FCC Part 15C Compliance Test Report

Test Report no.:	FCC15C_RM-779_05.docx	**Date of Report:**	05-Aug-2011
Number of pages:	40	**Customer's Contact person:**	Timo Peltola
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 Corporation P.O. Box 50 Elektroniikkatie 10 FIN-90571 OULU, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 47222
FCC listing no.: **IC recognition no.:**	94436 661AK-1		
Tested devices/ accessories:	**Phone RM-779 / Battery BP-3L / AC charger AC-10E / Headset WH-207**		
FCC ID:	LJPRM-779	**IC:**	661E-RM779
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:	 Digitally signed by Jari Jantunen Date: 2011.08.05 08:40:09 +03'00'		

Jari Jantunen, System Manager, EMC

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	27-Jul-2011
Testing completed	04-Aug-2011
The customer's contact person	Timo Peltola
Test Plan referred to	T:\Projects\RM-779\TestPlan\RS_TestPlan_RM-779.xls
Notes	-
Document name	FCC15C_RM-779_05.docx

1.1. EUT and Accessory Information

The EUT is a 9-band (GSM850/900/1800/1900 and WCDMA Band I/II(1900)/IV(1700)/V(850)/VIII) mobile phone with GPRS, EGPRS, Bluetooth and WLAN. Bluetooth and WLAN are tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-779	004402135684722	0503	-	111.010.0705	42634
Phone	RM-779	004402135684961	0503	-	111.010.0705	42642
Battery	BP-3L	39321312351401114 04;0670635	-	-	-	42636
AC charger	AC-10E	399791043206220 1323;0675408	-	-	-	42637
Headset	WH-207	06949371106A1R12943	-	-	-	42638

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	PASSED
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 (a)	20 dB bandwidth	PASSED
15.247(a)(1)	A8.1 (b)	Carrier frequency separation	PASSED
15.247(a)(1)(iii)	A8.1 (d)	Number of hopping frequencies	PASSED
15.247(a)(1)(iii)	A8.1 (d)	Time of occupancy	PASSED

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 Tampere Laboratory.

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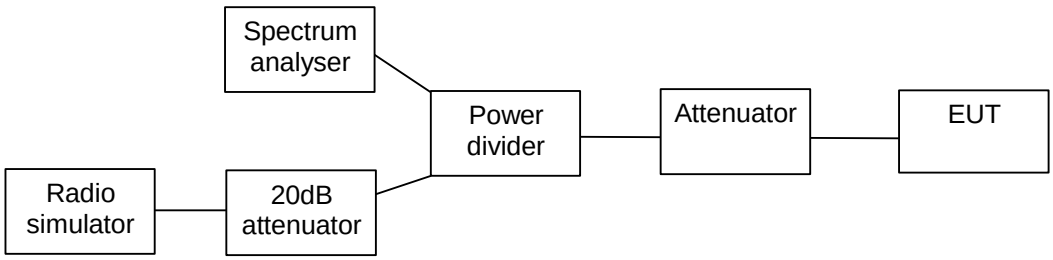
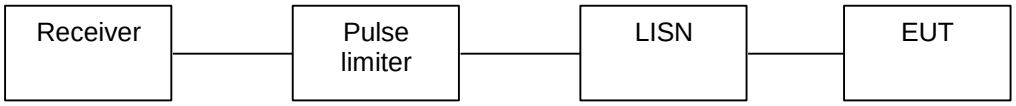
2. Test setups

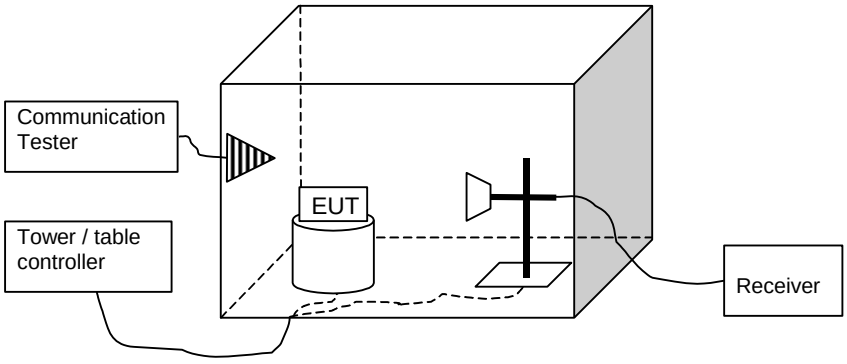
2.1. Conducted RF test setup



2.2. AC powerline conducted emissions test setup



2.3. Radiated test setup



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3. Conducted peak output power

(FCC §15.247(b)(1), RSS-210 A8.4 (2))

EUT with DUT number	RM-779 DUT 42642
Accessories with DUT numbers	BP-3L DUT 42636
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 47 / 99.7
Date of measurements	01-Aug-2011
Measured by	Jari Jantunen

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

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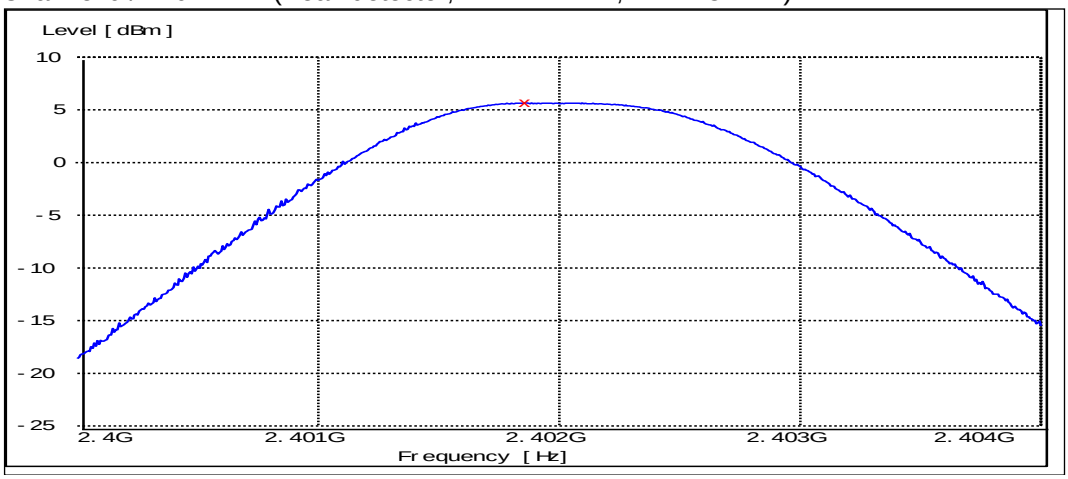
3.2. Bluetooth Test results

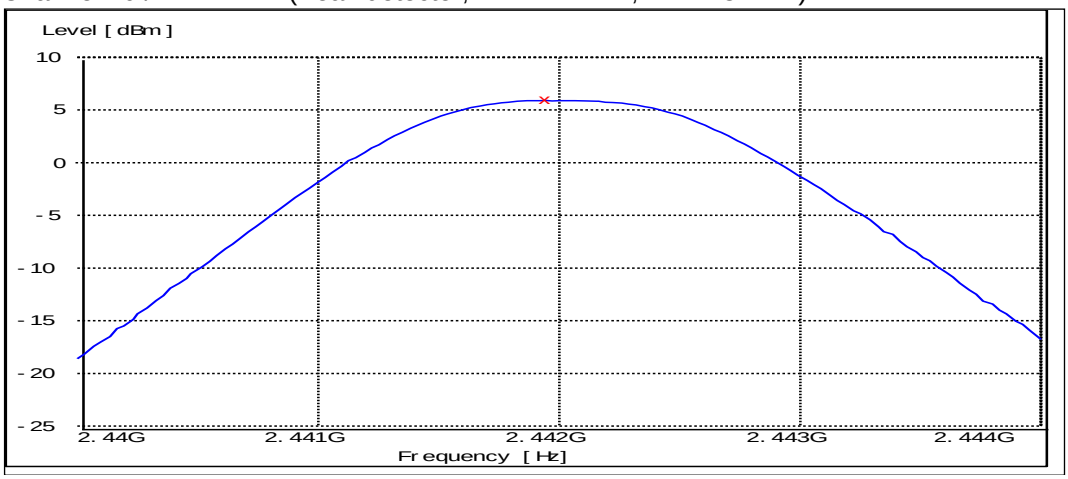
3.2.1 GFSK modulation, PRBS packet type

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
0 / 2402	5.70	3.715	PASSED
40 / 2442	6.00	3.981	PASSED
78 / 2480	5.80	3.802	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)



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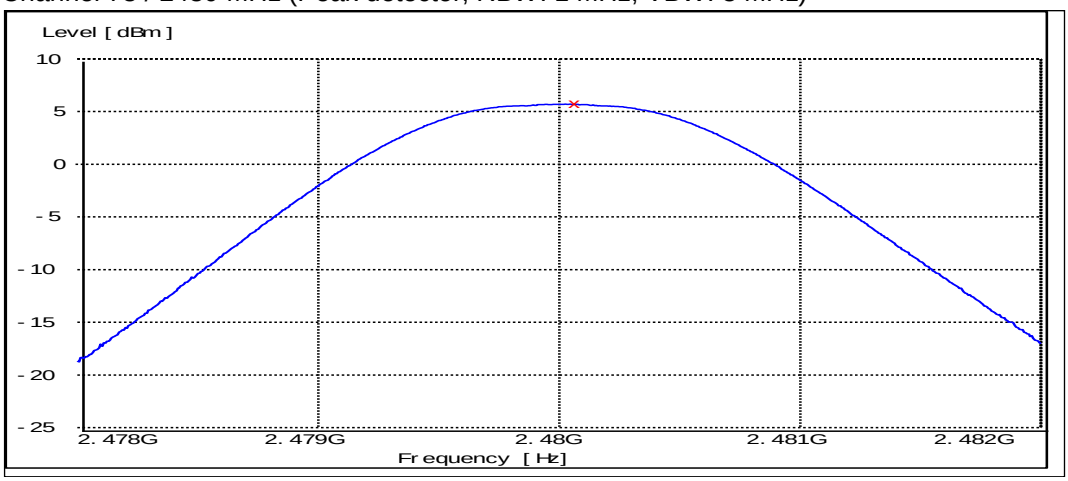
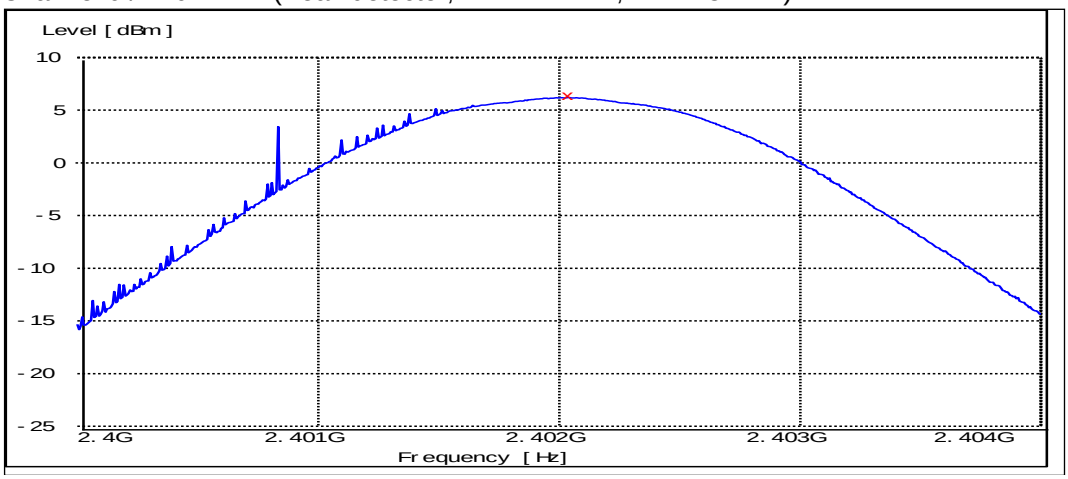
Channel 78 / 2480 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



3.2.2 8DPSK modulation, PRBS packet type

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
0 / 2402	6.40	4.365	PASSED
40 / 2442	6.60	4.571	PASSED
78 / 2480	6.50	4.467	PASSED

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



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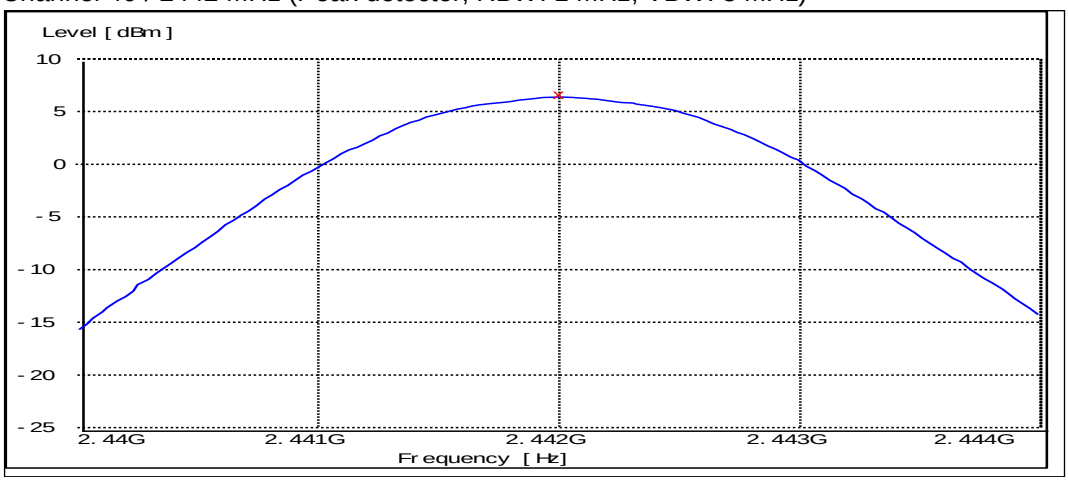
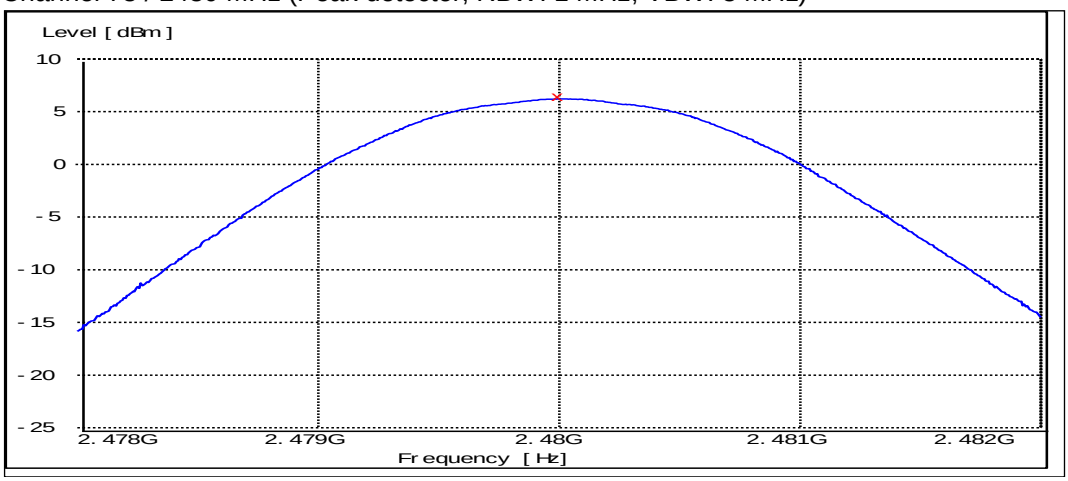
Channel 40 / 2442 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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



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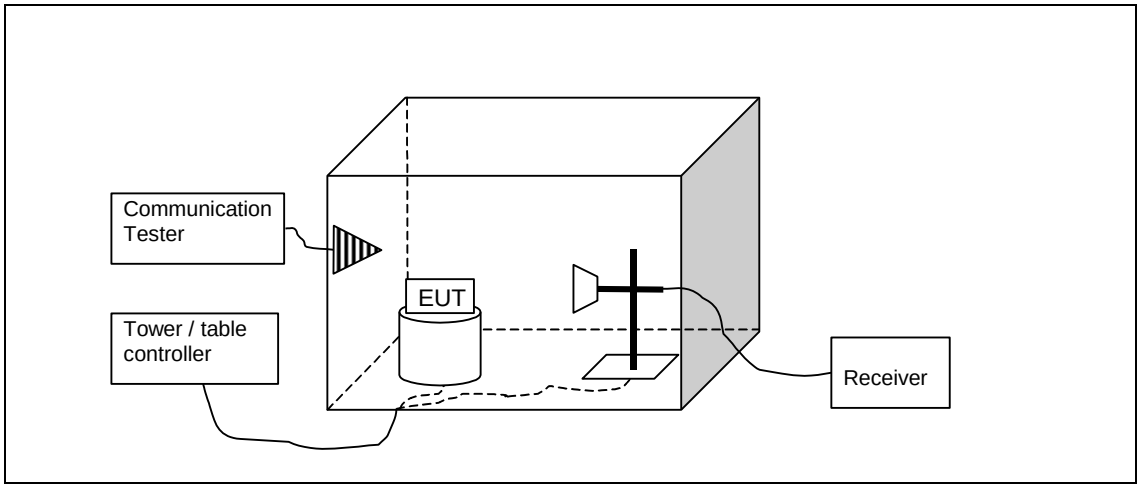
4. Band edge compliance of RF emissions
(FCC §15.247(d), RSS-210 A8.5)

EUT with DUT number	RM-779, DUT 42634
Accessories with DUT numbers	BP-3L, DUT 42636 ; AC-10E, DUT 42637 ; WH-207, DUT 42638
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 49 / 99.6
Date of measurements	27-Jul-2011
Measured by	Jari Jantunen

4.1.1 Test Setup



4.2. Test method and limit

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

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 ($A_{TOT} = L_{CABLES} + A_F - G_{PREAMP}$).

Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

Frequency range [MHz]	Limit Average [dBµV/m]	Limit Peak [dBµV/m]
Below 2390 and above 2483.5	<=54	<=74

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4.3. Bluetooth Test results

4.3.1 GFSK modulation, PRBS packet type

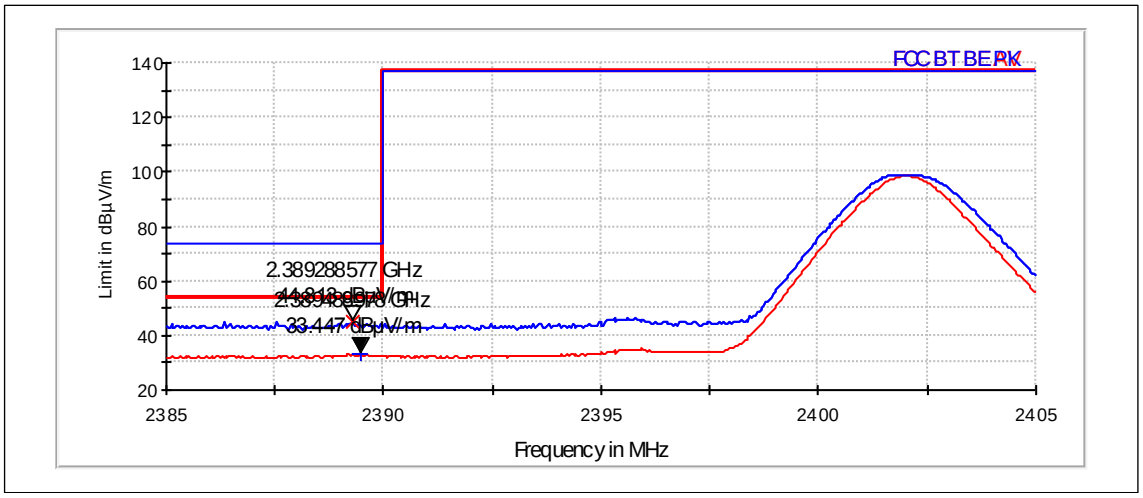
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Result
0 / 2402	33.45	47.027	42.45	-9	PASSED
Hopping on, low end	35.52	59.688	44.52	-9	PASSED
78 / 2480	48.61	269.382	57.31	-8.7	PASSED
Hopping on, high end	49.27	290.854	57.97	-8.7	PASSED

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

Channel / f_C [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Result
0 / 2402	44.81	174.045	53.81	-9	PASSED
Hopping on, low end	52.3	411.878	61.3	-9	PASSED
78 / 2480	52.31	412.427	61.01	-8.7	PASSED
Hopping on, high end	54.62	538.108	63.32	-8.7	PASSED

GFSK mode. Channel 0 / 2402 MHz



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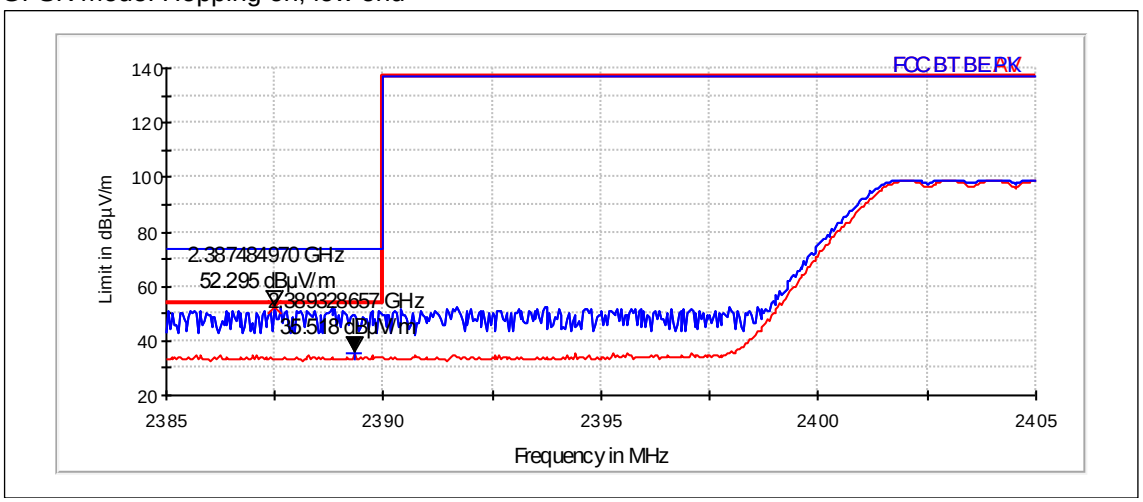
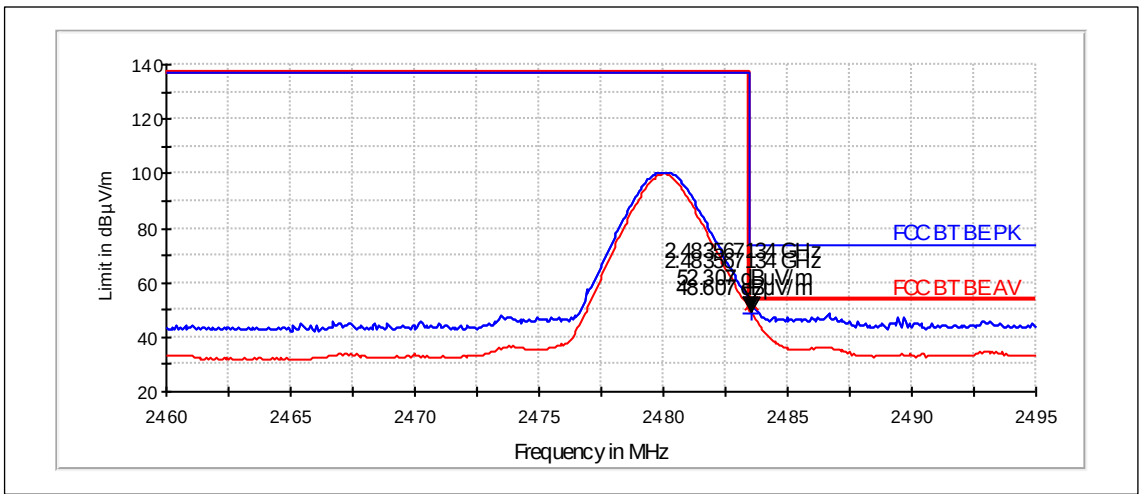
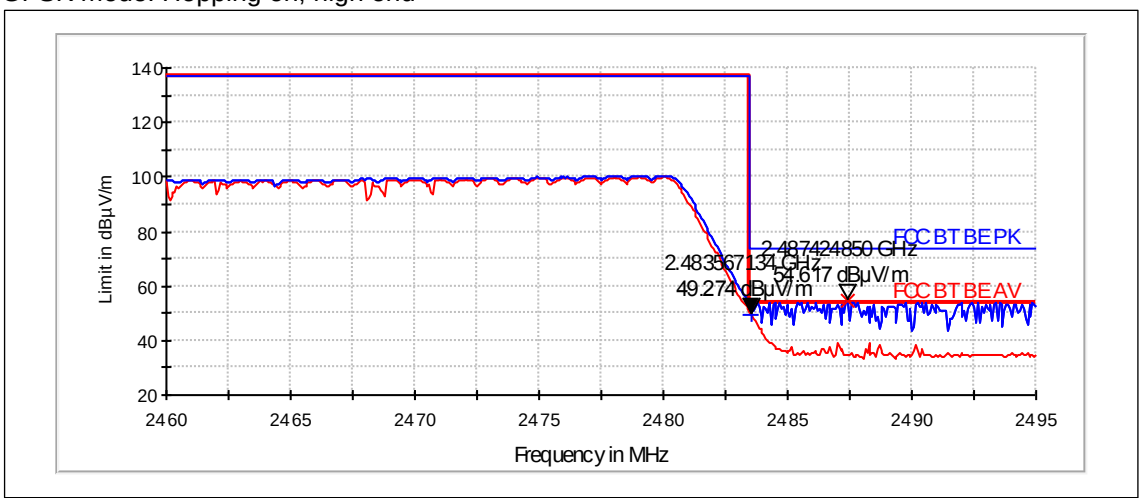
GFSK mode. Hopping on, low end



GFSK mode. Channel 78 / 2480 MHz



GFSK mode. Hopping on, high end



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8DPSK modulation, PRBS packet type

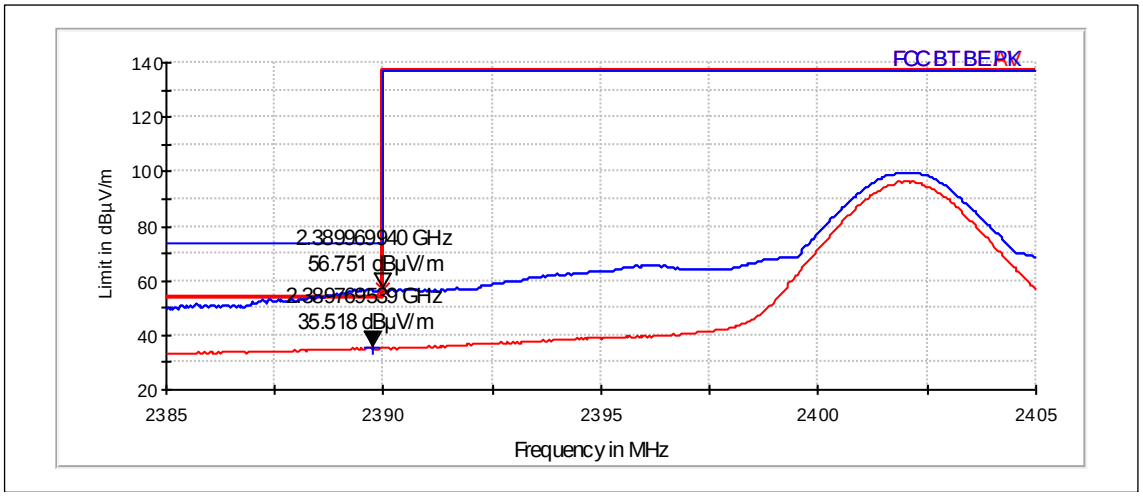
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Result
0 / 2402	35.52	59.688	44.52	-9	PASSED
Hopping on, low end	39.47	94.053	48.47	-9	PASSED
78 / 2480	50.11	320.135	58.81	-8.7	PASSED
Hopping on, high end	52	398.216	60.7	-8.7	PASSED

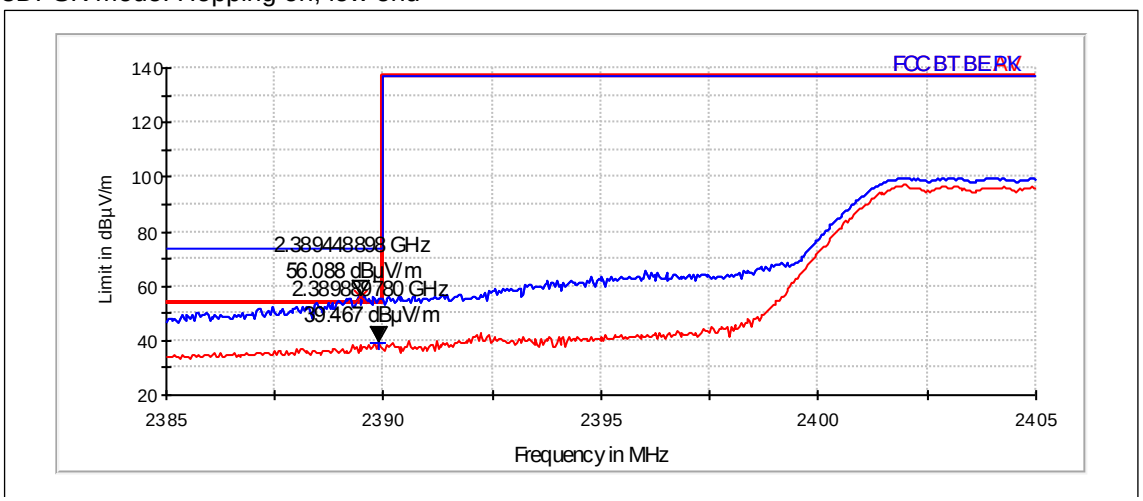
Peak (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Result
0 / 2402	56.75	687.963	65.75	-9	PASSED
Hopping on, low end	56.09	637.404	65.09	-9	PASSED
78 / 2480	66.6	2136.985	75.3	-8.7	PASSED
Hopping on, high end	65.11	1800.639	73.81	-8.7	PASSED

8DPSK mode. Channel 0 / 2402 MHz



8DPSK mode. Hopping on, low end



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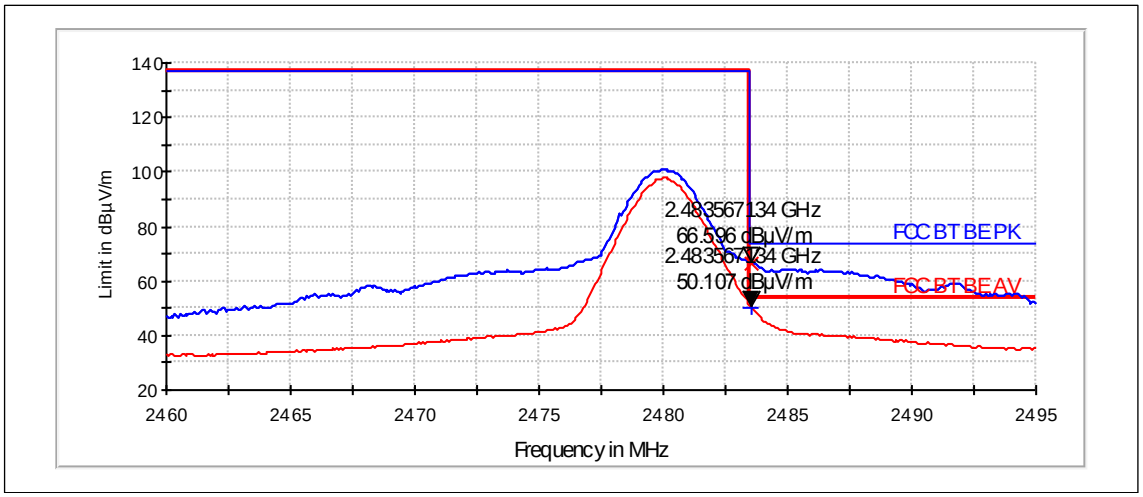
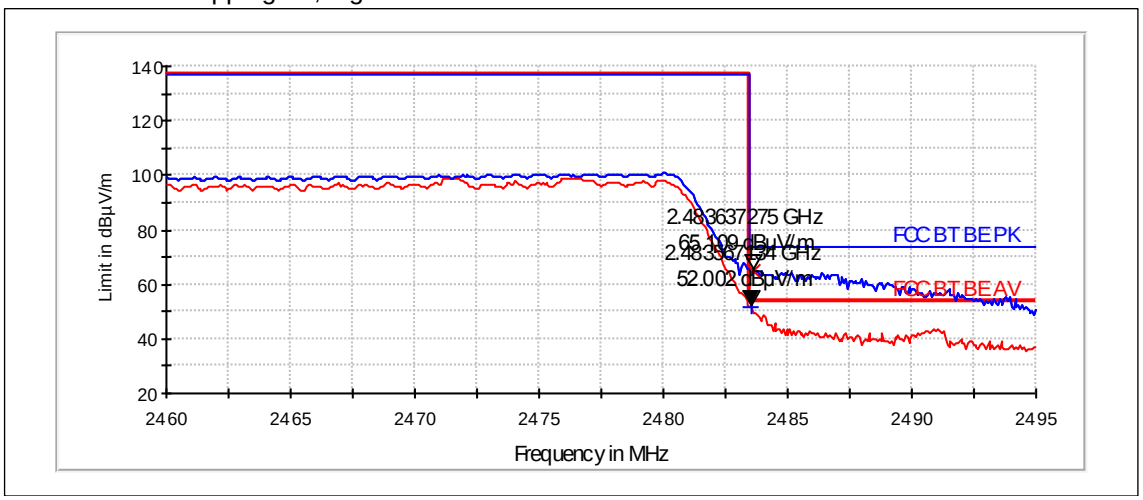
8DPSK mode. Channel 78 / 2480 MHz



8DPSK mode. Hopping on, high end



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

EUT with DUT number	RM-779 DUT 42642
Accessories with DUT numbers	BP-3L DUT 42636
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 47 / 99.7
Date of measurements	01-Aug-2011
Measured by	Jari Jantunen

5.1. 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

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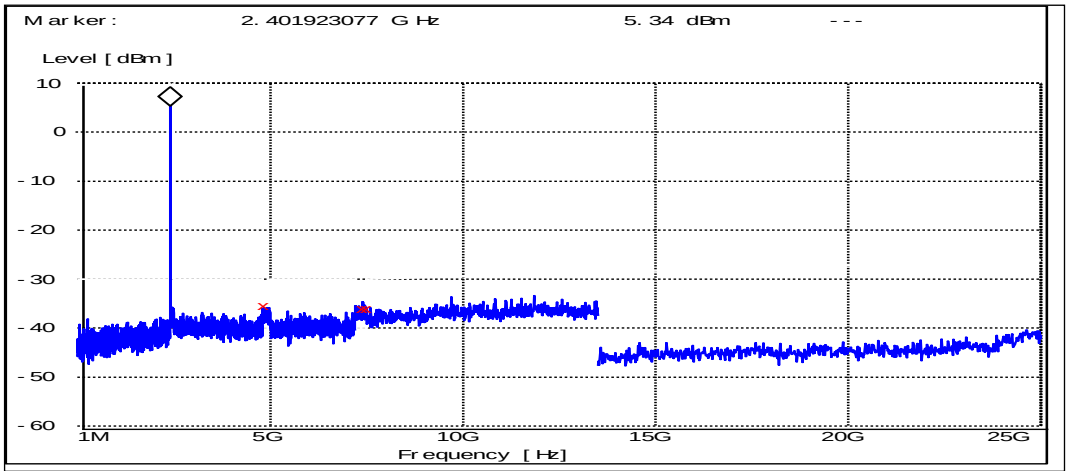
5.2. Bluetooth Test results

5.2.1 GFSK modulation, PRBS packet type

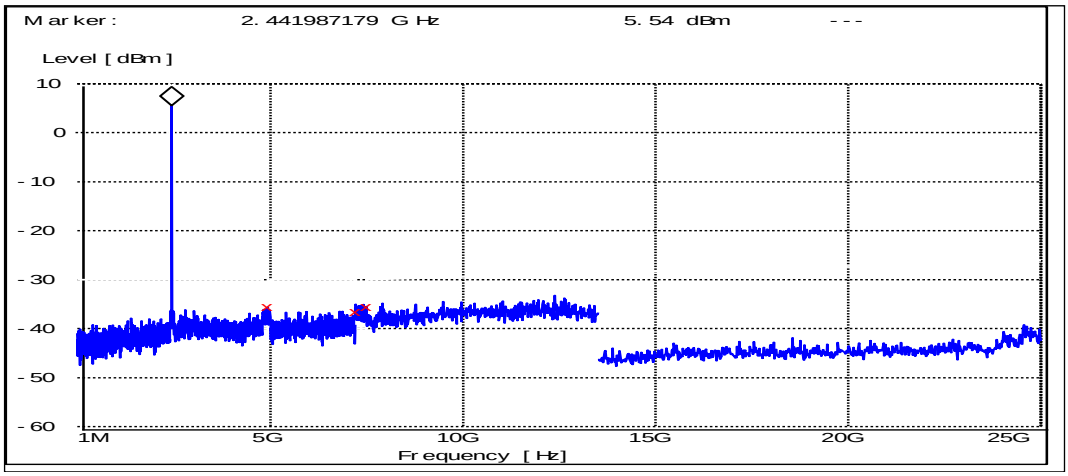
Channel 0 / 2402 MHz



Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4835.897436	-40.740328	PASSED
7395.192308	-41.440328	PASSED
7500.000000	-41.440328	PASSED

Channel 40 / 2442 MHz



Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4929.166667	-41.137584	PASSED
7212.500000	-42.037584	PASSED
7500.000000	-41.137584	PASSED

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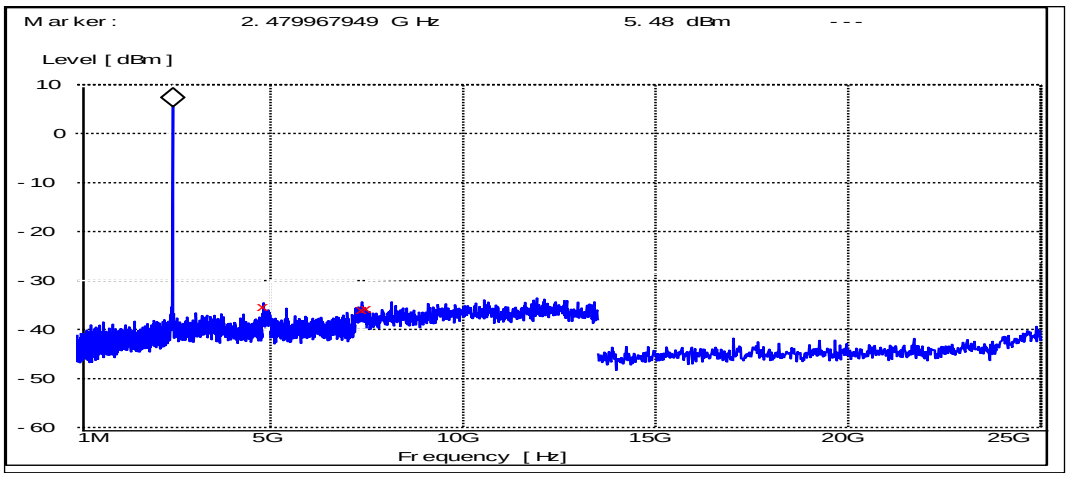
Channel 78 / 2480 MHz

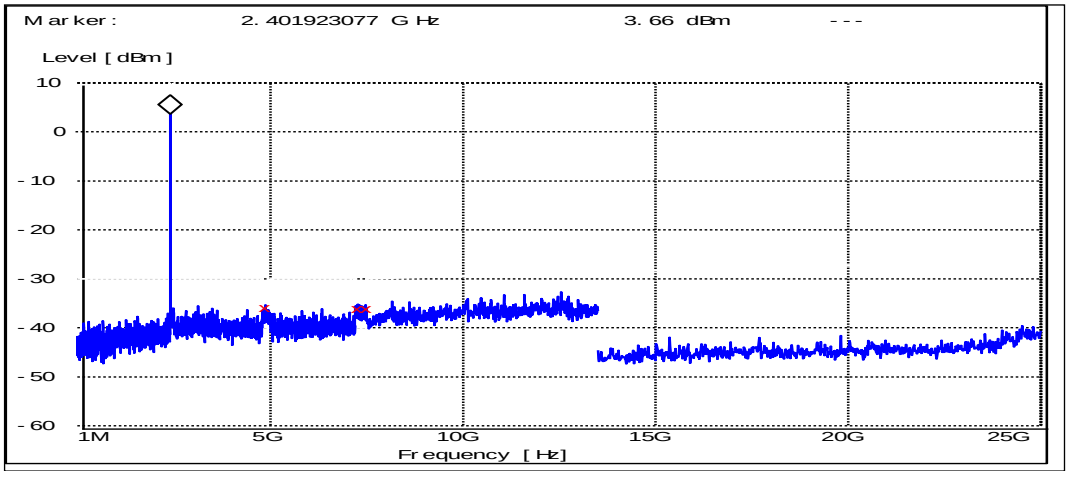


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4825.320513	-40.781163	PASSED
7380.288462	-41.381163	PASSED
7500.000000	-41.281163	PASSED

5.2.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz



Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4876.602564	-39.655597	PASSED
7270.673077	-39.855597	PASSED
7500.000000	-39.755597	PASSED

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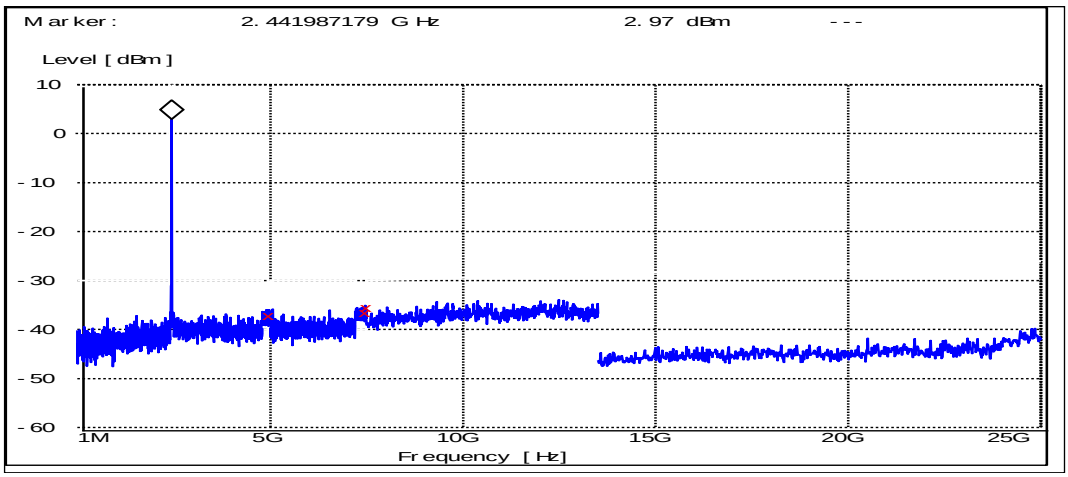
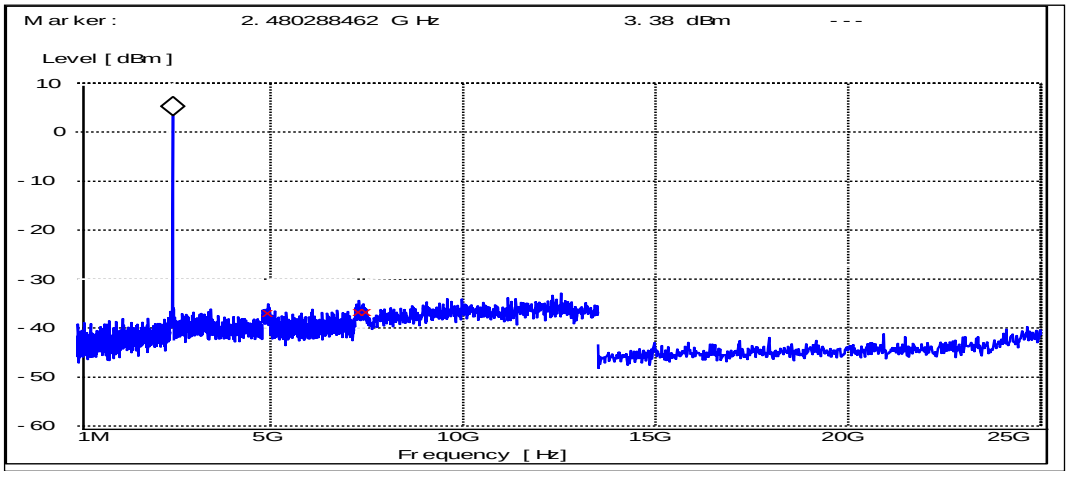
Channel 40 / 2442 MHz



Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4979.807692	-40.070926	PASSED
7458.653846	-39.470926	PASSED
7500.000000	-38.570926	PASSED

Channel 78 / 2480 MHz



Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4954.487179	-40.183138	PASSED
7298.557692	-40.083138	PASSED
7500.000000	-39.983138	PASSED

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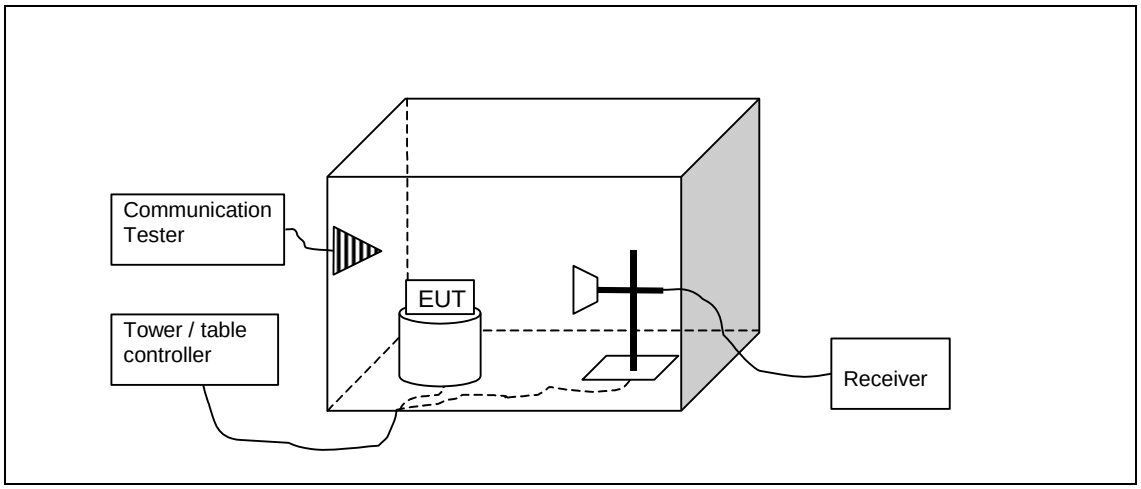
6. Spurious radiated emissions
(FCC §15.247(d), §15.209, RSS-210 A8.5)

EUT with DUT number	RM-779, DUT 42634
Accessories with DUT numbers	BP-3L, DUT 42636 ; AC-10E, DUT 42637 ; WH-207, DUT 42638
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 49 / 99.6
Date of measurements	27-Jul-2011
Measured by	Jari Jantunen

6.1.1 Test Setup



6.2. 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.

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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 ($A_{TOT} = L_{CABLES} + A_F - G_{PREAMP}$).

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

Frequency range [MHz]	Limit [µV/m]	Limit [dBµV/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

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6.3. Bluetooth Test results

6.3.1 GFSK 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	43.19	144.361	45.94	-2.75	HORIZONTAL	PASSED
7205.6	55.98	629.506	55.17	0.81	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	30.43	33.243	33.18	-2.75	HORIZONTAL	PASSED
7205.6	41.74	122.194	40.93	0.81	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
30.785	16.07	6.359	37.77	-21.7	VERTICAL	PASSED
33.015	23.65	15.226	46.22	-22.57	VERTICAL	PASSED
872.435	28.66	27.099	43.99	-15.33	HORIZONTAL	PASSED
912.072	22.83	13.845	37.46	-14.63	HORIZONTAL	PASSED
945.932	40.88	110.675	55.33	-14.45	HORIZONTAL	PASSED
946.096	37.95	79.013	53.49	-15.54	VERTICAL	PASSED
956.002	29.18	28.767	43.68	-14.5	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
7343.491	55.83	618.657	54.26	1.57	HORIZONTAL	PASSED
7350.5	55.67	607.225	54.14	1.53	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
7343.491	31.21	36.345	29.64	1.57	HORIZONTAL	PASSED
7350.5	31.13	36.016	29.6	1.53	HORIZONTAL	PASSED

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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
4959.8	46.19	203.822	47.93	-1.74	HORIZONTAL	PASSED
7440.4	56.63	678.656	55.17	1.46	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4959.8	33.27	46.079	35.01	-1.74	HORIZONTAL	PASSED
7440.4	41.53	119.261	40.07	1.46	HORIZONTAL	PASSED

6.3.2 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
4804.3	46.63	214.635	49.38	-2.75	HORIZONTAL	PASSED
7205.6	55.21	575.771	54.4	0.81	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
4804.3	34.17	51.133	36.92	-2.75	HORIZONTAL	PASSED
7205.6	41.39	117.328	40.58	0.81	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
32.116	19.97	9.962	42.19	-22.22	VERTICAL	PASSED
32.436	14.72	5.443	37.07	-22.35	VERTICAL	PASSED
32.516	14.42	5.259	36.8	-22.38	VERTICAL	PASSED
33.015	18.87	8.784	41.44	-22.57	VERTICAL	PASSED
35.343	17.79	7.756	41.28	-23.49	VERTICAL	PASSED
945.932	40.92	111.212	55.37	-14.45	HORIZONTAL	PASSED
956.002	29.2	28.83	43.7	-14.5	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
7314.024	55.73	611.716	54	1.73	HORIZONTAL	PASSED
7368.436	56.12	639.661	54.65	1.47	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
7314.024	31.16	36.153	29.43	1.73	HORIZONTAL	PASSED
7368.436	30.91	35.103	29.44	1.47	HORIZONTAL	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
4960.1	45.21	182.222	46.94	-1.73	HORIZONTAL	PASSED
7440.5	56.25	649.008	54.78	1.47	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4960.1	32.37	41.524	34.1	-1.73	HORIZONTAL	PASSED
7440.5	42.44	132.419	40.97	1.47	HORIZONTAL	PASSED

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7. AC powerline conducted emissions

(FCC §15.207, RSS-GEN 7.2.2)

EUT with DUT number	RM-779, DUT 42634
Accessories with DUT numbers	BP-3L, DUT 42636 ; AC-10E, DUT 42637 ; WH-207, DUT 42638
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24 / 53 / 100.0
Date of measurements	04-Aug-2011
Measured by	Jari Jantunen

7.1. 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

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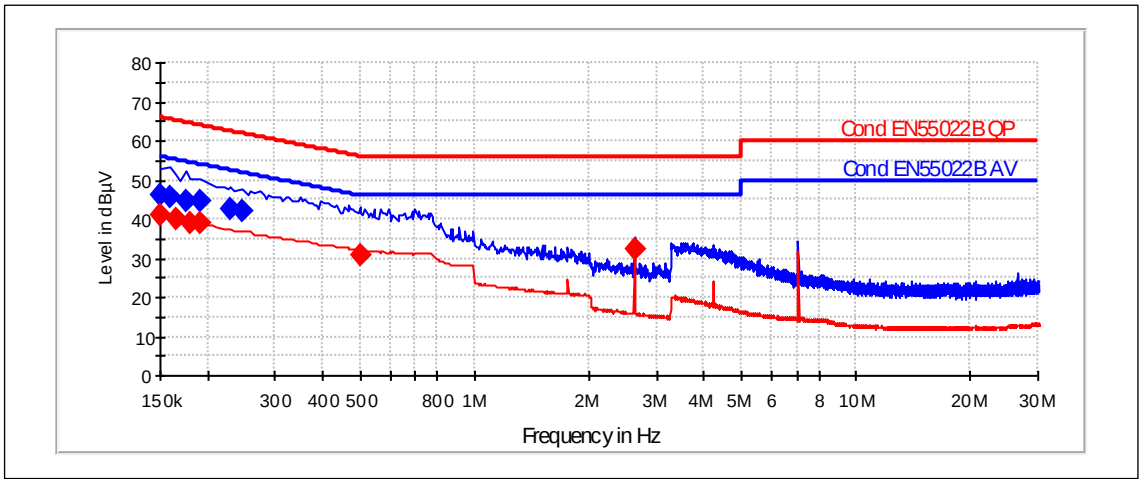
7.2. Bluetooth Test results

7.2.1 GFSK modulation, PRBS packet type

Channel 40 / 2442 MHz



Quasi peak

Frequency [MHz]	Level [dBµV]	IF-BW[kHz]	Line	Margin	Result
0.15	46.17	10	L1	19.8	PASSED
0.16	45.59	10	L1	19.86	PASSED
0.175	44.84	10	N	19.92	PASSED
0.19	44.51	10	N	19.54	PASSED
0.23	42.48	10	L1	19.95	PASSED
0.245	42.03	10	N	19.92	PASSED

Average

Frequency [MHz]	Level [dBµV]	IF-BW[kHz]	Line	Margin	Result
0.15	40.82	10	L1	15.2	PASSED
0.165	39.98	10	L1	15.21	PASSED
0.18	39.01	10	N	15.49	PASSED
0.19	38.99	10	N	15.04	PASSED
0.505	30.8	10	N	15.2	PASSED
2.625	32.43	10	L1	13.6	PASSED

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8. 20 dB bandwidth

(FCC §15.247(a)(1), RSS-210 A8.1 (a))

EUT with DUT number	RM-779 DUT 42642
Accessories with DUT numbers	BP-3L DUT 42636
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 47 / 99.7
Date of measurements	01-Aug-2011
Measured by	Jari Jantunen

8.1. 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

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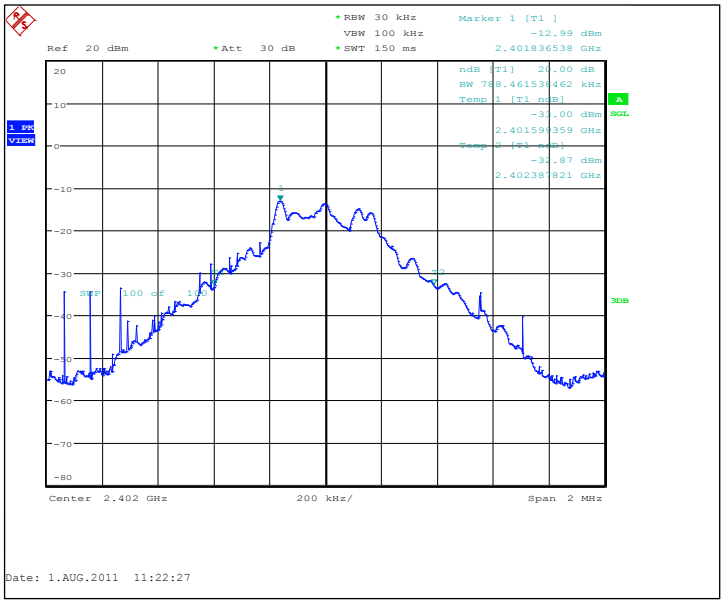
8.2. Bluetooth Test results

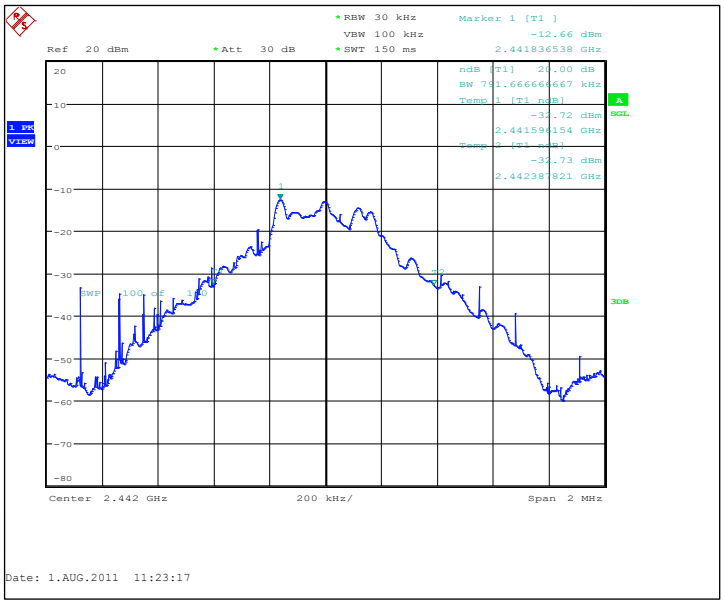
8.2.1 GFSK modulation, PRBS packet type

Channel / f_C [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	788.462	PASSED
40 / 2442	791.667	PASSED
78 / 2480	794.872	PASSED

Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



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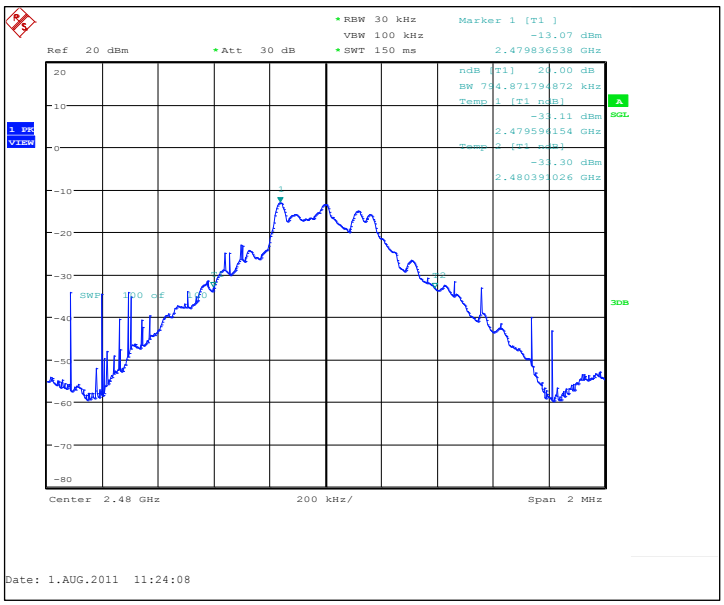
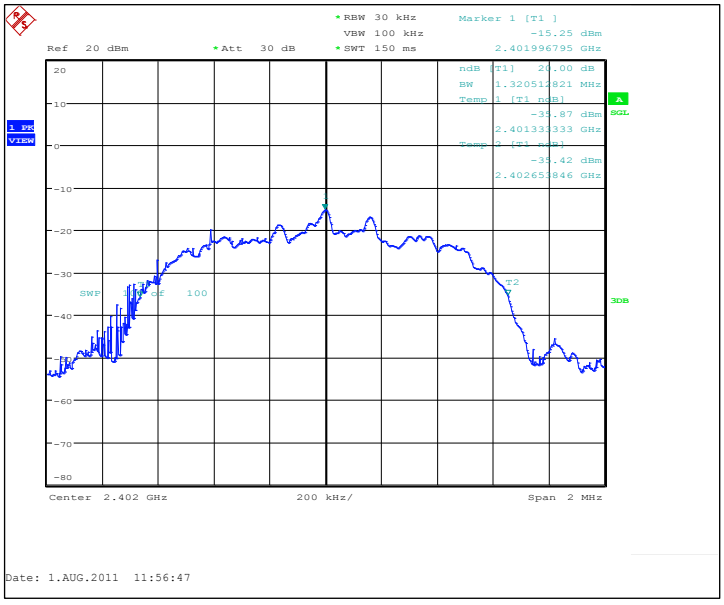
Channel 78 / 2480 MHz



8.2.2 8DPSK modulation, PRBS packet type

Channel / f_C [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	1320.513	PASSED
40 / 2442	1314.103	PASSED
78 / 2480	1304.487	PASSED

Channel 0 / 2402 MHz



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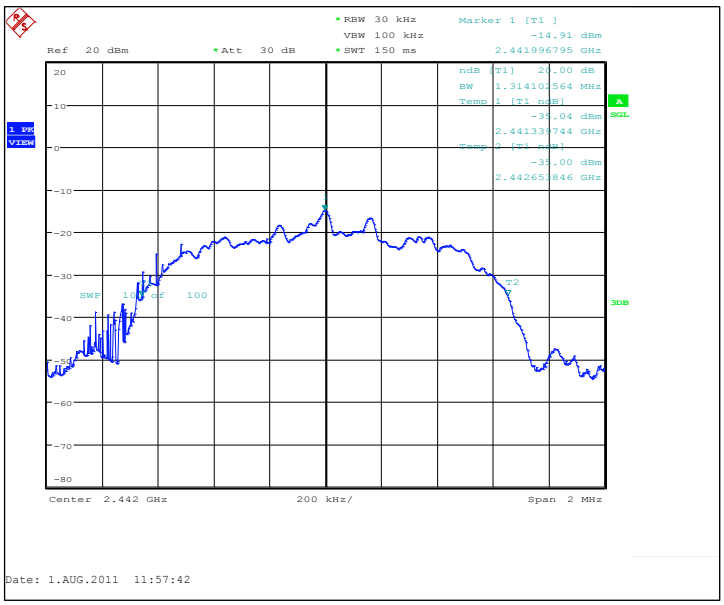
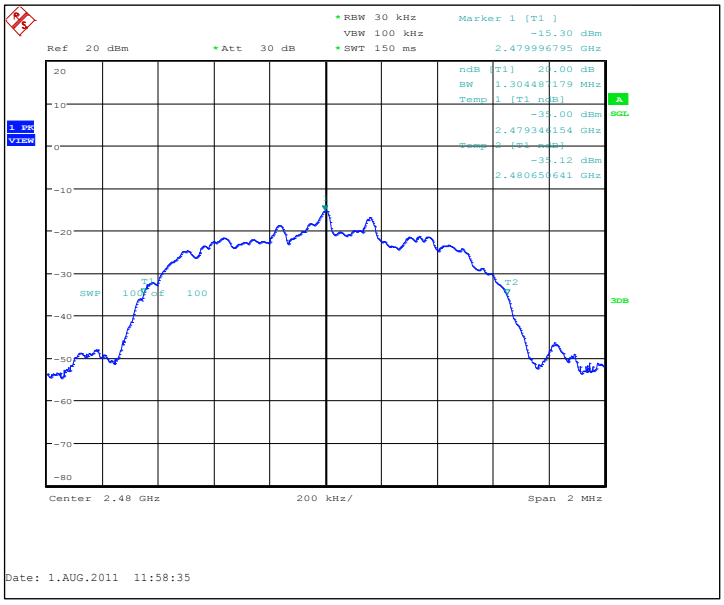
Channel 40 / 2442 MHz



Channel 78 / 2480 MHz



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9. Carrier frequency separation

(FCC §15.247(a)(1), RSS-210 A8.1 (b))

EUT with DUT number	RM-779 DUT 42642
Accessories with DUT numbers	BP-3L DUT 42636
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 47 / 99.7
Date of measurements	01-Aug-2011
Measured by	Jari Jantunen

9.1. 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

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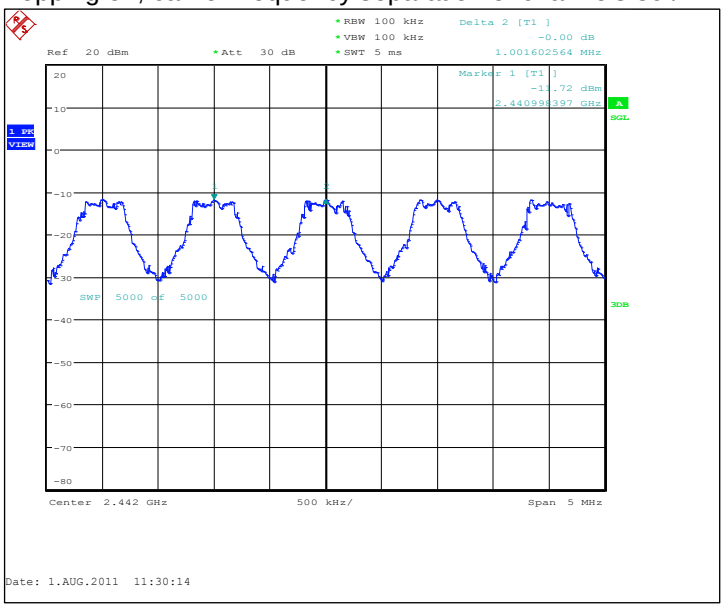
9.2. Bluetooth Test results

9.2.1 GFSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1001.603	PASSED

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



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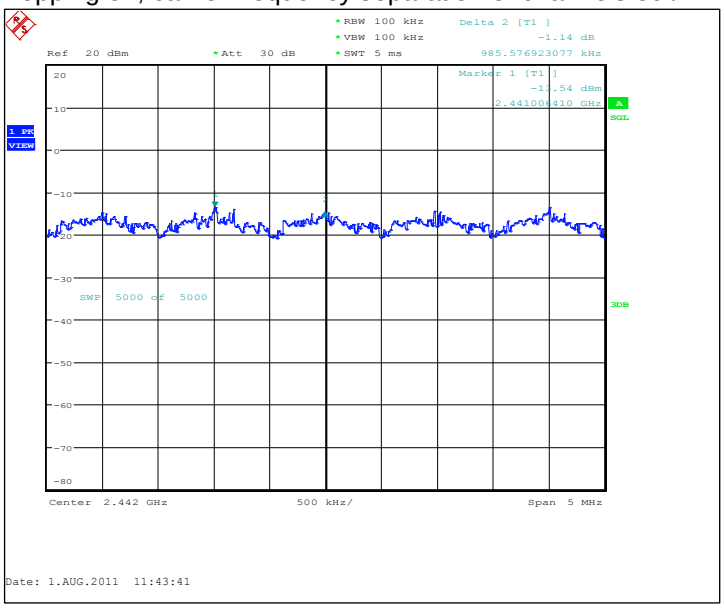
9.2.2 8DPSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
985.577	PASSED

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



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10. Number of hopping frequencies

(FCC §15.247(a)(1)(iii), RSS-210 A8.1 (d))

EUT with DUT number	RM-779 DUT 42642
Accessories with DUT numbers	BP-3L DUT 42636
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 47 / 99.7
Date of measurements	01-Aug-2011
Measured by	Jari Jantunen

10.1. 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

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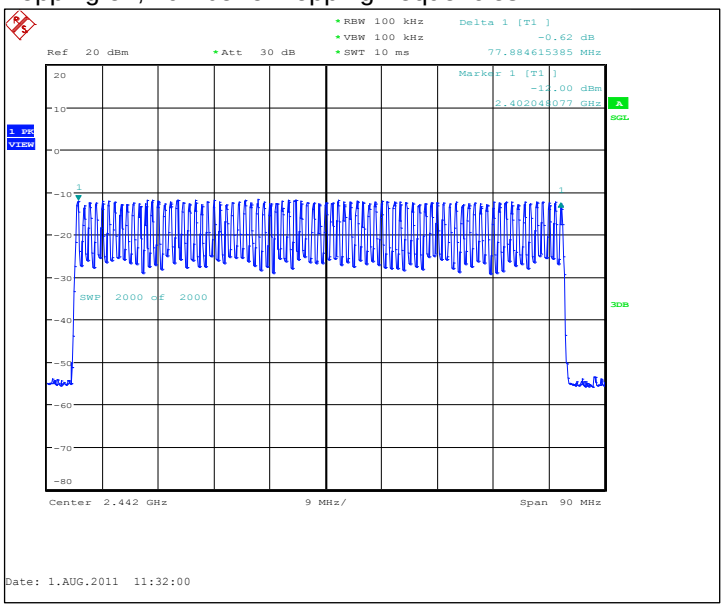
10.2. Bluetooth Test results

10.2.1 GFSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
79	PASSED

Hopping on, number of hopping frequencies



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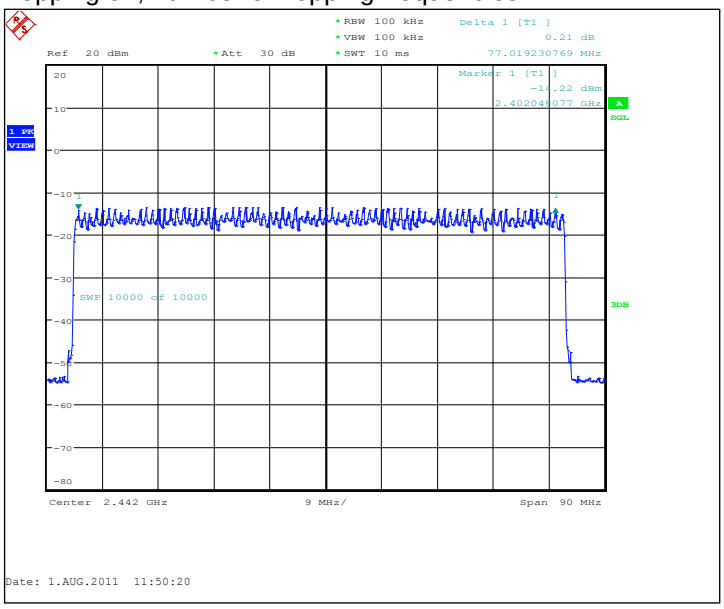
10.2.2 8DPSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
29	PASSED

Hopping on, number of hopping frequencies



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11. Time of occupancy

(FCC §15.247(a)(1)(iii), RSS-210 A8.1 (d))

EUT with DUT number	RM-779 DUT 42642
Accessories with DUT numbers	BP-3L DUT 42636
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 47 / 99.7
Date of measurements	01-Aug-2011
Measured by	Jari Jantunen

11.1. 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

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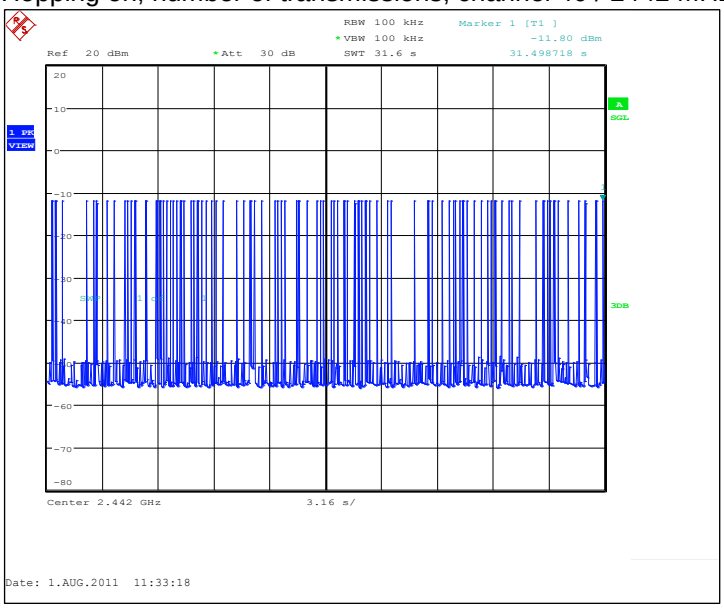
11.2. Bluetooth test results

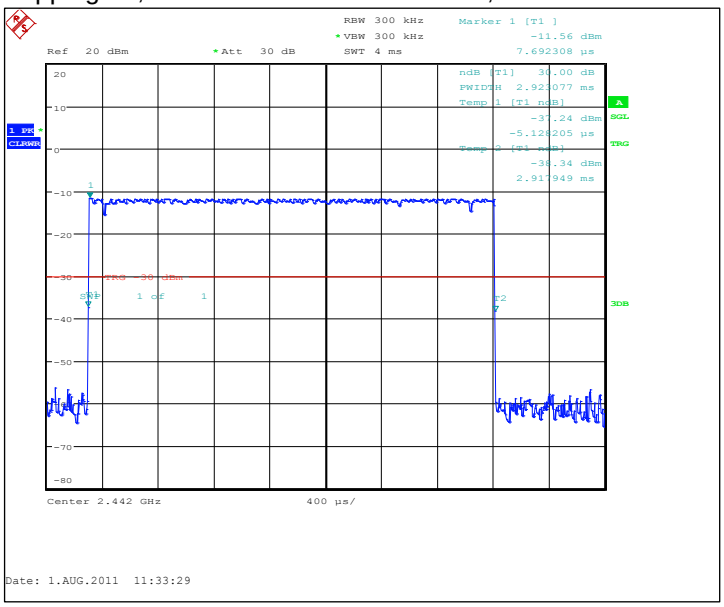
11.2.1 GFSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [µs]	Time of occupancy [s]	Result
89	2 923	0.260154	PASSED

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



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



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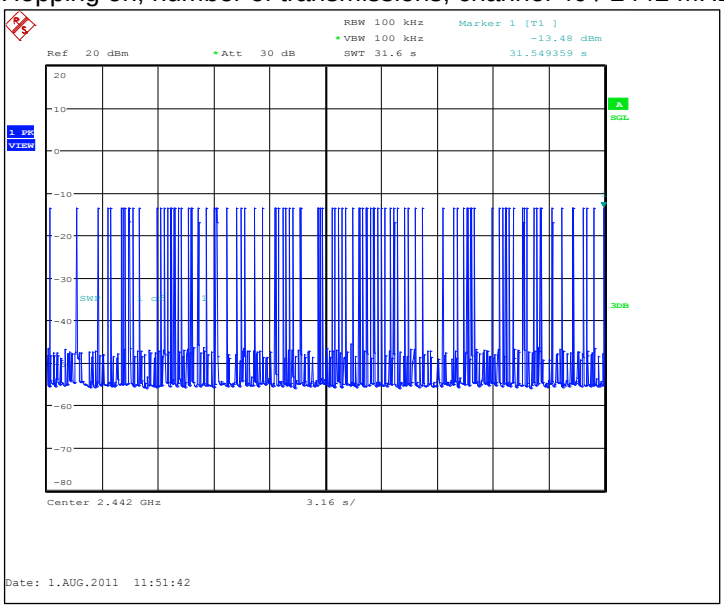
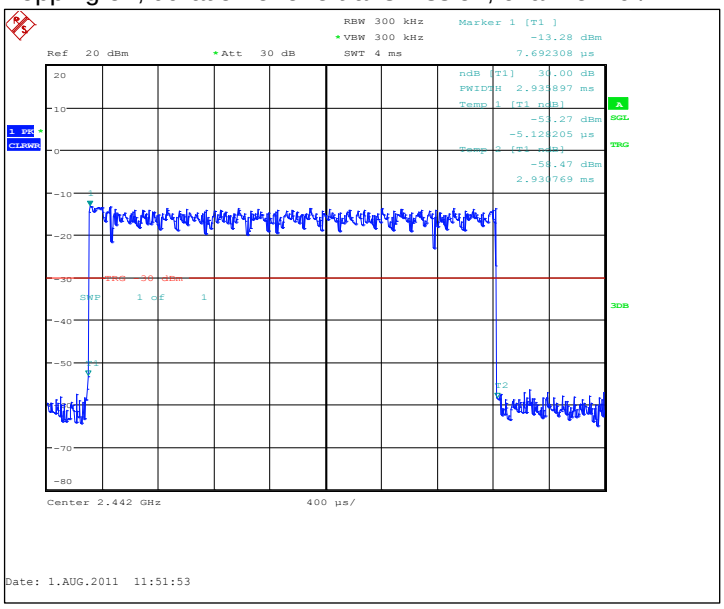
11.2.2 8DPSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [µs]	Time of occupancy [s]	Result
88	2 936	0.258359	PASSED

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



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



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13. Test Equipment

13.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM38112	Power supply	6632A	Agilent	22/24/27, 15C
TM38631	Signal Generator	83640L	Agilent	22/24/27, 15C, 15B
OM06312	Signal Generator	E4422B	Agilent	22/24
TM37678	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
TM37773	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
TM30600	Impulse limiter	ESH3-Z2	R&S	15C, 15B
TM26490	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
TM26491	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
TM37610	Spectrum Analyzer	FSU26	R&S	22/24/27, 15C
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
2058	Receiver	ESPC	R&S	15C, 15B
2001	Bluetooth tester	CBT	R&S	22/24/27, 15C, 15B
2002	Communication Tester	CMU200	R&S	22/24/27
2009	LISN 50 µH	ENV216	R&S	15C, 15B
2010	LISN 50 µH	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

13.2. 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, 15B
TM38323	Preamplifier	PA-02 18-26 GHz	EMC Automation	22/24/27, 15C, 15B
-	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C
TM26497	Antenna	3115	Emco	22/24/27, 15C, 15B
TM37678	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
TM37773	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
TM38845	Receiver	ESIB 26	R&S	22/24/27, 15C, 15B
-	Antenna	HL562	R&S	22/24/27, 15C, 15B
TM26500	Turntable	DS412	Deisel	22/24/27, 15C, 15B
TM30642	Mast/turntable controller	HD-100	Deisel	22/24/27, 15C, 15B
TM38990	Remote switching module	RSM1	EMC Automation	22/24/27, 15C, 15B
TM38341	System interface	SI-300	EMC Automation	22/24/27, 15C, 15B
-	Mini mast	2075-2	ETS Lindgren	22/24/27, 15C, 15B
TM38843	Mini mast	2075	Emco	22/24/27, 15C, 15B
TM38842	Controller	2090	Emco	22/24/27, 15C, 15B
TM39158	Antenna	3116	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

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Eq. No	Equipment	Type	Manufacturer	Used in
TM39180	Laser distance meter	Disto Pro	Leica	22/24/27, 15C, 15B
TM37523	Preamplifier	AMF-4D-10M-3G-25-20P	Miteq	22/24/27, 15C, 15B
-	Preamplifier	AFS4-00100300-20-23P6	Miteq	15C
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	Torqueleader	22/24/27, 15C, 15B
TM38066	High pass filter	4HC3000/18000-3-KK	Trilithic	22/24/27, 15C, 15B
TM26511	Tunable notch filter	WRCA870/	Wainwright	27
TM38215	Band reject filter	WRCD 1920/1980-1918/1982-40/20	Wainwright UMTS	27
TM38214	Band reject filter	WRCT 2402/2480-2400/2483.5-30/	Wainwright ISM	15C
-	Band reject filter	WRCG1877/1883-1870/1890-40/6EE	Wainwright	27
-	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	27
TM23892	Controller	G-1000SDX	Yaesu	22/24/27
2001	Bluetooth tester	CBT	R&S	22/24/27, 15C, 15B
-	Antenna	SBA 9113	Schwarzbeck	22/24/27
6023	Antenna	VUBA 9117	Schwarzbeck	22/24/27, 15C

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