

## FCC Part 22/24 Compliance Test Report

<b>Test Report no.:</b>	FCC22&24_RM-841_03.docx	<b>Date of Report:</b>	06-Mar-2013
<b>Number of pages:</b>	8	<b>Customer's Contact person:</b>	Wang Hai Juan (kellywan)
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<b>FCC listing no.:</b>	975940		
<b>IC recognition no.:</b>	661AH-1		
<b>Tested devices/ accessories:</b>	<b>Phone RM-841 / Battery BL-4U / AC Charger AC-20E / Headset WH-109</b>		
<b>FCC ID:</b>	QTLRM-841	<b>IC:</b>	-
<b>Supplement reports:</b>	-		
<b>Testing has been carried out in accordance with:</b>	<b>CFR 47, FCC rules Parts 22/24 , TIA-603-C-2004 and IC standards, RSS-GEN (Issue 3, December 2010), RSS-132 (Issue 2, September 2005), RSS-133 (Issue 5, February 2009). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".</b>		
<b>Documentation:</b>	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.		
<b>Test Results:</b>	<b>The EUT complies with the requirements in respect of all parameters subject to the test.</b> The test results relate only to devices specified in this document		
<b>Date and signature for the contents:</b>			

**Gao Sherina, Engineer, EMC**

## 1. Summary for FCC Part 22/24 Compliance Test Report

Date of receipt	22-Feb-2013
Testing completed	01-Mar-2013
The customer's contact person	Wang Hai Juan (kellywan)
Test Plan referred to	T:\Projects\RM-841\TestPlan\RS_testplan_RM-841.xlsm
Notes	-
Document name	FCC22&24_RM-841_03.docx

### 1.1. EUT and Accessory Information

The EUT is a mobile phone with following features:

GSM/WCDMA/Bluetooth

The EUT is tested with maximum rated TX power.

Devices under tests

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-841	004402472270259	0404	-	busECL3G_13W07	53252
Battery	BL-4U	4955402155061418983;0670560	-	-	-	53032
AC Charger	AC-20E	4868672204330501923;0675628	-	-	-	53035
Headset	WH-109	660	0.1	0.2	-	52843
Phone	RM-841	004402472270440	0404	-	busECL3G_13W07	53254

### 1.2. Summary of Test Results

WCDMA 850 (Band V):

Section in CFR 47	Section in RSS-GEN or RSS-132	Name of the test	Result
§2.1046(a), 22.913(a)	4.4	Conducted RF output power	NP
§22.913(a)	4.4	Radiated RF output power	NP
§2.1049(h)	4.6.1	99 % occupied bandwidth	PASSED
§22.917(a)	4.5	Band edge compliance	NP
§22.917(a), §2.1051	4.5	Spurious emissions at antenna terminals	NP
§22.917(a), §2.1053	4.5	Spurious radiated emissions	PASSED
§2.1055(a)	4.3	Frequency stability, temperature variation	NP
§2.1055(d)	4.3	Frequency stability, voltage variation	NP

WCDMA 1900 (Band II):

Section in CFR 47	Section in RSS-GEN or RSS-133	Name of the test	Result
§2.1046(a)	6.4	Conducted RF output power	NP
§24.232(b)	6.4	Radiated RF output power	NP
§2.1049(h)	4.6.1	99 % occupied bandwidth	PASSED
§24.238(a)	6.5	Band edge compliance	NP
§24.238(a), §2.1051	6.5	Spurious emissions at antenna terminals	NP
§24.238(a), §2.1053	6.5	Spurious radiated emissions	PASSED
§2.1055(a)	6.3	Frequency stability, temperature variation	NP
§2.1055(d)	6.3	Frequency stability, voltage variation	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.

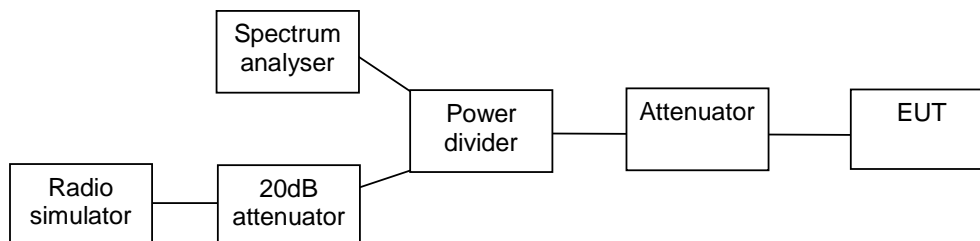
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## 2. 99% occupied bandwidth (FCC §2.1049(h), RSS-GEN 4.6.1)

EUT with DUT number	RM-841, DUT 53254
Accessories with DUT numbers	BL-4U, DUT 53032 ; AC-20E, DUT 53035 ; WH-109, DUT 52843
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21/32/102.5
Date of measurements	26-Feb-2013
Measured by	Fu Roger

### 2.1. Test Setup



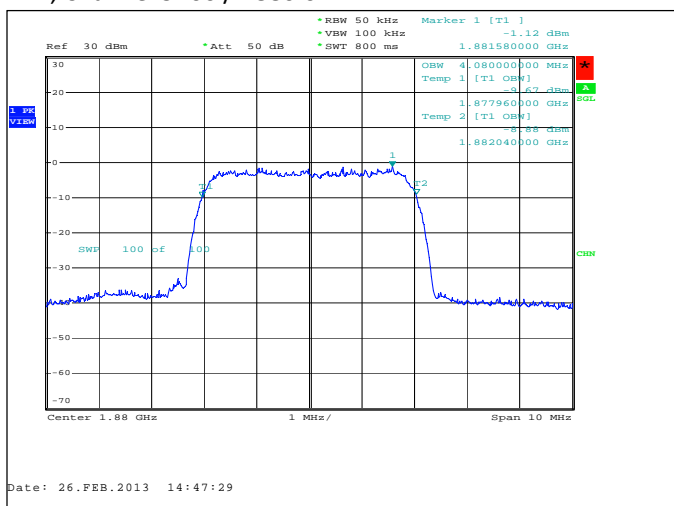
### 2.2. Test method and limit

The measurement is made according to FCC rules parts 22, 24 and IC standard RSS-GEN.

## 2.3. WCDMA 1900 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD	4080

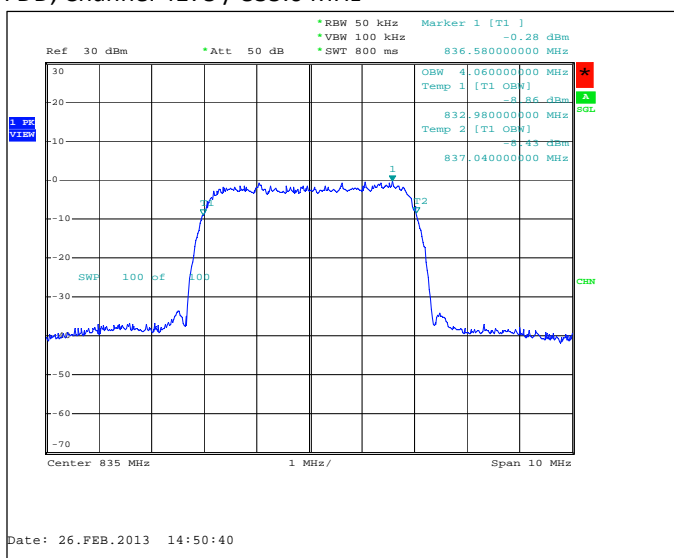
FDD, Channel 9400 / 1880.0 MHz



## 2.4. WCDMA 850 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD	4060

FDD, Channel 4175 / 835.0 MHz

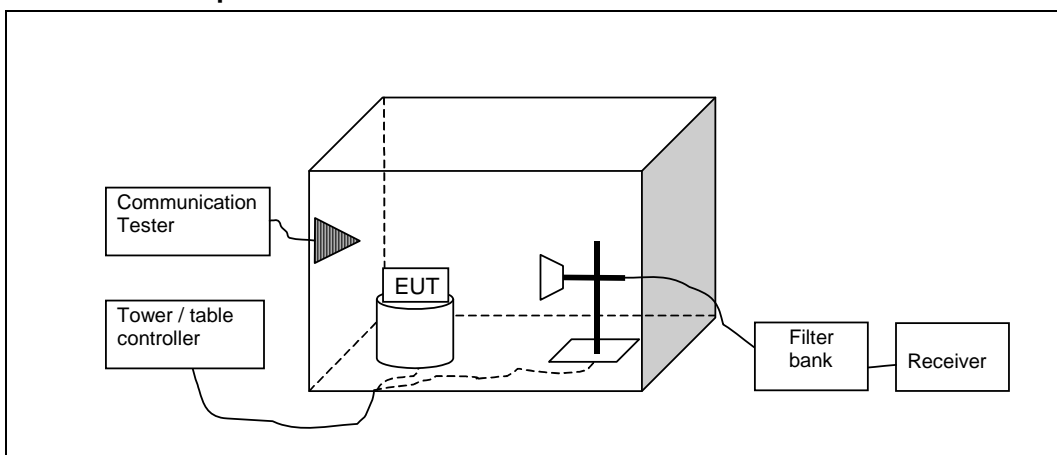


### 3. Spurious radiated emissions

(FCC §22.917(a), §2.1053, §24.238(a), §2.1053, RSS-132 4.5, RSS-133 6.5)

<b>EUT with DUT number</b>	RM-841, DUT 53252
<b>Accessories with DUT numbers</b>	BL-4U, DUT 53032 ; AC-20E, DUT 53035 ; WH-109, DUT 52843
<b>Operation Voltage [V] / [Hz]</b>	Nominal
<b>Results</b>	PASSED
<b>Remarks</b>	-
<b>Temp [°C] / Humidity [%RH] / Air Pressure [kPa]</b>	20/35/102.3
<b>Date of measurements</b>	01-Mar-2013
<b>Measured by</b>	Sherina Gao

#### 3.1.1 Test setup



### 3.2. Test method and limit

#### 4.2. Test method and limit

The measurement is made according to TIA-603-C-2004 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 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 substitution method is used. Substitution values at each frequencies are measured beforehand and saved to the test software. The substitution corrections are obtained as described below:

$$ASUBST = PSUBST\ TX - PSUBST\ RX - LSUBST\ CABLES + GSUBST\ TX\ ANT$$

Where ASUBST is the final substitution correction including receive antenna gain. PSUBST TX is

signal generator level, PSUBST RX is receiver level, LSUBST CABLES is cable losses including both TX and RX cables and GSUBST TX ANT is substitution antenna gain.

The measurement results are obtained as described below:

$$P[\text{dBm}] = \text{PMEAS} + \text{ATOT}$$

Where PMEAS is receiver reading in dBm and ATOT is total correction factor including cable loss and substitution correction ( $\text{ATOT} = \text{LCABLES} - \text{GPREAMP} + \text{ASUBST}$ ).

Limits for spurious radiated emissions measurements

Operation band	Frequency range [MHz]	Limit [dBm]
WCDMA850	30 - 8500	-13
WCDMA1900	30 - 18000	-13

### 3.3. WCDMA 850 (Band V) test results

Channel 4175 / 835.0 MHz

FDD mode, Peak detector

Frequency [MHz]	P [dBm]	P [ $\mu$ W]	P <sub>MEAS</sub> [dBm]	A <sub>TOT</sub> [dB]	Polarization	Results
848.309	-45.4	0.02882	-78.8	33.4	VERTICAL	PASSED
848.382	-45.03	0.03143	-78.44	33.41	VERTICAL	PASSED
878.552	-31.68	0.67999	-65.42	33.74	VERTICAL	PASSED
936.207	-43.63	0.04333	-79.51	35.88	HORIZONTAL	PASSED

\*Substitution method could not be utilized as no emissions above noise floor were found during measurements.

### 3.4. WCDMA 1900 (Band II) test results

Channel 9400 / 1880.0 MHz

FDD mode, Peak detector

Frequency [MHz]	P [dBm]	P [ $\mu$ W]	P <sub>MEAS</sub> [dBm]	A <sub>TOT</sub> [dB]	Polarization	Results
2896.172	-43.53	0.04435	-61.01	17.48	VERTICAL	PASSED
2898.518	-43.72	0.04248	-61.11	17.39	VERTICAL	PASSED
2912.008	-42.38	0.05784	-60.34	17.96	VERTICAL	PASSED
2943.916	-43.68	0.04284	-61.53	17.85	VERTICAL	PASSED

\*Substitution method could not be utilized as no emissions above noise floor were found during measurements.