

# FCC Test Report

## E4064281101AG

Type / Model Name: HU-318

Trade name: SkylinkHome™

Product Description: Network Controller

Applicant: Capital Prospect Ltd.

FCC ID: KUTHU318

## FCC --- TEST REPORT

<b>Test Report No. :</b>	<b>E4064281101AG</b>	May 30, 2012 Date of issue
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Type / Model Name : HU-318

Product Description : Network Controller

**Applicant** : Capital Prospect Ltd.

Address : Rm. 1303, 13/F, Block B, Veristrong Ind. Centre,  
36 AupuiWan Street, Fo Tan,  
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. **E4064281101AG**

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## 1 TEST STANDARDS

The tests were performed according to following standards:

FCC Part 15:2011-10-01

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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*4\_F510\_65\_Rev1\_0 / Date of release: 2012-03-06, Author: Kidd Yang*

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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 : 17-05-2012

Testing commenced on : 17-05-2012

Testing concluded on : 30-05-2012

Checked by:

Tested by:

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Ivan Toa  
Technical Manager

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Alan.Geng  
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: INPUT:120VAC 60Hz 7W  
OUTPUT: 12VDC 250mA

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

The EuT is a remote control and working with 317.5 MHz. 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 12V output adapter 120VAC 60Hz.

Tested samples: One Set  
Serial number: Not Labelled  
Dimensions: L: 10.5 cm W: 10.5 cm H: 3.5 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	
RJ45	3.0	8-wires	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ethernet

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.

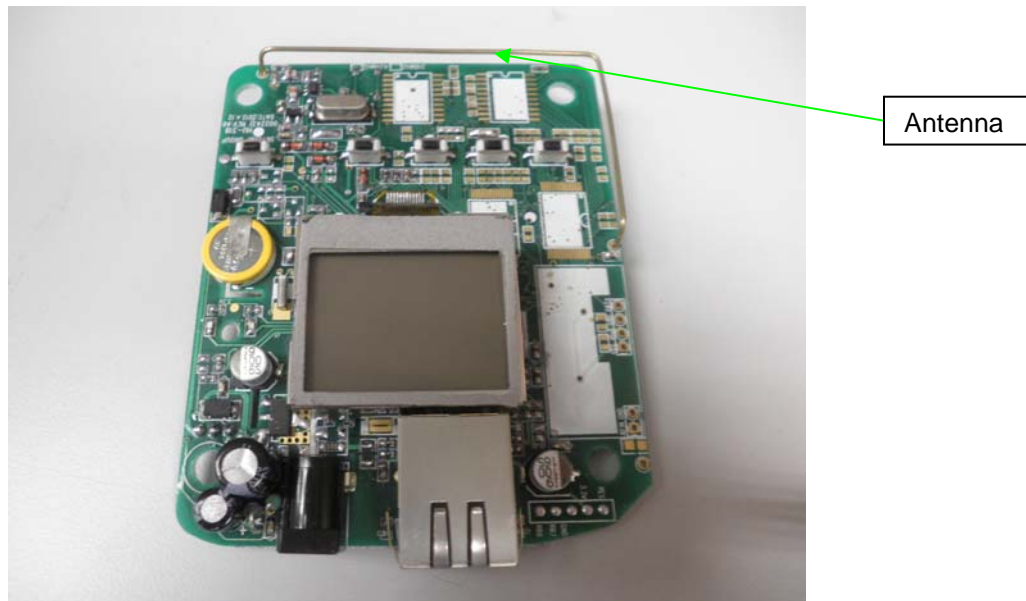


## **5 TEST CONDITIONS AND RESULTS**

### **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:** \_\_\_\_\_

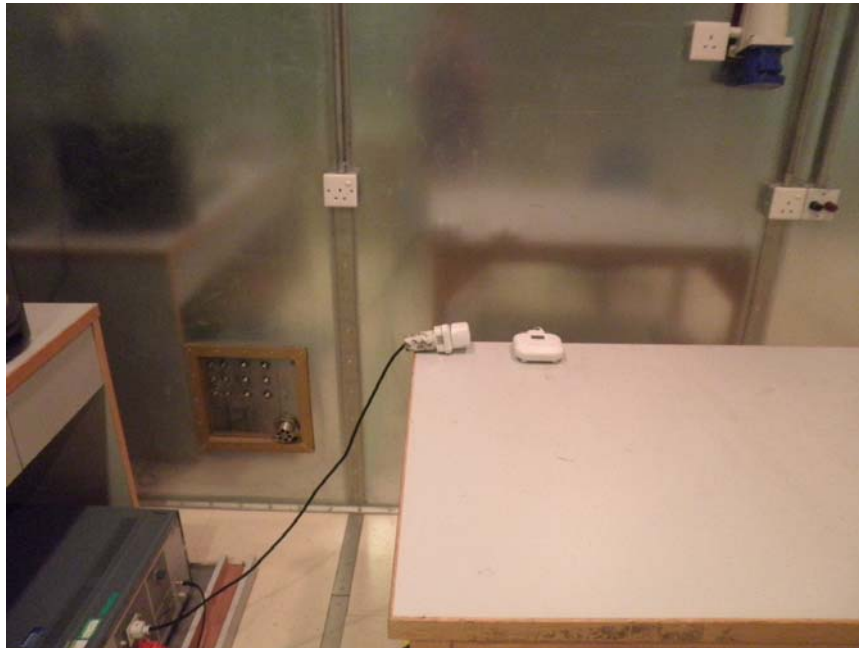
## 5.2 Conducted disturbance

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 the test set-up



### 5.2.3 Test specification:

Environmental conditions: Temperature: 22° C Humidity: 51% Atmospheric pressure: 103kPa

Frequency range: 0.15 MHz – 30 MHz

The test was carried out in the following operation mode(s):  
- Transmitting mode

### 5.2.4 Test result

Min. limit margin -41.7 dB

The requirements are **FULFILLED**

Remarks:

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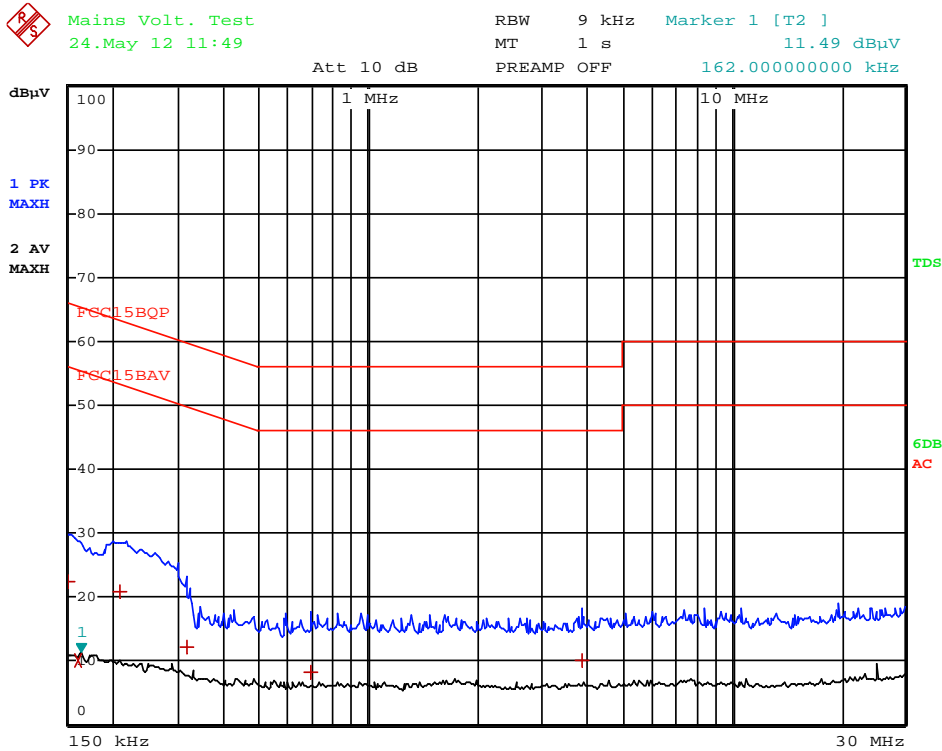
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### 5.2.5 Test protocol

Test point: Neutral  
 Operation mode: Transmitting mode  
 Date: May 24, 2012  
 Tested by: Alan Geng  
 Result: Pass

Start Frequency: 0.15MHz  
 Stop Frequency: 30MHz  
 Step: 4.5KHz  
 IF BW: 10KHz  
 Detector: QP+AV  
 Final M-Time: 1s  
 Transducer: ESH3Z2



Date: 24.MAY.2012 11:49:15

LINE	Frequency [MHz]	Measured QP Value [dBμV]	Limit [dBμV/m]	Margin [dB]
N	0.150	22.5	66.0	-43.5
N	0.210	20.9	63.2	-42.3
N	0.314	12.3	59.8	-47.5
N	0.694	8.4	56.0	-47.6
N	3.870	10.0	56.0	-46.0

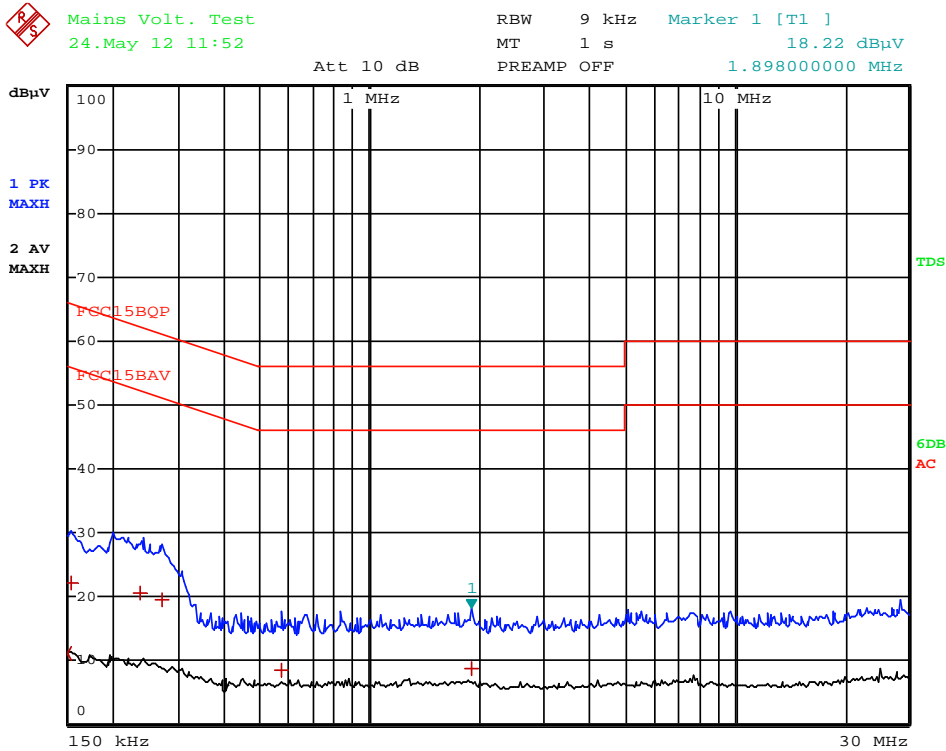
LINE	Frequency [MHz]	Measured AV Value [dBμV]	Limit [dBμV/m]	Margin [dB]
N	0.162	10.1	55.3	-45.2

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Test point: Line 1  
 Operation mode: Transmitting mode  
 Date: May 24, 2012  
 Tested by: Alan Geng

Result: Pass

Start Frequency: 0.15MHz    Stop Frequency: 30MHz    Step: 4.5KHz    IF BW: 10KHz    Detector: QP+AV    Final M-Time: 1s    Transducer: ESH3Z2



Date: 24.MAY.2012 11:52:07

LINE	Frequency [MHz]	Measured QP Value [dBμV]	Limit [dBμV/m]	Margin [dB]
L1	0.154	22.2	65.8	-43.6
L1	0.238	20.5	62.2	-41.7
L1	0.270	19.5	61.2	-41.7
L1	0.574	8.7	56.0	-47.3
L1	1.898	8.7	56.0	-47.3

LINE	Frequency [MHz]	Measured AV Value [dBμV]	Limit [dBμV/m]	Margin [dB]
L1	0.162	10.1	55.3	-45.2

File No. E4064281101AG

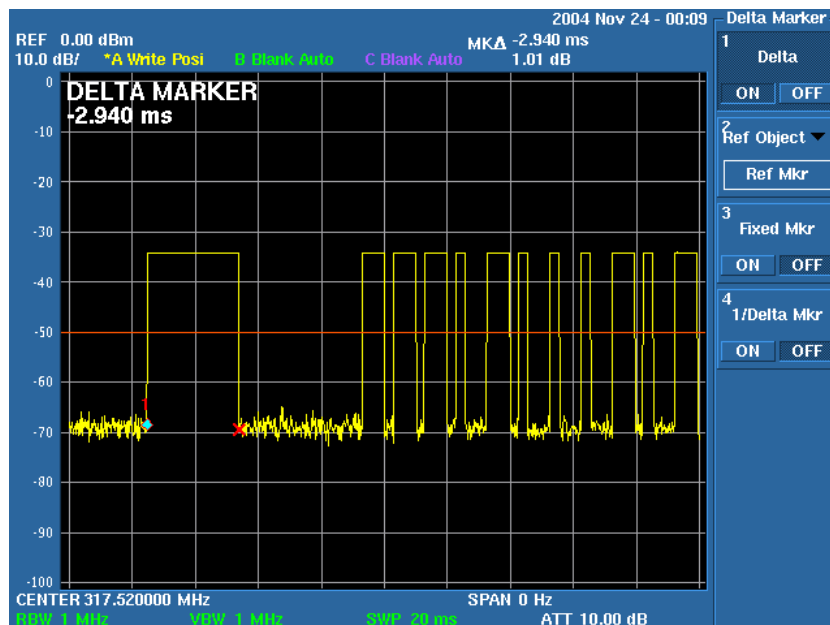
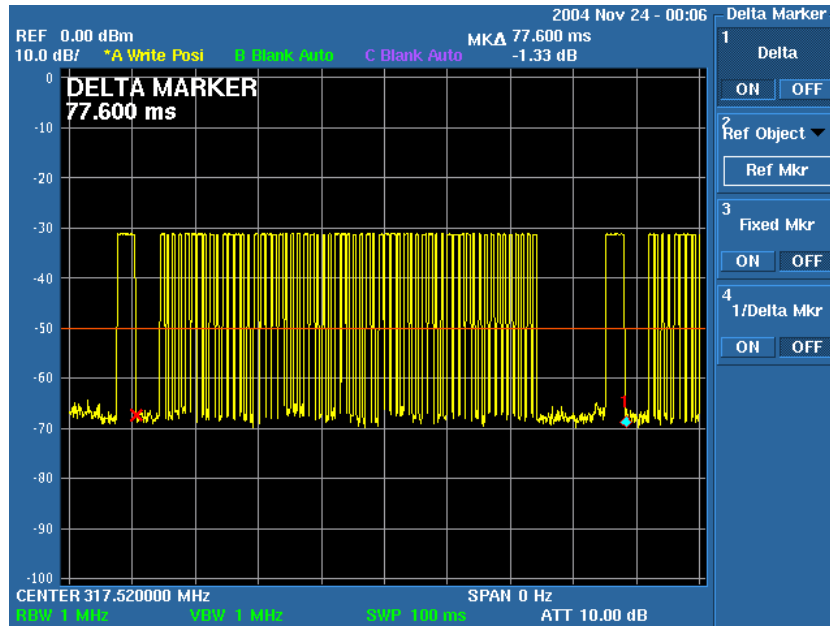
### 5.3 Average Factor

For test instruments and accessories used see section 6.

#### 5.3.1 Description of the test location

Test location: Shield room

#### 5.3.2 Photo documentation of test

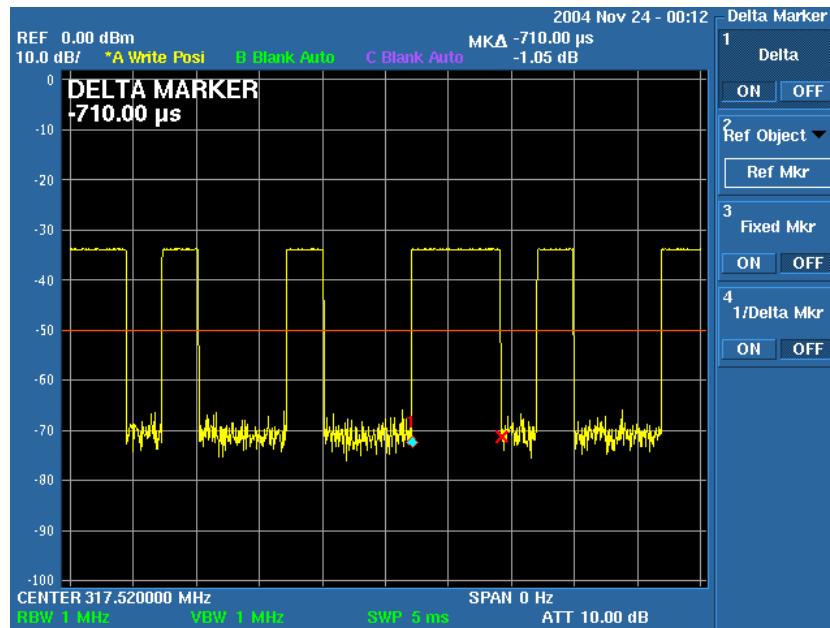
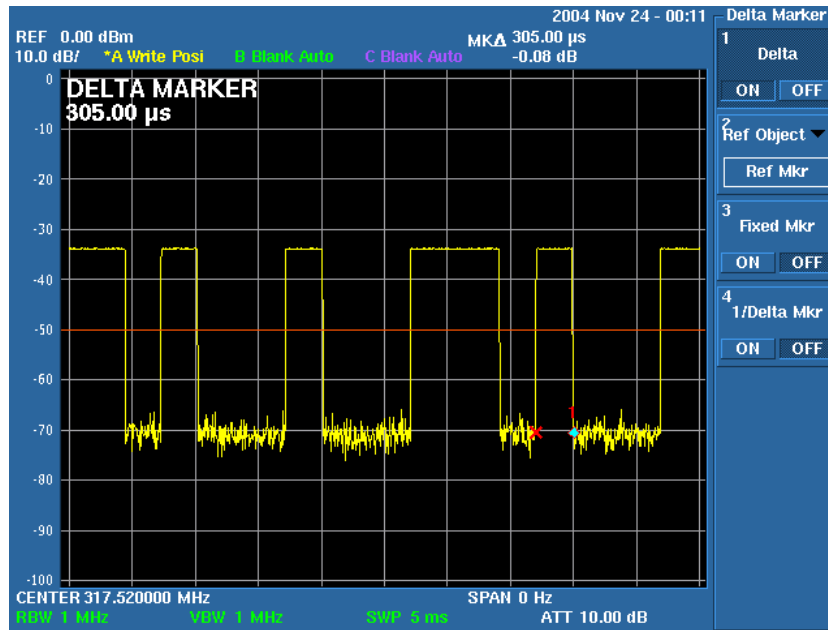


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### 5.3.3 Test result

whole period=77.60ms<100ms
Pulse 1= 0.710ms; Pulse 2=0.305ms; Pulse 3=2.940ms
$T_{on}=(0.710*38+0.305*23+2.940*1)ms=36.935ms$
Average factor= $20 \log(36.935ms/77.60ms)=20 \log(0.505)=-6.5dB$

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

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## 5.4 Radiated Emission

For test instruments and accessories used see section 6.

### 5.4.1 Description of the test location

Test location: Semi-anechoic Chamber

Test distance: 3m

### 5.4.2 Photo documentation of test



### 5.4.3 Test result

Frequency range: 30MHz to 3175MHz

Min. limit margin: -2.1 dB

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.

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#### 5.4.4 Test protocol

Product Description:  
Operation mode:  
Date:  
Tested by:

Network Controller  
Transmitting mode  
May 23, 2012  
Alan Geng

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	3175	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	158.76	29.3	8.1	0.8	38.1	75.8	-37.7
H	158.76	25.4	9.4	0.8	35.5	75.8	-40.3
V	317.52	63.5	14.2	1.1	78.8	95.8	-17.0
H	317.52	67.7	14.0	1.1	80.2	95.8	-15.6
V	635.04	17.6	20.0	1.9	39.4	75.8	-36.4
H	635.04	23.2	20.2	1.9	45.2	75.8	-30.6
V	952.56	18.7	22.7	2.2	43.6	75.8	-32.2
H	952.56	19.9	22.5	2.2	44.6	75.8	-31.2
V	1587.60	4.2	28.5	3.3	36.0	74.0	-38.0
H	1587.60	5.4	27.5	3.3	36.2	74.0	-37.8

Polarization	Frequency (MHz)	Detector	Measured Result (dBuV/m)	Average Factor (dB)	Calculated Average Value (dBuV/m)	AV limit (dBuV/m)	margin (dB)
V	158.76	Peak	38.1	-6.5	31.7	55.8	-24.2
H	158.76	Peak	35.5	-6.5	29.1	55.8	-26.8
V	317.52	Peak	78.8	-6.5	72.4	75.8	-3.5
H	317.52	Peak	80.2	-6.5	73.8	75.8	-2.1
V	635.04	Peak	39.4	-6.5	33.0	55.8	-22.9
H	635.04	Peak	45.2	-6.5	38.8	55.8	-17.1
V	952.56	Peak	43.6	-6.5	37.2	55.8	-18.7
H	952.56	Peak	44.6	-6.5	38.2	55.8	-17.7
V	1587.60	Peak	36.0	-6.5	29.6	54.0	-24.5
H	1587.60	Peak	36.2	-6.5	29.8	54.0	-24.3

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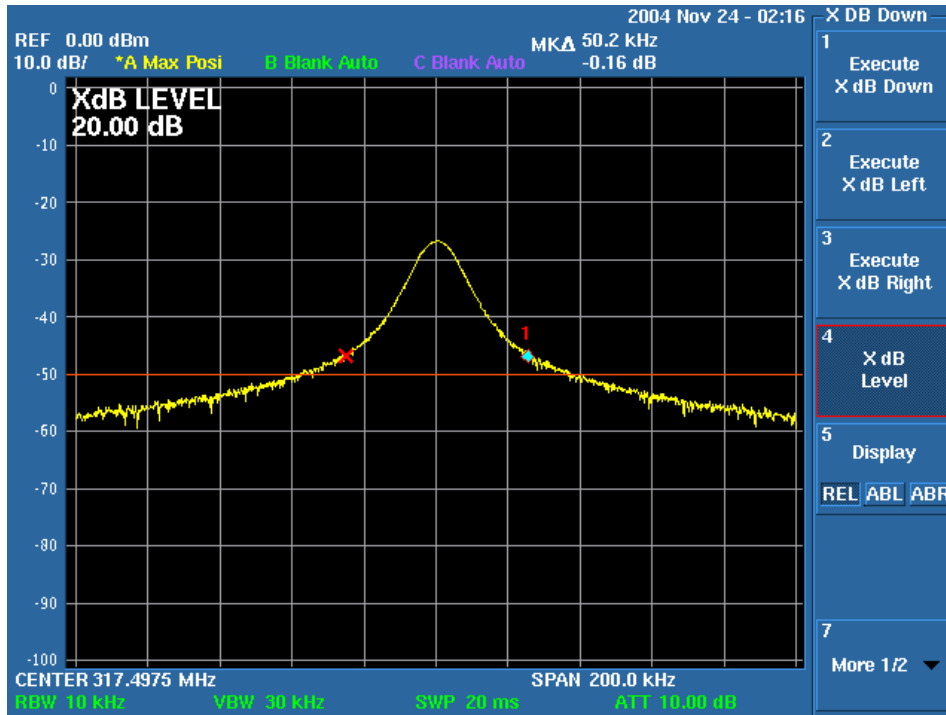
## 5.5 Bandwidth

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

Measured Occupied Bandwidth (kHz)	Limit (kHz)
50.2	795.0

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

Remarks:

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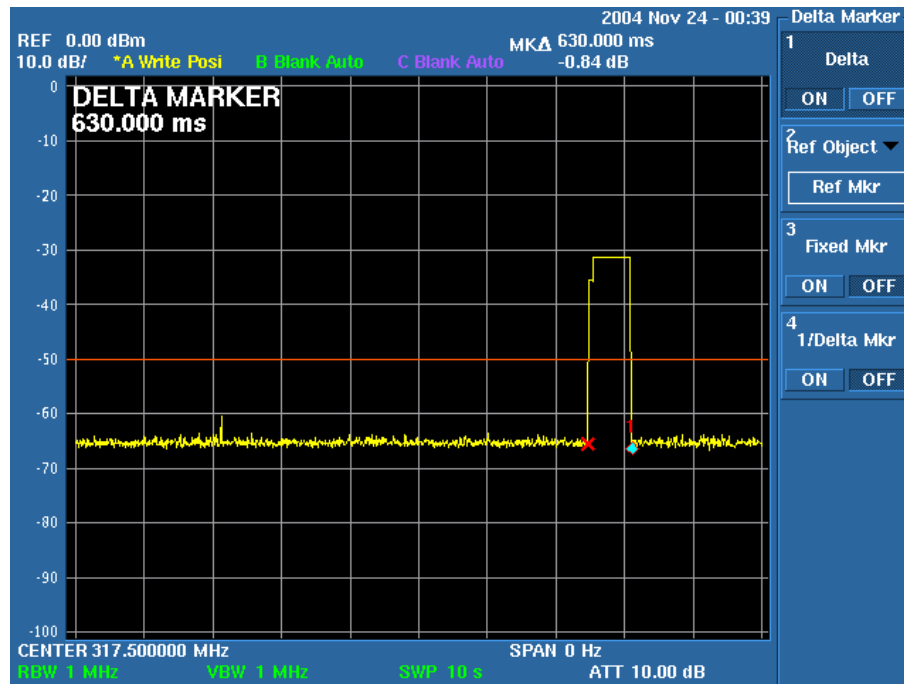
## 5.6 Provision of Momentary operation

For test instruments and accessories used see section 6.

### 5.6.1 Description of the test location

Test location: Shielded Room

### 5.6.2 Photo documentation of the test



### 5.6.3 Test result

The time of stopping transmission after switch releasing (s)	Limit (s)
0.630	5.000

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>Next Cal. Date</b>	<b>Equipment o.</b>
Conducted Emission	ESPI3	Test Receiver	Rohde & Schwarz	Apr 11, 2013	04-02/03-06-002
	ESH2-Z5	LISN	Rohde & Schwarz	Apr 11, 2013	04-02/20-06-001
	C009	Coaxial cable	emitel	N/A	N/A
	C010	Coaxial cable	emitel	N/A	N/A
Radiated Emission	ESPI3	EMI Test Receiver	Rohde & Schwarz	Jun 01, 2013	04-02/03-06-002
	U3772	Spectrum Analyzer	Advantest	Jun 02, 2013	04-02/11-08-001
	3142C	Biconilog Antenna	EMCO	Feb 11,2014	04-02/24-06-001
	3117	Horn Antenna	ETS Lindgren	May 07,2013	04-02/24-07-001
Bandwidth	U3772	Spectrum Analyzer	Advantest	Jun 02, 2013	04-02/11-08-001
Momentary operation	U3772	Spectrum Analyzer	Advantest	Jun 02, 2013	04-02/11-08-001
Average Factor	U3772	Spectrum Analyzer	Advantest	Jun 02, 2013	04-02/11-08-001