICAL SPECIFICATIONS**

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### 6.0 Technical Specifications 6.0 Technical Specifications

For electronic filing, the block diagram and schematics of the tested EUT are saved with filename: block.pdf and circuit.pdf respectively.

**EXHIBIT 7**  
**INSTRUCTION MANUAL**

## INTERTEK TESTING SERVICES

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### 7.0 Instruction Manual 7.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf

This manual will be provided to the end-user with each unit sold/leased in the United States.