

FCC Part 15C Compliance Test Report

Test Report no.:	Salo_FCC_0833_08.doc	Date of Report:	25-Aug-2008
Number of pages:	60	Customer's Contact person:	Ralph Schwarz
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FCC listing no.:	533467		
IC recognition no.:	661V-1		
Tested devices/ accessories:	Phone RM-399 / Battery BL-5BT, Headset HS-47 and AC-Charger AC-3E		
FCC ID:	PPIRM-399	IC:	661U-RM399
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), Public Notice DA 00-705, DTS procedures KDB 558074, IC standards RSS-GEN (Issue 2, June 2007) and RSS-210 (Issue 7, June 2007). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		
Documentation:	The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test Results:	The EUT complies with the requirements in respect of all parameters subject to the test. The test results relate only to devices specified in this document.		
Date and signature for the contents:			

Anni Manninen, Test System Manager

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	25-Jul-2008
Testing completed	19-Aug-2008
The customer's contact person	Ralph Schwarz
Test Plan referred to	T:\Projects\RM-399\TestPlan_RS\RS_Testplan_RM-399.xls
Notes	-
Document name	T:\Projects\RM-399\EMC\Results\FCC\Salo_FCC_0833_08.doc

1.1. EUT and Accessory Information

The EUT is a 4-band (GSM850/900/1800/1900) 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-399	004401/10/042935/2	0360	-	jsu08w11_08w32	13112
Battery	BL-5BT	4620408173120108548;0670547	-	-	-	13057
Headset	HS-47	350853642502	-	-	-	12393
AC-Charger	AC-3E	4090495461961007948;0875379	-	-	-	12335
Phone	RM-399	004401/10/250238/8	0360	-	jsu2.51	13119
Battery	BL-5BT	4620408173120108489;0670547	-	-	-	13120

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	NP
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-GEN or RSS-210	Name of the test	Result
15.247(b)(1)	A8.4 (4)	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	NP
15.247(a)(2)	A8.2 (1)	6 dB bandwidth	PASSED
15.247(e)	A8.2 (2)	Power spectral density	PASSED

PASSED
FAILED
NP

The EUT complies with the essential requirements in the standard.
The EUT does not comply with the essential requirements in the standard.
The test was not performed by the TCC Nokia Salo Laboratory.

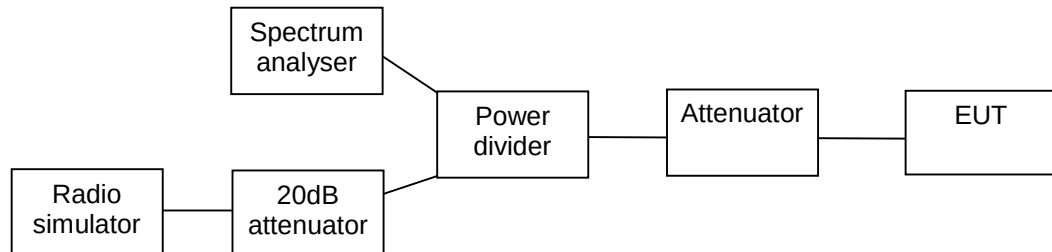
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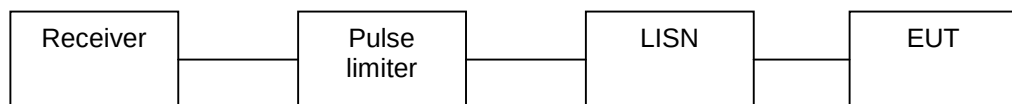
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2. Test setups

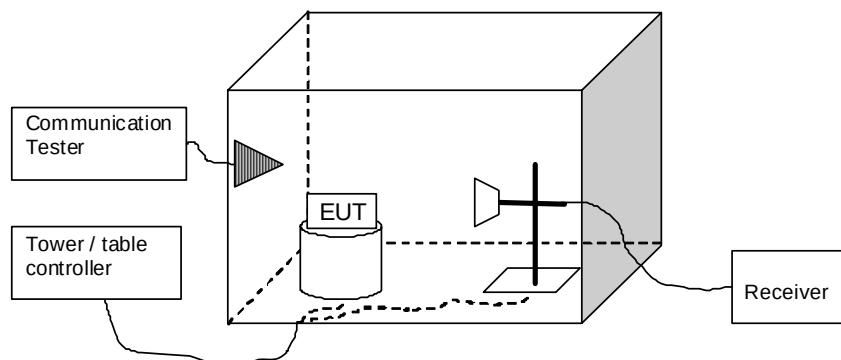
2.1. Conducted RF test setup



2.2. AC powerline conducted emissions test setup



2.3. Radiated test setup



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

EUT with DUT number	RM-399, DUT 13119
Accessories with DUT numbers	BL-5BT, DUT 13120; HS-47, DUT 12393; AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 50 / 101
Date of measurements	18-Aug-2008
Measured by	Anni Manninen

3.1. Test method and limit

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

Limits for conducted peak output power measurements

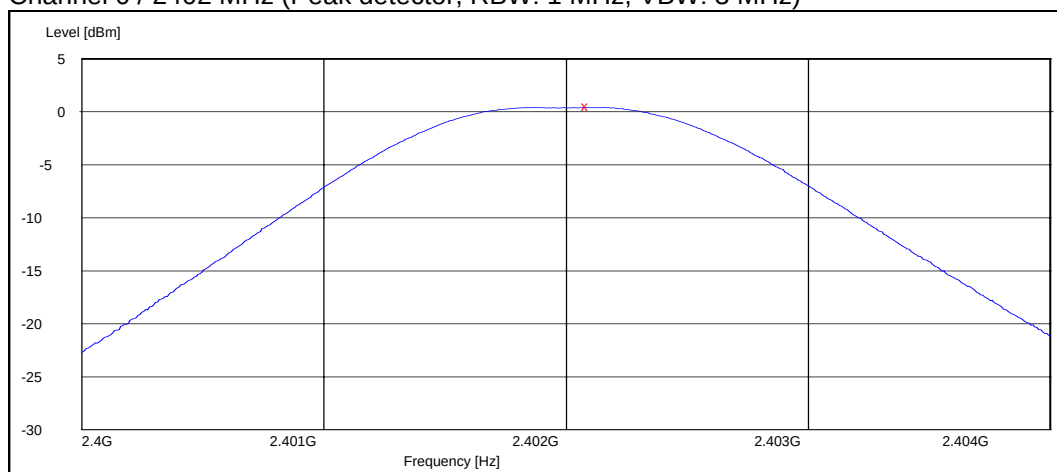
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

3.2. Bluetooth Test results

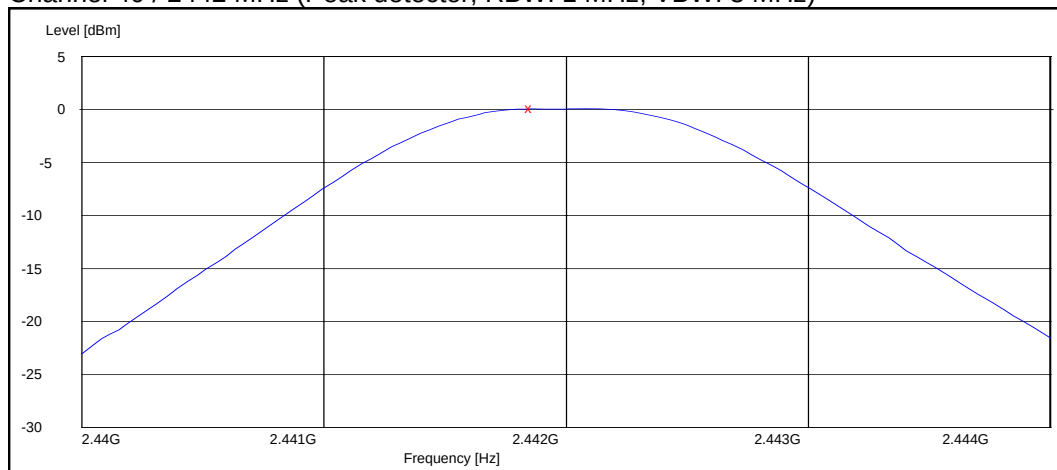
3.2.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	0.50	1.122	PASSED
40 / 2442	0.10	1.023	PASSED
78 / 2480	-0.80	0.832	PASSED

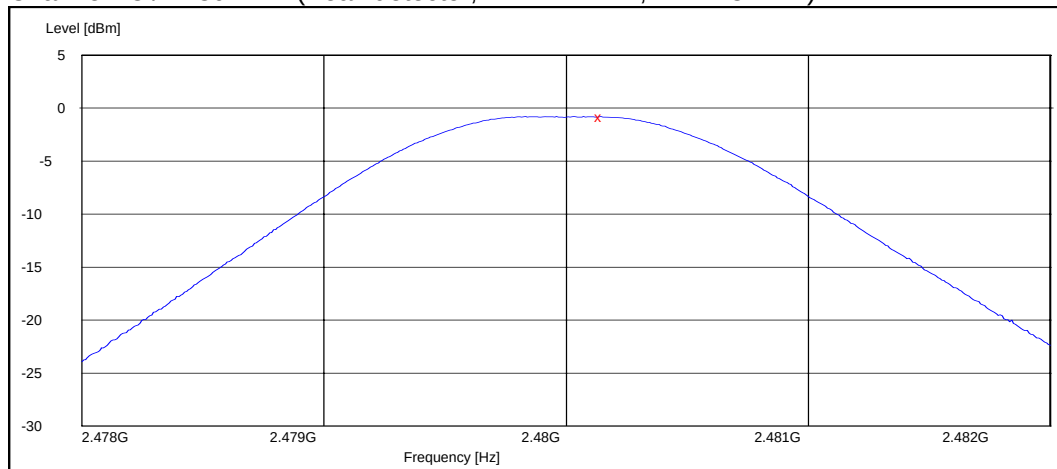
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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



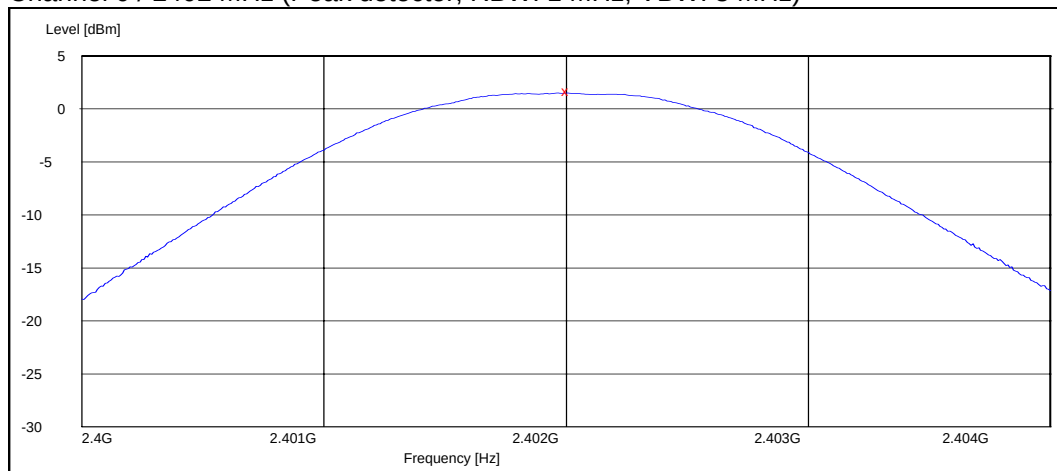
Channel 78 / 2480 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



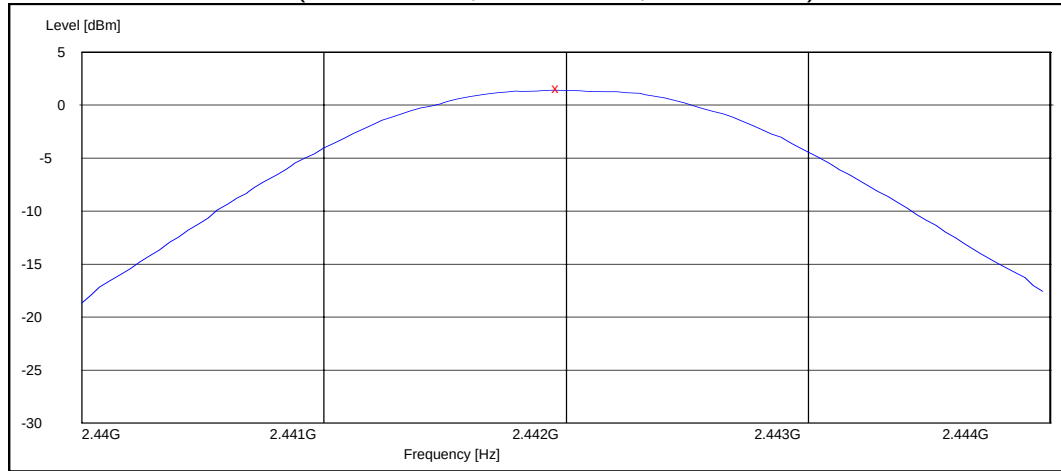
3.2.2 8DPSK modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	1.70	1.479	PASSED
40 / 2442	1.60	1.445	PASSED
78 / 2480	1.00	1.259	PASSED

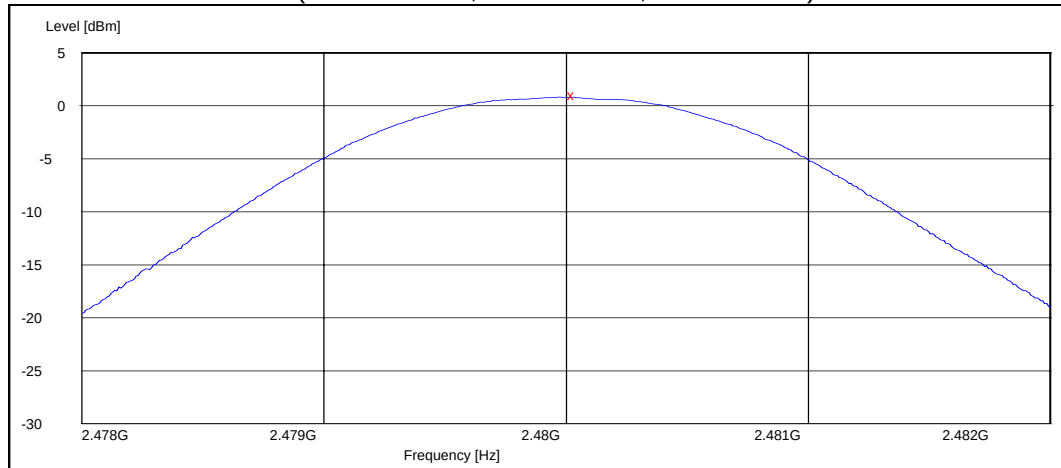
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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



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



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

EUT with DUT number	RM-399, DUT 13112
Accessories with DUT numbers	BL-5BT, DUT 13057, HS-47, DUT 12393 AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Phone tested flip open mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 41 / 102.1
Date of measurements	14-Aug-2008 – 19-Aug-2008
Measured by	Sami Lehtonen / Kalle Hannila

4.1. Test method and limit

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

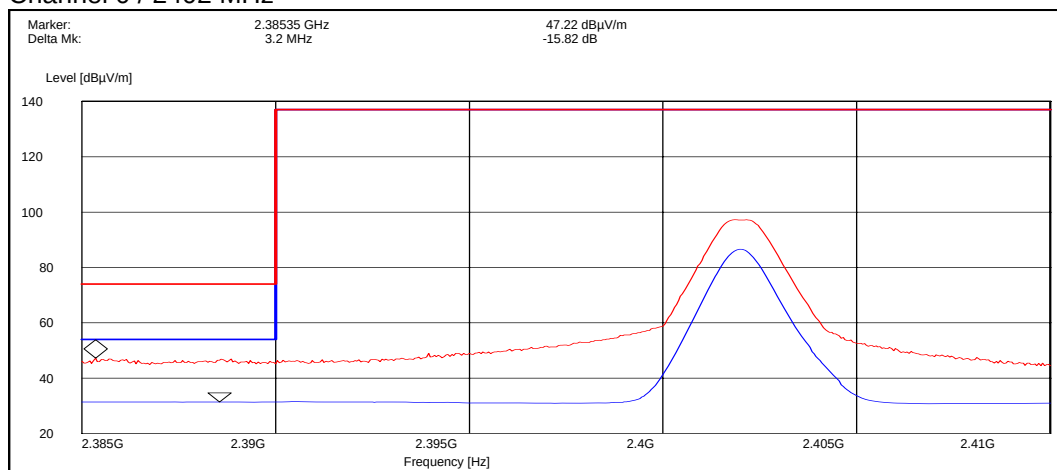
Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

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

4.2. Bluetooth Test results

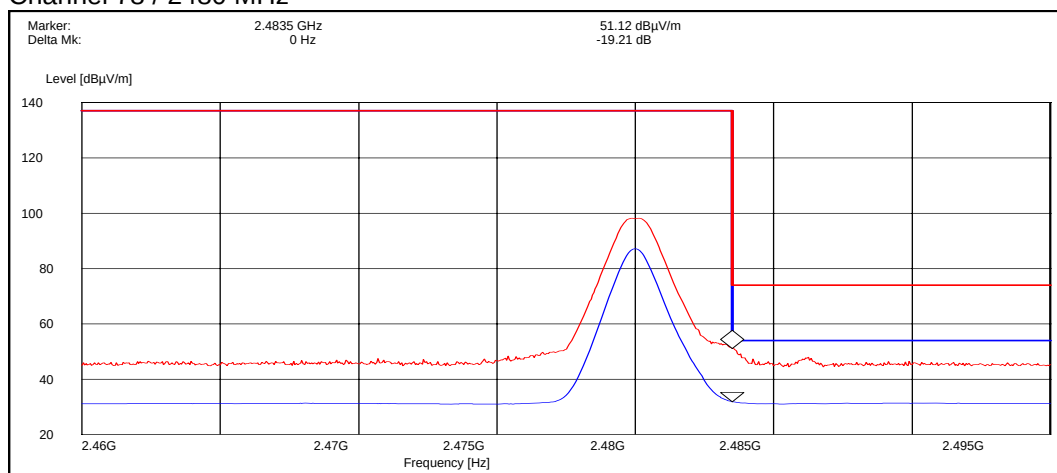
4.2.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz



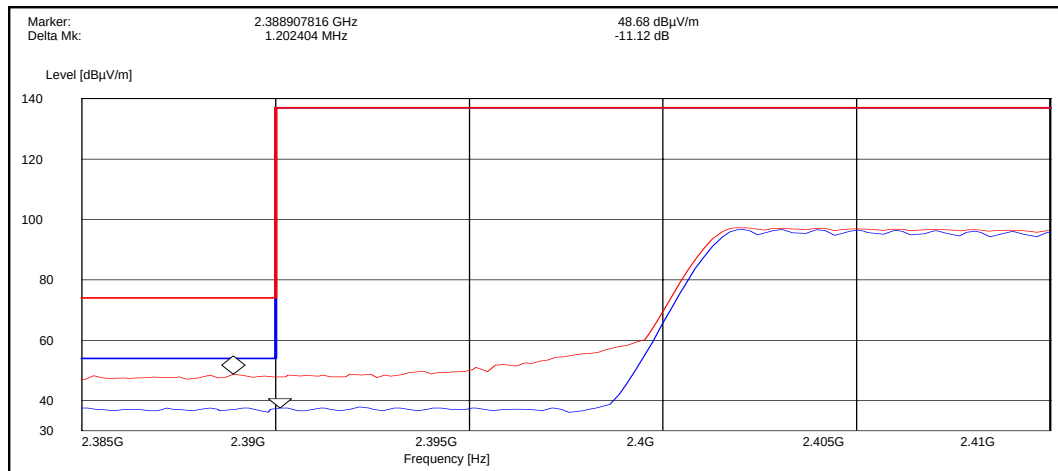
Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	47.20	PASSED
Average	31.40	PASSED

Channel 78 / 2480 MHz



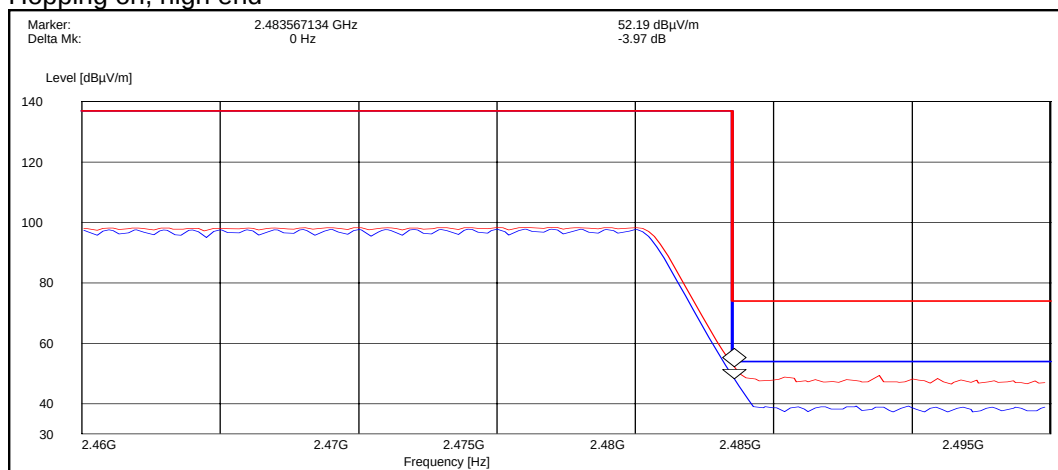
Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	51.10	PASSED
Average	31.90	PASSED

Hopping on, low end



Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	48.70	PASSED
Average	37.60	PASSED

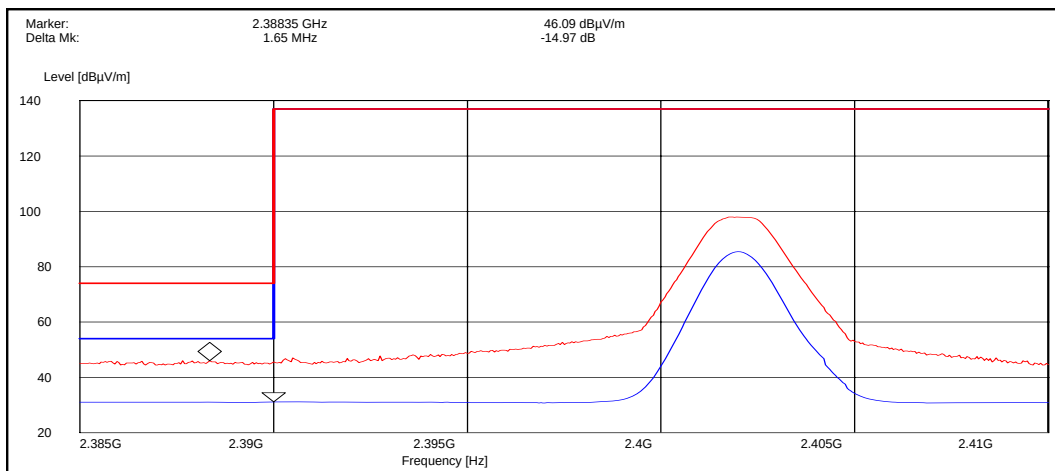
Hopping on, high end



Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	52.20	PASSED
Average	48.20	PASSED

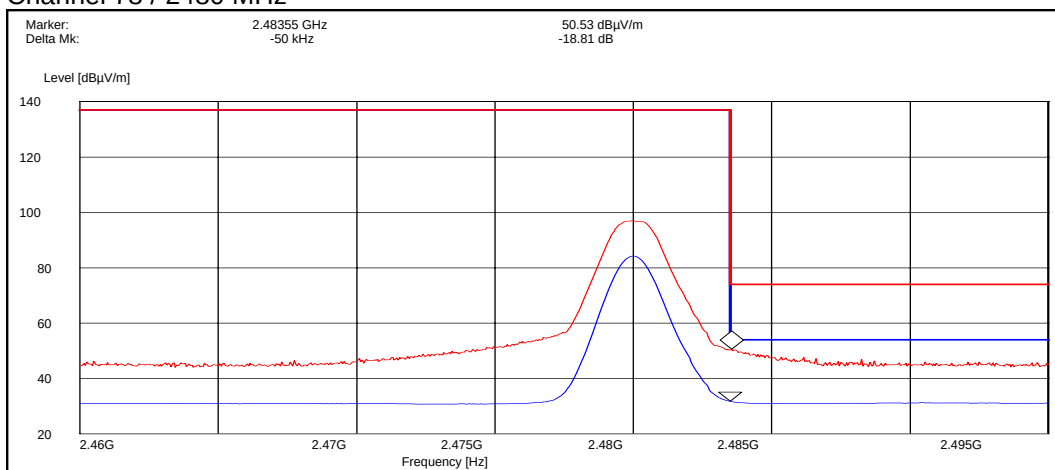
4.2.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz



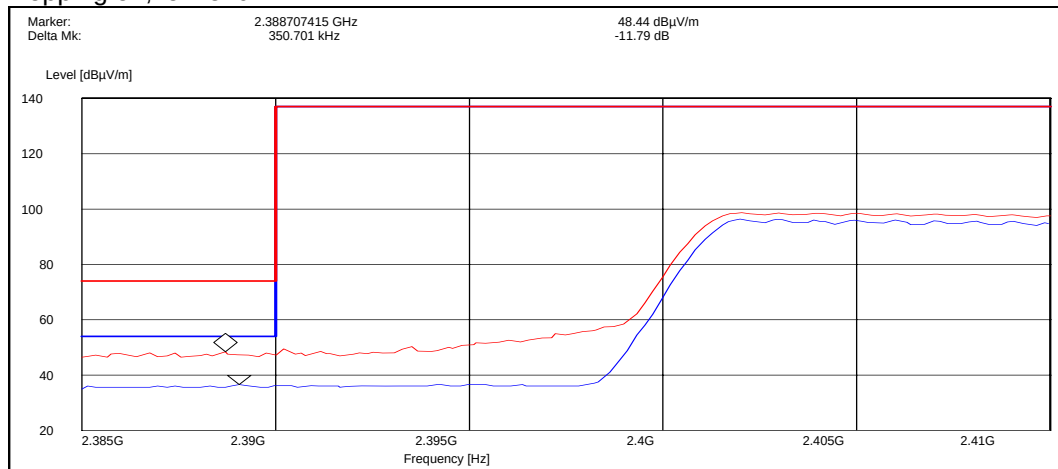
Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	46.10	PASSED
Average	31.10	PASSED

Channel 78 / 2480 MHz



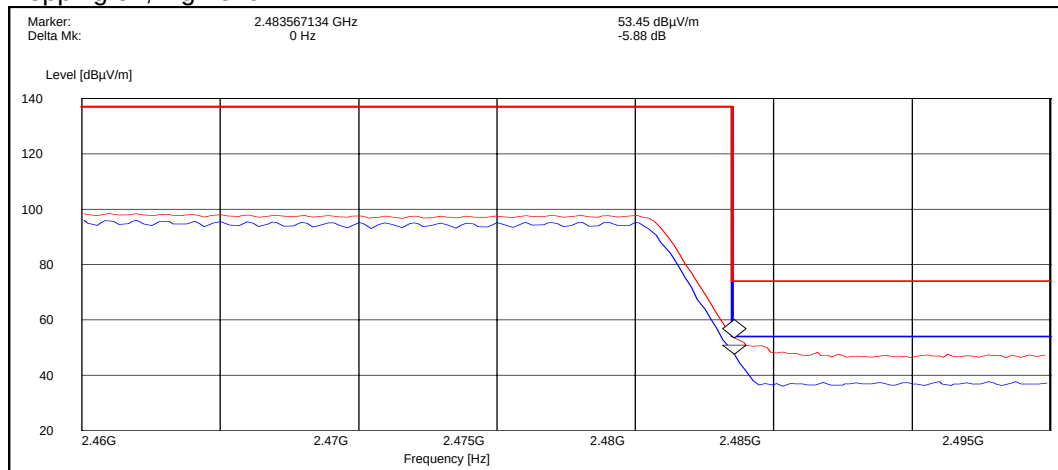
Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	50.50	PASSED
Average	31.70	PASSED

Hopping on, low end



Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	48.40	PASSED
Average	36.60	PASSED

Hopping on, high end



Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	53.40	PASSED
Average	47.60	PASSED

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

EUT with DUT number	RM-399, DUT 13119
Accessories with DUT numbers	BL-5BT, DUT 13120; HS-47, DUT 12393; AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 50 / 101
Date of measurements	18-Aug-2008
Measured by	Anni Manninen

5.1. Test method and limit

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

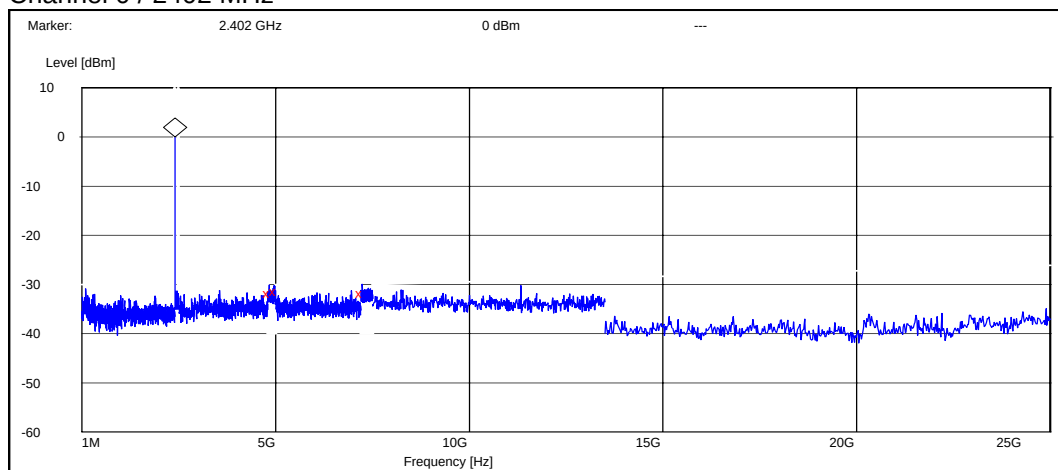
Limits for spurious RF conducted emissions measurements

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

5.2. Bluetooth Test results

5.2.1 GFSK modulation, PRBS packet type

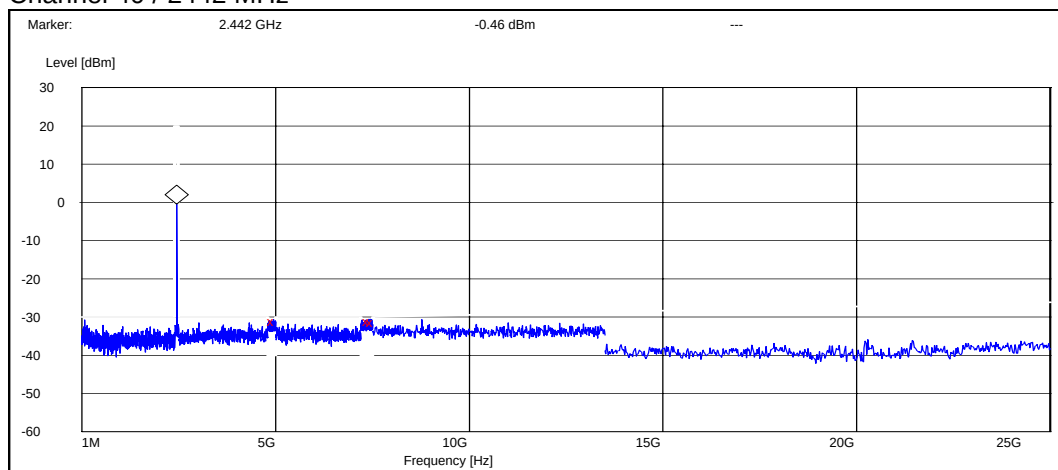
Channel 0 / 2402 MHz



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

Frequency [MHz]	P [dBc]	Result
4844.800000	-31.800143	PASSED
5000.000000	-31.400143	PASSED
7236.600000	-31.700143	PASSED

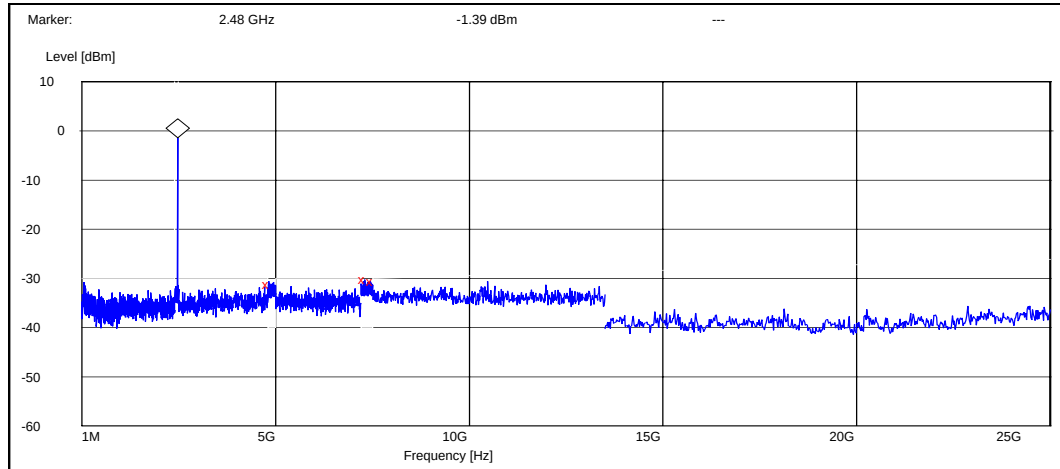
Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4951.600000	-30.738248	PASSED
7407.600000	-30.638248	PASSED
7500.000000	-30.838248	PASSED

Channel 78 / 2480 MHz

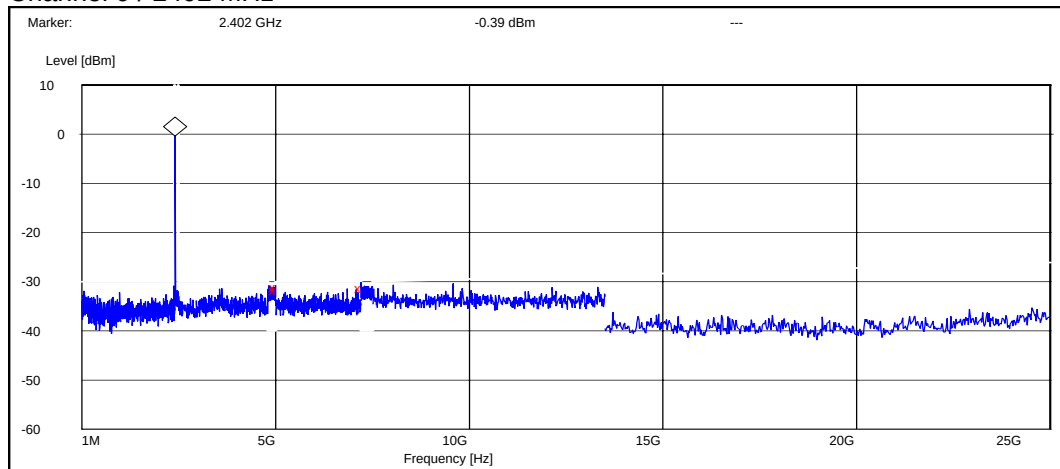


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4819.200000	-29.810904	PASSED
7296.600000	-28.810904	PASSED
7500.000000	-29.110904	PASSED

5.2.2 8DPSK modulation, PRBS packet type

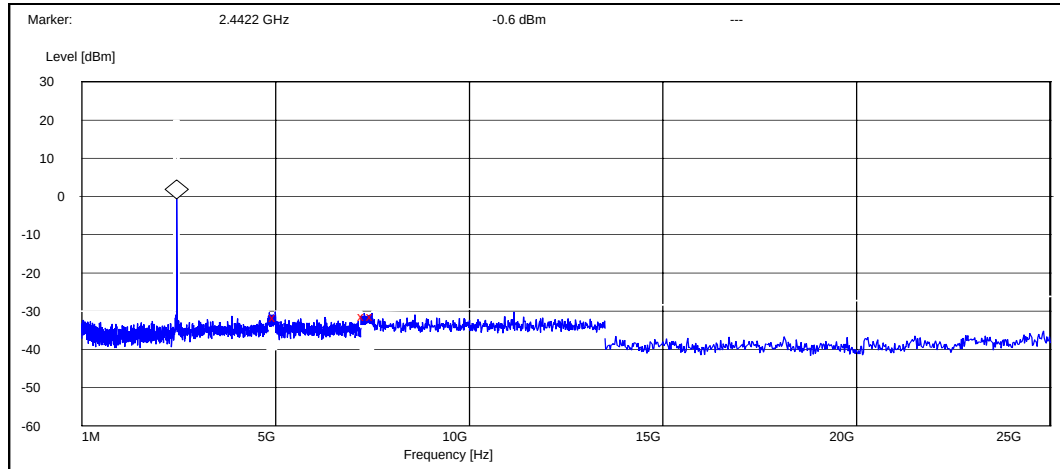
Channel 0 / 2402 MHz



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

Frequency [MHz]	P [dBc]	Result
4998.000000	-30.806711	PASSED
5000.000000	-31.306711	PASSED
7207.800000	-31.006711	PASSED

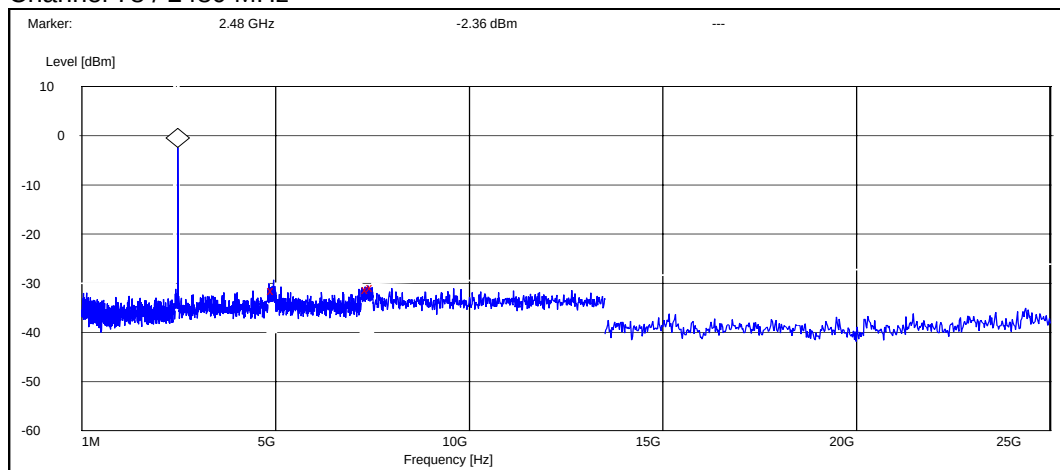
Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4984.400000	-31.096158	PASSED
7292.400000	-30.796158	PASSED
7500.000000	-30.696158	PASSED

Channel 78 / 2480 MHz



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

Frequency [MHz]	P [dBc]	Result
4947.600000	-29.035394	PASSED
7381.200000	-28.935394	PASSED
7500.000000	-28.435394	PASSED

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

EUT with DUT number	RM-399, DUT 13112
Accessories with DUT numbers	BL-5BT, DUT 13057, HS-47, DUT 12393 AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Phone tested flip open mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 41 / 102.1
Date of measurements	12-Aug-2008
Measured by	Sami Lehtonen / Kalle Hannila

6.1. Test method and limit

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

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system.

The Final Measurement is performed in the Semi-Anechoic Chamber with conducting metal floor, if the Preliminary Measurement results are closer than 20 dB to the permissible value.

The EUT is placed at nonconductive plate at the turntable center.

For each suspected frequency, the turntable is rotated 360 degrees and antenna is scanned from 1 to 4 m. This is repeated for both horizontal and vertical receive antenna polarizations.

The emissions less than 20 dB below the permissible value are reported.

The measurement results are obtained as described below:

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

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

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

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

6.2. Bluetooth Test results

6.2.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	44.30	164.06	43.30	1.0	HORIZONTAL	PASSED
7206.000000	47.00	223.87	44.10	2.9	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	31.60	38.02	30.60	1.0	HORIZONTAL	PASSED
7206.000000	18.90	8.81	16.00	2.9	VERTICAL	PASSED

Channel 40 / 2442 MHz

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
37.735872	22.80	13.80	43.30	-20.5	VERTICAL	PASSED
90.079760	17.60	7.59	45.90	-28.3	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4849.193387	45.50	188.36	43.90	1.6	HORIZONTAL	PASSED
12482.463928	52.70	431.52	40.90	11.8	HORIZONTAL	PASSED
13392.793587	53.60	478.63	40.10	13.5	HORIZONTAL	PASSED
15374.251503	56.10	638.26	37.70	18.4	HORIZONTAL	PASSED
15830.153307	55.20	575.44	36.80	18.4	HORIZONTAL	PASSED
16030.562124	57.10	716.14	36.90	20.2	HORIZONTAL	PASSED
17820.637275	56.20	645.65	37.00	19.2	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4849.193387	32.20	40.74	30.60	1.6	HORIZONTAL	PASSED
12482.463928	40.30	103.51	28.60	11.7	HORIZONTAL	PASSED
13392.793587	41.20	114.82	27.70	13.5	HORIZONTAL	PASSED
15374.251503	43.30	146.22	25.10	18.2	HORIZONTAL	PASSED

15827.653307	42.90	139.64	24.40	18.5	HORIZONTAL	PASSED
16033.562124	44.20	162.18	23.90	20.3	HORIZONTAL	PASSED
17821.637275	43.70	153.11	24.40	19.3	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
4960.000000	43.80	154.88	43.60	0.2	HORIZONTAL	PASSED
7440.000000	48.20	257.04	43.80	4.4	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
4960.000000	30.50	33.50	30.30	0.2	HORIZONTAL	PASSED
7440.000000	35.20	57.54	30.80	4.4	HORIZONTAL	PASSED

6.2.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	27.60	23.99	26.60	1.0	VERTICAL	PASSED
7206.000000	31.70	38.46	28.80	2.9	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
4804.000000	14.50	5.31	13.50	1.0	VERTICAL	PASSED
7206.000000	18.90	8.81	16.00	2.9	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
38.095391	21.80	12.30	42.50	-20.7	VERTICAL	PASSED
89.979760	16.90	7.00	45.20	-28.3	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
4845.193387	28.50	26.61	27.00	1.5	HORIZONTAL	PASSED
4875.251503	29.90	31.26	28.50	1.4	VERTICAL	PASSED
7293.089178	32.10	40.27	29.00	3.1	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
4844.693387	15.70	6.10	14.20	1.5	HORIZONTAL	PASSED
4874.751503	16.30	6.53	14.90	1.4	VERTICAL	PASSED

7293.589178	19.10	9.02	16.00	3.1	HORIZONTAL	PASSED
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Channel 78 / 2480 MHz

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
4960.000000	29.30	29.17	29.10	0.2	VERTICAL	PASSED
7440.000000	33.90	49.55	29.50	4.4	VERTICAL	PASSED

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
4960.000000	16.20	6.46	16.00	0.2	HORIZONTAL	PASSED
7440.000000	20.50	10.59	16.10	4.4	HORIZONTAL	PASSED

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

EUT with DUT number	RM-399, DUT 13119
Accessories with DUT numbers	BL-5BT, DUT 13120; HS-47, DUT 12393; AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 50 / 101
Date of measurements	18-Aug-2008
Measured by	Anni Manninen

7.1. Test method and limit

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

Limits for 20 dB bandwidth measurements

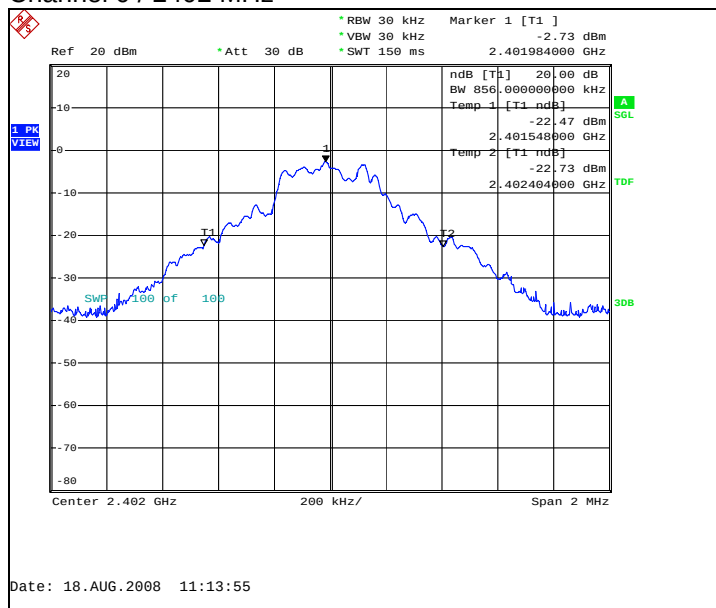
Limit [MHz]
N/A

7.2. Bluetooth Test results

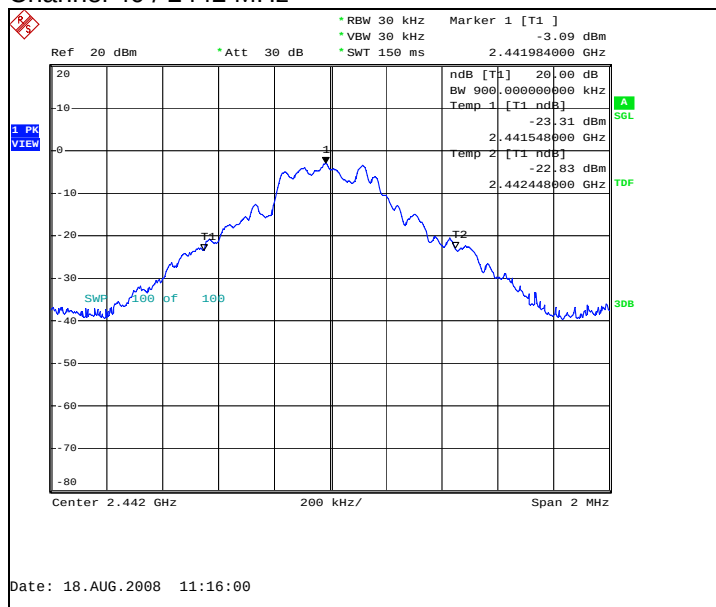
7.2.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	856.000	PASSED
40 / 2442	900.000	PASSED
78 / 2480	900.000	PASSED

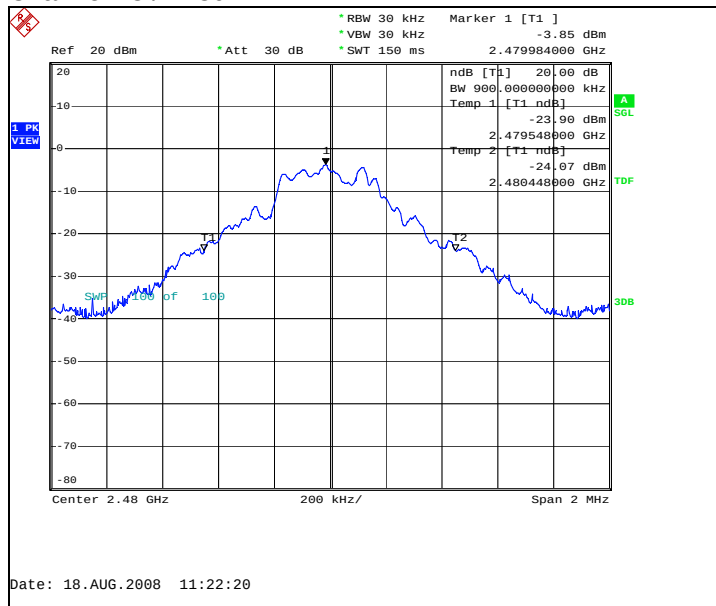
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



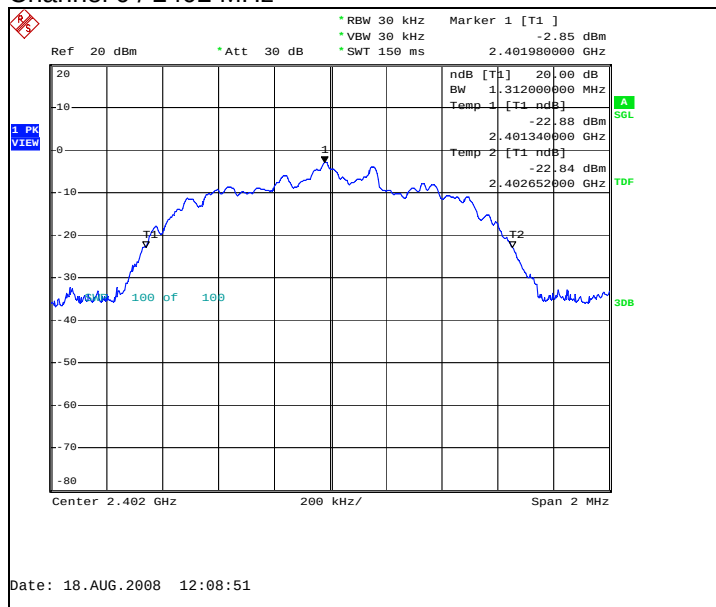
Channel 78 / 2480 MHz



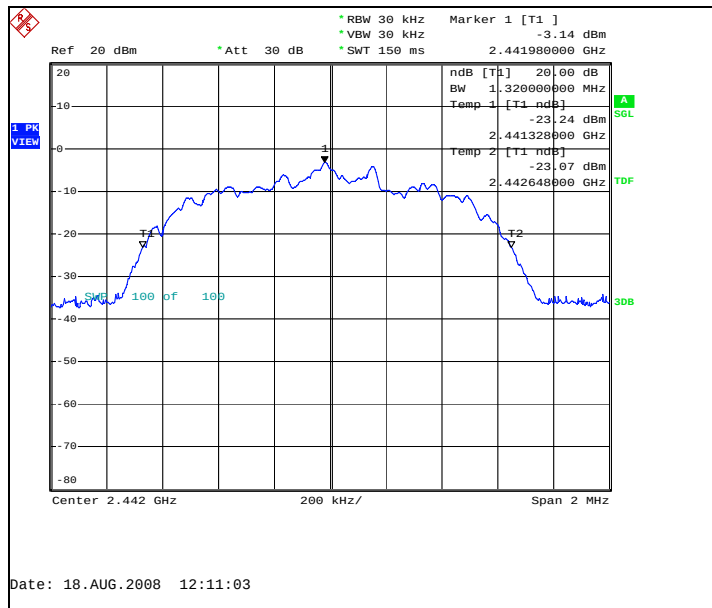
7.2.2 8DPSK modulation, PRBS packet type

Channel / f _c [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	1312.000	PASSED
40 / 2442	1320.000	PASSED
78 / 2480	1324.000	PASSED

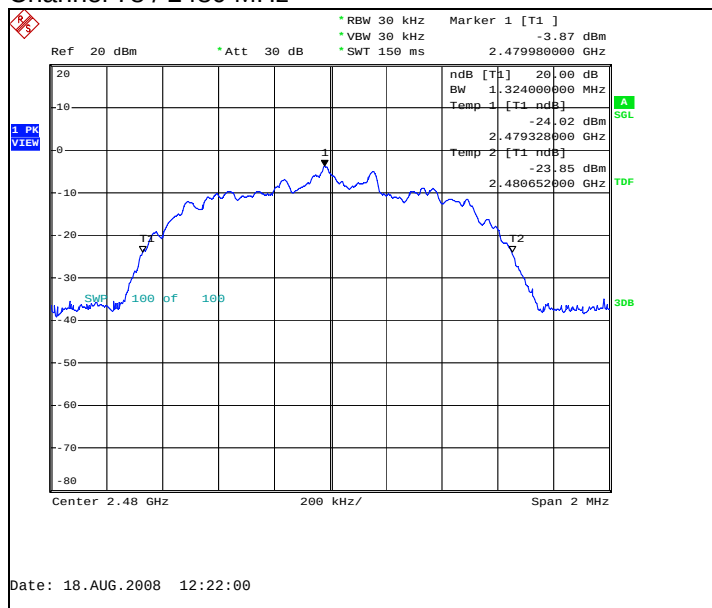
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



Channel 78 / 2480 MHz



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

EUT with DUT number	RM-399, DUT 13119
Accessories with DUT numbers	BL-5BT, DUT 13120; HS-47, DUT 12393; AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 50 / 101
Date of measurements	18-Aug-2008
Measured by	Anni Manninen

8.1. Test method and limit

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

Limits for carrier frequency separation measurements

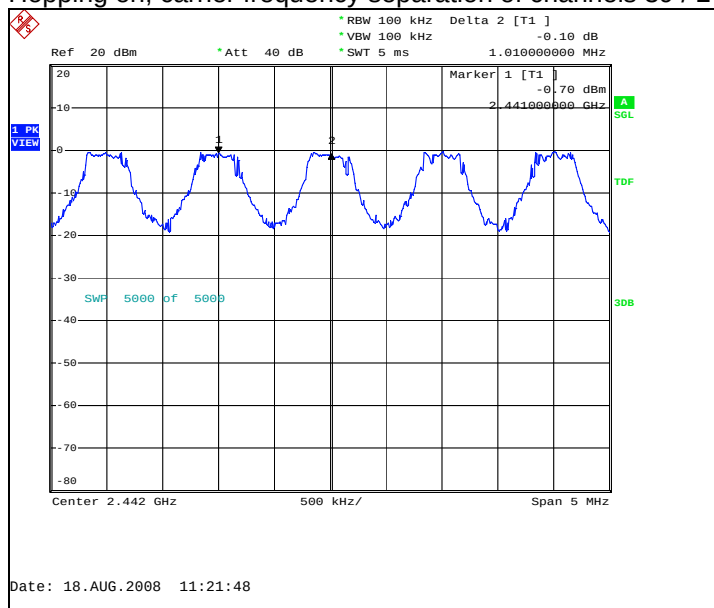
Limit [MHz]
≥ 0.025 or $2/3$ of the 20 dB bandwidth

8.2. Bluetooth Test results

8.2.1 GFSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1010	PASSED

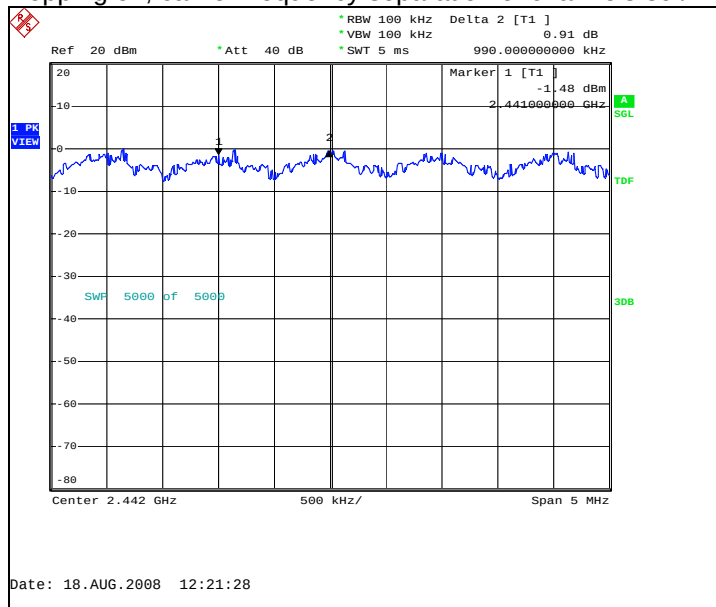
Hopping on, carrier frequency separation of channels 39 / 2441 MHz and 40 / 2442 MHz



8.2.2 8DPSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
990	PASSED

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



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

EUT with DUT number	RM-399, DUT 13119
Accessories with DUT numbers	BL-5BT, DUT 13120; HS-47, DUT 12393; AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 50 / 101
Date of measurements	18-Aug-2008
Measured by	Anni Manninen

9.1. Test method and limit

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

Limits for number of hopping frequencies measurements

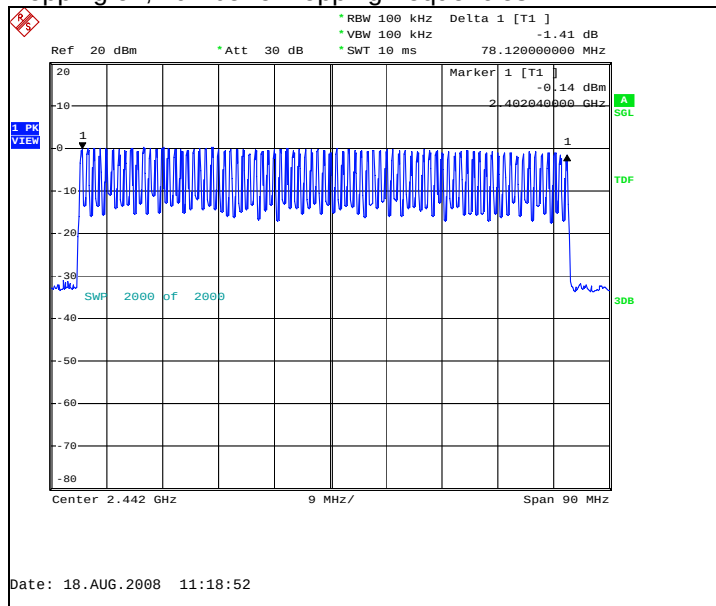
Limit [number]
≥ 15

9.2. Bluetooth Test results

9.2.1 GFSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
78	PASSED

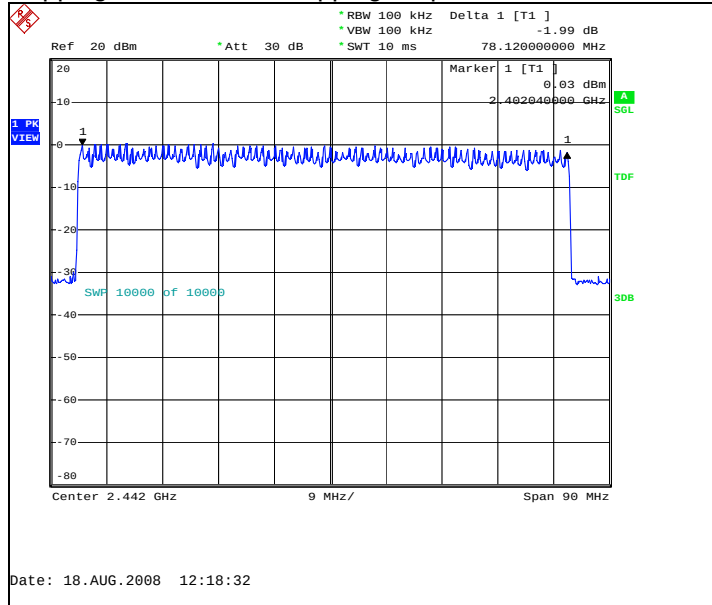
Hopping on, number of hopping frequencies



9.2.2 8DPSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
71	PASSED

Hopping on, number of hopping frequencies



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

EUT with DUT number	RM-399, DUT 13119
Accessories with DUT numbers	BL-5BT, DUT 13120; HS-47, DUT 12393; AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 50 / 101
Date of measurements	18-Aug-2008
Measured by	Anni Manninen

10.1. Test method and limit

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

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

Limits for time of occupancy measurements

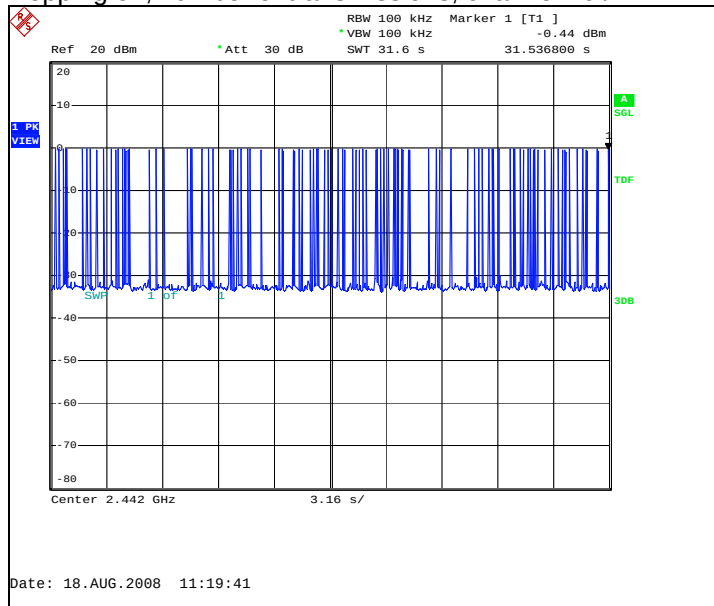
Limit [s]
≤ 0.4

10.2. Bluetooth test results

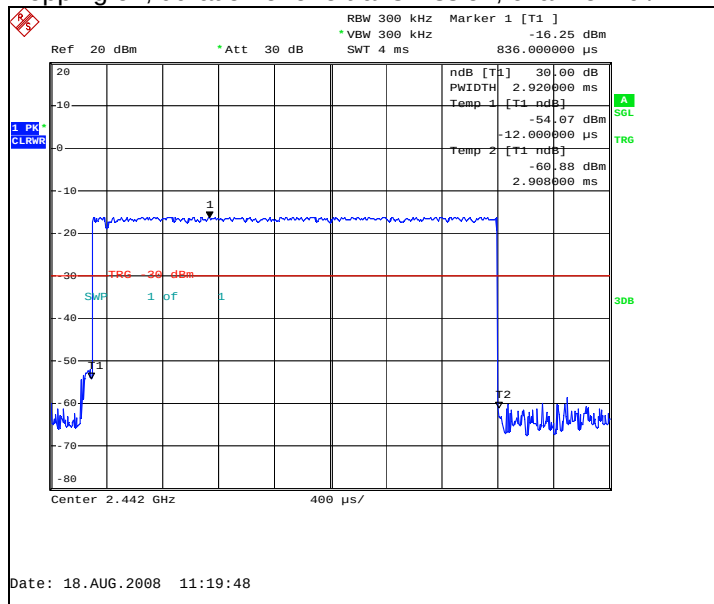
10.2.1 GFSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [μ s]	Time of occupancy [s]	Result
88	2 920	0.256960	PASSED

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



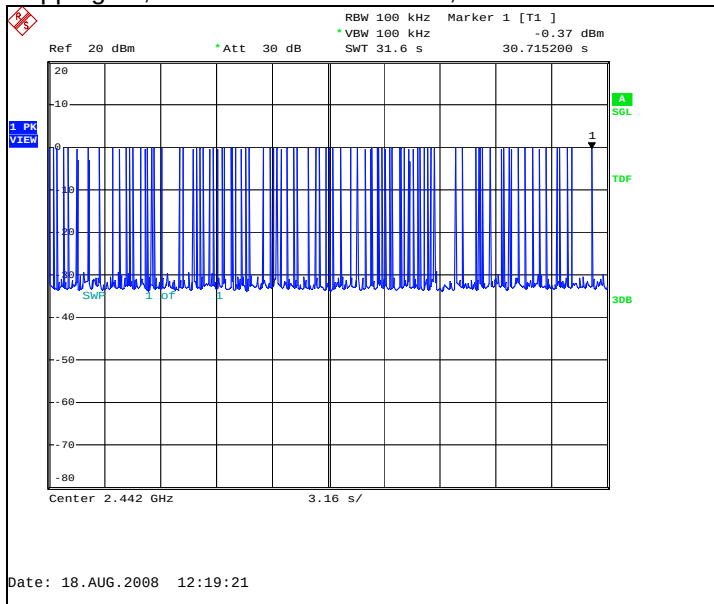
Hopping on, duration of one transmission, channel 40 / 2442 MHz



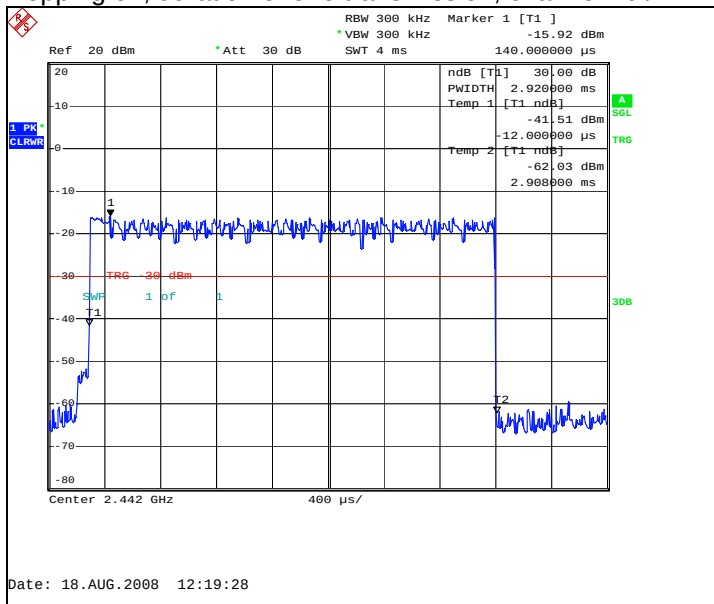
10.2.2 8DPSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [μ s]	Time of occupancy [s]	Result
89	2 920	0.259880	PASSED

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



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



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

EUT with DUT number	RM-399, DUT 13119
Accessories with DUT numbers	BL-5BT, DUT 13120; HS-47, DUT 12393; AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 50 / 101
Date of measurements	18-Aug-2008
Measured by	Anni Manninen

11.1. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210.

Limits for conducted peak output power measurements

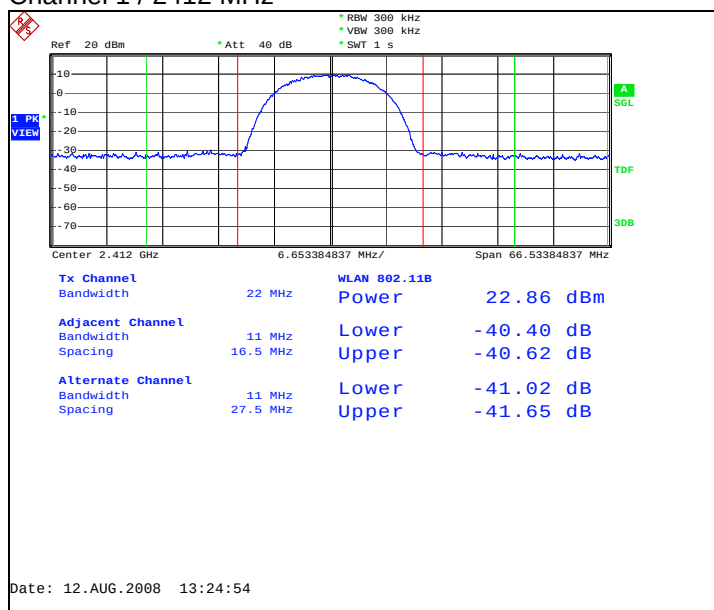
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

11.2. WLAN Test results

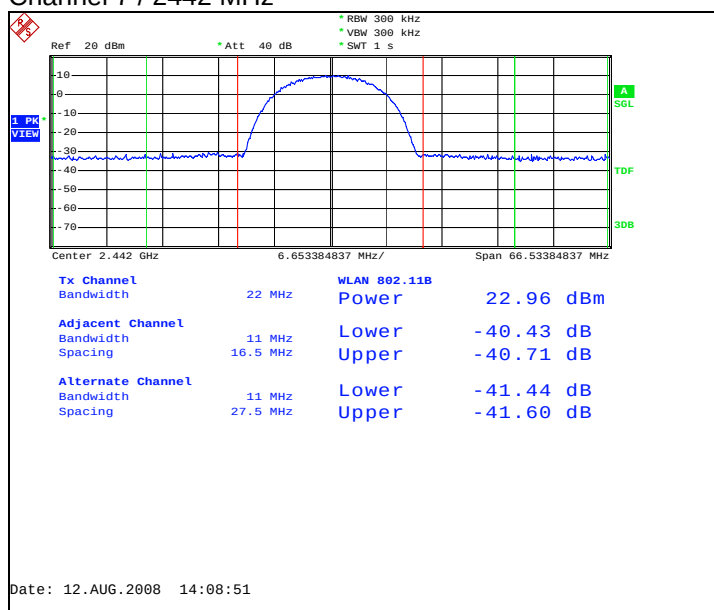
11.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	22.86	0.193	PASSED
7 / 2442	22.96	0.198	PASSED
11 / 2462	22.94	0.197	PASSED

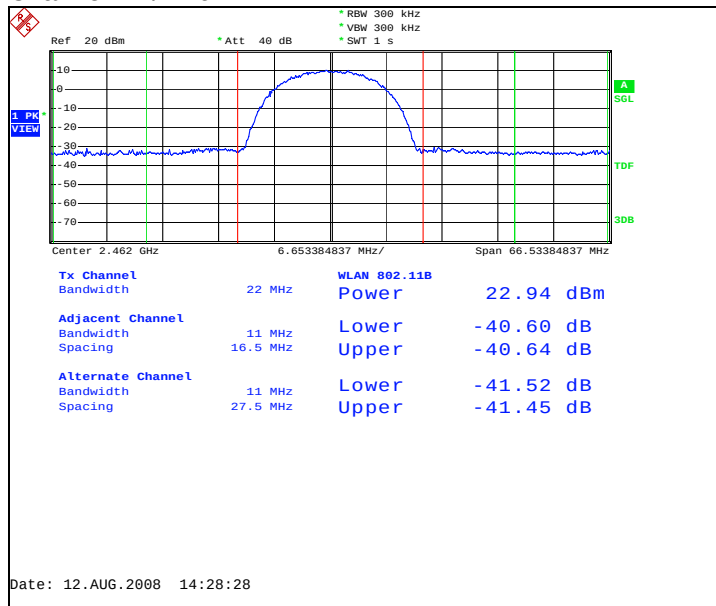
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



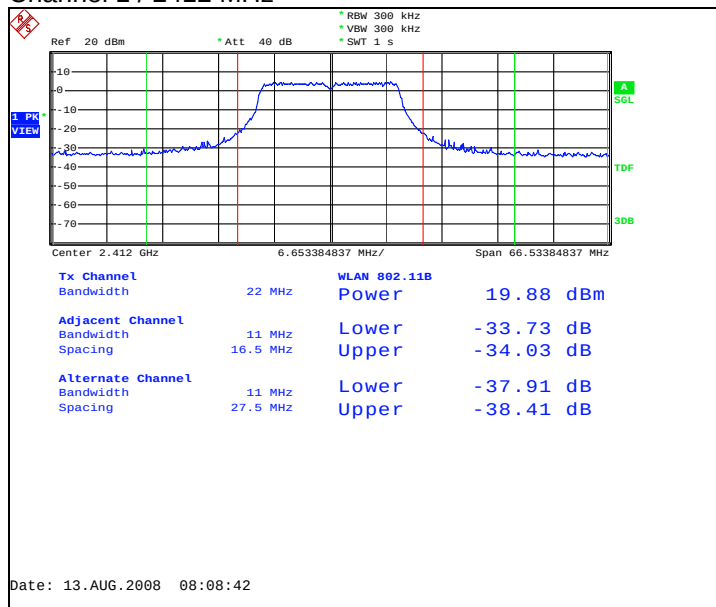
Channel 11 / 2462 MHz



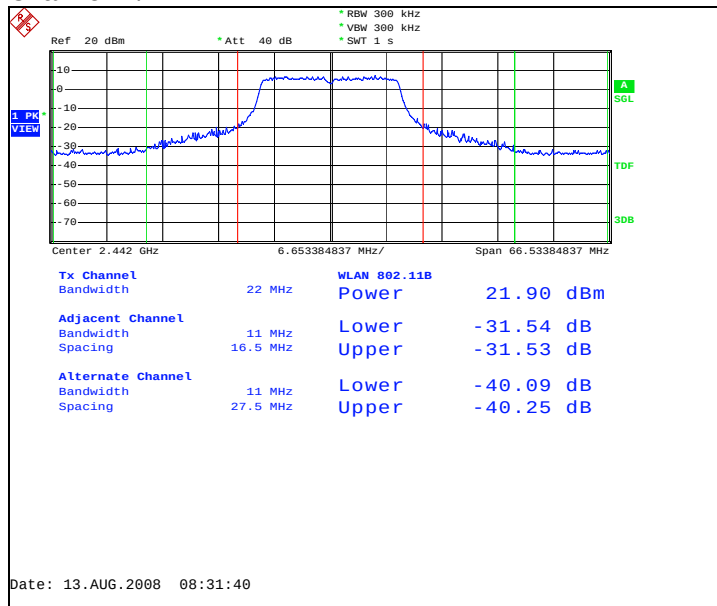
11.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	19.88	0.097	PASSED
7 / 2442	21.90	0.155	PASSED
11 / 2462	20.12	0.103	PASSED

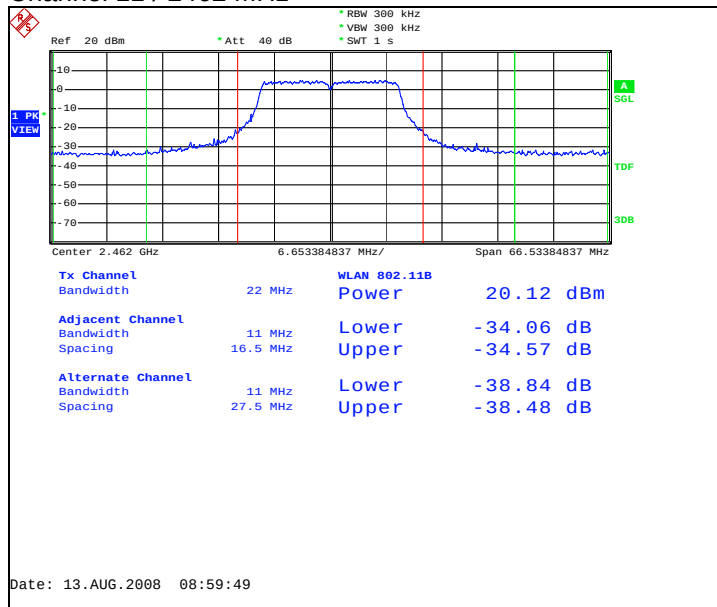
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



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

EUT with DUT number	RM-399, DUT 13112
Accessories with DUT numbers	BL-5BT, DUT 13057, HS-47, DUT 12393 AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Phone tested flip open mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 41 / 102.1
Date of measurements	14-Aug-2008
Measured by	Sami Lehtonen / Kalle Hannila

12.1. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210.

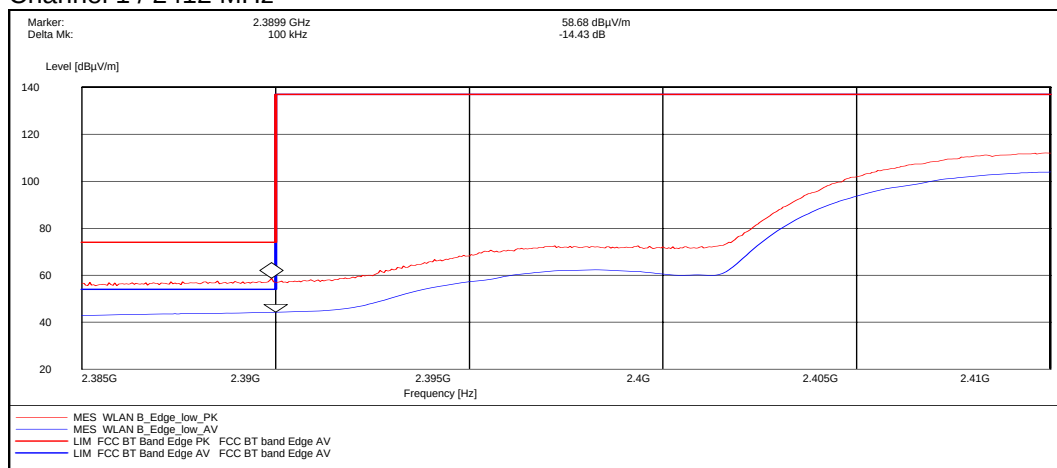
Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

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

12.2. WLAN Test results

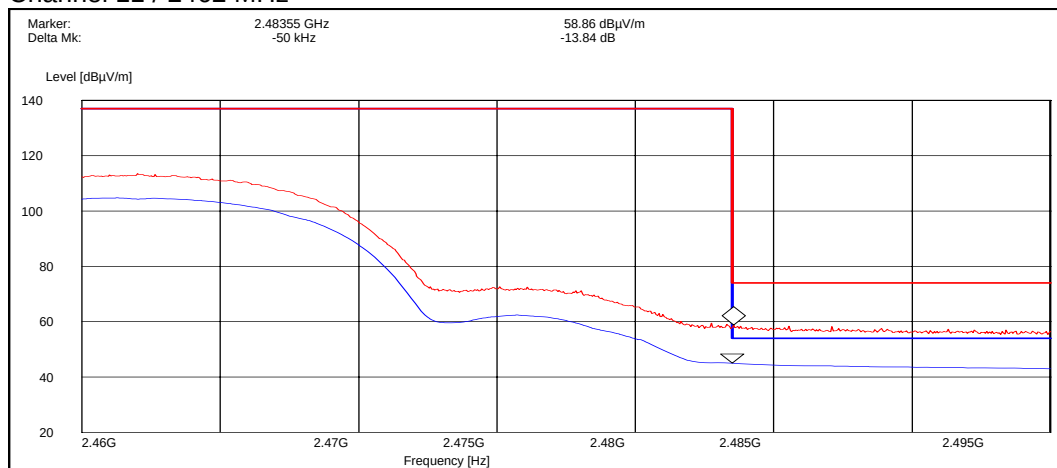
12.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel 1 / 2412 MHz



Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	58.70	PASSED
Average	44.30	PASSED

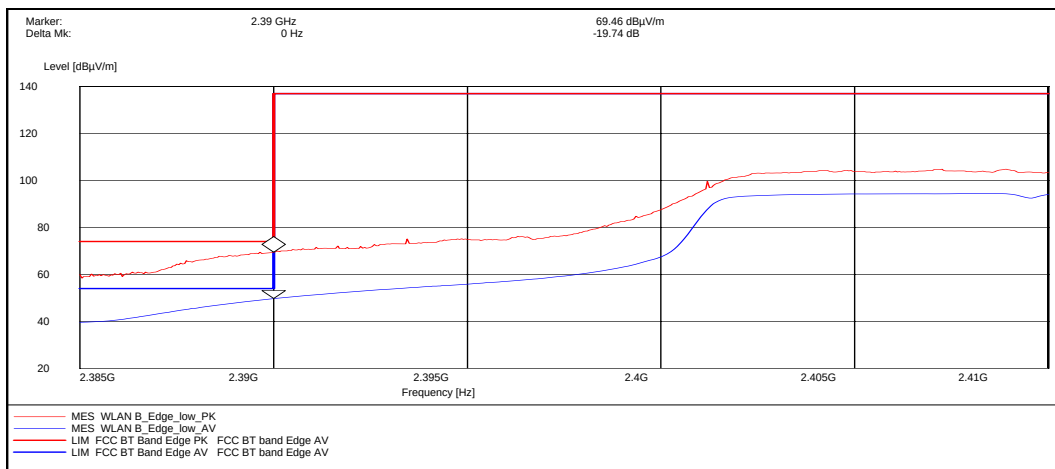
Channel 11 / 2462 MHz



Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	58.90	PASSED
Average	45.00	PASSED

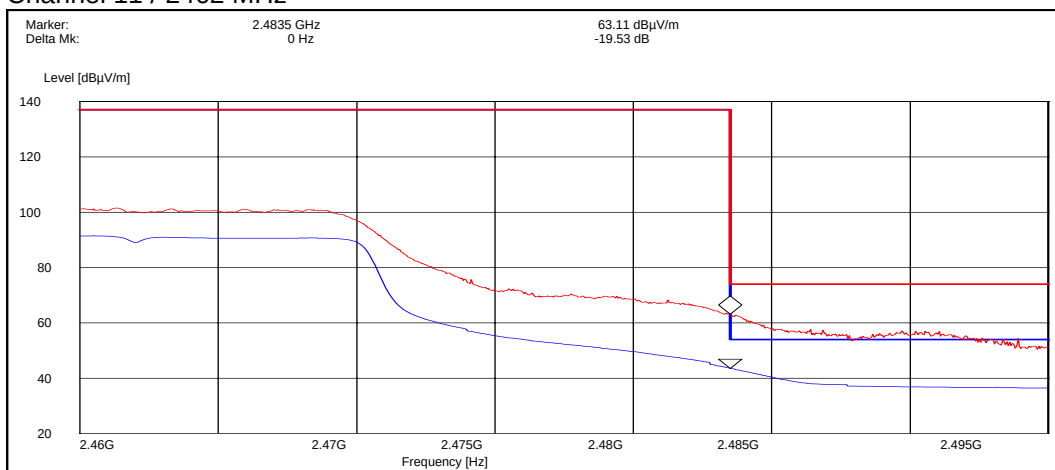
12.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel 1 / 2412 MHz



Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	69.50	PASSED
Average	49.70	PASSED

Channel 11 / 2462 MHz



Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	63.10	PASSED
Average	43.60	PASSED

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

EUT with DUT number	RM-399, DUT 13119
Accessories with DUT numbers	BL-5BT, DUT 13120; HS-47, DUT 12393; AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 50 / 101
Date of measurements	18-Aug-2008
Measured by	Anni Manninen

13.1. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210.

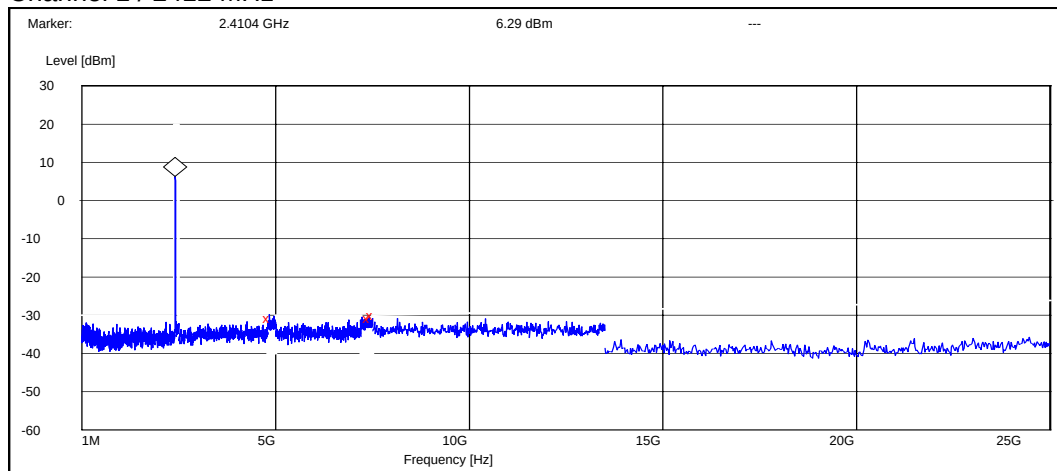
Limits for spurious RF conducted emissions measurements

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

13.2. WLAN Test results

13.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

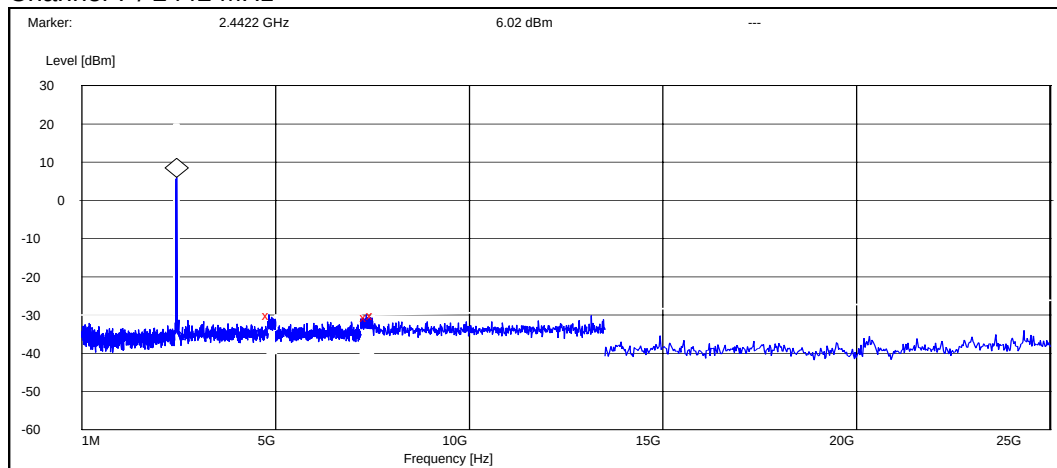
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
4836.800000	-37.094541	PASSED
7422.600000	-37.194541	PASSED
7500.000000	-36.294541	PASSED

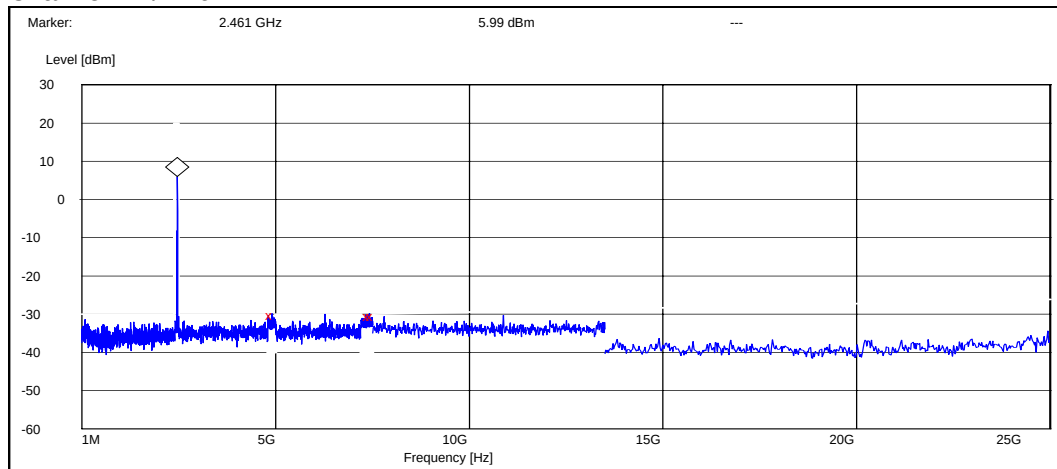
Channel 7 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4832.400000	-36.020120	PASSED
7338.600000	-36.620120	PASSED
7500.000000	-36.220120	PASSED

Channel 11 / 2462 MHz

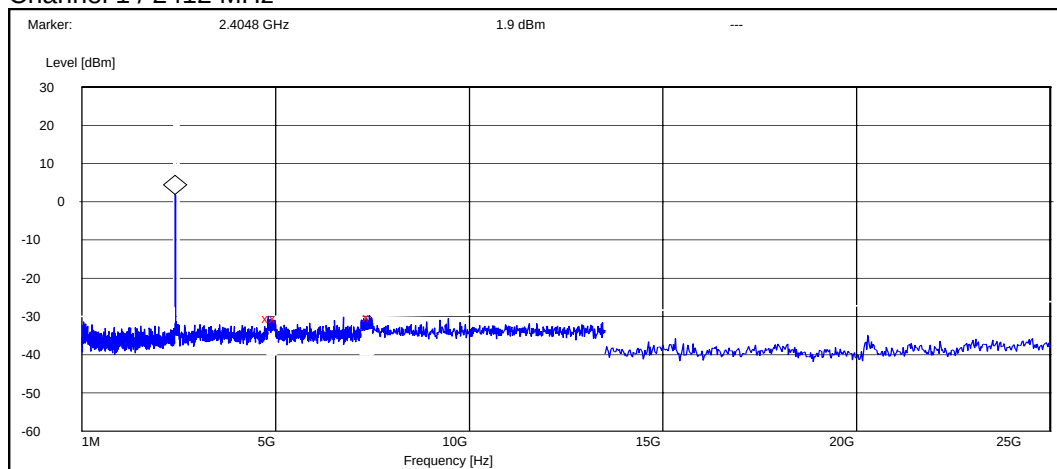


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4902.800000	-36.192281	PASSED
7425.600000	-36.492281	PASSED
7500.000000	-36.392281	PASSED

13.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

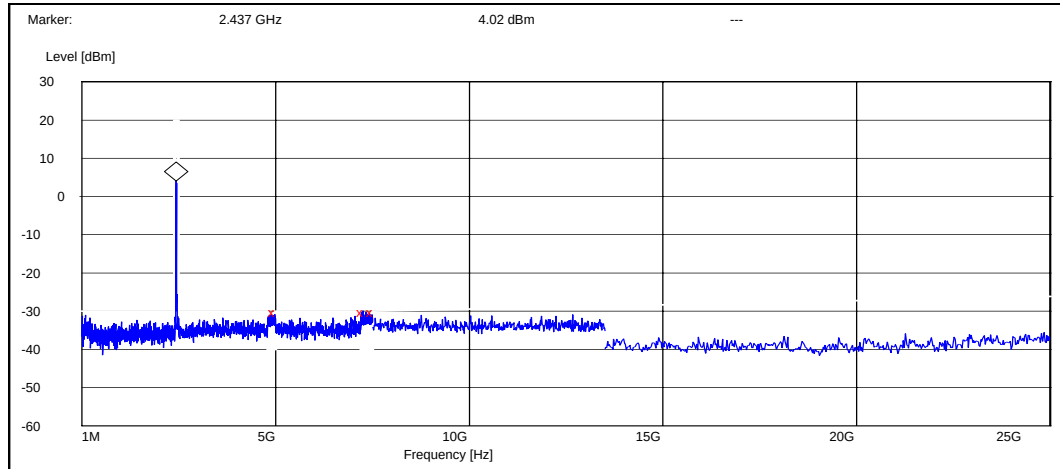
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
4811.600000	-32.300889	PASSED
5000.000000	-32.400889	PASSED
7426.200000	-32.200889	PASSED

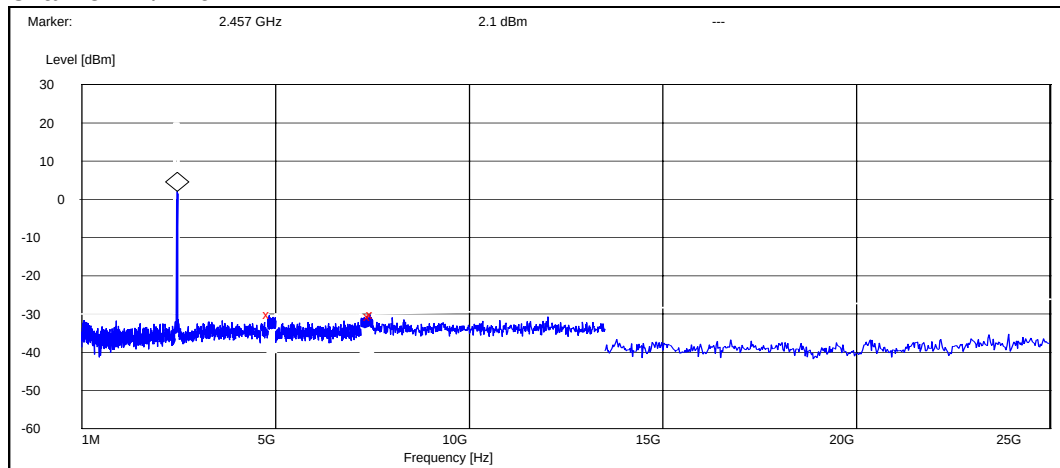
Channel 7 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4973.600000	-34.319782	PASSED
7261.800000	-34.319782	PASSED
7500.000000	-34.219782	PASSED

Channel 11 / 2462 MHz



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

Frequency [MHz]	P [dBc]	Result
4838.000000	-32.295422	PASSED
7433.400000	-32.795422	PASSED
7500.000000	-32.195422	PASSED

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

EUT with DUT number	RM-399, DUT 13112
Accessories with DUT numbers	BL-5BT, DUT 13057, HS-47, DUT 12393 AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Phone tested flip open mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 41 / 102.1
Date of measurements	11-Aug-2008 – 15-Aug-2008
Measured by	Sami Lehtonen / Kalle Hannila

14.1. Test method and limit

The measurement is made according to DTS procedures KDB 558074 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:

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

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

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

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

14.2. WLAN Test results

14.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel 1 / 2412 MHz

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4824.000000	28.30	26.00	27.00	1.3	VERTICAL	PASSED
7236.000000	31.40	37.15	28.40	3.0	VERTICAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4824.000000	15.10	5.69	13.80	1.3	HORIZONTAL	PASSED
7236.000000	18.80	8.71	15.80	3.0	HORIZONTAL	PASSED

Channel 7 / 2442 MHz

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
37.595391	26.60	21.38	47.00	-20.4	VERTICAL	PASSED
89.798798	17.50	7.50	45.80	-28.3	HORIZONTAL	PASSED
108.577756	14.80	5.50	41.40	-26.6	VERTICAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4872.249499	29.30	29.17	27.90	1.4	VERTICAL	PASSED
4907.823647	29.80	30.90	28.80	1.0	HORIZONTAL	PASSED
7347.191383	33.40	46.77	29.70	3.7	HORIZONTAL	PASSED
7427.351703	33.90	49.55	29.40	4.5	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4874.249499	16.30	6.53	14.90	1.4	VERTICAL	PASSED
4914.823647	16.70	6.84	15.80	0.9	HORIZONTAL	PASSED
7348.691383	19.60	9.55	15.90	3.7	HORIZONTAL	PASSED
7425.851703	20.50	10.59	16.00	4.5	HORIZONTAL	PASSED

Channel 11 / 2462 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4924.000000	29.60	30.20	28.90	0.7	HORIZONTAL	PASSED
7386.000000	33.50	47.32	29.30	4.2	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
4924.000000	16.60	6.76	15.90	0.7	HORIZONTAL	PASSED
7386.000000	20.20	10.23	16.00	4.2	HORIZONTAL	PASSED

14.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel 1 / 2412 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4824.000000	28.80	27.54	27.50	1.3	HORIZONTAL	PASSED
7236.000000	31.80	38.90	28.80	3.0	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
4824.000000	15.00	5.62	13.70	1.3	VERTICAL	PASSED
7236.000000	18.80	8.71	15.80	3.0	HORIZONTAL	PASSED

Channel 7 / 2442 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
37.595391	25.40	18.62	45.80	-20.4	VERTICAL	PASSED
89.539279	18.40	8.32	46.70	-28.3	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
4884.761523	29.50	29.85	28.20	1.3	HORIZONTAL	PASSED
4889.773547	30.30	32.73	29.00	1.3	HORIZONTAL	PASSED
7340.187375	32.30	41.21	28.70	3.6	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
4883.261523	16.50	6.68	15.20	1.3	HORIZONTAL	PASSED
4885.273547	16.60	6.76	15.30	1.3	HORIZONTAL	PASSED
7341.187375	19.50	9.44	15.90	3.6	VERTICAL	PASSED

Channel 11 / 2462 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4924.000000	29.70	30.55	29.00	0.7	VERTICAL	PASSED
7386.000000	33.40	46.77	29.20	4.2	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
4924.000000	16.60	6.76	15.90	0.7	VERTICAL	PASSED
7386.000000	20.20	10.23	16.00	4.2	HORIZONTAL	PASSED

15. 6 dB bandwidth (FCC §15.247(a)(2), RSS-210 A8.2 (1))

EUT with DUT number	RM-399, DUT 13119
Accessories with DUT numbers	BL-5BT, DUT 13120; HS-47, DUT 12393; AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 50 / 101
Date of measurements	18-Aug-2008
Measured by	Anni Manninen

15.1. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210.

Limits for 6 dB bandwidth measurements

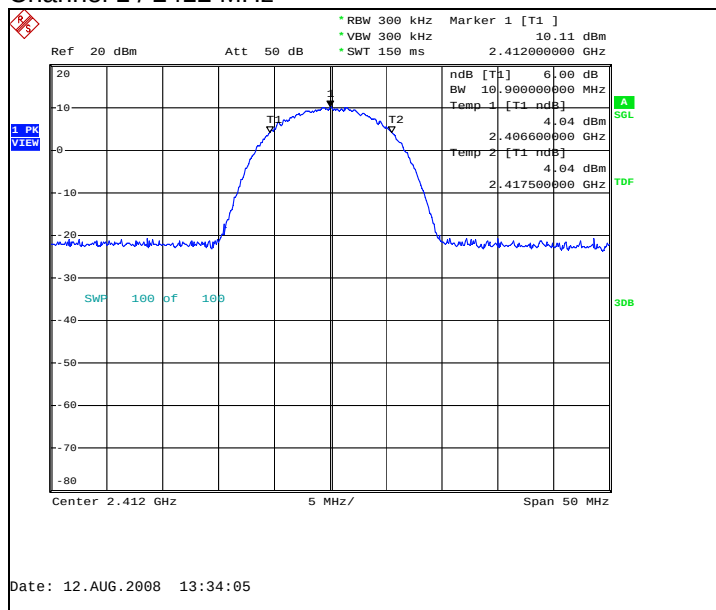
Limit [kHz]
≥ 500

15.2. WLAN test results

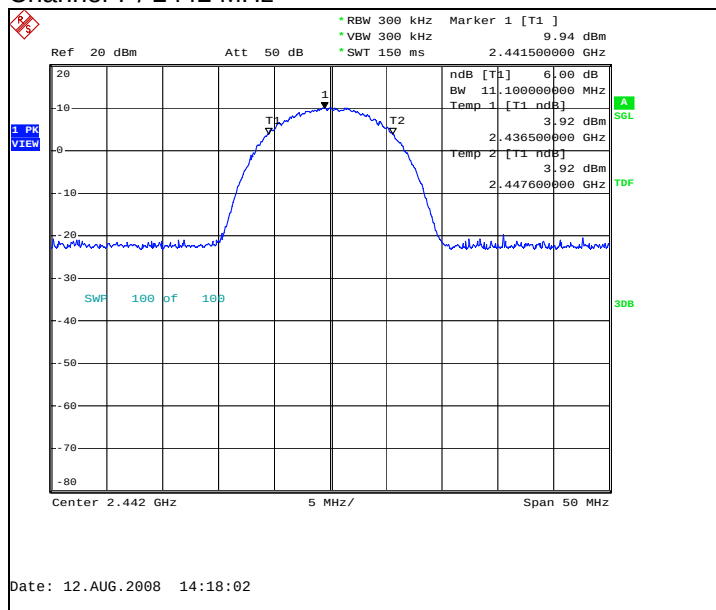
15.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1	10900.000	PASSED
7	11100.000	PASSED
11	10900.000	PASSED

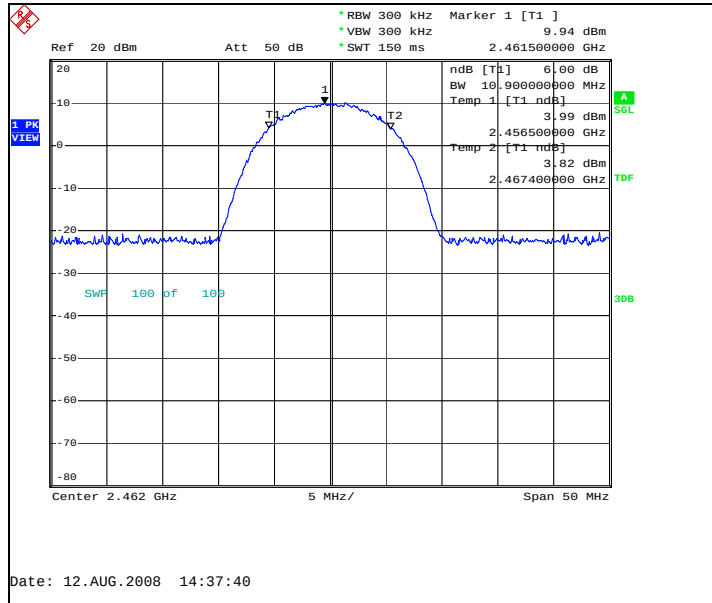
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



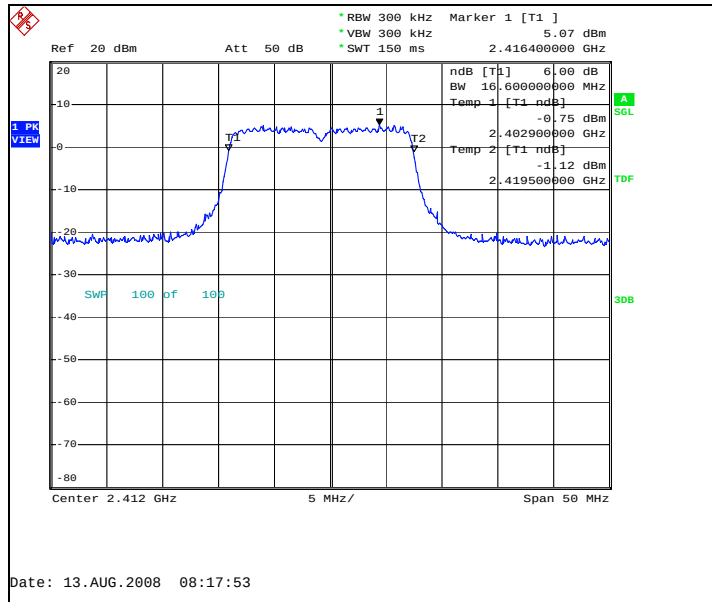
Channel 11 / 2462 MHz



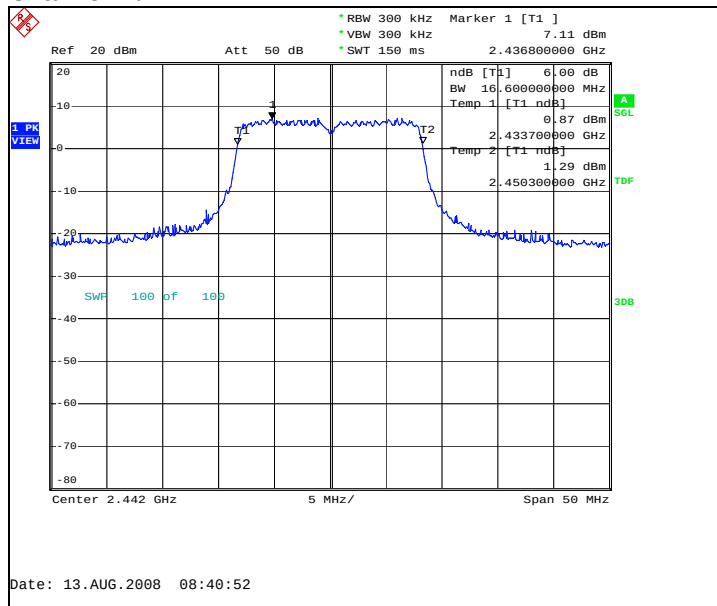
15.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1	16600.000	PASSED
7	16600.000	PASSED
11	16600.000	PASSED

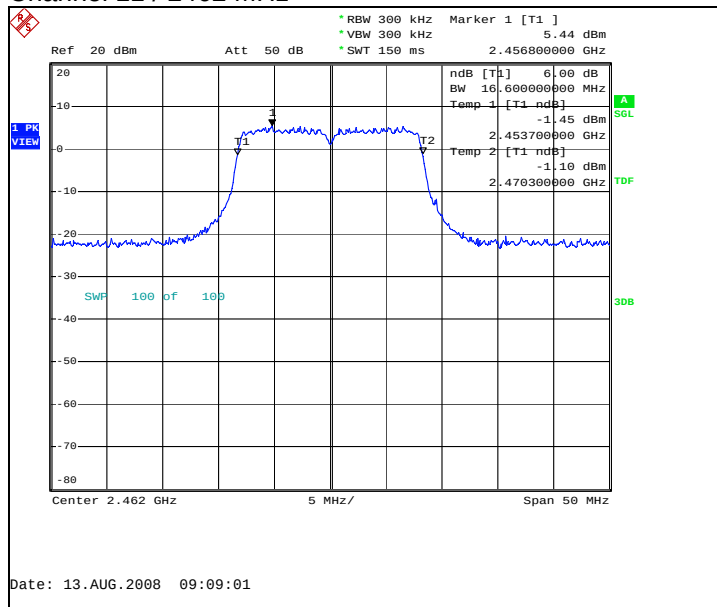
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



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

EUT with DUT number	RM-399, DUT 13119
Accessories with DUT numbers	BL-5BT, DUT 13120; HS-47, DUT 12393; AC-3E, DUT 12335
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 50 / 101
Date of measurements	18-Aug-2008
Measured by	Anni Manninen

16.1. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210.

Limits for power spectral density measurements

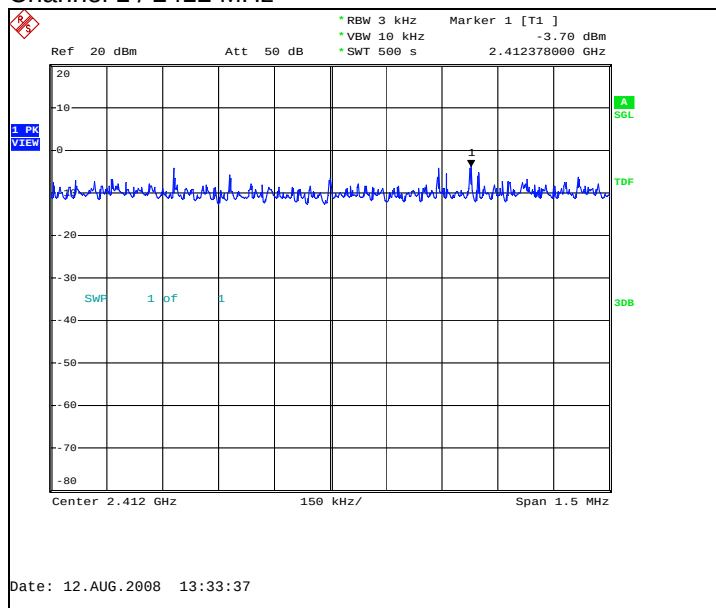
Limit [dBm] @ 3 kHz
≤ 8

16.2. WLAN test results

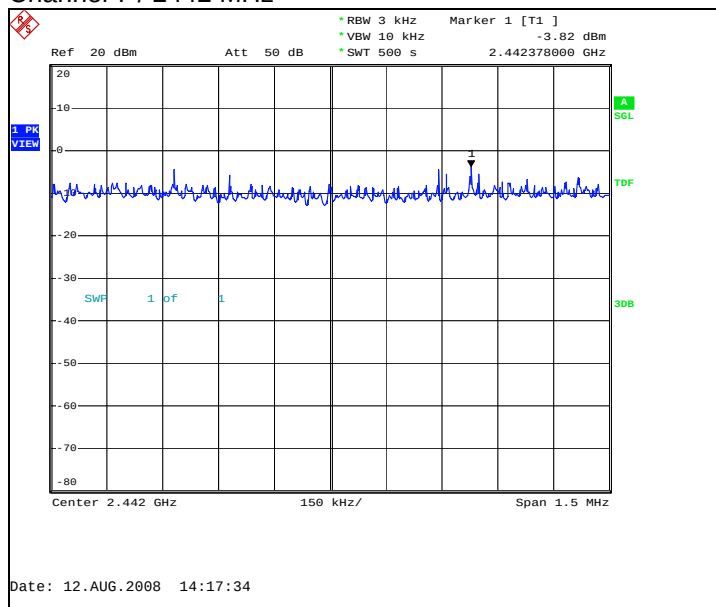
16.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-3.70	PASSED
7 / 2442	-3.82	PASSED
11 / 2462	-3.82	PASSED

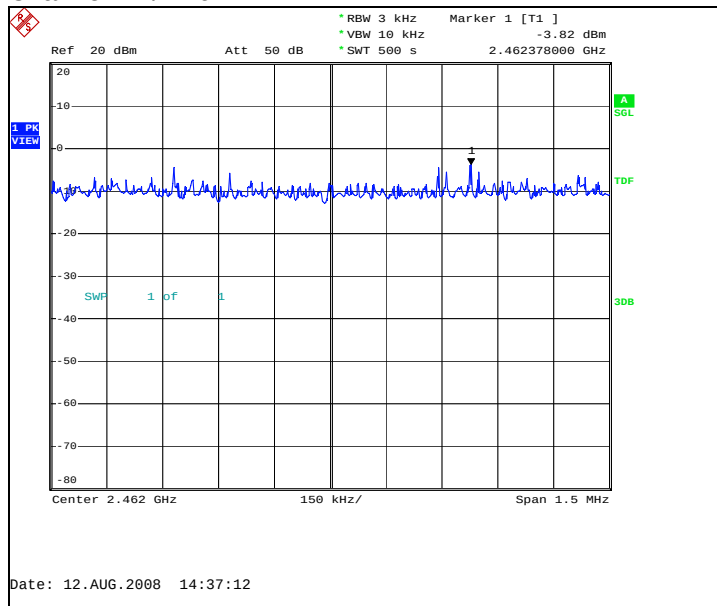
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



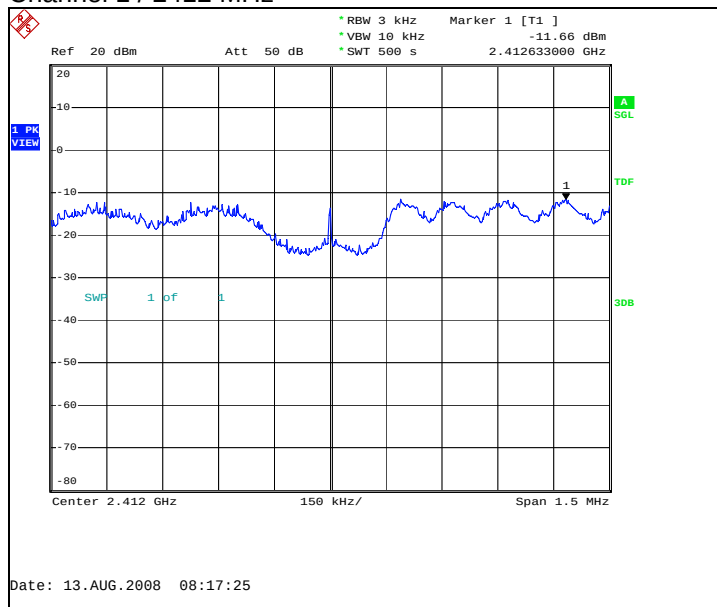
Channel 11 / 2462 MHz



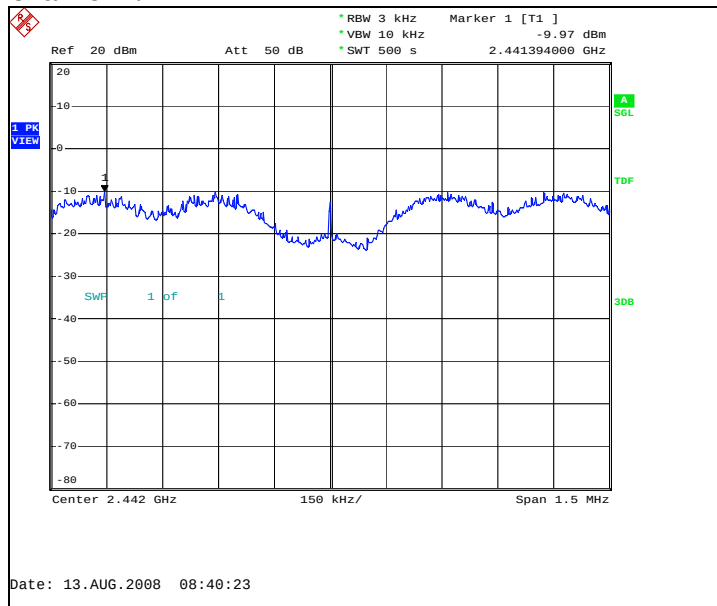
16.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-11.66	PASSED
7 / 2442	-9.97	PASSED
11 / 2462	-11.50	PASSED

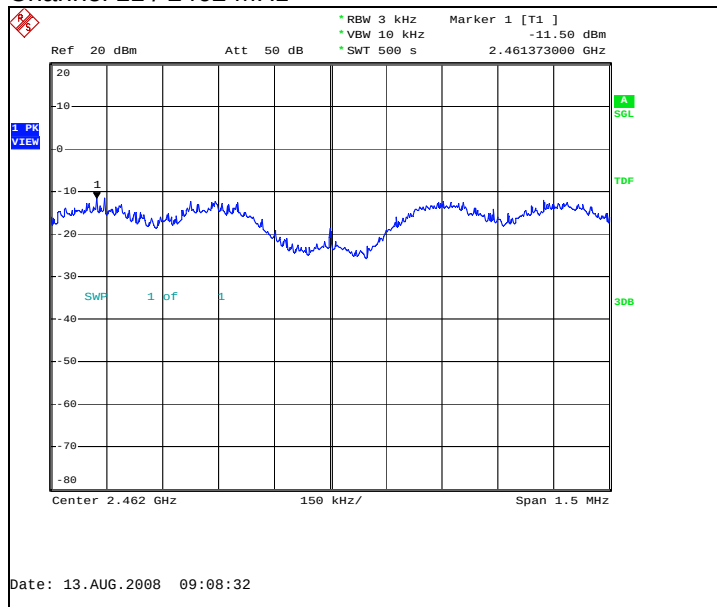
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



17. Test Equipment

17.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1742	EMI Test Receiver	ESMI	R&S	15C, 15B
1759	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
1872	Thermo- Hygrograph	00.02520.150700	Lambrecht	15C, 15B
1916	Radio Communication tester	CMTA84	R&S	15C, 15B
2039	Power Supply	PL330QMD	THURLBY	15C, 15B
2060	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
2068	CDN-Antenna line	S1	NMP	15C, 15B
2097	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
2111	Multimeter	TX3	Tektronix	15C, 15B
2156	Digital Radio Communication Tester	CMU200	R&S	15C, 15B
2206	Signal generator	SMX	R&S	15C, 15B
2335	GPIO Switch 2 to 1	-	National Instruments	15C, 15B
2347	Digital Radio Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2352	Spectrum Analyzer	FSP	R&S	22/24/27, 15C
2359	Temperature Test system	VT4002	Vötsch Industrietechnik	22/24/27
2360	Serial Bus Converter	Serial 488A	IO Tech	22/24/27
2362	Power Supply	NGPX 70/5	R&S	22/24/27
2388	Bluetooth Tester	CBT	R&S	15C, 15B
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24/27, 15C, 15B

17.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1748	Log. per. Antenna	HL025	R&S	22/24/27, 15C
1749	Log. per. Antenna	HL025	R&S	22/24/27, 15C
1875	Thermo- Hygrograph	00.02520.150700	Lambrecht	22/24/27, 15C, 15B
1917	Radio Communication tester	CMTA84	R&S	22/24/27, 15C, 15B
1933	Precision half-wave dipole antennas	HZ-13	R&S	22/24/27, 15C
1938	Precision half-wave dipole antennas	HZ-12	R&S	22/24/27, 15C
2006	Radiation Reference Source	VSQ	MEB	22/24/27, 15C, 15B
2009	Signal generator	SMP 22	R&S	22/24/27, 15C, 15B
2019	Multimeter	34401A	HP	22/24/27, 15C, 15B
2027	Coupling and Decoupling Network	M2 (modified) DC1	MEB	22/24/27, 15C, 15B
2028	Coupling and Decoupling Network	M3 (modified) DC2	MEB	22/24/27, 15C, 15B
2029	Power Supply	PL330	THURLBY	22/24/27, 15C, 15B
2043	Band Reject Filter	WRCA824/849-0.2-6SS	Wainwright	22, 15C, 15B
2047	Band Reject Filter	WRCC1800/2000-0.2-10SS	Wainwright	24, 15C, 15B
2048	Band Reject Filter	WRCC1700/1800-0.2-10SS	Wainwright	27, 15C, 15B
2051	High Pass Filter	4HC1700-1-KK	R&S	22/24/27, 15C
2057	Log. per. Antenna	HL025	R&S	22/24/27, 15C
2109	Power Supply	PL330QMD	THURLBY	22/24/27, 15C, 15B
2110	Multimeter	34401A	HP	22/24/27, 15C, 15B
2112	Multimeter	TX3	Tektronix	22/24/27, 15C, 15B
2116	Controller	EMCO MODEL 2090	ETS	22/24/27, 15C, 15B
2133	Power Meter	NRVS	R&S	22/24/27, 15C
2134	Power Sensor	NRV-Z32	R&S	22/24/27, 15C

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