August 11, 2009

Guangzhou Grandview Crystal Screen Co., Ltd.
Federal Industry Zone, No. 363, Yushan West Road,
Shiqiao, PanYu District, Guangzhou,
Guangdong, China.

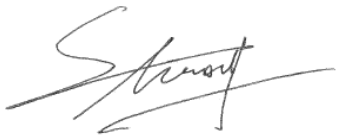
Dear Xiang Yao:

Enclosed you will find your file copy of a Part 15 report (FCC ID: XH868MIR).

For your reference, TCB will normally take another 15-20 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

**Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch**
6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China
Tel: (86 755) 8601 6288 Fax: (86 755) 8601 6751 Website: www.china.intertek-etlsemko.com

# Guangzhou Grandview Crystal Screen Co., Ltd.

Application
For
Certification
**(FCC ID: XH868MIR)**

Superheterodyne Receiver

SZ09050370-3
Billy Li
August 11, 2009



TRF no.: FCC 15B_RX-Sha
FCC ID: XH868MIR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# LIST OF EXHIBITS

# MEASUREMENT / TECHNICAL REPORT

## Guangzhou Grandview Crystal Screen Co., Ltd.
## MODEL: 868M-IR

## FCC ID: XH868MIR

## August 11, 2009

This report concerns (check one:) Original Grant ___X___ Class II Change _____

Equipment Type: Superheterodyne Receiver

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Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes _____ No __X__

If yes, defer until: _____
date

Company Name agrees to notify the Commission by: _____
date

of the intended date of announcement of the product so that the grant can be issued on that date.

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Transition Rules Request per 15.37? Yes _____ No __X__

If no, assumed Part 15, Subpart C for intentional radiator – the new 47 CFR [10-01-08 Edition] provision.

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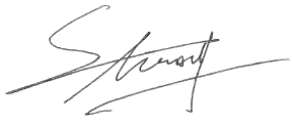
Report prepared by:



Shawn Xing
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## Table of Contents

List of attached file

| Exhibit Type | File Description | Filename |
|---|---|---|
| Test Report | Test Report | report.pdf |
| Test Setup Photo | Radiated Emission | radiated photos.pdf |
| Test Setup Photo | Conducted Emission | conducted photos.pdf |
| External Photo | External Photo | external photos.pdf |
| Internal Photo | Internal Photo | internal photos.pdf |
| Schematics | Circuit Diagram | circuit.pdf |
| Operation Description | Technical Description | descri.pdf |
| Block Diagram | Block Diagram | block.pdf |
| ID Label / Location | Label Artwork and Location | label.pdf |
| User Manual | User Manual | manual.pdf |
| Cover Letter | Letter of agency | agency.pdf |
| Cover Letter | Confidentiality Request | confidentiality.pdf |
| Equipment List | Test Equipment List | equipment list.pdf |

# EXHIBIT 1

# GENERAL DESCRIPTION

## 1.0 General Description

### 1.1 Product Description

The Equipment Under Test (EUT) is a 868MHz receiver: wireless synchro converter (RF to IR). When the related transmitter ES-2W2 (FCC ID: XH8ES2W2) is powered on and off, the receiver will receive the trigger signal to control the Grandview Integrated Motorized Screen to slide down and up automatically. At the same time, it can be controlled the Grandview Integrated Motorized Screen to slide down, up and stop by the related transmitter FM-868MHz (FCC ID: XH81GD868). The EUT is powered by the Grandview Integrated Motorized Screen (Input AC 120V, 60Hz) via a converter unit.

Antenna Type: Integral

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 receiver. The two transmitters, associated with this receiver, have FCC ID: XH81GD868 and XH8ES2W2 have been filed at the same time.

## 1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. 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 and shield room used to collect the radiated data and conducted data is **Interterk Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, Block D, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China. 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 is powered by the Grandview Integrated Motorized Screen (Input AC 120V, 60Hz) via a converter unit during test.

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. The step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

The rear of unit shall be flushed with the rear of the table.

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.

The frequency range from 30MHz to 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.

### 2.3 Special Accessories

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

### 2.4 Equipment Modification

Any modifications installed previous to testing by Guangzhou Grandview Crystal Screen Co., Ltd. will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd Kejiyuan Branch.

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 the following configuration:

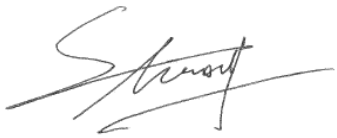
Refer List:

| Description | Manufacturer | Model No. |
|---|---|---|
| Integrated Motorized Screen | Grandview | PJ 405D |

All the items listed under section 2.0 of this report are

*Confirmed by:*

*Shawn Xing*
*Assistant Manager*
*Intertek Testing Services Shenzhen Ltd Kejiyuan Branch.*
*Agent for Guangzhou Grandview Crystal Screen Co., Ltd.*



*Signature*

August 11, 2009 *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 Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF - AG

where FS = Field Strength in dBµV/m
RA = Receiver Amplitude (including preamplifier) in dBµV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:

FS = RR + LF

where FS = Field Strength in dBµV/m
RR = RA - AG in dBµV
LF = CF + AF in dB

Assume a receiver reading of 52.0 dBµV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB are added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dBµV/m. This value in dBµV/m was converted to its corresponding level in µV/m.

RA = 52.0 dBµV/m
AF = 7.4 dB RR = 23.0 dBµV
CF = 1.6 dB LF = 9.0 dB
AG = 29.0 dB
FS = RR + LF
FS = 23 + 9 = 32 dBµV/m

Level in µV/m = Common Antilogarithm [(32 dBµV/m)/20] = 39.8 µV/m

3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
At
4392.600MHz

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.

Judgment: Passed by 3.9dB margin

***TEST PERSONNEL:***

*Signature*

Billy Li, Compliance Engineer
*Typed / Printed Name*

August 11, 2009
*Date*

Company: Guangzhou Grandview Crystal Screen Co., Ltd.
Date of Test: August 11, 2009
Model: 868M-IR
Operating Mode: Receive

**Table 1**

**FCC Class B Radiated Emissions**

| Polarization | Frequency (MHz) | Reading (dBµV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBµV/m) | Limit at 3m (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| Horizontal | 37.760 | 23.5 | 20.0 | 17.2 | 20.7 | 40.0 | -19.3 |
| Horizontal | 41.640 | 34.0 | 20.0 | 15.3 | 29.3 | 40.0 | -10.7 |
| Vertical | 121.665 | 30.2 | 20.0 | 9.7 | 19.9 | 43.5 | -23.6 |
| Horizontal | 1728.350 | 51.9 | 36.8 | 27.0 | 42.1 | 54.0 | -11.9 |
| Vertical | 2680.380 | 53.0 | 36.7 | 28.8 | 45.1 | 54.0 | -8.9 |
| Horizontal | 4296.813 | 53.9 | 36.7 | 32.7 | 49.9 | 54.0 | -4.1 |
| Vertical | 4392.600 | 54.1 | 36.7 | 32.7 | 50.1 | 54.0 | -3.9 |

NOTES:
1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances 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 used for the emission over 1000MHz.
5. All emissions below 1000MHz are below the QP limit and all emissions above 1000MHz are below the AV limit.

Test Engineer: Billy Li

3.4 Conducted Emission Configuration Photograph

Worst Case Line-Conducted Configuration
at

9.998 MHz

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

3.5 Conducted Emission Data

Judgement: Passed by 30.8 dB margin

***TEST PERSONNEL:***

*Signature*

Billy Li, Compliance Engineer
*Typed/Printed Name*

August 11, 2009
*Date*

Company: Guangzhou Grandview Crystal Screen Co., Ltd.
Date of Test: June 19, 2009
Model: 868M-IR
Worst Case Operating Mode: Receive

**Table 2**

**Conducted Emissions**

Live Line Data

| Frequency (MHz) | Quasi-Peak | | Average | |
|---|---|---|---|---|
| | Disturbance level dB(μV) | Permitted limit dB(μV) | Disturbance level dB(μV) | Permitted limit dB(μV) |
| 0.334 | 16.7 | 59.4 | 6.0 | 49.4 |
| 9.998 | 19.9 | 60.0 | 19.2 | 50.0 |
| 12.582 | 13.8 | 60.0 | 11.2 | 50.0 |
| 16.778 | 14.7 | 60.0 | 12.2 | 50.0 |
| 25.166 | 17.4 | 60.0 | 15.9 | 50.0 |
| 29.362 | 18.7 | 60.0 | 17.3 | 50.0 |

Neutral Line Data

| Frequency (MHz) | Quasi-Peak | | Average | |
|---|---|---|---|---|
| | Disturbance level dB(μV) | Permitted limit dB(μV) | Disturbance level dB(μV) | Permitted limit dB(μV) |
| 0.346 | 14.8 | 59.1 | 5.7 | 49.1 |
| 9.998 | 18.6 | 60.0 | 17.6 | 50.0 |
| 12.582 | 13.6 | 60.0 | 10.8 | 50.0 |
| 16.778 | 15.6 | 60.0 | 13.5 | 50.0 |
| 20.974 | 14.1 | 60.0 | 11.2 | 50.0 |
| 25.170 | 16.7 | 60.0 | 15.1 | 50.0 |

Test Engineer: Billy Li

# EXHIBIT 4

# EQUIPMENT PHOTOGRAPHS

## 4.0 Equipment Photographs

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

# EXHIBIT 5

# PRODUCT LABELLING

## 5.0 **Product Labelling**

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

# EXHIBIT 6

# TECHNICAL SPECIFICATIONS

## 6.0 Technical Specifications

For electronic filing, the block diagram of the tested EUT is saved with filename: block.pdf.

# 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 Miscellaneous Information

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

8.1 Discussion of Pulse Desensitization

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF.*

This device is a superheterodyne receiver. The stabilized signals are continuous, and no desensitization of the measurement equipment occurs.

8.2 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services Shenzhen Ltd. Kejiyuan Brach in the measurements of superheterodyne receivers operating under the Part 15, Subpart B rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 - 2003. The local oscillator of the superheterodyne receiver is stabilized prior to measurement by generating a typical or an unmodulated CW Signal at the operating frequency of the receiver. The signal is usually generated as CW with a R&S SML03 signal generator and a short whip antenna and is at a level of several hundred to several thousand mV/m. If a modulated signal is used, it will be noted.

The equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter in height above the groundplane. 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 axis to obtain maximum emission levels. The antenna height and polarization are also 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.

The frequency range scanned is from 30MHz to 5000MHz. For line conducted emissions, the range scanned is 150 kHz to 30 MHz.

8.2 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 were 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 8.1). Above 1000 MHz, a resolution bandwidth of 1 MHz is used.

Measurements are normally conducted at a measurement distance of three meters. All measurements are extrapolated to three meters using inverse scaling, unless otherwise reported. Measurements taken at a closer distance are so marked.

# EXHIBIT 9

# CONFIDENTIALITY REQUEST

## 9.0 **Confidentiality Request**

For electronic filing, the confidentiality request of the tested EUT is saved with filename: confidentiality.pdf.

# EXHIBIT 10

# TEST EQUIPMENT LIST

## 10.0 Test Equipment List

For electronic filing, the test equipment list of the tested EUT is saved with filename: equipment list.pdf.