

**TEST REPORT CONCERNING THE COMPLIANCE OF A
DIGITAL TRANSMISSION SYSTEM OPERATING IN THE
FREQUENCYRANGE 2408 – 2475 MHZ,
BRAND NEDAP, MODEL Luxon Wireless 245A
WITH 47 CFR PART 15 (10-1-12 Edition) and
RSS-Gen (issue 3, December 2010) and
RSS-210 (Issue 8, December 2010)**

**13041503.fcc01_Rev01
September 16,2013**

FCC listed : 90828
Industry Canada : 2932G-2
R&TTE, LVD, EMC Notified Body : 1856

**TÜV Rheinland EPS
P.O. Box 37
9350 AA Leek (NL)
Eiberkamp 10
9351 VT Leek (NL)**

Telephone: +31 594 505005
Telefax: +31 594 504804

E-mail: info@tuv-eps.com
Web: www.tuv-eps.com

MEASUREMENT/TECHNICAL REPORT

**N.V. Nederlandsche Apparatenfabriek "Nedap"
 Model : Luxon Wireless 245A**

**FCC ID: CGDLW245A
 IC: 1444A-LW245A**

This report concerns:	Original grant,certification / Limited Single Modular Approval Class 2 change Verification	
Equipment type:	Digital Transmission System (DTS)	
Report prepared by:	Name	: Richard van der Meer
	Company name	: TÜV Rheinland EPS
	Address	: Eiberkamp 10
	Postal code/city	: 9351VT Leek
	Mailing address	: P.O. Box 37
	Postal code/city	: 9350AA Leek
	Country	: The Netherlands
	Telephone number	: + 31 594 505 005
	Telefax number	: + 31 594 504 804
	E-mail	: info@tuv-eps.com

The data taken for this test and report herein was done in accordance with 47 CFR Part 15 (10-1-12 Edition), RSS-Gen (issue 3, December 2010) and RSS-210 (Issue 8, December 2010) and the measurement procedures of ANSI C63.10-2009. TÜV Rheinland EPS at Leek, The Netherlands, certifies that the data is accurate and contains a true representation of the emission profile of the Equipment Under Test (EUT) on the date of the test as noted in the test report. I have reviewed the test report and find it to be an accurate description of the test(s) performed and the EUT so tested.

Date: September 16, 2013

Signature:



O. Hoekstra
 Senior Engineer Telecom TÜV Rheinland EPS

Description of test item

Test item : Digital Transmission System operating in the range 2408-2475 MHz
Manufacturer : N.V. Nederlandsche Apparatenfabriek "Nedap"
Brand : Nedap
Model : Luxon Wireless 245A
Serial number : n.a.
Revision : n.a.


Applicant information


Applicant's representative : Mr. J. Hulshof
Company : N.V. Nederlandsche Apparatenfabriek "Nedap"
Address : Parallelweg 2
Postal code : 7141 DC
City : Groenlo
Country : The Netherlands
Telephone number : +31 544 471 162
Telefax number : +31 544 463 475
E-mail : Jacques.Hulshof@Nedap.com

Test(s) performed

Location : Leek
Test(s) started : June 19, 2013
Test(s) completed : June 27, 2013
Purpose of test(s) : Equipment Authorization (Original grant/certification) /
Limited Single Modular Approval

Test specification(s) : 47 CFR Part 15 (10-1-12 Edition) and
RSS-GEN (ISSUE 3, DECEMBER 2010) AND
RSS-210 (ISSUE 8, DECEMBER 2010).

Test engineer(s) : R. van der Meer 

Report written by : R. van der Meer 

Report date : September 16, 2013

**This report shall not be reproduced, except in full, without the written permission of TÜV Rheinland EPS.
The test results relate only to the item(s) tested.**

Table of contents

1	General information.....	5
1.1	Product description.....	5
1.1.1	Introduction.....	5
1.2	Related submittal(s) and/or Grant(s).....	5
1.2.1	General.....	5
1.3	Tested system details.....	5
1.3.1	Description of input and output ports.....	7
1.4	Test results summary.....	8
1.5	Test methodology.....	9
1.6	Test facility.....	9
1.7	Test conditions.....	9
2	System test configuration.....	10
2.1	Justification.....	10
2.2	EUT mode of operation.....	10
2.3	Special accessories.....	10
2.4	Equipment modifications.....	10
2.5	Product Labeling.....	10
2.6	Block diagram of the EUT.....	10
2.7	Schematics of the EUT.....	10
2.8	Part list of the EUT.....	10
3	Radiated emission data.....	11
3.1	Radiated field strength measurements (30 MHz – 1 GHz, E-field).....	12
3.1.1	Radiated field strength measurements (30 MHz- 1 GHz, E-field).....	12
3.2	Radiated field strength measurements (1 - 25 GHz, E-field), Peak values.....	13
3.2.1	Radiated field strength measurements (1 - 25 GHz, E-field), EUT's TX Frequency 2408 MHz.....	13
3.2.2	Radiated field strength measurements (1 - 25 GHz, E-field), EUT's TX Frequency 2450 MHz.....	13
3.2.3	Radiated field strength measurements (1 - 25 GHz, E-field), EUT's TX Frequency 2475 MHz.....	13
4	Conducted emission data.....	15
4.1	AC Power Line Conducted Emission data of the EUT.....	15
4.1.1	Testresults.....	16
5	Emissions at the band edges.....	19
6	Bandwidth of the emission.....	20
7	List of utilized test equipment.....	24

1 General information.

1.1 Product description.

The brand Nedap , model Luxon Wireless 245A (hereafter referred to as EUT), is used in the Luxon Wireless system and is designed to operate in the 2.4 GHz frequency band (2408 MHz to 2475 MHz). Luxon Wireless is a new generation of lighting systems featuring innovative technology that makes it possible to create and control any lighting situation from a distance (wireless).

1.1.1 Introduction.

The content of this report and measurement results have not been changed other than the way of presenting the data.

1.2 Related submittal(s) and/or Grant(s).

1.2.1 General.

This test report supports the Limited Approval (original grant/certification) in equipment authorization files under **FCC ID: CGDLW245A and IC: 1444A-LW245A.**

1.3 Tested system details.

Details and an overview of the system and all of its components, as it has been tested, may be found below.

EUT	:	Digital Transmission System
Manufacturer	:	N.V. Nederlandsche Apparatenfabriek "Nedap"
Brand	:	Nedap
Model	:	Luxon Wireless 245A
Serial number	:	N.a.
Voltage input rating	:	3.3Vdc ±5%
Voltage output rating	:	--
Current input rating	:	not provided
Antenna	:	Internal
Remarks	:	--
Auxiliary equipment (AUX1)	:	Power Supply Adapter
Manufacturer	:	Mean Well
Brand	:	Mean Well
Model	:	GPSU15E-6P1J
Serial number	:	n.a.
Voltage input rating	:	100 – 240Vac 50/60Hz 0.5A
Voltage output rating	:	24Vdc 0.62A, 15W max.
Remark	:	used as a power supply for AUX5
Auxiliary equipment 2 (AUX2)	:	Notebook computer
Brand	:	Hewlett-Packard
Model	:	Compaq nc6400
Serial number	:	HUB713022K
Voltage input rating	:	18.5 - 19 Vdc
Current input rating	:	3.50 A
Remark	:	used for programming the EUT, property applicant

Auxiliary equipment 3 (AUX3)	:	AC Adaptor
Brand	:	Hewlett-Packard
Series	:	PPP012LE
Voltage input rating	:	100 - 240 Vac
Current input rating	:	1.5 A
Voltage output rating	:	19 Vdc
Current output rating	:	4.74 A
Remarks	:	connects to AUX2
Auxiliary equipment 4 (AUX4)	:	USB key
Manufacturer	:	Nedap Light Controls
Brand	:	Nedap
Series	:	Senzafil USB key
Voltage input rating	:	5Vdc
Current input rating	:	--
Voltage output rating	:	--
Current output rating	:	--
Remarks	:	Used to program EUT
FCC ID	:	CGD-SF-USB
IC	:	1444A-SFUSB
Auxiliary equipment 5 (AUX5)	:	Auxiliary box
Brand	:	Nedap Light Controls
Series	:	--
Voltage input rating	:	24 Vdc
Voltage output rating	:	3.3 Vdc
Remarks	:	connects to EUT

The 'PC ControlUnit V2.4.4' software (as installed on AUX2) is used to program the operating frequency of the EUT. AUX2, AUX3 and AUX4 were used only to program the operating frequency and once set these three auxiliary items were removed from the test-setup and the EUT operates on it's own. Once the EUT is set for frequency it can be set to continues transmit by means of a switch. The switch for "Cont. TX" and the switch for "NORM/CONT" are for testing purposes only and are normally not fitted.

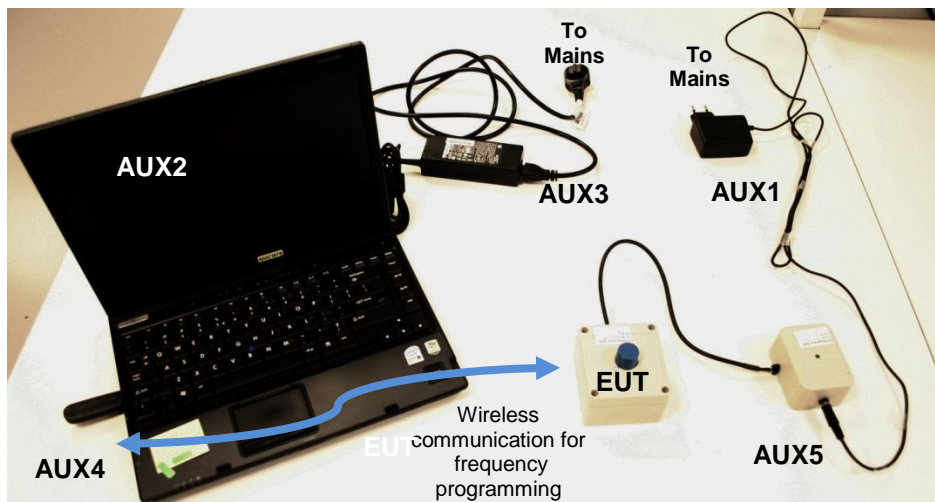


Photo 1: basic setup for frequency programming

1.3.1 Description of input and output ports.

Number	Terminal	From	To	Remarks
1	Mains	Mains	Power supply (AUX1)	--
2	24Vdc	AUX1	AUX5	--
3	3.3Vdc	AUX5	EUT	--

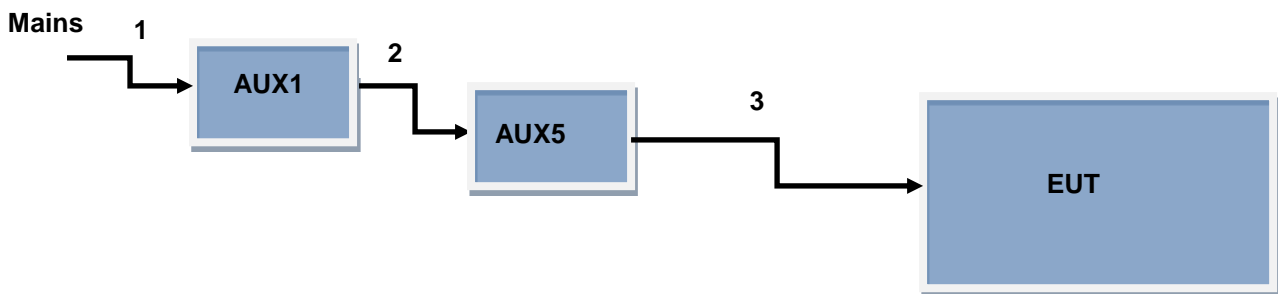


Figure 1. Basic set-up

1.4 Test results summary

The EUT was tested in accordance with the specifications given in the table below.

Test Standard		Description	Page	Pass / Fail
47 CFR Part 15 (10-1-12 Edition)	RSS-210 Issue 8, December 2010			
15.207(a)	RSS-Gen(7.2.4)	Conducted emissions	15 - 18	Pass
15.205, 15.209 and 15.249(a) and (e)	RSS-Gen(4.9, 7.2.2 and 7.2.5) and RSS-210(2.5)	Radiated emissions	11 - 14	Pass
15.249(d)	RSS-210 section A2.9	Band Edge emissions	19	Pass
15.215(c)	RSS-Gen(4.6.1)	Occupied bandwidth	20 - 23	Pass

Table : testspecifications

Testmethods: ANSI C63.10-2009 and RSS-Gen Issue 3, December 2010

1.5 Test methodology.

The test methodology used is based on the requirements of 47 CFR Part 15 (10-1-12 Edition), sections 15.31, 15.205, 15.207, 15.209 and 15.249, RSS-GEN (ISSUE 3, DECEMBER 2010) RSS-210 (ISSUE 8, DECEMBER 2010).

The test methods, which have been used, are based on ANSI C63.10- 2009.

Radiated emission tests above 30 MHz were performed at a measurement distance of 3 meters.
Radiated emission tests below 30 MHz were performed at a measurement distance of 3 meters.

The receivers are switching automatically to the right bandwidth in accordance with CISPR 16. This is implemented in the receiver. The antenna factors are programmed in the test receiver. The receiver automatically calculates the appropriate correction factor for the utilized antenna and also the appropriate antenna factor for the cable loss. The total correction is automatically added to the measured value.

1.6 Test facility.

The Federal Communications Commission and Industry Canada has reviewed the technical characteristics of the test facilities at TÜV Rheinland EPS, located in Leek, 9351VT Eiberkamp 10, The Netherlands, and has found these test facilities to be in compliance with the requirements of 47 CFR Part 15, section 2.948.

The description of the test facilities has been filed at the Office of the Federal Communications Commission under registration number 90828. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

The description of the test facilities has been filed to Industry Canada under registration number 2932G-2. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

1.7 Test conditions.

Normal test conditions:

Temperature (*)	: +15°C to +35°C
Relative humidity(*)	: 20 % to 75 %
Supply voltage	: 120VAC/60Hz to the AC/DC Power Supply
Air pressure	: 950 – 1050 hPa

When it was impracticable to carry out the tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests are stated separately.

2 System test configuration.

2.1 Justification.

The system was configured for testing in a typical fashion (as a customer would normally use it).

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C63.10- 2009.

2.2 EUT mode of operation.

The EUT has been tested in continues transmit mode with a modulated carrier.. The output power was set for maximum output by the applicant. The intentional radiator tests have been performed with a complete functioning EUT and interconnections.

2.3 Special accessories.

No special accessories are used and/or needed to achieve compliance.

2.4 Equipment modifications.

No modifications have been made to the equipment in order to achieve compliance.

2.5 Product Labeling

The product labeling information is available in the technical documentation package.

2.6 Block diagram of the EUT.

The block diagram is available in the technical documentation package.

2.7 Schematics of the EUT.

The schematics are available in the technical documentation package.

2.8 Part list of the EUT.

The part list is available in the technical documentation package.

3 Radiated emission data.

RESULT: PASS

Date of testing: 2013-06-21
Frequency range: 30MHz - 25GHz

Requirements:

FCC 15.205, FCC 15.209, FCC 15.249 and IC RSS-Gen(4.9, 7.2.2 and 7.2.5) and RSS-210(2.5)

Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a), must comply with the radiated emission limits specified in FCC 15.209(a).

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

Test procedure:

ANSI C63.10-2009.

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Before final measurements of radiated emissions were performed, the EUT was scanned to determine its emission spectrum profile. The physical arrangement of the test system, the associated cabling and the EUT orientation (X, Y, Z) were varied in order to ensure that maximum emission amplitudes were attained.

The spectrum was examined from 30MHz to the 10th harmonic of the highest fundamental transmitter frequency (25GHz). Final radiated emission measurements were made at 3m distance.

At each frequency where a spurious emission was found, the EUT was rotated 360° and the antenna was raised and lowered from 1 to 4m in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations.

The highest emission amplitudes relative to the appropriate limit were recorded in this report. Field strength values of radiated emissions at frequencies not listed in the tables are more than 20 dB below the applicable limit.

3.1 Radiated field strength measurements (30 MHz – 1 GHz, E-field)

3.1.1 Radiated field strength measurements (30 MHz- 1 GHz, E-field)

Freq. [MHz]	Antenna Orientation	Level QP [dB μ V/m]	Limit [dB μ V/m]	Result Pass/Fail
47.79	Vertical	32.6	40.0	Pass
701.24	Vertical	30.8	46.0	Pass
734.22	Vertical	31.4	46.0	Pass
774.96	Vertical	32.1	46.0	Pass
838.98	Vertical	33.3	46.0	Pass
883.60	Vertical	34.1	46.0	Pass

Table 1 Radiated emissions of the EUT in the frequency range 30 MHz – 1 GHz.

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15 section 15.209, 15.249 and RSS-210 section A2.9 and RSS-Gen section 7.2.5 with the EUT operating in continues transmit mode (Cont. TX) are depicted in Table 1.

Notes:

- Field strength values of radiated emissions at frequencies not listed in the table above are more than 20 dB below the applicable limit.
- Measurement uncertainty is ± 5.0 dB
- The reported field strength values are the worst case values at the indicated frequency. The EUT was varied in three positions, the antenna was varied in horizontal and vertical orientations and also in height (between 1m and 4m).
- The EUT was tested in on the lowest frequency (2408 MHz), a middle frequency (2450 MHz) and the highest frequency (2475 MHz) in the 2408 – 2475 MHz band wherein it operates.
- A Quasi-peak detector was used with a resolution bandwidth of 120 kHz, except for frequencies above 960 MHz where an average detector was used.

Used test equipment and ancillaries:

99608	99699	99847	99861	99858	99580/99847	99609		

3.2 Radiated field strength measurements (1 - 25 GHz, E-field), Peak values

3.2.1 Radiated field strength measurements (1 - 25 GHz, E-field), EUT's TX Frequency 2408 MHz

Freq. [MHz]	Antenna Orientation	Detector	Resolution Bandwidth (kHz)	Level [dB μ V/m]	Limit [dB μ V/m]	Result
2408 (fundamental)	Horizontal	Peak	1000	92.6	114.0	Pass
1202.0	Horizontal	Peak	1000	41.5	74.0	Pass
1431.0	Horizontal	Peak	1000	41.2	74.0	Pass
2365.0	Horizontal	Peak	1000	44.9	74.0	Pass
4825.6	Vertical	Peak	1000	59.3	74.0	Pass
4825.6 ⁵	Vertical	Average	1000	38.7	54.0	Pass
7925.0	Horizontal	Peak	1000	45.7	74.0	Pass

Table 2

3.2.2 Radiated field strength measurements (1 - 25 GHz, E-field), EUT's TX Frequency 2450 MHz

Freq. [MHz]	Antenna Orientation	Detector	Resolution Bandwidth (kHz)	Level [dB μ V/m]	Limit [dB μ V/m]	Result
2450 (fundamental)	Horizontal	Peak	1000	96.6	114.0	Pass
2450 (fundamental)	Horizontal	Average	1000	88.3	94.0	Pass
1234	Horizontal	Peak	1000	38.8	74.0	Pass
1849	Vertical	Peak	1000	39.7	74.0	Pass
2365	Vertical	Peak	1000	45.2	74.0	Pass
2513	Horizontal	Peak	1000	51.2	74.0	Pass
4899	Vertical	Peak	1000	58.8	74.0	Pass
4899 ⁵	Vertical	Average	1000	40.2	54.0	Pass

Table 3

3.2.3 Radiated field strength measurements (1 - 25 GHz, E-field), EUT's TX Frequency 2475 MHz

Freq. [MHz]	Antenna Orientation	Detector	Resolution Bandwidth (kHz)	Level [dB μ V/m]	Limit [dB μ V/m]	Result
2475 (fundamental)	Horizontal	Peak	1000	96.8	114.0	Pass
2475 (fundamental)	Horizontal	Average	1000	88.5	94.0	Pass
2376	Horizontal	Peak	1000	44.9	74.0	Pass
2548	Horizontal	Peak	1000	52.4	74.0	Pass
4960	Vertical	Peak	1000	58.4	74.0	Pass
4960 ⁵	Vertical	Average	1000	39.8	54.0	Pass
12316	Vertical	Peak	1000	46.7	74.0	Pass
14481	Horizontal	Peak	1000	47.1	74.0	Pass

Table 4

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15 section 15.209 and 15.249 and RSS-210 section A2.9 and RSS-Gen section 7.2.5 with the EUT operating in continues transmit mode (Cont. TX) are depicted in Tables 2,3 and 4.

Notes:

1. Field strength values of radiated emissions at frequencies not listed in the table above are more than 20 dB below the applicable limit.
2. Measurement uncertainty is ± 5.0 dB
3. The reported field strength values are the worst case values at the indicated frequency. The EUT was varied in three positions, the antenna was varied in horizontal and vertical orientations and also in height (between 1m and 4m).
4. The EUT was tested in on the lowest frequency (2408 MHz), a middle frequency (2450 MHz) and the highest frequency (2475 MHz) in the 2408 – 2475 MHz band wherein it operates.
5. Most Peak values were within Average limits, therefor not retested with Average detector, except where Peak value exceeds Average limit.

Used test equipment and ancillaries:

99608	99699	99847	99861	99858	99580/99847	99609		

4 Conducted emission data.

4.1 AC Power Line Conducted Emission data of the EUT

RESULT: Pass

Date of testing: 2013-06-27

Requirements:

Except when the requirements applicable to a given device state otherwise, for any license-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in the following table. The tighter limit applies at the frequency range boundaries.

Frequency of Emission (MHz)	Conducted Limit (dB μ V) Quasi-Peak	Conducted Limit (dB μ V) Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 - 30	46	50

*Decreases with the logarithm of the frequency.

4.1.1 Testresults

Frequency (MHz)	Measurement results (dB μ V) Neutral/L2		Measurement results (dB μ V) Line 1		Limits (dB μ V)		Result
	QP	AV ^(note 4)	QP	AV ^(note 4)	QP	AV	
0.158	48.7	--	48.6	--	56.0	46.0	PASS
0.181	30.0	--	44.1	--	60.0	50.0	PASS
0.247	30.0	--	38.0	--	60.0	50.0	PASS
1.360	31.4	--	31.8	--	60.0	50.0	PASS
3.950	32.5	--	32.0	--	60.0	50.0	PASS
23.810	33.2	--	35.5	--	60.0	50.0	PASS

Table 5

The results of the conducted emission tests, carried out in accordance with 47 CFR Part 15 section 15.207(a) and RSS-Gen section 7.2.4, at the 120 Volts/ 60 Hz AC mains connection terminals of AUX1 which connects to the EUT, are depicted in Table 5 above. The system is tested as in whole, so with all equipment as shown in Figure 1 in place and functioning. Being the worst case situation. See plots on pages 17 and 18.

Notes:

1. Measurement uncertainty is ± 3.5 dB
2. The resolution bandwidth used was 9 kHz
3. The EUT was tested in on the lowest frequency (2408 MHz), a middle frequency (2450 MHz) and the highest frequency (2475 MHz) of the frequencyband (2408 – 2475 MHz) wherein it operates.
4. Values of conducted emissions at frequencies not listed in Table 7 are more than 20 dB below the applicable limit.
5. Qp values are already within Av limits, therefor not retested on Av.

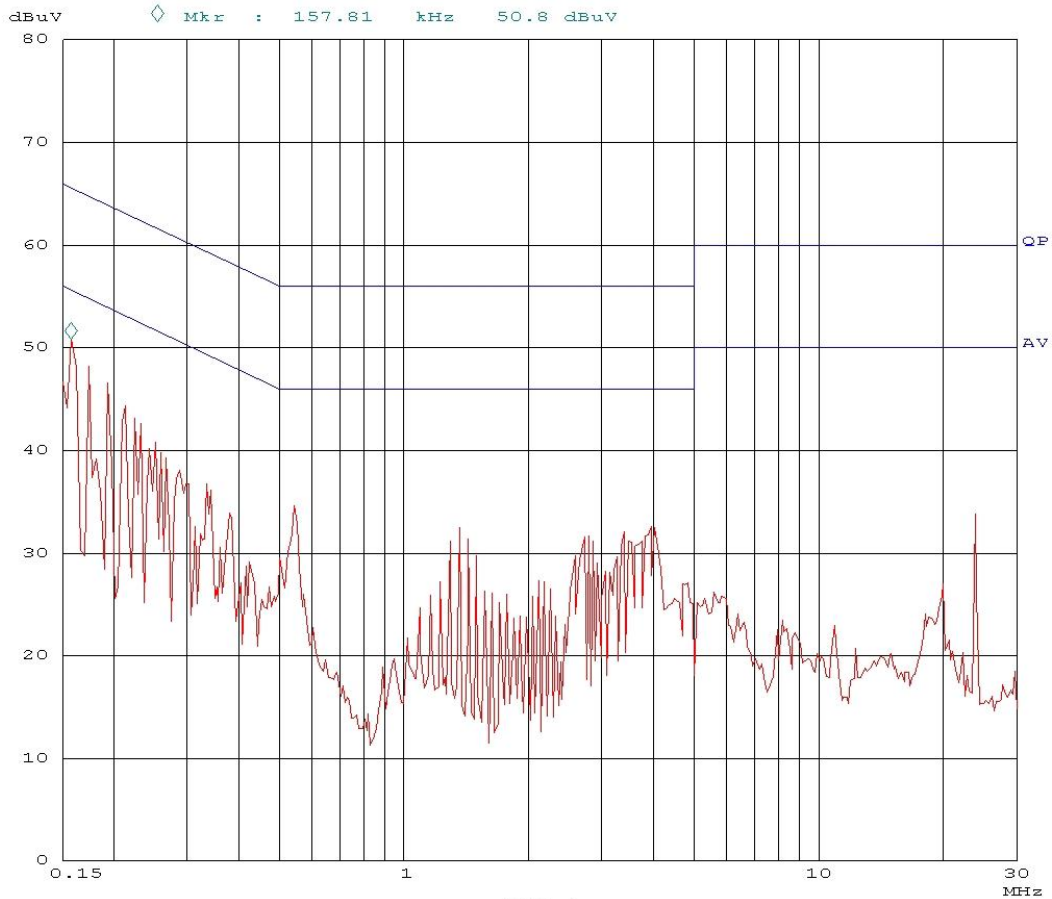
Used test equipment and ancillaries:

13313	99161	12512	15667	99852	99855	99848

27. Jun 13 08:38

```

Overview Scan Settings (1 Range)
|----- Frequencies -----| |----- Receiver Settings -----|
  Start      Stop      Step      IF BW  Detector  M-Time  Atten  Preamp
  150k       30M       3.9k     9k     PK        0.05ms  0dB LN OFF
  
```

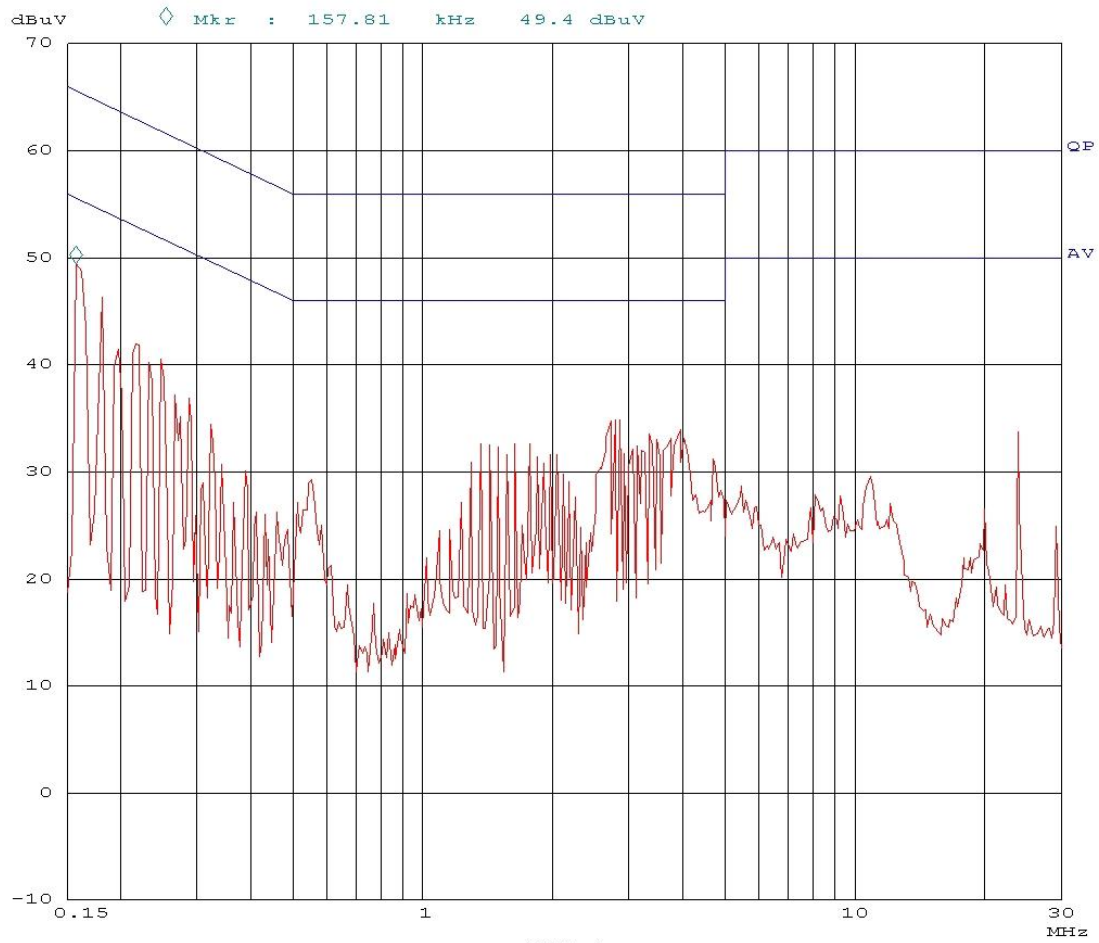


Plot 1 Conducted emissions on L1

27. Jun 13 08:47

```

Overview Scan Settings (1 Range)
|----- Frequencies -----|----- Receiver Settings -----|
  Start      Stop      Step      IF BW  Detector  M-Time  Atten  Preamp
  150k       30M       3.9k     9k     PK       0.05ms  0dB    OFF
  
```



Plot 2 Conducted emissions on L2

5 Emissions at the band edges

RESULT: Pass

Date of testing: 2013-06-27

The tables below show compliance with the 47 CFR Part 15 section 15.249(d) and RSS-210 section A2.9, this section requires the emissions at the 2400 and 2483.5 MHz band edges to be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in section 15.209 and RSS-Gen section 7.2.5, whichever is the lower attenuation.

Table 6 and Table 7 below show the levels at the band edges in respect to the general radiated emission limits.

EUT Frequency [MHz]	Band Edge Frequency [MHz]	Antenna Orientation	Level Pk [dB μ V/m]	Limit Pk [dB μ V/m]	Result Pass/Fail
2408	2399.98	Vertical	66.6	74	Pass
2475	2483.68	Vertical	65.3	74	Pass

Table 6 level of the band edge emissions, Peak values

EUT Frequency [MHz]	Band Edge Frequency [MHz]	Antenna Orientation	Level Av [dB μ V/m]	Limit Av [dB μ V/m]	Result Pass/Fail
2408	2399.86	Vertical	53.8	54	Pass
2475	2483.64	Vertical	50.7	54	Pass

Table 7 level of the band edge emissions, Average values

Notes:

1. Measurement uncertainty is ± 5.0 dB
2. The reported field strength values are the worst case values at the indicated frequency. The EUT was varied in three positions, the antenna was varied in horizontal and vertical orientations and also in height (between 1m and 4m).
3. The EUT was tested in on the lowest frequency (2408 MHz) and the highest frequency (2475 MHz) in the 2408 – 2475 MHz band wherein it operates.

Used test equipment and ancillaries:

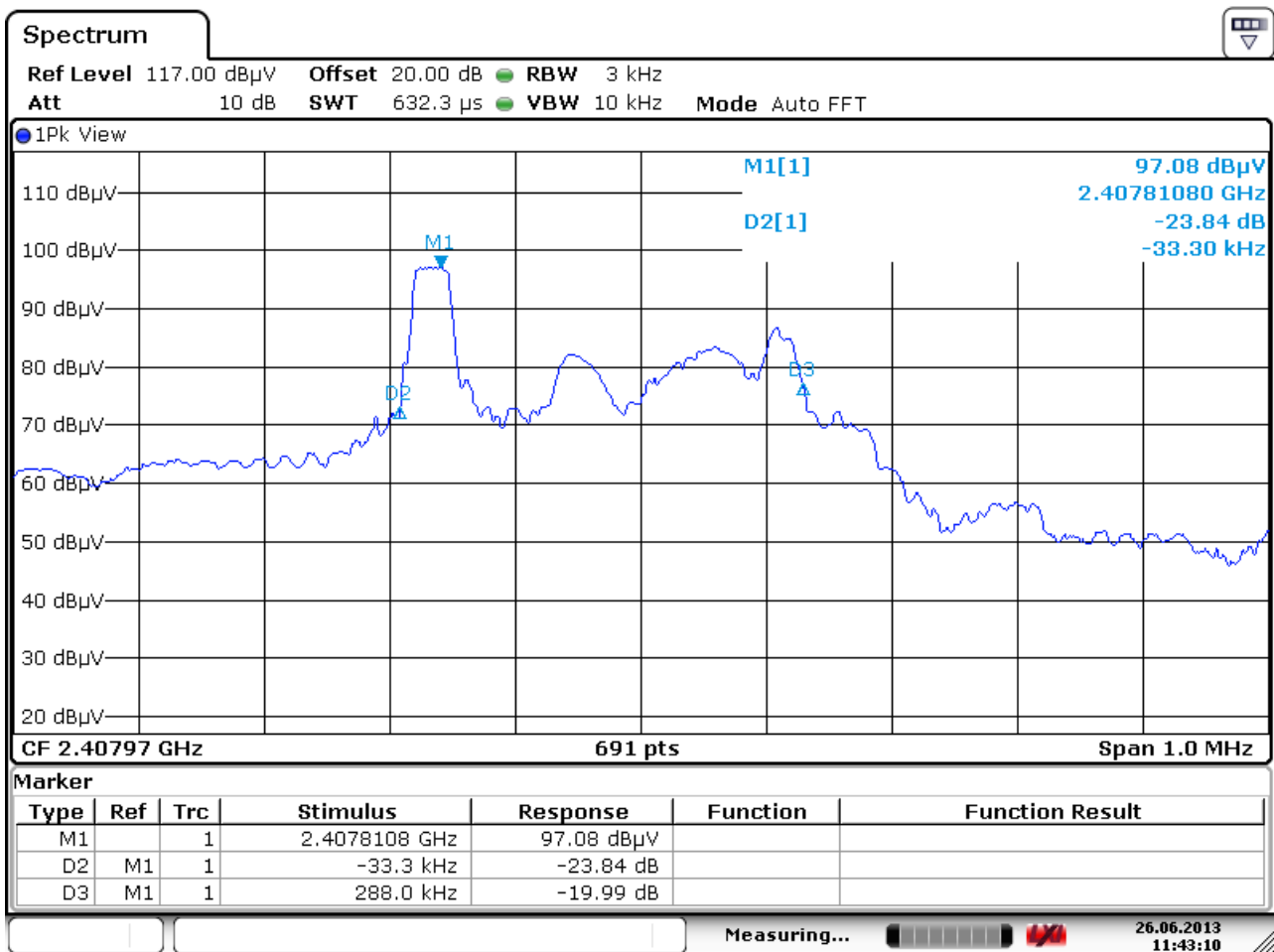
99608	99699	99847	99861	99858	99580/99847	99609		
-------	-------	-------	-------	-------	-------------	-------	--	--

6 Bandwidth of the emission

RESULT: PASS

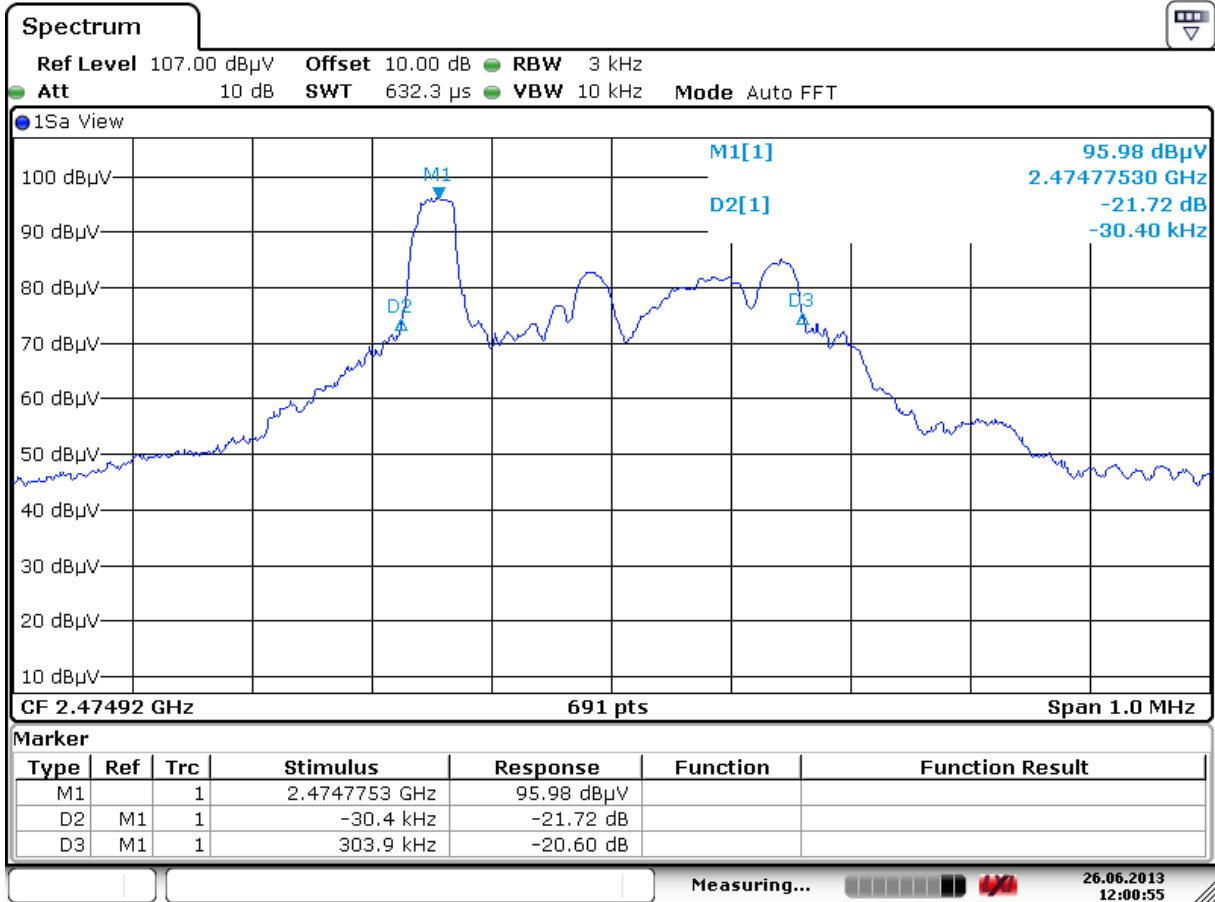
Date of testing: 2013-03-20

The plots below show compliance with the 47 CFR Part 15 section 15.215(c), this section requires the 20 dB emission bandwidth is within the frequencyband designated in section 15.249.



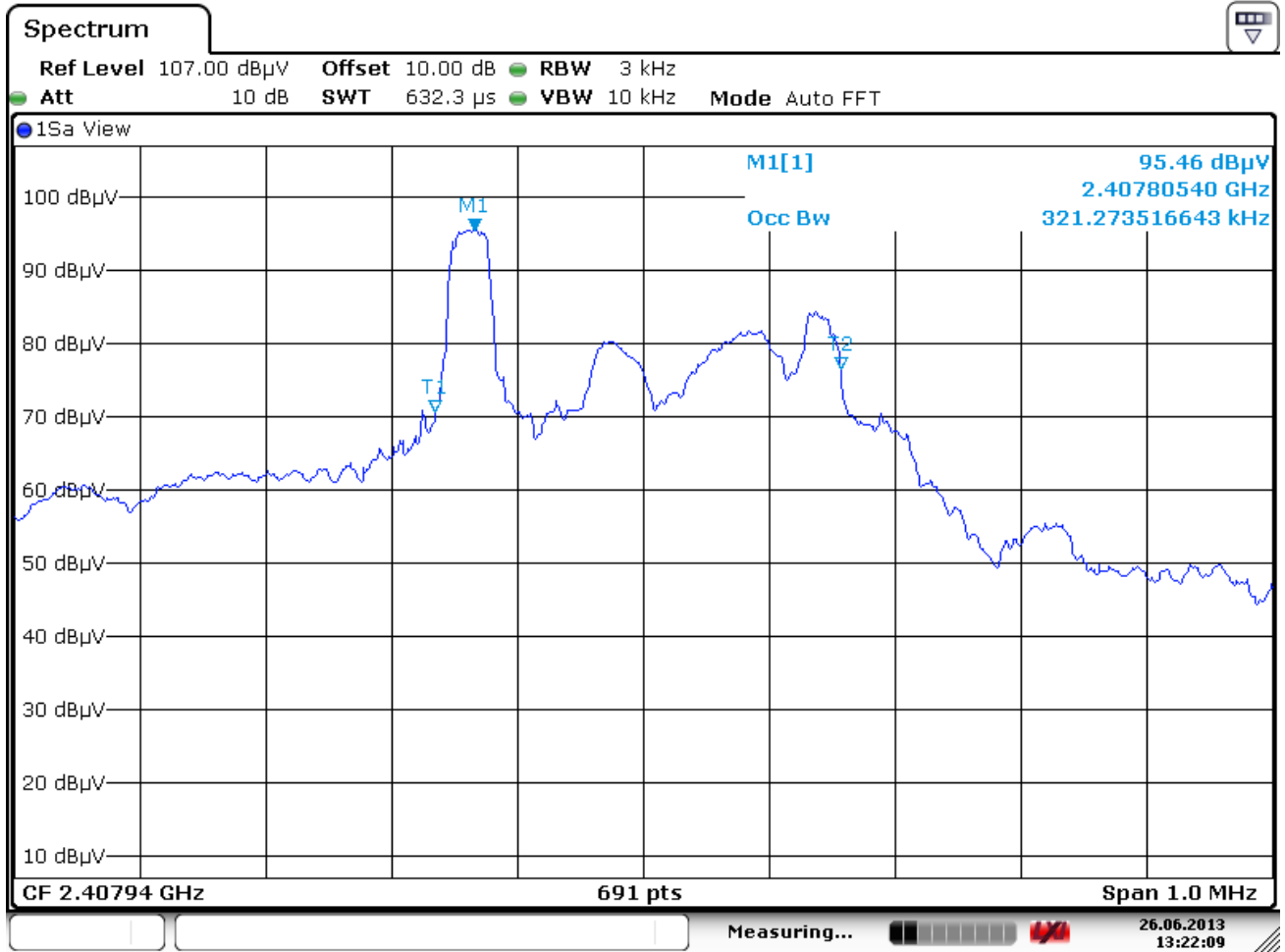
Date: 26.JUN.2013 11:43:10

Plot lowest channel - 2408 MHz, Occupied bandwidth is 321.3 kHz as measured on a spectrum analyzer.



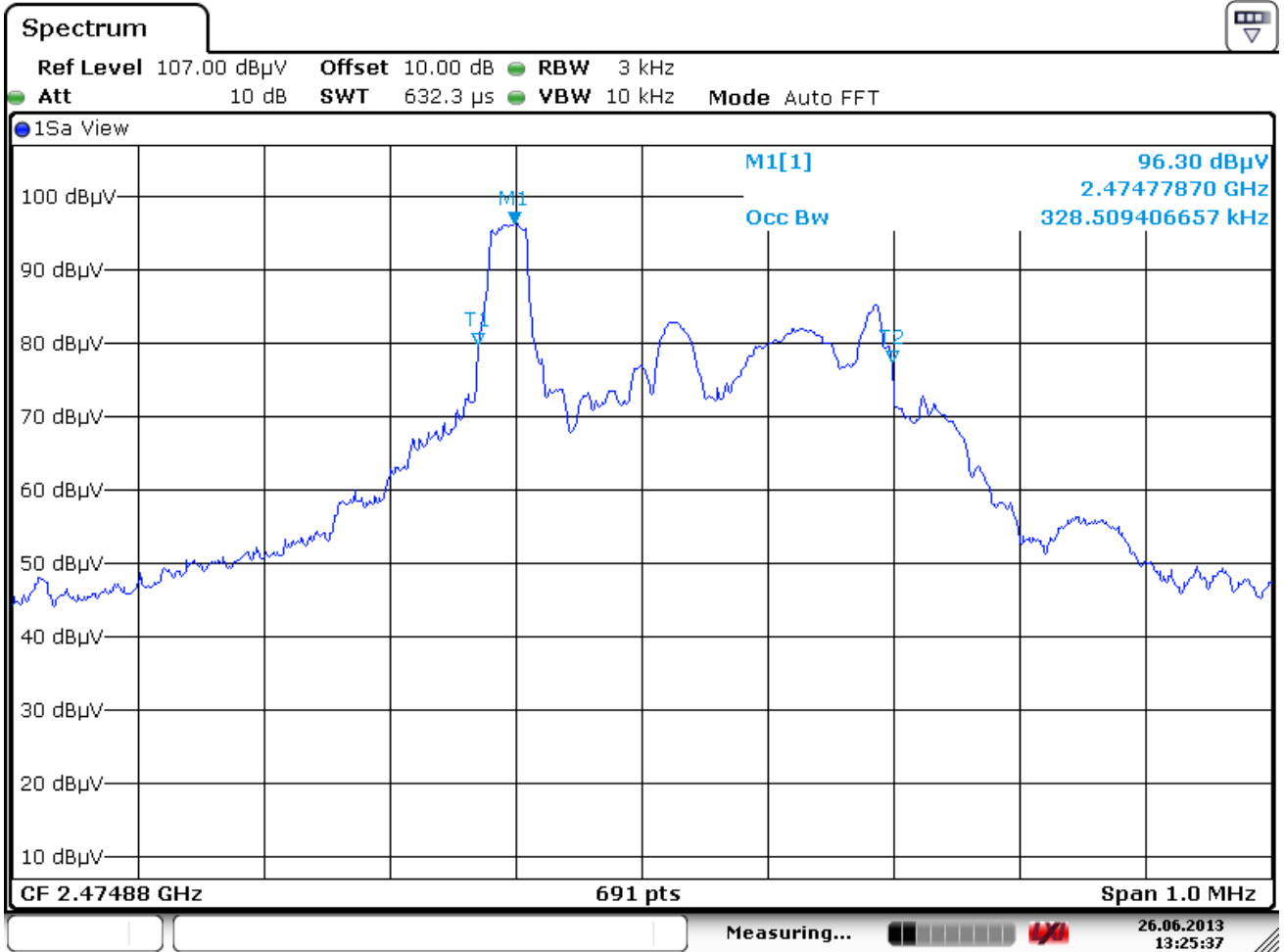
Date: 26.JUN.2013 12:00:55

Plot highest channel - 2475 MHz, Occupied bandwidth is 334.3 kHz as measured on a spectrum analyzer.



Date: 26.JUN.2013 13:22:10

Plot lowest channel - 2408 MHz, 99% bandwidth is 321.3 kHz as measured on a spectrum analyzer.



Date: 26.JUN.2013 13:25:37

Plot highest channel - 2475 MHz, 99% bandwidth is 328.5 kHz as measured on a spectrum analyzer.

7 List of utilized test equipment.

Inventory number	Description	Brand	Model	Last cal.	Next cal.
12512	LISN	EMCO	3625/2	01/2012	01/2014
13313	Pulse limiter	R&S	ESH3-Z2	01/2013	01/2014
15667	Measuring receiver	R&S	ESCS30	10/2012	10/2013
99877	Biconilog Test antenna	Teseq	CBL 6111B	06/11-2013	06/11-2014
99161	Variac 250V 6A	RFT	LTS006	NA	NA
99538	Spectrum Analyzer	R&S	FSP	12/2012	12/2013
99580/ 99847	Semi Anechoic Room	Siepel	FCC listed: 90828 IC: 2932G-2	12-2011	12-2014
99608	Antenna mast controller	EMCS	DOC202	NA	NA
99609	Antenna mast	EMCS	AP-4702C	NA	NA
99848	Shielded room for Conducted emissions	Euroshield	RFD-100 359	NA	NA
99847/ 99852/ 99855	Temperature- Humiditymeter	Extech	SD500	02-2013	02-2014
99858	RF Cable S-AR	Gigalink	APG0500	01/2013	01/2014
99861	Controller turntable	Maturo	SCU/088/8090811	NA	NA
99699	Measuring receiver	R&S	ESCI	03-2013	03-2014

NA= Not Applicable