

FCC Part 15B Compliance Test Report

Test Report no.:	FCC15B_RM-1085_14	Date of Report:	02-Oct-2015
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FCC listing no.:	533467		
IC recognition no.:	661V-1		
Tested devices/ accessories:	Phone RM-1085 / Battery BV-T4D / Charger AC-100 / Headset WH-308		
FCC ID:	PYARM-1085	IC:	661X-RM1085
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Part 15 Subpart B, ANSI C63.4 (2014), CISPR 22 and IC standards, RSS-GEN (Issue 4, November 2014), RSS-139 (Issue 2, February 2009), RSS-130 (Issue 1, October 2013). 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:			

Sami Lehtonen, Engineer, EMC

1. Summary for FCC Part 15B Compliance Test Report

Date of receipt	16-Jun-2015
Testing completed	30-Jun-2015
The customer's contact person	Tia Melava
Test Plan referred to	T:\Projects\RM-1085\TestPlan\RS_TestPlan_RM-1085.xlsm
Notes	-
Document name	T:\Projects\RM-1085\EMC\FCC15B_RM-1085_14.docx

1.1. EUT and Accessory Information

The EUT is a mobile phone with following features:
GSM/WCDMA/WLAN/Bluetooth
The EUT is tested with maximum rated TX power.

Devices under tests

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-1085	004402742308384;059W5J6	2110	-	01063.00001.15244.09000	100024
Battery	BV-T4D	4955405174010300826;0670771	v3.0	-	-	100025
Charger	AC-100					100026
Headset	WH-308					100028

1.2. Summary of Test Results

GSM 850:

Section in CFR 47	Section in RSS-GEN	Name of the test	Result
15.107, a	8.8	AC powerline conducted emissions	NP
15.109, a	6.1	Radiated emissions	PASSED

GSM 1900:

Section in CFR 47	Section in RSS-GEN	Name of the test	Result
15.107, a	8.8	AC powerline conducted emissions	NP
15.109, a	6.1	Radiated emissions	PASSED

WCDMA4:

Section in CFR 47	Section in RSS-GEN	Name of the test	Result
15.107, a	8.8	AC powerline conducted emissions	NP
15.109, a	6.1	Radiated emissions	PASSED

LTE7:

Section in CFR 47	Section in RSS-GEN	Name of the test	Result
15.107, a	8.8	AC powerline conducted emissions	NP
15.109, a	6.1	Radiated emissions	PASSED

LTE12:

Section in CFR 47	Section in RSS-GEN	Name of the test	Result
15.107, a	8.8	AC powerline conducted emissions	NP
15.109, a	6.1	Radiated emissions	PASSED

LTE17:

Section in CFR 47	Section in RSS-GEN	Name of the test	Result
15.107, a	8.8	AC powerline conducted emissions	NP
15.109, a	6.1	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.

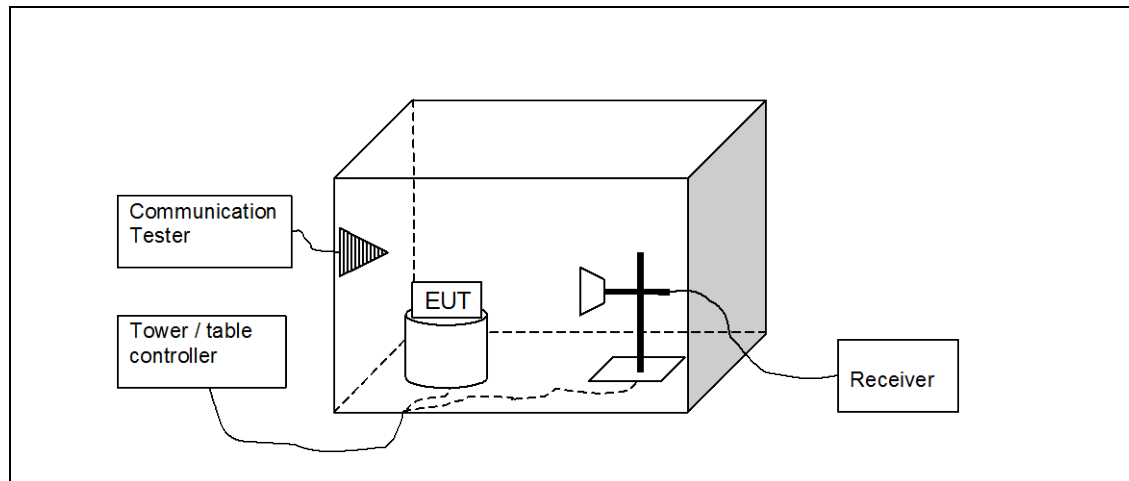
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2. Radiated emissions (FCC 15.109, a, RSS-139 6.1, RSS-130 6.1)

EUT with DUT number	RM-1085, DUT 100024
Accessories with DUT numbers	BV-T4D, DUT 100025 ; AC-100, DUT 100026 ; WH-308, DUT 100028
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	Measurement frequency is in measurement is 30 MHz – 8.5GHz.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 44 / 99.7
Date of measurements	30-Jun-2015
Measured by	Kalle Hannila

2.1.1 Test setup



2.2. Test method and limit

The measurement is made according to ANSI C63.4-2014as 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

2.3. GSM 850 test results, GPS ON

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
3476.5	37.99	79.341	44.09	-6.1	74	36.01	PASSED
6955.6	49.66	304.089	47.76	1.9	74	24.34	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
3476.5	24.64	17.061	30.74	-6.1	54	29.36	PASSED
6955.6	36.6	67.608	34.7	1.9	54	17.4	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
50.701	19.64	9.594	42.44	-22.8	40	20.36	PASSED
147.491	19.92	9.908	43.92	-24	40	20.08	PASSED
149.195	20.19	10.221	44.29	-24.1	40	19.81	PASSED
151.329	22.44	13.243	46.54	-24.1	40	17.56	PASSED
151.583	20.58	10.691	44.68	-24.1	40	19.42	PASSED
153.547	21.22	11.508	45.32	-24.1	40	18.78	PASSED
30.06	16.67	6.816	25.87	-9.2	40	23.33	PASSED

RX mode, channel 190 / 881.6 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
7816.233	47.19	228.823	42.29	4.9	74	26.81	PASSED
7826.858	47.02	224.388	42.02	5	74	26.98	PASSED
7832.463	47.2	229.087	42.2	5	74	26.8	PASSED
7837.278	46.97	223.1	41.87	5.1	74	27.03	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
7816.233	33.84	49.204	28.94	4.9	54	20.16	PASSED
7826.858	33.98	50.003	28.98	5	54	20.02	PASSED
7832.463	33.96	49.888	28.96	5	54	20.04	PASSED
7837.278	33.97	49.946	28.87	5.1	54	20.03	PASSED

RX mode, channel 190 / 881.6 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
3527	37.15	72.028	42.85	-5.7	74	36.85	PASSED
7053.2	46.05	200.678	43.25	2.8	74	27.95	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
3527	24.69	17.159	30.39	-5.7	54	29.31	PASSED
7053.2	32.48	42.073	29.68	2.8	54	21.52	PASSED

RX mode, channel 251 / 893.8 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
3577	37.77	77.357	42.97	-5.2	74	36.23	PASSED
7152.2	46.04	200.447	42.64	3.4	74	27.96	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
3577	24.84	17.458	30.04	-5.2	54	29.16	PASSED
7152.2	32.81	43.702	29.41	3.4	54	21.19	PASSED

2.4. GSM 1900 test results, FM-Radio ON

RX mode, channel 512 / 1930.2 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
3862	37.95	78.977	42.85	-4.9	74	36.05	PASSED
7719.7	46.03	200.217	41.53	4.5	74	27.97	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
3862	24.75	17.278	29.65	-4.9	54	29.25	PASSED
7719.7	33.07	45.03	28.57	4.5	54	20.93	PASSED

RX mode, channel 661 / 1960.0 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
30.57	15.64	6.053	25.14	-9.5	40	24.36	PASSED
97.956	66.03	2002.166	88.73	-22.7	40	-26.03	*PASSED
905.368	17.38	7.396	27.38	-10	47	29.62	PASSED

*97.956 MHz frequency is FM-Radio signal and thus ignored."

RX mode, channel 661 / 1960.0 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
3523.046	51.4	371.535	57.1	-5.7	74	22.6	PASSED
7041.185	45.31	184.289	42.61	2.7	74	28.69	PASSED
7835.871	47.32	232.274	42.22	5.1	74	26.68	PASSED
7841.887	47	223.872	41.9	5.1	74	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
3523.046	49.7	305.492	55.4	-5.7	54	4.3	PASSED
7041.185	32.52	42.267	29.82	2.7	54	21.48	PASSED
7835.871	33.92	49.659	28.82	5.1	54	20.08	PASSED
7841.887	33.74	48.641	28.64	5.1	54	20.26	PASSED

RX mode, channel 661 / 1960.0 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
3918.9	38.07	80.076	42.67	-4.6	74	35.93	PASSED
7841	46.85	220.039	41.75	5.1	74	27.15	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
3918.9	25.29	18.387	29.89	-4.6	54	28.71	PASSED
7841	33.84	49.204	28.74	5.1	54	20.16	PASSED

RX mode, channel 810 / 1989.8 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
3980.4	38.56	84.723	43.26	-4.7	74	35.44	PASSED
7958.7	48.25	258.523	42.35	5.9	74	25.75	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
3980.4	25.03	17.844	29.73	-4.7	54	28.97	PASSED
7958.7	34.7	54.325	28.8	5.9	54	19.3	PASSED

2.5. WCDMA4 test results, GPS ON

RX mode, channel 1537 / 2112.4 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
4224.5	38.03	79.708	42.33	-4.3	74	35.97	PASSED
6337.9	46.8	218.776	47.2	-0.4	74	27.2	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
4224.5	25.15	18.093	29.45	-4.3	54	28.85	PASSED
6337.9	33.62	47.973	34.02	-0.4	54	20.38	PASSED

RX mode, channel 1637 / 2132.4 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
30.66	16.42	6.622	26.02	-9.6	40	23.58	PASSED
50.522	19.14	9.057	41.84	-22.7	40	20.86	PASSED

RX mode, channel 1637 / 2132.4 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
7036.976	46.11	202.069	43.51	2.6	74	27.89	PASSED
7820.943	46.94	222.331	41.94	5	74	27.06	PASSED
7843.788	46.97	223.1	41.87	5.1	74	27.03	PASSED
7858.415	47.03	224.647	41.73	5.3	74	26.97	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
7036.976	32.62	42.756	30.02	2.6	54	21.38	PASSED
7820.943	33.85	49.261	28.85	5	54	20.15	PASSED
7843.788	33.95	49.831	28.85	5.1	54	20.05	PASSED
7858.415	34	50.119	28.7	5.3	54	20	PASSED

RX mode, channel 1637 / 2132.4 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
4279.3	39.82	97.949	43.52	-3.7	74	34.18	PASSED
6420	45.58	190.108	45.68	-0.1	74	28.42	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
4279.3	26.17	20.347	29.87	-3.7	54	27.83	PASSED
6420	32.57	42.511	32.67	-0.1	54	21.43	PASSED

RX mode, channel 1738 / 2152.6 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
4304.3	39.44	93.756	42.74	-3.3	74	34.56	PASSED
6456.8	46.22	204.644	46.12	0.1	74	27.78	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
4304.3	26.43	20.965	29.73	-3.3	54	27.57	PASSED
6456.8	33.35	46.505	33.25	0.1	54	20.65	PASSED

2.6. LTE7 test results, GPS ON

RX mode, channel 2775 / 2622.5 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
5244.8	42.91	139.798	44.71	-1.8	74	31.09	PASSED
7868.7	47.49	236.865	41.99	5.5	74	26.51	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
5244.8	30	31.623	31.8	-1.8	54	24	PASSED
7868.7	33.59	47.808	28.09	5.5	54	20.41	PASSED

RX mode, channel 3100 / 2655 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
30.51	15.92	6.252	25.42	-9.5	40	24.08	PASSED
50.433	18.41	8.327	41.11	-22.7	40	21.59	PASSED
432.284	22.85	13.884	39.65	-16.8	47	24.15	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
2623.648	66.91	2215.644	64.81	2.1	70	3.09	PASSED

RX mode, channel 3100 / 2655 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
7814.13	46.74	217.27	41.84	4.9	74	27.26	PASSED
7829.155	46.31	206.776	41.31	5	74	27.69	PASSED
7830.163	46.2	204.174	41.2	5	74	27.8	PASSED
7846.695	46.69	216.023	41.59	5.1	74	27.31	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
7814.13	33.41	46.827	28.51	4.9	54	20.59	PASSED
7829.155	33.48	47.206	28.48	5	54	20.52	PASSED
7830.163	33.52	47.424	28.52	5	54	20.48	PASSED
7846.695	33.37	46.612	28.27	5.1	54	20.63	PASSED

RX mode, channel 3100 / 2655 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
5311.5	42.11	127.497	44.11	-2	74	31.89	PASSED
7963.7	47.01	224.13	41.21	5.8	74	26.99	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
5311.5	29.26	29.04	31.26	-2	54	24.74	PASSED
7963.7	34.21	51.345	28.41	5.8	54	19.79	PASSED

RX mode, channel 3425 / 2687.5 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
5374.1	42.33	130.768	44.03	-1.7	74	31.67	PASSED
8062.6	47.55	238.506	41.35	6.2	74	26.45	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
5374.1	29.4	29.512	31.1	-1.7	54	24.6	PASSED
8062.6	34.84	55.208	28.64	6.2	54	19.16	PASSED

2.7. LTE12 test results, GPS ON

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
1463.5	37.63	76.12	43.13	-5.5	70	32.37	PASSED
2196.4	42.24	129.42	43.34	-1.1	70	27.76	PASSED
3001.8	38.34	82.604	43.34	-5	74	35.66	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
1463.5	24.27	16.349	29.77	-5.5	50	25.73	PASSED
2196.4	29.12	28.576	30.22	-1.1	50	20.88	PASSED
3001.8	24.92	17.62	29.92	-5	54	29.08	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
30.565	17.82	7.78	27.32	-9.5	40	22.18	PASSED
50.535	20.98	11.194	43.68	-22.7	40	19.02	PASSED
151.393	22.13	12.779	46.23	-24.1	40	17.87	PASSED
412.413	17.82	7.78	35.12	-17.3	47	29.18	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
2623.648	64.22	1625.549	62.12	2.1	70	5.78	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
2623.648	49.86	311.172	47.76	2.1	50	0.14	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
7827.656	46.02	199.986	41.02	5	74	27.98	PASSED
7828.959	46.7	216.272	41.7	5	74	27.3	PASSED
7838.578	46.9	221.309	41.8	5.1	74	27.1	PASSED
7849.903	46.03	200.217	40.83	5.2	74	27.97	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
7827.656	33.38	46.666	28.38	5	54	20.62	PASSED

7828.959	33.43	46.935	28.43	5	54	20.57	PASSED
7838.578	33.48	47.206	28.38	5.1	54	20.52	PASSED
7849.903	33.35	46.505	28.15	5.2	54	20.65	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
1473.2	36.87	69.743	42.47	-5.6	70	33.13	PASSED
2212.1	41.74	122.18	43.04	-1.3	70	28.26	PASSED
3000.1	38.62	85.31	43.62	-5	74	35.38	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
1473.2	24.21	16.237	29.81	-5.6	50	25.79	PASSED
2212.1	29.05	28.347	30.35	-1.3	50	20.95	PASSED
3000.1	24.26	16.331	29.26	-5	54	29.74	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
1487.6	37.17	72.194	42.87	-5.7	70	32.83	PASSED
2231.7	42.18	128.529	43.08	-0.9	70	27.82	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
1487.6	24.07	15.977	29.77	-5.7	50	25.93	PASSED
2231.7	29.27	29.074	30.17	-0.9	50	20.73	PASSED

2.8. LTE17 test results, GPS ON

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
1473.7	37.37	73.875	42.97	-5.6	70	32.63	PASSED
2211.4	42.78	137.721	44.08	-1.3	70	27.22	PASSED
3000.7	38.19	81.19	43.19	-5	74	35.81	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	24.39	16.577	29.99	-5.6	50	25.61	PASSED
2211.4	29.24	28.973	30.54	-1.3	50	20.76	PASSED
3000.7	25.05	17.885	30.05	-5	54	28.95	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
30.06	19.1	9.016	28.3	-9.2	40	20.9	PASSED
50.561	21.46	11.83	44.16	-22.7	40	18.54	PASSED
52.485	16.03	6.331	39.73	-23.7	40	23.97	PASSED
426.15	23.38	14.757	40.38	-17	47	23.62	PASSED
745.014	30.18	32.285	41.88	-11.7	47	16.82	PASSED
903.338	17.46	7.464	27.46	-10	47	29.54	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
7821.446	46.94	222.331	41.94	5	74	27.06	PASSED
7834.366	47.42	234.963	42.32	5.1	74	26.58	PASSED
7849.701	46.86	220.293	41.66	5.2	74	27.14	PASSED
7859.015	46.92	221.82	41.62	5.3	74	27.08	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
7821.446	33.87	49.374	28.87	5	54	20.13	PASSED
7834.366	33.98	50.003	28.88	5.1	54	20.02	PASSED
7849.701	33.86	49.317	28.66	5.2	54	20.14	PASSED
7859.015	33.88	49.431	28.58	5.3	54	20.12	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
1479.9	37.24	72.778	42.94	-5.7	70	32.76	PASSED
2220.4	42.05	126.619	43.35	-1.3	70	27.95	PASSED
3001.6	38.34	82.604	43.34	-5	74	35.66	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
1479.9	24.3	16.406	30	-5.7	50	25.7	PASSED
2220.4	29.24	28.973	30.54	-1.3	50	20.76	PASSED
3001.6	25.04	17.865	30.04	-5	54	28.96	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
1488.2	37.39	74.046	43.09	-5.7	70	32.61	PASSED
2229.2	42.33	130.768	43.33	-1	70	27.67	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
1488.2	24.27	16.349	29.97	-5.7	50	25.73	PASSED
2229.2	29.39	29.478	30.39	-1	50	20.61	PASSED

3. Test Equipment

3.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
6039	USB Interface	5541765	Testo	22/24/27, 15C, 15B
6044	V-network	ESH3-Z6	R&S	-
2059	V-network	ESH3-Z6	R&S	-
1759	LISN 50 µH	ESH3-Z5	R&S	22/24/27, 15C, 15B
2097	Pulse Limiter	ESH3-Z2	R&S	22/24/27, 15C, 15B
1999	Receiver	ESIB26	R&S	22/24/27, 15C, 15B
2180	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2390	Directional Coupler	DC2600	AR	-
-	RF immunity / Emission Software	EMC32	R&S	22/24/27, 15C, 15B
2060	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
1759	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
2039	Power Supply	PL330QMD	Thurlby	15C, 15B
6036	Data Logger	175-H2	Testo	22/24/27, 15C, 15B
2359	Temperature Test Chamber	VT4002	Vötsch	22/24/27
2352	Spectrum Analyzer	FSP-30	R&S	22/24/27, 15C
6109	Communication Tester	CMU200	R&S	22/24/27, 15C
6246	Power Supply	66332A	HP	22/24/27, 15C
1992	Signal Generator	83630B	Agilent	15C, 15B
6098	Signal Generator	8648C	Agilent	-
6046	Attenuator 10dB	8493C	Agilent	22/24/27, 15C
6047	Attenuator 20dB	8493C	Agilent	22/24/27, 15C
6045	Power splitter	11667B	Agilent	22/24/27, 15C
6247	Communication Tester	CBT	R&S	22/24/27, 15C 15B
6052	Communication Tester	CMU200	R&S	22/24/27, 15C 15B
6248	Power Supply	6632B	-	22/24/27, 15C 15B
6106	Spectrum Analyzer	FSP-30	R&S	22/24/27, 15C 15B
6113	Signal Generator	SMF100A	R&S	22/24/27, 15C 15B
6202	Temperature Test Chamber	VT4002	Vötsch	22/24/27, 15C 15B
6122	Power Splitter	11667B	Agilent	22/24/27, 15C 15B
6134	Attenuator 10dB	BW-S10-2W263+	Mini-Circuits	22/24/27, 15C
6136	Attenuator 20dB	BW-S20-2W263+	Mini-Circuits	22/24/27, 15C
6103	Bluetooth tester	CBT	R&S	22/24/27, 15C 15B
6250	Power Supply	6651A	Agilent	22/24/27, 15C 15B
6108	Communication Tester	CMU200	R&S	22/24/27, 15C 15B
6105	Spectrum Analyzer	FSV-30	R&S	22/24/27, 15C 15B
6251	Temperature Test Chamber	VT4002	Vötsch	22/24/27, 15C 15B
6243	Power Splitter	1167B	Agilent	22/24/27, 15C 15B
6245	Attenuator 10dB	BW-S10-2W263+	Mini-Circuits	22/24/27, 15C 15B
6244	Attenuator 20dB	BW-S20-2W263+	Mini-Circuits	22/24/27, 15C 15B

3.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
2388	Bluetooth Tester	CBT	R&S	15B
10479	Communication Tester	CMW500	R&S	22/24/27, 15C, 15B
2347	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2009	Signal Generator	SMP 22	R&S	22/24/27, 15C, 15B
2348	Controller	G-1000DXC	Yaesu	22/24/27, 15C, 15B
2349	Computer Controller	g-1000DXC	Yaesu	22/24/27, 15C, 15B
2116	Controller	EMCO 2090	ETS	22/24/27, 15C, 15B
2109	Power Supply	PL330QMD	Thurlby	22/24/27, 15C, 15B
2353	Receiver	ESIB26	R&S	22/24/27, 15C, 15B
6115	Open switch and control unit	OSP 130	R&S	22/24/27, 15C 15B
6116	Open switch and control unit	OSP 150	R&S	22/24/27, 15C 15B

Eq. No	Equipment	Type	Manufacturer	Used in
6117	Open switch and control unit	OSP 150	R&S	22/24/27, 15C, 15B
6131	Notch Filter	WRCT902.4-0.4/40-8SS	Wainwright	22/24/27, 15C, 15B
6130	Notch Filter	WRCD1880-1.1.25/50-10SS	Wainwright	22/24/27
6159	Band Reject Filter	WRCD1747.8-0.4/40-5SS	Wainwright	22/24/27, 15C, 15B
6158	Band Reject Filter	WRCT836.6-0.4/40-8SS	Wainwright	22/24/27, 15C, 15B
6197	Band Reject Filter	WRCJV2531/2539-2523/2547-60/12SS	Wainwright	22/24/27, 15C, 15B
2231	Band Reject Filter	WRCG1947/1953-1940/1960-40/6SS	Wainwright	22/24/27, 15C, 15B
2391	Band Reject Filter	WRCG1729.4/1735.4-1722.4/1742.4-40/6SS	Wainwright	27
2386	Band Reject Filter	WRCG1764.4/1770.4-1760.4/1774.4-40/6SS	Wainwright	22/24/27, 15C, 15B
2385	Band Reject Filter	WRCG1744.4/1750.4-1740.4/1754.4-40/6SS	Wainwright	22/24/27, 15C, 15B
2357	Band Reject Filter	WRCG2400/2483-2390/2493-35/10SS	Wainwright	15C
2188	Preamplifier	AFS4-00100300-20-23P-6	Miteq	22/24/27, 15C, 15B
6195	High Pass Filter	-	Wainwright	22/24/27, 15C, 15B
2364	Band Reject Filter	WRCG1877/1883 - 1870/1890-40/6SS	Wainwright	24
2361	Anechoic Chamber	3 m Semi / Full Anechoic Chamber	Euroshield	22/24/27, 15C, 15B
6212	Antenna Array system	-	TCC	22/24/27, 15C, 15B
-	RF immunity / Emission Software	EMC32	R&S	22/24/27, 15C, 15B
6089	Antenna	HFH2-Z2	R&S	15C, 15B
2027	CDN	M2 (modified) DC1	MEB	22/24/27, 15C, 15B
2028	CDN	M3 (modified) DC2	MEB	22/24/27, 15C, 15B
2176	CDN	CDN 801-M3	Lüthi	22/24/27, 15C, 15B
2135	CDN	CDN 801-M3	Lüthi	22/24/27, 15C, 15B
2029	Power Supply	PL330	Thurlby	22/24/27, 15C
6038	Data Logger	Testo 580	Testo	22/24/27, 15C, 15B
6037	Data Logger	175-H2	Testo	22/24/27, 15C, 15B
6039	USB Interface	5541765	Testo	22/24/27, 15C, 15B