

FCC Part 15B Compliance Test Report

Test Report no.:	Salo_FCC_0727_02.doc	Date of Report:	06.07.2007
Number of pages:	19	Customer's Contact person:	Pasi Vainio
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FCC listing no.:	533467		
IC recognition no.:	5385		
Tested devices/ accessories:	Phone RM-160 / Battery BL-6F, Headset HS-45, Control Unit AD-43, AC-Charger AC-5U, Laptop T-30 and Printer C3941A		
FCC ID:	PDNRM-160	IC:	661R-RM160
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Part 15 Subpart B, ANSI C63.4 (2003), ICES-003, CISPR 22 and IC standards RSS-132, RSS-133 and RSS-210. 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 Nokia.		
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, System Manager

1. Summary for FCC Part 15B Compliance Test Report

Date of receipt	13.06.2007
Testing completed	05.07.2007
The customer's contact person	Pasi Vainio
Test Plan referred to	T:\Projects\RM-160\TestPlan_RS\RS_Testplan_RM-160.xls
Notes	-
Document name	T:\Projects\RM-160\EMC\Results\FCC\Salo_FCC_0727_02.doc

1.1. EUT and Accessory Information

The EUT is a 6-band (GSM850/900/1800/1900 and WCDMA Band II(1900)/V(850)) mobile phone with GPRS, EGPRS, Bluetooth and WLAN. GSM and WCDMA bands are tested in idle mode. Bluetooth and WLAN are tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-160	004400/82/172012/3	4000	-	V 10.2.001	12000
AC-Charger	AC-5U	3943497094090720279;0675542	-	-	-	11999
Battery	BL-6F	0000007205000100000;0670523	-	-	-	12004
Control Unit	AD-43		-	-	-	12002
Headset	HS-45	06946447156H1903135	-	-	-	12001
Printer H&P LaserJet 5L	C3941A	CNVMO55419	-	-	-	10854
Laptop	T-30	99-ZYGY7	-	-	-	11358

1.2. Summary of Test Results

GSM 850:

Section in CFR 47	Section in ICES-003 (RSS-132)	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	PASSED
15.109, a	5.5 (6.6)	Radiated emissions	PASSED

GSM 1900:

Section in CFR 47	Section in ICES-003 (RSS-133)	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	PASSED
15.109, a	5.5 (9)	Radiated emissions	PASSED

Bluetooth:

Section in CFR 47	Section in ICES-003	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	PASSED
15.109, a	5.5	Radiated emissions	PASSED

WLAN:

Section in CFR 47	Section in ICES-003	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	PASSED
15.109, a	5.5	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 Nokia Salo Laboratory.

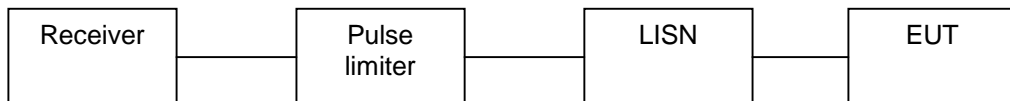
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2. AC powerline conducted emissions (FCC §15.107, ICES-003 section 5.3)

EUT with DUT number	RM-160, DUT 12000
Accessories with DUT numbers	AD-43, DUT 12002; HS-45, DUT 12001; AC-5U, DUT 11999; BL-6F DUT 12004; T-30, DUT 11358; C3941A, DUT 10854;
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Phone tested slide open mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 45 / 100.6
Date of measurements	04.07.2007
Measured by	Sami Lehtonen

2.1. Test setup



2.2. Test method and limit

The measurement is made according to ANSI C63.4-2003 as follows:

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

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

The measurement results are obtained as described below:

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

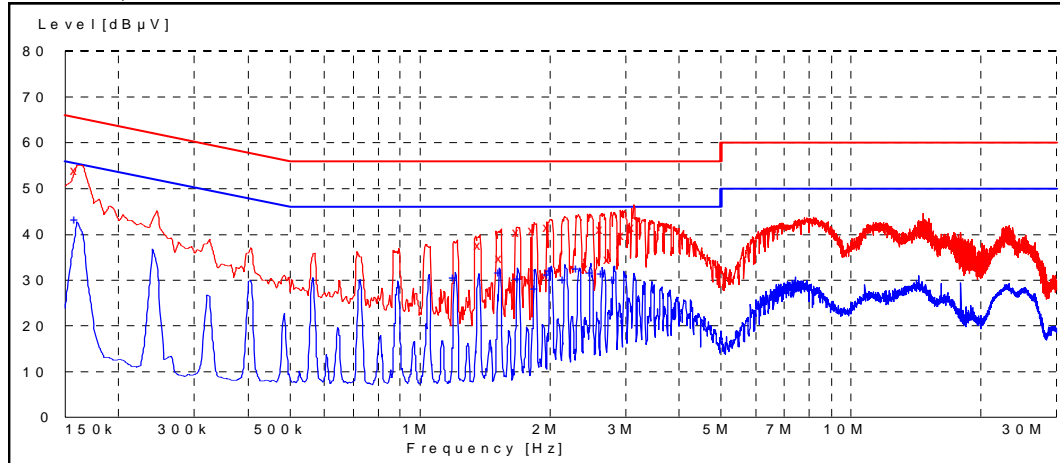
Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable and pulse limiter attenuations.

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

RX mode, channel 190 / 881.6 MHz



Quasi peak (RBW: 9 kHz)

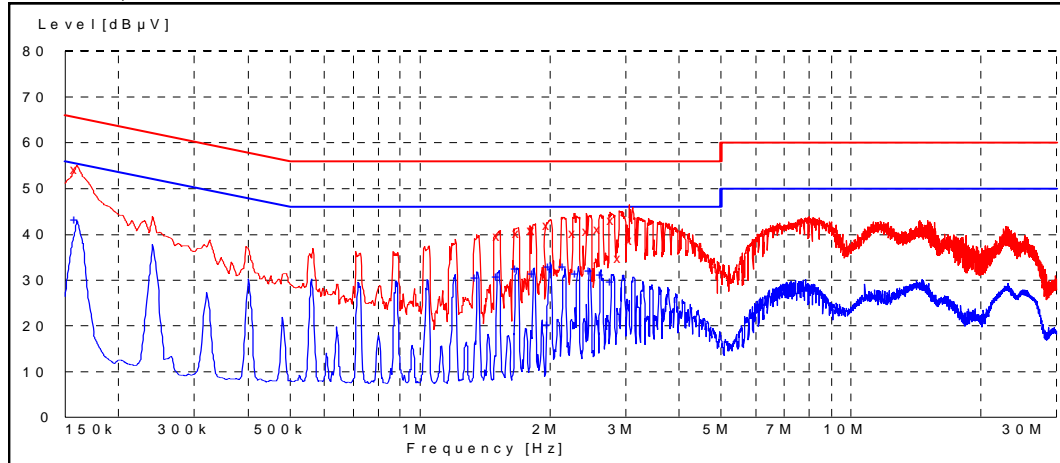
Frequency [MHz]	U [dBµV]	Line	Result
0.160000	54.00	L1	PASSED
1.380000	37.50	N	PASSED
1.545000	34.80	N	PASSED
1.690000	40.50	L1	PASSED
1.845000	41.00	N	PASSED
1.995000	41.50	N	PASSED
2.450000	32.60	L1	PASSED
2.650000	41.20	L1	PASSED
2.765000	34.50	N	PASSED
2.960000	39.80	N	PASSED
3.120000	41.00	L1	PASSED
3.135000	41.60	L1	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.160000	43.30	L1	PASSED
1.205000	30.50	L1	PASSED
1.535000	31.70	N	PASSED
1.700000	30.40	N	PASSED
1.865000	28.10	L1	PASSED
2.000000	31.30	L1	PASSED
2.025000	32.20	N	PASSED
2.175000	30.30	N	PASSED
2.340000	32.70	L1	PASSED
2.505000	31.70	N	PASSED
2.670000	31.60	L1	PASSED
2.840000	30.10	L1	PASSED

2.4. GSM 850 Test results with GPS

RX mode, channel 190 / 881.6 MHz



Quasi peak (RBW: 9 kHz)

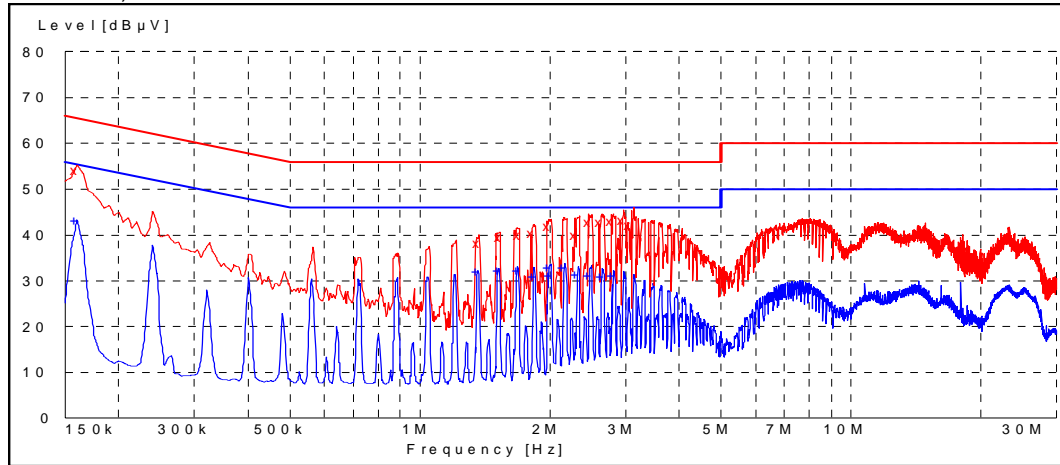
Frequency [MHz]	U [dBµV]	Line	Result
0.160000	54.20	L1	PASSED
1.525000	39.50	L1	PASSED
1.695000	40.40	N	PASSED
1.830000	40.90	L1	PASSED
1.845000	41.00	N	PASSED
2.000000	41.90	N	PASSED
2.290000	40.20	L1	PASSED
2.465000	40.70	N	PASSED
2.625000	41.10	N	PASSED
2.810000	43.00	L1	PASSED
2.910000	34.90	L1	PASSED
3.095000	38.60	L1	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.160000	43.30	L1	PASSED
1.360000	30.60	N	PASSED
1.520000	30.80	L1	PASSED
1.680000	32.50	L1	PASSED
1.850000	31.60	N	PASSED
1.995000	20.40	L1	PASSED
2.005000	33.10	N	PASSED
2.170000	32.90	L1	PASSED
2.325000	31.50	L1	PASSED
2.490000	32.20	N	PASSED
2.650000	31.40	N	PASSED
2.800000	29.80	N	PASSED

2.5. GSM 1900 Test results

RX mode, channel 661 / 1960.0 MHz



Quasi peak (RBW: 9 kHz)

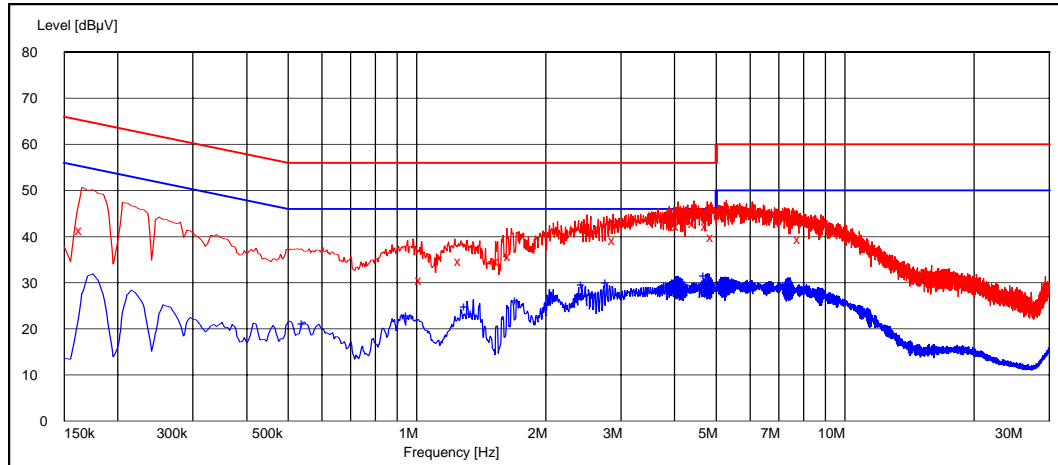
Frequency [MHz]	U [dBµV]	Line	Result
0.160000	54.30	L1	PASSED
1.375000	38.30	N	PASSED
1.535000	39.40	N	PASSED
1.700000	39.90	L1	PASSED
1.835000	40.30	N	PASSED
2.000000	42.00	N	PASSED
2.300000	40.10	N	PASSED
2.480000	42.70	N	PASSED
2.635000	42.70	L1	PASSED
2.795000	42.90	L1	PASSED
2.960000	43.20	L1	PASSED
3.085000	42.20	L1	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.160000	43.20	L1	PASSED
1.365000	32.10	N	PASSED
1.525000	32.30	N	PASSED
1.690000	32.30	L1	PASSED
1.840000	31.00	N	PASSED
2.000000	32.90	N	PASSED
2.015000	31.20	L1	PASSED
2.160000	33.00	N	PASSED
2.325000	31.40	L1	PASSED
2.480000	31.30	L1	PASSED
2.650000	30.90	N	PASSED
2.815000	31.10	L1	PASSED

2.6. Bluetooth Test results

Channel 40 / 2442 MHz



Quasi peak (RBW: 9 kHz)

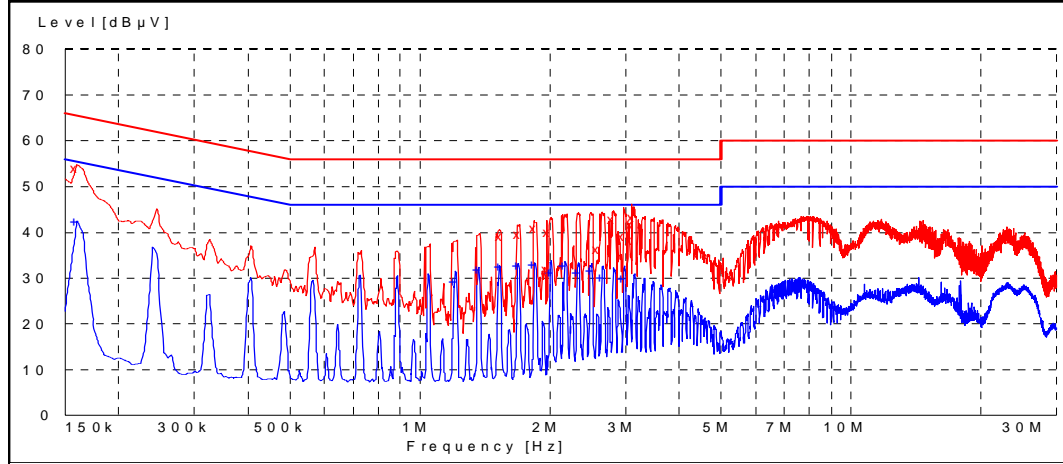
Frequency [MHz]	U [dBµV]	Line	Result
0.165000	41.50	N	PASSED
1.025000	30.50	N	PASSED
1.265000	34.70	N	PASSED
1.555000	34.70	N	PASSED
1.655000	35.80	N	PASSED
2.895000	39.30	N	PASSED
4.090000	42.30	N	PASSED
4.455000	43.00	N	PASSED
4.775000	42.40	N	PASSED
4.915000	39.90	N	PASSED
7.850000	39.50	N	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.545000	21.30	N	PASSED
0.955000	23.00	N	PASSED
1.305000	25.00	N	PASSED
1.350000	23.50	N	PASSED
1.715000	26.20	N	PASSED
2.450000	29.70	N	PASSED
2.790000	30.10	N	PASSED
4.725000	31.60	N	PASSED
4.900000	29.70	N	PASSED
8.145000	29.20	N	PASSED

2.7. WLAN Test results

TX mode, channel 7 / 2442 MHz



Quasi peak (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.160000	54.00	N	PASSED
1.545000	39.20	L1	PASSED
1.705000	39.70	L1	PASSED
1.855000	40.90	L1	PASSED
1.985000	31.90	N	PASSED
2.000000	40.00	N	PASSED
2.605000	36.40	N	PASSED
2.810000	42.80	N	PASSED
2.960000	39.00	L1	PASSED
3.105000	38.20	L1	PASSED
3.125000	41.80	N	PASSED
3.135000	43.30	L1	PASSED

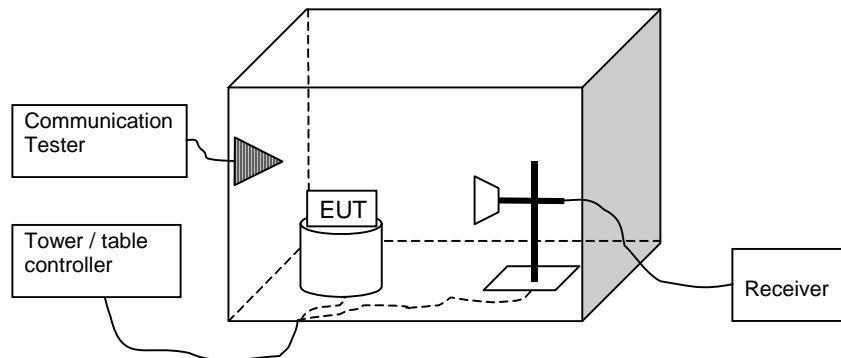
Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.160000	42.30	N	PASSED
1.205000	29.40	N	PASSED
1.370000	31.90	N	PASSED
1.535000	32.50	L1	PASSED
1.690000	32.80	L1	PASSED
1.850000	33.00	L1	PASSED
2.025000	31.40	L1	PASSED
2.170000	32.80	L1	PASSED
2.335000	31.40	L1	PASSED
2.515000	31.70	N	PASSED
2.650000	30.20	N	PASSED
2.975000	30.00	N	PASSED

3. Radiated emissions
(FCC §15.109, ICES-003 section 5.5, RSS-132 6.6, RSS-133 9)

EUT with DUT number	RM-160, DUT 12000
Accessories with DUT numbers	AD-43, DUT 12002; HS-45, DUT 12001; AC-5U, DUT 11999; BL-6F DUT 12004; T-30, DUT 11358; C3941A, DUT 10854;
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Phone tested slide open mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 44 / 99.8
Date of measurements	02.07.2007
Measured by	Sami Lehtonen

3.1. Test setup



3.2. Test method and limit

The measurement is made according to ANSI C63.4-2003as 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:

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

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

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	-	-
Above 1000	-	54	74

3.3. GSM 850 Test results

RX mode, channel 128 / 869.2 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U_{RX} [dB μ V]	A_{TOT} [dB]	Polarisation	Result
3476.800000	42.60	134.90	44.40	-1.8	VERTICAL	PASSED
6953.600000	46.40	208.93	43.60	2.8	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U_{RX} [dB μ V]	A_{TOT} [dB]	Polarisation	Result
3476.800000	30.30	32.73	32.10	-1.8	HORIZONTAL	PASSED
6953.600000	32.90	44.16	30.10	2.8	VERTICAL	PASSED

RX mode, channel 190 / 881.6 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U_{RX} [dB μ V]	A_{TOT} [dB]	Polarisation	Result
35.309619	32.30	41.21	43.90	-11.6	VERTICAL	PASSED
47.174148	37.70	76.74	56.40	-18.7	VERTICAL	PASSED
62.564930	33.70	48.42	58.50	-24.8	VERTICAL	PASSED
86.413026	39.60	95.50	60.50	-20.9	VERTICAL	PASSED
551.102204	28.70	27.23	45.80	-17.1	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U_{RX} [dB μ V]	A_{TOT} [dB]	Polarisation	Result
2944.889780	38.80	87.10	35.60	3.2	VERTICAL	PASSED
7494.495992	35.00	56.23	30.80	4.2	VERTICAL	PASSED
7976.947896	35.60	60.26	30.00	5.6	VERTICAL	PASSED

RX mode, channel 251 / 893.8 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
3575.200000	41.60	120.23	44.90	-3.3	HORIZONTAL	PASSED
7150.400000	46.40	208.93	44.10	2.3	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
3575.200000	28.90	27.86	32.20	-3.3	VERTICAL	PASSED
7150.400000	33.40	46.77	31.10	2.3	VERTICAL	PASSED

3.4. GSM 850 Test results with GPS

RX mode, channel 128 / 869.2 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
3476.800000	43.30	146.22	45.10	-1.8	HORIZONTAL	PASSED
6953.600000	45.80	194.98	43.00	2.8	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
3476.800000	30.20	32.36	32.00	-1.8	HORIZONTAL	PASSED
6953.600000	32.90	44.16	30.10	2.8	VERTICAL	PASSED

RX mode, channel 190 / 881.6 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
35.971543	31.40	37.15	43.20	-11.8	VERTICAL	PASSED
67.493587	38.50	84.14	61.70	-23.2	VERTICAL	PASSED
87.715431	39.10	90.16	59.90	-20.8	HORIZONTAL	PASSED
113.265932	42.50	133.35	63.50	-21.0	HORIZONTAL	PASSED
139.097395	28.80	27.54	51.40	-22.6	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
2944.889780	38.80	87.10	35.60	3.2	VERTICAL	PASSED
7496.500000	35.00	56.23	30.80	4.2	VERTICAL	PASSED
7972.949900	35.60	60.26	30.00	5.6	HORIZONTAL	PASSED

RX mode, channel 251 / 893.8 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
3575.200000	41.60	120.23	44.90	-3.3	HORIZONTAL	PASSED
7150.400000	46.40	208.93	44.10	2.3	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
3575.200000	28.90	27.86	32.20	-3.3	VERTICAL	PASSED
7150.400000	33.40	46.77	31.10	2.3	VERTICAL	PASSED

3.5. GSM 1900 Test results

RX mode, channel 512 / 1930.2 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
3860.000000	41.40	117.49	45.00	-3.6	HORIZONTAL	PASSED
7720.000000	47.70	242.66	43.70	4.0	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
3860.000000	28.20	25.70	31.80	-3.6	HORIZONTAL	PASSED
7720.000000	34.60	53.70	30.60	4.0	VERTICAL	PASSED

RX mode, channel 661 / 1960.0 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
34.769138	30.90	35.08	42.00	-11.1	VERTICAL	PASSED
48.917034	38.70	86.10	58.50	-19.8	VERTICAL	PASSED
66.753106	35.00	56.23	58.40	-23.4	VERTICAL	PASSED
73.527054	34.40	52.48	56.20	-21.8	VERTICAL	PASSED
86.853507	40.10	101.16	61.00	-20.9	VERTICAL	PASSED
547.696192	25.30	18.41	42.50	-17.2	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
2945.889780	38.80	87.10	35.60	3.2	VERTICAL	PASSED
7498.497996	35.00	56.23	30.70	4.3	HORIZONTAL	PASSED
7973.949900	35.80	61.66	30.20	5.6	VERTICAL	PASSED

RX mode, channel 810 / 1989.8 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
3980.000000	41.10	113.50	44.20	-3.1	HORIZONTAL	PASSED
7960.000000	48.30	260.02	42.70	5.6	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
3980.000000	28.60	26.92	31.70	-3.1	HORIZONTAL	PASSED
7960.000000	35.50	59.57	29.90	5.6	VERTICAL	PASSED

3.6. Bluetooth Test results

Channel 0 / 2402 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]	Polarisation	Result
4804.000000	43.60	151.36	43.10	0.5	HORIZONTAL	PASSED
7206.000000	47.20	229.09	44.50	2.7	HORIZONTAL	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]	Polarisation	Result
4804.000000	30.80	34.67	30.30	0.5	VERTICAL	PASSED
7206.000000	33.50	47.32	30.80	2.7	HORIZONTAL	PASSED

Channel 40 / 2442 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]	Polarisation	Result
37.595391	25.10	17.99	43.50	-18.4	VERTICAL	PASSED
65.891182	16.80	6.92	46.80	-30.0	HORIZONTAL	PASSED
75.048497	15.60	6.03	43.30	-27.7	HORIZONTAL	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]	Polarisation	Result
4834.167335	44.30	164.06	43.40	0.9	VERTICAL	PASSED
7337.673347	46.90	221.31	43.70	3.2	VERTICAL	PASSED
13358.717435	52.10	402.72	39.70	12.4	VERTICAL	PASSED
14489.473948	52.80	436.52	39.00	13.8	HORIZONTAL	PASSED
15456.911824	53.70	484.17	37.90	15.8	VERTICAL	PASSED
15899.291583	54.80	549.54	37.60	17.2	HORIZONTAL	PASSED
16163.330661	55.70	609.54	38.10	17.6	HORIZONTAL	PASSED
17893.287575	57.10	716.14	39.10	18.0	VERTICAL	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]	Polarisation	Result
4836.667335	31.20	36.31	30.30	0.9	VERTICAL	PASSED
7333.173347	34.40	52.48	31.30	3.1	VERTICAL	PASSED
13360.217435	39.80	97.72	27.40	12.4	VERTICAL	PASSED
14482.973948	39.80	97.72	25.90	13.9	HORIZONTAL	PASSED
15452.411824	40.60	107.15	24.80	15.8	VERTICAL	PASSED
15898.791583	41.90	124.45	24.70	17.2	HORIZONTAL	PASSED
16168.830661	42.60	134.90	24.90	17.7	HORIZONTAL	PASSED
17891.787575	43.10	142.89	25.10	18.0	VERTICAL	PASSED

Channel 78 / 2480 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]	Polarisation	Result
4960.000000	43.40	147.91	43.80	-0.4	HORIZONTAL	PASSED
7440.000000	47.30	231.74	43.60	3.7	VERTICAL	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]	Polarisation	Result
4960.000000	29.90	31.26	30.30	-0.4	HORIZONTAL	PASSED
7440.000000	34.70	54.33	31.00	3.7	VERTICAL	PASSED

3.7. WLAN Test results

Channel 1 / 2412 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]	Polarisation	Result
4824.000000	48.20	257.04	47.40	0.8	VERTICAL	PASSED
7236.000000	47.50	237.14	44.90	2.6	VERTICAL	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]	Polarisation	Result
4824.000000	40.20	102.33	39.40	0.8	VERTICAL	PASSED
7236.000000	34.00	50.12	31.40	2.6	HORIZONTAL	PASSED

Channel 7 / 2442 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]	Polarisation	Result
38.176353	19.30	9.23	38.00	-18.7	VERTICAL	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]	Polarisation	Result
2362.939880	51.80	389.05	56.80	-5.0	HORIZONTAL	PASSED
4884.269539	46.70	216.27	45.90	0.8	VERTICAL	PASSED
7323.149299	48.60	269.15	45.60	3.0	HORIZONTAL	PASSED
12493.487976	52.40	416.87	41.70	10.7	VERTICAL	PASSED
13269.031062	53.00	446.68	41.00	12.0	HORIZONTAL	PASSED
15358.721443	53.50	473.15	37.70	15.8	HORIZONTAL	PASSED
15900.299599	54.30	518.80	37.10	17.2	HORIZONTAL	PASSED
16184.876754	54.90	555.90	37.00	17.9	HORIZONTAL	PASSED
17875.243487	55.80	616.60	37.90	17.9	HORIZONTAL	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]	Polarisation	Result
2363.939880	41.60	120.23	46.60	-5.0	HORIZONTAL	PASSED
4884.269539	38.20	81.28	37.40	0.8	VERTICAL	PASSED
7323.649299	37.70	76.74	34.70	3.0	HORIZONTAL	PASSED
12491.487976	39.50	94.41	28.80	10.7	VERTICAL	PASSED
13267.531062	40.00	100.00	28.10	11.9	HORIZONTAL	PASSED
15358.721443	40.80	109.65	25.00	15.8	HORIZONTAL	PASSED
15901.299599	41.90	124.45	24.70	17.2	HORIZONTAL	PASSED
16188.376754	42.80	138.04	24.80	18.0	HORIZONTAL	PASSED
17873.743487	42.80	138.04	24.90	17.9	HORIZONTAL	PASSED

Channel 11 / 2462 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]	Polarisation	Result
4924.000000	51.20	363.08	51.00	0.2	VERTICAL	PASSED
7386.000000	48.50	266.07	45.00	3.5	HORIZONTAL	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]	Polarisation	Result
4924.000000	46.60	213.80	46.40	0.2	VERTICAL	PASSED
7386.000000	35.00	56.23	31.50	3.5	VERTICAL	PASSED

4. Test Equipment

4.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1742	EMI Test Receiver	ESMI	R&S	15C, 15B
1759	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
1872	Thermo- Hygrograph	00.02520.150700	Lambrecht	15C, 15B
1916	Radio Communication tester	CMTA84	R&S	15C, 15B
2039	Power Supply	PL330QMD	THURLBY	15C, 15B
2060	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
2068	CDN-Antenna line	S1	NMP	15C, 15B
2097	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
2111	Multimeter	TX3	Tektronix	15C, 15B
2156	Digital Radio Communication Tester	CMU200	R&S	15C, 15B
2206	Signal generator	SMX	R&S	15C, 15B
2335	GPIB Switch 2 to 1	-	National Instruments	15C, 15B
2347	Digital Radio Communication Tester	CMU200	R&S	22/24, 15C, 15B
2352	Spectrum Analyzer	FSP	R&S	22/24, 15C
2359	Temperature Test system	VT4002	Vötsch Industrietechnik	22/24
2360	Serial Bus Converter	Serial 488A	IO Tech	22/24
2362	Power Supply	NGPX 70/5	R&S	22/24
2388	Bluetooth Tester	CBT	R&S	15C, 15B
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24, 15C, 15B

4.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1748	Log. per. Antenna	HL025	R&S	22/24, 15C
1749	Log. per. Antenna	HL025	R&S	22/24, 15C
1875	Thermo- Hygrograph	00.02520.150700	Lambrecht	22/24, 15C, 15B
1917	Radio Communication tester	CMTA84	R&S	22/24, 15C, 15B
1933	Precision half-wave dipole antennas	HZ-13	R&S	22/24, 15C
1938	Precision half-wave dipole antennas	HZ-12	R&S	22/24, 15C
2006	Radiation Reference Source	VSQ	MEB	22/24, 15C, 15B
2009	Signal generator	SMP 22	R&S	22/24, 15C, 15B
2019	Multimeter	34401A	HP	22/24, 15C, 15B
2027	Coupling and Decoupling Network	M2 (modified) DC1	MEB	22/24, 15C, 15B
2028	Coupling and Decoupling Network	M3 (modified) DC2	MEB	22/24, 15C, 15B
2029	Power Supply	PL330	THURLBY	22/24, 15C, 15B
2043	Band Reject Filter	WRCA824/849-0,2-6SS	Wainwright	22/24, 15C, 15B
2047	Band Reject Filter	WRCC1800/2000-0.2-10SS	Wainwright	22/24, 15C, 15B
2051	High Pass Filter	4HC1700-1-KK	R&S	22/24, 15C
2057	Log. per. Antenna	HL025	R&S	22/24, 15C

Eq. No	Equipment	Type	Manufacturer	Used in
2109	Power Supply	PL330QMD	THURLBY	22/24, 15C, 15B
2110	Multimeter	34401A	HP	22/24, 15C, 15B
2112	Multimeter	TX3	Tektronix	22/24, 15C, 15B
2116	Controller	EMCO MODEL 2090	ETS	22/24, 15C, 15B
2133	Power Meter	NRVS	R&S	22/24, 15C
2134	Power Sensor	NRV-Z32	R&S	22/24, 15C
2135	Coupling and Decoupling Network	CDN 801-M3	LÜTHI	22/24, 15C, 15B
2138	Ultra Broadband Antenna	HL562	R&S	22/24, 15C, 15B
2140	Biconical Antenna	EMCO93110B	EMCO	22/24, 15C
2142	Log.-per.-dipol Antenna	3146	EMCO	22/24, 15C
2144	Attenuator	6803.17B	Huber-Suhner	22/24, 15C, 15B
2150	High Pass Filter	F-15041	RLC ELECTRONICS	22/24, 15C
2176	Coupling and Decoupling Network	CDN 801-M3	LÜTHI	22/24, 15C, 15B
2180	Digital Radio Communication Tester	CMU200	R&S	22/24, 15C, 15B
2188	Preamplifier	AFS4-00100300-20-23P-6	MITEQ	22/24, 15C, 15B
2330	EMI Test receiver	ESIB26	R&S	22/24, 15C, 15B
2334	GPIB Switch 2 to 1	-	National Instruments	22/24, 15C, 15B
2348	Yaesu controller	G-1000DXC	YAESU	22/24, 15C, 15B
2349	Computer controller (Yaesu)	GS-232B	YAESU	22/24, 15C, 15B
2350	Preamplifier	AMF-6D-020180-29-20P	MITEQ	22/24, 15C
2361	Anechoic chamber	3 meter semi/full anechoic chamber	Euroshield	22/24, 15C, 15B
2398	Horn antenna	HF906	R&S	22/24, 15C
2363	Band Reject Filter	WRCG 832/838-825/845/5SS	Wainwright	22/24
2364	Band Reject Filter	WRCG1877/1883 - 1870/1890-40/6SS	Wainwright	22/24
2365	Relay Switch Unit	TS-RSP	R&S	22/24, 15C, 15B
2366	Relay Switch Unit	TS-RSP	R&S	22/24, 15C, 15B
2384	Band Reject Filter	WRCG832/838-825/845-40/5SS	Wainwright	22/24
2388	Bluetooth Tester	CBT	R&S	15C, 15B
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24, 15C, 15B