FCC Part 15C Compliance Test Report

WLAN

Test Report no.:	EMC_BO_001738	**Date of Report:**	06-Aug-2012
Number of pages:	37	**Project support engineer:**	Robert Müller

Customer:	Novero GmbH, Meesmannstrasse 103, 44807 Bochum, Germany		
Customers contact:	Jürgen Hindersmann		
Manufacturer	Novero GmbH		
EUT ident.:	**Hands-Free Unit with Bluetooth, WLAN and GSM/WCDMA, HT-5**		
FCC ID	WJLHT-5	**IC:**	7847A-HT5

Referred documents:	CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), KDB558074 D01 (2012), IC standards RSS-GEN and RSS-210. Deviations or clarifications to these standards are noted in the related test result under “test method and limit”.			
Testing Laboratory:	novero Test Center, Meesmannstr.103, 44807 Bochum, Germany			
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	FCC listing no.:	881111	IC recognition no.:	7847A-1
	Laboratory manager:	Jürgen Mitterer		

Test result	The EUT complies with the requirements made in the referred test documents.

Date and signature:

Digitally signed by Juergen Mitterer
DN: cn=Juergen Mitterer, o=novero, ou=QVC, email=jurgen.mitterer@novero.com, c=DE
Date: 2012.08.22 09:46:14 +02'00'

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	16 April 2012
Testing completed	06 July 2012
The customer's contact person	Jürgen Hindersmann
Notes	None

1.1. EUT and Accessory Information

The EUT is a DC powered GSM850/900/1800/1900/FDDI/FDDV with WLAN and Bluetooth device for automotive applications. EUT is tested with maximum rated TX power. EUT has separate BT and WLAN antennas and fixed GSM/WCDMA antenna connector. Data rates 1Mbps for IEEE802.11b and 6Mbps for IEEE802.1g were selected as worst case scenarios after output power pre-measurement with a peak power meter.

Product	Type	SN	HW	MV	SW	DUT
UHV premium	HT-5	A09737781	X21		X907	GEM016
UHV premium	HT-5	A09737713	X21		X907	GEM014

1.2. Summary of Test Results

WLAN:

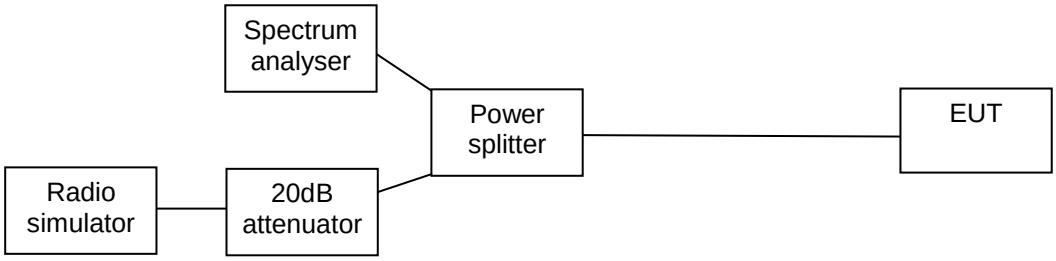
Section in CFR 47	Section in *RSS-GEN* or RSS-210	Name of the test	Result
15.247(b)(1)	A8.4 (4)	Conducted peak output power	PASSED
15.247(d)	A8.5	Band edge compliance of RF emissions	PASSED
15.247(c)	A8.5	Spurious RF conducted emissions	PASSED
15.247(c), 15.209	A8.5	Spurious radiated emissions	PASSED
15.207	7.2.2	AC powerline conducted emissions	NA
15.247(a)(2)	A8.2 (a)	6 dB / 99% bandwidth	PASSED
15.247(e)	A8.2 (b)	Power spectral density	PASSED

PASSED: The EUT complies with the essential requirements in the standard.
FAILED: The EUT does not comply with the essential requirements in the standard.
NP: The test was not performed.
NA: The test was not applicable

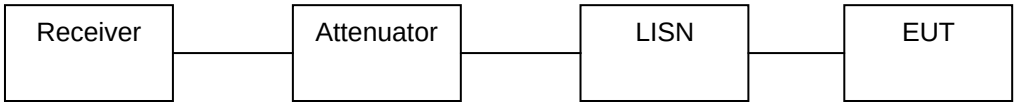
CONTENTS

2. Test setups

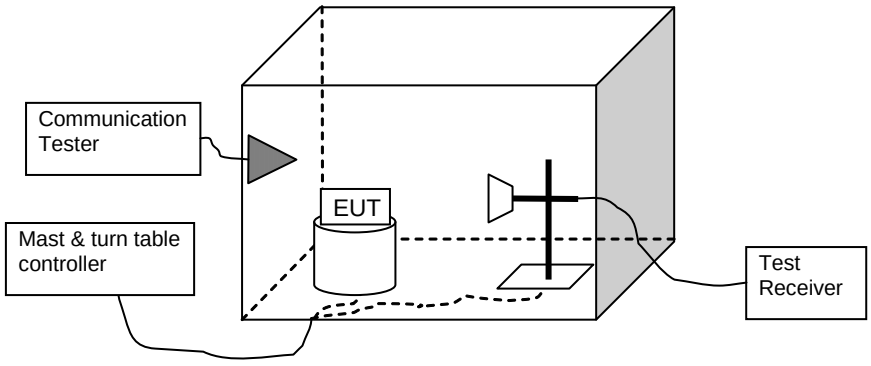
2.1. Conducted RF test setup



2.2. AC power line conducted emissions test setup



2.3. Spurious radiated emissions test setup



3. Conducted peak output power

(FCC §15.247(b)(1), RSS-210 A8.4 (2))

EUT with DUT number	GEM014
Accessories with DUT numbers	None
Operation Voltage [V] / [Hz]	13.2 / DC
Result	PASSED
Remarks	None
Temp [°C] / Humidity [%RH]	25 / 50
Date of measurements	22 May 2012
Measured by	Robert Müller

3.1. Test method and limit

The measurement is made according to KDB 558074 D01 (2012) and IC standard RSS-210.

Limits for conducted peak output power measurements

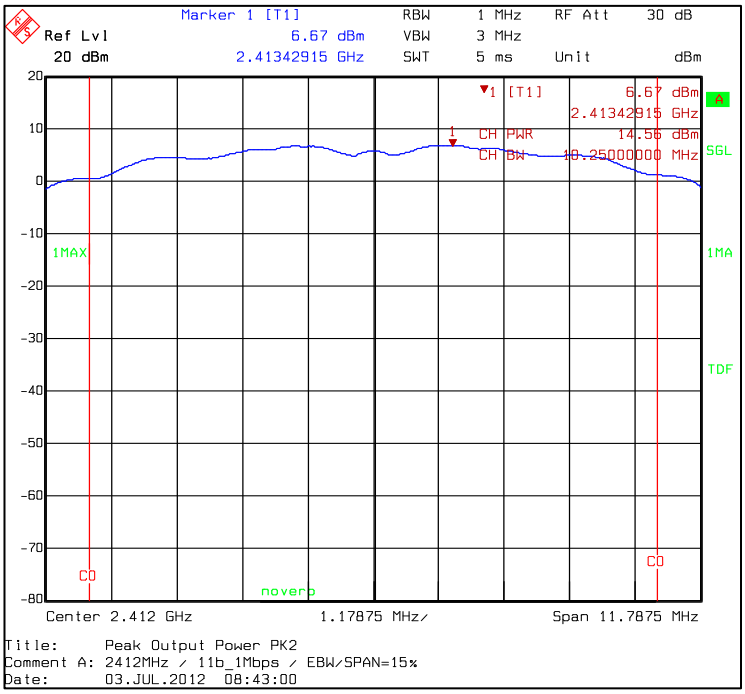
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

3.2. WLAN Test results

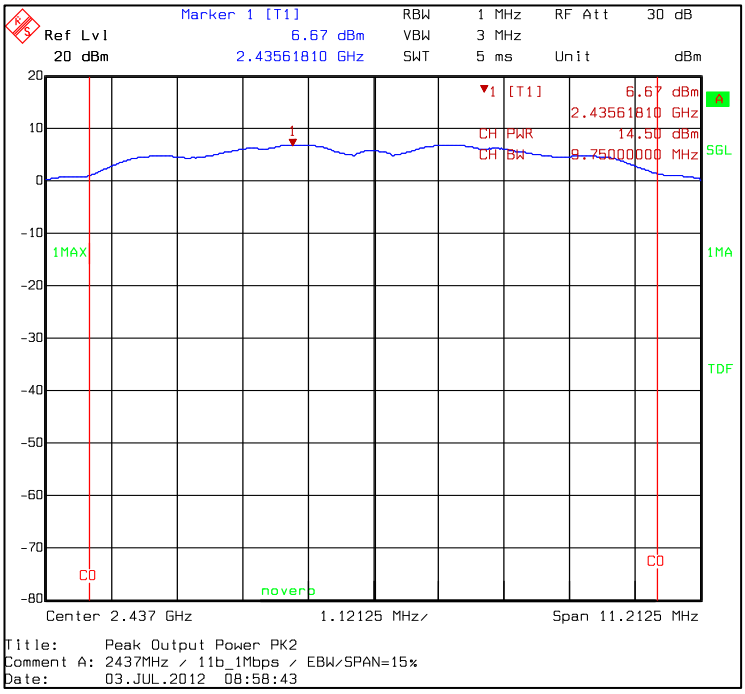
3.2.1 DSSS mode, DBPSK modulation, 1 Mbps data rate

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
1 / 2412	14.56	28.58	PASSED
6 / 2437	14.50	28.18	PASSED
11 / 2462	14.43	27.73	PASSED

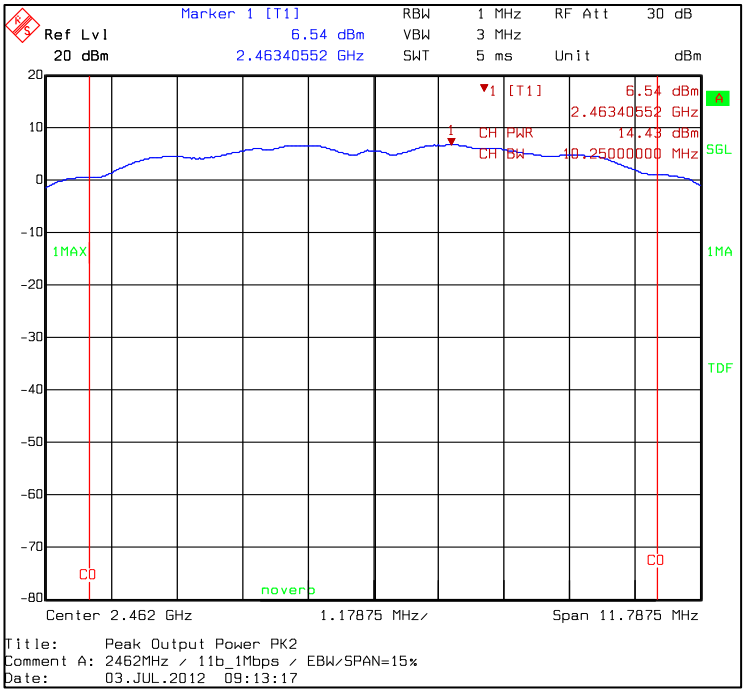
Channel 1 / 2412 MHz (Peak detector, RBW: 1 MHz)



Channel 6 / 2437 MHz (Peak detector, RBW: 1 MHz)



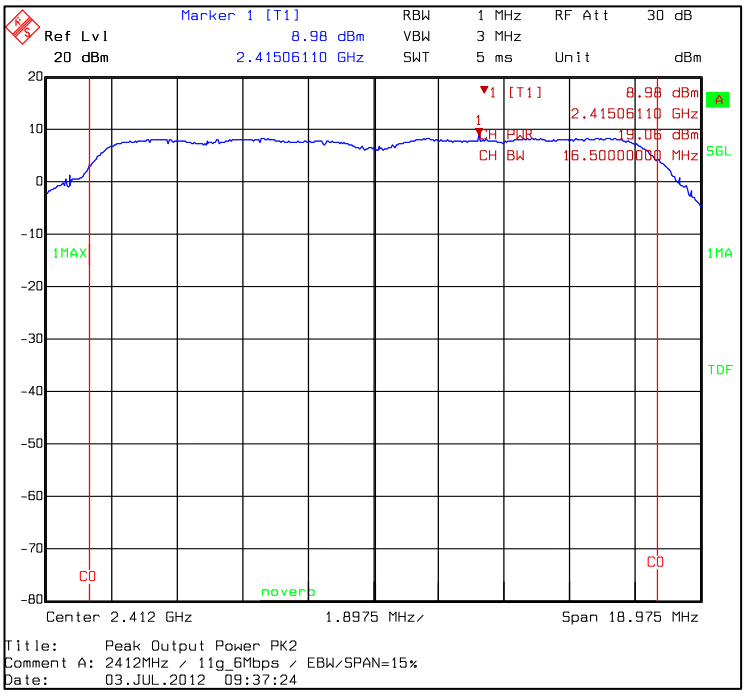
Channel 11 / 2462 MHz (Peak detector, RBW: 1 MHz)



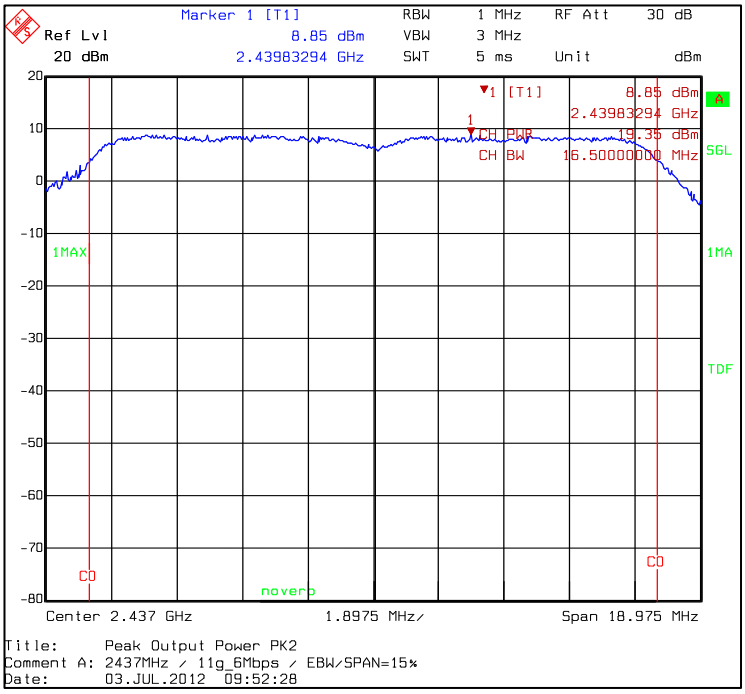
3.2.2 OFDM mode, DBPSK modulation, 6 Mbps data rate

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
1 / 2412	19.06	80.54	PASSED
6 / 2437	19.35	86.10	PASSED
11 / 2462	18.98	79.07	PASSED

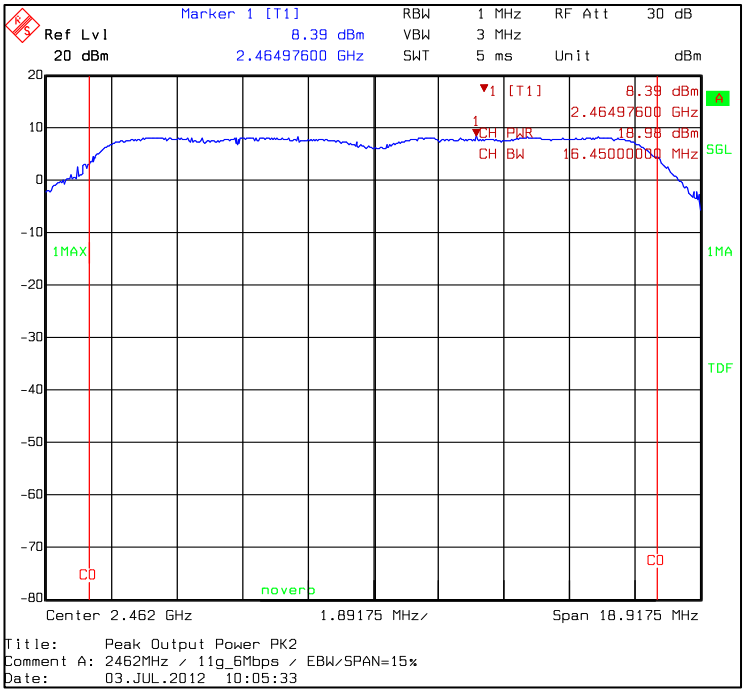
Channel 1 / 2412 MHz (Peak detector, RBW: 1 MHz)



Channel 6 / 2437 MHz (Peak detector, RBW: 1 MHz)



Channel 11 / 2462 MHz (Peak detector, RBW: 1 MHz)



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

EUT with DUT number	GEM016
Accessories with DUT numbers	None
Operation Voltage [V] / [Hz]	13.2 / DC
Result	PASSED
Remarks	None
Temp [°C] / Humidity [%RH]	25 / 50
Date of measurements	21-May-2012
Measured by	Robert Müller

4.1. Test method and limit

The measurement is made according to 558074 D01 (2012) and IC standard RSS- 210.

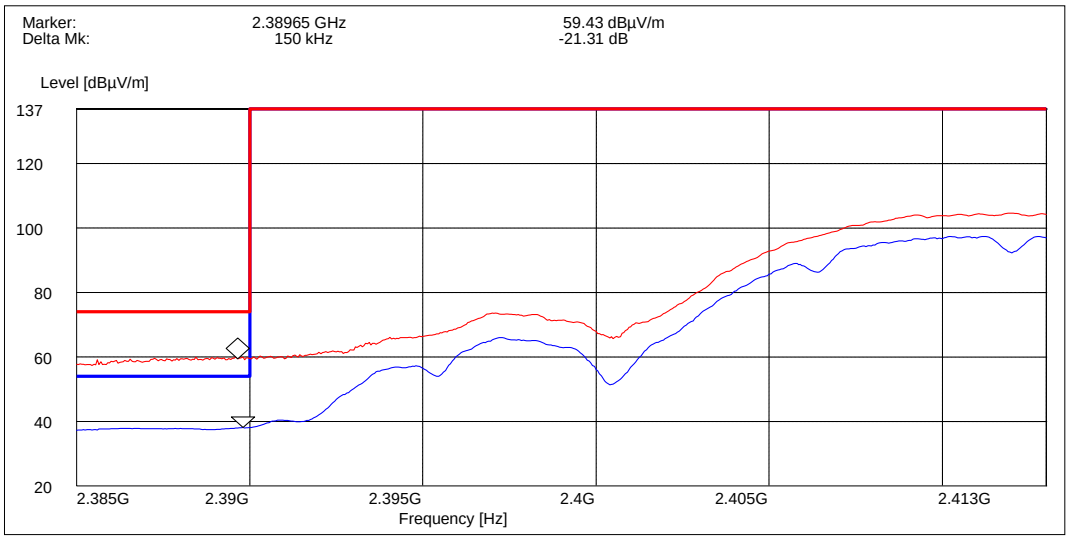
Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

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

4.2. WLAN Test results

4.2.1 DSSS mode, DBPSK modulation, 1 Mbps data rate

Radiated, channel 1 / 2412 MHz



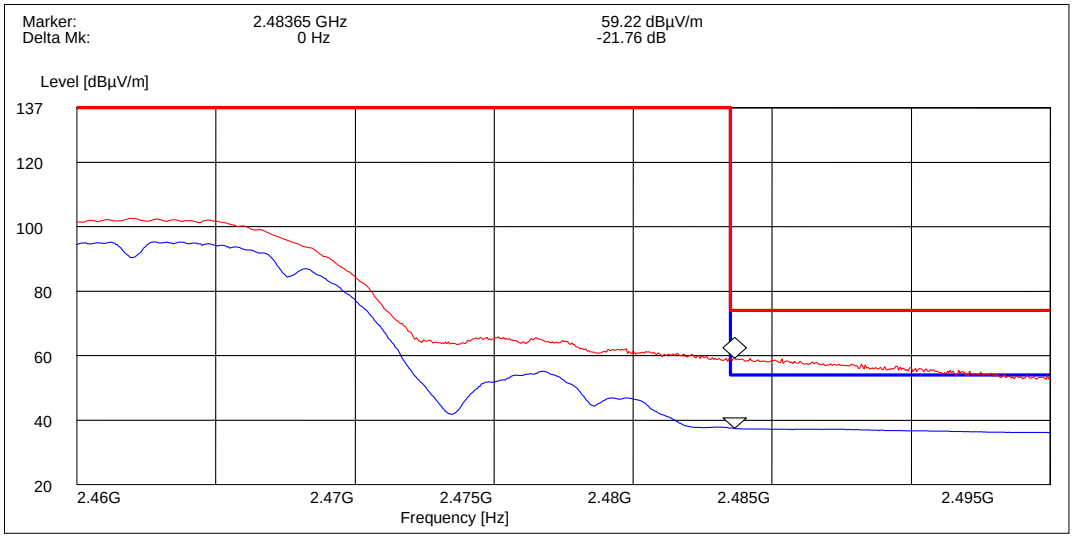
Peak (RBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	Result
1 / 2412	59.43	PASSED

Average (RBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	Result
1 / 2412	38.12	PASSED

Radiated, channel 11 / 2462 MHz



Peak (RBW: 1 MHz)

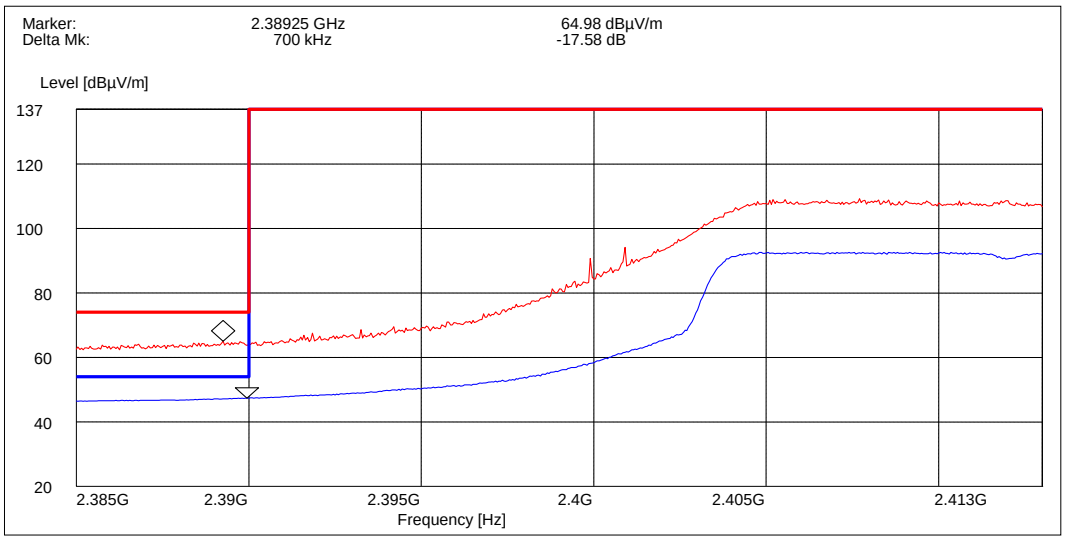
Channel / f_C [MHz]	E [dBµV/m]	Result
11 / 2462	59.22	PASSED

Average (RBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	Result
11 / 2462	37.46	PASSED

4.2.2 OFDM mode, DBPSK modulation, 6 Mbps data rate

Radiated, channel 1 / 2412 MHz



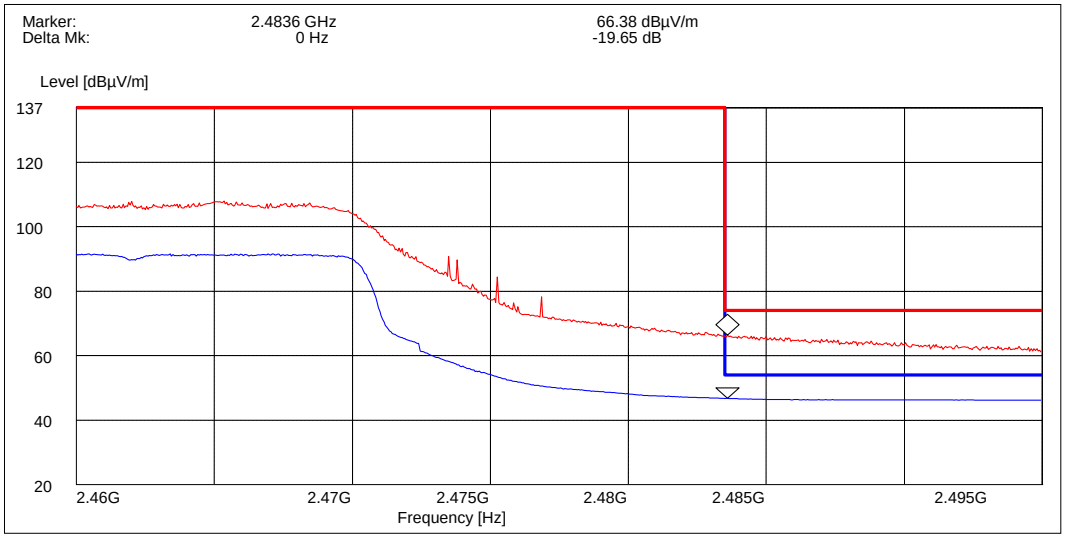
Peak (RBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	Result
1 / 2412	64.98	PASSED

Average (RBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	Result
1 / 2412	47.40	PASSED

Radiated, channel 11 / 2462 MHz



Peak (RBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	Result
11 / 2462	66.38	PASSED

Average (RBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	Result
11 / 2462	46.73	PASSED

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

EUT with DUT number	GEM014
Accessories with DUT numbers	None
Operation Voltage [V] / [Hz]	13.2 / DC
Result	PASSED
Remarks	None
Temp [°C] / Humidity [%RH]	25 / 50
Date of measurements	03-July-2012
Measured by	Robert Müller

5.1. Test method and limit

The measurement is made according to KDB 558074 D01 (2012) and IC standard RSS-210.

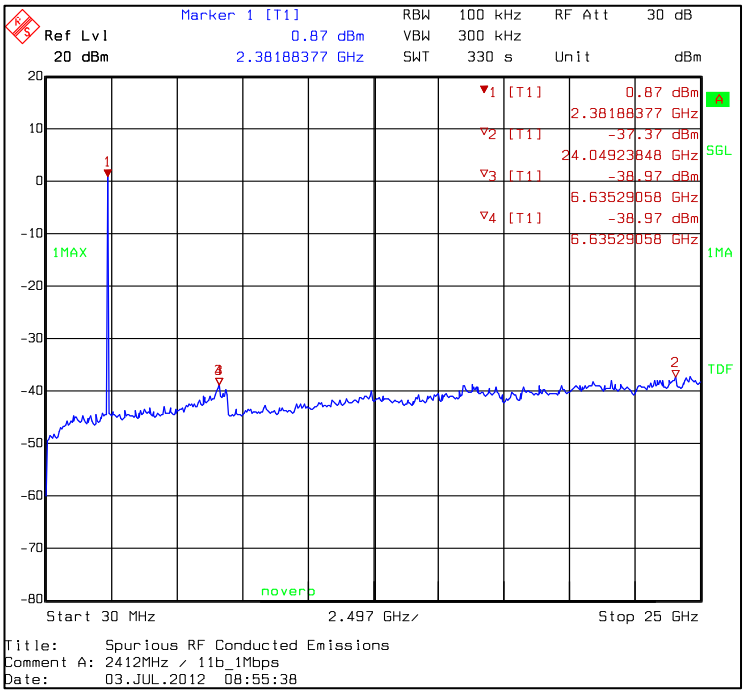
Limits for spurious RF conducted emissions measurements

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

5.2. WLAN Test results

5.2.1 DSSS mode, DBPSK modulation, 1 Mbps data rate

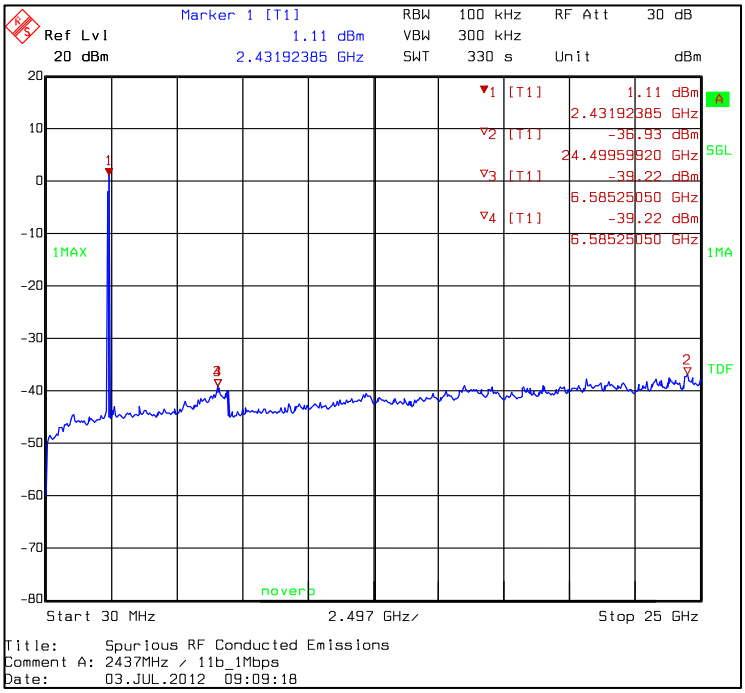
Channel 1 / 2412 MHz



Peak (RBW: 100 KHz)

Frequency [MHz]	P [dBc]	Result
6635.29	-38.97	PASSED
24049.24	-37.37	PASSED

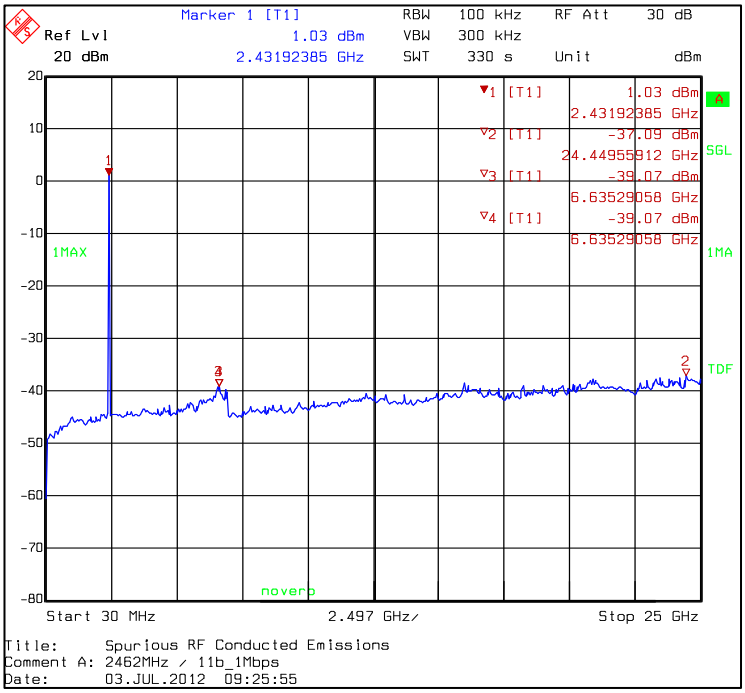
Channel 7 / 2442 MHz



Peak (RBW: 100 KHz)

Frequency [MHz]	P [dBc]	Result
6585.25	-39.22	PASSED
24499.60	-36.93	PASSED

Channel 11 / 2462 MHz

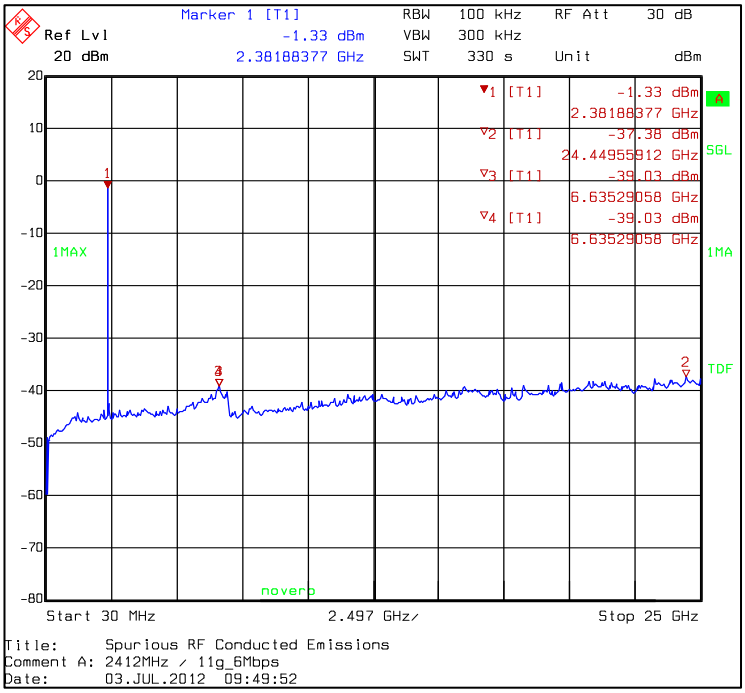


Peak (RBW: 100 KHz)

Frequency [MHz]	P [dBc]	Result
6635.29	-39.07	PASSED
24449.56	-37.09	PASSED

5.2.2 OFDM mode, DBPSK modulation, 6 Mbps data rate

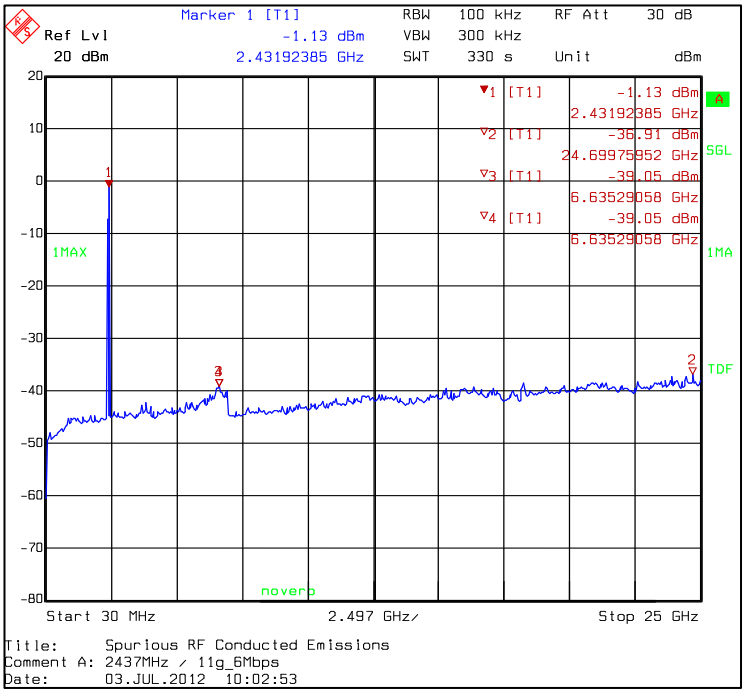
Channel 1 / 2412 MHz



Peak (RBW: 100 KHz)

Frequency [MHz]	P [dBc]	Result
6635.29	-39.03	PASSED
24449.56	-37.38	PASSED

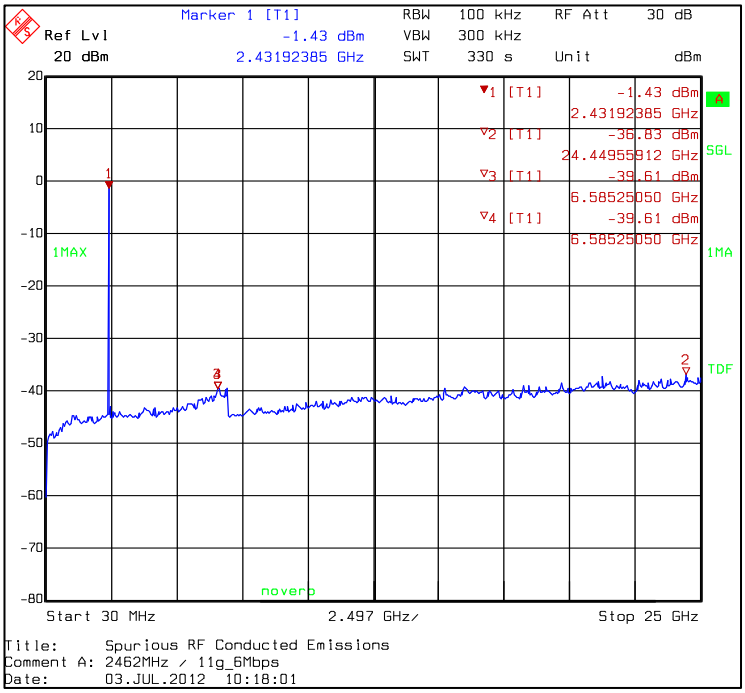
Channel 6 / 2437 MHz



Peak (RBW: 100 KHz)

Frequency [MHz]	P [dBc]	Result
6635.29	-39.05	PASSED
24699.76	-36.91	PASSED

Channel 11 / 2462 MHz



Peak (RBW: 100 KHz)

Frequency [MHz]	P [dBc]	Result
6585.25	-39.61	PASSED
24449.56	-36.83	PASSED

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

EUT with DUT number	GEM016
Accessories with DUT numbers	None
Operation Voltage [V] / [Hz]	13.2 / DC
Result	PASSED
Remarks	None
Temp [°C] / Humidity [%RH]	25 / 50
Date of measurements	06-July-2012
Measured by	Robert Müller

6.1. Test method and limit

The measurement is made according to Public notice DA 00-705/ KDB Publication No. 558074 and IC standard RSS-210 as follows:

Below 1GHz:

The Preliminary Measurement and the Final Measurement is performed in 3m distance by rotating the turntable of 360 degrees and moving the antenna height between 1-4m.

The Preliminary Measurement is performed with floor absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system.

The Final Measurement is performed without floor absorbers, if the Preliminary Measurement results are closer than 20 dB to the permissible limit.

Between 1-3GHz:

The Preliminary Measurement and the Final Measurement is performed in 3m distance by rotating the turntable of 360 degrees at fixed height.

The Preliminary Measurement and the Final Measurement with absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system.

The Final Measurement is performed, if the Preliminary Measurement results are closer than 20 dB to the permissible limit.

Above 3GHz:

The Preliminary Measurement and the Final Measurement is performed in 1.5m distance by rotating the turntable of 360 degrees at fixed height.

The Preliminary Measurement and the Final Measurement with absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system.

The Final Measurement is performed, if the Preliminary Measurement results are closer than 20 dB to the permissible limit.

General:

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

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

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

The measurement results are obtained as described below:

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

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

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

Frequency range [MHz]	Limit [µV/m]	Limit [dBµV/m]	Detector
30 – 88	100	40	Quasi peak
88 – 216	150	43.5	Quasi peak
216 – 960	200	46	Quasi peak
960 – 1000	500	54	Quasi peak
Above 1000	500	54	Average
Above 1000	5000	74	Peak

6.2. WLAN Test results

6.2.1 DSSS mode, DBPSK modulation, 1 Mbps data rate

Channel 1 / 2412 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result
4824.22	40.20	102.33	57.20	-17.00	VERTICAL	PASSED
7236.68	43.00	141.25	53.80	-10.80	VERTICAL	PASSED
9648.24	46.10	201.84	51.60	-5.50	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result
4824.22	30.10	31.99	47.10	-17.00	VERTICAL	PASSED
7236.18	30.30	32.74	41.10	-10.80	VERTICAL	PASSED
9648.24	37.10	71.61	42.60	-5.50	HORIZONTAL	PASSED

No further emissions found less than 20dB to the regulatory limit

Channel 6 / 2437 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result

No emissions found less than 20dB to the regulatory limit

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result
4874.20	42.10	127.35	59.30	-17.20	VERTICAL	PASSED
7312.10	42.20	128.82	51.90	-9.70	HORIZONTAL	PASSED
9748.10	46.30	206.54	51.60	-5.30	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result
4874.20	34.50	53.09	51.70	-17.20	VERTICAL	PASSED
7313.60	30.60	33.88	40.30	-9.70	HORIZONTAL	PASSED
9748.10	38.30	82.22	43.60	-5.30	HORIZONTAL	PASSED

No further emissions found less than 20dB to the regulatory limit

Channel 11 / 2462 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result
4923.88	40.90	110.92	58.10	-17.20	VERTICAL	PASSED
7384.92	43.20	144.54	52.00	-8.80	VERTICAL	PASSED
9848.06	46.50	211.35	52.20	-5.70	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result
4923.88	31.70	38.46	48.90	-17.20	VERTICAL	PASSED
7386.92	32.10	40.27	40.90	-8.80	VERTICAL	PASSED
9848.06	38.30	82.22	44.00	-5.70	VERTICAL	PASSED

No further emissions found less than 20dB to the regulatory limit

6.2.2 OFDM mode, DBPSK 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_{CF} [dB]	Polarisation	Result
4822.16	40.30	103.51	57.30	-17.00	VERTICAL	PASSED
7237.78	44.90	175.79	55.70	-10.80	VERTICAL	PASSED
9647.94	46.70	216.27	52.20	-5.50	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result
4821.15	28.30	26.00	45.30	-17.00	VERTICAL	PASSED
7237.77	30.20	32.36	41.00	-10.80	VERTICAL	PASSED
9646.94	39.70	96.61	45.20	-5.50	VERTICAL	PASSED

No further emissions found less than 20dB to the regulatory limit

Channel 6 / 2437 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result

No emissions found less than 20dB to the regulatory limit

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result
4875.70	41.00	112.20	58.00	-17.00	HORIZONTAL	PASSED
7317.31	43.90	156.68	53.50	-9.60	VERTICAL	PASSED
9747.90	47.20	229.09	52.50	-5.30	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result
4875.70	27.10	22.65	44.30	-17.20	VERTICAL	PASSED
7319.81	30.60	33.88	40.20	-9.60	VERTICAL	PASSED
9748.10	39.60	95.50	44.90	-5.30	HORIZONTAL	PASSED

No further emissions found less than 20dB to the regulatory limit

Channel 11 / 2462 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result
4928.18	38.70	86.10	55.90	-17.20	VERTICAL	PASSED
7382.51	45.70	192.75	54.50	-8.80	VERTICAL	PASSED
9848.06	47.10	226.46	52.80	-5.70	HORIZONTAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{CF} [dB]	Polarisation	Result
4922.68	26.60	21.38	43.80	-17.20	VERTICAL	PASSED
7382.51	30.90	35.08	39.70	-8.80	VERTICAL	PASSED
9848.06	39.30	92.26	45.00	-5.70	HORIZONTAL	PASSED

No further emissions found less than 20dB to the regulatory limit

7. 6 dB / 99% bandwidth

(FCC §15.247(a)(2), RSS-210 A8.2 (a))

EUT with DUT number	GEM014
Accessories with DUT numbers	None
Operation Voltage [V] / [Hz]	13.2 / DC
Result	PASSED
Remarks	None
Temp [°C] / Humidity [%RH]	25 / 50
Date of measurements	03-July-2012
Measured by	Robert Müller

7.1. Test method and limit

The measurement is made according to KDB 558074 D01 (2012) and IC standard RSS-210.

Limits for 20 dB bandwidth measurements

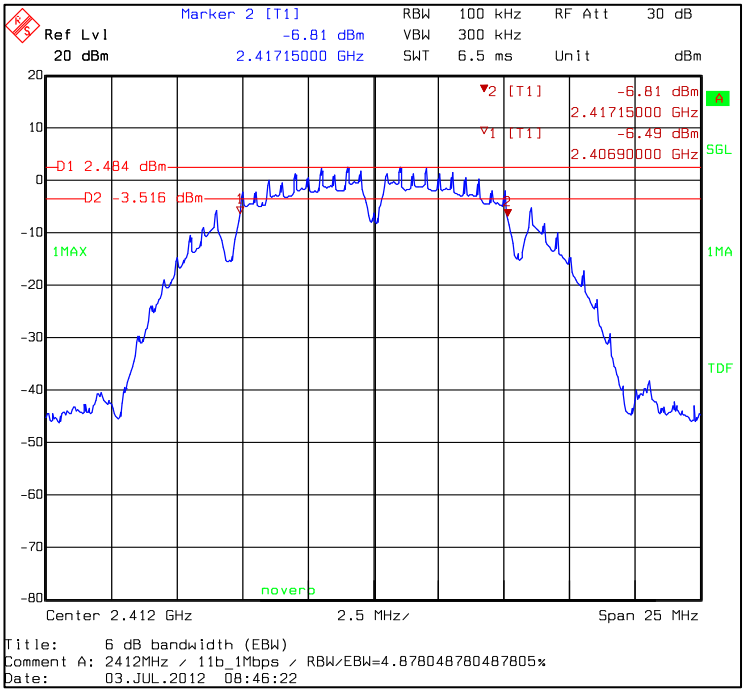
Limit [MHz]
N/A

7.2. WLAN Test results

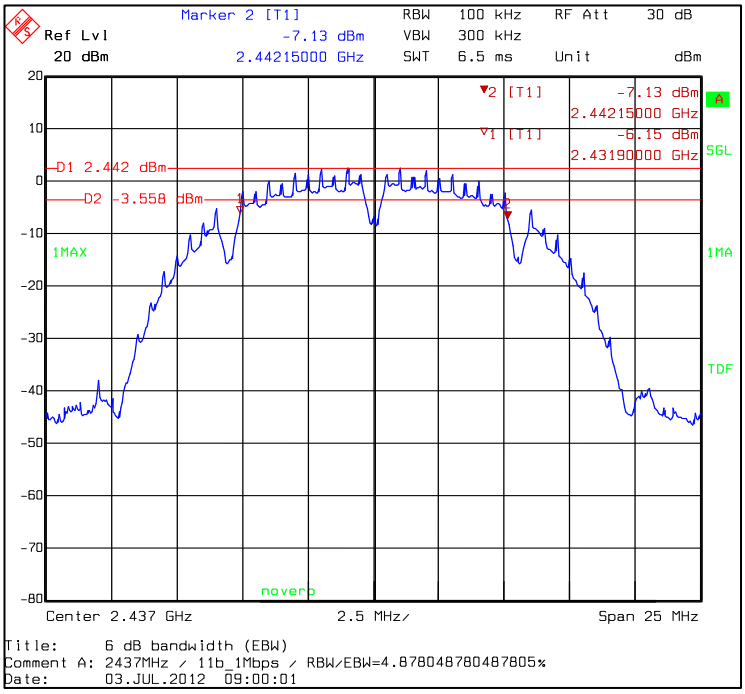
7.2.1 DSSS mode, DBPSK modulation, 1Mbps data rate

Channel / f_C [MHz]	6 dB bandwidth [MHz]	99% bandwidth [MHz]	Result
1 / 2412	10.25	13.83	PASSED
6 / 2437	10.25	13.83	PASSED
11 / 2462	10.25	13.83	PASSED

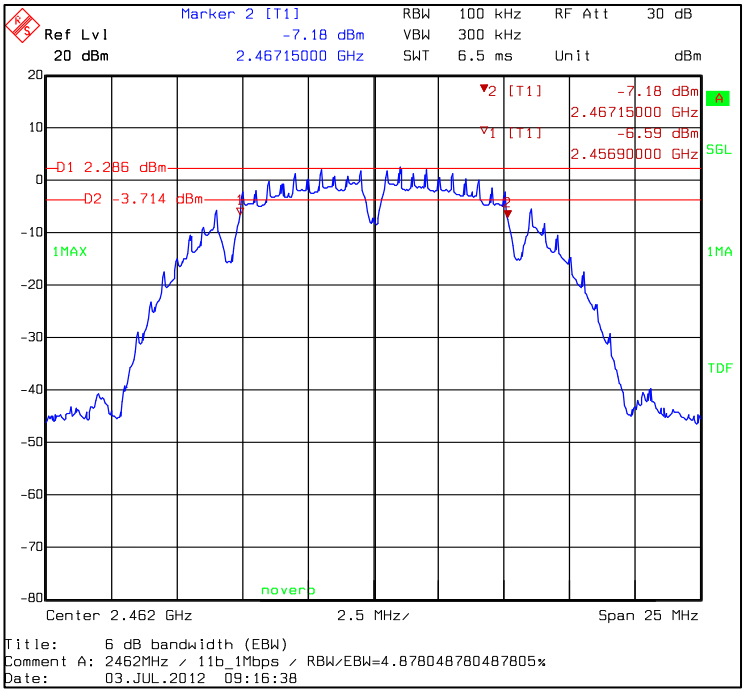
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



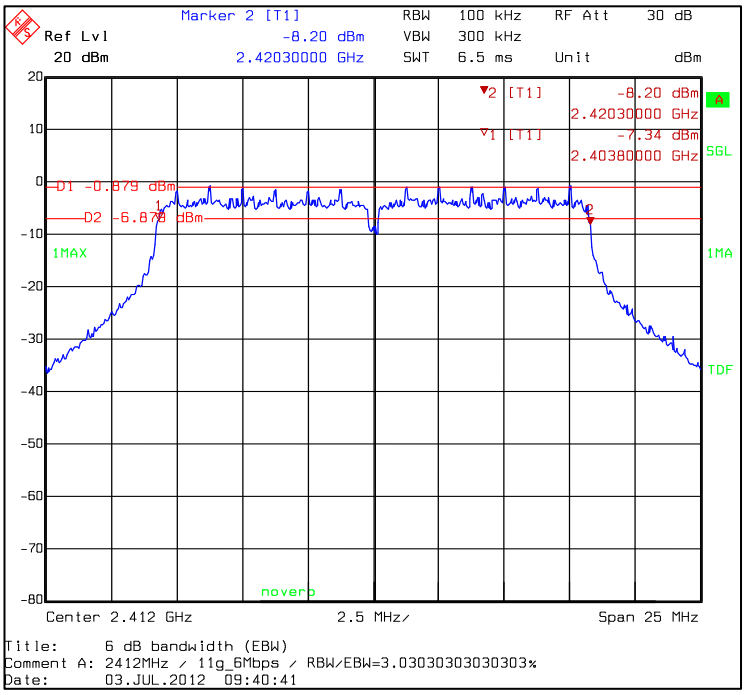
Channel 11 / 2462 MHz



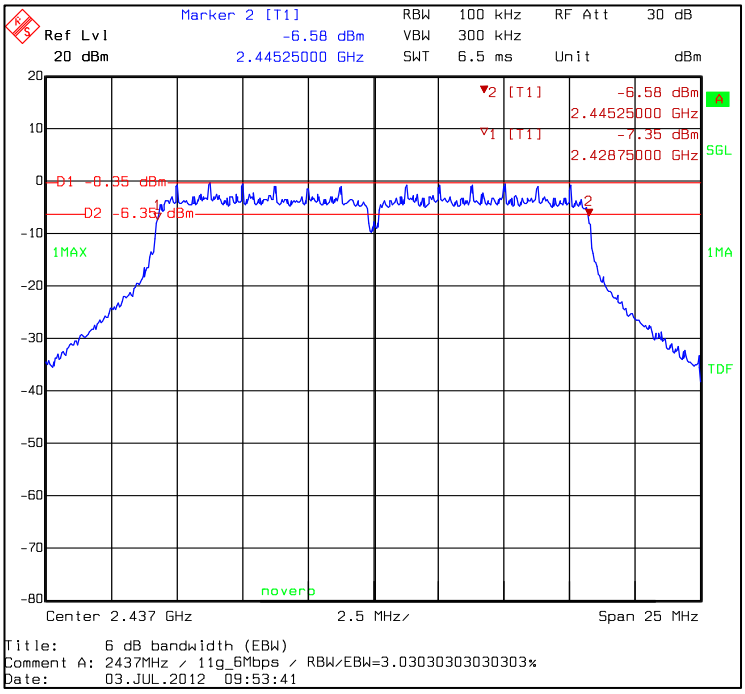
7.2.2 OFDM mode, DBPSK modulation, 6Mbps data rate

Channel / f_C [MHz]	6 dB bandwidth [MHz]	99% bandwidth [MHz]	Result
1 / 2412	16.50	16.93	PASSED
6 / 2437	16.50	17.03	PASSED
11 / 2462	16.50	16.93	PASSED

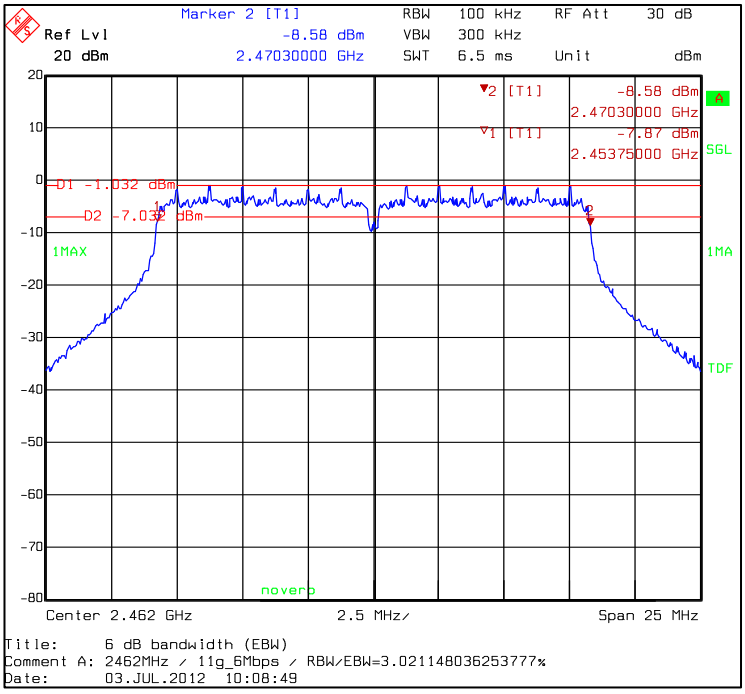
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz



8. Power spectral density

(FCC §15.247(e), RSS-210 A8.3 (b))

EUT with DUT number	GEM014
Accessories with DUT numbers	None
Operation Voltage [V] / [Hz]	13.2 / DC
Result	PASSED
Remarks	None
Temp [°C] / Humidity [%RH]	25 / 50
Date of measurements	03-July-2012
Measured by	Robert Müller

8.1. Test method and limit

The measurement is made according to KDB 558074 D01 (2012) and IC standard RSS-210.

Limits for carrier frequency separation measurements

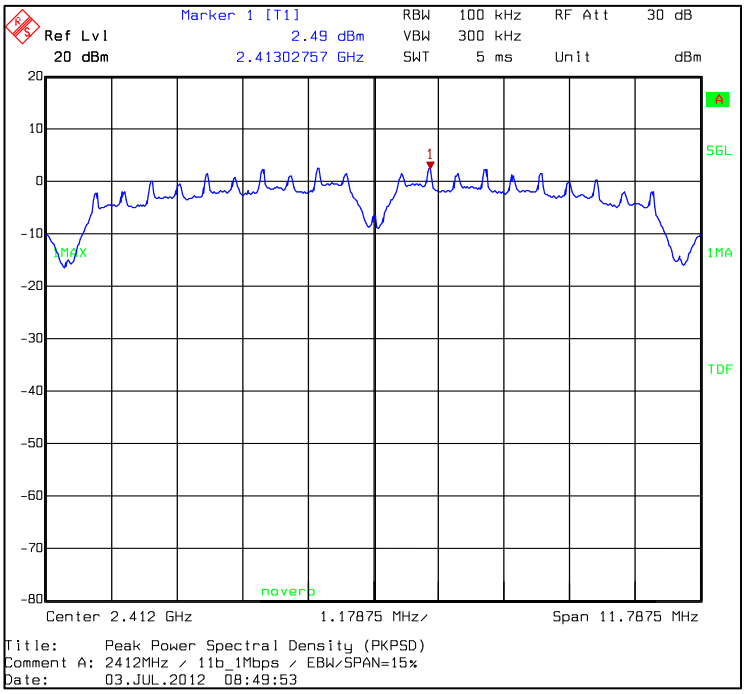
Limit [dBm] @ 3 KHz
≤ 8

8.2. WLAN Test results

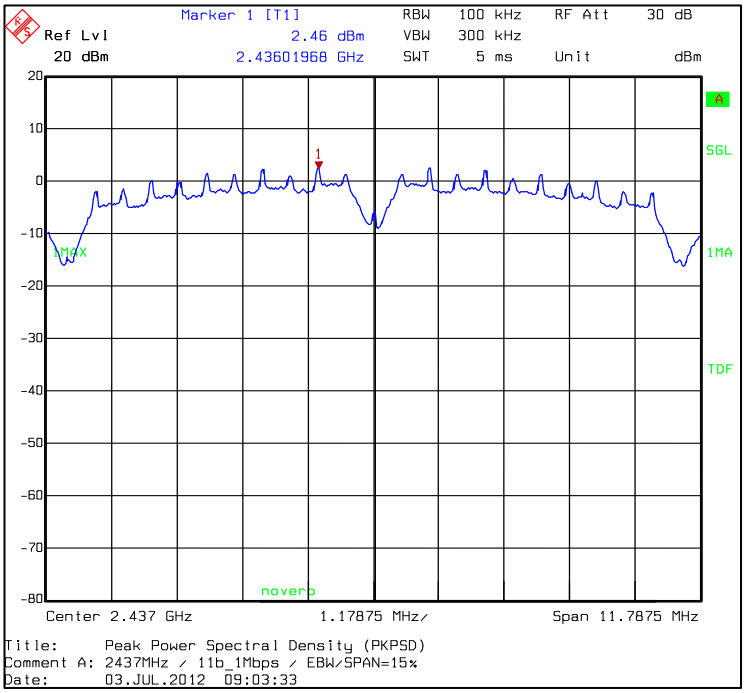
8.2.1 DSSS mode, DBPSK modulation, 1Mbps data rate

Channel / f_C [MHz]	Spectral Density [dBm]	Result
1 / 2412	-12.71	PASSED
6 / 2437	-12.74	PASSED
11 / 2462	-12.85	PASSED

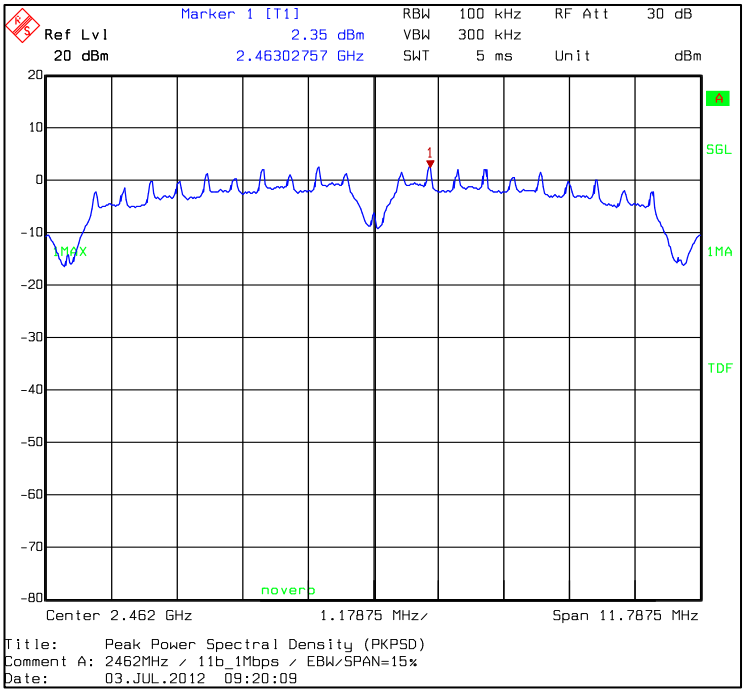
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



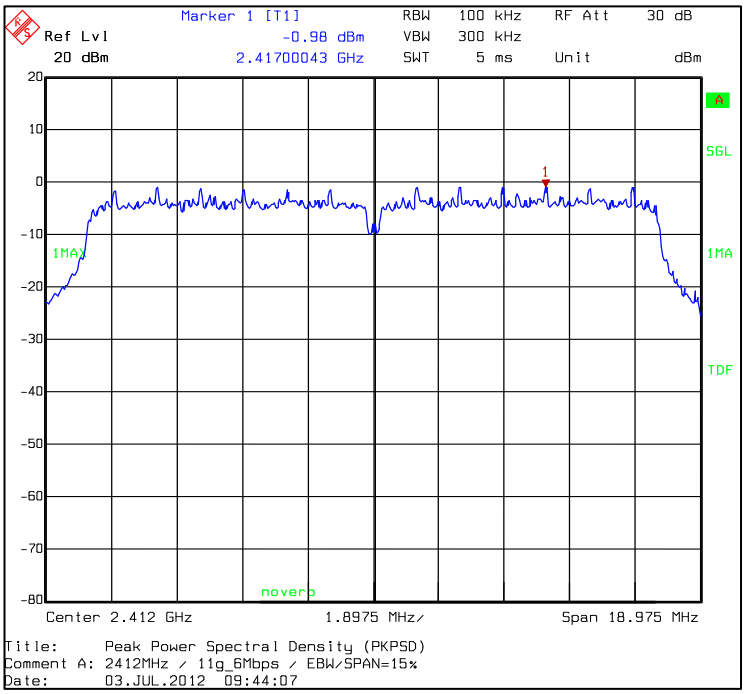
Channel 11 / 2462 MHz



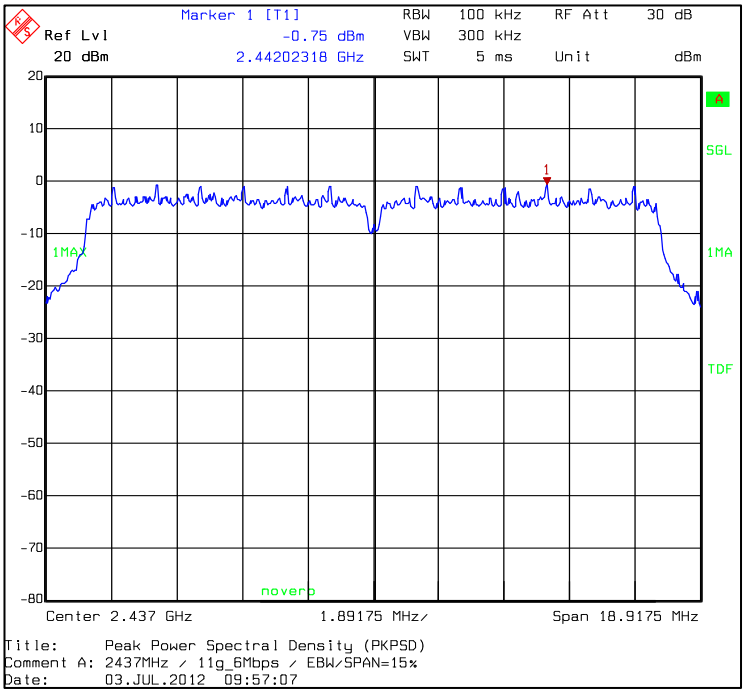
8.2.2 OFDM mode, DBPSK modulation, 6Mbps data rate

Channel / f_C [MHz]	Spectral Density [dBm]	Result
1 / 2412	-16.18	PASSED
6 / 2437	-15.95	PASSED
11 / 2462	-16.07	PASSED

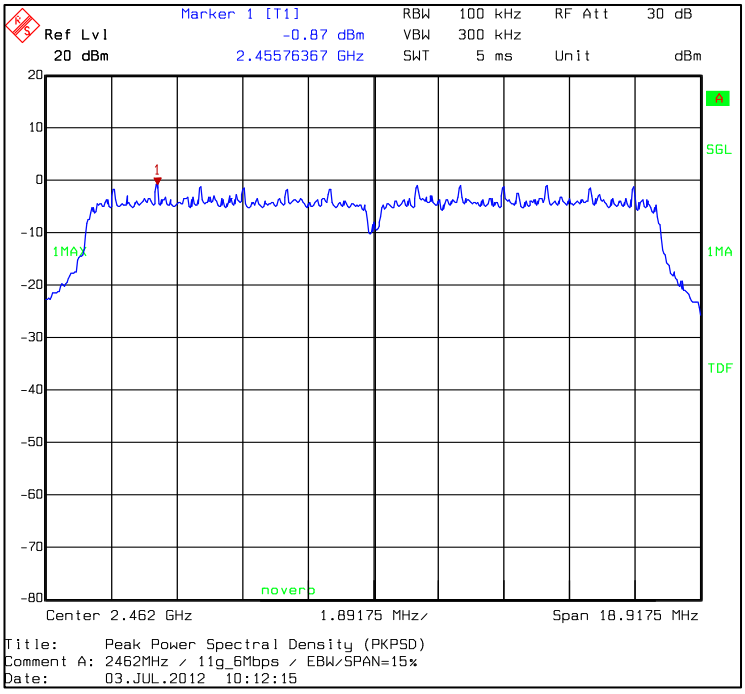
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz



10. Test Equipment

10.1. Conducted measurements

Equipment	Type	Manufacturer	Calibrated	Cycle [Years]
EMI Test Receiver	ESCS 30	R&S	May 2011	1
LISN 50 µH	ESH3-Z5	R&S	Jul 2011	1
LISN 50 µH	ESH3-Z5	R&S	Jul 2011	1
V network	ESH3-Z6	R&S	May 2011	1
V network	ESH3-Z6	R&S	May 2011	1
T-ISN	ISN T800	Teseq	Jul 2010	2
Thermo- Hygrograph	OPUS 10	Lufft	Jun 2011	2
EM Injection clamp	F-33-1	Fischer	Apr 2012	2
Signal generator	SML01	R&S	Apr 2012	2
Digital Radio Communication Tester	CMU200	R&S	Jun 2012	2
RF Emission Software	ES-K1 v.1.71	R&S	n.a.	--
EMI Test Receiver	FSEM30	R&S	Jul 2011	1
Temperature Test system	VT4004	Vötsch	Jul 2012	2
Power Supply	E3632A	Agilent	Jul 2012	1
Signal generator	SMP02	R&S	Jun 2011	2
BT/WLAN Tester	N 4010 A	Agilent	May 2011	2
Digital Radio Communication Tester	CMU200	R&S	Jun 2012	1
RF Radio Software	RADIO	novero	n.a.	--

10.2. Radiated measurements

Equipment	Type	Manufacturer	Calibrated	Cycle [Years]
Controller	2090	ETS	n.a.	--
MAST	2075	ETS	n.a.	--
Ultra Broadband Antenna	HL562	R&S	Mar 2009	3
Digital Radio Communication Tester	CMU200	R&S	Jul 2011	2
EMI Test receiver	ESU26	R&S	Jul 2011	1
Yaesu controller	G-1000DXC	YAESU	n.a.	--
Computer controller (Yaesu)	GS-232B	YAESU	n.a.	--
Anechoic chamber	3 meter semi/full anechoic chamber	ETS Euroshield	Mar 2012	3
Horn Antenna	3115	EMCO	Apr 2012	3
Horn Antenna	BBHA9120LF	Schwarzbeck	Aug 2011	3
Standard Horn Antenna	3160-09	EMCO	n.a.	--
Thermo- Hygrograph	OPUS 10	Lufft	Jun 2011	2
Band Reject Filter	WRCG 2400/2485 - 2375/2510 - 60/20EE	Wainwright	Mar 2012	1
Notch Filter GSM850	WRCD 800/880-0,2/40-5SSSD	Wainwright	Mar 2012	1
Band Reject Filter WCDMA850	WRCG 832/838-825/845-40/5SS	Wainwright	Mar 2012	1
Notch Filter GSM1900	WRCD 1700/2000-0,2/40-5SSSD	Wainwright	Mar 2012	1
Band Reject Filter AWS 1700	WRCGV1729.4/1735.4 -1722.4/1742.4-40/6SS	Wainwright	Mar 2012	1
RF Emission Software	ES-K1 v.1.71	R&S	n.a.	--