

TEST REPORT

Test Report No.: 1-3439-01-18/11_A



Testing Laboratory

CETECOM ICT Services GmbH
 Untertürkheimer Straße 6 – 10
 66117 Saarbrücken/Germany
 Phone: + 49 681 5 98 - 0
 Fax: + 49 681 5 98 - 9075
 Internet: <http://www.cetecom.com>
 e-mail: ict@cetecom.com

Accredited Test Laboratory:

The test laboratory is accredited according to:
 DIN EN ISO/IEC 17025
 DAkkS registration number: D-PL-12076-01-01

The area of testing is recognized by the FCC and IC.
 Anechoic chamber registration no.: 90462 (FCC)
 Anechoic chamber registration no.: 3462C-1 (IC)
 Certification ID: DE 0001 (FCC)
 Accreditation ID: DE 0002 (IC)

Applicant

Research In Motion Limited
 305 Phillip Street
 Waterloo, ON N2L 3W8/CANADA
 Phone: +1-519-888-7465
 Fax: +1-519-888-6906
 Contact: Masud Attayi
 e-mail: mattayi@rim.com

Manufacturer

Same as Applicant

Test Standard/s

47CFR15	2009-10	Subpart B - Unintentional Radiators
ICES-003, Issue 4	2004-02	Interference-Causing Equipment Standard Digital Apparatus

Test Item

Kind of test item:	smartphone
Model name:	RDY 71 UW
FCC ID:	L6ARDY70UW
IC:	2503A-RDY70UW
S/N serial number:	CER-21958-002
	IMEI: 004402.24.060165.2
HW hardware status:	Rev. 1 12-Apr-11
SW software status:	5.0.0.123
Power Supply:	see EUT list

This test report is electronically signed and valid without handwritten signature. The public keys can be requested at the test laboratory to verify the electronic signatures.

Test performed:

Test Report authorised:

 Jens Hennemann

 Uli Kraus



1 Table of contents

1	Table of contents.....	2
2	General information	3
2.1	Notes.....	3
2.2	Application details	3
3	Test standard/s:.....	3
4	Test Environment.....	3
5	Test Laboratories sub-contracted	3
6	Information about Test Conditions	4
6.1	Test Item.....	4
6.2	EUT: Type, S/N etc. and Short Descriptions Used in this Test Report.....	5
6.3	EUT Set-up(s).....	6
6.4	EUT Operating Modes.....	6
7	Summary of Test Results	7
7.1	Emission.....	7
7.2	Measurement and Test Set-up	8
7.3	Measurement uncertainty.....	8
8	Detailed test results - Emission.....	9
8.1	Conducted Emission.....	9
8.2	Electromagnetic Radiated Emissions (Distance 10 m)	15
9	Test equipment and ancillaries used for tests.....	24
10	Observations	26
	Annex A: Photographs of the test set-up	26
	Annex B: Photographs of the EUT	26
	Annex C: Document history	27
	Annex D: Further information	27

2 General information

2.1 Notes

The test results of this test report relate exclusively to the test item specified in this test report. CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM ICT Services GmbH.

This test report replaces the test report with the number 1-3439-01-18/11 and dated 2011-05-10.

2.2 Application details

Date of receipt of order:	2011-04-29
Date of receipt of test item:	2011-05-02
Start of test:	2011-05-04
End of test:	2011-05-05
Person(s) present during the test:	- / -

3 Test standard/s:

Test Standard	Version	Test Standard Description
47CFR15	2009-10	Subpart B - Unintentional Radiators
ICES-003, Issue 4	2004-022	Interference-Causing Equipment Standard Digital Aparatus

4 Test Environment

Temperature:	20°C – 25°C
Relative humidity content:	30 % - 50 %
Air pressure:	1020 hPa
Power supply:	230 V / 50 Hz

5 Test Laboratories sub-contracted

6 Information about Test Conditions

6.1 Test Item

Kind of test item	:	smartphone		
Type identification	:	RDY 71 UW		
Equipment classification:		Equipment for portable use		
Environment classification:		Residential, commercial and light industry		
Supply voltage	:	AC 115 V / 60 Hz		
Ports : (maximum cable lengths declared by manufacturer)		Description	Direction	Length
		Mini USB port:	in- / output	< 3 m
		3,5 mm stereo jack:	in- / output	< 3 m
		DC power port:	input	< 3 m
Is mounting position / usual operating position defined?				No
Additional information:				
The tests were performed in accordance to a test plan of the manufacturer.				
The radio parts of the EUT are not part of this test report.				

6.2 EUT: Type, S/N etc. and Short Descriptions Used in this Test Report

short description*)	EUT	Type	S/N serial number	HW hardware status	SW software status
EUT A	smartphone	RIM BlackBerry RDY 71 UW	CER-21958-002 IMEI: 004402.24.060165.2	Rev 1 12-Apr-11	5.0.0.123
EUT B	stereo headset	2nd generation Stereo Headset (HDW-24529-001) alt 1	unknown	unknown	- / -
EUT C	stereo headset	2nd generation Stereo Headset (HDW-24529-001) alt 2	unknown	unknown	- / -
EUT D	AC/DC-power supply	Fixed Blade Charger (HDW-24481-001 Rev 1)	unknown	Rev. 1	- / -
EUT E	AC/DC-power supply	Fixed Blade Charger (HDW-24481-001 Rev 2)	unknown	Rev. 2	- / -
EUT F	AC/DC-power supply	Captive Cable Charger (HDW-17957-003 Rev 3) MEPS IV	unknown	Rev. 3	- / -
EUT G	USB cable	1,2 m USB Cable (HDW-28109-003)	unknown	unknown	- / -
EUT H	USB cable	0,3 m USB Cable (HDW-28109-001)	unknown	unknown	- / -
EUT I	USB Y-cable	USB Y-Cable (HDW-19137-002)	unknown	unknown	- / -
EUT J	charging pod	Charging Pod (HDW-40025-001)	unknown	unknown	- / -
EUT K	external battery charger	External Battery Charger (HDW-24478-001)	unknown	unknown	- / -

*) EUT short description is used to simplify the identification of the EUT in this test report.

6.3 EUT Set-up(s)

EUT set-up no.*)	Combination of EUT and AE	Remarks
set. 1	EUT A + EUT B + EUT D + EUT G	- / -
set. 2	EUT A + EUT C + EUT F + EUT I + EUT J + EUT K	- / -
set. 3	EUT A + EUT B + EUT D + EUT G + EUT I + EUT J + EUT K	- / -
set. 4	EUT A + EUT C + EUT E + EUT H	- / -

*) EUT set-up no. is used to simplify the identification of the EUT set-up in this test report.

6.4 EUT Operating Modes

EUT operating mode no.*)	Description of operating modes	Additional information
op. 1	UMTS FDD II traffic + charging	- / -
op. 2	UMTS FDD V traffic + charging	- / -
op. 3	UMTS FDD II idle + charging	- / -
op. 4	UMTS FDD V idle + charging	- / -

*) EUT operating mode no. is used to simplify the test report.

7 Summary of Test Results

- ☒ No deviations from the technical specifications were ascertained
☐ There were deviations from the technical specifications ascertained

7.1 Emission

7.1.1 Enclosure

EMI Phenomenon	Frequency range	Basic standard	Result
Radiated Interference Field Strength	30 - 1000 MHz	FCC Part 15 Class B	passed
Radiated Interference Field Strength	> 1 GHz	FCC Part 15 Class B	passed

7.1.2 AC Mains Power Input/Output Ports

EMI Phenomenon	Frequency range	Basic standard	Result
Conducted interference voltage	0,15– 30 MHz	FCC Part 15 Class B	passed

Remarks:

NA1	Not tested because not required by used standard
NA2	Test not applicable because port does not exists
NA3	Test not applicable because port only for services
NA4	Test not applicable because port lengths not longer than 3m
NA5	Not tested because not required by customer
NA6	Not tested because used frequency < 108 MHz

7.2 Measurement and Test Set-up

Note: The test configuration is in accordance with the requirements given in the standards in point 3

7.3 Measurement uncertainty

The uncertainty of the measurement equipment fulfils CISPR 16 and the related European and national standards.

The semi anechoic chamber fulfils the requirements of CISPR 16-1 (ANSI C63.4) for a test volume of 3m Ø.

Measurement uncertainty calculations are on file and available from the test laboratory upon request.

8 Detailed test results - Emission

8.1 Conducted Emission

8.1.1 Instrumentation for Test (see equipment list)

G 1	G 2	F 21									
-----	-----	------	--	--	--	--	--	--	--	--	--

8.1.2 Test Plan

EUT set-up	set. 1+ set. 2		
Operating mode	Port / Line	Limit	Result
op. 1 (set. 1)	AC power line	47CFR15: (FCC part 15 B) Class B	passed
op. 2 (set. 2)	AC power line	47CFR15: (FCC part 15 B) Class B	passed

Remark : Powered by external power supply (115V / 60Hz)

8.1.3 Conducted Limits (Power-Line)

Frequency- range	FCC part 15 B Class B		FCC part 15 B Class A	
	Quasi-Peak (dBμV)	Average (dBμV)	Quasi-Peak (dBμV)	Average (dBμV)
0,15 MHz – 0,5 MHz	66-56	56-46	79	66
0,5 MHz -5 MHz	56	46	73	60
5 MHz -30 MHz	60	50	73	60

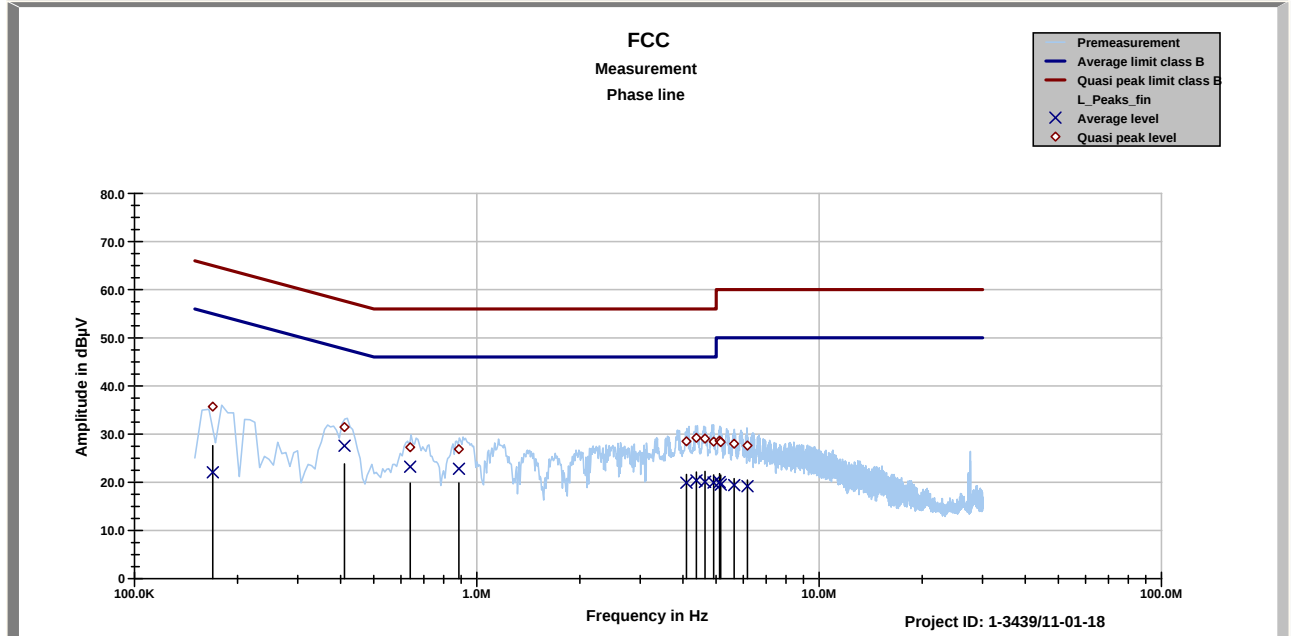
8.1.4 Calibration Information

Device	Serial number	ICT Number	Calibration valid until	Calibration interval
HP 8542 EMI Receiver with RF Filter Unit	3617A00170	300000568	01 / 2012	12 month
VISN ESH 3-Z5	892475/017	300002209	01 / 2012	24 month

Remarks: All emission components and the shielded room were checked weekly
Cable loss: 0.6 to 2.4 dB (150kHz to 30 MHz)

8.1.5 Test Results of Main

set. 1



FCC
Phase line tbl

Project ID: 1-3439/11-01-18

03:39:54 PM, Thursday, May 05, 2011

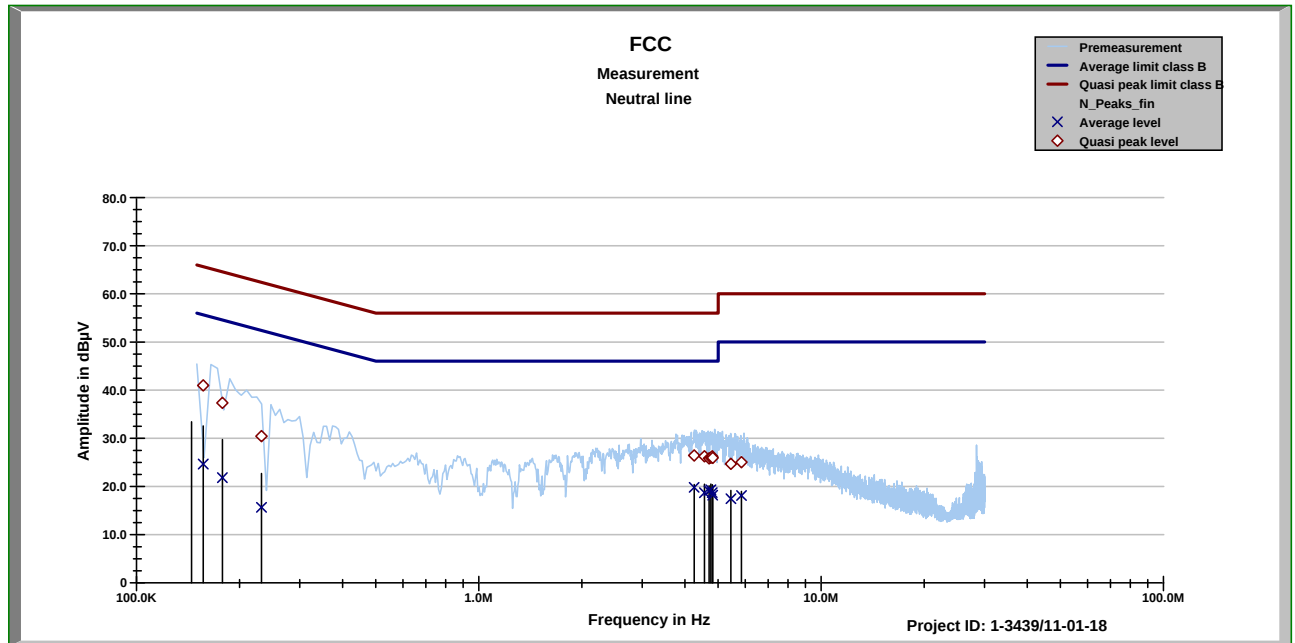
Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.1693	35.70	29.30	22.08	33.36
0.41073	31.46	26.17	27.57	20.98
0.63846	27.27	28.73	23.24	22.76
0.88602	26.86	29.14	22.80	23.20
4.0927	28.50	27.50	19.91	26.09
4.3772	29.22	26.78	20.38	25.62
4.6366	29.07	26.93	20.09	25.91
4.9121	28.43	27.57	19.93	26.07
5.1172	28.62	31.38	20.02	29.98
5.155	28.35	31.65	19.51	30.49
5.6419	28.02	31.98	19.41	30.59
6.1719	27.62	32.38	19.20	30.80

Project ID - 1-3439/11-01-18

EUT - RDY 71 UW + 2nd generation Stereo Headset (HDW-24529-001) alt 1 + Fixed Blade Charger (HDW-24481-001 Rev 1) + 1,2 m USB Cable (HDW-28109-003)

Serial Number - CER-21958-002 | IMEI: 004402.24.060165.2

Operating mode - UMTS FDD II traffic + charging



FCC

Neutral line tbl

Project ID: 1-3439/11-01-18

03:39:54 PM, Thursday, May 05, 2011

Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.15662	40.97	24.67	24.65	31.16
0.17819	37.34	27.23	21.82	33.38
0.23184	30.43	31.95	15.66	38.00
4.255	26.43	29.57	19.80	26.20
4.5576	26.27	29.73	18.69	27.31
4.7018	25.83	30.17	19.09	26.91
4.7581	25.95	30.05	19.31	26.69
4.8053	26.25	29.75	18.72	27.28
4.8193	25.93	30.07	18.18	27.82
5.4479	24.68	35.32	17.45	32.55
5.8478	25.03	34.97	18.11	31.89

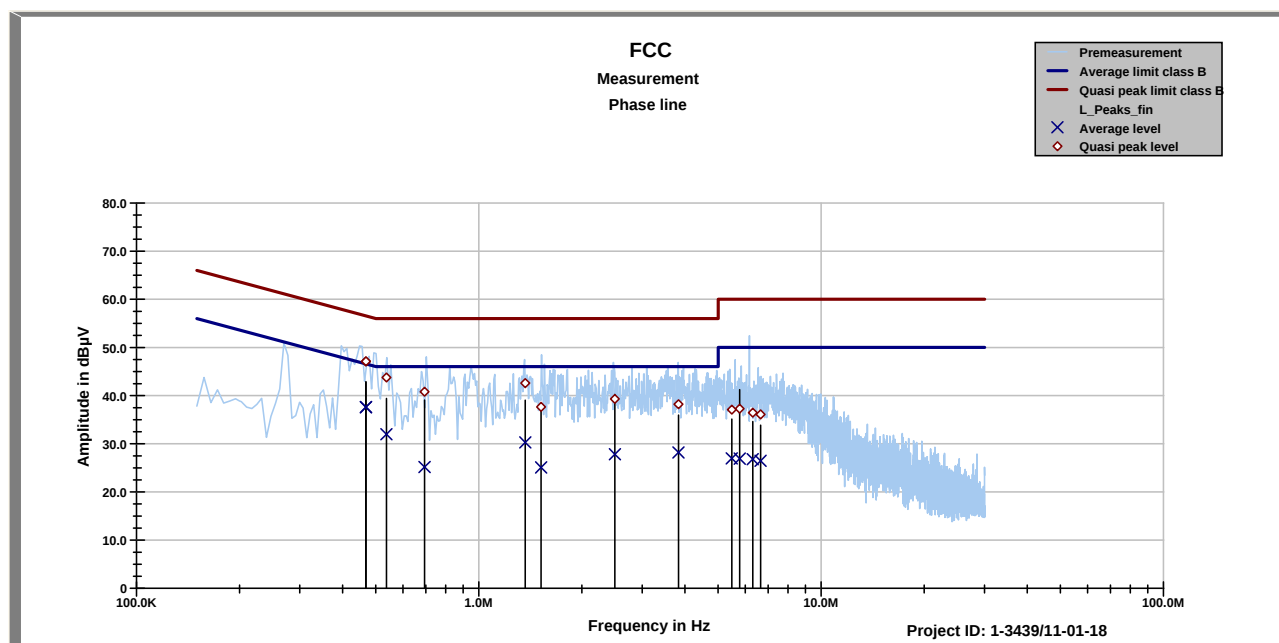
Project ID - 1-3439/11-01-18

EUT - RDY 71 UW + 2nd generation Stereo Headset (HDW-24529-001) alt 1 + Fixed Blade Charger (HDW-24481-001 Rev 1) + 1,2 m USB Cable (HDW-28109-003)

Serial Number - CER-21958-002 | IMEI: 004402.24.060165.2

Operating mode - UMTS FDD II traffic + charging

set. 2



FCC

Phase line tbl

Project ID: 1-3439/11-01-18

03:18:20 PM, Thursday, May 05, 2011

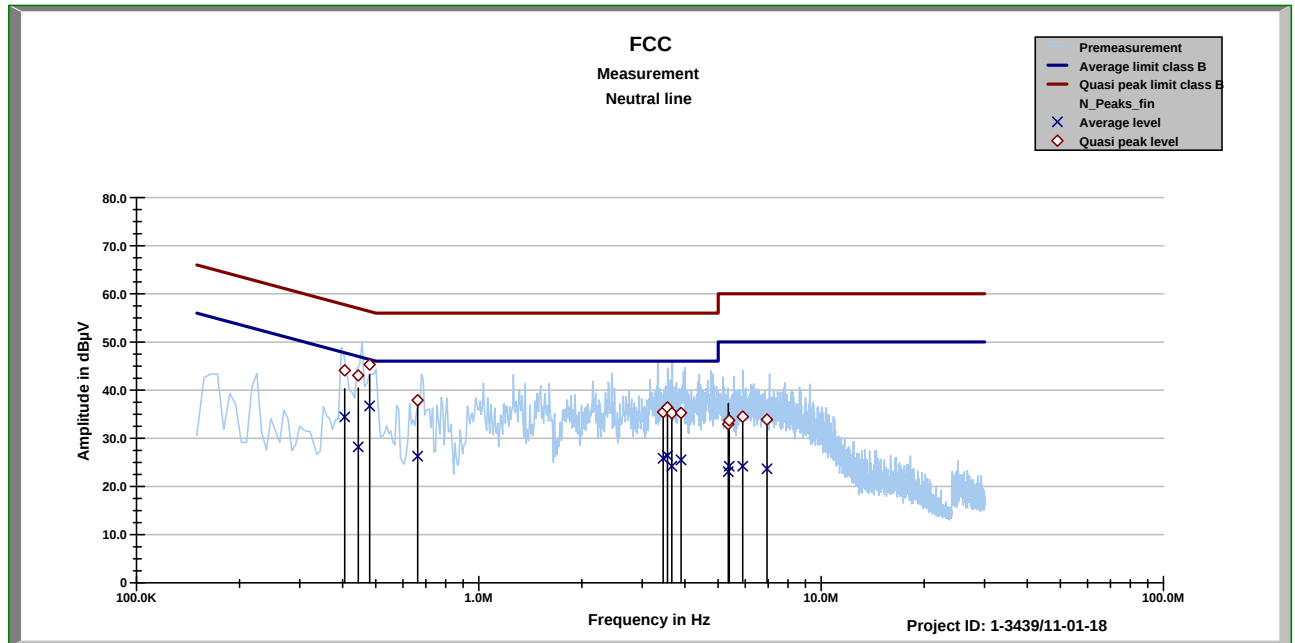
Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.46761	47.09	9.47	37.56	9.36
0.46814	47.11	9.43	37.63	9.28
0.53689	43.74	12.26	31.97	14.03
0.69397	40.78	15.22	25.16	20.84
1.366	42.58	13.42	30.27	15.73
1.5191	37.65	18.35	25.08	20.92
2.4954	39.29	16.71	27.81	18.19
3.8268	38.20	17.80	28.20	17.80
5.4806	37.07	22.93	26.97	23.03
5.7779	37.26	22.74	26.90	23.10
6.3073	36.45	23.55	26.80	23.20
6.6491	36.09	23.91	26.45	23.55

Project ID - 1-3439/11-01-18

 EUT - RDY 71 UW + 2nd Generation Stereo Headset (HDW-24529-001) alt 2 + Captive
 Cable Charger (HDW-17957-003 Rev 3) MEPS IV + USB Y-Cable (HDW-19137-002) +
 Charging Pod (HDW-40025-001) + External Battery Charger (HDW-24478-001)

Serial Number - CER-21958-002 | IMEI: 004402.24.060165.2

Operating mode - UMTS FDD V traffic + charging



FCC

Neutral line tbl

Project ID: 1-3439/11-01-18

03:18:20 PM, Thursday, May 05, 2011

Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.40574	44.09	13.65	34.43	14.26
0.44435	43.04	13.94	28.22	19.37
0.4796	45.29	11.05	36.70	9.88
0.66259	37.89	18.11	26.30	19.70
3.4533	35.44	20.56	25.83	20.17
3.5522	36.38	19.62	26.38	19.62
3.6612	35.21	20.79	24.19	21.81
3.894	35.27	20.73	25.50	20.50
5.3492	32.94	27.06	23.06	26.94
5.3857	33.72	26.28	24.20	25.80
5.8987	34.50	25.50	24.20	25.80
6.9415	33.90	26.10	23.67	26.33

Project ID - 1-3439/11-01-18

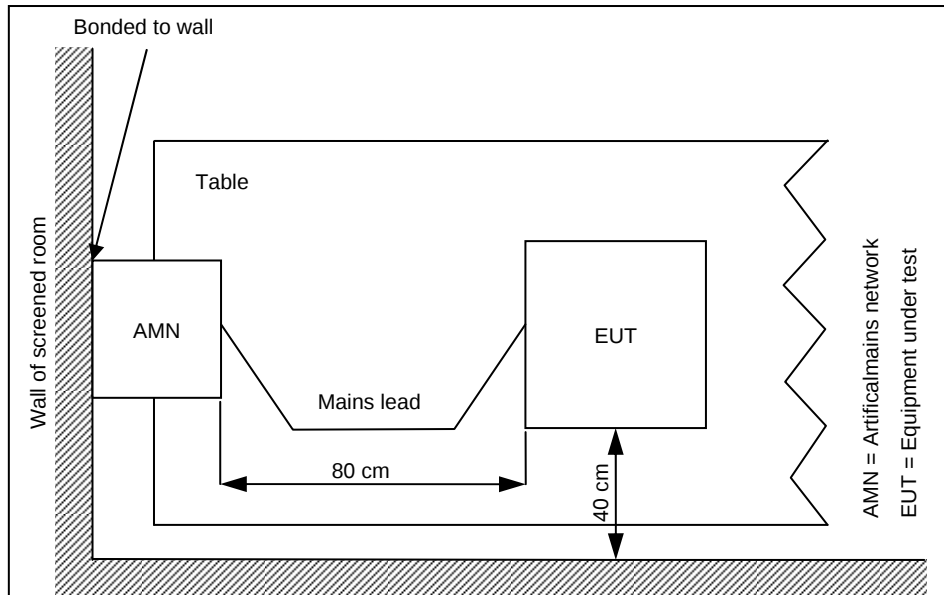
EUT - RDY 71 UW + 2nd Generation Stereo Headset (HDW-24529-001) alt 2 + Captive Cable Charger (HDW-17957-003 Rev 3) MEPS IV + USB Y-Cable (HDW-19137-002) + Charging Pod (HDW-40025-001) + External Battery Charger (HDW-24478-001)

Serial Number - CER-21958-002 | IMEI: 004402.24.060165.2

Operating mode - UMTS FDD V traffic + charging

8.1.6 Test Set-up

According to EMC basic standard **ANSI 63.4**



8.2 Electromagnetic Radiated Emissions (Distance 10 m)

8.2.1 Instrumentation for Test (see equipment list)

F 1	F 2	F 4b	F 5	F 6	F 7	F 8	F 21				
-----	-----	------	-----	-----	-----	-----	------	--	--	--	--

8.2.2 Test Plan

EUT set-up	set. 3 + set. 4		
Operating mode	Application	Limit	Result
op. 3 (set. 3)	Enclosure	FCC part 15 B Class B	passed
op. 4 (set. 4)	Enclosure	FCC part 15 B Class B	passed

Remarks: Powered by external power supply (115V / 60Hz)

8.2.3 Radiated Limits

Frequency- range	FCC part 15 B Class B	FCC part 15 B Class A
30 MHz – 88 MHz	30 dB μ V/m	39,1 dB μ V/m
88 MHz – 216 MHz	33,5 dB μ V/m	43,5 dB μ V/m
216 MHz – 960 MHz	36 dB μ V/m	46,4 dB μ V/m
960 MHz – 1000 MHz	44 dB μ V/m	49,5 dB μ V/m
	* This values are recalculated from the class B limits at 3 m antenna distance in §15.109 (g 2) of the FCC rules	

8.2.4 Calibration Information

Device	Serial number	ICT Number	Calibration valid until	Calibration interval
ESCI 3 Receiver	100083/003	300003312	03/2012	12 month
Trilog Antenna	9163-295	300003787	04/2012	24 month

Remarks:

System check of all relevant devices and the chamber (weekly)

Cable loss: 0.5 to 4.2 dB (30 MHz to 2 GHz); the cable and connectors loss is re-measured every 3 month

8.2.5 Test Results

set. 3

CETECOM ICT Services GmbH

Common Information

EUT: RDY 71 UW + 2nd generation Stereo Headset (HDW-24529-001) alt
 1 + Fixed Blade Charger (HDW-24481-001 Rev 1) + 1,2 m USB
 Cable (HDW-28109-003) + USB Y-Cable (HDW-19137-002) +
 Charging Pod (HDW-40025-001) + External Battery charger (HDW-
 24478-001)

Serial Number: CER-21958-002 | IMEI: 004402.24.060165.2

Test Description: FCC part 15 B class B @ 10 m

Operating Conditions: UMTS FDD II idle + charging

Operator Name: Hennemann

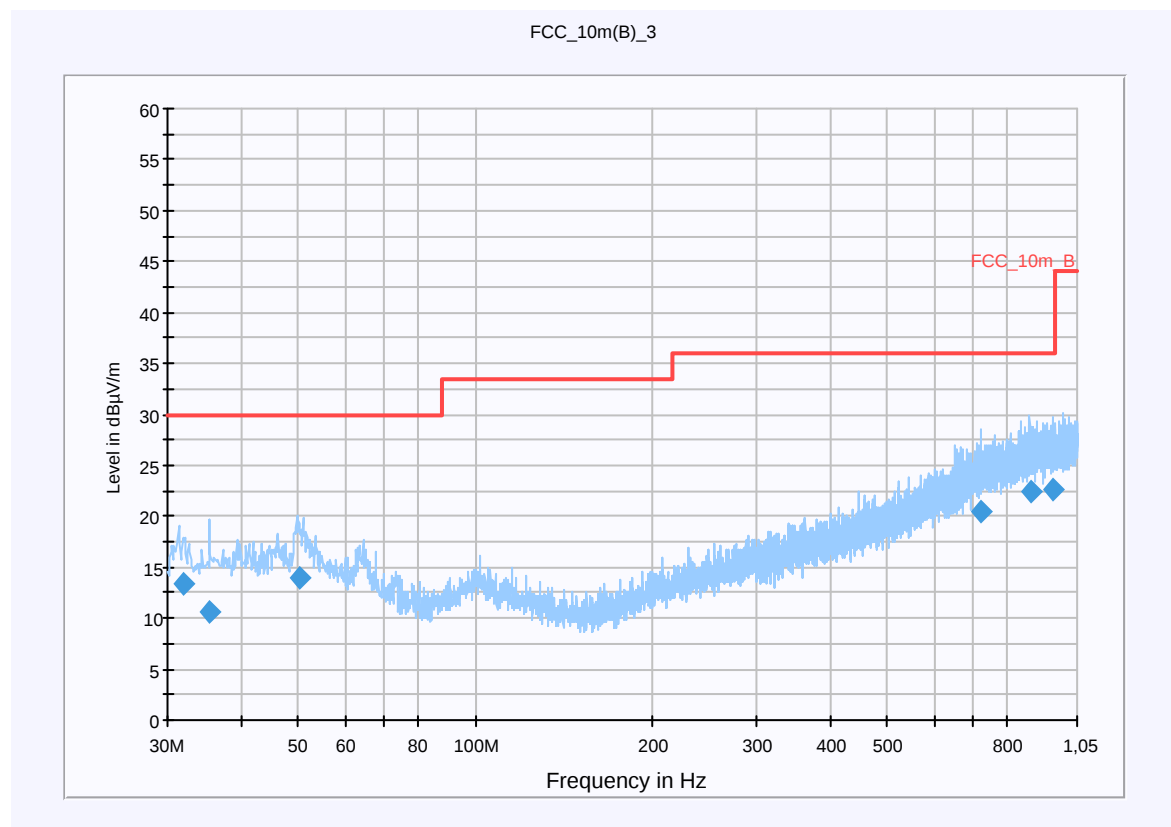
Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)

Level Unit: dB μ V/m

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 2 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
31.971150	13.3	15000.000	120.000	170.0	V	184.0	12.7	16.7	30.0	
35.446500	10.7	15000.000	120.000	164.0	V	86.0	13.1	19.3	30.0	
50.113800	14.1	15000.000	120.000	170.0	V	196.0	13.4	15.9	30.0	
722.704800	20.5	15000.000	120.000	170.0	V	268.0	23.0	15.5	36.0	
873.563550	22.4	15000.000	120.000	106.0	H	270.0	24.9	13.6	36.0	
957.091800	22.6	15000.000	120.000	170.0	V	266.0	25.4	13.4	36.0	

set. 4

CETECOM ICT Services GmbH

Common Information

EUT: RDY 71 UW + 2nd generation Stereo Headset (HDW-24529-001) alt
2 + Fixed Blade Charger (HDW-24481-001 Rev 2) + 0,3m USB
Cable (HDW-28109-001)

Serial Number: CER-21958-002 | IMEI: 004402.24.060165.2

Test Description: FCC part 15 B class B @ 10 m

Operating Conditions: UMTS FDD V idle + charging

Operator Name: Hennemann

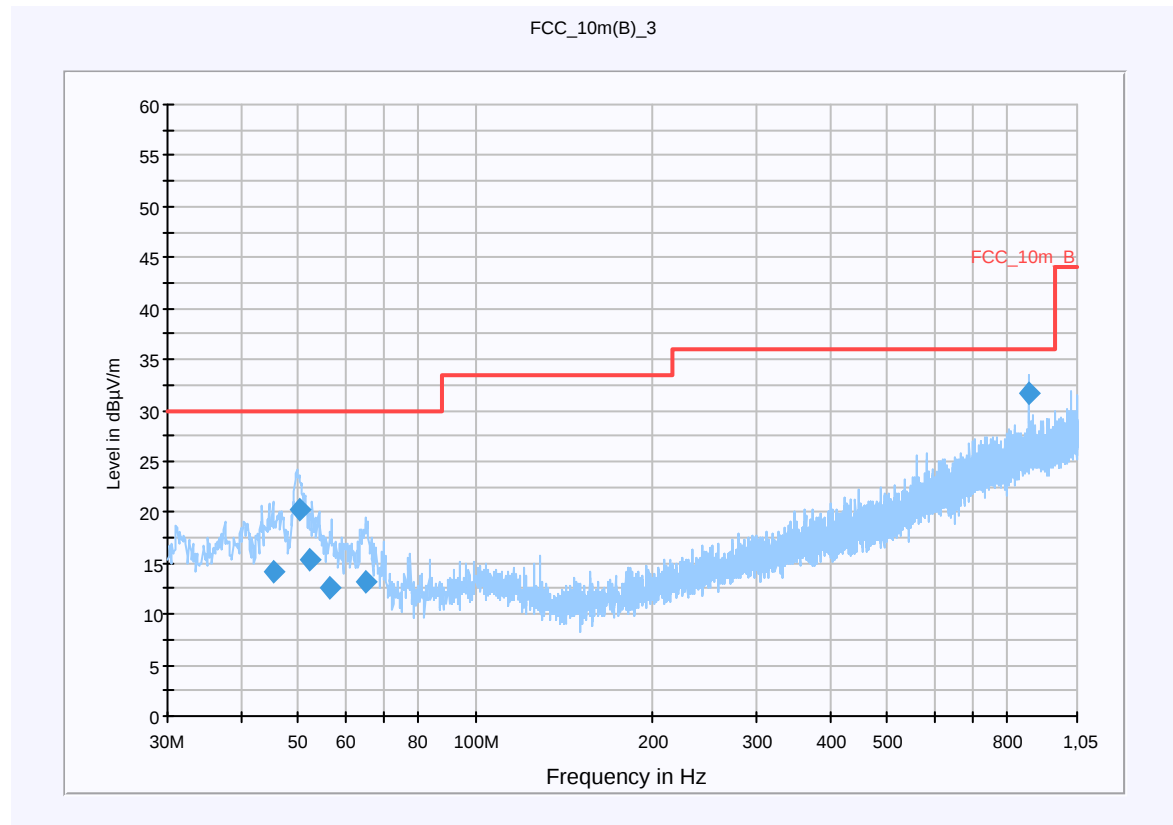
Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)

Level Unit: dB μ V/m

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 2 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

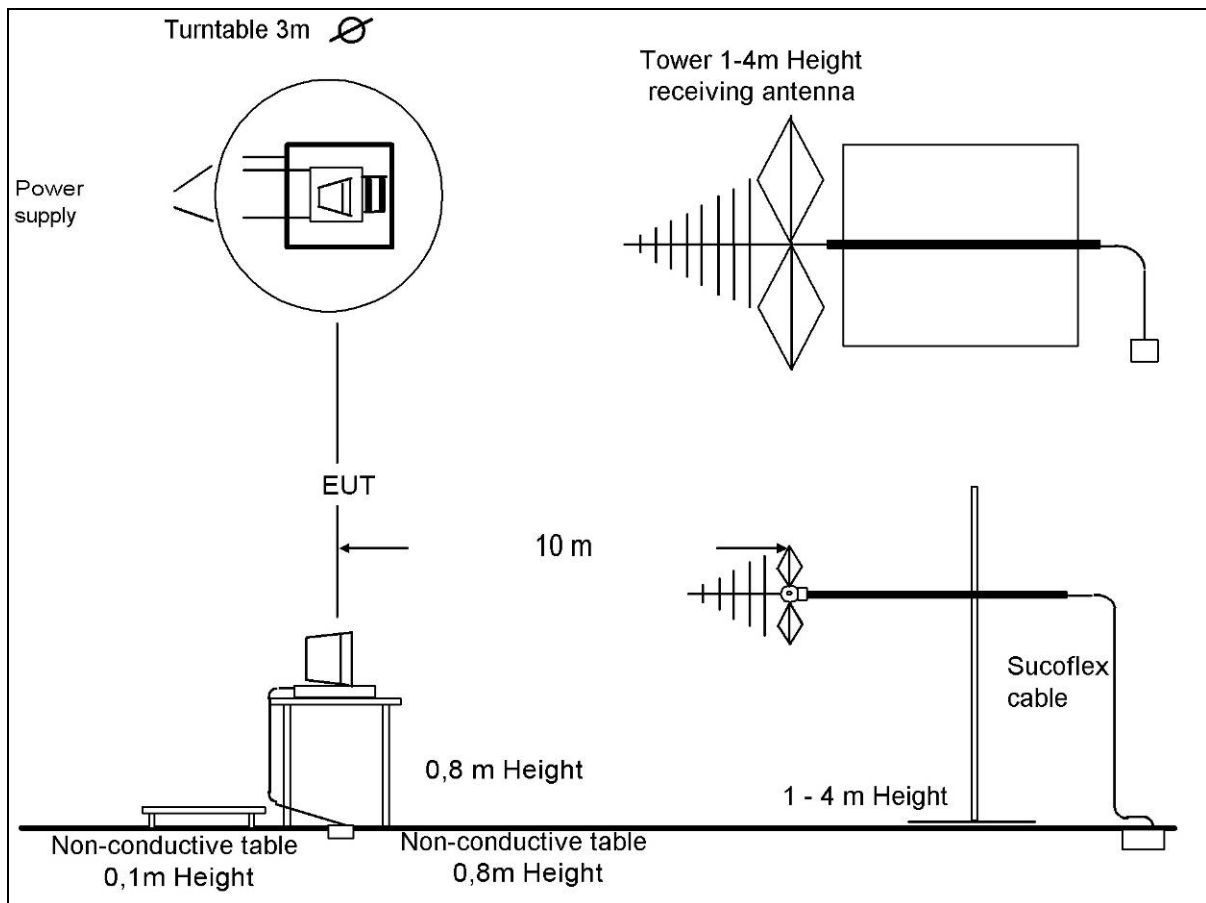
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
45.386400	14.1	15000.000	120.000	146.0	V	264.0	13.3	15.9	30.0	
50.160000	20.2	15000.000	120.000	98.0	V	182.0	13.4	9.8	30.0	
52.333650	15.3	15000.000	120.000	115.0	V	8.0	13.1	14.7	30.0	
56.717700	12.6	15000.000	120.000	170.0	V	106.0	12.4	17.4	30.0	
65.010150	13.3	15000.000	120.000	170.0	V	272.0	10.4	16.7	30.0	
870.714750	31.6	15000.000	120.000	146.0	H	8.0	24.8	4.4	36.0	

8.2.6 Hardware Set-up

Subrange 1

Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.42
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (1005)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12
Software-version:	EMC 32 Version 8.10.00

8.2.7 Test Set-up



8.2.8 Electromagnetic Radiated Emissions (Distance 5 m)

8.2.8.1 Instrumentation for Test (see equipment list)

F 1	F 6	F 21	F 29	F 30	F 33						
-----	-----	------	------	------	------	--	--	--	--	--	--

8.2.8.2 Test Plan

EUT set-up	set. 3 + set. 4		
Operating mode	Application	Limit	Result
op. 3 (set. 3)	Enclosure	47CFR15: (FCC part 15 B) Class B	passed
op. 4 (set 4)	Enclosure	47CFR15: (FCC part 15 B) Class B	passed

Remarks:	The measured values are recalculated from 5m to 3m distance Powered by external power supply (115V / 60Hz)
-----------------	---

8.2.8.3 Radiated Limits

Frequency- range	47CFR15: (FCC part 15 B) Class B	47CFR15: (FCC part 15 B) Class A *
1000 MHz – 10000 MHz	54 dB μ V/m	59,5 dB μ V/m
		* This values are recalculated from the class A limits at 10 m antenna distance in §15.109 (g 2) of the FCC rules.

8.2.8.4 Calibration Information

Device	Serial number	ICT Number	Calibration valid until	Calibration interval
FSU 26	200809	300003874	01/2012	12 month
Horn Antenna	9120B188	300003896	04/2012	24 month

Remarks:
System check of all relevant devices and the chamber (weekly)
Cable loss: 0.5 to 4.2 dB (30 MHz to 2 GHz); the cable and connectors loss is re-measured every 3 month

8.2.8.5 Test Results

set. 3

CETECOM ICT Services GmbH

Common Information

EUT: RDY 71 UW + 2nd generation Stereo Headset (HDW-24529-001) alt 1 + Fixed Blade Charger (HDW-24481-001 Rev 1) + 1,2 m USB Cable (HDW-28109-003) + USB Y-Cable (HDW-19137-002) + Charging Pod (HDW-40025-001) + External Battery charger (HDW-24478-001)

Serial Number: CER-21958-002 | IMEI: 004402.24.060165.2

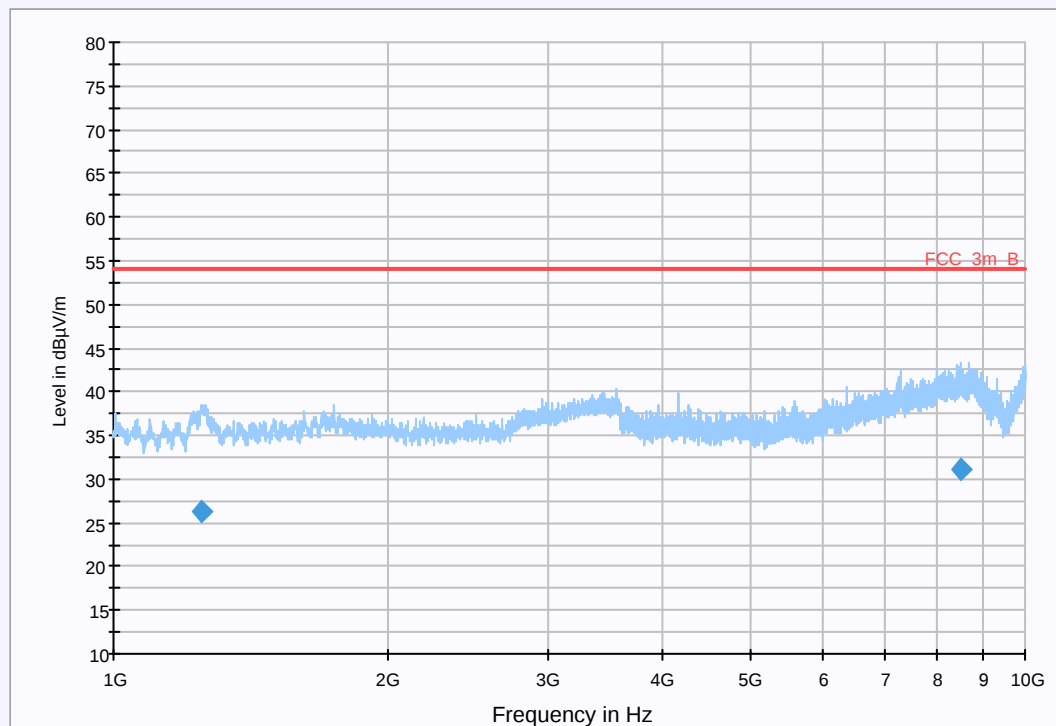
Test Description: FCC part 15 B class B

Operating Conditions: UMTS FDD II idle + charging

Operator Name: Hennemann

Comment: AC: 115 / 60 Hz

FCC_1_10_B_5m



Final Result 1

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
1246.909885	26.2	100.000	1000.000	100.0	H	135.0	-2.4	27.8	54.0	
8507.090217	31.1	100.000	1000.000	100.0	H	74.0	4.2	22.9	54.0	

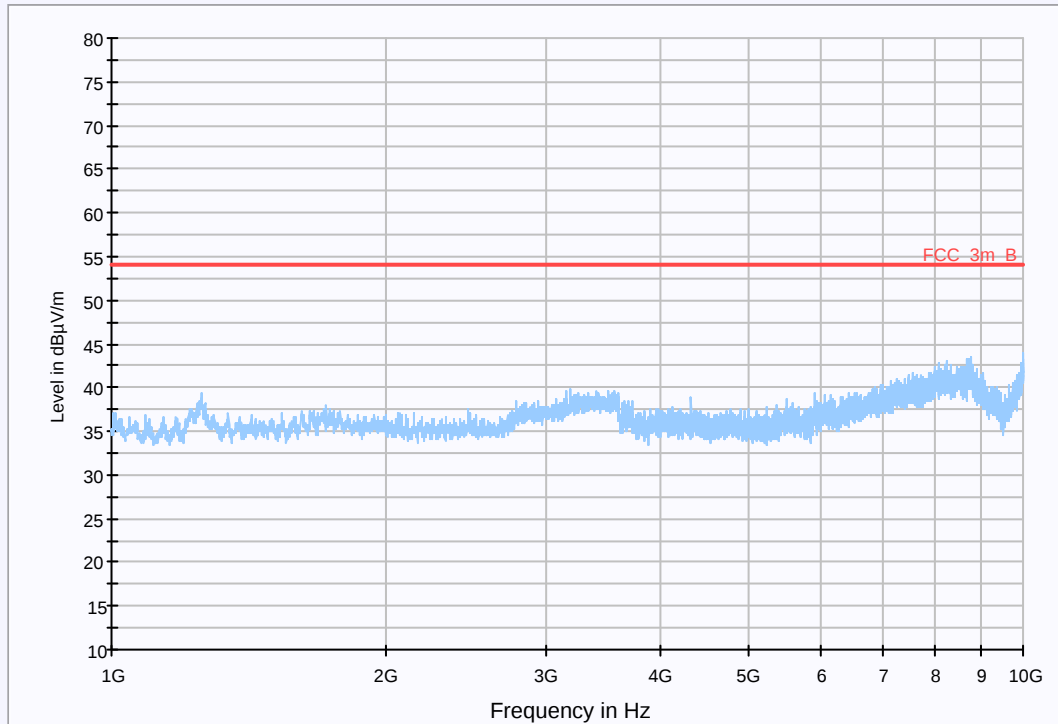
set. 4

CETECOM ICT Services GmbH

Common Information

EUT:	RDY 71 UW + 2nd generation Stereo Headset (HDW-24529-001) alt 2 + Fixed Blade Charger (HDW-24481-001 Rev 2) + 0,3m USB Cable (HDW-28109-001)
Serial Number:	CER-21958-002 IMEI: 004402.24.060165.2
Test Description:	FCC part 15 B class B
Operating Conditions:	UMTS FDD V idle + charging
Operator Name:	Hennemann
Comment:	AC: 115 V / 60 Hz

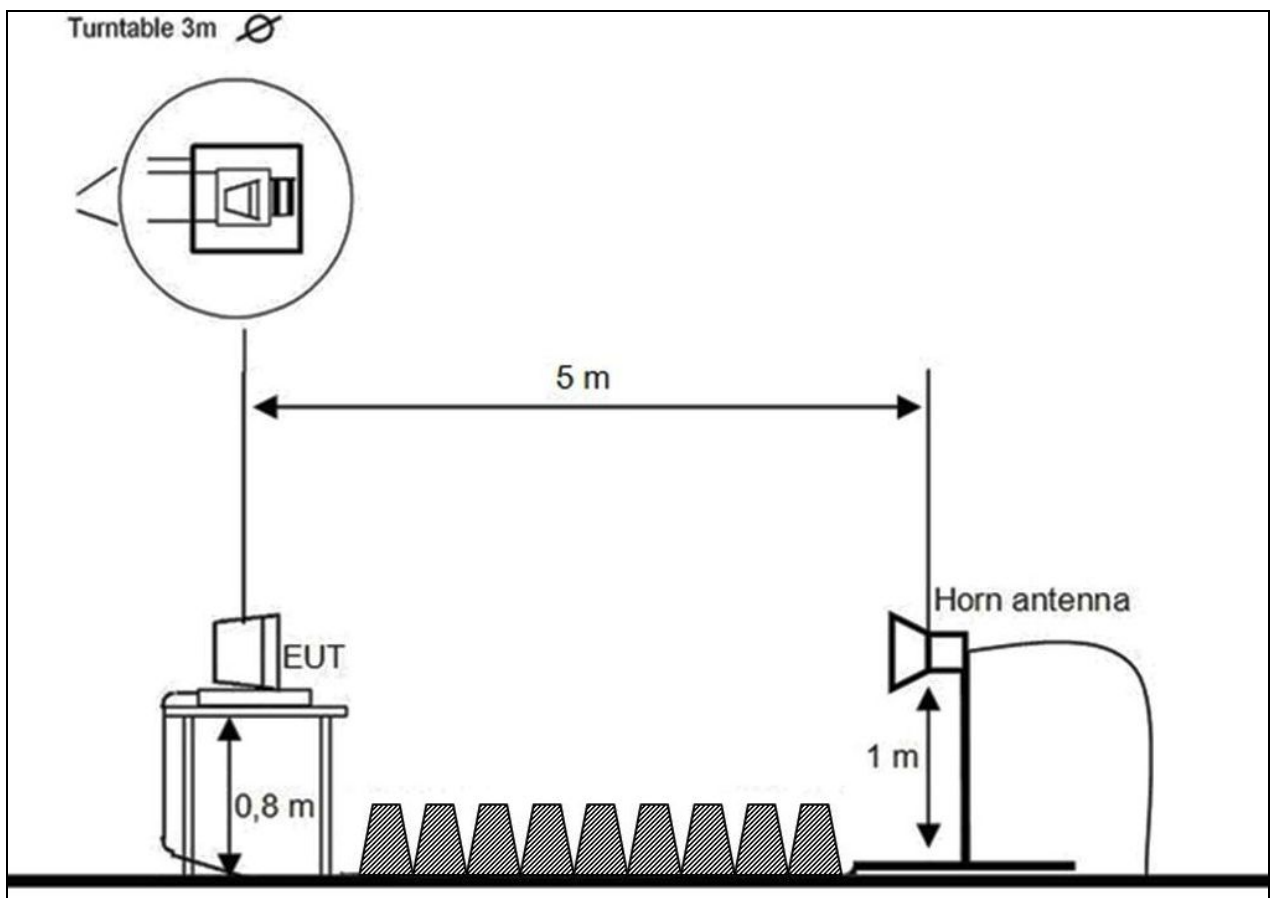
FCC_1_10_B_5m



8.2.8.6 Hardware Set-up

Subrange 1	
Frequency Range:	1 GHz - 10 GHz
Receiver:	ESU [ESU 26] @ GPIB0 (ADR 17), SN 100037/026, FW 4.43
Signal Path:	1_6_EN FW 1.0 Correction Table: 3_5m Correction Table: LNA_EN (matix)
Antenna:	BBHA 9120 B Correction Table (vertical): BBHA9120 Correction Table (horizontal): BBHA9120 Correction Table: Cable_Horn_EN (1103)
Antenna Tower:	Generic Tripod [Generic Tripod] @ GPIB0 (ADR 19), SN ?
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

8.2.8.7 Test Set-up



9 Test equipment and ancillaries used for tests

To simplify the identification of the test equipment and/or ancillaries which were used, the reporting of the relevant test cases only refer to the test item number as specified in the table below.

No.	Instrument/Ancillary	Manufacturer	Type	Serial-No.	Internal identification
Radiated emission in chamber E					
F-1	Control Computer	F+W		FW0502032	300003303
F-2	Trilog-Antenna	Schwarzbeck	VULB 9163	9163-295	---
F-3a	Amplifier	Veritech Microwave Inc.	0518C-138	- / -	- / -
F-4b	Switch	HP	3488A	- / -	300000368
F-5	EMI Test receiver	R&S	ESCI	100083	300003312
F-6	Turntable Interface-Box	EMCO / ETS-LINDGREN	Model 105637	44583	300003747
F-7	Tower/Turntable Controller	EMCO / ETS-LINDGREN	Model 2090	64672	300003746
F-8	Tower	EMCO / ETS-LINDGREN	Model 2175	64762	300003745
F-9	Ultra Notch-Filter Rejected band Ch. 62	WRCD		9	
Radiated immunity in chamber E					
F-10	Control Computer	F+W		FW0502032	300003303
F-11	Signal Generator	R&S	SML 03	102519	300003407
F-12	RF-Amplifier	ar	100W1000 M1	12951	300000529
F-13	Directional Coupler	ar	DC 3010	12708	300001428
F-14	Stacked Logper Antenna	Schwarzbeck	STLP9128 E	9128 E 013	300003408
F-15	RF-Amplifier	ar	60S1G3	313649	300003410
F-15b	RF-Amplifier 0.8 – 4 GHz	BONN	BLMA 0840-2000/100D	076820B	300003783
F-16	Directional Coupler	ar	DC7144A	312786	300003411
F-17	Horn Antenna	ar	AT 4002	19739	300000633
F-18	Power Meter	R&S	NRV	860327/024	F033
F-19	Power sensor	R&S	URV5-Z2	839080/005	300002844.02
F-20	Power sensor	R&S	URV5-Z2	830755/057	F032
Harmonics and flicker in front of chamber E					
F-21	Flicker and Harmonics Test System	Spitzenberger & Spies	PHE4500/B I PHE4500/B II	B5983 B5984	300000210
F-28	Power Supply	Hewlett Packard	6032 A	2920 A 04466	300000580
Radiated emission in chamber F > 1GHz					
F-29	Horn antenna	Schwarzbeck	BBHA 9120 B	9120B188	300003896
F-30	Amplifier	ProNova	0518C-138	005	F 024
F-31	Amplifier	Miteq	42-00502650-28-5A	1103782	300003379
F-32	Horn antenna	Emco	3115	9709-5289	300000213
F-33	Spectrum Analyzer	R&S	FSU 26	200809	300003874
F-34	Loop antenna	EMCO	6502	8905-2342	300000256

No.	Instrument/Ancillary	Manufacturer	Type	Serial-No.	Internal identification
Conducted emission in chamber G					
G-1	EMI Receiver	Hewlett Packard	8542 E	3617A00170	300000568
G-2	V-ISN	Rohde & Schwarz	ESH 3-Z5	892475/017	300002209
G-2a	V-ISN	Rohde & Schwarz	ESH 2-Z5	892602/024	300000587
G-3	2-Wire ISN	Schaffner	ISN T200	19075	300003422
G-4	4-Wire ISN	Schaffner	ISN T400	22325	300003423
G-5	Shielded wire ISN	Schaffner	ISN ST08	22583	300003433
G-6	Unshielded 8 wire ISN	Teseq	ISN T800	26113	300003833
G-7	Unshielded 8 wire ISN	Teseq	ISN T8-Cat. 6	26374	300003851
G-8	RF Current probe	FCC	F-33-4	46	300003257
G-9	V-ISN	Schaffner	ISN PLC-150	21579	300003318
G-10	V-ISN	Schaffner	ISN PLC-25-30	21584	300003319
G-10a	PLC Filter	TESEQ	Filter PLC	23436	300003598
G-10b	Coupling unit 75 Ohm	Fiedler	AC	----	300003272.04
Conducted immunity in chamber G					
G-11	Signal generator	R&S	SMG	8610647025	300000204.01
G-12	RF-Amplifier	BONN	BSA 0125-75	066502-01	300003545
G-13	Power Meter	R&S	URV 5	837723/025	300002844.01
G-14	Power Sensor	R&S	URV 5-Z2	832874/021	300002239
G-15	Directional coupler	emv	DC 2000	9401-1677	300000592
G-16	Attenuator 6dB	Alan	50HP6-100 N	1210480348	300003148
G-17	EM-Injection Clamp	FCC	203i	232	300000626
G-18	CDN	FCC	FCC-801-M3-16	237	300000627
G-19	CDN	FCC	FCC-801-T2	78	300000629
G-20	CDN	FCC	FCC-801-AF 2	62	300000630
G-21	CDN	FCC	FCC-801-AF 4	61	300000631
G-22	CDN	FCC	FCC-801-M1	2027	300002761
G-23	CDN	Lüthi	CDN 801-M2/M3	9350105	300000534
G-24	Transformer for 50Hz Loop Antenna	EM-Test	MC2630	0200-10	300002659.01
G-25	50Hz Loop Antenna	EM-Test	MS 100	none	300002659
Surge, Burst, Dips and Interruptions in chamber G					
G-26	Hybrid-Generator	EM-Test	UCS 500M6	0399-07	300002599
G-27	Motor Variac	EM-Test	MV 2616	0600-01	300002658
G-28	Capacitive Coupling Clamp	MWB	KKS 100	---	300000589
G-29	Coupling Decoupling Network	EMC-Partner	CDN-UTP	00014	300003226
ESD in chamber G					
G-30	ESD generator	Schaffner	NSG 435	308	300002249
Emission on bench in chamber G					
G-31	Absorbing Clamp	R&S	MDS-21	832 231/006	300000527

10 Observations

No observations, exceeding those reported with the single test cases, have been made.

Annex A: Photographs of the test set-up

see document: 1-343901-18/11_A_ANNEX

Annex B: Photographs of the EUT

see document: 1-343901-18/11_A_ANNEX

Annex C: Document history

Version	Applied changes	Date of release
	Initial release	2011-05-10
A	Remove pictures of the EUT and setups and added to an separate document.	2011-05-25

Annex D: Further information**Glossary**

DUT	-	Device under Test
EMC	-	Electromagnetic Compatibility
EUT	-	Equipment under Test
FCC	-	Federal Communication Commission
FCC ID	-	Company Identifier at FCC
HW	-	Hardware
IC	-	Industry Canada
Inv. No.	-	Inventory number
N/A	-	not applicable
S/N	-	Serial Number
SW	-	Software