

FCC Part 22/24 Compliance Test Report

Test Report no.:	Tre_FCC_0540_02.doc	Date of Report:	10.11.2005
Number of pages:	11	Customer's Contact person:	Steve Walmsley
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FCC listing no.:	94436		
IC recognition no.:	3608		
Tested devices/ accessories:	GSM phone RM-43 / Battery BL-5C, AC charger AC-4U, Headset HS-28, Adapter AD-36, Dummy battery SD-2		
FCC ID:	QEYRM-43	IC:	661L-RM43
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Parts 22 and 24, TIA-603-B-2002 and IC standards RSS-132 and RSS-133. 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:			
	Jari Jantunen, System Manager		

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

Date of receipt	3.10.2005
Testing completed	25.10.2005
The customer's contact person	Steve Walmsley
Test Plan referred to	\\EMC\\TESTPLAN\\
Notes	-
Document name	T:\\Projects\\RM-43\\results\\emc\\FCC\\Tre_FCC_0540_02.doc

1.1. EUT and Accessory Information

The EUT is a quadri band (GSM900/1800/1900 and WCDMA2100) mobile phone with GPRS, EGPRS, Bluetooth and WLAN. The EUT is tested with maximum rated TX power, modulated with pseudo random bit sequence (PRBS9).

Product	Type	SN	HW	MV	SW	DUT
GSM phone	RM-43	004400421661404	4005	-	05w36_p1	40377
GSM phone	RM-43	004400421662378	4005	-	05w36_p1	40378
Battery	BL-5C	M09241CF31143	-	-	-	40379
Battery	BL-5C	M09241CF31588	-	-	-	40380
AC-Charger	AC-4U	03997915213061101207	-	-	-	40381
Headset	HS-28	160	-	2.0	-	40383
Adapter	AD-36	-	9.4	1.5	-	40384
Dummy battery	SD-2	-	-	-	-	40152

1.2. Summary of Test Results

GSM 1900:

Section in CFR 47	Section in RSS-133	Name of the test	Result
§2.1046(a)	6.2	Conducted RF output power	NP
§24.232(b)	6.2	Radiated RF output power	NP
§2.1049(h)	5.6	99 % occupied bandwidth	PASSED
§24.238(a)	6.3	Band edge compliance	NP
§24.238(a), §2.1051	6.3	Spurious emissions at antenna terminals	NP
§24.238(a), §2.1053	6.3	Spurious radiated emissions	PASSED
§2.1055(a)	7	Frequency stability, temperature variation	PASSED
§2.1055(d)	7	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 Tampere Laboratory.

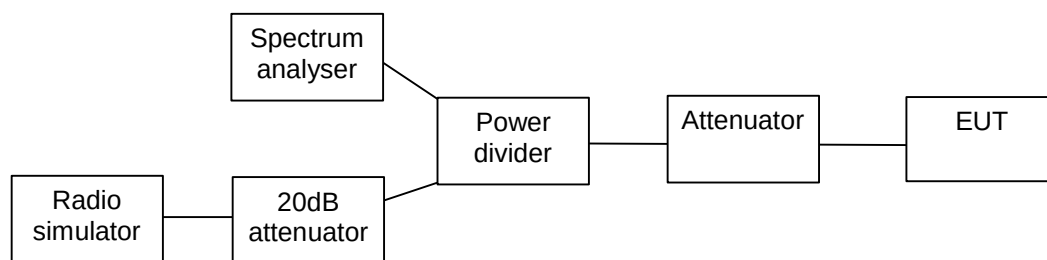
CONTENTS

1. Summary for FCC Part 22/24 Compliance Test Report	2
1.1. EUT and Accessory Information	2
1.2. Summary of Test Results	2
2. 99 % occupied bandwidth (FCC §2.1049(h), RSS-132 4.2, RSS-133 5.6)	4
2.1. Test setup	4
2.2. Test method and limit	4
2.3. GSM 1900 Test results	5
3. Spurious radiated emissions	
(FCC §22.917(a), §24.238(a), §2.1053, RSS-132 4.5, RSS-133 6.3)	6
3.1. Test setup	6
3.2. Test method and limit	6
3.3. GSM 1900 Test results	7
4. Frequency stability, temperature variation	
(FCC §2.1055(a), §2.1055(a), RSS-132 4.3, 6.3, RSS-133 7)	8
4.1. Test setup	8
4.2. Test method and limit	8
4.3. GSM 1900 Test results	9
5. Frequency stability, voltage variation (FCC §2.1055(d), RSS-132 4.3, 6.3, RSS-133 7) ...	10
5.1. Test setup	10
5.2. Test method and limit	10
5.3. GSM 1900 Test results	10
6. Test Equipment.....	11
6.1. Conducted measurements	11
6.2. Radiated measurements	11

2. 99 % occupied bandwidth (FCC §2.1049(h), RSS-132 4.2, RSS-133 5.6)

EUT with DUT number	RM-43 DUT 40378
Accessories with DUT numbers	BL-5C DUT 40380
Operation Voltage [V] / [Hz]	-
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 51 / 102.5
Date of measurements	6.10.2005
Measured by	Jari Jantunen

2.1. Test setup



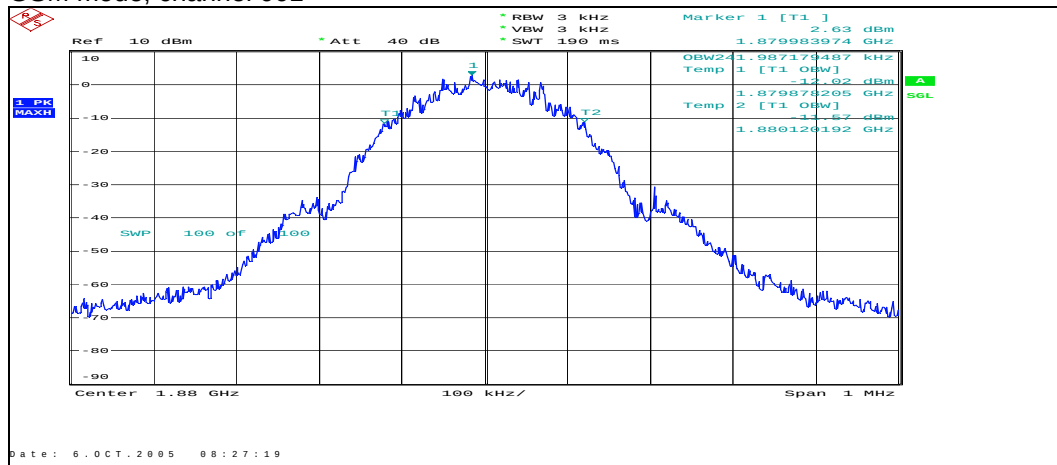
2.2. Test method and limit

The measurement is made according to FCC rules part 22 and 24 and IC standards RSS-132 and RSS-133.

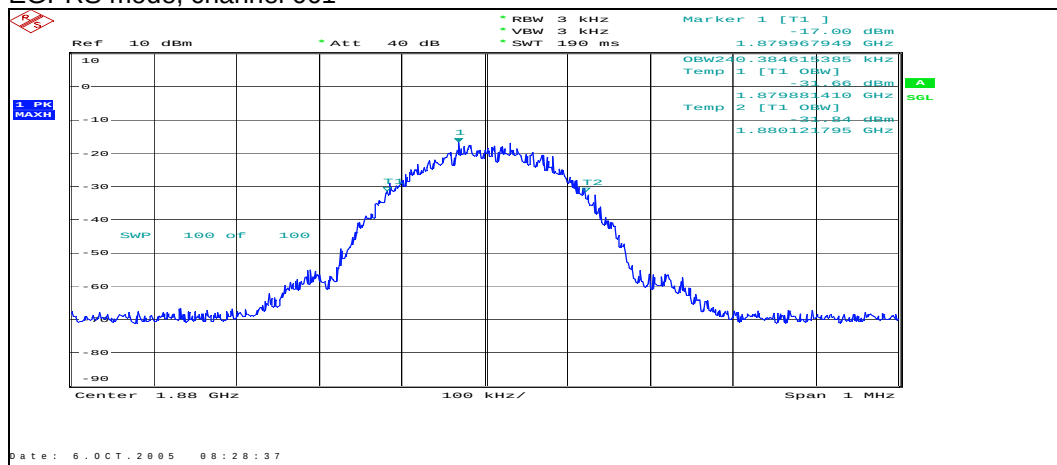
2.3. GSM 1900 Test results

Operation mode (TX on)	99% occupied bandwidth [kHz]
GSM	241.987
EGPRS	240.385

GSM mode, channel 661



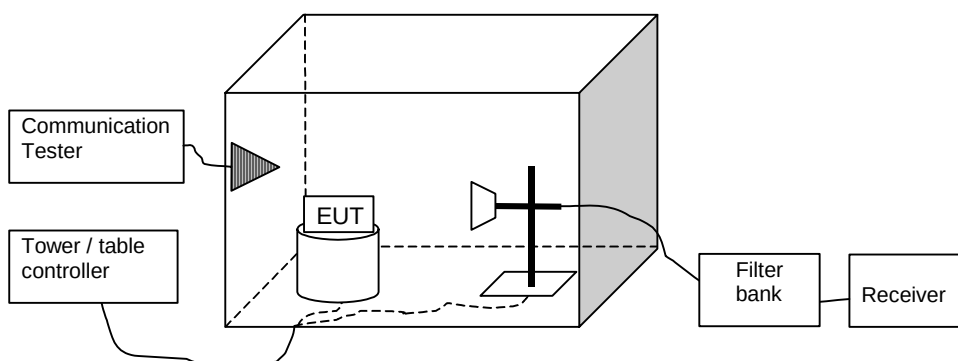
EGPRS mode, channel 661



3. Spurious radiated emissions (FCC §22.917(a), §24.238(a), §2.1053, RSS-132 4.5, RSS-133 6.3)

EUT with DUT number	RM-43 DUT 40377
Accessories with DUT numbers	BL-5C DUT 40379, AC-4U DUT 40381, HS-28 DUT 40383, AD-36 DUT 40384
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 42 / 103.1
Date of measurements	5.10.2005
Measured by	Jari Jantunen

3.1. Test setup



3.2. Test method and limit

The measurement is made according to TIA-603-B-2002 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. Substitution values at each frequencies are measured beforehand and saved to the test software.

The substitution corrections are obtained as described below:

$$A_{SUBST} = P_{SUBST_TX} - P_{SUBST_RX} - L_{SUBST_CABLES} + G_{SUBST_TX_ANT}$$

Where A_{SUBST} is the final substitution correction including receive antenna gain. P_{SUBST_TX} is signal generator level, P_{SUBST_RX} is receiver level, L_{SUBST_CABLES} is cable losses including both TX and RX cables and $G_{SUBST_TX_ANT}$ is substitution antenna gain.

The measurement results are obtained as described below:

$$P [dBm] = P_{MEAS} + A_{TOT}$$

Where P_{MEAS} is receiver reading in dBm and A_{TOT} is total correction factor including cable loss, preamplifier gain and substitution correction ($A_{TOT} = L_{CABLES} - G_{PREAMP} + A_{SUBST}$).

Limits for spurious radiated emissions measurements

Operation band	Frequency range [MHz]	Limit [dBm]
GSM 850 / WCDMA 850	30 - 8500	-13
GSM 1900 / WCDMA 1900	30 - 18000	-13

3.3. GSM 1900 Test results

GSM mode, channel 661

Frequency [MHz]	P [dBm]	P [μW]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
3760.023046	-43.10	0.04898	- 52.50	9.40	HORIZONTAL	PASSED
5639.782565	-40.90	0.08128	- 53.50	12.60	VERTICAL	PASSED
7520.542084	-46.50	0.02239	- 62.80	16.30	VERTICAL	PASSED

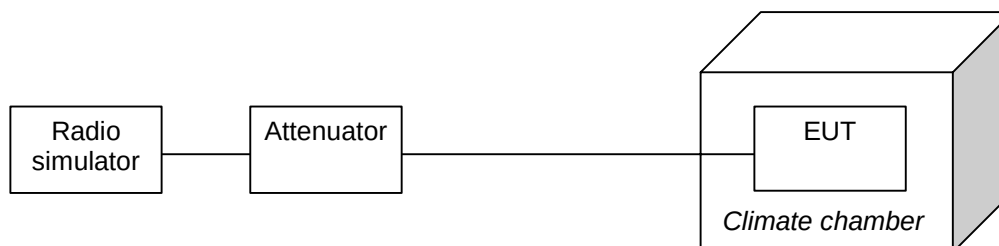
EGPRS mode, channel 661

Frequency [MHz]	P [dBm]	P [μW]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
3760.023046	-45.20	0.03020	- 54.60	9.40	HORIZONTAL	PASSED
5640.282565	-44.70	0.03388	- 57.20	12.50	VERTICAL	PASSED
7520.542084	-47.90	0.01622	- 64.20	16.30	VERTICAL	PASSED

4. Frequency stability, temperature variation (FCC §2.1055(a), §2.1055(a), RSS-132 4.3, 6.3, RSS-133 7)

EUT with DUT number	RM-43 DUT 40378
Accessories with DUT numbers	BL-5C:DUT 40380
Operation Voltage [V] / [Hz]	-
Result	Passed
Remarks	
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/54/100.9
Date of measurements	24-25.10.2005
Measured by	Jan-Erik Lilja

4.1. Test setup



4.2. Test method and limit

The measurement is made according to FCC rules part 22 and 24 and IC standards RSS-132 and RSS-133 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. GSM 1900 Test results

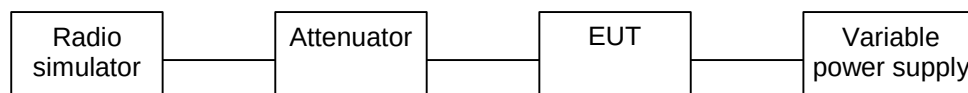
GSM mode, channel 661

Temperature [°C]	Deviation [Hz]	Deviation [ppm]
50	-35	-0.018617021
40	-34	-0.018085106
30	-33	-0.017553191
20	-33	-0.017553191
10	-25	-0.013297872
0	-40	-0.021276596
-10	-31	-0.016489362
-20	-33	-0.017553191
-30	-34	-0.018085106

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

EUT with DUT number	RM-43 DUT 40378
Accessories with DUT numbers	SD-2 DUT 40152
Operation Voltage [V] / [Hz]	3.4 V and 3.7 V DC
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 42 / 103.1
Date of measurements	5.10.2005
Measured by	Jari Jantunen

5.1. Test setup



5.2. Test method and limit

The measurement is made according to FCC rules part 22 and 24 and IC standards RSS-132 and RSS-133 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. GSM 1900 Test results

GSM mode, channel 661

Voltage level [V]	Deviation [Hz]	Deviation [ppm]
Nominal / 3.4	-35	-0.018617
Battery cut-off point / 3.7	-38	-0.020213

6. Test Equipment

6.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM37610	Spectrum analyzer	FSU	R&S	15C,22/24
TM37678	Radio communication tester	CMU-200	R&S	15C,22/24
	Attenuator 10 dB	6251.17.A	Huber+Suhner AG	15C,22/24
TM22901	Step attenuator 110dB	8496A	Agilent	15C,22/24
TM37499	Power splitter	11667A	Agilent	15C,22/24
	Temperature chamber	VT4002	Vötsch	15C,22/24
TM38112	DC power supply	6632A	Agilent	15C,22/24
TM38111	Multimeter	34401A	Agilent	15C,22/24
TM38845	EMI receiver	ESI 40	R&S	15B,15C
TM37773	Radio communication tester	CMU-200	R&S	15B,15C
TM38631	Signal generator	83640L	Agilent	15B,15C
TM38114	DC power supply	6632A	Agilent	15B,15C
TM22835	Multimeter	87	Fluke	15B,15C
TM30600	Pulse Limiter	ESH3-Z2	R&S	15B,15C
TM26490	LISN 50 µH	ESH3-Z5/	R&S	15B,15C
TM30636	LISN 50 µH	L2-16/	PMM	15B,15C

6.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM30599	3m semi-anechoic chamber		TDK	15B,15C, 22/24
TM38845	EMI receiver	ESI 40	R&S	15B,15C, 22/24
TM37498	Preamplifier	AMF-5D-020180-26-10P	MITEQ	15B,15C, 22/24
TM37523	Preamplifier	AMF-4D-10M-3G-25-20P	MITEQ	15B,15C, 22/24
TM37516	Biconilog antenna	HL562	R&S	15B,15C, 22/24
TM26496	Double ridged waveguide antenna	3115	EMCO	15B,15C, 22/24
TM39158	Horn antenna	3116	EMCO	15B,15C, 22/24
TM26492	Reference dipole set	UHAP/VHAP	Schwarzbeck	15B,15C, 22/24
TM37501	Dipole antenna	3125-870	EMCO	22/24
TM37502	Dipole antenna	3125-1880	EMCO	22/24
TM37773	Radio communication tester	CMU-200	R&S	15B,15C, 22/24
TM38631	Signal generator	83640L	Agilent	15B,15C, 22/24
TM38066	High pass filter	4HC3000/18000-3-KK	Trilithic	15B,15C, 22/24
	High pass filter	WHK2010-10SS	Trilithic	15B,15C, 22/24
	Low pass filter	WLK1750-10SS	Trilithic	15B,15C, 22/24
TM26511	Tunable notch filter	WRCA870	Wainwright	22/24
TM38215	Tunable notch filter	WRCD1850/1910-0.2/40	Wainwright	22/24
TM38214	Band reject filter	WRCT 2402/2480-2400/2483.5-30	Wainwright	15C
TM30642	Turntable controller	HD-100	Deisel	15B,15C, 22/24
TM26500	Turntable	DS412	Deisel	15B,15C, 22/24
TM38842	Antenna mast controller	2090	EMCO	15B,15C, 22/24
TM38843	Antenna mast	2075	EMCO	15B,15C, 22/24
TM38114	DC power supply	6632A	Agilent	15B,15C, 22/24
TM22835	Multimeter	87	Fluke	15B,15C, 22/24

FCC Part 22/24 Compliance Test Report

Test Report no.:	Salo_FCC_0542_03.doc	Date of Report:	28.11.2005
Number of pages:	13	Customer's Contact person:	Stephen Walmsley
Testing laboratory:	TCC Nokia Salo Laboratory P.O. Box 86 Joensuunkatu 7H / Kiila 1B FIN-24101 SALO, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 45220	Client:	Nokia Corporation 9200 Glenlyon Parkway Burnaby, British Columbia, Canada V5J 5J8 Tel: +1 604 456 5400 Fax: +1 604 456 5454
FCC listing no.:	533467		
IC recognition no.:	5385		
Tested devices/ accessories:	Phone RM-43 / Battery BL-5C, AC-Charger AC-4, Headset HS-28 and Remote Control AD-36		
FCC ID:	QEYRM-43	IC:	661L-RM43
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Parts 22 and 24, TIA-603-B-2002 and IC standards RSS-132 and RSS-133. 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:			

Tomi Lipponen, System Manager

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

Date of receipt	04.10.2005
Testing completed	19.10.2005
The customer's contact person	Stephen Walmsley
Test Plan referred to	T:\Projects\RM-43\TestPlan_RS\ RM-43_RS_TestPlan.xls
Notes	-
Document name	T:\Projects\RM-43\results\emc\FCC\Salo_FCC_0542_03.doc

1.1. EUT and Accessory Information

The EUT is a single band (GSM1900) mobile phone with GPRS, EGPRS, Bluetooth and WLAN.
The EUT is tested with maximum rated TX power, modulated with pseudo random bit sequence (PRBS9).

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-43	004400/42/166236/0	4005	-	05w36_p1	10800
Battery	BL-5C	0670398380257M09241CF30899	-	-	-	10796
AC-Charger	AC-4E	3997915196061102099;0675384	-	-	-	10797
Headset	HS-28	175	-	2.0	-	10798
Remote Control	AD-36	6	9.4	1.5	-	10799

1.2. Summary of Test Results

GSM 1900:

Section in CFR 47	Section in RSS-133	Name of the test	Result
§2.1046(a)	6.2	Conducted RF output power	NP
§24.232(b)	6.2	Radiated RF output power	PASSED
§2.1049(h)	5.6	99 % occupied bandwidth	NP
§24.238(a)	6.3	Band edge compliance	PASSED
§24.238(a), §2.1051	6.3	Spurious emissions at antenna terminals	NP
§24.238(a), §2.1053	6.3	Spurious radiated emissions	NP
§2.1055(a)	7	Frequency stability, temperature variation	NP
§2.1055(d)	7	Frequency stability, voltage variation	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 Salo Laboratory.

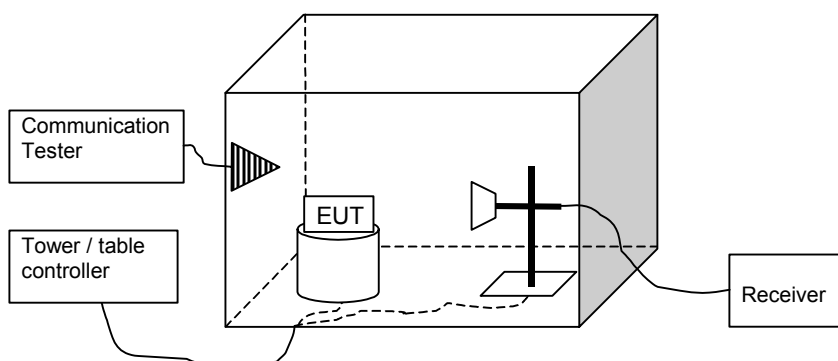
CONTENTS

1. Summary for FCC Part 22/24 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), RSS-132 6.4, RSS-133 6.2) 4	
2.1. Test setup	4
2.2. Test method and limit	4
2.3. GSM 1900 Test results	5
3. Band edge compliance (FCC §22.917(a), 24.238(a), RSS-132 4.5, RSS-133 6.3) ...7	
3.1. Test setup	7
3.2. Test method and limit	7
3.3. GSM 1900 Test results	8
4. Test Equipment.....	12
4.1. Conducted measurements	12
4.2. Radiated measurements	12

2. Radiated RF output power (FCC §22.913(a), §24.232(b), RSS-132 6.4, RSS-133 6.2)

EUT with DUT number	RM-43, DUT 10800
Accessories with DUT numbers	BL-5C, DUT 10796; AC-4, DUT 10797; HS-28, DUT 10798; AD-36, DUT 10799
Operation Voltage [V] / [Hz]	110 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 50 / 101.3
Date of measurements	19.10.2005
Measured by	Tomi Lipponen

2.1. Test setup



2.2. Test method and limit

The measurement is made according to TIA-603-B-2002 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. Substitution values at each frequencies are measured beforehand and saved to the test software.

The substitution corrections are obtained as described below:

$$A_{SUBST} = P_{SUBST_TX} - P_{SUBST_RX} - L_{SUBST_CABLES} + G_{SUBST_TX_ANT}$$

Where A_{SUBST} is the final substitution correction including receive antenna gain. P_{SUBST_TX} is signal generator level, P_{SUBST_RX} is receiver level, L_{SUBST_CABLES} is cable losses including both TX and RX cables and $G_{SUBST_TX_ANT}$ is substitution antenna gain.

The measurement results are obtained as described below:

$$P [dBm] = P_{MEAS} + A_{TOT}$$

Where P_{MEAS} is receiver reading in dBm and A_{TOT} is total correction factor including cable loss and substitution correction ($A_{TOT} = L_{CABLES} + A_{SUBST}$).

Limits for radiated RF output power measurements

Frequency range [MHz]	Limit [W]	Limit [dBm]
824 - 849	7	38.5
1850 - 1910	2	33

2.3. GSM 1900 Test results

GSM mode, slide closed

Channel	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
512	29.90	0.977	- 13.80	43.70	HORIZONTAL	PASSED
661	30.70	1.175	- 13.60	44.30	HORIZONTAL	PASSED
810	29.40	0.871	- 13.90	43.30	HORIZONTAL	PASSED

GPRS mode, 2 TX Slots, slide closed

Channel	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
512	26.80	0.479	- 16.90	43.70	HORIZONTAL	PASSED
661	28.10	0.646	- 16.20	44.30	HORIZONTAL	PASSED
810	26.50	0.447	- 16.80	43.30	HORIZONTAL	PASSED

EGPRS mode, 1 TX Slot, slide closed

Channel	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
512	25.80	0.380	- 17.90	43.70	HORIZONTAL	PASSED
661	27.10	0.513	- 17.20	44.30	HORIZONTAL	PASSED
810	25.60	0.363	- 17.70	43.30	HORIZONTAL	PASSED

GSM mode, slide open

Channel	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512	28.90	0.776	- 14.80	43.70	HORIZONTAL	PASSED
661	29.10	0.813	- 15.20	44.30	VERTICAL	PASSED
810	28.10	0.646	- 15.20	43.30	HORIZONTAL	PASSED

GPRS mode, 2 TX Slots, slide open

Channel	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512	26.50	0.447	- 17.20	43.70	HORIZONTAL	PASSED
661	26.40	0.437	- 17.90	44.30	HORIZONTAL	PASSED
810	26.00	0.398	- 19.30	45.30	VERTICAL	PASSED

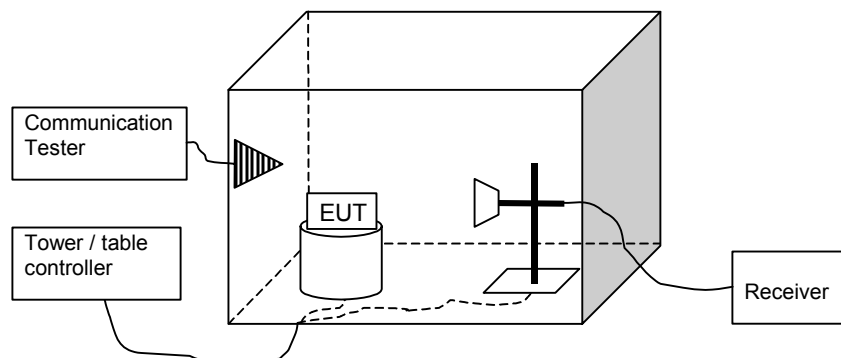
EGPRS mode, 1 TX Slot, slide open

Channel	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512	25.40	0.347	- 18.30	43.70	HORIZONTAL	PASSED
661	25.30	0.339	- 19.00	44.30	VERTICAL	PASSED
810	24.40	0.275	- 18.90	43.30	HORIZONTAL	PASSED

3. Band edge compliance (FCC §22.917(a), 24.238(a), RSS-132 4.5, RSS-133 6.3)

EUT with DUT number	RM-43, DUT 10800
Accessories with DUT numbers	BL-5C, DUT 10796; AC-4, DUT 10797; HS-28, DUT 10798; AD-36, DUT 10799
Operation Voltage [V] / [Hz]	110 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 50 / 101.3
Date of measurements	19.10.2005
Measured by	Tomi Lipponen

3.1. Test setup



3.2. Test method and limit

The measurement is made according to FCC rules part 22 and 24 and IC standards RSS-132 and RSS-133.

Limits for band edge compliance measurements

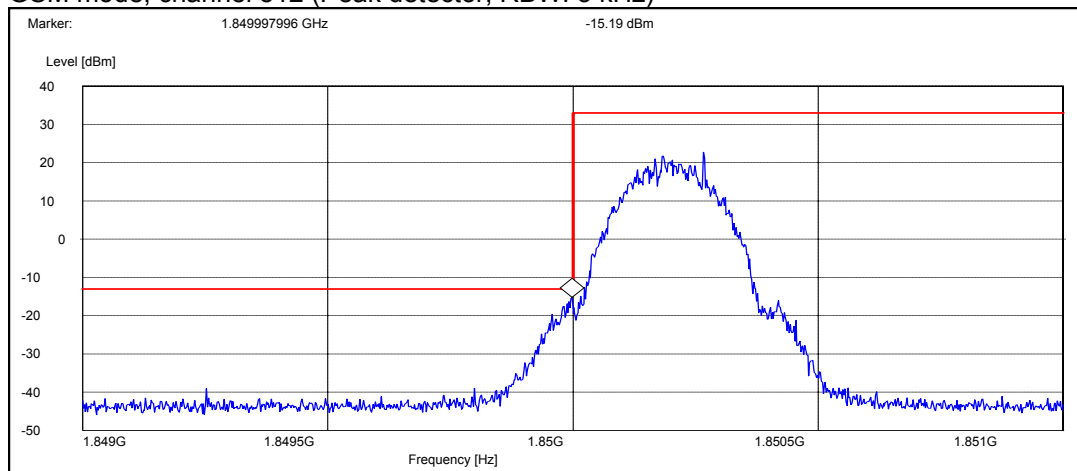
Operation band	Frequency range [MHz]	Limit [dBm]
GSM 850 / WCDMA 850	Below 824 and above 849	-13
GSM 1900 / WCDMA 1900	Below 1850 and above 1910	-13

3.3. GSM 1900 Test results

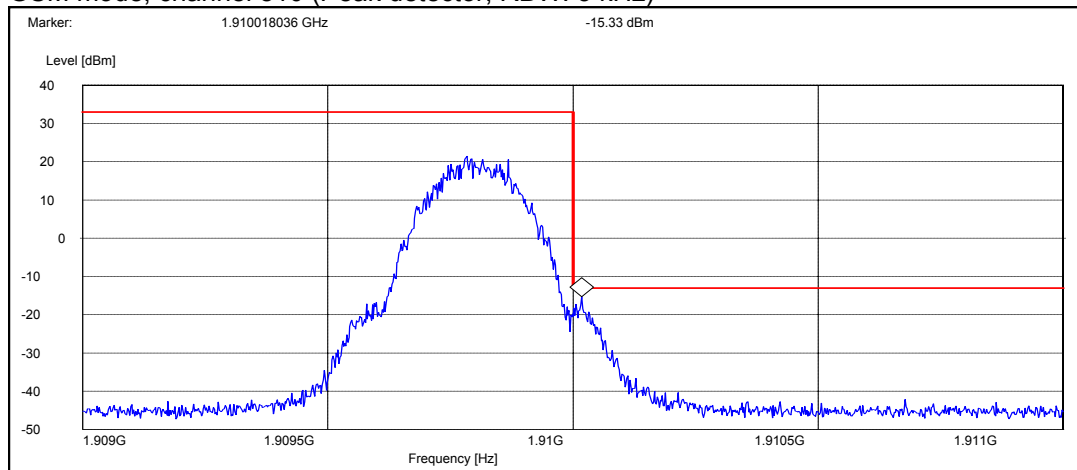
SLIDE CLOSED

Operation mode (TX on)	Channel	Level [dBm]
GSM	512	-15.19
GSM	810	-15.33
EGPRS	512	-25.76
EGPRS	810	-27.05

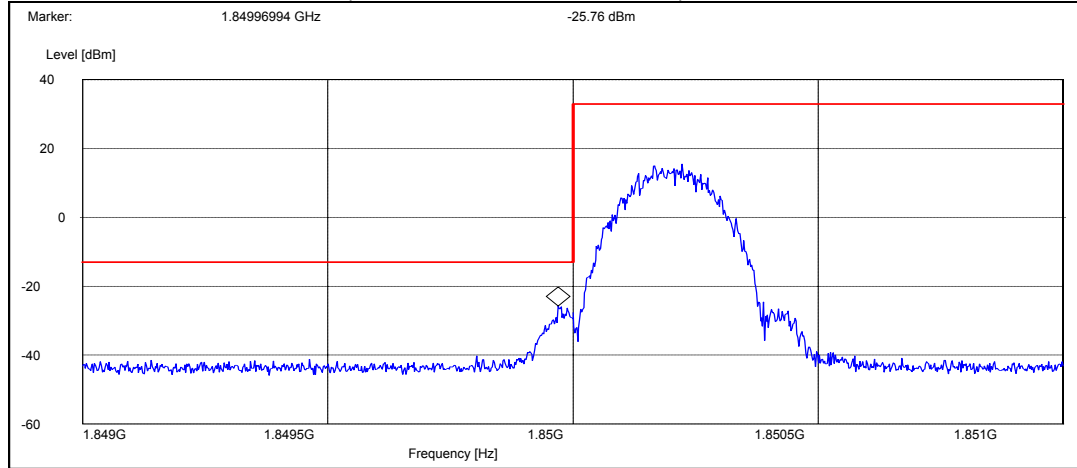
GSM mode, channel 512 (Peak detector, RBW: 3 kHz)



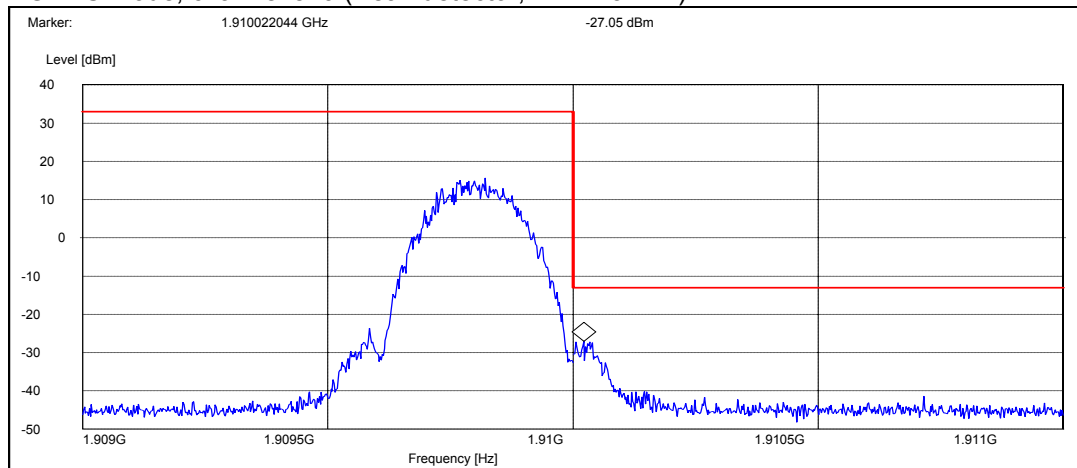
GSM mode, channel 810 (Peak detector, RBW: 3 kHz)



EGPRS mode, channel 512 (Peak detector, RBW: 3 kHz)



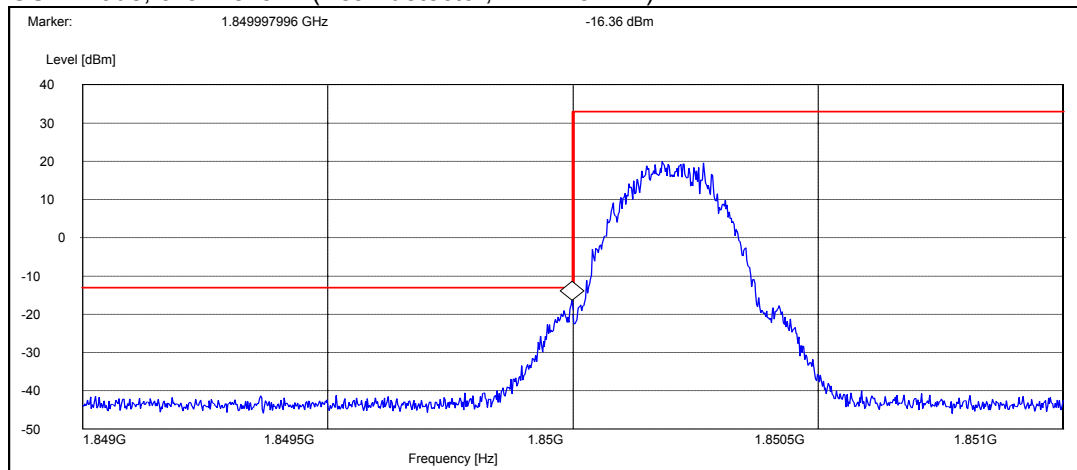
EGPRS mode, channel 819 (Peak detector, RBW: 3 kHz)



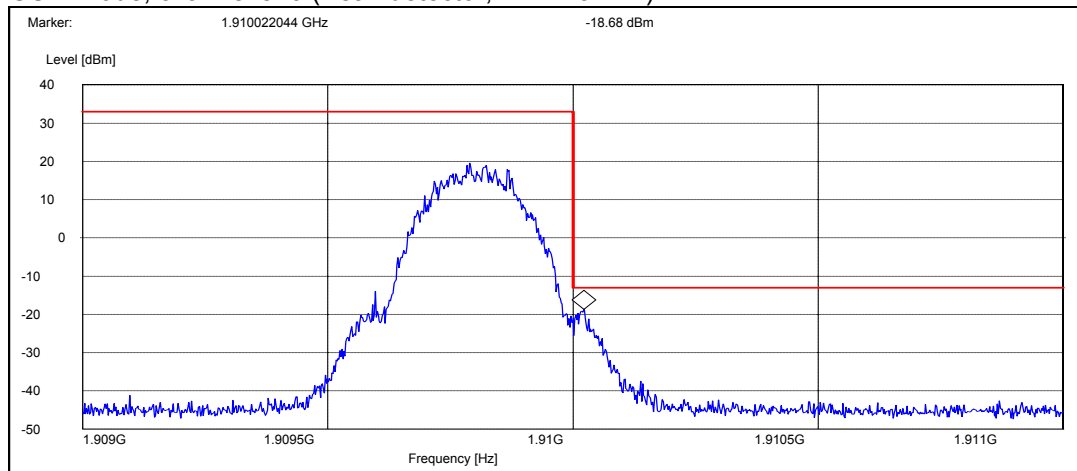
SLIDE OPEN

Operation mode (TX on)	Channel	Level [dBm]
GSM	512	-16.36
GSM	810	-18.68
EGPRS	512	-24.08
EGPRS	810	-28.64

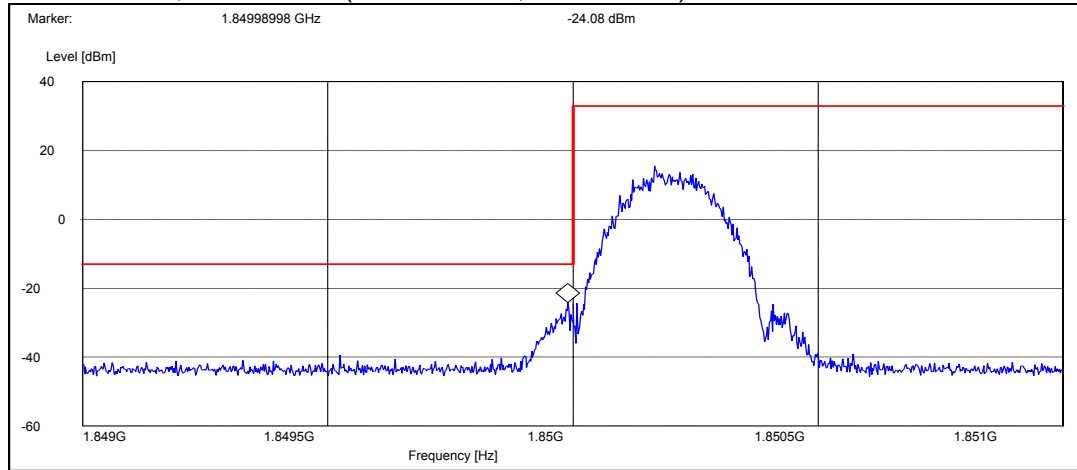
GSM mode, channel 512 (Peak detector, RBW: 3 kHz)



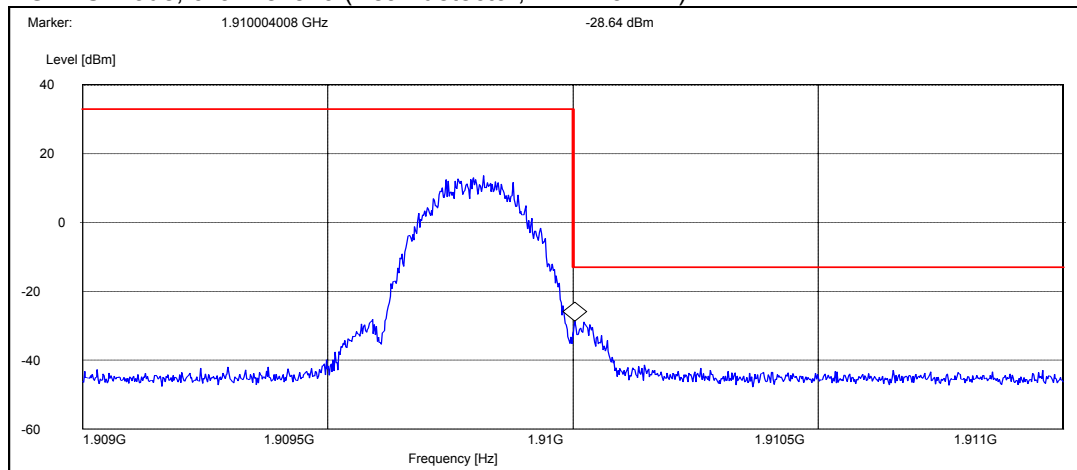
GSM mode, channel 810 (Peak detector, RBW: 3 kHz)



EGPRS mode, channel 512 (Peak detector, RBW: 3 kHz)



EGPRS mode, channel 819 (Peak detector, RBW: 3 kHz)



4. Test Equipment

4.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1742	EMI Test Receiver	ESMI	R&S	15C, 15B
1759	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
1872	Thermo- Hygrograph	00.02520.150700	Lambrecht	15C, 15B
1916	Radio Communication tester	CMTA84	R&S	15C, 15B
2039	Power Supply	PL330QMD	THURLBY	15C, 15B
2060	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
2068	CDN-Antenna line	S1	NMP	15C, 15B
2097	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
2111	Multimeter	TX3	Tektronix	15C, 15B
2156	Digital Radio Communication Tester	CMU200	R&S	15C, 15B
2206	Signal generator	SMX	R&S	15C, 15B
2335	GPIB Switch 2 to 1	-	National Instruments	15C, 15B
2347	Digital Radio Communication Tester	CMU200	R&S	22/24, 15C, 15B
2352	Spectrum Analyzer	FSP	R&S	22/24, 15C
2359	Temperature Test system	VT4002	Vötsch Industrietechnik	22/24
2360	Serial Bus Converter	Serial 488A	IO Tech	22/24
2362	Power Supply	NGPX 70/5	R&S	22/24
-	RF Emission Software	ES-K1 v.1.60	R&S	15C, 15B

4.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1748	Log. per. Antenna	HL025	R&S	22/24, 15C
1749	Log. per. Antenna	HL025	R&S	22/24, 15C
1875	Thermo- Hygrograph	00.02520.150700	Lambrecht	22/24, 15C, 15B
1917	Radio Communication tester	CMTA84	R&S	22/24, 15C, 15B
1933	Precision half-wave dipole antennas	HZ-13	R&S	22/24, 15C
1938	Precision half-wave dipole antennas	HZ-12	R&S	22/24, 15C
2004	Relay Switch Unit	RSU	R&S	22/24, 15C, 15B
2006	Radiation Reference Source	VSQ	MEB	22/24, 15C, 15B
2009	Signal generator	SMP 22	R&S	22/24, 15C, 15B
2019	Multimeter	34401A	HP	22/24, 15C, 15B
2027	Coupling and Decoupling Network	M2 (modified) DC1	MEB	22/24, 15C, 15B
2028	Coupling and Decoupling Network	M3 (modified) DC2	MEB	22/24, 15C, 15B
2029	Power Supply	PL330	THURLBY	22/24, 15C
2043	Band Reject Filter	WRCA824/849-0,2-6SS	Wainwright	22/24, 15C, 15B
2047	Band Reject Filter	WRCC1800/2000-0.2-10SS	Wainwright	22/24, 15C, 15B
2051	High Pass Filter	4HC1700-1-KK	R&S	22/24, 15C
2057	Log. per. Antenna	HL025	R&S	22/24, 15C

Eq. No	Equipment	Type	Manufacturer	Used in
2109	Power Supply	PL330QMD	THURLBY	22/24, 15C, 15B
2110	Multimeter	34401A	HP	22/24, 15C, 15B
2112	Multimeter	TX3	Tektronix	22/24, 15C, 15B
2116	Controller	EMCO MODEL 2090	ETS	22/24, 15C, 15B
2133	Power Meter	NRVS	R&S	22/24, 15C
2134	Power Sensor	NRV-Z32	R&S	22/24, 15C
2135	Coupling and Decoupling Network	CDN 801-M3	LÜTHI	22/24, 15C, 15B
2138	Ultra Broadband Antenna	HL562	R&S	22/24, 15C, 15B
2140	Biconical Antenna	EMCO93110B	EMCO	22/24, 15C
2142	Log.-per.-dipol Antenna	3146	EMCO	22/24, 15C
2144	Attenuator	6803.17B	Huber-Suhner	22/24, 15C, 15B
2150	High Pass Filter	F-15041	RLC ELECTRONICS	22/24, 15C
2176	Coupling and Decoupling Network	CDN 801-M3	LÜTHI	22/24, 15C, 15B
2180	Digital Radio Communication Tester	CMU200	R&S	22/24, 15C, 15B
2188	Preamplifier	AFS4-00100300-20-23P-6	MITEQ	22/24, 15C, 15B
2330	EMI Test receiver	ESIB26	R&S	22/24, 15C, 15B
2334	GPIO Switch 2 to 1	-	National Instruments	22/24, 15C, 15B
2348	Yaesu controller	G-1000DXC	YAESU	22/24, 15C, 15B
2349	Computer controller (Yaesu)	GS-232B	YAESU	22/24, 15C, 15B
2350	Preamplifier	AMF-6D-020180-29-20P	MITEQ	22/24, 15C
2361	Anechoic chamber	3 meter semi/full anechoic chamber	Euroshield	22/24, 15C, 15B
2398	Horn antenna	HF906	R&S	22/24, 15C
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24, 15C, 15B