Test report no. : 212710-6

Item tested : WHB004BS

Type of equipment : UPCS Base with USB

FCC ID : BCE-WHB004BS

Client : GN Netcom A/S

www.nemko.com

FCC Part 15, subpart B

Class B personal computers and peripherals

Industry Canada ICES-003, Issue 4

Digital Apparatus

2012-11-01

Authorized by : .....

Geir Antonsen
Technical Verificator

CONTENTS

1 GENERAL INFORMATION 3
1.1 Testhouse Info 3
1.2 Client Information 3
1.3 Manufacturer (if other than client) 3

2 TEST INFORMATION 4
2.1 Tested Item 4
2.2 Test Environment 5
2.3 Test Period 5
2.4 Test Engineer(s) 5
2.5 Test Equipment 5
2.6 Other Comments 5

3 TEST REPORT SUMMARY 6
3.1 General 6
3.2 Test Summary 7

4 TEST RESULTS 8
4.1 Power Line Conducted Emissions 8
4.2 Spurious Emissions (Radiated) 11

5 TEST SETUPS 17
5.1 Radiated Emissions Test 17
5.2 Power Line Conducted Emissions Test 17

6 TEST EQUIPMENT USED 18

1 GENERAL INFORMATION

1.1 Testhouse Info

Name :	Nemko AS
Address :	Nemko Kjeller Instituttveien 6, Box 96 NO-2007 Kjeller, NORWAY
Telephone :	+47 64 84 57 00
Fax :	+47 64 84 57 05
E-mail:	comlab@nemko.com
FCC test firm registration # :	994405
IC OATS registration # :	2140D-1
Total Number of Pages:	18

1.2 Client Information

Name :	GN Netcom A/S
Address :	Lautrupbjerg 7, Ballerup, Denmark

Contact:

Name :	Steen Kaiser
Telephone :	+45 4575 8888
E-mail :	skaiser@jabra.com

1.3 Manufacturer (if other than client)

Same as client.

2 Test Information

2.1 Tested Item

Name :	Jabra
Model name :	WHB004BS
FCC ID :	BCE-WHB004BS
Industry Canada ID :	2386C-WHB004BS
FCC / IC Class	B
Serial number :	/
Hardware identity and/or version:	E
Software identity and/or version :	1.8.0
Tested to IC Radio Standard (RSS) :	ICES-003
Test Site IC Reg. Number :	2040D-1
Desktop Charger :	Charged from USB
Highest Frequency in EUT :	16 MHz (excluding UPCS portion)

Description of Tested Device(s)

The EUT is a UPCS Base station for connection to the Universal Serial Bus (USB) port of a personal computer. The EUT is then together with the Handset used as a cordless handset for a softphone on the computer.

Labeling

The Device must be labeled with the two-part warning statement:

"This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation."

Canada:

The device complies with ICES-003.

2.2 Test Environment

Temperature:	21.5 – 22.3 °C
Relative humidity:	46 – 49 %
Normal test voltage:	5.0 V DC (Powered from USB)

All tests were performed with the EUT powered from the USB port on a computer.

The values are the limit registered during the test period.

2.3 Test Period

Item received date: 2012-06-27

Test period : from 2012-07-11 to 2012-10-25

2.4 Test Engineer(s)

Frode Sveinsen / Thomas Dangle

2.5 Test Equipment

See list of test equipment in clause 6.

2.6 Other Comments

The tests were performed with the EUT connected to and powered from a personal computer. In addition to the EUT a USB mouse was connected to the computer.

For all tests the computer was connected to a SIP server and a call was made to another SIP telephone for the test with active connection. For the radiated test the computer was connected through an ethernet cable and the SIP server was located outside the anechoic chamber.

Host Computer: Dell Latitude D620, s.no.: 386-391-838-51

Computer PSU: Dell 65W PSU, Model: LA65NS0-00

Computer Mouse: Dell USB Mouse, Model: M-BAC-DEL5

3 TEST REPORT SUMMARY

3.1 General

Manufacturer: GN Netcom A/S

Model No.: 5610 Cradle

All measurements are traceable to national standards.

All tests were performed is accordance with ANSI C63.4-2003 where applicable. Radiated emissions were tested in a 10m semi-anechoic chamber.

A description of the test facility is on file with FCC and Industry Canada.

☒ New Submission ☒ Production Unit

☐ Class II Permissive Change ☐ Pre-production Unit

JBP Equipment Code ☐ Family Listing

THIS TEST REPORT APPLIES ONLY TO THE ITEM(S) AND CONFIGURATIONS TESTED.

Deviations from, additions to, or exclusions from the test specifications are described in "Summary of Test Data".

TEST REPORT NO: 212710-6

TESTED BY : Frode Sveinsen **DATE: 25 October 2012**

Frode Sveinsen, Chief Engineer

3.2 Test Summary

Name of test	FCC CFR 47 Paragraph #	ICES-003 Paragraph #	Verdict
Power Line Conducted Emission	15.107(a)	5.2 / 5.3	Complies
Spurious Emissions (Radiated)	15.109(a)	5.4 / 5.5	Complies

4 TEST RESULTS

4.1 Power Line Conducted Emissions

Para. No.: 15.107 (a)

Test Performed By: Thomas Dangle	**Date of Test: 11 July 2012**

Measurement procedure: **ANSI C63.4-2009 using 50 µH/50 ohms LISN.**

Test Results: **Complies**

Measurement Data: **See attached graph, (Peak detector).**

Measured on computer power supply (120V, 60Hz). EUT powered from computer USB port.

Highest measured value (L1 and N):

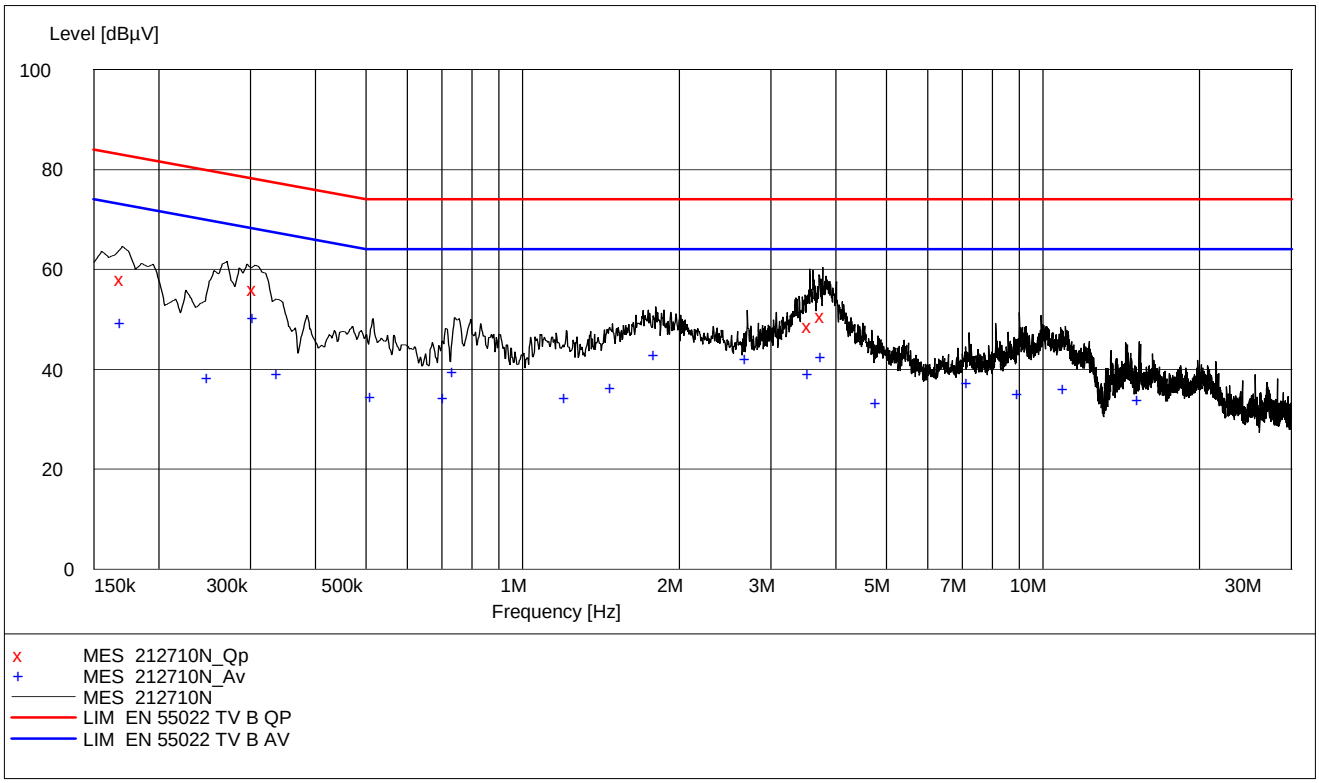
EUT On-Hook, Charging, Base powered from USB:

Frequency [MHz]	Level [dBuV]	Af [dB]	Limit [dBuV]	Margin [dB]	Det	Position	Verdict [Pass/Fail]
0.170000	58.00	10.10	83.00	25.00	QP	N	Pass
0.305000	56.20	10.10	78.10	21.90	QP	N	Pass
3.560000	48.60	10.30	74.00	25.40	QP	N	Pass
3.770000	50.70	10.30	74.00	23.30	QP	N	Pass
0.170000	49.30	10.10	73.00	23.70	AV	N	Pass
0.250000	38.40	10.10	69.80	31.40	AV	N	Pass
0.305000	50.30	10.10	68.10	17.80	AV	N	Pass
0.340000	39.00	10.20	67.20	28.20	AV	N	Pass
0.515000	34.50	10.20	64.00	29.50	AV	N	Pass
0.710000	34.20	10.20	64.00	29.80	AV	N	Pass
0.740000	39.40	10.20	64.00	24.60	AV	N	Pass
1.215000	34.30	10.20	64.00	29.70	AV	N	Pass
1.485000	36.20	10.20	64.00	27.80	AV	N	Pass
1.800000	43.00	10.20	64.00	21.00	AV	N	Pass
2.705000	42.20	10.30	64.00	21.80	AV	N	Pass
3.560000	39.00	10.30	64.00	25.00	AV	N	Pass
3.770000	42.40	10.30	64.00	21.60	AV	N	Pass
4.810000	33.20	10.40	64.00	30.80	AV	N	Pass
7.210000	37.30	10.50	64.00	26.70	AV	N	Pass
9.015000	35.10	10.60	64.00	28.90	AV	N	Pass
11.025000	36.10	10.60	64.00	27.90	AV	N	Pass
15.325000	33.90	10.80	64.00	30.10	AV	N	Pass

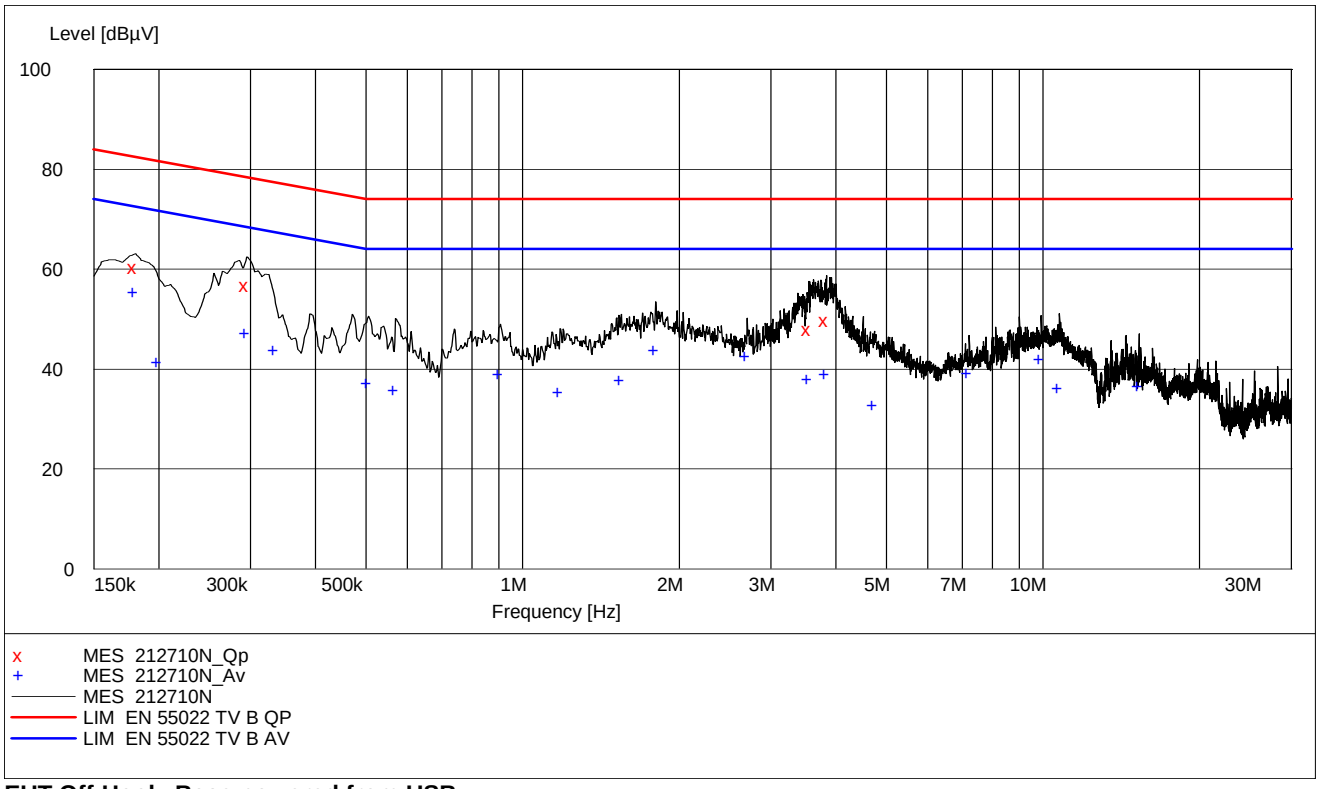
Highest measured value (L1 and N):

EUT Off-Hook, Base powered from USB:

Frequency [MHz]	Level [dBuV]	Af [dB]	Limit [dBuV]	Margin [dB]	Det	Position	Verdict [Pass/Fail]
0.180000	60.40	10.10	82.50	22.10	QP	N	Pass
0.295000	56.80	10.10	78.40	21.60	QP	N	Pass
3.550000	48.10	10.30	74.00	25.90	QP	N	Pass
3.835000	49.90	10.30	74.00	24.10	QP	N	Pass
0.180000	55.50	10.10	72.50	17.00	AV	N	Pass
0.200000	41.50	10.10	71.60	30.10	AV	N	Pass
0.295000	47.10	10.10	68.40	21.30	AV	N	Pass
0.335000	43.80	10.20	67.30	23.50	AV	N	Pass
0.505000	37.10	10.20	64.00	26.90	AV	N	Pass
0.570000	35.80	10.20	64.00	28.20	AV	N	Pass
0.905000	39.00	10.20	64.00	25.00	AV	N	Pass
1.180000	35.40	10.20	64.00	28.60	AV	N	Pass
1.550000	37.80	10.20	64.00	26.20	AV	N	Pass
1.800000	43.80	10.20	64.00	20.20	AV	N	Pass
2.700000	42.60	10.30	64.00	21.40	AV	N	Pass
3.550000	38.00	10.30	64.00	26.00	AV	N	Pass
3.835000	39.10	10.30	64.00	24.90	AV	N	Pass
4.740000	32.90	10.40	64.00	31.10	AV	N	Pass
7.210000	39.30	10.50	64.00	24.70	AV	N	Pass
9.910000	42.10	10.60	64.00	21.90	AV	N	Pass
10.760000	36.20	10.60	64.00	27.80	AV	N	Pass
15.325000	36.70	10.80	64.00	27.30	AV	N	Pass



EUT On-Hook, Charging, Base powered from USB



EUT Off-Hook, Base powered from USB

4.2 Spurious Emissions (Radiated)

Measurement Procedure:

FCC 15.109

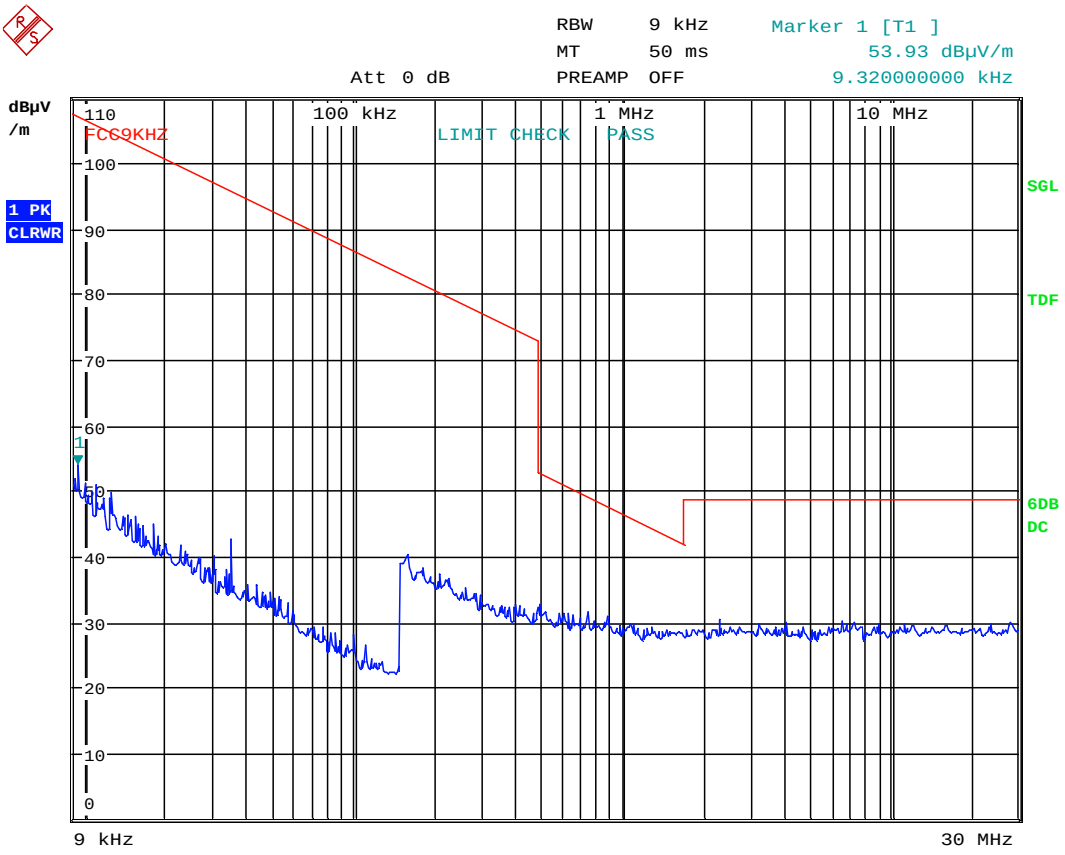
Test Results:

Radiated emission 9 kHz-30 MHz.

Measuring distance 10 m, measured with Peak detector.

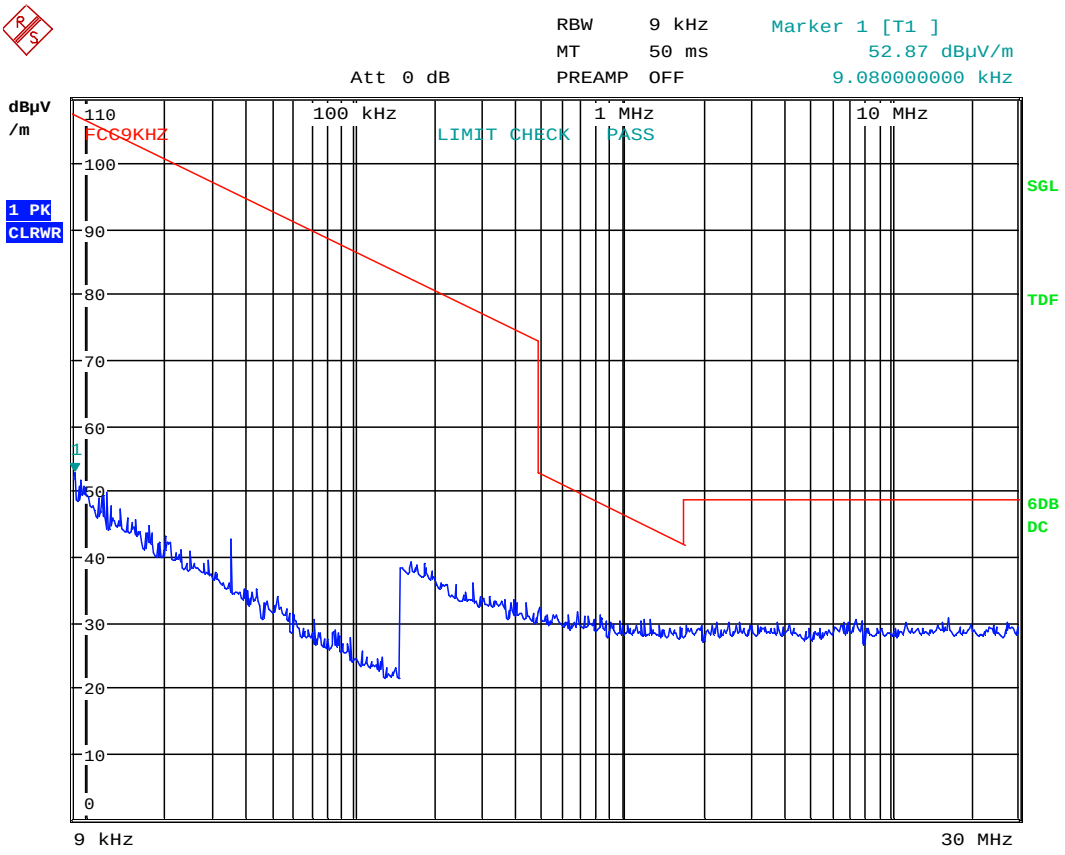
No component detected, see attached graph.

Limit is converted to 10m using 40 dB/decade according to 15.31 (f) (2).



Date: 2.NOV.2012 10:52:15

Handset Off-Hook



Date: 2.NOV.2012 11:07:52

Handset Charging

Radiated Emissions 30 - 1000 MHz.

Detector: Quasi-Peak

Measuring distance 3 m

The EUT were rotated 360 degrees and the antenna height varied between 1 and 4 m on all found frequencies.

Handset Charging:

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
30.030987	28.1	1000.0	120.000	100.0	V	308.0	-10.6	11.9	40.0	
48.005271	33.3	1000.0	120.000	100.0	V	68.0	-9.3	6.7	40.0	
56.346452	26.6	1000.0	120.000	100.0	V	271.0	-9.7	13.4	40.0	
95.397872	26.1	1000.0	120.000	116.0	V	317.0	-9.4	17.4	43.5	
239.998592	40.3	1000.0	120.000	141.0	H	263.0	-9.2	5.7	46.0	
365.151389	38.5	1000.0	120.000	100.0	H	177.0	-6.1	7.5	46.0	
642.219441	34.0	1000.0	120.000	100.0	V	183.0	-0.8	12.0	46.0	
693.933653	36.3	1000.0	120.000	100.0	V	221.0	-0.4	9.7	46.0	
999.387229	46.5	1000.0	120.000	122.0	V	150.0	3.7	7.4	53.9	

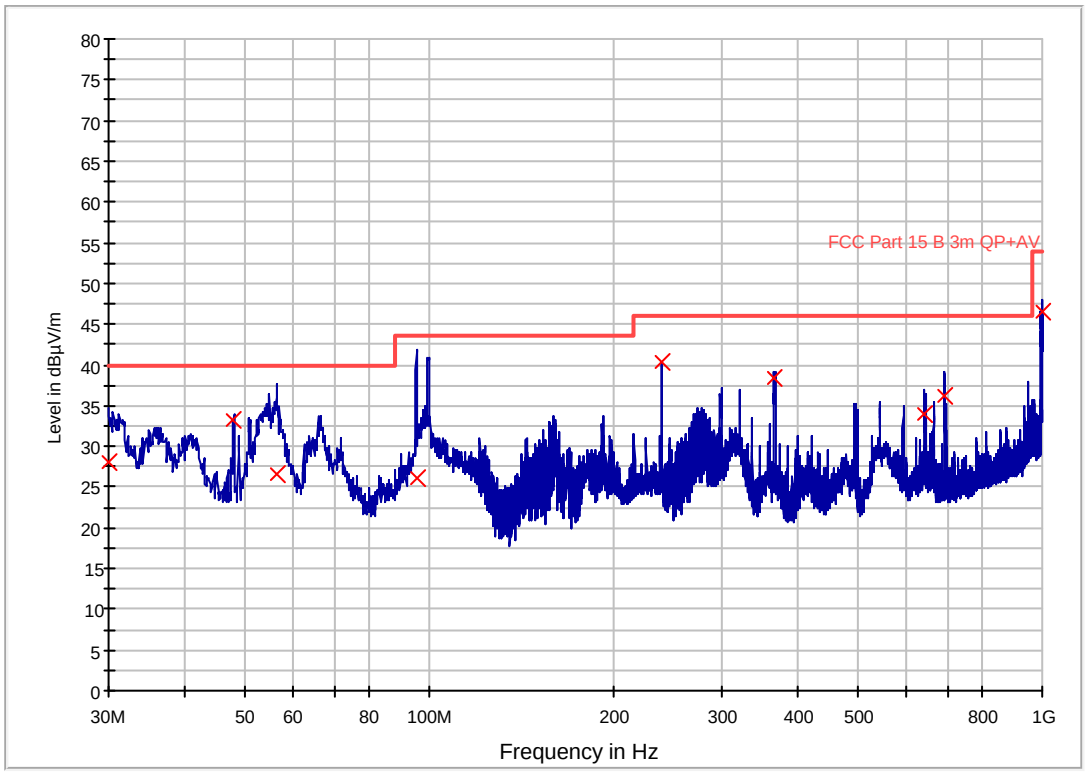
Hook-Off Mode:

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.996252	30.4	1000.0	120.000	100.0	V	72.0	-10.2	9.6	40.0	
52.888202	28.8	1000.0	120.000	100.0	V	173.0	-9.5	11.2	40.0	
95.709284	28.5	1000.0	120.000	116.0	V	297.0	-9.4	15.0	43.5	
99.616462	40.9	1000.0	120.000	100.0	V	267.0	-9.1	2.6	43.5	
365.161028	38.4	1000.0	120.000	100.0	H	162.0	-6.1	7.6	46.0	
495.596823	33.1	1000.0	120.000	100.0	V	193.0	-3.5	12.9	46.0	
543.388177	34.4	1000.0	120.000	100.0	V	182.0	-2.4	11.6	46.0	
691.538002	35.8	1000.0	120.000	100.0	V	54.0	-0.4	10.2	46.0	
999.255077	44.7	1000.0	120.000	100.0	H	180.0	3.7	9.2	53.9	

Limits (FCC 15.109):

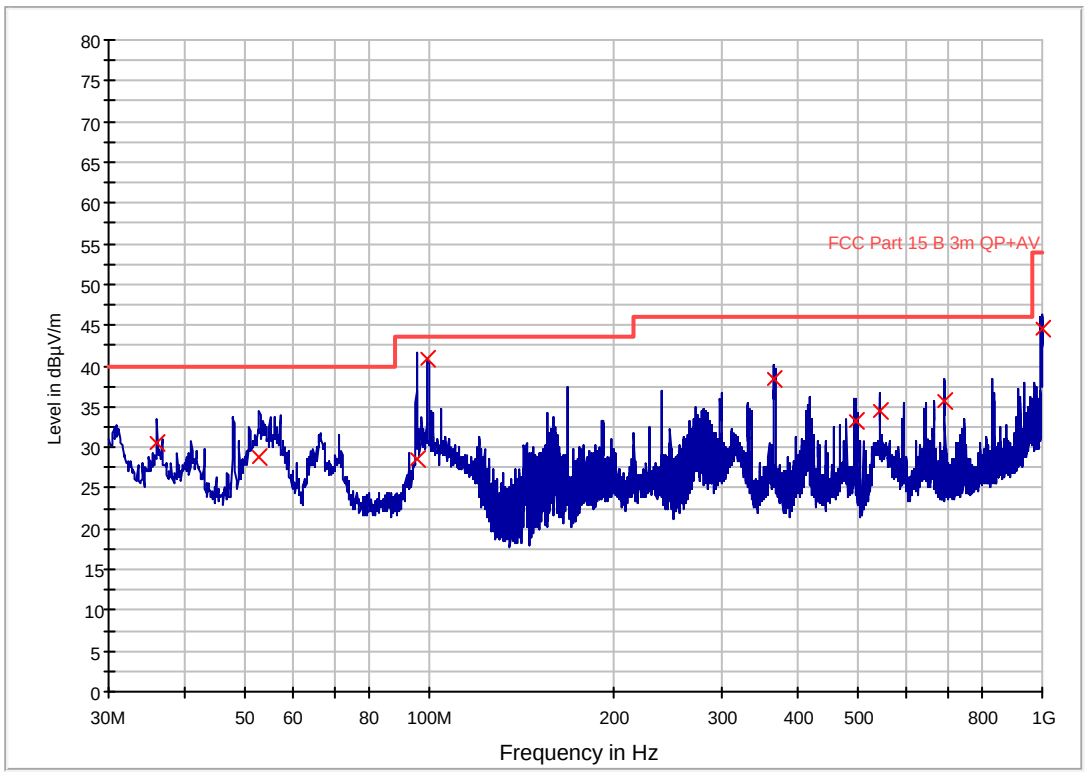
Spurious Frequency MHz	Field Strength dBµV/m @3m
30 – 88	40.0
88 - 216	43.5
216 - 960	46.0
Above 960	54.0

FCC Pt15 Class B 30-1000M 3m



Handset Charging

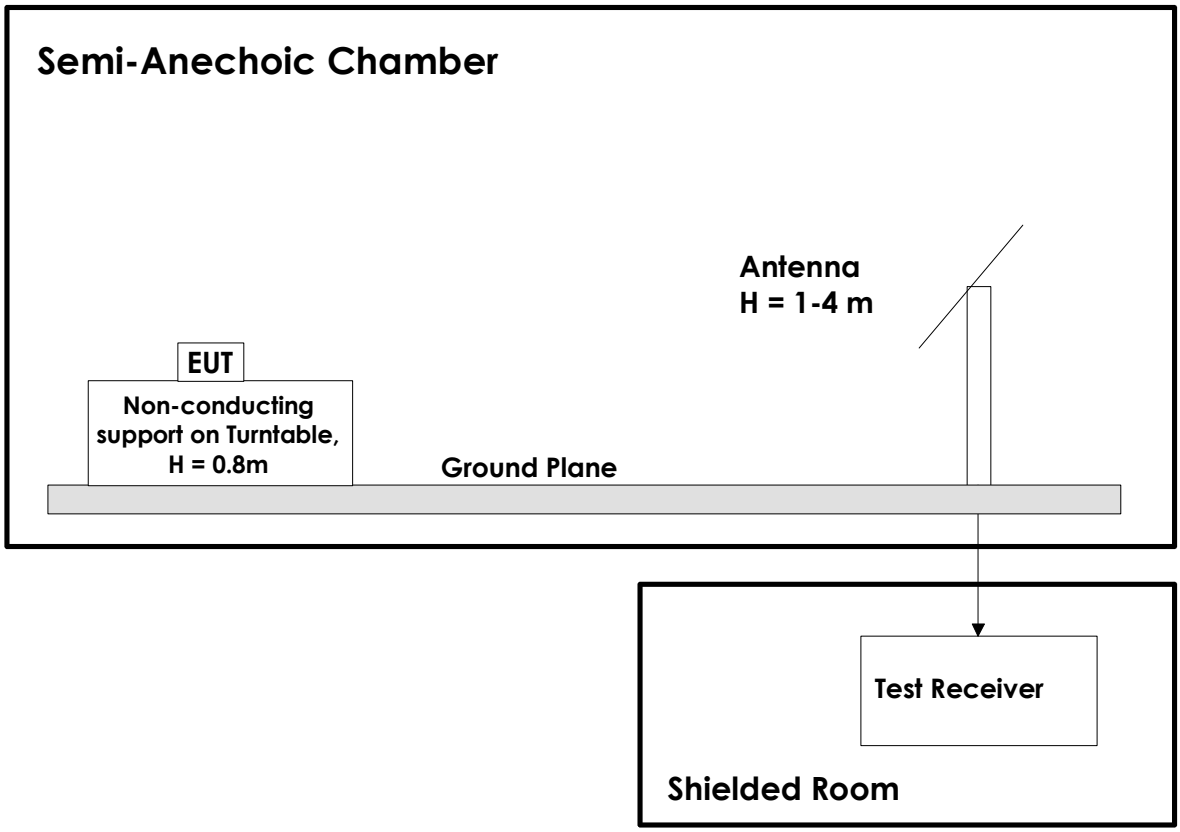
FCC Pt15 Class B 30-1000M 3m



Hook-Off Mode

5 Test Setups

5.1 Radiated Emissions Test

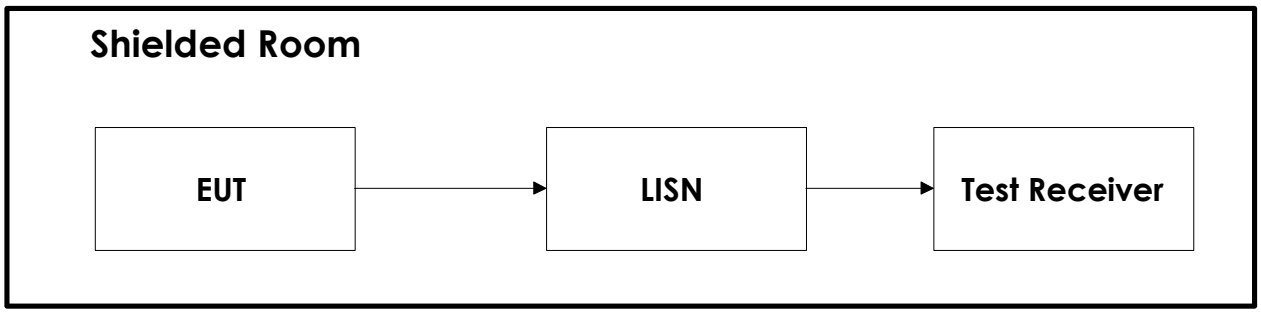


Test equipment: 1, 5, 6, 7

Test Set-Up 1

This test setup is used for all radiated emissions tests. For all frequencies below 1 GHz the measuring distance is 10m when measuring to CISPR 22.

5.2 Power Line Conducted Emissions Test



Test equipment: 2, 3, 4, 8, 9

Test Set-Up 2

6 Test Equipment Used

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries are identified (numbered) by the Testhouse.

No.	Model number	Description	Manufacturer	Ref. no.	Cal. date	Cal. Due
1	ESU40	Measuring Receiver	Rohde & Schwarz	LR 1639	2012-06	2013-06
2	ESHS10	Measuring Receiver	Rohde & Schwarz	N-3528	2012-07	2013-07
3	ESH3-Z2	Pulse Limiter	Rohde & Schwarz	LR 285	2011.10.08	2013.10.08
4	ESH3-Z5	Two Line V-Network	Rohde & Schwarz	LR 1076	2011.11.03	2013.11.03
5	HFHZ2-Z2	Loop Antenna	Rohde & Schwarz	LR 285	2010.10.08	2013.10.08
6	VULB9163	BiLog Antenna	Schwarzbeck	LR 1616	2011.08.22	2014.08.22
7	LNA6900	Preamplifier	Teseq	LR 1593	2010.11.16	2012.11.16