

FCC Part 15B Compliance Test Report

Test Report no.:	FCC15B_RM-675_13.docx	Date of Report:	08-Oct-2010
Number of pages:	11	Customer's Contact person:	Alison Lenaghan
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FCC listing no.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-675 / Battery BL-5K / AC-charger AC-15E / Headset WH-102		
FCC ID:	QFXRM-675X	IC:	661Z-RM675
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-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, System Manager		

1. Summary for FCC Part 15B Compliance Test Report

Date of receipt	29-Jun-2010
Testing completed	16-Jul-2010
The customer's contact person	Alison Lenaghan
Test Plan referred to	T:\Projects\RM-675\TestPlan\RS_testplan_RM-675 EMC FCC SAR.xls
Notes	-
Document name	FCC15B_RM-675_10.docx

1.1. EUT and Accessory Information

The EUT is a 9-band (GSM850/900/1800/1900) and WCDMA Band (I/II(1900)/IV(1700)/V(850)/VIII) mobile phone with GPRS, EGPRS, HSDPA, HSUPA and WLAN and Bluetooth and FM transmitter.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-675	004402131424719	3001	-	010.022	51747
Battery	BL-5K	4620400051K10101256;0670580	-	-	-	51751
AC-charger	AC-15E	4090490023220806073;0675463	-	-	-	51720
Headset	WH-102	0694323939454109315	-	-	-	51755

1.2. Summary of Test Results

GSM850:

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	PASSED

GSM1900:

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	PASSED

WCDMA4:

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	PASSED

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	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 Laboratory.

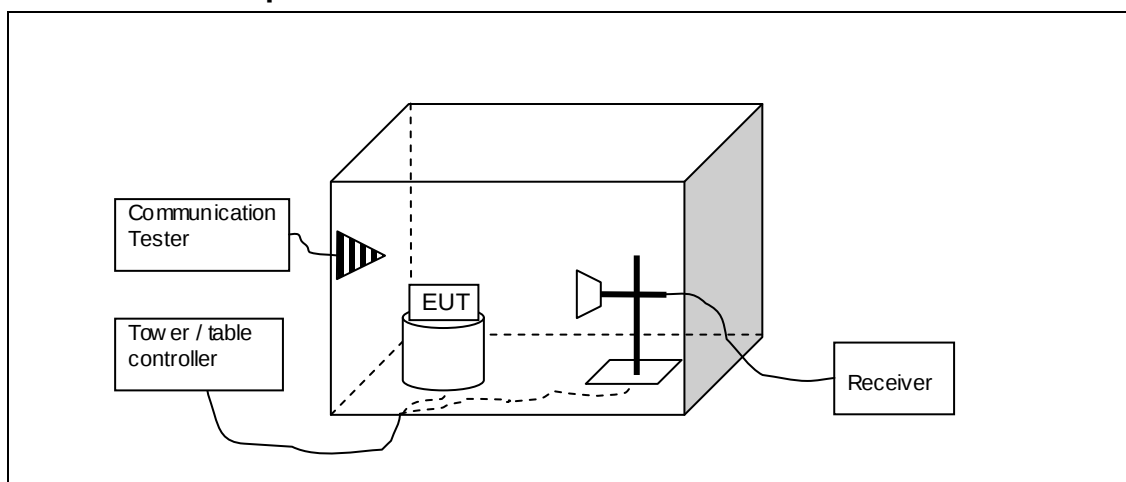
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2. Radiated emissions (FCC §15.109, ICES-003 section 5.5)

EUT with DUT number	RM-675, DUT 51747
Accessories with DUT numbers	BL-5K, DUT 51751 ; AC-15E, DUT 51720 ; WH-102, DUT 51755
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 66 / 100.1
Date of measurements	16-Jul-2010
Measured by	Jia Dongsheng

2.1. 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:

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

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]	Limit [dBμV/m]	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

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3476	27.09	22.631	29.6	-2.51	HORIZONTAL	PASSED
6953.5	38.02	79.607	33.31	4.71	VERTICAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3476	40.38	104.448	42.89	-2.51	HORIZONTAL	PASSED
6953.5	50.65	340.643	45.94	4.71	VERTICAL	PASSED

RX mode, channel 190 / 881.6 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
37.404	22.39	13.163	36.28	-13.89	VERTICAL	PASSED
41.193	23.39	14.777	39.94	-16.55	VERTICAL	PASSED

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
7069.141	32.85	43.878	27.95	4.9	HORIZONTAL	PASSED
7850.903	32.84	43.848	28.06	4.78	HORIZONTAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
7069.141	46.47	210.547	41.57	4.9	HORIZONTAL	PASSED
7850.903	46.21	204.433	41.43	4.78	HORIZONTAL	PASSED

RX mode, channel 251 / 893.8 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3576.5	26.81	21.908	29.58	-2.77	HORIZONTAL	PASSED
7150.2	33.09	45.128	28.12	4.97	VERTICAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3576.5	39.85	98.231	42.62	-2.77	HORIZONTAL	PASSED
7150.2	46.92	221.845	41.95	4.97	VERTICAL	PASSED

2.4. GSM1900 Test results, GPS receiver on

RX mode, channel 512 / 1930.2 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3860.9	28.01	25.139	29.49	-1.48	VERTICAL	PASSED
7719.5	32.54	42.359	27.98	4.56	HORIZONTAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3860.9	40.87	110.497	42.35	-1.48	VERTICAL	PASSED
7719.5	45.61	190.7	41.05	4.56	HORIZONTAL	PASSED

RX mode, channel 661 / 1960.0 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
37.565	22.4	13.18	36.41	-14.01	VERTICAL	PASSED
41.432	23	14.127	39.69	-16.69	VERTICAL	PASSED

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3915.631	28	25.116	29.41	-1.41	VERTICAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3915.631	41.07	113.162	42.48	-1.41	VERTICAL	PASSED

RX mode, channel 810 / 1989.8 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3981.6	26.87	22.06	28.84	-1.97	HORIZONTAL	PASSED
7961	32.63	42.786	27.84	4.79	HORIZONTAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3981.6	39.47	94.059	41.44	-1.97	HORIZONTAL	PASSED
7961	45.58	190.13	40.79	4.79	HORIZONTAL	PASSED

2.5. WCDMA4 Test results, FM radio on

RX mode, channel 1537 / 2112.4 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4225.8	26.77	21.81	28.93	-2.16	HORIZONTAL	PASSED
6335.4	32.92	44.233	32.11	0.81	VERTICAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4225.8	39.53	94.733	41.69	-2.16	HORIZONTAL	PASSED
6335.4	46.04	200.47	45.23	0.81	VERTICAL	PASSED

RX mode, channel 1637 / 2132.4 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
37.325	21.39	11.729	35.22	-13.83	VERTICAL	PASSED
41.403	20.1	10.12	36.77	-16.67	VERTICAL	PASSED

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2133.464	40.45	105.354	40.84	-0.39	VERTICAL	PASSED
3908.314	28.16	25.571	29.57	-1.41	VERTICAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2133.464	55.74	612.068	56.13	-0.39	VERTICAL	PASSED
3908.314	41.08	113.214	42.49	-1.41	VERTICAL	PASSED

RX mode, channel 1738 / 2152.6 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4306.3	26.9	22.118	29.02	-2.12	HORIZONTAL	PASSED
6458.2	33.7	48.423	32.39	1.31	HORIZONTAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4306.3	40.1	101.123	42.22	-2.12	HORIZONTAL	PASSED
6458.2	47.94	249.546	46.63	1.31	HORIZONTAL	PASSED

2.6. WLAN Test results, GPS receiver on

2.6.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel 1 / 2412 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4823.9	28.59	26.894	28.82	-0.23	HORIZONTAL	PASSED
7236.7	32.83	43.808	27.71	5.12	HORIZONTAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4823.9	43.06	142.266	43.29	-0.23	HORIZONTAL	PASSED
7236.7	46.42	209.508	41.3	5.12	HORIZONTAL	PASSED

Channel 7 / 2442 MHz

Quasi peak (RBW: 100 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
37.163	23.76	15.424	31.36	-7.6	VERTICAL	PASSED
37.194	23.74	15.382	31.36	-7.62	VERTICAL	PASSED
37.294	24.3	16.41	32	-7.7	VERTICAL	PASSED
40.491	23.84	15.552	33.98	-10.14	VERTICAL	PASSED
40.591	23.36	14.723	33.56	-10.2	VERTICAL	PASSED

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2826.052	37.76	77.268	28.92	8.84	HORIZONTAL	PASSED
2886.673	37.97	79.195	28.85	9.12	VERTICAL	PASSED
3921.545	27.91	24.869	29.32	-1.41	VERTICAL	PASSED
3938.676	27.69	24.247	29.25	-1.56	VERTICAL	PASSED
17988.378	45.55	189.452	26.48	19.07	VERTICAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2826.052	50.4	331.284	41.56	8.84	HORIZONTAL	PASSED
2886.673	50.94	352.29	41.82	9.12	VERTICAL	PASSED
3921.545	40.67	107.994	42.08	-1.41	VERTICAL	PASSED
3938.676	40.92	111.186	42.48	-1.56	VERTICAL	PASSED
17988.378	58.46	837.915	39.39	19.07	VERTICAL	PASSED

Channel 11 / 2462 MHz

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
4922.5	29.5	29.857	29.49	0.01	HORIZONTAL	PASSED
7384.4	33.19	45.667	28.18	5.01	VERTICAL	PASSED

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
4922.5	42.76	137.404	42.75	0.01	HORIZONTAL	PASSED
7384.4	46.7	216.197	41.69	5.01	VERTICAL	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
BJPCHW0020	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 µH	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	GPIO-RS232 convertor	GPIO-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