

FCC Part 15C Compliance Test Report

Test Report no.:	Salo_FCC_0802_05.doc	Date of Report:	05-Feb-2008
Number of pages:	36	Customer's Contact person:	Sonja Perälä
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FCC listing no.:	533467		
IC recognition no.:	661V-1		
Tested devices/ accessories:	Phone RM-400 / Battery BL-4L, Headset HS-47 and AC- Charger AC-4		
FCC ID:	LJPRM-400	IC:	661E-RM400
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), Public Notice DA 00-705, DTS procedures KDB 558074, IC standards RSS-GEN (Issue 2, June 2007) and RSS-210 (Issue 7, June 2007). 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:			

Anni Manninen, System Manager

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	02-Jan-2008
Testing completed	26-Jan-2008
The customer's contact person	Sonja Perälä
Test Plan referred to	T:\Projects\RM-400\TestPlan_RS\RS_Testplan_RM-400.xls
Notes	-
Document name	T:\Projects\RM-400\EMC\Results\FCC\Salo_FCC_0802_05.doc

1.1. EUT and Accessory Information

The EUT is a 6-band (GSM850/900/1800/1900 and WCDMA Band I/V(850)) mobile phone with GPRS, EGPRS and Bluetooth. Bluetooth is tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-400	004401/01/626436/4	3000	-	V 02.12	12464
Battery	BP-4L	3932137273120203920;0670519	-	-	-	12457
Headset	HS-47	0694579651502107838	-	-	-	12460
AC-charger	AC-4E	3943495307070111383;0675384	-	-	-	12458
Phone	RM-400	004401/01/626449/7	3000	-	V 02.12	12437
Battery	BP-4L	3932137273120203919;0670519	-	-	-	12480
Headset	HS-47	069457965150104441	-	-	-	12439
AC-charger	AC-4E	3997915482171203929;0675384	-	-	-	12440

1.2. Summary of Test Results

Bluetooth:

Section in CFR 47	Section in RSS-GEN or RSS-210	Name of the test	Result
15.247(b)(1)	A8.4 (2)	Conducted peak output power	PASSED
15.247(d)	A8.5	Band edge compliance of RF emissions	NP
15.247(d)	A8.5	Spurious RF conducted emissions	PASSED
15.247(d), 15.209	A8.5	Spurious radiated emissions	PASSED
15.207	7.2.2	AC powerline conducted emissions	PASSED
15.247(a)(1)	A8.1 (1)	20 dB bandwidth	PASSED
15.247(a)(1)	A8.1 (2)	Carrier frequency separation	PASSED
15.247(a)(1)(iii)	A8.1 (4)	Number of hopping frequencies	PASSED
15.247(a)(1)(iii)	A8.1 (4)	Time of occupancy	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 Salo Laboratory.

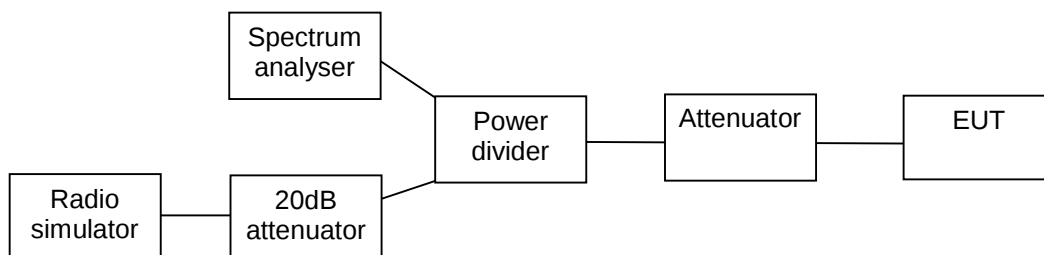
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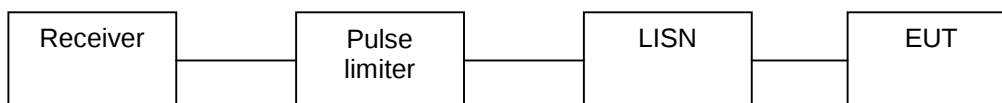
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2. Test setups

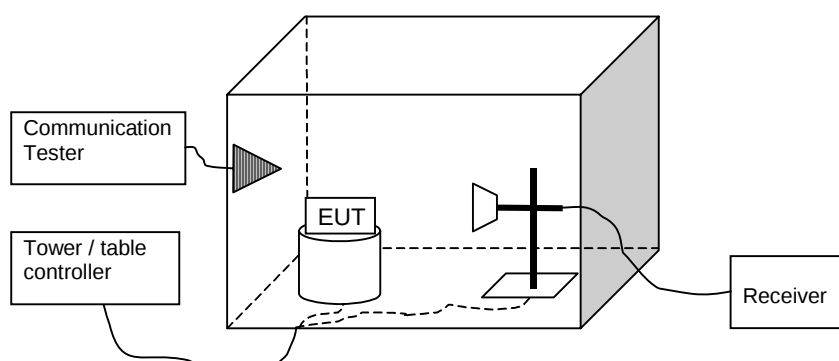
2.1. Conducted RF test setup



2.2. AC powerline conducted emissions test setup



2.3. Spurious radiated emissions test setup



3. Conducted peak output power (FCC §15.247(b)(1), RSS-210 A8.4 (2))

EUT with DUT number	RM-400, DUT 12464
Accessories with DUT numbers	BP-4L, DUT 12457; HS-47, DUT 12460; AC-4E, DUT 12458
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 40 / 100
Date of measurements	07-Jan-2008
Measured by	Anni Manninen

3.1. Test method and limit

The measurement is made according to Public notice DA 00-705 and IC standard RSS-210.

Limits for conducted peak output power measurements

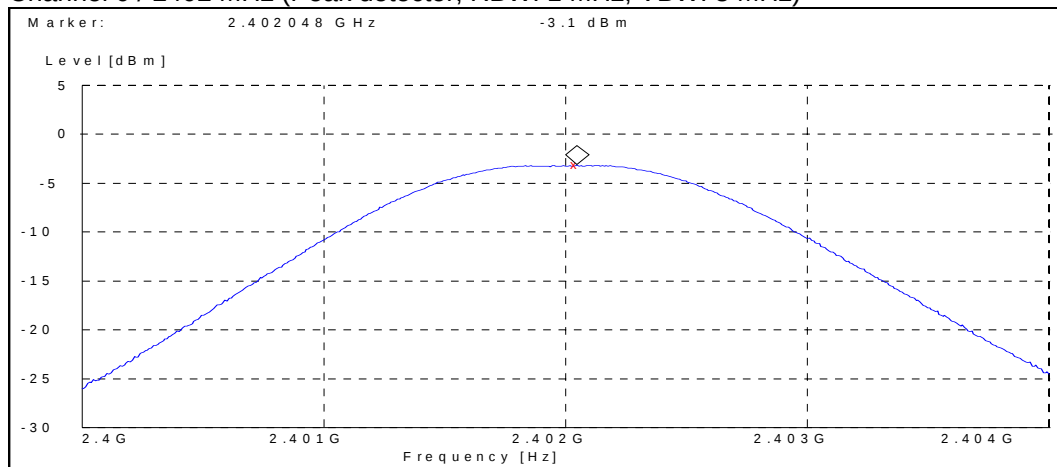
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

3.2. Bluetooth Test results

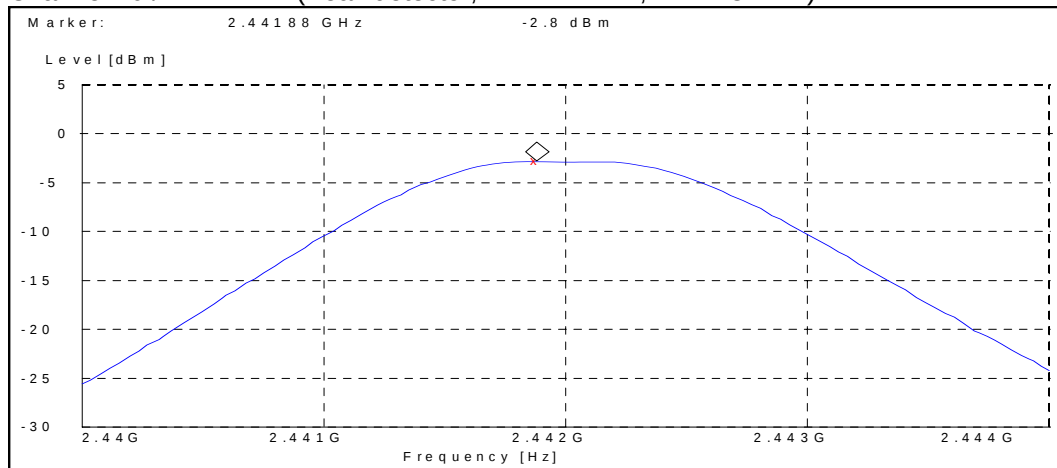
3.2.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	-3.10	0.490	PASSED
40 / 2442	-2.80	0.525	PASSED
78 / 2480	-2.90	0.513	PASSED

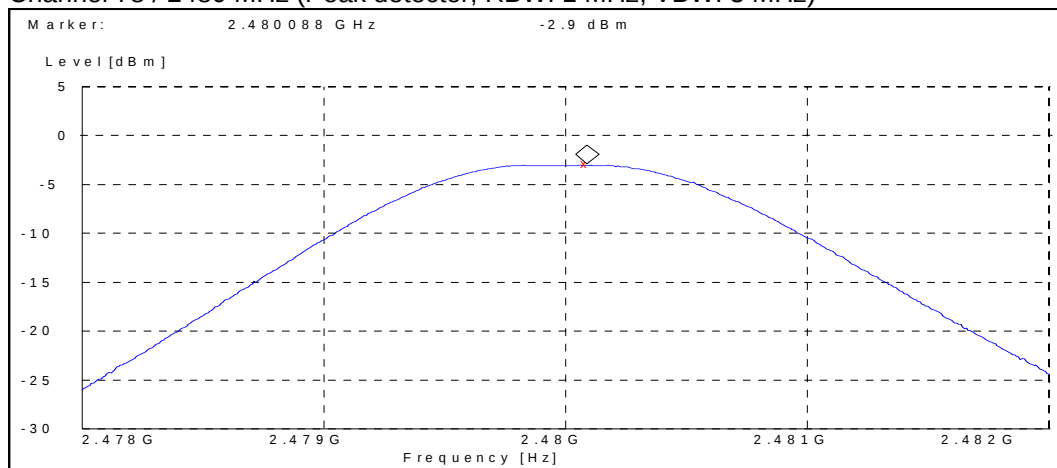
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



Channel 40 / 2442 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



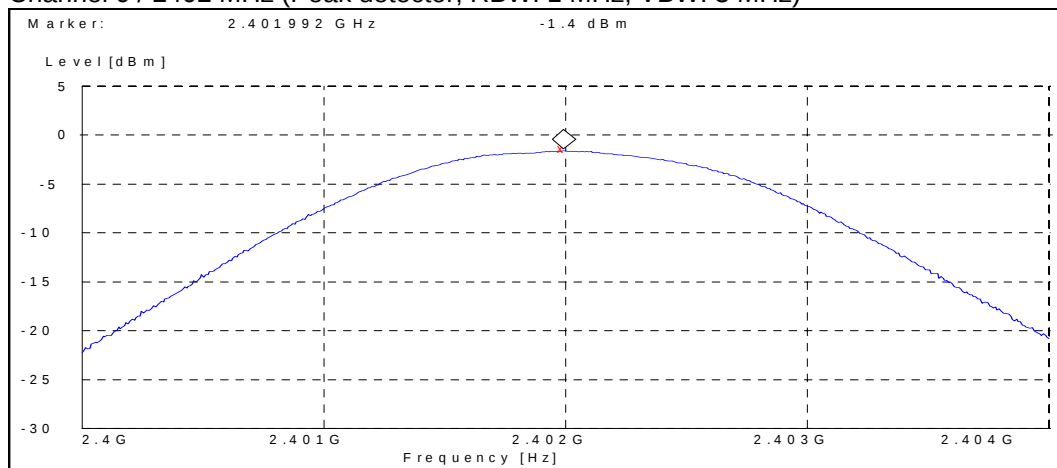
Channel 78 / 2480 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



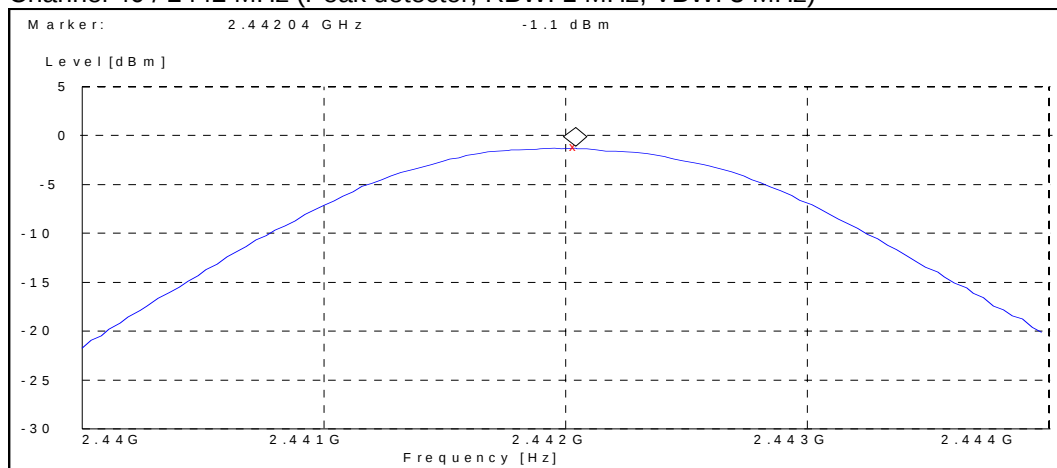
3.2.2 8DPSK modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	-1.40	0.724	PASSED
40 / 2442	-1.10	0.776	PASSED
78 / 2480	-1.10	0.776	PASSED

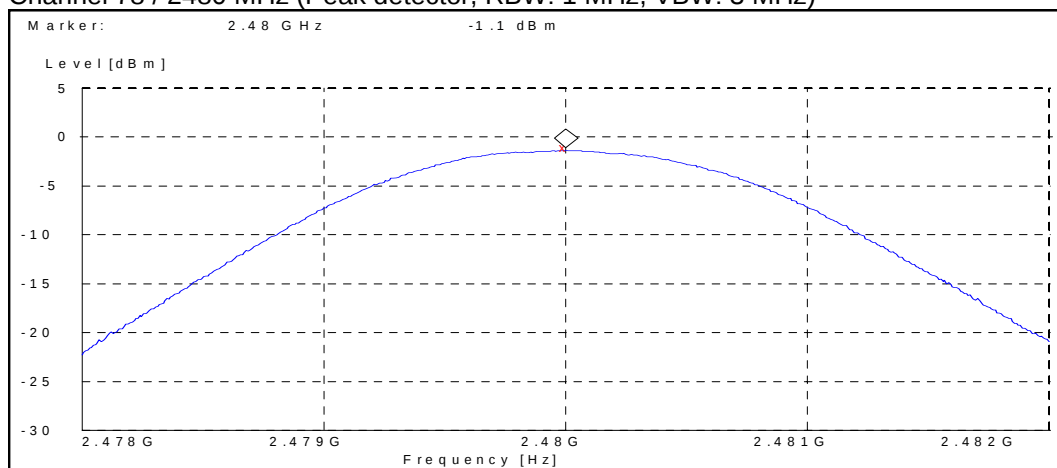
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



Channel 40 / 2442 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



Channel 78 / 2480 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



4. Spurious RF conducted emissions (FCC §15.247(d), RSS-A8.5)

EUT with DUT number	RM-400, DUT 12464
Accessories with DUT numbers	BP-4L, DUT 12457; HS-47, DUT 12460; AC-4E, DUT 12458
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 40 / 100
Date of measurements	07-Jan-2008
Measured by	Anni Manninen

4.1. Test method and limit

The measurement is made according to Public notice DA 00-705 and IC standard RSS-210.

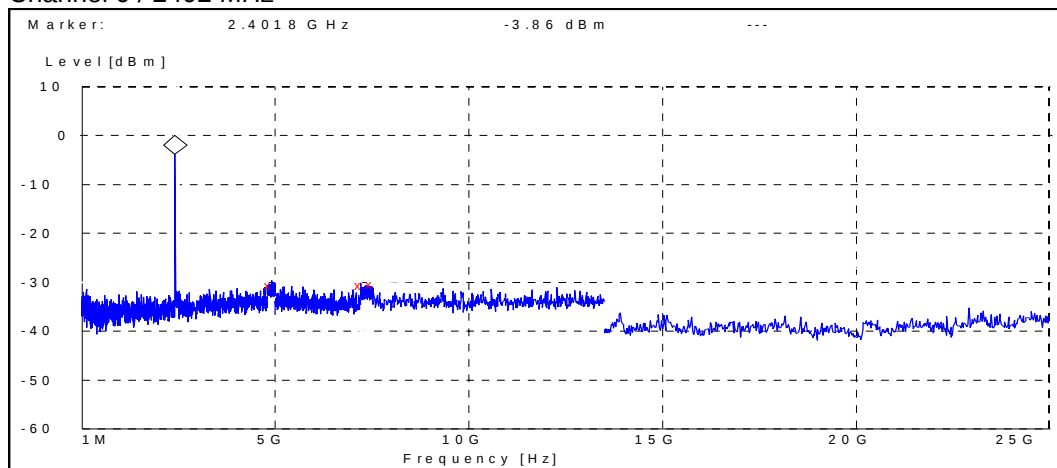
Limits for spurious RF conducted emissions measurements

Frequency range [MHz]	Limit [dBc]
1 – 25000	≤ -20

4.2. Bluetooth Test results

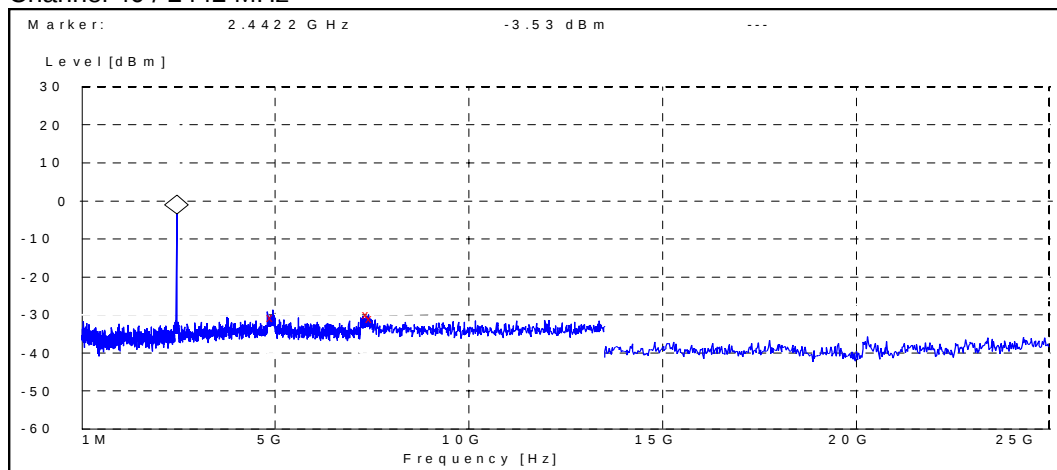
4.2.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz



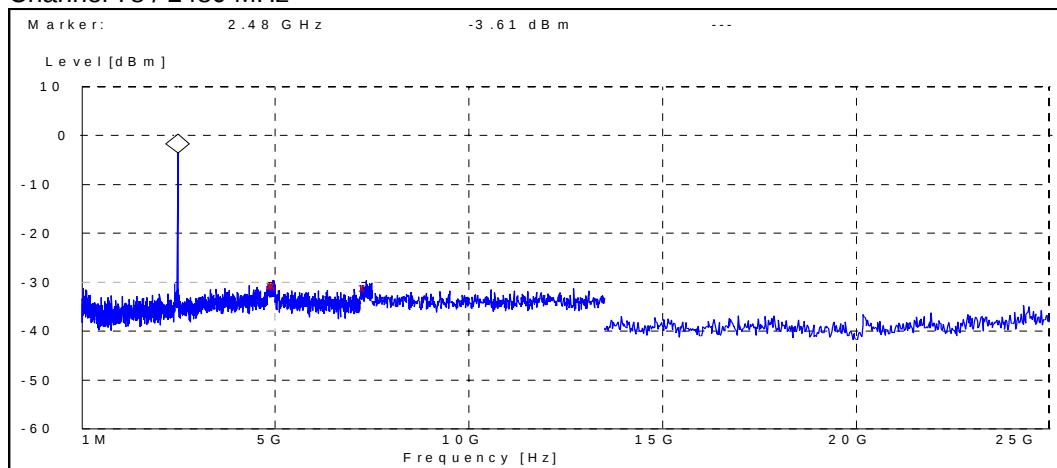
Frequency [MHz]	P [dBc]	Result
4896.800000	-26.737974	PASSED
7202.400000	-26.837974	PASSED
7500.000000	-26.637974	PASSED

Channel 40 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4938.000000	-26.974367	PASSED
7413.000000	-26.374367	PASSED
7500.000000	-27.374367	PASSED

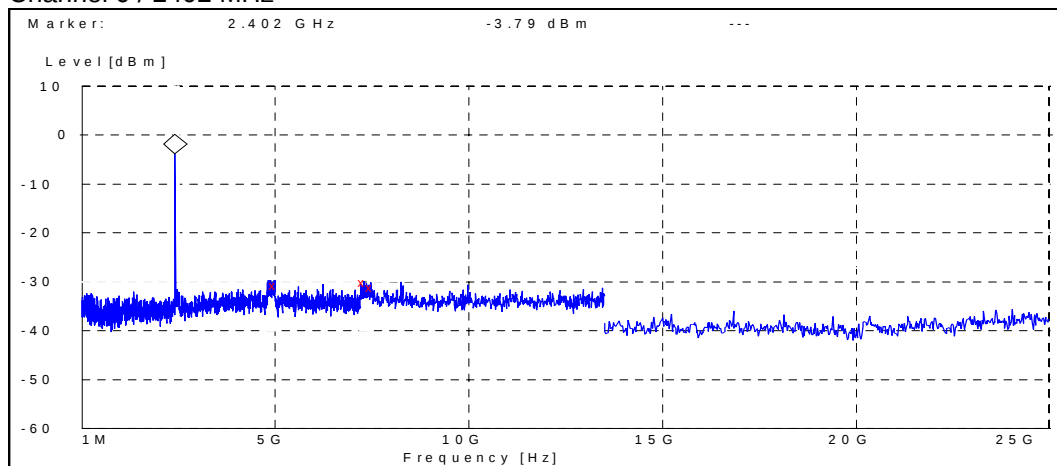
Channel 78 / 2480 MHz



Frequency [MHz]	P [dBc]	Result
4938.800000	-27.087540	PASSED
5000.000000	-27.087540	PASSED
7344.000000	-27.387540	PASSED

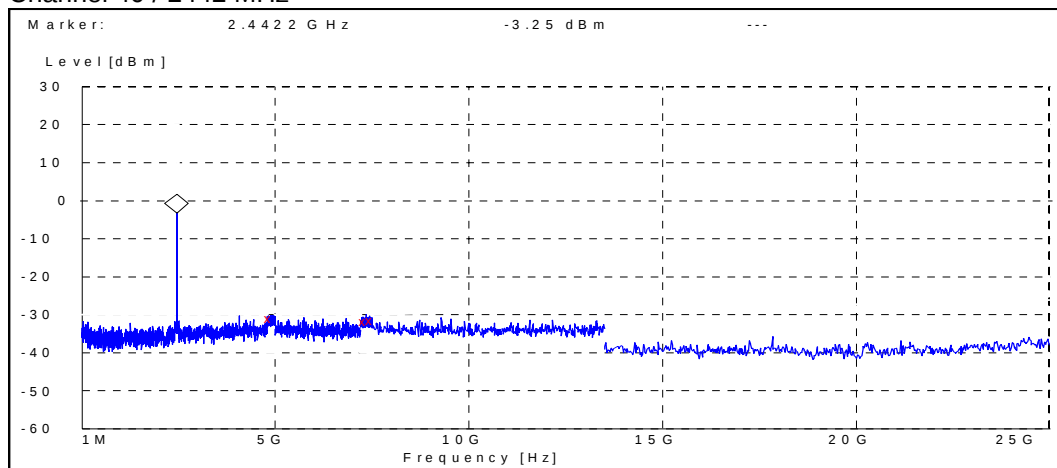
4.2.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz



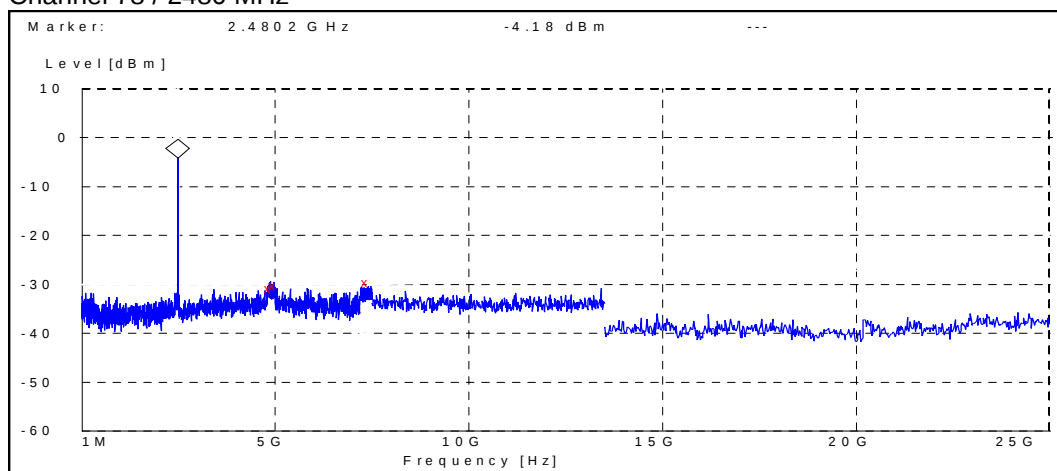
Frequency [MHz]	P [dBc]	Result
4990.800000	-27.008145	PASSED
7291.200000	-26.408145	PASSED
7500.000000	-27.308145	PASSED

Channel 40 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4880.800000	-27.845691	PASSED
7341.600000	-28.345691	PASSED
7500.000000	-28.145691	PASSED

Channel 78 / 2480 MHz



Frequency [MHz]	P [dBc]	Result
4867.200000	-26.616484	PASSED
5000.000000	-26.016484	PASSED
7392.600000	-25.416484	PASSED

5. Spurious radiated emissions (FCC §15.247(d), §15.209, RSS-210 A8.5)

EUT with DUT number	RM-400, DUT 12437
Accessories with DUT numbers	BP-4L, DUT 12480; HS-47, DUT 12439; AC-4E, DUT 12440
Operation Voltage [V] / [Hz]	115/60
Result	PASSED
Remarks	Phone tested flip open mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	18 / 44 / 99.3
Date of measurements	26-Jan-2008
Measured by	Sami Lehtonen

5.1. Test method and limit

The measurement is made according to Public notice DA 00-705 and IC standard RSS-210 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 measurement results are obtained as described below:

$$E [\mu V/m] = U_{RX} + A_{TOT}$$

Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable loss, antenna factor and preamplifier gain ($A_{TOT} = L_{CABLES} + AF - G_{PREAMP}$).

Limits for spurious radiated emissions measurements (3 m measurement distance)

Frequency range [MHz]	Limit [$\mu\text{V/m}$]	Limit [dB $\mu\text{V/m}$]	Detector
30 – 88	100	40	Quasi peak
88 – 216	150	43.5	Quasi peak
216 – 960	200	46	Quasi peak
960 – 1000	500	54	Quasi peak
Above 1000	500	54	Average
Above 1000	5000	74	Peak

5.2. Bluetooth Test results

5.2.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	42.60	134.90	42.40	0.2	VERTICAL	PASSED
7206.000000	46.10	201.84	43.90	2.2	VERTICAL	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	30.00	31.62	29.80	0.2	VERTICAL	PASSED
7206.000000	32.80	43.65	30.60	2.2	VERTICAL	PASSED

Channel 40 / 2442 MHz

Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
31.500000	18.40	8.32	35.30	-16.9	VERTICAL	PASSED
37.835872	15.80	6.17	36.10	-20.3	VERTICAL	PASSED
114.187375	16.50	6.68	42.80	-26.3	HORIZONTAL	PASSED
125.632866	13.30	4.62	41.40	-28.1	VERTICAL	PASSED

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4828.151303	43.00	141.25	42.40	0.6	VERTICAL	PASSED
13347.701403	53.80	489.78	40.50	13.3	VERTICAL	PASSED
13354.707415	52.10	402.72	38.70	13.4	HORIZONTAL	PASSED
15350.203407	53.20	457.09	38.10	15.1	VERTICAL	PASSED
15981.971944	53.60	478.63	36.70	16.9	VERTICAL	PASSED
16198.394790	54.60	537.03	37.00	17.6	VERTICAL	PASSED
17923.351703	56.80	691.83	37.70	19.1	VERTICAL	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4826.651303	30.20	32.36	29.70	0.5	VERTICAL	PASSED
13351.701403	40.30	103.51	26.90	13.4	VERTICAL	PASSED
13356.707415	39.50	94.41	26.10	13.4	HORIZONTAL	PASSED
15347.703407	40.20	102.33	25.00	15.2	VERTICAL	PASSED
15986.471944	40.90	110.92	24.00	16.9	VERTICAL	PASSED
16196.394790	42.10	127.35	24.60	17.5	VERTICAL	PASSED
17924.851703	43.70	153.11	24.60	19.1	VERTICAL	PASSED

Channel 78 / 2480 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	43.40	147.91	43.80	-0.4	VERTICAL	PASSED
7440.000000	46.70	216.27	43.60	3.1	VERTICAL	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	29.80	30.90	30.20	-0.4	VERTICAL	PASSED
7440.000000	33.80	48.98	30.70	3.1	VERTICAL	PASSED

5.2.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	43.70	153.11	43.50	0.2	VERTICAL	PASSED
7206.000000	46.10	201.84	43.90	2.2	VERTICAL	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	30.10	31.99	29.90	0.2	VERTICAL	PASSED
7206.000000	32.90	44.16	30.70	2.2	VERTICAL	PASSED

Channel 40 / 2442 MHz

Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
37.695391	15.60	6.03	35.80	-20.2	VERTICAL	PASSED
62.626854	15.10	5.69	46.70	-31.6	HORIZONTAL	PASSED
113.987375	16.30	6.53	42.60	-26.3	HORIZONTAL	PASSED
127.494790	13.60	4.79	42.00	-28.4	VERTICAL	PASSED

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4838.169339	43.10	142.89	42.40	0.7	VERTICAL	PASSED
12530.068136	50.80	346.74	40.30	10.5	HORIZONTAL	PASSED
13259.521042	53.80	489.78	41.20	12.6	VERTICAL	PASSED
15388.777555	53.10	451.86	37.90	15.2	VERTICAL	PASSED
15579.160321	54.30	518.80	38.30	16.0	VERTICAL	PASSED
16197.396794	54.50	530.88	37.00	17.5	VERTICAL	PASSED
17924.849699	56.60	676.08	37.50	19.1	VERTICAL	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4835.169339	30.40	33.11	29.70	0.7	VERTICAL	PASSED
12531.068136	38.30	82.22	27.80	10.5	HORIZONTAL	PASSED
13261.521042	40.30	103.51	27.70	12.6	VERTICAL	PASSED
15391.277555	39.70	96.61	24.50	15.2	VERTICAL	PASSED
15583.160321	40.80	109.65	24.80	16.0	VERTICAL	PASSED
16201.896794	42.20	128.82	24.60	17.6	VERTICAL	PASSED
17924.349699	43.70	153.11	24.60	19.1	VERTICAL	PASSED

Channel 78 / 2480 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	42.00	125.89	42.40	-0.4	HORIZONTAL	PASSED
7440.000000	47.10	226.46	44.00	3.1	VERTICAL	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	30.00	31.62	30.40	-0.4	VERTICAL	PASSED
7440.000000	33.90	49.55	30.80	3.1	VERTICAL	PASSED

6. AC powerline conducted emissions (FCC §15.207, RSS-GEN 7.2.2)

EUT with DUT number	RM-400 #12456
Accessories with DUT numbers	BP-4L #12438, HS-47 #12460, AC-4E #12458
Operation Voltage [V] / [Hz]	115 / 60
Result	Passed
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 42 / 102
Date of measurements	16-Jan-2008
Measured by	Jufo Tuohino

6.1. Test method and limit

The measurement is made according to Public notice DA 00-705 and IC standard RSS-GEN as follows:

The EUT is placed on a wooden table 80 cm above the reference groundplane.

The EUT is connected via LISN to a test power supply.

The measurement results are obtained as described below:

$$U [dB\mu V] = U_{RX} + A_{TOT}$$

Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable and pulse limiter attenuations.

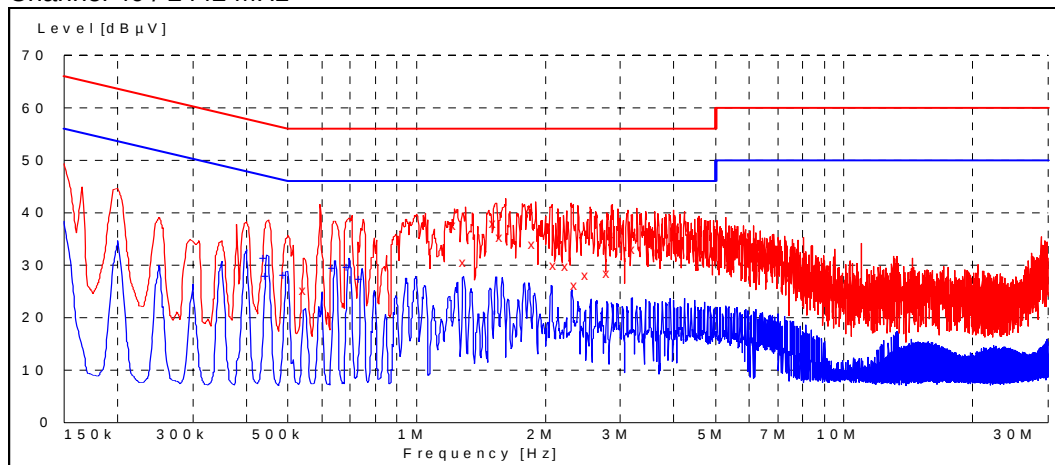
CISPR 22 Class B limits

Frequency range [MHz]	Quasi peak limit [dBμV]	Average limit [dBμV]
0.15 - 0.5	66 - 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

6.2. Bluetooth Test results

6.2.1 GFSK modulation, PRBS packet type

Channel 40 / 2442 MHz



Quasi peak (RBW: 9 kHz)

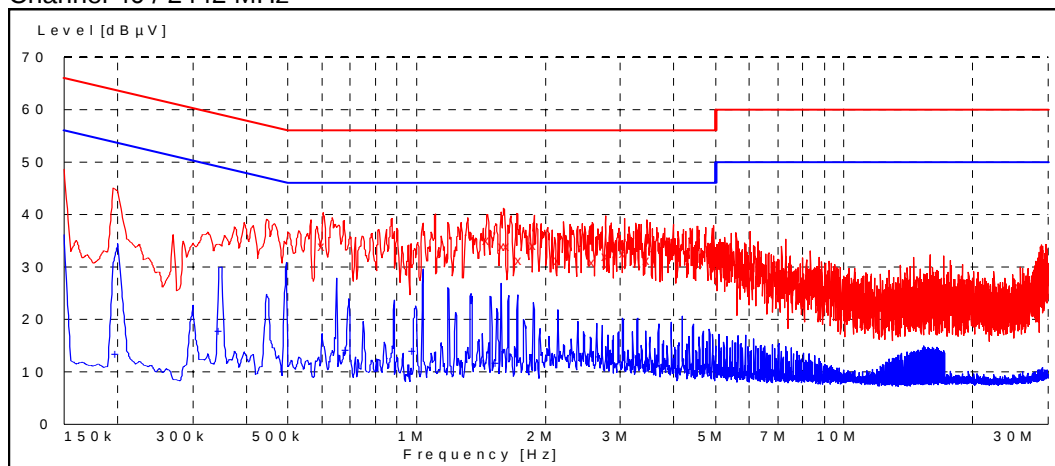
Frequency [MHz]	U [dBμV]	Line	Result
0.550000	25.30	L1	PASSED
1.235000	37.50	L1	PASSED
1.305000	30.50	L1	PASSED
1.530000	38.00	L1	PASSED
1.590000	35.40	L1	PASSED
1.895000	34.00	L1	PASSED
2.110000	29.90	L1	PASSED
2.265000	29.70	L1	PASSED
2.375000	26.10	L1	PASSED
2.525000	28.10	L1	PASSED
2.820000	28.40	L1	PASSED
3.235000	33.10	L1	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.445000	31.20	L1	PASSED
0.450000	27.90	L1	PASSED
0.495000	28.10	L1	PASSED
0.645000	29.50	L1	PASSED
0.695000	29.60	L1	PASSED
0.745000	27.30	L1	PASSED

6.2.2 8DPSK modulation, PRBS packet type

Channel 40 / 2442 MHz



Quasi peak (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.610000	33.90	L1	PASSED
1.475000	35.10	L1	PASSED
1.605000	33.90	L1	PASSED
1.650000	33.90	L1	PASSED
1.760000	31.20	L1	PASSED
1.900000	34.10	L1	PASSED
2.170000	31.20	L1	PASSED
2.615000	31.00	L1	PASSED
2.800000	31.90	L1	PASSED
3.090000	32.60	L1	PASSED
3.505000	31.20	L1	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.200000	13.30	N	PASSED
0.350000	17.60	L1	PASSED
0.690000	14.00	L1	PASSED
0.990000	13.80	L1	PASSED
1.555000	11.70	L1	PASSED

7. 20 dB bandwidth (FCC §15.247(a)(1), RSS-210 A8.1 (1))

EUT with DUT number	RM-400, DUT 12464
Accessories with DUT numbers	BP-4L, DUT 12457; HS-47, DUT 12460; AC-4E, DUT 12458
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 40 / 100
Date of measurements	07-Jan-2008
Measured by	Anni Manninen

7.1. Test method and limit

The measurement is made according to Public notice DA 00-705 and IC standard RSS-210.

Limits for 20 dB bandwidth measurements

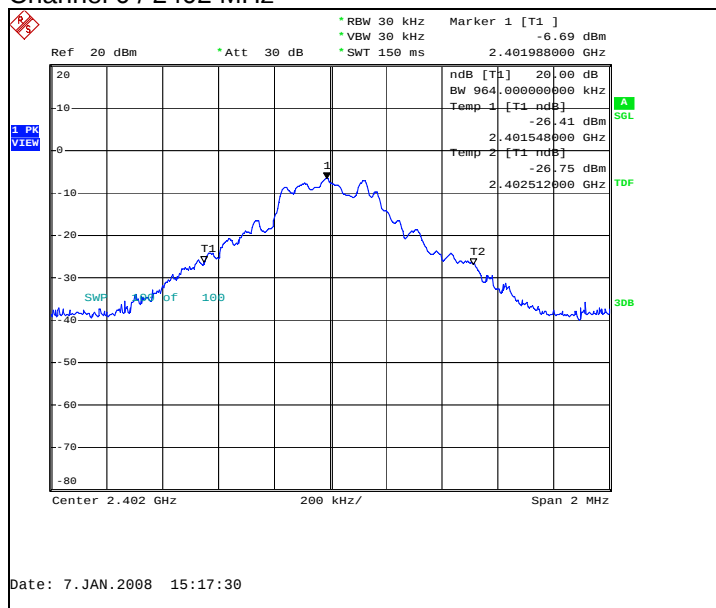
Limit [MHz]
N/A

7.2. Bluetooth Test results

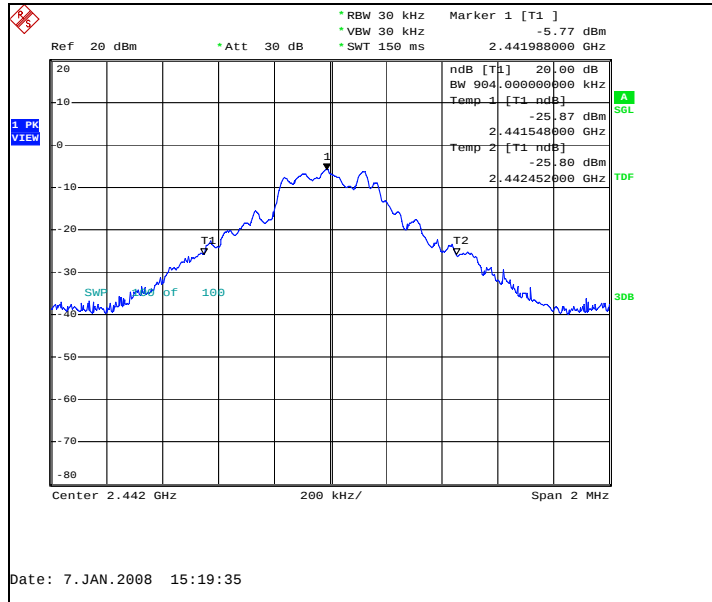
7.2.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	964.000	PASSED
40 / 2442	904.000	PASSED
78 / 2480	904.000	PASSED

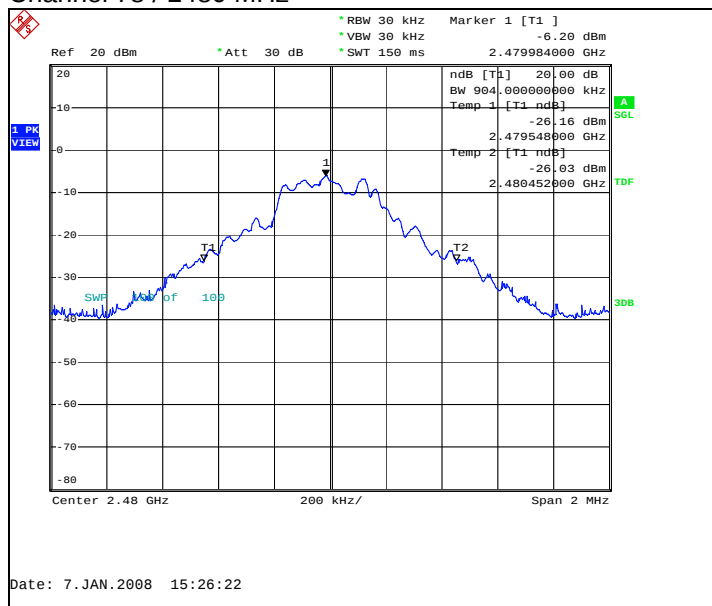
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



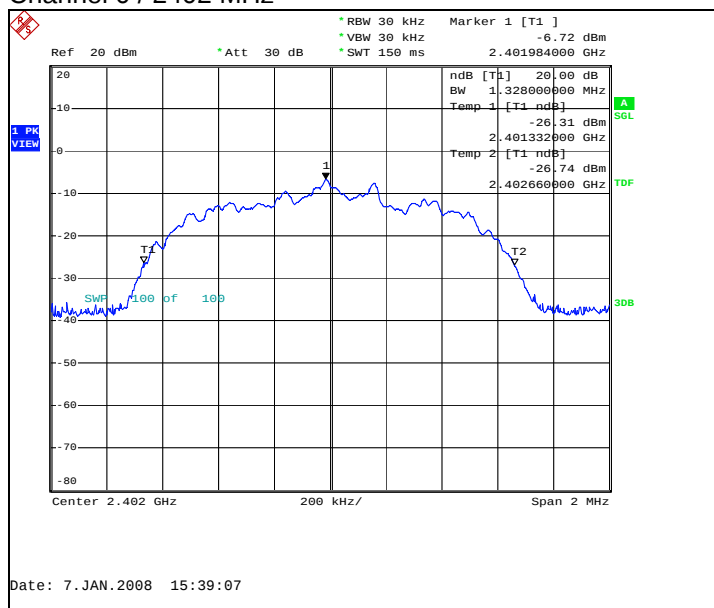
Channel 78 / 2480 MHz



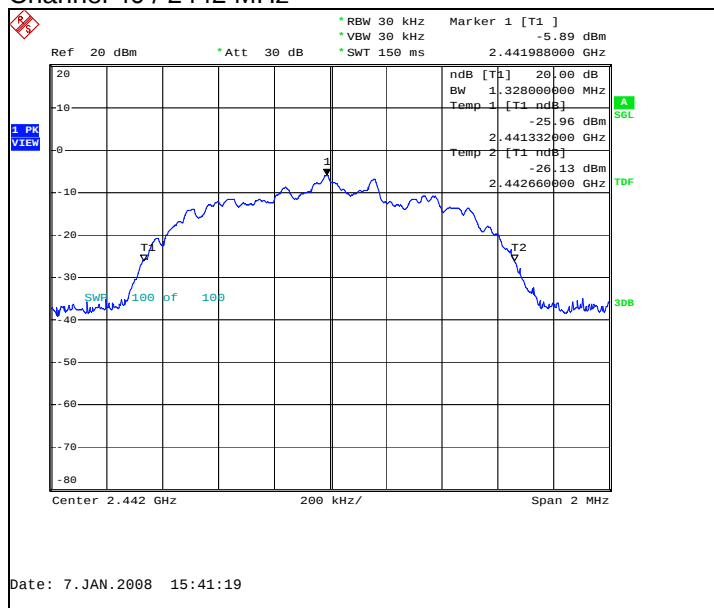
7.2.2 8DPSK modulation, PRBS packet type

Channel / f_c [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	1328.000	PASSED
40 / 2442	1328.000	PASSED
78 / 2480	1328.000	PASSED

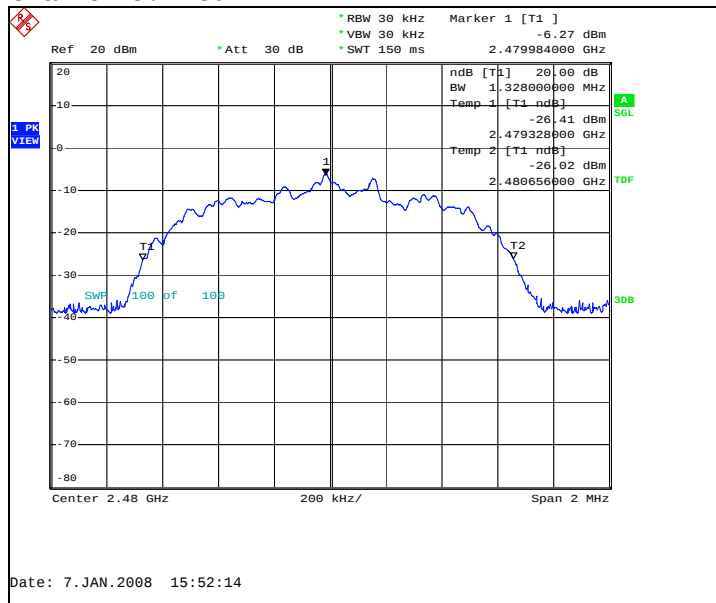
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



Channel 78 / 2480 MHz



8. Carrier frequency separation (FCC §15.247(a)(1), RSS-210 A8.1 (2))

EUT with DUT number	RM-400, DUT 12464
Accessories with DUT numbers	BP-4L, DUT 12457; HS-47, DUT 12460; AC-4E, DUT 12458
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 40 / 100
Date of measurements	07-Jan-2008
Measured by	Anni Manninen

8.1. Test method and limit

The measurement is made according to Public notice DA 00-705 and IC standard RSS-210.

Limits for carrier frequency separation measurements

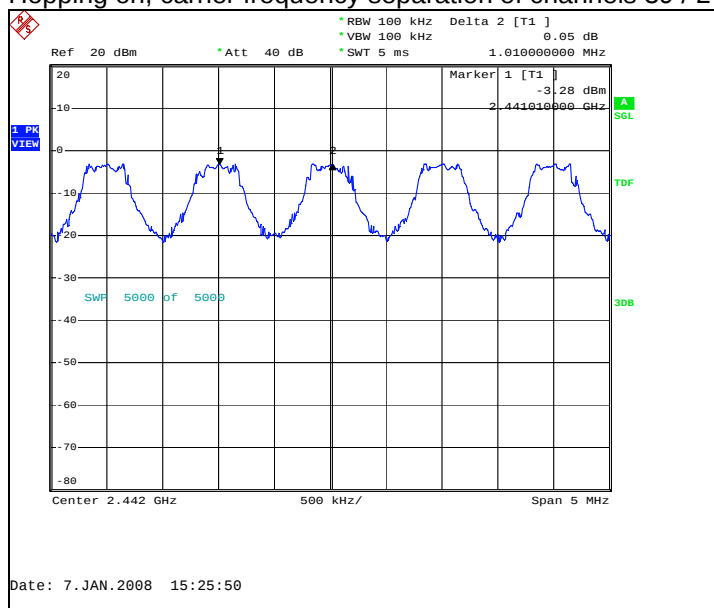
Limit [MHz]
≥ 0.025 or 2/3 of the 20 dB bandwidth

8.2. Bluetooth Test results

8.2.1 GFSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1010	PASSED

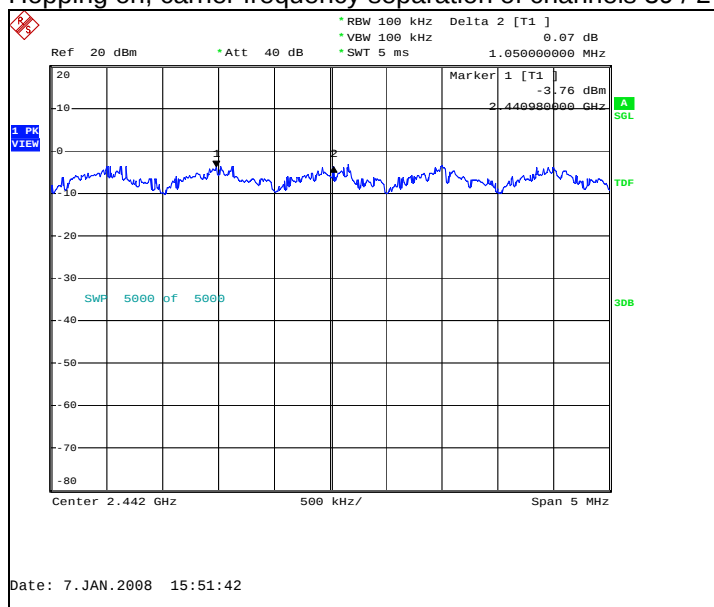
Hopping on, carrier frequency separation of channels 39 / 2441 MHz and 40 / 2442 MHz



8.2.2 8DPSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1050	PASSED

Hopping on, carrier frequency separation of channels 39 / 2441 MHz and 40 / 2442 MHz



9. Number of hopping frequencies (FCC §15.247(a)(1)(iii), RSS-210 A8.1 (4))

EUT with DUT number	RM-400, DUT 12464
Accessories with DUT numbers	BP-4L, DUT 12457; HS-47, DUT 12460; AC-4E, DUT 12458
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 40 / 100
Date of measurements	07-Jan-2008
Measured by	Anni Manninen

9.1. Test method and limit

The measurement is made according to Public notice DA 00-705 and IC standard RSS-210.

Limits for number of hopping frequencies measurements

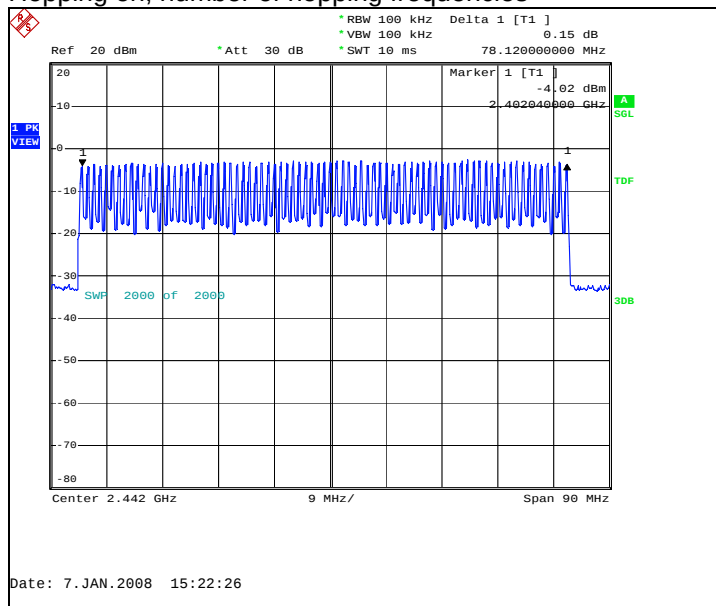
Limit [number]
≥ 15

9.2. Bluetooth Test results

9.2.1 GFSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
79	PASSED

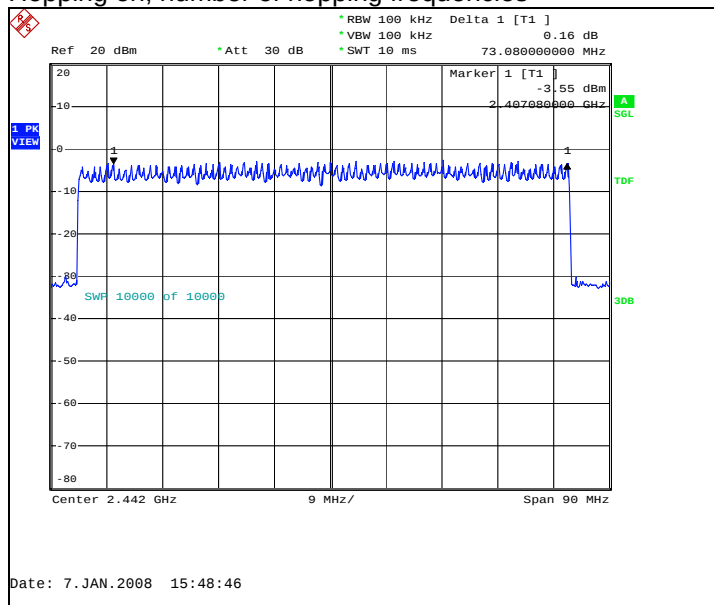
Hopping on, number of hopping frequencies



9.2.2 8DPSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
15	PASSED

Hopping on, number of hopping frequencies



10. Time of occupancy (FCC §15.247(a)(1)(iii), RSS-210 A8.1 (4))

EUT with DUT number	RM-400, DUT 12464
Accessories with DUT numbers	BP-4L, DUT 12457; HS-47, DUT 12460; AC-4E, DUT 12458
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 40 / 100
Date of measurements	07-Jan-2008
Measured by	Anni Manninen

10.1. Test method and limit

The measurement is made according to Public notice DA 00-705 and IC standard RSS-210 as follows:

The total time of occupancy is get by multiplying the measured number of transmissions occurred during 31.6 second period with the duration of one transmission.

Limits for time of occupancy measurements

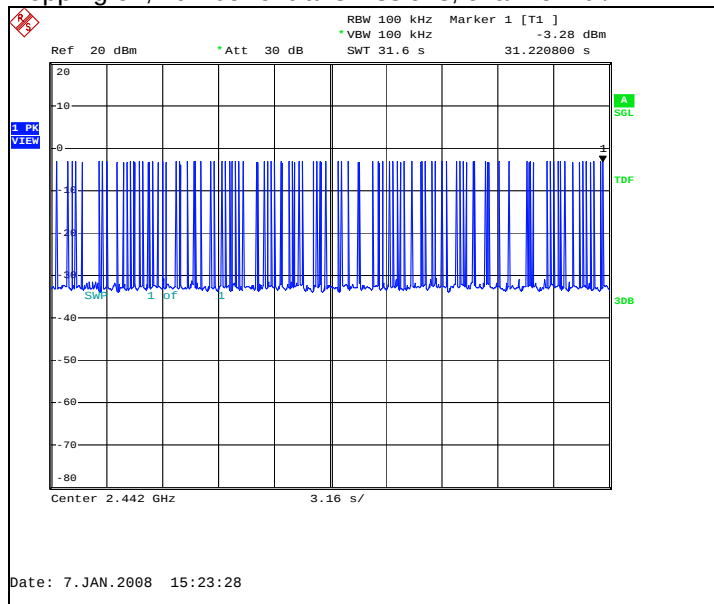
Limit [s]
≤ 0.4

10.2. Bluetooth test results

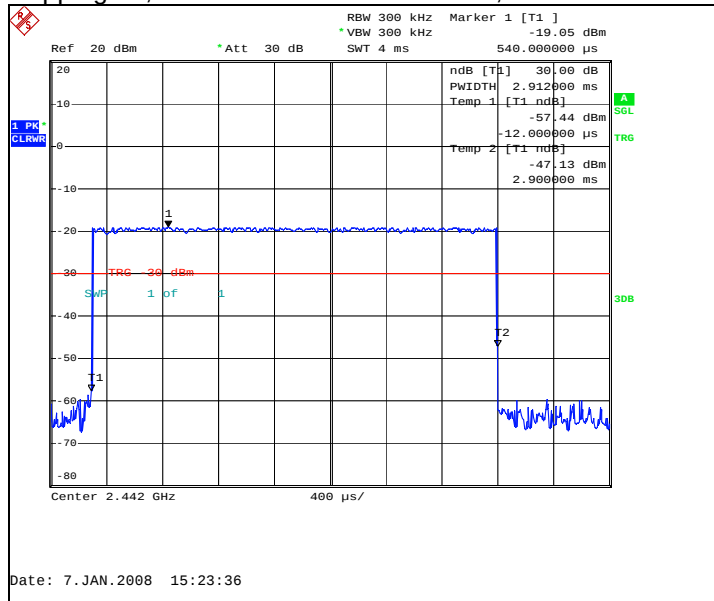
10.2.1 GFSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [μ s]	Time of occupancy [s]	Result
95	2 912	0.276640	PASSED

Hopping on, number of transmissions, channel 40 / 2442 MHz



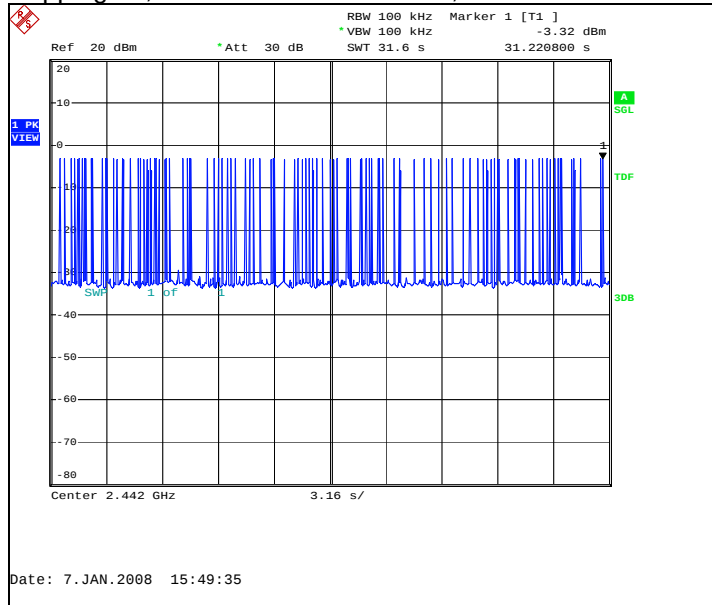
Hopping on, duration of one transmission, channel 40 / 2442 MHz



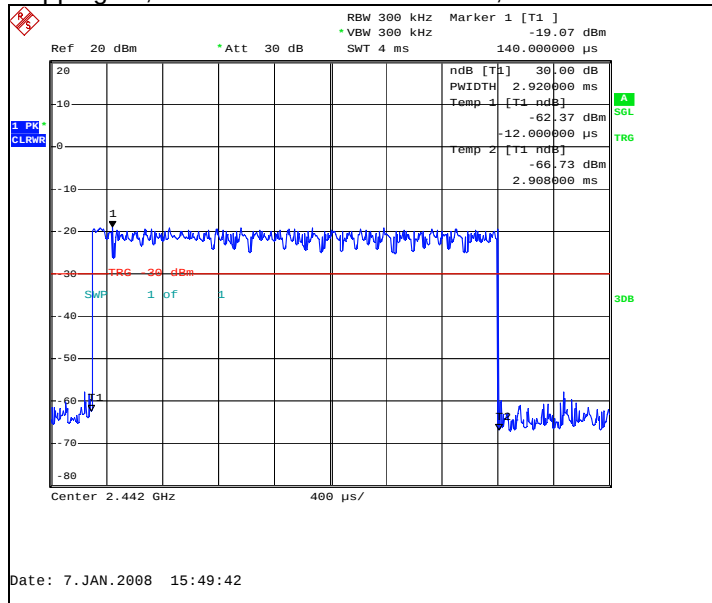
10.2.2 8DPSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [μ s]	Time of occupancy [s]	Result
93	2 920	0.271560	PASSED

Hopping on, number of transmissions, channel 40 / 2442 MHz



Hopping on, duration of one transmission, channel 40 / 2442 MHz



11. Test Equipment

11.1. 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	22/24/27, 15C, 15B
2352	Spectrum Analyzer	FSP	R&S	22/24/27, 15C
2359	Temperature Test system	VT4002	Vötsch Industrietechnik	22/24/27
2360	Serial Bus Converter	Serial 488A	IO Tech	22/24/27
2362	Power Supply	NGPX 70/5	R&S	22/24/27
2388	Bluetooth Tester	CBT	R&S	15C, 15B
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24/27, 15C, 15B

11.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1748	Log. per. Antenna	HL025	R&S	22/24/27, 15C
1749	Log. per. Antenna	HL025	R&S	22/24/27, 15C
1875	Thermo- Hygrograph	00.02520.150700	Lambrecht	22/24/27, 15C, 15B
1917	Radio Communication tester	CMTA84	R&S	22/24/27, 15C, 15B
1933	Precision half-wave dipole antennas	HZ-13	R&S	22/24/27, 15C
1938	Precision half-wave dipole antennas	HZ-12	R&S	22/24/27, 15C
2006	Radiation Reference Source	VSQ	MEB	22/24/27, 15C, 15B
2009	Signal generator	SMP 22	R&S	22/24/27, 15C, 15B
2019	Multimeter	34401A	HP	22/24/27, 15C, 15B
2027	Coupling and Decoupling Network	M2 (modified) DC1	MEB	22/24/27, 15C, 15B
2028	Coupling and Decoupling Network	M3 (modified) DC2	MEB	22/24/27, 15C, 15B
2029	Power Supply	PL330	THURLBY	22/24/27, 15C, 15B
2043	Band Reject Filter	WRCA824/849-0.2-6SS	Wainwright	22, 15C, 15B
2047	Band Reject Filter	WRCC1800/2000-0.2-10SS	Wainwright	24, 15C, 15B
2048	Band Reject Filter	WRCC1700/1800-0.2-10SS	Wainwright	27, 15C, 15B
2051	High Pass Filter	4HC1700-1-KK	R&S	22/24/27, 15C
2057	Log. per. Antenna	HL025	R&S	22/24/27, 15C
2109	Power Supply	PL330QMD	THURLBY	22/24/27, 15C, 15B
2110	Multimeter	34401A	HP	22/24/27, 15C, 15B
2112	Multimeter	TX3	Tektronix	22/24/27, 15C, 15B
2116	Controller	EMCO MODEL 2090	ETS	22/24/27, 15C, 15B
2133	Power Meter	NRVS	R&S	22/24/27, 15C

Eq. No	Equipment	Type	Manufacturer	Used in
2134	Power Sensor	NRV-Z32	R&S	22/24/27, 15C
2135	Coupling and Decoupling Network	CDN 801-M3	LÜTHI	22/24/27, 15C, 15B
2138	Ultra Broadband Antenna	HL562	R&S	22/24/27, 15C, 15B
2140	Biconical Antenna	EMCO93110B	EMCO	22/24/27, 15C
2142	Log.-per.-dipol Antenna	3146	EMCO	22/24/27, 15C
2144	Attenuator	6803.17B	Huber-Suhner	22/24/27, 15C, 15B
2150	High Pass Filter	F-15041	RLC ELECTRONICS	22/24/27, 15C
2176	Coupling and Decoupling Network	CDN 801-M3	LÜTHI	22/24/27, 15C, 15B
2180	Digital Radio Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2188	Preamplifier	AFS4-00100300-20-23P-6	MITEQ	22/24/27, 15C, 15B
2330	EMI Test receiver	ESIB26	R&S	22/24/27, 15C, 15B
2334	GPIO Switch 2 to 1	-	National Instruments	22/24/27, 15C, 15B
2348	Yaesu controller	G-1000DXC	YAESU	22/24/27, 15C, 15B
2349	Computer controller (Yaesu)	GS-232B	YAESU	22/24/27, 15C, 15B
2350	Preamplifier	AMF-6D-020180-29-20P	MITEQ	22/24/27, 15C
2361	Anechoic chamber	3 meter semi/full anechoic chamber	Euroshield	22/24/27, 15C, 15B
2398	Horn antenna	HF906	R&S	22/24/27, 15C
2363	Band Reject Filter	WRCG 832/838-825/845/5SS	Wainwright	22/24/27
2364	Band Reject Filter	WRCG1877/1883 - 1870/1890-40/6SS	Wainwright	22/24/27
2365	Relay Switch Unit	TS-RSP	R&S	22/24/27, 15C, 15B
2366	Relay Switch Unit	TS-RSP	R&S	22/24/27, 15C, 15B
2384	Band Reject Filter	WRCG832/838-825/845-40/5SS	Wainwright	22/24/27
2388	Bluetooth Tester	CBT	R&S	15C, 15B
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24/27, 15C, 15B