

FCC Part 15C Compliance Test Report

Test Report no.:	Cph_FCC_0637_06.doc	Date of Report:	05-10-2006
Number of pages:	120	Customer's Contact person:	Niko Balabanis
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FCC listing no.:	99059		
IC recognition no.:	4820 and 4820-1		
Tested devices/ accessories:	Internet Tablet: RX-34 (HW: 1101), Battery; BP-5L, Multimedia card; MU-17, Headset; HS-48, AC Charger; AC-4E		
FCC ID:	LJPRX-34	IC:	661E-RX34
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:			

Allan F. Henriksen, Engineer

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	13-09-2006
Testing completed	05-10-2006
The customer's contact person	Niko Balabanis
Test Plan referred to	T:\Projects\accessor\RX-34\TestPlan_RS\RS_Testplan_for_RX-34_FCC.xls
Notes	None
Document name	T:\Projects\accessor\RX-34\EMC\Results\FCC\Cph_FCC_0637_06.doc

1.1. EUT and Accessory Information

The EUT is a Bluetooth and WLAN device. Bluetooth and WLAN are tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
Internet Tablet	RX-34	03A088604	1101	-	wk36-17	27841
Internet Tablet	RX-34	03A088220	1101	-	wk36-17	27842
Internet Tablet	RX-34	03A088300	1101	-	wk36-17	27843
Internet Tablet	RX-34	03A088610	1101	-	wk36-17	27920
Battery	BP-5L	0670390393213N154110321612	-	-	-	27838
Battery	BP-5L	0670390393213N162210300747	-	-	-	27836
Multi Media Card	MU-17	SDSDM-128 AK05T54EG	-	-	-	27832
Multi Media Card	MU-17	SDSDM-128 AK06153EG	-	-	-	27831
Headset	HS-48	663	4.2	3.0	-	27835
Headset	HS-48	500	4.2	3.0	-	27846
AC Charger	AC-4E	3943495502070122522;0675384	-	-	-	27840
AC-Charger	AC-4E	3943495502070123212;0675384	-	-	-	27849

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 power line 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 power line conducted emissions	Passed
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 Copenhagen Laboratory.

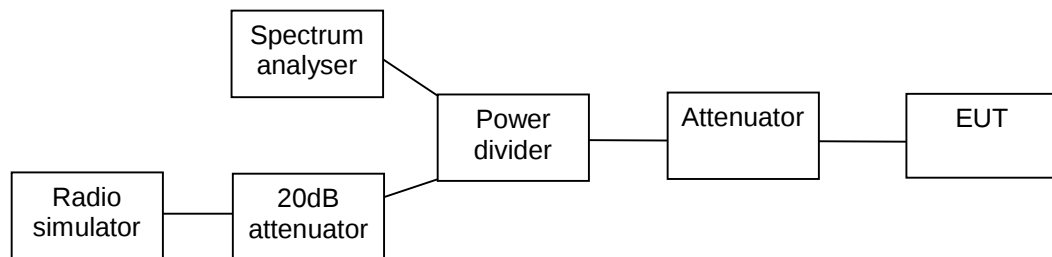
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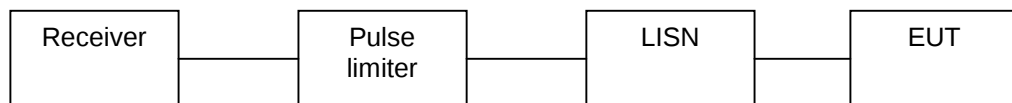
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2. Test setups

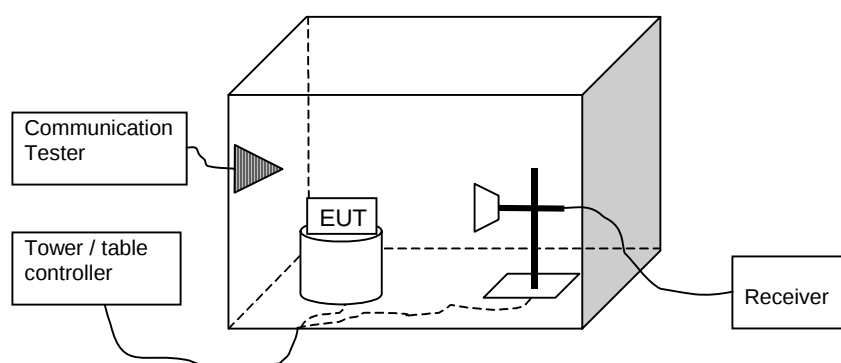
2.1. Conducted RF test setup



2.2. AC powerline conducted emissions test setup



2.3. Spurious radiated emissions test setup



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

EUT with DUT number	RX-34 dut 27841, BP-5L dut 27838, MU-17 dut 27832
Accessories with DUT numbers	HS-48 dut 27835, AC-4E dut27840
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	249 / 44.0 1023.4
Date of measurements	21-09-2006
Measured by	Jan Engelbrechtsen

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

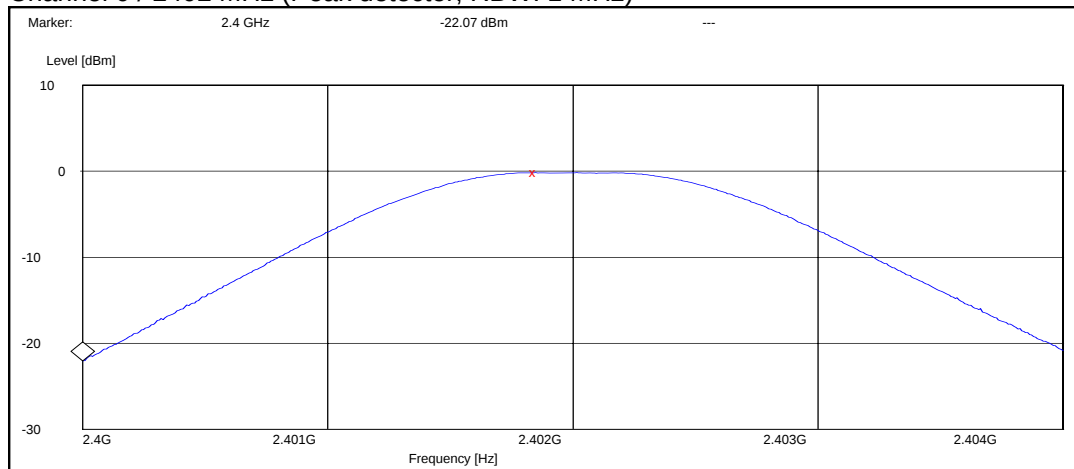
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

3.2. Bluetooth Test results

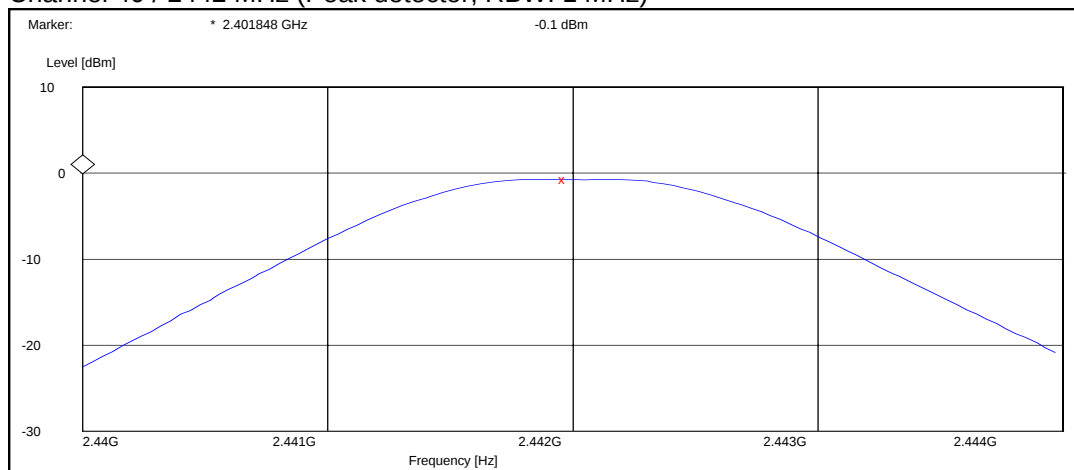
3.2.1 GSKF modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	-0.10	0.977	Passed
40 / 2442	-0.70	0.851	Passed
78 / 2480	-1.20	0.759	Passed

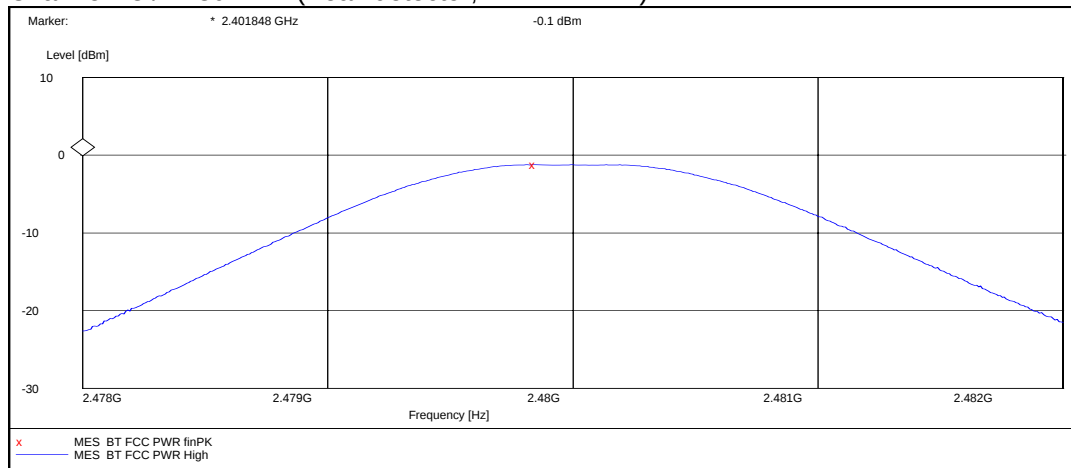
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz)



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



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



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

EUT with DUT number	RX-34 Dut#27842
Accessories with DUT numbers	BP-5L Dut#27836, HS-48 Dut#27846, AC-4E Dut#27849, MU-17 Dut#27831
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	24 / 48 / 1023
Date of measurements	21-09-2006
Measured by	Christian Andersen

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

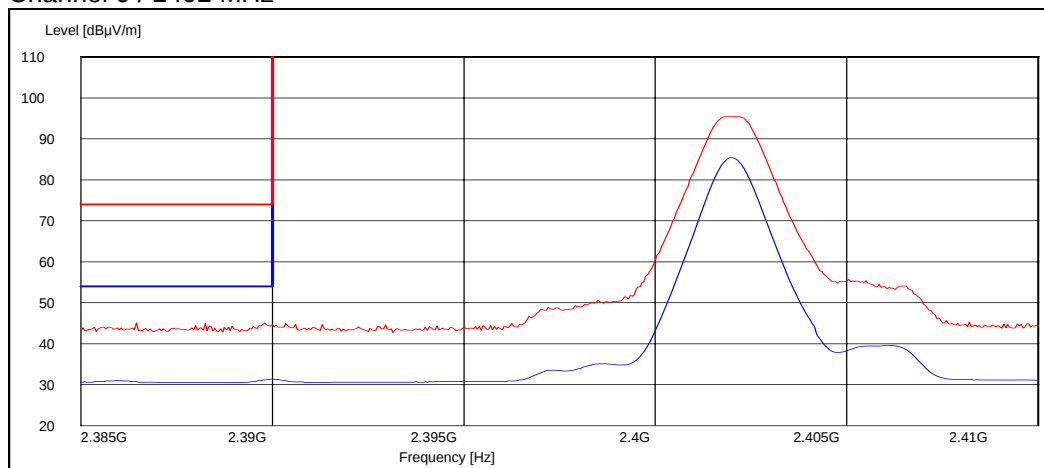
Average (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
0 / 2402	31.39	Passed
78 / 2480	38.12	Passed
Hopping on, low end	30.54	Passed
Hopping on, high end	31.90	Passed

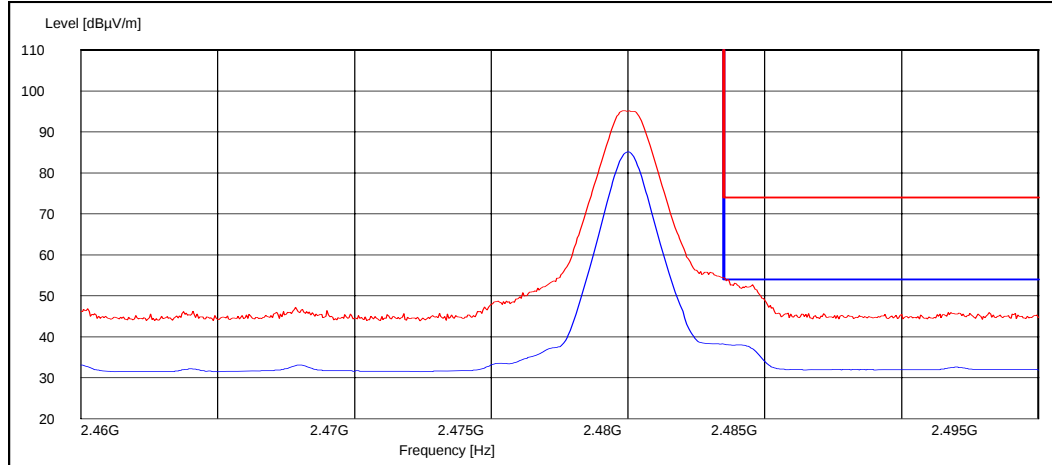
Peak (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
0 / 2402	45.00	Passed
78 / 2480	54.05	Passed
Hopping on, low end	44.33	Passed
Hopping on, high end	52.98	Passed

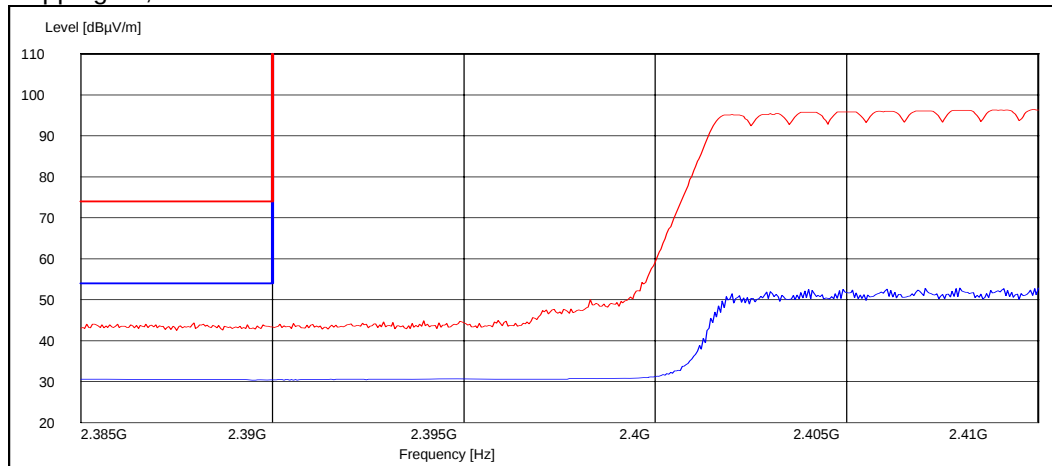
Channel 0 / 2402 MHz



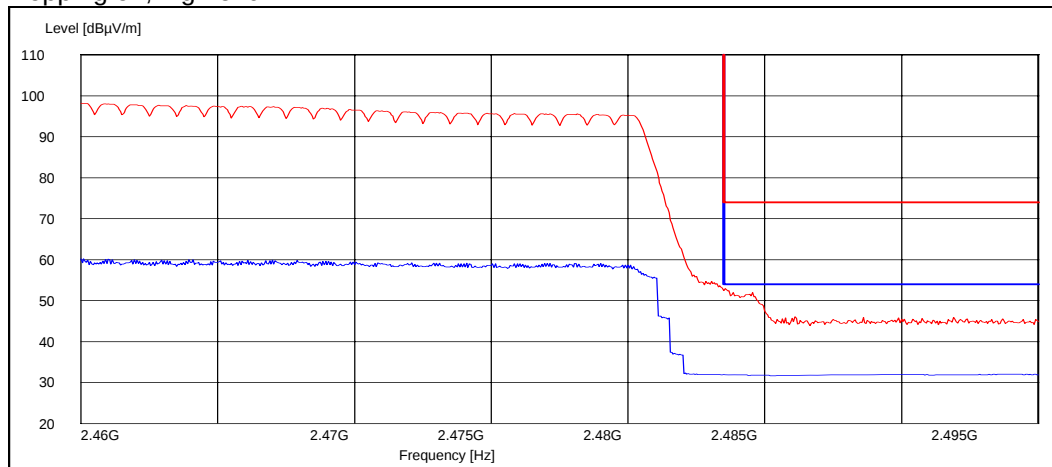
Channel 78 / 2480 MHz



Hopping on, low end



Hopping on, high end



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

EUT with DUT number	RX-34 dut 27841, BP-5L dut 27838, MU-17 dut 27832
Accessories with DUT numbers	HS-48 dut 27835, AC-4E dut 27840
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	249 / 44.0 1023.4
Date of measurements	21-09-2006
Measured by	Jan Engelbrechtsen

5.1. Test method and limit

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

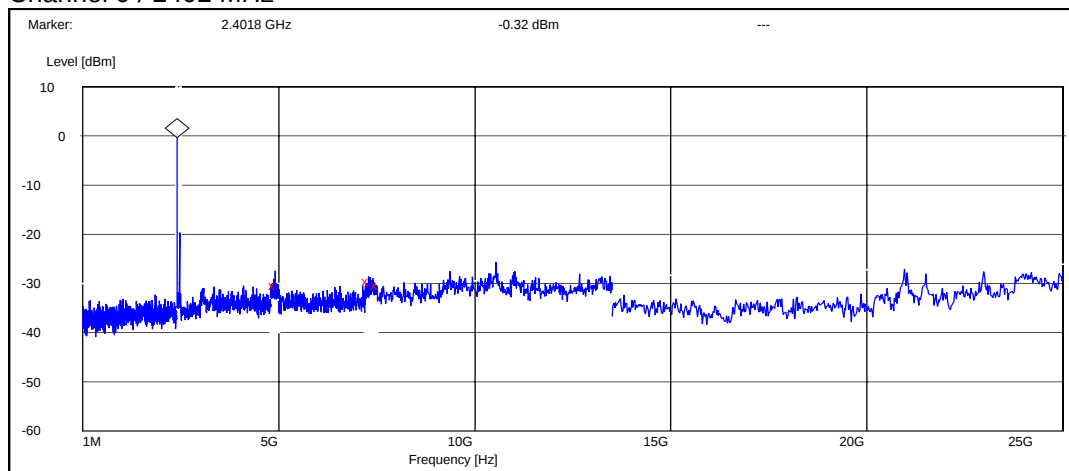
Limits for spurious RF conducted emissions measurements

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

5.2. Bluetooth Test results

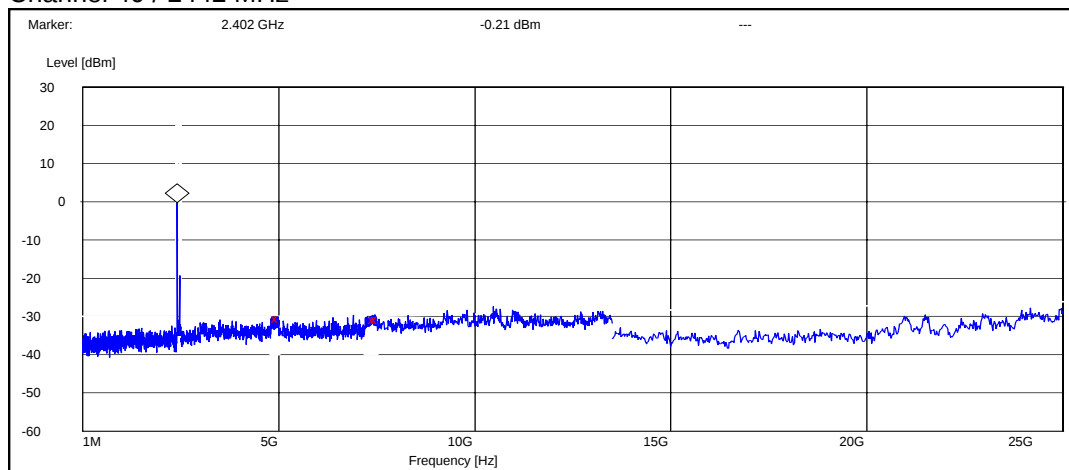
5.2.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz



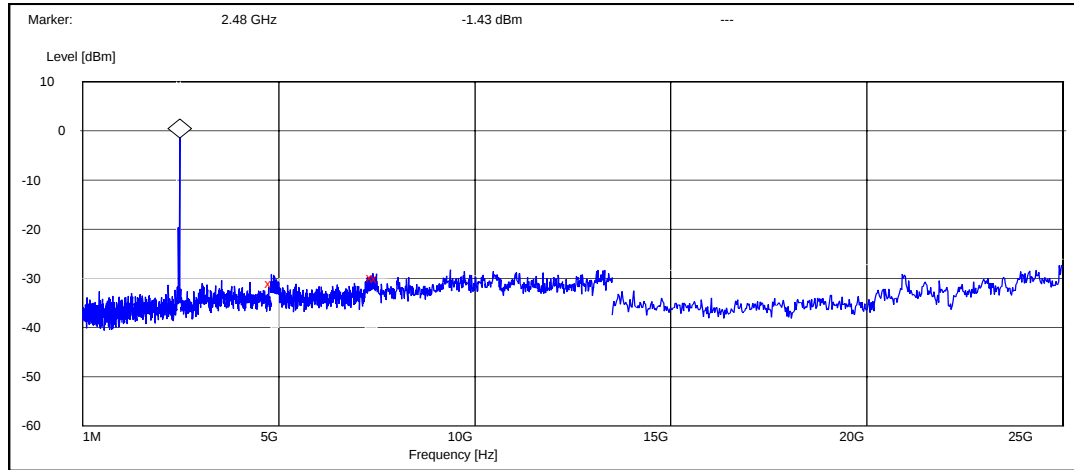
Frequency [MHz]	P [dBc]	Result
4911.200000	-29.978564	Passed
7281.000000	-29.178564	Passed
7500.000000	-30.078564	Passed

Channel 40 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4976.800000	-30.185642	Passed
7446.000000	-30.685642	Passed
7500.000000	-30.685642	Passed

Channel 78 / 2480 MHz



Frequency [MHz]	P [dBc]	Result
4815.200000	-29.468092	Passed
7390.800000	-28.268092	Passed
7500.000000	-28.568092	Passed

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

EUT with DUT number	RX-34 Dut#27842
Accessories with DUT numbers	BP-5L Dut#27836, HS-48 Dut#27846, AC-4E Dut#27849, MU-17 Dut#27831
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	23 / 52 / 1020
Date of measurements	03-10-2006
Measured by	Christian Andersen

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

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)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	37.40	74.13	39.40	-2.00	VERTICAL	Passed
7206.000000	40.00	100.00	35.80	4.20	VERTICAL	Passed

Average (RBW: 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	24.10	16.03	26.10	-2.00	VERTICAL	Passed
7206.000000	27.00	22.39	22.80	4.20	VERTICAL	Passed

Channel 40 / 2442 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
38.176353	21.70	12.16	39.80	-18.10	VERTICAL	Passed
119.980361	20.40	10.47	45.30	-24.90	HORIZONTAL	Passed
133.406814	24.20	16.22	50.40	-26.20	VERTICAL	Passed
136.814028	23.70	15.31	50.20	-26.50	VERTICAL	Passed
264.028457	37.50	74.99	61.50	-24.00	HORIZONTAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4945.391784	38.00	79.43	39.70	-1.70	VERTICAL	Passed
7339.671343	40.50	105.93	35.90	4.60	VERTICAL	Passed
7417.339679	42.40	131.83	37.40	5.00	VERTICAL	Passed
17865.233467	58.00	794.33	32.80	25.20	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4945.891784	25.90	19.72	27.60	-1.70	VERTICAL	Passed
7339.671343	28.30	26.00	23.70	4.60	VERTICAL	Passed
7419.339679	29.30	29.17	24.40	4.90	VERTICAL	Passed
17868.233467	45.20	181.97	19.90	25.30	VERTICAL	Passed

Channel 78 / 2480 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	38.10	80.35	39.70	-1.60	VERTICAL	Passed
7440.000000	41.10	113.50	36.20	4.90	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	25.20	18.20	26.80	-1.60	VERTICAL	Passed
7440.000000	28.30	26.00	23.40	4.90	VERTICAL	Passed

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

EUT with DUT number	RX-34 Dut # 27842
Accessories with DUT numbers	BP-5L Dut # 27836 + AC-4E Dut # 27849 + HS-48 Dut # 27846 + MU-17 Dut # 27831
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	22.8 / 51.5 1018
Date of measurements	26-09-2006
Measured by	Allan F. Henriksen

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.

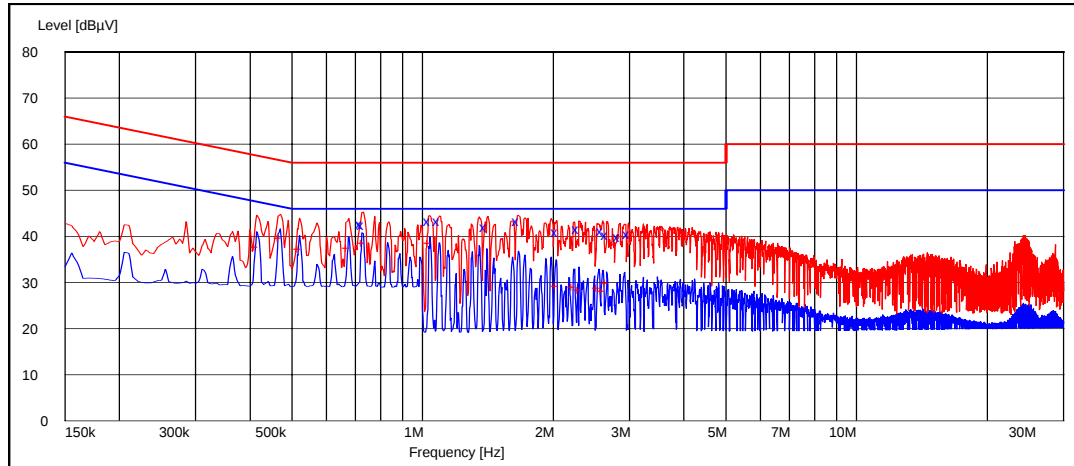
CISPR 22 Class B limits

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

7.2. Bluetooth Test results

7.2.1 GFSK modulation, PRBS packet type

Channel 40 / 2442 MHz



Quasi peak (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.725000	42.80	N	Passed
0.730000	42.40	N	Passed
1.040000	43.40	N	Passed
1.090000	43.30	N	Passed
1.400000	42.00	N	Passed
1.665000	43.40	N	Passed
2.045000	41.00	N	Passed
2.290000	41.60	N	Passed
2.600000	41.20	N	Passed
2.670000	40.40	N	Passed
2.840000	39.80	N	Passed
2.990000	40.50	N	Passed

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.415000	37.60	N	Passed
0.470000	39.70	N	Passed
0.520000	37.30	N	Passed
0.675000	37.50	N	Passed
0.730000	38.50	N	Passed
1.040000	38.60	N	Passed
2.040000	29.20	N	Passed
2.230000	29.00	N	Passed
2.300000	28.40	N	Passed
2.545000	28.70	N	Passed
2.605000	28.10	N	Passed
2.660000	30.00	N	Passed

8. 20 dB bandwidth (FCC §15.247(a)(1), RSS-210 A8.1 (1))

EUT with DUT number	RX-34 dut 27841, BP-5L dut 27838, MU-17 dut 27832
Accessories with DUT numbers	HS-48 dut 27835, AC-4E dut27840
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	249 / 44.0 1023.4
Date of measurements	21-09-2006
Measured by	Jan Engelbrechtsen

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

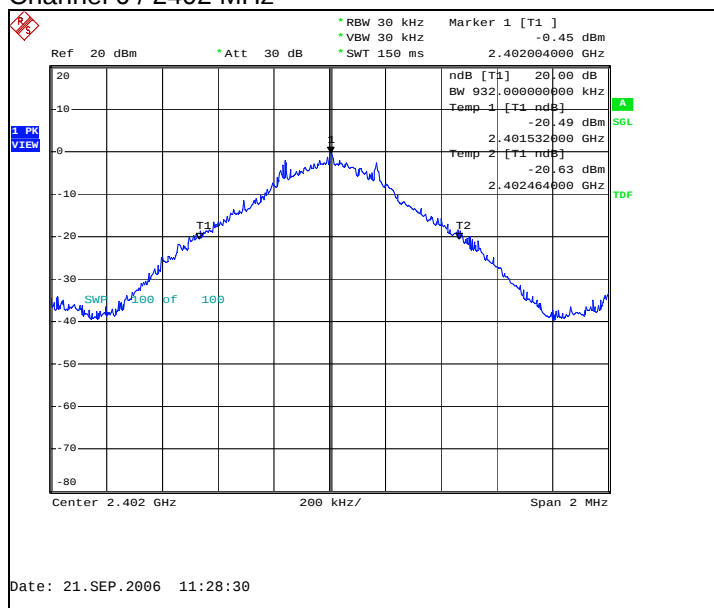
Limit [MHz]
N/A

8.2. Bluetooth Test results

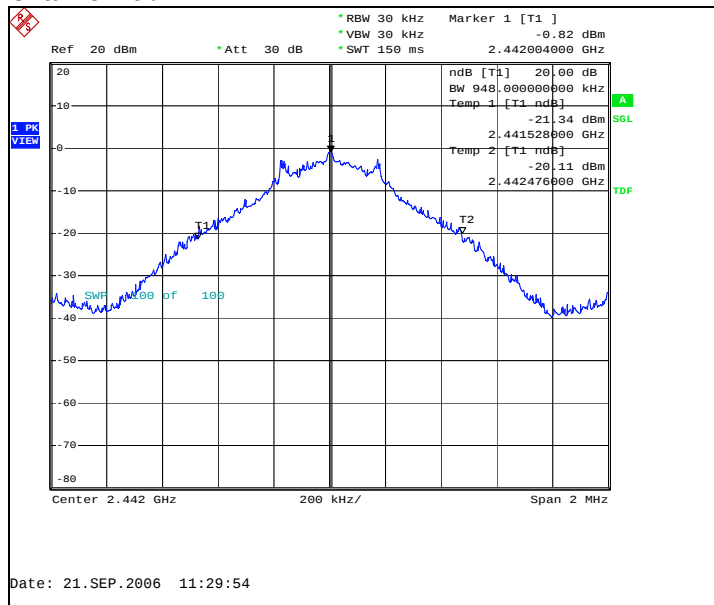
8.2.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	932.000	Passed
40 / 2442	948.000	Passed
78 / 2480	960.000	Passed

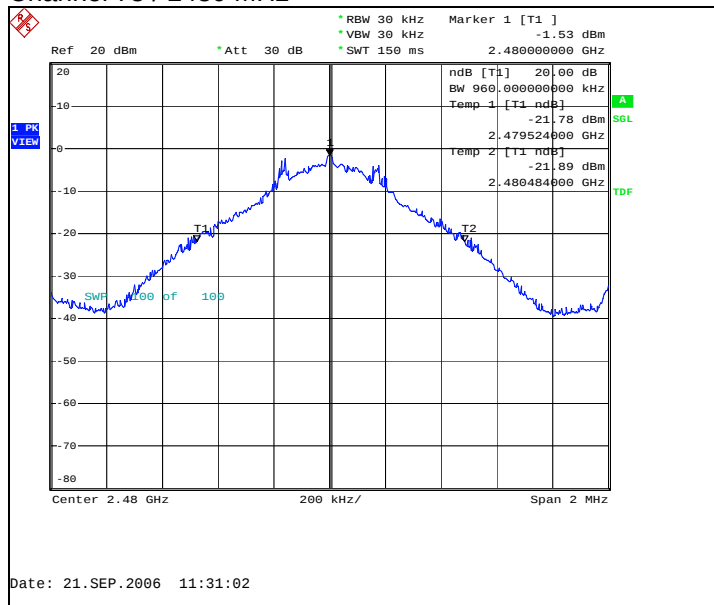
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



Channel 78 / 2480 MHz



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

EUT with DUT number	RX-34 dut 27841, BP-5L dut 27838, MU-17 dut 27832
Accessories with DUT numbers	HS-48 dut 27835, AC-4E dut27840
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	249 / 44.0 1023.4
Date of measurements	21-09-2006
Measured by	Jan Engelbrechtsen

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

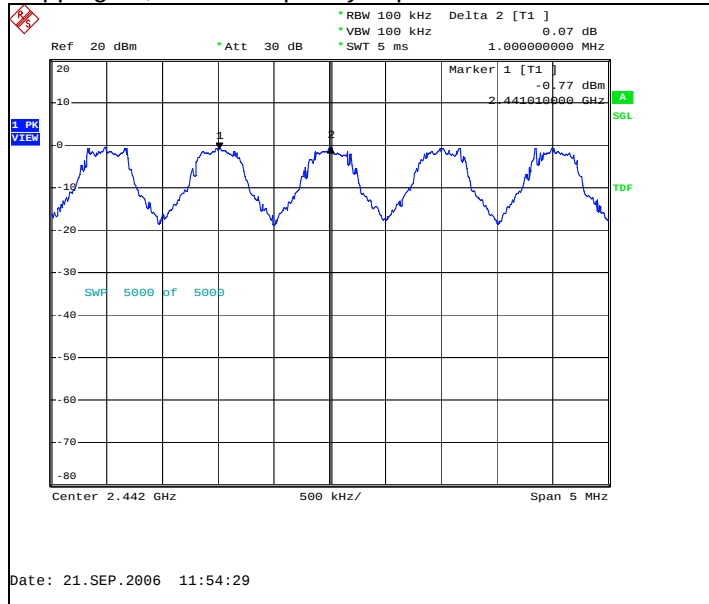
Limit [MHz]
≥ 0.025 or $2/3$ of the 20 dB bandwidth

9.2. Bluetooth Test results

9.2.1 GFSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1000	Passed

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



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

EUT with DUT number	RX-34 dut 27841, BP-5L dut 27838, MU-17 dut 27832
Accessories with DUT numbers	HS-48 dut 27835, AC-4E dut 27840
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	249 / 44.0 1023.4
Date of measurements	21-09-2006
Measured by	Jan Engelbrechtsen

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

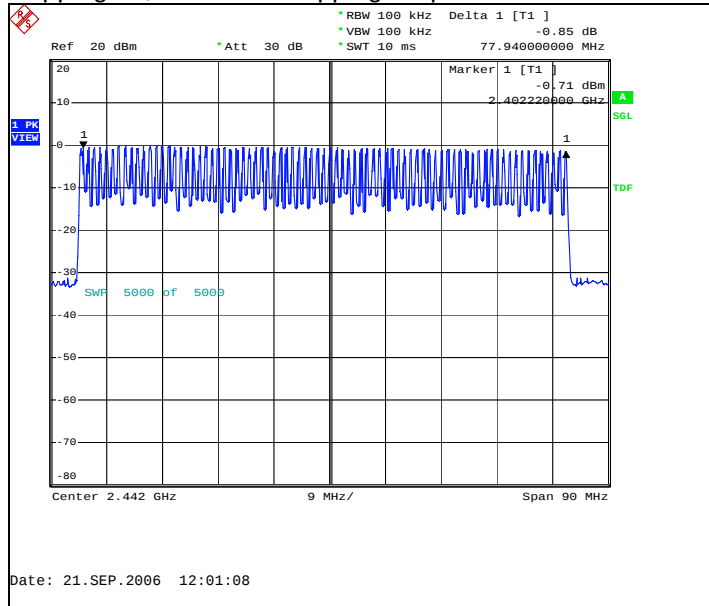
Limit [number]
≥ 15

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



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

EUT with DUT number	RX-34 dut 27841, BP-5L dut 27838, MU-17 dut 27832
Accessories with DUT numbers	HS-48 dut 27835, AC-4E dut27840
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	249 / 44.0 1023.4
Date of measurements	21-09-2006
Measured by	Jan Engelbrechtsen

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

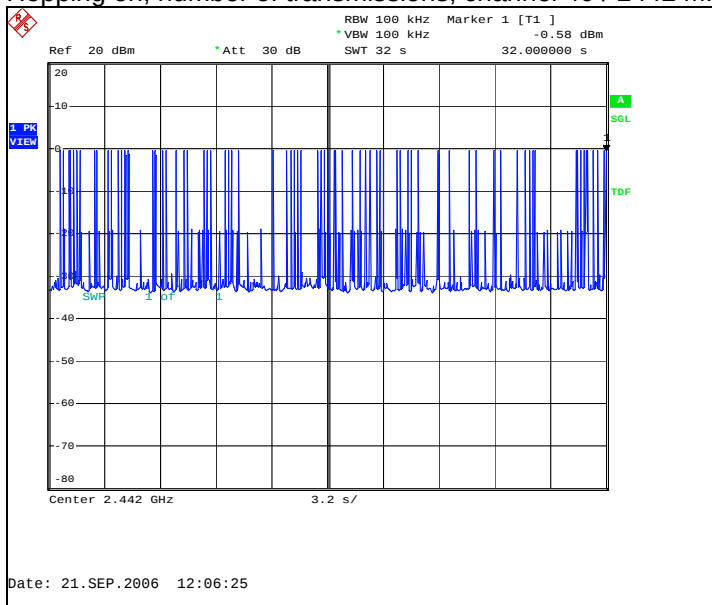
Limit [s]
≤ 0.4

11.2. Bluetooth test results

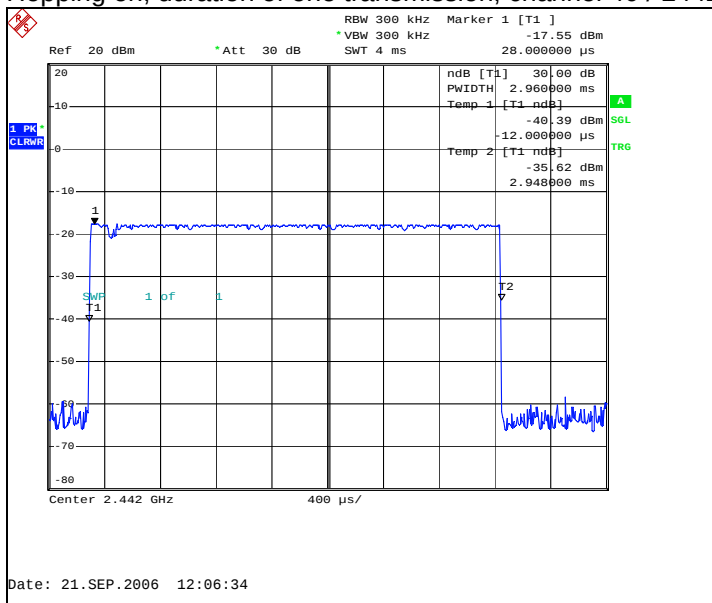
11.2.1 GFSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [μ s]	Time of occupancy [s]	Result
72	2960.000	0.213120	Passed

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



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



12. Peak output power (FCC §15.247(b)(1), RSS-210 A8.4 (4))

EUT with DUT number	RX-34 dut 27841, BP-5L dut 27838, MU-17 dut 27832
Accessories with DUT numbers	HS-48 dut 27835, AC-4E dut27840
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	24.1 / 46.0 1020.4
Date of measurements	19-09-2006
Measured by	Jan Engelbrechtsen

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

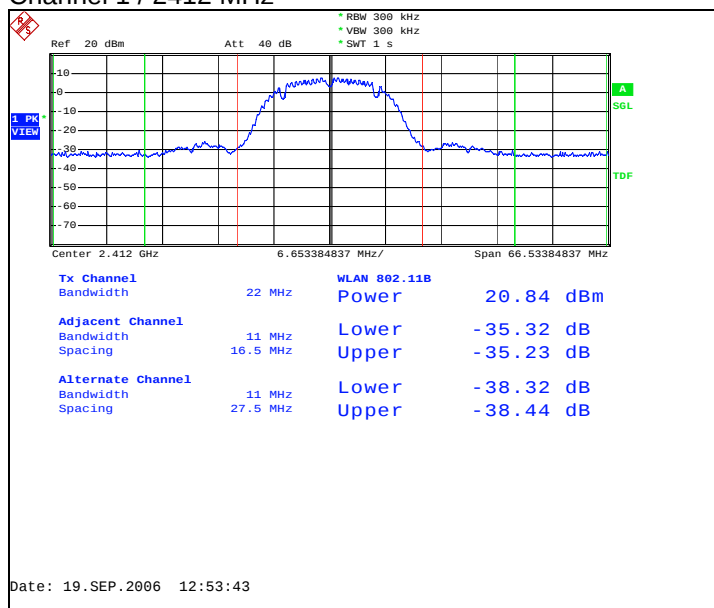
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

12.2. WLAN Test results

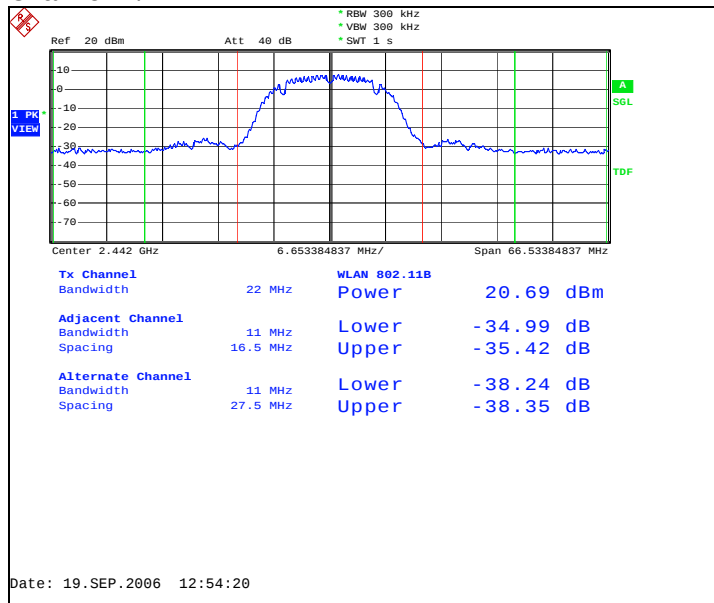
12.2.1 DSSS mode, BPSK modulation, 1 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	20.84	0.121	Passed
7 / 2442	20.69	0.117	Passed
11 / 2462	21.20	0.132	Passed

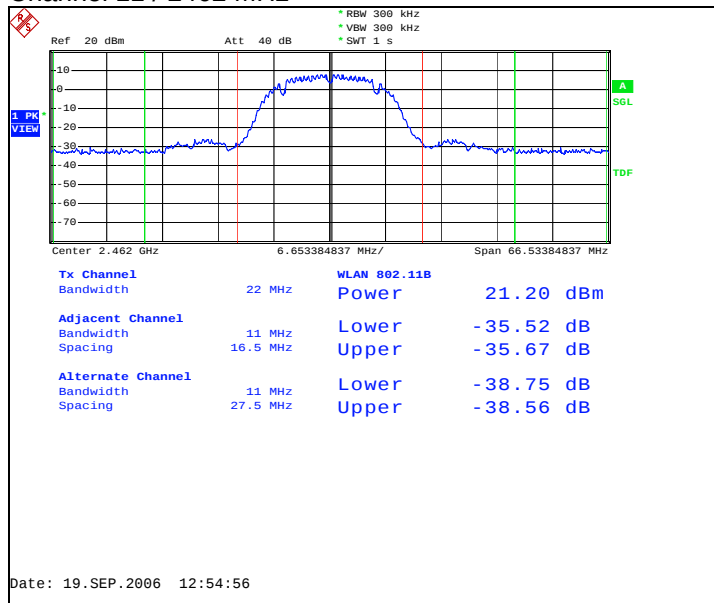
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



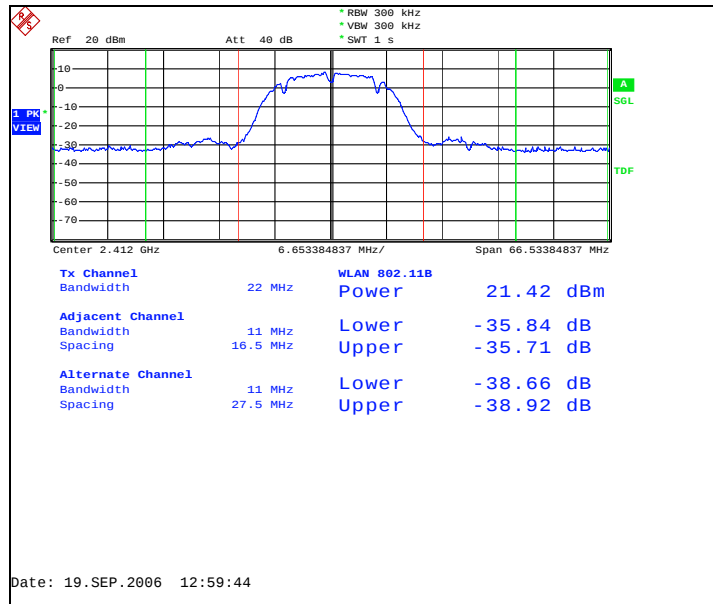
Channel 11 / 2462 MHz



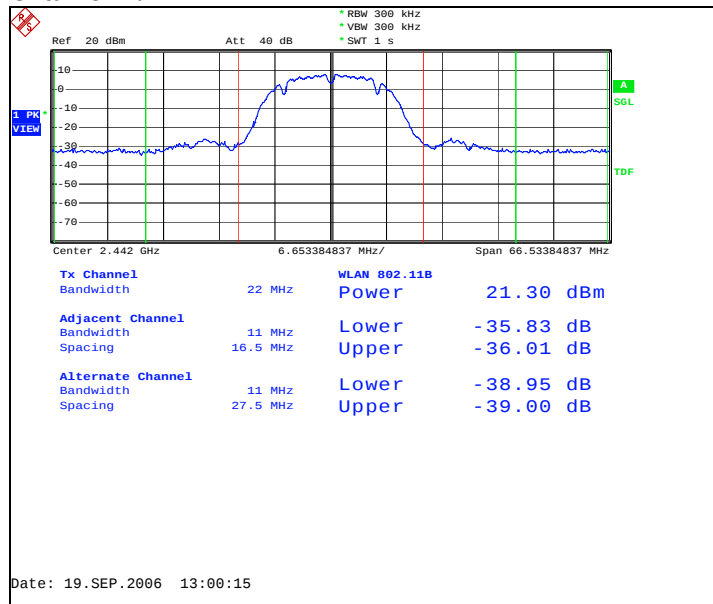
12.2.2 DSSS mode, QPSK modulation, 2 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	21.42	0.139	Passed
7 / 2442	21.30	0.135	Passed
11 / 2462	21.75	0.150	Passed

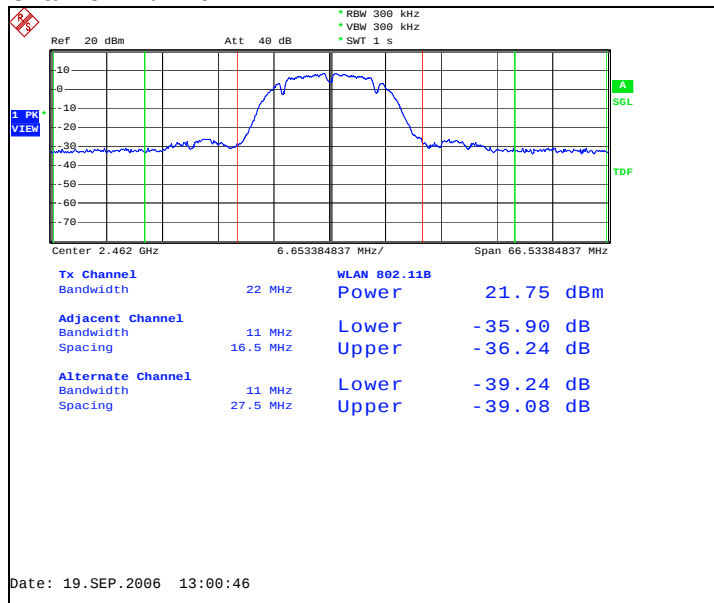
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



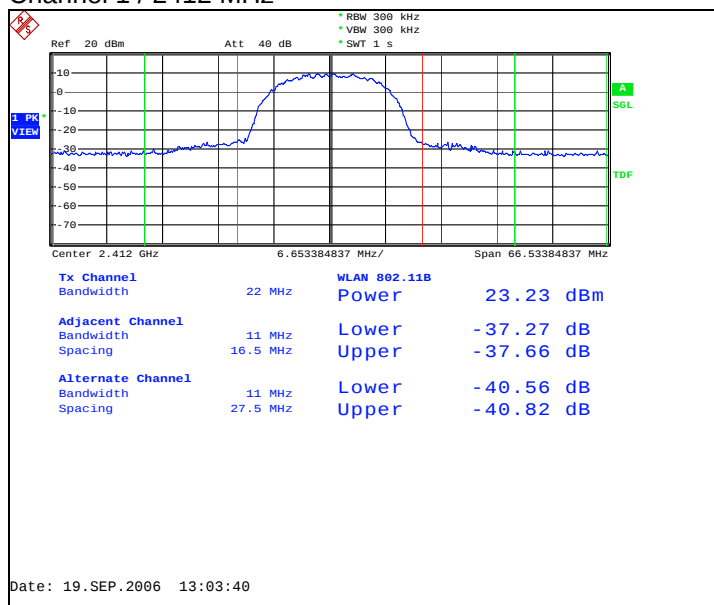
Channel 11 / 2462 MHz



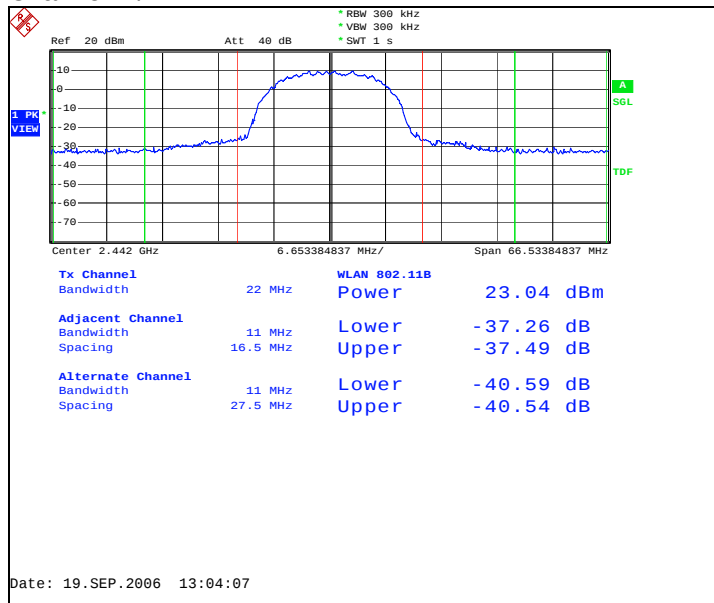
12.2.3 DSSS mode, QPSK modulation, 5.5 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [W]	Result
1 / 2412	23.23	0.210	Passed
7 / 2442	23.04	0.201	Passed
11 / 2462	23.47	0.222	Passed

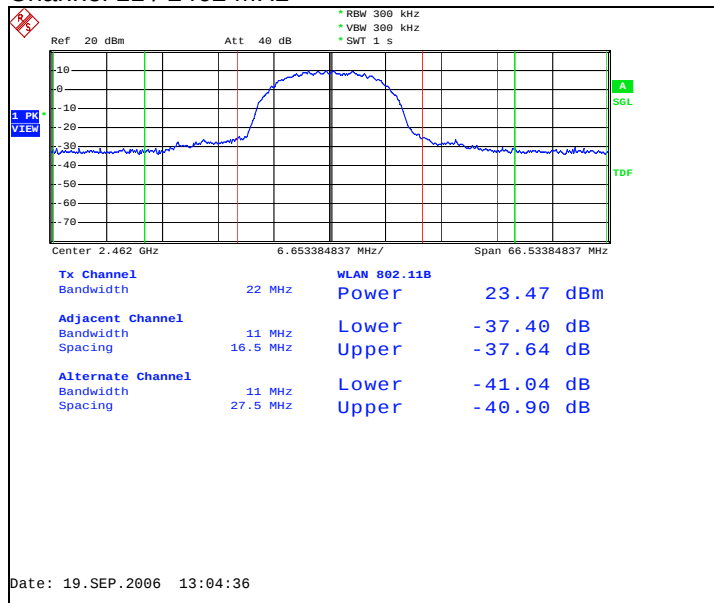
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



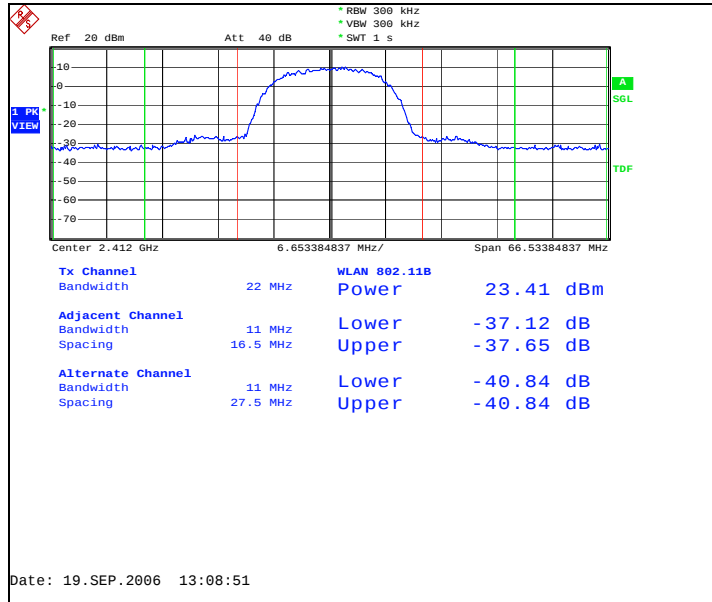
Channel 11 / 2462 MHz



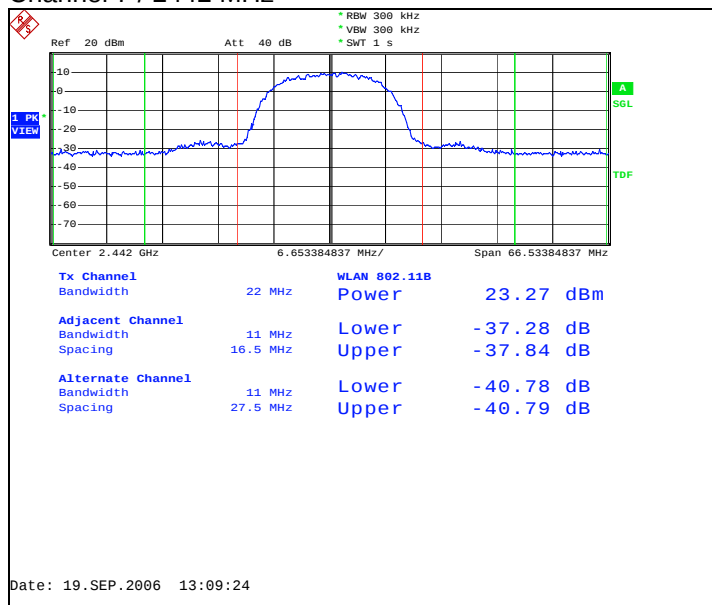
12.2.4 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	23.41	0.219	Passed
7 / 2442	23.27	0.212	Passed
11 / 2462	23.69	0.234	Passed

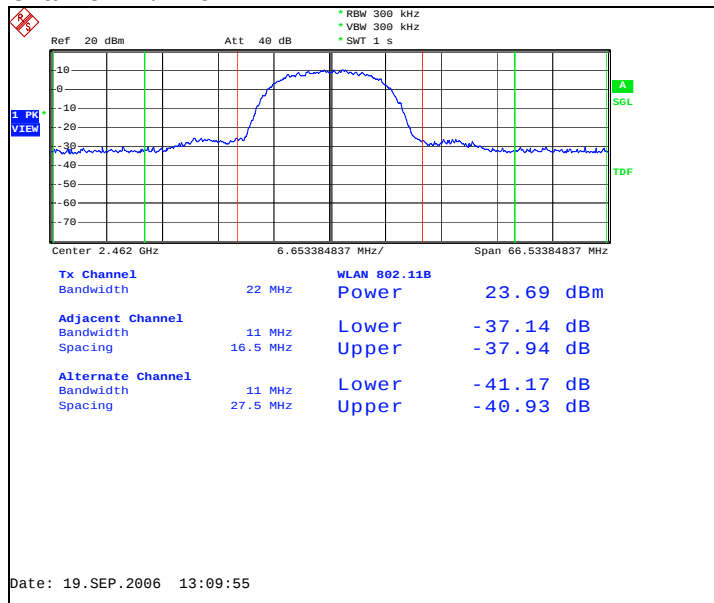
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



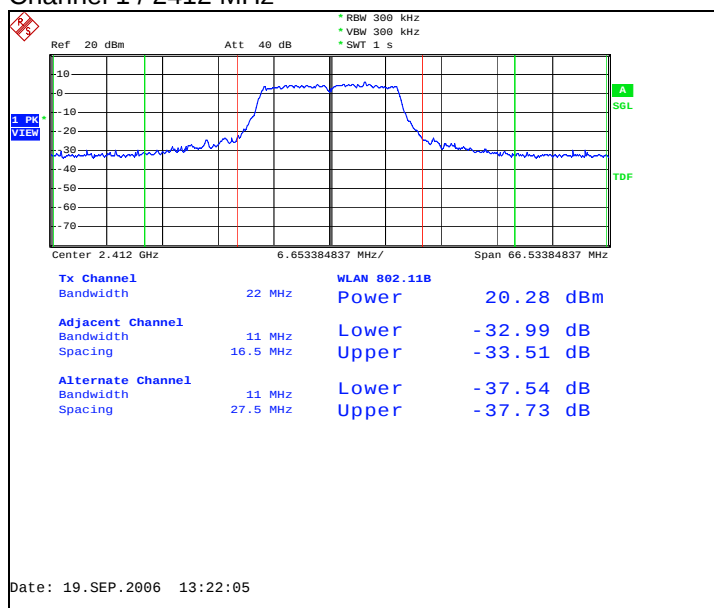
Channel 11 / 2462 MHz



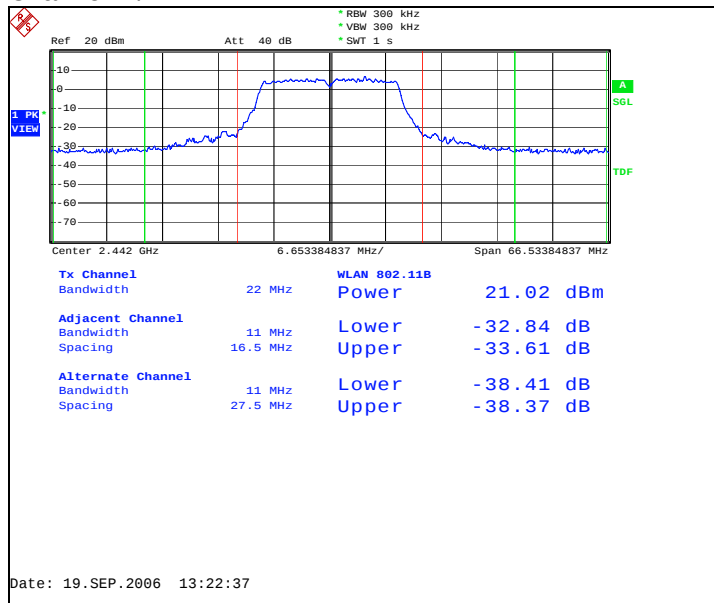
12.2.5 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	20.28	0.107	Passed
7 / 2442	21.02	0.126	Passed
11 / 2462	21.35	0.136	Passed

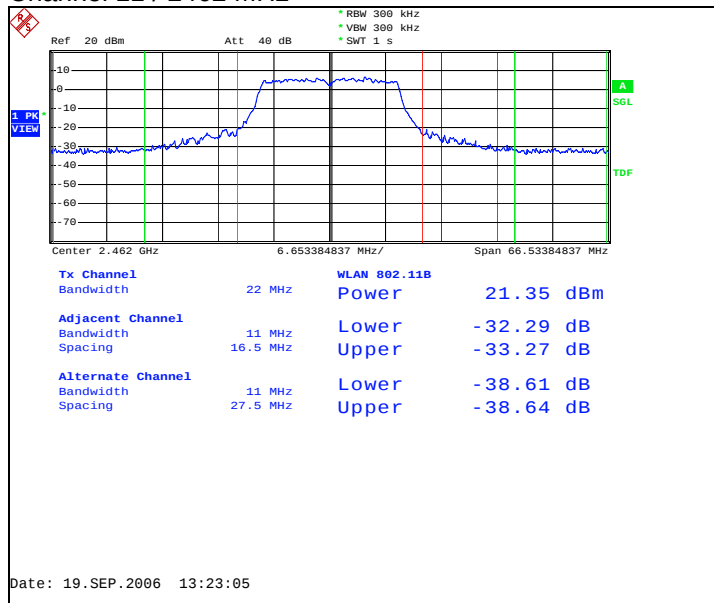
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



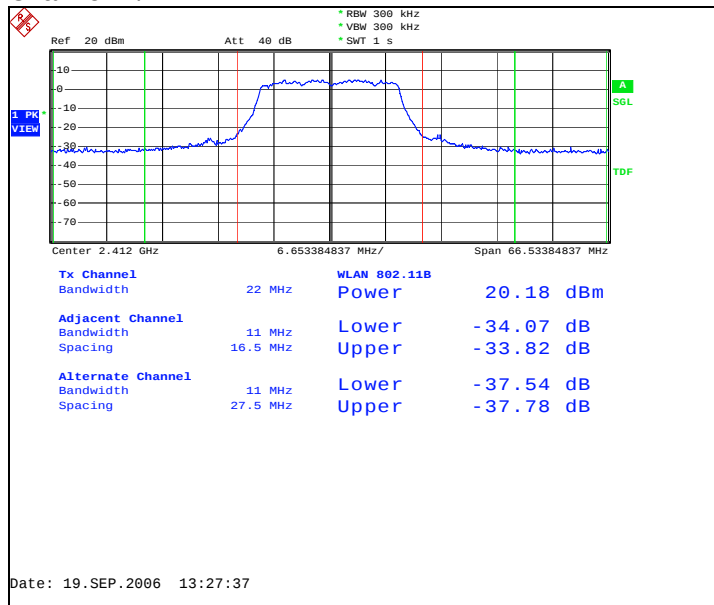
Channel 11 / 2462 MHz



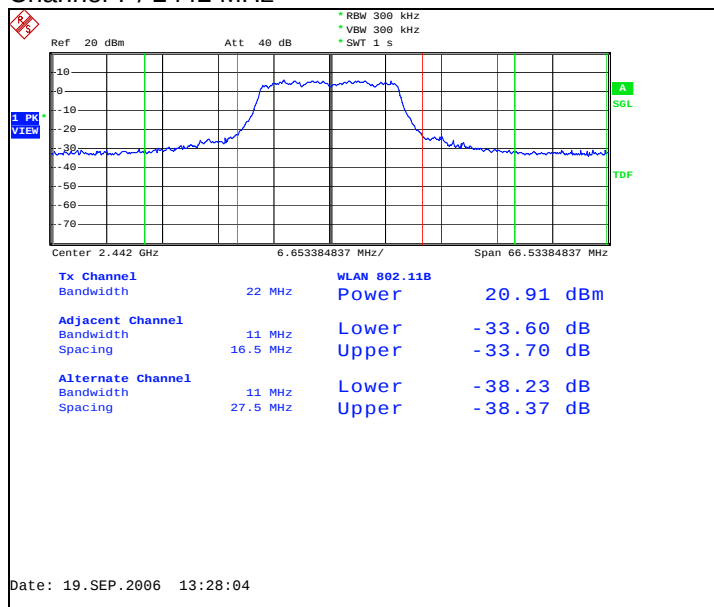
12.2.6 OFDM mode, BPSK modulation, 9 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	20.18	0.104	Passed
7 / 2442	20.91	0.123	Passed
11 / 2462	21.24	0.133	Passed

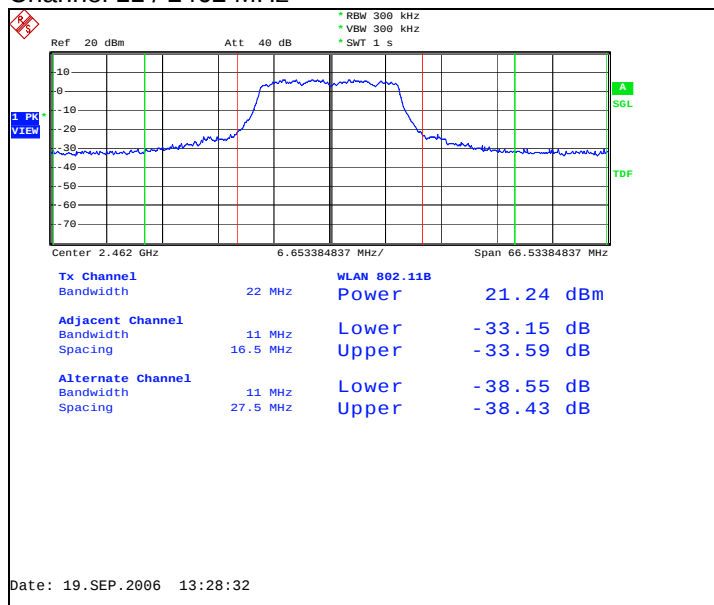
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



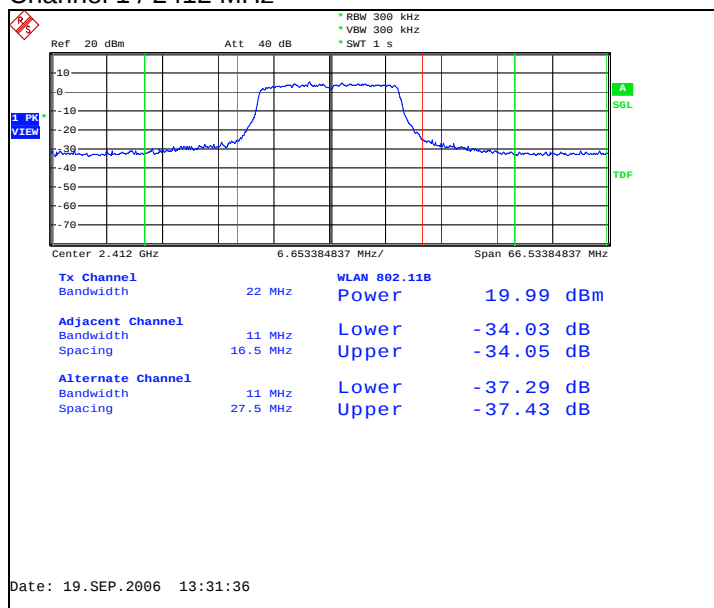
Channel 11 / 2462 MHz



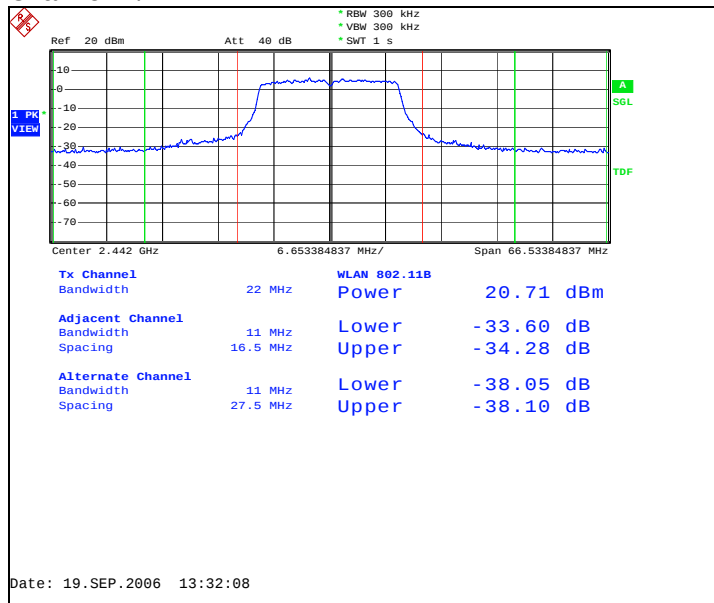
12.2.7 OFDM mode, QPSK modulation, 12 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [W]	Result
1 / 2412	19.99	0.100	Passed
7 / 2442	20.71	0.118	Passed
11 / 2462	21.03	0.127	Passed

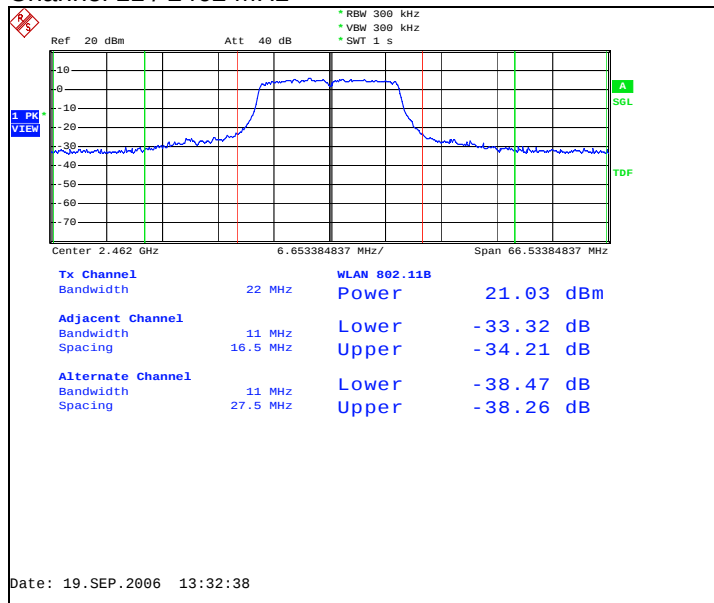
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



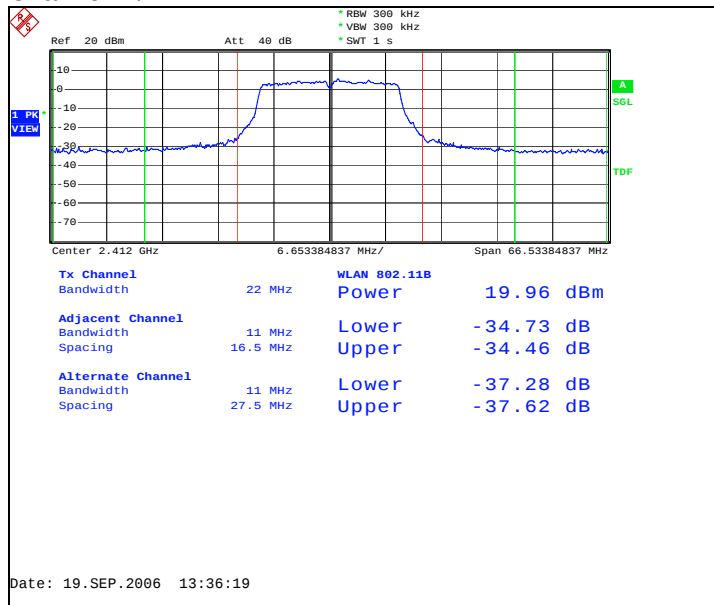
Channel 11 / 2462 MHz



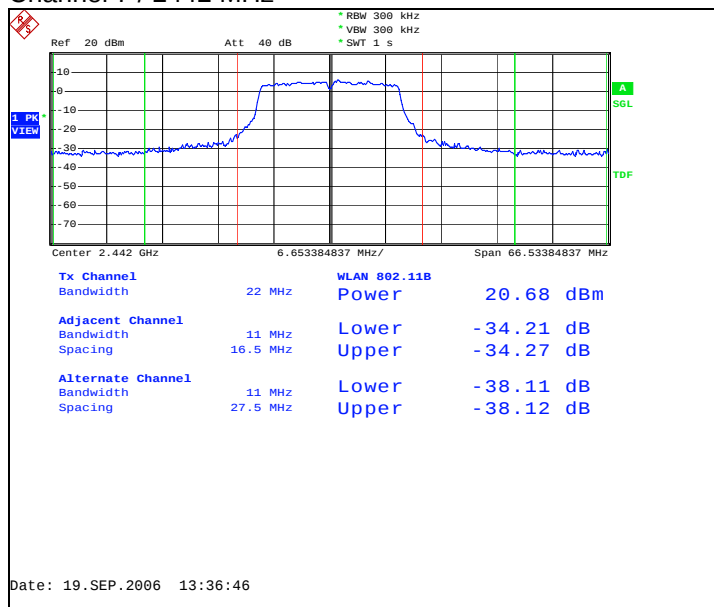
12.2.8 OFDM mode, QPSK modulation, 18 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	19.96	0.099	Passed
7 / 2442	20.68	0.117	Passed
11 / 2462	21.01	0.126	Passed

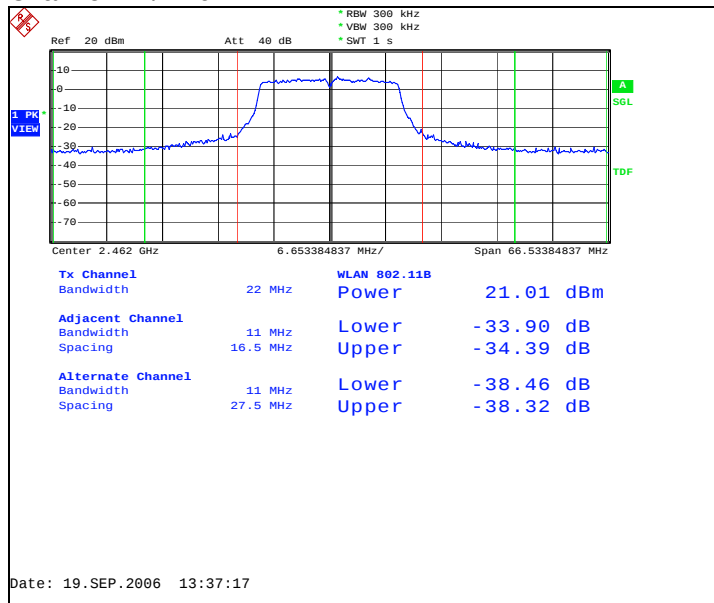
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



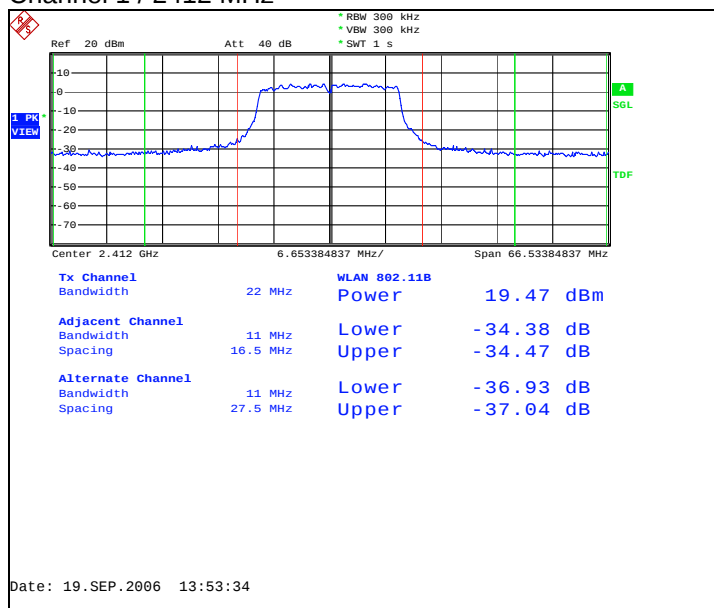
Channel 11 / 2462 MHz



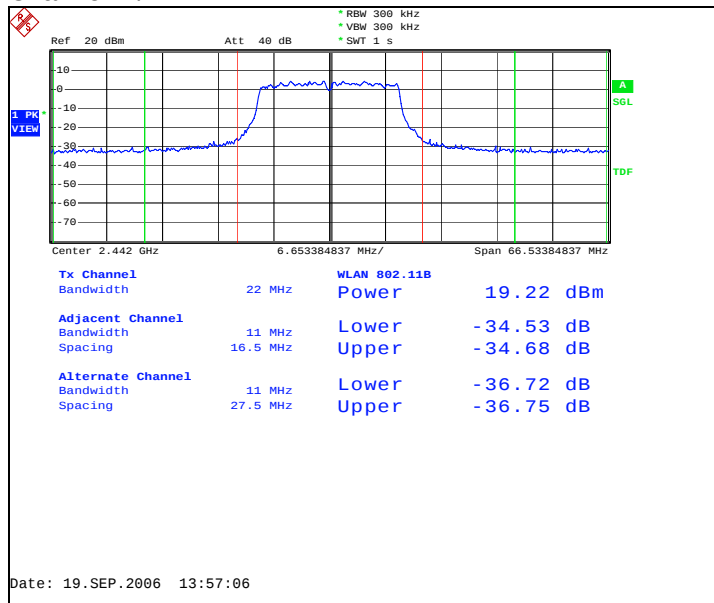
12.2.9 OFDM mode, 16QAM modulation, 24 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [W]	Result
1 / 2412	19.47	0.089	Passed
7 / 2442	19.22	0.084	Passed
11 / 2462	19.49	0.089	Passed

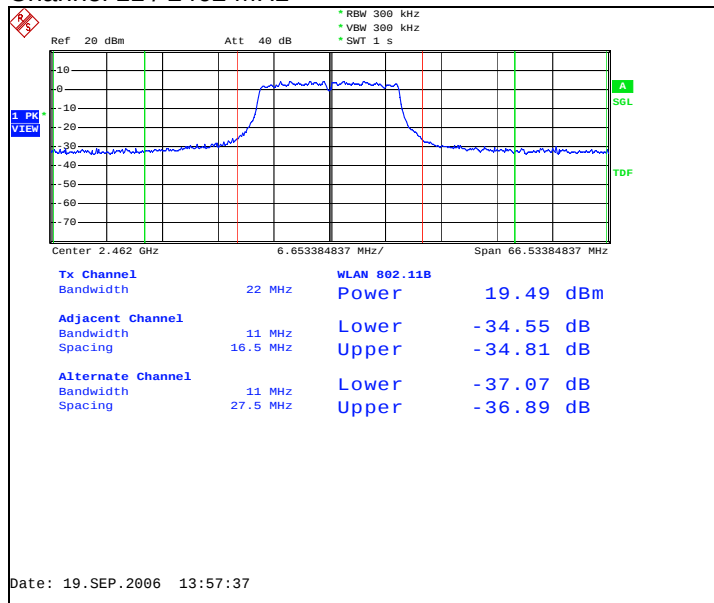
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



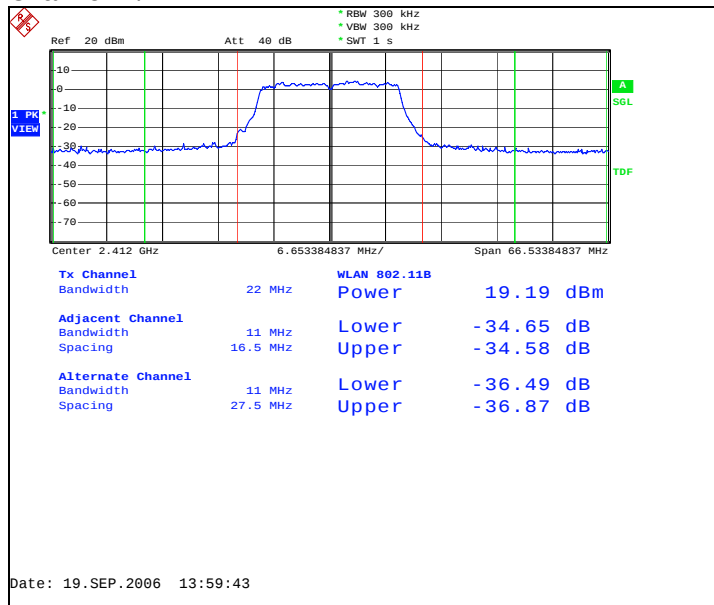
Channel 11 / 2462 MHz



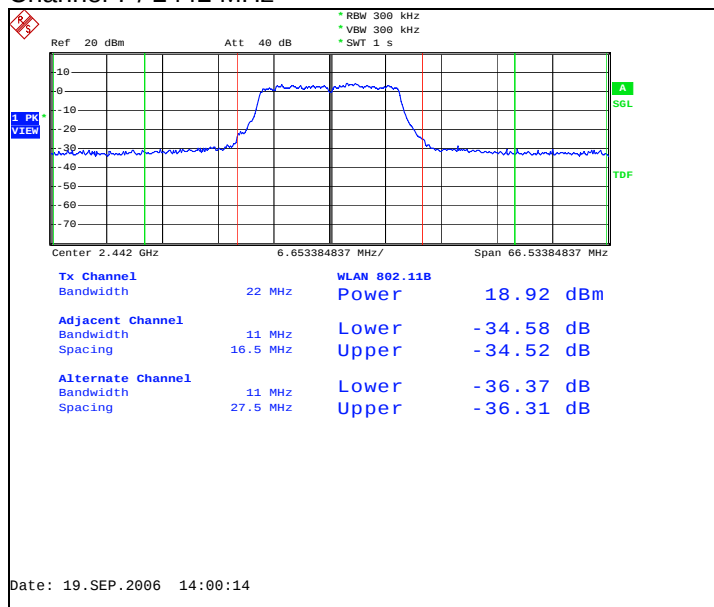
12.2.10 OFDM mode, 16QAM modulation, 36 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	19.19	0.083	Passed
7 / 2442	18.92	0.078	Passed
11 / 2462	19.16	0.082	Passed

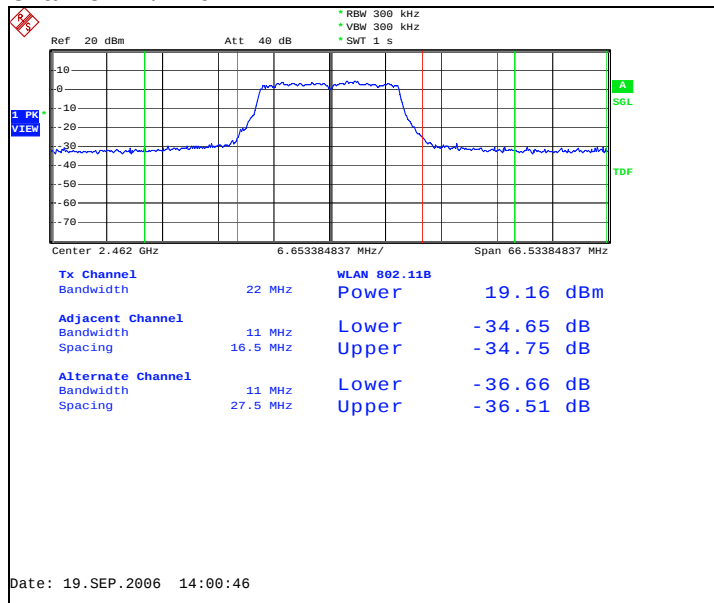
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



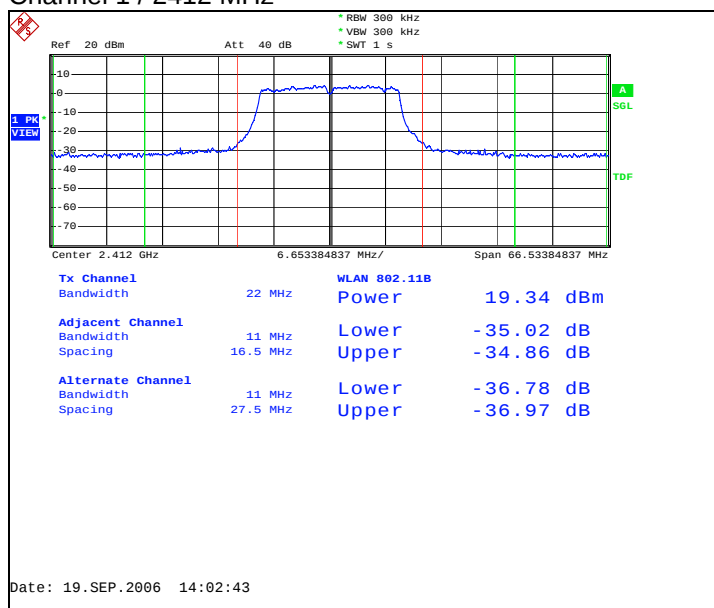
Channel 11 / 2462 MHz



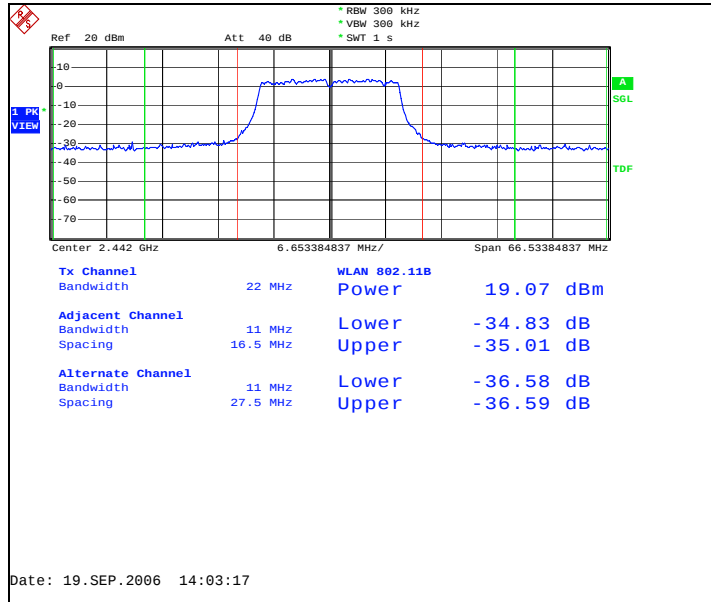
12.2.11 OFDM mode, 64QAM modulation, 48 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [W]	Result
1 / 2412	19.34	0.086	Passed
7 / 2442	19.07	0.081	Passed
11 / 2462	19.32	0.086	Passed

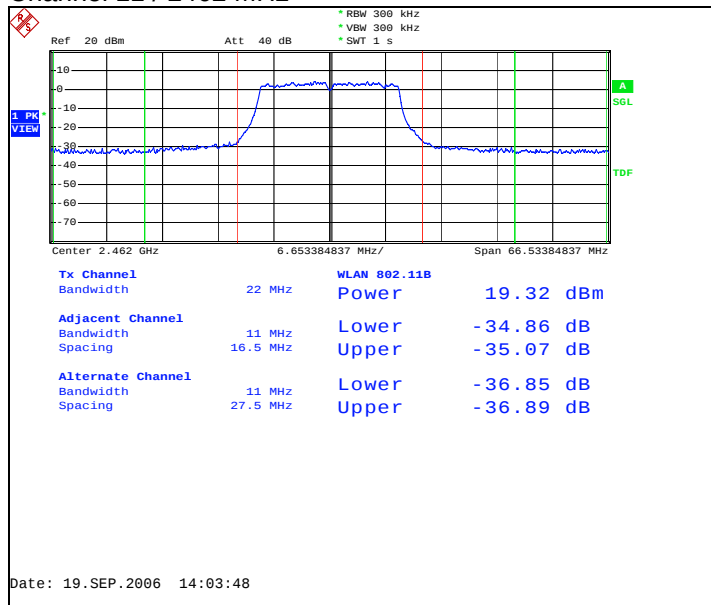
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



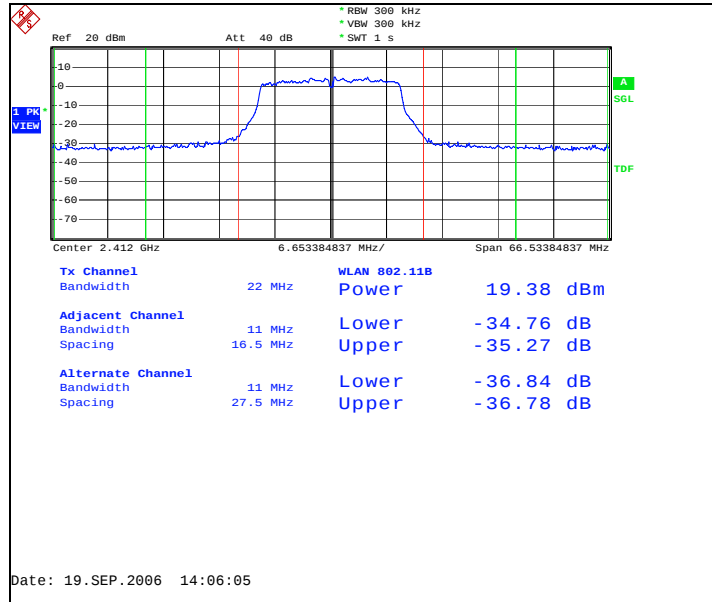
Channel 11 / 2462 MHz



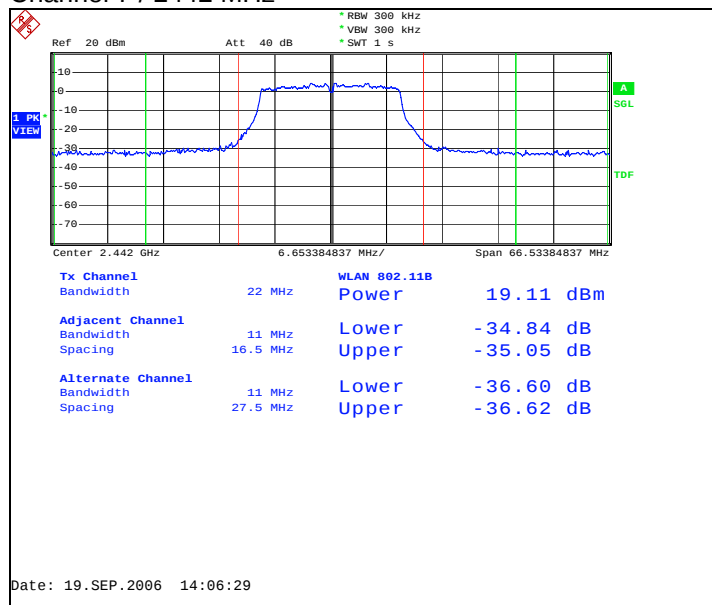
12.2.12 OFDM mode, 64QAM modulation, 54 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	19.38	0.087	Passed
7 / 2442	19.11	0.081	Passed
11 / 2462	19.35	0.086	Passed

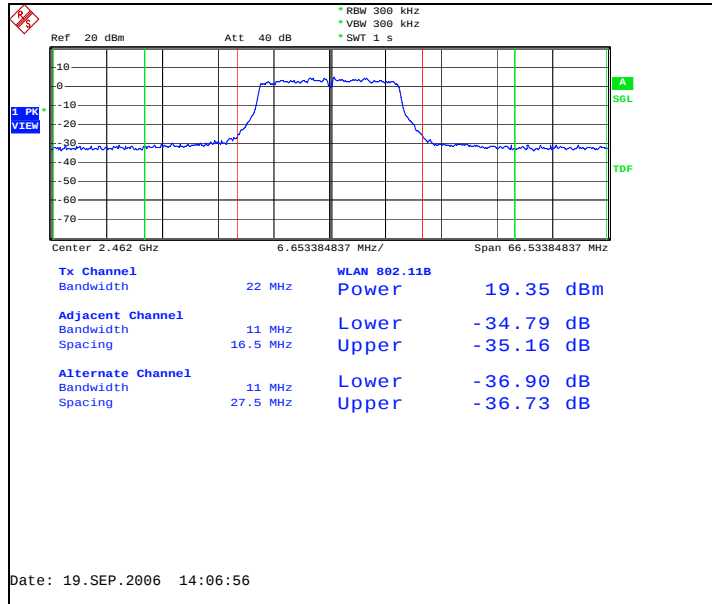
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



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

EUT with DUT number	RX-34 Dut#27843 + Dut#27920
Accessories with DUT numbers	BP-5L Dut#27836, HS-48 Dut#27846, AC-4E Dut#27849, MU-17 Dut#27831
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	23 / 52 / 1020
Date of measurements	28-09-2006
Measured by	Christian Andersen

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

13.2. WLAN Test results

13.2.1 DSSS mode, BPSK modulation, 1 Mbps data rate

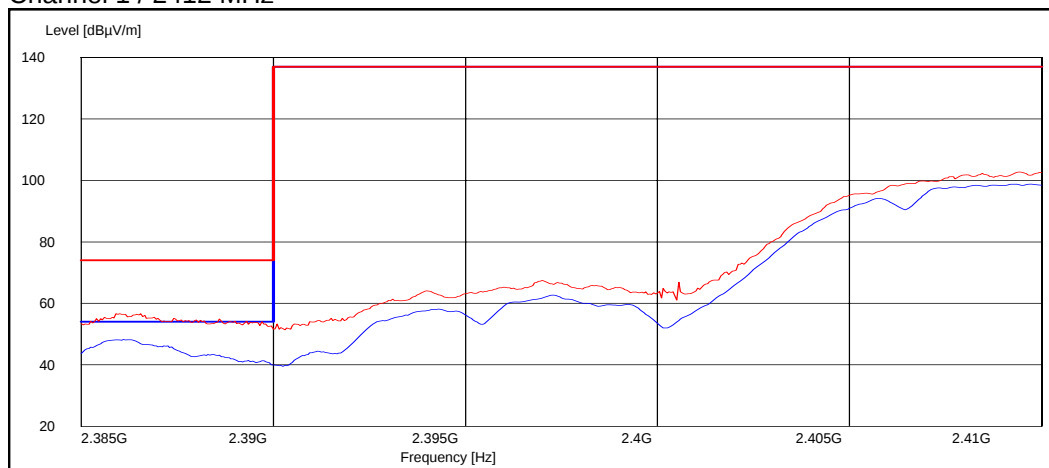
Average (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	48.17	Passed
11 / 2462	44.32	Passed

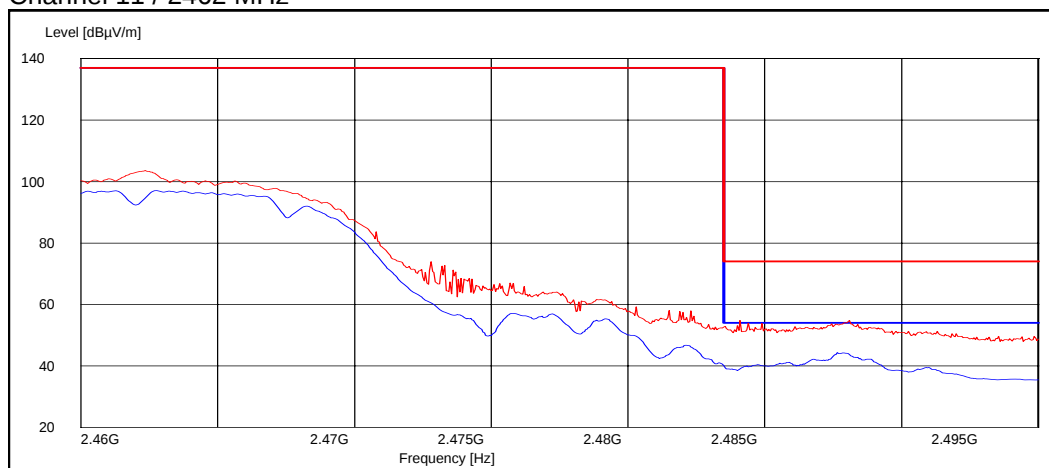
Peak (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	56.25	Passed
11 / 2462	54.85	Passed

Channel 1 / 2412 MHz



Channel 11 / 2462 MHz



13.2.2 DSSS mode, QPSK modulation, 11 Mbps data rate

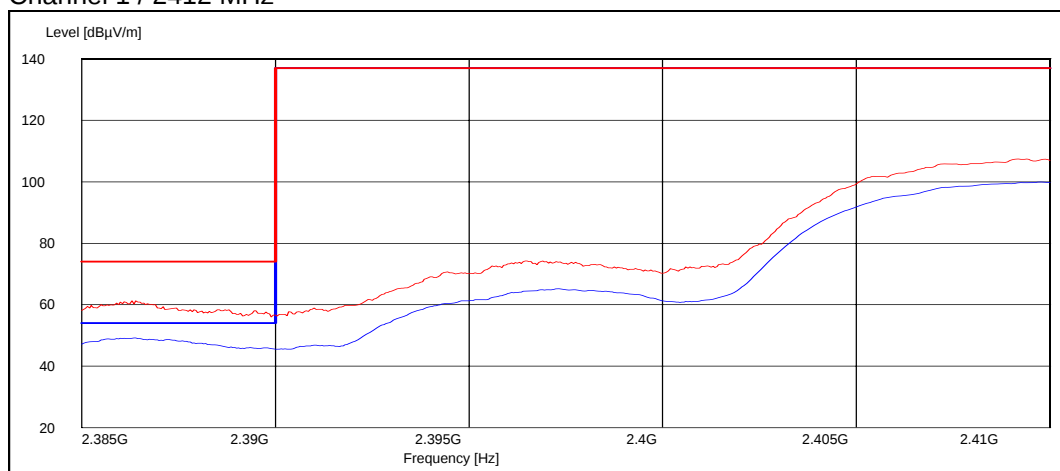
Average (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	49.18	Passed
11 / 2462	38.06	Passed

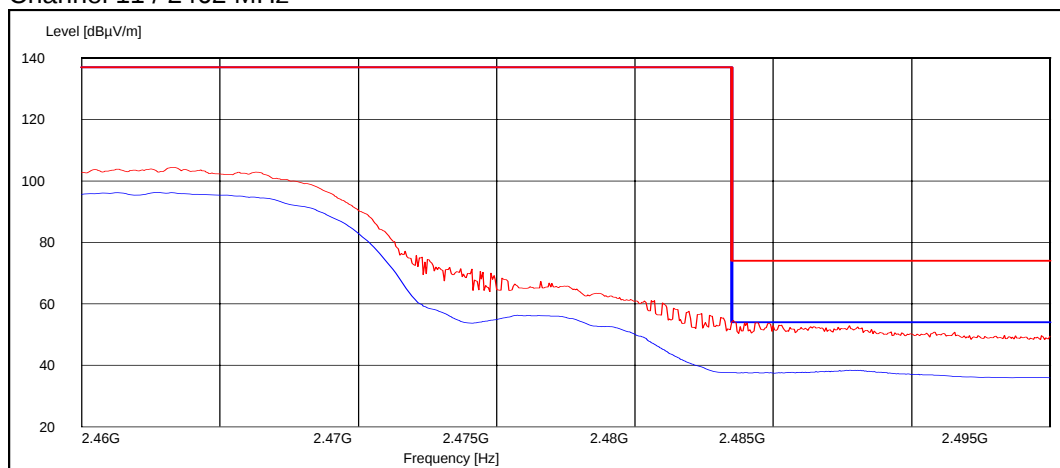
Peak (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	61.20	Passed
11 / 2462	54.57	Passed

Channel 1 / 2412 MHz



Channel 11 / 2462 MHz



13.2.3 OFDM mode, BPSK modulation, 6 Mbps data rate

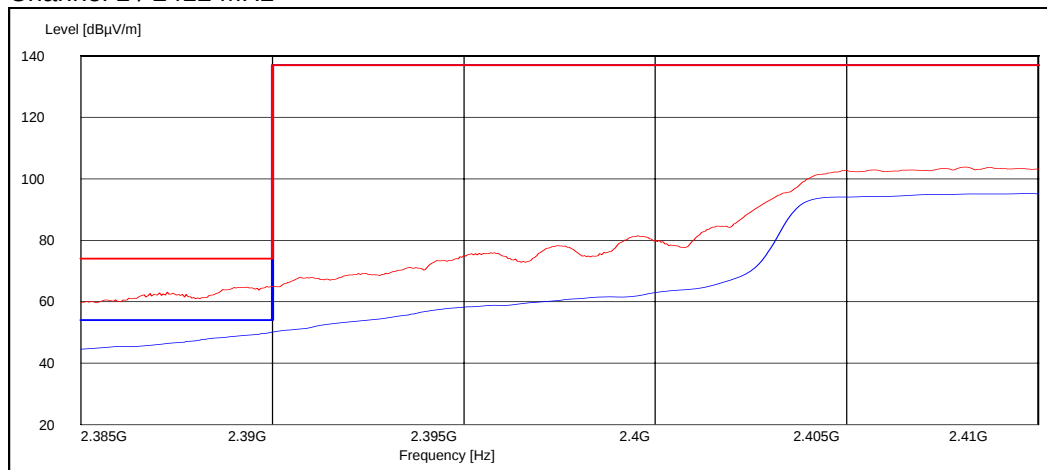
Average (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	49.80	Passed
11 / 2462	44.11	Passed

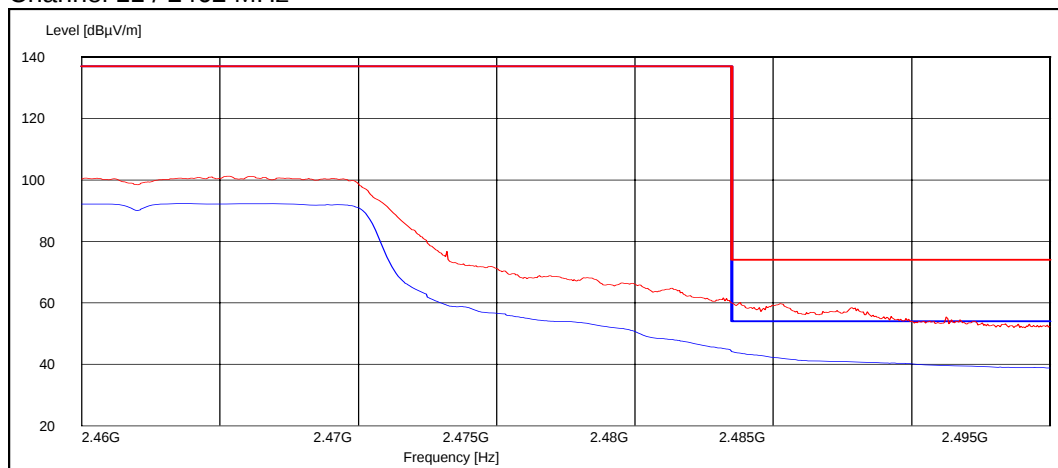
Peak (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	64.92	Passed
11 / 2462	59.95	Passed

Channel 1 / 2412 MHz



Channel 11 / 2462 MHz



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

EUT with DUT number	RX-34 dut 27841, BP-5L dut 27838, MU-17 dut 27832
Accessories with DUT numbers	HS-48 dut 27835, AC-4E dut27840
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	24.1 / 46.0 1020.4
Date of measurements	18-09-2006
Measured by	Jan Engelbrechtsen

14.1. Test method and limit

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

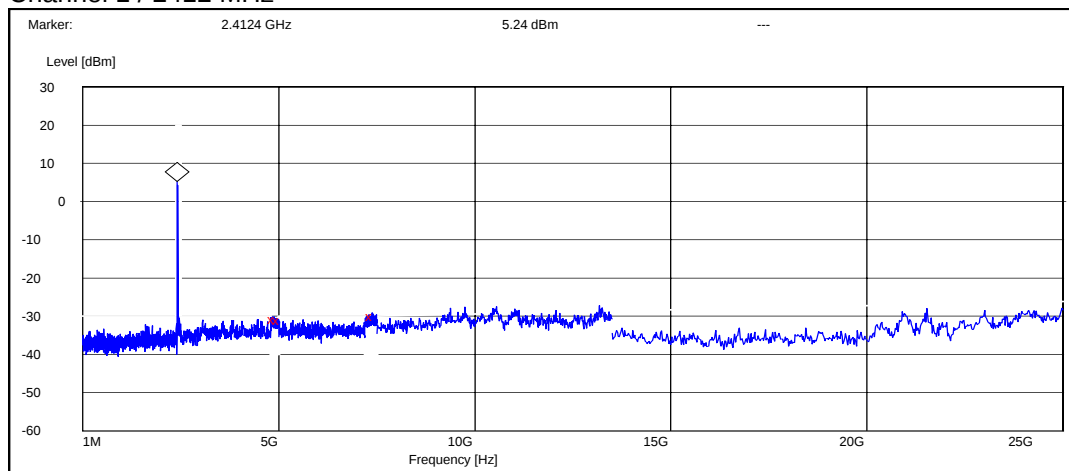
Limits for spurious RF conducted emissions measurements

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

14.2. WLAN Test results

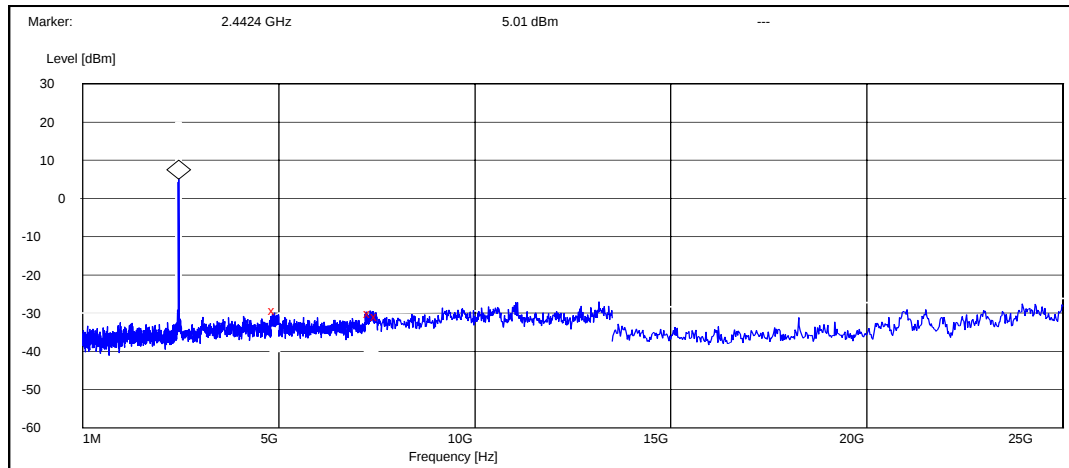
14.2.1 DSSS mode, BPSK modulation, 1 Mbps data rate

Channel 1 / 2412 MHz



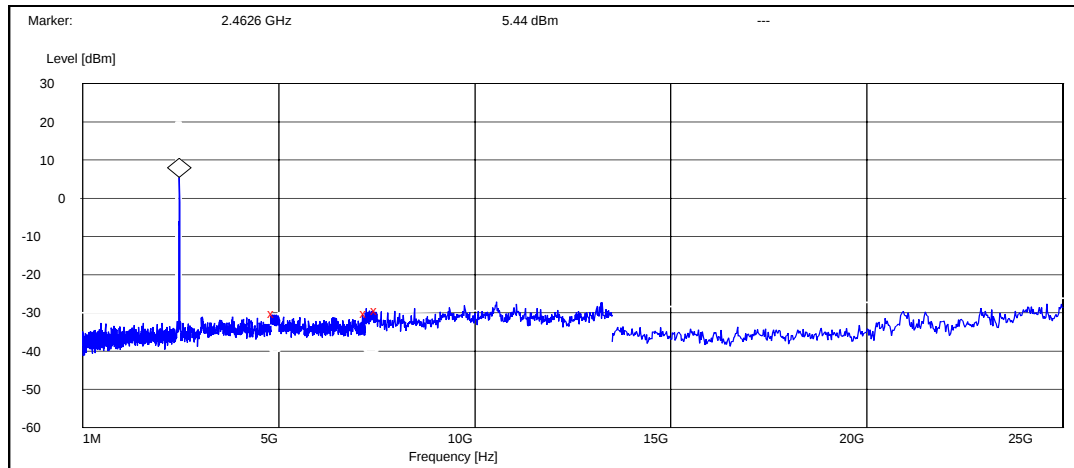
Frequency [MHz]	P [dBc]	Result
4880.000000	-36.044251	Passed
5000.000000	-36.244251	Passed
7387.800000	-35.344251	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4890.400000	-34.307935	Passed
7324.800000	-35.007935	Passed
7500.000000	-35.807935	Passed

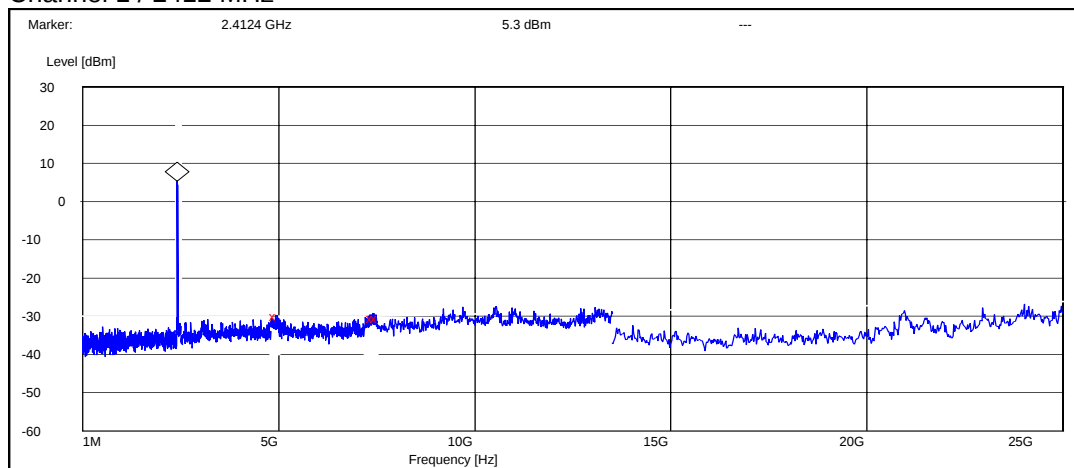
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4876.800000	-35.644687	Passed
7237.800000	-35.644687	Passed
7500.000000	-34.744687	Passed

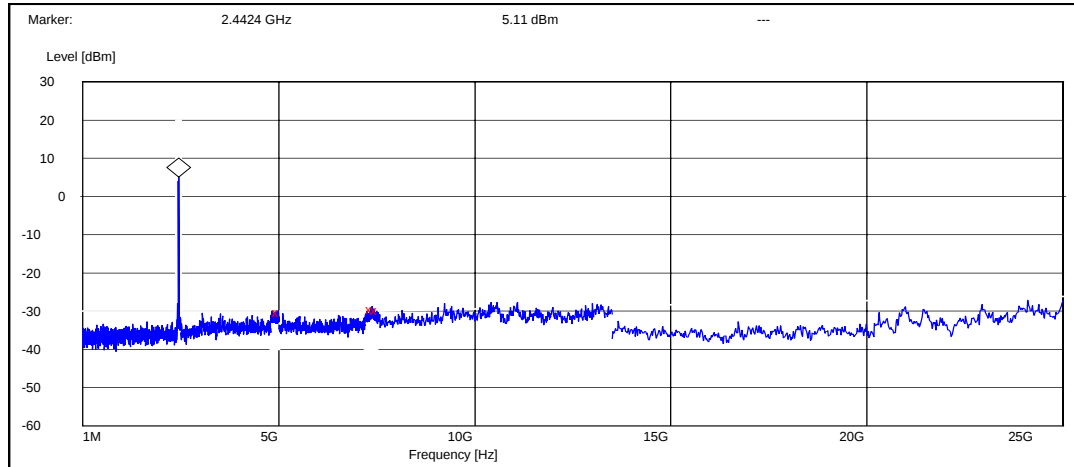
14.2.2 DSSS mode, QPSK modulation, 2 Mbps data rate

Channel 1 / 2412 MHz



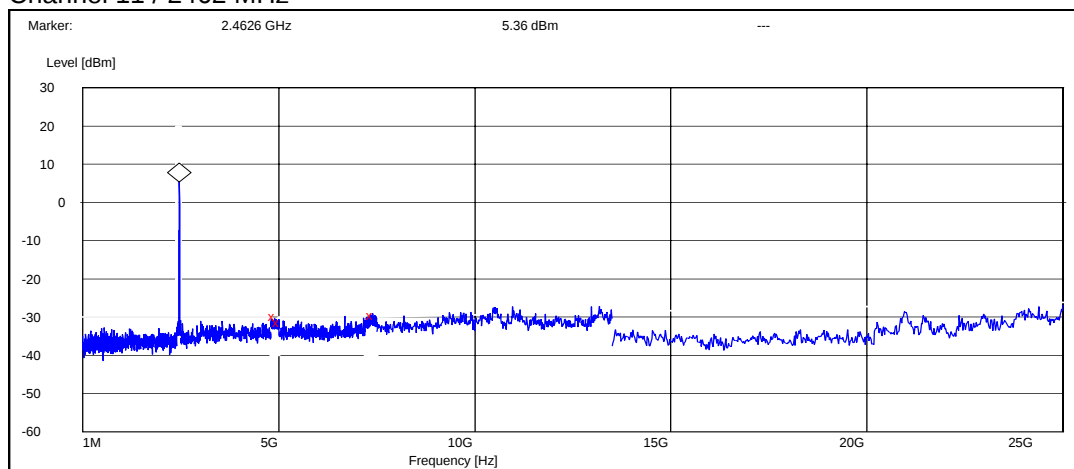
Frequency [MHz]	P [dBc]	Result
4920.000000	-35.403822	Passed
7390.200000	-35.803822	Passed
7500.000000	-35.703822	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4991.200000	-35.511557	Passed
7388.400000	-34.611557	Passed
7500.000000	-34.911557	Passed

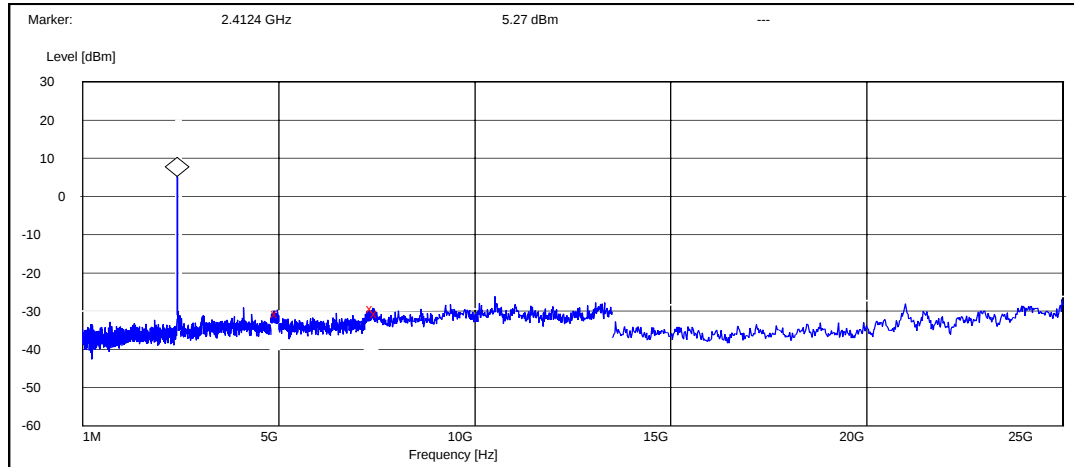
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4888.400000	-35.164532	Passed
5000.000000	-36.664532	Passed
7401.600000	-34.964532	Passed

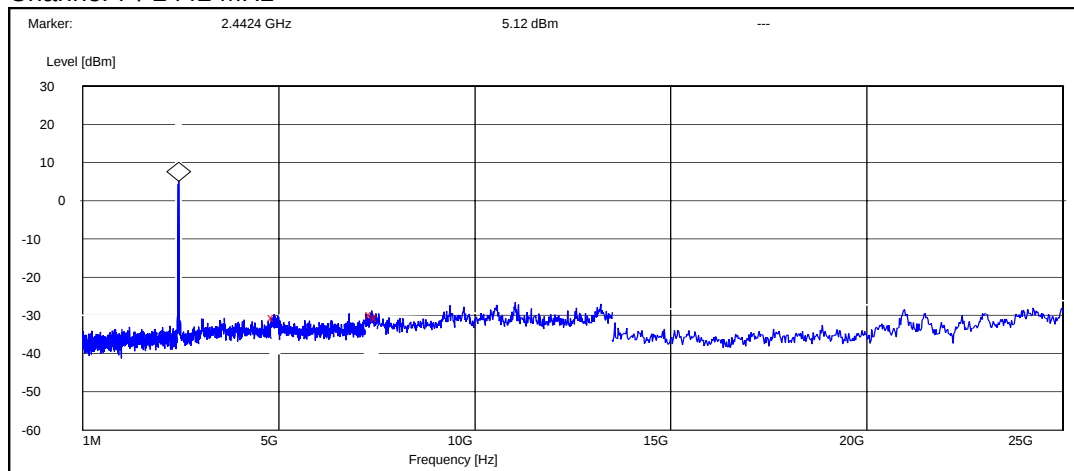
14.2.3 DSSS mode, QPSK modulation, 5.5 Mbps data rate

Channel 1 / 2412 MHz



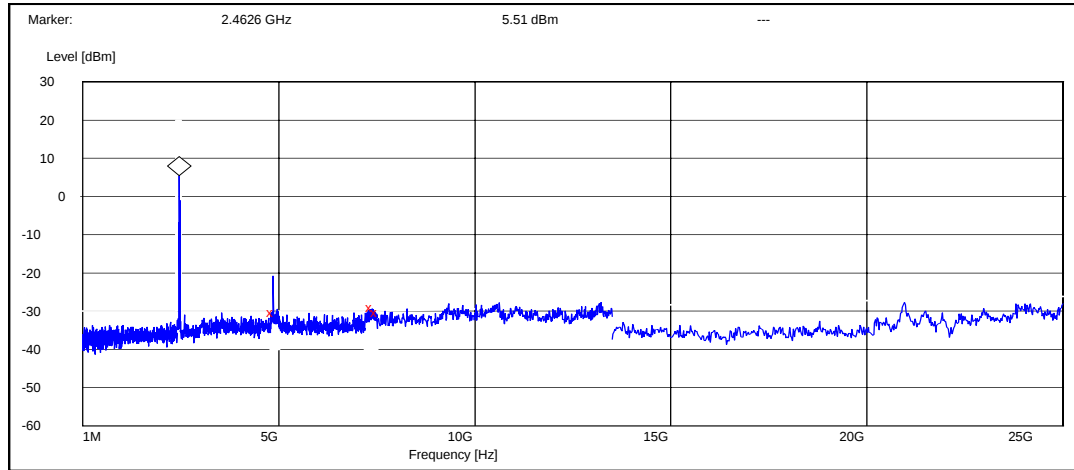
Frequency [MHz]	P [dBc]	Result
4958.800000	-35.772030	Passed
7399.800000	-34.472030	Passed
7500.000000	-35.772030	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4886.800000	-35.618019	Passed
7366.200000	-34.918019	Passed
7500.000000	-35.518019	Passed

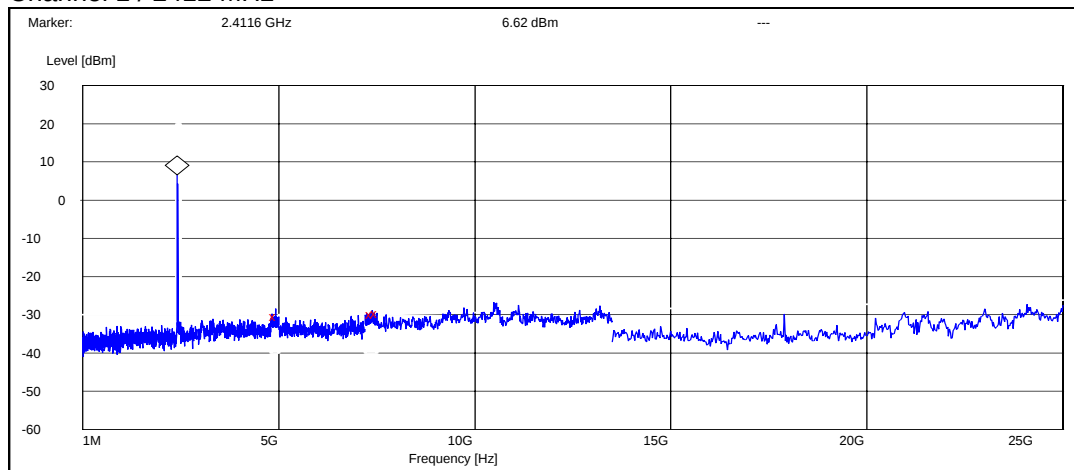
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4850.000000	-35.911154	Passed
7387.800000	-34.511154	Passed
7500.000000	-35.811154	Passed

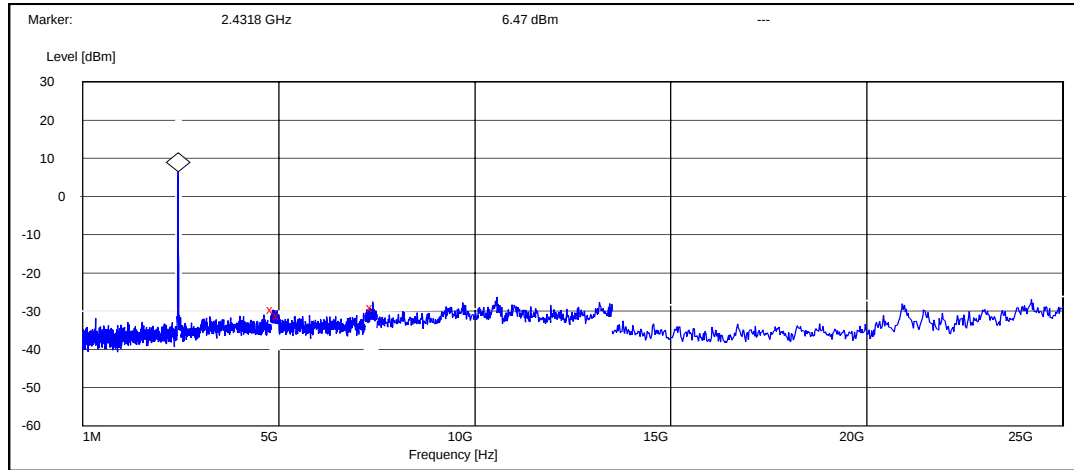
14.2.4 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel 1 / 2412 MHz



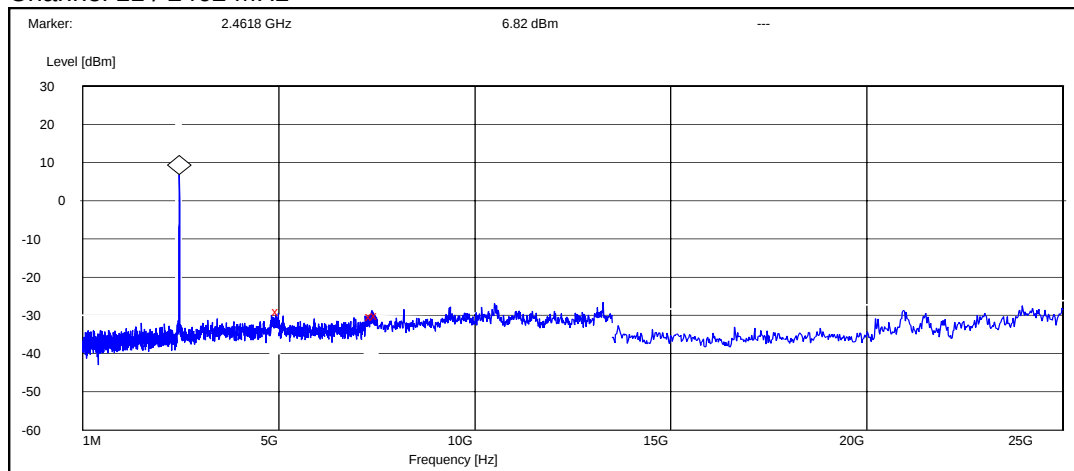
Frequency [MHz]	P [dBc]	Result
4915.600000	-36.923767	Passed
7383.600000	-36.523767	Passed
7500.000000	-36.223767	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4852.000000	-36.067637	Passed
5000.000000	-37.467637	Passed
7389.600000	-35.467637	Passed

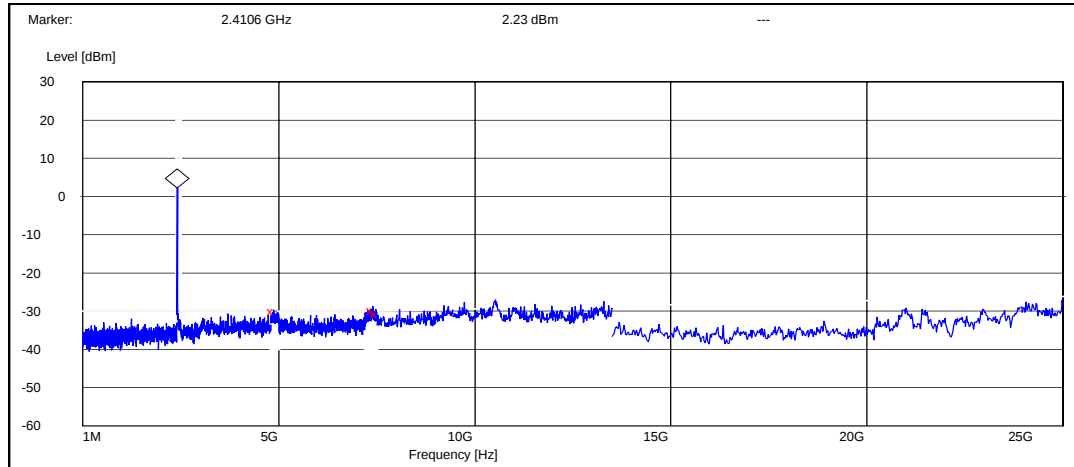
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4990.800000	-35.820671	Passed
7365.000000	-37.120671	Passed
7500.000000	-36.720671	Passed

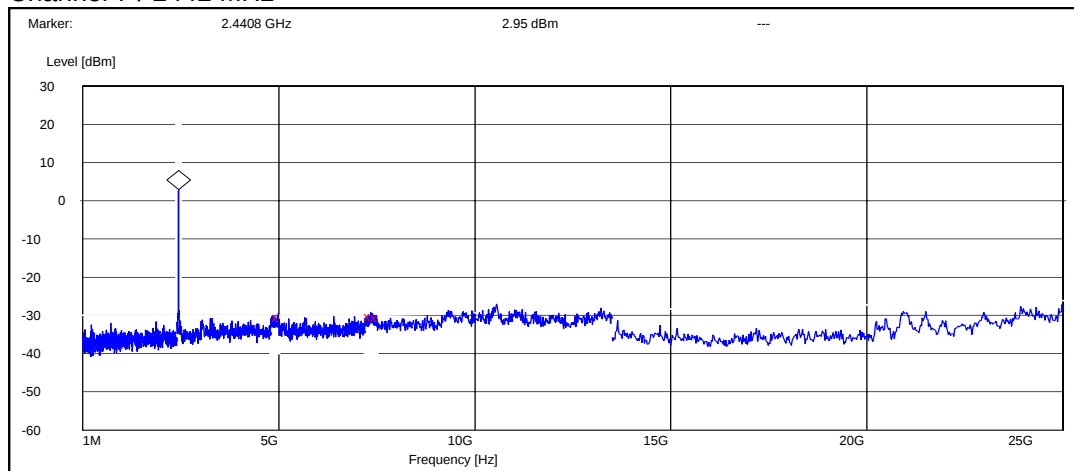
14.2.5 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel 1 / 2412 MHz



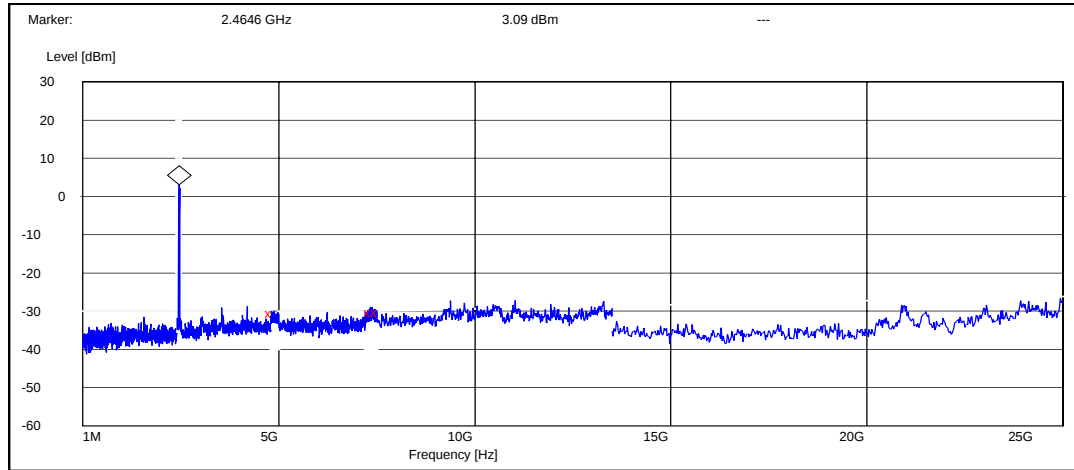
Frequency [MHz]	P [dBc]	Result
4866.400000	-32.128825	Passed
7390.800000	-32.028825	Passed
7500.000000	-32.728825	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4986.400000	-33.445124	Passed
7335.600000	-33.245124	Passed
7500.000000	-33.445124	Passed

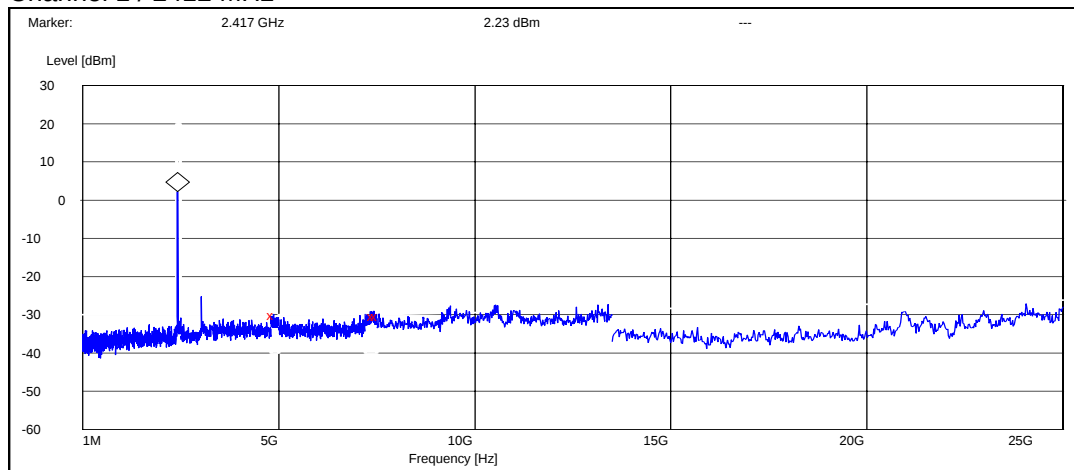
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4812.000000	-33.589981	Passed
7347.000000	-33.289981	Passed
7500.000000	-33.289981	Passed

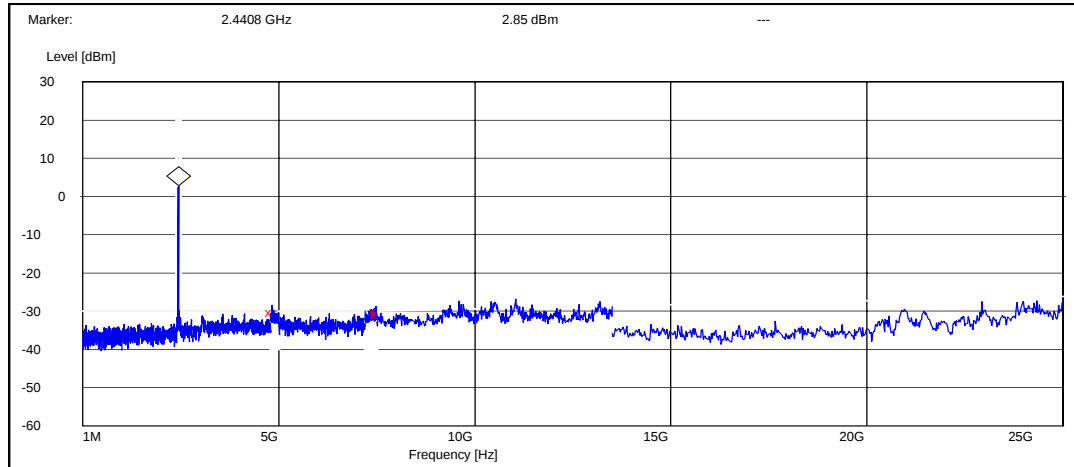
14.2.6 OFDM mode, BPSK modulation, 9 Mbps data rate

Channel 1 / 2412 MHz



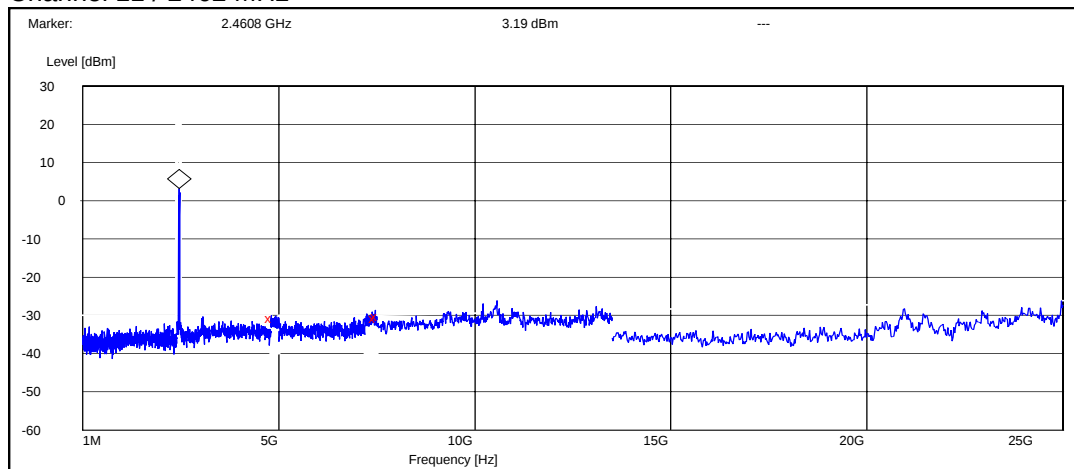
Frequency [MHz]	P [dBc]	Result
4860.400000	-32.428830	Passed
7422.000000	-32.728830	Passed
7500.000000	-32.528830	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4822.800000	-33.146765	Passed
7479.000000	-32.946765	Passed
7500.000000	-33.646765	Passed

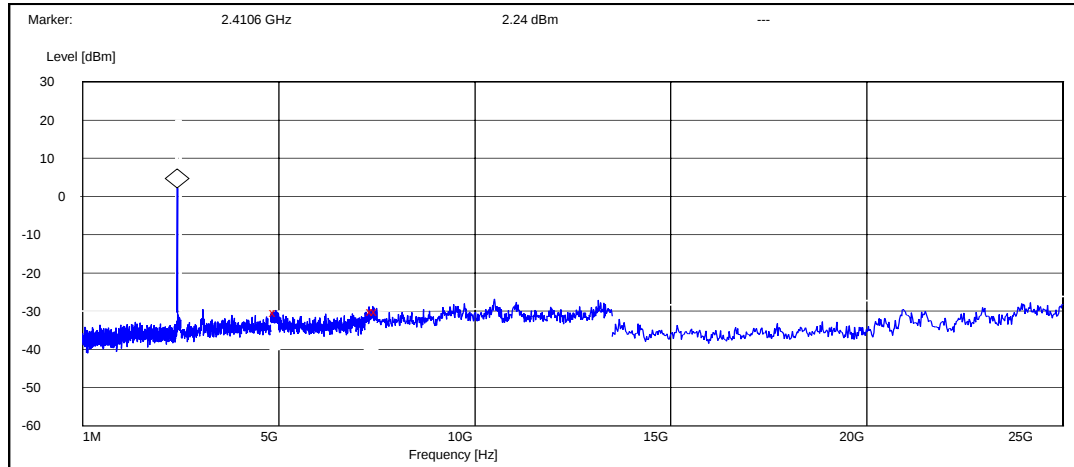
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4810.000000	-33.991002	Passed
7468.800000	-33.891002	Passed
7500.000000	-33.491002	Passed

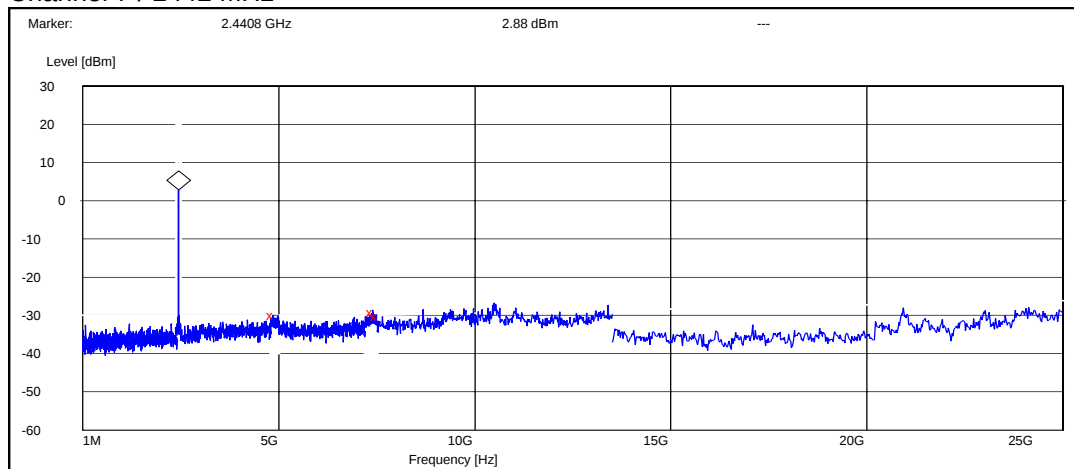
14.2.7 OFDM mode, QPSK modulation, 12 Mbps data rate

Channel 1 / 2412 MHz



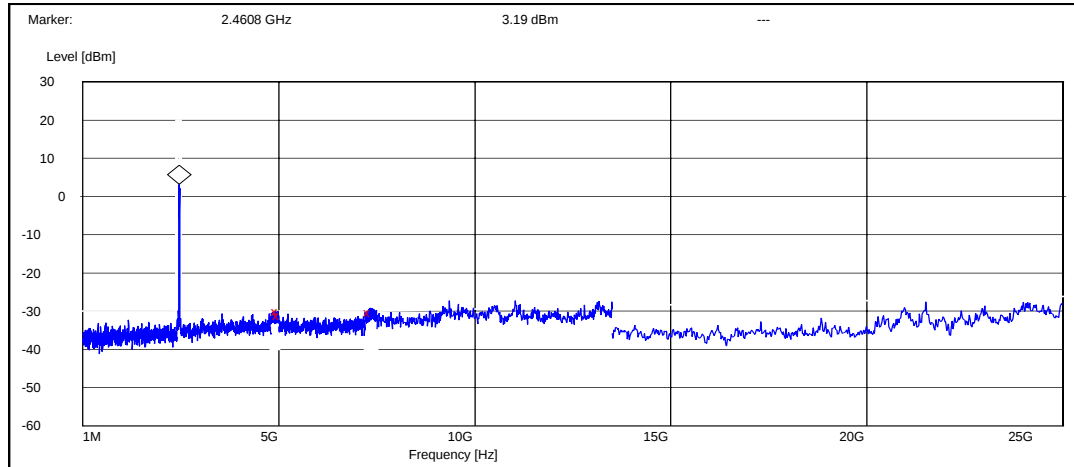
Frequency [MHz]	P [dBc]	Result
4922.000000	-32.543008	Passed
7389.600000	-32.243008	Passed
7500.000000	-32.243008	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4857.200000	-32.876200	Passed
7401.000000	-32.176200	Passed
7500.000000	-32.976200	Passed

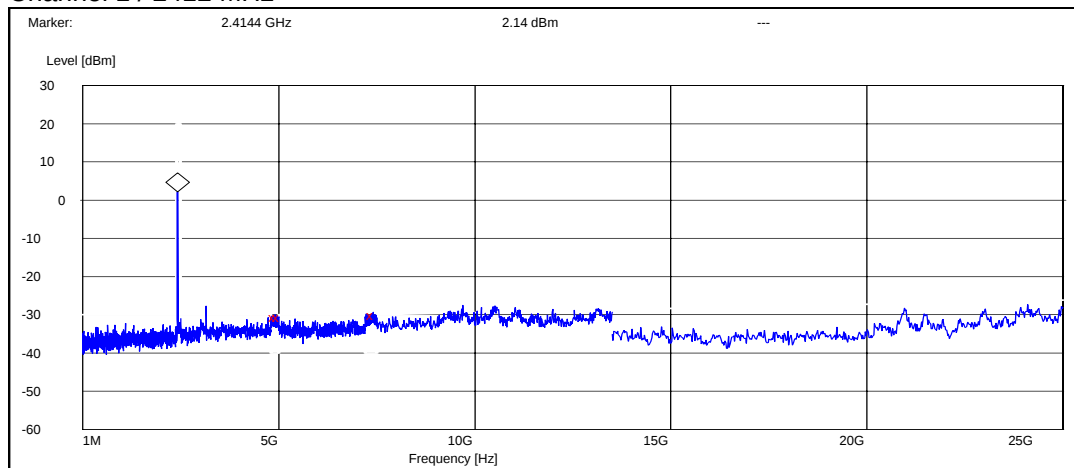
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4975.600000	-33.294168	Passed
5000.000000	-34.194168	Passed
7326.600000	-33.394168	Passed

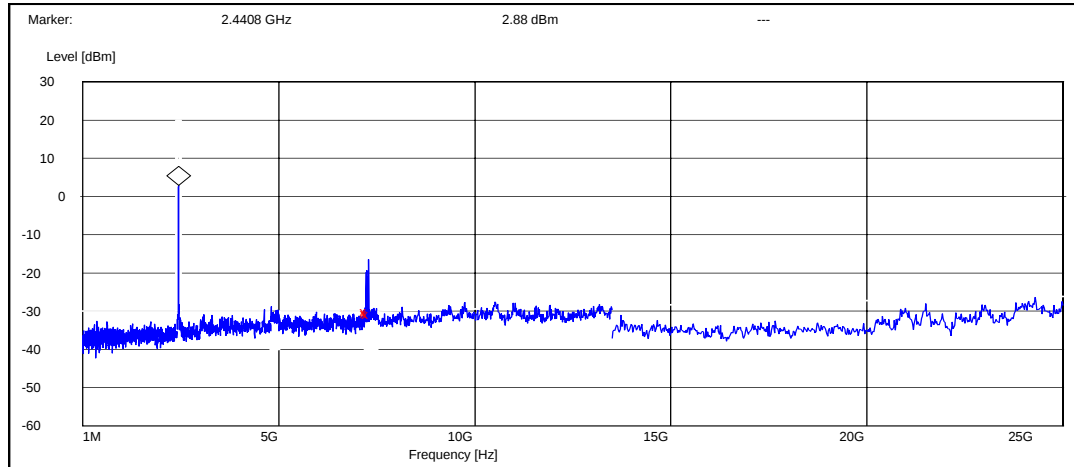
14.2.8 OFDM mode, QPSK modulation, 18 Mbps data rate

Channel 1 / 2412 MHz



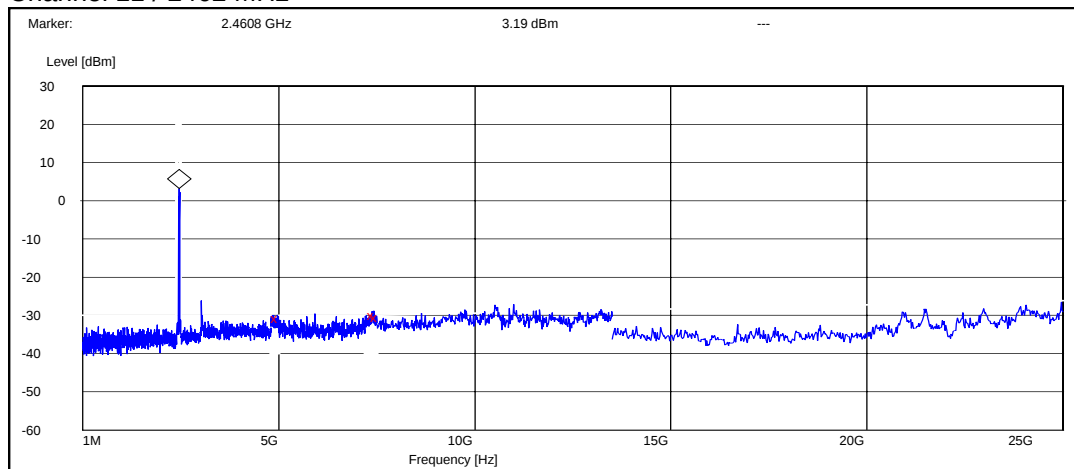
Frequency [MHz]	P [dBc]	Result
4905.200000	-32.837382	Passed
5000.000000	-32.837382	Passed
7402.800000	-32.237382	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
7237.200000	-32.983898	Passed
7242.600000	-33.483898	Passed
7291.800000	-33.783898	Passed

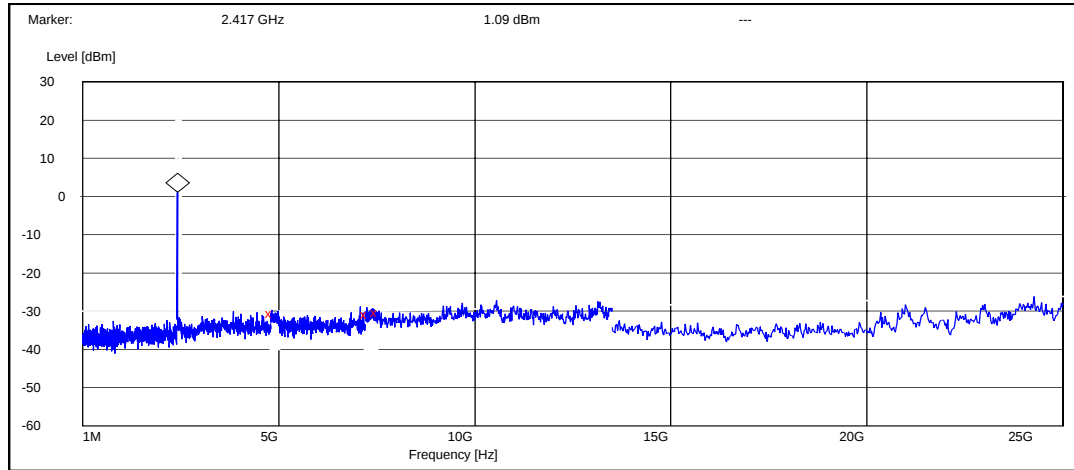
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4962.400000	-34.091269	Passed
7427.400000	-33.191269	Passed
7500.000000	-33.791269	Passed

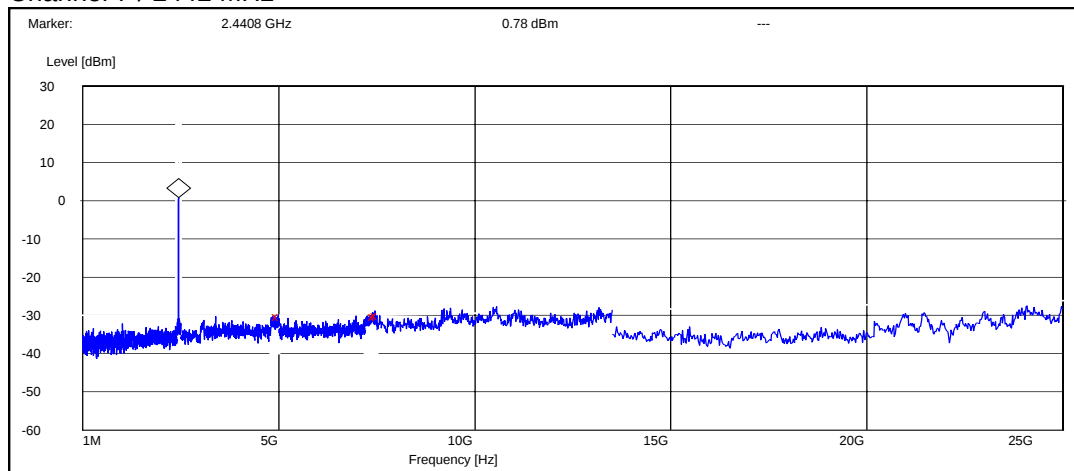
14.2.9 OFDM mode, 16QAM modulation, 24 Mbps data rate

Channel 1 / 2412 MHz



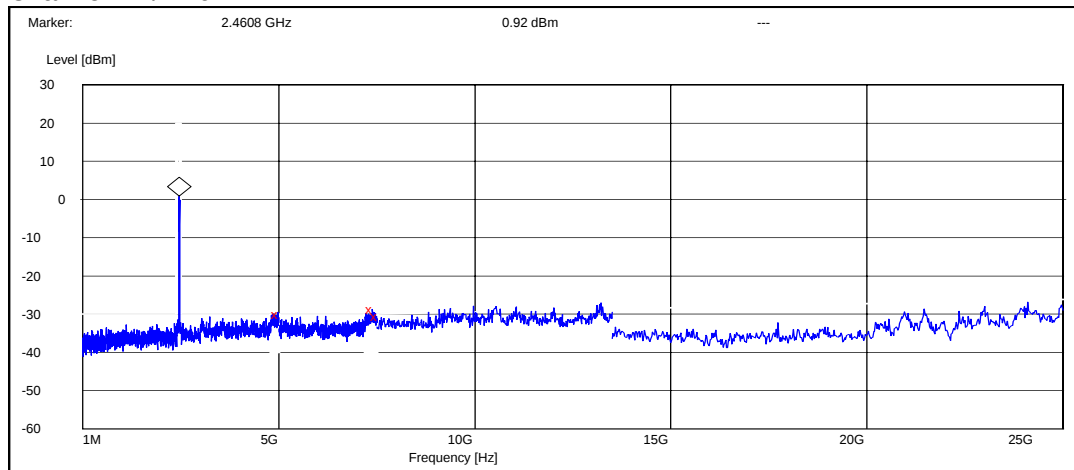
Frequency [MHz]	P [dBc]	Result
4830.800000	-31.686885	Passed
7245.000000	-31.986885	Passed
7500.000000	-31.386885	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4988.400000	-31.080062	Passed
7456.800000	-30.980062	Passed
7500.000000	-30.680062	Passed

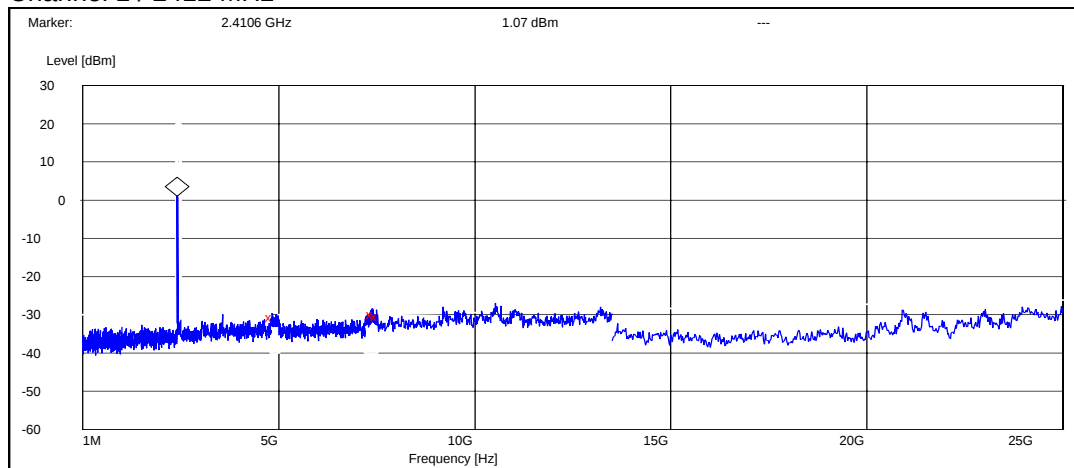
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4978.400000	-30.816458	Passed
7386.600000	-29.616458	Passed
7500.000000	-31.516458	Passed

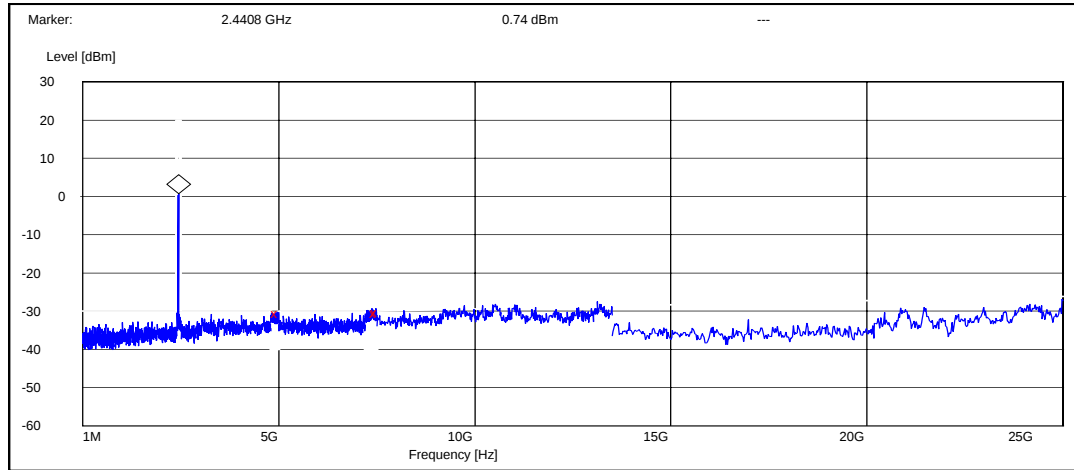
14.2.10 OFDM mode, 16QAM modulation, 36 Mbps data rate

Channel 1 / 2412 MHz



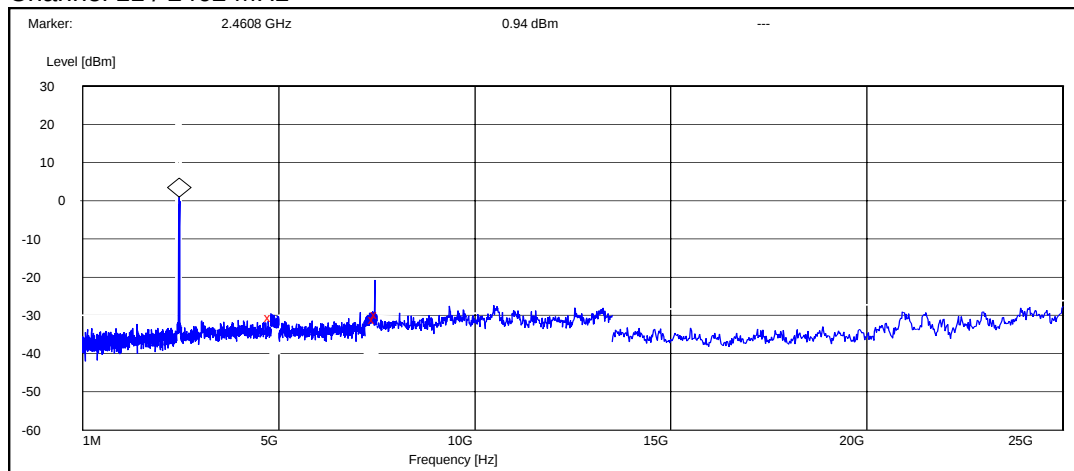
Frequency [MHz]	P [dBc]	Result
4828.400000	-31.668020	Passed
7395.000000	-30.968020	Passed
7500.000000	-31.568020	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4960.800000	-31.243891	Passed
7477.200000	-31.243891	Passed
7500.000000	-31.143891	Passed

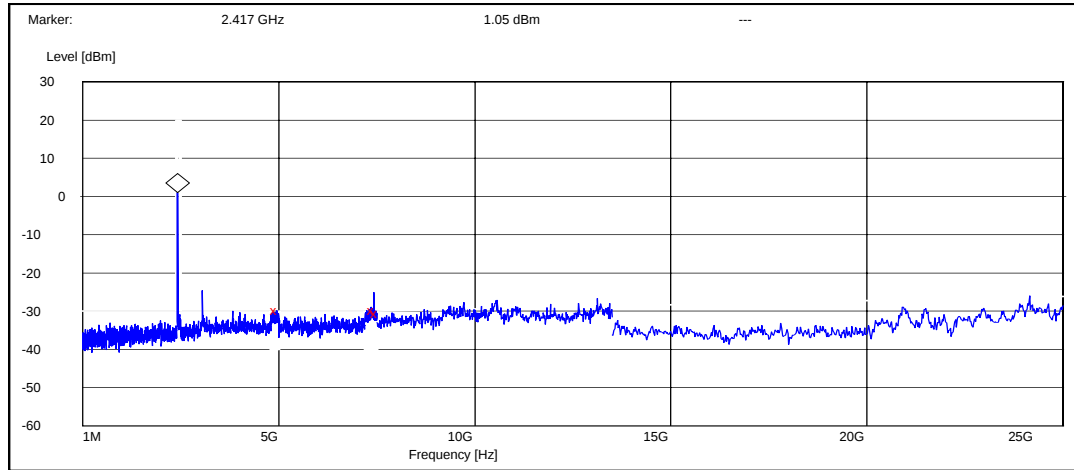
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4802.800000	-31.338087	Passed
7455.000000	-31.938087	Passed
7500.000000	-30.638087	Passed

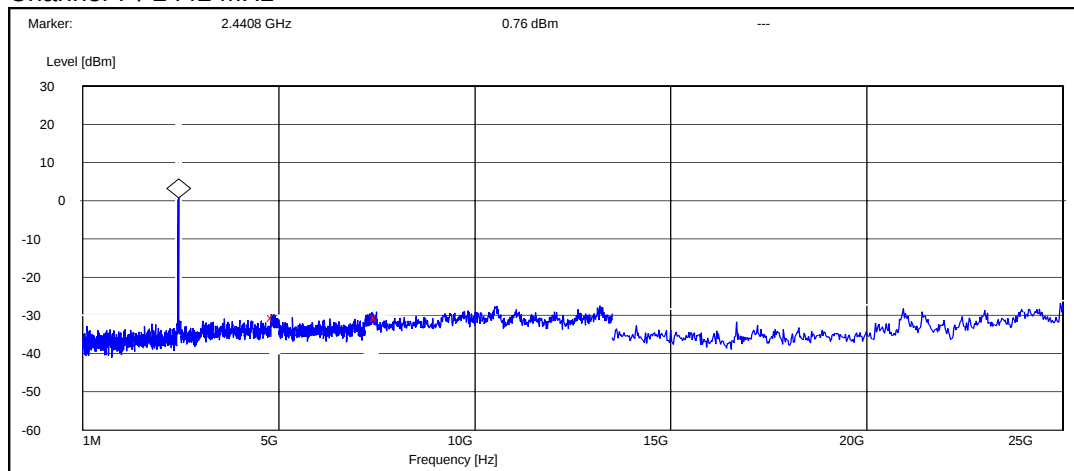
14.2.11 OFDM mode, 64QAM modulation, 48 Mbps data rate

Channel 1 / 2412 MHz



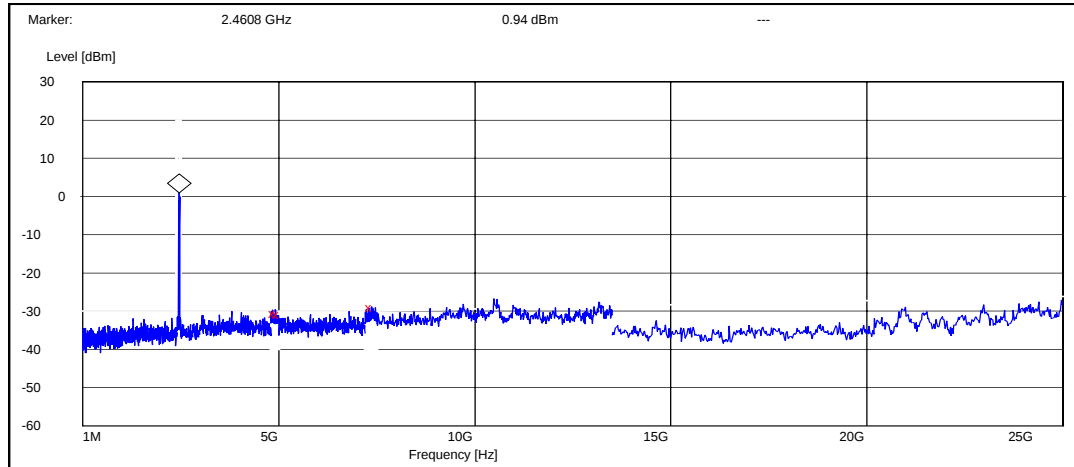
Frequency [MHz]	P [dBc]	Result
4954.400000	-30.746793	Passed
7422.000000	-30.846793	Passed
7500.000000	-31.646793	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4863.600000	-31.357799	Passed
7489.200000	-31.257799	Passed
7500.000000	-31.257799	Passed

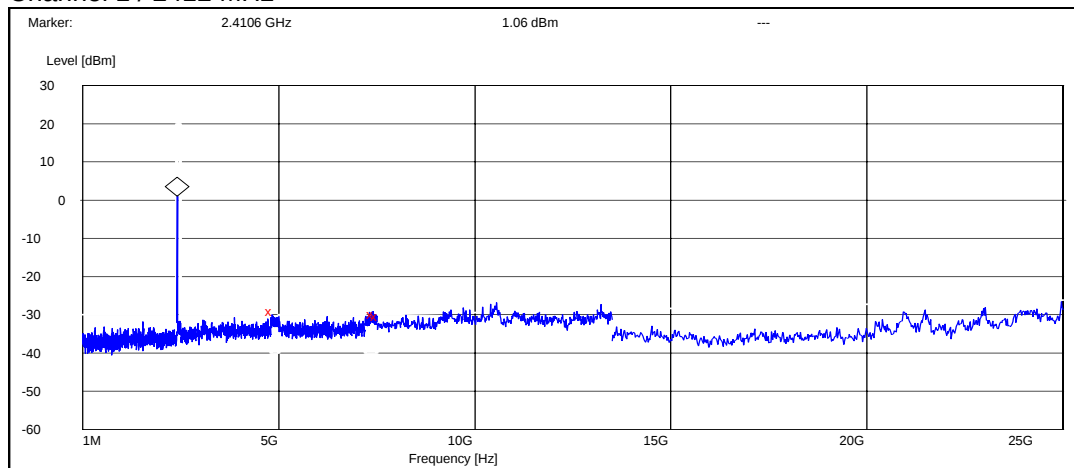
Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4904.000000	-31.441490	Passed
5000.000000	-31.841490	Passed
7374.000000	-29.941490	Passed

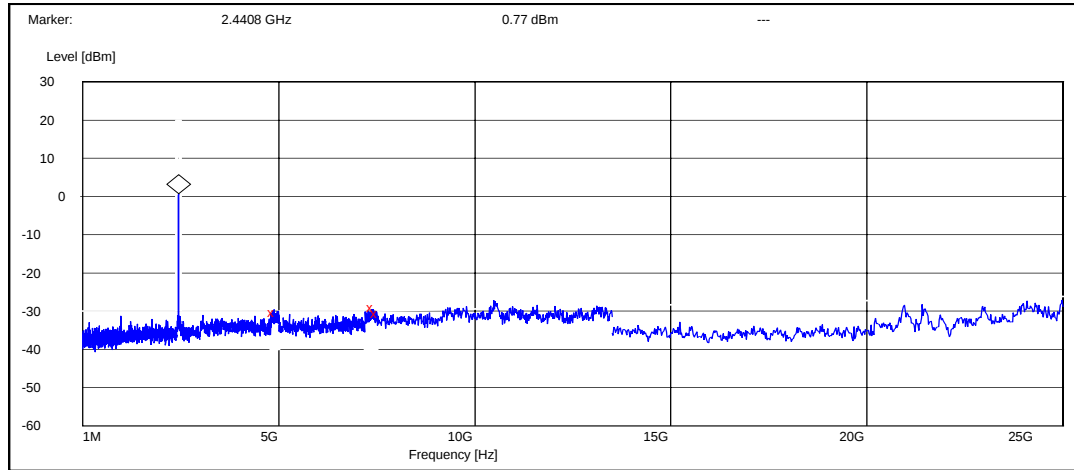
14.2.12 OFDM mode, 64QAM modulation, 54 Mbps data rate

Channel 1 / 2412 MHz



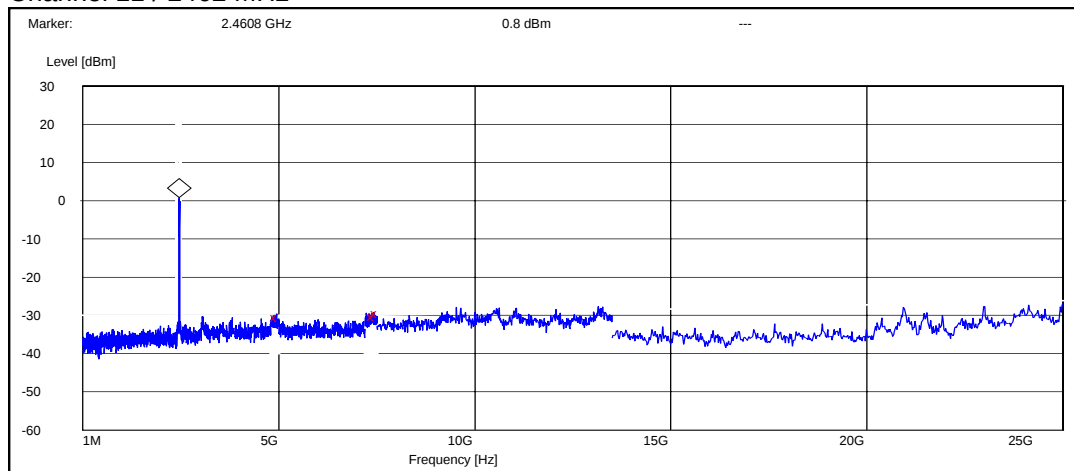
Frequency [MHz]	P [dBc]	Result
4830.800000	-30.063076	Passed
7414.200000	-30.963076	Passed
7500.000000	-31.463076	Passed

Channel 7 / 2442 MHz



Frequency [MHz]	P [dBc]	Result
4886.400000	-31.166184	Passed
7405.200000	-29.766184	Passed
7500.000000	-31.366184	Passed

Channel 11 / 2462 MHz



Frequency [MHz]	P [dBc]	Result
4950.000000	-31.400255	Passed
7420.800000	-31.000255	Passed
7500.000000	-30.200255	Passed

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

EUT with DUT number	RX-34 Dut#27842
Accessories with DUT numbers	BP-5L Dut#27836, HS-48 Dut#27846, AC-4E Dut#27849, MU-17 Dut#27831
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 52 / 1020
Date of measurements	28-09-2006
Measured by	Christian Andersen

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

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

15.2. WLAN Test results

15.2.1 DSSS mode, BPSK modulation, 11 Mbps data rate

Channel 1 / 2412 MHz

Peak (RBW: 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	45.90	197.24	48.10	-2.20	HORIZONTAL	Passed
7236.000000	48.60	269.15	44.60	4.00	VERTICAL	Passed

Average (RBW: 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	42.60	134.90	44.80	-2.20	HORIZONTAL	Passed
7236.000000	36.40	66.07	32.40	4.00	VERTICAL	Passed

Channel 7 / 2442 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
37.695391	21.90	12.45	39.70	-17.80	VERTICAL	Passed
137.214028	22.40	13.18	48.90	-26.50	VERTICAL	Passed
264.028457	38.10	80.35	62.10	-24.00	HORIZONTAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4883.767535	43.50	149.62	45.40	-1.90	HORIZONTAL	Passed
4884.269539	43.40	147.91	45.30	-1.90	HORIZONTAL	Passed
7326.149299	45.80	194.98	41.60	4.20	VERTICAL	Passed
7330.157315	45.00	177.83	40.70	4.30	VERTICAL	Passed
17867.237475	58.20	812.83	32.90	25.30	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4883.769539	38.80	87.10	40.70	-1.90	HORIZONTAL	Passed
4884.267535	38.80	87.10	40.70	-1.90	HORIZONTAL	Passed
7325.649299	33.80	48.98	29.60	4.20	VERTICAL	Passed
7325.657315	34.40	52.48	30.20	4.20	VERTICAL	Passed
17871.737475	45.00	177.83	19.60	25.40	VERTICAL	Passed

Channel 11 / 2462 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4924.000000	44.20	162.18	45.60	-1.40	HORIZONTAL	Passed
7386.000000	45.20	181.97	40.20	5.00	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4924.000000	40.50	105.93	41.90	-1.40	HORIZONTAL	Passed
7386.000000	31.00	35.48	26.00	5.00	VERTICAL	Passed

15.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel 1 / 2412 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4824.000000	45.80	194.98	48.00	-2.20	HORIZONTAL	Passed
7236.000000	46.10	201.84	42.10	4.00	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4824.000000	33.60	47.86	35.80	-2.20	HORIZONTAL	Passed
7236.000000	34.00	50.12	30.00	4.00	VERTICAL	Passed

Channel 7 / 2442 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
37.695391	21.00	11.22	38.80	-17.80	VERTICAL	Passed
136.814028	23.90	15.67	50.40	-26.50	VERTICAL	Passed
264.028457	37.70	76.74	61.70	-24.00	HORIZONTAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2492.000000	55.50	595.66	50.40	5.10	VERTICAL	Passed
2495.048096	53.20	457.09	50.70	2.50	HORIZONTAL	Passed
4883.767535	43.20	144.54	45.10	-1.90	HORIZONTAL	Passed
4884.269539	43.10	142.89	45.00	-1.90	HORIZONTAL	Passed
7322.145291	45.40	186.21	41.20	4.20	VERTICAL	Passed
7324.647295	45.00	177.83	40.80	4.20	VERTICAL	Passed
17500.995992	52.60	426.58	32.90	19.70	VERTICAL	Passed
17870.749499	57.70	767.36	32.30	25.40	HORIZONTAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2493.000000	41.90	124.45	37.70	4.20	VERTICAL	Passed
2498.048096	39.80	97.72	37.40	2.40	HORIZONTAL	Passed
4883.767535	31.10	35.89	33.00	-1.90	HORIZONTAL	Passed
4884.269539	30.90	35.08	32.80	-1.90	HORIZONTAL	Passed
7325.647295	33.40	46.77	29.20	4.20	VERTICAL	Passed
7326.145291	33.20	45.71	29.00	4.20	VERTICAL	Passed
17500.995992	38.40	83.18	18.70	19.70	VERTICAL	Passed
17873.749499	45.00	177.83	19.60	25.40	HORIZONTAL	Passed

Channel 11 / 2462 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4924.000000	39.70	96.61	41.10	-1.40	HORIZONTAL	Passed
7386.000000	45.60	190.55	40.60	5.00	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4924.000000	27.00	22.39	28.40	-1.40	HORIZONTAL	Passed
7386.000000	30.60	33.88	25.60	5.00	VERTICAL	Passed

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

EUT with DUT number	RX-34 Dut # 27842
Accessories with DUT numbers	BP-5L Dut # 27836 + AC-4E Dut # 27849 + HS-48 Dut # 27846 + MU-17 Dut # 27831
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	The Tested modulation types and Data Speed was selected as worst case from the Peak Output Power measurement.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22.8 / 51.5 1018
Date of measurements	26-09-2006
Measured by	Allan F. Henriksen

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.

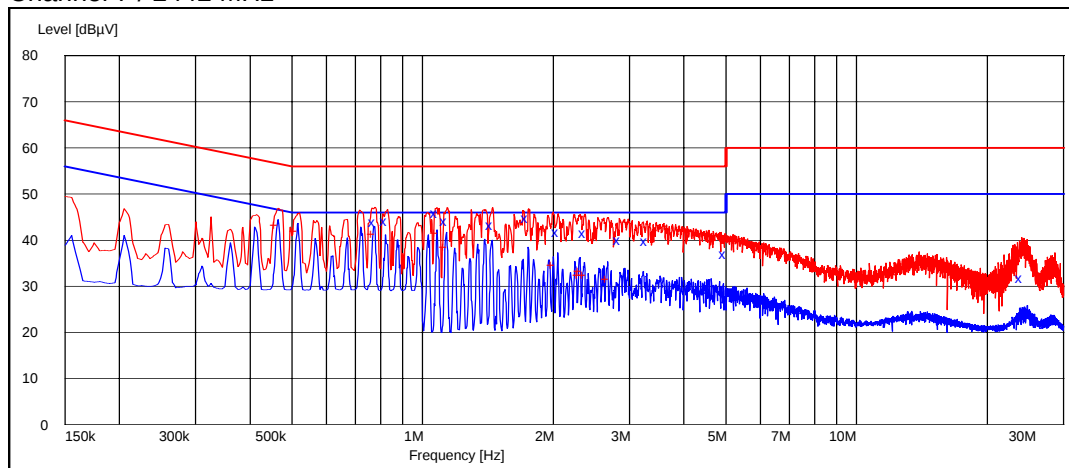
CISPR 22 Class B limits

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

16.2. WLAN Test results

16.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel 7 / 2442 MHz



Quasi peak (RBW: 9 kHz)

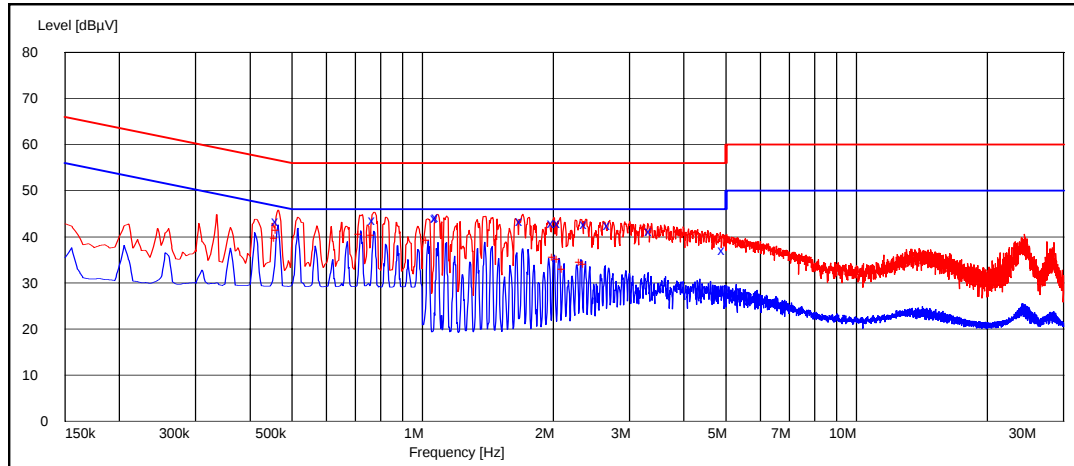
Frequency [MHz]	U [dBμV]	Line	Result
0.775000	44.00	N	Passed
0.825000	44.20	N	Passed
1.080000	45.80	N	Passed
1.135000	44.20	N	Passed
1.445000	43.40	N	Passed
1.745000	44.80	N	Passed
2.055000	41.80	N	Passed
2.365000	41.60	N	Passed
2.845000	40.00	N	Passed
3.285000	39.90	N	Passed
4.985000	37.00	N	Passed
24.055000	31.80	N	Passed

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.460000	43.30	N	Passed
0.510000	41.90	N	Passed
0.770000	41.30	N	Passed
1.075000	41.50	N	Passed
1.130000	38.40	N	Passed
2.000000	34.70	N	Passed
2.295000	32.40	N	Passed
2.305000	33.40	N	Passed
2.360000	32.50	N	Passed
2.670000	31.60	N	Passed

16.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel 7 / 2442 MHz



Quasi peak (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.465000	43.50	N	Passed
0.775000	43.70	N	Passed
1.080000	44.10	N	Passed
1.085000	44.20	N	Passed
1.695000	43.50	N	Passed
2.005000	42.90	N	Passed
2.070000	43.00	N	Passed
2.385000	42.80	N	Passed
2.695000	42.50	N	Passed
3.370000	41.20	N	Passed
4.965000	37.10	N	Passed

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.460000	39.70	N	Passed
0.465000	41.50	N	Passed
0.720000	40.50	N	Passed
0.770000	40.40	N	Passed
1.030000	39.20	N	Passed
2.010000	35.70	N	Passed
2.065000	35.10	N	Passed
2.120000	32.90	N	Passed
2.320000	34.60	N	Passed
2.375000	34.10	N	Passed

17. 6 dB bandwidth (FCC §15.247(a)(2), RSS-210 A8.2 (1))

EUT with DUT number	RX-34 dut 27841, BP-5L dut 27838, MU-17 dut 27832
Accessories with DUT numbers	HS-48 dut 27835, AC-4E dut27840
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	24.1 / 46.0 1020.4
Date of measurements	20-09-2006
Measured by	Jan Engelbrechtsen

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

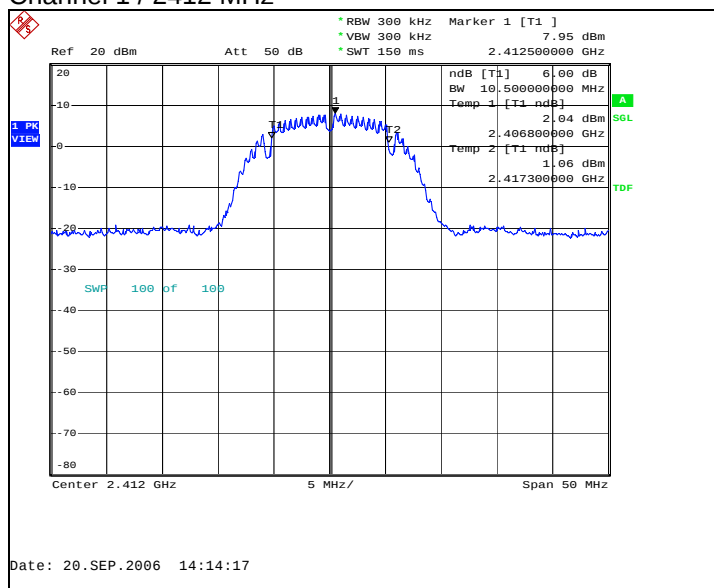
Limit [kHz]
≥ 500

17.2. WLAN test results

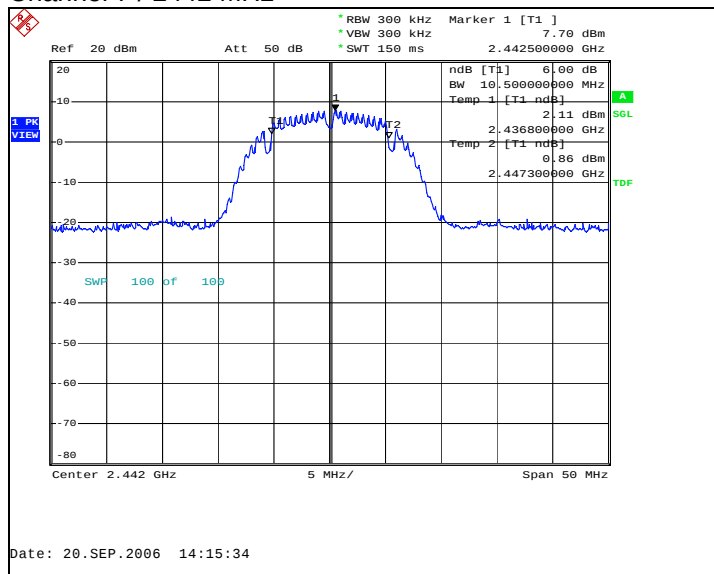
17.2.1 DSSS mode, BPSK modulation, 1 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1	10500.000	Passed
7	10500.000	Passed
11	10400.000	Passed

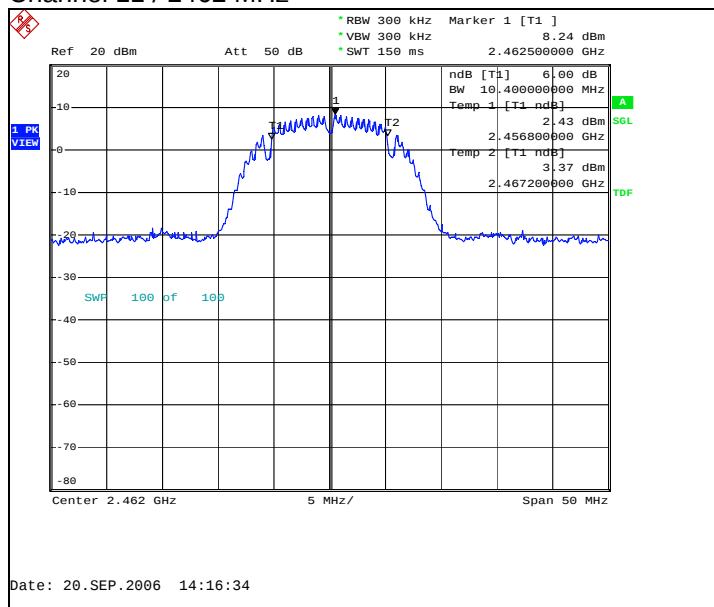
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



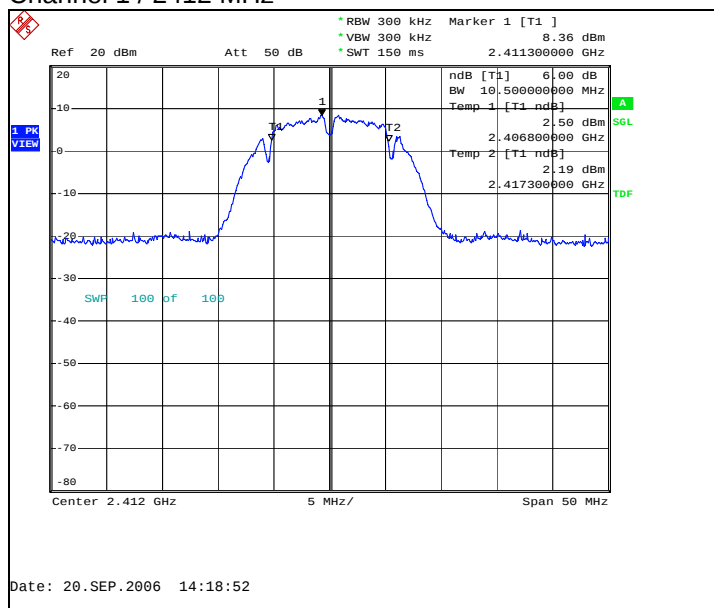
Channel 11 / 2462 MHz



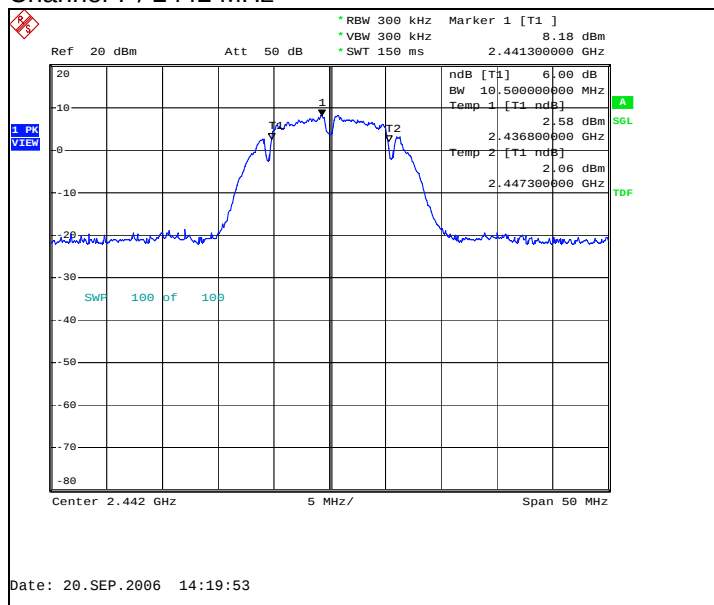
17.2.2 DSSS mode, QPSK modulation, 2 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1	10500.000	Passed
7	10500.000	Passed
11	10500.000	Passed

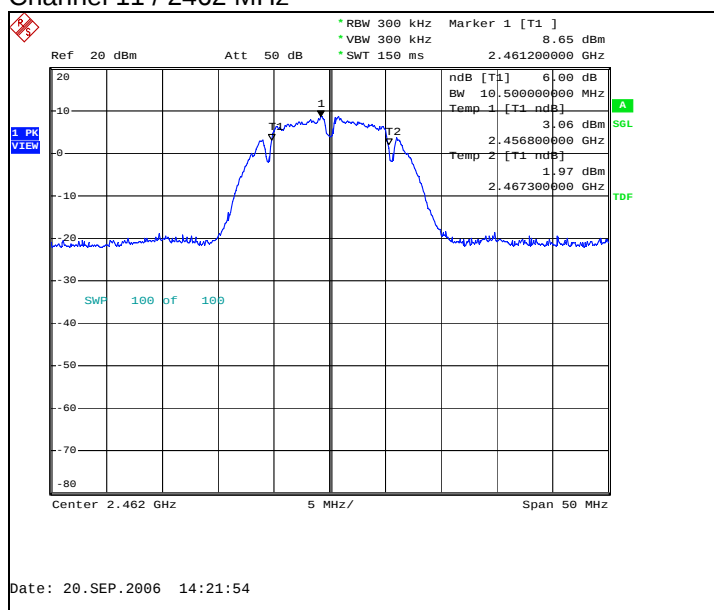
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



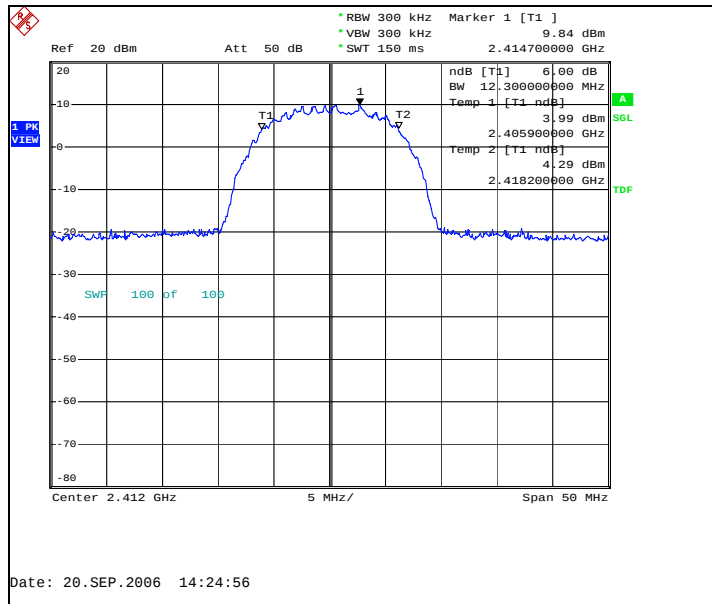
Channel 11 / 2462 MHz



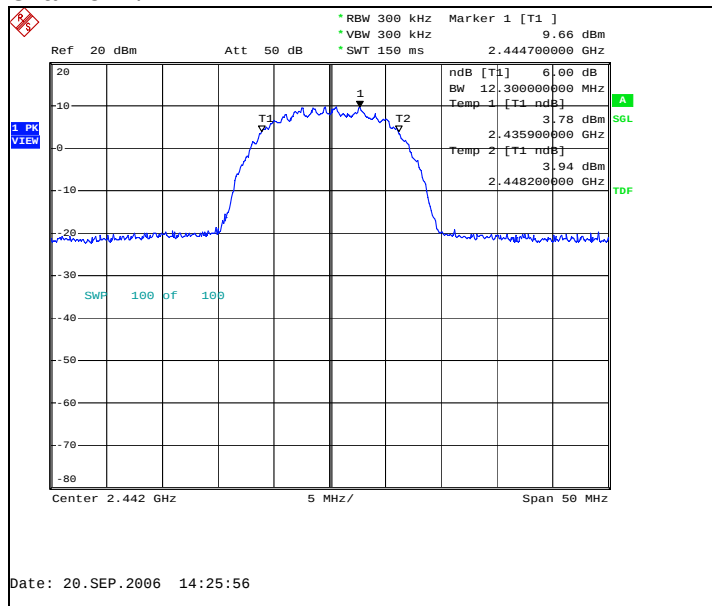
17.2.3 DSSS mode, QPSK modulation, 5.5 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1	12300.000	Passed
7	12300.000	Passed
11	12400.000	Passed

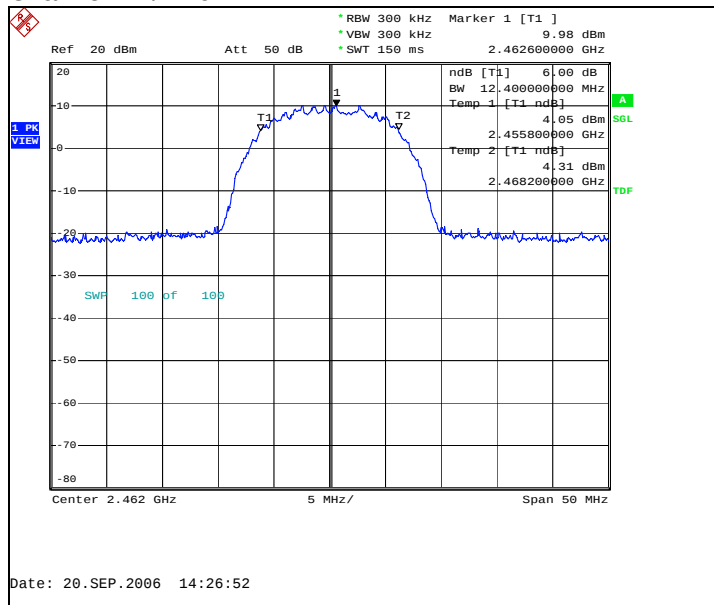
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



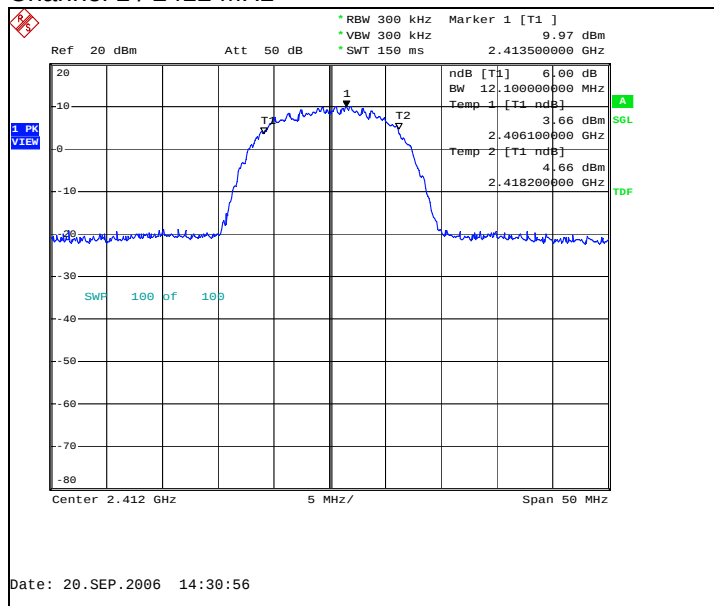
Channel 11 / 2462 MHz



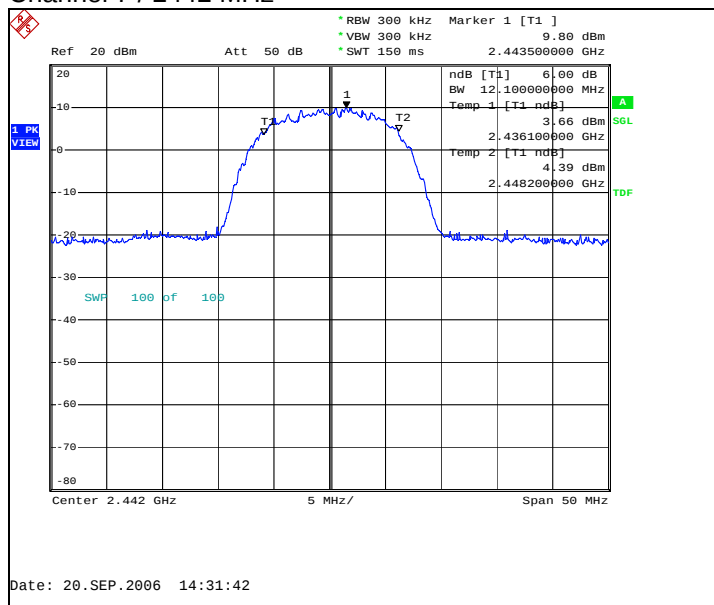
17.2.4 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1	12100.000	Passed
7	12100.000	Passed
11	12100.000	Passed

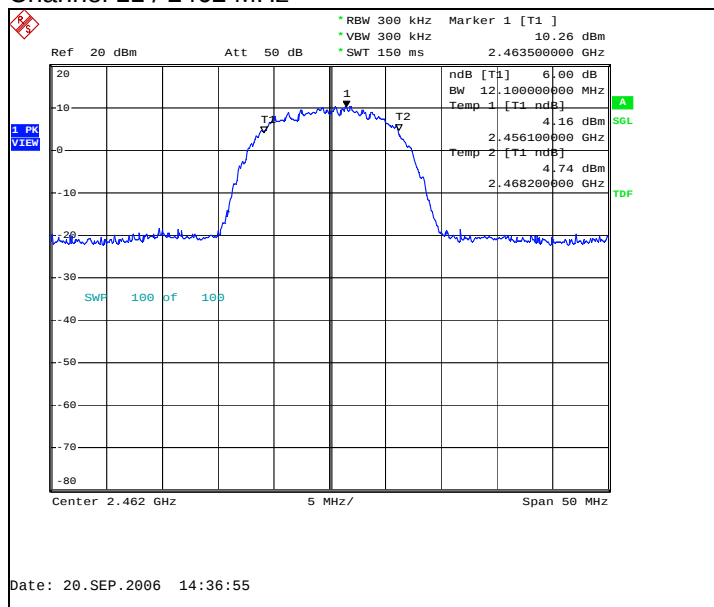
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



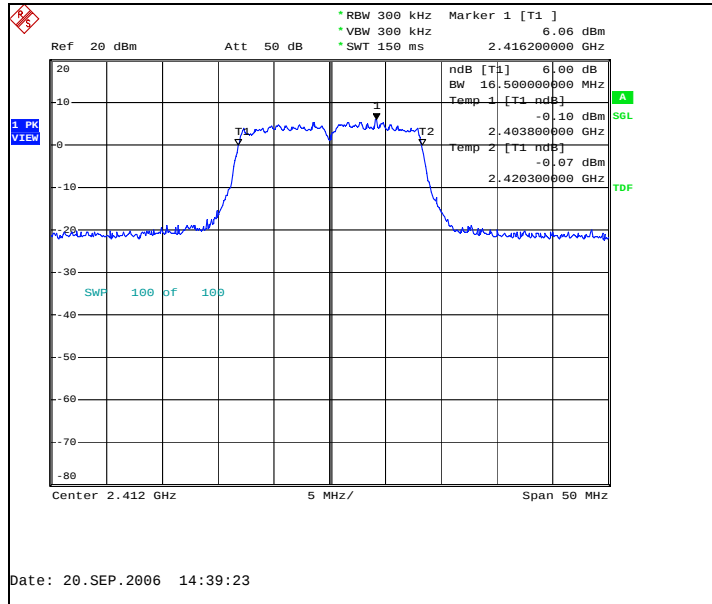
Channel 11 / 2462 MHz



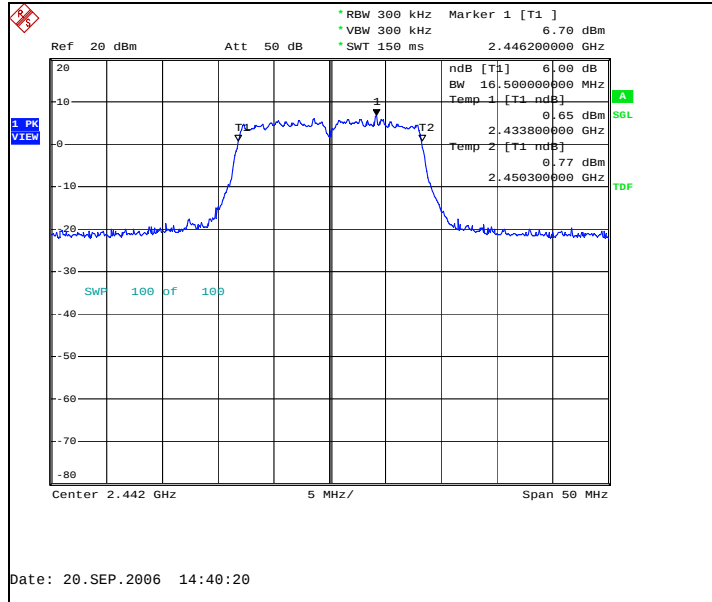
17.2.5 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1	16500.000	Passed
7	16500.000	Passed
11	16500.000	Passed

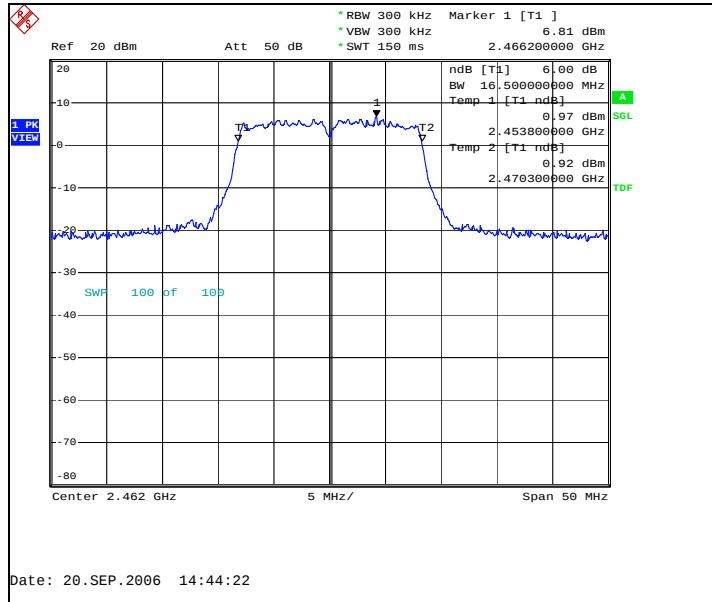
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



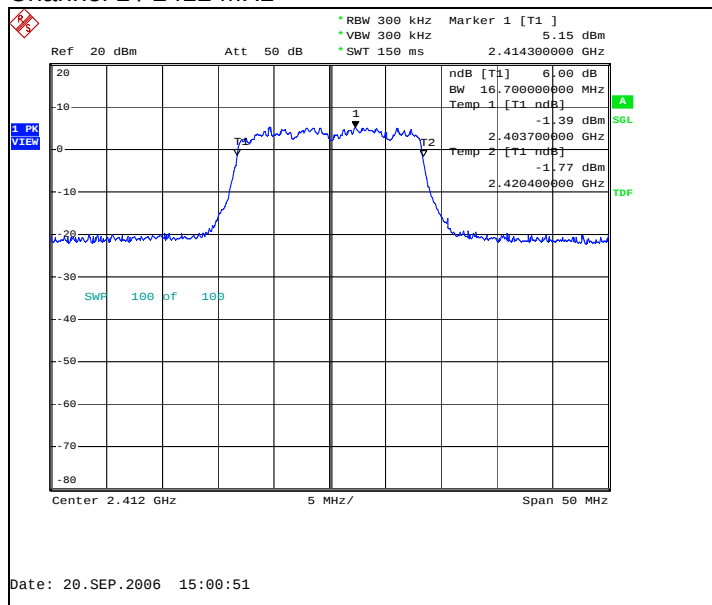
Channel 11 / 2462 MHz



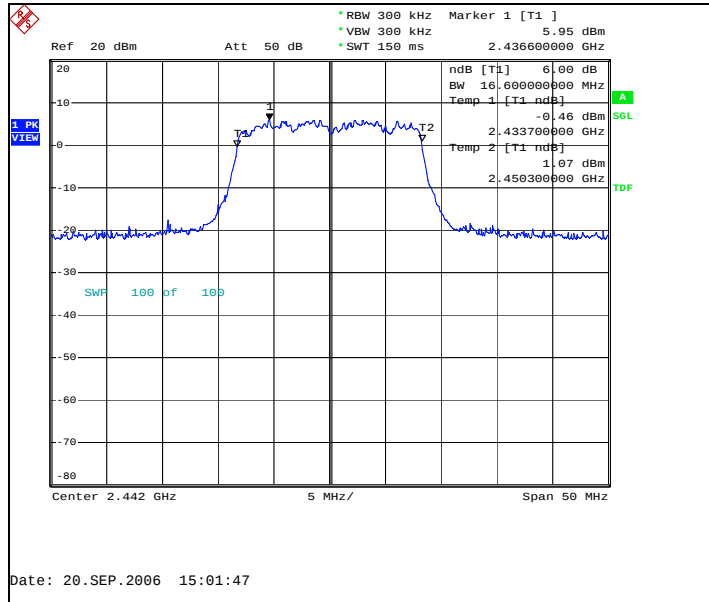
17.2.6 OFDM mode, BPSK modulation, 9 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1	16700.000	Passed
7	16600.000	Passed
11	16600.000	Passed

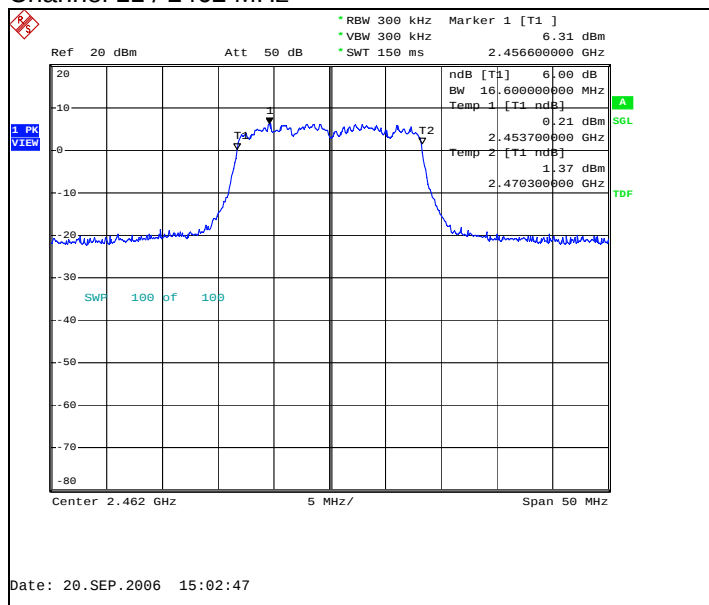
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



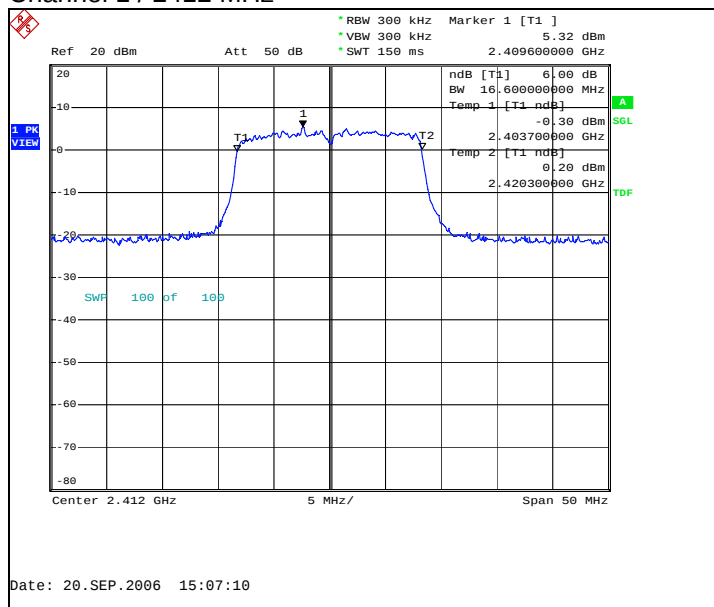
Channel 11 / 2462 MHz



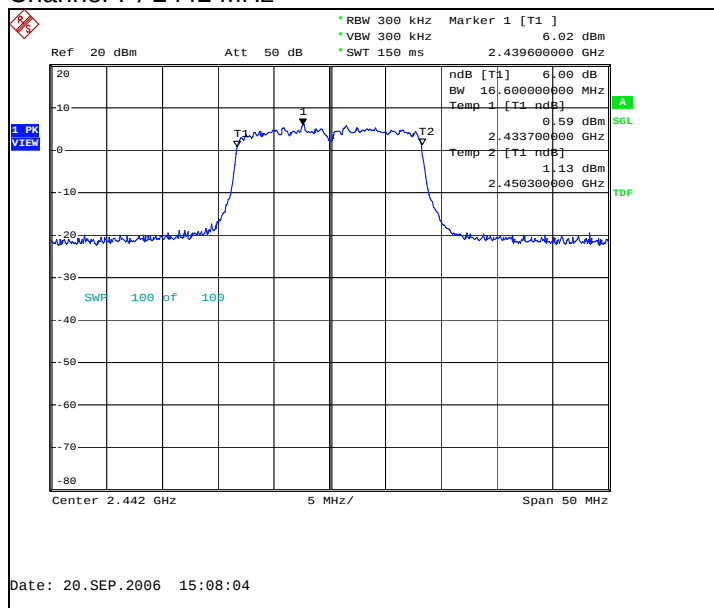
17.2.7 OFDM mode, QPSK modulation, 12 Mbps data rate

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

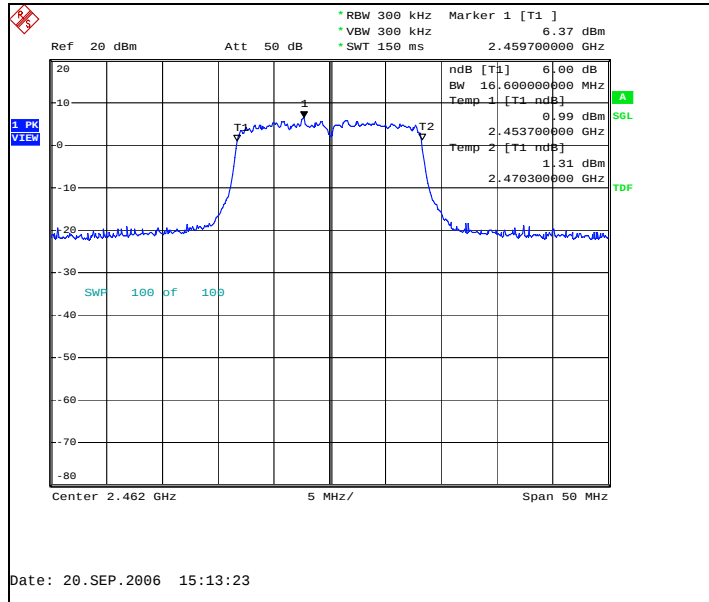
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



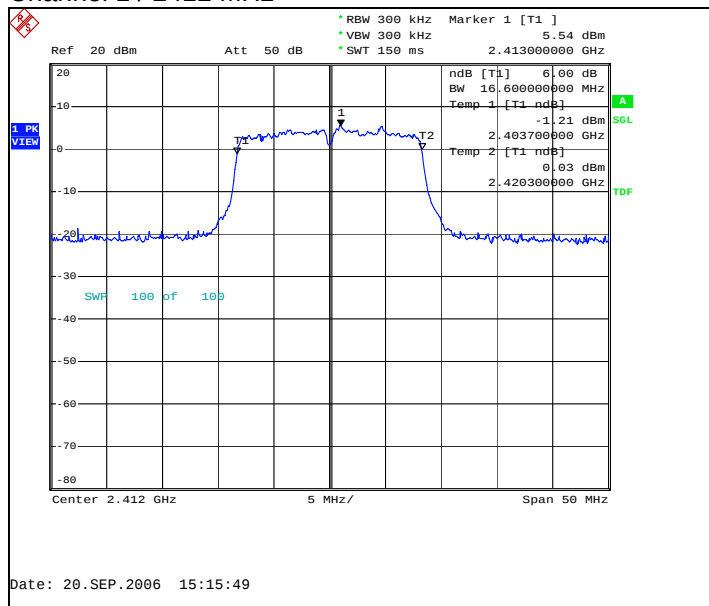
Channel 11 / 2462 MHz



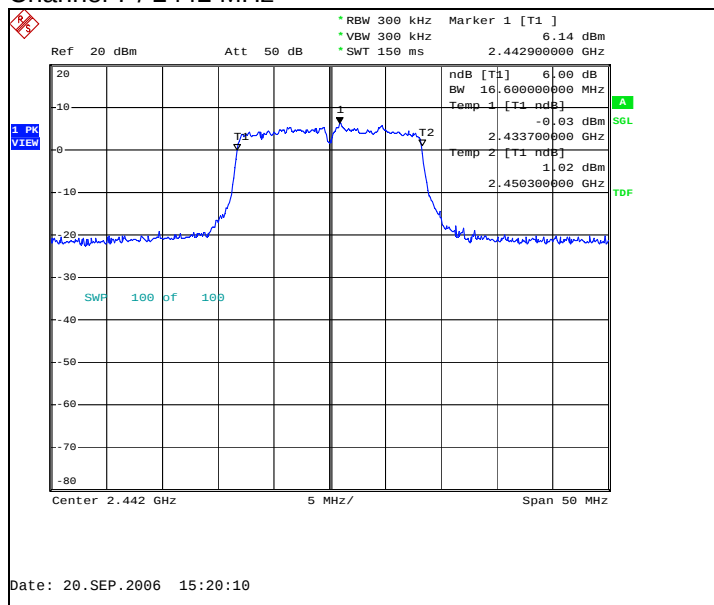
17.2.8 OFDM mode, QPSK modulation, 18 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1	16600.000	Passed
7	16600.000	Passed
11	16600.000	Passed

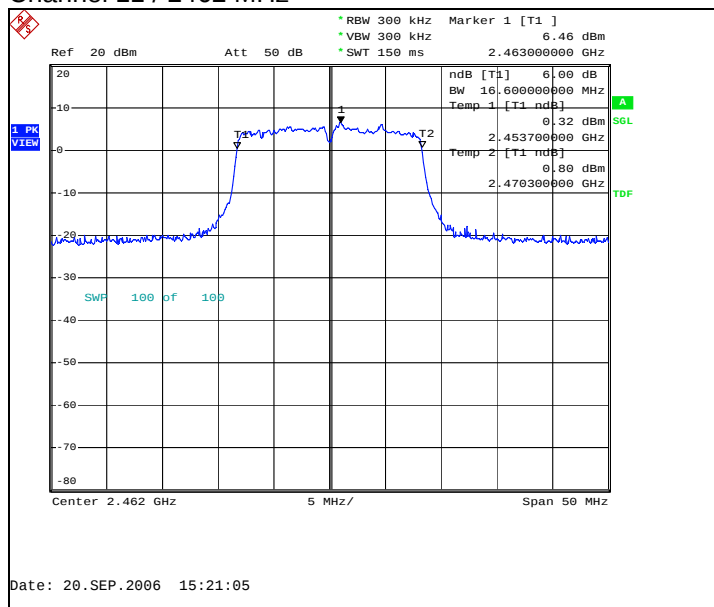
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



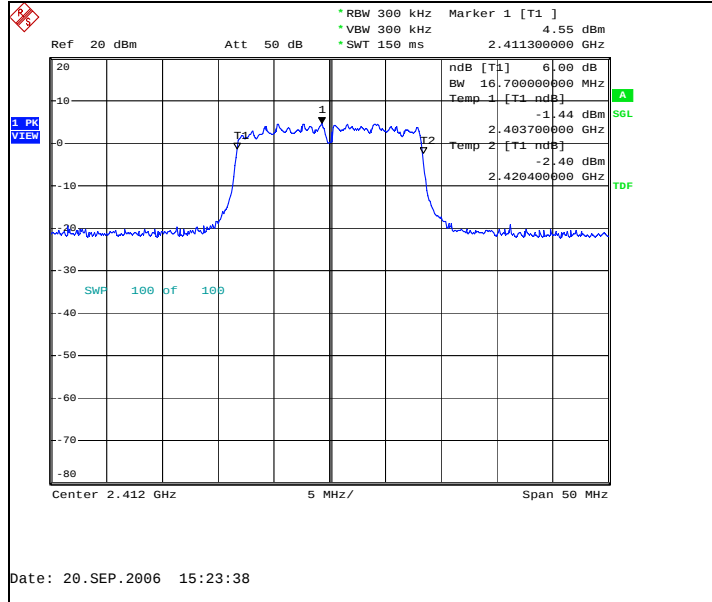
Channel 11 / 2462 MHz



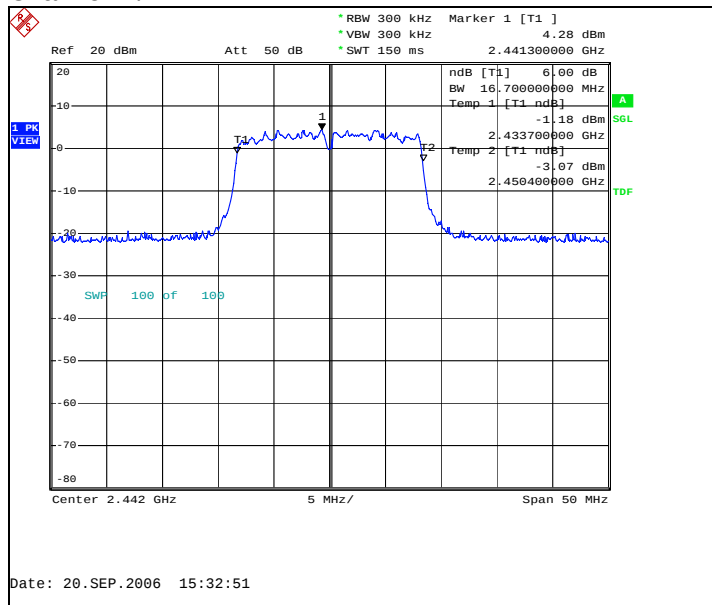
17.2.9 OFDM mode, 16QAM modulation, 24 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1	16700.000	Passed
7	16700.000	Passed
11	16700.000	Passed

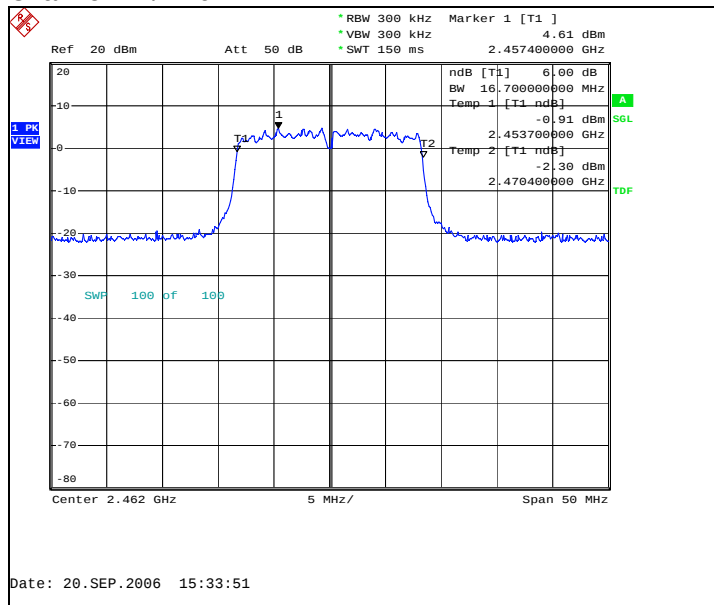
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



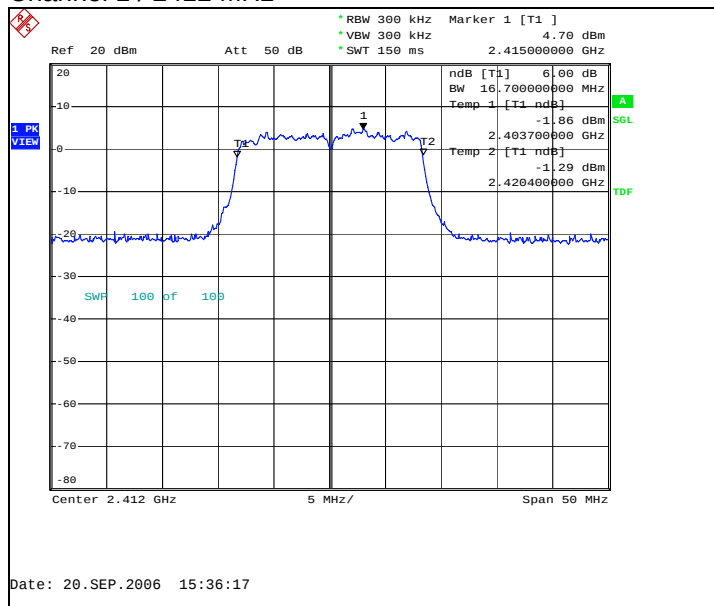
Channel 11 / 2462 MHz



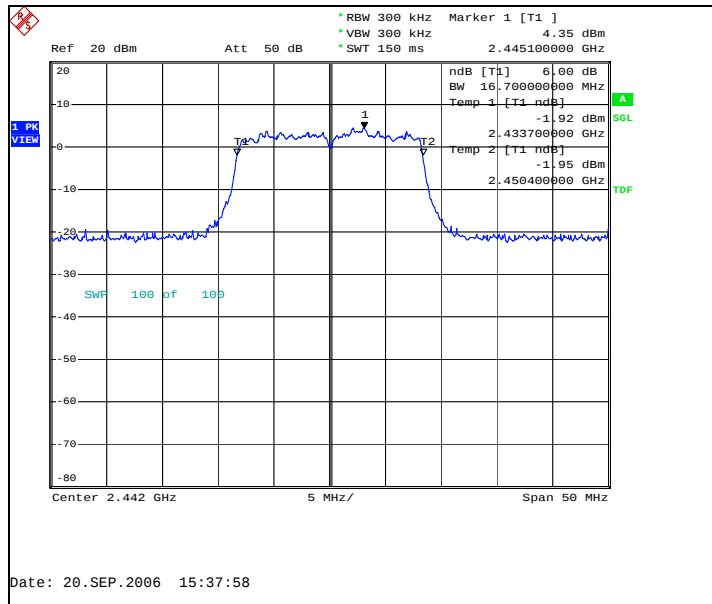
17.2.10 OFDM mode, 16QAM modulation, 36 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1	16700.000	Passed
7	16700.000	Passed
11	16700.000	Passed

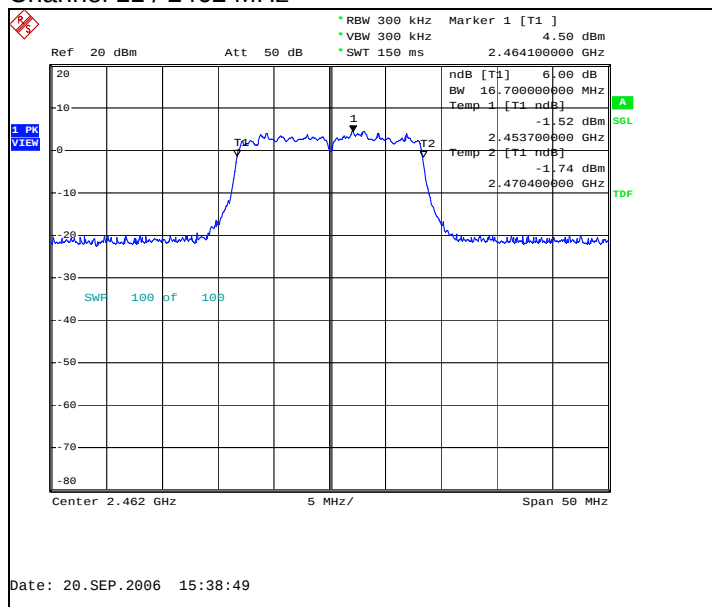
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



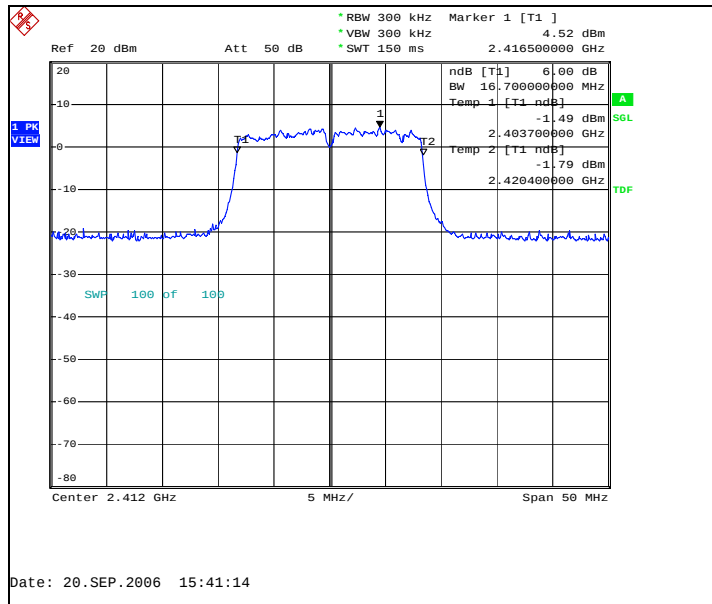
Channel 11 / 2462 MHz



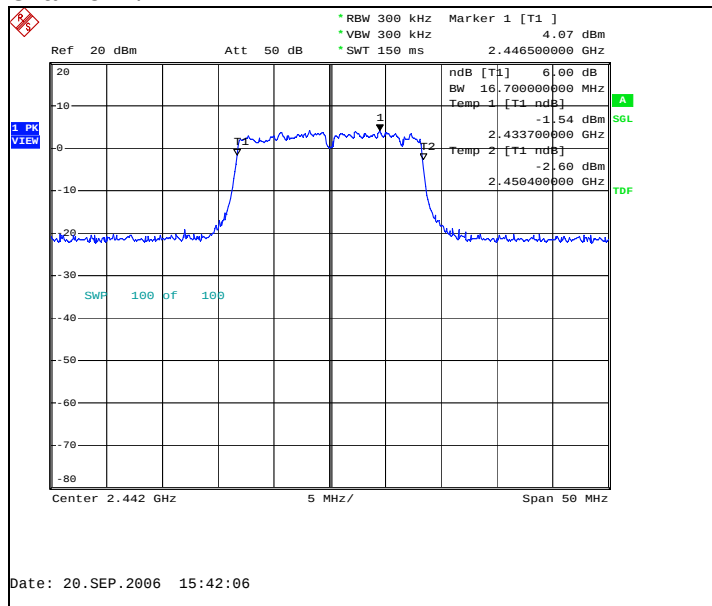
17.2.11 OFDM mode, 64QAM modulation, 48 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1	16700.000	Passed
7	16700.000	Passed
11	16700.000	Passed

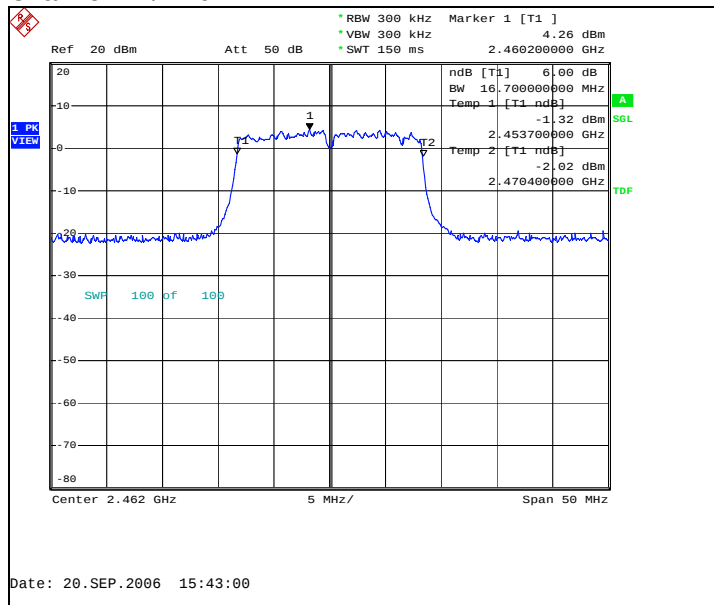
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



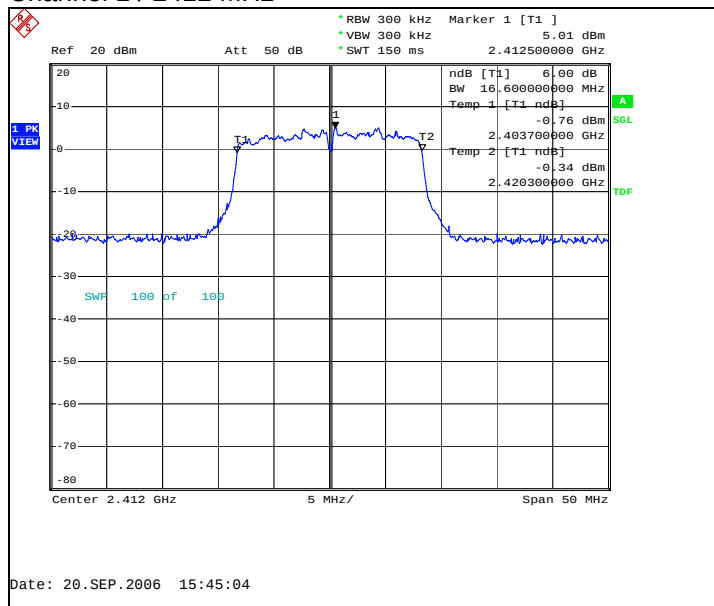
Channel 11 / 2462 MHz



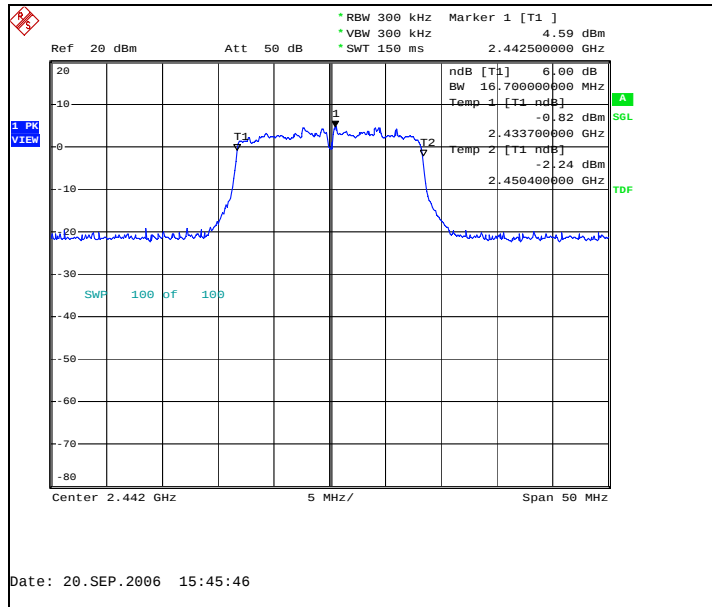
17.2.12 OFDM mode, 64QAM modulation, 54 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1	16600.000	Passed
7	16700.000	Passed
11	16600.000	Passed

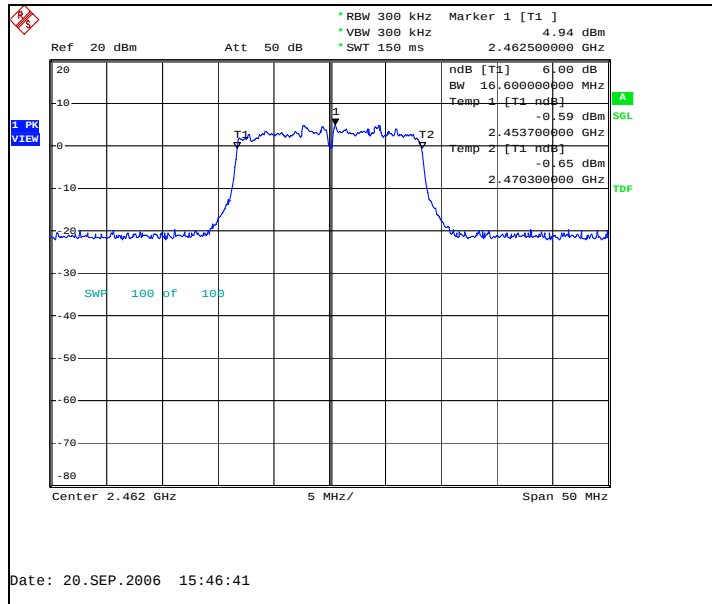
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



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

EUT with DUT number	RX-34 dut 27841, BP-5L dut 27838, MU-17 dut 27832
Accessories with DUT numbers	HS-48 dut 27835, AC-4E dut27840
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	24.1 / 46.0 1020.4
Date of measurements	20-09-2006
Measured by	Jan Engelbrechtsen

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

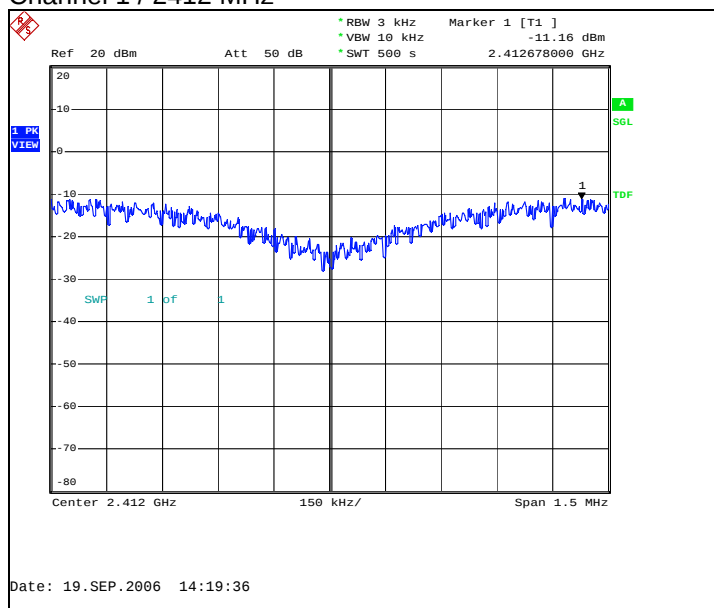
Limit [dBm] @ 3 kHz
≤ 8

18.2. WLAN test results

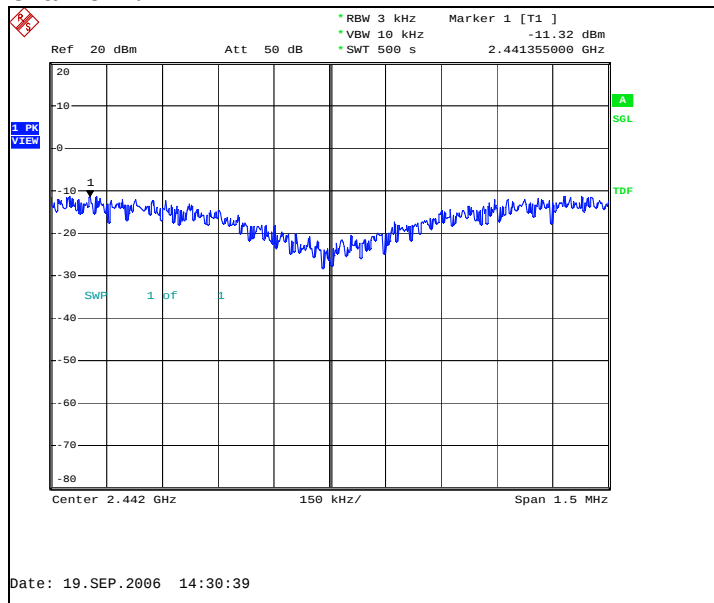
18.2.1 DSSS mode, BPSK modulation, 1 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-11.16	Passed
7 / 2442	-11.32	Passed
11 / 2462	-10.81	Passed

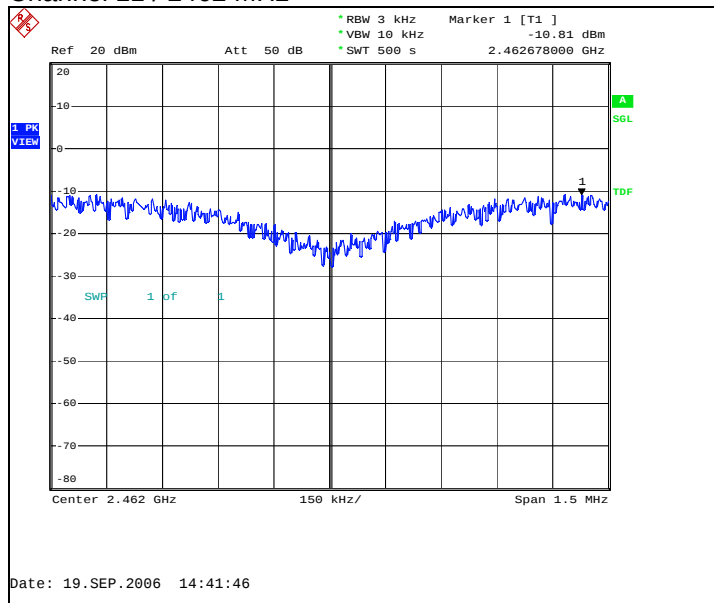
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



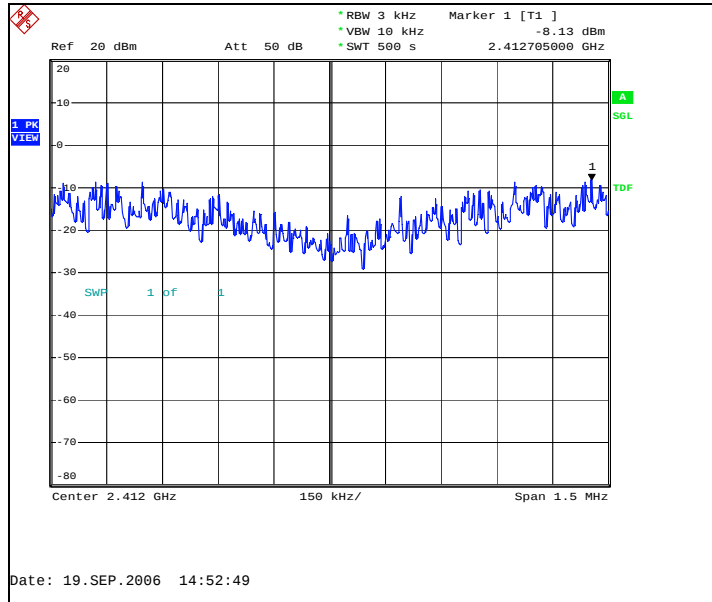
Channel 11 / 2462 MHz



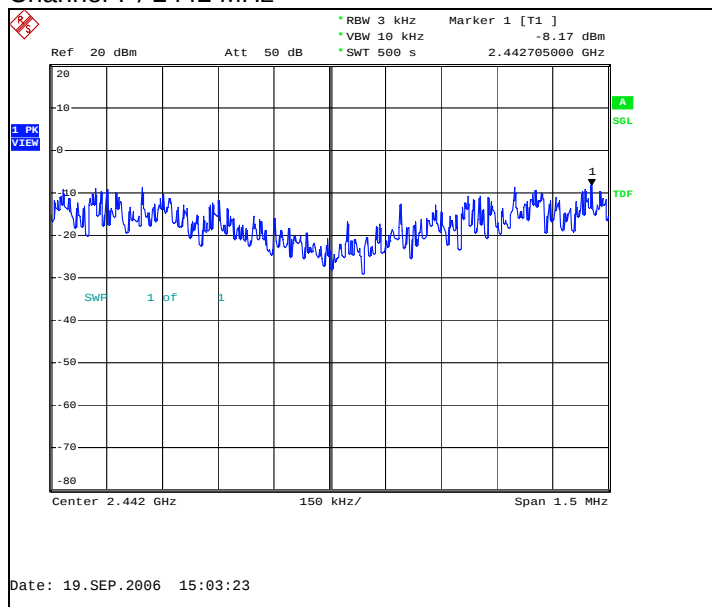
18.2.2 DSSS mode, QPSK modulation, 2 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-8.13	Passed
7 / 2442	-8.17	Passed
11 / 2462	-7.57	Passed

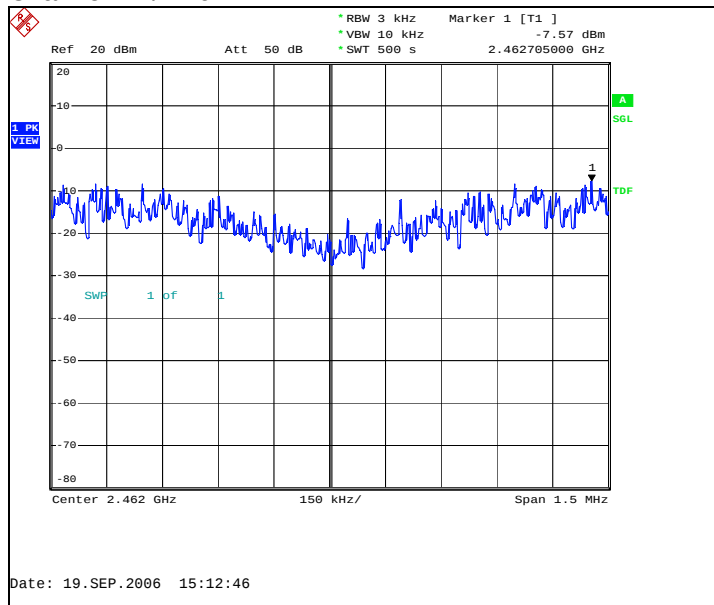
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



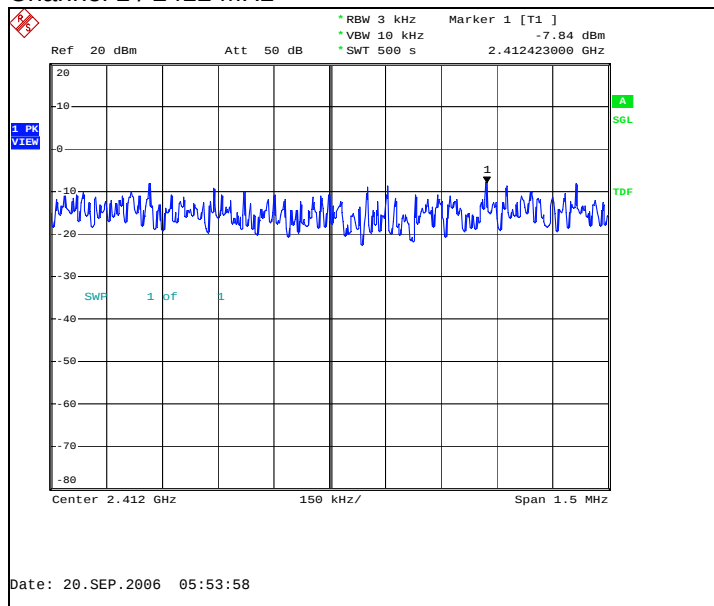
Channel 11 / 2462 MHz



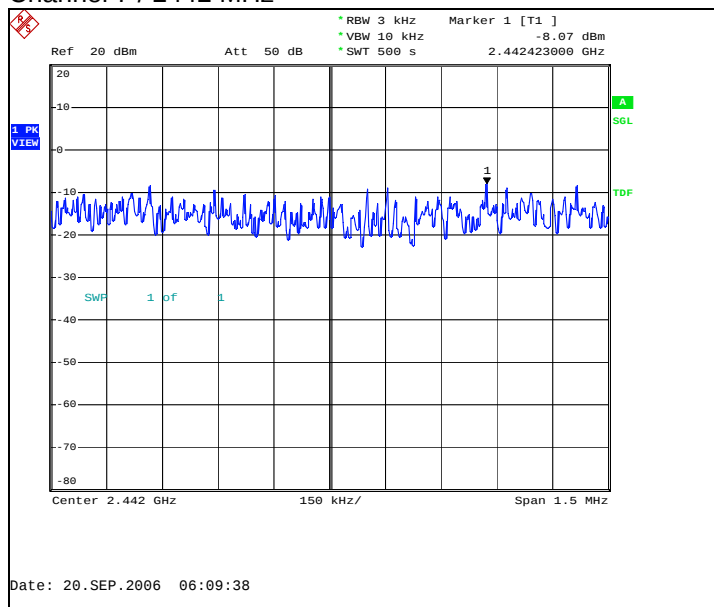
18.2.3 DSSS mode, QPSK modulation, 5.5 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-7.84	Passed
7 / 2442	-8.07	Passed
11 / 2462	-7.63	Passed

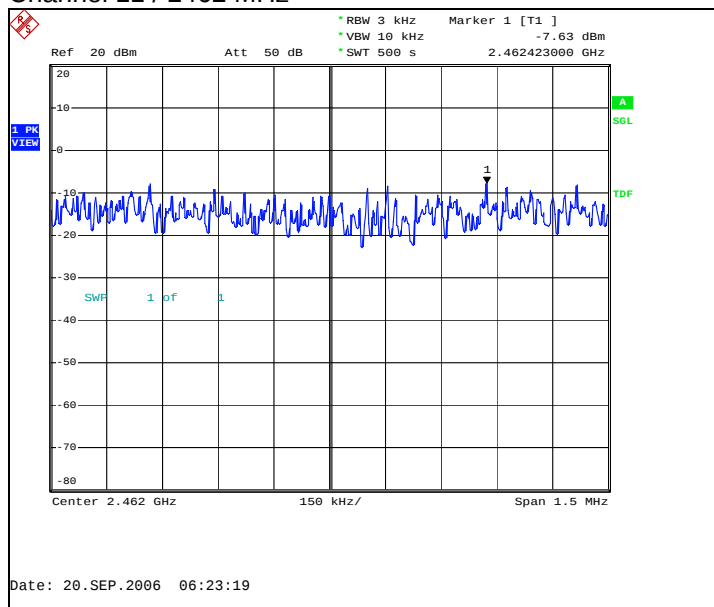
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



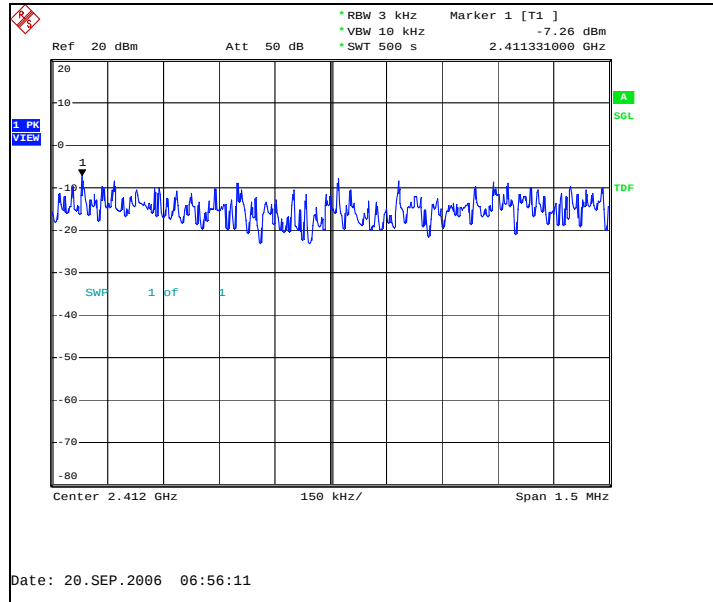
Channel 11 / 2462 MHz



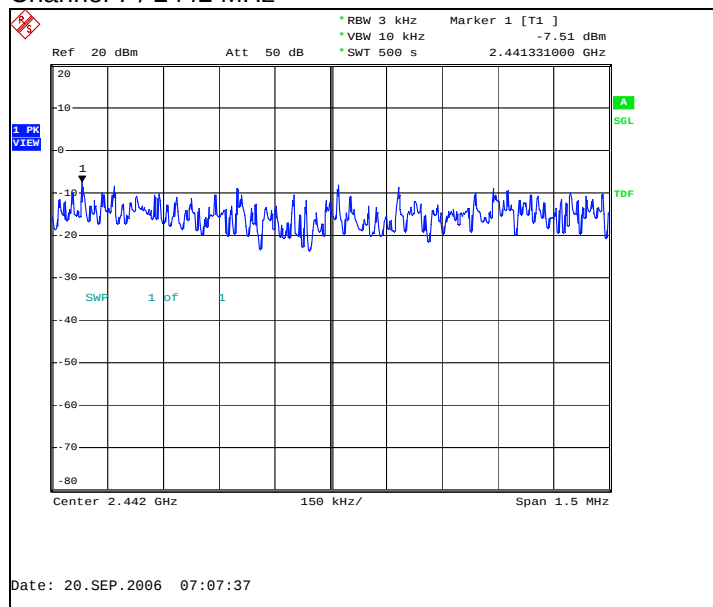
18.2.4 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-7.26	Passed
7 / 2442	-7.51	Passed
11 / 2462	-7.05	Passed

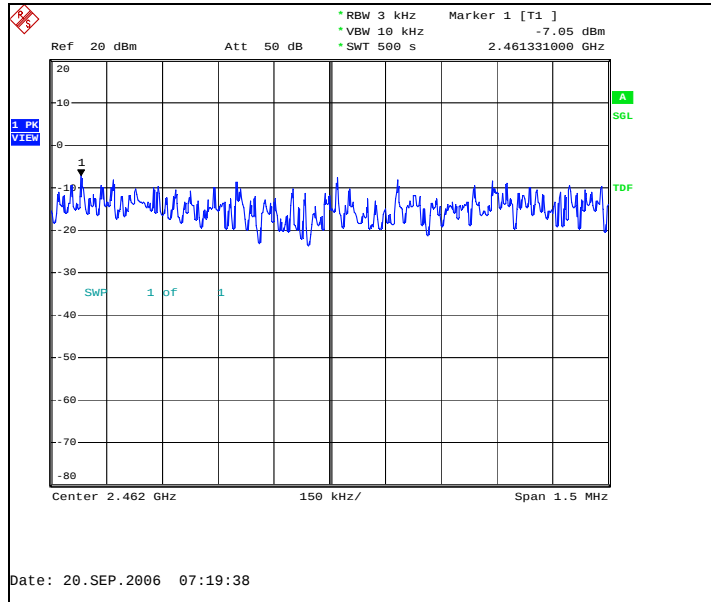
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



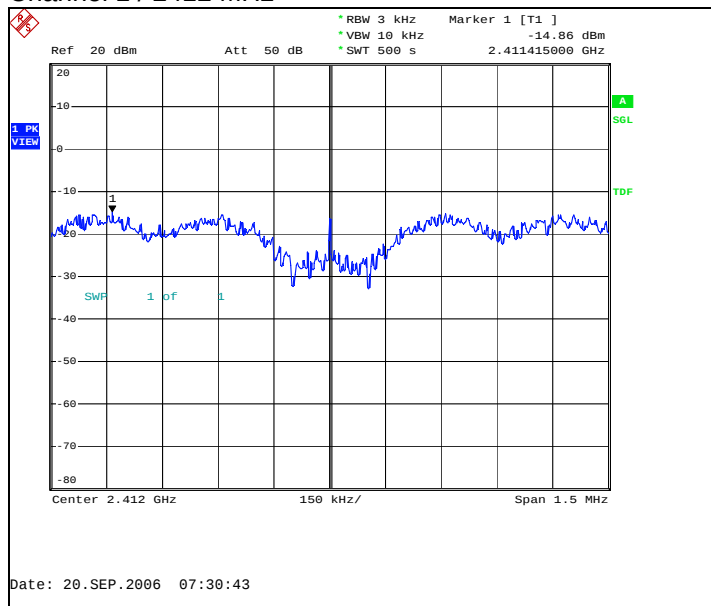
Channel 11 / 2462 MHz



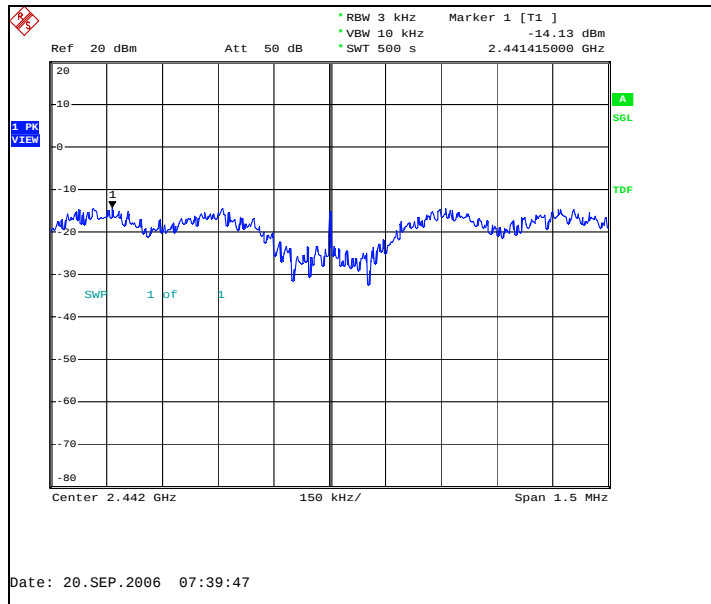
18.2.5 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-14.86	Passed
7 / 2442	-14.13	Passed
11 / 2462	-13.94	Passed

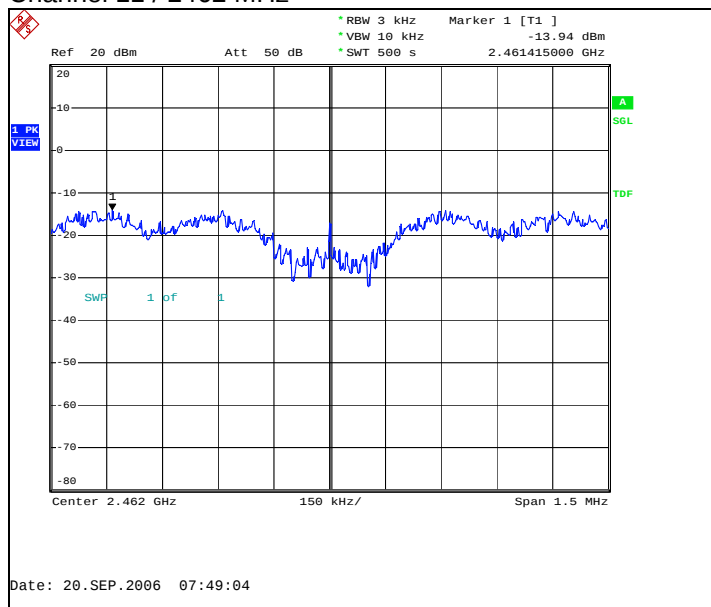
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



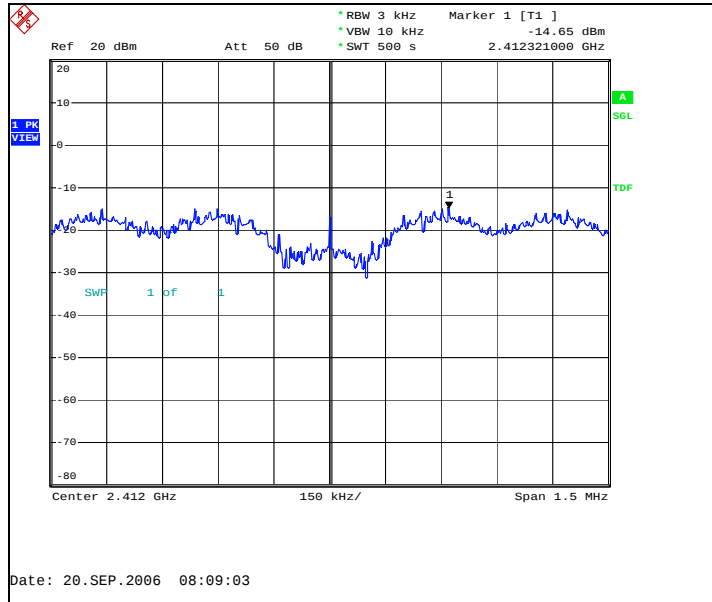
Channel 11 / 2462 MHz



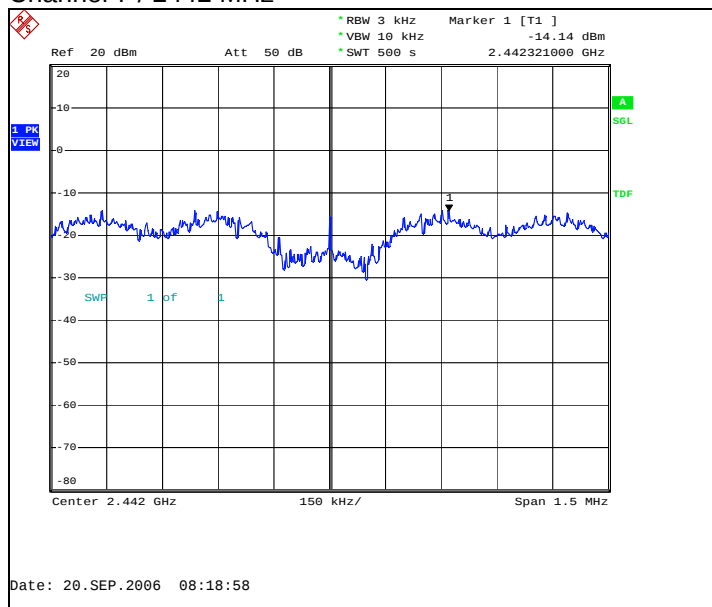
18.2.6 OFDM mode, BPSK modulation, 9 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-14.65	Passed
7 / 2442	-14.14	Passed
11 / 2462	-13.72	Passed

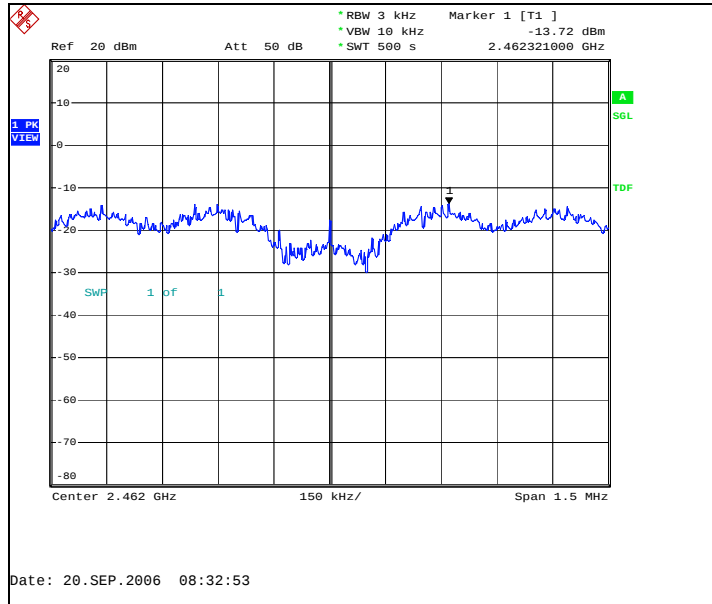
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



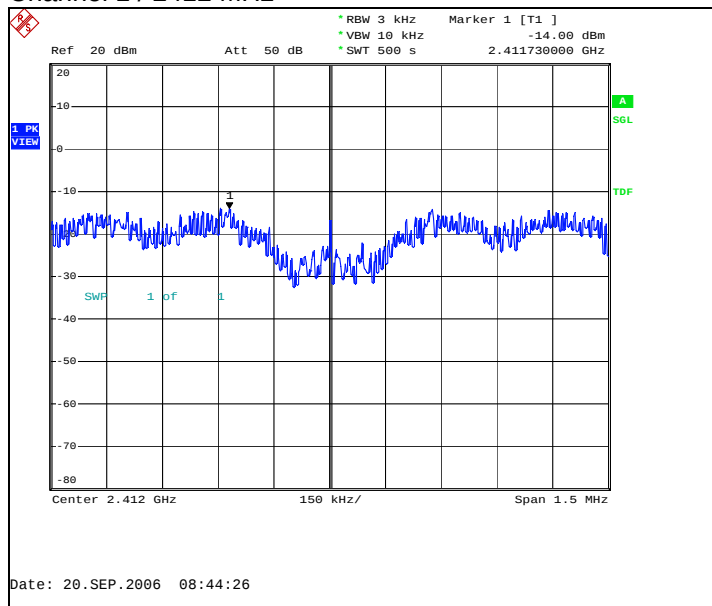
Channel 11 / 2462 MHz



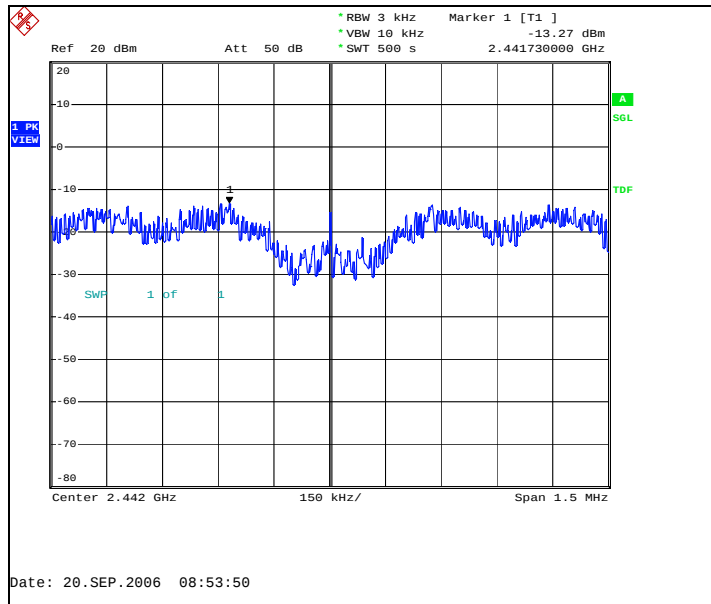
18.2.7 OFDM mode, QPSK modulation, 12 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-14.00	Passed
7 / 2442	-13.27	Passed
11 / 2462	-12.85	Passed

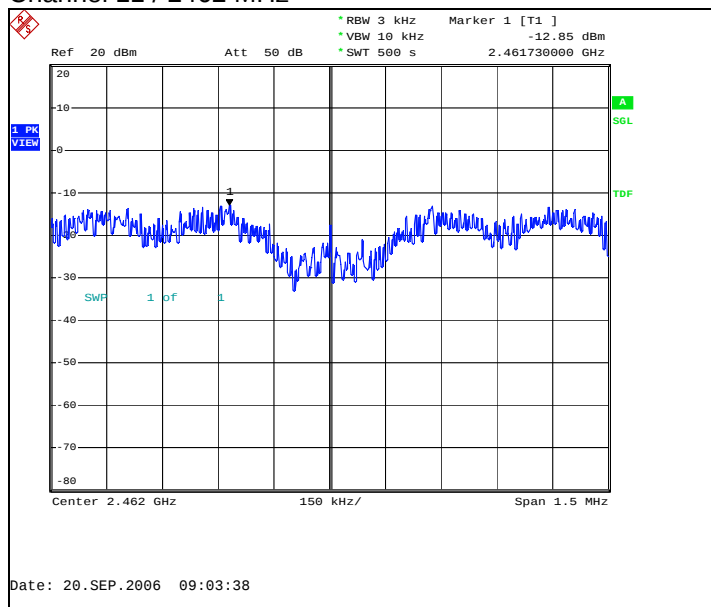
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



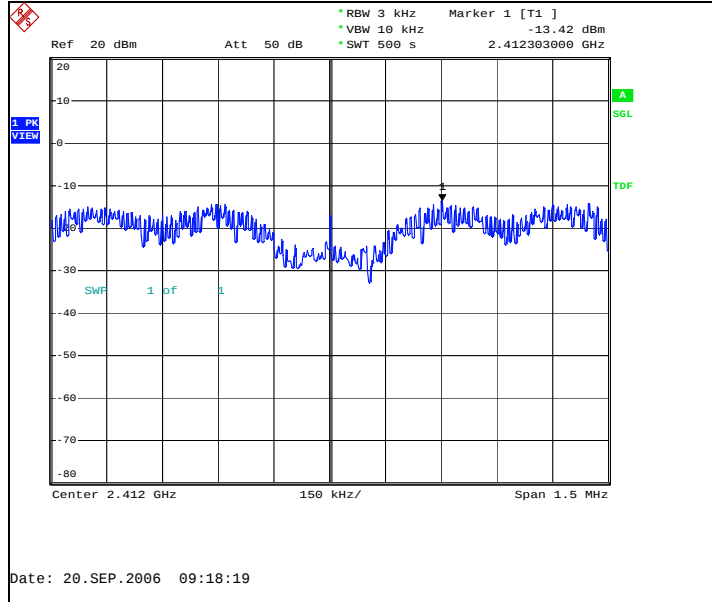
Channel 11 / 2462 MHz



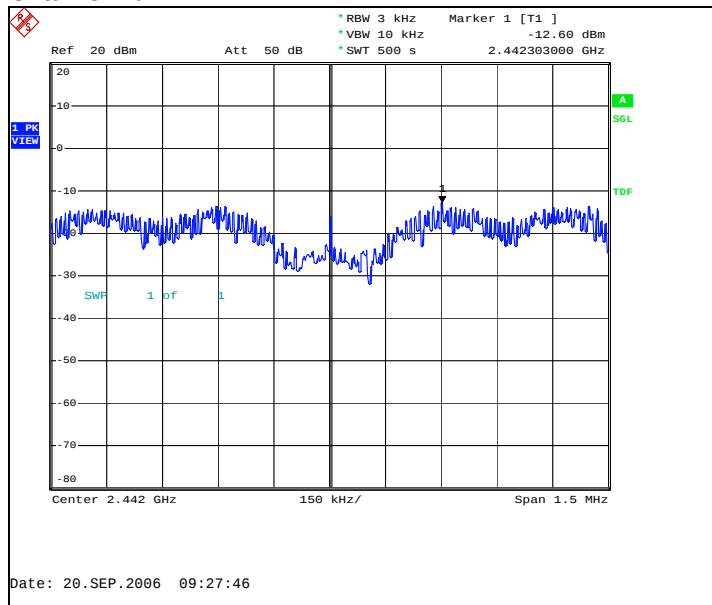
18.2.8 OFDM mode, QPSK modulation, 18 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-13.42	Passed
7 / 2442	-12.60	Passed
11 / 2462	-12.39	Passed

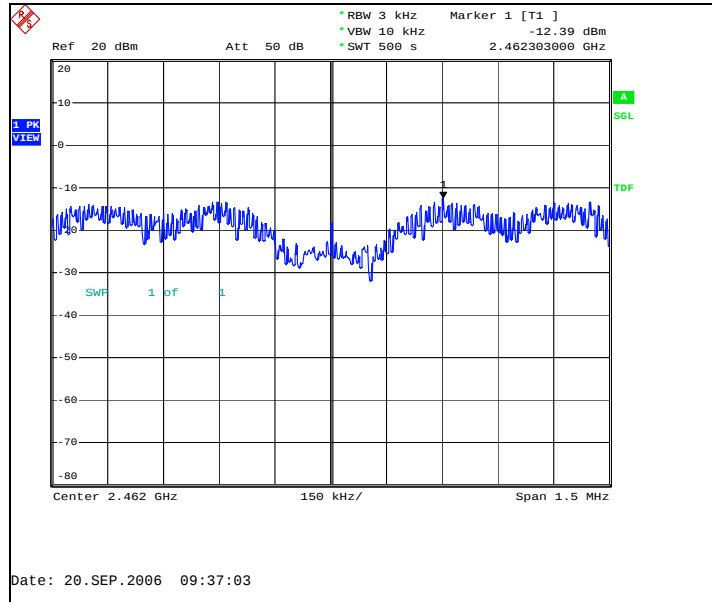
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



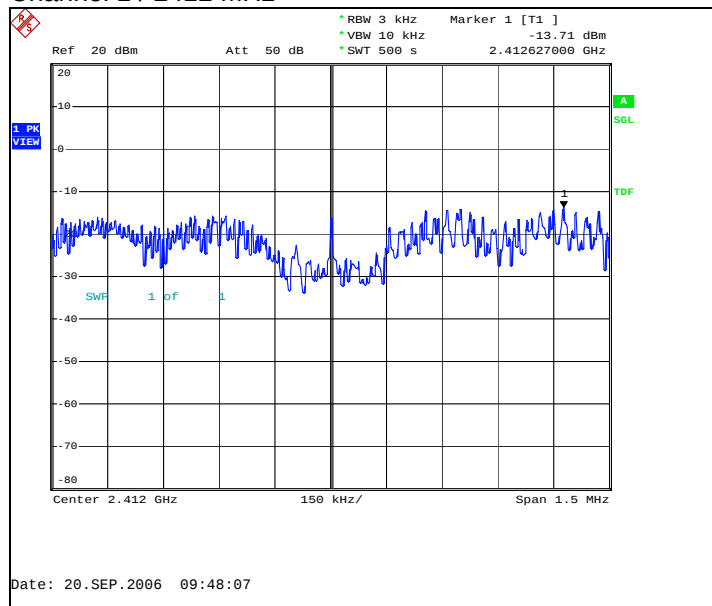
Channel 11 / 2462 MHz



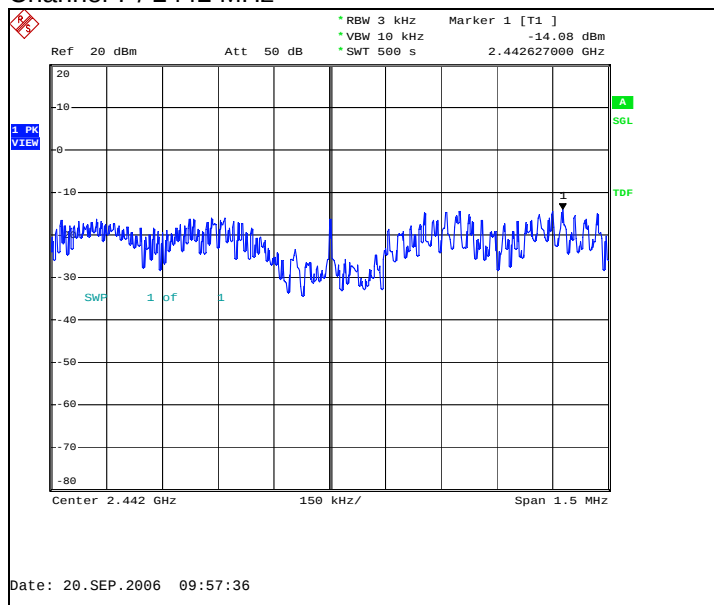
18.2.9 OFDM mode, 16QAM modulation, 24 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-13.71	Passed
7 / 2442	-14.08	Passed
11 / 2462	-13.79	Passed

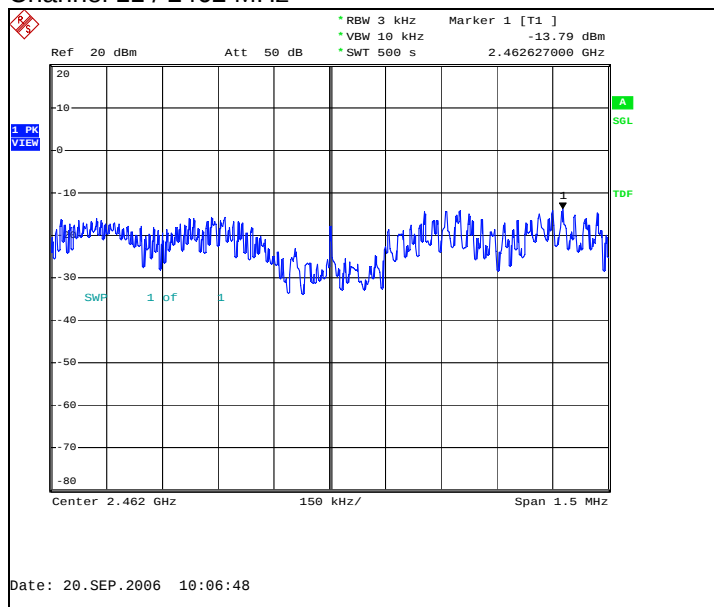
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



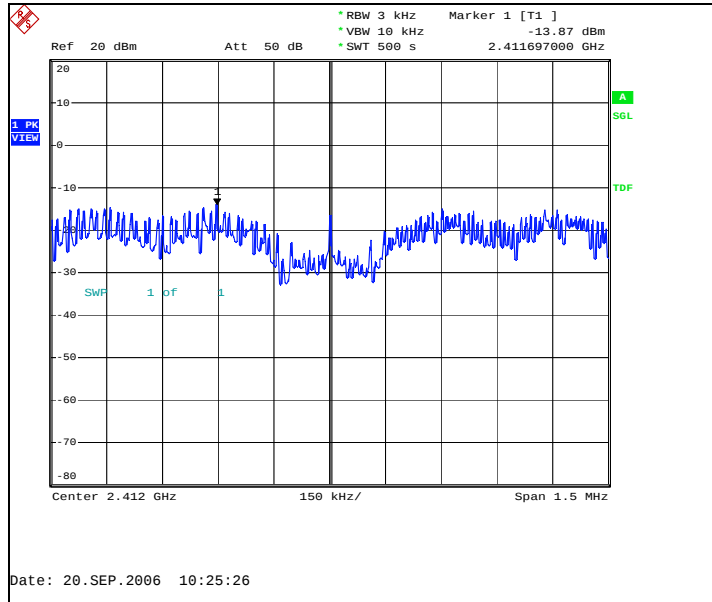
Channel 11 / 2462 MHz



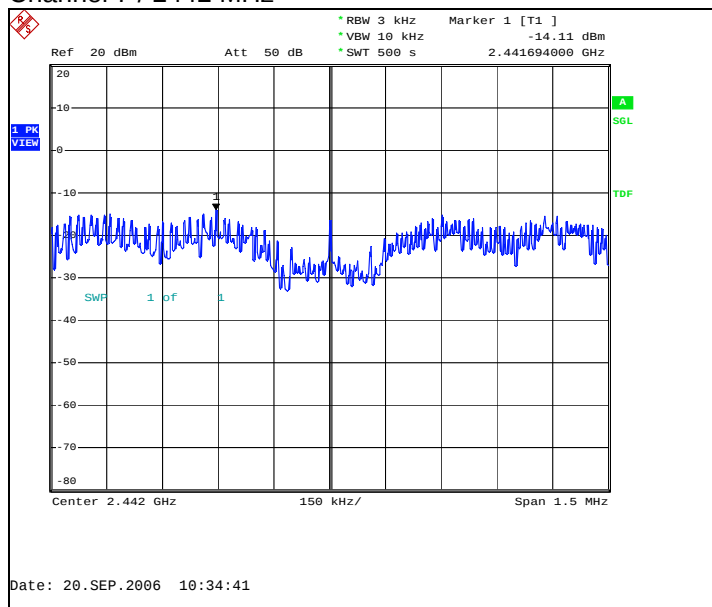
18.2.10 OFDM mode, 16QAM modulation, 36 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-13.87	Passed
7 / 2442	-14.11	Passed
11 / 2462	-13.75	Passed

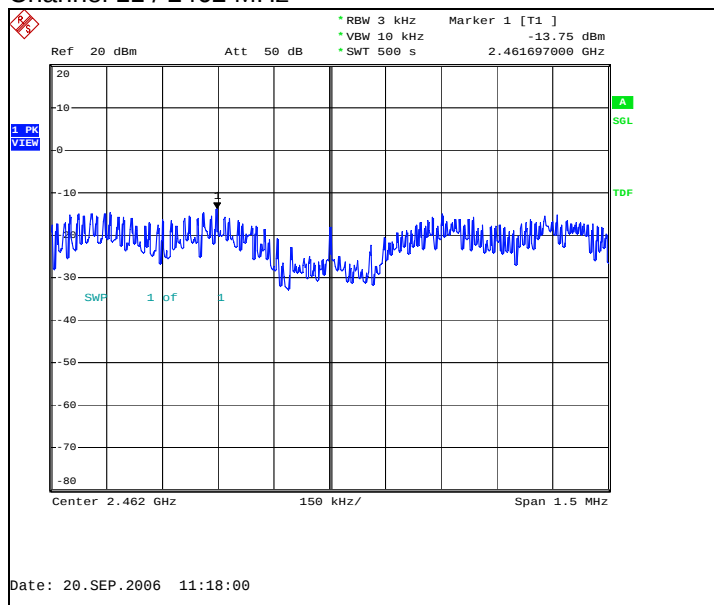
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



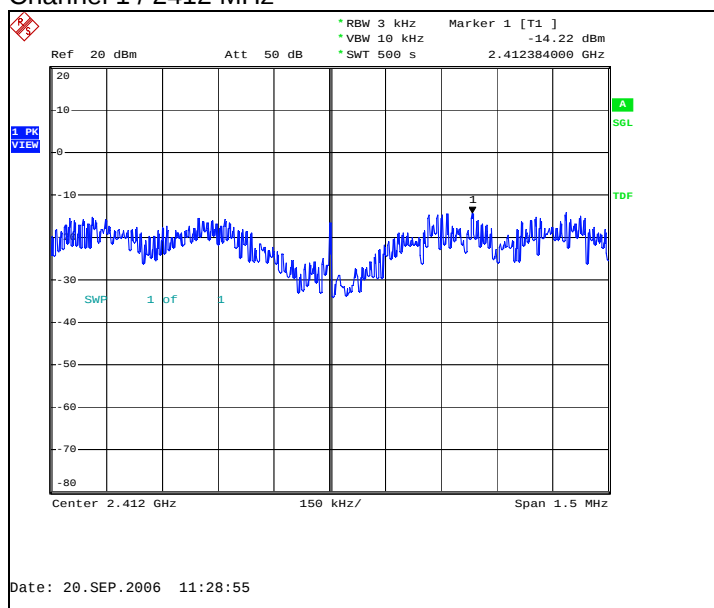
Channel 11 / 2462 MHz



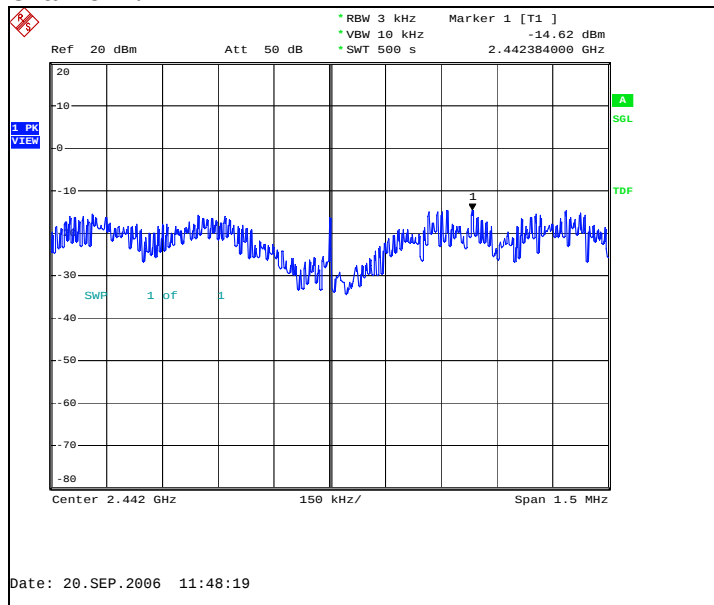
18.2.11 OFDM mode, 64QAM modulation, 48 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-14.22	Passed
7 / 2442	-14.62	Passed
11 / 2462	-14.35	Passed

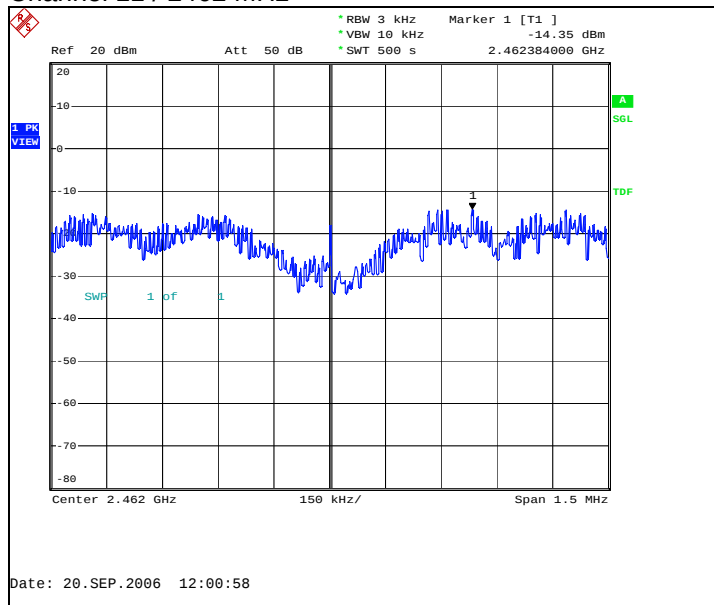
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



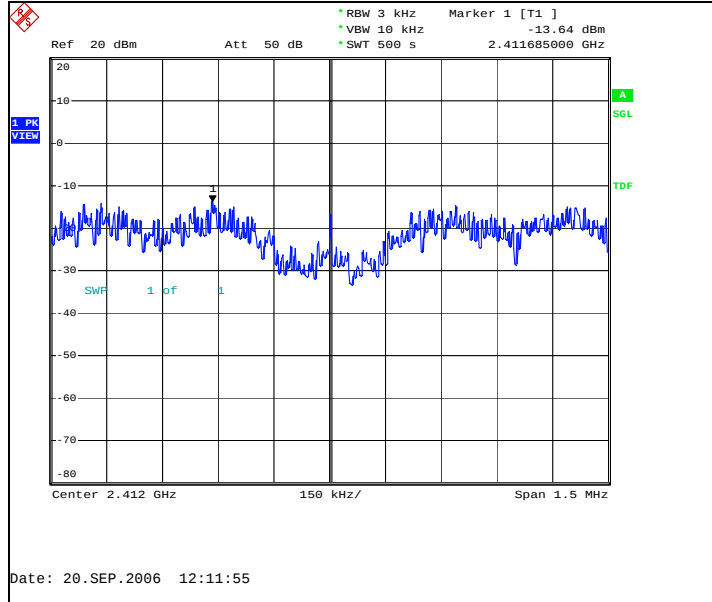
Channel 11 / 2462 MHz



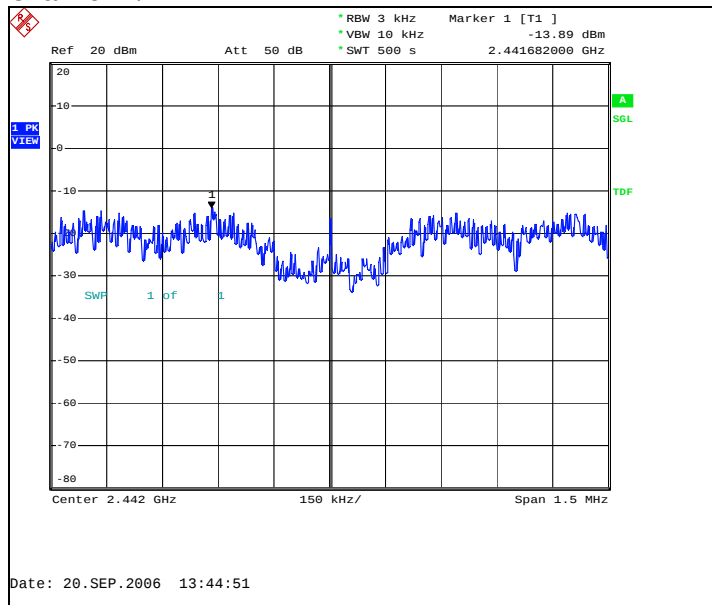
18.2.12 OFDM mode, 64QAM modulation, 54 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-13.64	Passed
7 / 2442	-13.89	Passed
11 / 2462	-13.62	Passed

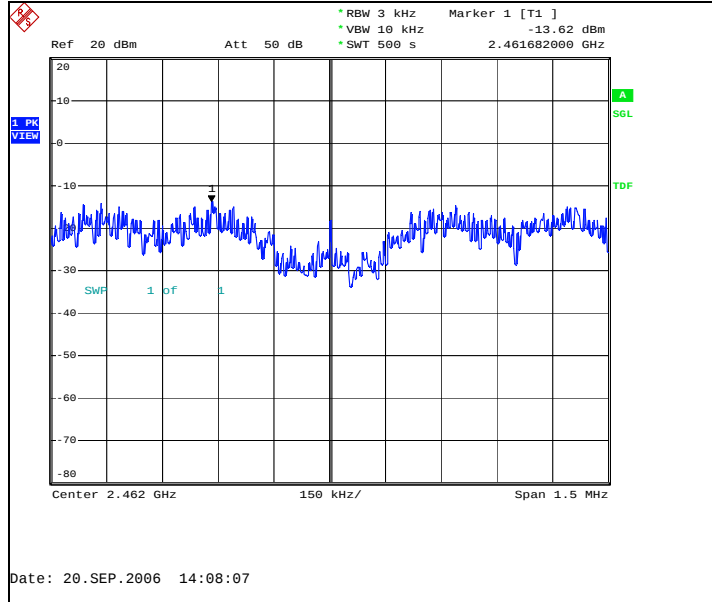
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



19. Test Equipment

19.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
13037	Power Supply 0-15V 10A	EA3012	LP Instruments	15B,15C
13513	Pulse Limiter 9KHz-30MHz	ESH3Z2	Rohde&Schwarz	15B,15C
13666	EMI Test Reciever 9KHz-2,5GHz	ESPC	Rohde&Schwarz	15B,15C
13935	Two Lines Artificial Mains Network	ESH3-Z5	Rohde&Schwarz	15B,15C
16995	Directional Coupler 20dB 0,5-2,0 GHz SMA Conn.	1538RA-20	Weinschel	15B,15C
18772	Shielded Chamber	RFD-100	ETS-Lindgren	15B,15C
19171	Universal Radio Communication Tester	CMU200	Rohde&Schwarz	15B,15C
11386	System DC Power Supply	HP6632A	Hewlett Packard	22.24
11487	Network analyzer 300KHz-3,0GHz	HP8753A	Hewlett Packard	22.24
11584	Spectrum analyzer 50Hz-6,5GHz	HP8561B	Hewlett Packard	22.24
13134	Tracking generator	HP85645A	Hewlett Packard	22.24
13302	Spectrum Analyzer 9KHz-12.8GHz	HP8596E	Hewlett Packard	22.24
13371	Temperature Chamber	S-1,2C	Thermotron	22.24
13524	Digital Radiocomm. Tester	CMD55	Rohde&Schwarz	22.24
14807	S - Parameter Test Set 300KHz-6GHz	HP85047A	Hewlett Packard	22.24
15859	Digital Radio Communication Test Set	4201S	Wavetek	22.24
17277	Multimeter Digital 6 1/2 Digit	AT34401A	Agilent Technologies	22.24
17796	Radio Communication Test Set	4400M	Wavetek	22.24
19374	Resonant Dipole Antenna 850MHz SMA m Conn.	-	NMP Cph	22.24
19375	Resonant Dipole Antenna 1900MHz SMA m Conn.	-	NMP Cph	22.24
13037	Power Supply 0-15V 10A	EA3012	LP Instruments	15B,15C

19.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
14020	Programmable Relay Switching System	-	Pickering	15B,15C,22,24
18792	Multi Device Controller	2090	ETS-EMCO	15B,15C,22,24
13829	Turntable Controller	4630-100	Comtest	15B,15C,22,24
14963	RF Preamplifier 100MHz-4GHz (Metal Chassis)	AFS3-00100400	Miteq/NMP Cph	15B,15C,22,24
13668	BiLog Antenna 30-2000MHz	BiLog-CBL6112A	Chase	15B,15C,22,24
18861	EMI Test Receiver 20Hz-26,5GHz	ESI	Rohde&Schwarz	15B,15C,22,24
12679	Dual Log Periodic Antenna 1-18 GHz	HL025	Rohde&Schwarz	15B,15C,22,24
18860	Ultra Broadband Antenna	HL562	Rohde&Schwarz	15B,15C,22,24

Eq. No	Equipment	Type	Manufacturer	Used in
	Ultralog 30-3000MHz			
18773	Shielded Chamber	RFD-100	ETS-Lindgren	15B,15C,22,24
18774	Shielded Chamber	RFSD-F/A-100	ETS-Lindgren	15B,15C,22,24
18324	High Pass Filter 3GHz SMA f Conn	WHJS3000-10SS	Wainwright	15B,15C,22,24
14114	Highpass Filter 1000MHz-4500MHz	WHK1000-12SS	Wainwright	15B,15C,22,24
13918	Highpass Filter 2000-4000MHz 50OHM SMA Conn	WHKS2000-10SS	Wainwright Instruments	15B,15C,22,24
13937	Ultra Stable Notch Filter 902,4MHz	WRCA902.4-0.2/40-6SS	Wainwright Instruments	15B,15C,22,24
13936	Ultra Stable Notch Filter 1747,5MHz	WRCD1747.5-0.2/40-10SS	Wainwright Instruments	15B,15C,22,24
13917	Highpass Filter 1000-3000MHz 50OHM SMA Conn	WHKS1000-10SS	Wainwright Instruments	15B,15C,22,24
14188	Ultra Stable Notch Filter 902,4MHz	WRCA902.4-0.2/40-6SS	Wainwright	15B,15C,22,24
14187	Ultra Stable Notch Filter 1747,5MHz	WRCD1747.5-0.2/40-10SS	Wainwright	15B,15C,22,24
16633	Ultra Stable Notch Filter 1880,0MHz	WRCD1880.0-0.2/40-10SS	Wainwright	15B,15C,22,24
18323	Band reject filter 1947-1953MHz 40dB	WRCG1947/1953-1940/1960-40/6SS	Wainwright	15B,15C,22,24
15190	Infra Red Remote Control Unit	4630	Emco	22,24,15B,15C
14993	EMI Test Receiver 9KHz-2750MHz	ESCS30	Rohde&Schwarz	22,24,15B,15C
15191	Turntable Contoller Unit	G-800SDX	YAESU	22,24,15B,15C
14900	Antenna Controller	HD100	HD GmbH	22,24,15B,15C