

FCC Part 15B Compliance Test Report

Test Report no.:	FCC15B_RM-849_08.docx	Date of Report:	25-May-2012
Number of pages:	11	Customer's Contact person:	Hu Dongji
Testing laboratory:	TCC Nokia Beijing Laboratory Beijing Economic and Technological Development Area No.5 Donghuan Zhonglu Beijing PRC China 100176 Tel. +86 10 8711 8888 Fax. +86 10 8711 4550	Customer:	Nokia Corporation Beijing Economic and Technological Development Area No.5 Donghuan Zhonglu Beijing PRC China 100176 Tel. +86 10 8711 8888 Fax. +86 10 8711 4550
FCC listing no.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-849 / Battery BP-3L / AC Charger AC-50E / USB data cable CA-190CD / Headset WH-208		
FCC ID:	QTLRM-849	IC:	661AB-RM849
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, RSS-132 (Issue 2, September 2005), RSS-133 (Issue 5, February 2009), RSS-210 (Issue 8, December 2010). 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:			

Gao Sherina, Engineer, EMC

1. Summary for FCC Part 15B Compliance Test Report

Date of receipt	27-Apr-2012
Testing completed	17-May-2012
The customer's contact person	Hu Dongji
Test Plan referred to	T:\Projects\RM-849\TestPlan\RS_testplan_RM-849.xls
Notes	-
Document name	FCC15B_RM-849_08.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, modulated with pseudo random bit sequence (PRBS9).

Devices under tests

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-849	004402138942879;059P3M1	2035	-	1100.0000.8773.12150	52727
Battery	BP-3L	3932131515450172307;0670635	-	-	-	52710
AC Charger	AC-50E	4090492071260400827;0675619	-	-	-	52718
USB data cable	CA-190CD	07304571506G2F	-	-	-	52720
Headset	WH-208	1483T41	-	-	-	52715

1.2. Summary of Test Results

GSM850:

Section in CFR 47	Section in ICES-003 (RSS-132)	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	NP
15.109, a	5.5 (4.6)	Radiated emissions	PASSED

WCDMA 850 (Band V):

Section in CFR 47	Section in ICES-003 (RSS-132)	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	NP
15.109, a	5.5 (4.6)	Radiated emissions	NP

GSM1900:

Section in CFR 47	Section in ICES-003 (RSS-133)	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	NP
15.109, a	5.5 (6.6)	Radiated emissions	PASSED

WCDMA 1900 (Band II):

Section in CFR 47	Section in ICES-003 (RSS-133)	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	NP
15.109, a	5.5 (6.6)	Radiated emissions	NP

Bluetooth:

Section in CFR 47	Section in ICES-003 (RSS-139)	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	NP
15.109, a	5.5 (6.6)	Radiated emissions	NP

WLAN:

Section in CFR 47	Section in ICES-003 (RSS-139)	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	NP
15.109, a	5.5 (6.6)	Radiated emissions	NP

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 Laboratory.

CONTENTS

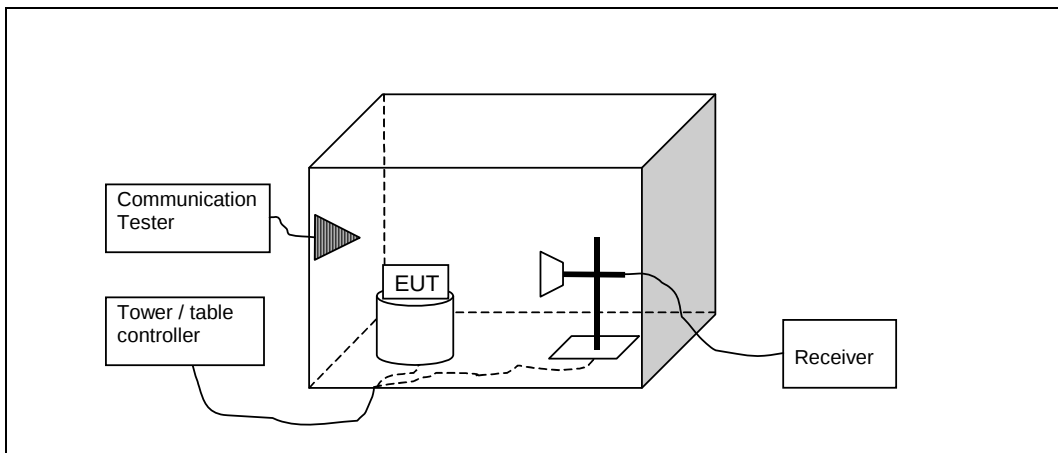
1. Summary for FCC Part 15B Compliance Test Report.....	2
1.1. EUT and Accessory Information.....	2
1.2. Summary of Test Results.....	2
2. Radiated emissions	
(FCC §15.109, ICES-003 section 5.5, RSS-132 4.6, RSS-133 6.6)	5
2.2. Test method and limit.....	5
2.3. GSM850 Test results, FM radio on	7
2.4. GSM1900 Test results, FM radio on.....	9
3. Test Equipment.....	11
3.1. Conducted measurements	11
3.2. Radiated measurements	11

2. Radiated emissions

(FCC §15.109, ICES-003 section 5.5, RSS-132 4.6, RSS-133 6.6)

EUT with DUT number	RM-849, DUT 52727
Accessories with DUT numbers	BP-3L, DUT 52710 ; AC-50E, DUT 52718 ; CA-190CD, DUT 52720 ; WH-208, DUT 52715
Operation Voltage [V] / [Hz]	115/60
Results	PASSED
Remarks	FM Radio active during GSM idle mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/48/100.5
Date of measurements	17-May-2012
Measured by	Zou Ming

2.1.1 Test Setup



2.2. 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:

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

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

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

Frequency range [MHz]	Quasi peak limit [dBμV/m]	Average limit [dBμV/m]	Peak limit [dBμV/m]
30 - 230	40	-	-
230 – 1000	47	-	-
Above 1000	-	54	74

2.3. GSM850 Test results, FM radio on

RX mode, channel 128 / 869.2 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3476.1	41.8	122.956	43.77	-1.97	HORIZONTAL	PASSED
6952.2	53.63	480.065	48.5	5.13	VERTICAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3476.1	28.74	27.362	30.71	-1.97	HORIZONTAL	PASSED
6952.2	40.15	101.73	35.02	5.13	VERTICAL	PASSED

RX mode, channel 190 / 881.6 MHz

Quasi peak (RBW: 120 kHz, VBW: 300 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
30.36	19.24	9.157	28.13	-8.89	VERTICAL	PASSED
30.45	23.48	14.935	26.44	-2.96	VERTICAL	PASSED
43.196	20.05	10.061	37.86	-17.81	VERTICAL	PASSED
955.321	27.01	22.416	37.04	-10.03	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
1527.555	60.49	1057.548	65.89	-5.4	VERTICAL	PASSED
1834.37	47.85	246.86	50.72	-2.87	HORIZONTAL	PASSED
2475.047	44.69	171.534	42.82	1.87	VERTICAL	PASSED
2578.856	45.19	181.656	42.14	3.05	VERTICAL	PASSED
3000.6	41.85	123.794	43.49	-1.64	HORIZONTAL	PASSED
3526.5	41.26	115.598	43.63	-2.37	VERTICAL	PASSED
7032.262	46.86	220.191	41.63	5.23	VERTICAL	PASSED
7040.178	45.85	195.997	40.6	5.25	VERTICAL	PASSED
7051.303	46.45	210.136	41.37	5.08	HORIZONTAL	PASSED
7051.4	46.84	219.66	41.75	5.09	VERTICAL	PASSED
7074.648	46.41	209.194	41.11	5.3	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
1527.555	43.42	148.218	48.82	-5.4	VERTICAL	PASSED
1834.37	43.34	146.876	46.21	-2.87	HORIZONTAL	PASSED
2475.047	31.52	37.675	29.65	1.87	VERTICAL	PASSED
2578.856	32.3	41.214	29.25	3.05	VERTICAL	PASSED
3000.6	28.71	27.268	30.35	-1.64	HORIZONTAL	PASSED
3526.5	28.33	26.089	30.7	-2.37	VERTICAL	PASSED
7032.262	33.17	45.53	27.94	5.23	VERTICAL	PASSED
7040.178	33.05	44.947	27.8	5.25	VERTICAL	PASSED
7051.303	32.97	44.535	27.89	5.08	HORIZONTAL	PASSED
7051.4	33.14	45.389	28.05	5.09	VERTICAL	PASSED
7074.648	33.24	45.941	27.94	5.3	HORIZONTAL	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]	Polarisation	Result
3573.5	40.91	111.058	43.22	-2.31	VERTICAL	PASSED
7148.9	45.56	189.714	40.46	5.1	VERTICAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3573.5	28.22	25.754	30.53	-2.31	VERTICAL	PASSED
7148.9	33.1	45.201	28	5.1	VERTICAL	PASSED

2.4. GSM1900 Test results, FM radio on

RX mode, channel 512 / 1930.2 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3858.9	43.21	144.744	43.91	-0.7	VERTICAL	PASSED
7721.3	45.29	183.908	40.85	4.44	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3858.9	29.44	29.635	30.14	-0.7	VERTICAL	PASSED
7721.3	32.48	42.068	28.04	4.44	HORIZONTAL	PASSED

RX mode, channel 661 / 1960.0 MHz

Quasi peak (RBW: 120 kHz, VBW: 300 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
30.36	24.28	16.361	27.17	-2.89	VERTICAL	PASSED
34.939	14.96	5.595	27.17	-12.21	VERTICAL	PASSED
42.696	15.21	5.764	32.63	-17.42	VERTICAL	PASSED
52.414	10.89	3.504	35.31	-24.42	VERTICAL	PASSED
955.341	27.99	25.09	38.02	-10.03	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
1527.753	58.53	844.015	63.93	-5.4	VERTICAL	PASSED
1834.37	50.71	343.321	53.58	-2.87	HORIZONTAL	PASSED
3001	41.72	121.857	43.36	-1.64	HORIZONTAL	PASSED
3921.3	42.91	139.83	43.63	-0.72	VERTICAL	PASSED
7031.36	46.35	207.611	41.12	5.23	VERTICAL	PASSED
7041.283	46.24	205.163	40.98	5.26	VERTICAL	PASSED
7055.81	46.02	200.078	40.85	5.17	HORIZONTAL	PASSED
7066.534	46.04	200.424	40.85	5.19	HORIZONTAL	PASSED
7838.9	45.94	198.13	41.37	4.57	VERTICAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
1527.753	39.93	99.243	45.33	-5.4	VERTICAL	PASSED
1834.37	46.92	221.922	49.79	-2.87	HORIZONTAL	PASSED
3001	28.7	27.236	30.34	-1.64	HORIZONTAL	PASSED
3921.3	29.28	29.09	30	-0.72	VERTICAL	PASSED
7031.36	33.1	45.201	27.87	5.23	VERTICAL	PASSED
7041.283	33.12	45.264	27.86	5.26	VERTICAL	PASSED
7055.81	32.94	44.351	27.77	5.17	HORIZONTAL	PASSED
7066.534	33.13	45.337	27.94	5.19	HORIZONTAL	PASSED
7838.9	32.92	44.254	28.35	4.57	VERTICAL	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]	Polarisation	Result
3980.4	42.2	128.825	43.08	-0.88	VERTICAL	PASSED
7959.1	46.14	202.652	41.12	5.02	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
3980.4	29.08	28.438	29.96	-0.88	VERTICAL	PASSED
7959.1	33	44.684	27.98	5.02	HORIZONTAL	PASSED

3. Test Equipment

3.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	RF Emission Software	EMC32 Test Software	R&S	22/24/27, 15C, 15B
BJPCWH0020	DC Power supply	Hp6632B	HP	22/24/27, 15C
BJPCPT0040	Receiver	ESCS30	R&S	15C, 15B
BJPCPT0073	Signal Generator	SMR 20	R&S	22/24/27, 15C, 15B
BJPCPT0079	LISN 50 μ H	ESH3-Z5	R&S	15C, 15B
BJPCPT0131	Communication Tester	CMU200	R&S	15C, 15B
BJPCPT0191	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
BJPCTC0017	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0067	Bluetooth Tester	CBT	R&S	22/24/27, 15C
BJPCTC0089	Temperature Test chamber	VT4002	Votsch industrietechnik	22/24/27, 15C
BJPCTC0090	FSP spectrum analyzer	FSP30	R&S	22/24/27, 15C
BJPCTC0094	GPB-RS232 convertor	GPB-RS232	NI	22/24/27, 15C
BJPCTC0112	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0114	Signal Generator	E8357C	Agilent	22/24/27, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C

3.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	RF Emission Software	EMC32 Test Software	R&S	22/24/27, 15C, 15B
BJPCPT0072	Receiver	ESI B26	R&S	22/24/27, 15C, 15B
BJPCPT0130	Relay Switch Unit	TS-RSP	R&S	22/24/27, 15C, 15B
BJPCPT0150	High Pass Filter	WHKS1200-10SS	Wainwright	22/24/27, 15C, 15B
BJPCPT0151	Band Reject Filter	WRCD1880/2000-0.2/40-5SSK	Wainwright	24, 15B
BJPCPT0154	Band Reject Filter	WRCT2402/2480-2400/2483.5-30-20SS	Wainwright	15C, 15B
BJPCPT0162	Antenna	HF906	R&S	22/24/27, 15C, 15B
BJPCTC0007	Antenna	HL562	R&S	22/24/27, 15C, 15B
BJPCTC0029	Antenna	HF906	R&S	22/24/27, 15C, 15B
BJPCTC0034	Band Reject Filter	WRCT 800/880-0.2/40-5SSK	Wainwright	22, 15B
BJPCTC0049	Preamplifier	Blma 0118-1A-Bt	Bonn	22/24/27, 15C, 15B
BJPCTC0055	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0058	Bluetooth Tester	CBT	R&S	15C, 15B
BJPCTC0064	Band Reject Filter	WRCG1877/1883-1870/1890-40/6SS	Wainwright	24, 15B
BJPCTC0065	Band Reject Filter	WRCG832/838-825/845-40/5SS	Wainwright	27, 15B
BJPCTC0071	Multi-Device Controller	2090	EMCO	22/24/27, 15C, 15B
BJPCTC0072	Anechoic Chamber	3 m Semi / Full Anechoic Chamber	ETS	22/24/27, 15C, 15B
BJPCTC0073	MAST	Model-TR/POL	ETS	22/24/27, 15C, 15B
BJPCTC0074	MAST	Model 2070-2	ETS	22/24/27, 15C, 15B
BJPCTC0075	Turntable	Model 2188	ETS-EMCO	22/24/27, 15C, 15B
BJPCTC0096	Preamplifier	AFS4-00100300-20-23P-6	Miteq	22/24/27, 15C, 15B
BJPCTC0113	Receiver	ESI B26	R&S	22/24/27, 15B, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C
BJPCTC0124	Attenuator	SA18N200W-40	Fairview Microwave	-