FCC Part 15C Compliance Test Report

Test Report no.:	Tre_FCC_0604_03.doc	**Date of Report:**	6.3.2006
Number of pages:	62	**Customer's Contact person:**	Robert Binder
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	**Client:**	Nokia Corporation Arco Tower Shimomeguro 1-8-1 Meguro-ku TOKYO 153-0064 JAPAN Tel. +81 3 5759 7001 Fax. +81 3 5740 6858
FCC listing no.: **IC recognition no.:**	94436 3608		
Tested devices/ accessories:	**GSM phone RM-55 / Battery BP-6M, AC charger AC-4, Headset HS-23, Memory card MU-17**		
FCC ID:	QVVRM-55	**IC:**	661AE-RM55
Supplement reports:	-		
Testing has been carried out in accordance with:	**CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), IC standards RSS-GEN and RSS-210. 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 Jan-Erik Lilja DN: CN = Jan-Erik Lilja, C = FI, O = TCC nokia, OU = TCC Nokia Tampere Location: Tampere Date: 2006.03.07 15:10:10 +02'00'	

Jan-Erik Lilja, System Manager

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	23.1.2006
Testing completed	2.3.2006
The customer's contact person	Robert Binder
Test Plan referred to	\EMC\TESTPLAN\
Notes	-
Document name	T:\Projects\RM-55\EMC\Results\FCC\Tre_FCC_0604_03.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. Bluetooth and WLAN are tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
GSM phone	RM-55	004400801727957	4100	-	02.0.026	40547
GSM phone	RM-55	004400801722214	4002	-	2.0551.0	40510
GSM phone	RM-55	004400801722503	4002	-	2.0551.0	40517
GSM phone	RM-55	004400801728278	4015	-	2.0551.0_RD_V01	40532
GSM phone	RM-55	004400801730795	4015	-	2.0551.0_RD_V01	40518
GSM phone	RM-55	004400801723568	4002	-	2.0551.0_RD_V01	40524
Battery	BP-6M	-	-	-	-	40543
Battery	BP-6M	-	-	-	-	40519
Battery	BP-6M	-	-	-	-	40511
AC-Charger	AC-4	-	-	-	-	40512
Headset	HS-23	-	-	-	-	40513
Memory Card	MU-17	-	-	-	-	40516
Memory card	MU-17					40520

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)	Peak output power	Passed
15.247(c)	A8.5	Band edge compliance of RF emissions	Passed
15.247(c)	A8.5	Spurious RF conducted emissions	Passed
15.247(c), 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

WLAN:

Section in CFR 47	Section in RSS-210	Name of the test	Result
15.247(b)(1)	A8.4 (4)	Peak output power	Passed
15.247(c)	A8.5	Band edge compliance of RF emissions	Passed
15.247(c)	A8.5	Spurious RF conducted emissions	Passed
15.247(c), 15.209	A8.5	Spurious radiated emissions	Passed
15.207	*7.2.2*	AC powerline conducted emissions	Passed

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15.247(a)(2)	A8.2 (1)	6 dB bandwidth	Passed
15.247(e)	A8.2 (2)	Power spectral density	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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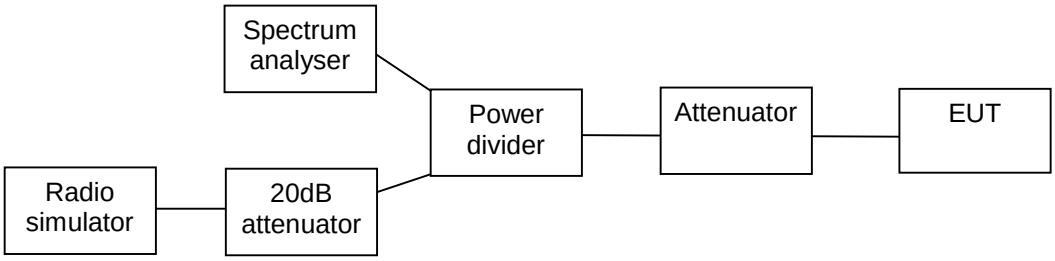
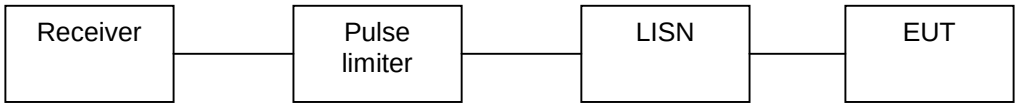
2. Test setups

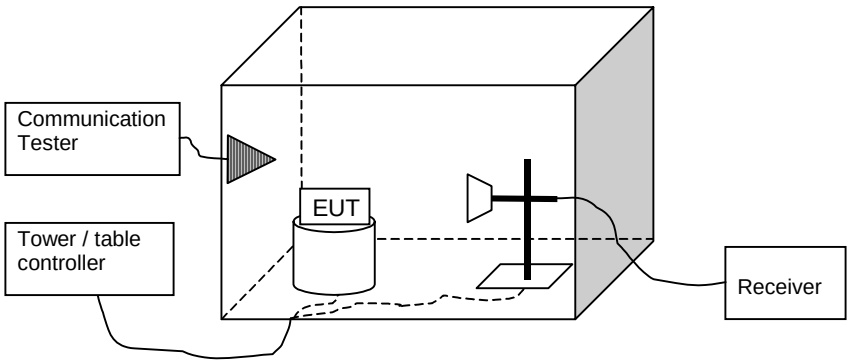
2.1. Conducted RF test setup



2.2. AC powerline conducted emissions test setup



2.3. Spurious radiated emissions test setup



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3. Peak output power

(FCC §15.247(b)(1), RSS-210 A8.4 (2))

EUT with DUT number	Phone: DUT 40518
Accessories with DUT numbers	Battery: DUT 40543
Operation Voltage [V] / [Hz]	-
Result	Passed
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22/52/100.7-102.9
Date of measurements	24.2.2006,27.2.2006
Measured by	Jan-Erik Lilja

3.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

Limits for peak output power measurements

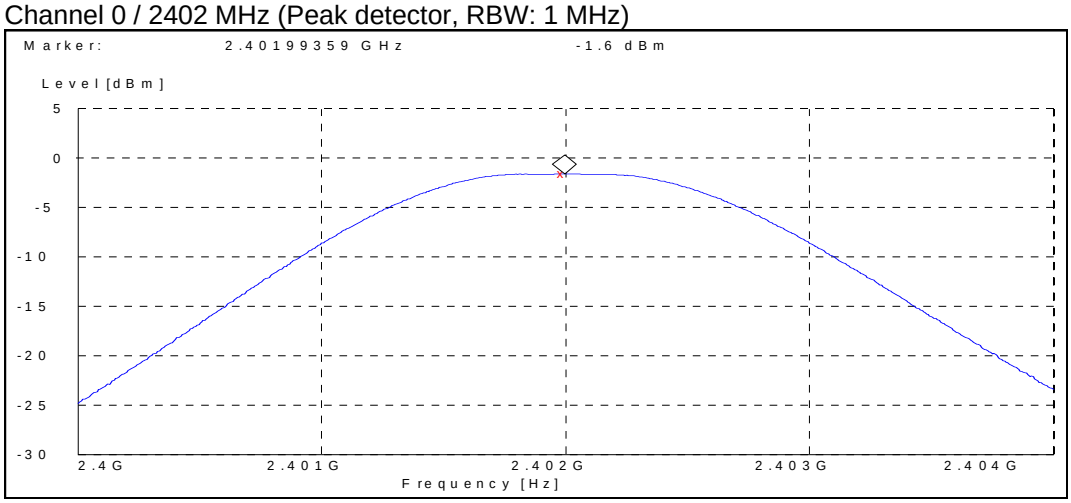
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

3.2. Bluetooth Test results

3.2.1 GSFK modulation, PRBS packet type

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
0 / 2402	-1.60	0.692	Passed
40 / 2442	-0.60	0.871	Passed
78 / 2480	-0.50	0.891	Passed

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



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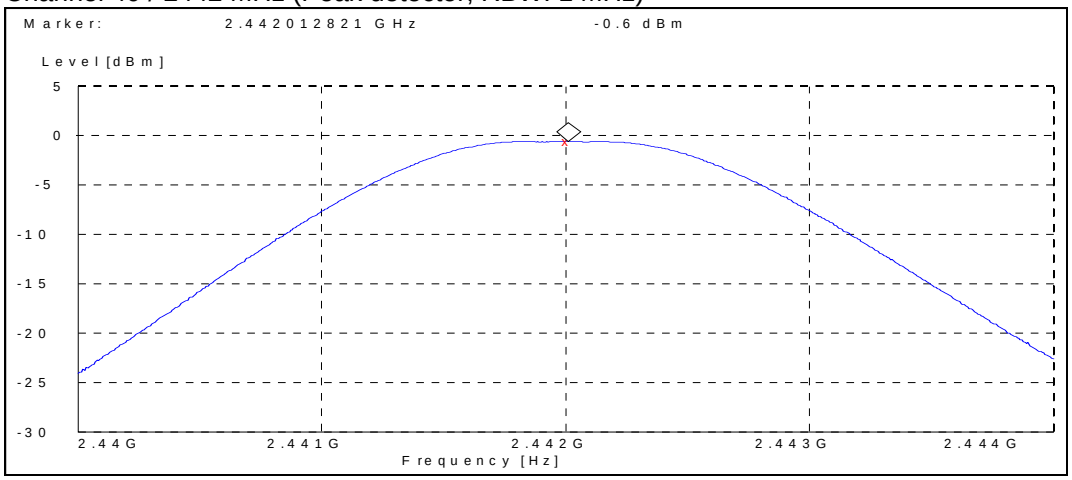
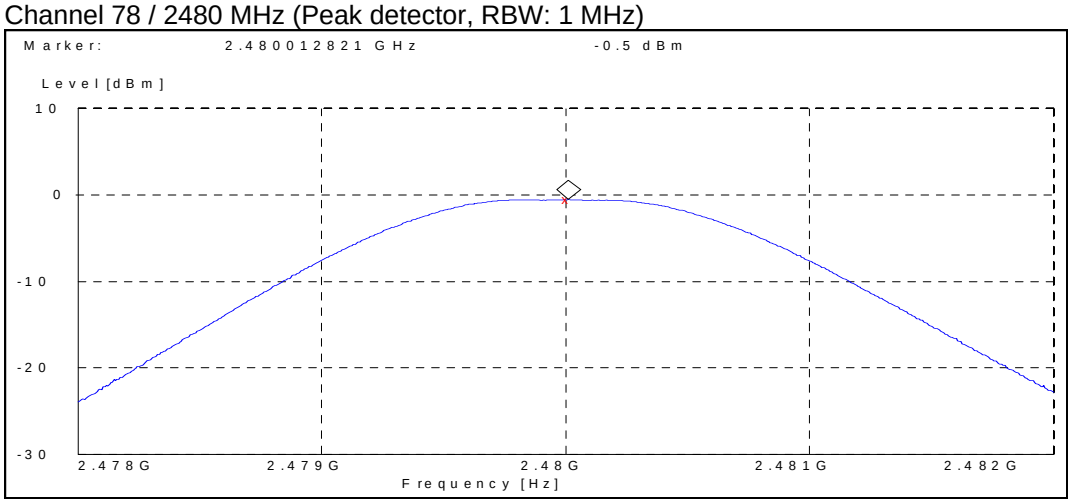
Channel 40 / 2442 MHz (Peak detector, RBW: 1 MHz)



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



3.2.2 8DPSK modulation, PRBS packet type

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
0 / 2402	-2.1	0.617	Passed
39 / 2441	-1.7	0.676	Passed
78 / 2480	-2.30	0.589	Passed

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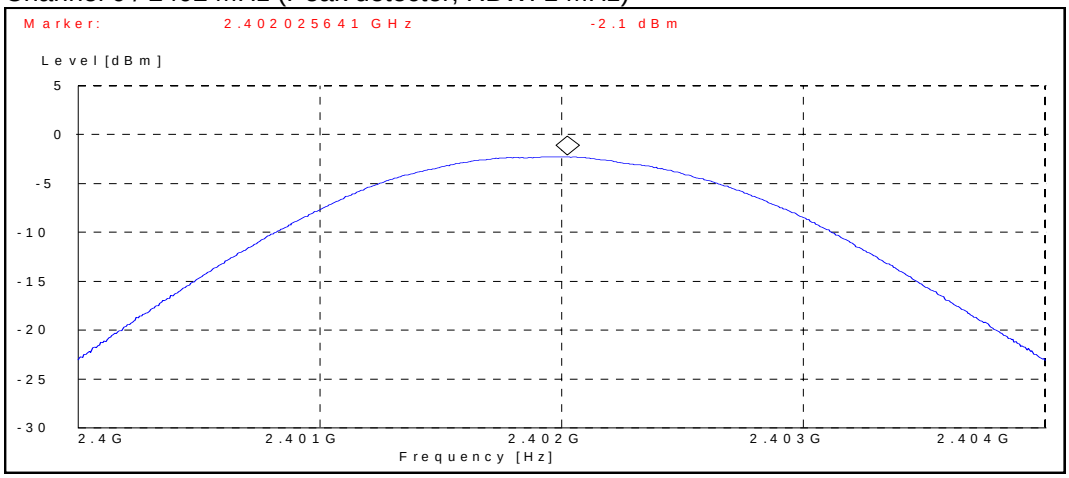
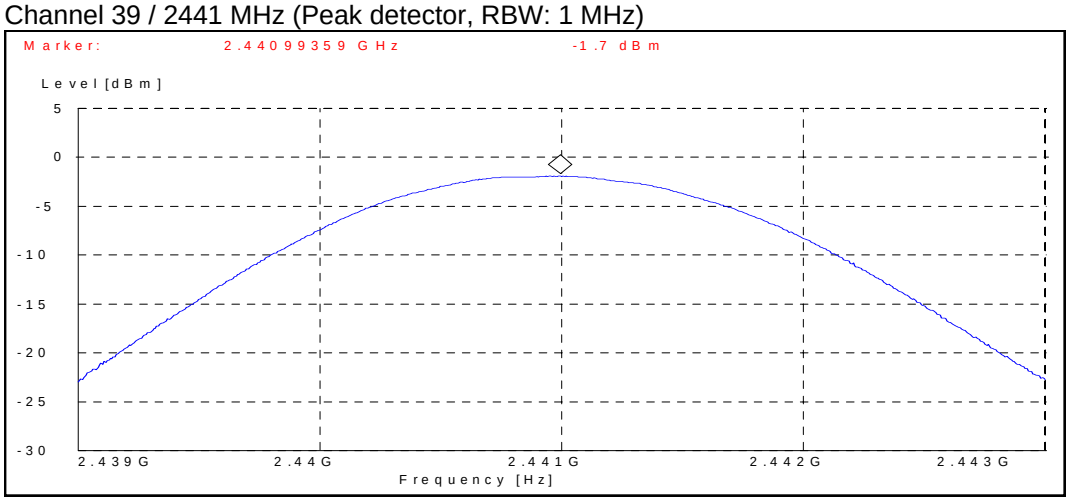
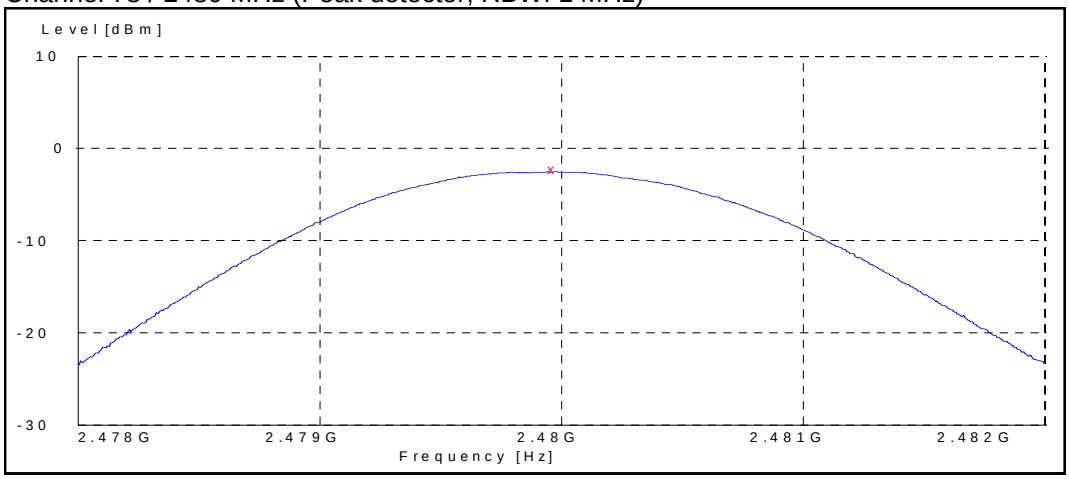
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz)



Channel 39 / 2441 MHz (Peak detector, RBW: 1 MHz)



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



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4. Band edge compliance of RF emissions

(FCC §15.247(c), RSS-210 A8.5)

EUT with DUT number	RM-55 DUT 40532
Accessories with DUT numbers	BP-6M DUT 40511, AC-4 DUT 40512, HS-23 DUT 40513, MU-17 DUT 40516
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Flip open
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24 / 44 / 102.3
Date of measurements	6.2.2006
Measured by	Jari Jantunen

4.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

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

4.2. Bluetooth Test results

4.2.1 GFSK modulation, PRBS packet type

Average (RBW: 1 MHz)

Channel	E [dBµV/m]	Result
0	28.08	PASSED
78	37.54	PASSED
Hopping on, low end	28.14	PASSED
Hopping on, high end	30.64	PASSED

Peak (RBW: 1 MHz)

Channel	E [dBµV/m]	Result
0	43.00	PASSED
78	53.87	PASSED
Hopping on, low end	43.71	PASSED
Hopping on, high end	52.44	PASSED

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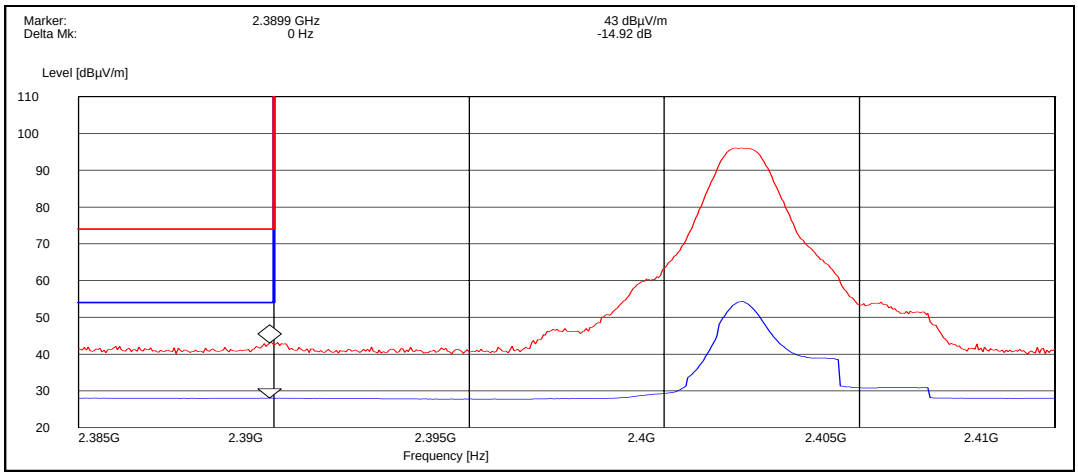
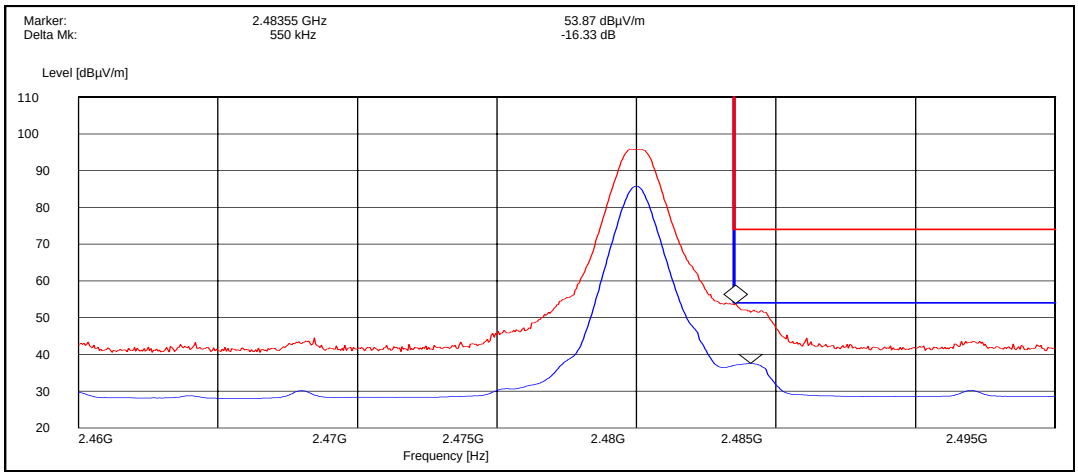
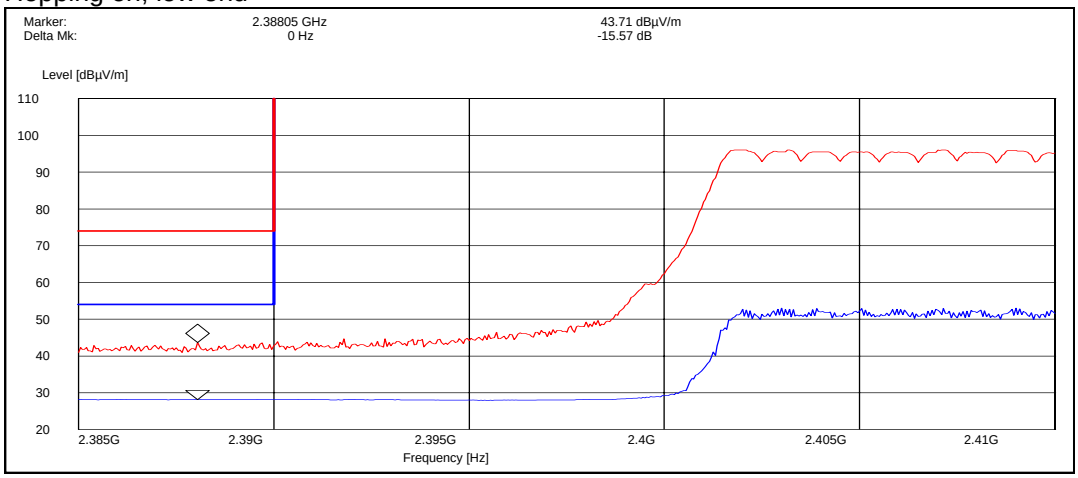
Channel 0



Channel 78



Hopping on, low end



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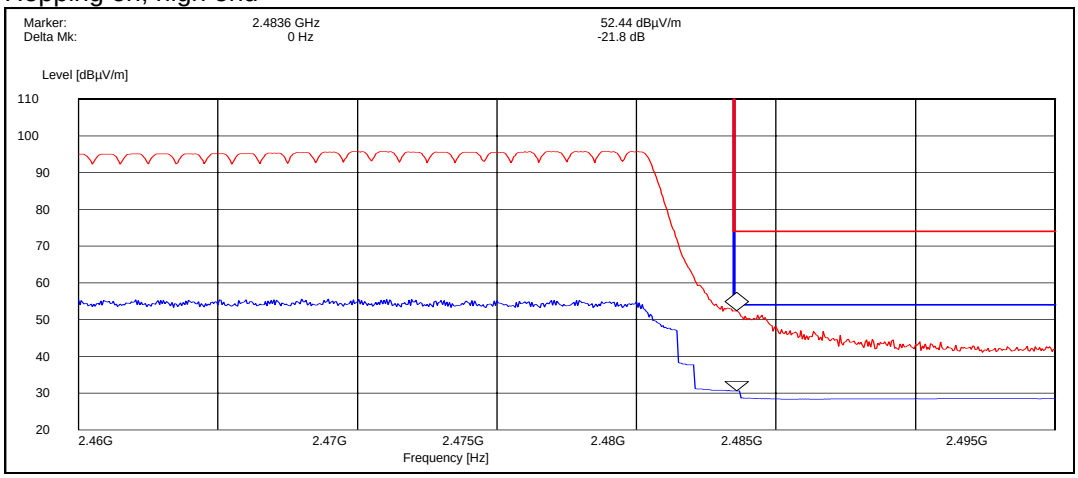
Hopping on, high end



4.2.2 8DPSK modulation, PRBS packet type

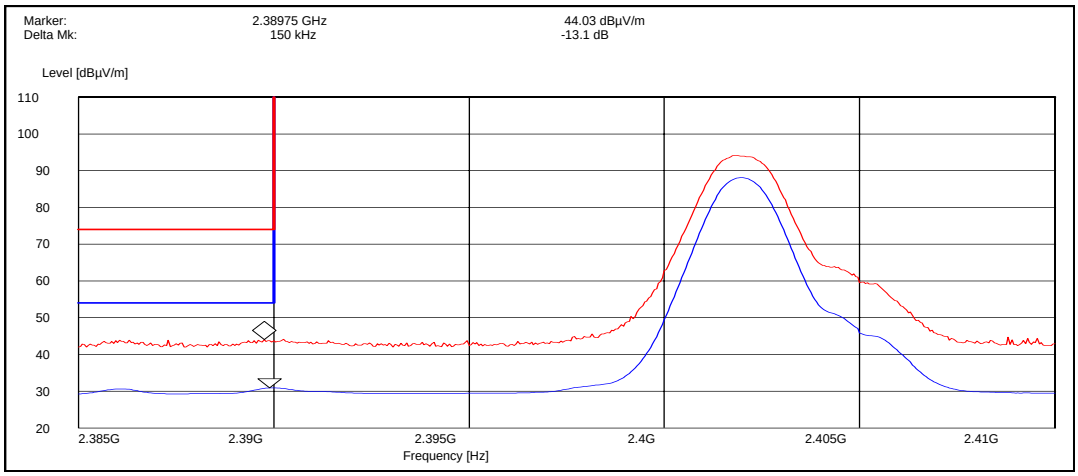
Average (RBW: 1 MHz)

Channel	E [dBµV/m]	Result
0	29.93	PASSED
78	44.78	PASSED
Hopping on, low end	28.90	PASSED
Hopping on, high end	31.24	PASSED

Peak (RBW: 1 MHz)

Channel	E [dBµV/m]	Result
0	44.03	PASSED
78	58.40	PASSED
Hopping on, low end	44.65	PASSED
Hopping on, high end	55.98	PASSED

Channel 0



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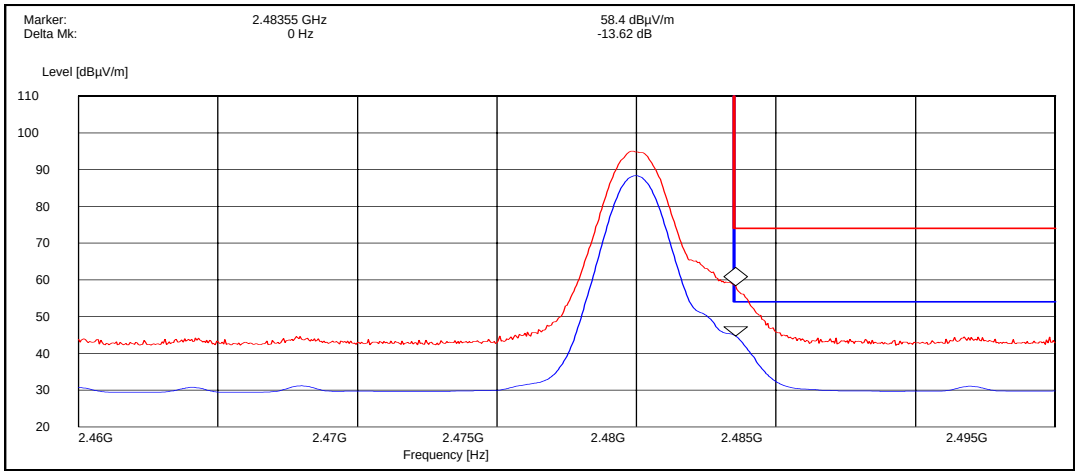
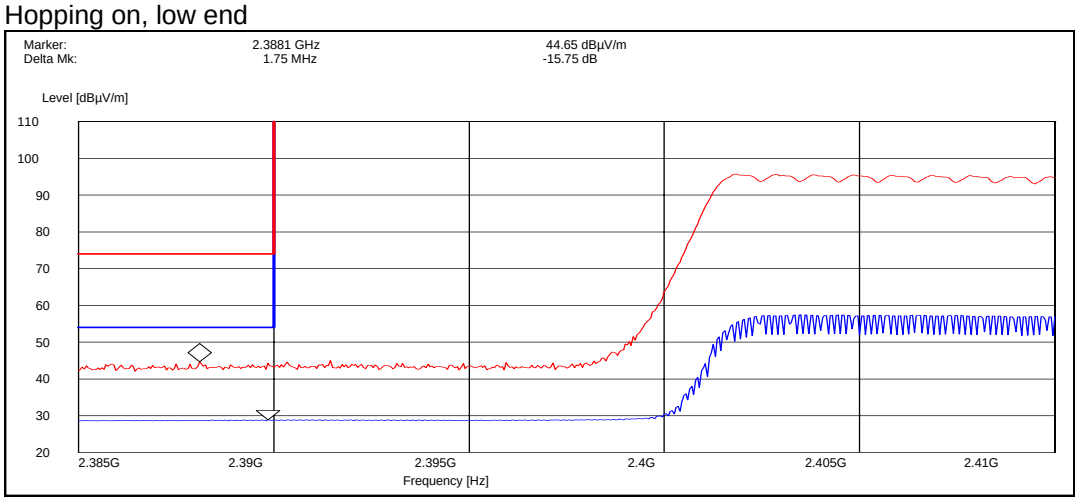
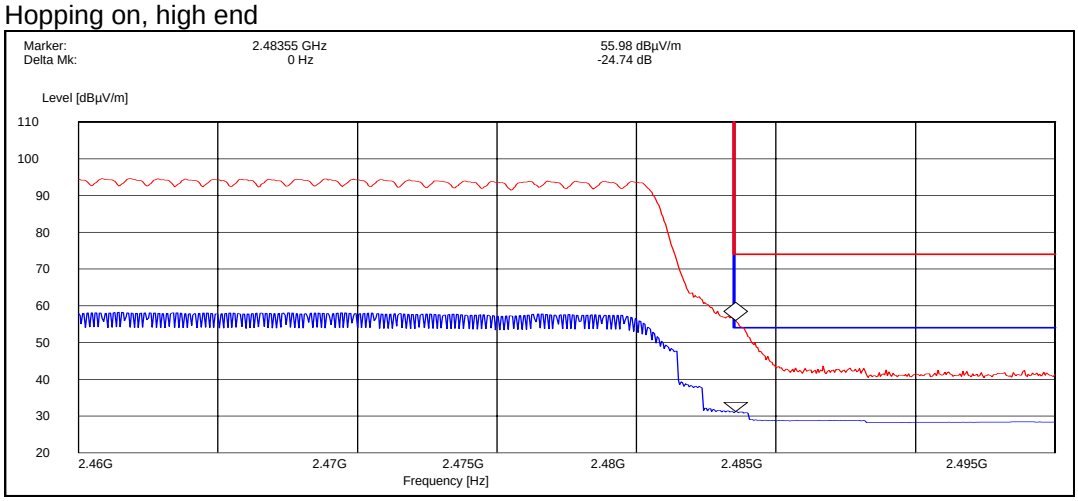
Channel 78



Hopping on, low end



Hopping on, high end



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

EUT with DUT number	Phone: DUT 40524
Accessories with DUT numbers	Battery: DUT 40543
Operation Voltage [V] / [Hz]	-
Result	Passed
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22/52/100.7-102.9
Date of measurements	24.2.2006,27.2.2006
Measured by	Jan-Erik Lilja

5.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

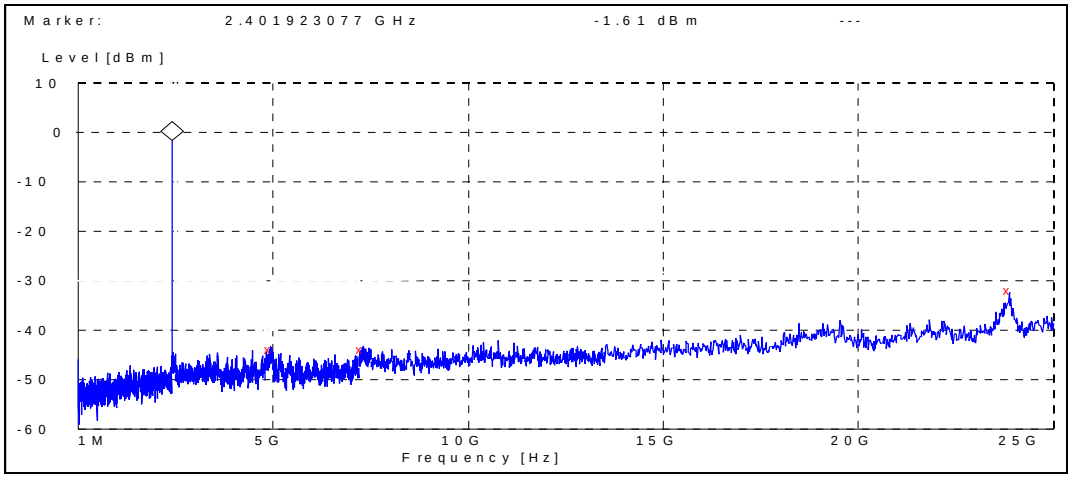
Limits for spurious RF conducted emissions measurements

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

5.2. Bluetooth Test results

5.2.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz



Frequency [MHz]	P [dBc]	Result
4941.987179	-42.388087	Passed
7293.269231	-42.188087	Passed
23875.801282	-30.188087	Passed

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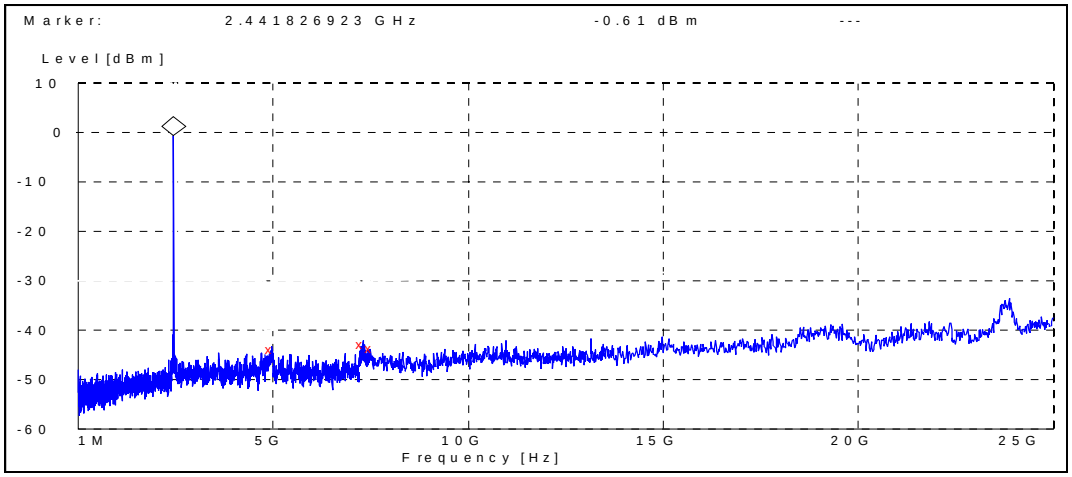
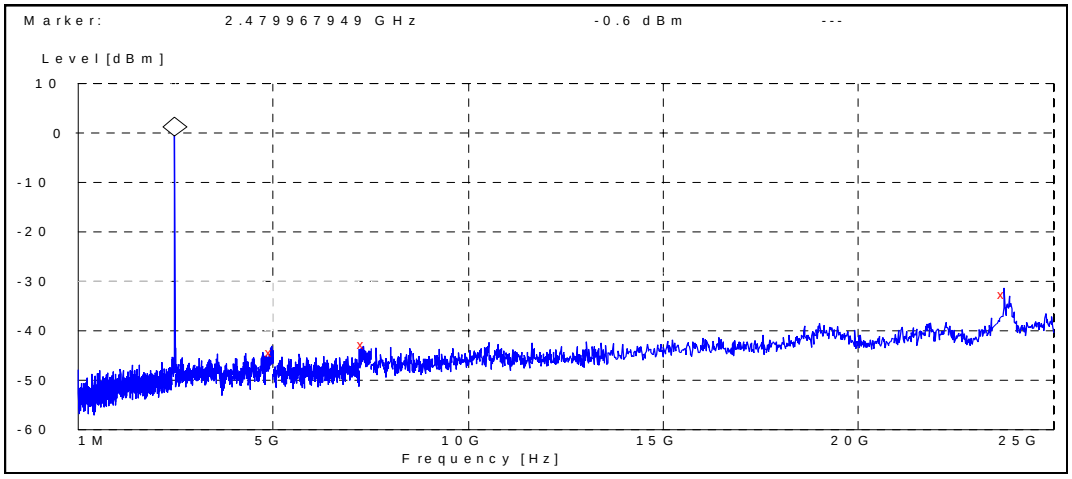
Channel 40 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4960.576923	-43.386967	Passed
7303.365385	-42.186967	Passed
7500.000000	-43.086967	Passed

Channel 78 / 2480 MHz



Frequency [MHz]	P [dBc]	Result
4957.692308	-43.698000	Passed
7314.903846	-42.198000	Passed
23746.794872	-31.998000	Passed

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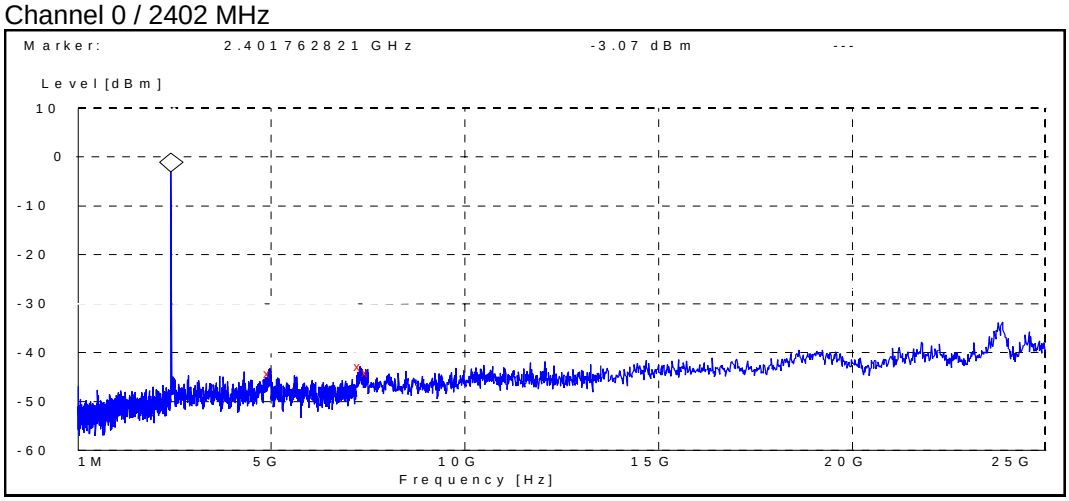
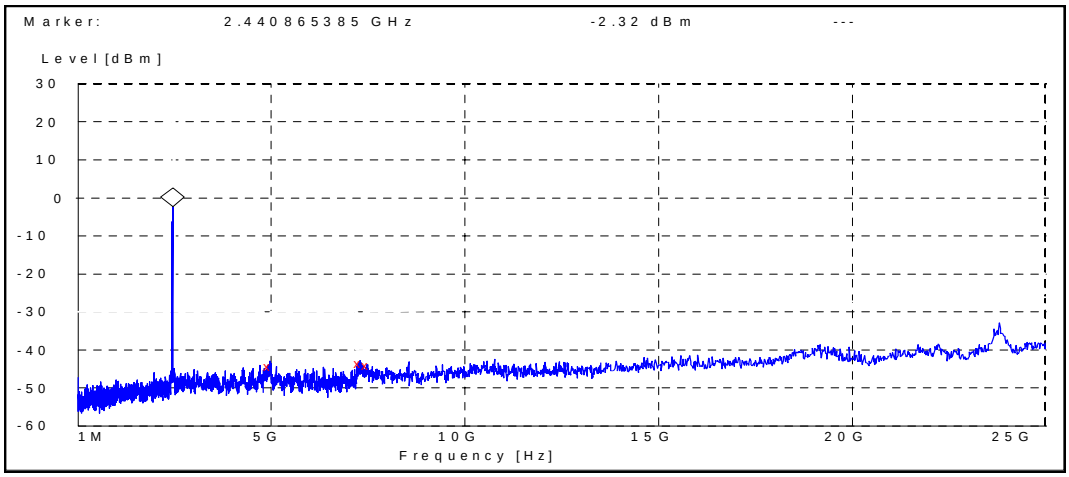
5.2.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz



Frequency [MHz]	P [dBc]	Result
4963.461538	-41.231731	Passed
7296.634615	-39.731731	Passed
7500.000000	-41.131731	Passed

Channel 39 / 2441 MHz



Frequency [MHz]	P [dBc]	Result
4969.551282	-41.976789	Passed
7300.000000	-41.276789	Passed
7500.000000	-41.676789	Passed

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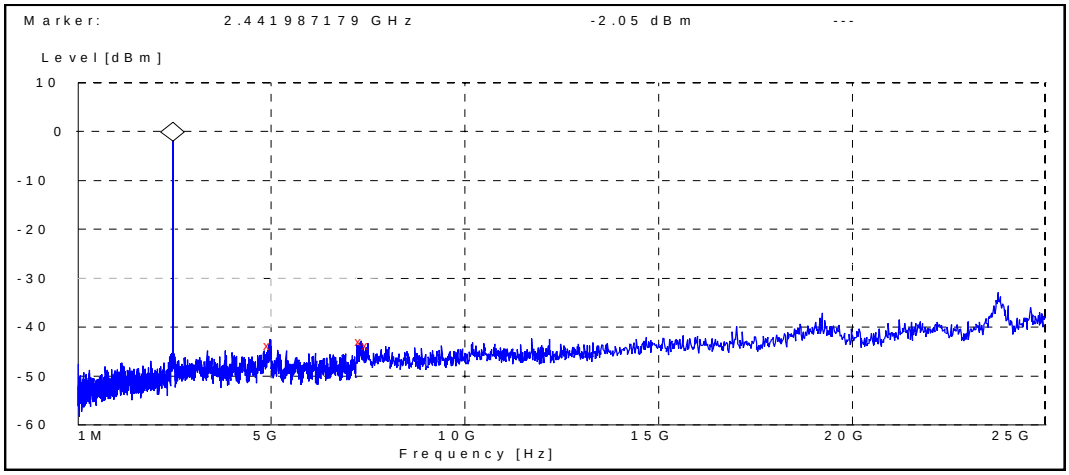
Channel 78 / 2480 MHz



Frequency [MHz]	P [dBc]	Result
4975.961538	-41.748090	Passed
7311.057692	-40.848090	Passed
7500.000000	-41.648090	Passed

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

EUT with DUT number	RM-55 DUT 40532
Accessories with DUT numbers	BP-6M DUT 40511, AC-4 DUT 40512, HS-23 DUT 40513, MU-17 DUT 40516
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Flip open
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24 / 44 / 101.0-102.3
Date of measurements	6-7.2.2006
Measured by	Jari Jantunen

6.1. Test method and limit

The measurement is made according to FCC rules part 15.247 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 ($A_{TOT} = L_{CABLES} + AF - G_{PREAMP}$).

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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

6.2. Bluetooth Test results

6.2.1 GFSK modulation, PRBS packet type

Channel 0

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4804.000000	52.70	431.52	53.00	-0.30	VERTICAL	PASSED
7206.000000	44.90	175.79	41.90	3.00	VERTICAL	PASSED
9608.000000	46.70	216.27	37.40	9.30	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4804.000000	43.30	146.22	43.60	-0.30	VERTICAL	PASSED
7206.000000	31.90	39.36	28.90	3.00	VERTICAL	PASSED
9608.000000	33.50	47.32	24.20	9.30	HORIZONTAL	PASSED

Channel 40

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4883.767535	52.20	407.38	52.90	-0.70	VERTICAL	PASSED
4947.891784	41.00	112.20	41.20	-0.20	VERTICAL	PASSED
7280.557114	44.70	171.79	41.20	3.50	HORIZONTAL	PASSED
7325.651303	45.40	186.21	42.00	3.40	VERTICAL	PASSED
7415.831663	45.10	179.89	40.60	4.50	HORIZONTAL	PASSED
9768.000000	45.80	194.98	37.30	8.50	VERTICAL	PASSED
17998.500000	56.10	638.26	33.80	22.30	VERTICAL	PASSED

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Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4884.267535	36.10	63.83	36.80	-0.70	VERTICAL	PASSED
4943.891784	27.80	24.55	28.10	-0.30	VERTICAL	PASSED
7282.057114	31.20	36.31	27.70	3.50	HORIZONTAL	PASSED
7325.651303	32.50	42.17	29.10	3.40	VERTICAL	PASSED
7411.831663	31.80	38.90	27.30	4.50	HORIZONTAL	PASSED
9768.000000	32.70	43.15	24.20	8.50	HORIZONTAL	PASSED
18000.000000	43.50	149.62	21.20	22.30	VERTICAL	PASSED

Channel 78

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4960.000000	51.70	384.59	51.80	-0.10	VERTICAL	PASSED
7440.000000	46.30	206.54	41.90	4.40	VERTICAL	PASSED
9920.000000	46.40	208.93	37.20	9.20	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4960.000000	39.10	90.16	39.20	-0.10	VERTICAL	PASSED
7440.000000	32.70	43.15	28.30	4.40	VERTICAL	PASSED
9920.000000	33.70	48.42	24.50	9.20	HORIZONTAL	PASSED

6.2.2 8DPSK modulation, PRBS packet type

Channel 0

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4804.000000	48.40	263.03	48.70	-0.30	VERTICAL	PASSED
7206.000000	42.60	134.90	39.60	3.00	VERTICAL	PASSED
9608.000000	46.00	199.53	36.70	9.30	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4804.000000	35.30	58.21	35.60	-0.30	VERTICAL	PASSED
7206.000000	30.20	32.36	27.20	3.00	HORIZONTAL	PASSED
9608.000000	33.40	46.77	24.10	9.30	HORIZONTAL	PASSED

Channel 39

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4883.000000	41.30	116.14	42.00	-0.70	HORIZONTAL	PASSED

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7342.685371	44.70	171.79	40.60	4.10	VERTICAL	PASSED
7348.193387	44.90	175.79	40.50	4.40	VERTICAL	PASSED
7422.841683	44.60	169.82	40.10	4.50	VERTICAL	PASSED
9764.000000	45.40	186.21	36.90	8.50	VERTICAL	PASSED
17920.345691	55.60	602.56	33.90	21.70	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4882.000000	27.90	24.83	28.60	-0.70	VERTICAL	PASSED
7343.185371	31.40	37.15	27.20	4.20	VERTICAL	PASSED
7350.193387	31.60	38.02	27.20	4.40	VERTICAL	PASSED
7419.341683	32.00	39.81	27.50	4.50	VERTICAL	PASSED
9764.000000	32.70	43.15	24.20	8.50	VERTICAL	PASSED
17920.345691	42.80	138.04	21.10	21.70	HORIZONTAL	PASSED

Channel 78

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4960.000000	44.70	171.79	44.80	-0.10	VERTICAL	PASSED
7440.000000	44.70	171.79	40.30	4.40	VERTICAL	PASSED
9920.000000	46.60	213.80	37.40	9.20	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4960.000000	28.30	26.00	28.40	-0.10	VERTICAL	PASSED
7440.000000	31.80	38.90	27.40	4.40	HORIZONTAL	PASSED
9920.000000	33.70	48.42	24.50	9.20	HORIZONTAL	PASSED

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7. AC powerline conducted emissions

(FCC §15.207, RSS-GEN 7.2.2)

EUT with DUT number	RM-55 DUT 40532
Accessories with DUT numbers	BP-6M DUT 40511, AC-4 DUT 40512, HS-23 DUT 40513, MU-17 DUT 40516
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 45 / 100.7
Date of measurements	8.2.2006
Measured by	Jari Jantunen

7.1. Test method and limit

The measurement is made according to FCC rules part 15.247 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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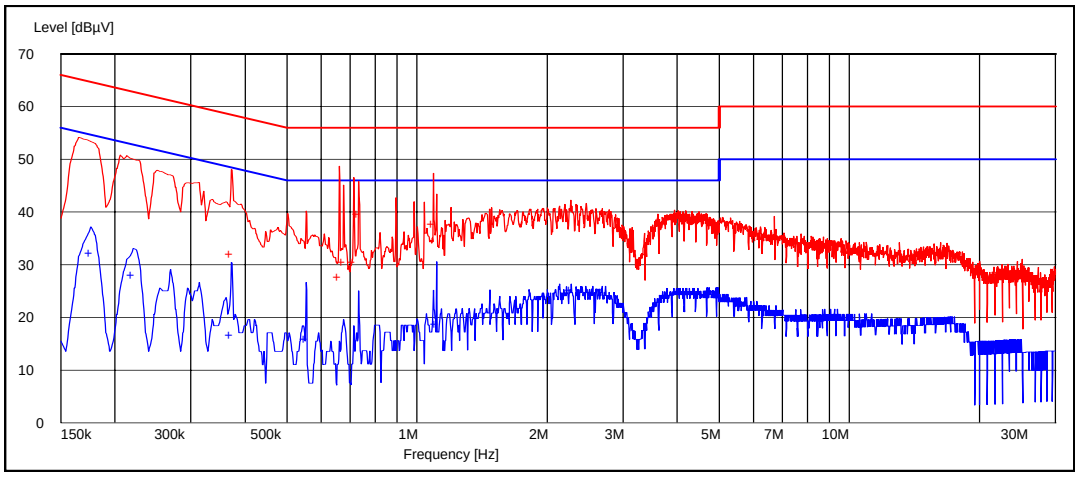
7.2. Bluetooth Test results

7.2.1 GFSK modulation, PRBS packet type

Channel 40



Quasi peak (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.372445	32.00	N	PASSED
0.661623	27.70	L1	PASSED
0.676453	30.40	L1	PASSED
0.713527	30.50	L1	PASSED
0.732064	39.60	L1	PASSED
1.091683	37.80	L1	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.175952	32.20	L1	PASSED
0.220441	28.00	N	PASSED
0.372445	16.60	L1	PASSED
0.554108	15.80	L1	PASSED
1.110220	18.80	L1	PASSED
2.276553	25.30	L1	PASSED

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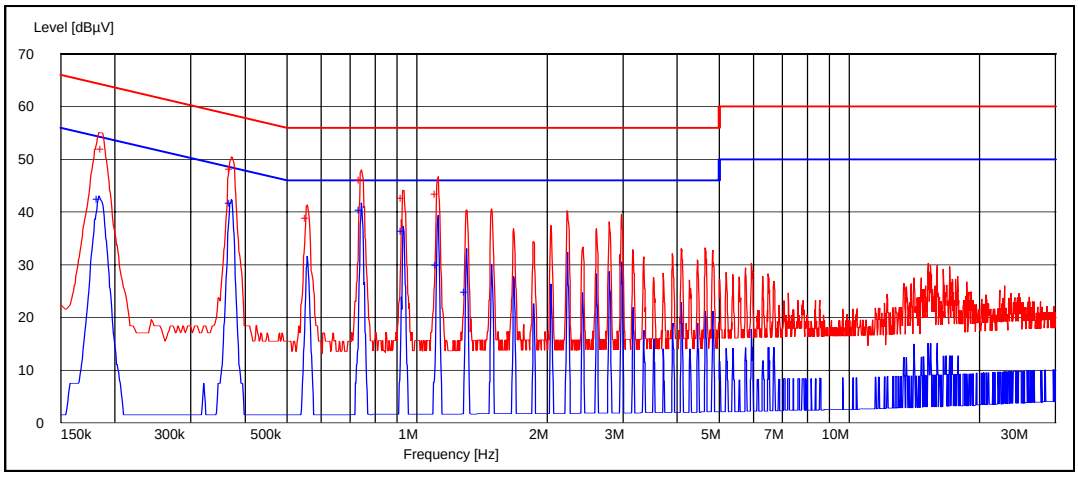
7.2.2 8DPSK modulation, PRBS packet type

Channel 39



Quasi peak (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.187074	51.90	N	PASSED
0.372445	48.20	N	PASSED
0.557816	38.80	L1	PASSED
0.743186	46.00	L1	PASSED
0.928557	42.60	L1	PASSED
1.113928	43.40	L1	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.183367	42.50	L1	PASSED
0.372445	41.70	L1	PASSED
0.743186	40.40	L1	PASSED
0.928557	36.40	L1	PASSED
1.117635	29.90	L1	PASSED
1.303006	24.80	L1	PASSED

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8. 20 dB bandwidth

(FCC §15.247(a)(1), RSS-210 A8.1 (1))

EUT with DUT number	Phone: DUT 40524
Accessories with DUT numbers	Battery: DUT 40543
Operation Voltage [V] / [Hz]	-
Result	Passed
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22/52/100.7-102.9
Date of measurements	24.2.2006,27.2.2006
Measured by	Jan-Erik Lilja

8.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

Limits for 20 dB bandwidth measurements

Limit [MHz]
N/A

8.2. Bluetooth Test results

8.2.1 GFSK modulation, PRBS packet type

Channel / f_C [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	955.128	Passed
40 / 2442	951.923	Passed
78 / 2480	945.513	Passed

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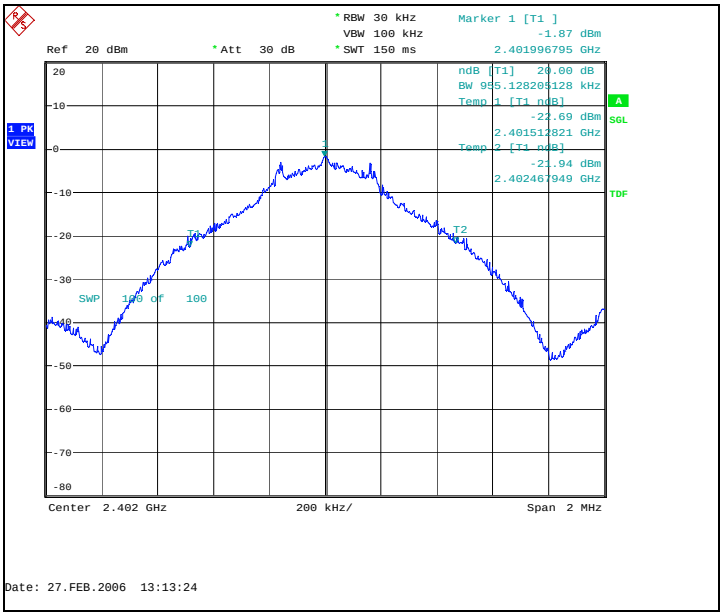
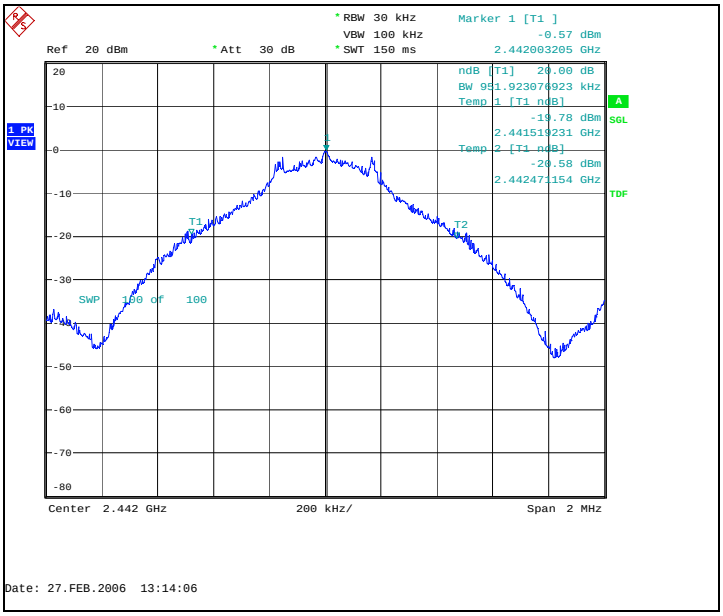
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



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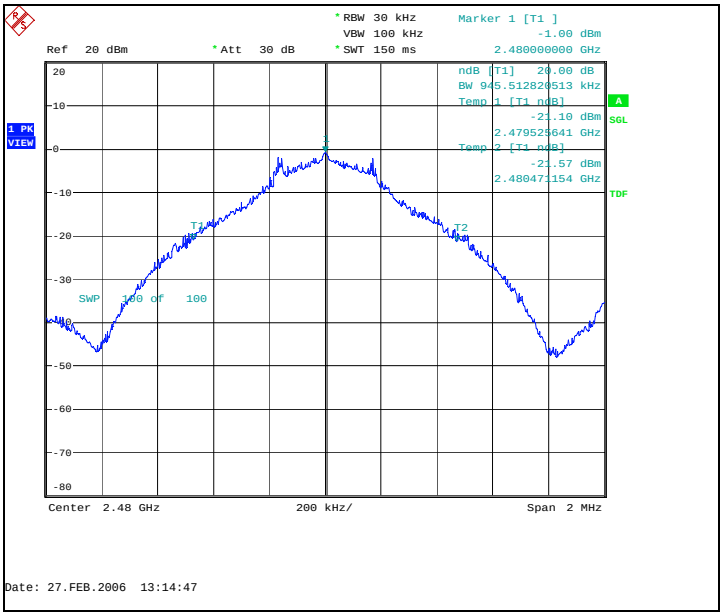
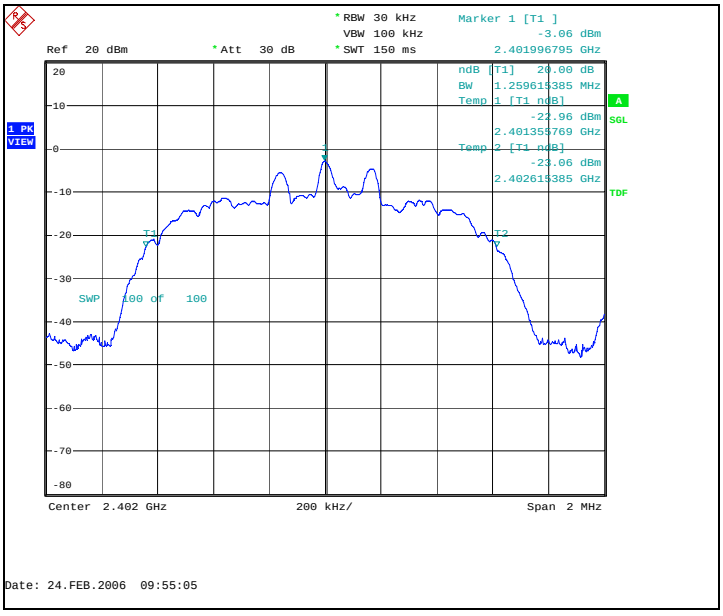
Channel 78 / 2480 MHz



8.2.2 8DPSK modulation, PRBS packet type

Channel / f_C [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	1259.615	Passed
39 / 2441	1259.615	Passed
78 / 2480	1259.615	Passed

Channel 0 / 2402 MHz



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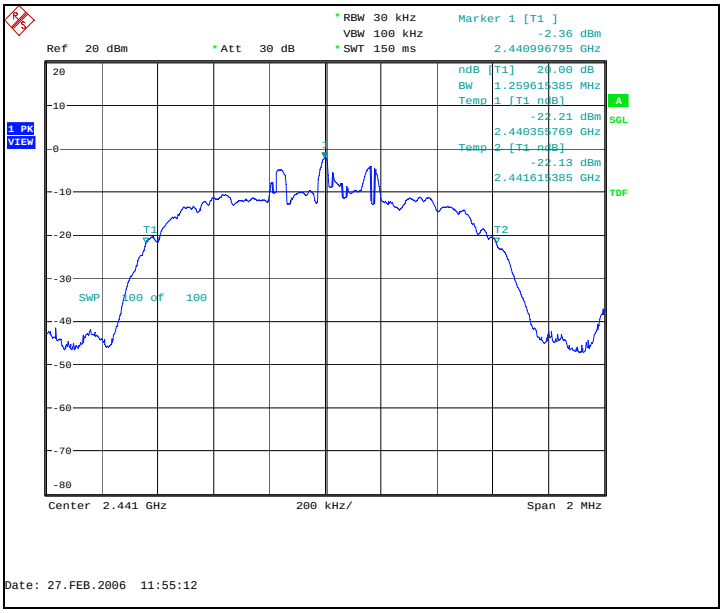
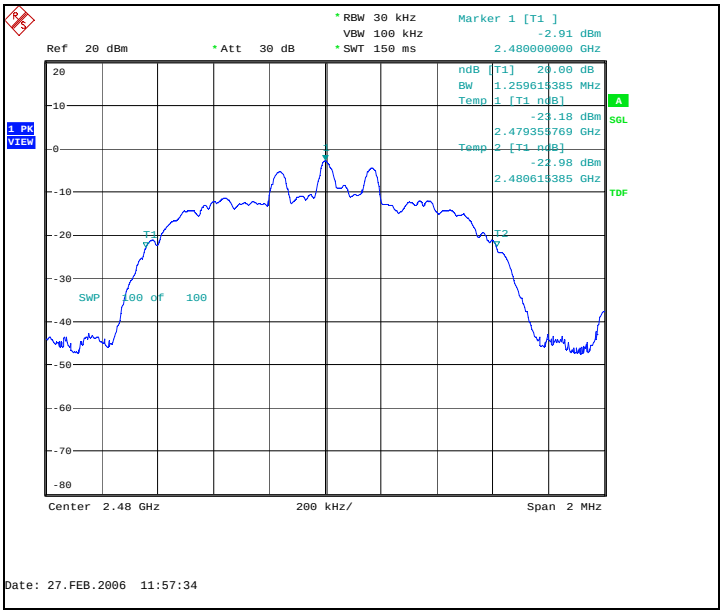
Channel 39 / 2441 MHz



Channel 78 / 2480 MHz



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9. Carrier frequency separation

(FCC §15.247(a)(1), RSS-210 A8.1 (2))

EUT with DUT number	Phone: DUT 40524
Accessories with DUT numbers	Battery: DUT 40543
Operation Voltage [V] / [Hz]	-
Result	Passed
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22/52/100.7-102.9
Date of measurements	24.2.2006,27.2.2006
Measured by	Jan-Erik Lilja

9.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

Limits for carrier frequency separation measurements

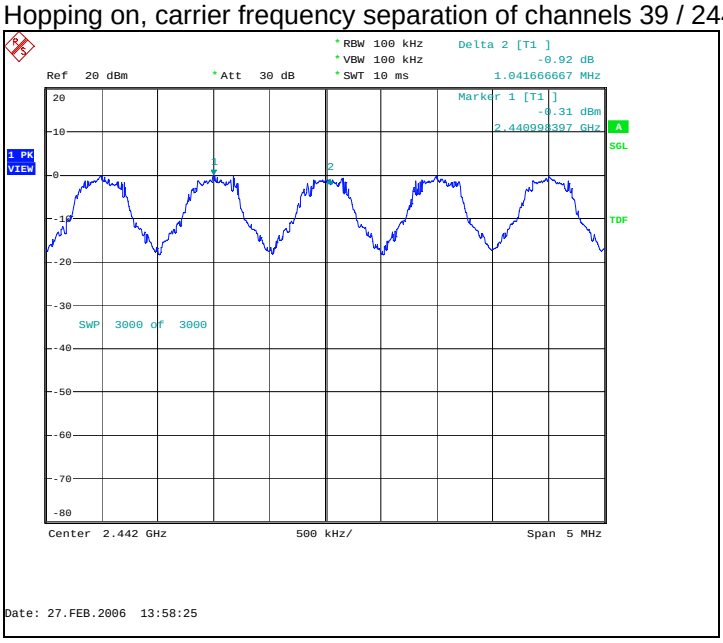
Limit [MHz]
≥ 0.025 or 2/3 of the 20 dB bandwidth

9.2. Bluetooth Test results

9.2.1 GFSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1041.667	Passed

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



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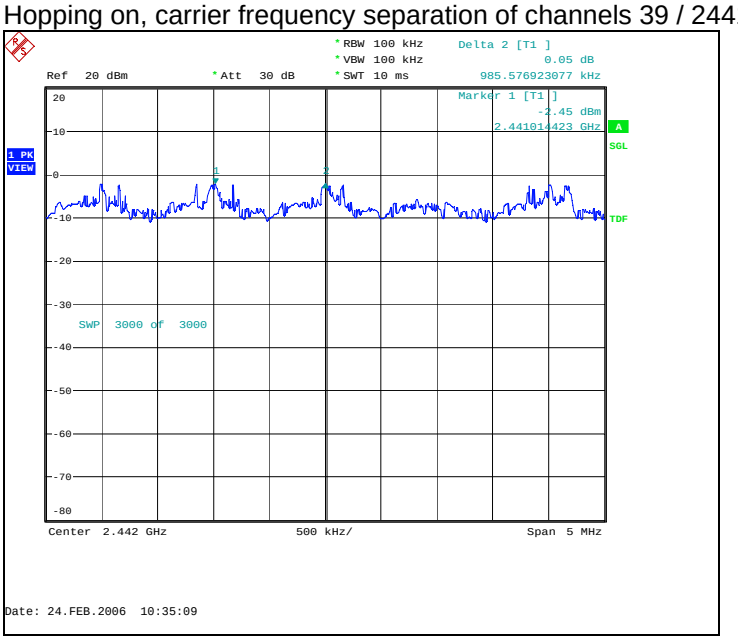
9.2.2 8DPSK modulation, PRBS packet type

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 (4))

EUT with DUT number	Phone: DUT 40524
Accessories with DUT numbers	Battery: DUT 40543
Operation Voltage [V] / [Hz]	-
Result	Passed
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22/52/100.7-102.9
Date of measurements	27.2.2006
Measured by	Jan-Erik Lilja

10.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

Limits for number of hopping frequencies measurements

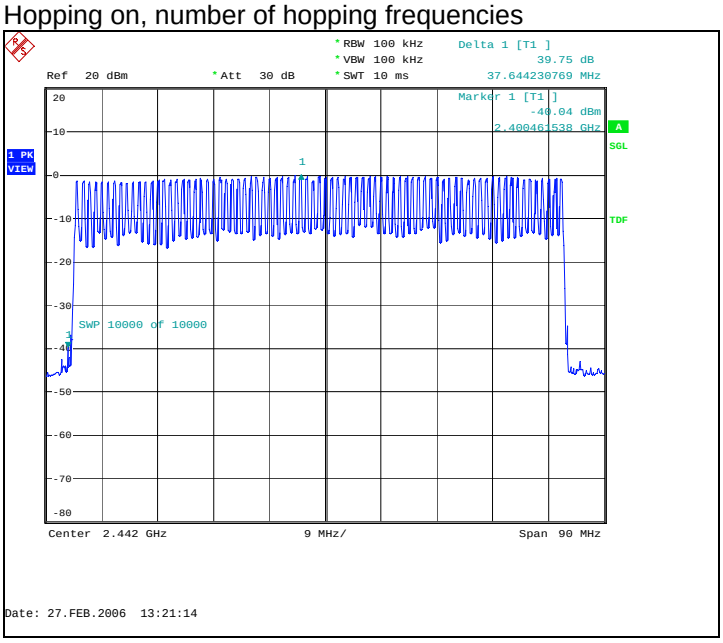
Limit [number]
≥ 15

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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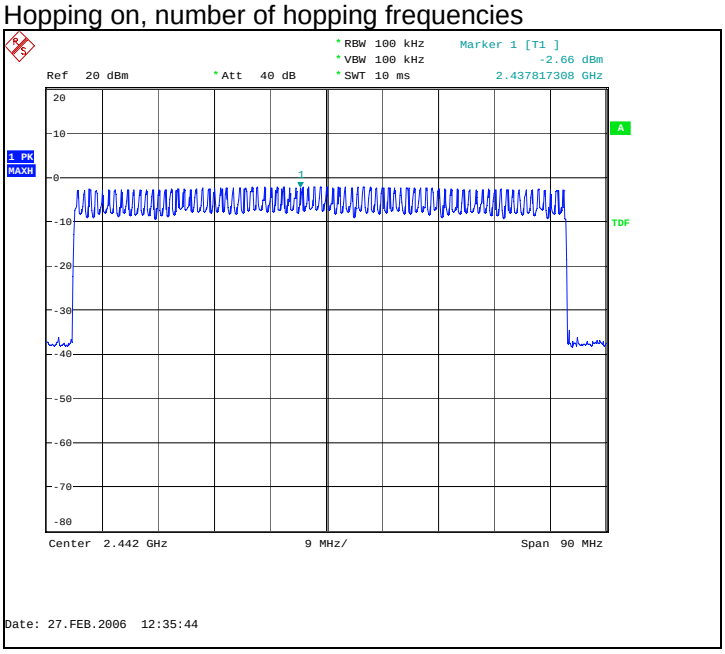
10.2.2 8DPSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
79	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 (4))

EUT with DUT number	Phone: DUT 40524
Accessories with DUT numbers	Battery: DUT 40543
Operation Voltage [V] / [Hz]	-
Result	Passed
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22/52/100.7-102.9
Date of measurements	24.2.2006,27.2.2006
Measured by	Jan-Erik Lilja

11.1. Test method and limit

The measurement is made according to FCC rules part 15.247 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

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
58.00	2968	0.172141	Passed

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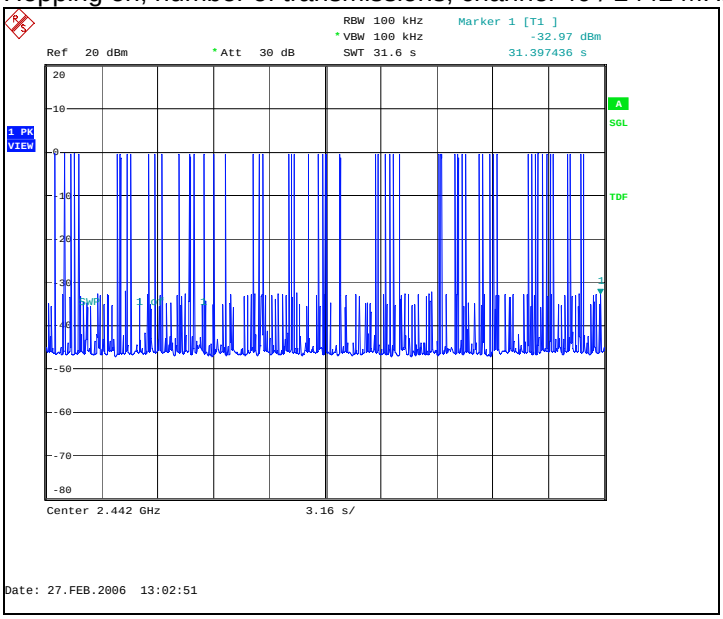
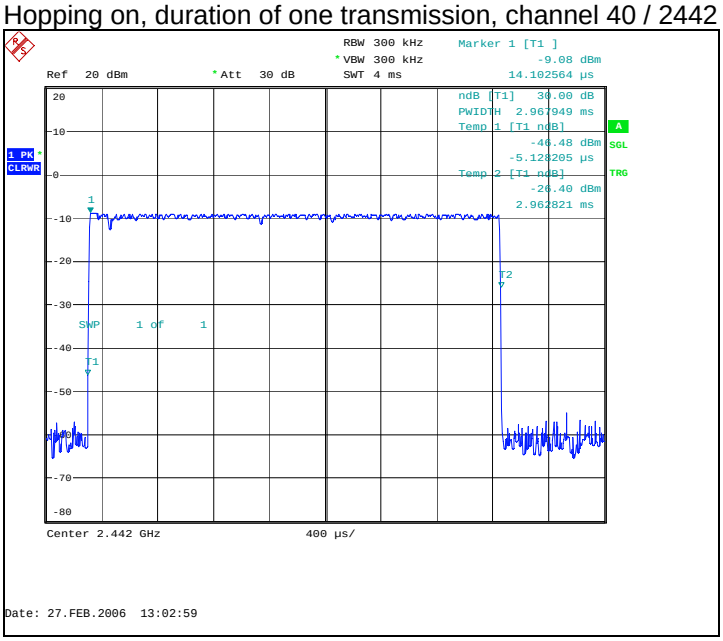
Hopping on, number of transmissions, channel 40 / 2442 MHz



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



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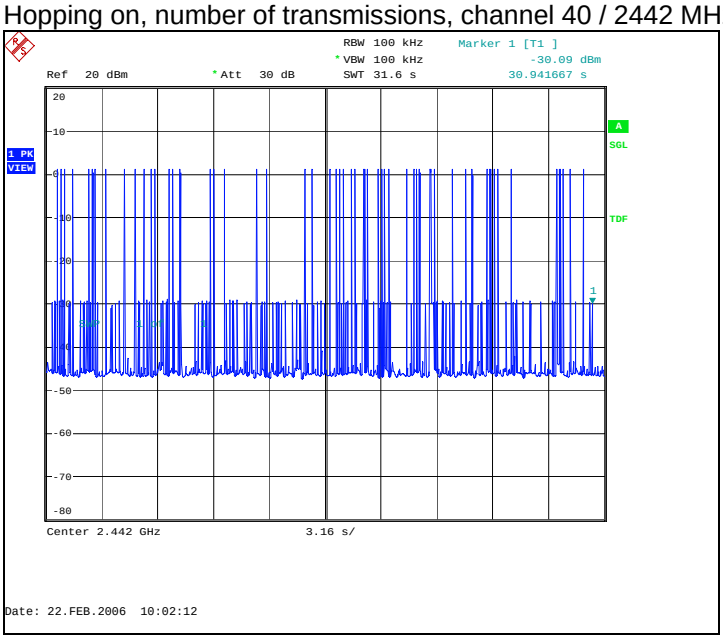
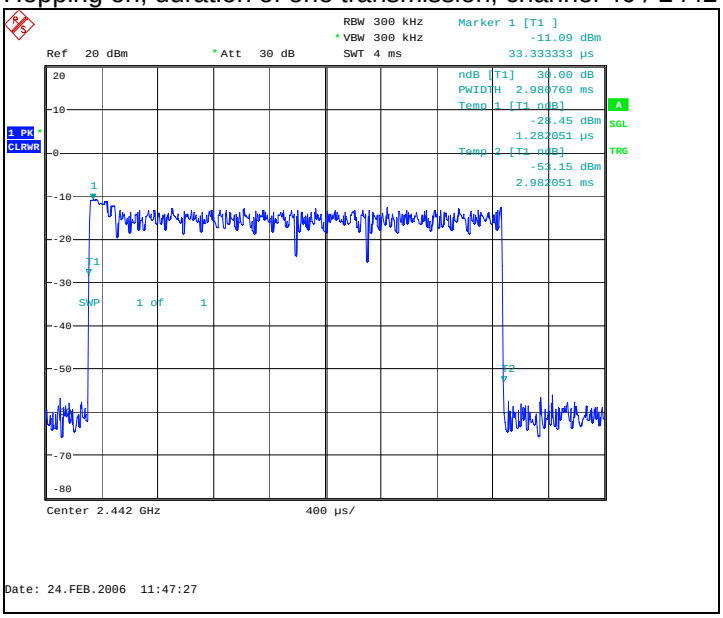
11.2.2 8DPSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [µs]	Time of occupancy [s]	Result
107.0	2981	0.318942	Passed

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



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



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12. Peak output power

(FCC §15.247(b)(1), RSS-210 A8.4 (4))

EUT with DUT number	Phone: DUT 40524
Accessories with DUT numbers	Battery: DUT 40543
Operation Voltage [V] / [Hz]	-
Result	Passed
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22/49/100.8
Date of measurements	2.3.2006
Measured by	Jan-Erik Lilja

12.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

Limits for peak output power measurements

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

12.2. WLAN Test results

12.2.1 DSSS mode, QPSK modulation, 5.5 Mbps data rate

Channel / f_C [MHz]	P [dBm]	P [W]	Result
1 / 2412	18.87	0.077	Passed
7 / 2442	20.29	0.107	Passed
11 / 2462	19.22	0.084	Passed

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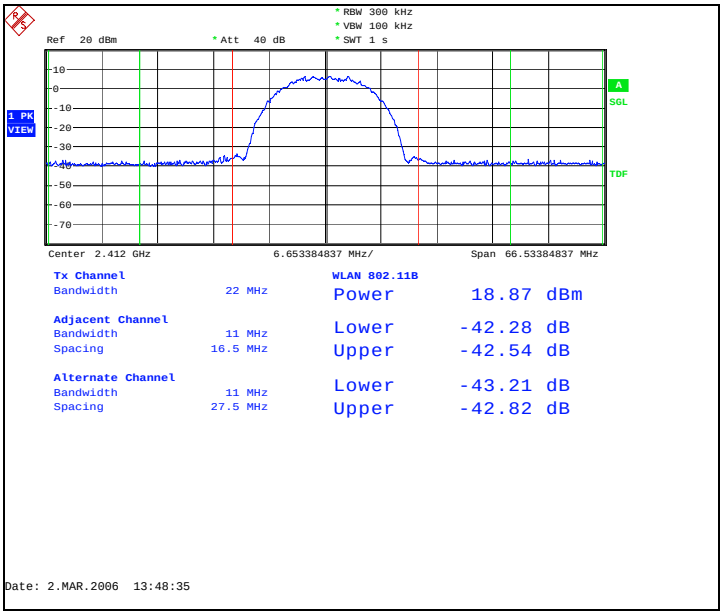
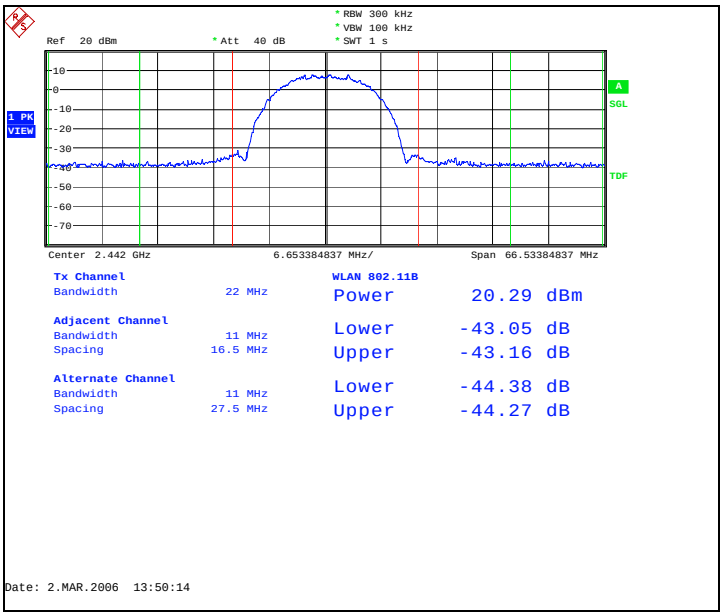
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



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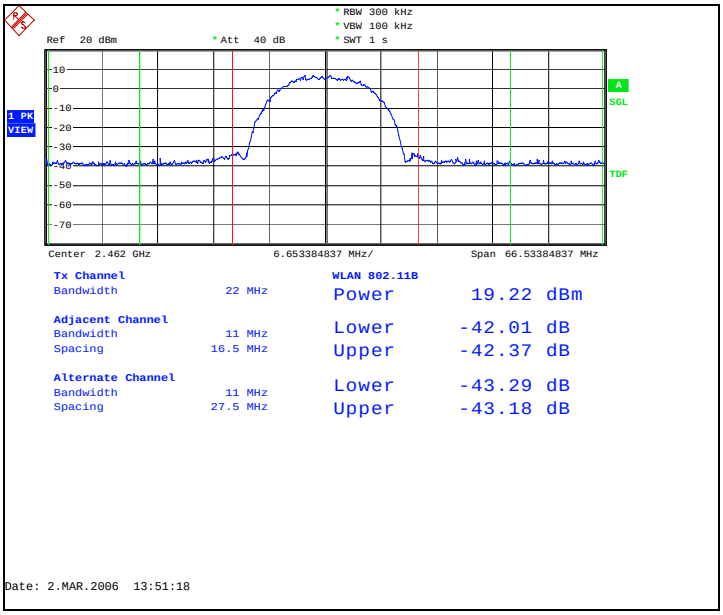
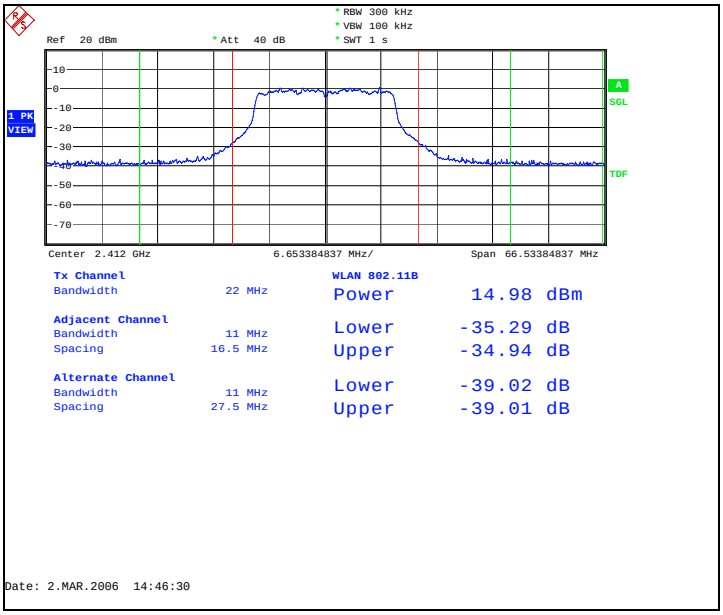
Channel 11 / 2462 MHz



12.2.2 OFDM mode, BPSK modulation, 9 Mbps data rate

Channel / f_C [MHz]	P [dBm]	P [W]	Result
1 / 2412	14.98	0.031	Passed
7 / 2442	15.69	0.037	Passed
11 / 2462	15.24	0.033	Passed

Channel 1 / 2412 MHz



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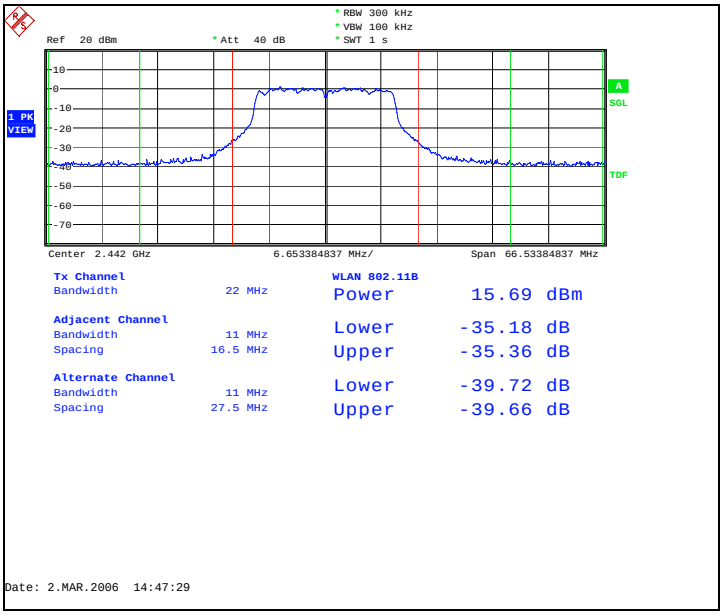
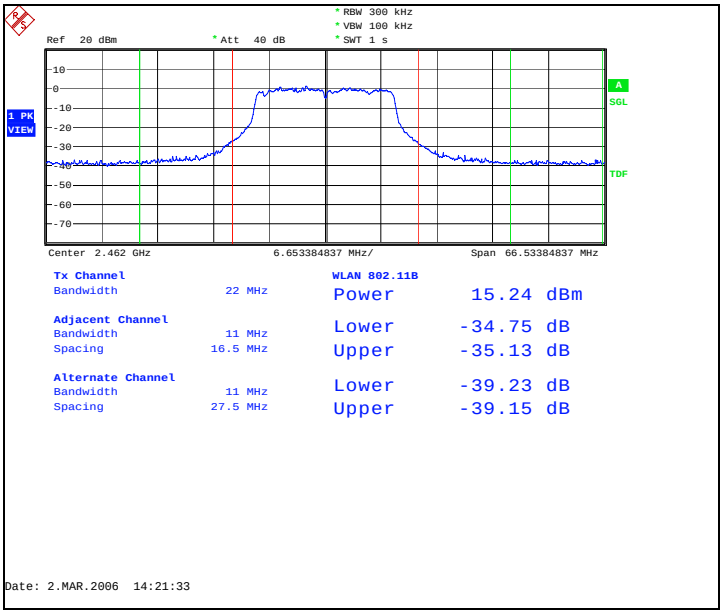
Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



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13. Band edge compliance of RF emissions

(FCC §15.247(c), RSS-210 A8.5)

EUT with DUT number	RM-55 DUT 40547
Accessories with DUT numbers	BP-6M DUT 40511, AC-4 DUT 40512, HS-23 DUT 40513, MU-17 DUT 40516
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 44 / 102.6
Date of measurements	24.2.2006
Measured by	Jari Jantunen

13.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

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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13.2. WLAN Test results

13.2.1 DSSS mode, QPSK modulation, 5.5 Mbps data rate

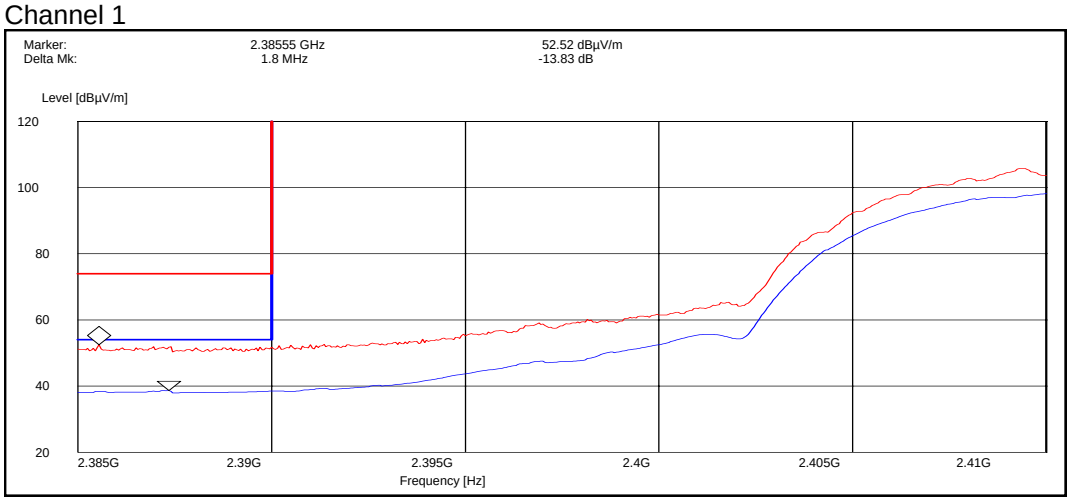
Average (RBW: 1 MHz)

Channel	E [dBµV/m]	Result
1	38.69	PASSED
11	38.19	PASSED

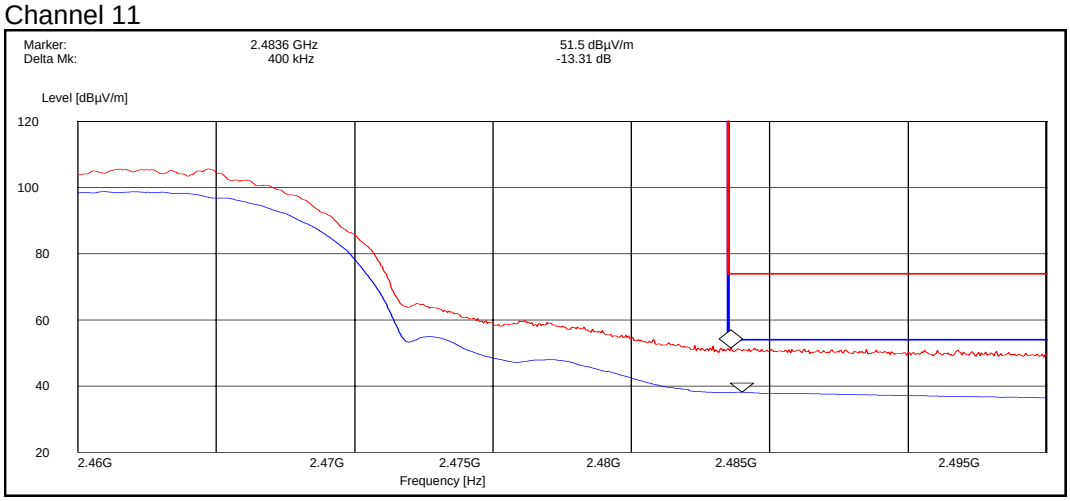
Peak (RBW: 1 MHz)

Channel	E [dBµV/m]	Result
1	52.52	PASSED
11	51.50	PASSED

Channel 1



Channel 11



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13.2.2 OFDM mode, BPSK modulation, 9 Mbps data rate

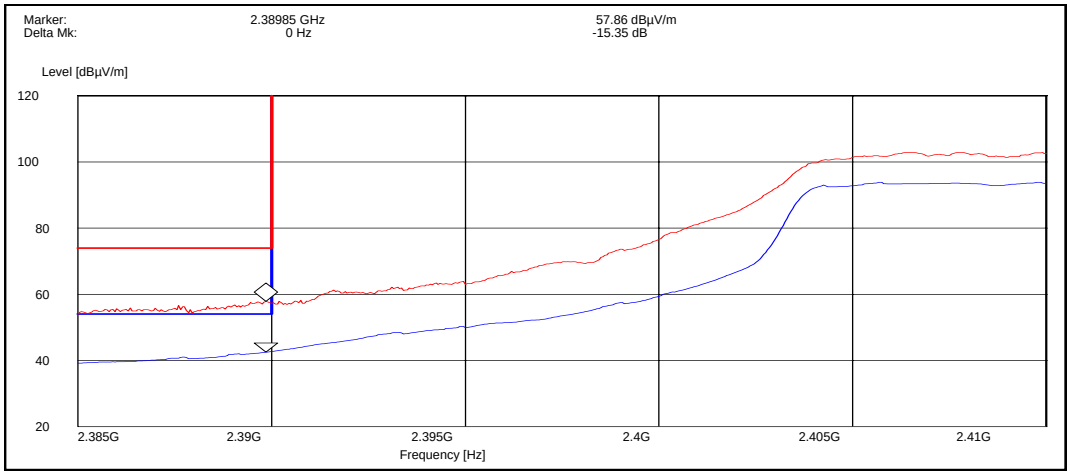
Average (RBW: 1 MHz)

Channel	E [dBµV/m]	Result
1	42.51	PASSED
11	43.96	PASSED

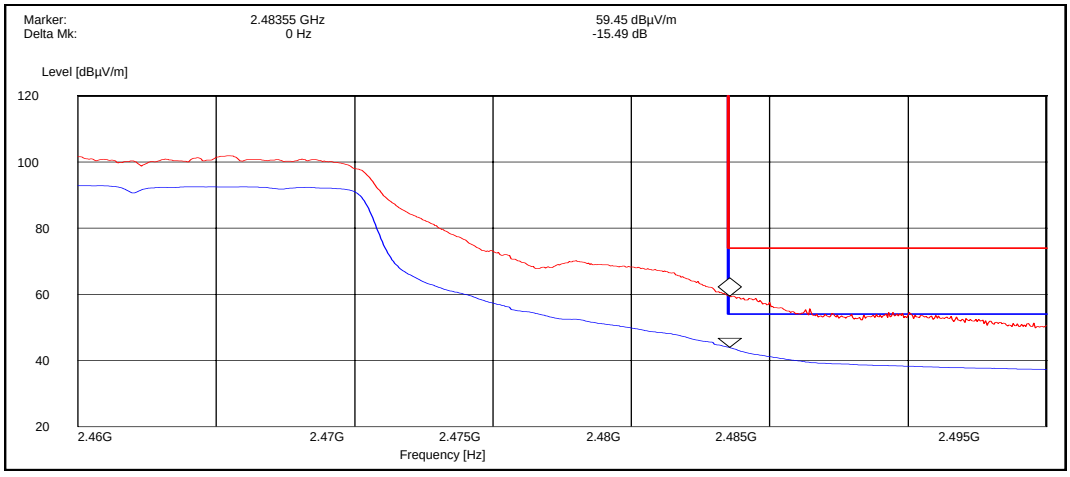
Peak (RBW: 1 MHz)

Channel	E [dBµV/m]	Result
1	57.86	PASSED
11	59.45	PASSED

Channel 1



Channel 11



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14. Spurious RF conducted emissions
(FCC §15.247(c), RSS-210 A8.5)

EUT with DUT number	Phone: DUT 40524
Accessories with DUT numbers	Battery: DUT 40543
Operation Voltage [V] / [Hz]	-
Result	Passed
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22/49/100.8
Date of measurements	2.3.2006
Measured by	Jan-Erik Lilja

14.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

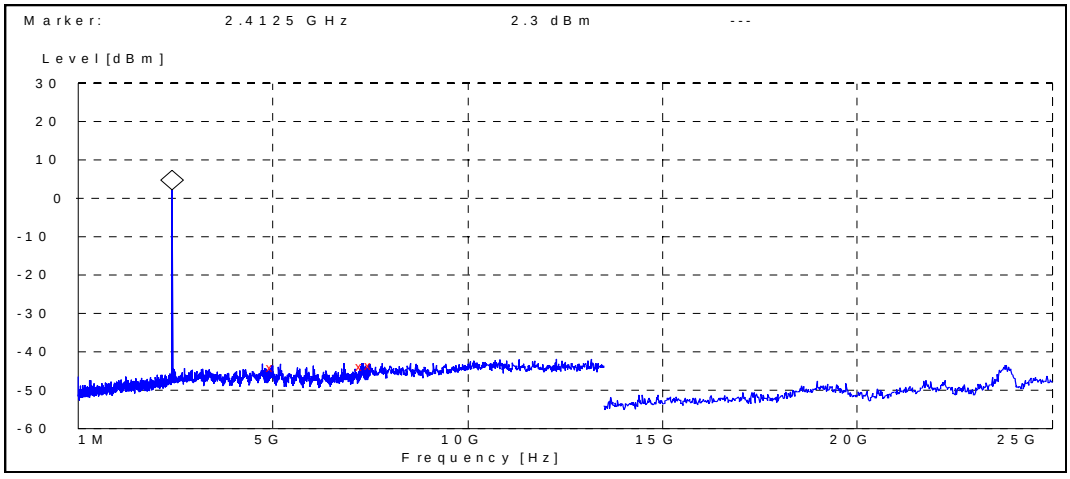
Limits for spurious RF conducted emissions measurements

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

14.2. WLAN Test results

14.2.1 DSSS mode, QPSK modulation, 5.5 Mbps data rate

Channel 1 / 2412 MHz



Frequency [MHz]	P [dBc]	Result
4998.076923	-46.402082	Passed
7274.519231	-46.202082	Passed
7500.000000	-45.802082	Passed

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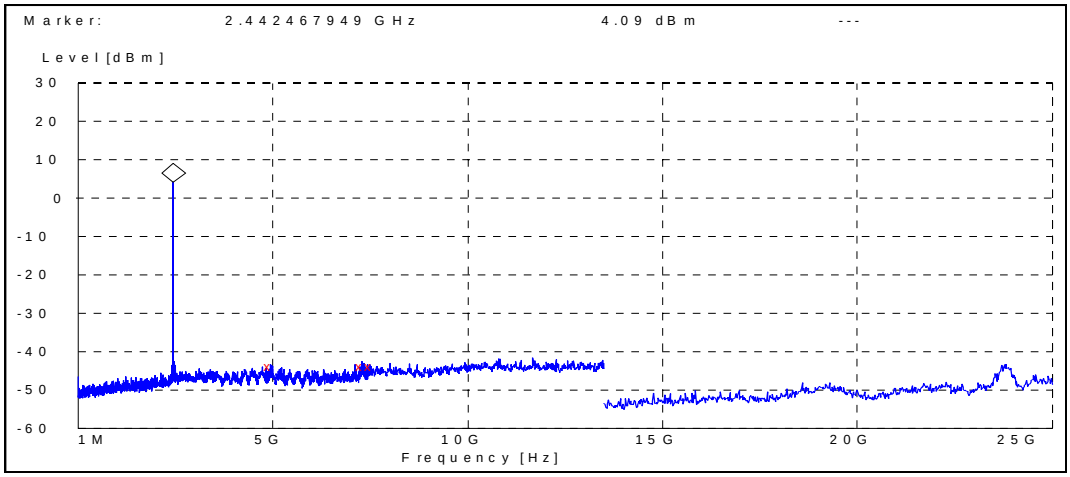
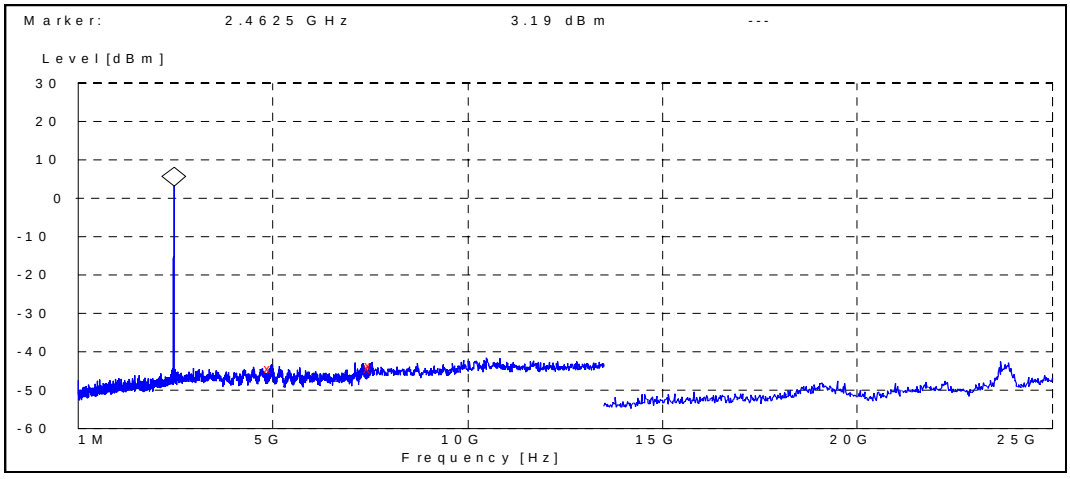
Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4939.102564	-47.993066	Passed
7268.269231	-48.093066	Passed
7500.000000	-48.093066	Passed

Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4953.846154	-47.388771	Passed
7484.134615	-47.488771	Passed
7500.000000	-46.888771	Passed

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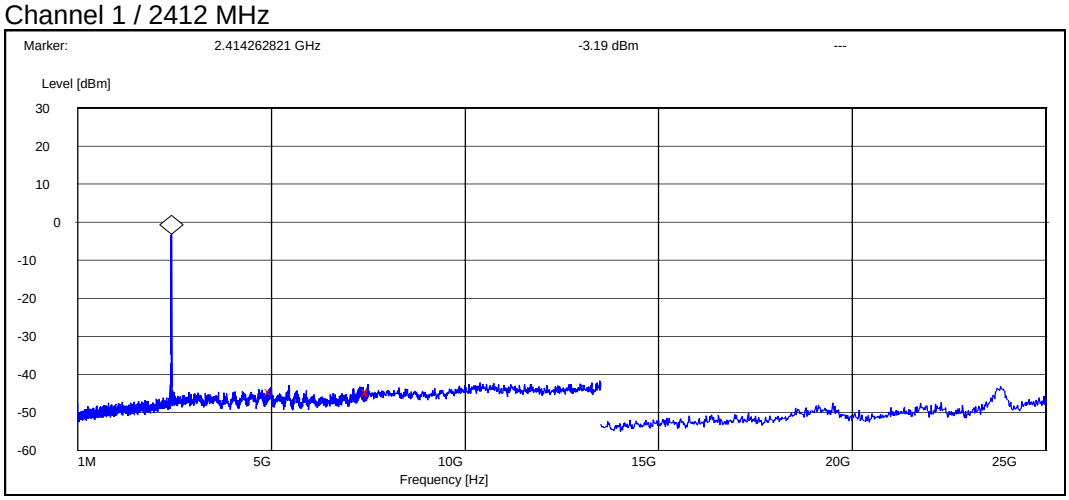
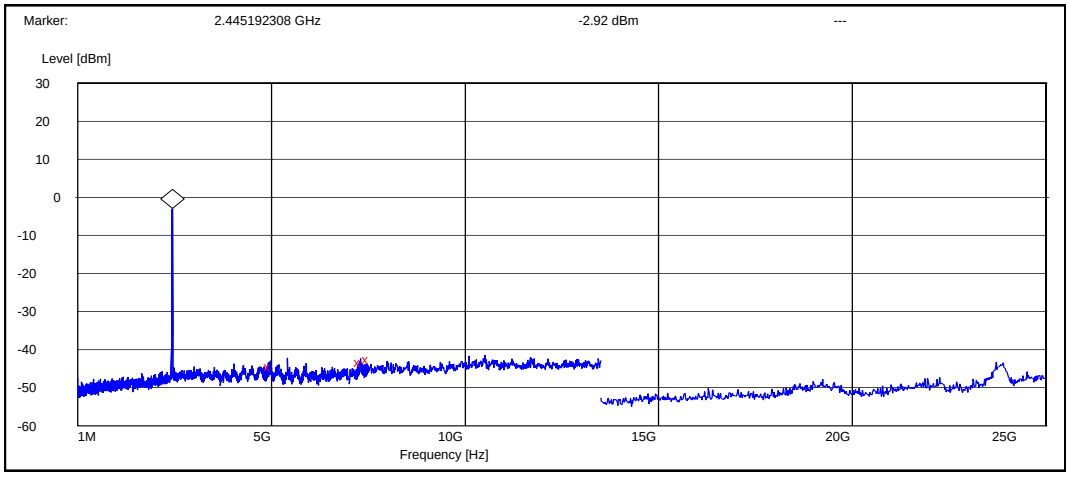
14.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel 1 / 2412 MHz



Frequency [MHz]	P [dBc]	Result
4995.512821	-41.314849	Passed
7485.096154	-41.414849	Passed
7500.000000	-41.114849	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4973.076923	-41.375486	Passed
7303.365385	-40.475486	Passed
7500.000000	-39.675486	Passed

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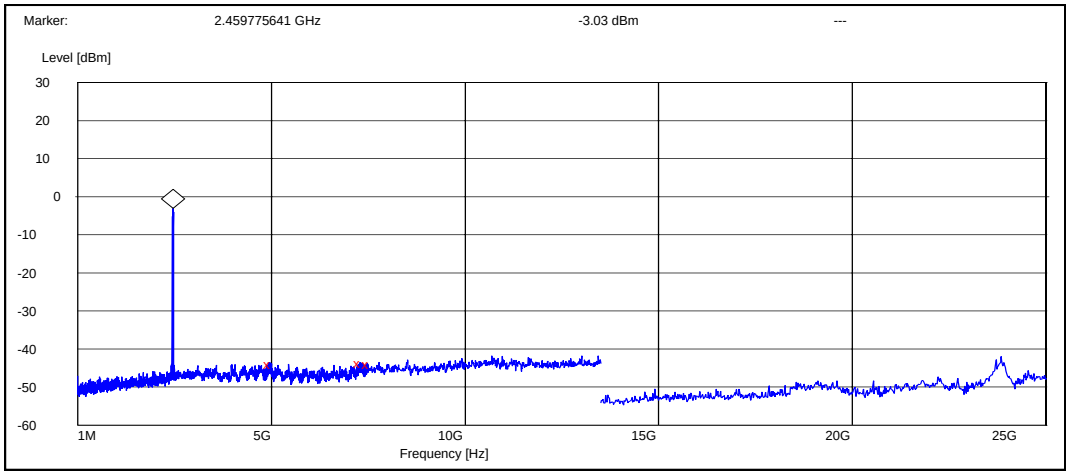
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4958.653846	-40.967221	Passed
7286.057692	-40.667221	Passed
7500.000000	-41.067221	Passed

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

EUT with DUT number	RM-55 DUT 40547
Accessories with DUT numbers	BP-6M DUT 40511, AC-4 DUT 40512, HS-23 DUT 40513, MU-17 DUT 40516
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 44 / 102.
Date of measurements	23.2.2006
Measured by	Jari Jantunen

15.1. Test method and limit

The measurement is made according to FCC rules part 15.247 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 ($A_{TOT} = L_{CABLES} + AF - G_{PREAMP}$).

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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

15.2. WLAN Test results

15.2.1 DSSS mode, QPSK modulation, 5.5 Mbps data rate

Channel 1

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4824.000000	43.70	153.11	45.10	-1.40	VERTICAL	PASSED
7236.000000	42.90	139.64	40.60	2.30	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4824.000000	31.60	38.02	33.00	-1.40	VERTICAL	PASSED
7236.000000	29.80	30.90	27.50	2.30	HORIZONTAL	PASSED

Channel 7

Quasipeak

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
37.976353	17.30	7.33	29.90	-12.60	VERTICAL	PASSED
124.568537	26.20	20.42	50.40	-24.20	VERTICAL	PASSED
132.063928	21.10	11.35	46.20	-25.10	VERTICAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4878.257515	55.40	588.84	56.90	-1.50	VERTICAL	PASSED
4889.779559	55.50	595.66	57.10	-1.60	VERTICAL	PASSED
7276.547094	43.40	147.91	40.70	2.70	VERTICAL	PASSED
7335.669339	44.70	171.79	41.90	2.80	VERTICAL	PASSED
7430.365731	43.40	147.91	40.20	3.20	VERTICAL	PASSED
17984.975952	55.50	595.66	34.00	21.50	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4878.757515	50.20	323.59	51.70	-1.50	VERTICAL	PASSED
4889.279559	50.50	334.97	52.10	-1.60	VERTICAL	PASSED
7276.047094	30.40	33.11	27.70	2.70	VERTICAL	PASSED

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7331.169339	33.00	44.67	30.30	2.70	VERTICAL	PASSED
7428.865731	30.70	34.28	27.50	3.20	VERTICAL	PASSED
17989.475952	42.80	138.04	21.30	21.50	HORIZONTAL	PASSED

Channel 11

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4924.000000	45.30	184.08	46.80	-1.50	VERTICAL	PASSED
7386.000000	44.50	167.88	41.40	3.10	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4924.000000	34.20	51.29	35.70	-1.50	VERTICAL	PASSED
7386.000000	31.00	35.48	27.90	3.10	VERTICAL	PASSED

15.2.2 OFDM mode, BPSK modulation, 9 Mbps data rate

Channel 1

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4824.000000	48.80	275.42	50.20	-1.40	VERTICAL	PASSED
7236.000000	43.10	142.89	40.80	2.30	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4824.000000	36.60	67.61	38.00	-1.40	VERTICAL	PASSED
7236.000000	30.00	31.62	27.70	2.30	VERTICAL	PASSED

Channel 7

Quasi Peak

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
124.868537	29.00	28.18	53.30	-24.30	HORIZONTAL	PASSED
133.044890	26.00	19.95	51.20	-25.20	HORIZONTAL	PASSED
137.735471	21.50	11.89	47.10	-25.60	HORIZONTAL	PASSED
172.344489	20.30	10.35	46.60	-26.30	HORIZONTAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4886.267535	52.80	436.52	54.40	-1.60	VERTICAL	PASSED
4886.273547	52.50	421.70	54.10	-1.60	VERTICAL	PASSED
7289.577154	43.30	146.22	40.60	2.70	VERTICAL	PASSED
7329.155311	44.40	165.96	41.70	2.70	VERTICAL	PASSED
17490.977956	52.00	398.11	34.00	18.00	HORIZONTAL	PASSED
17999.491984	55.60	602.56	34.10	21.50	VERTICAL	PASSED

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Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4886.267535	38.40	83.18	40.00	-1.60	VERTICAL	PASSED
4886.273547	38.70	86.10	40.30	-1.60	VERTICAL	PASSED
7289.577154	30.30	32.73	27.60	2.70	VERTICAL	PASSED
7323.655311	30.80	34.67	28.10	2.70	VERTICAL	PASSED
17485.477956	38.80	87.10	20.80	18.00	HORIZONTAL	PASSED
17992.491984	42.80	138.04	21.30	21.50	VERTICAL	PASSED

Channel 11

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4924.000000	49.00	281.84	50.50	-1.50	VERTICAL	PASSED
7386.000000	44.50	167.88	41.40	3.10	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4924.000000	37.90	78.52	39.40	-1.50	VERTICAL	PASSED
7386.000000	31.40	37.15	28.30	3.10	VERTICAL	PASSED

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

EUT with DUT number	RM-55 DUT 40547
Accessories with DUT numbers	BP-6M DUT 40511, AC-4 DUT 40512, HS-23 DUT 40513, MU-17 DUT 40516
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 45 / 100.9
Date of measurements	27.2.2006
Measured by	Jari Jantunen

16.1. Test method and limit

The measurement is made according to FCC rules part 15.247 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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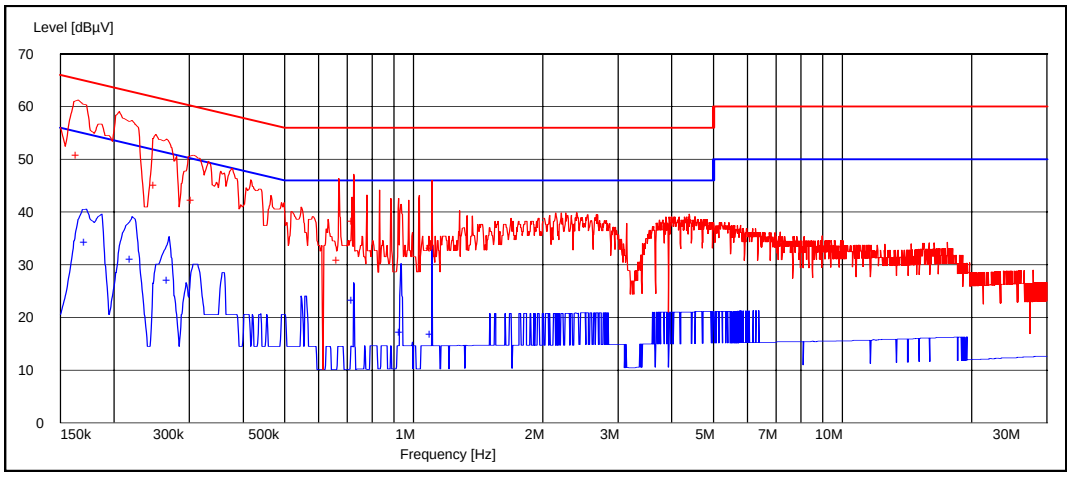
16.2. WLAN Test results

16.2.1 DSSS mode, QPSK modulation, 5.5 Mbps data rate

Channel 7



Quasi peak (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.164830	50.90	N	PASSED
0.250100	45.10	N	PASSED
0.305711	42.20	N	PASSED
0.669038	30.90	L1	PASSED
0.724649	38.30	L1	PASSED
1.102806	33.10	L1	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.172244	34.30	L1	PASSED
0.220441	31.00	N	PASSED
0.268637	27.00	N	PASSED
0.724649	23.30	L1	PASSED
0.935972	17.20	L1	PASSED
1.102806	16.90	L1	PASSED

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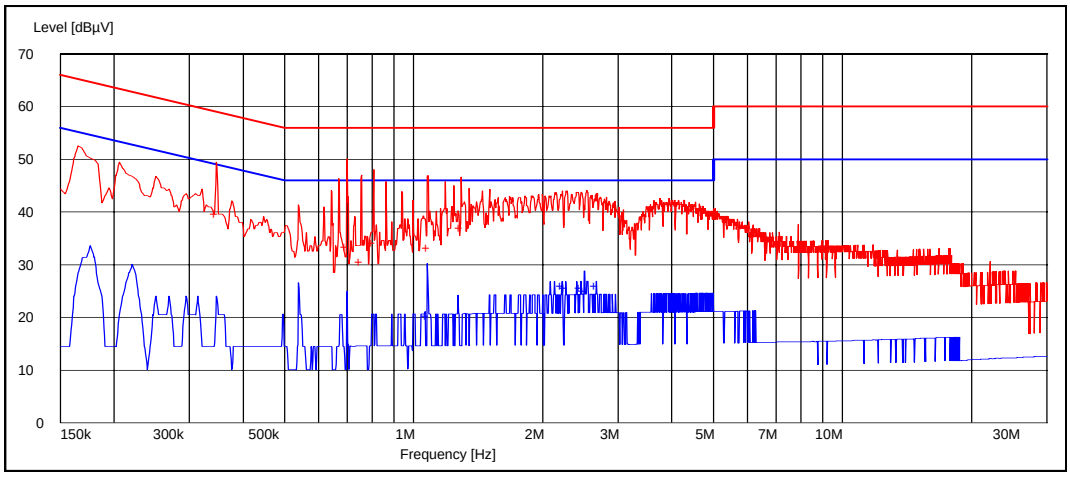
16.2.2 OFDM mode, BPSK modulation, 9 Mbps data rate

Channel 7



Quasi peak (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.346493	39.60	L1	PASSED
0.698697	33.30	L1	PASSED
0.754309	30.50	L1	PASSED
0.806212	34.10	L1	PASSED
1.080561	33.20	L1	PASSED
1.291884	36.90	L1	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
1.076854	20.20	L1	PASSED
2.222445	25.90	L1	PASSED
2.264529	25.50	L1	PASSED
2.456914	25.50	L1	PASSED
2.505010	25.00	L1	PASSED
2.667335	26.00	L1	PASSED

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17. 6 dB bandwidth

(FCC §15.247(a)(2), RSS-210 A8.2 (1))

EUT with DUT number	Phone: DUT 40524
Accessories with DUT numbers	Battery: DUT 40543
Operation Voltage [V] / [Hz]	-
Result	Passed
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22/49/100.8
Date of measurements	2.3.2006
Measured by	Jan-Erik Lilja

17.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

Limits for 6 dB bandwidth measurements

Limit [kHz]
≥ 500

17.2. WLAN test results

17.2.1 DSSS mode, QPSK modulation, 5.5 Mbps data rate

Channel / f_C [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	10256.410	Passed
7 / 2442	10336.538	Passed
11 / 2462	10336.538	Passed

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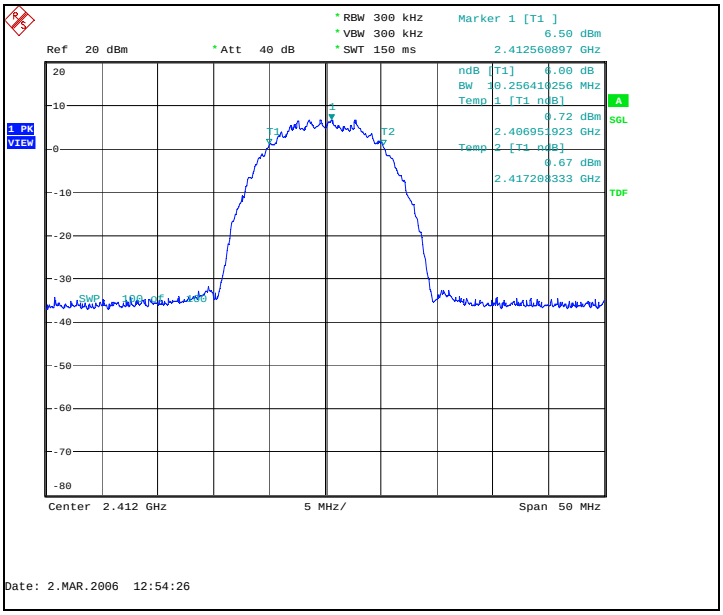
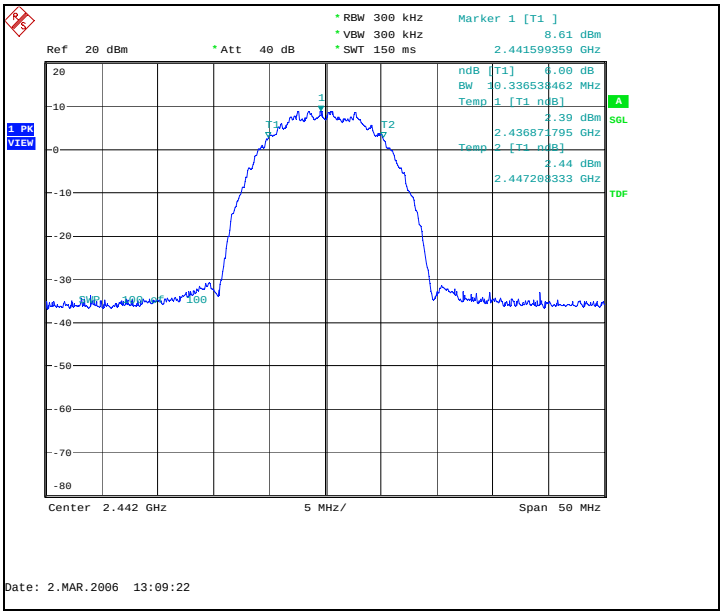
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



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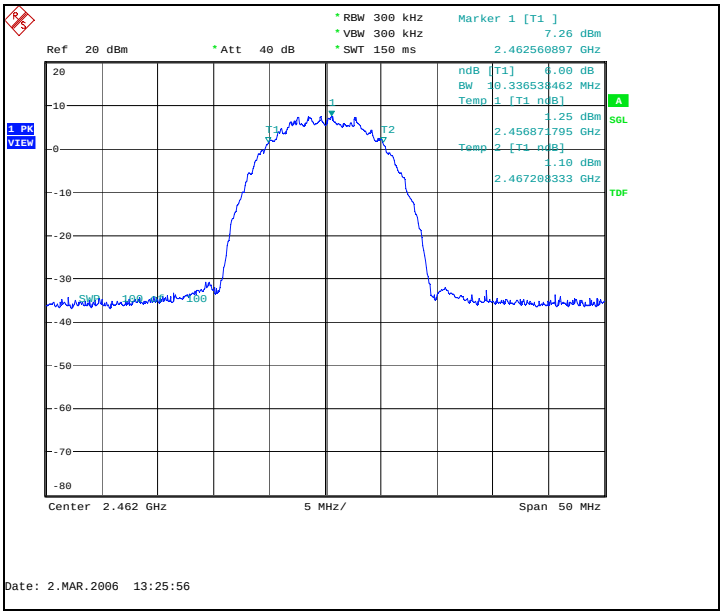
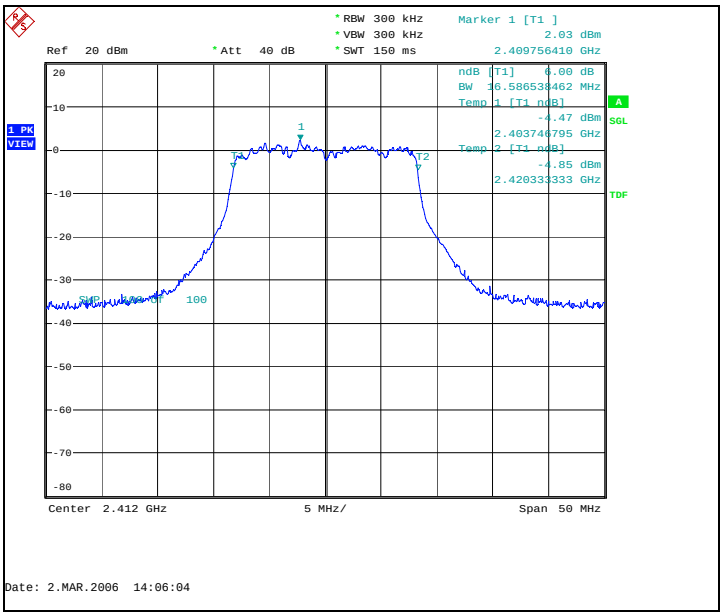
Channel 11 / 2462 MHz



17.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_C [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	16586.538	Passed
7 / 2442	16506.410	Passed
11 / 2462	16506.410	Passed

Channel 1 / 2412 MHz



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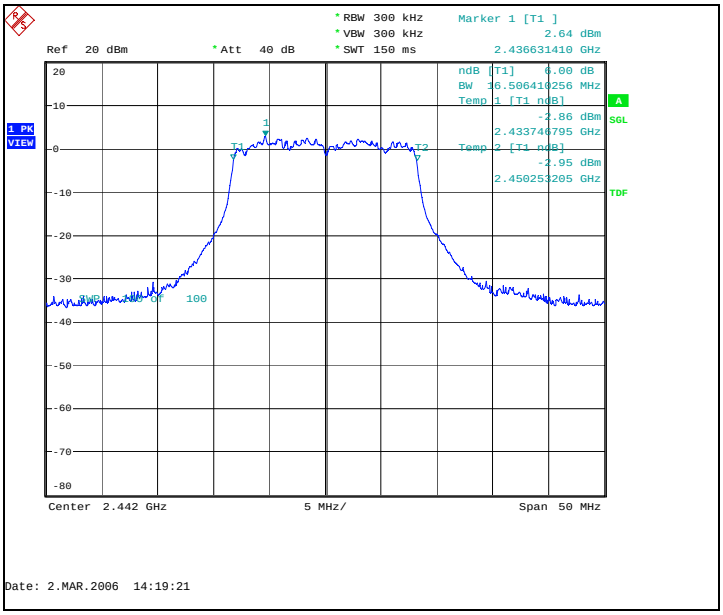
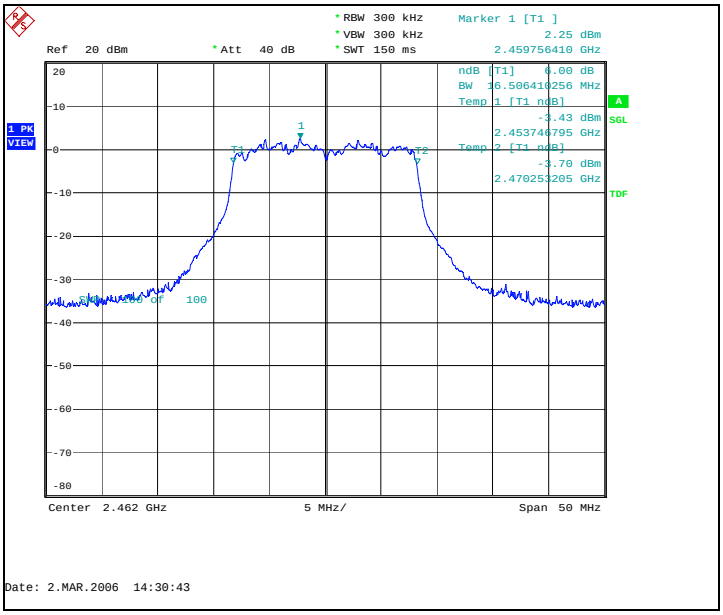
Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



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18. Power spectral density
(FCC §15.247(e), RSS-210 A8.2 (2))

EUT with DUT number	Phone: DUT 40524
Accessories with DUT numbers	Battery: DUT 40543
Operation Voltage [V] / [Hz]	-
Result	Passed
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22/49/100.8
Date of measurements	2.3.2006
Measured by	Jan-Erik Lilja

18.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

Limits for power spectral density measurements

Limit [dBm] @ 3 kHz
≤ 8

18.2. WLAN test results

18.2.1 DSSS mode, QPSK modulation, 5.5 Mbps data rate

Channel / f_C [MHz]	P [dBm]	Result
1 / 2412	-10.50	Passed
7 / 2442	-8.45	Passed
11 / 2462	-9.71	Passed

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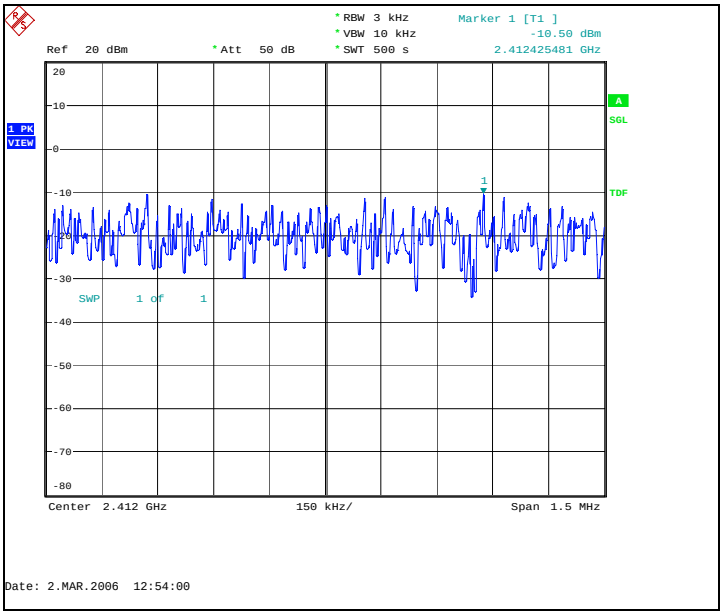
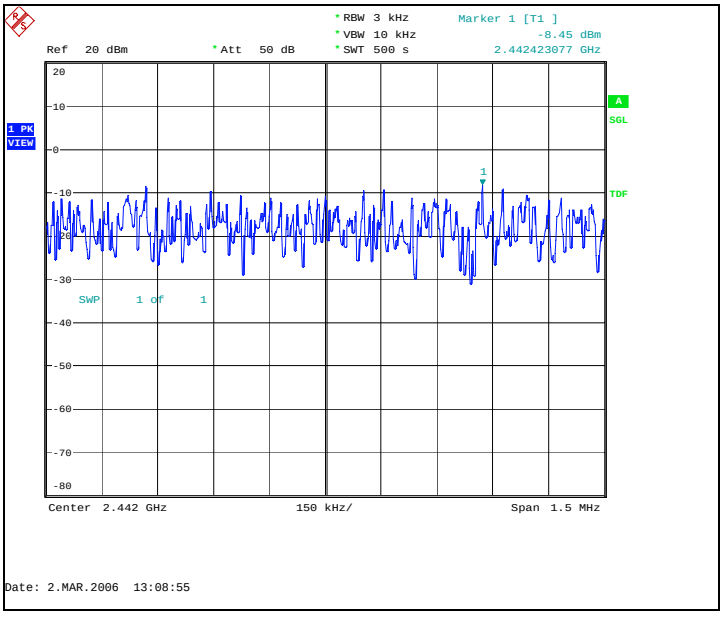
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



Channel 11 / 2462 MHz

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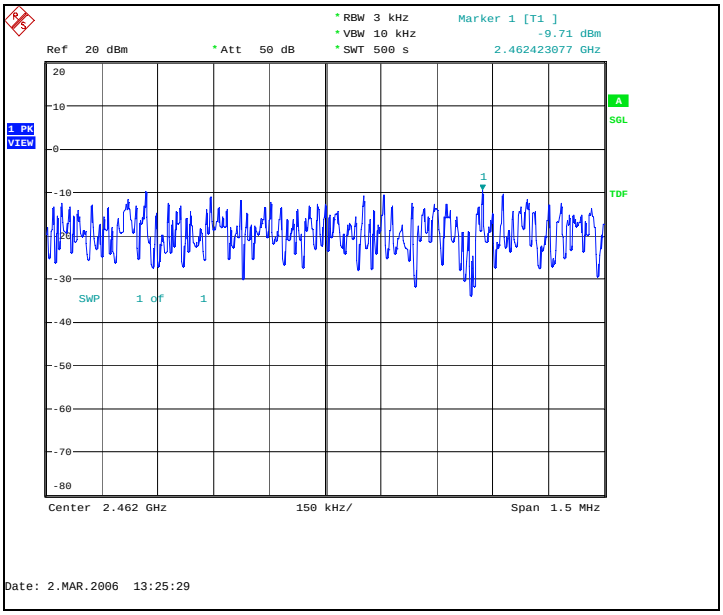
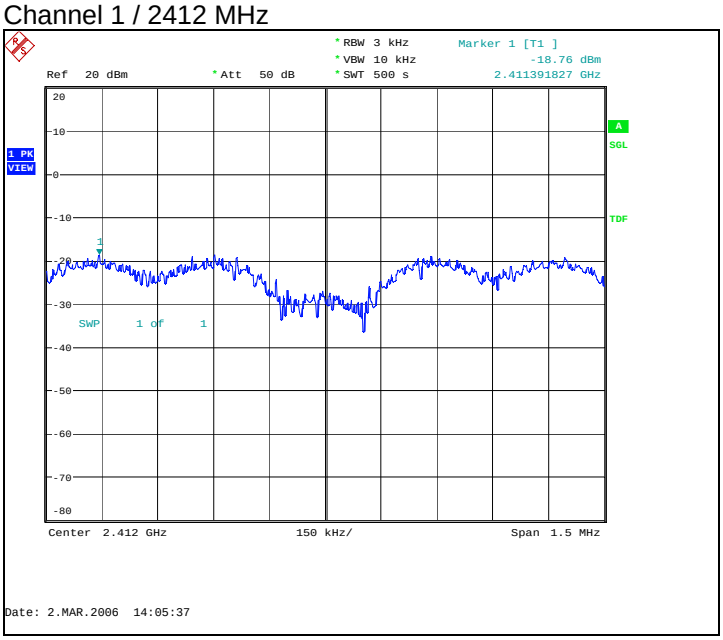


18.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_C [MHz]	P [dBm]	Result
1 / 2412	-18.76	Passed
7 / 2442	-17.81	Passed
11 / 2462	-18.43	Passed

Channel 1 / 2412 MHz



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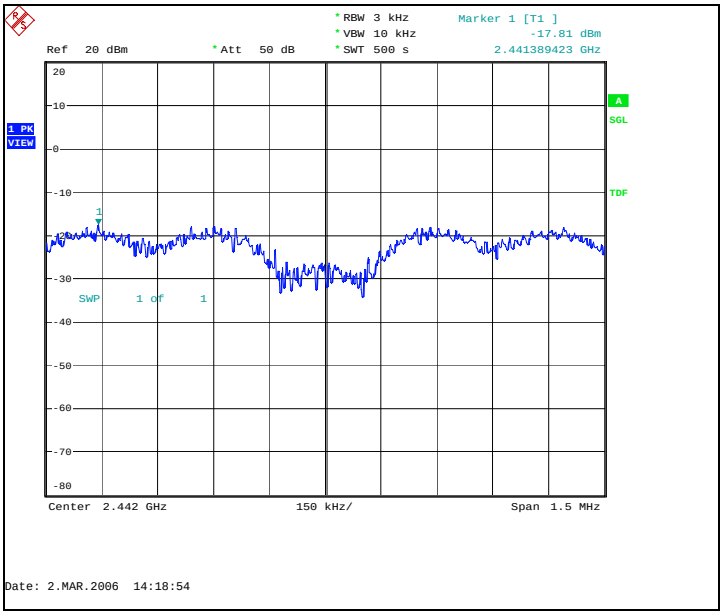
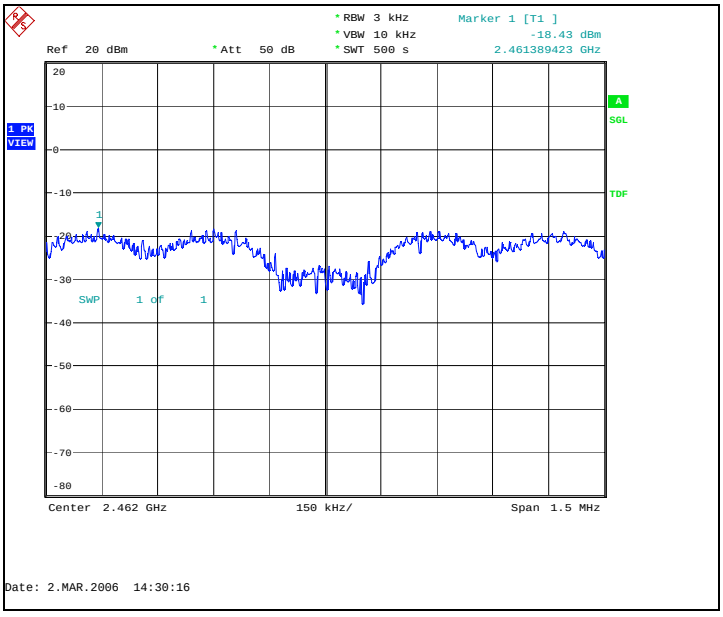
Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



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19. Test Equipment

19.1. 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

19.2. 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

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