

FCC Part 22/24/27 Compliance Test Report

Test Report no.:	FCC22&24&27_RM-917_06.docx	Date of Report:	14-Mar-2013
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FCC listing no.:	533467		
IC recognition no.:	661V-1		
Tested devices/ accessories:	Phone RM-917 / Battery BL-5J / Headset WH-108 / AC-Charger AC-20U		
FCC ID:	QTLRM-917	IC:	-
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:			

Kalle Hannila, System Manager, EMC

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

Date of receipt	05-Feb-2013
Testing completed	25-Feb-2013
The customer's contact person	Hu Ying
Test Plan referred to	T:\Projects\RM-917\TestPlan\RS_testplan_RM-917.xlsm
Notes	-
Document name	T:\Projects\RM-917\EMC\FCC22&24&27_RM-917_06.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-917	355913050000442	0201	-	1030.6400.1304.10070	17234
Phone	RM-917	355913050000566	0201	-	1030.6400.1304.10070	17232
Battery	BL-5J	495540221503230720260670574	-	-	-	17235
Headset	WH-108	3022D71	-	-	-	17236
AC-Charger	AC-20U	486867251234050709760675629	-	-	-	17237
Dummy Battery	SD-50B	LT5020234	-	-	-	17242

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	PASSED
§2.1049(h)	4.6.1	99 % occupied bandwidth	NP
§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	PASSED
§2.1055(a)	4.3	Frequency stability, temperature variation	NP
§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	PASSED
§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	PASSED
§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	PASSED

§2.1049(h)	4.6.1	99 % occupied bandwidth	NP
§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 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	PASSED
§2.1049(h)	4.6.1	99 % occupied bandwidth	NP
§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

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

CONTENTS

1. Summary for FCC Part 22/24/27 Compliance Test Report	2
1.1. EUT and Accessory Information.....	2
1.2. Summary of Test Results.....	2
2. Radiated RF output power (FCC §22.913(a), §24.232(b), §27.50(d)(2), RSS-132 4.4, RSS-133 6.4).....	6
2.2. Test method and limit.....	6
2.3. GSM850 TX test results	7
2.4. GSM1900 TX test results	7
2.5. WCDMA 1900 (Band II) test results	7
2.6. WCDMA 1700 (Band IV) test results	8
2.7. WCDMA 850 (Band V) test results	8
2.8. GSM850-E1 TX test results.....	9
2.9. GSM1900-E1 TX test results.....	9
3. Spurious radiated emissions (FCC §22.917(a), §2.1053, §24.238(a), §2.1053, §27.53(g), §2.1053, RSS-132 4.5, RSS-133 6.5).....	10
3.2. Test method and limit.....	10
3.3. GSM850 TX test results	12
3.4. GSM1900 TX test results	12
3.5. WCDMA 1900 (Band II) test results	12
3.6. WCDMA 850 (Band V) test results.....	13
3.7. GSM850-E1 TX test results.....	13
3.8. GSM1900-E1 TX test results.....	13
3.9. WCDMA 1700 (Band IV) test results	14
4. 99% occupied bandwidth (FCC §2.1049(h), RSS-GEN 4.6.1)	15
4.1. Test Setup.....	15
4.2. Test method and limit.....	15
4.3. WCDMA 1700 Test results.....	16
5. 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).....	17
5.1. Test Setup.....	17
5.2. Test method and limit.....	17
5.3. GSM 1900 Test results	18
5.4. GSM 850 Test results	20
5.5. WCDMA 1700 Test results.....	22

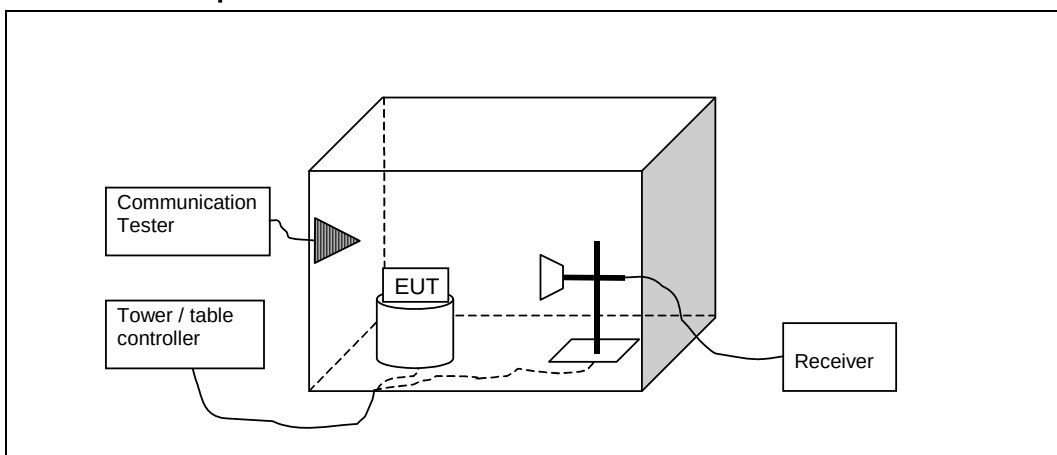
6. Frequency stability, temperature variation (FCC §2.1055(a), RSS-132 4.3, RSS-133 6.3, RSS-139 6.3).....	23
6.1. Test Setup.....	23
6.2. Test method and limit.....	23
6.3. WCDMA 1700 Test results.....	24
7. Frequency stability, voltage variation (FCC §2.1055(d), RSS-132 4.3, RSS-133 6.3, RSS-139 6.3).....	25
7.1. Test Setup.....	25
7.2. Test method and limit.....	25
7.3. WCDMA 1700 Test results.....	26
8. Test Equipment.....	27
8.1. Conducted measurements	27
8.2. Radiated measurements	27

2. Radiated RF output power

(FCC §22.913(a), §24.232(b), §27.50(d)(2), RSS-132 4.4, RSS-133 6.4)

EUT with DUT number	RM-917, DUT 17234
Accessories with DUT numbers	-
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 35 / 102
Date of measurements	07-Feb-2013
Measured by	Kalle Hannila

2.1.1 Test setup



2.2. Test method and limit

The measurement is made according to TIA-603-C-2004 as follows:

The measurement is performed in the Anechoic Chamber with absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system. The turntable is rotated 360 degrees and this is repeated for both horizontal and vertical receive antenna polarizations.

The EUT is placed on a nonconductive plate at 170 cm height.

The substitution method is used. The measurement results are obtained as described below:

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

Where $P_{SUBST\ TX}$ is signal generator level. P_{MEAS} is measured power level from the EUT. $P_{SUBST\ RX}$ is measured power level in substitute measurement. $L_{SUBST\ CABLE}$ is the loss of the cable between the signal generator and the substitution antenna and $G_{SUBST\ TX\ ANT}$ is substitution antenna gain.

Limits for radiated RF output power measurements

Frequency range [MHz]	Limit [W]	Limit [dBm]
824 - 849	7 ERP	38.5
1710 - 1755	1 EIRP	30
1850 - 1910	2 EIRP	33

2.3. GSM850 TX test results

Peak detector

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
128 / 824.2	31.98	1.579	-4.59	36.57	HORIZONTAL	PASSED
190 / 836.6	32.06	1.607	-3.78	35.84	VERTICAL	PASSED
251 / 848.8	31.23	1.326	-3.65	34.88	VERTICAL	PASSED

2.4. GSM1900 TX test results

Peak detector

Channel / f_c [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
512 / 1850.2	30.52	1.128	-13.99	44.51	HORIZONTAL	PASSED
661 / 1880	31.5	1.412	-13.56	45.06	HORIZONTAL	PASSED
810 / 1909.8	29.85	0.966	-15.63	45.48	HORIZONTAL	PASSED

2.5. WCDMA 1900 (Band II) test results

Peak detector

Channel / f_c [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
9262 / 1852.4	26.42	0.439	-18.18	44.6	HORIZONTAL	PASSED
9400 / 1880	28.23	0.665	-16.83	45.06	HORIZONTAL	PASSED
9538 / 1907.6	27.27	0.534	-18.24	45.51	HORIZONTAL	PASSED

RMS detector

Channel / f_c [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
9262 / 1852.4	22.43	0.175	-22.17	44.6	HORIZONTAL	PASSED
9400 / 1880	24.18	0.262	-20.88	45.06	HORIZONTAL	PASSED
9538 / 1907.6	22.53	0.179	-22.98	45.51	HORIZONTAL	PASSED

2.6. WCDMA 1700 (Band IV) test results

Peak detector

Channel / f_c [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1312 / 1712.4	25.65	0.367	-18.63	44.28	HORIZONTAL	PASSED
1450 / 1740	26.48	0.444	-17.72	44.2	HORIZONTAL	PASSED
1513 / 1752.6	24.54	0.285	-19.71	44.25	HORIZONTAL	PASSED

Peak detector

Channel / f_c [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1312 / 1712.4	29.57	0.906	-14.71	44.28	HORIZONTAL	PASSED
1450 / 1740	28.65	0.733	-15.55	44.2	HORIZONTAL	PASSED
1513 / 1752.6	28.99	0.793	-15.26	44.25	HORIZONTAL	PASSED

2.7. WCDMA 850 (Band V) test results

Peak detector

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
4132 / 826.4	21.71	0.148	-13.85	35.56	VERTICAL	PASSED
4183 / 836.6	23.1	0.204	-12.74	35.84	VERTICAL	PASSED
4233 / 846.6	18.94	0.078	-16.1	35.04	VERTICAL	PASSED

RMS detector

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
4132 / 826.4	16.13	0.041	-19.43	35.56	VERTICAL	PASSED
4183 / 836.6	16.14	0.041	-19.7	35.84	VERTICAL	PASSED
4233 / 846.6	17.44	0.055	-17.6	35.04	VERTICAL	PASSED

2.8. GSM850-E1 TX test results

TX mode, channel 128 / 824.2 MHz

Peak detector

Channel / f _c [MHz]	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Results
128 / 824.2	25.26	0.336	-11.31	36.57	HORIZONTAL	PASSED

TX mode, channel 190 / 836.6 MHz

Peak detector

Channel / f _c [MHz]	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Results
190 / 836.6	29.46	0.883	-6.38	35.84	VERTICAL	PASSED

TX mode, channel 251 / 848.8 MHz

Peak detector

Channel / f _c [MHz]	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Results
251 / 848.8	28.77	0.753	-6.11	34.88	VERTICAL	PASSED

2.9. GSM1900-E1 TX test results

TX mode, channel 512 / 1850.2 MHz

Peak detector

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Results
512 / 1850.2	28.8	0.758	-15.71	44.51	HORIZONTAL	PASSED

TX mode, channel 661 / 1880.0 MHz

Peak detector

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Results
661 / 1880	30.39	1.093	-14.67	45.06	HORIZONTAL	PASSED

TX mode, channel 810 / 1909.8 MHz

Peak detector

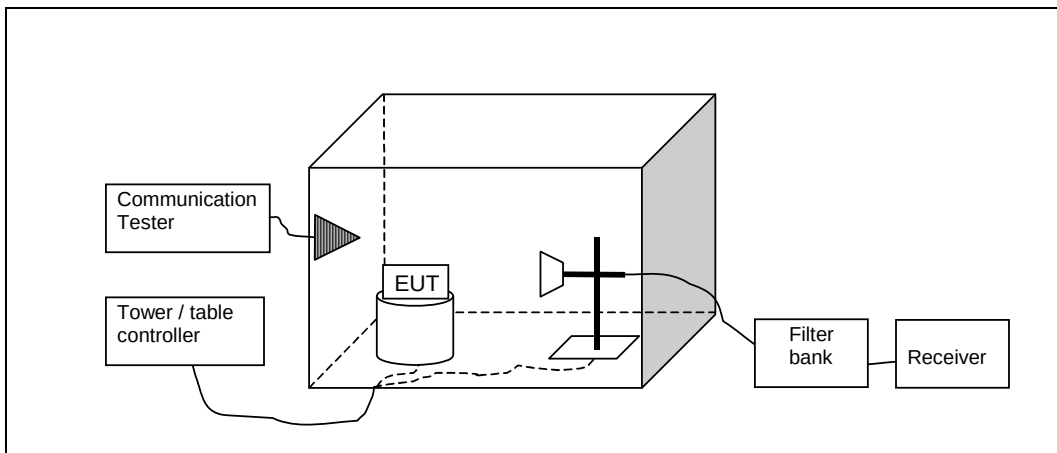
Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Results
810 / 1909.8	28.8	0.759	-16.68	45.48	HORIZONTAL	PASSED

3. Spurious radiated emissions

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

EUT with DUT number	RM-917, DUT 17234
Accessories with DUT numbers	BL-5J, DUT 17235 ; WH-108, DUT 17236 ; AC-20U, DUT 17237
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 35 / 102
Date of measurements	07-Feb-2013
Measured by	Kalle Hannila

3.1.1 Test setup



3.2. 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.

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]
GSM850 / WCDMA850	30 - 8500	-13
WCDMA1700 / / / GSM1900 / WCDMA1900	30 - 18000	-13

3.3. GSM850 TX test results

Peak detector

Frequency [MHz]	P [dBm]	P [μ W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarization	Results
1673.066	-43.34	0.04632	-49.45	6.11	VERTICAL	PASSED
1673.146	-43.21	0.04779	-49.32	6.11	VERTICAL	PASSED
1673.307	-43.83	0.04141	-49.94	6.11	VERTICAL	PASSED
2509.539	-43.76	0.04209	-55.39	11.63	HORIZONTAL	PASSED
2536.393	-52.96	0.00506	-64.74	11.78	HORIZONTAL	PASSED
3343.647	-59.33	0.00117	-66.21	6.88	HORIZONTAL	PASSED

3.4. GSM1900 TX test results

Peak detector

Frequency [MHz]	P [dBm]	P [μ W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarization	Results
1959.98	-45.75	0.02661	-55.86	10.11	HORIZONTAL	PASSED
9694.79	-41.19	0.07603	-66.75	25.56	HORIZONTAL	PASSED
9790.741	-40.34	0.09253	-65.84	25.5	VERTICAL	PASSED
9903.607	-40.81	0.08299	-66.12	25.31	HORIZONTAL	PASSED
9937.675	-39.81	0.1045	-65.14	25.33	VERTICAL	PASSED
10039.379	-39.49	0.11249	-65.43	25.94	HORIZONTAL	PASSED

3.5. WCDMA 1900 (Band II) test results

Channel 9400 / 1880.0 MHz

FDD mode, Peak detector

Frequency [MHz]	P [dBm]	P [μ W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarization	Results
1961.091	-24.54	3.51641	-33.81	9.27	HORIZONTAL	PASSED
1961.192	-24.92	3.22181	-34.19	9.27	HORIZONTAL	PASSED
9680.501	-39.88	0.10292	-65.52	25.64	VERTICAL	PASSED
9912.725	-38.59	0.13829	-63.95	25.36	VERTICAL	PASSED
9987.234	-39.78	0.10517	-65.25	25.47	VERTICAL	PASSED
9995.283	-39.33	0.11668	-64.89	25.56	HORIZONTAL	PASSED

3.6. WCDMA 850 (Band V) test results

Channel 4175 / 835.0 MHz

FDD mode, Peak detector

Frequency [MHz]	P [dBm]	P [μW]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarization	Results
847.921	-45.97	0.02529	-80.61	34.64	HORIZONTAL	PASSED
878.522	-29.92	1.01953	-65.66	35.74	VERTICAL	PASSED
879.389	-30.23	0.94755	-66.06	35.83	VERTICAL	PASSED
881.107	-30.02	0.99632	-65.84	35.82	VERTICAL	PASSED
959.113	-40.21	0.09537	-80.51	40.3	HORIZONTAL	PASSED
962.695	-40.05	0.09886	-80.09	40.04	HORIZONTAL	PASSED

3.7. GSM850-E1 TX test results

Peak detector

Frequency [MHz]	P [dBm]	P [μW]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarization	Results
1673.006	-51.6	0.00692	-57.71	6.11	VERTICAL	PASSED
1673.126	-51.42	0.00721	-57.53	6.11	VERTICAL	PASSED
1673.126	-51.03	0.0079	-57.14	6.11	VERTICAL	PASSED
2503.026	-52.74	0.00532	-64.27	11.53	HORIZONTAL	PASSED
2510.04	-52.49	0.00563	-64.12	11.63	HORIZONTAL	PASSED
3327.956	-58.52	0.0014	-65.77	7.25	HORIZONTAL	PASSED

3.8. GSM1900-E1 TX test results

Peak detector

Frequency [MHz]	P [dBm]	P [μW]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarization	Results
1909.96	-45.6	0.02755	-55.17	9.57	HORIZONTAL	PASSED
9653.487	-40.74	0.08439	-66.15	25.41	HORIZONTAL	PASSED
9781.182	-39.93	0.10155	-65.48	25.55	VERTICAL	PASSED
9920.661	-40.87	0.08181	-66.3	25.43	VERTICAL	PASSED
9940.301	-39.69	0.10735	-65.43	25.74	HORIZONTAL	PASSED
10006.774	-39.16	0.12126	-65.2	26.04	HORIZONTAL	PASSED

3.9. WCDMA 1700 (Band IV) test results

Channel 1412 / 1732.4 MHz

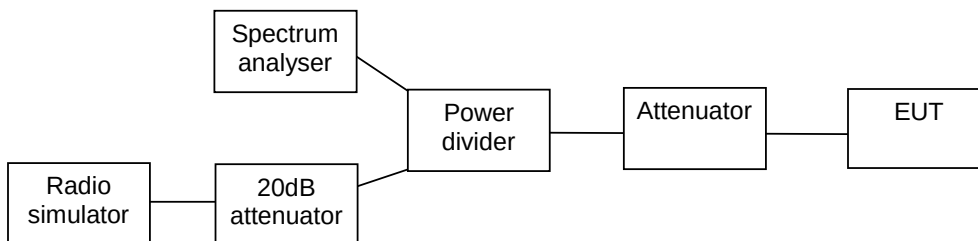
FDD mode, Peak detector

Frequency [MHz]	P [dBm]	P [μ W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarization	Results
1714.218	-35.99	0.25183	-43.72	7.73	HORIZONTAL	PASSED
1755.822	-42.6	0.0549	-50.58	7.98	HORIZONTAL	PASSED
9799.579	-39.72	0.10659	-65.17	25.45	VERTICAL	PASSED
9810.24	-39.78	0.10524	-65.27	25.49	VERTICAL	PASSED
9978.216	-39.23	0.11948	-64.52	25.29	VERTICAL	PASSED
12119.319	-33.97	0.40068	-62.2	28.23	HORIZONTAL	PASSED

4. 99% occupied bandwidth (FCC §2.1049(h), RSS-GEN 4.6.1)

EUT with DUT number	RM-917, DUT 17232
Accessories with DUT numbers	SD-50B, DUT 17242
Operation Voltage [V] / [Hz]	-
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 35 / 102
Date of measurements	07-Feb-2013
Measured by	Tomi Lipponen

4.1. Test Setup



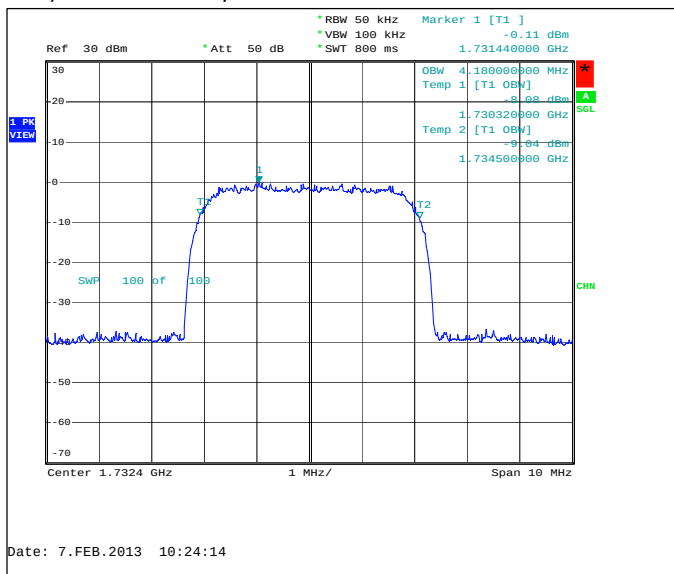
4.2. Test method and limit

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

4.3. WCDMA 1700 Test results

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

FDD, Channel 1412 / 1732.4 MHz

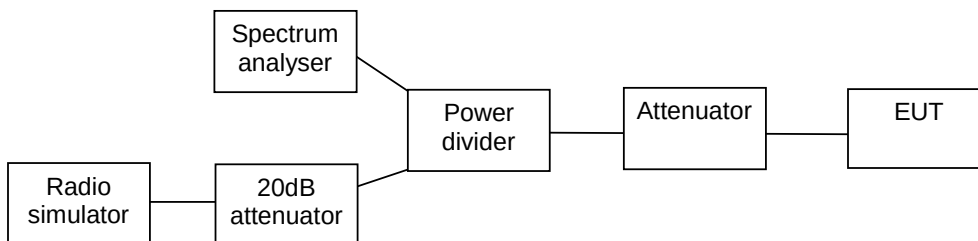


5. Band edge compliance

(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-917, DUT 17232
Accessories with DUT numbers	SD-50B, DUT 17242
Operation Voltage [V] / [Hz]	-
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 35 / 102
Date of measurements	07-Feb-2013
Measured by	Tomi Lipponen

5.1. Test Setup



5.2. Test method and limit

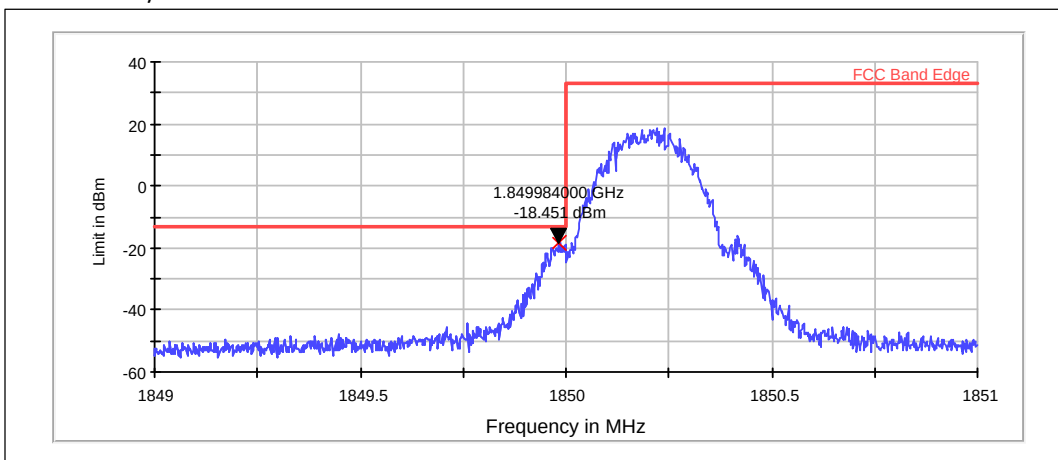
The measurement is made according to FCC rules parts 22, 24, 27 and IC standards , RSS-132, RSS-133, RSS-139.

Limits for band edge compliance measurements

Operation band	Frequency range [MHz]	Limit [dBm]
GSM850 / WCDMA850	Below 824 and above 849	-13
WCDMA1700	Below 1710 and above 1755	-13
GSM1900 / WCDMA1900	Below 1850 and above 1910	-13

5.3. GSM 1900 Test results

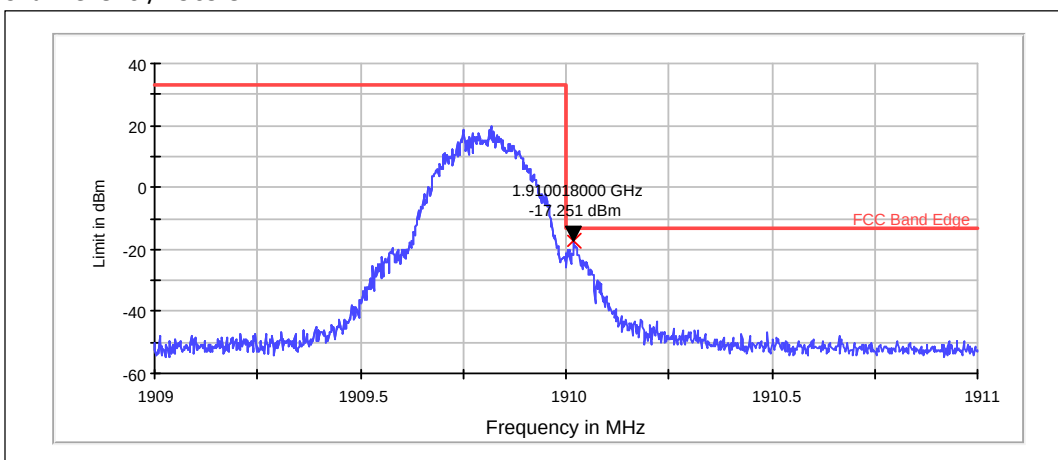
Channel 512 / 1850.2 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	1849.984	-18.45	PASSED

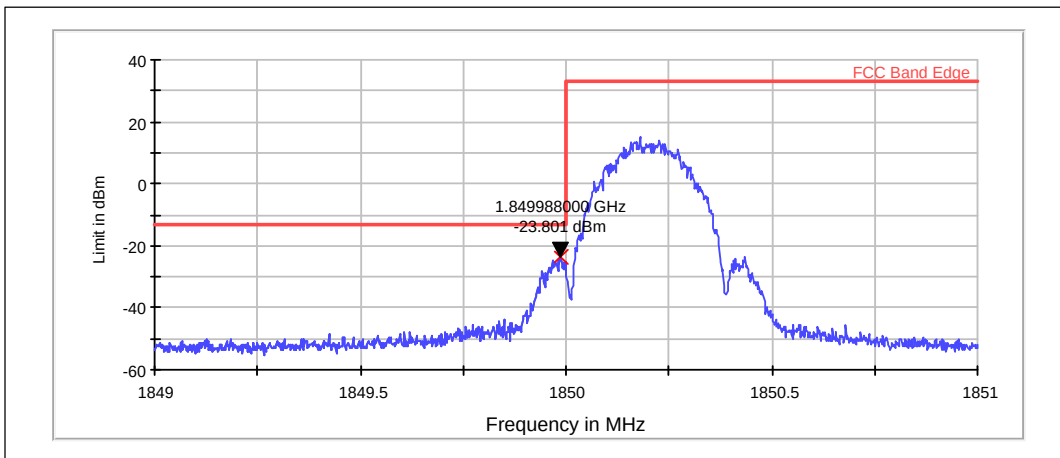
Channel 810 / 1909.8 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	1910.018	-17.25	PASSED

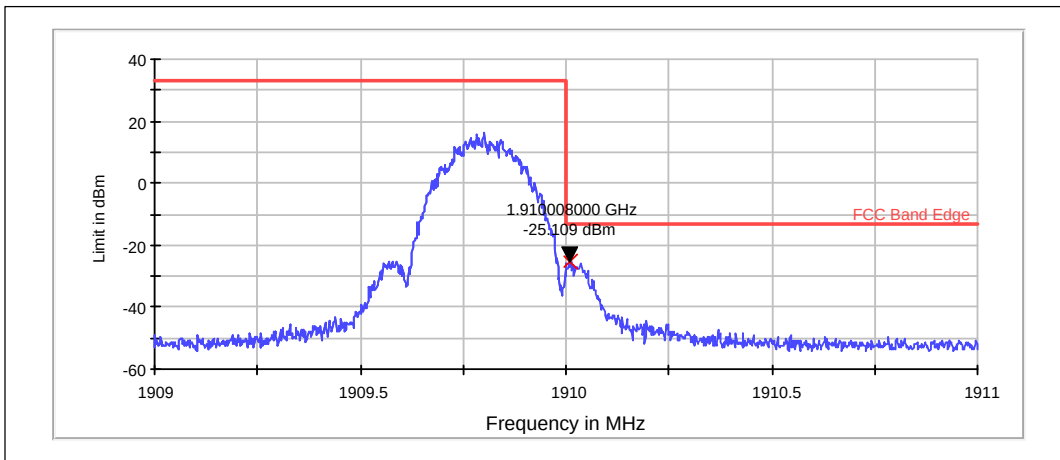
Channel 512 / 1850.2 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	1849.988	-23.80	PASSED

Channel 810 / 1909.8 MHz

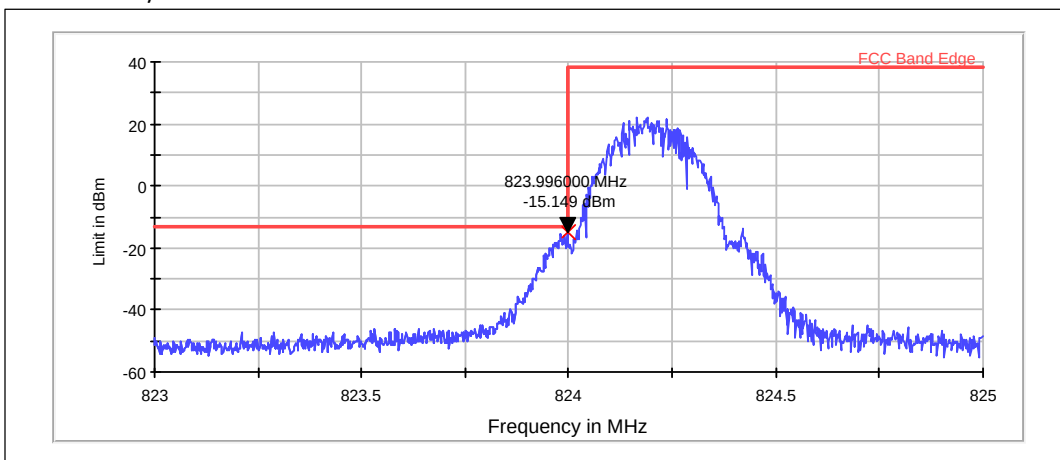


Peak (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	1910.008	-25.11	PASSED

5.4. GSM 850 Test results

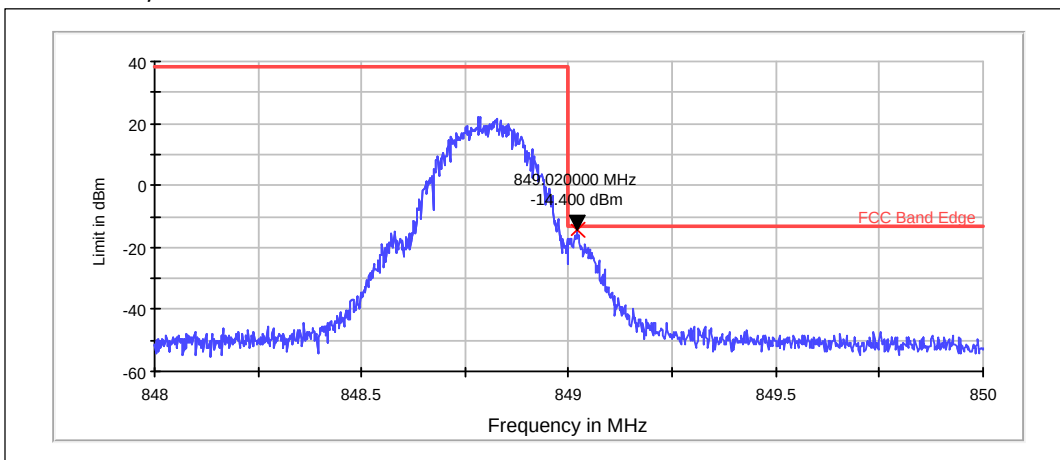
Channel 128 / 824.2 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	823.996	-15.15	PASSED

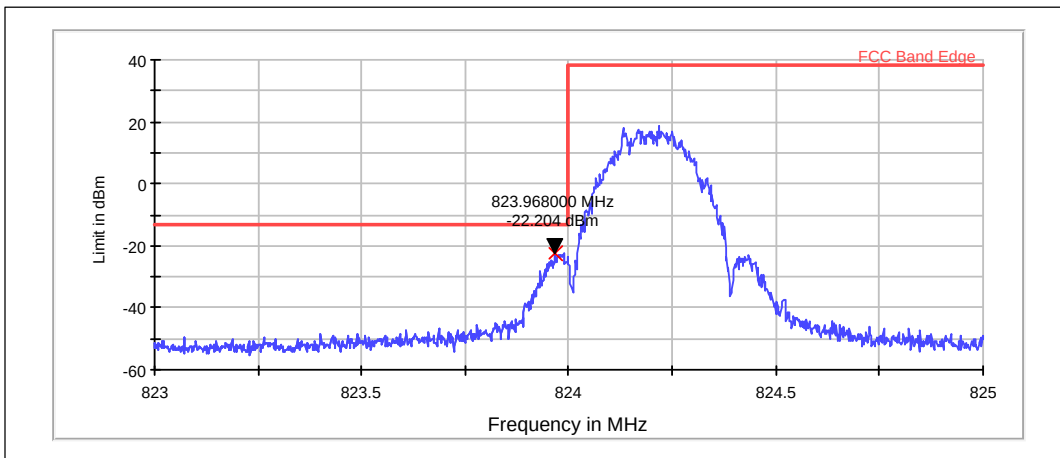
Channel 251 / 848.8 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	849.020	-14.40	PASSED

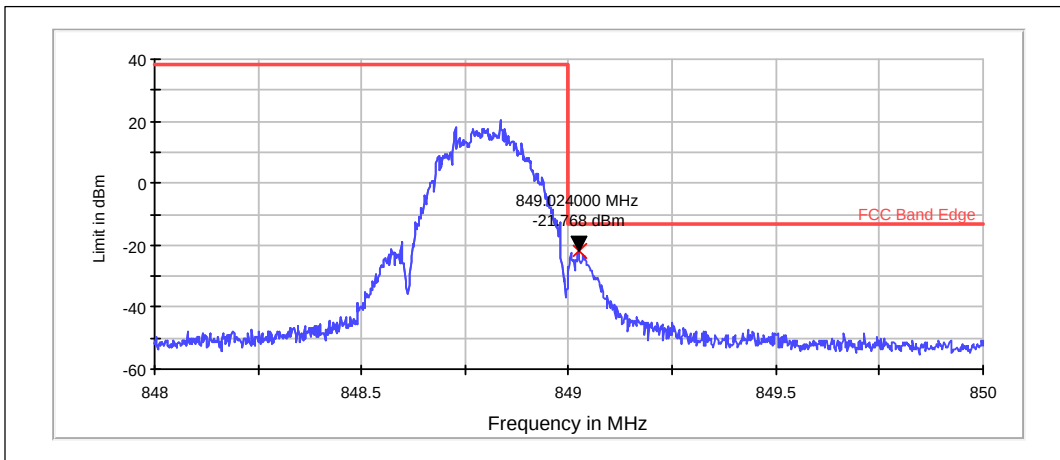
Channel 128 / 824.2 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	823.968	-22.20	PASSED

Channel 251 / 848.8 MHz

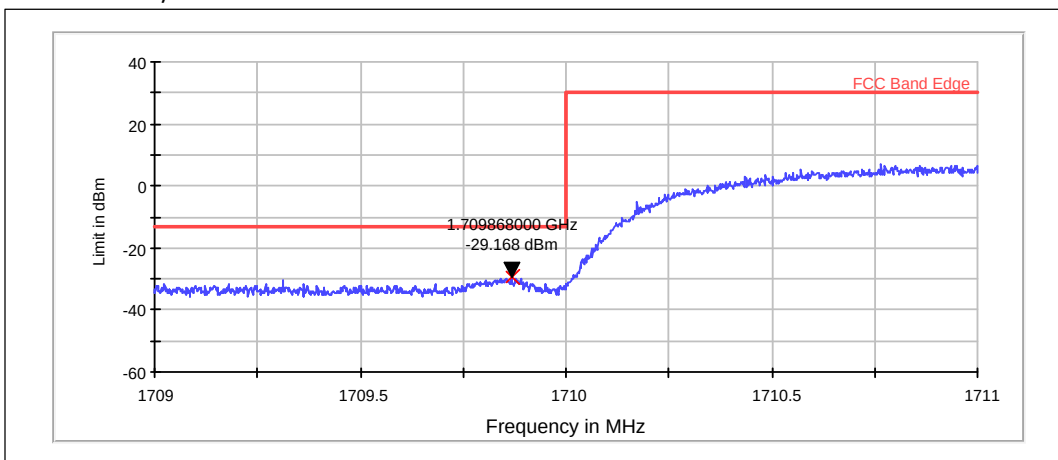


Peak (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	849.024	-21.77	PASSED

5.5. WCDMA 1700 Test results

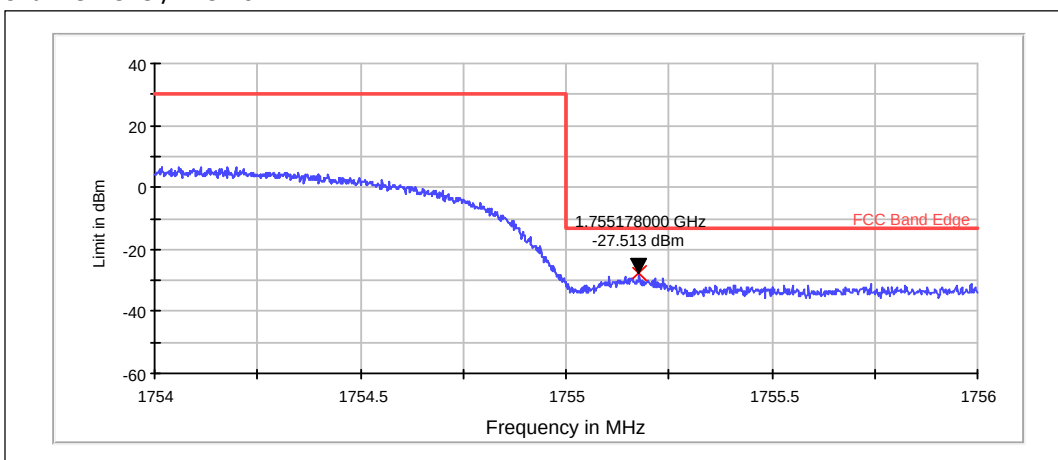
Channel 1312 / 1712.4 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1709.868	-29.17	PASSED

Channel 1513 / 1752.6 MHz



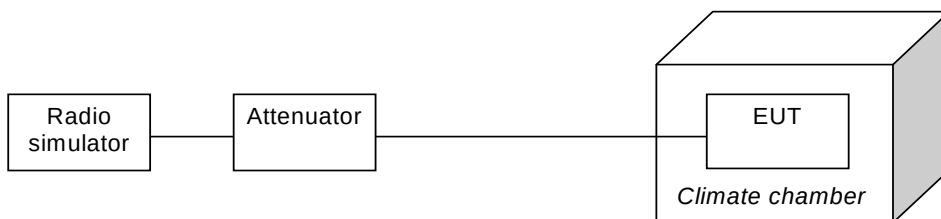
RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1755.178	-27.51	PASSED

6. 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-917, DUT 17232
Accessories with DUT numbers	SD-50B, DUT 17242
Operation Voltage [V] / [Hz]	-
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 35 / 102
Date of measurements	07-Feb-2013
Measured by	Tomi Lipponen

6.1. Test Setup



6.2. 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

6.3. WCDMA 1700 Test results

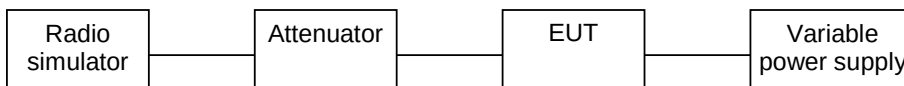
FDD, Channel 1412 / 1732.4 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	1732.40	-3.86047	-0.0022	PASSED
40	1732.40	-6.05774	-0.0035	PASSED
30	1732.40	-7.81250	-0.0045	PASSED
20	1732.40	-4.73023	-0.0027	PASSED
10	1732.40	-5.05066	-0.0029	PASSED
0	1732.40	-3.92151	-0.0023	PASSED
-10	1732.40	-1.90735	-0.0011	PASSED
-20	1732.40	-4.76074	-0.0027	PASSED
-30	1732.40	-4.44031	-0.0026	PASSED

7. Frequency stability, voltage variation (FCC §2.1055(d), RSS-132 4.3, RSS-133 6.3, RSS-139 6.3)

EUT with DUT number	RM-917, DUT 17232
Accessories with DUT numbers	SD-50B, DUT 17242
Operation Voltage [V] / [Hz]	-
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 35 / 102
Date of measurements	07-Feb-2013
Measured by	Tomi Lipponen

7.1. Test Setup



7.2. 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 EUT battery was replaced with an adjustable power supply. The frequency stability was measured at nominal voltage and at the battery cut-off point.

Limits for frequency stability, voltage variation measurements

Frequency deviation [ppm]
+/- 2.5

7.3. WCDMA 1700 Test results

FDD,

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.1	1732.40	-5.82886	-0.0034	PASSED
Nominal / 3.7	1732.40	-4.01306	-0.0023	PASSED
Battery cut-off point / 3.5	1732.40	-3.38745	-0.002	PASSED

8. Test Equipment

8.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
6038	Data Logger	Testo 580	Testo	-
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	-
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	-
2389	Signal Generator	SMJ 100A	R&S	-
6009	GPS Antenna	SA-700	Chronos	-
6010	GPS Network amplifier	NLA20FPDC	GPS Networking, Inc	-
6011	GPS signal Splitter	LDCBS1x4	GPS Networking, Inc	-
6015	Receiver	ESI	R&S	-
2059	V-network	ESH3-Z6	R&S	-
6044	V-network	ESH3-Z6	R&S	-
1759	LISN 50 µH	ESH3-Z5	R&S	-
2390	Directional Coupler	DC2600	AR	-
1916	Communication Tester	CMTA84	R&S	-
6012	CDN	CDN USB/c	Teseq	-
2388	Bluetooth Tester	CBT	R&S	-
6046	Attenuator 10dB	8493C	Agilent	-
6047	Attenuator 20dB	8493C	Agilent	-
6036	Data Logger	175-H2	Testo	-
6045	Power Splitter	11667B	Agilent	-
6039	USB Interface	5541765	Testo	-
10479	Communication Tester	CMW500	R&S	-
6094	Communication Tester	CMW500	R&S	-
6096	EMC Analyzer	E7405A	HP	-
6098	Signal Generator	8648C	Agilent	-
6103	Bluetooth tester	CBT	R&S	-
6113	Signal Generator	SMF100A	R&S	-
6120	Thermal Chamber	WT 20/40	Weiss	-
6121	Power Splitter	HP11667B	Agilent	-
6122	Power Splitter	HP11667B	Agilent	-
6134	Attenuator 10dB	BW-S10-2W263+	Mini-Circuits	-
6136	Attenuator 20dB	BW-S20-2W263+	Mini-Circuits	-
2359	Temperature Test Chamber	VT4002	Vötsch	-
2347	Communication Tester	CMU200	R&S	-
2180	Communication Tester	CMU200	R&S	-
2156	Communication Tester	CMU200	R&S	-
1999	Receiver	ESIB26	R&S	-
2352	Spectrum Analyzer	FSP-30	R&S	-
2097	Pulse Limiter	ESH3-Z2	R&S	-
2039	Power Supply	PL330QMD	Thurlby	-
1992	Signal Generator	83630B	Agilent	-
2206	Signal Generator	SMX	R&S	-

8.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
2391	Band Reject Filter	WRCG1729.4/1735.4-1722.4/1742.4-40/6SS	Wainwright	27
6038	Data Logger	Testo 580	Testo	-
6014	Substitute Calibration Cable	Sucoflex 104PB	Suhner	-
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	-
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	-
2389	Signal Generator	SMJ 100A	R&S	-
6009	GPS Antenna	SA-700	Chronos	-

Eq. No	Equipment	Type	Manufacturer	Used in
6010	GPS Network amplifier	NLA20FPDC	GPS Networking, Inc	-
6011	GPS signal Splitter	LDCBS1x4	GPS Networking, Inc	-
-	RF immunity / Emission Software	EMC32	R&S	-
1917	Communication Tester	CMTA84	R&S	-
2388	Bluetooth Tester	CBT	R&S	-
6037	Data Logger	175-H2	Testo	-
6039	USB Interface	5541765	Testo	-
6087	Antenna	BBHA 9120D	Scharzbeck	-
6088	Antenna	VUBA 9117	Scharzbeck	-
6089	Antenna	HFH2-Z2	R&S	-
10479	Communication Tester	CMW500	R&S	-
6094	Communication Tester	CMW500	R&S	-
6103	Bluetooth tester	CBT	R&S	-
6113	Signal Generator	SMF100A	R&S	-
6115	Open switch and control unit	OSP 130	R&S	-
6116	Open switch and control unit	OSP 150	R&S	-
6130	Notch Filter	WRCD1880-1.1.25/50-10SS	Wainwright	-
6131	Notch Filter	WRCT902.4-0.4/40-8SS	Wainwright	-
6135	Notch Filter	WRCJV2531/2539-2523/2547-60/12SS	Wainwright	-
2140	Antenna	EMCO93110B	EMCO	-
2142	Antenna	3146	EMCO	-
2357	Band Reject Filter	WRCG2400/2483-2390/2493-35/10SS	Wainwright	-
2364	Band Reject Filter	WRCG1877/1883 - 1870/1890-40/6SS	Wainwright	24
2043	Band Reject Filter	WRCA824/849-0,2-6SS	Wainwright	22
2347	Communication Tester	CMU200	R&S	-
2180	Communication Tester	CMU200	R&S	-
2156	Communication Tester	CMU200	R&S	-
2176	CDN	CDN 801-M3	Lüthi	-
2027	CDN	M2 (modified) DC1	MEB	-
2028	CDN	M3 (modified) DC2	MEB	-
1984	Antenna	BBHA 9120 D	Schwarzbeck	-
6017	Antenna	SBA 9113	Schwarzbeck	-
2009	Signal Generator	SMP 22	R&S	-
2029	Power Supply	PL330	Thurlby	-
2361	Anechoic Chamber	3 m Semi / Full Anechoic Chamber	Euroshield	-
2353	Receiver	ESIB26	R&S	-
2135	CDN	CDN 801-M3	Lüthi	-