FCC Test Report

E4064235301KY

Type / Model Name:	**MK-318**
Product Description:	**KEYCHAIN TYPE TRANSMITTER**
Applicant:	**Capital Prospect Ltd.**
FCC ID:	**KUTMK318**

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

Test Report No. : **E4064235301KY**	July 07, 2011 Date of issue

Type / Model Name: MK-318

Product Description： KEYCHAIN TYPE TRANSMITTER

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:	**POSITIVE**

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. **E4064235301KY**

Contents

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Part 15:2009-10-01	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:

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 : July 06, 2011

Testing commenced on : July 06, 2011

Testing concluded on : July 07, 2011

Checked by:

Ivan Toa
Technical Manager

Tested by:

Kidd Yang
Engineer

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3 EQUIPMENT UNDER TEST

3.1 Photo documentation of the EuT

Top View

Bottom View

3.2 Power supply system utilised

Power supply voltage: DC 3V(1× CR2032 button cell battery)

3.3 Short description of the Equipment under Test (EuT)

The Equipment under test (EUT) is a low-power communication operating at frequency range from 318.0MHz. The remote transmitter has three button switches to activate the transmission. When the buttons are pressed, the EuT will transmit the signal by on-off keying Modulation to corresponding receiver to change the status of the receiver.

Tested samples: One Set (model: MK-318)

Serial number: Not Labelled

Dimensions: L: 6.0 cm W: 3.0cm H: 1.2cm

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	Type	Line		Line termination
	[m]		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

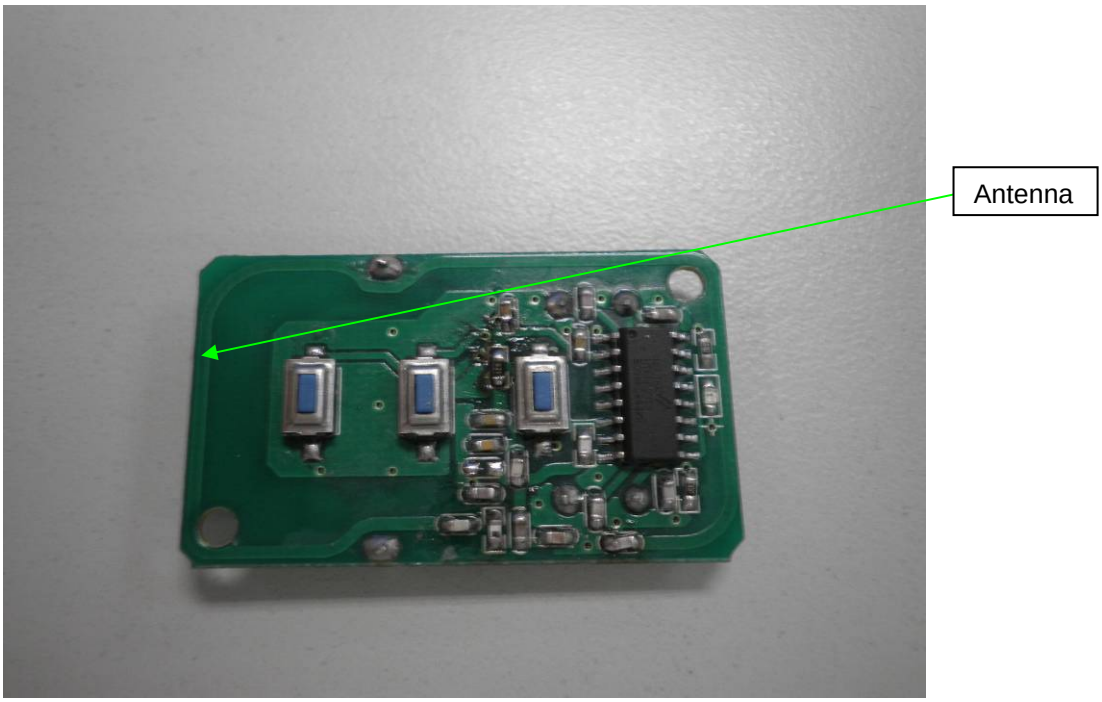
The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16-4-2 /11.2003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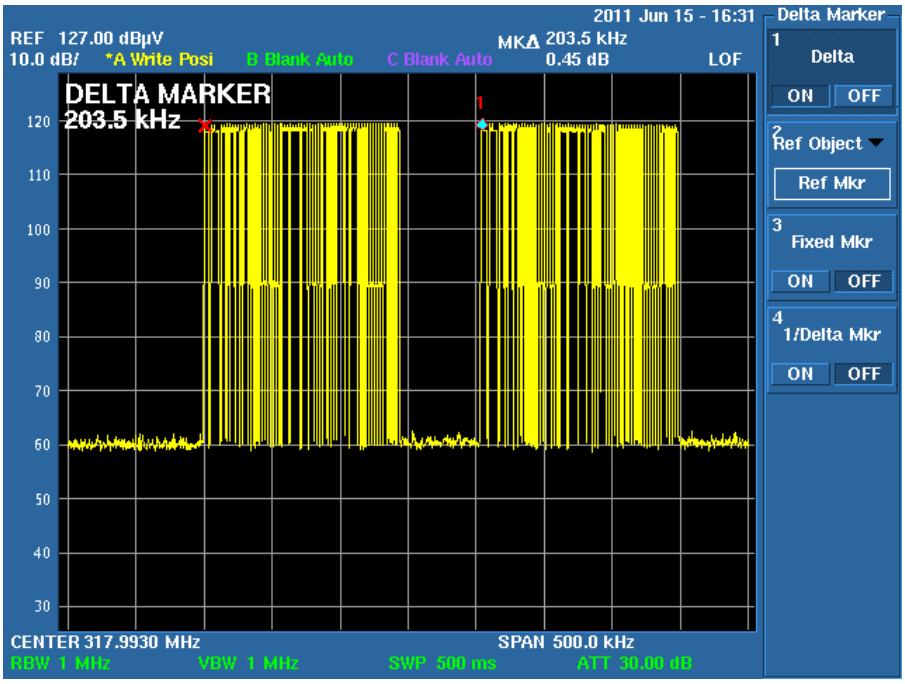
5.2 Average Factor

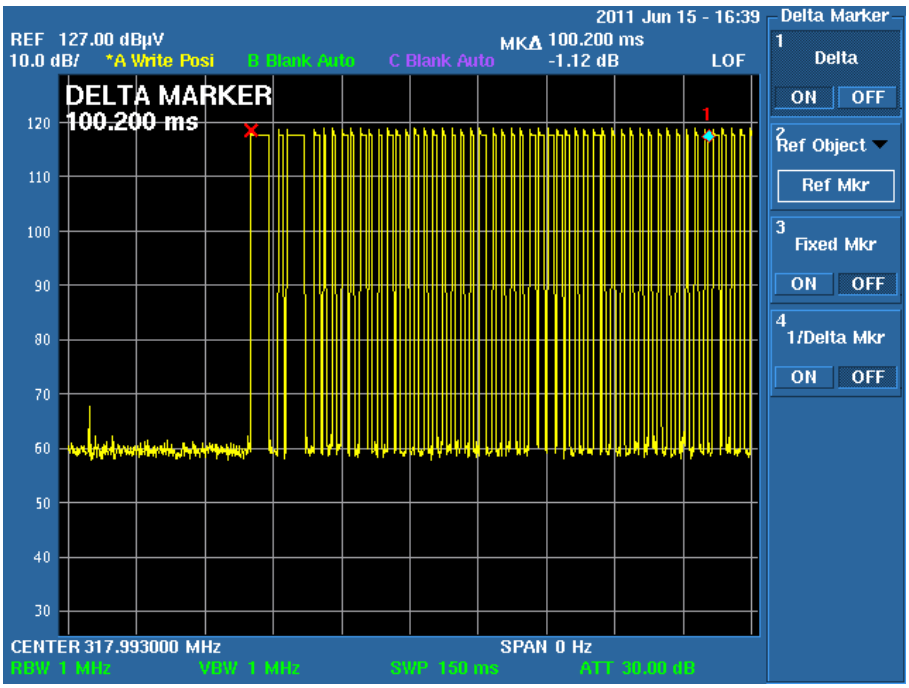
For test instruments and accessories used see section 6.

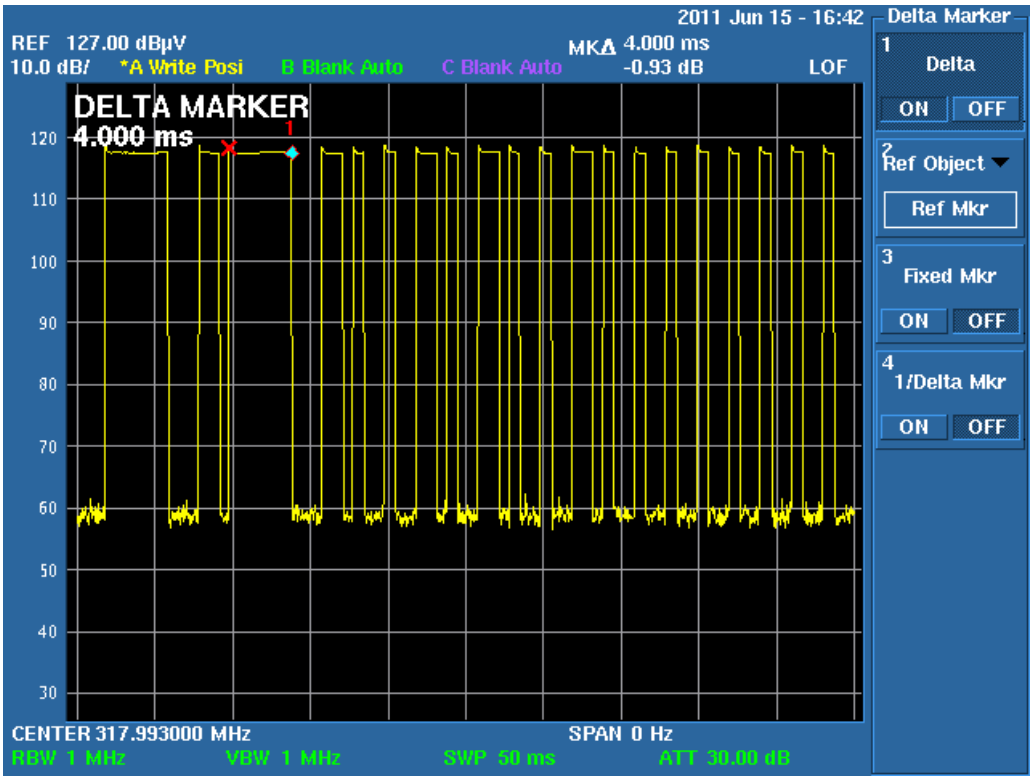
5.2.1 Description of the test location

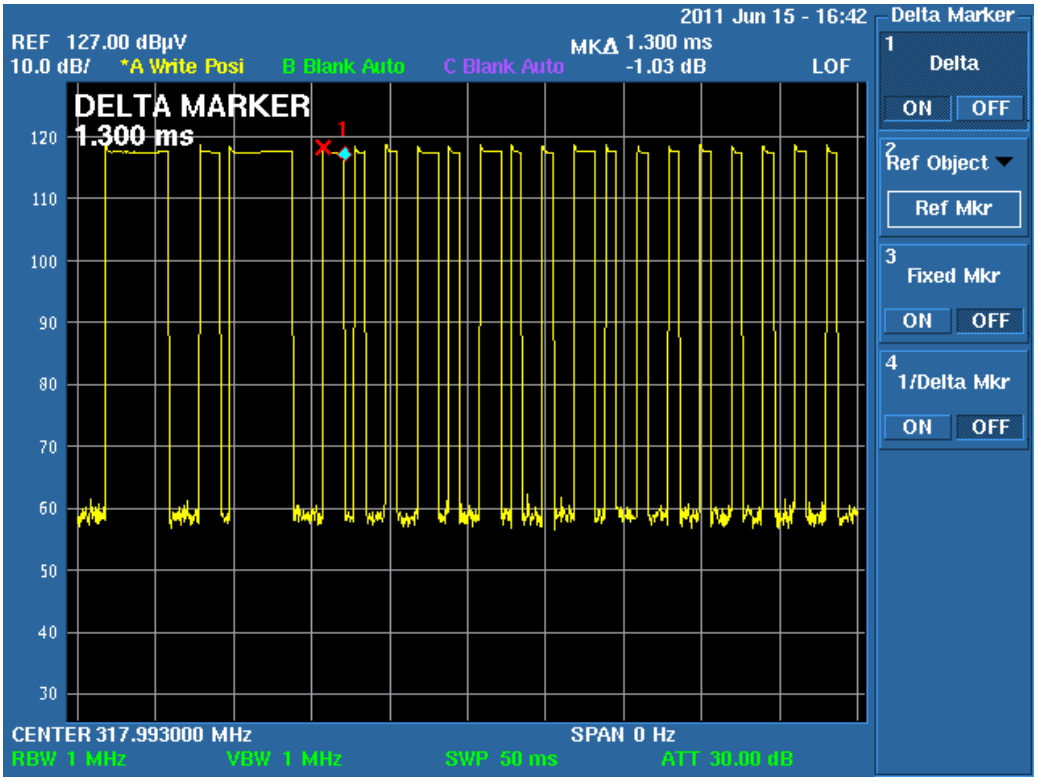
Test location: Shield room

5.2.2 Photo documentation of test









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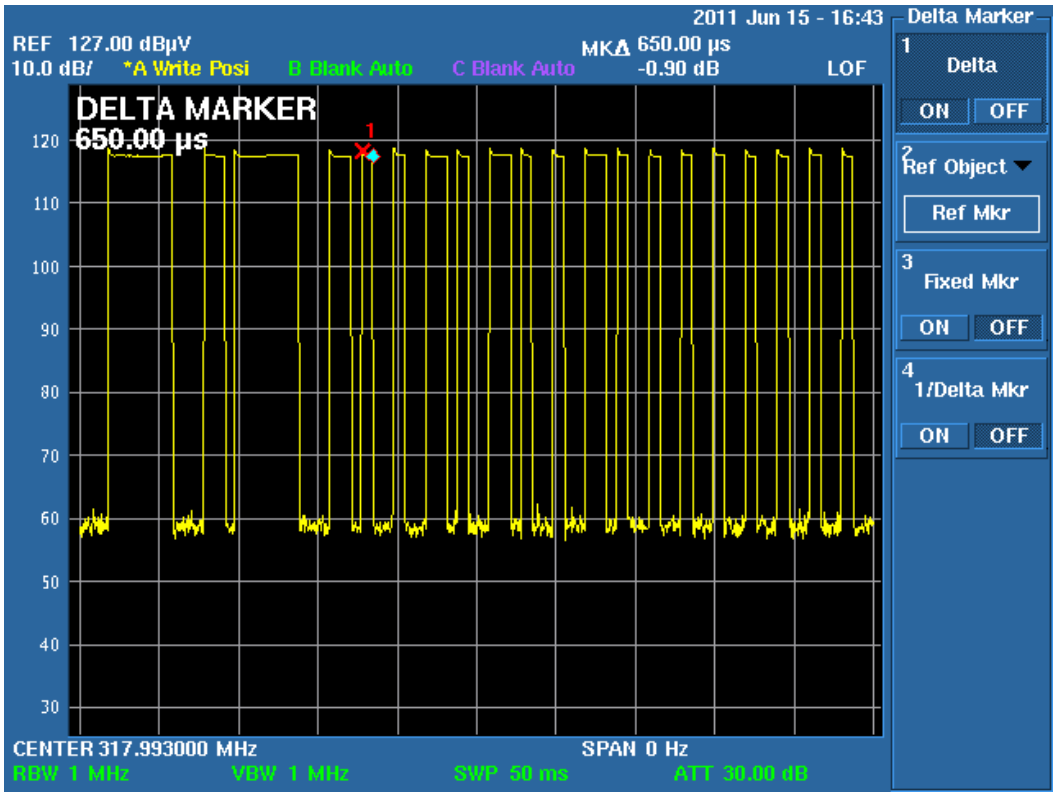

5.2.3 Test result

whole period=203.5ms>100ms
Pulse 1= 4.00ms
Pulse 2= 1.30ms
Pulse 3= 0.65 ms
T_{on}=(4.00*2+1.30*10+0.65*34)ms=43.10ms
Average factor=20 log(43.10ms/100ms)=20 log(0.431)=-7.3dB

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

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5.3 Radiated Emission

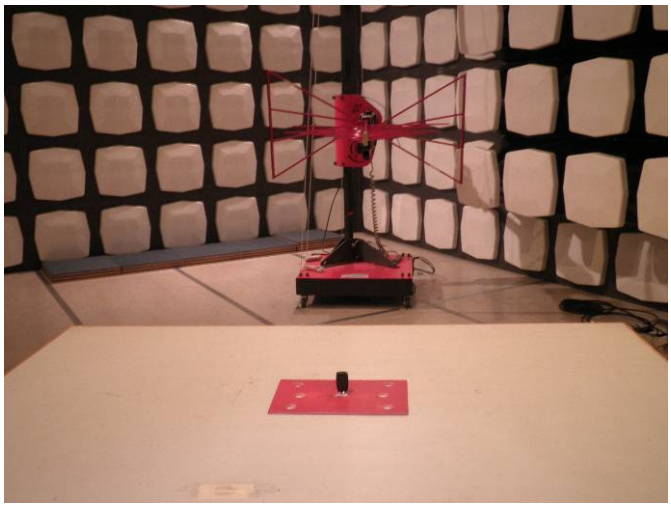
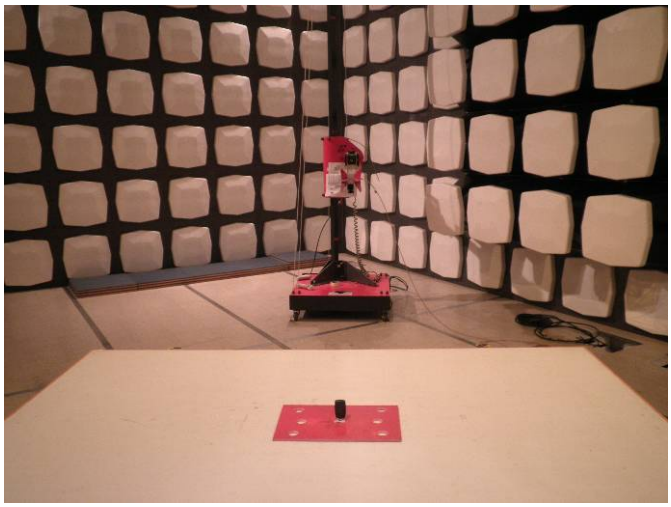
For test instruments and accessories used see section 6.

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 3180MHz

Min. limit margin: -5.4 dB

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

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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5.3.4 Test protocol

Product Description:	KEYCHAIN TYPE TRANSMITTER	Result: PASS
Worst Case Operation mode:	Transmitting mode	
Date:	July 06, 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	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	61.8	14.8	1.1	77.7	95.8	-18.1
H	318.00	57.1	14.3	1.1	72.5	95.8	-23.3
V	636.00	21.2	19.4	2.0	42.6	75.8	-33.2
V	954.00	20.5	23.1	2.2	45.8	75.8	-30.0
V	1272.00	15.0	23.5	3.1	41.6	75.8	-34.2
V	1908.00	12.7	28.7	3.8	45.2	75.8	-30.6
V	2226.00	7.5	30.0	4.0	41.5	74.0	-32.5

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	77.7	-7.3	70.4	75.8	-5.4
H	318.00	Peak	72.5	-7.3	65.2	75.8	-10.6
V	636.00	Peak	42.6	-7.3	35.3	55.8	-20.5
V	954.00	Peak	45.8	-7.3	38.5	55.8	-17.3
V	1272.00	Peak	41.6	-7.3	34.3	55.8	-21.5
V	1908.00	Peak	45.2	-7.3	37.9	55.8	-17.9
V	2226.00	Peak	41.5	-7.3	34.2	54.0	-19.8

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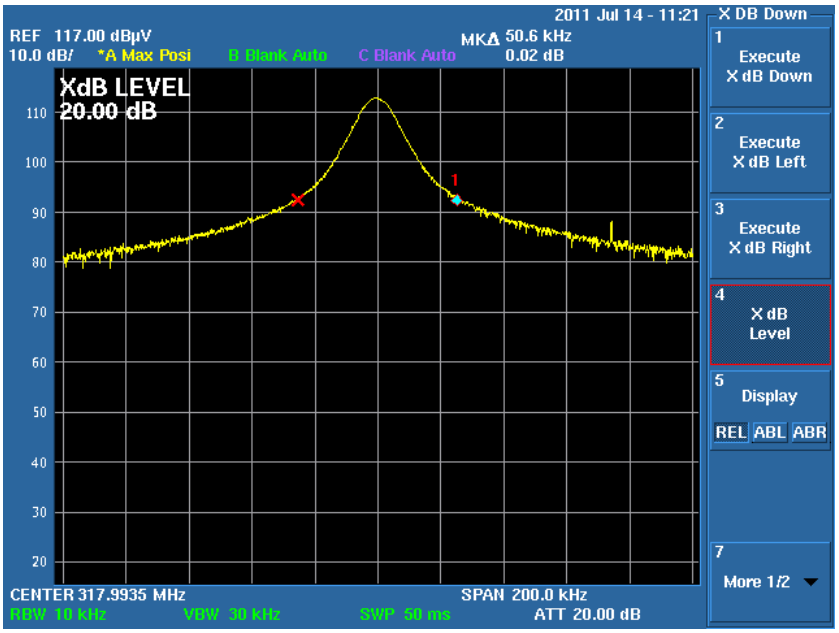
5.4 Bandwidth

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)
50.6	795.0

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

Remarks: _____

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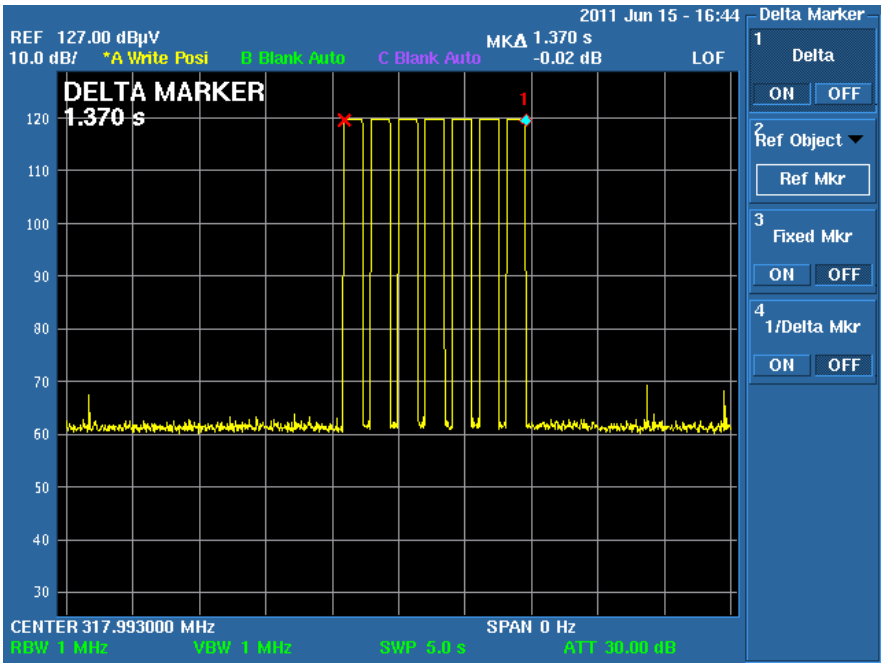
5.5 Provision of Momentary operation

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)
1.37	5.00

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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.

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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