

# FCC Test Report

## E4064144001KYS1

Type / Model Name: RE-100,RE-101

Product Description: Remote control

Applicant: 9141-0720 Quebec Inc. DBA MANARAS/OPERA

FCC ID: X7ORE100

## FCC -- TEST REPORT

<b>Test Report No. :</b> <b>E4064144001KYS1</b>	Jun 03,2010 <hr style="border: 0; border-top: 1px solid black;"/> Date of issue
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This report supercedes our previous report, E4064144001KY, dated May 19, 2010

Type / Model Name                    : RE-100, RE-101

Product Description                    : Remote control

**Applicant**                                9141-0720 Quebec Inc. DBA MANARAS/OPERA

Address                                    136 Oneida Drive,

POINTE-CLAIRE,

Quebec,

H9R 1A8

Canada

<b>Test Result</b> according to the standards listed in clause 1 test standards:	<b>PASS</b>
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The test report merely corresponds to the test sample.  
It is not permitted to copy extracts of these test results without the written permission of the test laboratory.

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## **1 TEST STANDARDS**

The tests were performed according to following standards:

FCC Part 15 Subpart B:2007-9-20

Radio frequency devices-Unintentional Radiators

ANSI C63.4:2003

Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

## 2 SUMMARY

### GENERAL REMARKS:

Model RE-100 and RE-101 are same design except the switch of the control by relay and electronic switch with transistors respectively

### FINAL ASSESSMENT:

The equipment under fulfils the FCC requirements cited in test standard listed in section 1.

Date of receipt of test sample : March 19, 2010

Testing commenced on : March 19, 2010

Testing concluded on : May 17, 2010

Reviewed by:

Prepared by:

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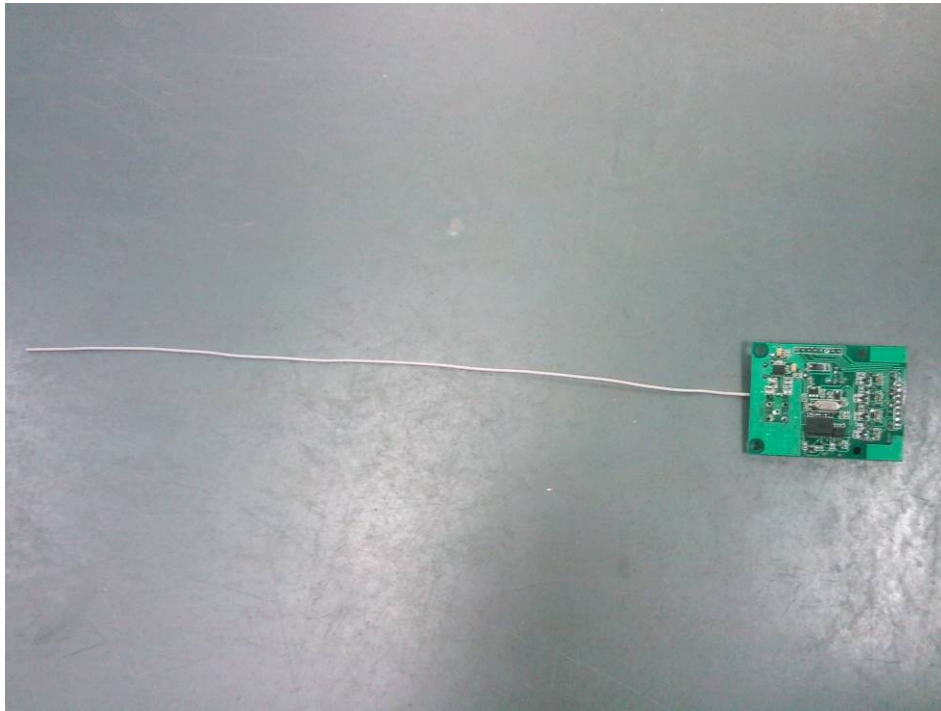
Wilson Loke  
Senior Manager

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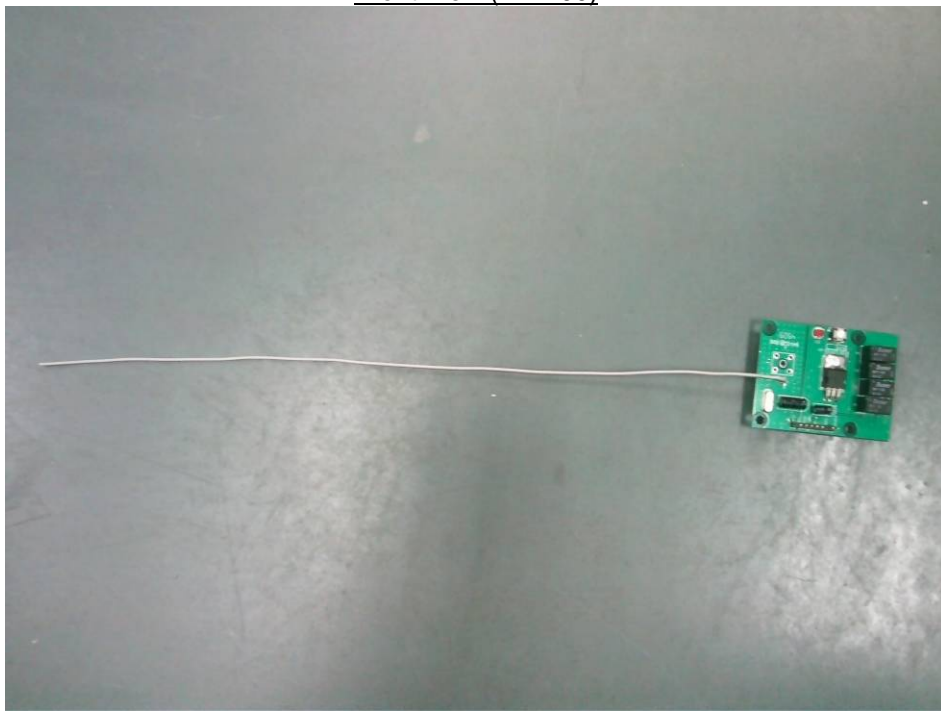
Kidd Yang  
Engineer

### **3 EQUIPMENT UNDER TEST**

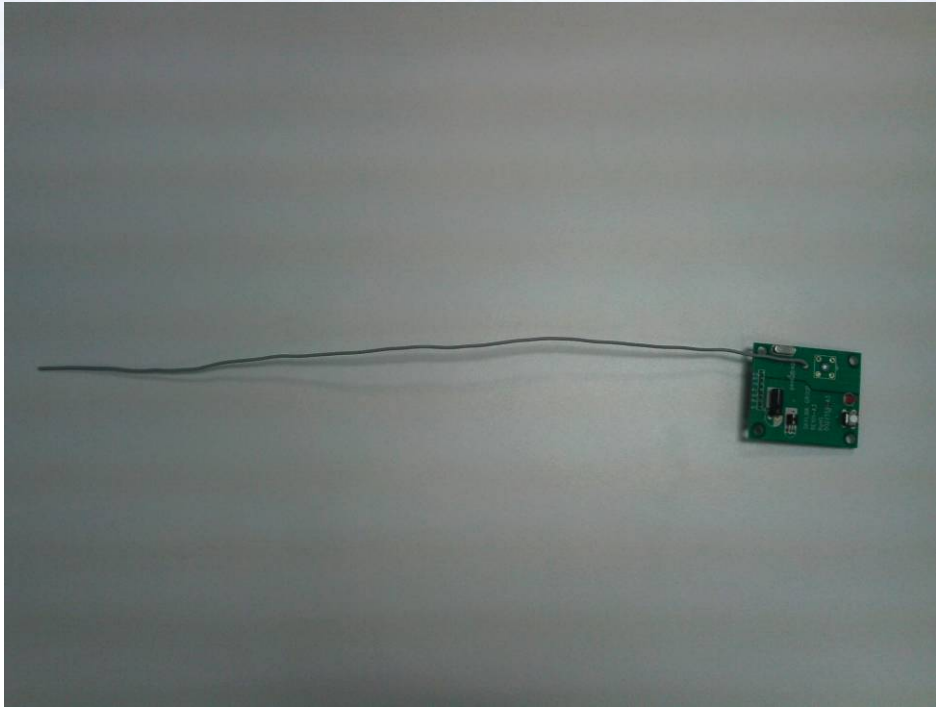
#### **3.1 Photo documentation of the EuT**



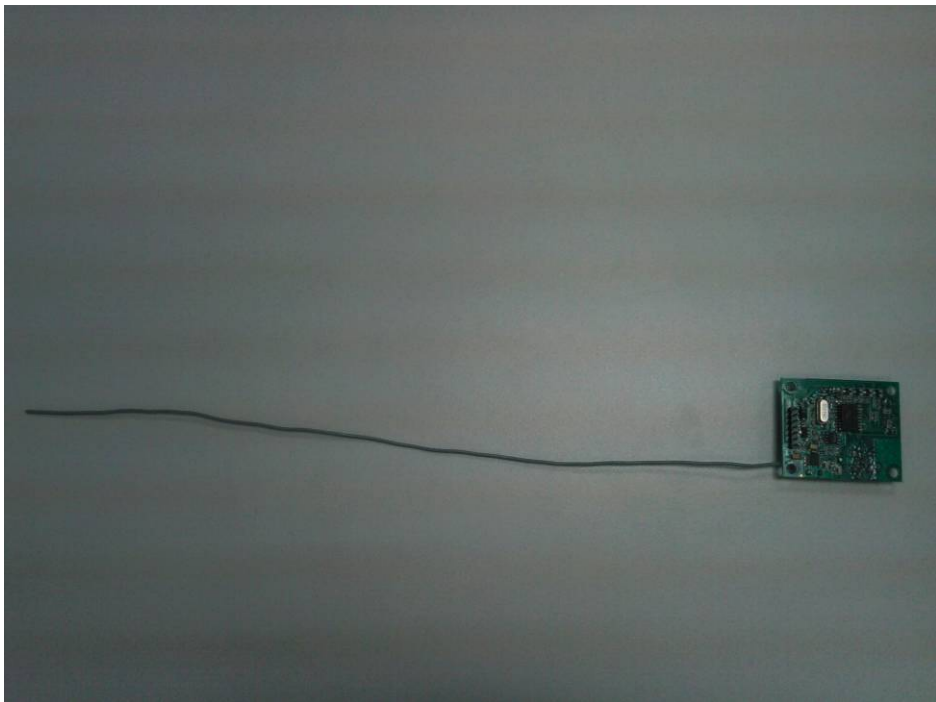
Front View (RE-100)



Back View (RE-100)



Front View (RE-101)



Back View (RE-101)

### 3.2 Power supply system utilised

Power supply voltage: DC 24V

### 3.3 Short description of the Equipment under Test (EuT)

The EuTs are a receiver powered by DC 24V battery. The radio receivers are designed as a PCBA product used with other devices to receive the signal from the transmitter. When the device receives the signal from the transmitter, It will responds to activate four switches by relay or electronic switches.

Number of tested samples: Two (Model: RE-100 and RE-101)  
 Serial number: Not Labelled  
 Dimensions: RE-100: L: 6.5cm W: 5.0cm H: 35.0cm  
 RE-101: L: 5.0cm W: 4.2cm H: 35.0cm

#### EuT operation mode:

The equipment under test was operated during the measurement under the following conditions:

- Operation mode 1: Receiving mode

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- Operation mode 2:

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#### EuT configuration:

The following interface cables and peripheral devices were connected during the measurements:

##### Interface cables:

Interface cable	Length [m]	Type	Line		Line termination
			shielded	unshielded	
N/A					

##### Peripheral devices:

Kind of equipment	Model and/or Manufacturer
Load simulator board	(provided by applicant)



## **4 TEST ENVIRONMENT**

### **4.1 Address of the test laboratory**

**emitel (Shenzhen) Limited  
Building 2, 171 Meihua Road,  
Futian District,  
Shenzhen, 518049  
China**

**FCC Registration No.: 746887**

### **4.2 Environmental conditions**

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 86-106 kPa

### **4.3 Statement of the measurement uncertainty**

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16-4-2 /11.2003 „Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements“ and is documented in the quality system acc. to ISO 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

## **5 TEST CONDITIONS AND RESULTS**

### **5.1 Radiated disturbance (electric field)**

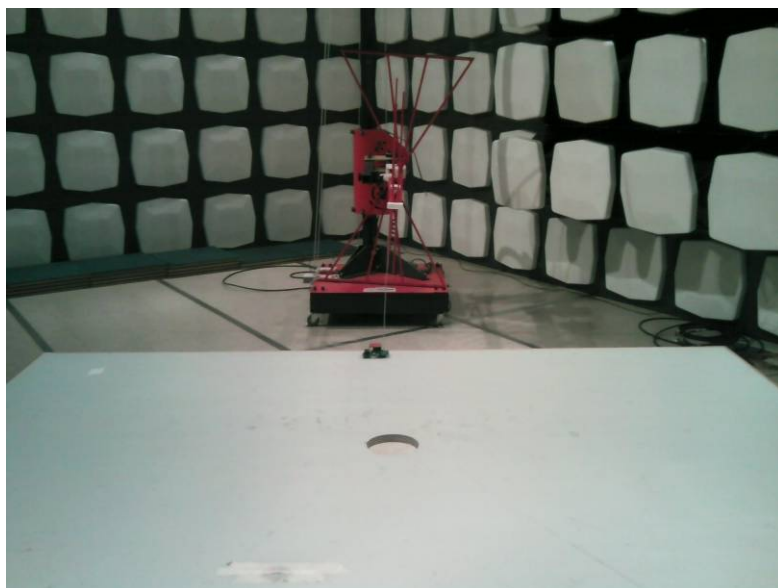
For test instruments and accessories used see section 6 Part I1.

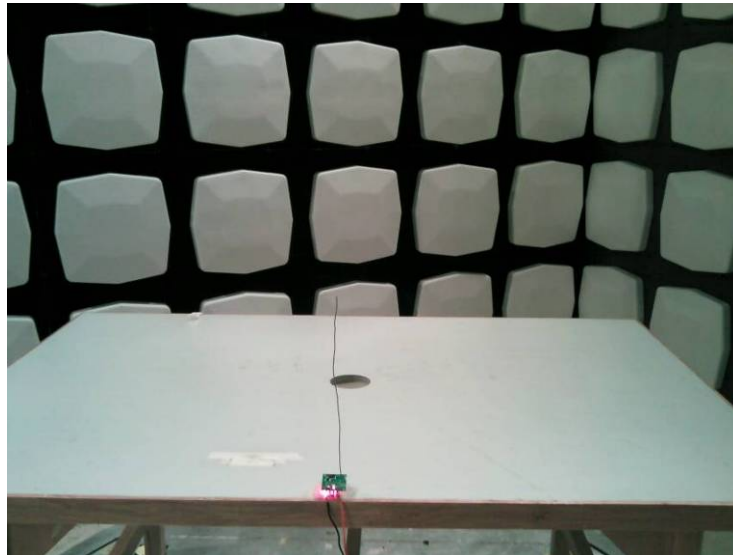
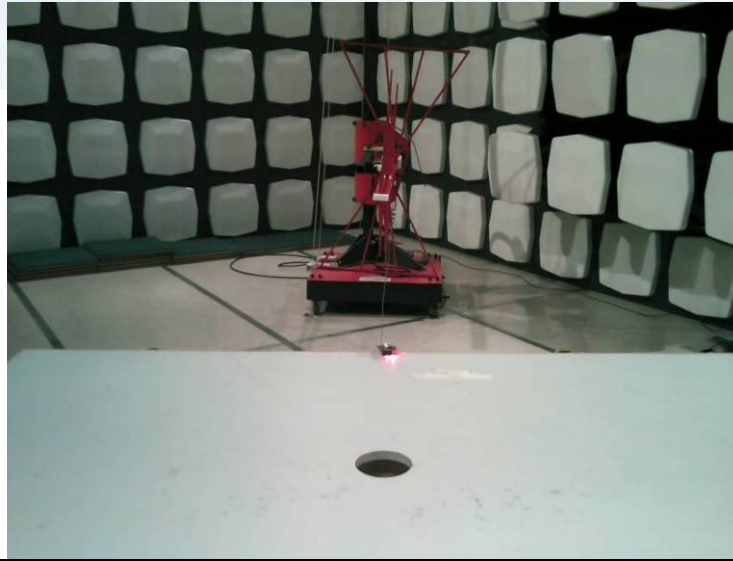
#### **5.1.1 Description of the test location**

Test location: Semi-Anechoic Chamber

Test distance: 3m

#### **5.1.2 Photo documentation of the test set-up**





### 5.1.3 Test result

The test was carried out in the following operation mode(s):

- Receiving mode

Frequency range: 30MHz to 2000MHz

Min. limit margin -13.4dB at 846MHz.

The requirements are **FULFILLED**

- Remarks:**
- 1) According to FCC part 15.33(b), since the EuT is used 390MHz frequency in the device, the upper frequency of measurement is up to 2000MHz.
  - 2) During photo mode test, EUT is rotated through three orthogonal axes to determine the maximum emission.

### 5.1.4 Test protocol

Product Description	: Remote control	Result: <b>PASS</b>
Model	: RE-100	
Test mode	: Receiving mode	
Date	: 01-06-2010	
Polarization	: Horizontal	

Start frequency [MHZ]	Stop frequency [MHZ]	Resolution bandwidth	step size	Measurement time	Detector
30	1000	120 kHz	40 kHz	1s	QP
1000	2000	1MHz	400kHz	1s	AV

Polarization	Frequency (MHz)	Read Value (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Measured Result (dBuV/m)	QP limit (dBuV/m)	margin (dB)
H	390.0	5.2	16.3	1.1	22.6	46.0	-23.4
H	683.0	5.2	22.0	2.2	29.4	46.0	-16.6
H	846.0	5.7	22.4	2.5	30.6	46.0	-15.4
V	390.0	7.2	15.6	1.1	23.9	46.0	-22.1
V	758.0	5.9	19.8	1.7	27.4	46.0	-18.6
V	854.0	6.3	23.0	2.5	31.8	46.0	-14.2

Remark: Emission is measured from 30MHz to 1000MHz.

Polarization	Frequency (MHz)	Read Value (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Measured Result (dBuV/m)	AV limit (dBuV/m)	margin (dB)
H	1800.0	1.2	29.6	3.7	34.5	54.0	-19.5
V	1890.0	3.3	28.7	3.8	35.8	54.0	-18.2

Remark: Emission is measured from 1000MHz to 2000MHz.

Polarization	Frequency (MHz)	Read Value (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Measured Result (dBuV/m)	PK limit (dBuV/m)	margin (dB)
H	1800.0	1.2	29.6	3.7	43.6	74.0	-30.4
V	1890.0	3.3	28.7	3.8	45.2	74.0	-28.8

Remark: Emission is measured from 1000MHz to 2000MHz.

Product Description : Remote control	Result: <b>PASS</b>
Model : RE-101	
Test mode : Receiving mode	
Date : 17-05-2010	
Polarization : Horizontal	

Start frequency [MHZ]	Stop frequency [MHZ]	Resolution bandwidth	step size	Measurement time	Detector
30	1000	120 kHz	40 kHz	1s	QP
1000	2000	1MHz	400 kHz	1s	AV

Polarization	Frequency (MHz)	Read Value (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Measured Result (dBuV/m)	QP limit (dBuV/m)	margin (dB)
H	390.0	5.9	16.3	1.1	23.3	46.0	-22.7
H	768.2	6.3	22.0	2.2	30.5	46.0	-15.5
H	846.0	6.3	22.4	2.5	31.2	46.0	-14.8
V	390	7.5	15.6	1.1	24.2	46.0	-21.8
V	519.0	9.3	19.8	1.7	30.8	46.0	-15.2
V	846.0	7.1	23.0	2.5	32.6	46.0	-13.4

Remark: Emission is measured from 30MHz to 1000MHz.

Polarization	Frequency (MHz)	Read Value (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Measured Result (dBuV/m)	AV limit (dBuV/m)	margin (dB)
H	1840.0	0.5	29.7	3.3	33.5	54.0	-20.5
V	1848.0	1.3	29.1	3.3	33.7	54.0	-20.3
V	1981.0	1.6	30.0	2.5	34.1	54.0	-19.9

Remark: Emission is measured from 1000MHz to 2000MHz.

Polarization	Frequency (MHz)	Read Value (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Measured Result (dBuV/m)	PK limit (dBuV/m)	margin (dB)
H	1840.0	0.5	29.7	3.3	44.5	74.0	-29.5
V	1848.0	1.3	29.1	3.3	46.3	74.0	-27.7
V	1981.0	1.6	30.0	2.5	47.2	74.0	-26.8

Remark: Emission is measured from 1000MHz to 2000MHz.

## **6 USED TEST EQUIPMENT AND ACCESSORIES**

All test instruments used, in addition to the test accessories, are calibrated and verified regularly.

<b>Test ID</b>	<b>Model / Type</b>	<b>Kind of Equipment</b>	<b>Manufacturer</b>	<b>Equipment No.</b>
I1	Test Receiver	ESPI3	Rohe & Schwarz	04-02/03-06-002
	BicoNILog Antenna	3142C	EMCO	04-02/24-06-001
	MiniMast	2175	ETS LINDGREN	04-02/30-06-001
	Mult-Device Controller	2091	EMCO	04-02/30-06-002
	Turntable	2087	ETS LINDGREN	04-02/03-06-003