

TEST REPORT

Test Report No.: 1-3314-01-19/11-B



Testing Laboratory

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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

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Waterloo, ON N2L 3W8/Canada
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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: RDD 71 UW
FCC ID: L6ARDD70UW
IC: 2503A-RDD70UW
S/N serial number: CER-39234-001
IMEI 004402.24.059357.8
PIN 27259D1D
HW hardware status: Rev. 1 (11-Apr-11)
SW software status: 8.0.0.167
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



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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.

2.2 Application details

Date of receipt of order:	2011-04-15
Date of receipt of test item:	2011-04-26
Start of test:	2011-04-28
End of test:	2011-04-29
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	2004-02	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	:	RDD 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- / ouput	< 3 m
		3,5 mm stereo jack:	in- / output	< 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.				

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 RDD 71 UW	CER-39234-001 IMEI: 004402.24.059357.8	Rev 1 11-Apr-11	8.0.0.167
EUT B	stereo headset	ST HS (HDW-14322-003)	unknown	unknown	- / -
EUT C	stereo headset	Premium ST HS (HDW-15766-005)	unknown	unknown	- / -
EUT D	stereo headset	2 nd generation Stereo Headset (HDW-24529-001) alt 1	unknown	unknown	- / -
EUT E	stereo headset	2 nd generation Stereo Headset (HDW-24529-001) alt 2	unknown	unknown	- / -
EUT F	stereo headset	Trident Straight Jack (HDW-24529-004)	unknown	unknown	- / -
EUT G	Bluetooth Headset	Bluetooth Headset (HS-300) (HDW-25937-001)	unknown	unknown	unknown
EUT H	AC/DC-power supply	Fixed Blade Charger (HDW-24481-001 Rev 1)	unknown	Rev 1	- / -
EUT I	AC/DC-power supply	Fixed Blade Charger (HDW-24481-001 Rev 2)	unknown	Rev 2	- / -
EUT J	AC/DC-power supply	Alt NA Fixed Blade Charger (HDW-24481-001)	unknown	unknown	- / -
EUT K	AC/DC-power supply	Captive Cable Charger (HDW-17957-003 Rev 4) MEPS IV	unknown	Rev 4	- / -
EUT L	USB-cable	1,5 m Pihong USB Cable (HDW-06610-005)	unknown	unknown	- / -
EUT M	USB-cable	0,3 m Pihong USB Cable (HDW-06610-013)	unknown	unknown	- / -
EUT N	USB-cable	1,2 m Boa USB Cable (HDW-28109-003)	unknown	unknown	- / -
EUT O	USB-cable	0,3 m Boa USB Cable (HDW-28109-001)	unknown	unknown	- / -
EUT P	USB Y-cable	USB Y-Cable (HDW-19137-002)	unknown	unknown	- / -
EUT Q	External Battery Charger	External Battery Charger (HDW-18976-005)	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 H + EUT L	- / -
set. 2	EUT A + EUT C + EUT I + EUT M	- / -
set. 3	EUT A + EUT D + EUT J + EUT N	- / -
set. 4	EUT A + EUT G + EUT K	- / -
set. 5	EUT A + EUT E + EUT J + EUT O	- / -
set. 6	EUT A + EUT F + EUT K + EUT P + EUT Q	- / -

*) 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	GSM 850 traffic + charging	- / -
op. 2	PCS 1900 traffic + charging	- / -
op. 3	GSM 850 idle + charging	- / -
op. 4	PCS 1900 idle + charging	- / -
op. 5	UMTS FDD IV 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								
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8.1.2 Test Plan

EUT set-up	set. 1 + set. 2 + set. 5 + set. 6		
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
op. 1 (set. 5)	AC power line	47CFR15: (FCC part 15 B) Class B	passed
op. 2 (set. 6)	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

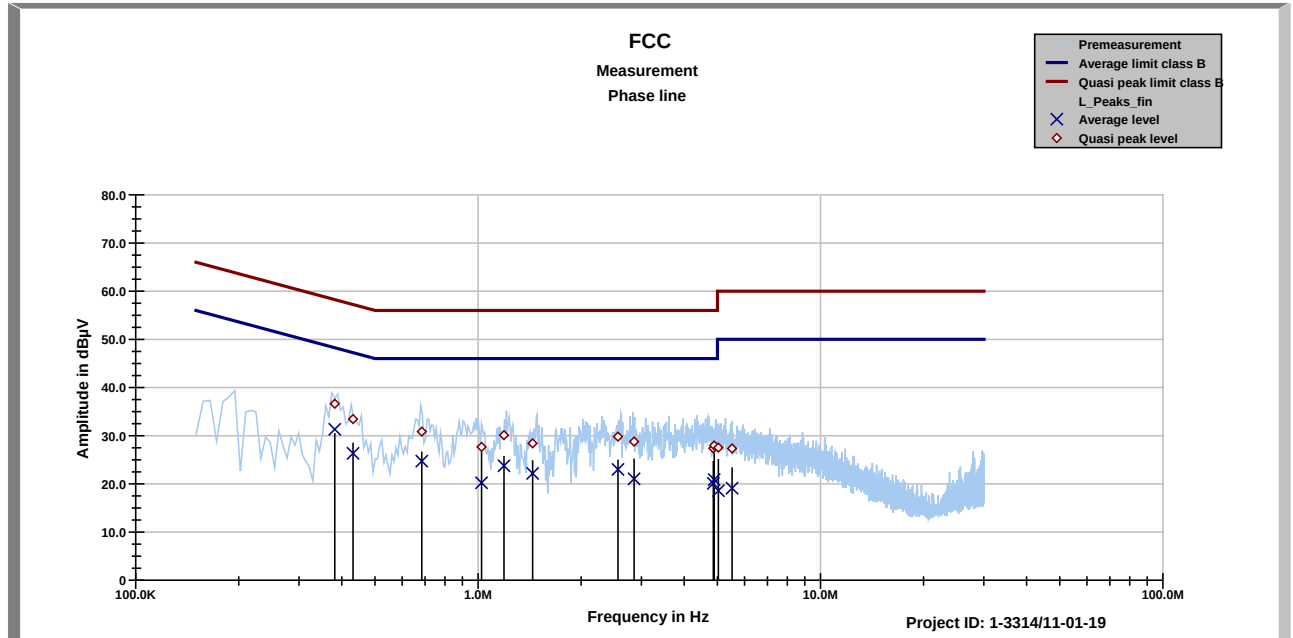
8.1.4 Calibration Information

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: 1-3314/11-01-19

03:32:25 PM, Thursday, April 28, 2011

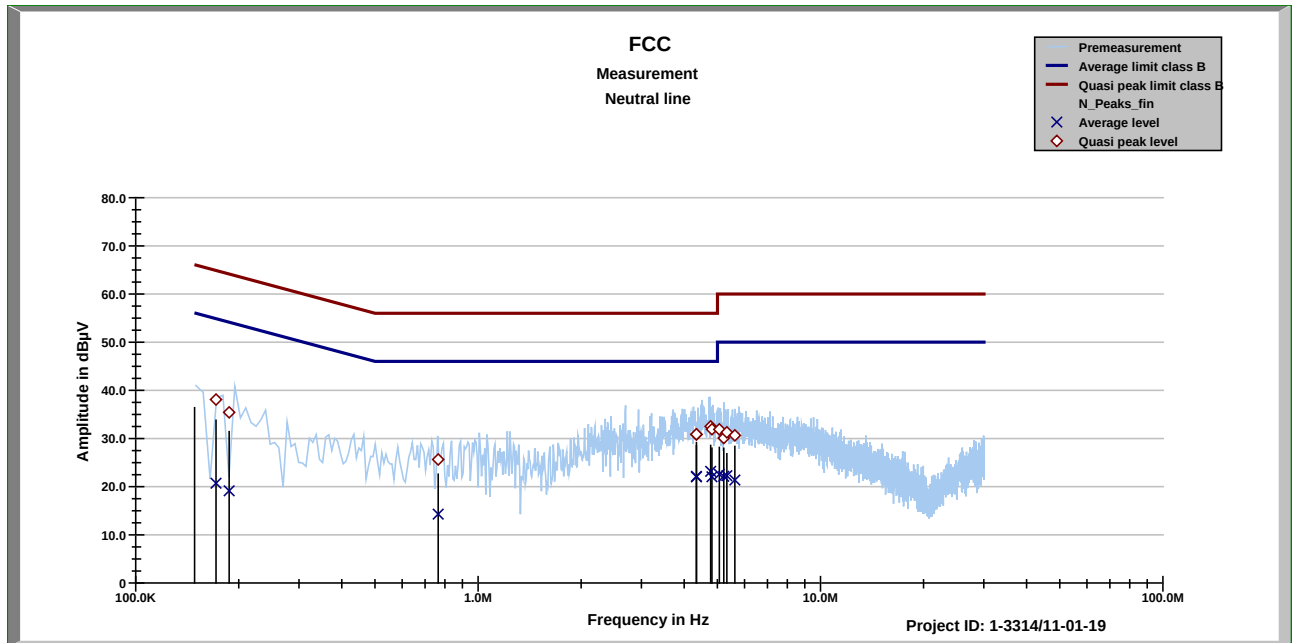
Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.38153	36.63	21.62	31.32	18.07
0.43118	33.44	23.79	26.34	21.63
0.6846	30.84	25.16	24.71	21.29
1.0231	27.65	28.35	20.21	25.79
1.18978	30.11	25.89	23.75	22.25
1.4426	28.40	27.60	22.17	23.83
2.5617	29.79	26.21	22.99	23.01
2.8535	28.76	27.24	21.04	24.96
4.8618	27.37	28.63	20.10	25.90
4.8922	27.95	28.05	20.87	25.13
5.0276	27.51	32.49	18.58	31.42
5.5152	27.34	32.66	19.09	30.91

Project ID - 1-3314/11-01-19

EUT - RDD 71 UW + ST HS (HDW-14322-003) + Fixed Blade Charger (HDW-24481-001 Rev 1) + 1,5m Pihong USB Cable (HDW-06610-005)

Serial Number - CER-39234-001 | IMEI 004402.24.059357.8

Operating mode - GSM 850 traffic + charging



FCC

Neutral line tbl

Project ID: 1-3314/11-01-19

03:32:25 PM, Thursday, April 28, 2011

Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.17166	38.09	26.79	20.70	34.68
0.18753	35.42	28.72	19.12	35.80
0.7645	25.63	30.37	14.28	31.72
4.3388	30.81	25.19	22.14	23.86
4.3393	30.87	25.13	22.01	23.99
4.7741	32.51	23.49	23.17	22.83
4.8173	31.90	24.10	22.04	23.96
5.0619	31.88	28.12	22.56	27.44
5.2176	30.09	29.91	22.14	27.86
5.3257	31.27	28.73	22.27	27.73
5.6195	30.63	29.37	21.37	28.63

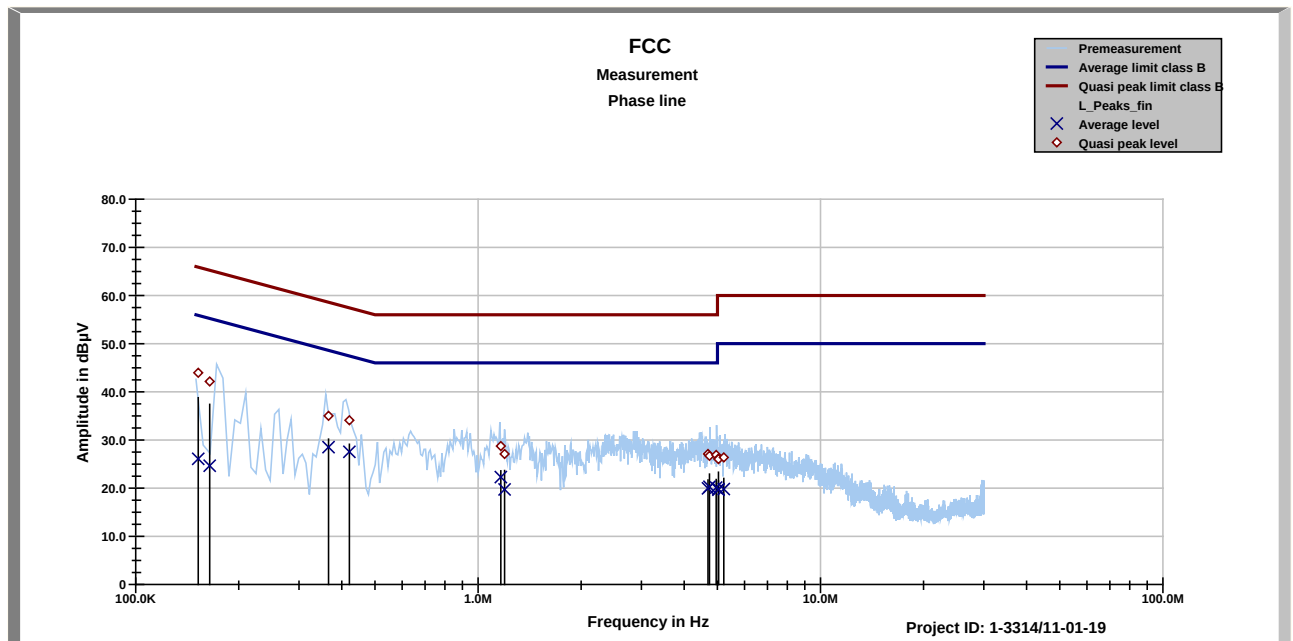
Project ID - 1-3314/11-01-19

EUT - RDD 71 UW + ST HS (HDW-14322-003) + Fixed Blade Charger (HDW-24481-001 Rev 1) + 1,5m Pihong USB Cable (HDW-06610-005)

Serial Number - CER-39234-001 | IMEI 004402.24.059357.8

Operating mode - GSM 850 traffic + charging

set. 2



FCC
Phase line tbl

Project ID: 1-3314/11-01-19

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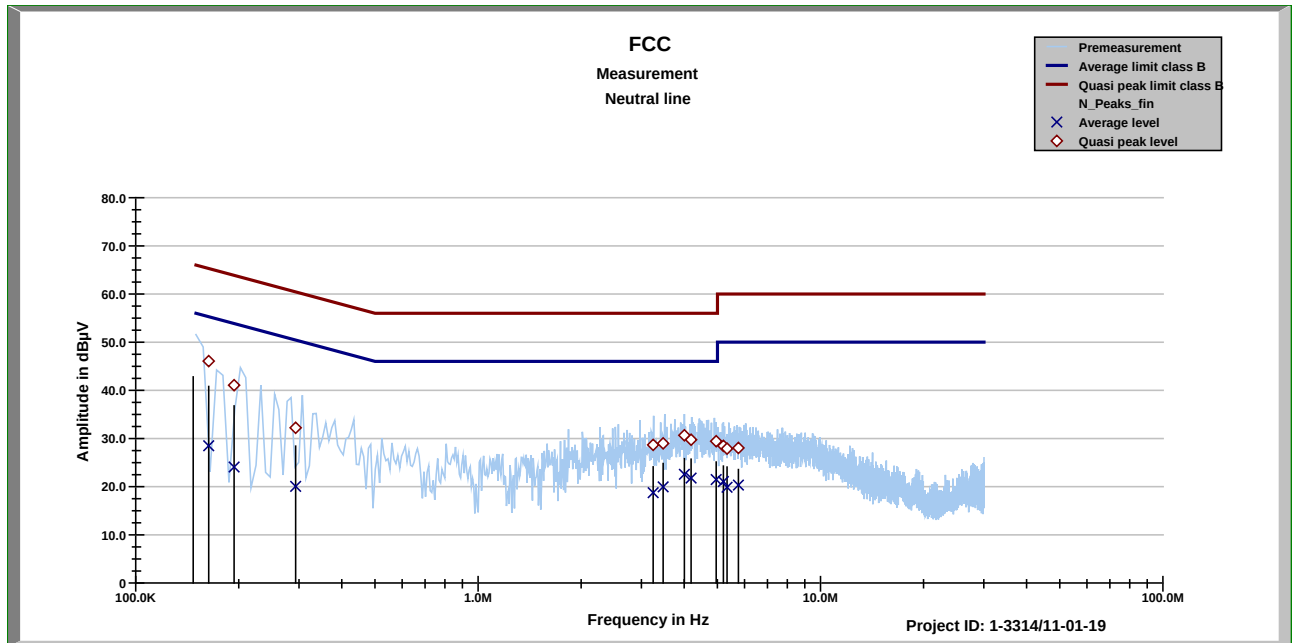
Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.15227	43.95	21.93	26.08	29.85
0.16453	42.14	23.09	24.65	30.94
0.36581	35.00	23.60	28.50	21.34
0.42076	34.08	23.36	27.54	20.73
1.1646	28.73	27.27	22.29	23.71
1.19486	27.09	28.91	19.73	26.27
4.689	27.08	28.92	19.95	26.05
4.7358	26.70	29.30	20.27	25.73
4.9558	26.89	29.11	20.11	25.89
5.0308	26.15	33.85	19.80	30.20
5.0339	26.02	33.98	19.65	30.35
5.2175	26.38	33.62	19.81	30.19

Project ID - 1-3314/11-01-19

EUT - RDD 71 UW + Premium ST HS (HDW-15766-005) + Fixed Blade Charger (HDW-24481-001 Rev 2) + 0,3m Pihong USB Cable (HDW-06610-013)

Serial Number - CER-39234-001 | IMEI 004402.24.059357.8

Operating mode - PCS 1900 traffic + charging



FCC

Neutral line tbl

Project ID: 1-3314/11-01-19

03:52:06 PM, Thursday, April 28, 2011

Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.16338	46.06	19.23	28.47	27.14
0.19383	41.06	22.81	24.08	30.67
0.29322	32.21	28.22	20.04	31.86
3.2434	28.67	27.33	18.73	27.27
3.4696	28.98	27.02	19.96	26.04
4.0024	30.66	25.34	22.55	23.45
4.1877	29.74	26.26	21.77	24.23
4.9551	29.42	26.58	21.46	24.54
5.2033	28.46	31.54	21.06	28.94
5.3307	27.89	32.11	19.87	30.13
5.7561	28.02	31.98	20.32	29.68

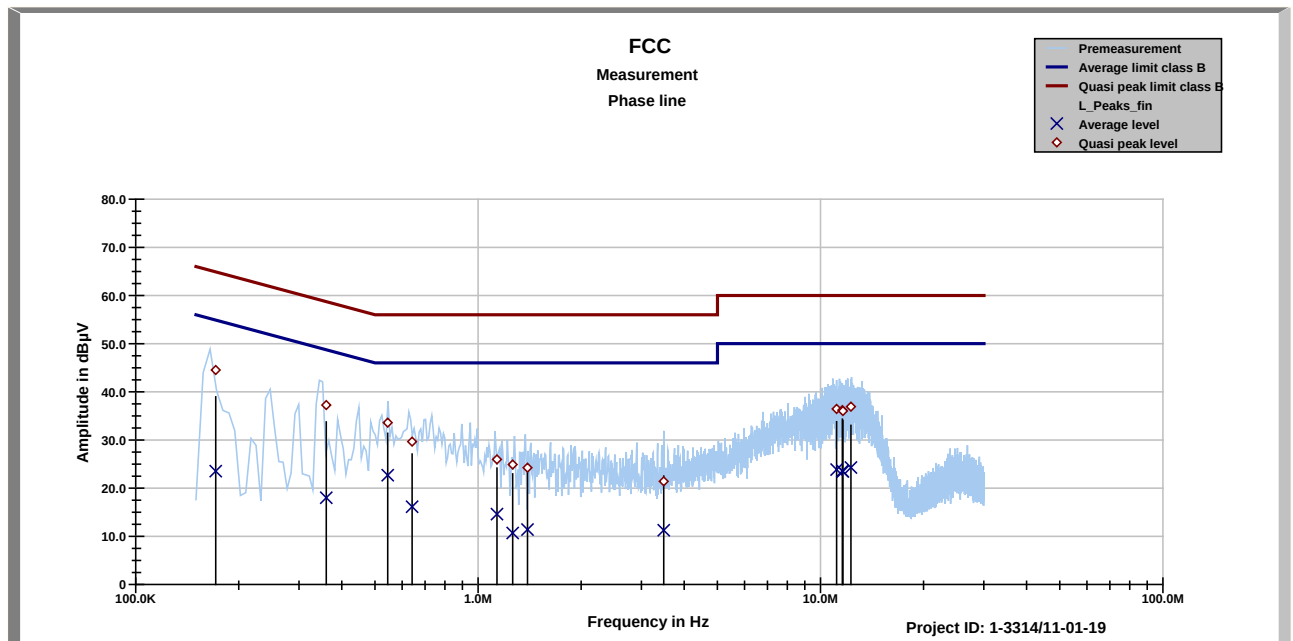
Project ID - 1-3314/11-01-19

EUT - RDD 71 UW + Premium ST HS (HDW-15766-005) + Fixed Blade Charger (HDW-24481-001 Rev 2) + 0,3m Pihong USB Cable (HDW-06610-013)

Serial Number - CER-39234-001 | IMEI 004402.24.059357.8

Operating mode - PCS 1900 traffic + charging

set. 5



FCC
Phase line tbl

Project ID: 1-3314/11-01-19

09:30:24 AM, Friday, April 29, 2011

Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.17126	44.53	20.37	23.51	31.88
0.36027	37.24	21.48	18.00	31.99
0.54453	33.60	22.40	22.68	23.32
0.64161	29.65	26.35	16.13	29.87
1.13539	25.95	30.05	14.59	31.41
1.2618	24.89	31.11	10.68	35.32
1.3941	24.24	31.76	11.40	34.60
3.4824	21.40	34.60	11.25	34.75
11.1395	36.44	23.56	23.84	26.16
11.5744	36.19	23.81	23.56	26.44
11.6192	36.01	23.99	23.45	26.55
12.2647	36.92	23.08	24.27	25.73

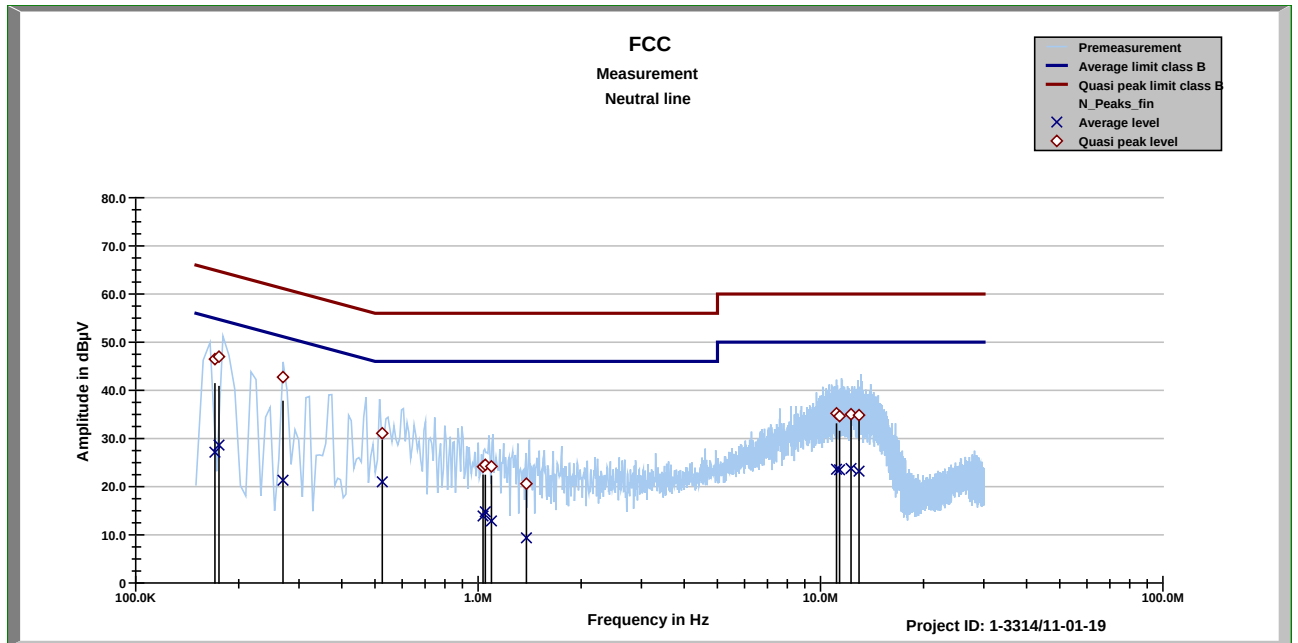
Project ID - 1-3314/11-01-19

EUT - RDD 71 UW + 2nd generation Stereo Headset (HDW-24529-001) alt 2 + Alt NA

Fixed Blade Charger (HDW-24481-001) + 0,3 Boa USB Cable (HDW-28109-001)

Serial Number - CER-39234-001 | IMEI 004402.24.059357.8

Operating mode - GSM 850 traffic + charging



FCC
Neutral line tbl

Project ID: 1-3314/11-01-19

09:30:24 AM, Friday, April 29, 2011

Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.17039	46.47	18.48	27.15	28.27
0.17508	46.99	17.72	28.62	26.66
0.26927	42.75	18.39	21.32	31.27
0.52507	31.07	24.93	20.99	25.01
1.03347	24.13	31.87	13.90	32.10
1.04931	24.53	31.47	14.77	31.23
1.09385	24.20	31.80	12.88	33.12
1.3838	20.62	35.38	9.37	36.63
11.1326	35.21	24.79	23.60	26.40
11.3633	34.64	25.36	23.50	26.50
12.269	35.04	24.96	23.77	26.23
12.95	34.84	25.16	23.21	26.79

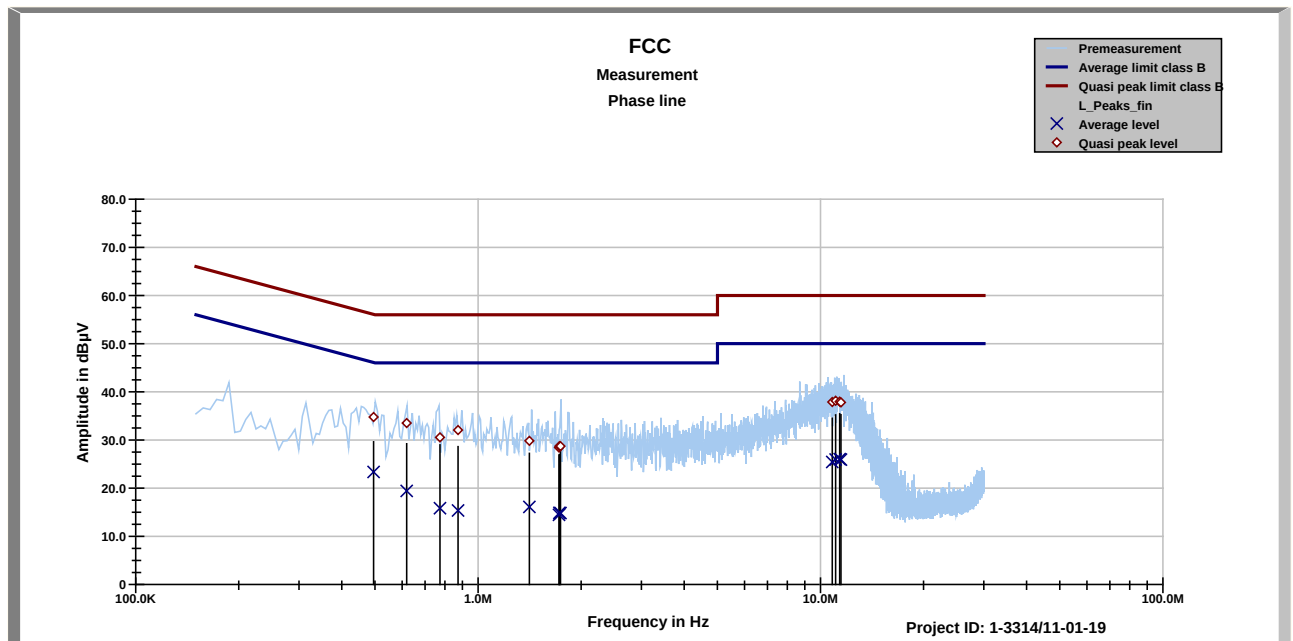
Project ID - 1-3314/11-01-19

EUT - RDD 71 UW + 2nd generation Stereo Headset (HDW-24529-001) alt 2 + Alt NA
Fixed Blade Charger (HDW-24481-001) + 0,3 Boa USB Cable (HDW-28109-001)

Serial Number - CER-39234-001 | IMEI 004402.24.059357.8

Operating mode - GSM 850 traffic + charging

set. 6



FCC
Phase line tbl

Project ID: 1-3314/11-01-19

09:55:00 AM, Friday, April 29, 2011

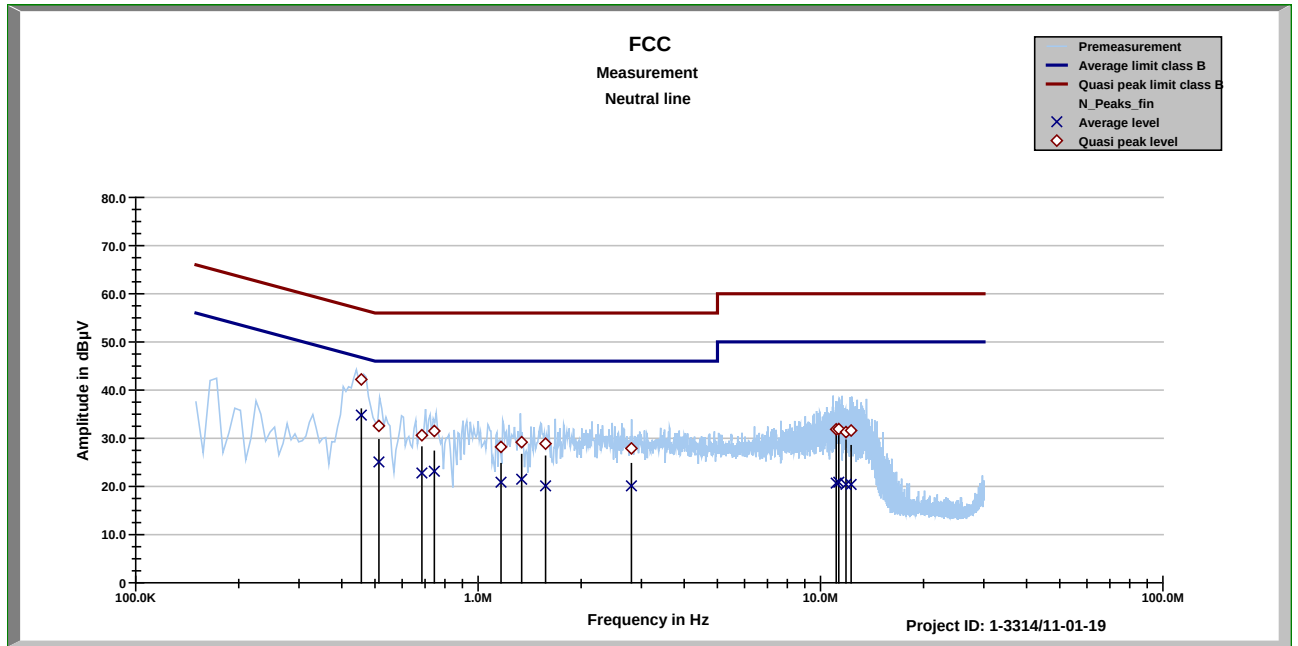
Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.49524	34.75	21.33	23.36	22.78
0.61877	33.50	22.50	19.41	26.59
0.77358	30.52	25.48	15.82	30.18
0.87378	32.05	23.95	15.35	30.65
1.411	29.82	26.18	16.09	29.91
1.7223	28.43	27.57	14.44	31.56
1.7272	28.72	27.28	14.87	31.13
1.7403	28.72	27.28	14.82	31.18
10.8196	37.87	22.13	25.42	24.58
11.0665	38.14	21.86	25.93	24.07
11.3701	37.96	22.04	26.03	23.97
11.4674	37.80	22.20	25.92	24.08

Project ID - 1-3314/11-01-19

EUT - RDD 71 UW + Trident Straight Jack (HDW-24529-004) + Captive Cable Charger (HDW-17957-003 Rev 4) MEPS IV + USB Y-Cable (HDW19137-002) + External Battery Charger (HDW-19137-002)

Serial Number - CER-39234-001 | IMEI 004402.24.059357.8

Operating mode - PCS 1900 traffic + charging



FCC
Neutral line tbl

Project ID: 1-3314/11-01-19

09:55:00 AM, Friday, April 29, 2011

Frequency	Quasi peak level	Margin quasi peak	Average level	Margin average
MHz	dBµV	dBµV	dBµV	dBµV
0.45598	42.20	14.57	34.80	12.46
0.51329	32.56	23.44	25.08	20.92
0.68532	30.62	25.38	22.77	23.23
0.74498	31.50	24.50	23.14	22.86
1.16663	28.20	27.80	20.88	25.12
1.3403	29.18	26.82	21.48	24.52
1.5734	28.87	27.13	20.12	25.88
2.8038	27.89	28.11	20.12	25.88
11.1108	31.84	28.16	20.69	29.31
11.3001	31.91	28.09	20.87	29.13
11.8617	31.28	28.72	20.43	29.57
12.2831	31.60	28.40	20.41	29.59

Project ID - 1-3314/11-01-19

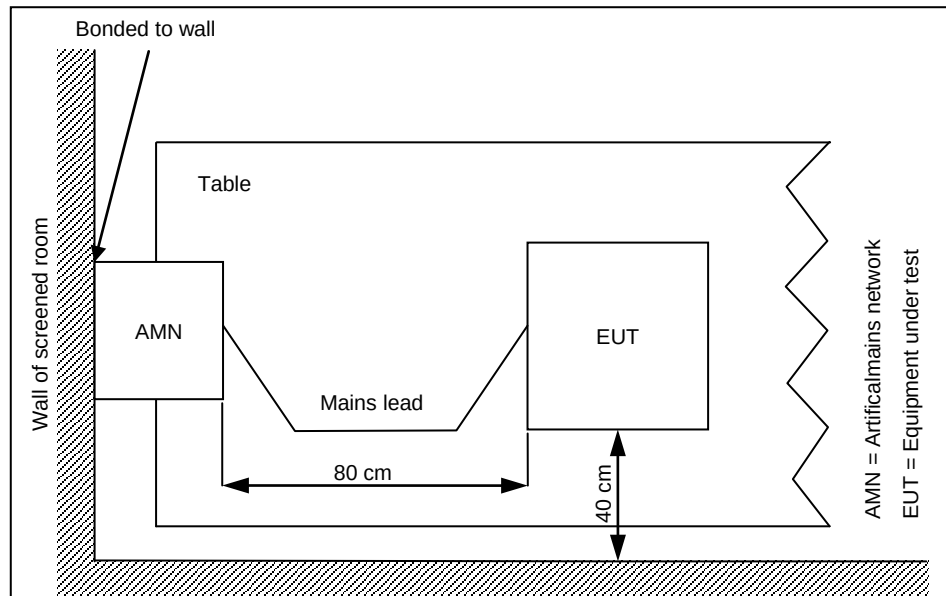
EUT - RDD 71 UW + Trident Straight Jack (HDW-24529-004) + Captive Cable Charger (HDW-17957-003 Rev 4) MEPS IV + USB Y-Cable (HDW19137-002) + External Battery Charger (HDW-19137-002)

Serial Number - CER-39234-001 | IMEI 004402.24.059357.8

Operating mode - PCS 1900 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				
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8.2.2 Test Plan

EUT set-up	set. 1 + set. 2 + set. 3 + set. 4 + set. 5 + set. 6		
Operating mode	Application	Limit	Result
op. 3 (set. 1)	Enclosure	FCC part 15 B Class B	passed
op. 4 (set. 2)	Enclosure	FCC part 15 B Class B	passed
op. 5 (set. 3)	Enclosure	FCC part 15 B Class B	passed
op. 3 (set. 4)	Enclosure	FCC part 15 B Class B	passed
op. 4 (set. 5)	Enclosure	FCC part 15 B Class B	passed
op. 5 (set. 6)	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. 1

CETECOM ICT Services GmbH

Common Information

EUT: RDD 71 UW + ST HS (HDW-14322-003) + Fixed Blade Charger (HDW-24481-001 Rev 1) + 1,5m Phihong USB Cable (HDW-06610-005)

Serial Number: CER-39234-001 | IMEI 004402.24.059357.8

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

Operating Conditions: GSM 850 idle + charging

Operator Name: Hennemann

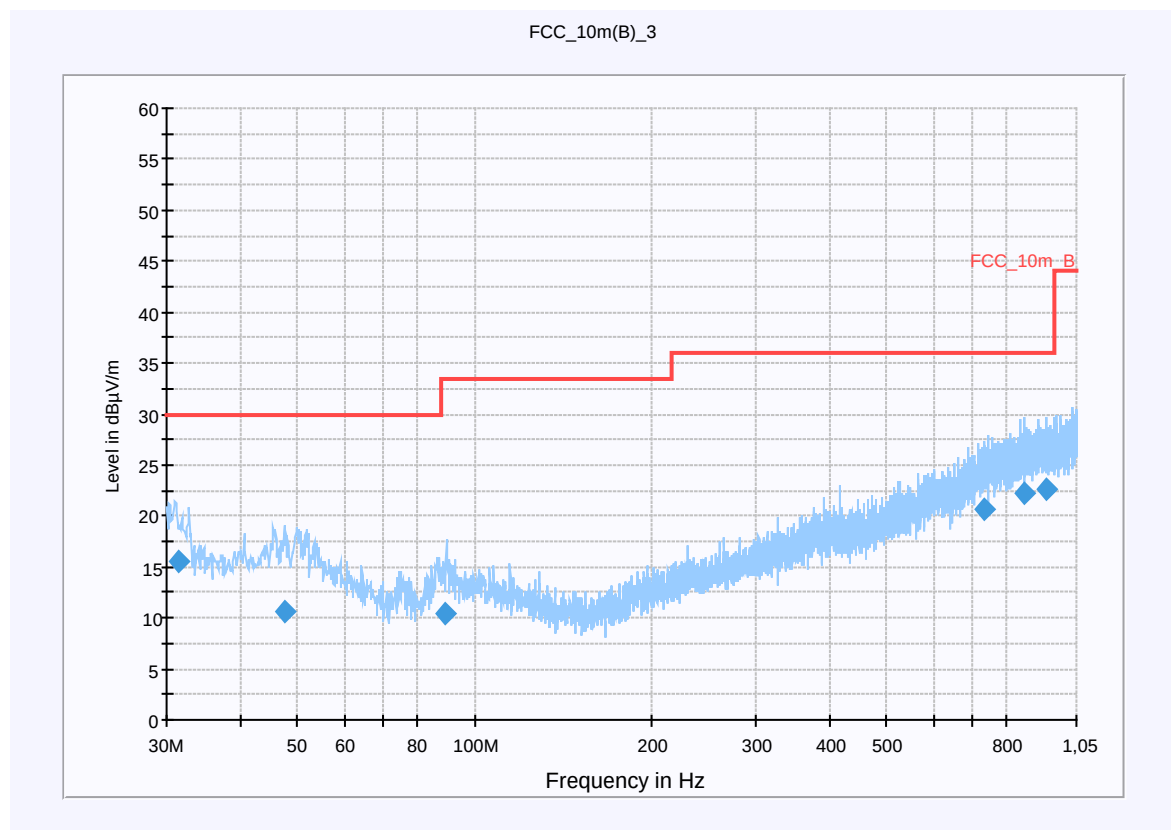
Comment: AC: 115 V / 60 Hz

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
31.448550	15.6	15000.000	120.000	115.0	V	283.0	12.7	14.4	30.0	
47.534100	10.6	15000.000	120.000	136.0	V	89.0	13.3	19.4	30.0	
89.118150	10.4	15000.000	120.000	106.0	V	188.0	10.4	23.1	33.5	
729.838350	20.6	15000.000	120.000	146.0	V	106.0	23.2	15.4	36.0	
857.999550	22.2	15000.000	120.000	98.0	V	-2.0	24.7	13.8	36.0	
936.524700	22.6	15000.000	120.000	164.0	H	106.0	25.3	13.4	36.0	

set. 2

CETECOM ICT Services GmbH

Common Information

EUT: RDD 71 UW + Premium ST HS (HDW-15766-005) + Fixed Blade Charger (HDW-24481-001 Rev 2) + 0,3m Phihong USB Cable (HDW-06610-013)

Serial Number: CER-39234-001 | IMEI 004402.24.059357.8

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

Operating Conditions: PCS 1900 idle + charging

Operator Name: Hennemann

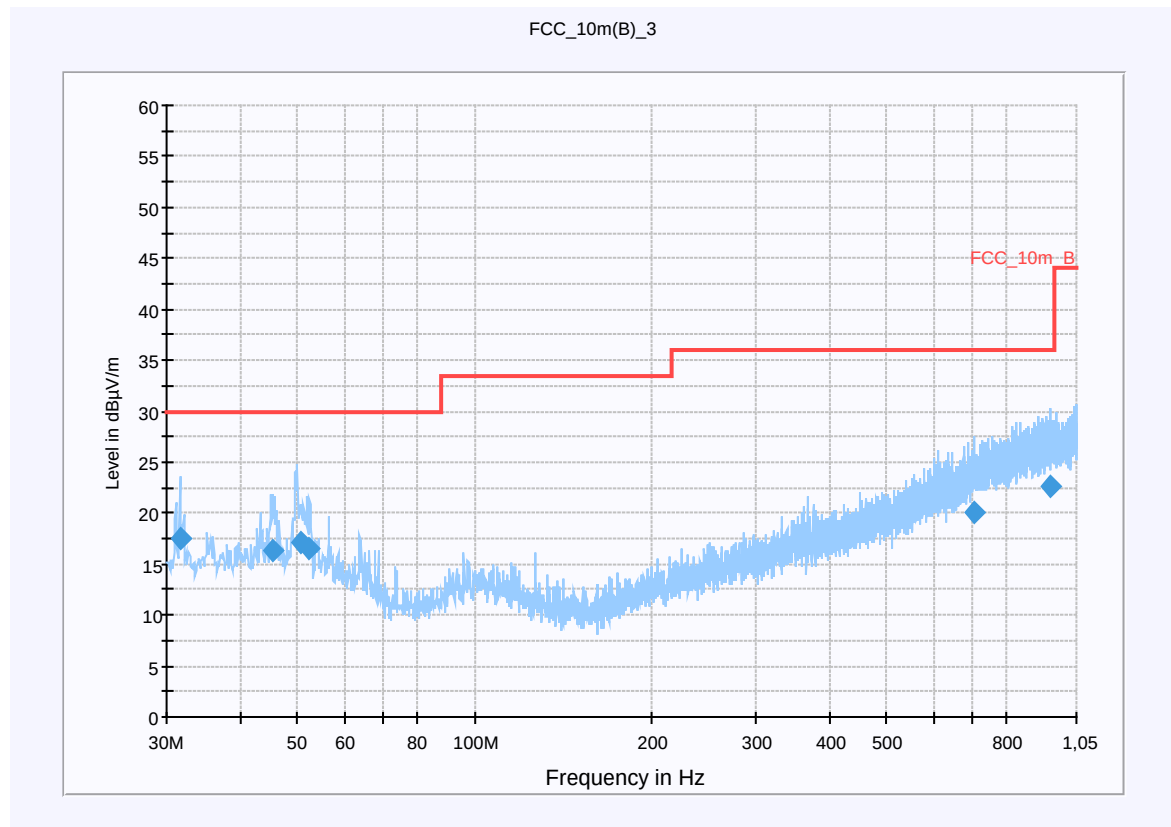
Comment: AC: 115 V / 60 Hz

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
31.764750	17.6	15000.000	120.000	124.0	V	95.0	12.7	12.4	30.0	
45.402900	16.3	15000.000	120.000	115.0	V	-2.0	13.3	13.7	30.0	
50.532150	17.1	15000.000	120.000	135.0	V	106.0	13.3	12.9	30.0	
52.344750	16.5	15000.000	120.000	106.0	V	264.0	13.1	13.5	30.0	
706.185000	20.1	15000.000	120.000	165.0	V	106.0	22.6	15.9	36.0	
948.028500	22.5	15000.000	120.000	165.0	V	8.0	25.3	13.5	36.0	

set. 3

CETECOM ICT Services GmbH

Common Information

EUT: RDD 71 UW + 2nd generation Stereo Headset (HDW-24529-001) alt 1 + Alt NA Fixed Blade Charger (HDW-24481-001) + 1,2m Boa USB Cable (HDW-28109-003)

Serial Number: CER-39234-001 | IMEI 004402.24.059357.8

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

Operating Conditions: UMTS FDD IV idle + charging

Operator Name: Hennemann

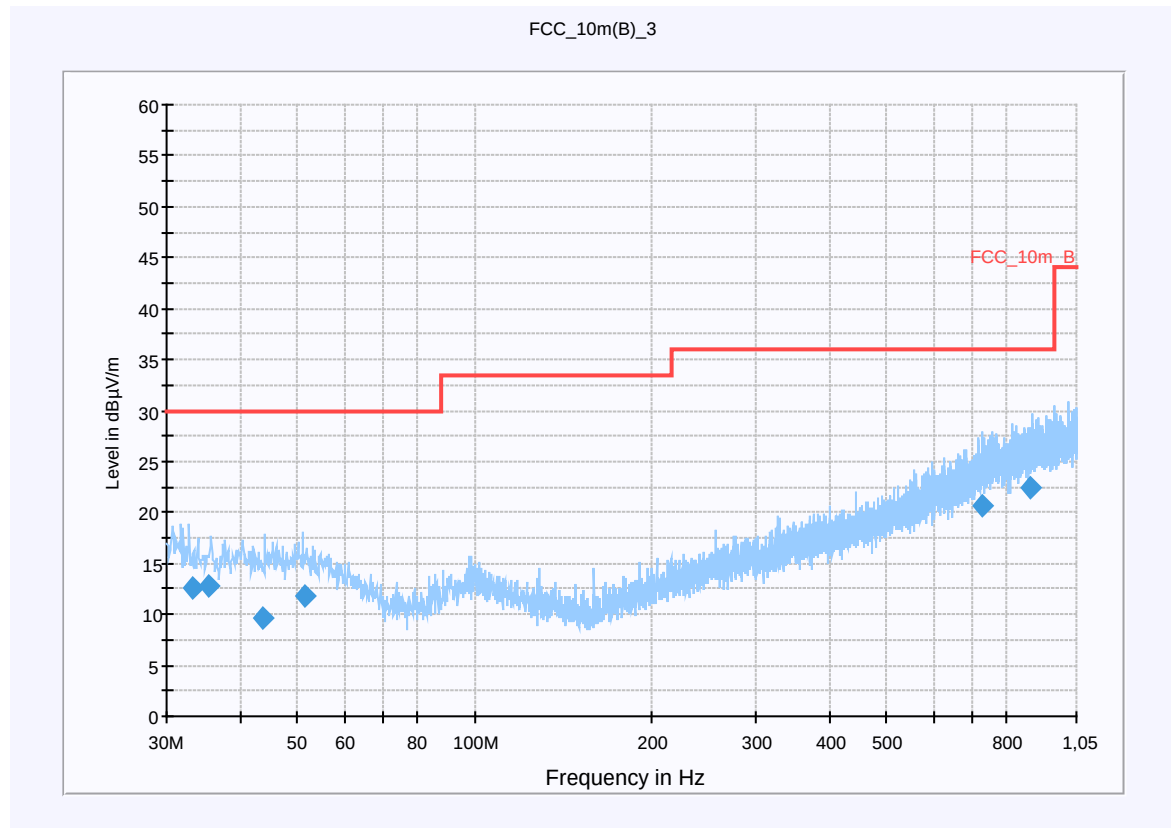
Comment: AC: 115 V / 60 Hz

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
33.130050	12.5	15000.000	120.000	126.0	V	106.0	12.8	17.5	30.0	
35.372700	12.7	15000.000	120.000	144.0	V	283.0	13.1	17.3	30.0	
43.717200	9.6	15000.000	120.000	170.0	V	95.0	13.3	20.4	30.0	
51.352650	11.8	15000.000	120.000	98.0	V	-2.0	13.2	18.2	30.0	
728.283750	20.6	15000.000	120.000	170.0	H	273.0	23.2	15.4	36.0	
880.218300	22.4	15000.000	120.000	170.0	H	-2.0	24.9	13.6	36.0	

set. 4

CETECOM ICT Services GmbH

Common Information

EUT: RDD 71 UW + Bluetooth Headset (HS-300) (HDW-25937-001) + Captive Cable Charger (HDW-17957-003 Rev 4) MEPS IV

Serial Number: CER-39234-001 | IMEI 004402.24.059357.8

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

Operating Conditions: GSM 850 idle + charging

Operator Name: Hennemann

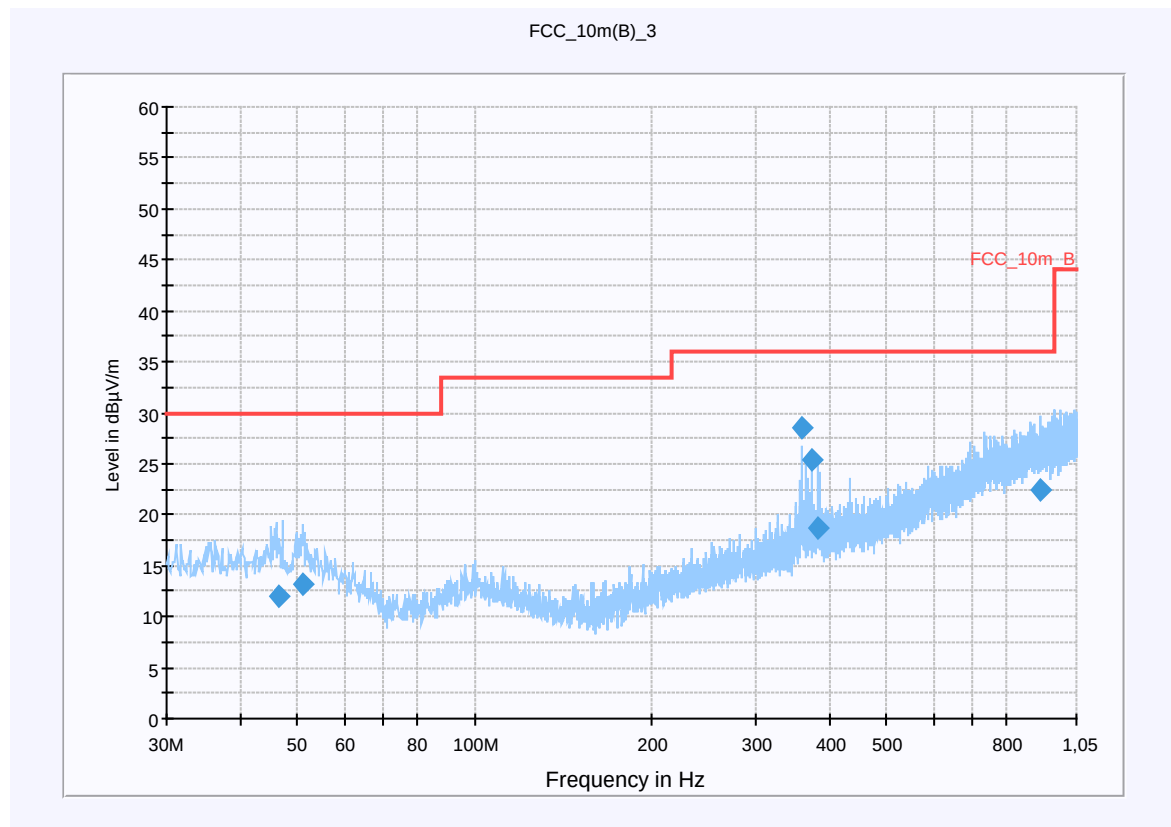
Comment: AC: 115 V / 60 Hz

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
46.686900	12.0	15000.000	120.000	124.0	V	196.0	13.3	18.0	30.0	
50.962950	13.1	15000.000	120.000	156.0	V	102.0	13.3	16.9	30.0	
360.318600	28.5	15000.000	120.000	98.0	V	182.0	16.2	7.5	36.0	
373.001700	25.4	15000.000	120.000	98.0	V	173.0	16.5	10.6	36.0	
381.429600	18.7	15000.000	120.000	170.0	V	284.0	16.6	17.3	36.0	
911.098950	22.5	15000.000	120.000	170.0	H	196.0	25.2	13.5	36.0	

set. 5

CETECOM ICT Services GmbH

Common Information

EUT: RDD 71 UW + 2nd generation Stereo Headset (HDW-24529-001)
alt 2 + Alt NA Fixed Blade Charger (HDW-24481-001) + 0,3 Boa
USB Cable (HDW-28109-001)

Serial Number: CER-39234-001 | IMEI 004402.24.059357.8

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

Operating Conditions: PCS 1900 idle + charging

Operator Name: Hennemann

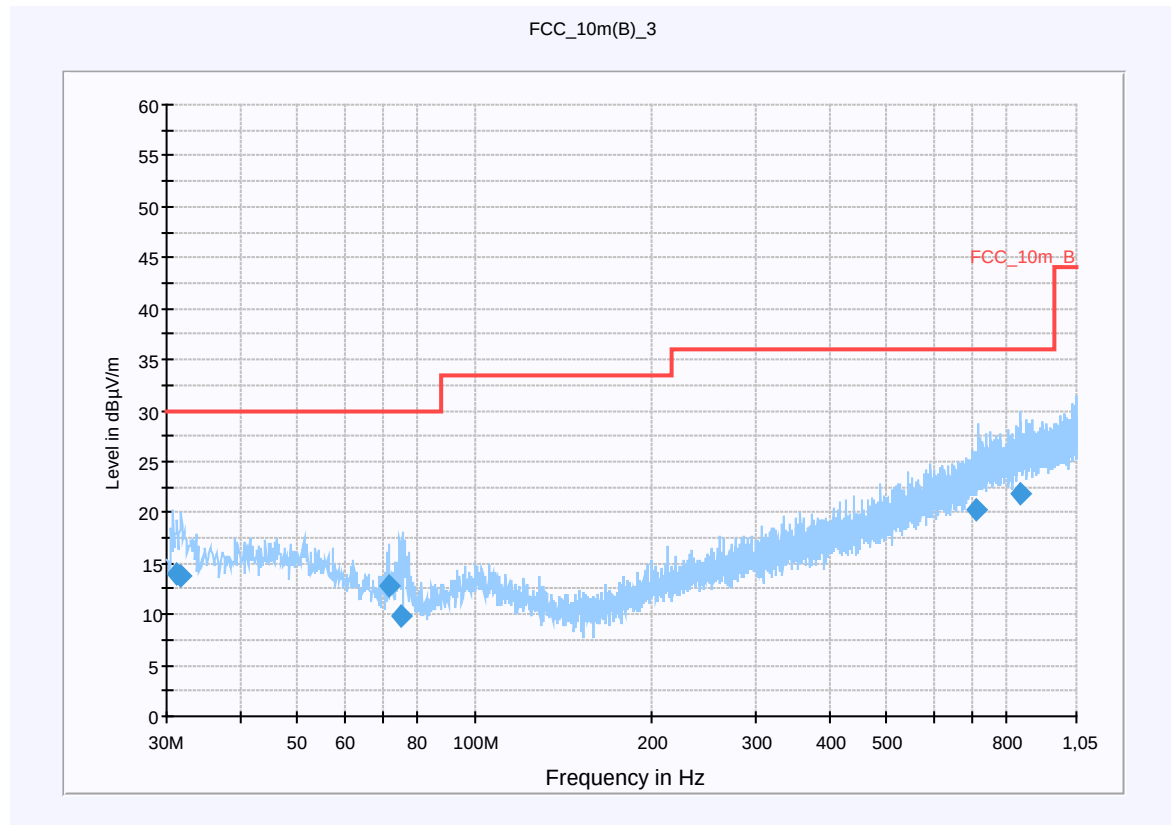
Comment: AC: 115 V / 60 Hz

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
31.182000	13.9	15000.000	120.000	115.0	V	283.0	12.6	16.1	30.0	
31.732050	13.7	15000.000	120.000	124.0	V	8.0	12.7	16.3	30.0	
71.436450	12.8	15000.000	120.000	170.0	V	96.0	9.3	17.2	30.0	
75.229650	9.7	15000.000	120.000	114.0	V	173.0	9.2	20.3	30.0	
712.524150	20.2	15000.000	120.000	170.0	H	173.0	22.8	15.8	36.0	
841.862700	21.9	15000.000	120.000	170.0	V	273.0	24.4	14.1	36.0	

set. 6

CETECOM ICT Services GmbH

Common Information

EUT: RDD 71 UW + Trident Straight Jack (HDW-24529-004) + Captive Cable Charger (HDW-17957-003 Rev 4) MEPS IV + USB Y-Cable (HDW19137-002) + External Battery Charger (HDW-19137-002)

Serial Number: CER-39234-001 | IMEI 004402.24.059357.8

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

Operating Conditions: UMTS FDD IV idle + charging

Operator Name: Hennemann

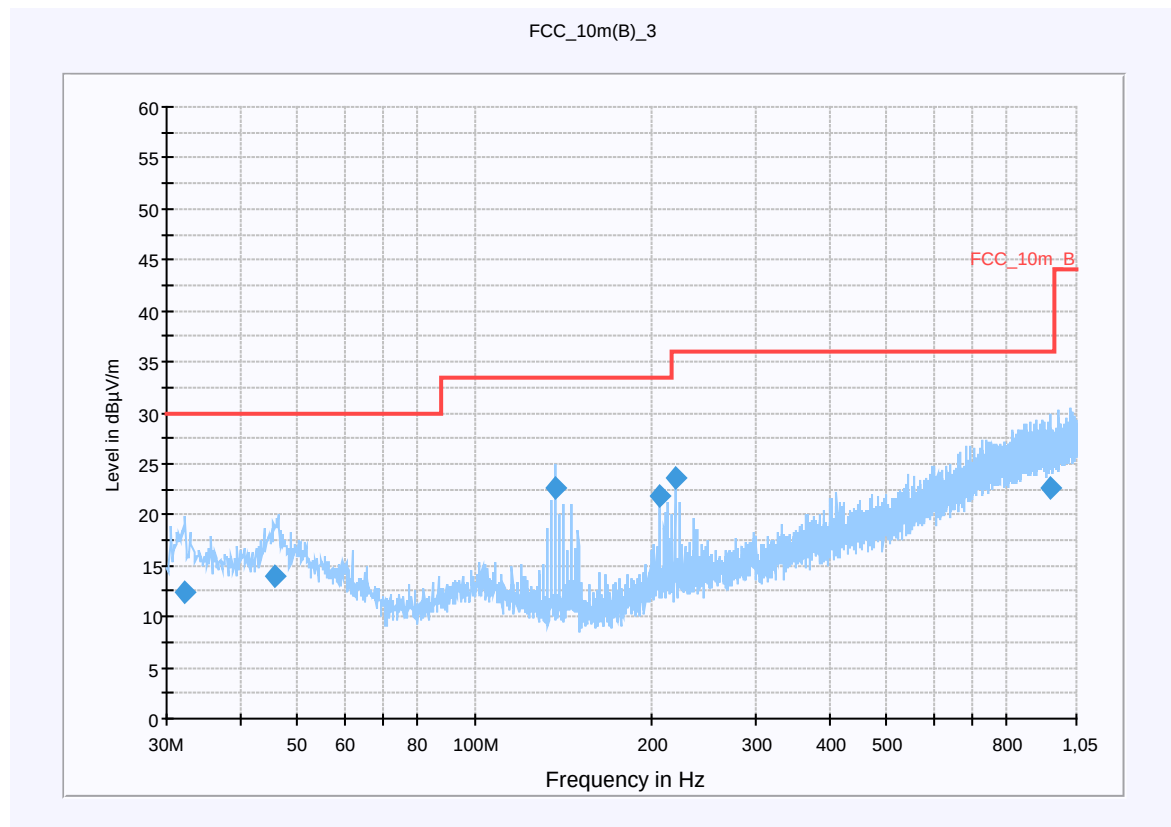
Comment: AC: 115 V / 60 Hz

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



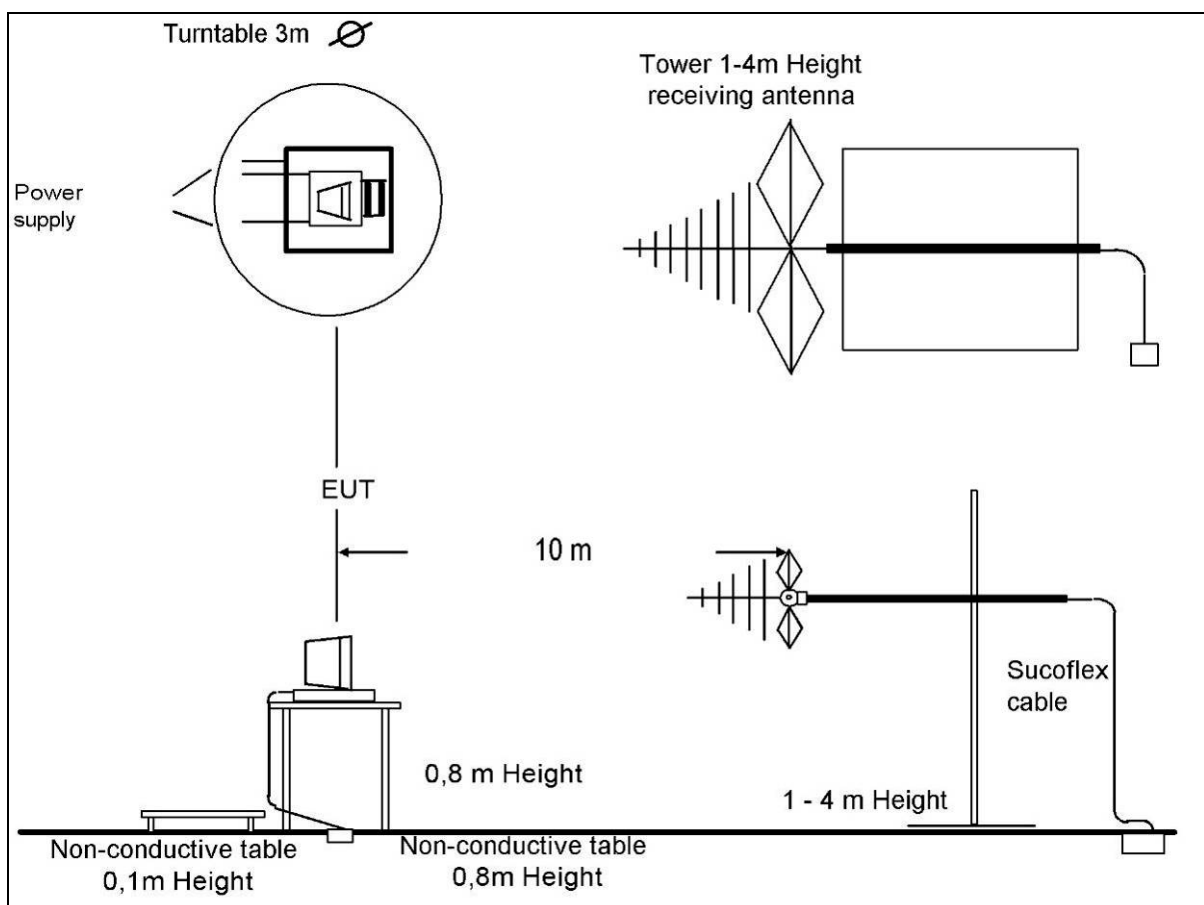
Final Result 1

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
32.274450	12.5	15000.000	120.000	112.0	V	-2.0	12.7	17.5	30.0	
45.865500	14.0	15000.000	120.000	147.0	V	92.0	13.3	16.0	30.0	
137.205600	22.6	15000.000	120.000	135.0	V	186.0	8.9	10.9	33.5	
205.767900	21.8	15000.000	120.000	170.0	V	106.0	11.9	11.7	33.5	
218.648250	23.5	15000.000	120.000	120.0	V	8.0	12.3	12.5	36.0	
946.714350	22.5	15000.000	120.000	98.0	H	8.0	25.3	13.5	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 29	F 21	F 30	F 33						
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8.2.8.2 Test Plan

EUT set-up	set. 1 + set. 2 + set. 3 + set. 4 + set. 5 + set. 6		
Operating mode	Application	Limit	Result
op. 3 (set. 1)	Enclosure	FCC part 15 B Class B	passed
op. 4 (set. 2)	Enclosure	FCC part 15 B Class B	passed
op. 5 (set. 3)	Enclosure	FCC part 15 B Class B	passed
op. 3 (set. 4)	Enclosure	FCC part 15 B Class B	passed
op. 4 (set. 5)	Enclosure	FCC part 15 B Class B	passed
op. 5 (set. 6)	Enclosure	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)
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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. 1

CETECOM ICT Services GmbH

Common Information

EUT: RDD 71 UW + ST HS (HDW-14322-003) + Fixed Blade Charger (HDW-24481-001 Rev 1) + 1,5m Phihong USB Cable (HDW-06610-005)

Serial Number: CER-39234-001 | IMEI 004402.24.059357.8

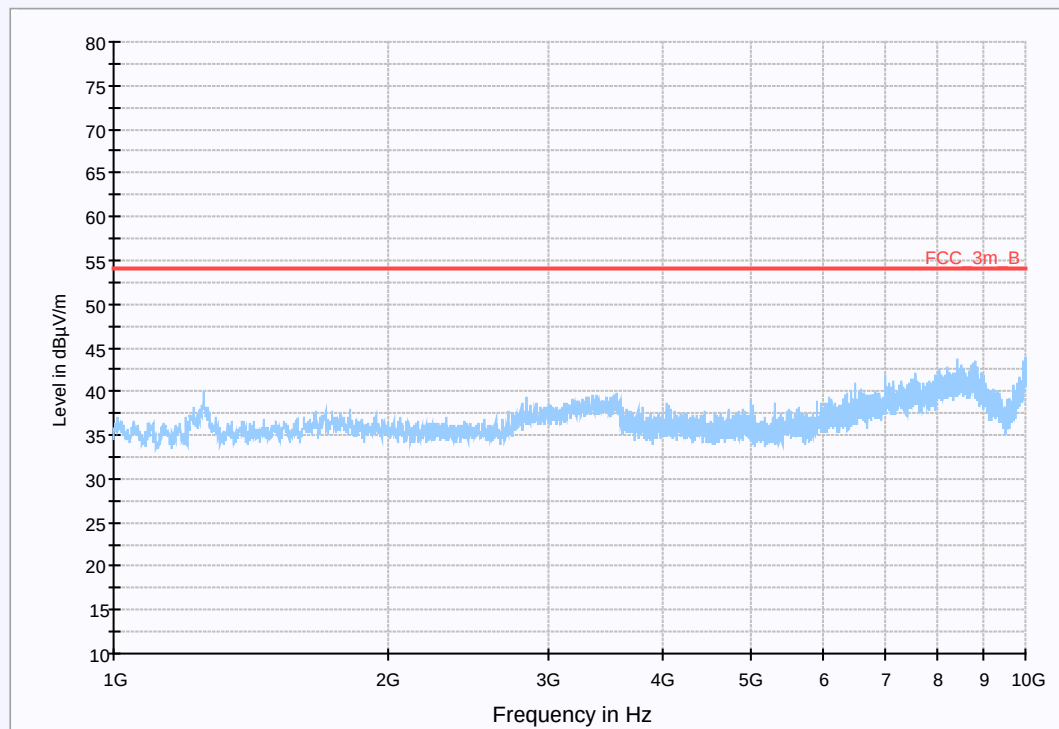
Test Description: FCC part 15 B class B

Operating Conditions: GSM 850 idle + charging

Operator Name: Hennemann

Comment: AC: 115 V / 60 Hz

FCC_1_10_B_5m



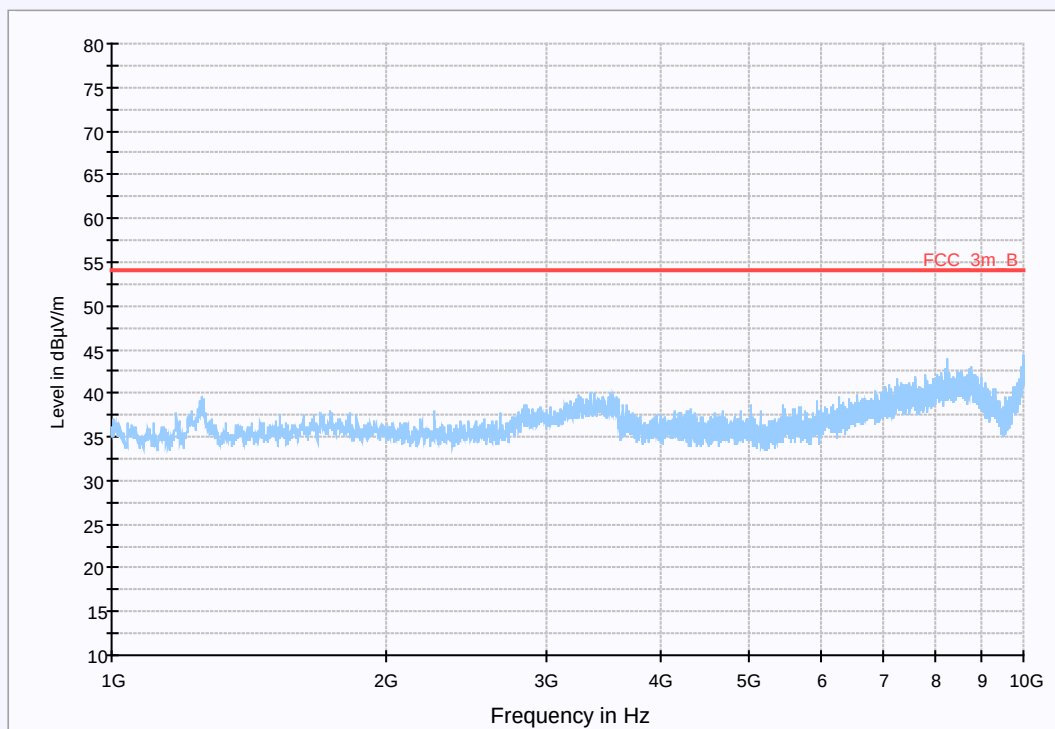
set. 2

CETECOM ICT Services GmbH

Common Information

EUT:	RDD 71 UW + Premium ST HS (HDW-15766-005) + Fixed Blade Charger (HDW-24481-001 Rev 2) + 0,3m Phihong USB Cable (HDW-06610-013)
Serial Number:	CER-39234-001 IMEI 004402.24.059357.8
Test Description:	FCC part 15 B class B
Operating Conditions:	PCS 1900 idle + charging
Operator Name:	Hennemann
Comment:	AC: 115 V / 60 Hz

FCC_1_10_B_5m



set. 3

CETECOM ICT Services GmbH**Common Information**

EUT: RDD 71 UW + 2nd generation Stereo Headset (HDW-24529-001) alt
1 + Alt NA Fixed Blade Charger (HDW-24481-001) + 1,2m Boa USB
Cable (HDW-28109-003)

Serial Number: CER-39234-001 | IMEI 004402.24.059357.8

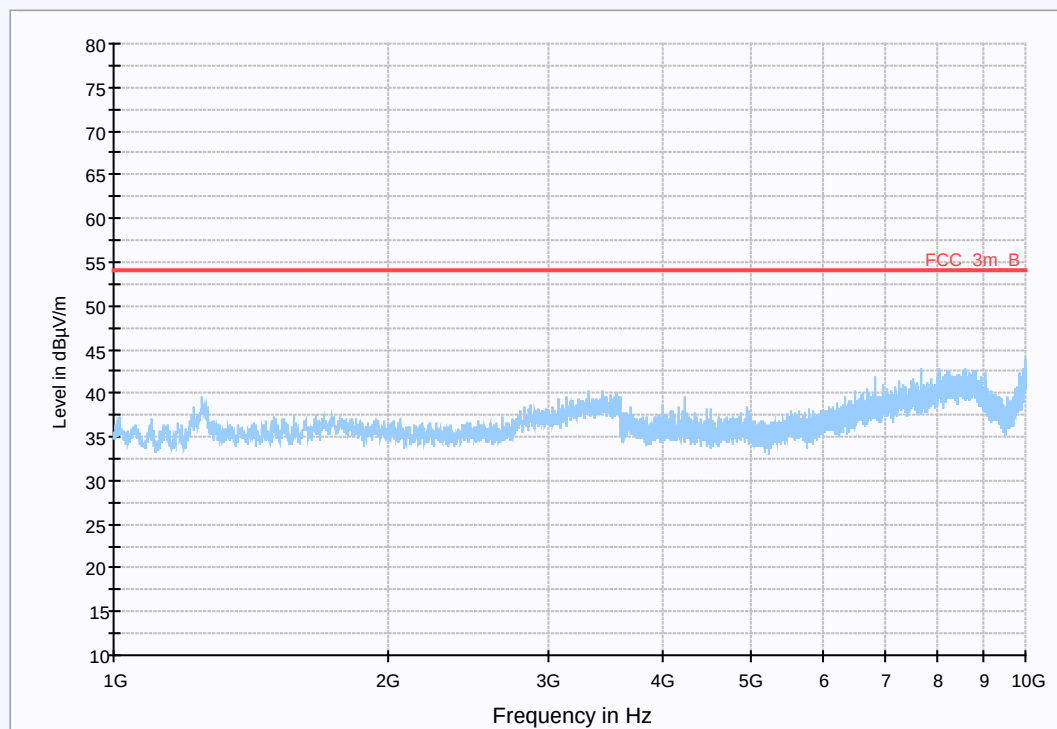
Test Description: FCC part 15 B class B

Operating Conditions: UMTS FDD IV idle + charging

Operator Name: Hennemann

Comment: AC: 115 V / 60 Hz

FCC_1_10_B_5m

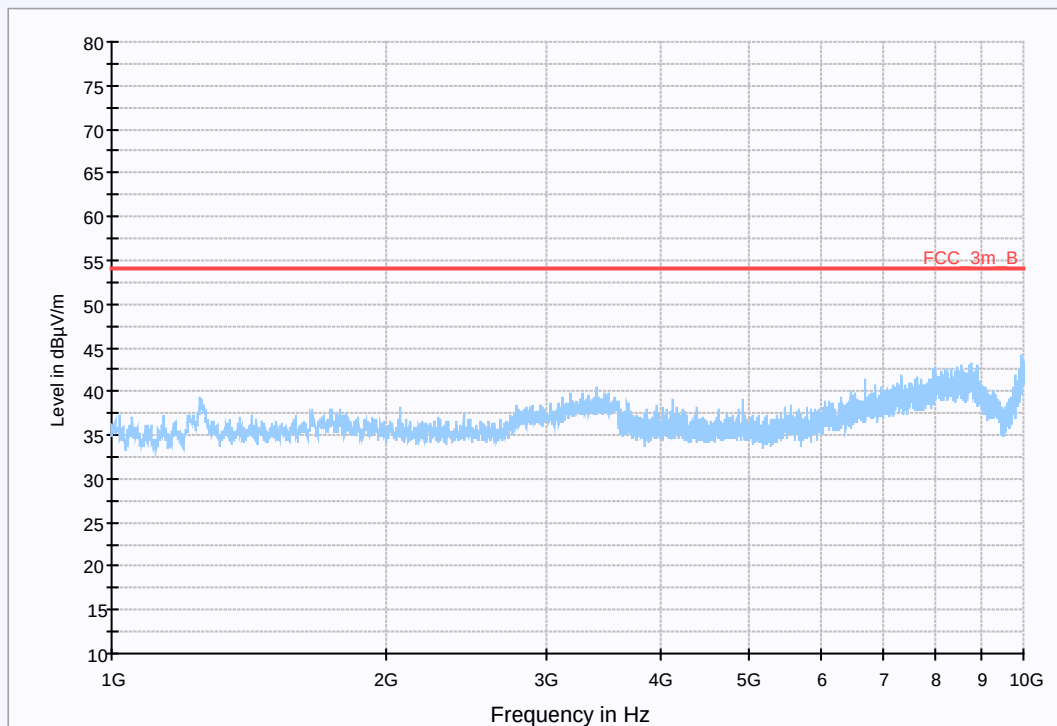


set. 4

CETECOM ICT Services GmbH**Common Information**

EUT:	RDD 71 UW + Bluetooth Headset (HS-300) (HDW-25937-001) + Captive Cable Charger (HDW-17957-003 Rev 4) MEPS IV
Serial Number:	CER-39234-001 IMEI 004402.24.059357.8
Test Description:	FCC part 15 B class B
Operating Conditions:	GSM 850 idle + charging
Operator Name:	Hennemann
Comment:	AC: 115 V / 60 Hz

FCC_1_10_B_5m



set. 5

CETECOM ICT Services GmbH**Common Information**

EUT: RDD 71 UW + 2nd generation Stereo Headset (HDW-24529-001)
alt 2 + Alt NA Fixed Blade Charger (HDW-24481-001) + 0,3 Boa
USB Cable (HDW-28109-001)

Serial Number: CER-39234-001 | IMEI 004402.24.059357.8

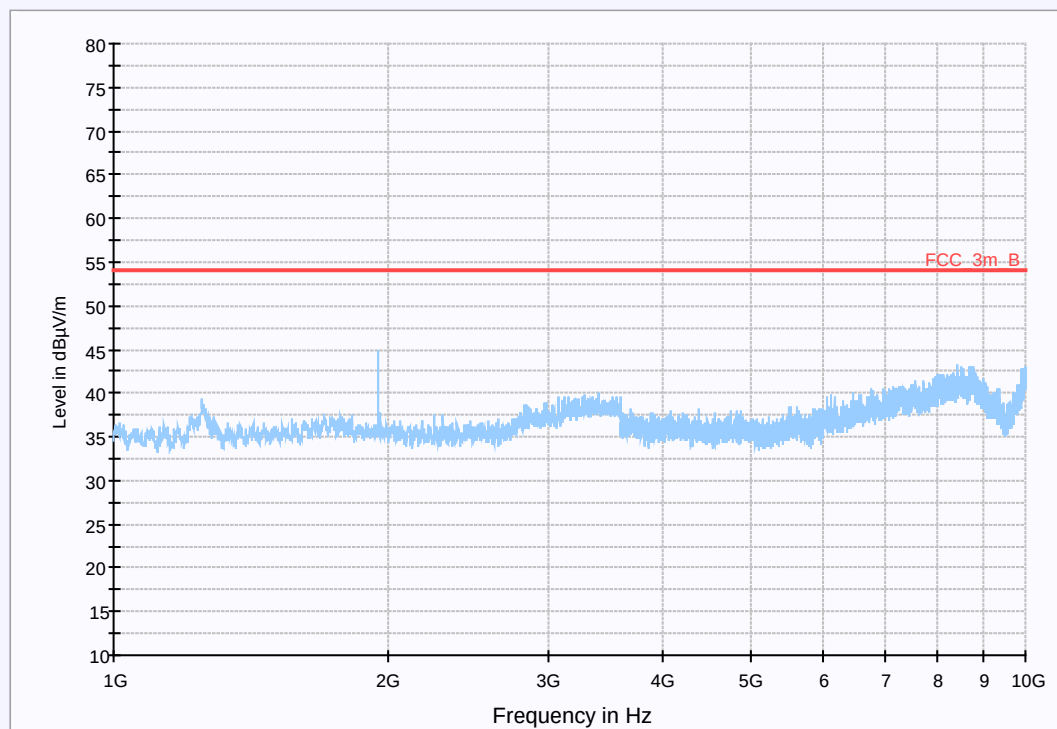
Test Description: FCC part 15 B class B

Operating Conditions: PCS 1900 idle + charging

Operator Name: Hennemann

Comment: AC: 115 V / 60 Hz

FCC_1_10_B_5m



set. 6

CETECOM ICT Services GmbH**Common Information**

EUT: RDD 71 UW + Trident Straight Jack (HDW-24529-004) + Captive Cable Charger (HDW-17957-003 Rev 4) MEPS IV + USB Y-Cable (HDW19137-002) + External Battery Charger (HDW-19137-002)

Serial Number: CER-39234-001 | IMEI 004402.24.059357.8

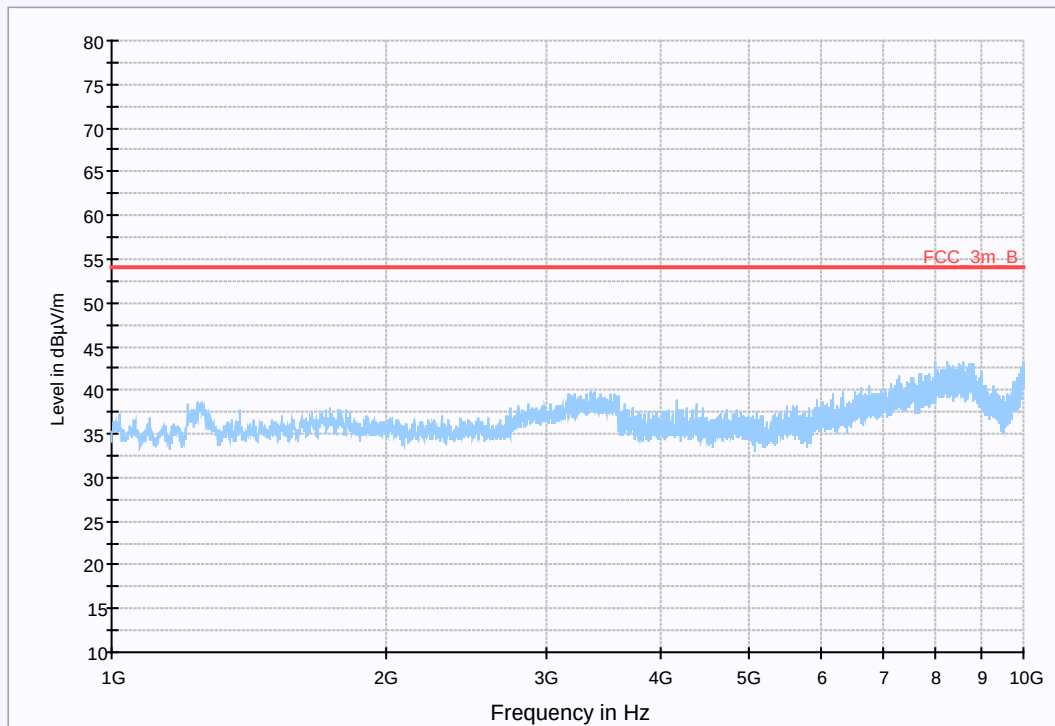
Test Description: FCC part 15 B class B

Operating Conditions: UMTS FDD IV 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

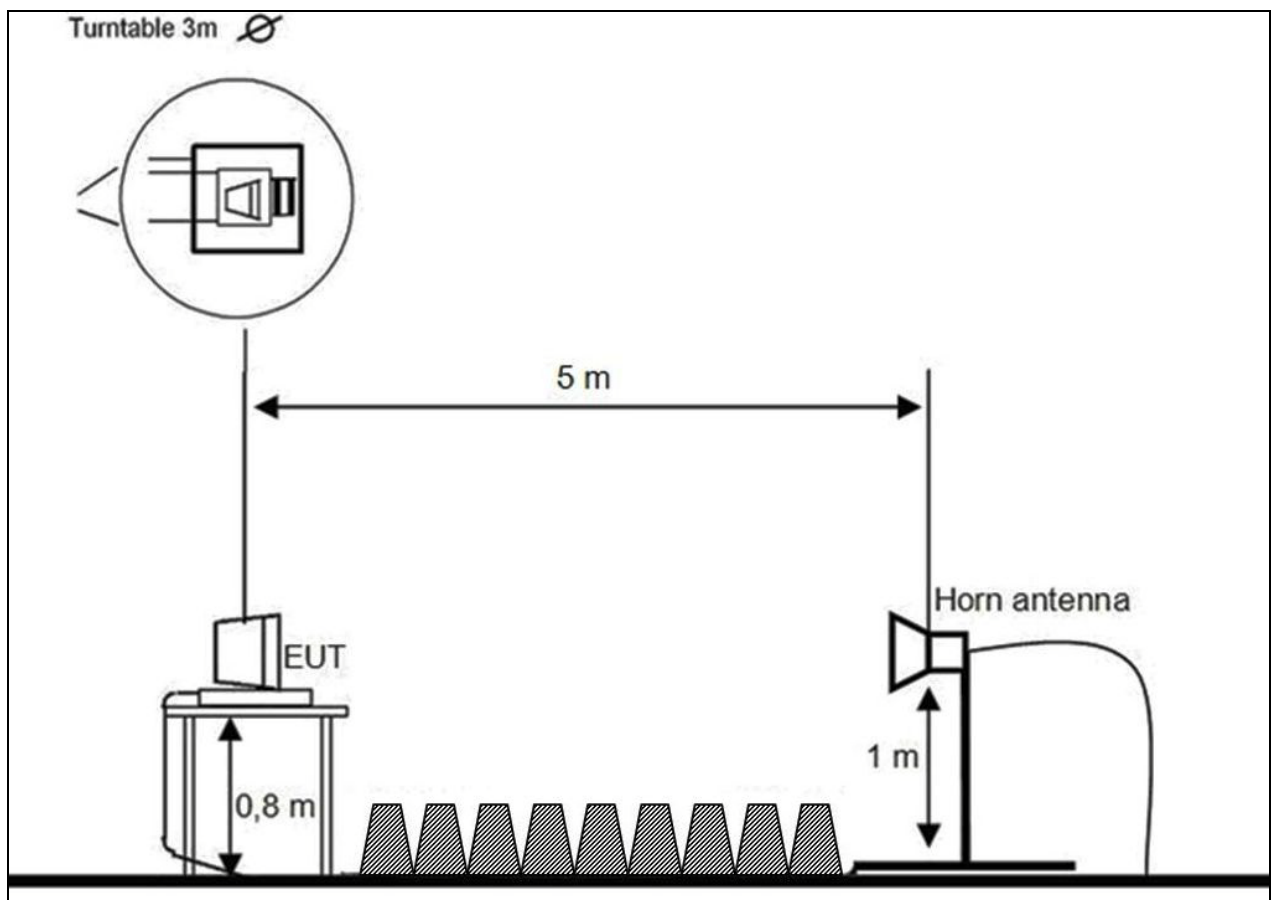
Signal Path: 1_6_EN
FW 1.0
Correction Table: 3_5m
Correction Table: LNA_EN (matix)

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 F					
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 F					
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 Logger 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 F					
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 following document: 1-3314-01-19/11_A_ANNEX

Annex B: Photographs of the EUT

see following document: 1-3314-01-19/11_A_ANNEX

Annex C: Document history

Version	Applied changes	Date of release
	Initial release	2011-04-29
A	PIN added All EUT and setup pictures removed and added to special Annex	2011-05-20
B	Erased test results	2011-07-18

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