

FCC Test Report

E4319267301KY

Type / Model Name: 900102123

Trade name: Konftel

Product Description: Konftel Remote Control

Applicant: Konftel AB

FCC ID: SNNRMT

FCC --- TEST REPORT

Test Report No. : E4319267301KY	Dec 30, 2011 <hr style="border: none; border-top: 1px solid black; margin: 0;"/> Date of issue
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Type / Model Name : 900102123

Product Description : Konftel Remote Control

Applicant : Konftel AB

Address : BOX 268,
Umeå, SE-90106,
Sweden

Test Result according to the standards listed in clause 1 test standards:	POSITIVE
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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. **E4319267301KY**

Contents

1	<u>TEST STANDARDS</u>	4
2	<u>SUMMARY</u>	5
3	<u>EQUIPMENT UNDER TEST</u>	6
3.1	PHOTO DOCUMENTATION OF THE EUT	6
3.2	POWER SUPPLY SYSTEM UTILISED	7
3.3	SHORT DESCRIPTION OF THE EQUIPMENT UNDER TEST (EUT)	7
4	<u>TEST ENVIRONMENT</u>	8
4.1	ADDRESS OF THE TEST LABORATORY	8
4.2	ENVIRONMENTAL CONDITIONS	8
4.3	STATEMENT OF THE MEASUREMENT UNCERTAINTY	8
5	<u>TEST CONDITIONS AND RESULTS</u>	9
5.1	ANTENNA REQUIREMENT	9
5.2	AVERAGE FACTOR	10
5.3	RADIATED EMISSION	12
5.4	BANDWIDTH	14
5.5	PROVISION OF MOMENTARY OPERATION	15
6	<u>USED TEST EQUIPMENT AND ACCESSORIES</u>	16

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4_F510_25_Rev2_0 / Date of release: 05-01-2009 / Author: Kidd Yang

Page 3 of 16

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Part 15:2010-10-01

Federal Communications Commission, Part 15 – Radio Frequency Device

ANSI C63.4:2003

American National Standard for 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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Page 4 of 16

2 SUMMARY

GENERAL REMARKS:

N/A

FINAL ASSESSMENT:

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

Date of receipt of test sample : 16-12-2011

Testing commenced on : 16-12-2011

Testing concluded on : 30-12-2011

Checked by:

Tested by:

Ivan Toa
Technical Manager

Kidd Yang
Engineer

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3 EQUIPMENT UNDER TEST

3.1 Photo documentation of the EuT



Top View



Bottom View

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3.2 Power supply system utilised

Power supply voltage: 4.5Vdc (3*AAA batteries)

3.3 Short description of the Equipment under Test (EuT)

The EuT is a remote control and working with 433.92MHz. The EuT is a transmitter. The EuT used to change the state of the corresponding receiver by transmitting the modulated signal. The EuT is operated with 4.5Vdc, three AAA batteries.

Tested samples: One Set

Serial number: Not Labelled

Dimensions: L: 18.5 cm W: 5.0 cm H: 2.5 cm

EuT operation mode:

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

- Operation mode 1: Transmitting mode

-

-

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		

File No. **E4319267301KY**

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

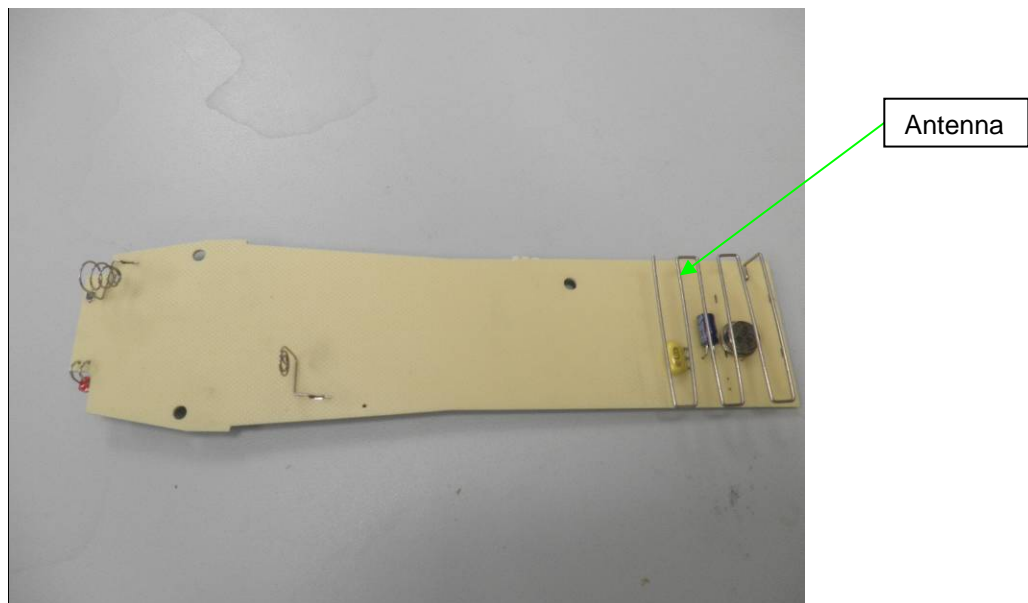
The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16-4-2 /11.2003 "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 Antenna Requirement

According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

The EuT has component antenna, which accordance to the above sections, is considered sufficient to comply with the provisions of these sections. Please see EuT photo for details.



The requirements of section 15.203 are **FULFILLED**.

Remarks: _____

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Page 9 of 16

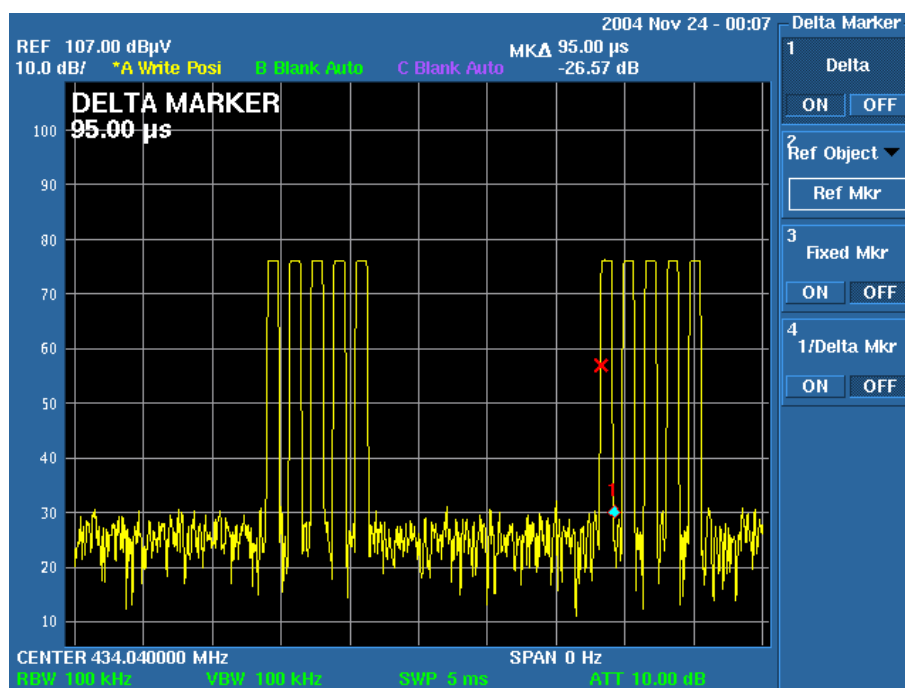
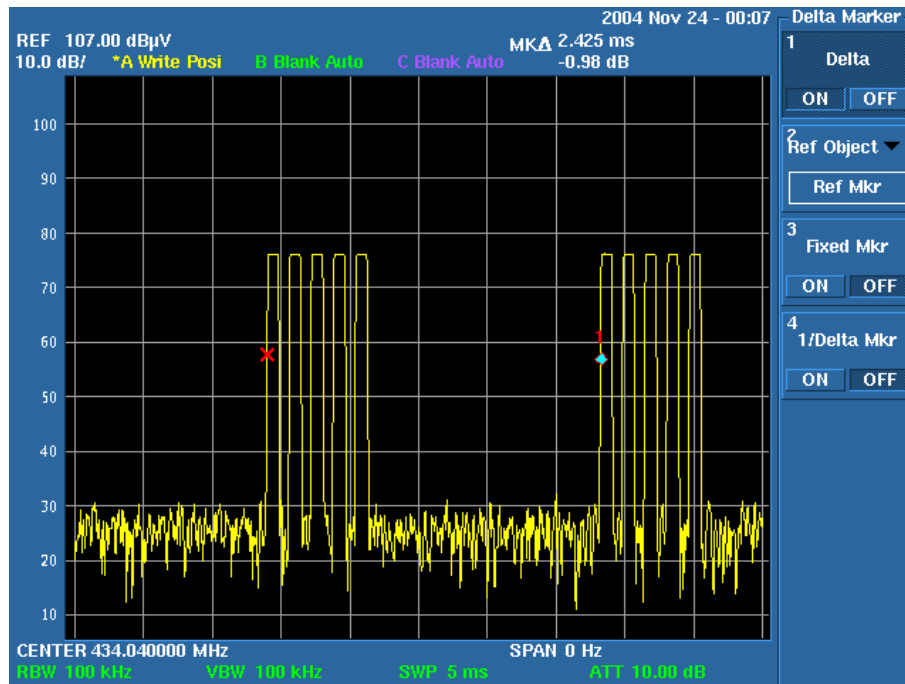
5.2 Average Factor

For test instruments and accessories used see section 6.

5.2.1 Description of the test location

Test location: Shield room

5.2.2 Photo documentation of test



File No. E4319267301KY

5.2.3 Test result

whole period=2.425ms<100ms
Pulse 1= 0.095ms
$T_{on}=(0.095*5)ms=0.475ms$
Average factor= $20 \log(0.475ms/2.425ms)=20 \log(0.196)=-14.1dB$

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

5.3 Radiated Emission

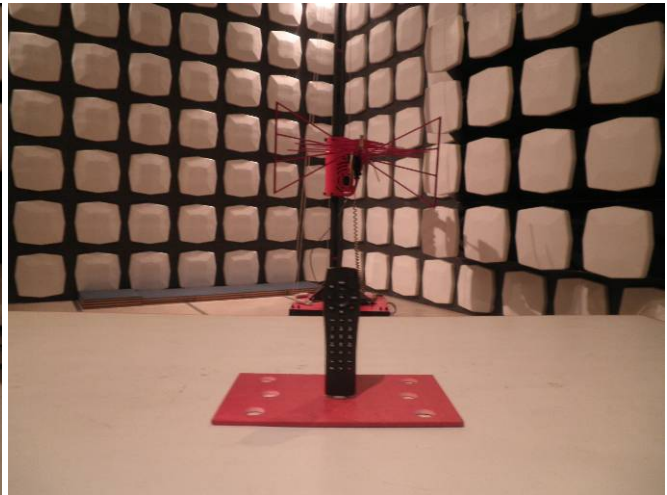
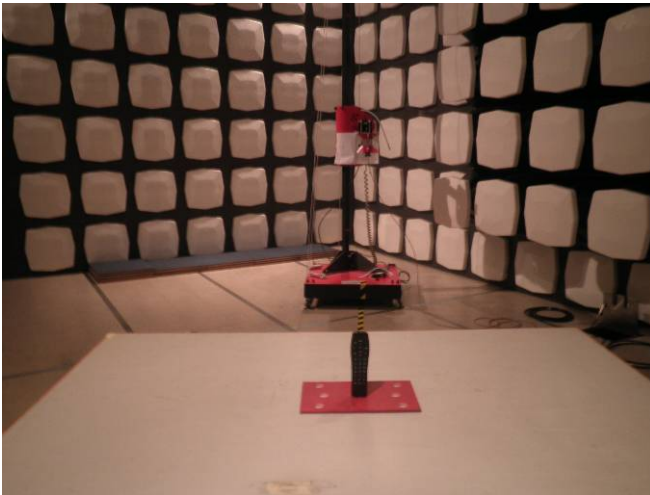
For test instruments and accessories used see section 6.

5.3.1 Description of the test location

Test location: Semi-anechoic Chamber

Test distance: 3m

5.3.2 Photo documentation of test



5.3.3 Test result

Frequency range: 30MHz to 4340MHz

Min. limit margin: -2.5dB

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

Remarks: 1) The emission 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.

5.3.4 Test protocol

Product Description: Konftel Remote Control Result: PASS
 Operation mode: Transmitting mode
 Date: Dec 30, 2011
 Tested by: Kidd Yang

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)
V	433.998	61.7	16.3	1.6	79.6	100.8	-21.2
H	433.998	74.2	16.6	1.6	92.4	100.8	-8.4
V	867.996	24.2	22.8	2.3	49.3	80.8	-31.5
H	867.996	34.6	22.7	2.3	59.6	80.8	-21.2
H	1301.994	12.3	25.0	2.8	40.1	74.0	-33.9
V	1735.992	11.6	27.3	3.6	42.5	80.8	-38.3
V	2169.990	15.9	30.0	4.3	50.2	80.8	-30.6
H	2169.990	16.9	29.8	4.3	51.0	80.8	-29.8

Polarization	Frequency (MHz)	Detector	Measured Result (dBuV/m)	Average Factor (dB)	Calculated Average Value (dBuV/m)	AV limit (dBuV/m)	margin (dB)
V	433.998	Peak	79.6	-14.1	65.5	80.8	-15.3
H	433.998	Peak	92.4	-14.1	78.3	80.8	-2.5
V	867.996	Peak	49.3	-14.1	35.2	60.8	-25.6
H	867.996	Peak	59.6	-14.1	45.5	60.8	-15.3
H	1301.994	Peak	40.1	-14.1	26.0	54.0	-28.0
V	1735.992	Peak	42.5	-14.1	28.4	60.8	-32.4
V	2169.990	Peak	50.2	-14.1	36.1	60.8	-24.7
H	2169.990	Peak	51.0	-14.1	36.9	60.8	-23.9

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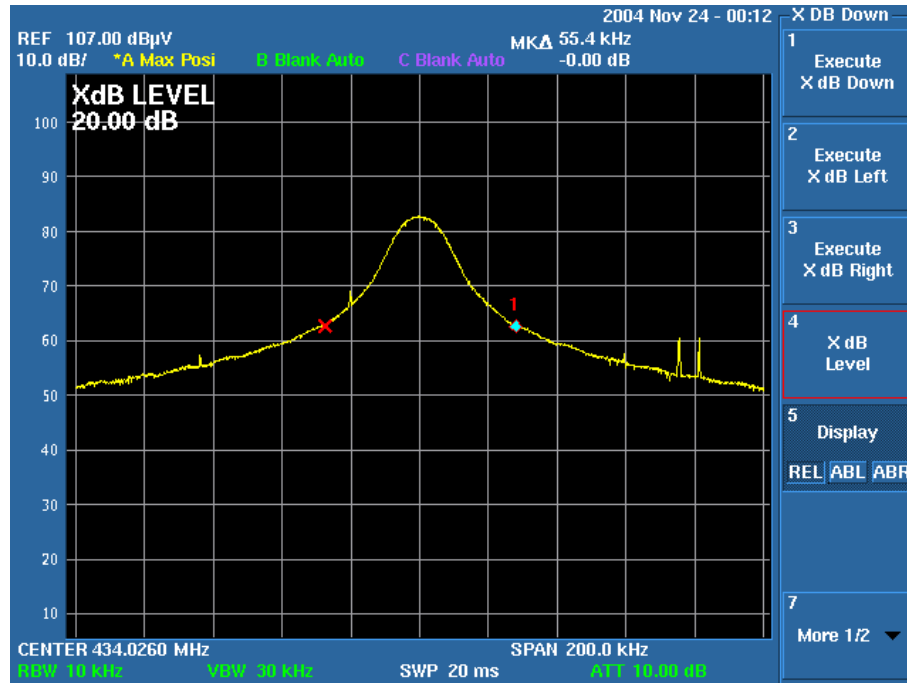
5.4 Bandwidth

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

Measured Occupied Bandwidth (kHz)	Limit (kHz)
55.4	1084.8

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

Remarks:

File No. **E4319267301KY**

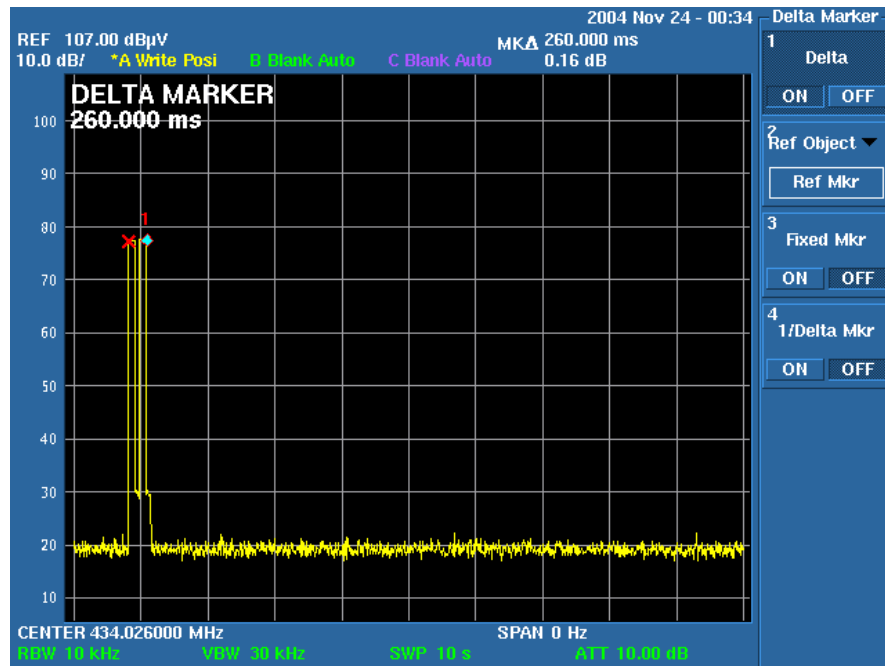
5.5 Provision of Momentary operation

For test instruments and accessories used see section 6.

5.5.1 Description of the test location

Test location: Shielded Room

5.5.2 Photo documentation of the test



5.5.3 Test result

The time of stopping transmission after switch releasing (s)	Limit (s)
0.260	5.000

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

Remarks:

File No. **E4319267301KY**

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	Next Cal. Date	Equipment o.
Radiated Emission	ESPI3	EMI Test Receiver	Rohde & Schwarz	Apr 26, 2012	04-02/03-06-002
	U3772	Spectrum Analyzer	Advantest	Apr 26, 2012	04-02/11-08-001
	3142C	Biconilog Antenna	EMCO	Mar 26,2013	04-02/24-06-001
	3117	Horn Antenna	ETS Lindgren	Mar 26,2013	04-02/24-07-001
Bandwidth	U3772	Spectrum Analyzer	Advantest	Apr 26, 2012	04-02/11-08-001
Momentary operation	U3772	Spectrum Analyzer	Advantest	Apr 26, 2012	04-02/11-08-001
Average Factor	U3772	Spectrum Analyzer	Advantest	Apr 26, 2012	04-02/11-08-001

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