

FCC Part 15B Compliance Test Report

Test Report no.:	FCC15B_RM-885_11.docx	Date of Report:	27-Feb-2013
Number of pages:	11	Customer's Contact person:	Li Craig.K
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FCC listing no.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-885 / Battery BP-4GWA / USB data cable CA-190CD / Laptop IBM T43 / Printer HP C6427A		
FCC ID:	QTLA	IC:	
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. 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:			

Zou Ming, Engineer, EMC

1. Summary for FCC Part 15B Compliance Test Report

Date of receipt	29-Jan-2013
Testing completed	01-Feb-2013
The customer's contact person	Li Craig.K
Test Plan referred to	T:\Projects\RM-885\TestPlan\RS_testplan_RM-885_EMC_FCC.xlsm
Notes	-
Document name	FCC15B_RM-885_11.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-885	004402472084890	0203	-	1030.6300.1302.10055	53118
Battery	BP-4GWA	-	2.0	-	-	53125
USB data cable	CA-190CD	07304562453Y2F	-	-	-	53141
Laptop	IBM T43	L3KXHL3	-	-	-	52468
Printer	HP C6427A	MY15B18156JJ	-	-	-	51838
Phone	RM-885	004402472083926	0203	-	1030.6300.1302.10055	53120
Battery	BP-4GWA	-	2.0	-	-	53128
USB data cable	CA-190CD	07304562453Y2F	-	-	-	53139

1.2. Summary of Test Results

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 Laboratory.

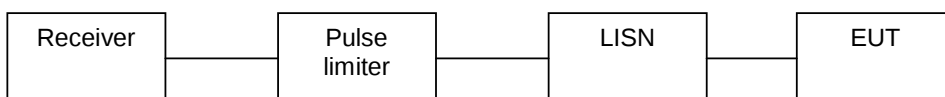
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2. AC powerline conducted emissions (FCC §15.107, ICES-003 section 5.3)

EUT with DUT number	RM-885, DUT 53120
Accessories with DUT numbers	BP-4GWA, DUT 53128 ; CA-190CD, DUT 53139 ; IBM T43, DUT 52468 ; HP C6427A, DUT 51838
Operation Voltage [V] / [Hz]	115/60
Results	PASSED
Remarks	Data was keeping transferred between PC and mobile phone during the test.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21/37/102.6
Date of measurements	01-Feb-2013
Measured by	Gao Sherina

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:

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

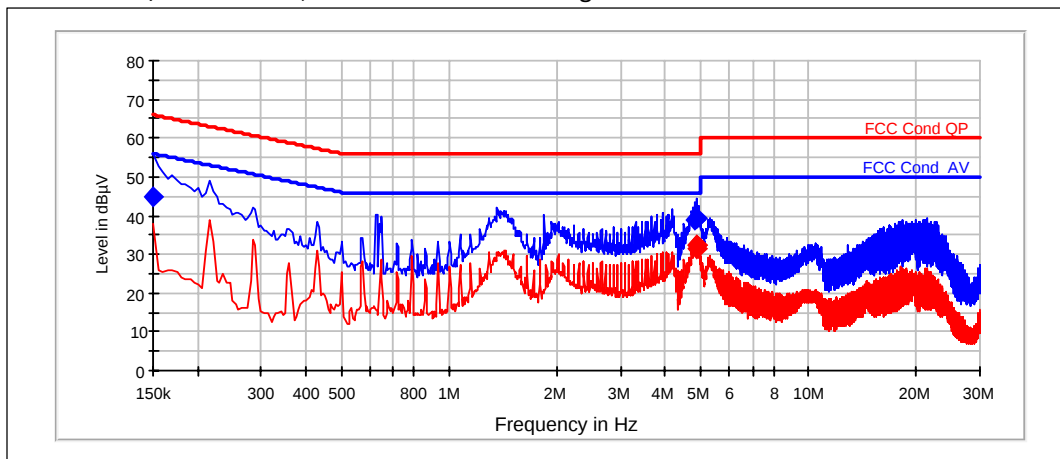
Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable and pulse limiter attenuations.

CISPR 22 Class B limits

Frequency range [MHz]	Quasi peak limit [dBμV]	Average limit [dBμV]
0.15 - 0.5	66 - 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

2.3. GSM 1900 Test results

Channel 661 / 1880.0 MHz, Measured from PC charger



QuasiPeak (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.15	44.64	N	PASSED
4.855	38.81	N	PASSED
4.875	39.39	L1	PASSED

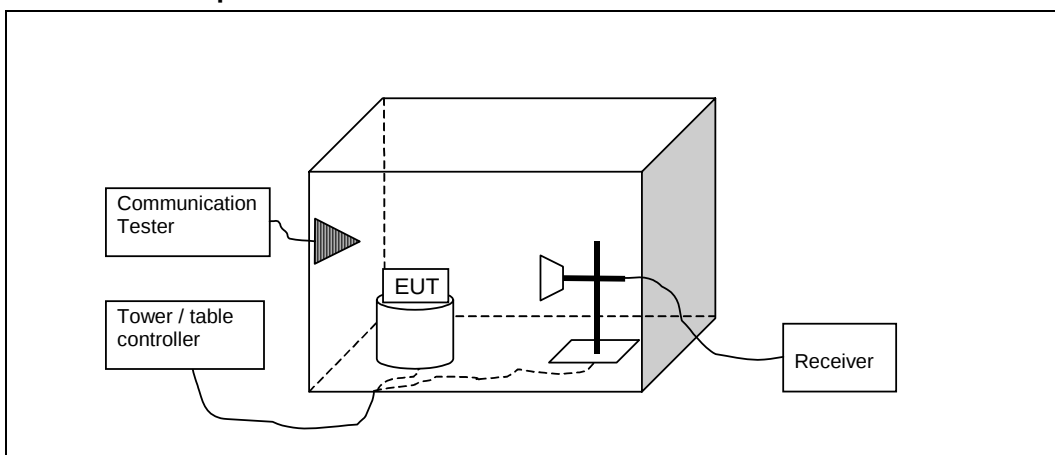
Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
4.87	31.53	N	PASSED
4.875	32.43	L1	PASSED
4.895	32.44	N	PASSED

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

EUT with DUT number	RM-885, DUT 53118
Accessories with DUT numbers	BP-4GWA, DUT 53125 ; CA-190CD, DUT 53141 ; IBM T43, DUT 52468 ; HP C6427A, DUT 51838
Operation Voltage [V] / [Hz]	115/60
Results	PASSED
Remarks	Data was keeping transferred between PC and mobile phone during the test.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 29 / 102.2
Date of measurements	01-Feb-2013
Measured by	Zou Ming

3.1.1 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:

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

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 [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

3.3. GSM1900 test results

RX mode, channel 512 / 1930.2 MHz

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3860.3	42.38	131.583	43.07	-0.69	31.6	74	PASSED
7720.6	45.5	188.278	41.07	4.43	28.5	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3860.3	29.46	29.706	30.15	-0.69	24.5	54	PASSED
7720.6	32.67	43.013	28.24	4.43	21.3	54	PASSED

RX mode, channel 661 / 1960.0 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
30	24.15	16.121	26.78	-2.63	15.9	40	PASSED
43.294	26.84	21.989	44.72	-17.88	13.2	40	PASSED
57.071	29.18	28.771	55.92	-26.74	10.8	40	PASSED
108.627	35.15	57.214	58.14	-22.99	4.9	40	PASSED
126.414	30.94	35.237	54.08	-23.14	9.1	40	PASSED
142.525	24.86	17.494	49.39	-24.53	15.1	40	PASSED
147.051	25.46	18.756	50.24	-24.78	14.5	40	PASSED
150.21	24.71	17.191	49.65	-24.94	15.3	40	PASSED
163.14	19.3	9.223	44.25	-24.95	20.7	40	PASSED
173.905	20.47	10.551	45.24	-24.77	19.5	40	PASSED
213.006	34.42	52.602	58.03	-23.61	5.6	40	PASSED

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3000.5	41.29	116.065	42.93	-1.64	32.7	74	PASSED
3919.7	42.08	126.984	42.8	-0.72	31.9	74	PASSED
7044.692	46.12	202.209	40.94	5.18	27.9	74	PASSED
7062.221	45.88	196.879	40.66	5.22	28.1	74	PASSED
7063.628	46.14	202.745	40.93	5.21	27.9	74	PASSED
7070.541	46.38	208.473	41.19	5.19	27.6	74	PASSED
7839.9	45.89	197.106	41.32	4.57	28.1	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3000.5	28.52	26.653	30.16	-1.64	25.5	54	PASSED
3919.7	29.25	29.017	29.97	-0.72	24.7	54	PASSED
7044.692	33.14	45.368	27.96	5.18	20.9	54	PASSED
7062.221	33.26	46.026	28.04	5.22	20.7	54	PASSED
7063.628	33.18	45.609	27.97	5.21	20.8	54	PASSED

7070.541	33.17	45.551	27.98	5.19	20.8	54	PASSED
7839.9	33	44.658	28.43	4.57	21	54	PASSED

RX mode, channel 810 / 1989.8 MHz

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3979.6	43.27	145.747	44.15	-0.88	30.7	74	PASSED
7960.3	46.48	210.814	41.45	5.03	27.5	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3979.6	29.1	28.5	29.98	-0.88	24.9	54	PASSED
7960.3	33.05	44.911	28.02	5.03	21	54	PASSED

4. Test Equipment

4.1. 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
BJPCPT0069	LISN 50 μ H	ESH3-Z5	R&S	15C, 15B
BJPCPT0073	Signal Generator	SMR 20	R&S	22/24/27, 15C, 15B
BJPCPT0191	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
BJPCPT0208	UPS	PULSAR RX10	Merlin gerin	15C, 15B
BJPCTC0001	DIGITAL CAMERA	PC1015	CANON	15C, 15R
BJPCTC0017	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0062	AC Power source	6812B	Hp	15C, 15B
BJPCTC0067	Bluetooth Tester	CBT	R&S	22/24/27, 15C
BJPCTC0082	Humidity and Temperature Sensor	175-H2	Testo	15B, 15C
BJPCTC0088	Absolut pressure meter	testo 511	Testo	22/24/27, 15B, 15C
BJPCTC0089	Tempreture 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	E8257C	Agilent	22/24/27, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C
BJPCTC0127	AC Power source	SOYI-500VA	SOYI	15B 15C
BJPCTC0128	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0129	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0131	Communication tester	CMW500	R&S	22/24/27 15B 15C
BJPCTC0136	Communication antenna	JXTXLB-880-NF	A-INFOMW	15B 15C

4.2. 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
BJPCPT0208	UPS	PULSAR RX10	Merlin gerin	15C, 15B
BJPCTC0001	DIGITAL CAMERA	PC1015	CANON	15C, 15R
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
BJPCTC0062	AC Power source	6812B	Hp	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

Eq. No	Equipment	Type	Manufacturer	Used in
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
BJPCTC0081	Humidity and Temperature Sensor	175-H2	Testo	15B, 15C
BJPCTC0088	Absolut pressure meter	testo 511	Testo	22/24/27, 15B, 15C
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	-
BJPCTC0125	Loop Antenna	HFH2-Z2	R&S	15C
BJPCTC0126	Tripod	FHU-Z	R&S	15C
BJPCTC0128	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0129	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0131	Communication tester	CMW500	R&S	22/24/27 15B 15C
BJPCTC0133	Open Swith and contril unit	OSP 150	R&S	15B, 15C
BJPCTC0134	Open Swith and contril unit	OSP 150	R&S	15B, 15C
BJPCTC0135	Open Swith and contril unit	OSP 130	R&S	15B, 15C
BJPCTC0136	Communication antenna	JXTXLB-880-NF	A-INFOMW	15B 15C