

*July 3, 2000*

*Asahi Corporation (HK) Ltd.  
Suite 806, 8/F., Tower 3,  
China Hong Kong City,  
33 Canton Rd., Tsim Sha Tsui,  
Kowloon, Hong Kong.*

*Dear Mr. Jack Cheung :*

*Enclosed you will find your file copy of a Part 15 Certification (FCC ID: AAO6004260RX49).  
We have forwarded the original, along with your check for \$940.00, to FCC.*

*For your reference, FCC will normally take another 60-90 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,*

A handwritten signature in black ink, appearing to read "Wilbur Ng", is centered on a light gray rectangular background.

*Wilbur Ng  
Assistant Manager*

*Enclosure*

FCC ID : AAO6004260RX49

**Asahi Corporation (HK) Ltd.**

Application  
For  
Certification  
**(FCC ID: AAO6004260RX49)**

Receiver

WO# 0006260

WN/at

July 3, 2000

- The test results reported in this 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 Hong Kong Limited

FCC ID : AAO6004260RX49

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# INTERTEK TESTING SERVICES

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## LIST OF EXHIBITS

*INTRODUCTION*

<i>EXHIBIT 1:</i>	General Description
<i>EXHIBIT 2:</i>	System Test Configuration
<i>EXHIBIT 3:</i>	Emission Results
<i>EXHIBIT 4:</i>	Equipment Photographs
<i>EXHIBIT 5:</i>	Product Labelling
<i>EXHIBIT 6:</i>	Technical Specifications
<i>EXHIBIT 7:</i>	Instruction Manual

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**MEASUREMENT/TECHNICAL REPORT**

**Asahi Corporation (HK) Ltd. - MODEL: 60-4260  
FCC ID: AAO6004260RX49**

**July 3, 2000**

This report concerns (check one:)		Original Grant <u>  X  </u>	Class II Change _____
Equipment Type: <u>Receiver</u> (example: computer, printer, modem, etc.)			
Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?		Yes _____	
No <u>  X  </u>			
		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.			
Transition Rules Request per 15.37?		Yes _____	
No <u>  X  </u>			
If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-1-98 Edition] provision.			
Report prepared by:		Wilbur Ng	
		Intertek Testing Services	
		2/F., Garment Center,	
		576, Castle Peak Road,	
		HONG KONG	
		Phone:	852-2173-8502
		Fax:	852-2742-9149

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# INTERTEK TESTING SERVICES

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## Table of Contents

1.0 <b>General Description</b> .....	2
1.1 Product Description.....	2
1.2 Related Submittal(s) Grants.....	2
1.3 Test Methodology.....	3
1.4 Test Facility .....	3
2.0 <b>System Test Configuration</b> .....	5
2.1 Justification.....	5
2.2 EUT Exercising Software .....	5
2.3 Special Accessories .....	5
2.4 Equipment Modification.....	6
2.5 Support Equipment List and Description .....	6
3.0 <b>Emission Results</b> .....	8
3.1 Field Strength Calculation .....	9
3.1 Field Strength Calculation (cont).....	10
3.2 Radiated Emission Configuration Photograph .....	11
3.3 Radiated Emission Data .....	12
4.0 <b>Equipment Photographs</b> .....	15
5.0 <b>Product Labelling</b> .....	17
6.0 <b>Technical Specifications</b> .....	19
7.0 <b>Instruction Manual</b> .....	21

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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
Operation Description	Technical Description	descrip.pdf
Test Setup Photo	Radiated Emission	radiated1.jpg to radiated2.jpg
Test Report	Bandwidth Plot	bw.pdf
External Photo	External Photo	ophoto1.jpg, ophoto2.jpg
Internal Photo	Internal Photo	iphoto1.jpg to iphoto2.jpg
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

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**EXHIBIT 1**

**GENERAL DESCRIPTION**

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### 1.0 **General Description**

#### 1.1 Product Description

The equipment under test (EUT) is a super for a Remote Controlled Car operating at            MHz which is controlled by a crystal. The EUT is powered by a 9.6V battery.

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

#### 1.2 Related Submittal(s) Grants

This is a single application for certification of a receiver. **The receiver for this transmitter is authorized by Certification procedure with [AAO6004260RX49](#).**

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### 1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (1992). 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. 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 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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**EXHIBIT 2**

**SYSTEM TEST CONFIGURATION**

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### 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 (1992.)

The EUT was powered by a 9.6V battery.

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.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was mounted to a cardboard box, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

#### 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.

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### 2.4 Equipment Modification

Any modifications installed previous to testing by Asahi Corporation (HK) Ltd. 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 Description

This product was tested in a standalone configuration.

All the items listed under section 2.0 of this report are

*Confirmed by:*

*Wilbur Ng  
Assistant Manager  
Intertek Testing Services  
Agent for Asahi Corporation (HK) Ltd.*



\_\_\_\_\_.Signature

\_\_\_\_\_.July 3, 2000

\_\_\_\_\_.Date

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**EXHIBIT 3**

**EMISSION RESULTS**

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### 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.

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### 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 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)

#### 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

Worst Case Radiated Emission

193.936 MHz

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated1.jpg to radiated2.jpg

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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 3 dB

#### ***TEST PERSONNEL:***



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*Signature*

Anthony K. M. Chan, Compliance Engineer  
*Typed/Printed Name*

3 July, 2000  
*Date*

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Company: Asahi Corporation (HK) Ltd.  
Model: 60-4260

Date of Test: June 17, 2000

Table 1

### Radiated Emissions

Polarity	Frequency (M Hz)	Reading (dB $\mu$ V)	Antenna Factor (dB)	Pre- Amp Gain (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	48.009	26.9	11	16	21.9	40.0	-18.1
V	49.801	38.8	11	16	33.8	40.0	-6.2
V	50.176	38.9	11	16	33.9	40.0	-6.1
V	50.609	37.9	11	16	32.9	40.0	-7.1
V	51.804	36.5	11	16	31.5	40.0	-8.5
V	52.416	36.8	11	16	31.8	40.0	-8.2
H	188.476	36.6	16	16	36.6	43.5	-6.9
H	190.564	39.7	16	16	39.7	43.5	-3.8
H	192.330	40.4	16	16	40.4	43.5	-3.1
H	193.936	40.5	16	16	40.5	43.5	-3.0
H	195.214	39.8	16	16	39.8	43.5	-3.7
H	198.074	37.8	16	16	37.8	43.5	-5.7
H	199.136	39.8	16	16	39.8	43.5	-3.7
H	203.134	34.0	16	16	34.0	43.5	-9.5

- Notes:
1. Negative sign in the column shows value below limit.
  2. Peak Detector Data unless otherwise stated.
  3. 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.

Test Engineer: Anthony K. M. Chan

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**EXHIBIT 4**

**EQUIPMENT PHOTOGRAPHS**

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### 4.0 **Equipment Photographs**

For electronic filing, the photographs are saved with filename: ophoto1.jpg to ophoto2.jpg and iphoto1.jpg to iphoto2.jpg

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**EXHIBIT 5**

**PRODUCT LABELLING**

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### 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**

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

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**EXHIBIT 7**

**INSTRUCTION MANUAL**

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### 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.