

FCC Part 22/24/27 Compliance Test Report

Test Report no.:	FCC22&24&27_RX-113_102.docx	Date of Report:	28-Oct-2013
Number of pages:	22	Customer's Contact person:	Jamie Lee
Testing laboratory:	TCC Nokia Tampere Laboratory P.O. Box 68 Sinitaival 5 FIN-33720 TAMPERE, FINLAND Tel. +358 (0) 7180 46800 Fax. +358 (0) 7180 46880	Customer:	Nokia, Inc. 16620 West Bernardo Drive San Diego, CA 92127 USA Tel. +1 858 831 5000 Fax. +1 858 385 1598
FCC listing no.:	94436		
IC recognition no.:	661AK-1		
Tested devices/ accessories:	Device RX-113 / Battery BC-3S / AC-Charger AC-300 / Headset WH-208		
FCC ID:	QMNB	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	03-Sep-2012
Testing completed	12-Sep-2012
The customer's contact person	Jamie Lee
Test Plan referred to	T:\Projects\RX-114\TestPlan\RS_testplan_RX-114.xlsm
Notes	-
Document name	T:\Projects\RX-113\EMC\FCC22&24&27_RX-113_102.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
Device	RX-114	004402473513822	0108	-	9471 1032 1332 v1.2.2	43079
Device	RX-114	004402473514887	0108	-	9471 1032 1332 v1.2.2	43066
Battery	BC-3S	GC02001XN10LG10136S02E9	B1.0	-	-	43090
AC charger	AC-300	1332000058	2.0	-	-	43068
Headset	WH-208	-	-	-	-	43035

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	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	NP
§2.1055(a)	6.3	Frequency stability, temperature variation	NP
§2.1055(d)	6.3	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	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	NP
§2.1055(a)	4.3	Frequency stability, temperature variation	PASSED
§2.1055(d)	4.3	Frequency stability, voltage variation	PASSED

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

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
§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	NP
§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

LTE 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	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

LTE700 Upper (Band 13):

Section in CFR 47	Section in RSS-GEN or RSS-132	Name of the test	Result
§2.1046 (a)	N/A	Conducted RF output power	NP
§27.50(b)(10)	N/A	Radiated RF output power	NP
§2.1049(h)	N/A	99 % occupied bandwidth	NP
§27.53(c)(2)(4)	N/A	Band edge compliance	NP
§27.53(c)(2)(4),(f), §2.1051	N/A	Spurious emissions at antenna terminals	NP
§27.53(c)(2)(4),(f), §2.1053	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

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
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.

The test results of Rx-114 are re-used for certification of the RX-113. The table above indicates the results, which will be re-used.

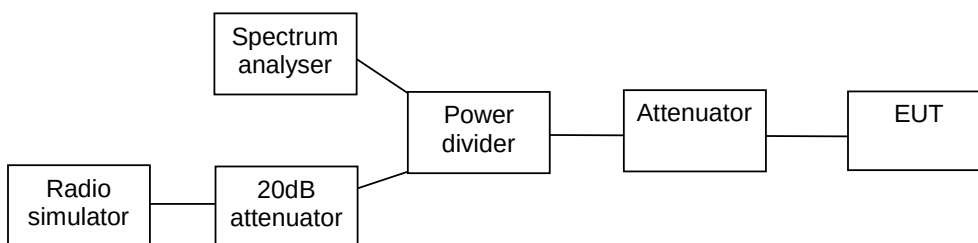
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2. 99% occupied bandwidth (FCC §2.1049(h), RSS-GEN 4.6.1)

EUT with DUT number	RX-114 DUT 43066
Accessories with DUT numbers	BC-3S, DUT 43090 ; AC-300, DUT 43068 ; WH-208, DUT 43035
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 58 / 101.7
Date of measurements	20-Aug-2013
Measured by	Jari Jantunen

2.1. Test Setup



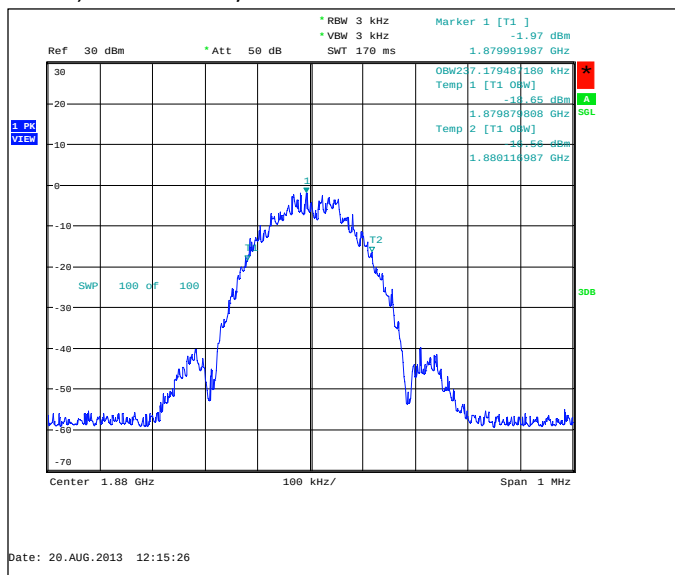
2.2. Test method and limit

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

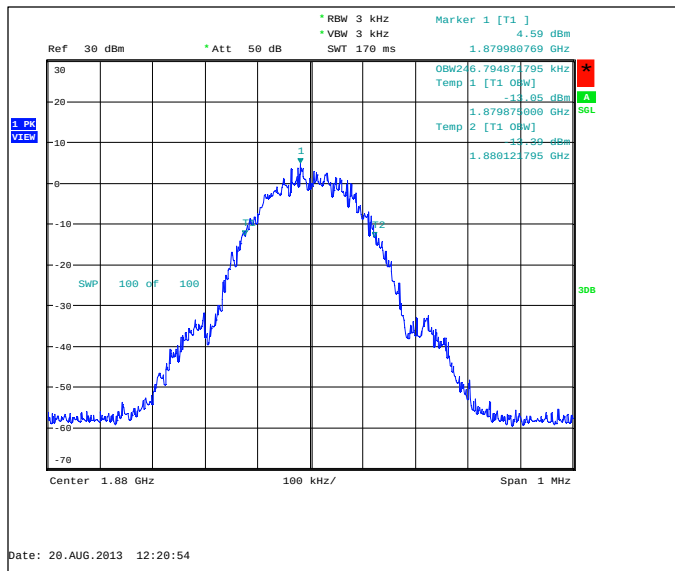
2.3. GSM 1900 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
EGPRS	237.2
GPRS	246.8

EGPRS, Channel 661 / 1880.0 MHz



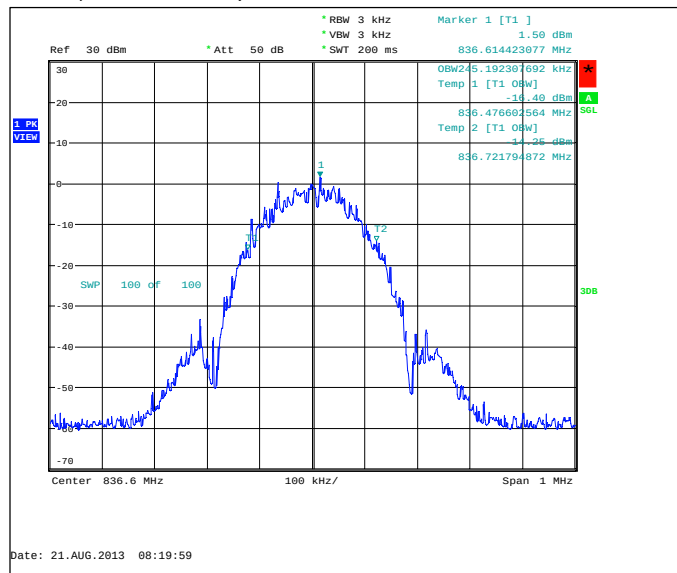
GPRS, Channel 661 / 1880.0 MHz



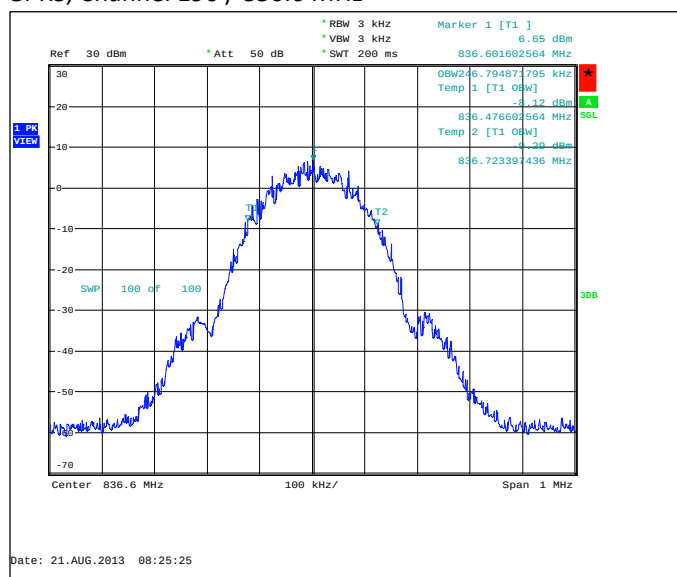
2.4. GSM 850 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
EGPRS	245.2
GPRS	246.8

EGPRS, Channel 190 / 836.6 MHz



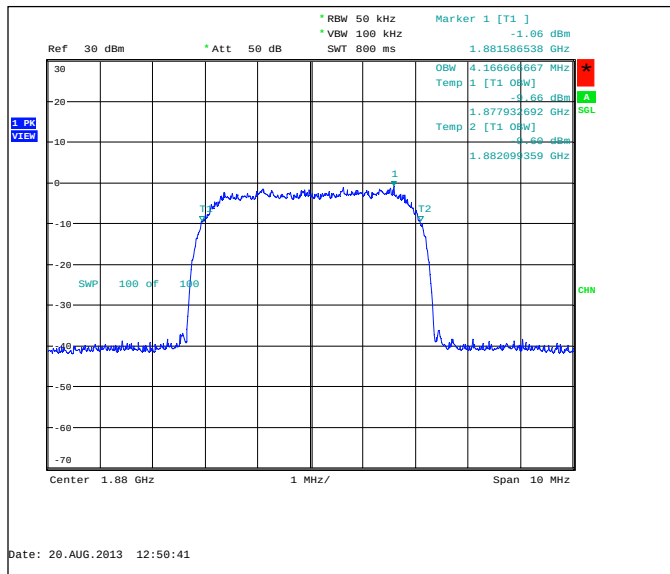
GPRS, Channel 190 / 836.6 MHz



2.5. WCDMA 1900 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD	4166.7

FDD, Channel 9400 / 1880.0 MHz

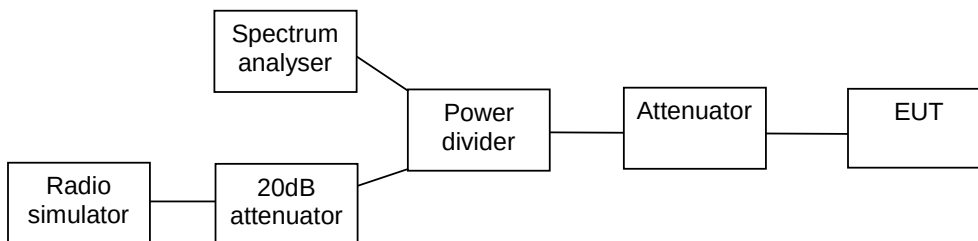


3. Band edge compliance

(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	RX-114, DUT 43066
Accessories with DUT numbers	BC-3S, DUT 43090 ; AC-300, DUT 43068 ; WH-208, DUT 43035
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 58 / 101.7
Date of measurements	20-Aug-2013
Measured by	Jari Jantunen

3.1. Test Setup



3.2. Test method and limit

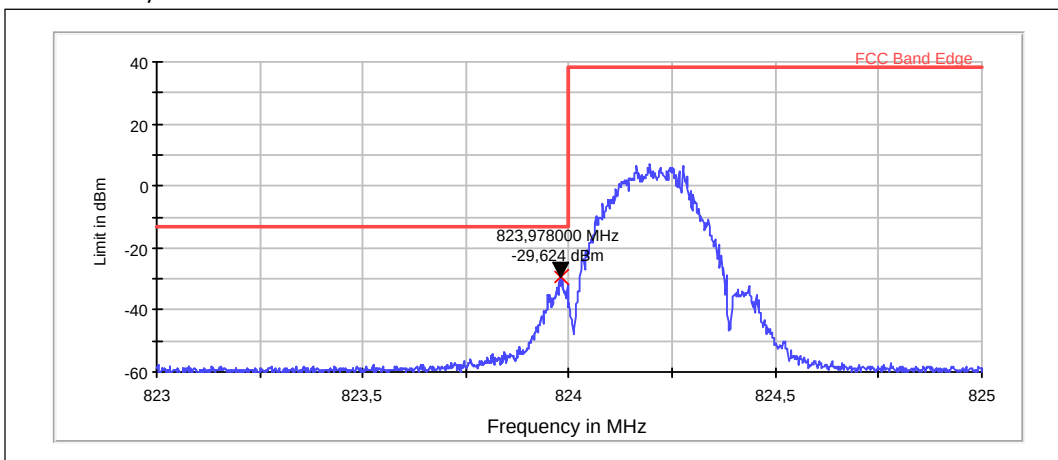
The measurement is made according to FCC rules parts 22, 24, 27 and IC standards , RSS-132, RSS-133, RSS-139.

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)
LTE 700 Upper	776.9 -777 and 787 - 787.1 Below 776.9 and above 787.1 763-775 and 793-805	-13 (RBW = 30 kHz, ERP) -13 (RBW = 100 kHz, ERP) -35 (RBW = 6.25 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

3.3. GSM 850 Test results

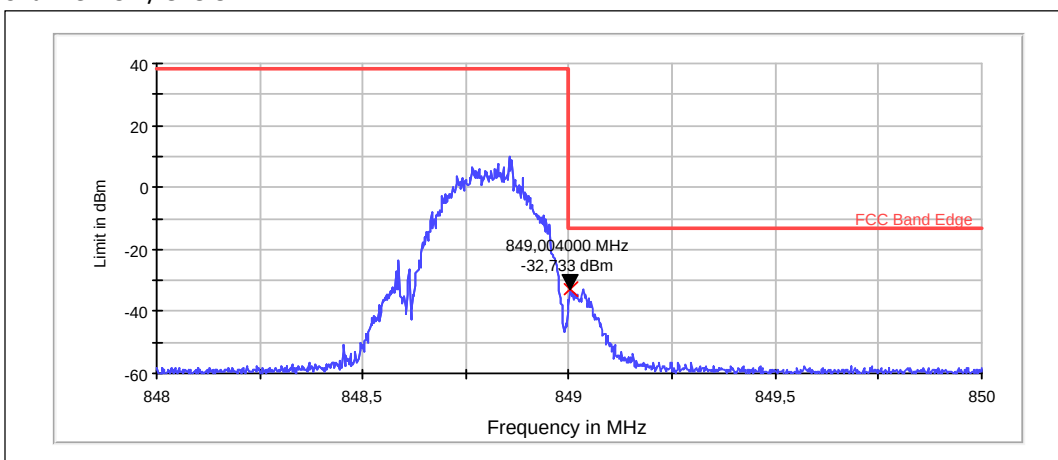
Channel 128 / 824.2 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	823.978	-29.62	PASSED

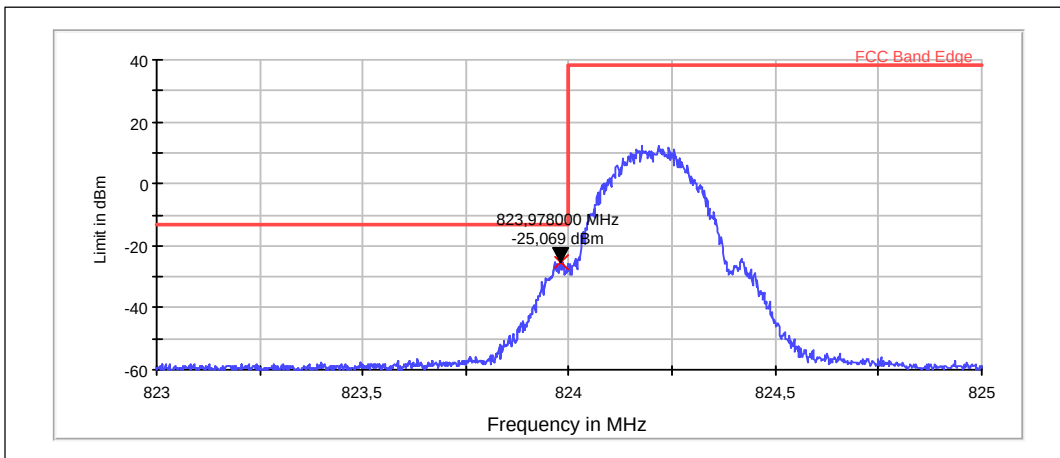
Channel 251 / 848.8 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	849.004	-32.73	PASSED

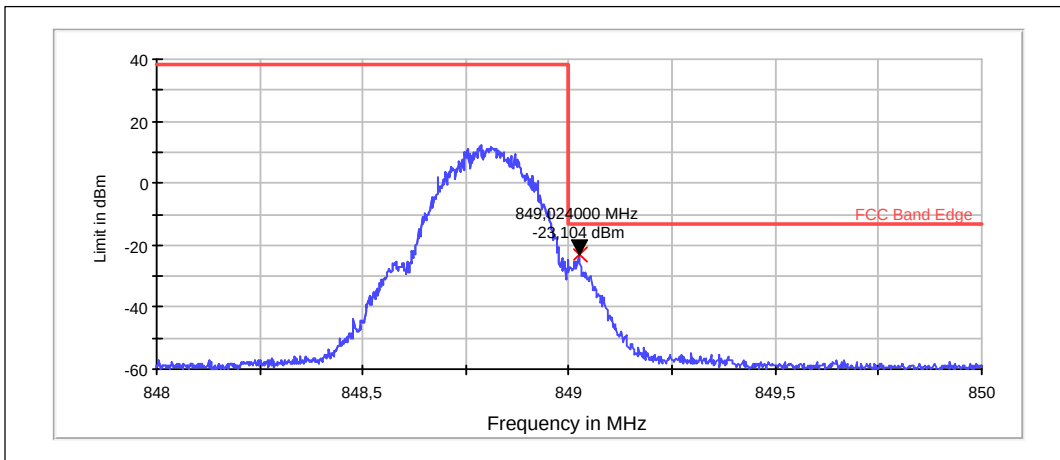
Channel 128 / 824.2 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GPRS	823.978	-25.069	PASSED

Channel 251 / 848.8 MHz

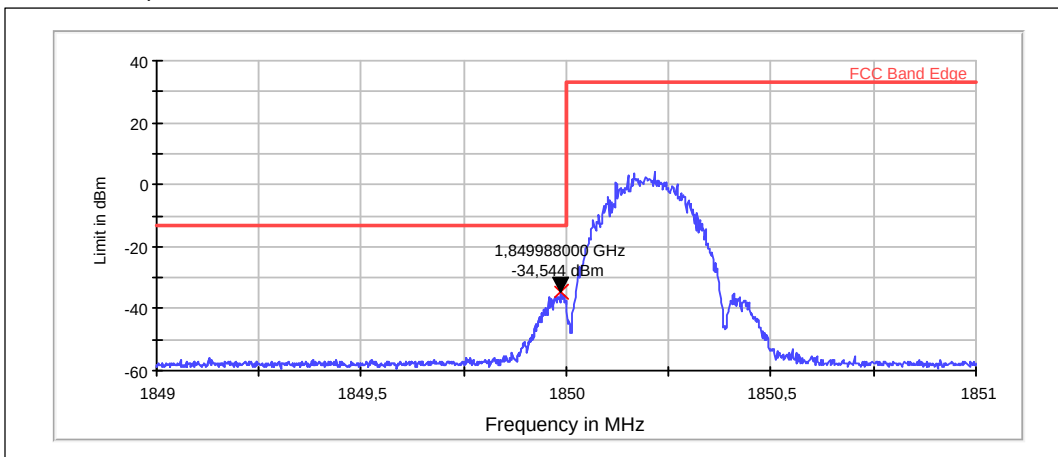


RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GPRS	849.024	-23.10	PASSED

3.4. GSM 1900 Test results

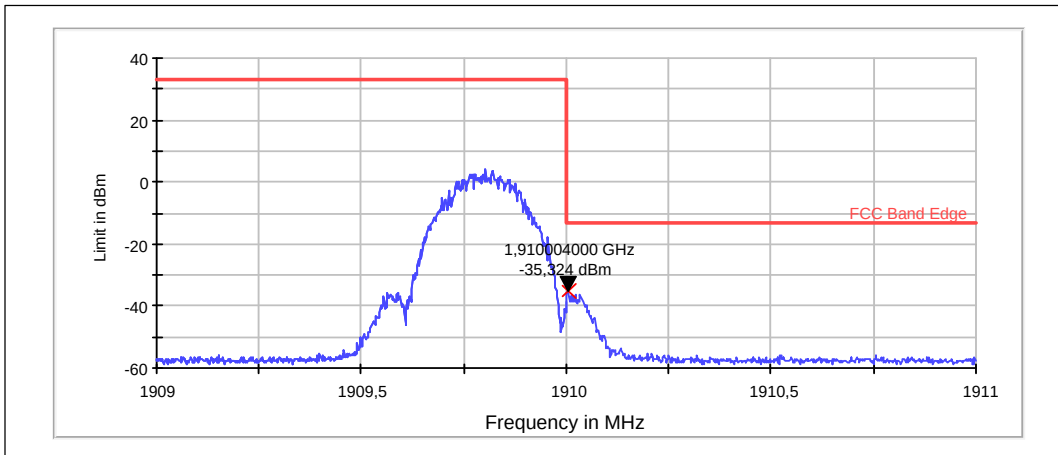
Channel 512 / 1850.2 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	1849.988	-34.54	PASSED

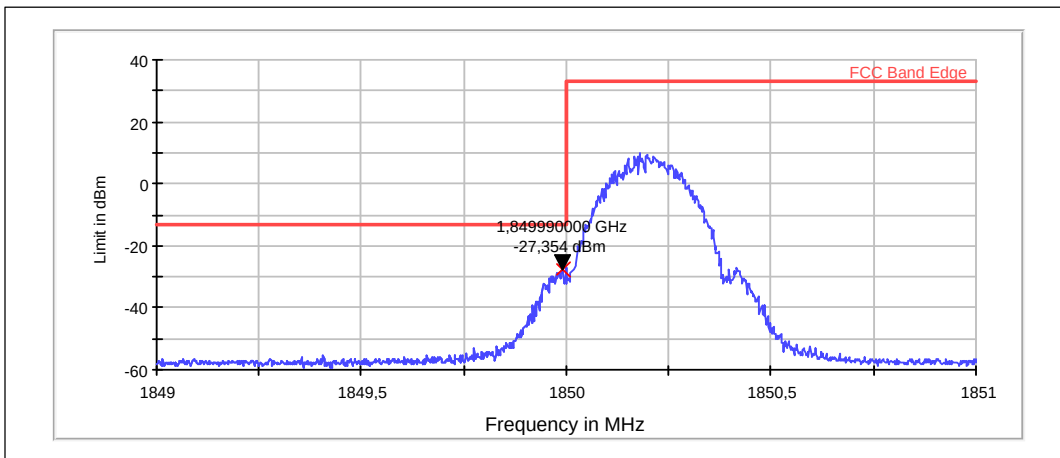
Channel 810 / 1909.8 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	1910.004	-35.32	PASSED

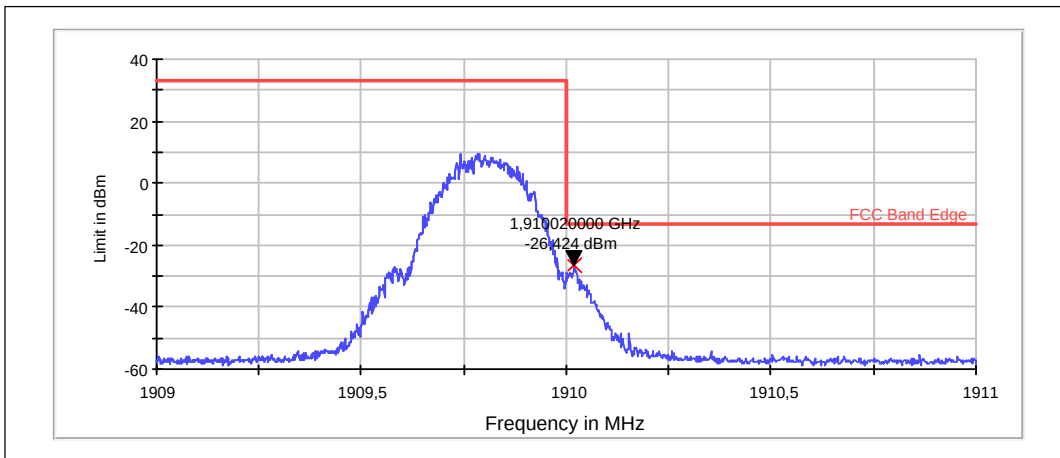
Channel 512 / 1850.2 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GPRS	1849.990	-27.35	PASSED

Channel 810 / 1909.8 MHz

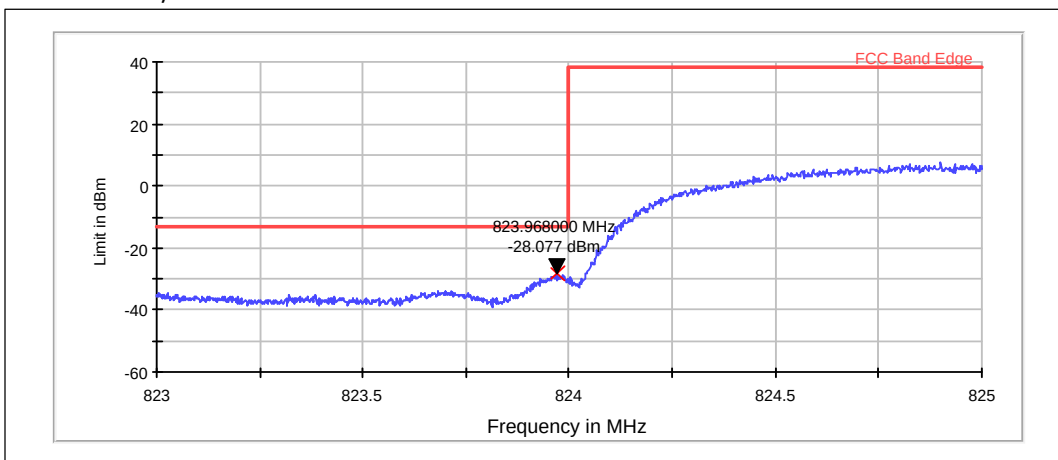


RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GPRS	1910.020	-26.42	PASSED

3.5. WCDMA 850 Test results

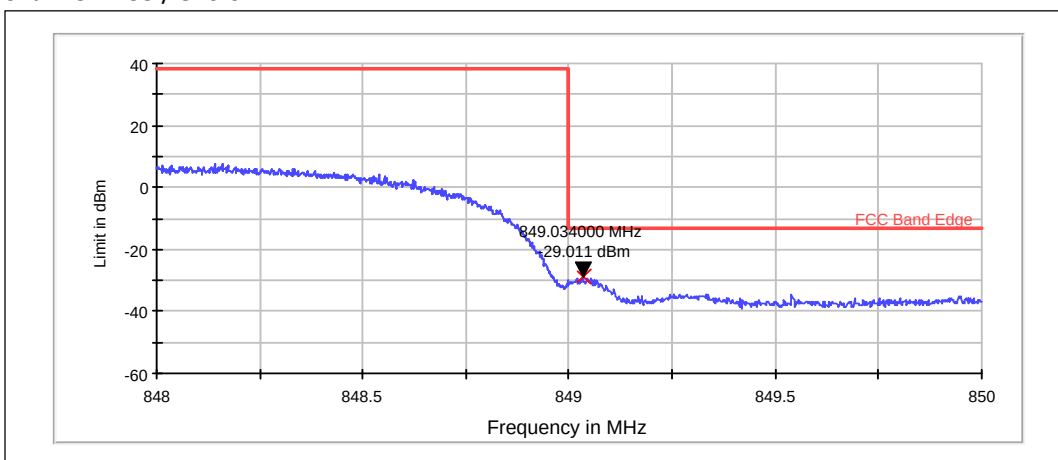
Channel 4132 / 826.4 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	823.968	-28.08	PASSED

Channel 4233 / 846.6 MHz

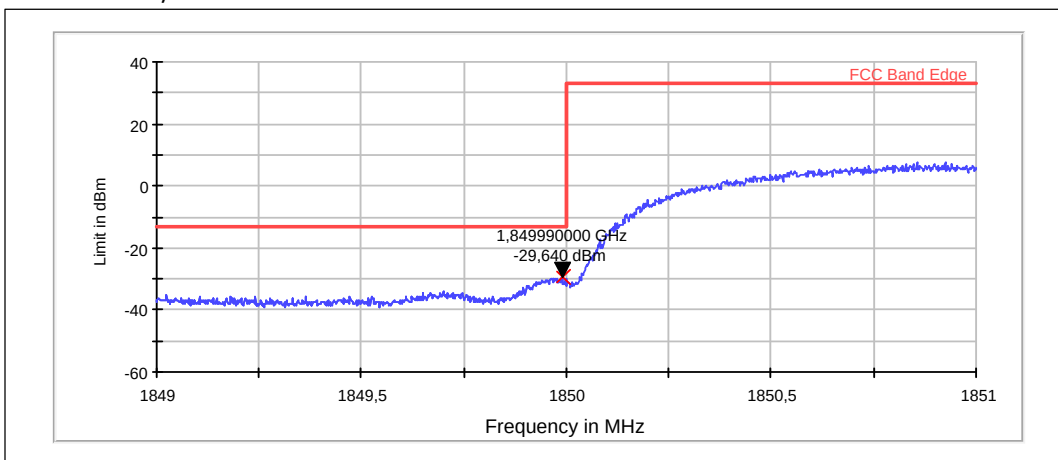


RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	849.034	-29.01	PASSED

3.6. WCDMA 1900 Test results

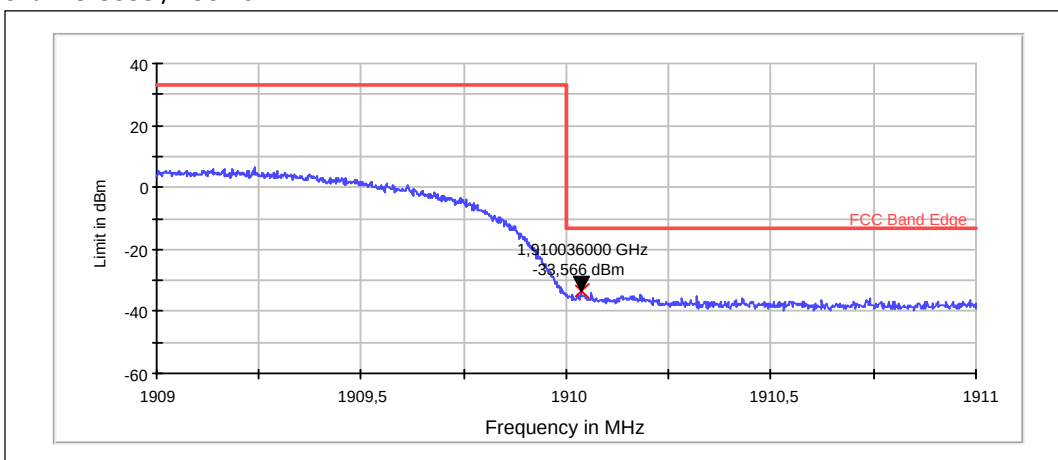
Channel 9262 / 1852.4 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1.849990000000E+3	-29.64	PASSED

Channel 9538 / 1907.6 MHz



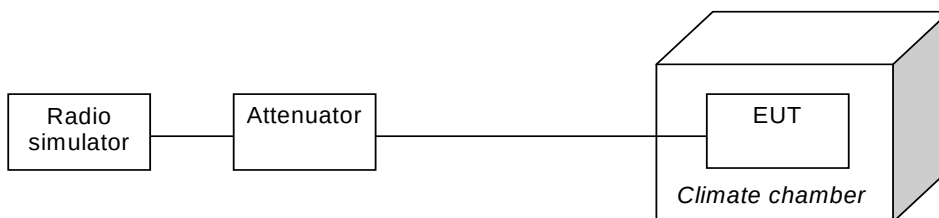
RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1.910036000000E+3	-33.57	PASSED

4. Frequency stability, temperature variation (FCC §2.1055(a), RSS-132 4.3, RSS-133 6.3, RSS-139 6.3)

EUT with DUT number	RX-114, DUT 43066
Accessories with DUT numbers	BC-3S, DUT 43090 ; AC-300, DUT 43068 ; WH-208, DUT 43035
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 60 / 102.3
Date of measurements	23-Aug-2013
Measured by	Jari Jantunen

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-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

4.3. WCDMA 850 Test results

FDD, Channel 4175 / 835.0 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	835.00	-2.67029	-0.0032	PASSED
40	835.00	1.12915	0.0014	PASSED
30	835.00	-0.27466	-0.0003	PASSED
20	835.00	-1.49536	-0.0018	PASSED
10	835.00	-1.17493	-0.0014	PASSED
0	835.00	-2.10571	-0.0025	PASSED
-10	835.00	0.56458	0.0007	PASSED
-20	835.00	-1.58691	-0.0019	PASSED
-30	835.00	-0.50354	-0.0006	PASSED

4.4. WCDMA 1900 Test results

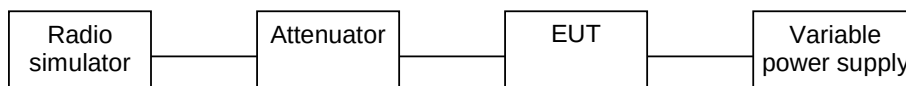
FDD, Channel 9400 / 1880.0 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	1880.00	-4.04358	-0.0021	PASSED
40	1880.00	-5.46265	-0.0029	PASSED
30	1880.00	-3.55530	-0.0019	PASSED
20	1880.00	-9.24683	-0.0049	PASSED
10	1880.00	-5.20325	-0.0028	PASSED
0	1880.00	-8.80432	-0.0047	PASSED
-10	1880.00	-4.76074	-0.0025	PASSED
-20	1880.00	-1.80054	-0.001	PASSED
-30	1880.00	-2.38037	-0.0013	PASSED

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

EUT with DUT number	RX-114 DUT 43066
Accessories with DUT numbers	-
Operation Voltage [V] / [Hz]	12.4 VDC, 14.8 VDC and 16.8 VDC
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 62 / 99.8
Date of measurements	11-Sep-2013
Measured by	Jari Jantunen

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 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

5.3. WCDMA 1900 Test results

FDD,

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Nominal / 14.8	1880.00	-3.78418	-0.002	PASSED
Battery cut-off point / 12.4	1880.00	-6.08826	-0.0032	PASSED
Max / 16.8	1880.00	-4.69971	-0.0025	PASSED

5.4. WCDMA 850 Test results

FDD,

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Nominal / 14.8	835.00	-0.36621	-0.0004	PASSED
Battery cut-off point / 12.4	835.00	-1.83106	-0.0022	PASSED
Max / 16.8	835.00	0.59509	0.0007	PASSED

6. Test Equipment

6.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM38112	Power supply	6632A	Agilent	22/24/27, 15C, 15E
TM38631	Signal Generator	83640L	Agilent	22/24/27, 15C, 15E, 15B
TM37678	Communication Tester	CMU200	R&S	15C, 15B
TM30600	Impulse limiter	ESH3-Z2	R&S	15C, 15B
TM26490	LISN 50 μ H	ESH3-Z5	R&S	15C, 15B
TM26491	LISN 50 μ H	ESH3-Z5	R&S	15C, 15B
TM37610	Spectrum Analyzer	FSU26	R&S	22/24/27, 15C, 15E
TM23007	Oscilloscope	TDS684B	Tektronix	15E
TM22806	Battery	BAT 20/E	Fiskars	15C, 15B
TM22805	UPS	PS 20/1.2	Fiskars	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
-	Temperature test chamber	VT 4002	Vötsch	22/24/27
2058	Receiver	ESPC	R&S	15C, 15B
2001	Bluetooth tester	CBT	R&S	15C, 15B
2002	Communication Tester	CMU200	R&S	22/24/27, 15C
2009	LISN 50 μ H	ENV216	R&S	15C, 15B
2010	LISN 50 μ H	ENV216	R&S	15C, 15B
2012	Power splitter	11667B	Agilent	22/24/27, 15C
2013	Attenuator	8493C	Agilent	22/24/27, 15C
2014	Attenuator	8493C	Agilent	22/24/27, 15C
2019	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
2020	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
2021	Communication Tester	CMW500	R&S	22/24/27
2023	Spectrum Analyzer	ESMI-RF	R&S	15B/15C
2024	Analyzer display unit	ESAI-D	R&S	15B/15C

6.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM38114	Power supply	6632A	Agilent	22/24/27, 15C, 15B
TM38631	Signal Generator	83640L	Agilent	22/24/27, 15C, 15E, 15B
-	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C
TM26497	Antenna	3115	Emco	22/24/27, 15C, 15B
TM37773	Communication Tester	CMU200	R&S	22/24/27, 15B
TM38845	Receiver	ESIB 26	R&S	22/24/27, 15C, 15E, 15B
-	Antenna	HL562	R&S	22/24/27, 15C, 15E, 15B
-	Turntable	2188	EMCO	22/24/27, 15C, 15E, 15B
-	Turntable controller	2090	EMCO	22/24/27, 15C, 15E, 15B
-	RF system panel	TS-RSP	R&S	22/24/27, 15C, 15E, 15B

Eq. No	Equipment	Type	Manufacturer	Used in
-	RF system panel	TS-RSP	R&S	22/24/27, 15C, 15E, 15B
-	Mini mast	2075-2	ETS Lindgren	22/24/27, 15C, 15B
TM38843	Mini mast	2075	Emco	22/24/27, 15C, 15B
TM38842	Antenna mast controller	2090	Emco	22/24/27, 15C, 15B
TM30643	LISN 50 µH	LISN-5-20-2	FCC	22/24/27, 15C, 15B
TM30644	LISN 50 µH	LISN-5-20-2	FCC	22/24/27, 15C, 15B
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C, 15B
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
TM37523	Preamplifier	AMF-4D-10M-3G-25-20P	Miteq	22/24/27, 15C, 15B
TM37498	Preamplifier	AMF-5D-020180-26-10P	Miteq	22/24/27, 15C, 15B
TM30599	Semi anechoic chambre	UNKNOWN	TDK	22/24/27, 15C, 15B
TM22638	Power supply	OL63743-901	-	22/24/27, 15C, 15E, 15B
TM38066	High pass filter	WHKX3.0/18G-12SS	Wainwright	22/24/27, 15C, 15E, 15B
2028	High pass filter	WHKX 1.0/15G-12SS	Wainwright	22/24/27, 15C, 15E, 15B
TM37545	Tunable notch filter	800.0/960.0-0.2/40-8SSK	Wainwright	22
TM26512	Tunable notch filter	WRCD1850/1910-0.2/40-10SSK	Wainwright	24
-	Band reject filter	WRCG1877/1883-1870/1890-40/6EE	Wainwright	24
-	Band reject filter	WRCG1729.4/1735.4-1722.4/1742.4-40/6SS	Wainwright	27
-	Band reject filter	WRCG832/838-825/848-40/5SS	Wainwright	22
TM23892	Controller	G-1000SDX	Yaesu	22/24/27
2001	Bluetooth tester	CBT	R&S	15C, 15B
6023	Antenna	VUBA 9117	Schwarzbeck	22/24/27
2021	Communication Tester	CMW500	R&S	22/24/27
2025	Antenna	HFH2-Z2	R&S	15C