FCC Part 22/24/27 Compliance Test Report

Test Report no.:	FCC22&24&27_RM-942_04.docx	**Date of Report:**	20-Jun-2013
Number of pages:	27	**Customer's Contact person:**	Wang Jinling (jinliwan)
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.: **IC recognition no.:**	975940 661AH-1		
Tested devices/ accessories:	**Phone RM-942 / Dummy battery - / Battery BP-4GWA / AC-Charger AC-20U / Headset WH-108**		
FCC ID:	QTLRM-942	**IC:**	661AB-RM942
Supplement reports:	-		
Testing has been carried out in accordance with:	**CFR 47, FCC rules Parts 22/24/27 , 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), RSS-139 (Issue 2, February 2009). 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:	 Digitally signed by Zou Ming DN: cn=Zou Ming, o=NOKIA, ou=PSCL, email=ming.2.zou@nokia.com, c=CN Date: 2013.06.25 10:08:47 +08'00'		

Zou Ming, Engineer, EMC

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1. Summary for FCC Part 22/24/27 Compliance Test Report

Date of receipt	17-May-2013
Testing completed	05-Jun-2013
The customer's contact person	Wang Jinling (jinliwan)
Test Plan referred to	T:\Projects\RM-942\TestPlan\RS_TestPlan_RM-942.xlsm
Notes	-
Document name	FCC22&24&27_RM-942_04.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-942	004402472770605	2001	-	3037.0000.1318.0000	53361
Dummy battery	-	-	-	-	-	53373
Headset	WH-108	122	0.1	0.3	-	53379
Phone	RM-942	004402472774169	2000	-	3037.0000.1318.0000	53365
Battery	BP-4GWA	-	-	-	-	53370
AC-Charger	AC-20U	486867311234050997O;0675629	-	-	-	53340
Headset	WH-108	1253	0.1	0.3	-	53343

1.2. Summary of Test Results

GSM850:

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	PASSED
§22.917(a), §2.1051	4.5	Spurious emissions at antenna terminals	NP
§22.917(a), §2.1053	4.5	Spurious radiated emissions	NP
§2.1055(a)	4.3	Frequency stability, temperature variation	PASSED
§2.1055(d)	4.3	Frequency stability, voltage variation	NP

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	PASSED
§22.917(a), §2.1051	4.5	Spurious emissions at antenna terminals	NP
§22.917(a), §2.1053	4.5	Spurious radiated emissions	NP
§2.1055(a)	4.3	Frequency stability, temperature variation	NP
§2.1055(d)	4.3	Frequency stability, voltage variation	NP

LTE 850 (Band V):

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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	NP
§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	NP
§2.1055(a)	4.3	Frequency stability, temperature variation	NP
§2.1055(d)	4.3	Frequency stability, voltage variation	NP

GSM1900:

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	PASSED
§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	PASSED
§2.1055(d)	6.3	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	PASSED
§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

WCDMA 1700 (Band IV):

Section in CFR 47	Section in RSS-GEN or RSS-139	Name of the test	Result
§2.1046(a)	6.4	Conducted RF output power	NP
§27.50(d)(2)	6.4	Radiated RF output power	NP
§2.1049(h)	4.6.1	99 % occupied bandwidth	PASSED
§27.53(g)	6.5	Band edge compliance	PASSED
§27.53(g), §2.1051	6.5	Spurious emissions at antenna terminals	NP
§24.238(a), §2.1053	6.5	Spurious radiated emissions	NP
§2.1055(a)	6.3	Frequency stability, temperature variation	PASSED
§2.1055(d)	6.3	Frequency stability, voltage variation	NP

LTE 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	NP

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§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	NP
§2.1055(a)	6.3	Frequency stability, temperature variation	NP
§2.1055(d)	6.3	Frequency stability, voltage variation	NP

LTE1700 (Band 4):

Section in CFR 47	Section in RSS-GEN or RSS-139	Name of the test	Result
§2.1046(a)	6.4	Conducted RF output power	NP
§27.50(d)(4)	6.4	Radiated RF output power	NP
§2.1049(h)	4.6.1	99 % occupied bandwidth	NP
§27.53(h)	6.5	Band edge compliance	NP
§27.53(h), §2.1051	6.5	Spurious emissions at antenna terminals	NP
§27.53(h), §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
N/A	N/A	Peak to average power ratio	NP

LTE700 Lower (Band 17):

Section in CFR 47	Section in RSS-GEN or RSS-133	Name of the test	Result
§2.1046 (a)	N/A	Conducted RF output power	NP
§27.50(c)(10)	N/A	Radiated RF output power	NP
§2.1049(h)	N/A	99 % occupied bandwidth	NP
§27.53(g)	N/A	Band edge compliance	NP
§27.53(g), §2.1051	N/A	Spurious emissions at antenna terminals	NP
§27.53(g), §2.1051	N/A	Spurious radiated emissions	NP
§2.1055(a)	N/A	Frequency stability, temperature variation	NP
§2.1055(d)	N/A	Frequency stability, voltage variation	NP
N/A	N/A	Peak to average power ratio	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 Laboratory.

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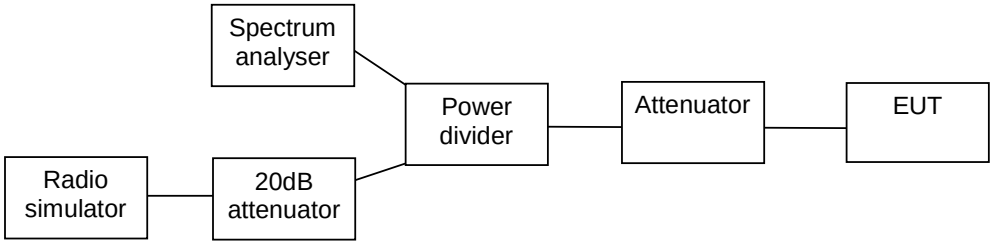
2. 99% occupied bandwidth
(FCC §2.1049(h), RSS-GEN 4.6.1)

EUT with DUT number	RM-942, DUT 53361
Accessories with DUT numbers	Dummy battery, DUT 53373; WH-108, DUT 53379
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/40/100.1 ; 25/57/99.7
Date of measurements	21-May-2013; 18-Jun-2013
Measured by	Gao Sherina

2.1. Test Setup



2.2. Test method and limit

The measurement is made according to FCC rules parts 22, 24, 27 and IC standard RSS-GEN.

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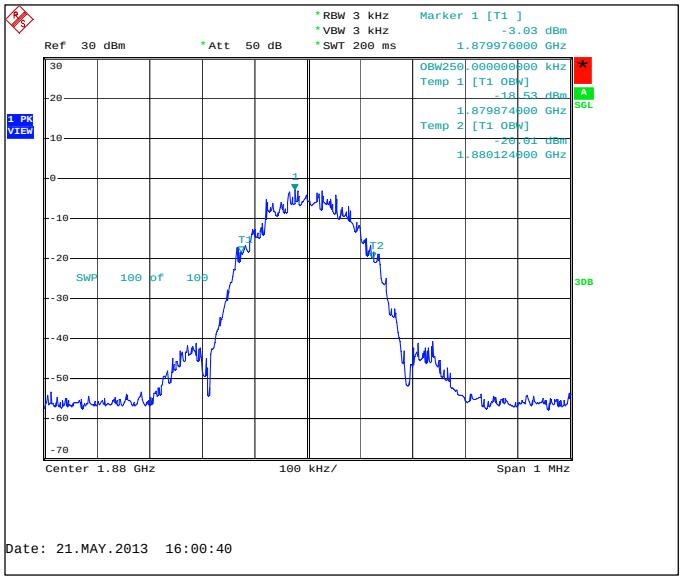
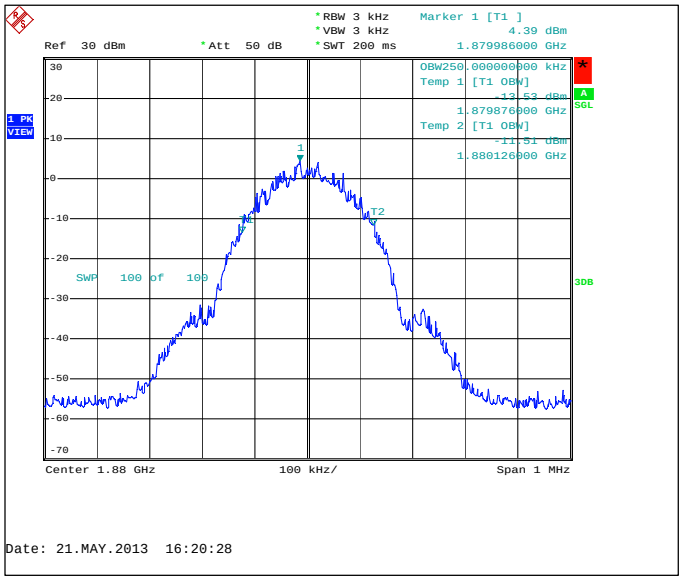
2.3. GSM 1900 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
EGPRS	250
GSM	250

EGPRS, Channel 661 / 1880.0 MHz



GSM, Channel 661 / 1880.0 MHz



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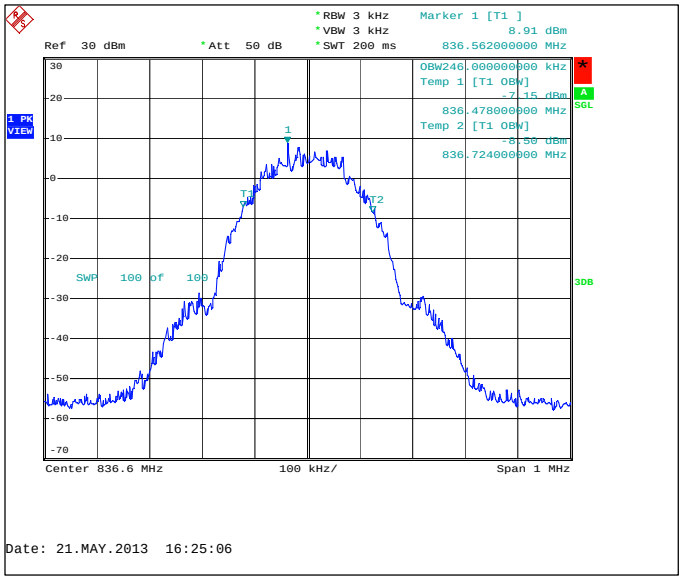
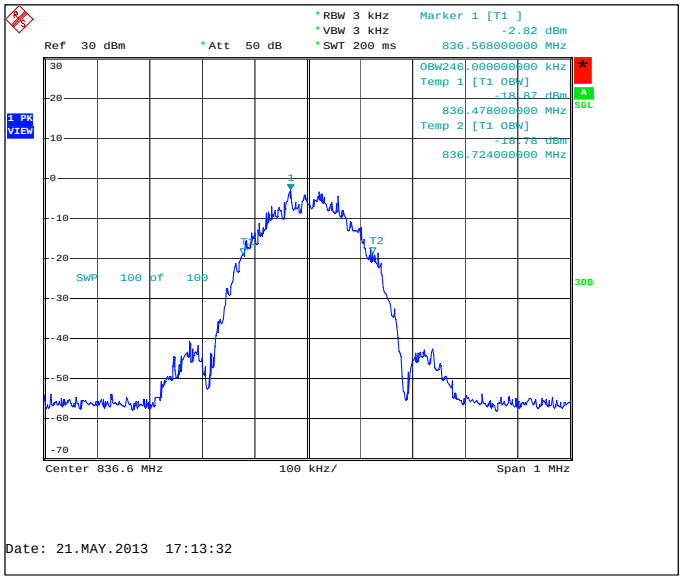
2.4. GSM 850 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
GSM	246
EGPRS	246

GSM, Channel 190 / 836.6 MHz



EGPRS, Channel 190 / 836.6 MHz



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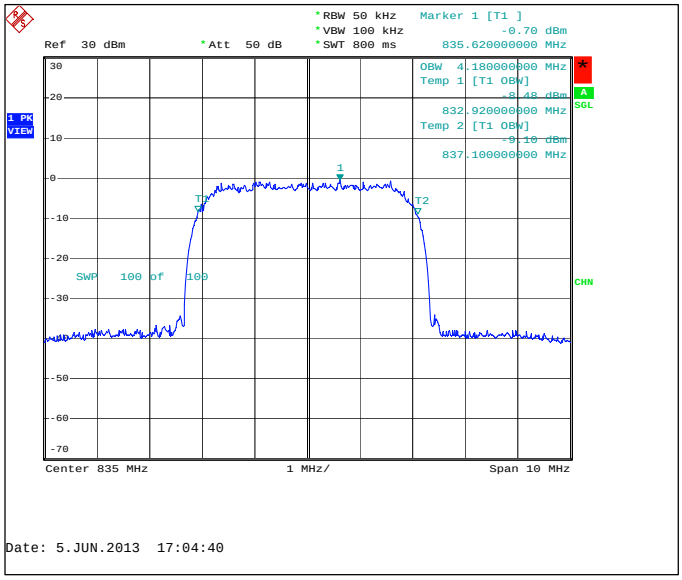
2.5. WCDMA 850 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD	4180

FDD, Channel 4175 / 835.0 MHz



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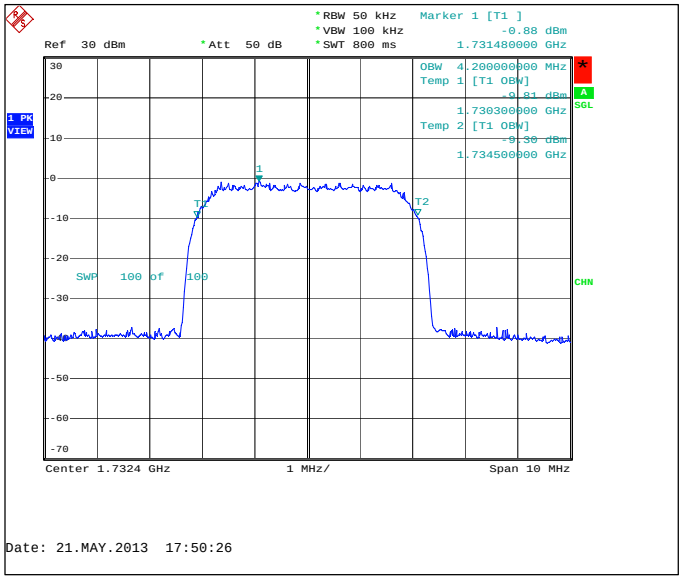
2.6. WCDMA 1700 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD	4200

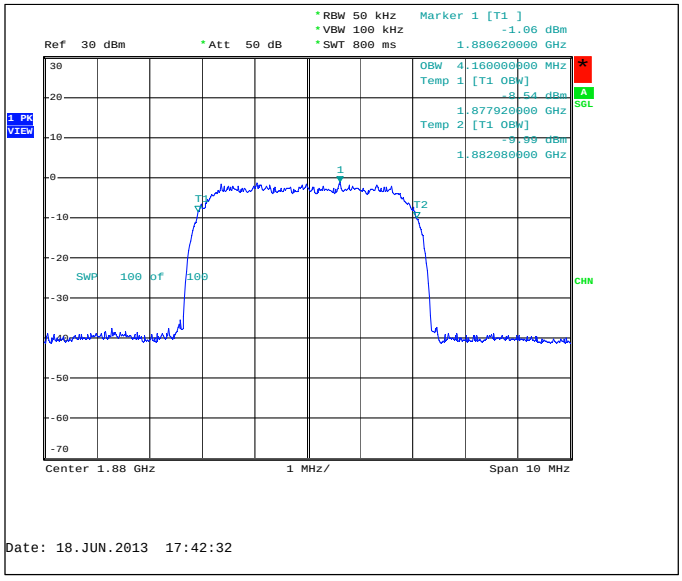
FDD, Channel 1412 / 1732.4 MHz



2.7. WCDMA 1900 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD	4160

FDD, Channel 9400 / 1880.0 MHz



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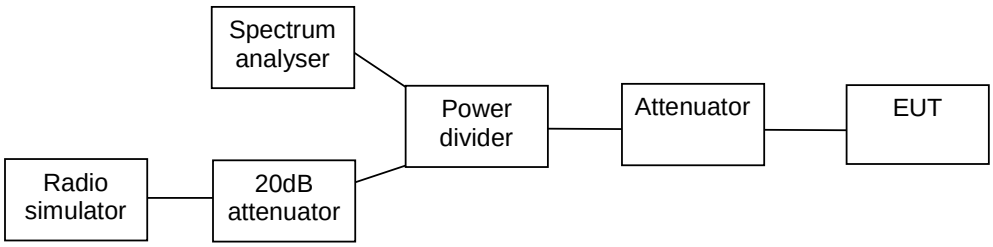
3. Band edge compliance

(FCC §22.917(a), §24.238(a), §27.53(g), §27.53(h), §27.53(c)(2)(4), §27.53(g), RSS-132 4.5, RSS-133 6.5, RSS-139 6.5)

EUT with DUT number	RM-942, DUT 53361
Accessories with DUT numbers	Dummy battery, DUT 53373; WH-108, DUT 53379
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/40/100.1
Date of measurements	21-May-2013
Measured by	Gao Sherina

3.1. Test Setup



3.2. Test method and limit

The measurement is made according to FCC rules parts 22, 24, 27 and IC standards , RSS-132, RSS-133, RSS-139.

Limits for band edge compliance measurements

Operation band	Frequency range [MHz]	Limit [dBm]
LTE 700 Lower	703.9 – 704 and 716 – 716.1 Below 703.9 and above 716.1	-13 (RBW = 30 kHz, ERP) -13 (RBW = 30 kHz, ERP)
GSM850 / WCDMA850 / LTE850	Below 824 and above 849	-13
WCDMA1700 / LTE1700	Below 1710 and above 1755	-13
GSM1900 / LTE1900 / WCDMA1900	Below 1850 and above 1910	-13

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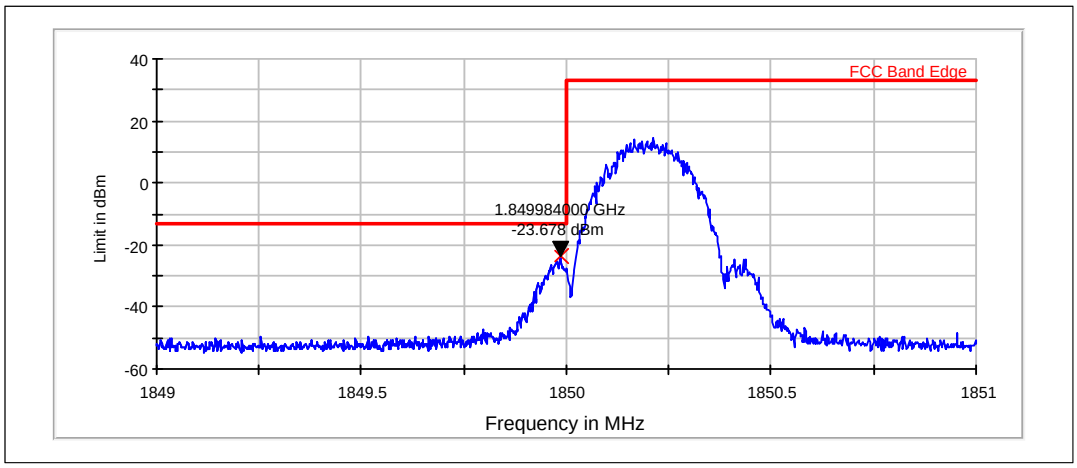
3.3. GSM 1900 Test results

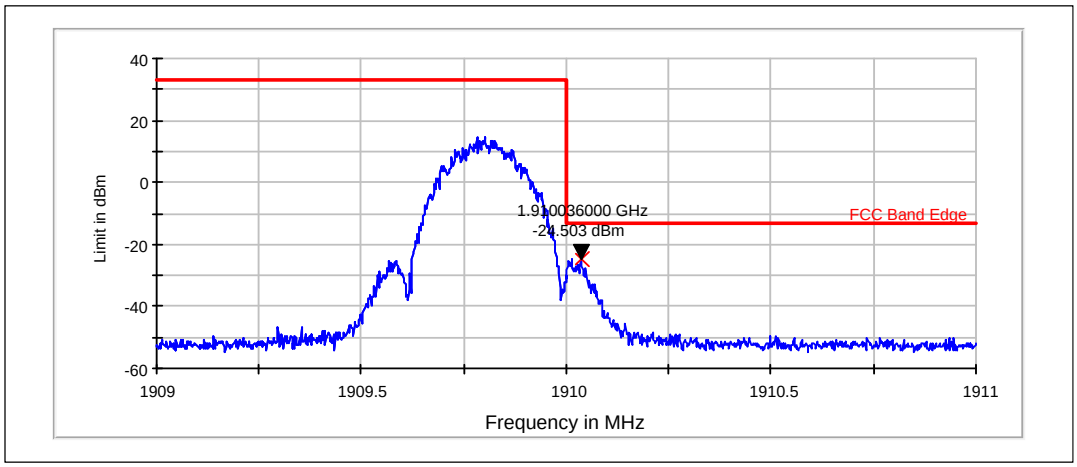
Channel 512 / 1850.2 MHz



Peak (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	1849.984	-23.68	PASSED

Channel 810 / 1909.8 MHz



Peak (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	1910.036	-24.50	PASSED

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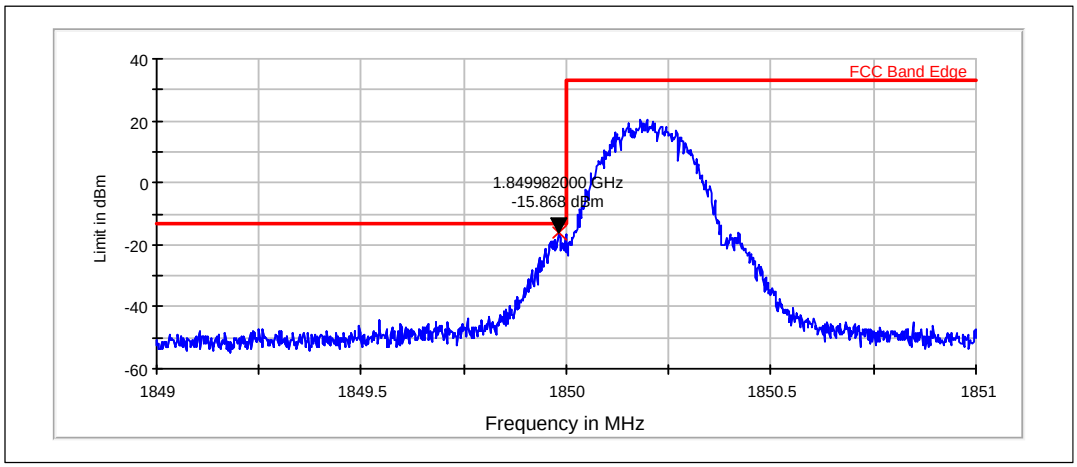
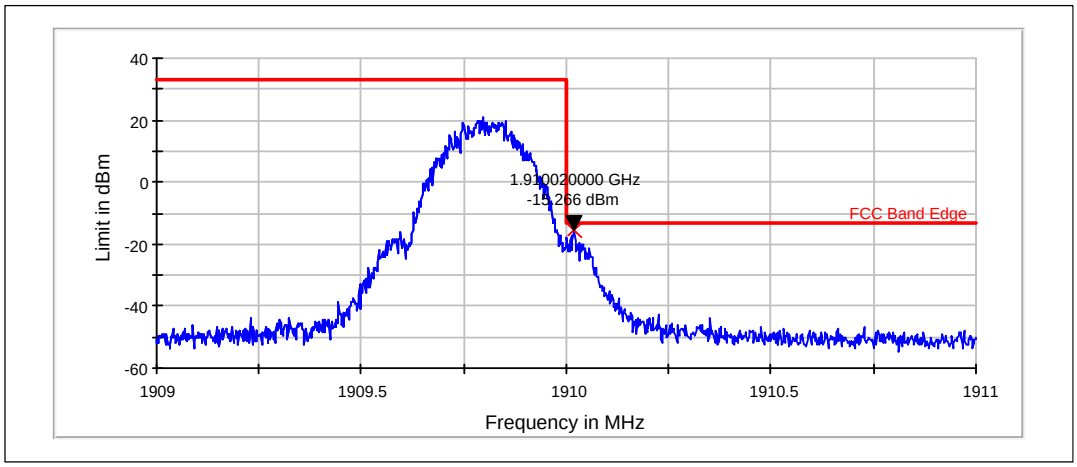
Channel 512 / 1850.2 MHz



Peak (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	1849.982	-15.87	PASSED

Channel 810 / 1909.8 MHz



Peak (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	1910.020	-15.27	PASSED

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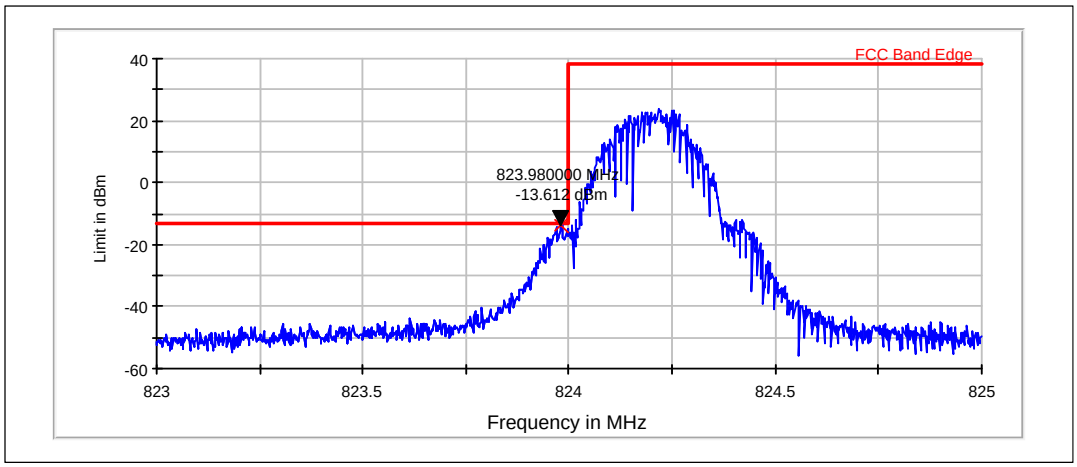
3.4. GSM 850 Test results

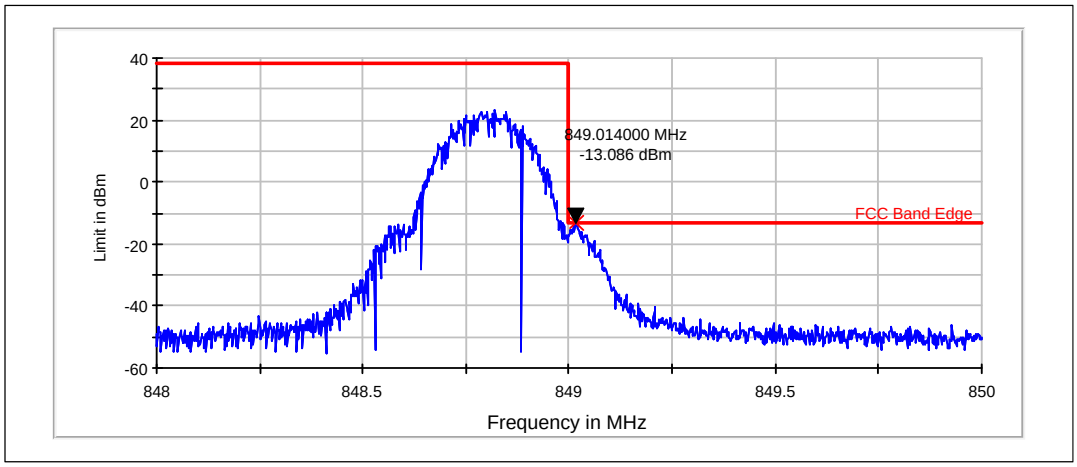
Channel 128 / 824.2 MHz



Peak (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	823.980	-13.61	PASSED

Channel 251 / 848.8 MHz



Peak (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	849.014	-13.09	PASSED

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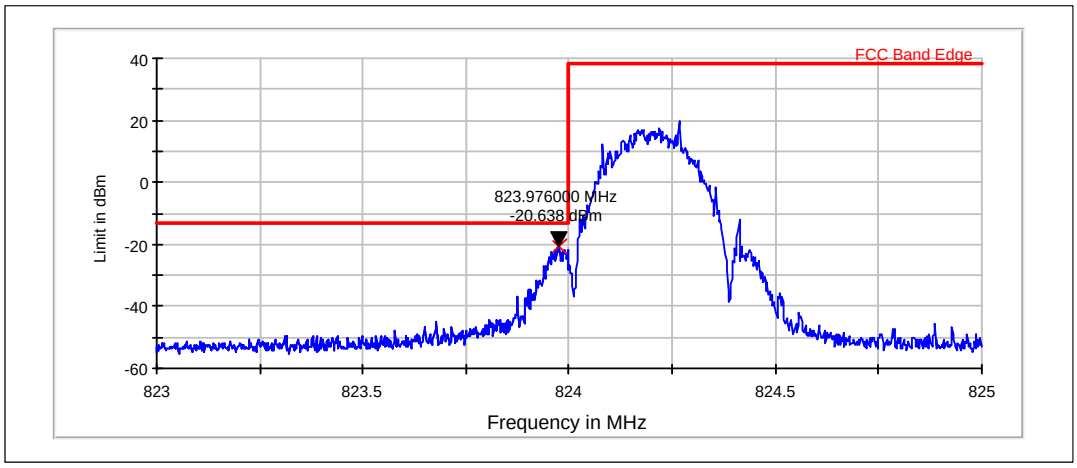
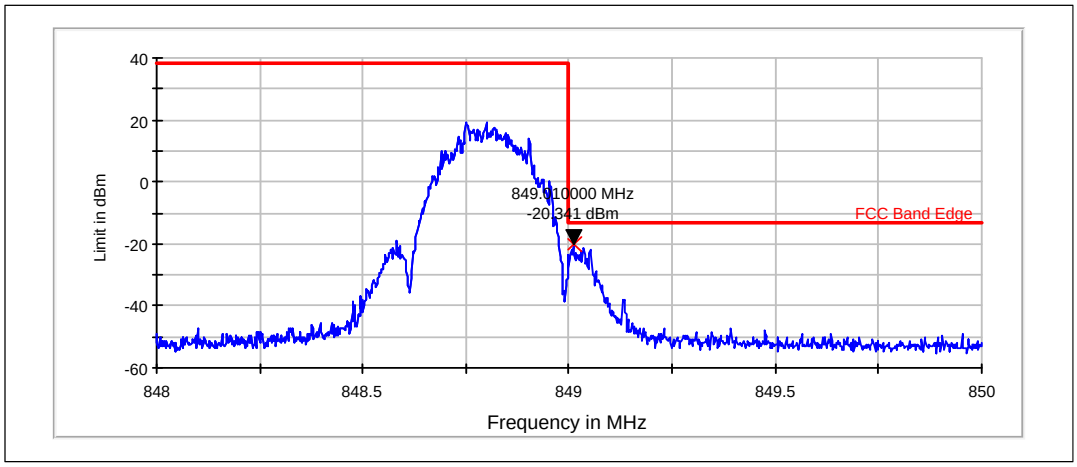
Channel 128 / 824.2 MHz



Peak (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	823.976	-20.64	PASSED

Channel 251 / 848.8 MHz



Peak (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	849.010	-20.34	PASSED

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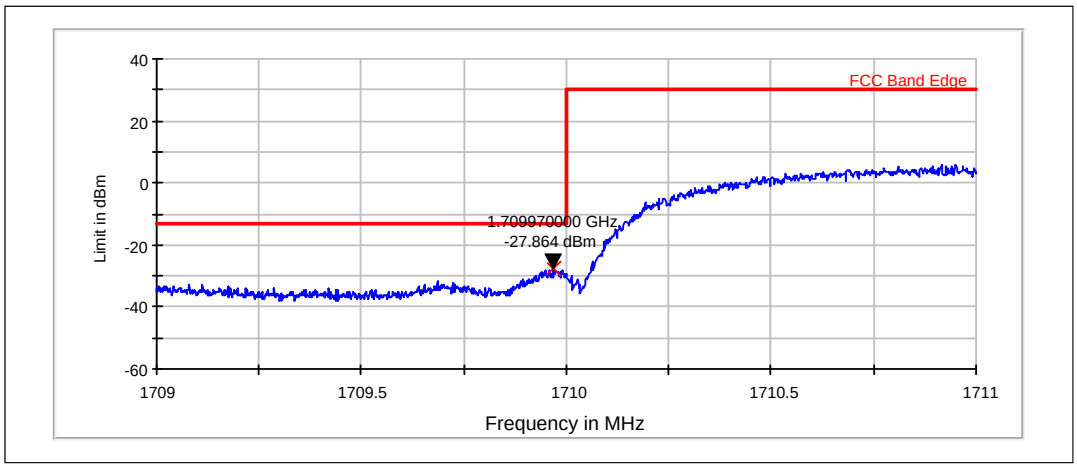
3.5. WCDMA 1700 Test results

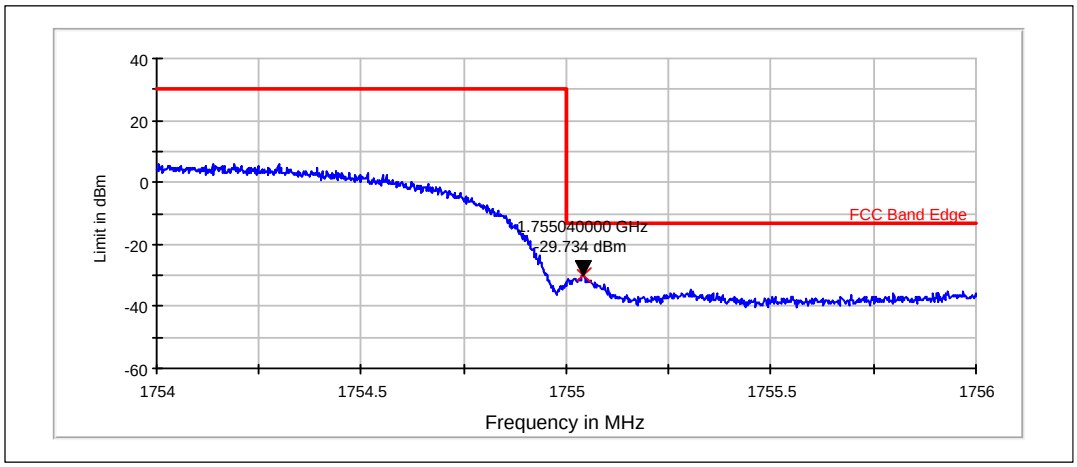
Channel 1312 / 1712.4 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1709.970	-27.86	PASSED

Channel 1513 / 1752.6 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1755.040	-29.73	PASSED

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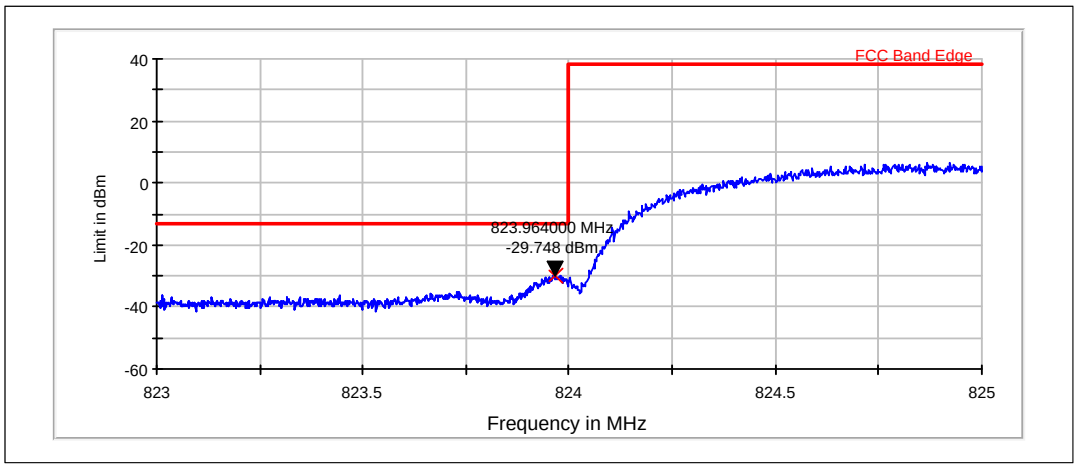
3.6. WCDMA 850 Test results

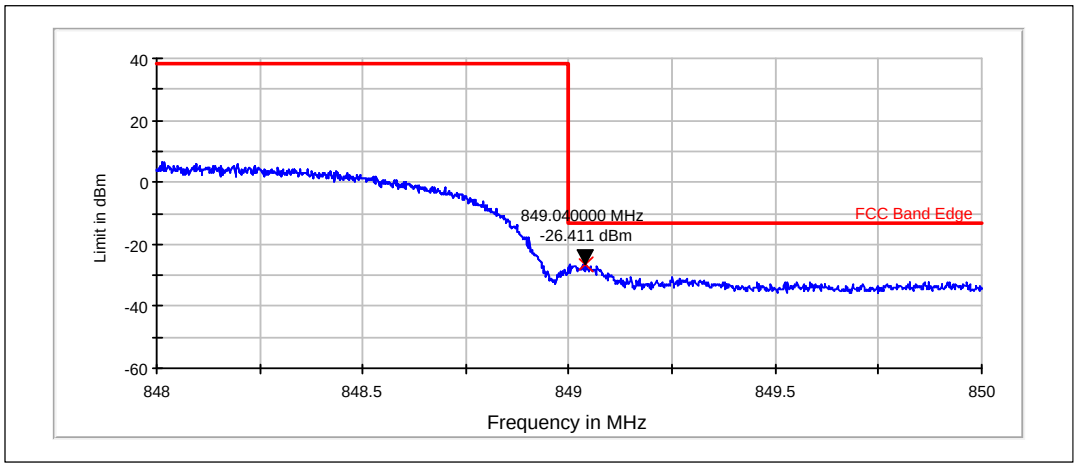
Channel 4132 / 826.4 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	823.964	-29.75	PASSED

Channel 4233 / 846.6 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	849.040	-26.41	PASSED

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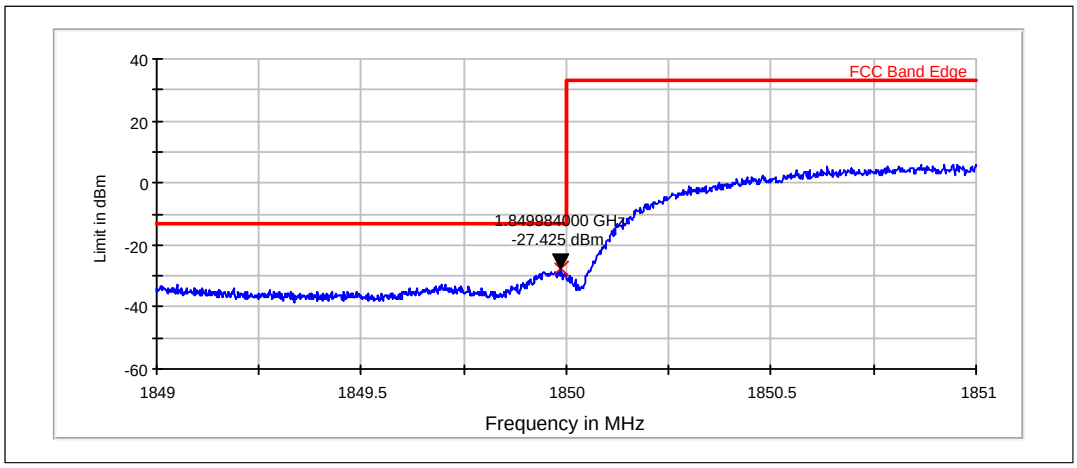
3.7. WCDMA 1900 Test results

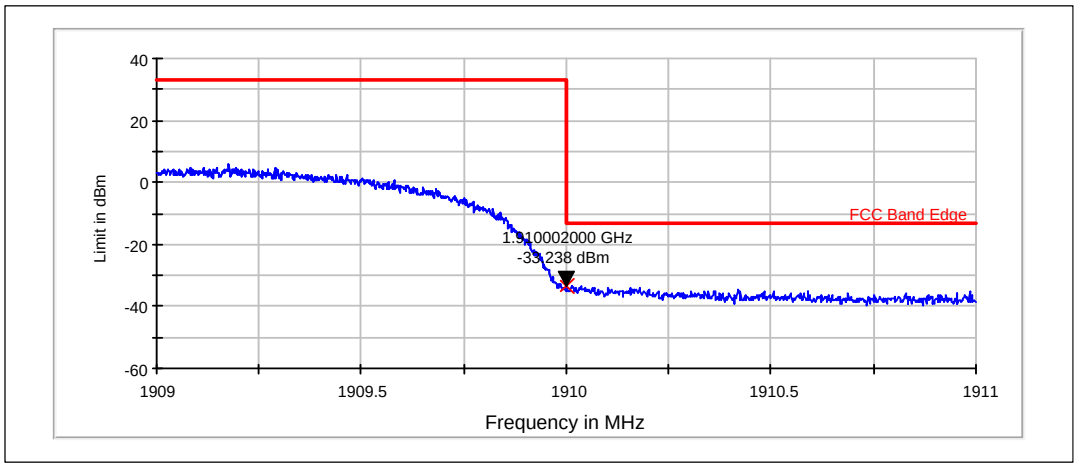
Channel 9262 / 1852.4 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1849.984	-27.43	PASSED

Channel 9538 / 1907.6 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1910.002	-33.24	PASSED

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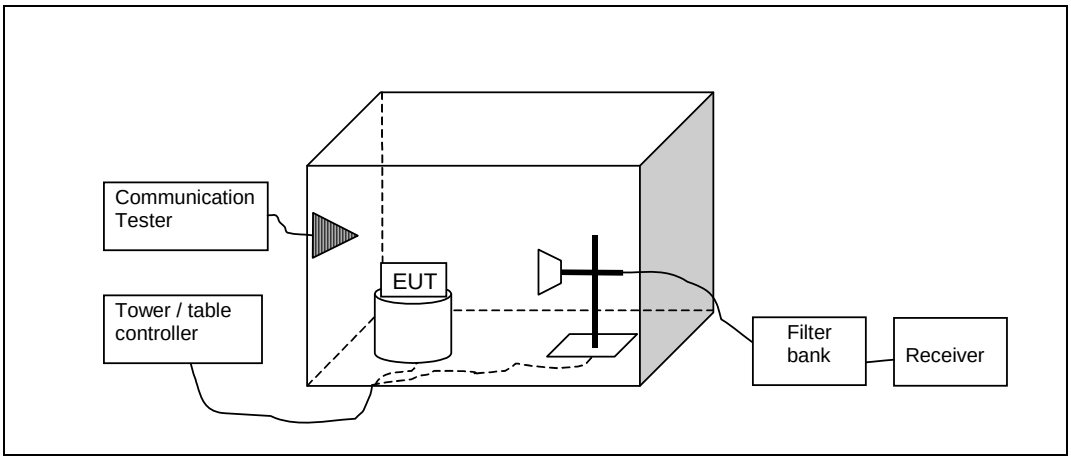
4. Spurious radiated emissions

(FCC §22.917(a), §2.1053, §24.238(a), §2.1053, §27.53(g), §2.1053, §27.53(h), §27.53(g), RSS-132 4.5, RSS-133 6.5)

EUT with DUT number	RM-942, DUT 53365
Accessories with DUT numbers	BP-4GWA, DUT 53370 ; AC-20U, DUT 53340 ; WH-108, DUT 53343
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	25/60/100.7
Date of measurements	23-May-2013
Measured by	Zou Ming

4.1.1 Test setup



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 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.

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The substitution method is used.

The measurement results are obtained as described below:

$P\ [dBm] = P_{SUBST\ TX} + G_{SUBST\ TX\ ANT} - L_{SUBST\ CABLE}$

Where $P_{SUBST\ TX}$ is signal generator level, which produces the same receiver reading P_{MEAS} in dBm as EUT. $G_{SUBST\ TX\ ANT}$ is substitution antenna gain and $L_{SUBST\ CABLE}$ is the loss of the cable between the signal generator and the substitution antenna.

Limits for spurious radiated emissions measurements

Operation band	Frequency range [MHz]	Limit [dBm]
LTE 700 Lower	30 - 7200	-13 (RBW = 100 kHz, ERP)
GSM850 / WCDMA850 / LTE850	30 - 8500	-13
WCDMA1700 / LTE1700 / / GSM1900 / WCDMA1900 / LTE1900	30 - 18000	-13

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4.3. GSM1900 TX test results

MaxPeak

Frequency [MHz]	P[dBm]	P [µW]	P_{MEAS} [dBm]	$P_{SUBST\ TX}$ [dBm]	$G_{SUBST\ TX\ ANT}$ [dBi]	$L_{SUBST\ CABLE}$ [dB]	Polarisation	Result
5640.2	-23.17	4.81948	-36.65	-25.00	11.25	9.42	VERTICAL	PASSED
9866.693	-42.25	0.05957	-67.66	-42.4	12.63	12.48	HORIZONTAL	PASSED
9900.2	-42.28	0.05916	-67.21	-42.5	12.68	12.46	VERTICAL	PASSED
9973.875	-40.82	0.08279	-67.34	-41.1	12.71	12.43	HORIZONTAL	PASSED
10035.912	-43.81	0.04159	-66.96	-44	12.71	12.52	HORIZONTAL	PASSED

4.4. GSM1900-E1 TX test results

Peak detector

Frequency [MHz]	P[dBm]	P [µW]	P_{MEAS} [dBm]	$P_{SUBST\ TX}$ [dBm]	$G_{SUBST\ TX\ ANT}$ [dBi]	$L_{SUBST\ CABLE}$ [dB]	Polarisation	Result
5639.98	-27.48	1.78649	-41.1	-29.30	11.25	9.43	VERTICAL	PASSED
9845.271	-41.56	0.06982	-67.27	-41.7	12.62	12.48	HORIZONTAL	PASSED
9909.8	-42.14	0.06109	-67.39	-42.3	12.68	12.52	VERTICAL	PASSED
9978.697	-39.92	0.10186	-66.69	-40.2	12.71	12.43	HORIZONTAL	PASSED
10003.567	-40.74	0.84333	-66.41	-40.9	12.70	12.54	HORIZONTAL	PASSED

4.5. WCDMA 1900 (Band II) test results

Channel 9400 / 1880.0 MHz

FDD mode, Peak detector

Frequency [MHz]	P[dBm]	P [µW]	P_{MEAS} [dBm]	$P_{SUBST\ TX}$ [dBm]	$G_{SUBST\ TX\ ANT}$ [dBi]	$L_{SUBST\ CABLE}$ [dB]	Polarisation	Result
5636.413	-37.27	0.18750	-51.34	-39.1	11.25	9.42	VERTICAL	PASSED
9797.014	-42.19	0.06039	-66.94	-42.3	12.51	12.40	VERTICAL	PASSED
9917.575	-41.54	0.07015	-66.85	-41.7	12.64	12.48	VERTICAL	PASSED
9983.828	-39.66	0.10814	-66.32	-39.9	12.70	12.46	HORIZONTAL	PASSED

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4.6. LTE 1700 (Band IV) test results

Channel 20175 / 1732.5 MHz

FDD, CBW 5MHz, QPSK, 1 RB, RMS detector

Frequency [MHz]	P[dBm]	P [µW]	P_{MEAS} [dBm]	$P_{SUBST\ TX}$ [dBm]	$G_{SUBST\ TX\ ANT}$ [dBi]	$L_{SUBST\ CABLE}$ [dB]	Polarisation	Result
3465.381	-56.88	0.00205	-67	-59.6	9.92	7.20	VERTICAL	PASSED
5198.041	-47.35	0.01841	-60.36	-49.3	10.98	9.03	VERTICAL	PASSED
6930.822	-50.7	0.00851	-68.76	-50.2	11.16	10.50	VERTICAL	PASSED
8663.322	-54.80	0.00331	-76.99	-55.2	12.06	11.66	VERTICAL	PASSED
10396.182	-46.26	0.02366	-72.46	-46.7	13.14	12.70	HORIZONTAL	PASSED

Channel 20175 / 1732.5 MHz

FDD, CBW 5MHz, 16QAM, 1 RB, RMS detector

Frequency [MHz]	P[dBm]	P [µW]	P_{MEAS} [dBm]	$P_{SUBST\ TX}$ [dBm]	$G_{SUBST\ TX\ ANT}$ [dBi]	$L_{SUBST\ CABLE}$ [dB]	Polarisation	Result
3465.421	-58.07	0.00156	-68.76	-60.9	9.92	7.09	VERTICAL	PASSED
5198.001	-53.45	0.00452	-66.72	-55.4	10.98	9.03	VERTICAL	PASSED
6930.701	-50.14	0.00969	-69.9	-50.8	11.16	10.50	VERTICAL	PASSED
8663.642	-54.6	0.00347	-76.99	-55.00	12.06	11.66	HORIZONTAL	PASSED
10396.102	-46.96	0.02014	-73.94	-47.4	13.14	12.70	HORIZONTAL	PASSED

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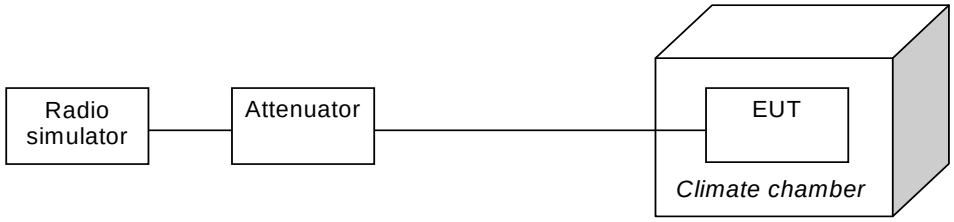
5. Frequency stability, temperature variation

(FCC §2.1055(a), RSS-132 4.3, RSS-133 6.3, RSS-139 6.3)

EUT with DUT number	RM-942, DUT 53361
Accessories with DUT numbers	Dummy battery, DUT 53373; WH-108, DUT 53379
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/40/100.1
Date of measurements	21-May-2013
Measured by	Gao Sherina

5.1. Test Setup



5.2. Test method and limit

The measurement is made according to FCC rules parts 22, 24, 27 and IC standard RSS-132, RSS-133 and RSS-139
as follows:

The climate chamber temperature is set to the maximum value and the temperature is allowed to stabilize.
The EUT is placed in the chamber.
The EUT is set in idle mode for 15 minutes.
The EUT is set to transmit.
The transmit frequency error was measured immediately.
The steps c - e were repeated for each temperature.Limits for frequency stability, temperature variation measurements

Frequency deviation [ppm]
+\- 2.5

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5.3. GSM 1900 Test results

GSM, Channel 661 / 1880.0 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	1880.00	-17.82000	-0.0095	PASSED
40	1880.00	-11.95000	-0.0064	PASSED
30	1880.00	-8.78000	-0.0047	PASSED
20	1880.00	-13.37000	-0.0071	PASSED
10	1880.00	-14.72000	-0.0078	PASSED
0	1880.00	-19.24000	-0.0102	PASSED
-10	1880.00	-33.06000	-0.0176	PASSED
-20	1880.00	-29.70000	-0.0158	PASSED
-20	1880.00	-22.66000	-0.0121	PASSED
-22	1880.00	-30.87000	-0.0164	PASSED

*The EUT stopped working below -22˚C.

5.4. GSM 850 Test results

GSM, Channel 190 / 836.6 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	836.60	4.91000	0.0059	PASSED
40	836.60	-6.26000	-0.0075	PASSED
30	836.60	-9.23000	-0.011	PASSED
20	836.60	-4.13000	-0.0049	PASSED
10	836.60	-11.82000	-0.0141	PASSED
0	836.60	3.16000	0.0038	PASSED
-10	836.60	-0.97000	-0.0012	PASSED
-20	836.60	-5.94000	-0.0071	PASSED
-22	836.60	-7.68000	-0.0092	PASSED

*The EUT stopped working below -22˚C.

5.5. WCDMA 1700 Test results

FDD, Channel 1412 / 1732.4 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	1732.40	-4.15039	-0.0024	PASSED
40	1732.40	-4.83704	-0.0028	PASSED
30	1732.40	-5.00488	-0.0029	PASSED
20	1732.40	-4.89807	-0.0028	PASSED
10	1732.40	-5.50842	-0.0032	PASSED
0	1732.40	0.27466	0.0002	PASSED
-10	1732.40	-3.18909	-0.0018	PASSED
-20	1732.40	-3.31116	-0.0019	PASSED
-22	1732.40	-3.57056	-0.0021	PASSED

*The EUT stopped working below -22˚C.

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6. Test Equipment

6.1. 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 µH	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	GPIB-RS232 convertor	GPIB-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
BJPCTC0306	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0305	GPIB converter	GPIB-RS232	NI	22/24/27, 15C
BJPCTC0304	Spectrum Analyser	FSV30	R&S	22/24/27, 15C

6.2. 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
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

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Eq. No	Equipment	Type	Manufacturer	Used in
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
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

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