

# Test Report

## E4064165701KY2

Type / Model Name: 4B-103, 4B-434, 4B-101, 4B-201

Brand Name: SKYLINK

Product Description: KEYCHAIN REMOTE

Applicant: Capital Prospect Limited

FCC ID: KUT4BXT

## FCC --- TEST REPORT

<b>Test Report No. :</b> <b>E4064165701KY2</b>	25-08-2010 <hr style="border: 0; border-top: 1px solid black; margin: 0;"/> Date of issue
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Type / Model Name:            4B-103, 4B-434, 4B-101, 4B-201

Brand Name :                    SKYLINK

Product Description :        KEYCHAIN REMOTE

Applicant :                      Capital Prospect Limited

Address :                         Room 03, 13/F., Block B,  
Veristrong Ind. Centre, 34-36 Au Pui Wan Street,  
Fo Tan, N.T.,  
Hong Kong

<b>Test Result</b> according to the standards listed in clause 1 test standards:	<b>POSITIVE</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.

File No. **E4064165701KY2**

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## 1 TEST STANDARDS

The tests were performed according to following standards:

FCC Part 15:2007-9-20

Federal Communications Commission, Part 15 – Radio Frequency Device

ANSI C63.4:2003

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

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## 2 SUMMARY

### GENERAL REMARKS:

The antenna of the EuT is fulfilled the FCC part 15.203.

The models: 4B-101, 4B-434, 4B-201 are identical as 4B-103. The 4 models are for different market strategy. The 4B-103 is selected as representative model for testing.

### FINAL ASSESSMENT:

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

Date of receipt of test sample : 09-07-2010

Testing commenced on : 09-07-2010

Testing concluded on : 25-08-2010

Checked by:

Tested by:

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Ivan Toa  
Technical Manager

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Kidd Yang  
Engineer

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### 3 EQUIPMENT UNDER TEST

#### 3.1 Photo documentation of the EuT



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### 3.2 Power supply system utilised

Power supply voltage: DC 12V(23AE alkaline battery)

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

The Equipment under test (EUT) is a 433.9MHz transmitter. When the buttons are pressed, the EuT will transmit the signal by Pulsed Code Modulation to corresponding receiver to change the status of the receiver. The EuT is powered one 12VDC alkaline battery.

Tested samples: One Set ( model: 4B-103 )

Serial number: Not Labelled

Dimensions: L: 6.8 cm W: 3.6cm H: 1.3 cm

#### EuT operation mode:

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

- Operation mode 1: Transmitting mode

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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
N/A	

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## **4 TEST ENVIRONMENT**

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

emitel (Shenzhen) Limited  
Building 2, 171 Meihua Road,  
Futian District, Shenzhen,  
P.R. China

### **Laboratory registration numbers:**

FCC Registration number: 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: 860-1060 mbar

### **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/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer does have the sole responsibility for the continued compliance of the device.



## 5 TEST CONDITIONS AND RESULTS

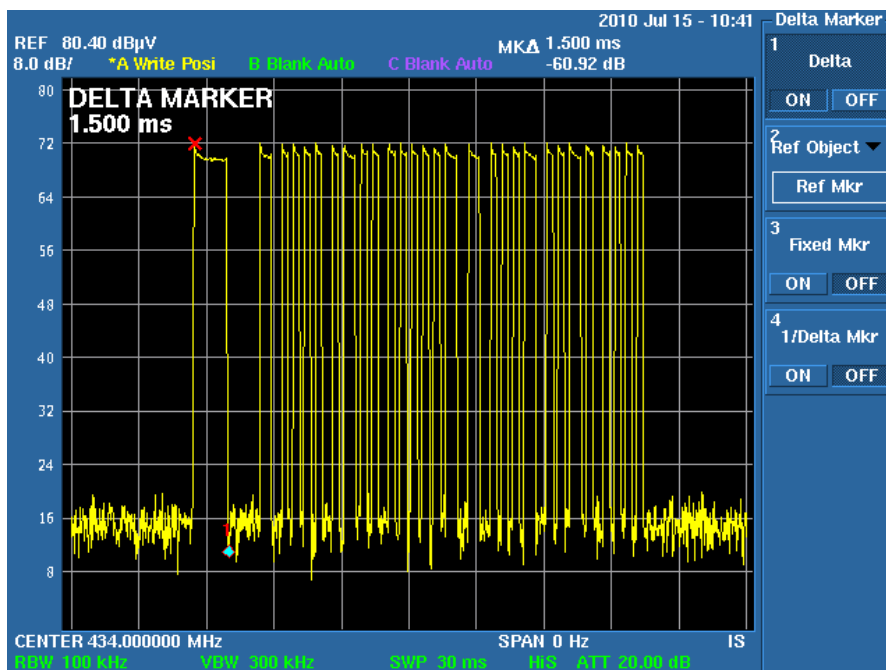
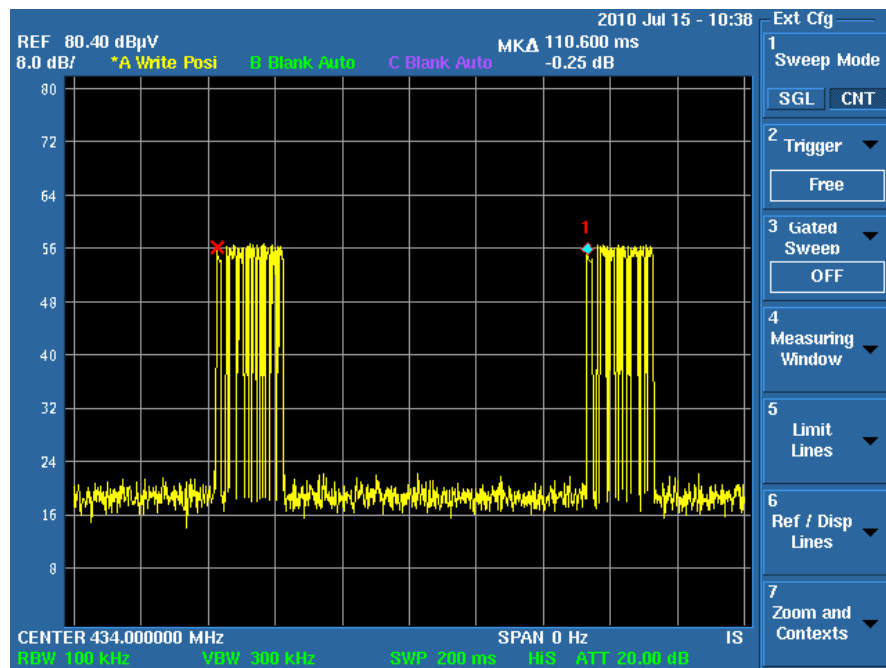
### 5.1 Average Factor

For test instruments and accessories used see section 6.

#### 5.1.1 Description of the test location

Test location: Shield room

#### 5.1.2 Photo documentation of test

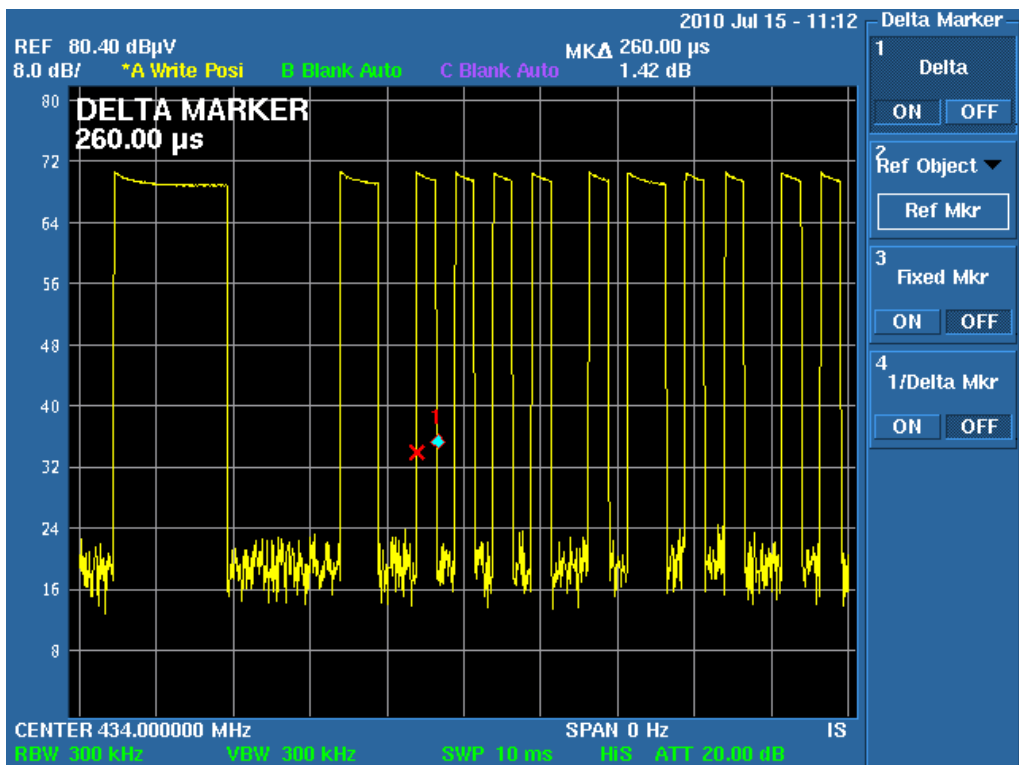
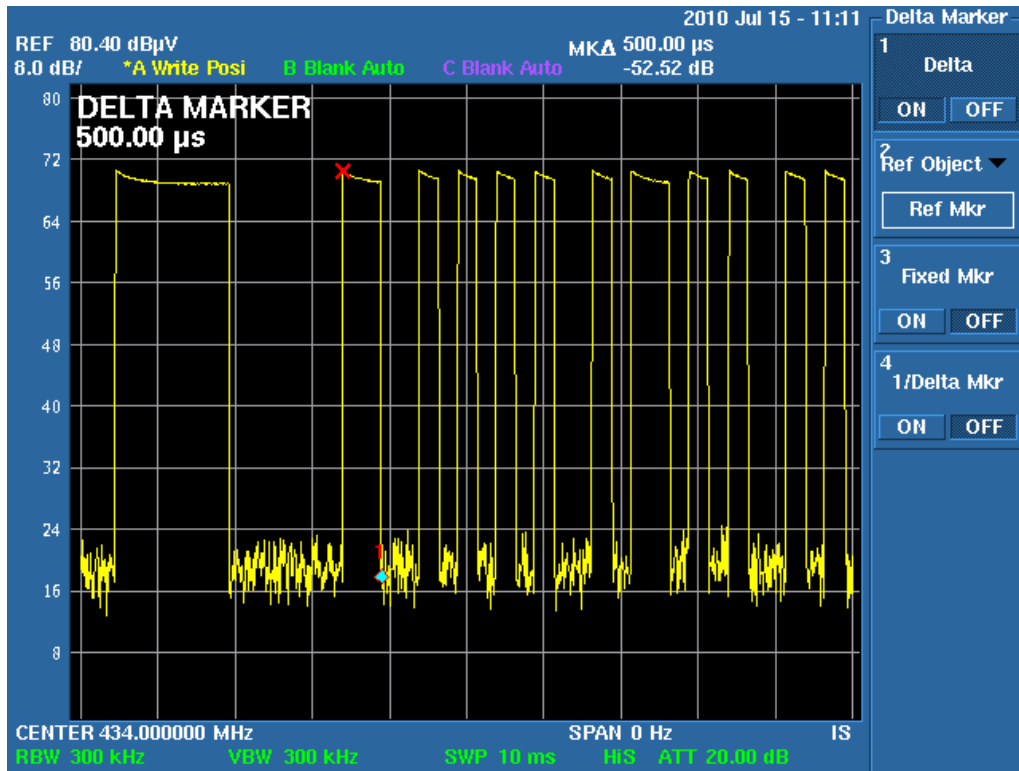


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### 5.1.3 Test result

whole period=110.6ms
Pulse 1= 1.5ms
Pulse 2= 0.5ms
Pulse 3= 0.26ms
$T_{on}=(1.5*1+0.5*6+0.26*22)ms=10.22ms$
Average factor= $20 \log(10.22ms/100ms)=20 \log(0.1022)=-19.8dB$

**Remarks:** Average factor of 4 buttons are measured and worst case average factor is reported above.

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## 5.2 Radiated Emission

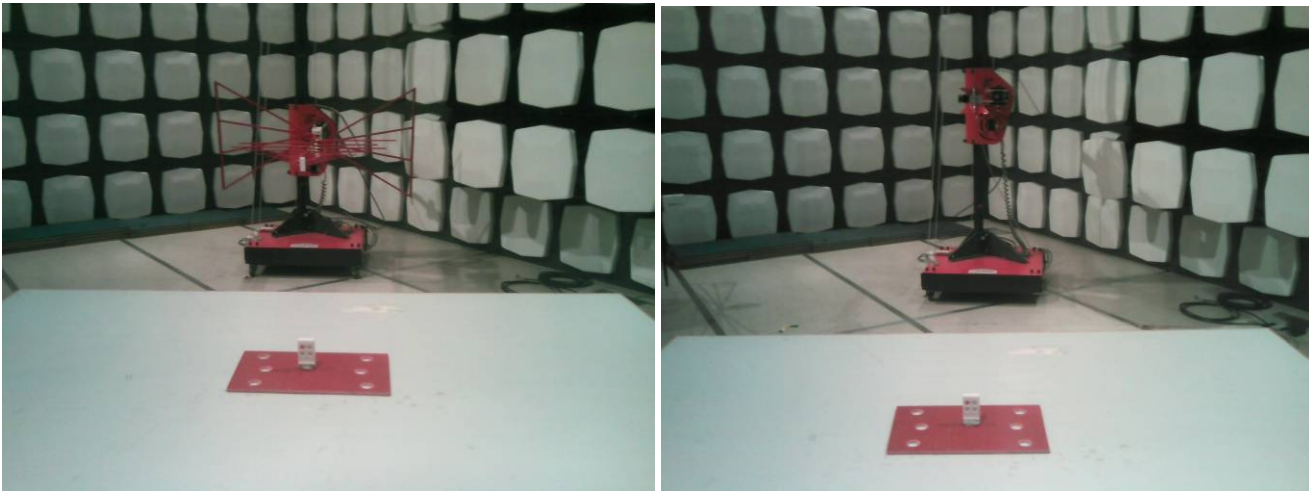
For test instruments and accessories used see section 6.

### 5.2.1 Description of the test location

Test location: Semi-anechoic Chamber

Test distance: 3m

### 5.2.2 Photo documentation of test



### 5.2.3 Test result

Frequency range: 30MHz to 4340MHz

Min. limit margin: -17.2dB

The requirements of section 15.231(b) are **FULFILLED**.

Remarks:

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## 5.2.4 Test protocol

Worst Case Operation mode: Transmitting mode  
 Remarks:  
 Date: August 15, 2010  
 Tested by: Kidd Yang

Result: PASS

Start frequency [MHZ]	Stop frequency [MHZ]	Resolution bandwidth	Video bandwidth	step size	Measurement time	Detector
30	1000	120 KHz	1 MHz	40 KHz	100ms	Peak
1000	4340	1 MHz	3 MHz	400 KHz	100ms	Peak

Polarization	Frequency (MHz)	Read Value (dBuV/m)	Antenna Factor(dB)	Cable Loss(dB)	Measured Result (dBuV/m)	PK limit (dBuV/m)	margin (dB)
H	433.90	50.5	16.6	1.6	68.6	100.8	-32.2
V	433.90	63.6	16.3	1.6	81.4	100.8	-19.4
V	867.80	26.2	22.8	2.3	51.3	80.8	-29.5
V	1301.70	28.8	25.0	2.8	56.6	74.0	-17.4
V	1735.60	24.3	27.9	3.2	55.4	80.8	-25.4
V	2169.60	22.2	30.0	3.9	56.1	80.8	-24.7

Polarization	Frequency (MHz)	Detector	Measured Result (dBuV/m)	Average Factor (dB)	Calculated Average Value (dBuV/m)	AV limit (dBuV/m)	margin (dB)
H	433.90	Peak	68.6	-19.8	48.8	80.8	-32.0
V	433.90	Peak	81.4	-19.8	61.6	80.8	-19.2
V	867.80	Peak	51.3	-19.8	31.5	60.8	-29.3
V	1301.70	Peak	56.6	-19.8	36.8	54.0	-17.2
V	1735.60	Peak	55.4	-19.8	35.6	60.8	-25.2
V	2169.60	Peak	56.1	-19.8	36.3	60.8	-24.5

**Remarks:**

1) The emissions lower than 20dB below the limit are not measured.

2) Testing is include the rotation of the EUT through three orthogonal axes to determine the maximum emission.

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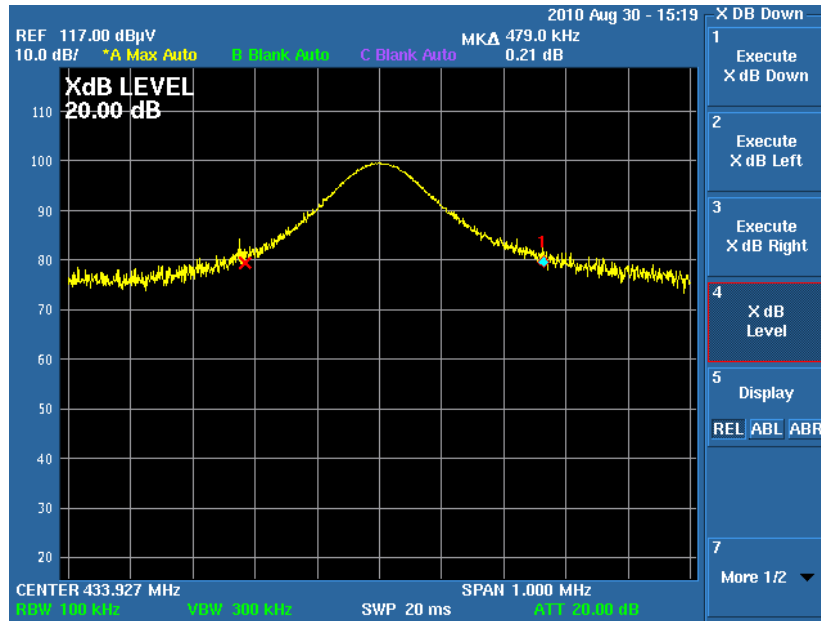
### 5.3 Bandwidth

For test instruments and accessories used see section 6.

#### 5.3.1 Description of the test location

Test location: Shielded Room

#### 5.3.2 Photo documentation of the test



#### 5.3.3 Test result

Measured Occupied Bandwidth (kHz)	Limit (kHz)
479.0	1084.8

The requirements of section 15.231(c) are **FULFILLED**

Remarks:

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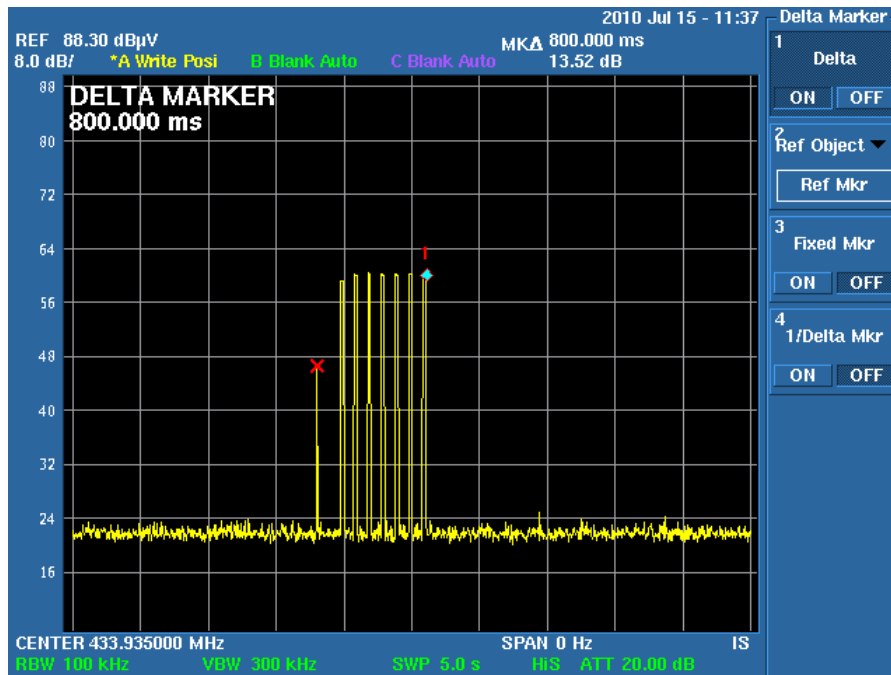
## 5.4 Provision of Momentary operation

For test instruments and accessories used see section 6.

### 5.4.1 Description of the test location

Test location: Shielded Room

### 5.4.2 Photo documentation of the test



### 5.4.3 Test result

The time of stopping transmission after switch releasing (s)	Limit (s)
0.80	5.00

The requirement of section 15.231(a)(1) is **FULFILLED**

Remarks:

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

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

<b>Test Item</b>	<b>Model / Type</b>	<b>Kind of Equipment</b>	<b>Manufacturer</b>	<b>Last Cal. Date</b>	<b>Equipment No.</b>
Radiated Emission	ESPI3	EMI Test Receiver	Rohde & Schwarz	Mar. 25,2010	04-02/03-06-002
	U3772	Spectrum Analyzer	Advantest	Mar. 25,2010	04-02/11-08-001
	3142C	Biconilog Antenna	EMCO	Jan. 08,2009	04-02/24-06-001
	3117	Horn Antenna	ETS Lindgren	Feb. 04,2009	04-02/24-07-001
Bandwidth	U3772	Spectrum Analyzer	Advantest	Mar. 25,2010	04-02/11-08-001
Momentary operation	U3772	Spectrum Analyzer	Advantest	Mar. 25,2010	04-02/11-08-001
Average Factor	U3772	Spectrum Analyzer	Advantest	Mar. 25,2010	04-02/11-08-001

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