TEST REPORT CONCERNING THE COMPLIANCE OF A Low Power Communication Device Transmitter (DXX) OPERATING IN THE FREQUENCYRANGE 2402 – 2480 MHz, BRAND Tacx, MODEL T2800 Neo WITH 47 CFR PART 15 (10-1-14 Edition) and RSS-Gen (Issue 4, November 2014) and RSS-210 (Issue 8, December 2010)

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August 13, 2015

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

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MEASUREMENT/TECHNICAL REPORT

Brand: Tacx
Model: T2800 Neo

FCC ID: 2AAMI-T2800
IC: 11353A-T2800

This report concerns:	Original grant,certification / ~~Limited Single Modular Approval~~ ~~Class 2 change Verification~~
Equipment type:	Low Power Communication Device Transmitter (DXX)

Report prepared by:		
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The data taken for this test and report herein was done in accordance with 47 CFR Part 15 (10-1-14 Edition), RSS-Gen (Issue 4, November 2014) and RSS-210 (Issue 8, December 2010) and the measurement procedures of ANSI C63.10-2013. TÜV Rheinland Nederland B.V. 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: August 13, 2015

Signature:

Pieter de Beer
Technical Manager
TÜV Rheinland Nederland B.V.

Description of test item

EUT	:	Low Power Communication Device Transmitter (DXX)
Manufacturer	:	Tacx b.v.
Brand	:	Tacx
Model(s)	:	T2800 Neo
Serial Number	:	P140103-1500001 (PCB serial nr. -conducted tests) and an unlabeled engineering sample (radiated tests)
Voltage input rating	:	48 Vdc
Voltage output rating	:	--
Current input rating	:	--
Antenna	:	Internal, integrated on the PCB
Antenna Gain	:	+ 3.3 dBi
Operating frequency	:	2402 MHz-2480 MHz.
Modulation	:	GFSK
Remarks	:	n.a.

Applicant information

Applicant's representative	:	Martin Smits
Company	:	Tacx b.v.
Address	:	Rijksstraatweg 52
Postal code	:	2241BW,
City	:	Wassenaar
Country	:	Netherlands
Telephone number	:	+31705119259
Telefax number	:	+31705116411

Test(s) performed

Location	:	Leek
Test(s) started	:	July 15, 2015
Test(s) completed	:	July 23, 2015
Purpose of test(s)	:	Equipment Authorization (Original grant/certification)
Test specification(s)	:	47 CFR Part 15, Subpart C, Section 15.249 (10-1-14 Edition) and RSS-GEN (ISSUE 4, NOVEMBER 2014) AND RSS-210 (ISSUE 8, DECEMBER 2010).
Test engineer(s)	:	R. van der Meer 
Report written by	:	R. van der Meer 
Report date	:	August 13, 2015

Table of contents

1 General information.

1.1 Product description.

The brand Tacx, Model T2800 Neo, hereafter referred to as EUT, is a Low Power Communication Device Transmitter (DXX), BlueTooth Low Energy used in an Interactive Smart Trainer with Electric Motor Brake for bicycles to transmit performance data to PC, Tablet or smartphone. The EUT is factory configured for the 2402-2480 MHz band. The EUT also contains a Digital Transmission System (DTS) operating in the frequencyband 2403-2480 MHz, based on ANT technology, although the two transmitters never transmit at the same time. The DTS transmitter is covered in a separate report.

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 original grant/certification in equipment authorization files under:
FCC ID: 2AAMI-T2800 and IC: 11353A-T2800.

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	:	Low Power Communication Device Transmitter (DXX)
Manufacturer	:	Tacx b.v.
Brand	:	Tacx
Model(s)	:	T2800 Neo
Serial Number	:	(conducted tests) and (radiated tests)
Voltage input rating	:	48 Vdc
Voltage output rating	:	--
Current input rating	:	--
Antenna	:	Internal, integrated on the PCB
Antenna Gain	:	+ 3.3 dBi
Operating frequency	:	2402 MHz-2480 MHz.
Modulation	:	GFSK
Spreading technique	:	Digital modulation
Remarks	:	n.a.

Auxiliary equipment 1 (AUX1)	:	Notebook computer
Brand	:	Hewlett-Packard
Model	:	Compaq 6710b
Serial number	:	CNU8150MD3
Remark	:	used for programming the EUT, property applicant

Auxiliary equipment 2 (AUX2)	:	Programming interface
Brand	:	Segger
Model	:	J-Link Lite CortexM
Serial number	:	--
Remarks	:	used for programming the EUT, property applicant

Auxiliary (AUX 4)	:	Mechanical Jig
Manufacturer	:	Tacx
Brand	:	Tacx
Models	:	n.a.
Serial number	:	n.a.
Voltage input rating	:	3x400Vac
Remark	:	Used to drive the EUT

The testsoftware (as installed on AUX1) is used to program the operating frequency of the EUT. AUX2 were used only to program the operating frequency and once set the auxiliary items were removed from the test-setup and the EUT operates on it's own.

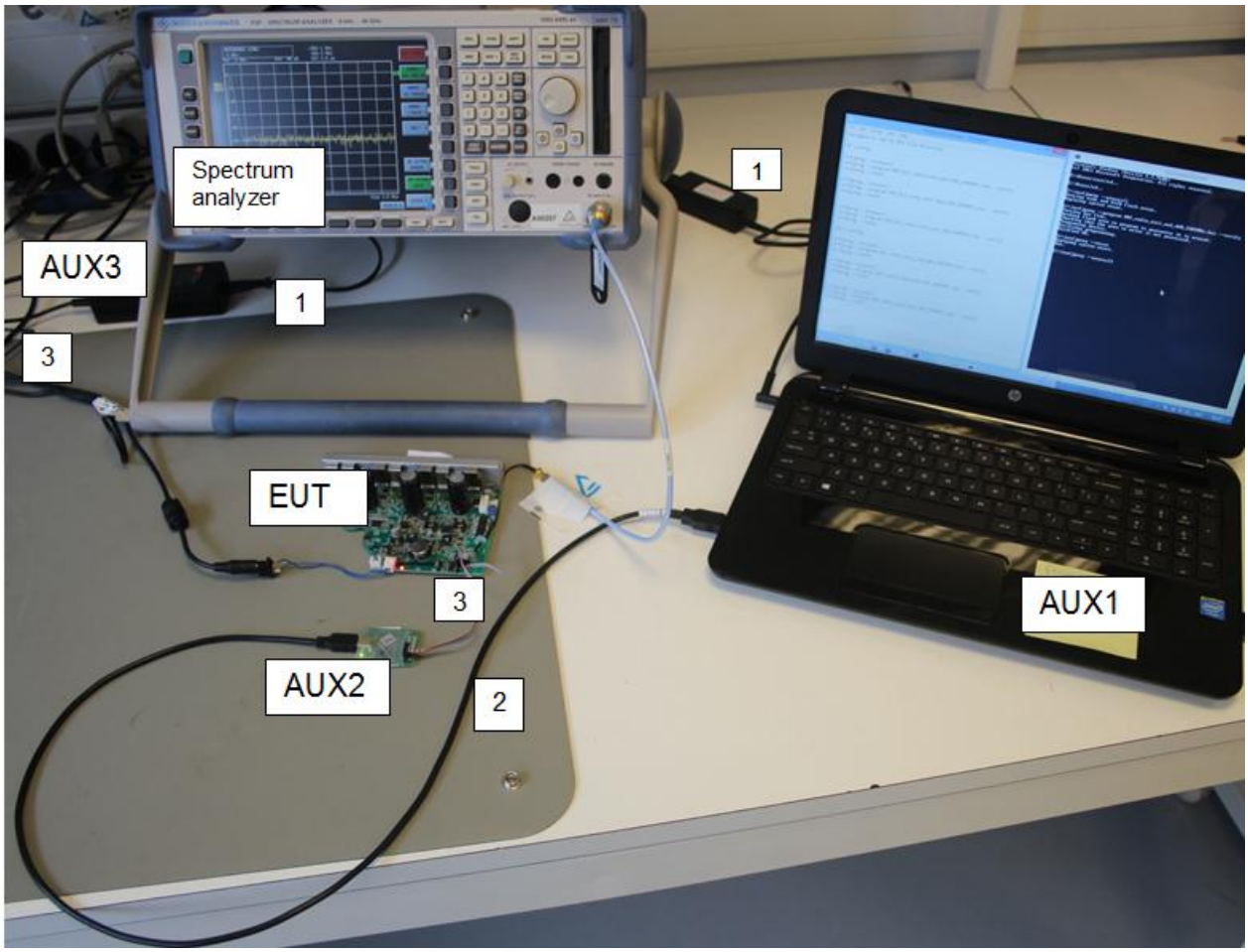


Photo 1: basic setup for frequency programming

1.3.1 Description of input and output ports.

No input and output connections ports on the EUT during testing, but for programming the following connections were used.

Number	Terminal	From	To	Remarks	
1	Mains	Mains	(AUX1)	--	
2	Usb	AUX1	AUX2	--	
3	datacom	AUX2	EUT	--	
4	DC Power	AUX3	EUT	12Vdc	

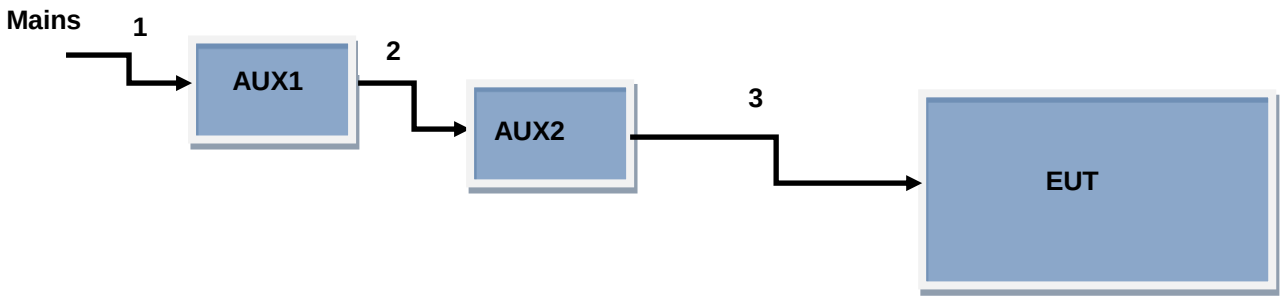


Figure 1. Basic set-up for programming

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 (10-1-14 Edition)	**RSS-210 Issue 8, December 2010**			
15.207(a)	RSS-Gen(8.8)	AC Power Line Conducted Emissions	16 - 16	Not Applicable
15.205 and 15.209	RSS-Gen(8.9, 8.10) and RSS-210(2.5)	Radiated Emissions	11 - 15	Pass
15.249(d)	RSS-210 section A2.9	Band Edge Emissions	17 - 19	Pass
15.215(c)	RSS-Gen(6.6)	Occupied Bandwidth	20 - 25	Pass

Table : testspecifications

Testmethods: ANSI C63.10-2013 and RSS-Gen Issue 4, November 2014

1.5 Test methodology.

The test methodology used is based on the requirements of 47 CFR Part 15 (10-1-14 Edition), sections 15.31, 15.205,15.207, 15.209 and 15.249, RSS-GEN (ISSUE 4, NOVEMBER 2014) RSS-210 (ISSUE 8, DECEMBER 2010).

The test methods, which have been used, are based on ANSI C63.10-2013.

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 Nederland B.V. , 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 : 48 Vdc through a 100 -240Vac Power Supply Adapter (AUX1)

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.

As load, a system with a driving control and motor was applied to drive the wheel. The performance could be monitored on a smartphone.
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 C63.10-2013.

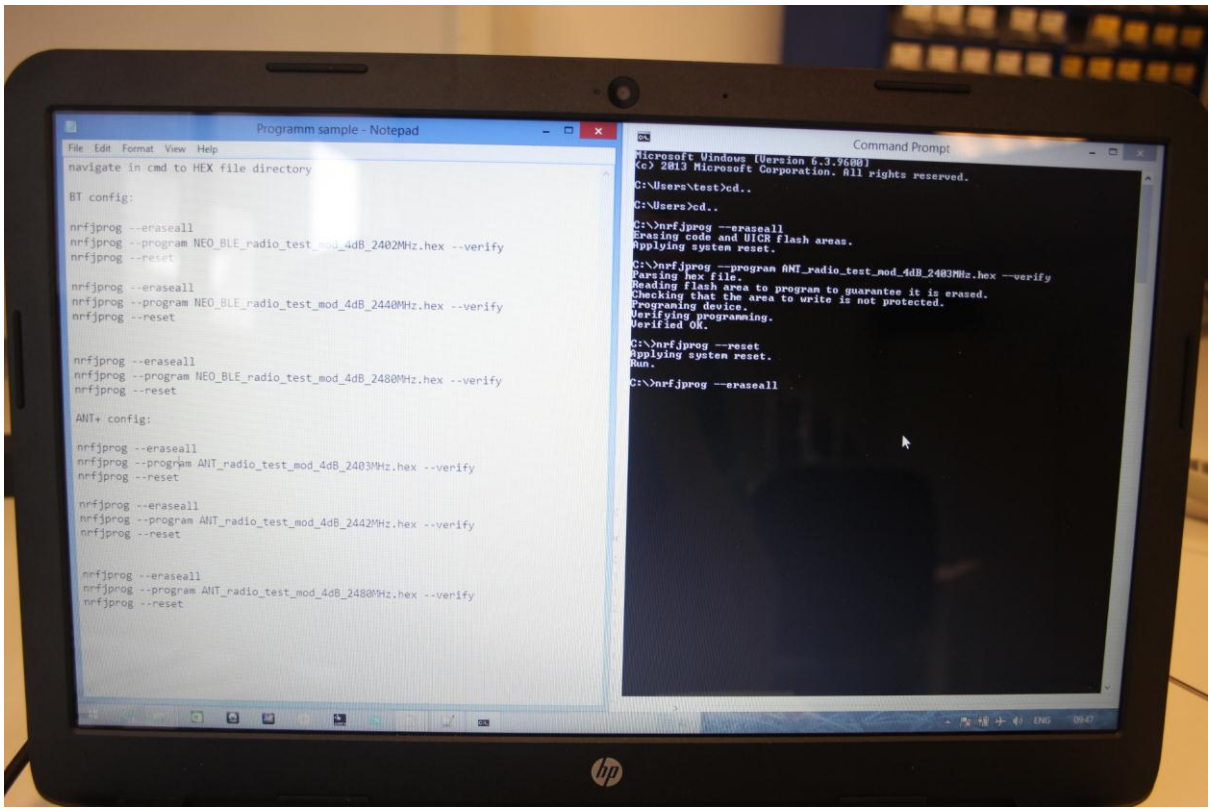
2.2 EUT mode of operation.

The EUT has been tested in continues transmit mode with a modulated carrier. The intentional radiator tests have been performed with a complete functioning EUT.

A continuous transmit mode could be initiated by using test software as supplied by the applicant. The test software was used to define various different operational modes of the EUT for the purpose of compliance testing. The version of the test software, as supplied by the applicant and used during all tests is:

Test software : nRFTools v 7.5.1

Batch files programmed by the applicant are used to make the required settings.
This software was running on a laptop computer (AUX1).



Photograph of the software (and settings) as used on AUX1

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: 2015-07-23

Frequency range: 30MHz - 25GHz

Requirements:

FCC 15.205, FCC 15.209, FCC 15.249 and IC RSS-Gen(8.9, 8.10) 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).

Radiated emissions which fall outside the operation frequency band and outside restricted bands shall either meet the limit specified in FCC 15.209(a)/ RSS-Gen (8.8) or be attenuated at least 20dB below the power level in the 100kHz bandwidth within the band that contains the highest level of the desired power (the less severe limit applies).

Test procedure:

ANSI C63.10-2013.

The EUT is considered as **floor-standing equipment** not typically installed with its base in direct electrical contact with, or connected to, a metal floor or grid. The EUT was placed on the floor with insulation material in-between of 4mm thickness to prevent electric contact.

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. The levels are expressed in dBm which are derived from dBm = E(dBµV/m) – 95.2dB. Where Peak (Pk) values where at least 6 dB under the Average (Av) limits, Av value was not tested. Were Average values were tested, Average values were measured using a 10Hz Video Bandwidth.

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)

Frequency [MHz]	Antenna Orientation	Level QP [dBµV/m]	Limit QP [dBµV/m]	Result Pass/Fail
50.000	Horizontal	22.0	40.0	Pass
204.00	Vertical	24.0	40.0	Pass
381.14	Horizontal	30.4	43.5	Pass
608.12	Horizontal	36.1	43.5	Pass
887.68	Vertical	43.0	46.0	Pass
965.08 (noise)	Vertical	43.0	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 8.9 with the EUT operating in continues transmit mode are depicted in Table 1.

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. The 6 highest values are noted
2. Measurement uncertainty is ±5.0dB
3. The reported field strength values are the worst case values at the indicated frequency. The EUT was varied in 2 positions (horizontal and vertical) because of it's physical limitations, the antenna was varied in horizontal and vertical orientations and also in height (between 1m and 4m).
4. Preliminary measurements indicated that the radiated emissions from EUT were not affected by the EUT's operating mode or frequency.
5. A Quasi-peak detector was used with a resolution bandwidth of 120 kHz.

Used test equipment and ancillaries:

A00314	A00447	A00450	A00257	A00235	A00258	A00444	A00466	

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 2402 MHz

Frequency [MHz]	Antenna Orientation	Detector	Resolution Bandwidth (kHz)	Level Pk [dBm]	Limit [dBm]	Result
2402 (fundamental)	Horizontal	Peak	1000	-6.83	-1.2 Av +18.9 Pk	Pass
1081.4*R	Horizontal	Peak	1000	-64.1	-41.2 Av -21.2 Pk	Pass
1441.8*R	Horizontal	Peak	1000	-60.5	-41.2 Av -21.2 Pk	Pass
2316.6*R	Horizontal			-46.4		
4804H-R	Horizontal	Peak	1000	-55.8	-21.2 Pk	Pass
7200H	Vertical	Peak	1000	-57.3	-41.2 Av -21.2 Pk	Pass
9376*R	Horizontal	Peak	1000	-52.5	-41.2 Av -21.2 Pk	Pass
11473*R	Vertical	Peak	1000	-50.0	-41.2 Av -21.2 Pk	Pass

Table 2

3.2.2 Radiated field strength measurements (1 - 25 GHz, E-field), EUT's TX Frequency 2440 MHz

Frequency [MHz]	Antenna Orientation	Detector	Resolution Bandwidth (kHz)	Level [dBm]	Limit [dBm]	Result
2440 (fundamental)	Horizontal	Peak	1000	-6.35	-1.2 Av +18.9 Pk	Pass
1081.4*R	Vertical	Peak	1000	-65.4	-41.2 Av -21.2 Pk	Pass
1320.2*R	Horizontal	Peak	1000	-66.3	-41.2 Av -21.2 Pk	Pass
1561.1*R	Horizontal			-65.3		
4882H-R	Vertical	Peak	1000	-57.4	-21.2 Pk	Pass
7318H-R	Vertical	Peak	1000	-58.0	-41.2 Av -21.2 Pk	Pass

Table 3

3.2.3 Radiated field strength measurements (1 - 25 GHz, E-field), EUT's TX Frequency 2480 MHz

Frequency [MHz]	Antenna Orientation	Detector	Resolution Bandwidth (kHz)	Level [dBm]	Limit [dBm]	Result
2480 (fundamental)	Horizontal	Peak	1000	-6.62	-1.2 Av +18.9 Pk	Pass
1079.2*R	Horizontal	Peak	1000	-65.6	-41.2 Av -21.2 Pk	Pass
1441.8*R	Horizontal	Peak	1000	-63.5	-41.2 Av -21.2 Pk	Pass
1611.1*R	Horizontal	Peak	1000	-58.9	-41.2 Av -21.2 Pk	Pass
4960H-R	Vertical	Peak	1000	-58.9	-21.2 Pk	Pass
7435H-R	Vertical	Peak	1000	-58.3	-41.2 Av -21.2 Pk	Pass

Table 4

3.2.4 Radiated field strength measurements (1 - 25 GHz, E-field), EUT normal operation

Frequency [MHz]	Antenna Orientation	Detector	Resolution Bandwidth (kHz)	Level [dBm]	Limit [dBm]	Result
4880*H*R	Horizontal	Peak	1000	-58.5	-41.2 Av -21.2 Pk	Pass
4921*H*R	Vertical	Peak	1000	-57.7	-41.2 Av -21.2 Pk	Pass
4960*H*R	Vertical	Peak	1000	-58.0	-41.2 Av -21.2 Pk	Pass
7435*R	Horizontal	Peak	1000	-58.5	-41.2 Av -21.2 Pk	Pass

Table 5

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 8.9 with the EUT operating in continues transmit mode are depicted in Tables 2 through 5.

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 ±5.0dB
3. The reported field strength values are the worst case values at the indicated frequency. The EUT was varied in 2 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 (2402 MHz), a middle frequency (2440 MHz) and the highest frequency (2480 MHz) in the 2402 – 2480 MHz band wherein it operates and the normal operation with both transmitters (ANT and BLE) active, although they never transmit simultaneously.
5. Peak values were within Average limits, therefor not retested with Average detector,
6. $*^{H}$ indicates a harmonic frequency, $*^{R}$ indicates a frequency in the restricted band and $*^{H*R}$ indicates a harmonic frequency in a restricted band.

Used test equipment and ancillaries:

A00450	A00235	A00337	A00258	A00444	A00009	A00012	A00255	A00247
A00151	A00131	A00065						

4 AC Powerline Conducted Emission Data.

4.1 AC Power Line Conducted Emission data of the EUT

RESULT: Pass

Date of testing: 2015-08-13

Requirements: for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency of Emission (MHz)	Conducted Limit (dBµV) Quasi-Peak	Conducted Limit (dBµV) 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.

Test procedure:

ANSI C63.10-2013.

Each phase and neutral of the AC power line were measured with respect to ground. Measurements were performed using a 50 µH / 50 Ω LISN. The frequency range from 150kHz to 30MHz was searched. The six highest EUT emissions relative to the limit were noted. The EUT is considered a floor-standing device. The EUT is placed on a non-conductive plate of 5mm thick above the ground plane, so to isolate it from the ground plane because the EUT normally does not make electrical contact with a ground plane. The EUT was positioned at least 80cm from the LISN. The power cable was routed over the non-conductive plate to the LISN.

4.1.1 AC Power Line Conducted Emissions

Frequency (MHz)	Measurement results (dBµV) L1		Measurement results (dBµV) L2/Neutral		Limits (dBµV)		Verdict (Pass/Fail)
	QP	AV	QP	AV	QP	AV	
0.15000	43.8	30.0	42.0	30.0	66.0	56.0	Pass
0.21000	40.0	30.0	41.1	34.2	63.2	53.2	Pass
0.35000	46.3	38.5	45.3	34.4	59.0	49.0	Pass
0.78500	39.4	30.3	33.6	28.9	56.0	46.0	Pass
1.03000	36.4	31.0	35.1	30.3	56.0	46.0	Pass
2.80500	30.0	25.0	33.6	28.8	56.0	46.0	Pass
9.86000	36.2	31.8	38.8	34.1	60.0	50.0	Pass

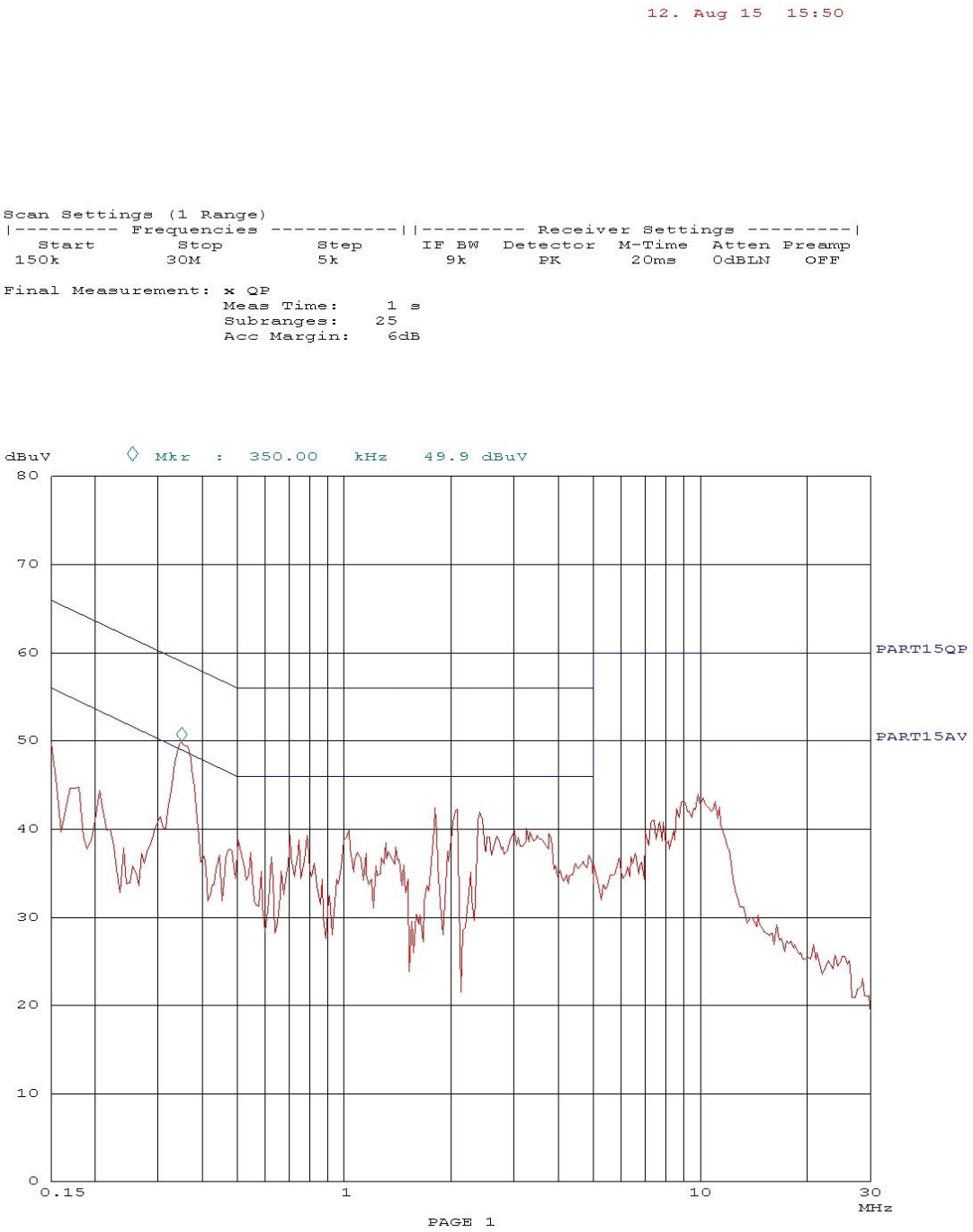
Table 6 AC Power Line Conducted Emissions results

The results of the conducted emission tests, carried out in accordance with 47 CFR Part 15 section 15.207(a) and RS-Gen section 8.8, at the 120 Volts/ 60 Hz AC mains connection terminals of the AUX1 that connects to the EUT, are depicted in the table above.

Notes:

1. The resolution bandwidth used was 9 kHz.
2. From pre-test the worst case configuration proved to be the normal operation mode wherein both DTS transmitter and Bluetooth were operational. Worst case values noted.
3. Plots are provided on the next pages.

4.1.2 Plots of the AC Power Line Conducted Emissions



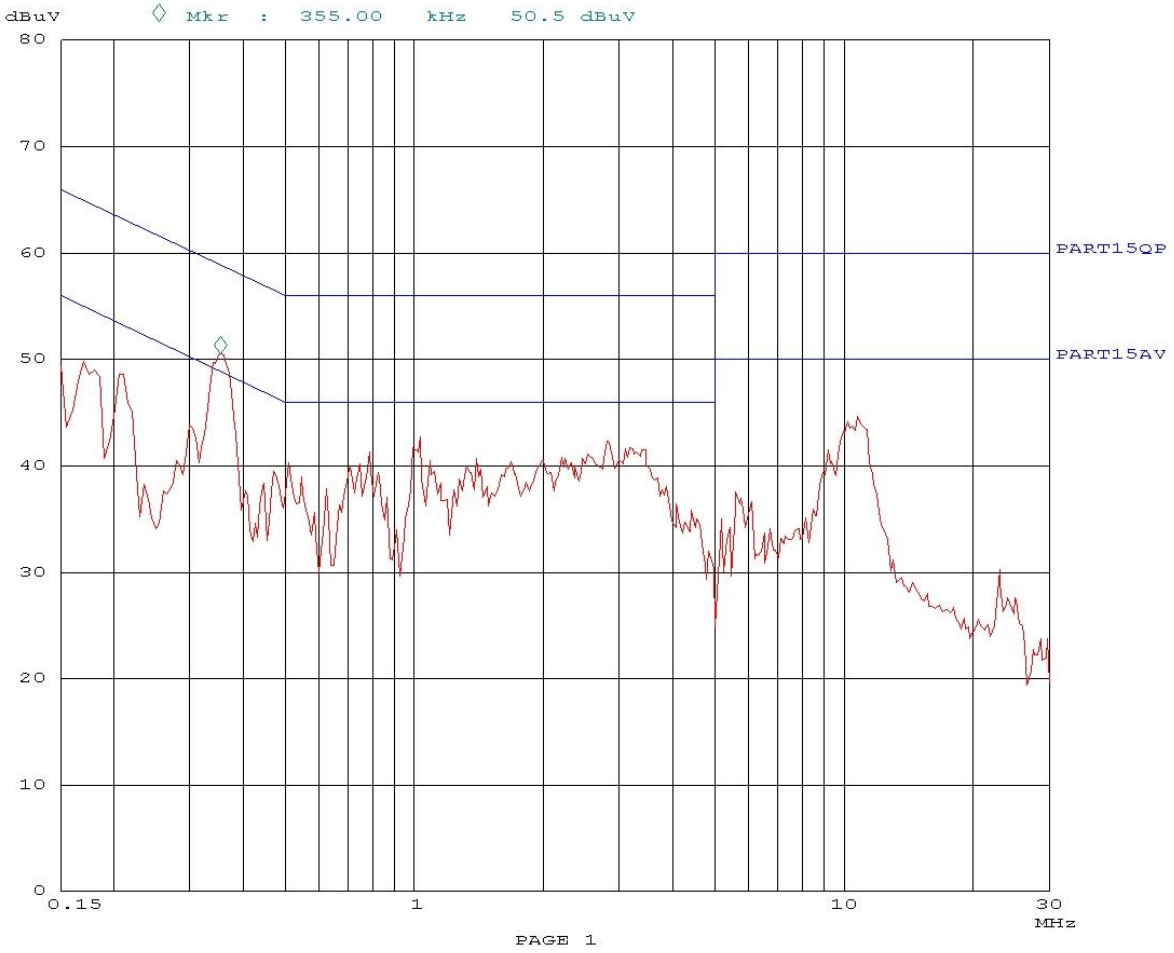
Plot of the AC Power Line Conducted Emissions on L1

12. Aug 15 15:59

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK	20ms	0dBLN	OFF

Final Measurement: x QP
Meas Time: 1 s
Subranges: 25
Acc Margin: 6dB



Plot of the AC Power Line Conducted Emissions on L2

5 Emissions at the band edges

RESULT: Pass

Date of testing: 2015-07-23

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 outside the 2400 and 2483.5 MHz frequency band 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 [dBm]	Limit Pk /Av [dBm]	Result Pass/Fail	Plot number
2402	2372.041	Horizontal	-46.22	-21.2 / -41.2	Pass	1a
2480	2497.533	Horizontal	-46.80	-21.2 / -41.2	Pass	1b

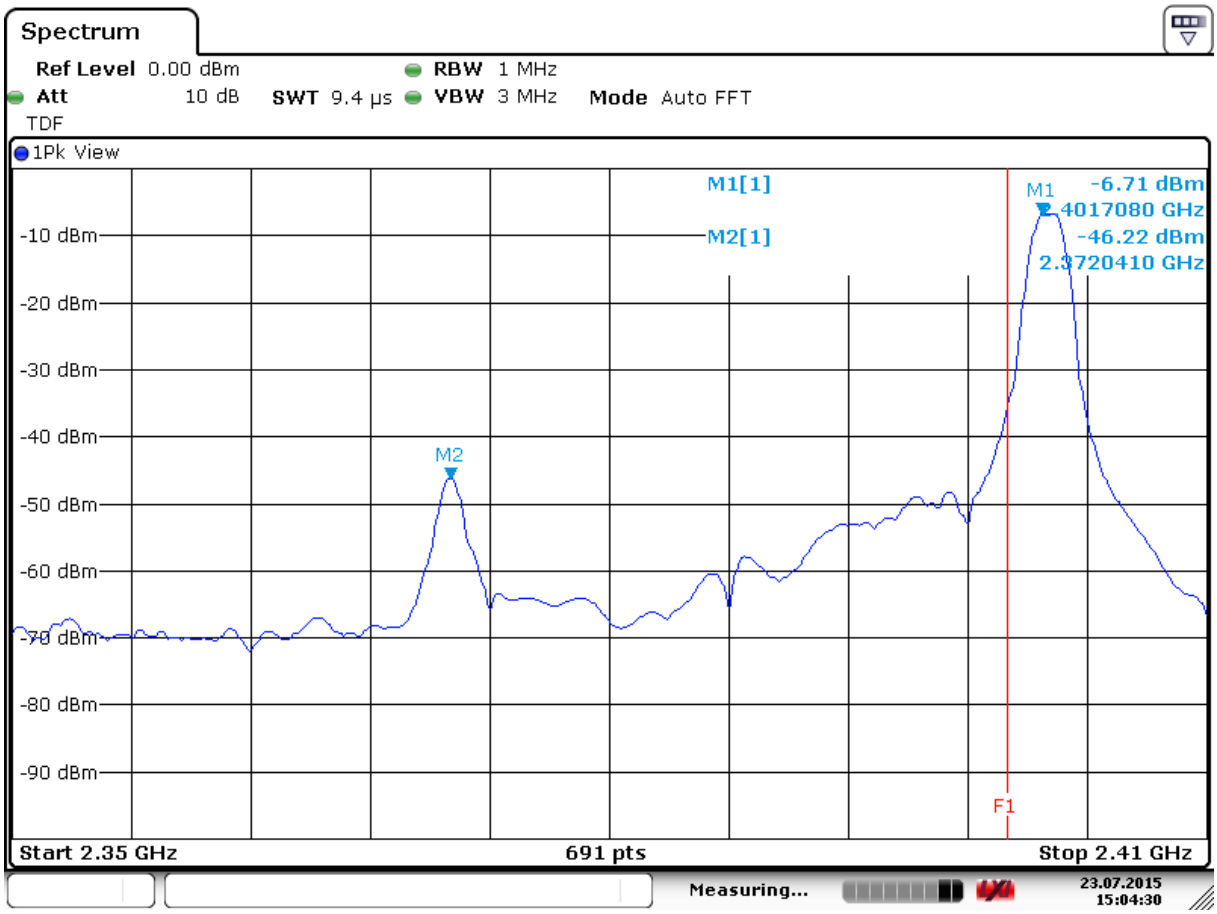
Table 7 level of the band edge emissions, Peak values

Notes:

1. Measurement uncertainty is ±5.0dB
2. The reported field strength values are the worst case values at the indicated frequency. 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 (2402 MHz) and the highest frequency (2480 MHz) in the 2402 – 2480 MHz band wherein it operates.
4. Peak (Pk) values were already within Average (Av) limits, Av therefor not tested.
5. See plots on pages 22-23.

Used test equipment and ancillaries:

A00450	A00235	A00337	A00258	A00444	A00009	A00012	A00255	A00247



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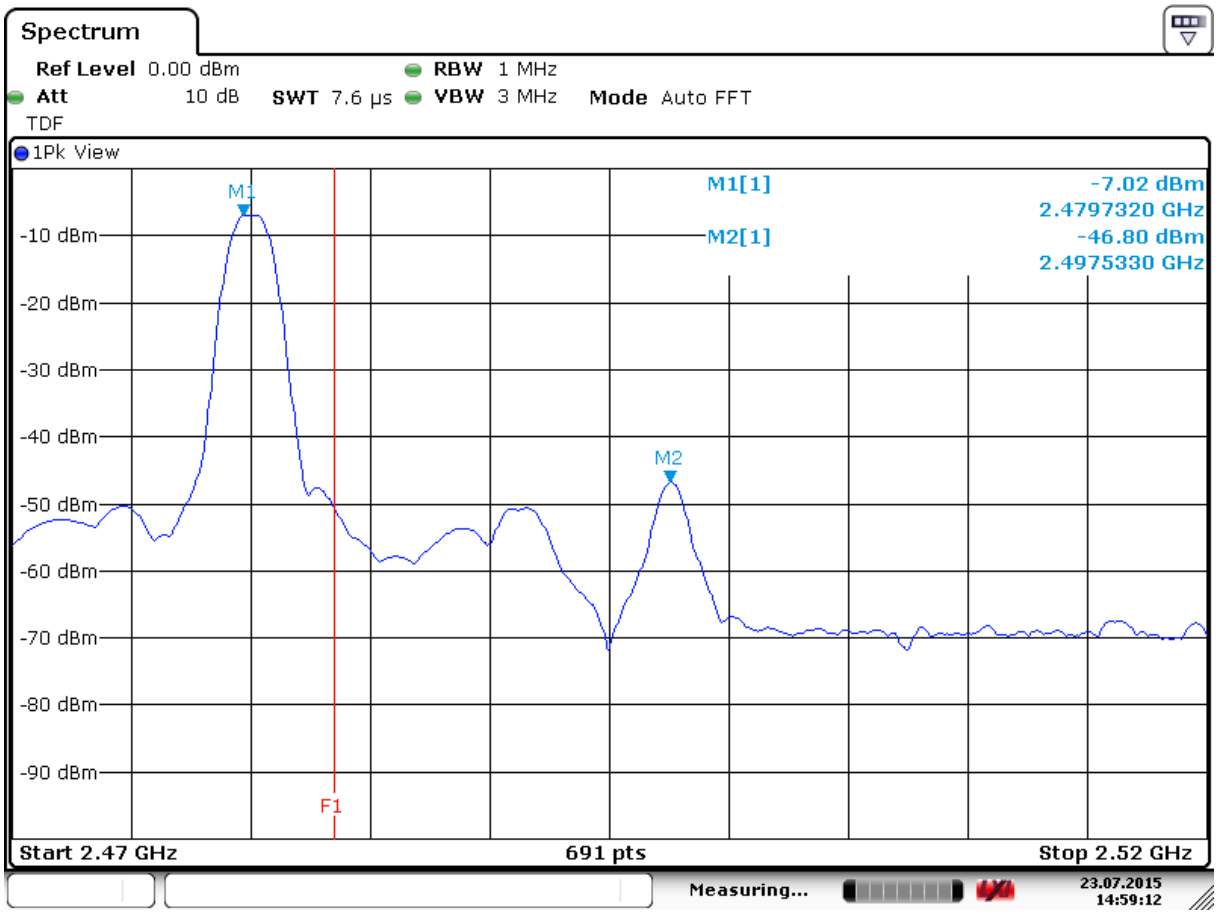
Plot 1a Band Edge (Low), Peak value, Spectral Diagram, 2402 MHz

F1 shows the band edge frequency of 2400 MHz.



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Plot 2a Band Edge (High), Peak value, Spectral Diagram, 2480 MHz.

F1 shows the band edge frequency of 2483.5 MHz

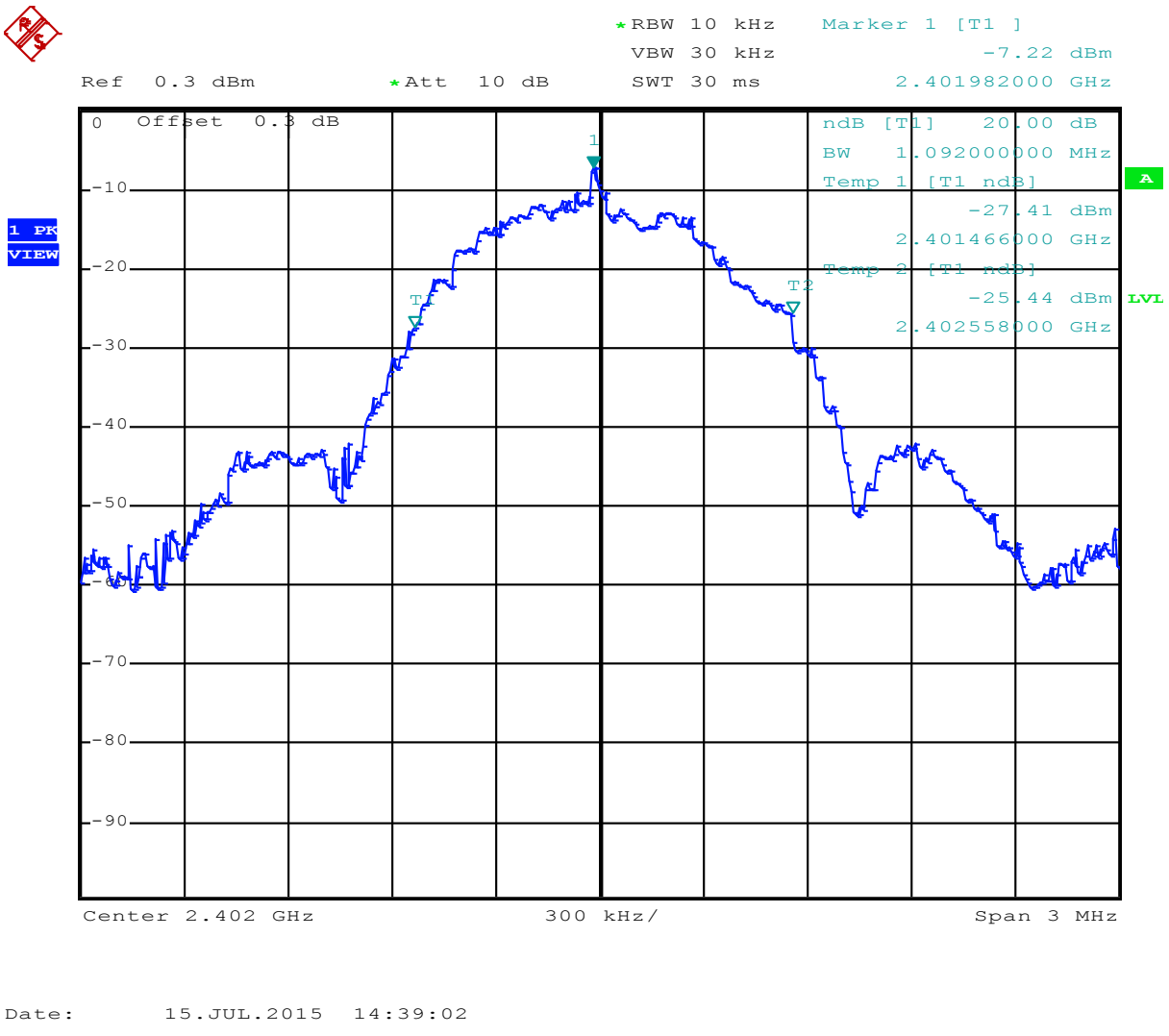
6 Bandwidth of the emission

RESULT: PASS

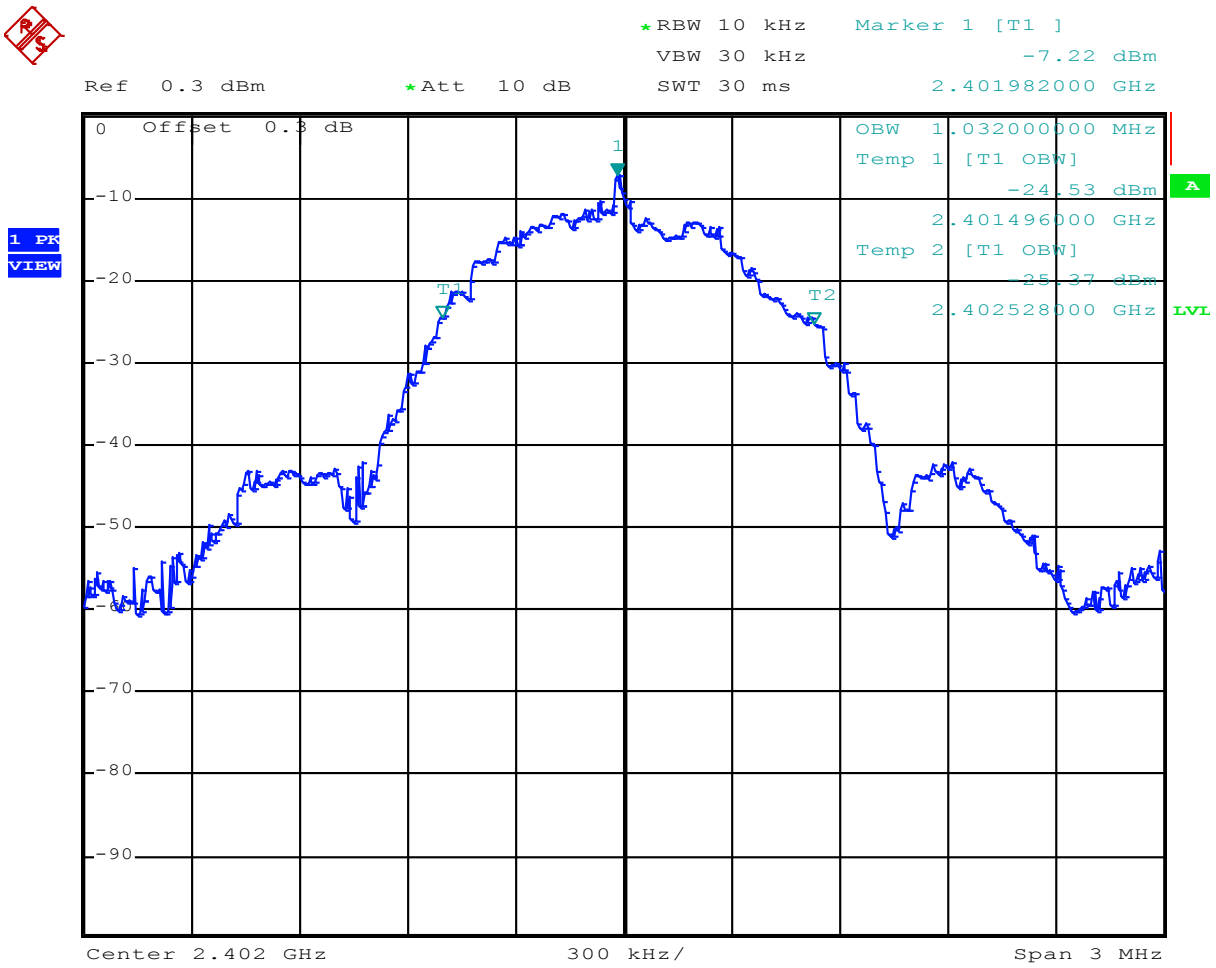
Date of testing: 2015-07-15

This was tested with a spectrum analyzer connected by a RF cable to the EUT antenna connector. Power level therefor differs from the radiated power levels.

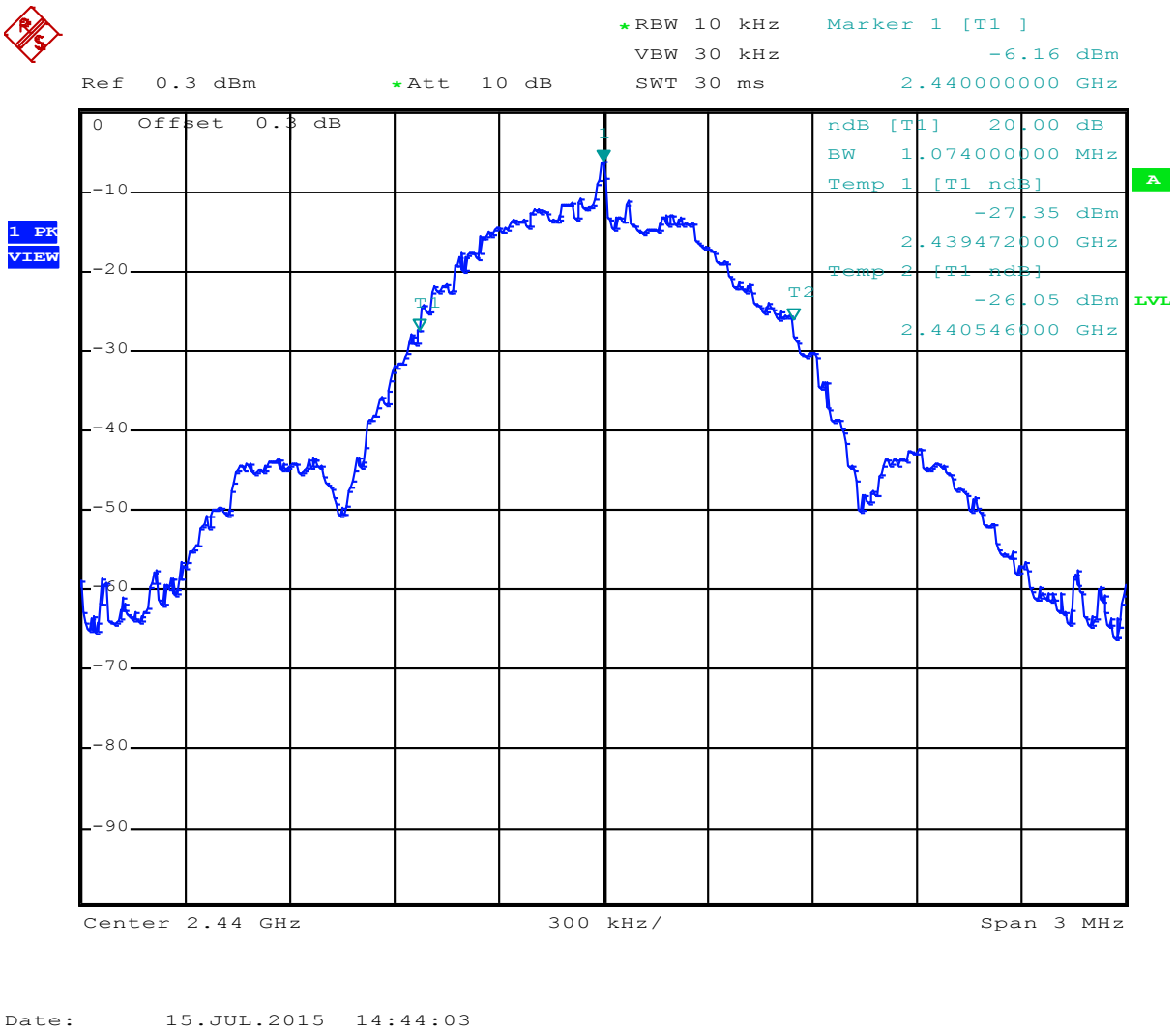
The plots below show compliance with the 47 CFR Part 15 section 15.215(c), this section requires the 20 dB emission bandwidth is within the frequencyband designated in section 15.249.



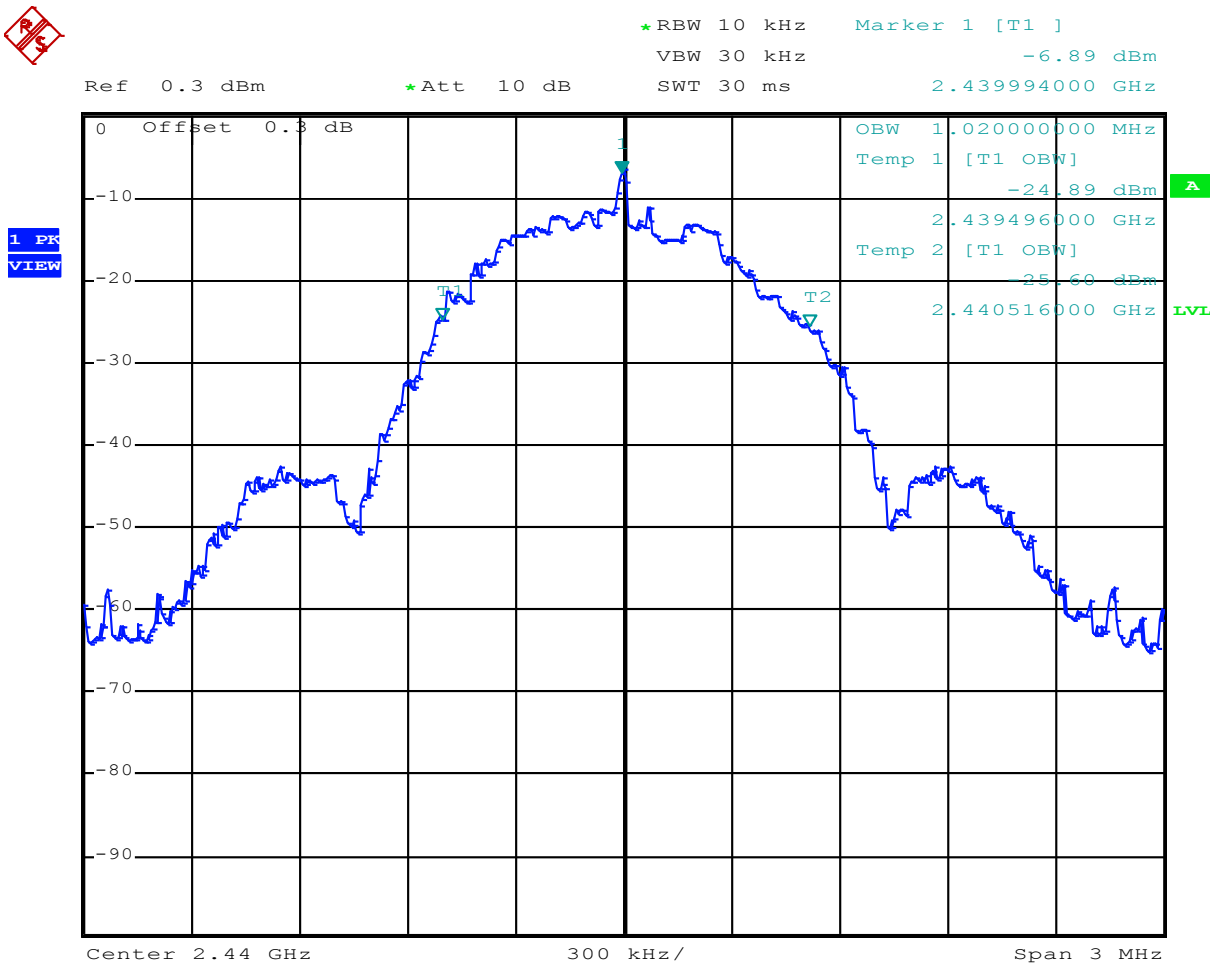
Plot lowest channel - 2402 MHz, Occupied bandwidth is 1092.00 kHz as measured on a spectrum analyzer.



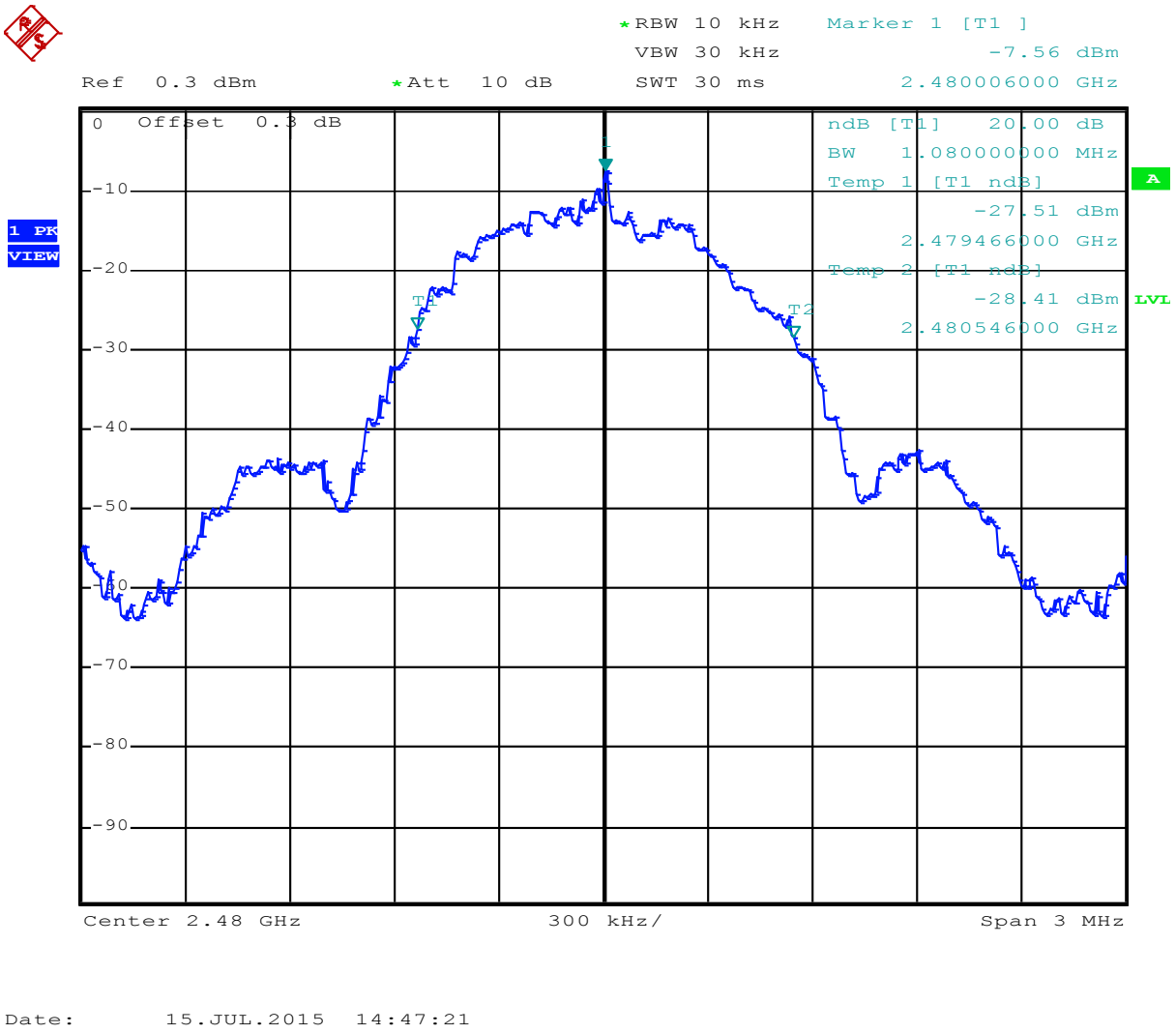
Plot lowest channel - 2402 MHz, 99% bandwidth is 1032.00 kHz as measured on a spectrum analyzer.



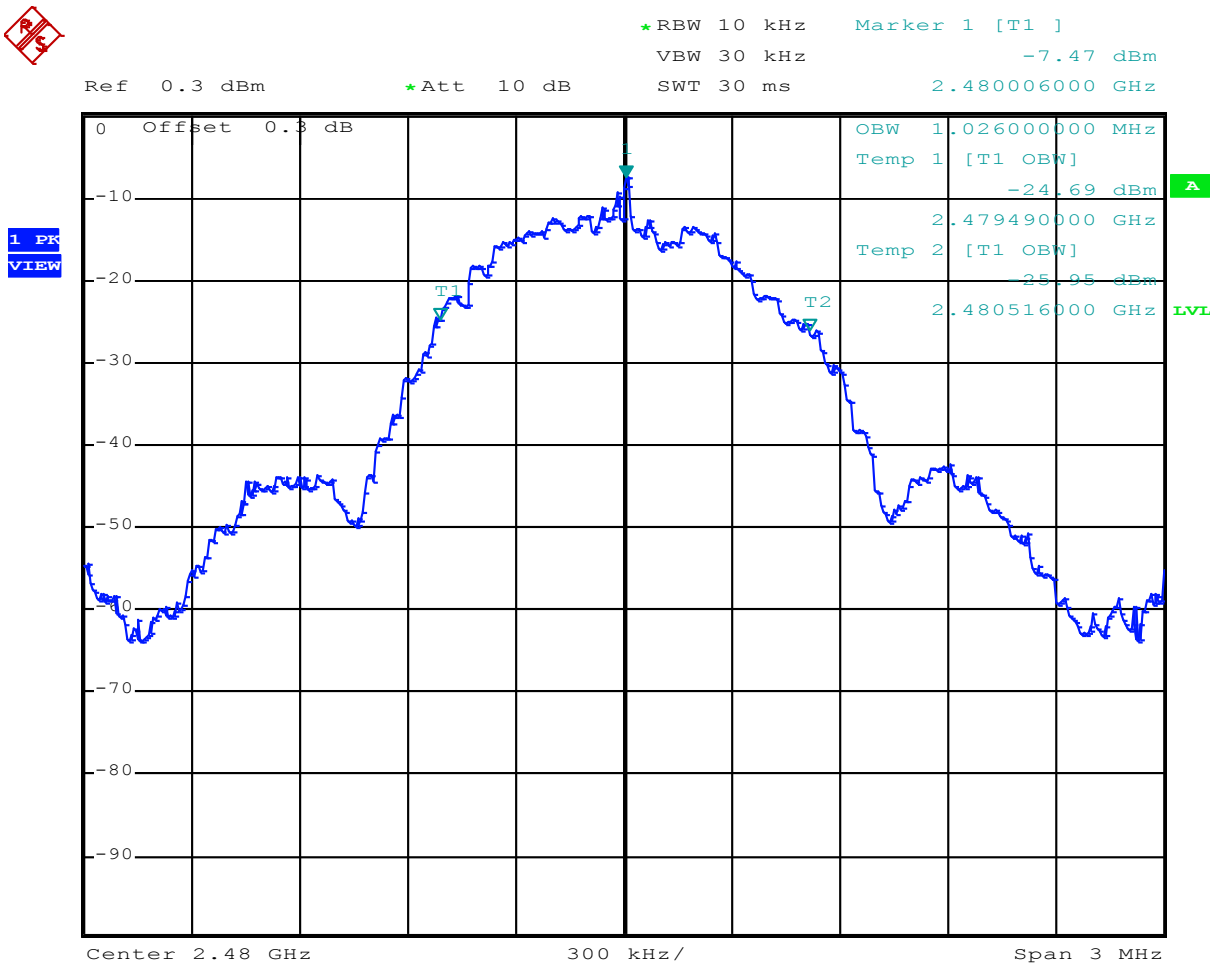
Plot middle channel - 2440 MHz, Occupied bandwidth is 1074.00 kHz as measured on a spectrum analyzer.



Plot highest channel - 2440 MHz, 99% bandwidth is 1020.00 kHz as measured on a spectrum analyzer



Plot highest channel - 2480 MHz, Occupied bandwidth is 1080.00 kHz as measured on a spectrum analyzer.



Plot highest channel - 2480 MHz, 99% bandwidth is 1026.00 kHz as measured on a spectrum analyzer

7 List of utilized test equipment.

Kind of Equipment	Manufacturer	Model Name	Inventory number	Calibration date (mm/yyyy)	Calibration due date (mm/yyyy)
For Antenna Port Conducted Emissions					
Temperature-Humiditymeter	Extech	SD500	A00446	03/2015	03/2016
Spectrum Analyzer	Rohde & Schwarz	FSP	A00207	11/2014	11/2015
RF Cable	H+S	Secuflex	A00347	04/2015	04/2016
For Radiated Emissions					
Measurement Receiver	Rohde & Schwarz	ESCI	A00314	03/2015	03/2016
RF Cable S-AR	Gigalink	APG0500	A00447	01/2015	01/2016
Controller	Maturo	SCU/088/ 8090811	A00450	N/A	N/A
Controller	EMCS	DOC202	A00257	N/A	N/A
Test facility	Comtest	FCC listed: 90828 IC: 2932G-2	A00235	04/2014	04/2017
Spectrum Analyzer	Rohde & Schwarz	FSP	A00337	08/2014	08/2015
Antenna mast	EMCS	AP-4702C	A00258	N/A	N/A
Temperature-Humiditymeter	Extech	SD500	A00444	03/2015	03/2016
Guidehorn 1-18 GHz	EMCO	3115	A00009	04/2015	04/2016
Guidehorn 18-40 GHz	EMCO	RA42-K-F-4B-C	A00012	04/2015	04/2016
Biconilog Testantenna	Teseq	CBL 6111D	A00466	06/2015	06/2016
2.4 GHz bandreject filter	BSC	XN-1783	A00065	N/A	N/A
Bandpass filter 4-10 GHz	Reactel	7AS-7G-6G-511	A00131	N/A	N/A
Bandpass filter 10-26 GHz	Reactel	9HS-10G/26.5G-S11	A00151	N/A	N/A
Preamplifier 0.5 - 18 GHz	Miteq	AMF-5D-005180-28-13p	A00247	N/A	N/A
Filterbox	EMCS	RFS06S	A00255	08/2014	08/2015

Kind of Equipment	Manufacturer	Model Name	Inventory number	Calibration date (mm/yyyy)	Calibration due date (mm/yyyy)
For AC Powerline Conducted Emissions					
Pulse limiter	R&S	ESH3-Z2	A00051	01/2015	01/2016
Variac	RFT	LSS020	A00171	NA	NA
LISN	EMCO	3625/2	A00022	01/2014	01/2016
Measurement Receiver	Rohde & Schwarz	ESCS30	A00726	09/2014	09/2015
Shielded room for Conducted emissions	--	--	A00437	NA	NA
Temperature-Humiditymeter	Extech	SD500	A00444/	03/2015	03/2016

Conformance of the used measurement and test equipment with the requirements of ISO/IEC 17025:2005 has been confirmed before testing.
NA= Not Applicable

<< End of report >>