

FCC Part 15C Compliance Test Report

Test Report no.:	Bej_FCC_0834_02.doc	Date of Report:	26-Aug-2008
Number of pages:	9	Customer's Contact person:	Victoria Abadilla
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FCC listing no.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-381 / Battery BP-6MT, AC-charger AC-6U, Headset HS-49.		
FCC ID:	QMNRM-381	IC:	661X-RM381
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), Public Notice DA 00-705, DTS procedures KDB 558074, IC standards RSS-GEN (Issue 2, June 2007) and RSS-210 (Issue 7, June 2007). 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:			
	Jia Dongsheng, Manager		

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	15-Aug-2008
Testing completed	19-Aug-2008
The customer's contact person	Victoria Abadilla
Test Plan referred to	T:\Projects\RM-381\TestPlan_RS\RS_Testplan_RM-381.xls
Notes	-
Document name	T:\Projects\RM-381\EMC\Results\FCC\Bej_FCC_0834_02.doc

1.1. EUT and Accessory Information

The EUT is a 7-band (GSM850/900/1800/1900 and WCDMA Band I/II(1900)/V(850)) mobile phone with GPRS, EGPRS and Bluetooth. Bluetooth is tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-381	04401/10/205347/3	S2.5	-	Sy08w11_08w28	51013
Battery	BP-6MT	3932138192320457351;0670551	-	-	-	51014
AC-charger	AC-6U	3943497484070802283;0675591	-	-	-	51015
Headset	HS-49	-	-	-	-	51016

1.2. Summary of Test Results

Bluetooth:

Section in CFR 47	Section in RSS-GEN or RSS-210	Name of the test	Result
15.247(b)(1)	A8.4 (2)	Conducted peak output power	NP
15.247(d)	A8.5	Band edge compliance of RF emissions	NP
15.247(d)	A8.5	Spurious RF conducted emissions	NP
15.247(d), 15.209	A8.5	Spurious radiated emissions	PASSED
15.207	7.2.2	AC powerline conducted emissions	NP
15.247(a)(1)	A8.1 (1)	20 dB bandwidth	NP
15.247(a)(1)	A8.1 (2)	Carrier frequency separation	NP
15.247(a)(1)(iii)	A8.1 (4)	Number of hopping frequencies	NP
15.247(a)(1)(iii)	A8.1 (4)	Time of occupancy	NP

PASSED

The EUT complies with the essential requirements in the standard.

FAILED

The EUT does not comply with the essential requirements in the standard.

NP

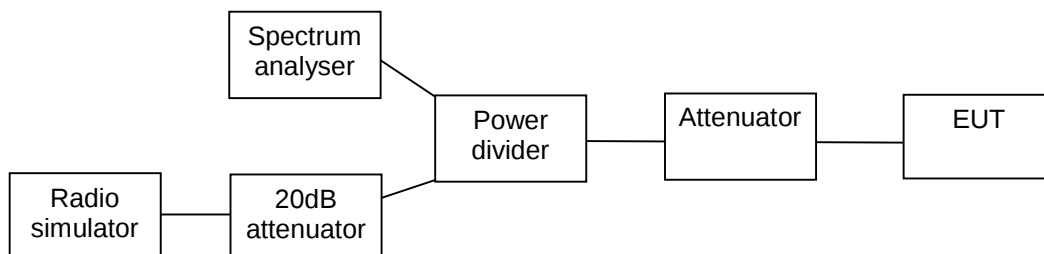
The test was not performed by the TCC Nokia Beijing Laboratory.

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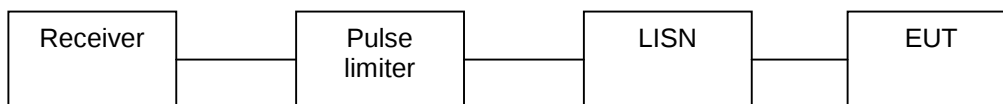
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2. Test setups

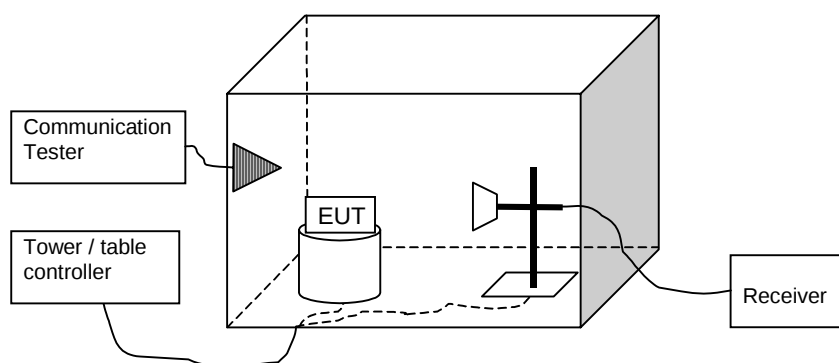
2.1. Conducted RF test setup



2.2. AC powerline conducted emissions test setup



2.3. Radiated test setup



3. Spurious radiated emissions (FCC §15.247(d), §15.209, RSS-210 A8.5)

EUT with DUT number	RM-381 DUT51013
Accessories with DUT numbers	BP-6MT DUT51014; AC-6U DUT51015; HS-49 DUT51016
Operation Voltage [V] / [Hz]	110 / 60
Result	PASSED
Remarks	Phone tested in flip open mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	18 / 77 / 100.2
Date of measurements	19-Aug-2008
Measured by	Jia Dongsheng

3.1. Test method and limit

The measurement is made according to Public notice DA 00-705 and IC standard RSS-210 as follows:

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system.

The Final Measurement is performed in the Semi-Anechoic Chamber with conducting metal floor, if the Preliminary Measurement results are closer than 20 dB to the permissible value.

The EUT is placed at nonconductive plate at the turntable center.

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:

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

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

Limits for spurious radiated emissions measurements (3 m measurement distance)

Frequency range [MHz]	Limit [$\mu\text{V/m}$]	Limit [dB $\mu\text{V/m}$]	Detector
30 – 88	100	40	Quasi peak
88 – 216	150	43.5	Quasi peak
216 – 960	200	46	Quasi peak
960 – 1000	500	54	Quasi peak
Above 1000	500	54	Average
Above 1000	5000	74	Peak

3.2. Bluetooth Test results

3.2.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	42.10	127.35	42.20	-0.1	VERTICAL	PASSED
7206.000000	49.50	298.54	45.20	4.3	VERTICAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	29.20	28.84	29.30	-0.1	VERTICAL	PASSED
7206.000000	35.80	61.66	31.50	4.3	VERTICAL	PASSED

Channel 40 / 2442 MHz

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
33.145291	13.60	4.79	36.10	-22.5	VERTICAL	PASSED
37.695391	8.80	2.75	34.40	-25.6	VERTICAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
2873.496994	50.30	327.34	46.90	3.4	VERTICAL	PASSED
4946.391784	41.70	121.62	41.50	0.2	HORIZONTAL	PASSED
7325.651303	47.00	223.87	42.40	4.6	VERTICAL	PASSED
17475.445892	52.70	431.52	35.60	17.1	HORIZONTAL	PASSED
17984.977956	55.70	609.54	35.70	20.0	VERTICAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
2875.996994	37.30	73.28	34.00	3.3	VERTICAL	PASSED
4944.891784	28.70	27.23	28.50	0.2	HORIZONTAL	PASSED
7326.151303	33.20	45.71	28.60	4.6	VERTICAL	PASSED
17469.945892	40.10	101.16	23.00	17.1	HORIZONTAL	PASSED
17990.977956	43.00	141.25	22.80	20.2	VERTICAL	PASSED

Channel 78 / 2480 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	43.30	146.22	43.10	0.2	HORIZONTAL	PASSED
7440.000000	47.40	234.42	43.10	4.3	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
4960.000000	30.80	34.67	30.60	0.2	HORIZONTAL	PASSED
7440.000000	34.10	50.70	29.80	4.3	VERTICAL	PASSED

3.2.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	42.90	139.64	43.00	-0.1	VERTICAL	PASSED
7206.000000	52.30	412.10	48.00	4.3	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
4804.000000	30.10	31.99	30.20	-0.1	VERTICAL	PASSED
7206.000000	41.30	116.14	37.00	4.3	VERTICAL	PASSED

Channel 40 / 2442 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
137.154509	30.10	31.99	66.00	-35.9	VERTICAL	PASSED
164.528858	30.20	32.36	66.90	-36.7	HORIZONTAL	PASSED
242.986373	19.80	9.77	54.10	-34.3	HORIZONTAL	PASSED
265.130862	29.20	28.84	62.90	-33.7	HORIZONTAL	PASSED
274.248898	29.60	30.20	63.00	-33.4	HORIZONTAL	PASSED
283.467535	31.00	35.48	63.90	-32.9	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
2835.576152	50.90	350.75	47.60	3.3	VERTICAL	PASSED
4883.769539	42.80	138.04	42.70	0.1	HORIZONTAL	PASSED
7325.651303	48.20	257.04	43.60	4.6	VERTICAL	PASSED
17477.455912	53.40	467.74	36.30	17.1	HORIZONTAL	PASSED
17972.449900	55.80	616.60	35.90	19.9	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
2836.576152	37.80	77.62	34.40	3.4	VERTICAL	PASSED
4883.769539	30.00	31.62	29.90	0.1	HORIZONTAL	PASSED
7325.651303	35.90	62.37	31.30	4.6	VERTICAL	PASSED
17478.955912	40.30	103.51	23.20	17.1	HORIZONTAL	PASSED
17977.449900	42.90	139.64	23.00	19.9	HORIZONTAL	PASSED

Channel 78 / 2480 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	44.00	158.49	43.80	0.2	HORIZONTAL	PASSED
7440.000000	48.60	269.15	44.30	4.3	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
4960.000000	32.10	40.27	31.90	0.2	VERTICAL	PASSED
7440.000000	37.50	74.99	33.20	4.3	VERTICAL	PASSED

4. Test Equipment

4.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
BJPCPT0039	LISN	ESH3-Z5	BJPCPT0039	15C, 15B
BJPCPT0040	TEST RECEIVER	ESCS30	BJPCPT0040	15C, 15B
BJPCPT0069	LISN	ESH3-Z5	BJPCPT0069	15C, 15B
BJPCPT0079	LISN	ESH3-Z5	BJPCPT0079	15C, 15B
BJPCPT0191	PULSE LIMITER	ESH3-Z2	BJPCPT0191	15C, 15B

4.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
BJPCPT0129	Relay Unit	TS-RSP	Rohde&Schwarz	22/24/27, 15C, 15B
BJPCPT0130	Relay Unit	TS-RSP	Rohde&Schwarz	22/24/27, 15C, 15B
BJPCPT0080	Device Controller	EMCO2090	ETS-EMCO	22/24/27, 15C, 15B
BJPCTC0048	RF Preamplifier 10MHz-3GHz (Metal chassis)	AFS4-00100300-10-10P-4	MITEQ	22/24/27, 15C, 15B
BJPCTC0007	Ultra Broadband Antenna 30MHz-3000MHz	HL562	Rohde&Schwarz	22/24/27, 15C, 15B
BJPCPT0162	Horn Antenna 1GHz-18GHz	HF906	Rohde&Schwarz	22/24/27, 15C, 15B
BJPCTC0029	Horn Antenna 1GHz-18GHz	HF906	Rohde&Schwarz	22/24/27, 15C, 15B
BJPCTC0049	RF preamplifier 3GHz-18GHz	BLMA-0118-1A-BT	Rohde&Schwarz	22/24/27, 15C, 15B
BJPCTC0072	3m anechoic chamber	-	ETS-Lindgren	22/24/27, 15C, 15B
BJPCTC0075	Turntable	Model 2088	ETS-EMCO	22/24/27, 15C, 15B
BJPCPT0072	EMI Test Receiver 20Hz-26.5GHz	ESIB26	Rohde&Schwarz	22/24/27, 15C, 15B
BJPCPT0150	High Pass filter	WHKS 1200-10SS	Wainwright instruments	22/24/27, 15C, 15B
BJPCTC0034	Notch Filter	WRCT800/880-0.2/40-5SSK	Wainwright instruments	22, 15B
BJPCPT0151	Notch Filter	WRCD1800/2000-0.2/40-5SSK	Wainwright instruments	24, 15B
BJPCTC0017	Radio Communication Tester	CMU200	Rohde&Schwarz	22/24/27, 15C, 15B
BJPCPT0154	Filter	WRCT2402/2480-2400/2483.5-30-20SS	Wainwright instruments	15C, 15B
BJPCTC0058	Bluetooth tester	CBT	Rohde&Schwarz	15C, 15B
BJPCTC0064	WCDMA II FILTER	WRCG1877/1883-1870/1890-40/6SS	Wainwright instruments	24, 15B
BJPCTC0065	WCDMA V FILTER	WRCG832/838-825/845-40/5SS	Wainwright instruments	22, 15B