FCC Test Report

E4064143901KYS1

Type / Model Name:	**EM-101,EM-103**
Product Description:	**Remote control**
Applicant:	**9141-0720 Quebec Inc. DBA MANARAS/OPERA**
FCC ID:	**X7OEM101**

FCC -- T E S T R E P O R T

Test Report No. : **E4064143901KYS1**	May 14, 2010 Date of issue

This report supercedes the pervious report, E406414390KY, dated May 04, 2010.

Type / Model Name : EM-101, EM-103

Product Description : Remote control

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

Address : 136 Oneida Drive,
POINTE-CLAIRE,
Quebec,
H9R 1A8
Canada

Test Result according to the standards listed in clause 1 test standards:	**PASS**

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.

Contents

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Part 15, July 10, 2008	Federal Communications Commission, Part 15 – Radio Frequency Device
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: EM-101 is identical to EM-103 except no. of keys. The model: EM-101and EM-103 have one key and three keys respectively. The EM-103 is selected as representative model for testing.

FINAL ASSESSMENT:

The equipment under test fulfils the technical requirement cited in section 15.231 of FCC Part 15

Date of receipt of test sample : March 19, 2010

Testing commenced on : March 19, 2010

Testing concluded on : April 05, 2010

Reviewed by:

Digitally signed by Wilson Loke

Wilson Loke
Senior Manager

Prepared by:

Digitally signed by kidd

Kidd Yang
Engineer

3 EQUIPMENT UNDER TEST

3.1 Photo documentation of the EuT

EM-103

Front View

Back View

3.2 Power supply system utilised

Power supply voltage: 3VDC (CR2032 lithium battery)

3.3 Short description of the Equipment under Test (EuT)

The Equipment under test (EUT) is a 390MHz transmitter. The main function of the EUT is acted as a remote control to operate difference receiver modules. When the buttons are pressed, the transmitter will transmit the signal by Pulsed Code Modulation to the corresponding receiver module to control the difference function in the receiver. The EUT is powered by one 3VDC lithium battery.

Number of tested samples:	One		
Serial number:	Not Labelled		
Dimensions:	L: 8.5cm	W: 5.5cm	H: 3.0cm

EuT operation mode:

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

- Operation mode 1: Transimitting mode

- Operation mode 2: N/A

- Operation mode 3: N/A

EuT configuration:

(The CDF filled by the applicant can be viewed at the test laboratory.)

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

- None Model : _____
- _____ Model : _____
- _____ Model : _____
- _____ Model : _____
- _____ Model : _____
- _____ Model : _____

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

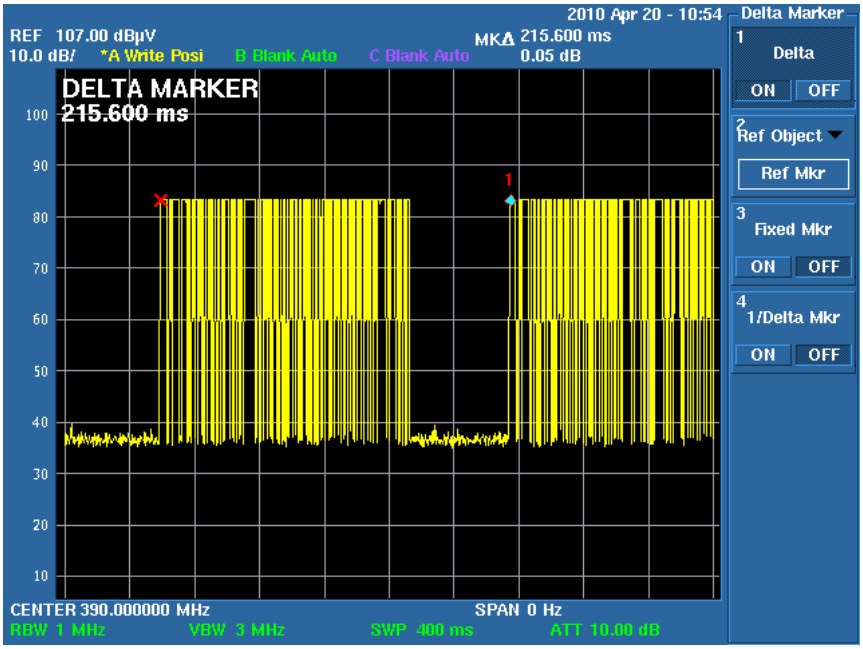
5.1 Average Factor

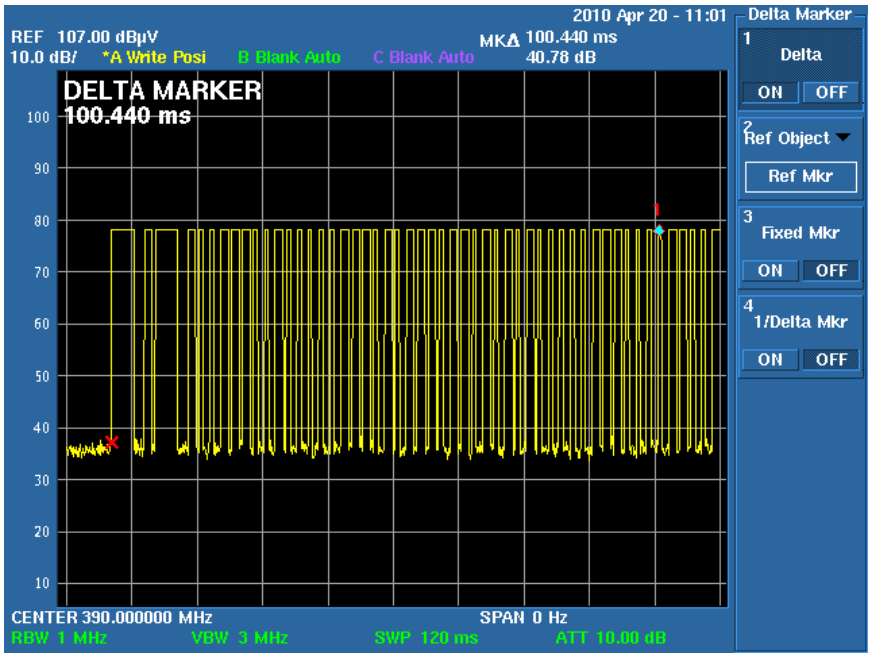
For test instruments and accessories used see section 6.

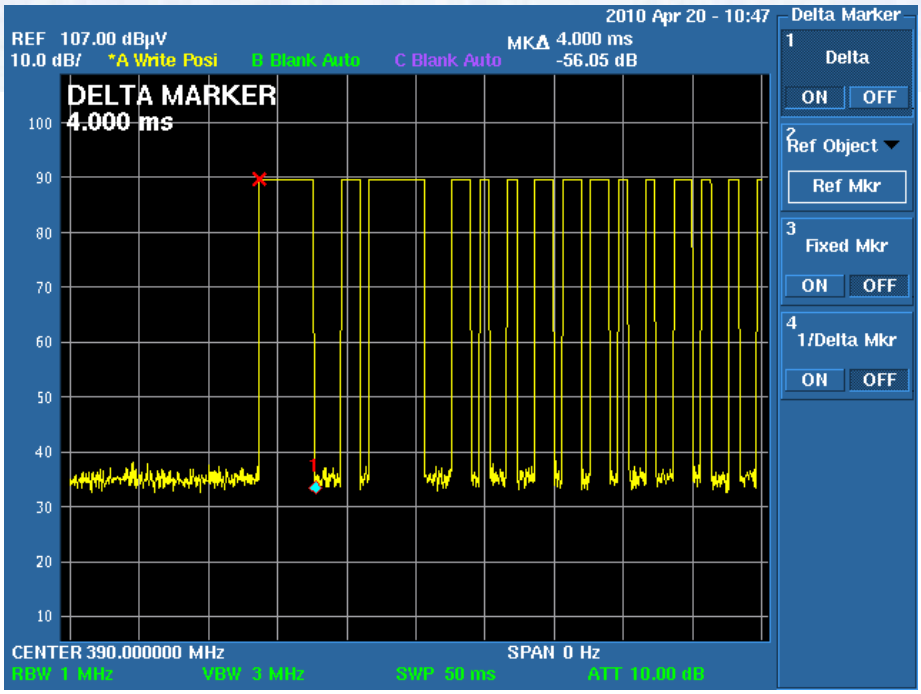
5.1.1 Description of the test location

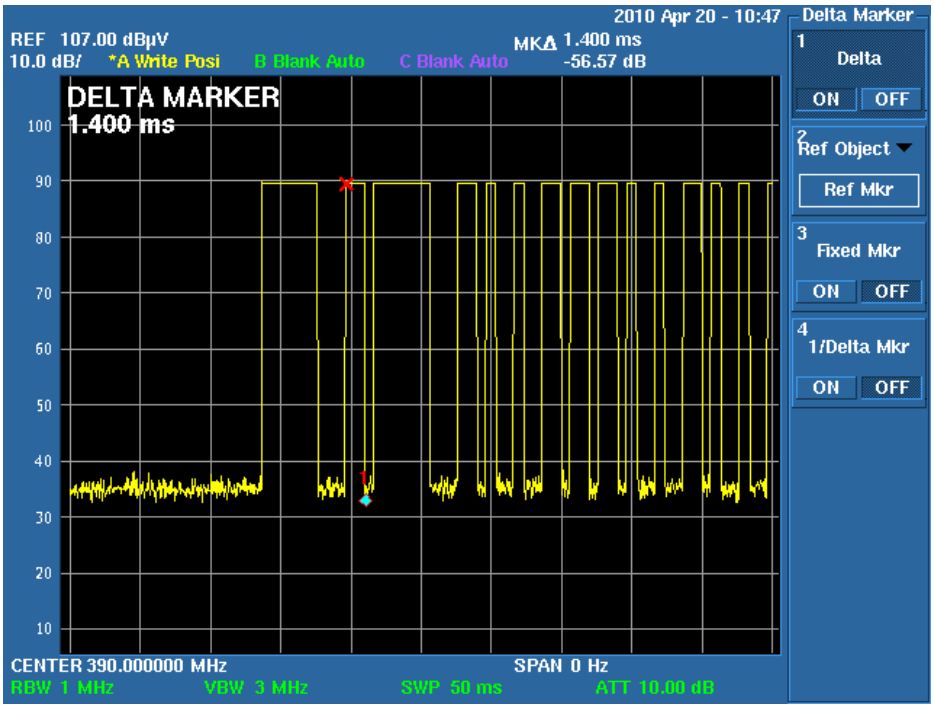
Test location: Shield room

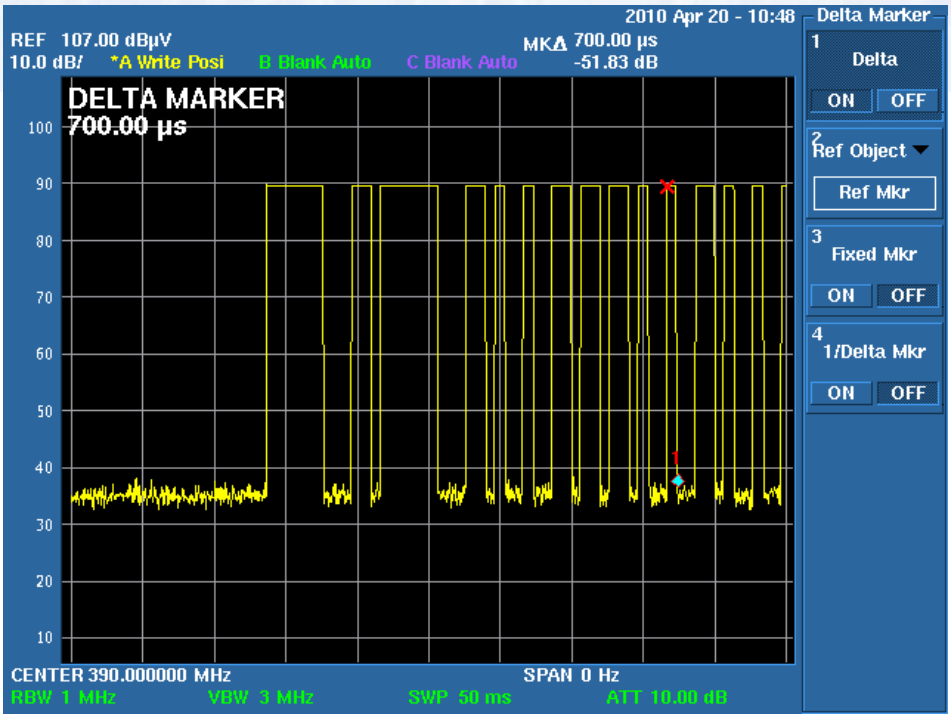
5.1.2 Photo documentation of test






2010 Apr 20 - 10:47
REF 107.00 dBµV
10.0 dB/ *A Write Posi B Blank Auto C Blank Auto
MKΔ 4.000 ms
-56.05 dB
DELTA MARKER
4.000 ms
100
90
80
70
60
50
40
30
20
10
CENTER 390.000000 MHz
SPAN 0 Hz
RBW 1 MHz VBW 3 MHz SWP 50 ms ATT 10.00 dB
Delta Marker
1 Delta
ON OFF
2 Ref Object
Ref Mkr
3 Fixed Mkr
ON OFF
4 1/Delta Mkr
ON OFF


2010 Apr 20 - 10:47
REF 107.00 dBµV
10.0 dB/ *A Write Posi B Blank Auto C Blank Auto
MKΔ 1.400 ms
-56.57 dB
DELTA MARKER
1.400 ms
100
90
80
70
60
50
40
30
20
10
CENTER 390.000000 MHz
SPAN 0 Hz
RBW 1 MHz VBW 3 MHz SWP 50 ms ATT 10.00 dB
Delta Marker
1 Delta
ON OFF
2 Ref Object
Ref Mkr
3 Fixed Mkr
ON OFF
4 1/Delta Mkr
ON OFF



5.1.3 Test result

$T1_{on}$（worst case）=	(4*2+1.4*21+0.7*23)ms
=	53.5ms
Average Factor (Press Switch) =	20log(53.5ms/100ms)
=	-5.4dB

Remarks: 1) Average factor of 3 buttons are measured and worst case average factor is reported above.

2)T1:The button which is close the LED light.

5.2 Radiated Emission

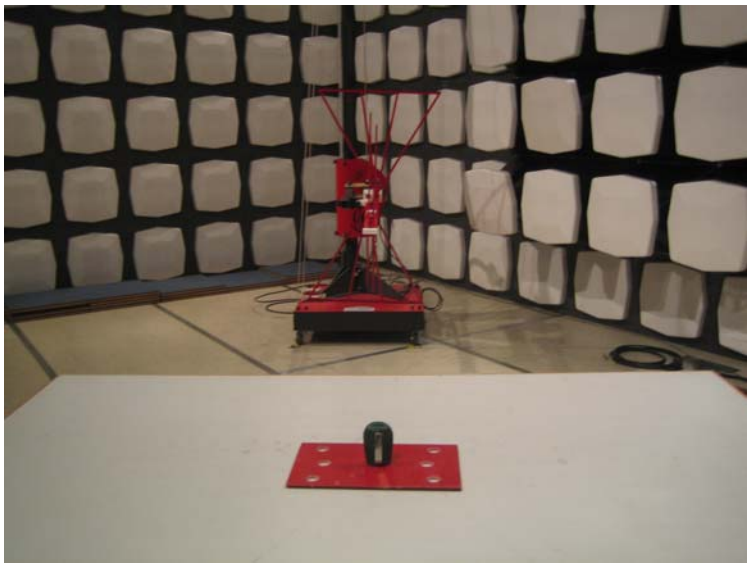
For test instruments and accessories used see section 6.

5.2.1 Description of the test location

Test location: Semi-anecholic Chamber

Test distance: 3m

5.2.2 Photo documentation of test



5.2.3 Test result

Frequency range: 30MHz to 3900MHz

Min. limit margin: -1.3dB

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

Remarks: _____

_____

_____

_____

5.2.4 Test protocol

Worst Case Operation mode: Transmitting mode Result: PASS
Remarks:
Date: March 20, 2010
Tested by: Kidd Yang

Start frequency [MHZ]	Stop frequency [MHZ]	Resolution bandwidth	Vedio bandwidth	step size	Measurement time	Detector
30	1000	120 KHz	1 MHz	40 KHz	100ms	Peak
1000	3900	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)
V	390.00	66.4	15.6	1.1	83.1	99.2	-16.1
H	390.00	59.6	16.3	1.1	77.0	99.2	-22.2
V	780.00	26.3	21.0	2.3	49.6	79.2	-29.6
V	1170.00	30.8	24.5	2.8	58.1	74.0	-15.9
V	1950.00	25.0	30.0	4.3	59.3	79.2	-19.9
V	2340.00	21.1	31.8	3.9	56.8	74.0	-17.2
V	2730.00	17.4	35.8	4.0	57.2	74.0	-16.8

Polarization	Frequency (MHz)	Detector	Measured Result (dBuV/m)	Average Factor (dB)	Calculated Average Value (dBuV/m)	AV limit (dBuV/m)	margin (dB)
V	390.00	Peak	83.1	-5.4	77.7	79.2	-1.5
H	390.00	Peak	77.0	-5.4	71.6	79.2	-7.6
V	780.00	Peak	49.6	-5.4	44.2	59.2	-15.0
V	1170.00	Peak	58.1	-5.4	52.7	54.0	-1.3
V	1950.00	Peak	59.3	-5.4	53.9	59.2	-5.3
V	2340.00	Peak	55.7	-5.4	50.3	54.0	-3.7
V	2730.00	Peak	56.2	-5.4	50.8	54.0	-3.2

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

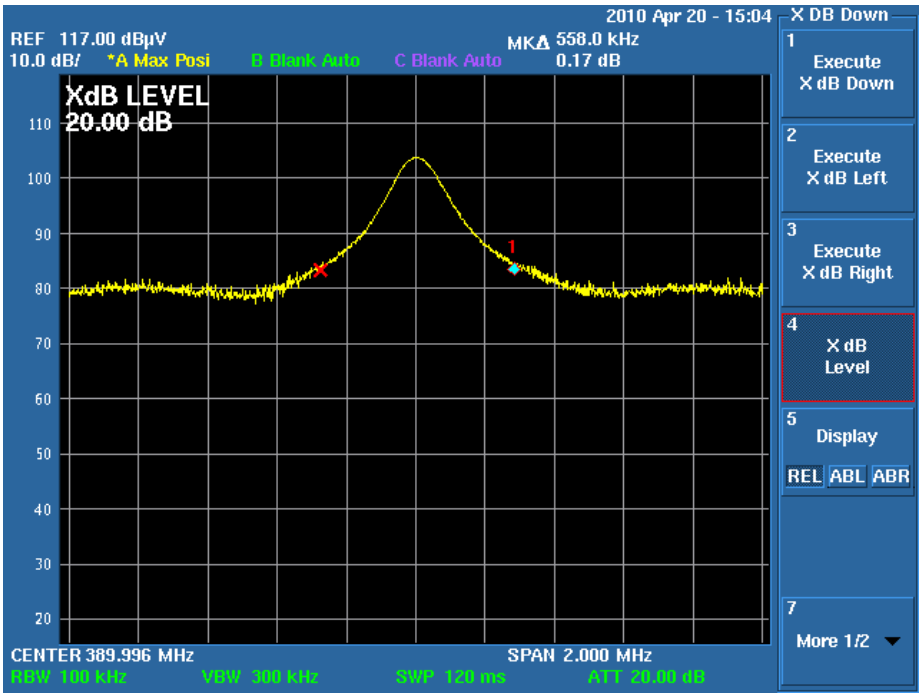
2) Testing is include the rotation of the EUT through three orthogonal axes to determine the maximum emission.

5.3 Bandwidth

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)
558	975

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

Remarks: _____

_____

_____

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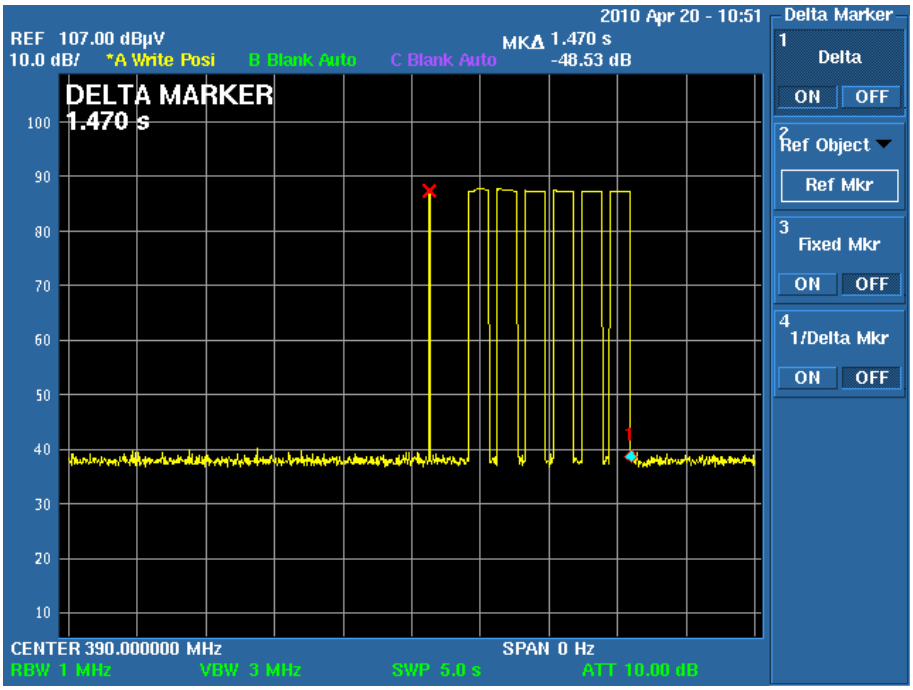
5.4 Provision of Momentary operation

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)
1.47	5.00

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

Remarks: _____

_____

6 USED TEST EQUIPMENT AND ACCESSORIES

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

Test Item	Model / Type	Kind of Equipment	Manufacturer	Last Cal. Date	Equipment No.
Radiated Emission	ESPI3	EMI Test Receiver	Rohde & Schwarz	Apr 16, 2009	04-02/03-06-002
	U3772	Spectrum Analyzer	Advantest	Apr 16, 2009	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	Apr 16, 2009	04-02/11-08-001
Momentary operation	U3772	Spectrum Analyzer	Advantest	Apr 16, 2009	04-02/11-08-001
Average Factor	U3772	Spectrum Analyzer	Advantest	Apr 16, 2009	04-02/11-08-001