

FCC Part 15C Compliance Test Report

Test Report no.:	FCC15C_RM-718_10.doc	Date of Report:	26-Jun-2010
Number of pages:	50	Customer's Contact person:	Koskela Kari
Testing laboratory:	TCC Nokia Salo Laboratory P.O.Box(86) Joensuunkatu 7H / Kiila 1B FIN-24101 SALO, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 45220	Customer:	Nokia Corporation P.O.Box(86) Joensuunkatu 7H / Kiila 1B FIN-24101 SALO, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 45220
FCC listing no.:	533467		
IC recognition no.:	661V-1		
Tested devices/ accessories:	Phone RM-718 / Battery BL-5CT / Headset HS-125 / AC Charger AC-15E		
FCC ID:	PYARM-718	IC:	661V-RM718
Supplement reports:	This report is a copy of FCC15C_RM-601_01.doc		
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:			

Jari Jantunen, System Manager

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	10-Jun-2010
Testing completed	07-Jul-2010
The customer's contact person	Koskela Kari
Test Plan referred to	T:\Projects\RM-601\TestPlan\RS_testplan_RM-601.xls
Notes	-
Document name	FCC15C_RM-601_01.doc

1.1. EUT and Accessory Information

The EUT is a 8-band (GSM850/900/1800/1900 and WCDMA Band I/II(1900)/IV(1700)/VIII(850)) 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-601	00440110970894700592343	0400	-	010.021	14830
Battery	BL-5CT	363563015391040888200670555	CE	-	-	14836
Headset	HS-125	06943239284F4104101	CE	-	-	14842
AC Charger	AC-15E	409049002322080608500675463	CE	-	-	14831

1.2. Summary of Test Results

Bluetooth:

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

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	NP
15.247(d)	A8.5	Spurious RF conducted emissions	PASSED
15.247(d), 15.209	A8.5	Spurious radiated emissions	NP
15.207	7.2.2	AC powerline conducted emissions	NP
15.247(a)(2)	A8.2 (a)	6 dB bandwidth	PASSED
15.247(e)	A8.2 (b)	Power spectral density	PASSED

The test results of PYARM-601 are re-used for certification of the PYARM-718. The table above indicates the results, which will be re-used.

PASSED

The EUT complies with the essential requirements in the standard.

FAILED

The EUT does not comply with the essential requirements in the standard.

NP

The test was not performed by the TCC Nokia Salo Laboratory.

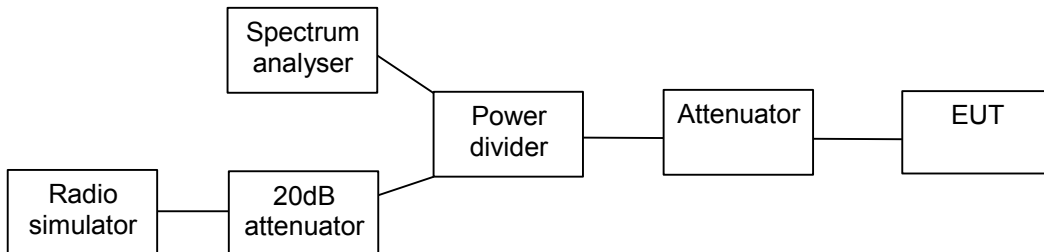
CONTENTS

1. Summary for FCC Part 15C Compliance Test Report.....	2
1.1. EUT and Accessory Information.....	2
1.2. Summary of Test Results.....	2
2. Test setups.....	5
2.1. Conducted RF test setup.....	5
2.2. AC powerline conducted emissions test setup	5
2.3. Radiated test setup	5
3. Conducted peak output power (FCC §15.247(b)(1), RSS-210 A8.4 (2))	6
3.1. Test method and limit.....	6
3.2. Bluetooth Test results.....	7
4. Spurious RF conducted emissions (FCC §15.247(d), RSS-A8.5)	10
4.1. Test method and limit.....	10
4.2. Bluetooth Test results.....	11
5. 20 dB bandwidth (FCC §15.247(a)(1), RSS-210 A8.1 (a))	14
5.1. Test method and limit.....	14
5.2. Bluetooth Test results.....	15
6. Carrier frequency separation (FCC §15.247(a)(1), RSS-210 A8.1 (b)).....	18
6.1. Test method and limit.....	18
6.2. Bluetooth Test results.....	19
7. Number of hopping frequencies (FCC §15.247(a)(1)(iii), RSS-210 A8.1 (d))	20
7.1. Test method and limit.....	20
7.2. Bluetooth Test results.....	21
8. Time of occupancy (FCC §15.247(a)(1)(iii), RSS-210 A8.1 (d)).....	22
8.1. Test method and limit.....	22
8.2. Bluetooth test results.....	23
9. Conducted peak output power (FCC §15.247(b)(1), RSS-210 A8.4 (4))	25
9.1. Test method and limit.....	25
9.2. WLAN Test results	26
10. Spurious RF conducted emissions (FCC §15.247(d), RSS-210 A8.5).....	31
10.1. Test method and limit.....	31
10.2. WLAN Test results	32
11. 6 dB bandwidth (FCC §15.247(a)(2), RSS-210 A8.2 (a))	37
11.1. Test method and limit.....	37
11.2. WLAN test results	38

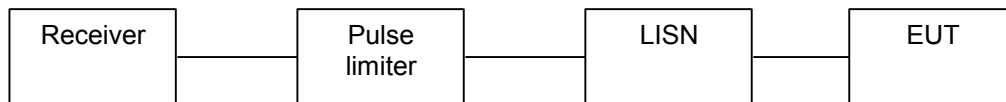
12.	Power spectral density (FCC §15.247(e), RSS-210 A8.2 (b))	43
12.1.	Test method and limit	43
12.2.	WLAN test results	44
13.	Test Equipment	49
13.1.	Conducted measurements	49
13.2.	Radiated measurements	49

2. Test setups

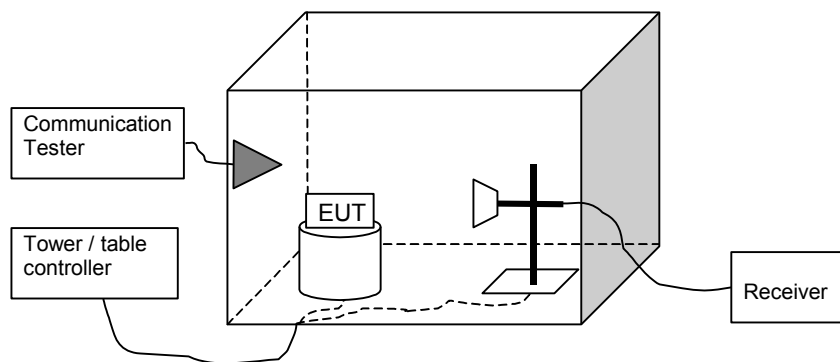
2.1. Conducted RF test setup



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-601, DUT 14830
Accessories with DUT numbers	BL-5CT, DUT 14836; HS-125, DUT 14842; AC-15, DUT 14831
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	24-Jun-2010 and 07-Jul-2010
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

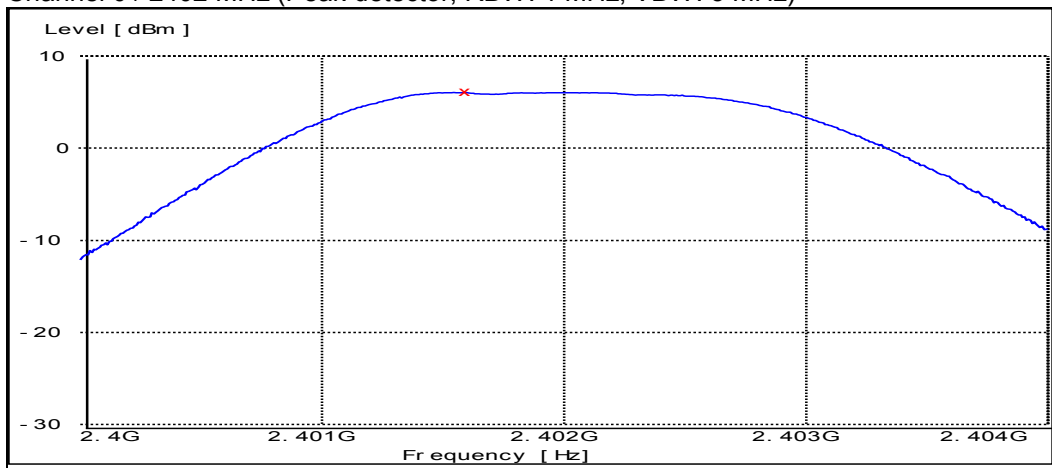
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

3.2. Bluetooth Test results

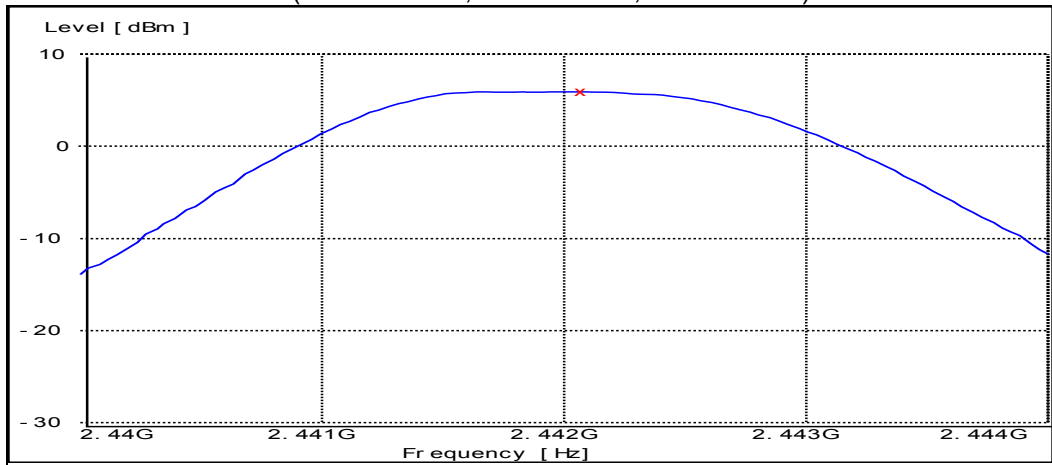
3.2.1 GFSK modulation, PRBS packet type

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	6.10	4.074	PASSED
40 / 2442	6.00	3.981	PASSED
78 / 2480	5.50	3.548	PASSED

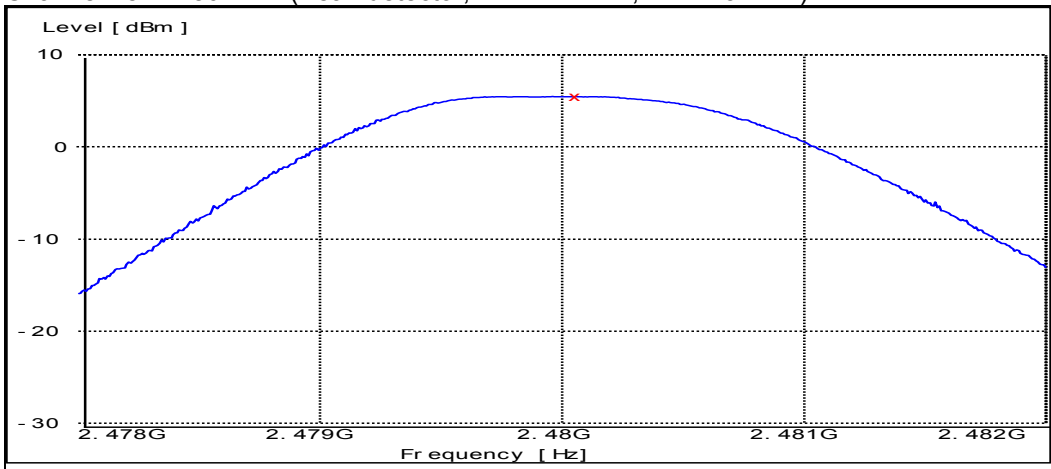
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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



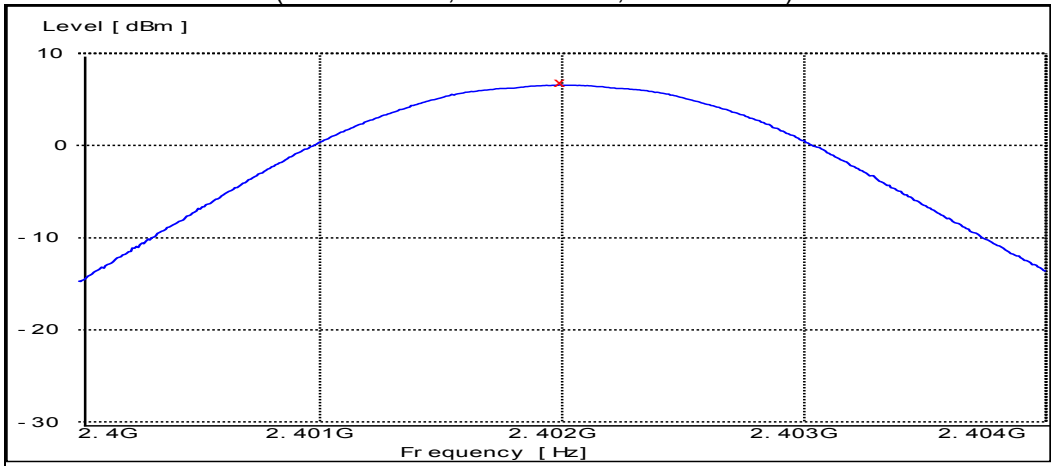
Channel 78 / 2480 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



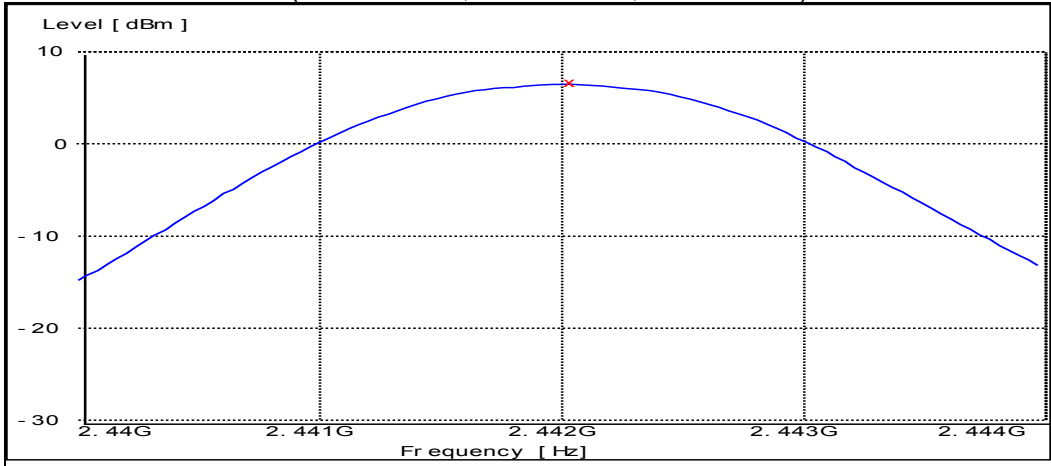
3.2.2 8DPSK modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	6.80	4.786	PASSED
40 / 2442	6.70	4.677	PASSED
78 / 2480	6.50	4.467	PASSED

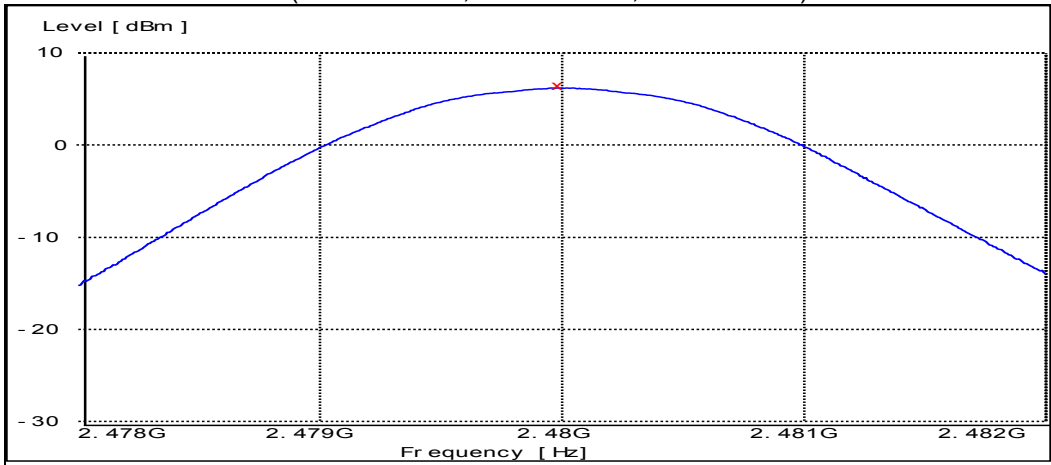
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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



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



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

EUT with DUT number	RM-601, DUT 14830
Accessories with DUT numbers	BL-5CT, DUT 14836; HS-125, DUT 14842; AC-15, DUT 14831
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	24-Jun-2010 and 07-Jul-2010
Measured by	Anni Manninen

4.1. Test method and limit

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

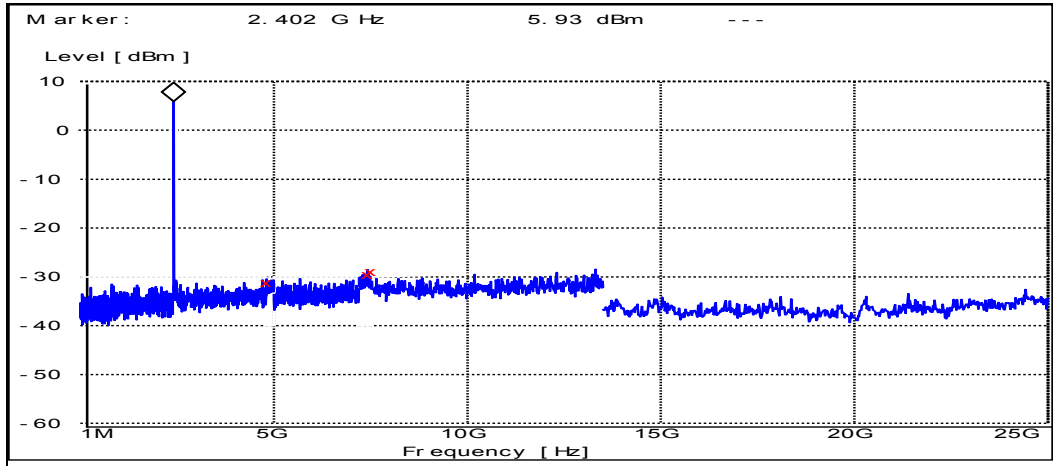
Limits for spurious RF conducted emissions measurements

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

4.2. Bluetooth Test results

4.2.1 GFSK modulation, PRBS packet type

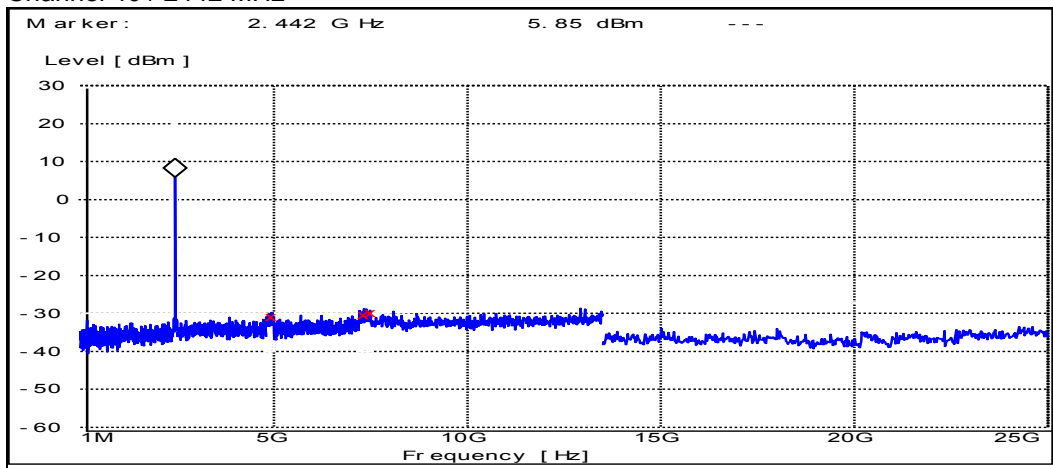
Channel 0 / 2402 MHz



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

Frequency [MHz]	P [dBc]	Result
4813.600000	-37.232687	PASSED
7419.600000	-35.532687	PASSED
7500.000000	-34.832687	PASSED

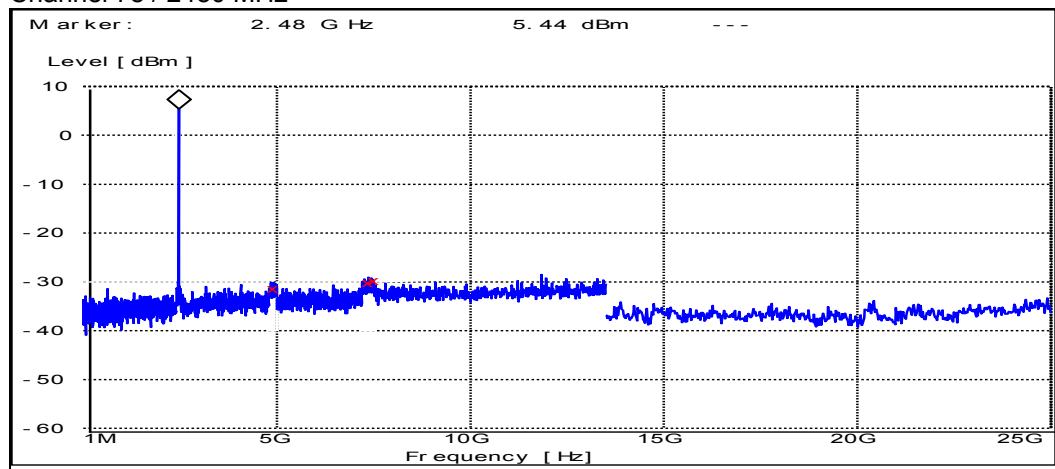
Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4955.200000	-36.754080	PASSED
7333.200000	-36.254080	PASSED
7500.000000	-35.654080	PASSED

Channel 78 / 2480 MHz

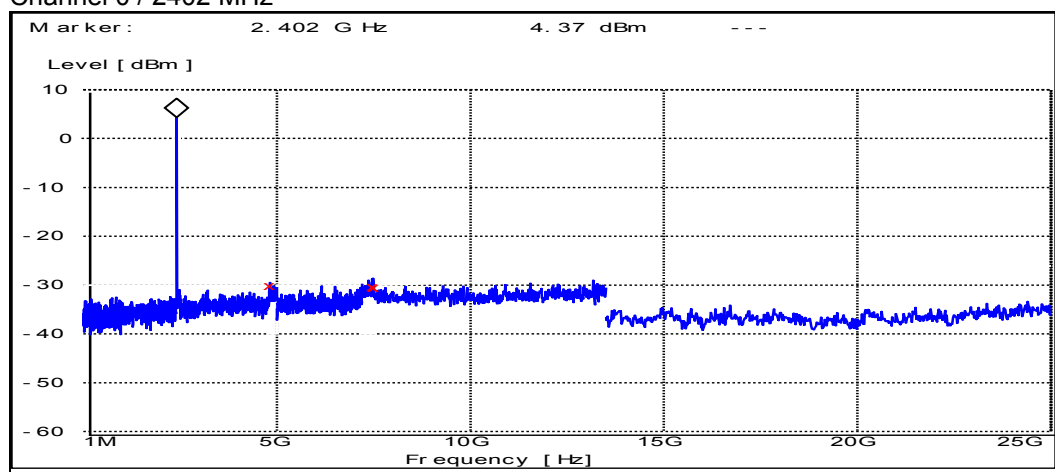


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4903.200000	-36.942570	PASSED
7365.600000	-35.642570	PASSED
7500.000000	-35.142570	PASSED

4.2.2 8DPSK modulation, PRBS packet type

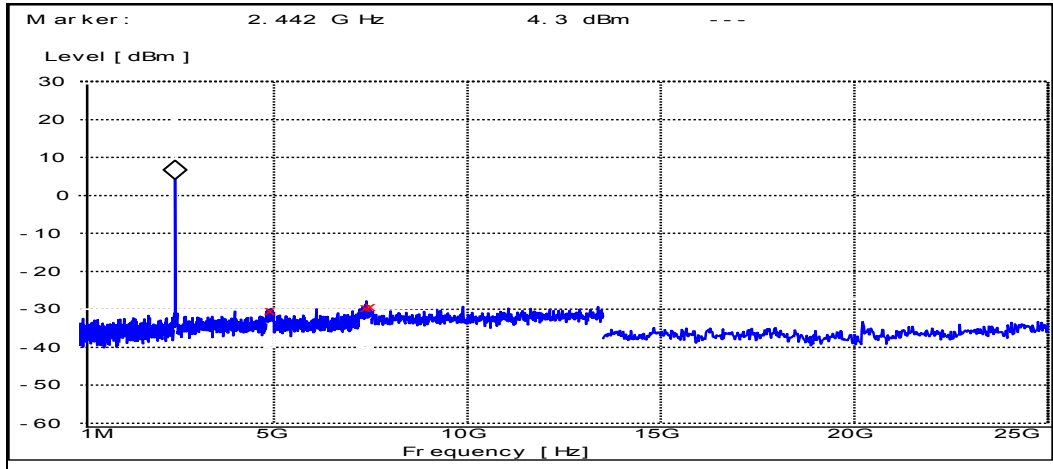
Channel 0 / 2402 MHz



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

Frequency [MHz]	P [dBc]	Result
4827.200000	-34.465778	PASSED
7488.000000	-34.765778	PASSED
7500.000000	-34.865778	PASSED

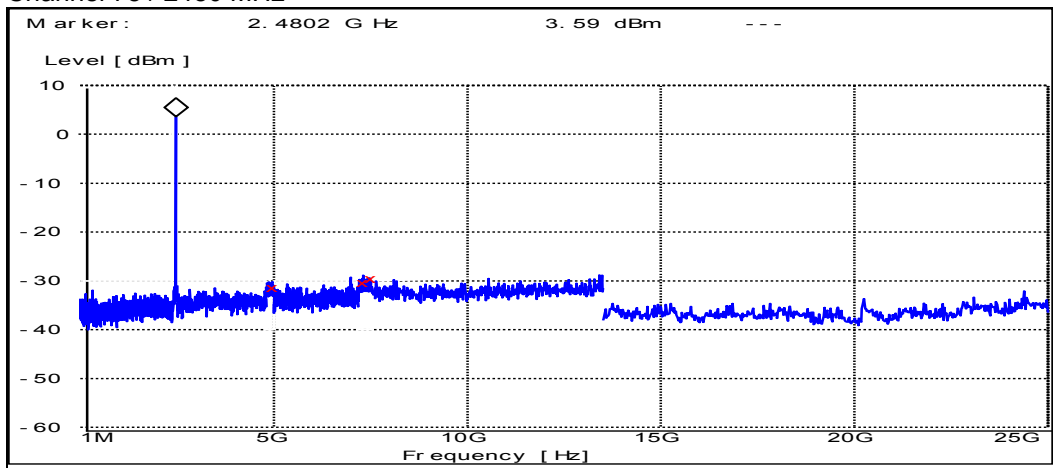
Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4923.600000	-34.797852	PASSED
7389.000000	-33.997852	PASSED
7500.000000	-33.597852	PASSED

Channel 78 / 2480 MHz



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

Frequency [MHz]	P [dBc]	Result
4966.800000	-34.993188	PASSED
7319.400000	-33.993188	PASSED
7500.000000	-33.093188	PASSED

5. 20 dB bandwidth (FCC §15.247(a)(1), RSS-210 A8.1 (a))

EUT with DUT number	RM-601, DUT 14830
Accessories with DUT numbers	BL-5CT, DUT 14836; HS-125, DUT 14842; AC-15, DUT 14831
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	24-Jun-2010 and 07-Jul-2010
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 20 dB bandwidth measurements

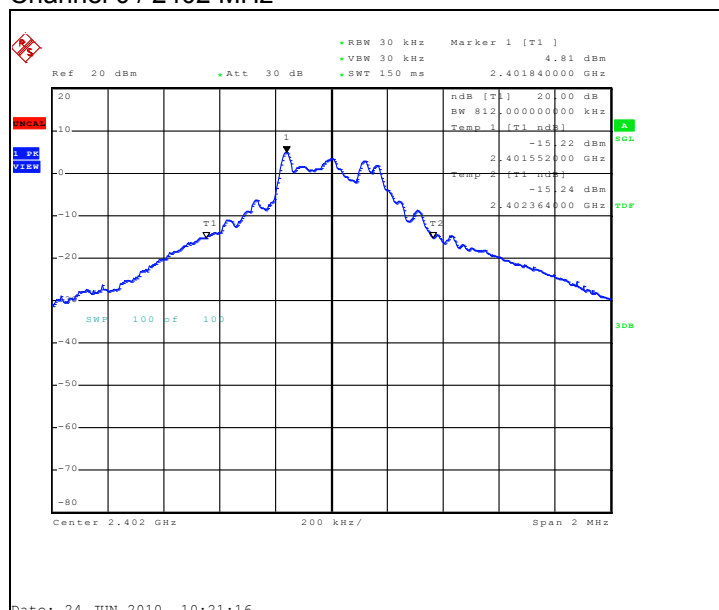
Limit [MHz]
N/A

5.2. Bluetooth Test results

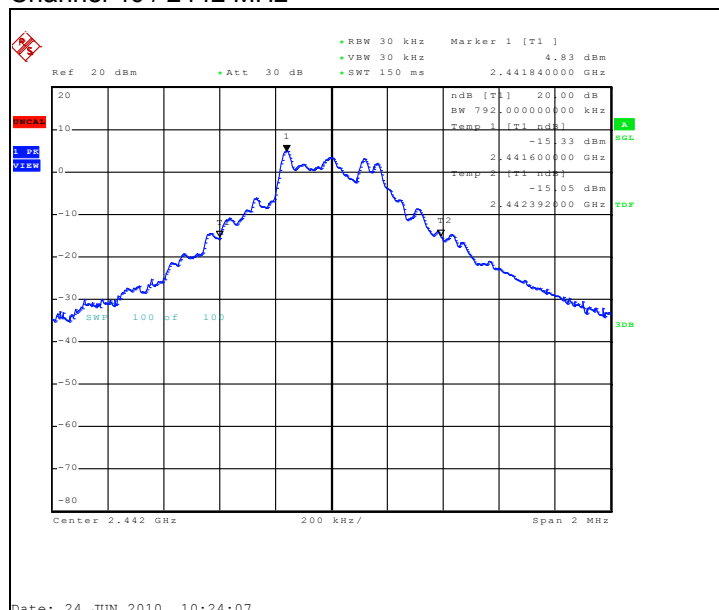
5.2.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	812.000	PASSED
40 / 2442	792.000	PASSED
78 / 2480	792.000	PASSED

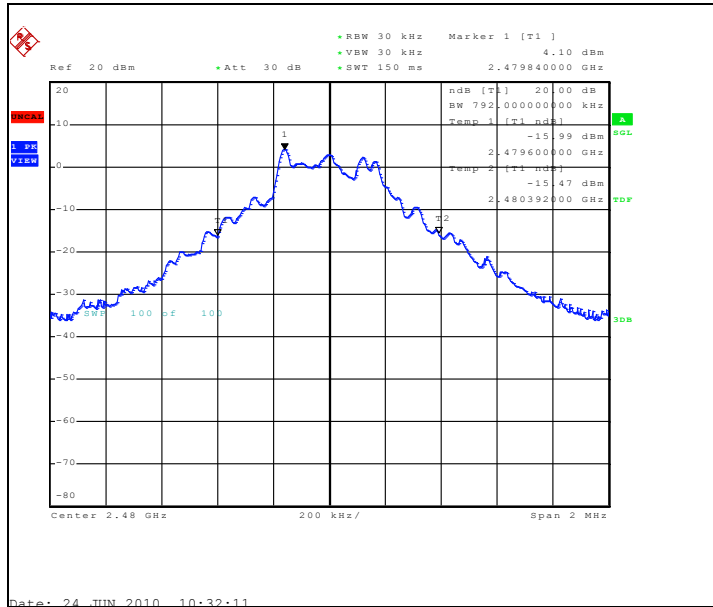
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



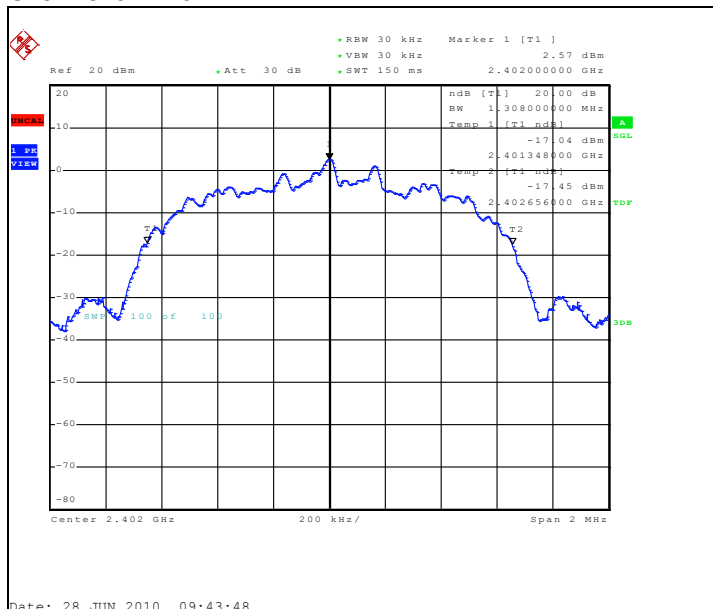
Channel 78 / 2480 MHz



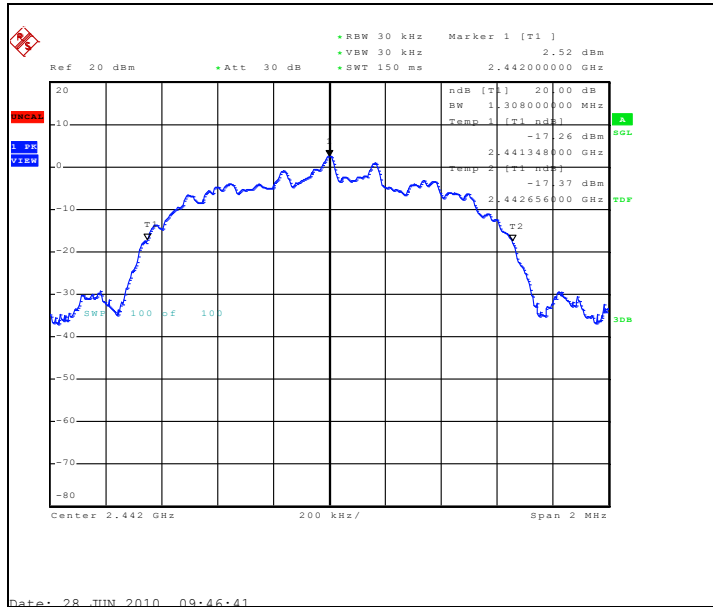
5.2.2 8DPSK modulation, PRBS packet type

Channel / f _c [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	1308.000	PASSED
40 / 2442	1308.000	PASSED
78 / 2480	1308.000	PASSED

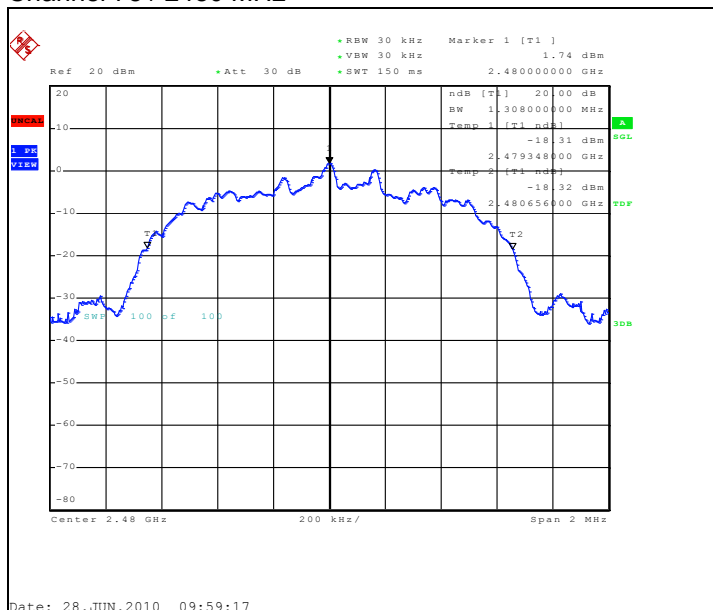
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



Channel 78 / 2480 MHz



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

EUT with DUT number	RM-601, DUT 14830
Accessories with DUT numbers	BL-5CT, DUT 14836; HS-125, DUT 14842; AC-15, DUT 14831
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	24-Jun-2010 and 07-Jul-2010
Measured by	Anni Manninen

6.1. 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

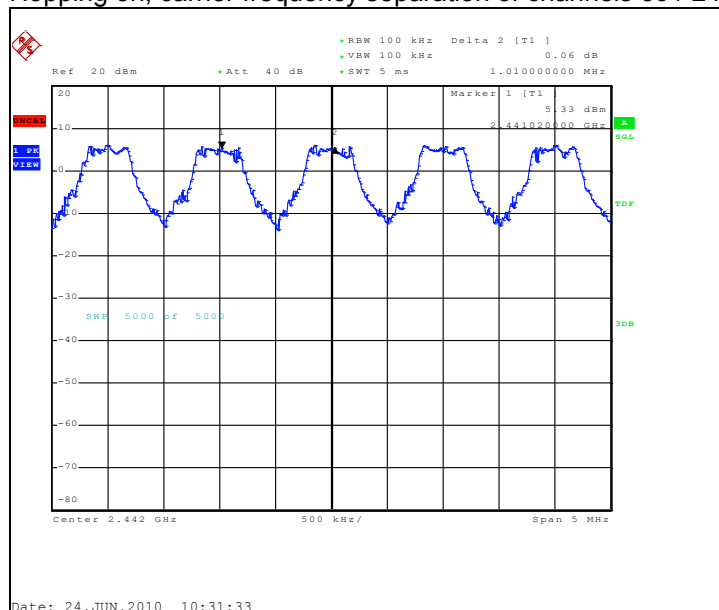
Limit [MHz]
≥ 0.025 or $2/3$ of the 20 dB bandwidth

6.2. Bluetooth Test results

6.2.1 GFSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1010	PASSED

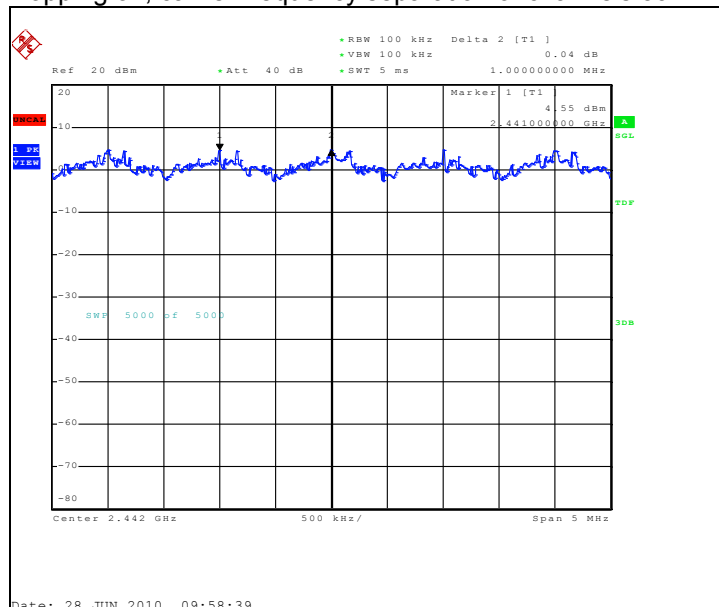
Hopping on, carrier frequency separation of channels 39 / 2441 MHz and 40 / 2442 MHz



6.2.2 8DPSK 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



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

EUT with DUT number	RM-601, DUT 14830
Accessories with DUT numbers	BL-5CT, DUT 14836; HS-125, DUT 14842; AC-15, DUT 14831
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	24-Jun-2010 and 07-Jul-2010
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 number of hopping frequencies measurements

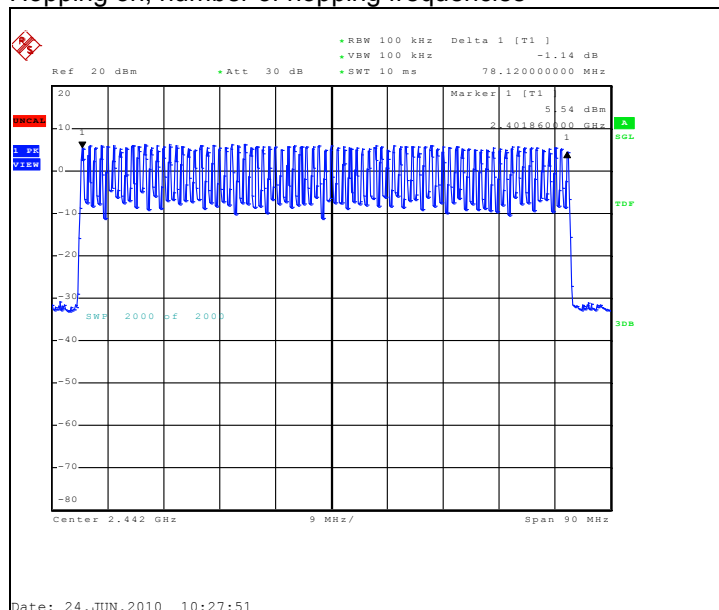
Limit [number]
≥ 15

7.2. Bluetooth Test results

7.2.1 GFSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
78	PASSED

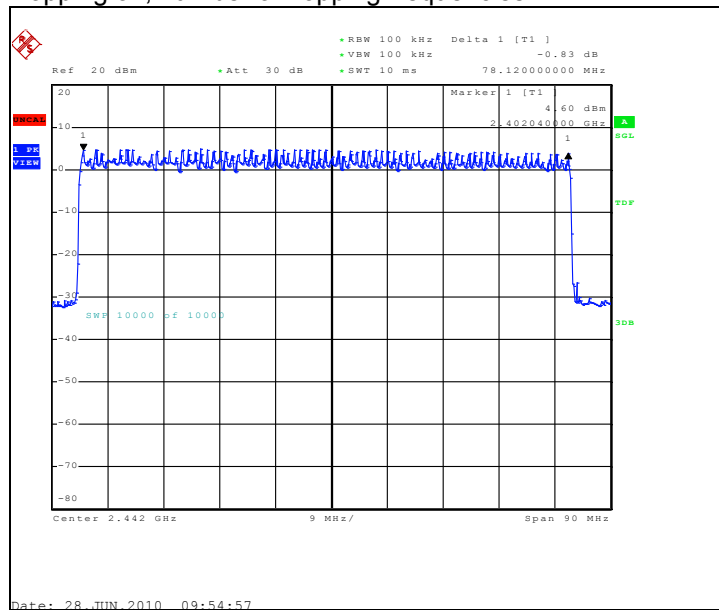
Hopping on, number of hopping frequencies



7.2.2 8DPSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
67	PASSED

Hopping on, number of hopping frequencies



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

EUT with DUT number	RM-601, DUT 14830
Accessories with DUT numbers	BL-5CT, DUT 14836; HS-125, DUT 14842; AC-15, DUT 14831
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	24-Jun-2010 and 07-Jul-2010
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 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

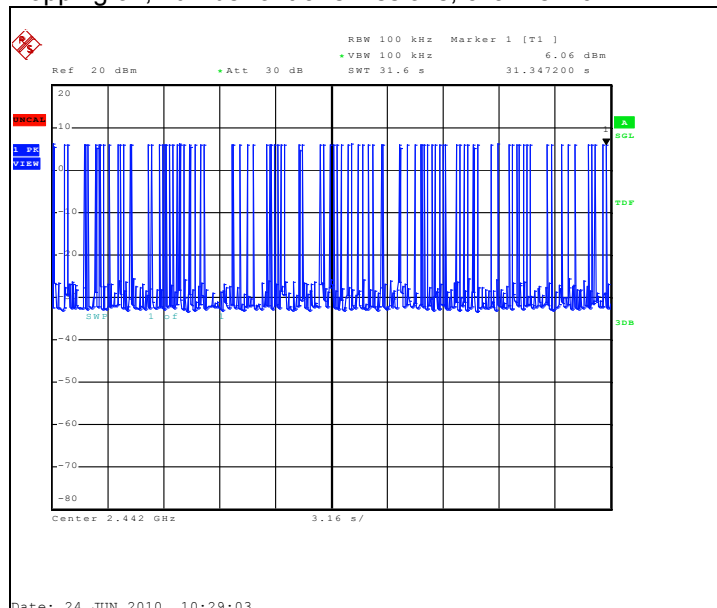
Limit [s]
≤ 0.4

8.2. Bluetooth test results

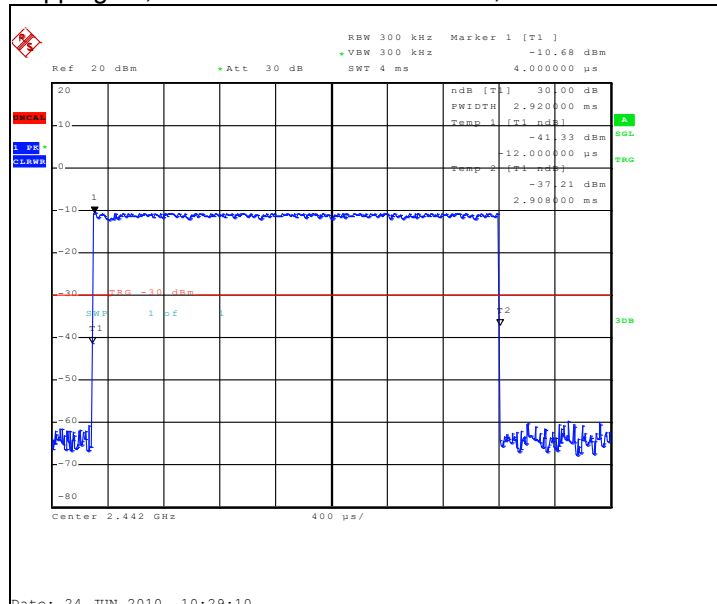
8.2.1 GFSK modulation, PRBS packet type

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

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



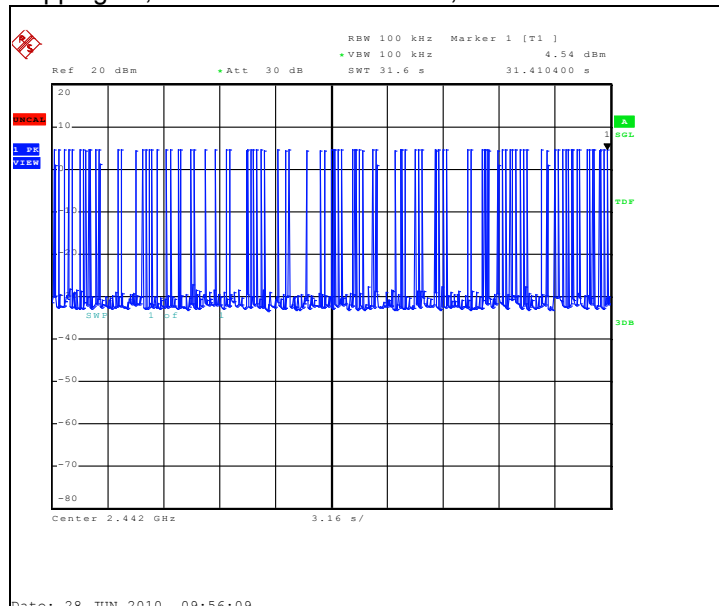
Hopping on, duration of one transmission, channel 40 / 2442 MHz



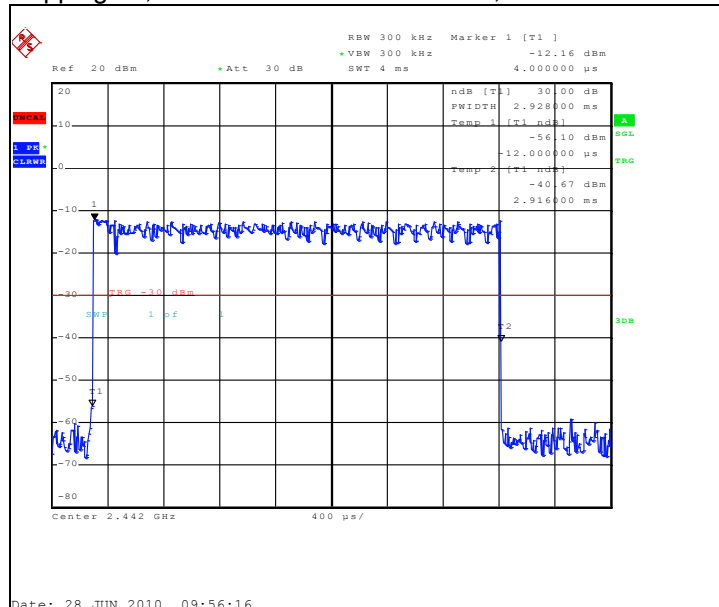
8.2.2 8DPSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [μs]	Time of occupancy [s]	Result
92	2 928	0.269376	PASSED

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



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



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

EUT with DUT number	RM-601, DUT 14830
Accessories with DUT numbers	BL-5CT, DUT 14836; HS-125, DUT 14842; AC-15, DUT 14831
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	24-Jun-2010 and 07-Jul-2010
Measured by	Anni Manninen

9.1. 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

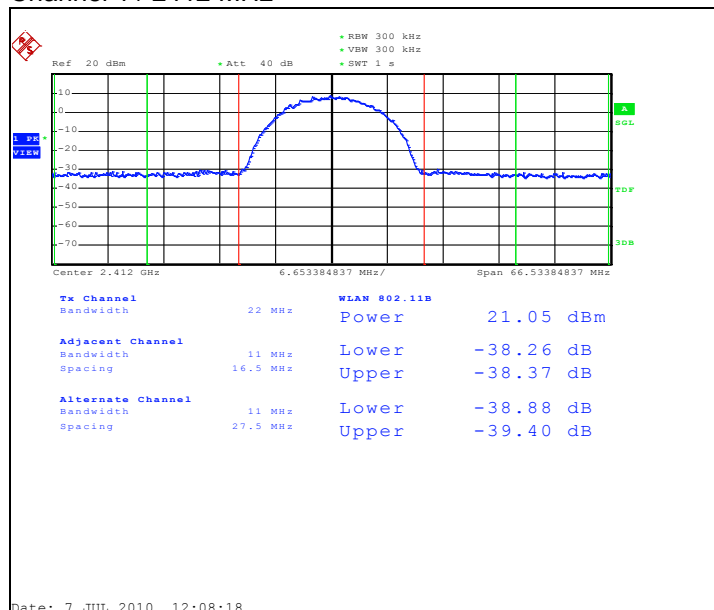
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

9.2. WLAN Test results

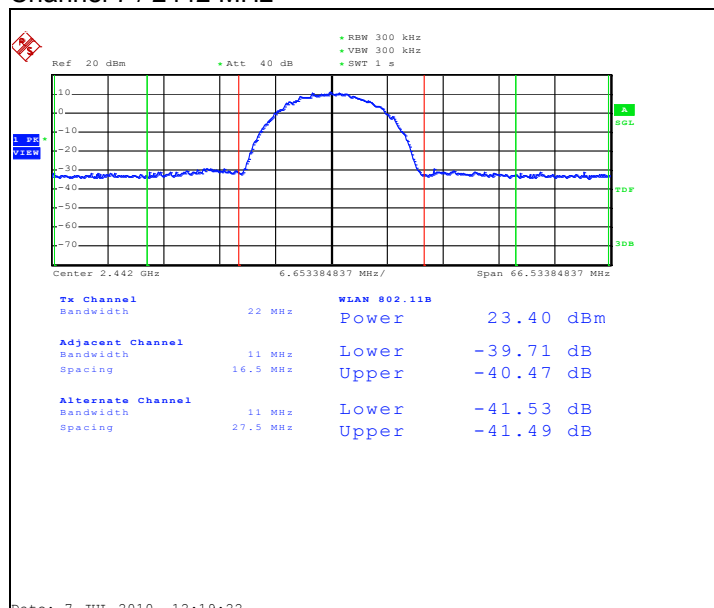
9.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	21.05	0.127	PASSED
7 / 2442	23.40	0.219	PASSED
11 / 2462	20.46	0.111	PASSED

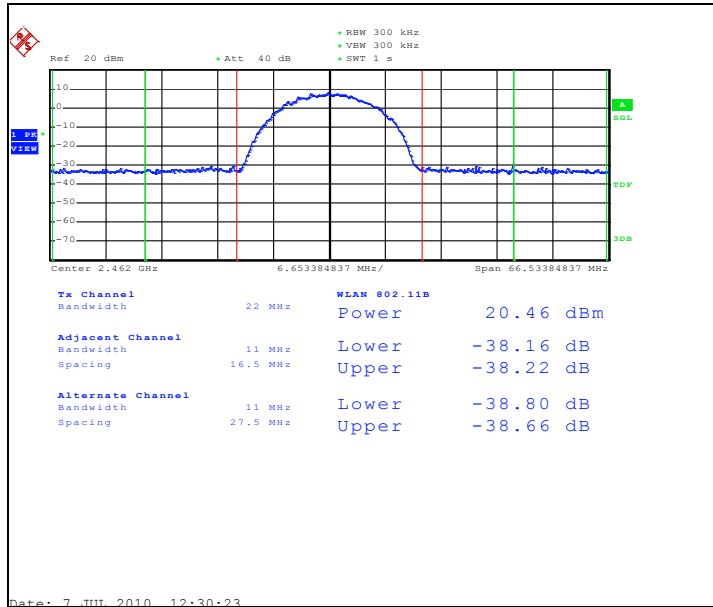
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



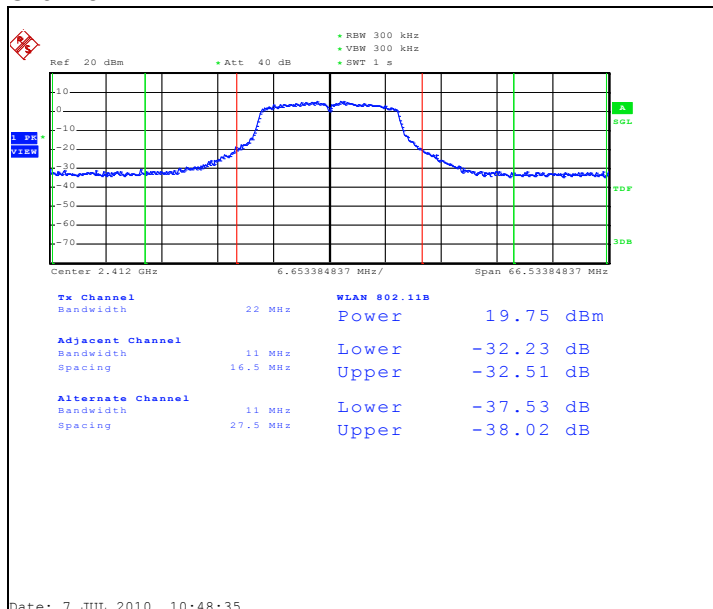
Channel 11 / 2462 MHz



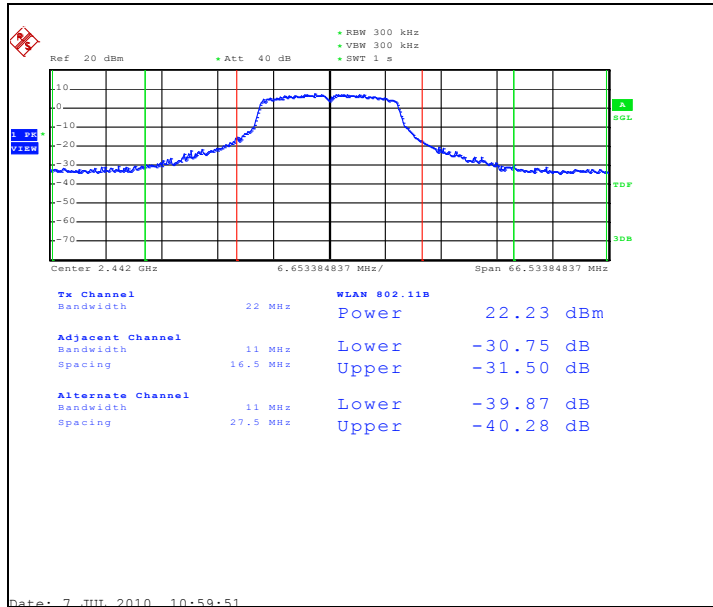
9.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [W]	Result
1 / 2412	19.75	0.094	PASSED
7 / 2442	22.23	0.167	PASSED
11 / 2462	19.29	0.085	PASSED

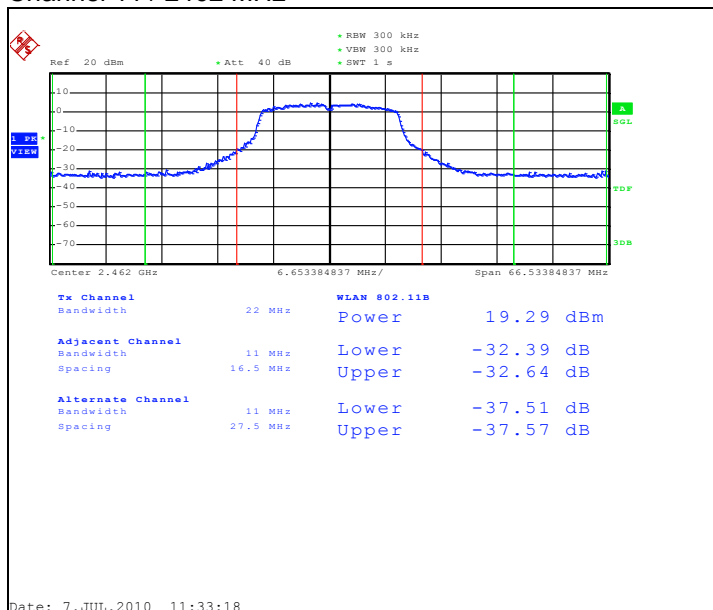
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



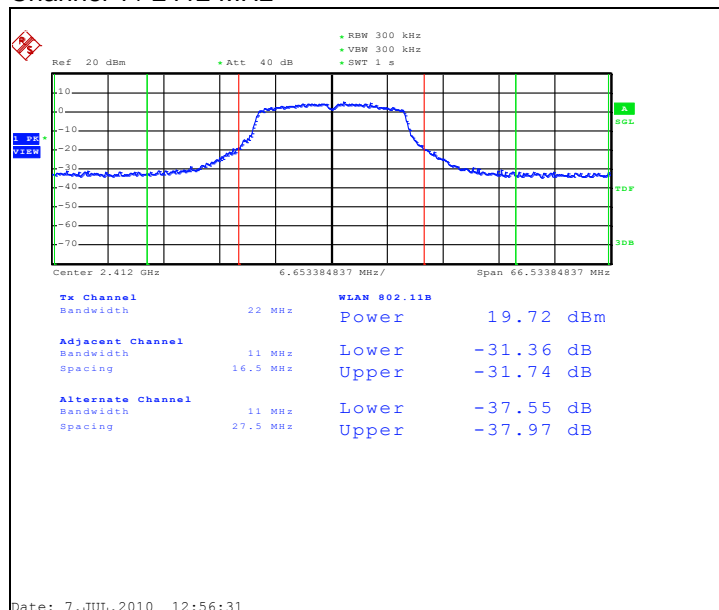
Channel 11 / 2462 MHz



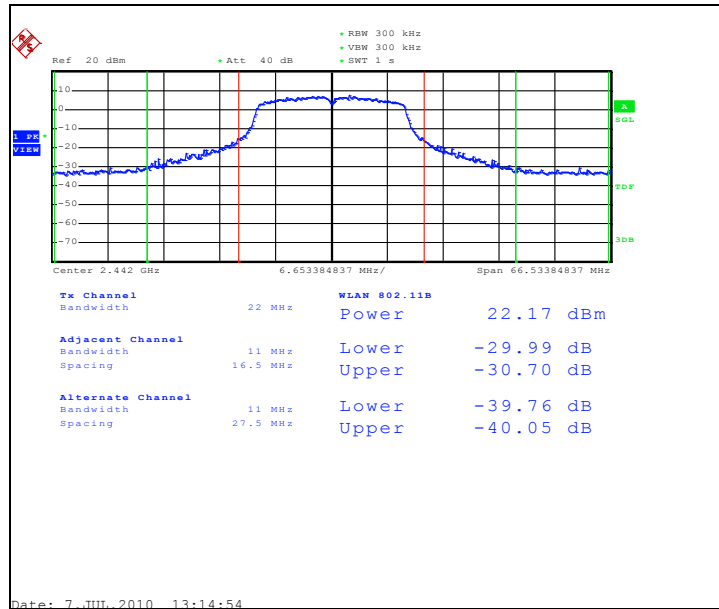
9.2.3 802.11n HT20 MCS 0

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	19.72	0.094	PASSED
7 / 2442	22.17	0.165	PASSED
11 / 2462	19.21	0.083	PASSED

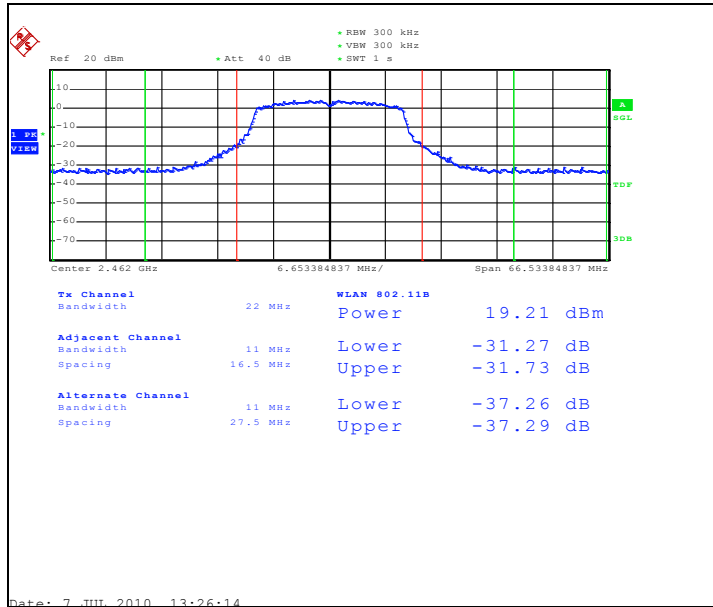
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



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

EUT with DUT number	RM-601, DUT 14830
Accessories with DUT numbers	BL-5CT, DUT 14836; HS-125, DUT 14842; AC-15, DUT 14831
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	24-Jun-2010 and 07-Jul-2010
Measured by	Anni Manninen

10.1. Test method and limit

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

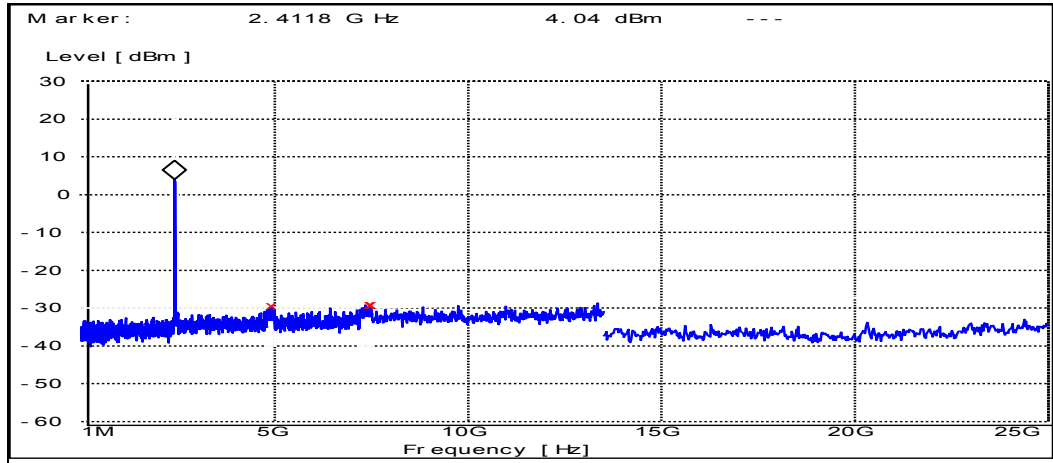
Limits for spurious RF conducted emissions measurements

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

10.2. WLAN Test results

10.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

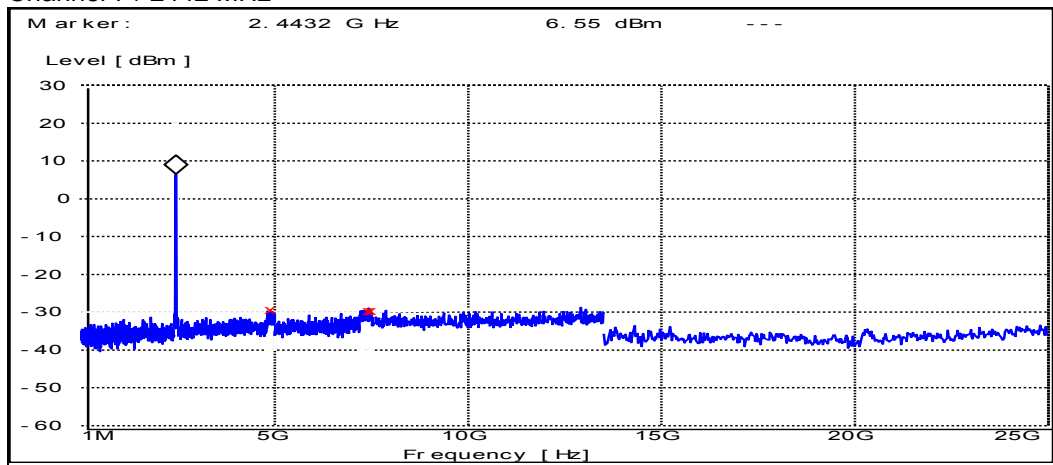
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
4941.600000	-33.438251	PASSED
7473.600000	-33.138251	PASSED
7500.000000	-33.238251	PASSED

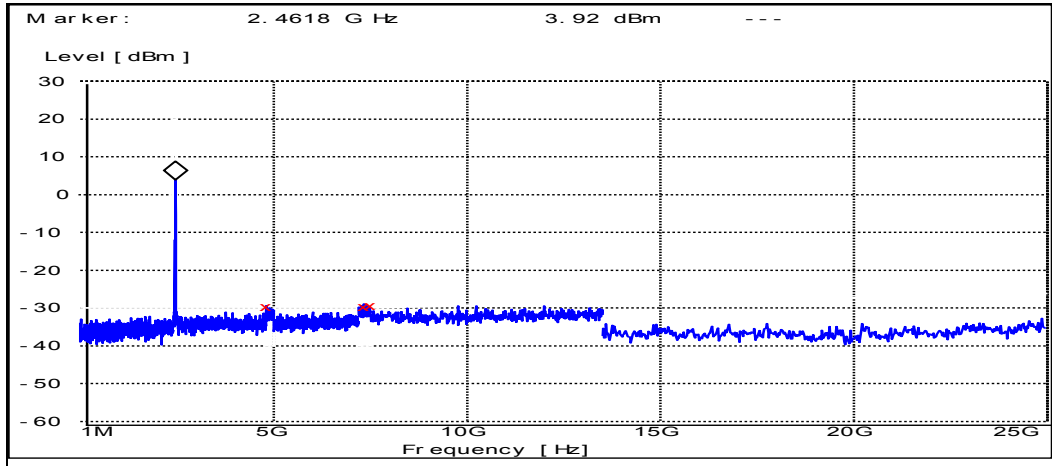
Channel 7 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4903.600000	-35.753344	PASSED
7416.600000	-36.053344	PASSED
7500.000000	-36.053344	PASSED

Channel 11 / 2462 MHz

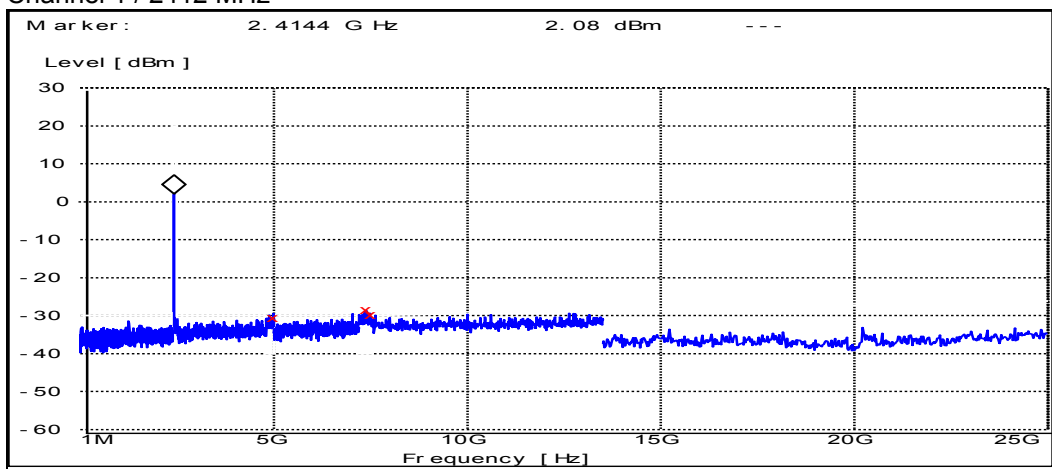


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4805.600000	-33.419878	PASSED
7324.200000	-33.619878	PASSED
7500.000000	-33.219878	PASSED

10.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

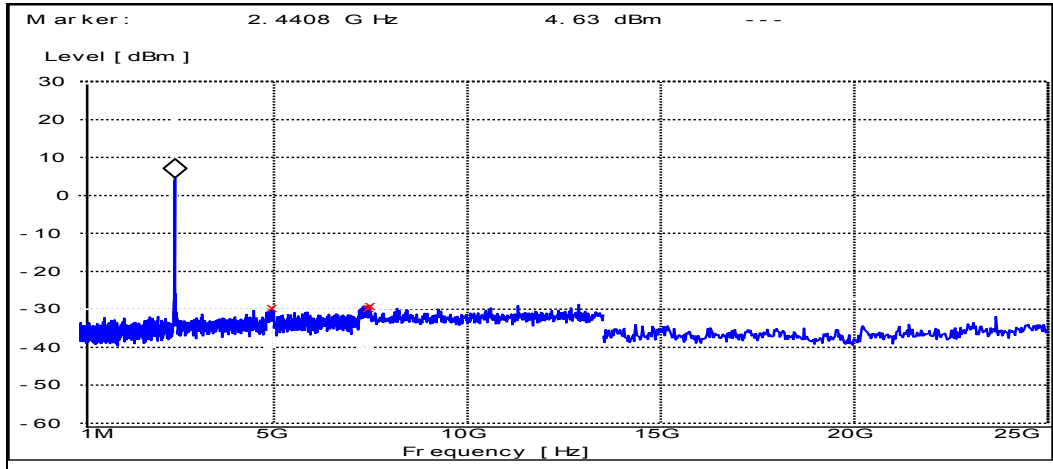
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
4986.400000	-32.580000	PASSED
7401.600000	-30.580000	PASSED
7500.000000	-31.680000	PASSED

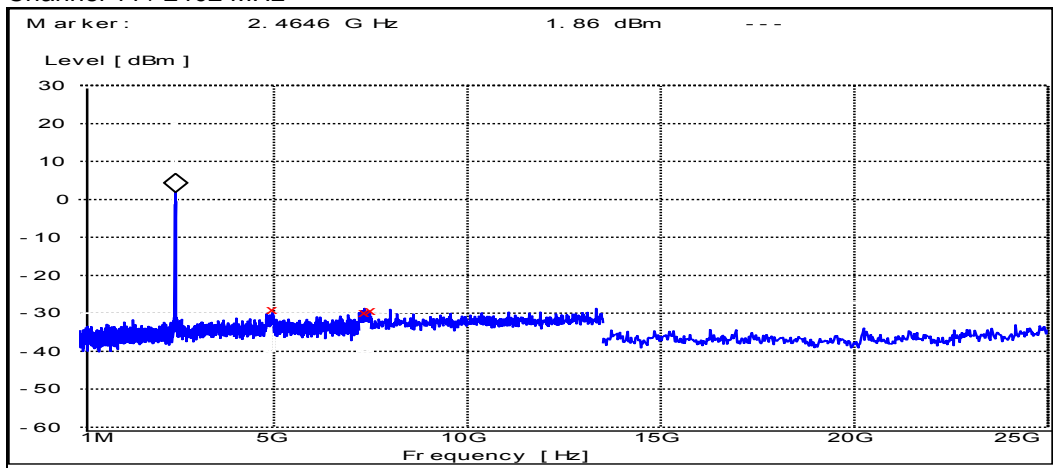
Channel 7 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4968.000000	-34.23000	PASSED
7462.800000	-34.13000	PASSED
7500.000000	-33.73000	PASSED

Channel 11 / 2462 MHz

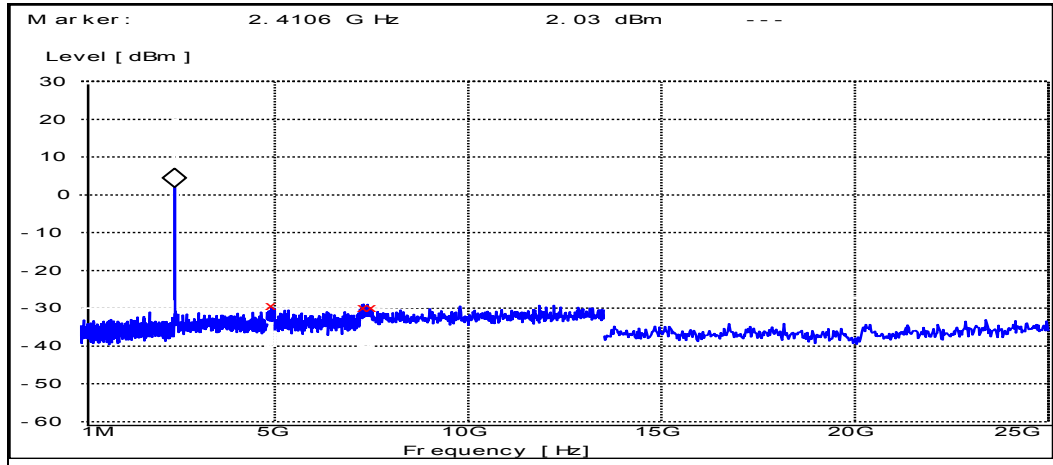


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4968.000000	-30.96000	PASSED
7347.000000	-31.86000	PASSED
7500.000000	-31.26000	PASSED

10.2.3 802.11n HT20 MCS 0

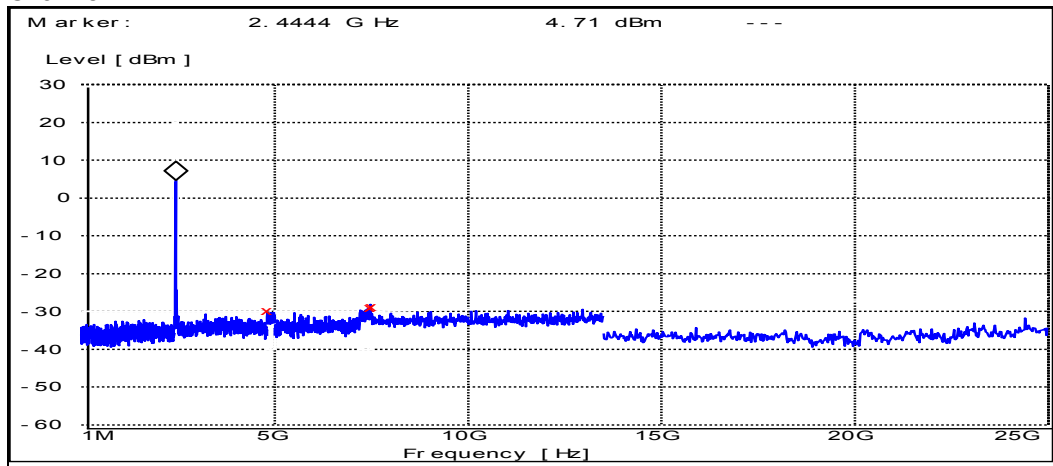
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
4926.800000	-31.329646	PASSED
7300.800000	-31.829646	PASSED
7500.000000	-31.929646	PASSED

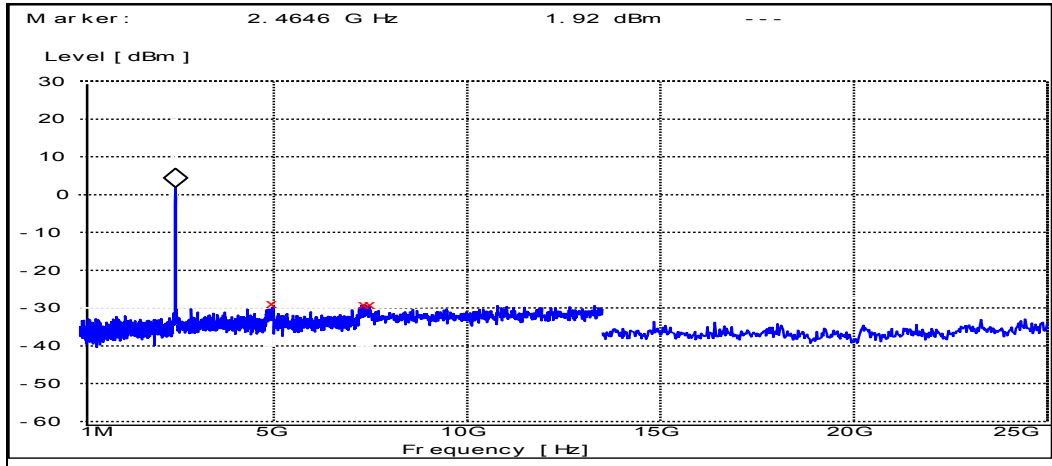
Channel 7 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4808.800000	-34.613127	PASSED
7483.200000	-33.713127	PASSED
7500.000000	-33.513127	PASSED

Channel 11 / 2462 MHz



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

Frequency [MHz]	P [dBc]	Result
4968.000000	-30.722734	PASSED
7334.400000	-30.922734	PASSED
7500.000000	-30.922734	PASSED

11. 6 dB bandwidth (FCC §15.247(a)(2), RSS-210 A8.2 (a))

EUT with DUT number	RM-601, DUT 14830
Accessories with DUT numbers	BL-5CT, DUT 14836; HS-125, DUT 14842; AC-15, DUT 14831
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	24-Jun-2010 and 07-Jul-2010
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 6 dB bandwidth measurements

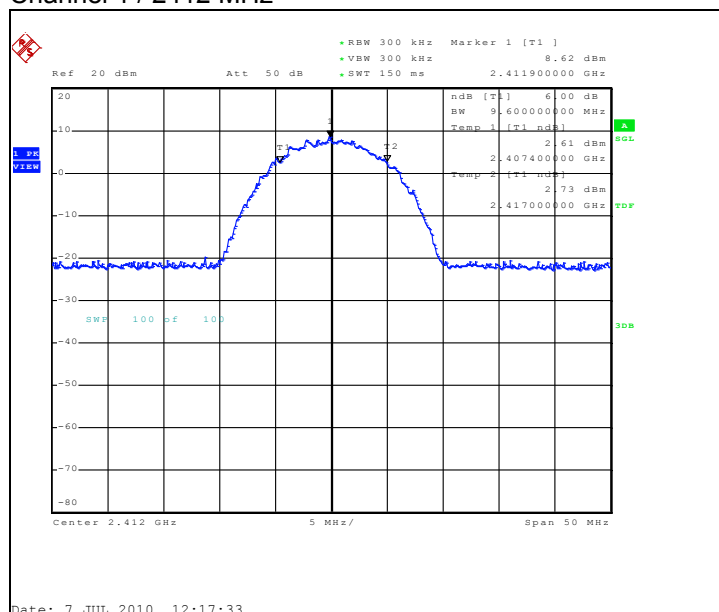
Limit [kHz]
≥ 500

11.2. WLAN test results

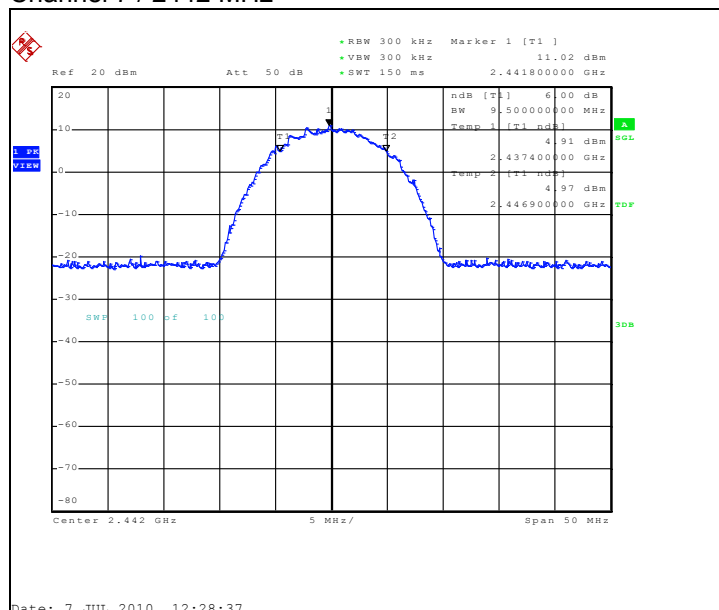
11.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1	9600.000	PASSED
7	9500.000	PASSED
11	9500.000	PASSED

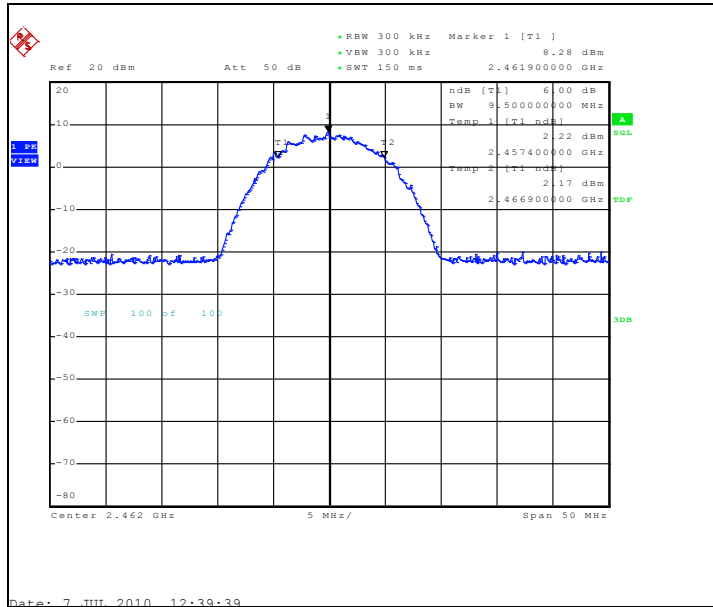
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



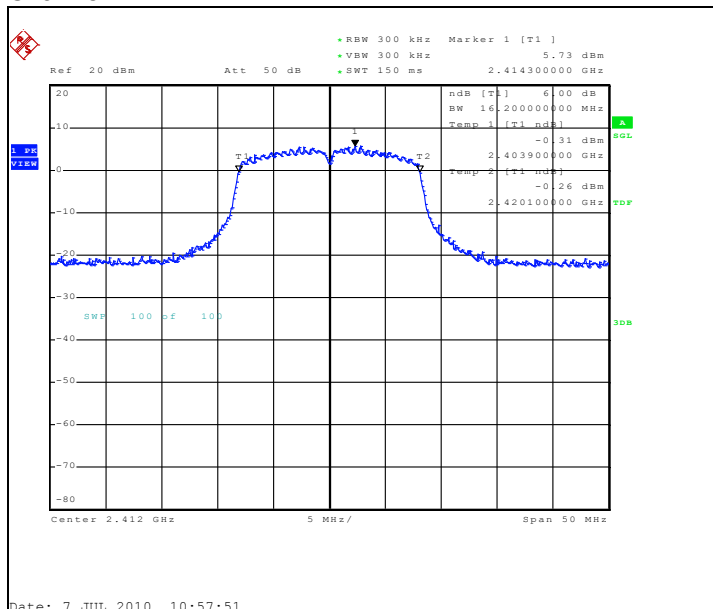
Channel 11 / 2462 MHz



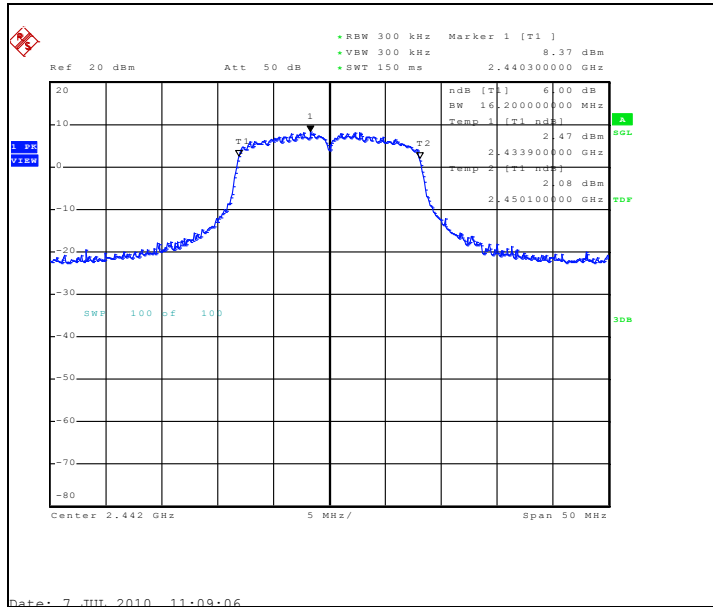
11.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1	16200.000	PASSED
7	16200.000	PASSED
11	16200.000	PASSED

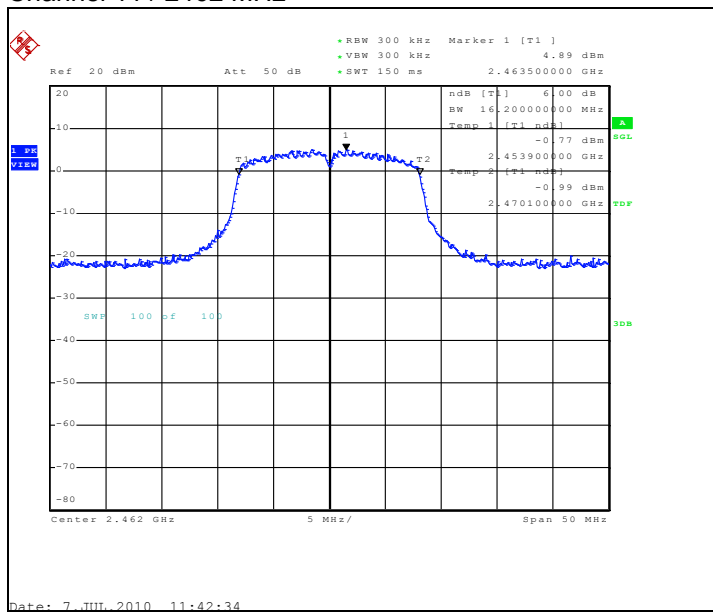
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



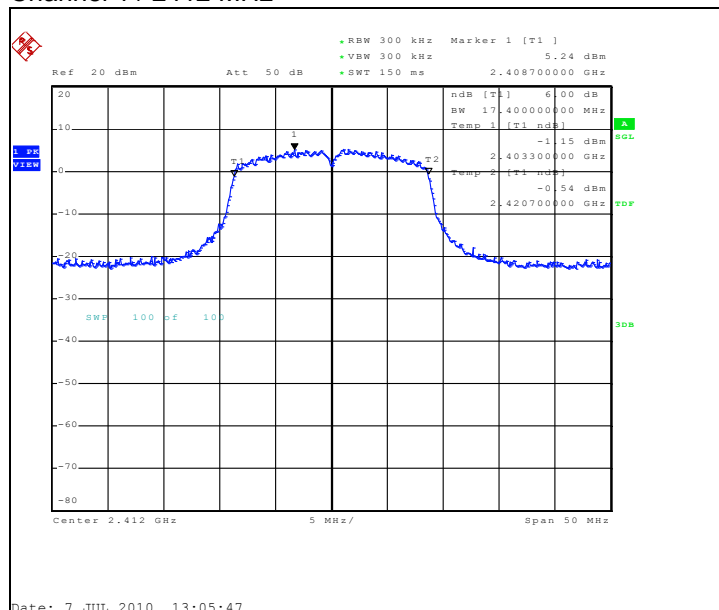
Channel 11 / 2462 MHz



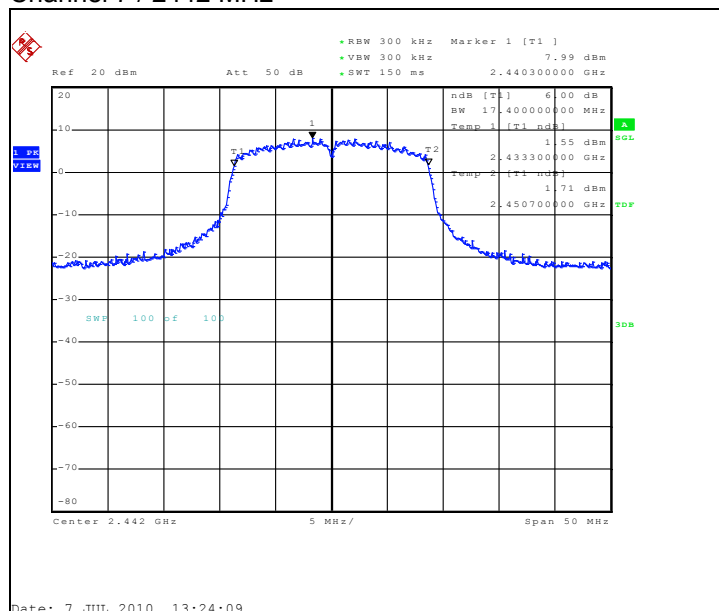
11.2.3 802.11n HT20 MCS 0

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1	17400.000	PASSED
7	17400.000	PASSED
11	17400.000	PASSED

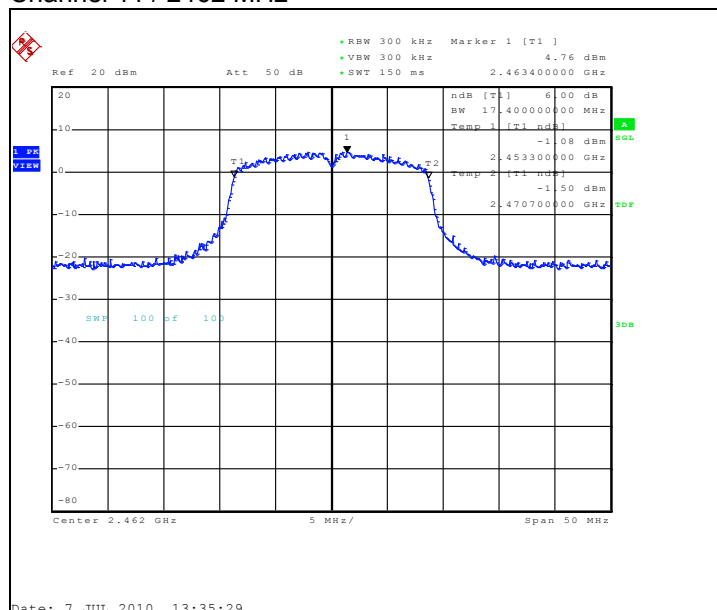
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



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

EUT with DUT number	RM-601, DUT 14830
Accessories with DUT numbers	BL-5CT, DUT 14836; HS-125, DUT 14842; AC-15, DUT 14831
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	24-Jun-2010 and 07-Jul-2010
Measured by	Anni Manninen

12.1. 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

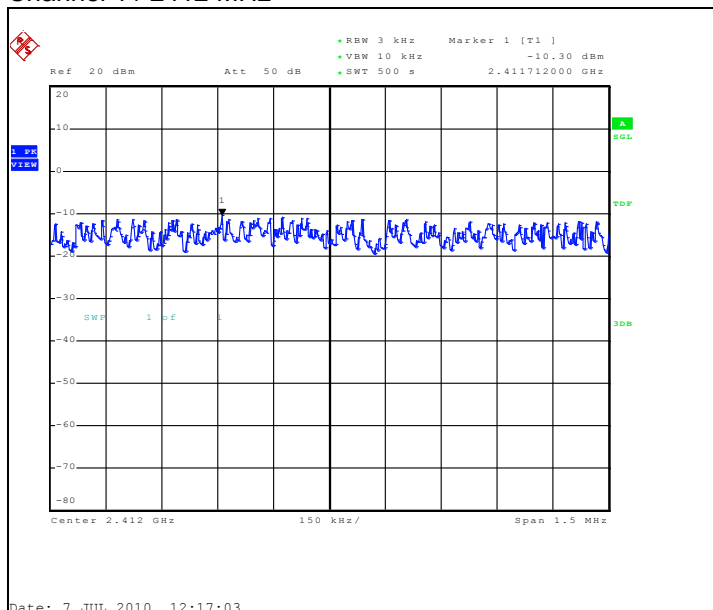
Limit [dBm] @ 3 kHz
≤ 8

12.2. WLAN test results

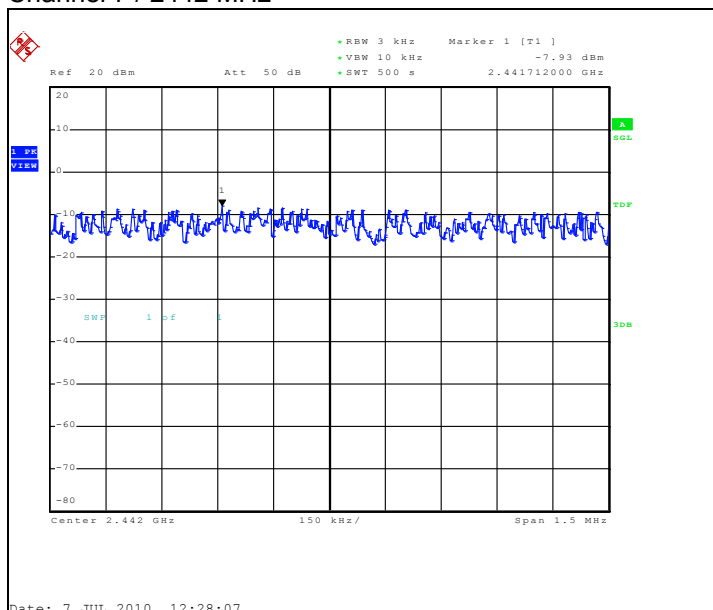
12.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-10.30	PASSED
7 / 2442	-7.93	PASSED
11 / 2462	-10.70	PASSED

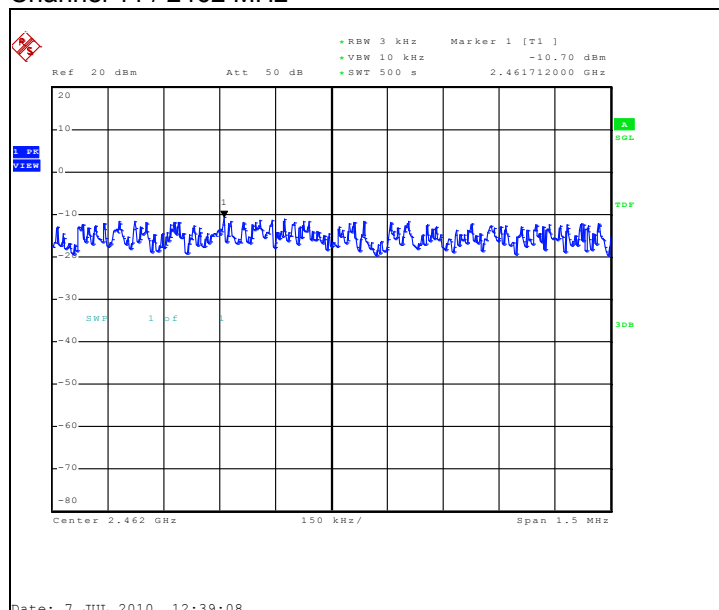
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



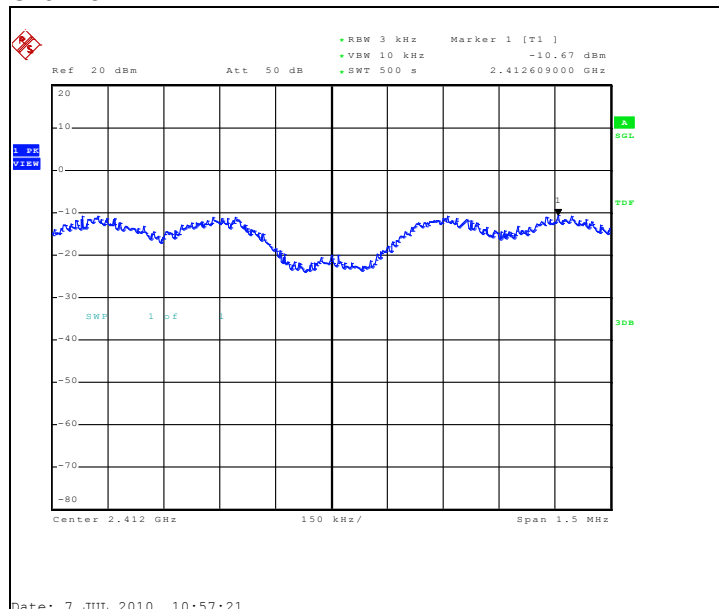
Channel 11 / 2462 MHz



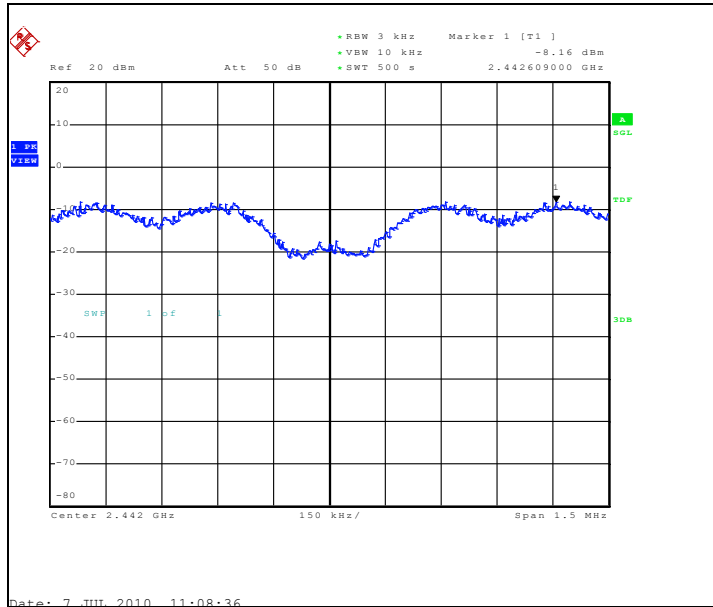
12.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-10.67	PASSED
7 / 2442	-8.16	PASSED
11 / 2462	-11.19	PASSED

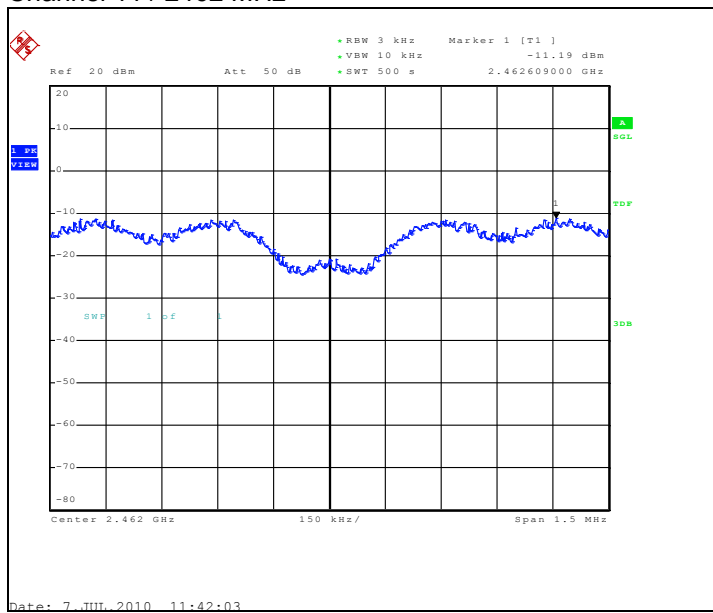
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



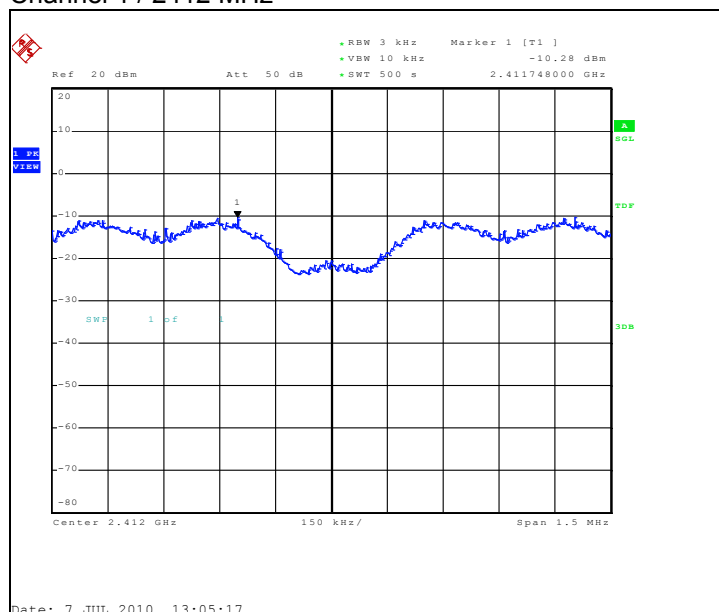
Channel 11 / 2462 MHz



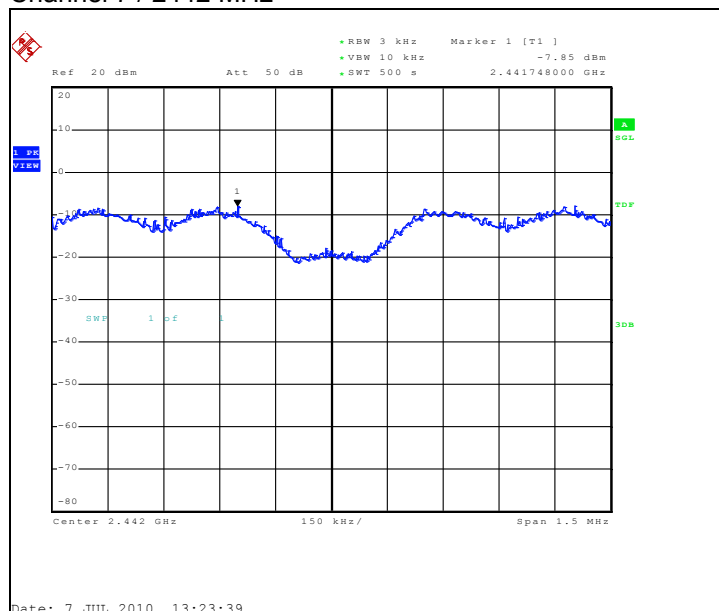
12.2.3 802.11n HT20 MCS 0

Channel / f _c [MHz]	P [dBm]	Result
1 / 2412	-10.28	PASSED
7 / 2442	-7.85	PASSED
11 / 2462	-10.82	PASSED

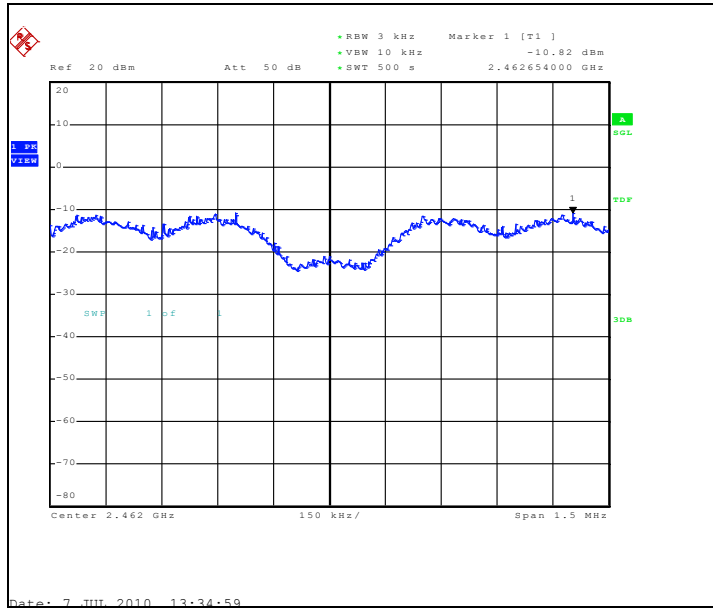
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



13. Test Equipment

13.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1759	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
1916	Communication Tester	CMTA84	R&S	15B
1986	GPS Antenna	AMHP10-15R/390	European Antenna	15C, 15B
1992	Signal Generator	83630B	Agilent	15C, 15B
2039	Power Supply	PL330QMD	Thurlby	15C, 15B
2060	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
2068	CDN	S1	NMP	15C, 15B
2097	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
2156	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2180	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2206	Signal Generator	SMX	R&S	15C, 15B
2347	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2352	Spectrum Analyzer	FSP-30	R&S	22/24/27, 15C
2359	Temperature Test Chamber	VT4002	Vötsch	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	15B
2389	Signal Generator	SMJ 100A	R&S	15B
2390	Directional Coupler	DC2600	AR	-
6009	GPS Antenna	SA-700	Chronos	15C
6010	GPS Network amplifier	NLA20FPDC	GPS Networking, Inc	15C
6011	GPS signal Splitter	LDCBS1x4	GPS Networking, Inc	15C
6012	CDN	CDN USB/c	Teseq	-
6015	Receiver	ESI	R&S	22/24, 15C, 15B
6016	ESD gun	PESD 1610	HAEFELY	-
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24/27, 15C, 15B
6036	Data Logger	175-H2	Testo	22/24/27, 15C, 15B
6038	Data Logger	Testo 580	Testo	23/24/27, 15C, 15B
6039	USB Interface	5541765	Testo	23/24/27, 15C, 15B
2059	V-network	ESH3-Z6	R&S	-
6044	V-network	ESH3-Z6	R&S	-
6045	Power splitter	11667B	Agilent	23/24/27, 15C
6046	Attenuator 10dB	8493C	Agilent	23/24/27, 15C
6047	Attenuator 20dB	8493C	Agilent	23/24/27, 15C

13.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1917	Communication Tester	CMTA84	R&S	15B
1984	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C, 15B
1986	GPS Antenna	AMHP10-15R/390	European Antenna	15C, 15B
1988	Antenna	HL562	R&S	22/24/27, 15C, 15B
1989	Relay Switch Unit	TS-RSP	R&S	22/24/27, 15C, 15B
2009	Signal Generator	SMP 22	R&S	22/24/27, 15C, 15B
2027	CDN	M2 (modified) DC1	MEB	22/24/27, 15C, 15B
2028	CDN	M3 (modified) DC2	MEB	22/24/27, 15C, 15B
2029	Power Supply	PL330	Thurlby	22/24/27, 15C
2043	Band Reject Filter	WRCA824/849-0,2-6SS	Wainwright	22

Eq. No	Equipment	Type	Manufacturer	Used in
2047	Band Reject Filter	WRCC1800/2000-0.2-10SS	Wainwright	24
2051	High Pass Filter	4HC1700-1-KK	R&S	22
2109	Power Supply	PL330QMD	Thurlby	22/24/27, 15C, 15B
2116	Controller	EMCO 2090	ETS	22/24/27, 15C, 15B
2135	CDN	CDN 801-M3	Lüthi	22/24/27, 15C, 15B
2140	Antenna	EMCO93110B	EMCO	22/24/27, 15C
2142	Antenna	3146	EMCO	22/24/27, 15C
2150	High Pass Filter	F-15041	RLC	22/24/27, 15C
2156	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2176	CDN	CDN 801-M3	Lüthi	22/24/27, 15C, 15B
2180	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2188	Preamplifier	AFS4-00100300-20-23P-6	Miteq	22/24/27, 15C, 15B
2347	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2348	Controller	G-1000DXC	Yaesu	22/24/27, 15C, 15B
2349	Computer Controller	GS-232B	Yaesu	22/24/27, 15C, 15B
2350	Preamplifier	AMF-6D-020180-29-20P	Miteq	22/24/27, 15C, 15B
2353	Receiver	ESIB26	R&S	22/24/27, 15C, 15B
2357	Band Reject Filter	WRCG2400/2483-2390/2493-35/10SS	Wainwright	15C
2361	Anechoic Chamber	3 m Semi / Full Anechoic Chamber	Euroshield	22/24/27, 15C, 15B
2364	Band Reject Filter	WRCG1877/1883 - 1870/1890-40/6SS	Wainwright	24
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
2388	Bluetooth Tester	CBT	R&S	15B
2389	Signal Generator	SMJ 100A	R&S	15B
2391	Band Reject Filter	WRCG1729.4/1735.4-1722.4/1742.4-40/6SS	Wainwright	27
6009	GPS Antenna	SA-700	Chronos	15C
6010	GPS Network amplifier	NLA20FPDC	GPS Networking, Inc	15C
6011	GPS signal Splitter	LDCBS1x4	GPS Networking, Inc	15C
6014	Substitute Calibration Cable	Sucoflex 104PB	Suhner	-
6017	Antenna	SBA 9113	Schwarzbeck	22 / 24 / 27
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24/27, 15C, 15B
-	RF immunity / Emission Software	EMC32	R&S	22/24/27, 15C, 15B
6037	Data Logger	175-H2	Testo	23/24/27, 15C, 15B
6038	Data Logger	Testo 580	Testo	23/24/27, 15C, 15B
6039	USB Interface	5541765	Testo	23/24/27, 15C, 15B