

FCC Test Report

E4064135801KYS1

Type / Model Name: TC-318-1、TC-318-2、TC-318-3、TC-318-10、
TC-318-7, TC-318-14

Product Description: Lighting remote control

Applicant: Capital Prospect Ltd.

FCC ID: KUTTC318

FCC -- TEST REPORT

Test Report No. : E4064135801KYS1	March 15, 2010 <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> Date of issue
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This report supercedes our previous report, E40641358KYS1, dated January 13, 2010

Type / Model Name : TC-318-1, TC-318-2, TC-318-3, TC-318-10,
 TC-318-7, TC-318-14

Product Description : Lighting remote control

Applicant : Capital Prospect LTD.

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

Test Result according to the standards listed in clause 1 test standards:	PASS
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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, 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: TC-318-1, TC-318-2, TC-318-3, TC-318-7 and TC-318-10 are identical to TC-318-14 except no. of keys. The model: TC-318-1, TC-318-2, TC-318-3, TC-318-7, TC-318-10 and TC-318-14 have one key, two keys, three keys, seven keys, ten keys and fourteen keys respectively. The TC-318-14 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 : December 30, 2009

Testing commenced on : December 30, 2009

Testing concluded on : November 13, 2009

Reviewed by:

Prepared by:

Wilson Loke
Senior Manager

Kidd Yang
Engineer

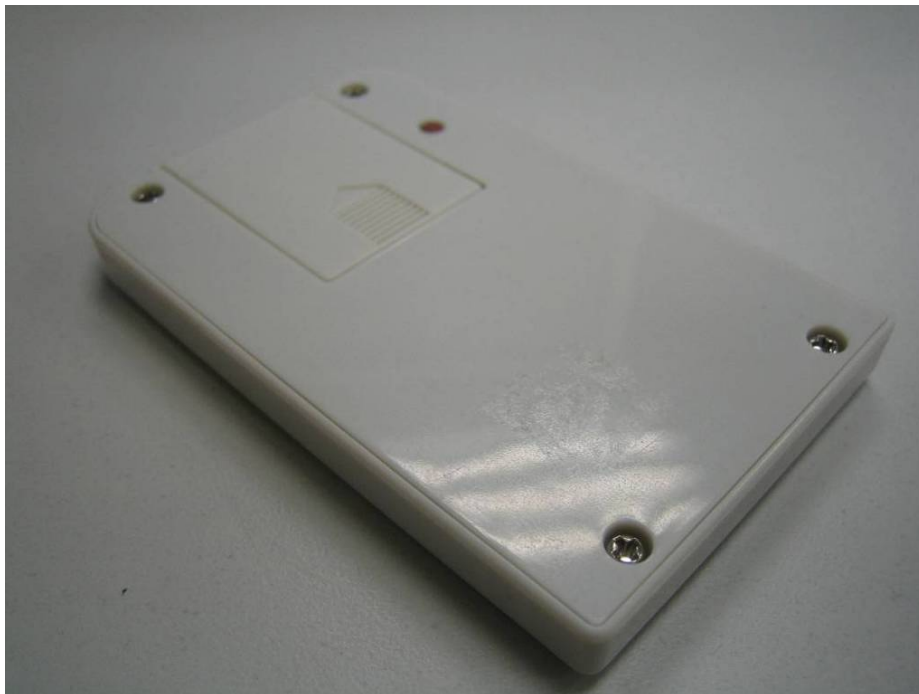
3 EQUIPMENT UNDER TEST

3.1 Photo documentation of the EuT

TC-318-3



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 318MHz transmitter. The main function of the EUT is acted as a remote control to operate difference lighting fixture with the lighting receiver modules. When the buttons are pressed, the transmitter will transmit the signal by Pulsed Code Modulation to the corresponding lighting receiver module to control the lighting fixture on/off and bightness. 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: 1.0cm

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

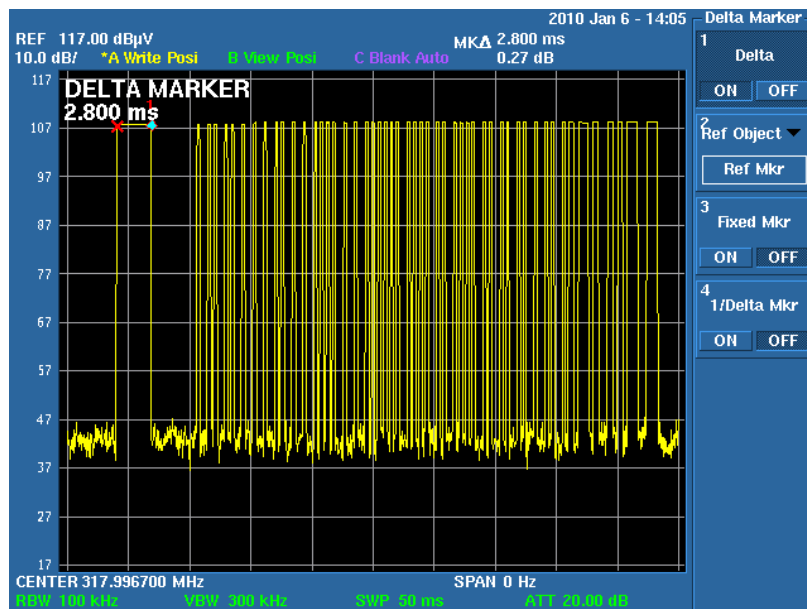
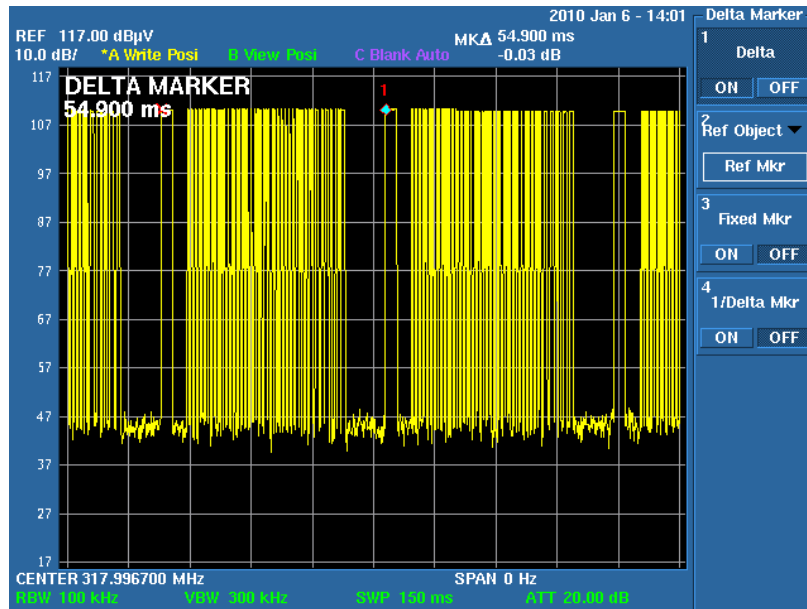
5.1 Average Factor

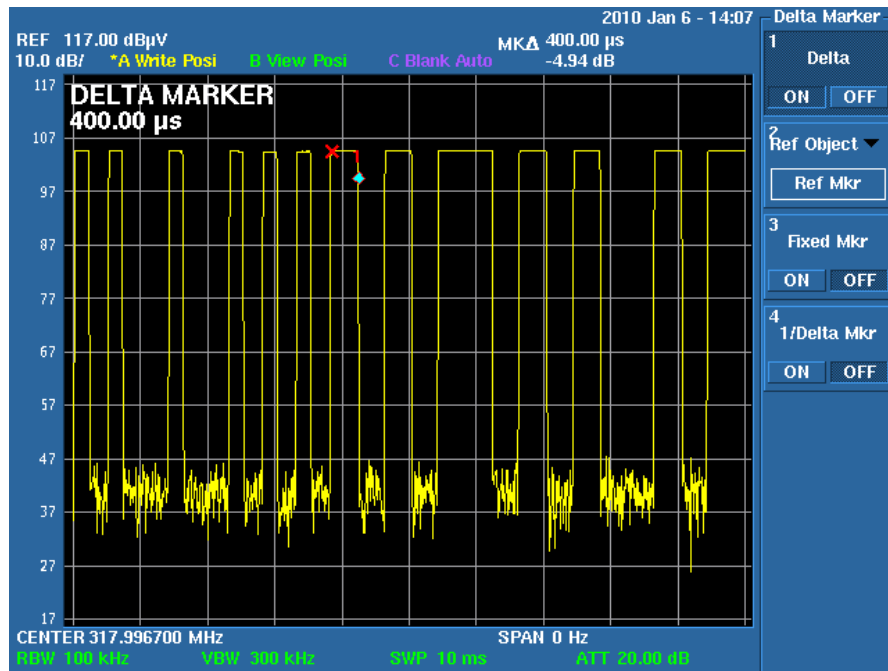
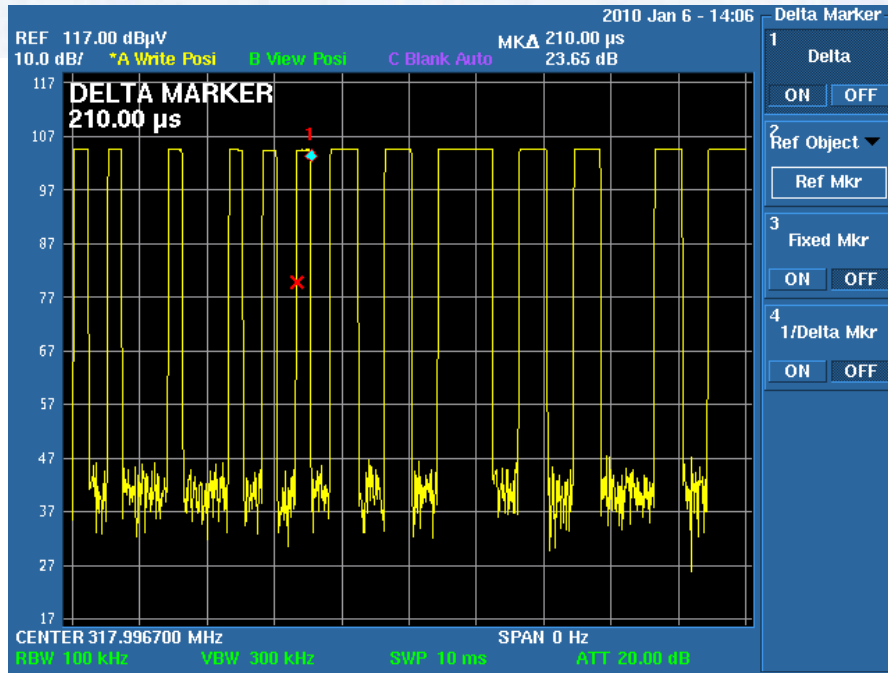
For test instruments and accessories used see section 6.

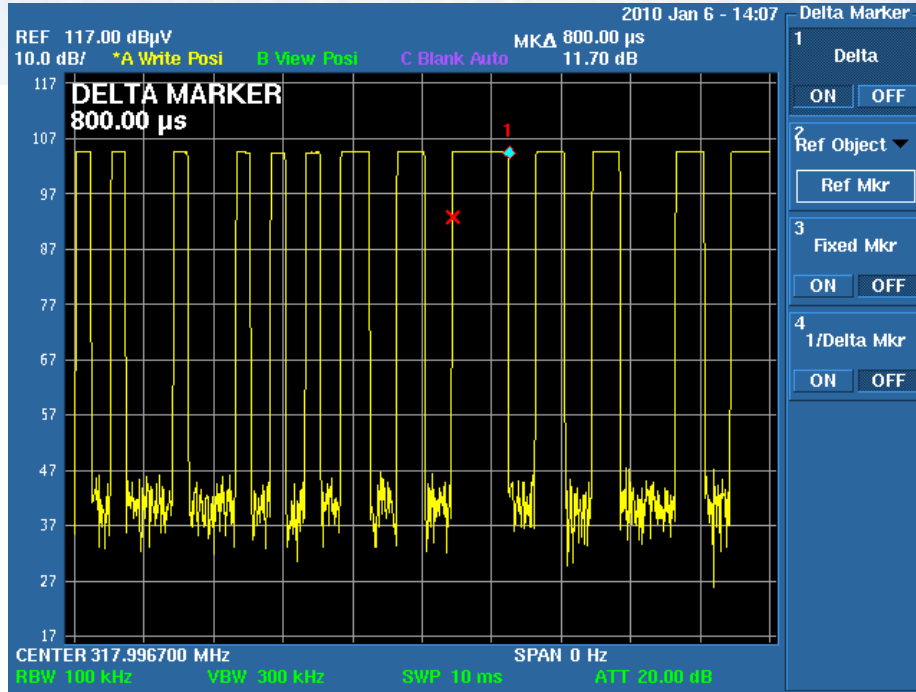
5.1.1 Description of the test location

Test location: Shield room

5.1.2 Photo documentation of test







5.1.3 Test result

T_{on} (worst case) =	$(2.8+0.21*44+0.4*6+0.8*2)ms$
	= 16.04ms
Average Factor (Press Switch) =	$20\log(16.04ms/54.90ms)$
	= -10.7dB

Remarks: Average factor of 14 buttons are measured and worst case average factor is reported above.

5.2 Radiated Emission

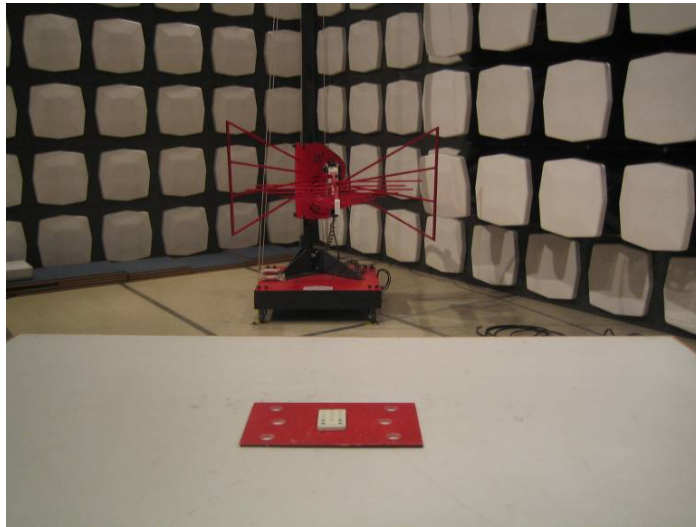
For test instruments and accessories used see section 6.

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 3180MHz

Min. limit margin: -3.9dB

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: Dec 30, 2009
 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	3180	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	318.00	45.7	14.8	1.1	61.6	95.8	-34.2
H	318.00	67.2	14.3	1.1	82.6	95.8	-13.2
H	636.00	29.9	20.5	1.9	52.3	75.8	-23.5
H	954.00	29.9	26.3	2.9	59.1	75.8	-16.7
H	1272.00	24.8	25.9	3.0	53.7	75.8	-22.1
H	1908.00	21.4	26.3	2.9	50.6	75.8	-25.2
H	2257.00	9.3	30.1	3.9	43.3	74.0	-30.7
H	2544.00	26.4	25.3	3.1	54.8	75.8	-21.0

Polarization	Frequency(MHz)	Detector	Measured Result (dBuV/m)	Average Factor (dB)	Calculated Average Value (dBuV/m)	AV limit (dBuV/m)	margin (dB)
V	318.00	Peak	61.6	-10.7	50.9	75.8	-24.9
H	318.00	Peak	82.6	-10.7	71.9	75.8	-3.9
H	636.00	Peak	52.3	-10.7	41.6	55.8	-14.2
H	954.00	Peak	59.1	-10.7	48.4	55.8	-7.4
H	1272.00	Peak	53.7	-10.7	43.0	55.8	-12.8
H	1908.00	Peak	50.6	-10.7	39.9	55.8	-15.9
H	2257.00	Peak	43.3	-10.7	32.6	54.0	-21.4
H	2544.00	Peak	54.8	-10.7	44.1	55.8	-11.7

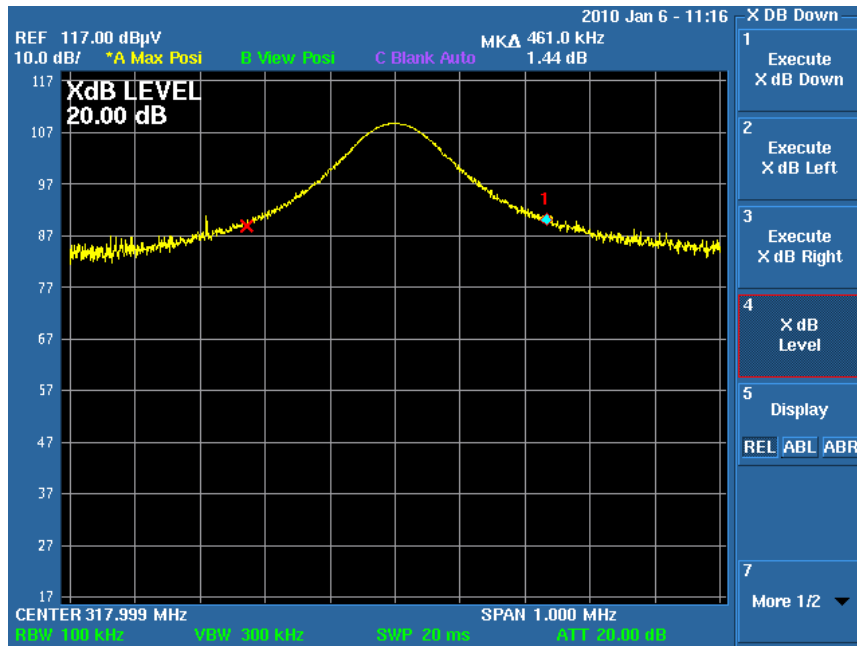
Remarks: 1) The emissions lower than 20dB below the limit are not measured.
 2) Testing is include the rotation of the EUT through three orthogonal axes to determine the maximum emission.

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)
461	795

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

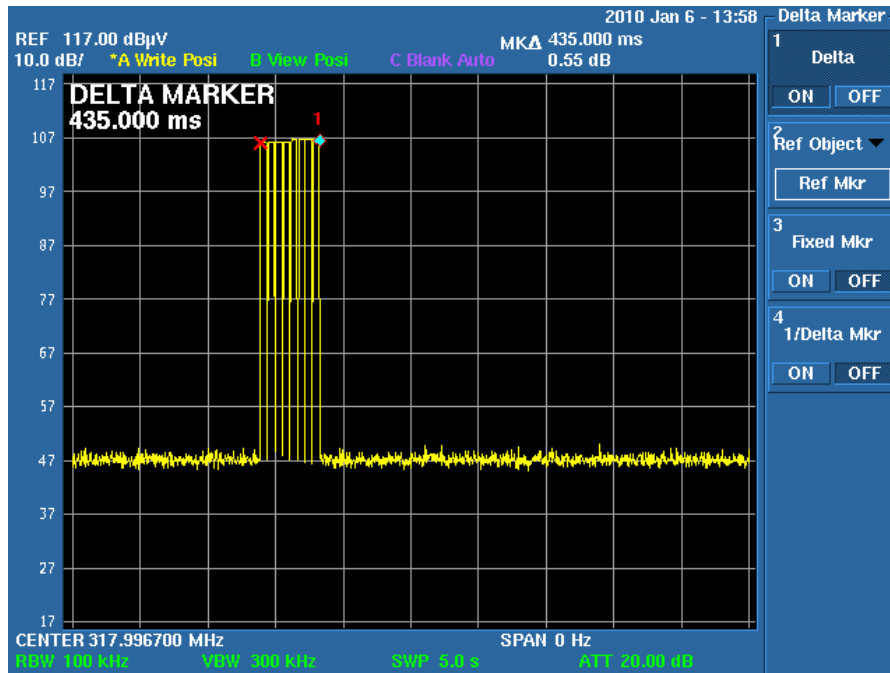
Remarks:

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)
0.435	5

The requirement 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