September 21, 2007

Elite Screens China Corp. Longxi Duimianling Industry Zone, Longcheng, Longgang District, Shenzhen, Guangdong, China

Dear Andy:

Enclosed you will find your file copy of a Part 15 Certification (FCC ID: VBXCINETENSION).

For your reference, TCB will normally take another 20 days for reviewing the report. Approval will then be granted when no query is sorted.

Please contact me if you have any questions regarding the enclosed material.

Sincerely,

Shawn Xing

**Assistant Manager** 

**Enclosure** 

# Elite Screens China Corp.

Application
For
Certification
(FCC ID: VBXCINETENSION)

**Transmitter** 

JGZ0705093-1

Shawn Xing

September 21, 2007

- The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
- This report shall not be reproduced except in full without prior authorization from Intertek Testing Services Shenzhen Limited.
- For Terms and Conditions of the services, it can be provided upon request.
- The evaluation data of the report will be kept for 3 years from the date of issuance.

#### **LIST OF EXHIBITS**

#### **INTRODUCTION**

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## **MEASUREMENT/TECHNICAL REPORT**

**Elite Screens China Corp.- MODEL: Cinetension** 

**FCC ID: VBXCINETENSION** 

**September 21, 2007** 

•	ginal Grant X Class II Changeer (example: computer, printer, modem, etc.)
Deferred grant requested per 47 CFR 0	0.457(d)(1)(ii)? Yes No_X
If yes, defer until:	
Company Name agrees to notify the Co	date ommission by:
Transition Rules Request per 15.37?	
If no, assumed Part 15, Subpart C f [05-04-07 Edition] provision.	for intentional radiator - the new 47 CFR
Report prepared by:	Shawn Xing Intertek Testing Service Shenzhen Ltd. Guangzhou Branch 1~8th floor, Block E2, 11 Cai Pin Road, Science city, Guangzhou Economic Development Zone, Guangzhou, P.R.China Phone: 86-755-8614-0602 Fax: 86-755-8601-6751

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## List of attached file

Exhibit type	File Description	Filename	
Test Report	Test Report	report.pdf	
Operation Description	Technical Description	descri.pdf	
Operation Description	Tx Module Specification	hc02.pdf	
Test Setup Photo	Radiated Emission	radiated photos.pdf	
Test Report	Bandwidth Plot	bw.pdf	
External Photo	External Photo	external photos.pdf	
Internal Photo	Internal Photo	internal photos.pdf	
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	

# EXHIBIT 1 GENERAL DESCRIPTION

#### 1.0 **General Description**

#### 1.1 Product Description

This Equipment Under Test (EUT) is the 434MHz wireless mannualy operated transmitter that powered by Battery (2\*AAA), The main function of the EUT is used to transmit the 434MHz modulation signal to the specified receiver installed to the electric screen that sold with this transmitter. The receiver will demodulate the signal and power on/off the DC motor to move or stop the screen. The EUT stops the transmission within 5 Seconds after release the button.

Antenna Type: Integral Antenna

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

#### 1.2 Related Submittal(s) Grants

This is an application for certification of a transmitter. The receiver, associated with this transmitter, has FCC ID: VBXELITESCREENS and has been filed at the same time.

#### 1.3 Test Methodology

Radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). All measurements were performed in Semi-Anechoic Chamber. Preliminary scans were performed in the Semi-anechoic Chamber 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 Facility

The Semi-Anechoic Chamber facility used to collect the radiated data is **SHENZHEN ACADEMY OF METROLOGY & QUALITY INSPECTION** located at Longzhu Road, Shenzhen. This test facility and site measurement data have been fully placed on file with the FCC.

# EXHIBIT 2 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 ANSI C63.4 (2003).

The EUT was powered from Battery (2\*AAA), 3.0V DC

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 at stand alone and placed in the centre of the turntable.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes. For simplicity of testing, the unit was wired to transmit continuously.

The frequency range from 9KHz to 4.5GHz was searched for spurious emissions from the device. Only those emissions reported were detected. All other emissions were at least 20 dB below the applicable limits.

#### 2.2 EUT Exercising Software

There was no special software to exercise the device. Once the button is depressed, the unit transmits the typical signal. For simplicity of testing, the unit was wired to transmit continuously.

#### 2.3 Special Accessories

None

#### 2.4 Equipment Modification

Any modifications installed previous to testing by Elite Screens China Corp. will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Intertek Testing Services.

### 2.5 Measurement Uncertainty

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

#### 2.6 Support Equipment List and Description

This product was tested in a stand alone configuration.

All the items listed under section 2.0 of this report are

Confirmed by:

Shawn Xing
Assistant Manager
Intertek Testing Service Shenzhen Ltd.
Guangzhou Branch
Agent for Elite Screens China Corp.

Signature

September 21, 2007

Date

# EXHIBIT 3 EMISSION RESULTS

## 3.0 **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.

#### 3.1 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 dBµV

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:

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

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.

 $RA = 62.0 dB\mu V$ 

AF = 7.4 dB

CF = 1.6 dB

 $AG = 29.0 \, dB$ 

PD = 0 dBAV = -10 dB

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

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

3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission At 1301.654 MHz

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos.pdf.

#### 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 4.8 dB

**TEST PERSONNEL:** 

Signature

Sam Dong, Compliance Engineer

Typed/Printed Name

September 21, 2007

Date

Applicant: Elite Screens China Corp. Date of Test: July 25, 2007

Model: Cinetension

Table 1

Radiated Emissions

Polarization	Frequency	Reading	Antenna	Pre-	Net	Limit	Margin
	(MHz)	(dBµV)	Factor	Amp	at 3m	at 3m	(dB)
			(dB)	Gain	(dBµV/m)	(dBµV/m)	
				(dB)			
V	434.085	57.1	28.1	15.2	70.0	80.8	-10.8
V	1301.654	54.0	28.5	33.3	49.2	54.0	-4.8
Н	434.085	37.8	28.6	15.2	51.2	80.8	-29.6

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.
- 4. Horn antenna and average detector are used for the emission over 1000MHz.
- \* Emission within the restricted band fulfils the requirement of Section 15.205. The corresponding limit as Section 15.205 is based on Quasi peak detector data for frequencies below 1000 MHz and average detector data for frequencies over 1000 MHz.

Test Engineer: Sam Dong

# EXHIBIT 4 EQUIPMENT PHOTOGRAPHS

# 4.0 **Equipment Photographs**

For electronic filing, the photographs of the tested EUT are saved with filename: external photos.pdf & internal photos.pdf.

# EXHIBIT 5 PRODUCT LABELLING

# 5.0 **Product Labelling**

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

# EXHIBIT 6 TECHNICAL SPECIFICATIONS

# 6.0 <u>Technical Specifications</u>

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**

## 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.

# EXHIBIT 8

## **MISCELLANEOUS INFORMATION**

## 8.0 <u>Miscellaneous Information</u>

This miscellaneous information includes details of the measured bandwidth, the test procedure and calculation of factors such as pulse desensitization and averaging factor.

#### 8.1 Bandwidth Plot

For electronic filing, the plot shows the fundamental emission when modulated is saved with filename: bw.pdf. From the plot, the 20dB bandwidth is 0.633MHz and less than the limit of 1.085MHz. It fulfils the requirement of 15.231(C).

#### 8.2 Discussion of Pulse Desensitization

The pulse desensitivity is not applicable for this device. Since the transmitter transmit the RF signal continuously.

# 8.3 Calculation of Average Factor

It is not necessary to apply average factor to the measurement results because the Peak Emissions Value is below the Average limit.

#### 8.4 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services in the measurements of transmitters operating under Part 15, Subpart C rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 - 2003.

The transmitting equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axes to obtain maximum emission levels. The antenna height and polarization are varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in Exhibit 8.3.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower. For line conducted emissions, the range scanned is 150 kHz to 30 MHz.

#### 8.4 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements are made as described in ANSI C63.4 - 2003.

The IF bandwidth used for measurement of radiated signal strength was 100 kHz or greater when frequency is below 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Exhibit 8.2). Above 1000 MHz, a resolution bandwidth of 1 MHz is used.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the forbidden bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, unless otherwise reported. Measurements taken at a closer distance are so marked.