

FCC Part 15B Compliance Test Report

Test Report no.:	FCC15B_RM-1150_07.docx	Date of Report:	02-Dec-2015
Number of pages:	17	Customer's Contact person:	Juha Paukku
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FCC listing no.:	94436		
IC recognition no.:	661AK-1		
Tested devices/ accessories:	Phone RM-1150 / Battery BV-T3G / Charger AC-60E / Headset WH-108 / Laptop Asus T100-TA / USB Cable CA-190CD / Display HP LP2475W / HDMI Cable Nokia		
FCC ID:	PYARM-1150	IC:	-
Supplement reports:	-		
Testing has been carried out in accordance with:	47 CFR 15B, ANSI C63.4 (2014) and RSS-GEN (Issue 4). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		
Documentation:	The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC Microsoft.		
Test Results:	The EUT complies with the requirements in respect of all parameters subject to the test. The test results relate only to devices specified in this document		
Date and signature for the contents:			
	Timo Raiskio, System Manager, EMC		

1. Summary for FCC Part 15B Compliance Test Report

Date of receipt	11-Nov-2015
Testing completed	01-Dec-2015
The customer's contact person	Juha Paukku
Test Plan referred to	T:\Projects\RM-1150\TestPlan\TP_EMCC_FCC_RM-1150.xlsx
Notes	-
Document name	T:\Projects\RM-1150\EMC\FCC15B_RM-1150_07.docx

1.1. EUT and Accessory Information

Product	Type	SN	HW	MV	SW / FCC authorization / Cable shielding and length	DUT
Phone	RM-1150	00402743292843	1520	-	01078.00010.15443.36000	400060
Battery	BV-T3G	4955405384B11010253;0670783	1.0	-	-	400062
Headset	WH-108	-	4.0	4.0	-	42927
Laptop	Asus T100TA-DK024H	E6NOBCO54692236	-	-	FCC DoC	43219
Charger	AC-60E	4090493116580300870;0675677	-	-	-	400002
USB Cable	CA-190CD	-	-	-	Shielded, 25cm	43028
USB Cable	CA-190CD	-	-	-	Shielded, 25cm	42720
Display	HP LP2475W	-	-	-	FCC DoC	43295
HDMI Cable	Nokia	-	-	-	Shielded, 300cm	43084

1.2. Summary of Test Results

GSM 850:

Section in CFR 47	Section in RSS-GEN	Name of the test	Result
15.107, a	2.3.3	AC powerline conducted emissions	PASSED
15.109, a	2.3.3	Radiated emissions	PASSED

LTE12:

Section in CFR 47	Section in RSS-GEN	Name of the test	Result
15.107, a	2.3.3	AC powerline conducted emissions	NP
15.109, a	2.3.3	Radiated emissions	PASSED

LTE17:

Section in CFR 47	Section in RSS-GEN	Name of the test	Result
15.107, a	2.3.3	AC powerline conducted emissions	NP
15.109, a	2.3.3	Radiated emissions	PASSED

LTE28:

Section in CFR 47	Section in RSS-GEN	Name of the test	Result
15.107, a	2.3.3	AC powerline conducted emissions	NP
15.109, a	2.3.3	Radiated emissions	PASSED

PASSED
 FAILED
 NP

The EUT complies with the essential requirements in the standard.
 The EUT does not comply with the essential requirements in the standard.
 The test was not performed by the TCC Microsoft Laboratory.

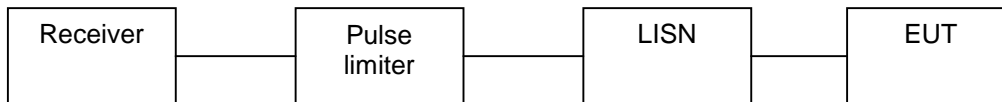
CONTENTS

1. Summary for FCC Part 15B Compliance Test Report.....	2
1.1. EUT and Accessory Information.....	2
1.2. Summary of Test Results	2
2. AC powerline conducted emissions	4
2.1. Test Setup	4
2.2. Test method and limit	4
2.3. GSM 850 Test results.....	5
3. Radiated emissions	6
3.2. Test method and limit	6
3.3. GSM 850 test results (30...8000 MHz)	8
3.4. LTE12 test results (30...8000 MHz).....	10
3.5. LTE17 test results (30...8000 MHz).....	12
3.6. LTE28 test results (30...8000 MHz).....	14
4. Test Equipment.....	16
4.1. Conducted measurements	16
4.2. Radiated measurements	16

2. AC powerline conducted emissions

EUT with DUT number	RM-1150, DUT400060
Accessories with DUT numbers	BV-T3G, DUT400062; WH-108, DUT 42927; T100TA, DUT43219; AC-60E, DUT400002; CA-190CD, DUT 43028; CA-190CD, DUT42720; LP2475W, DUT43295; HDMI cable, DUT43084
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	Continuous data transfer was active between phone and PC
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 41 / 100.6
Date of measurements	28-Nov-2015
Measured by	Timo Raiskio

2.1. Test Setup



2.2. Test method and limit

The measurement is made according to ANSI C63.4 as follows:

The EUT is placed on a wooden table 80 cm above the reference ground plane.

The EUT is connected via LISN to a test power supply.

The measurement results are obtained as described below:

$$U [dB\mu V] = U_{RX} + A_{TOT}$$

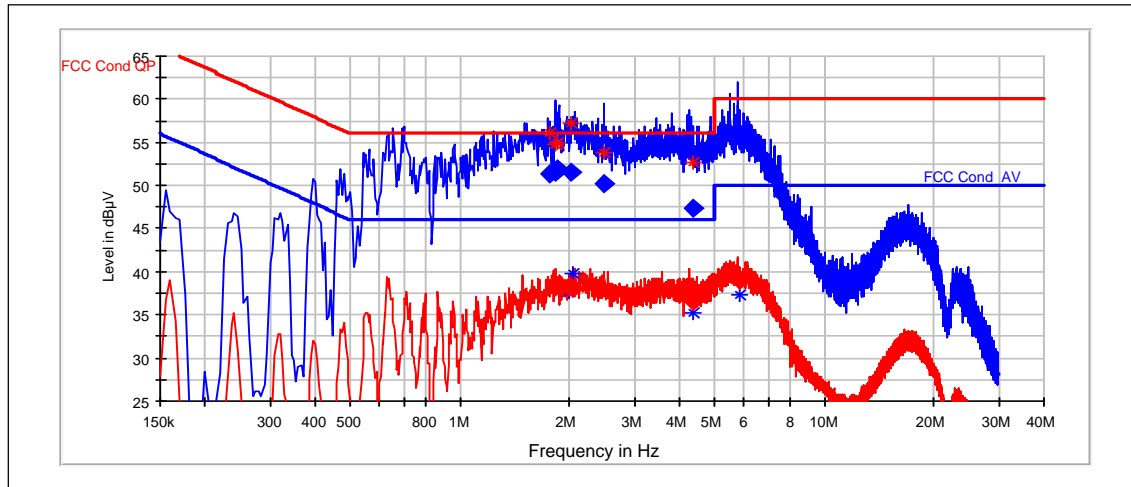
Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable and pulse limiter attenuations.

CISPR 22 Class B limits

Frequency range [MHz]	Quasi peak limit [dB μ V]	Average limit [dB μ V]
0.15 - 0.5	66 - 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

2.3. GSM 850 Test results

Channel 190 / 836.6 MHz



QuasiPeak (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
1.75	51.26	L1	PASSED
1.82	51.48	L1	PASSED
1.855	51.9	L1	PASSED
2.005	51.54	L1	PASSED
2.475	50.18	L1	PASSED
4.35	47.4	N	PASSED

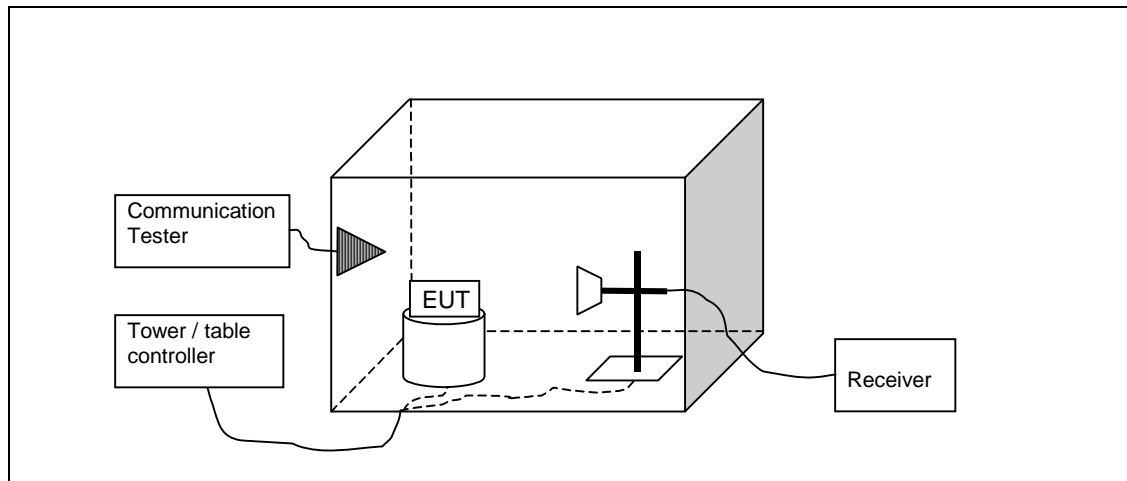
Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
1.825	38.34	L1	PASSED
1.9	38.34	L1	PASSED
1.985	38.28	L1	PASSED
2.04	38.17	L1	PASSED
4.33	36.53	L1	PASSED
5.845	38.97	N	PASSED

3. Radiated emissions

EUT with DUT number	RM-1150, DUT400060
Accessories with DUT numbers	BV-T3G, DUT400062; WH-108, DUT 42927; T100TA, DUT43219; AC-60E, DUT400002; CA-190CD, DUT 43028; CA-190CD, DUT42720; LP2475W, DUT43295; HDMI cable, DUT43084
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	Continuous data transfer was active between phone and PC
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 41 / 100.6
Date of measurements	28-Nov-2015
Measured by	Timo Raisio

3.1.1 Test setup



3.2. Test method and limit

The measurement is made according to ANSI C63.4 as follows:

The measurement is performed in the Semi-Anechoic Chamber with conducting metal floor.

The measurement distance is 3 m.

The EUT is placed on a nonconductive plate at 80 cm height.

For each suspected frequency, the turntable is rotated 360 degrees and antenna is scanned from 1 to 4 m. This is repeated for both horizontal and vertical receive antenna polarizations.

The emissions less than 20 dB below the permissible value are reported.

The measurement results are obtained as described below:

$$E [dB\mu V/m] = U_{RX} + A_{TOT}$$

Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable loss, antenna factor and preamplifier gain ($A_{TOT} = L_{CABLES} + A_F - G_{PREAMP}$).

CISPR 22 and FCC Part 15 Class B limits (3 m measurement distance)

Frequency range [MHz]	Quasi peak limit [dB μ V/m]	Average limit [dB μ V/m]	Peak limit [dB μ V/m]
30 - 230	40	-	-
230 – 1000	47	-	-
1000 - 3000	-	50	70
Above 3000	-	54	74

3.3. GSM 850 test results (30...8000 MHz)

RX mode, channel 128 / 869.2 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
3478.7	38.41	83.272	45.71	-7.3	74	35.59	PASSED
6955.4	47.98	250.611	47.98	0	74	26.02	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
3478.7	25.19	18.176	32.49	-7.3	54	28.81	PASSED
6955.4	34.83	55.144	34.83	0	54	19.17	PASSED

RX mode, channel 190 / 881.6 MHz

Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
153.929	28.8	27.542	64.7	-35.9	40	11.2	PASSED
230.819	28.75	27.384	64.55	-35.8	47	18.25	PASSED
304.011	35.55	59.91	69.05	-33.5	47	11.45	PASSED
304.138	35.68	60.814	69.18	-33.5	47	11.32	PASSED
305.484	34.46	52.845	67.96	-33.5	47	12.54	PASSED
615.992	42.52	133.66	69.52	-27	47	4.48	PASSED
707.775	39.14	90.573	64.34	-25.2	47	7.86	PASSED
943.727	44.11	160.509	66.71	-22.6	47	2.89	PASSED

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1673.645	36.72	68.549	52.82	-16.1	70	33.28	PASSED
2510.819	42.24	129.42	50.84	-8.6	70	27.76	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1673.645	24.13	16.088	40.23	-16.1	50	25.87	PASSED
2510.819	29.36	29.376	37.96	-8.6	50	20.64	PASSED

RX mode, channel 190 / 881.6 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4619.941	50.96	353.183	55.86	-4.9	74	23.04	PASSED
7819.737	46.17	203.47	43.07	3.1	74	27.83	PASSED
7835.673	46.57	213.059	43.37	3.2	74	27.43	PASSED
7852.504	47.12	226.986	43.72	3.4	74	26.88	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4619.941	43.6	151.356	48.5	-4.9	54	10.4	PASSED
7819.737	33.31	46.291	30.21	3.1	54	20.69	PASSED
7835.673	33.49	47.261	30.29	3.2	54	20.51	PASSED
7852.504	33.71	48.473	30.31	3.4	54	20.29	PASSED

RX mode, channel 190 / 881.6 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
3525.1	38.61	85.212	46.01	-7.4	74	35.39	PASSED
7052.5	45.07	179.267	44.17	0.9	74	28.93	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
3525.1	25.4	18.621	32.8	-7.4	54	28.6	PASSED
7052.5	31.87	39.219	30.97	0.9	54	22.13	PASSED

RX mode, channel 251 / 893.8 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
3573.5	37.66	76.384	45.36	-7.7	74	36.34	PASSED
7152.4	45.83	195.659	44.33	1.5	74	28.17	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
3573.5	24.9	17.579	32.6	-7.7	54	29.1	PASSED
7152.4	32.69	43.102	31.19	1.5	54	21.31	PASSED

3.4. LTE12 test results (30...8000 MHz)

RX mode, channel 5035 / 731.5 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1464.4	52.28	411.15	69.98	-17.7	70	17.72	PASSED
2194.6	40.35	104.112	51.85	-11.5	70	29.65	PASSED
3002	38.39	83.081	45.89	-7.5	74	35.61	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1464.4	26.78	21.827	44.48	-17.7	50	23.22	PASSED
2194.6	27.4	23.442	38.9	-11.5	50	22.6	PASSED
3002	25.51	18.858	33.01	-7.5	54	28.49	PASSED

RX mode, channel 5095 / 737.5 MHz

Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
44.889	26.85	22.004	60.05	-33.2	40	13.15	PASSED
76.505	29.72	30.62	68.02	-38.3	40	10.28	PASSED
155.79	30.46	33.343	66.46	-36	40	9.54	PASSED
228.076	30.17	32.248	66.17	-36	40	9.83	PASSED
230.049	30.34	32.885	66.24	-35.9	47	16.66	PASSED
306.526	33.85	49.261	67.35	-33.5	47	13.15	PASSED
707.775	35.59	60.187	60.79	-25.2	47	11.41	PASSED
943.727	40.74	108.893	63.34	-22.6	47	6.26	PASSED
943.731	41.67	121.199	64.27	-22.6	47	5.33	PASSED

RX mode, channel 5095 / 737.5 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4619.939	49.27	290.737	54.17	-4.9	74	24.73	PASSED
7837.375	46.43	209.652	43.23	3.2	74	27.57	PASSED
7848.694	46.55	212.569	43.15	3.4	74	27.45	PASSED
7855.511	46.73	217.02	43.33	3.4	74	27.27	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4619.939	42.06	126.765	46.96	-4.9	54	11.94	PASSED
7837.375	33.53	47.479	30.33	3.2	54	20.47	PASSED
7848.694	33.67	48.25	30.27	3.4	54	20.33	PASSED
7855.511	33.62	47.973	30.22	3.4	54	20.38	PASSED

RX mode, channel 5095 / 737.5 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1473.7	40.96	111.686	58.76	-17.8	70	29.04	PASSED
2212.5	40.73	108.768	52.03	-11.3	70	29.27	PASSED
3000.9	38.9	88.105	46.3	-7.4	74	35.1	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1473.7	25.71	19.297	43.51	-17.8	50	24.29	PASSED
2212.5	27.7	24.266	39	-11.3	50	22.3	PASSED
3000.9	25.57	18.989	32.97	-7.4	54	28.43	PASSED

RX mode, channel 5155 / 743.5 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1486.2	38.66	85.704	56.56	-17.9	70	31.34	PASSED
2230.9	46.84	219.786	57.84	-11	70	23.16	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1486.2	23.61	15.153	41.51	-17.9	50	26.39	PASSED
2230.9	29.69	30.514	40.69	-11	50	20.31	PASSED

3.5. LTE17 test results (30...8000 MHz)

RX mode, channel 5755 / 736.5 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1471.4	43.52	149.968	61.32	-17.8	70	26.48	PASSED
2207.5	44.25	163.117	55.55	-11.3	70	25.75	PASSED
3002	39.77	97.387	47.27	-7.5	74	34.23	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1471.4	29.84	31.046	47.64	-17.8	50	20.16	PASSED
2207.5	30.9	35.075	42.2	-11.3	50	19.1	PASSED
3002	25.74	19.364	33.24	-7.5	54	28.26	PASSED

RX mode, channel 5790 / 740.0 MHz

Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
50.731	19.96	9.954	56.36	-36.4	40	20.04	PASSED
77.174	29.72	30.62	67.92	-38.2	40	10.28	PASSED
155.789	30.72	34.356	66.72	-36	40	9.28	PASSED
227.676	30.36	32.961	66.36	-36	40	9.64	PASSED
227.913	30.6	33.884	66.6	-36	40	9.4	PASSED
304.191	36.38	65.917	69.88	-33.5	47	10.62	PASSED
617.225	35.8	61.66	62.8	-27	47	11.2	PASSED
707.775	42.6	134.896	67.8	-25.2	47	4.4	PASSED
943.727	43.29	146.049	65.89	-22.6	47	3.71	PASSED

RX mode, channel 5790 / 740.0 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4619.941	50.19	323.221	55.09	-4.9	74	23.81	PASSED
7839.177	46.73	217.02	43.43	3.3	74	27.27	PASSED
7852.608	47.27	230.94	43.87	3.4	74	26.73	PASSED
7863.03	46.86	220.293	43.46	3.4	74	27.14	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4619.941	41.81	123.169	46.71	-4.9	54	12.19	PASSED
7839.177	33.61	47.918	30.31	3.3	54	20.39	PASSED
7852.608	33.69	48.362	30.29	3.4	54	20.31	PASSED
7863.03	33.8	48.978	30.4	3.4	54	20.2	PASSED

RX mode, channel 5790 / 740.0 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1480.7	40.27	103.157	58.17	-17.9	70	29.73	PASSED
2221.2	46.95	222.587	58.15	-11.2	70	23.05	PASSED
3001.1	39.29	92.151	46.69	-7.4	74	34.71	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1480.7	24.73	17.239	42.63	-17.9	50	25.27	PASSED
2221.2	29.61	30.234	40.81	-11.2	50	20.39	PASSED
3001.1	25.62	19.099	33.02	-7.4	54	28.38	PASSED

RX mode, channel 5825 / 743.5 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1488.7	40.52	106.17	58.42	-17.9	70	29.48	PASSED
2230.8	46.58	213.304	57.58	-11	70	23.42	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1488.7	24.5	16.788	42.4	-17.9	50	25.5	PASSED
2230.8	29.67	30.444	40.67	-11	50	20.33	PASSED

3.6. LTE28 test results (30...8000 MHz)

RX mode, channel 9235 / 760.5 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1520.2	39.02	89.331	56.62	-17.6	70	30.98	PASSED
2282.8	40.79	109.522	51.29	-10.5	70	29.21	PASSED
3001.3	39.29	92.151	46.69	-7.4	74	34.71	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1520.2	24.21	16.237	41.81	-17.6	50	25.79	PASSED
2282.8	28.17	25.615	38.67	-10.5	50	21.83	PASSED
3001.3	25.77	19.431	33.17	-7.4	54	28.23	PASSED

RX mode, channel 9435 / 780.5 MHz

Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
153.989	31.28	36.644	67.18	-35.9	40	8.72	PASSED
227.245	28.39	26.272	64.39	-36	40	11.61	PASSED
227.632	27.71	24.294	63.71	-36	40	12.29	PASSED
301.21	35.45	59.224	69.25	-33.8	47	11.55	PASSED
302.241	36.05	63.46	69.75	-33.7	47	10.95	PASSED
303.804	36.69	68.312	70.19	-33.5	47	10.31	PASSED
303.93	36.55	67.22	70.05	-33.5	47	10.45	PASSED
707.775	41.44	118.032	66.64	-25.2	47	5.56	PASSED
943.727	43.48	149.279	66.08	-22.6	47	3.52	PASSED

RX mode, channel 9435 / 780.5 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
7825.649	46.58	213.304	43.48	3.1	74	27.42	PASSED
7846.593	46.69	216.023	43.39	3.3	74	27.31	PASSED
7855.112	46.32	207.014	42.92	3.4	74	27.68	PASSED
7865.227	46.59	213.55	43.19	3.4	74	27.41	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
7825.649	33.35	46.505	30.25	3.1	54	20.65	PASSED
7846.593	33.61	47.918	30.31	3.3	54	20.39	PASSED
7855.112	33.65	48.139	30.25	3.4	54	20.35	PASSED
7865.227	33.7	48.417	30.3	3.4	54	20.3	PASSED

RX mode, channel 9435 / 780.5 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1562.6	35.89	62.302	52.89	-17	70	34.11	PASSED
2341.6	41.45	118.168	51.85	-10.4	70	28.55	PASSED
3000.8	38.29	82.13	45.69	-7.4	74	35.71	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1562.6	23.72	15.346	40.72	-17	50	26.28	PASSED
2341.6	28.11	25.439	38.51	-10.4	50	21.89	PASSED
3000.8	25.48	18.793	32.88	-7.4	54	28.52	PASSED

RX mode, channel 9635 / 800.5 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1603	42.15	128.086	58.65	-16.5	70	27.85	PASSED
2402.4	44.06	159.588	53.76	-9.7	70	25.94	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
1603	24.89	17.559	41.39	-16.5	50	25.11	PASSED
2402.4	28.66	27.102	38.36	-9.7	50	21.34	PASSED

4. Test Equipment

The calibration dates for all test equipment are maintained in the equipment register. The register alerts the test lab about expired calibrations. Therefore, tests are always done with calibrated equipment. The dates are provided by request.

4.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM350089	Power supply	6632A	Agilent	22/24/27, 15C, 15E
TM350090	Power supply	6632A	Agilent	22/24/27, 15C, 15E
TM30600	Impulse limiter	ESH3-Z2	R&S	15C, 15B
TM490017	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
TM490018	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
TM150128	Spectrum Analyzer	FSU26	R&S	22/24/27, 15C, 15E
TM22806	Battery	BAT 20/E	Fiskars	15C, 15B
TM22805	UPS	PS 20/1.2	Fiskars	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
TM770113	Temperature test chamber	VT 4002	Vötsch	22/24/27
TM220042	Bluetooth tester	CBT	R&S	15C, 15B
TM490119	LISN 50 µH	ENV216	R&S	15C, 15B
TM490120	LISN 50 µH	ENV216	R&S	15C, 15B
2012	Power splitter	11667B	Agilent	22/24/27, 15C
2013	Attenuator	8493C	Agilent	22/24/27, 15C
2014	Attenuator	8493C	Agilent	22/24/27, 15C
-	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
-	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
TM210166	Communication Tester	CMW500	R&S	22/24/27
TM210205	Communication Tester	CMU200	R&S	22/24/27
TM110070	Signal Generator	SMF 100A	R&S	22/24/27, 15C, 15E, 15B
TM220065	Bluetooth tester	CBT	R&S	15C, 15B
TM210246	Communication Tester	CMU200	R&S	22/24/27, 15B
TM150131	Spectrum Analyzer	FSP30	R&S	22/24/27, 15C, 15E
TM210043	Communication Tester	CMU200	R&S	22/24/27

4.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C
TM38845	Receiver	ESIB 26	R&S	22/24/27, 15C, 15E, 15B
-	Antenna	HL562	R&S	22/24/27, 15C, 15E, 15B
-	Turntable	2188	EMCO	22/24/27, 15C, 15E, 15B
-	Turntable controller	2090	EMCO	22/24/27, 15C, 15E, 15B
-	RF system panel	OSP130	R&S	22/24/27, 15C, 15E, 15B
-	Mini mast	2075-2	ETS Lindgren	22/24/27, 15C, 15B

Eq. No	Equipment	Type	Manufacturer	Used in
TM38843	Mini mast	2075	Emco	22/24/27, 15C, 15B
TM38842	Antenna mast controller	2090	Emco	22/24/27, 15C, 15B
TM30643	LISN 50 µH	LISN-5-20-2	FCC	22/24/27, 15C, 15B
TM30644	LISN 50 µH	LISN-5-20-2	FCC	22/24/27, 15C, 15B
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C, 15B
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
TM37523	Preamplifier	AMF-4D-10M-3G-25-20P	Miteq	22/24/27, 15C, 15B
TM37498	Preamplifier	AMF-5D-020180-26-10P	Miteq	22/24/27, 15C, 15B
TM30599	Semi anechoic chamber	UNKNOWN	TDK	22/24/27, 15C, 15B
TM22638	Power supply	OL63743-901	-	22/24/27, 15C, 15E, 15B
TM38066	High pass filter	WHKX3.0/18G-12SS	Wainwright	22/24/27, 15C, 15E, 15B
2028	High pass filter	WHKX 1.0/15G-12SS	dfx	22/24/27, 15C, 15E, 15B
TM37545	Tunable notch filter	800.0/960.0-0.2/40-8SSK	Wainwright	22
TM26512	Tunable notch filter	WRCD1850/1910-0.2/40-10SSK	Wainwright	24
-	Band reject filter	WRCG1877/1883-1870/1890-40/6EE	Wainwright	24
-	Band reject filter	WRCG1729.4/1735.4-1722.4/1742.4-40/6SS	Wainwright	27
TM23892	Controller	G-1000SDX	Yaesu	22/24/27, 15C, 15E
TM220042	Bluetooth tester	CBT	R&S	15C, 15B
TM210203	Communication Tester	CMU200	R&S	22/24/27, 15B
6023	Antenna	VUBA 9117	Schwarzbeck	22/24/27
TM210166	Communication Tester	CMW500	R&S	22/24/27
TM540070	Antenna	HFH2-Z2	R&S	15C
TM110070	Signal Generator	SMF 100A	R&S	22/24/27, 15C, 15E, 15B
2052	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C, 15B, 15E
-	Antenna	QSH18S20	Q-Par	22/24/27, 15C, 15B, 15E
-	Antenna	QSH20S20	Q-Par	22/24/27, 15C, 15B, 15E
-	Antenna	QSH20S20	Q-Par	22/24/27, 15C, 15B, 15E
TM220065	Bluetooth tester	CBT	R&S	15C, 15B

END OF REPORT