

FCC Part 15C Compliance Test Report

Test Report no.:	FCC15CBT_RM-849_11.docx	Date of Report:	24-May-2012
Number of pages:	38	Customer's Contact person:	Hu Dongji
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FCC listing no.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-849 / Battery BP-3L / AC Charger AC-50E / USB data cable CA-190CD / Headset WH-208		
FCC ID:	QTLRM-849	IC:	661AB-RM849
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), Public Notice DA 00-705, DTS procedures KDB 558074, IC standards, RSS-210 (Issue 8, December 2010). 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:			

Zou Ming,Engineer,EMC

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	27-Apr-2012
Testing completed	09-May-2012
The customer's contact person	Hu Dongji
Test Plan referred to	T:\Projects\RM-849\TestPlan\RS_testplan_RM-849.xls
Notes	-
Document name	FCC15CBT_RM-849_11.docx

1.1. EUT and Accessory Information

The EUT is a mobile phone with following features:

GSM/WCDMA/WLAN/Bluetooth

The EUT is tested with maximum rated TX power, modulated with pseudo random bit sequence (PRBS9).

Devices under tests

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-849	004402138943786	2035	-	1100.0000.8773.12150	52709
Battery	BP-3L	3932131515450172305;0670635	-	-	-	52711
AC Charger	AC-50E	4090492071260400830;0675619	-	-	-	52719
USB data cable	CA-190CD	07304571506G2F	-	-	-	52721
Headset	WH-208	1504321	-	-	-	52713
Phone	RM-849	004402138942879;059P3M1	2035	-	1100.0000.8773.12150	52727
Battery	BP-3L	3932131515450172307;0670635	-	-	-	52710
AC Charger	AC-50E	4090492071260400827;0675619	-	-	-	52718
USB data cable	CA-190CD	07304571506G2F	-	-	-	52720
Headset	WH-208	1483T41	-	-	-	52715
Phone	RM-849	004402138942945	2035	-	1100.0000.8773.12150	52703
Battery	BP-3L	3932131515450172308;0670635	-	-	-	52723

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(0.4(2))	Conducted peak output power	PASSED
15.247(d), 15.205(b)	A8(0.5)	Band edge compliance of RF emissions	PASSED
15.247(d)	A8(0.5)	Spurious RF conducted emissions	PASSED
15.247(d), 15.209	A8(0.5)	Spurious radiated emissions	PASSED
15.207	7.2.2	AC powerline conducted emissions	PASSED
15.247(a)(1)	A8(0.1(1))	20dB(bandwidth)	PASSED
15.247(a)(1)	A8(0.1(2))	Carrier frequency separation	PASSED
15.247(a)(1)(iii)	A8(0.1(4))	Number of hopping frequencies	PASSED
15.247(a)(1)(iii)	A8(0.1(4))	Time of occupancy	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 Laboratory.

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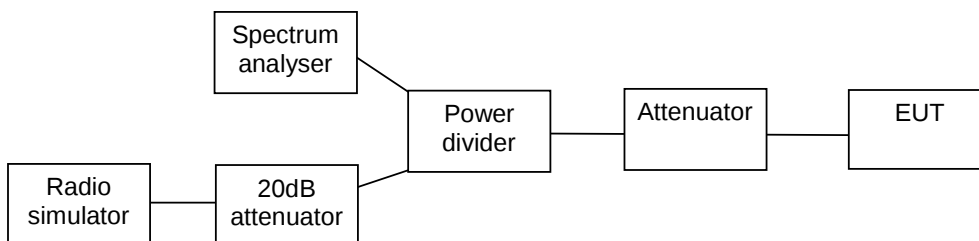
11.1. Conducted measurements 38

11.2. Radiated measurements 38

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

EUT with DUT number	RM-849, DUT 52709
Accessories with DUT numbers	BP-3L, DUT 52711 ; AC-50E, DUT 52719 ; CA-190CD, DUT 52721 ; WH-208, DUT 52713
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/44/101.1
Date of measurements	08-May-2012
Measured by	Gao Sherina

2.1. Test Setup



2.2. 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

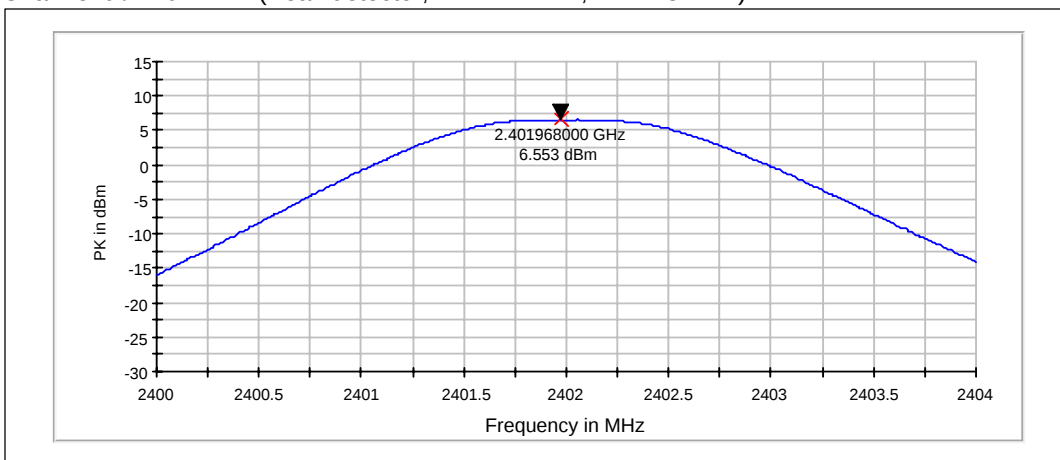
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	<= 1	<= 30

2.3. Bluetooth Test results

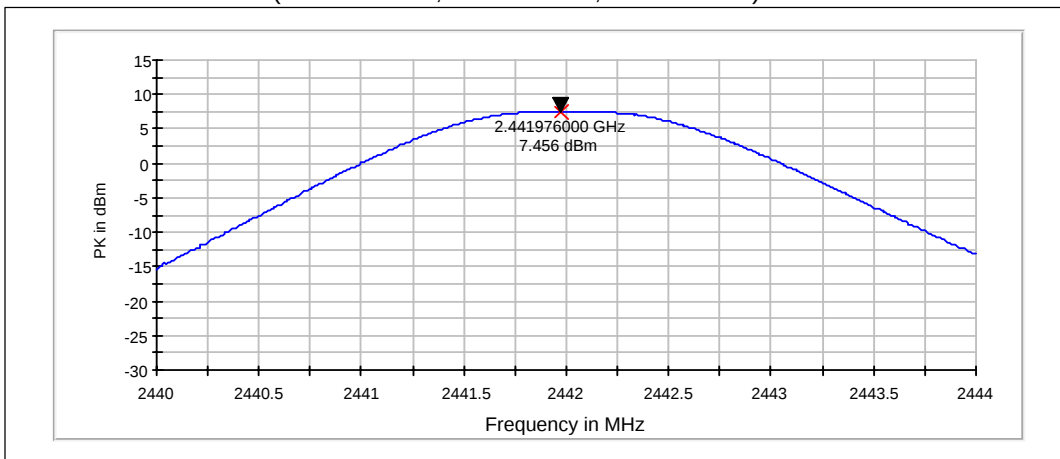
2.3.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	6.55	4.519	PASSED
40 / 2442	7.46	5.572	PASSED
78 / 2480	6.93	4.932	PASSED

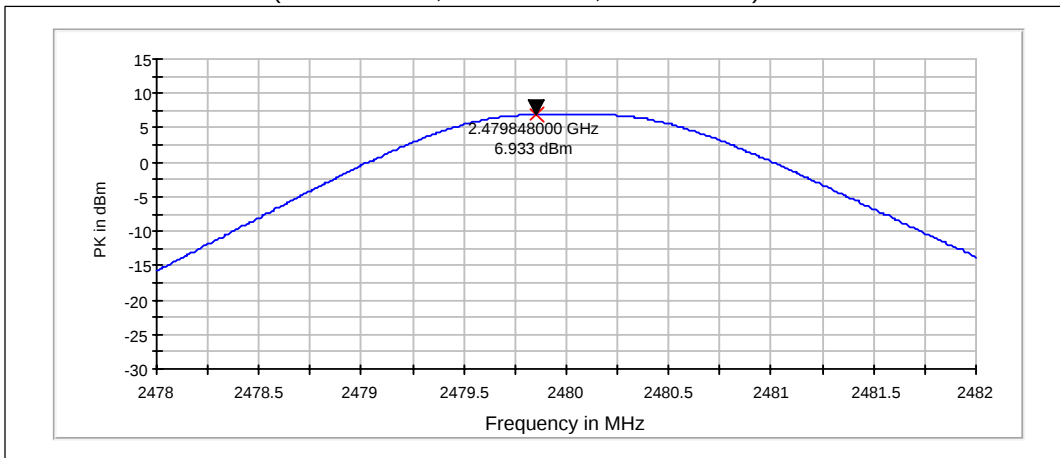
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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



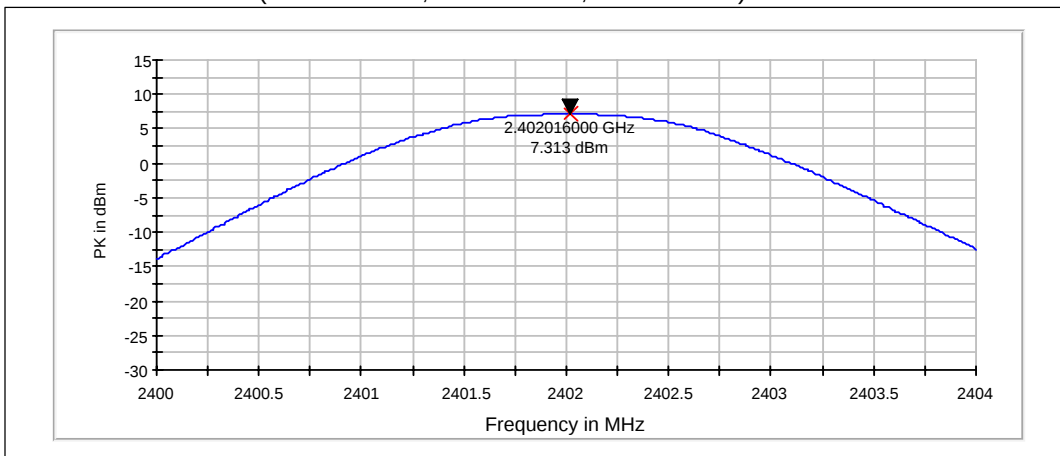
Channel 78 / 2480 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



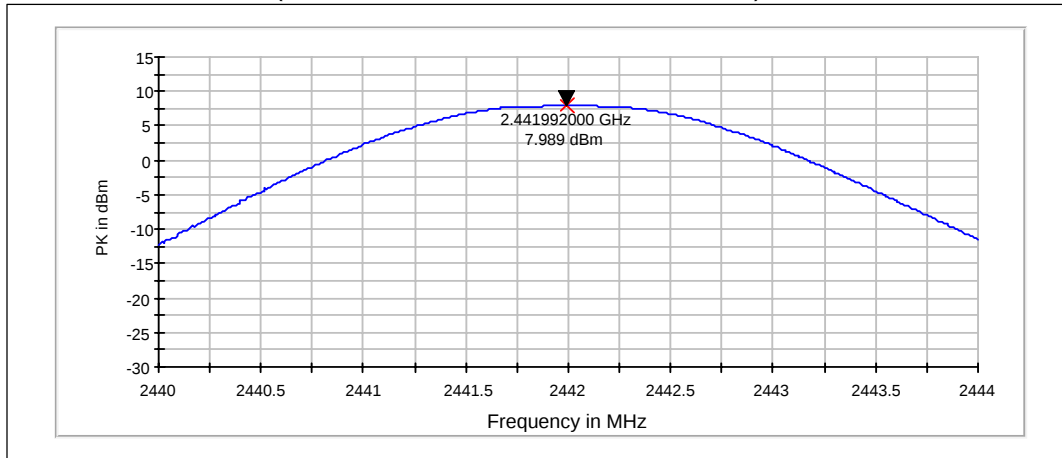
2.3.2 8DPSK modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	7.31	5.383	PASSED
40 / 2442	7.99	6.295	PASSED
78 / 2480	7.67	5.848	PASSED

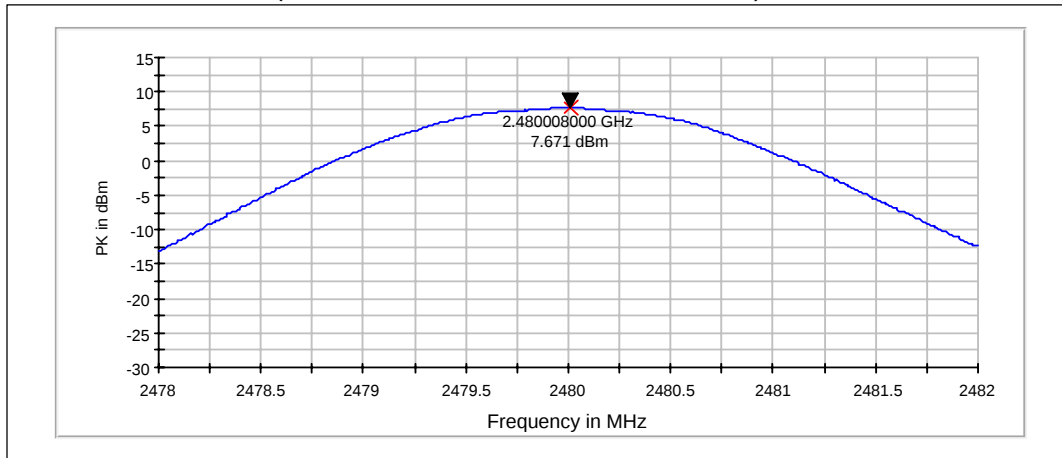
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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



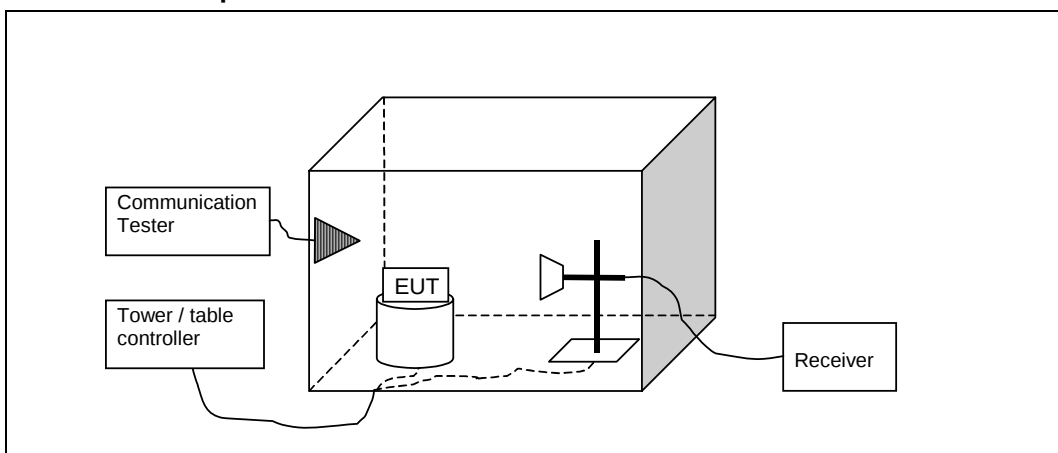
Channel 78 / 2480 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



3. Band edge compliance of RF emissions (FCC §15.247(d), 15.205(b), RSS-210 A8.5)

EUT with DUT number	RM-849, DUT 52727
Accessories with DUT numbers	BP-3L, DUT 52710 ; AC-50E, DUT 52718 ; CA-190CD, DUT 52720 ; WH-208, DUT 52715
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/42/101.1
Date of measurements	09-May-2012
Measured by	Zou Ming

3.1.1 Test Setup



3.2. Test method and limit

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

The measurement results are obtained as described below:

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

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

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

3.3. Bluetooth Test results

3.3.1 GFSK modulation, PRBS packet type

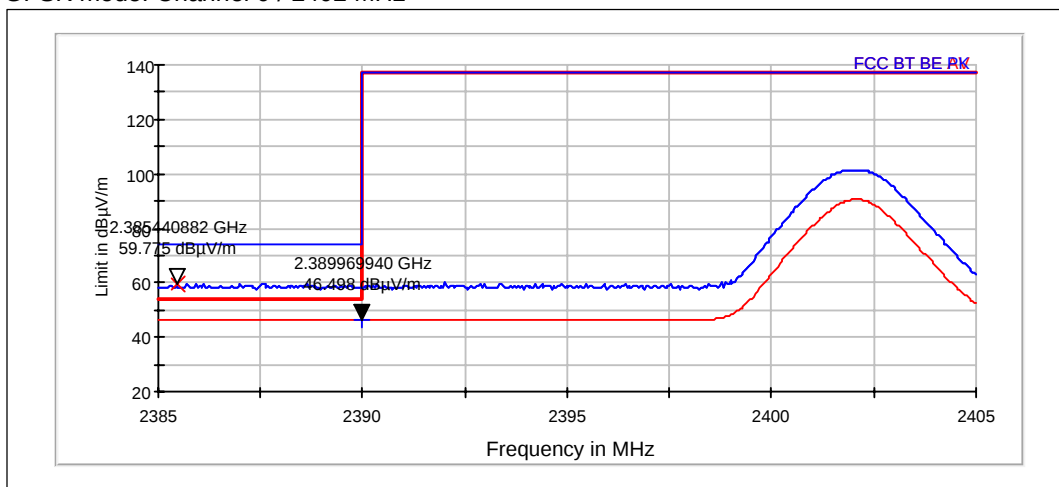
Average (RBW: 1 MHz, VBW: 10 Hz)

Channel / f_c [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Result
0 / 2402	46.5	211.292	45.33	1.17	PASSED
Hopping on, low end	46.5	211.292	45.33	1.17	PASSED
78 / 2480	50.57	337.702	48.55	2.02	PASSED
Hopping on, high end	47.51	237.496	45.49	2.02	PASSED

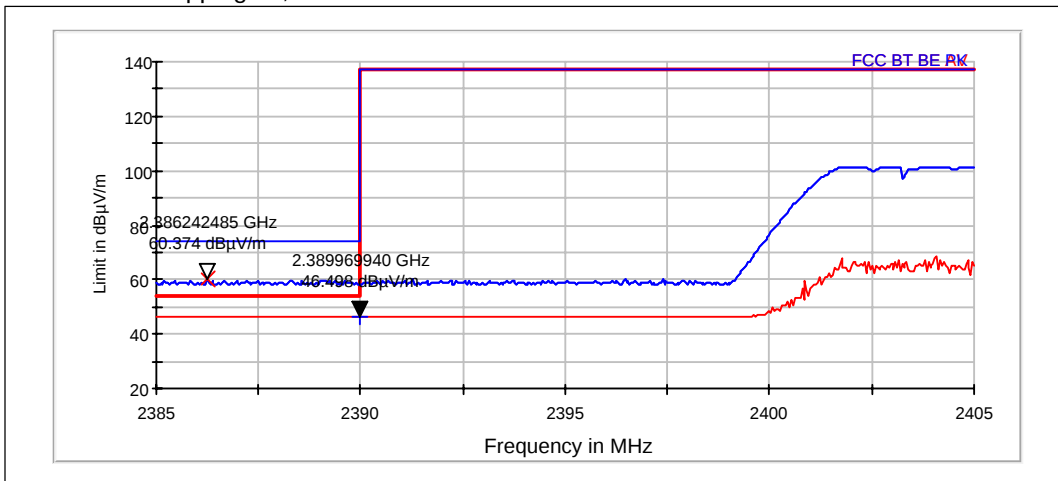
Peak (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Result
0 / 2402	59.78	974.475	58.61	1.17	PASSED
Hopping on, low end	60.37	1044.013	59.2	1.17	PASSED
78 / 2480	61.67	1211.693	59.65	2.02	PASSED
Hopping on, high end	62.07	1269.069	60.05	2.02	PASSED

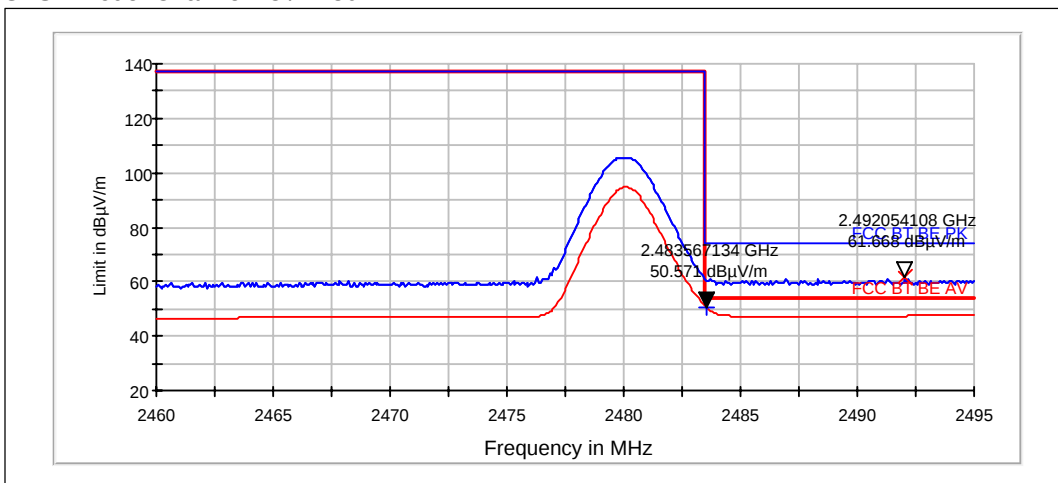
GFSK mode. Channel 0 / 2402 MHz



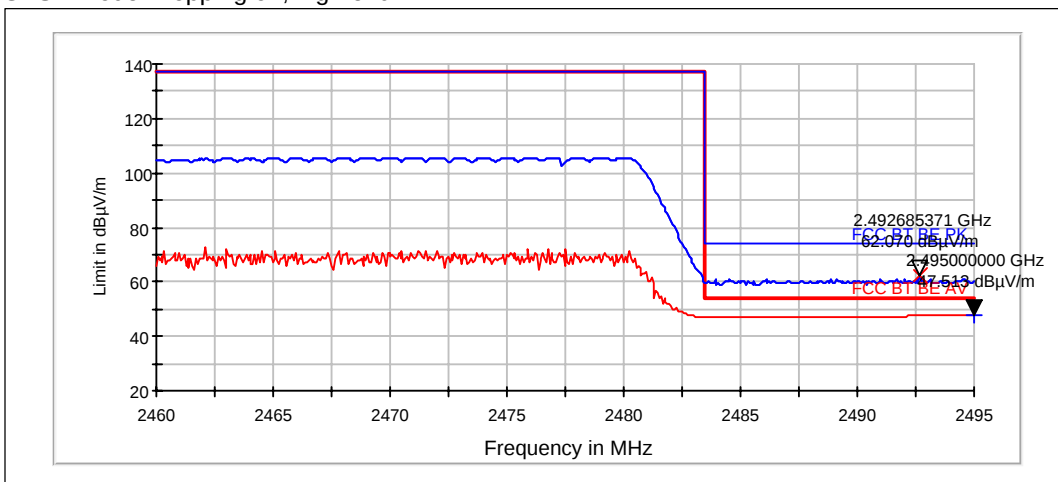
GFSK mode. Hopping on, low end



GFSK mode. Channel 78 / 2480 MHz



GFSK mode. Hopping on, high end



3.3.2 8DPSK modulation, PRBS packet type

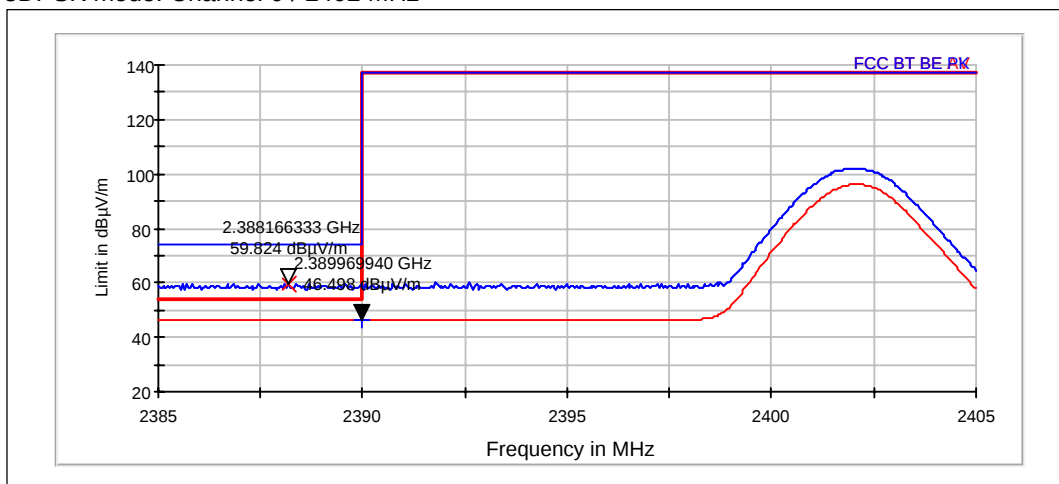
Average (RBW: 1 MHz, VBW: 10 Hz)

Channel / f_c [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Result
0 / 2402	46.5	211.292	45.33	1.17	PASSED
Hopping on, low end	46.5	211.292	45.33	1.17	PASSED
78 / 2480	52.51	422.128	50.49	2.02	PASSED
Hopping on, high end	48.24	258.155	46.22	2.02	PASSED

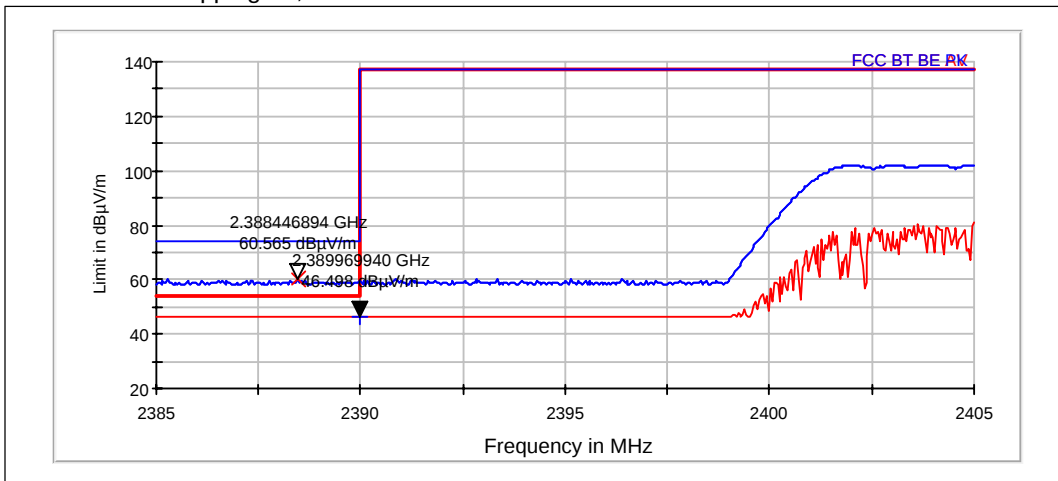
Peak (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Result
0 / 2402	59.82	979.99	58.65	1.17	PASSED
Hopping on, low end	60.57	1067.259	59.4	1.17	PASSED
78 / 2480	61.87	1240.673	59.85	2.02	PASSED
Hopping on, high end	61.68	1213.685	59.66	2.02	PASSED
78 / 2480	61.23	1152.45	59.21	2.02	PASSED

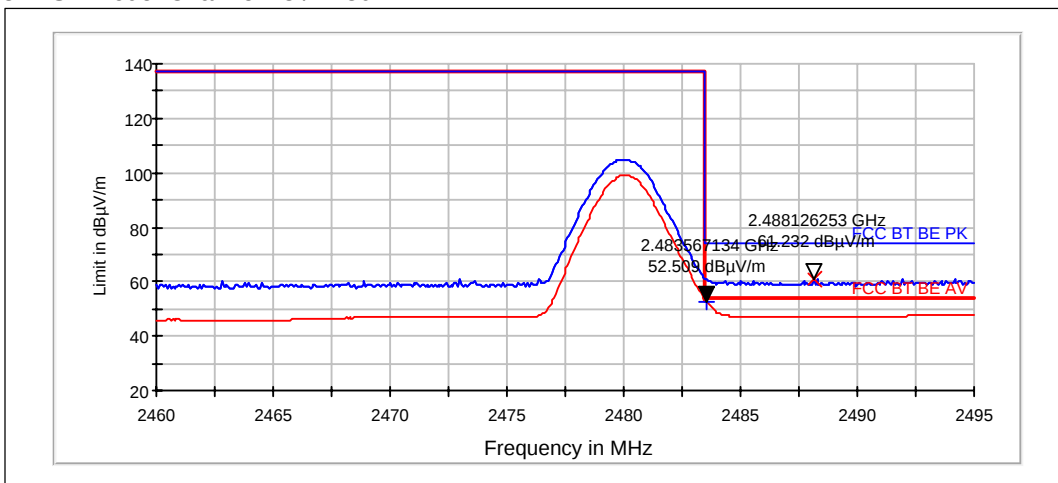
8DPSK mode. Channel 0 / 2402 MHz



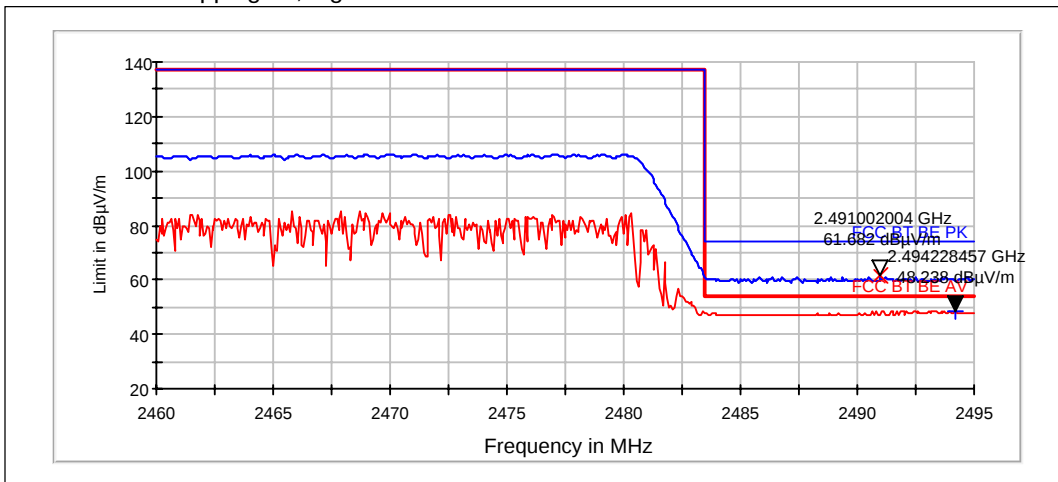
8DPSK mode. Hopping on, low end



8DPSK mode. Channel 78 / 2480 MHz



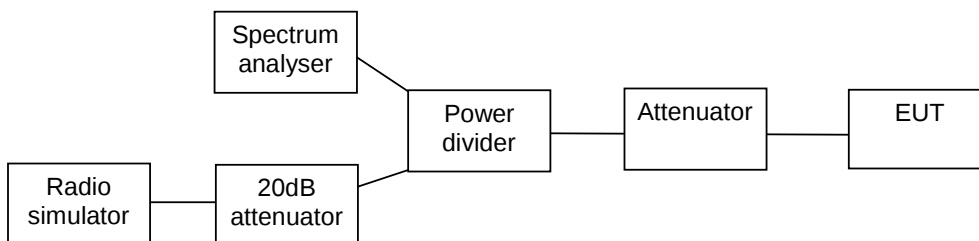
8DPSK mode. Hopping on, high end



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

EUT with DUT number	RM-849, DUT 52709
Accessories with DUT numbers	BP-3L, DUT 52711 ; AC-50E, DUT 52719 ; CA-190CD, DUT 52721 ; WH-208, DUT 52713
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/38/100.5
Date of measurements	08-May-2012
Measured by	Gao Sherina

4.1. Test Setup



4.2. Test method and limit

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

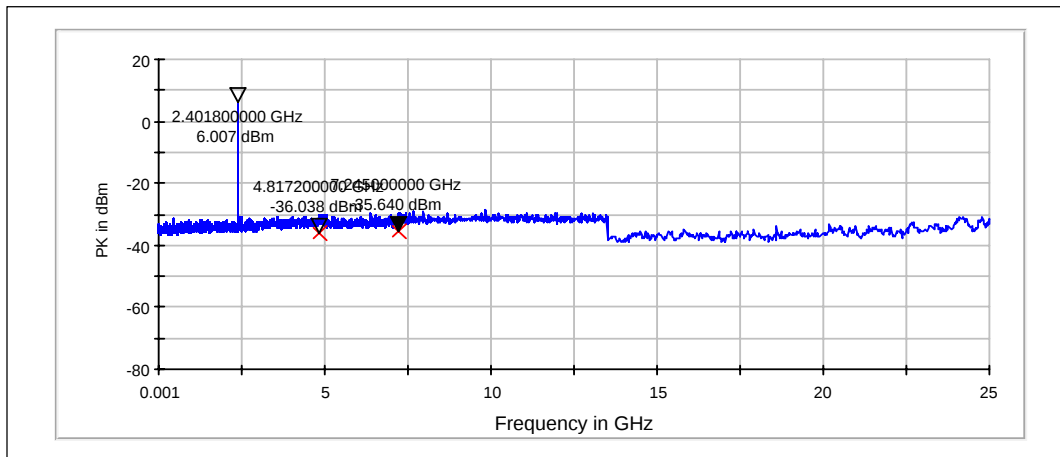
Limits for spurious RF conducted emissions measurements

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

4.3. Bluetooth Test results

4.3.1 GFSK modulation, PRBS packet type

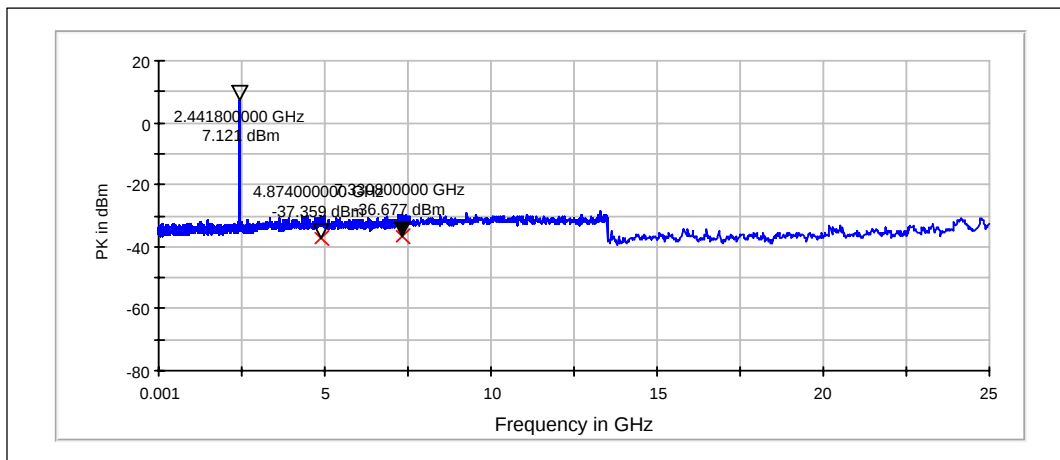
Channel 0 / 2402 MHz



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

Frequency [MHz]	P [dBc]	Result
4817.2	-36.04	PASSED
7245	-35.64	PASSED

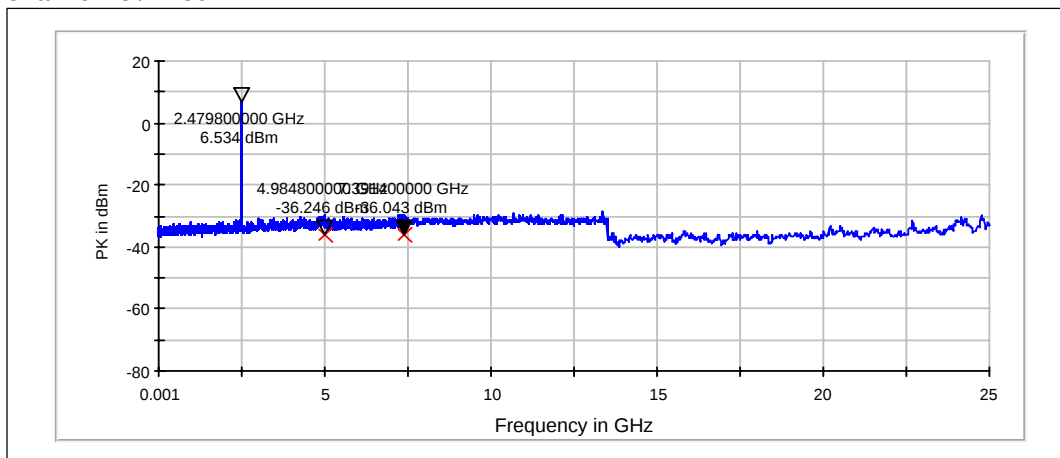
Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4874	-37.36	PASSED
7330.8	-36.68	PASSED

Channel 78 / 2480 MHz

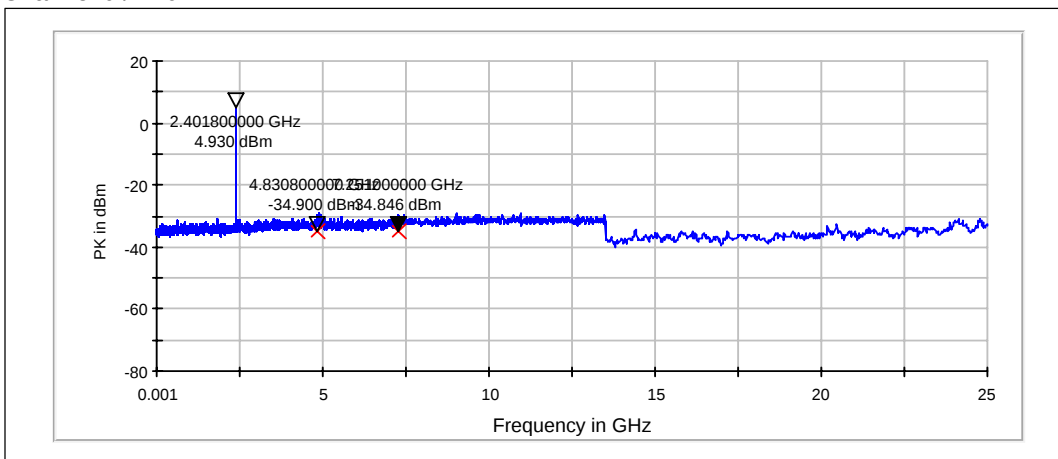


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4984.8	-36.25	PASSED
7391.4	-36.04	PASSED

4.3.2 8DPSK modulation, PRBS packet type

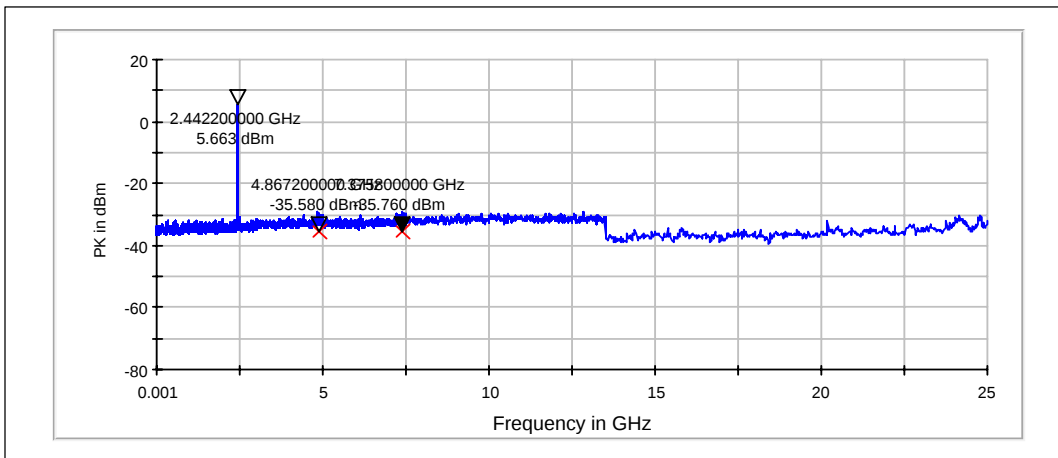
Channel 0 / 2402 MHz



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

Frequency [MHz]	P [dBc]	Result
4830.8	-34.9	PASSED
7251	-34.85	PASSED

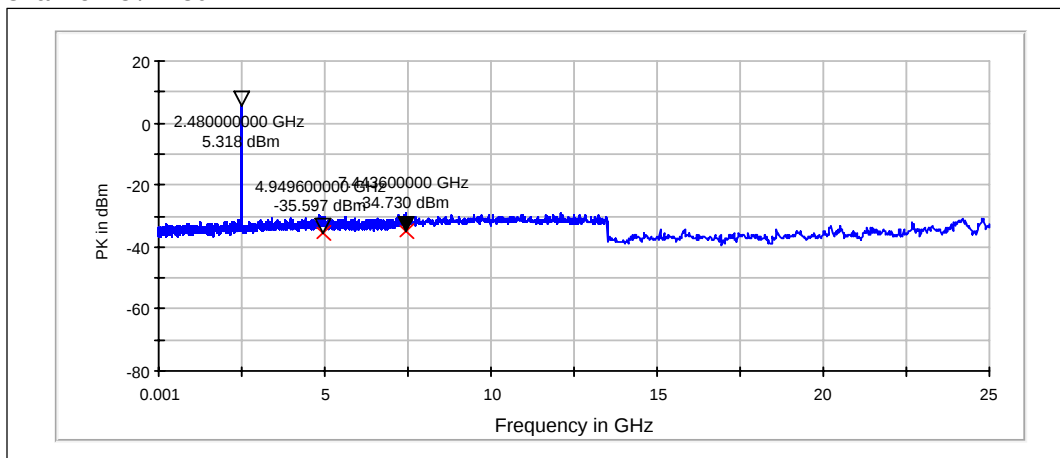
Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4867.2	-35.58	PASSED
7375.8	-35.76	PASSED

Channel 78 / 2480 MHz



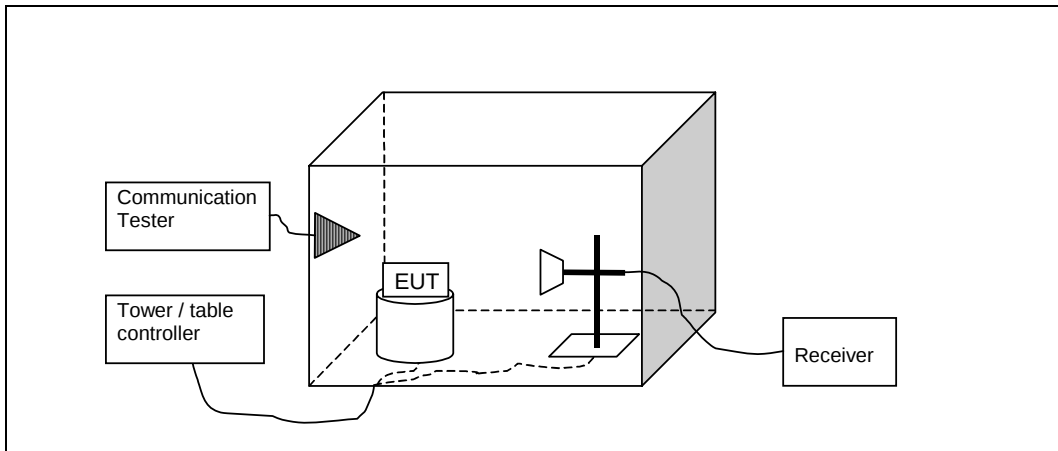
Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4949.6	-35.6	PASSED
7443.6	-34.73	PASSED

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

EUT with DUT number	RM-849, DUT 52727
Accessories with DUT numbers	BP-3L, DUT 52710 ; AC-50E, DUT 52718 ; CA-190CD, DUT 52720 ; WH-208, DUT 52715
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/42/101.1
Date of measurements	09-May-2012
Measured by	Zou Ming

5.1.1 Test Setup



5.2. Test method and limit

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

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

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

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

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

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

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

The measurement results are obtained as described below:

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

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

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

Frequency range [MHz]	Limit [$\mu V/m$]	Limit [$dB\mu V/m$]	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

5.3. Bluetooth Test results

5.3.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4803.8	44.64	170.667	44.53	0.11	HORIZONTAL	PASSED
7206.1	46.1	201.813	41.05	5.05	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4803.8	30.51	33.543	30.4	0.11	HORIZONTAL	PASSED
7206.1	33.28	46.142	28.23	5.05	HORIZONTAL	PASSED

Channel 40 / 2442 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
30.134	26.11	20.207	28.46	-2.35	VERTICAL	PASSED
30.18	25.4	18.612	27.78	-2.38	VERTICAL	PASSED
31.144	26.24	20.514	29.29	-3.05	VERTICAL	PASSED
32.07	27.47	23.624	31.17	-3.7	VERTICAL	PASSED
890.752	36.41	66.13	38.91	-2.5	VERTICAL	PASSED
903.068	38.79	86.946	41.15	-2.36	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3900.805	42.71	136.6	43.44	-0.73	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3900.805	29.75	30.722	30.48	-0.73	HORIZONTAL	PASSED

Channel 78 / 2480 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4958	44.6	169.824	44.11	0.49	VERTICAL	PASSED
7440.9	47.37	233.534	42.23	5.14	VERTICAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4958	32.09	40.235	31.6	0.49	VERTICAL	PASSED
7440.9	33.57	47.676	28.43	5.14	VERTICAL	PASSED

5.3.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.6	43.81	155.024	43.7	0.11	HORIZONTAL	PASSED
7206.5	46.23	204.904	41.18	5.05	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.6	30.45	33.297	30.34	0.11	HORIZONTAL	PASSED
7206.5	33.28	46.105	28.23	5.05	HORIZONTAL	PASSED

Channel 40 / 2442 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
30	25.93	19.781	28.19	-2.26	VERTICAL	PASSED
30	25.87	19.654	28.13	-2.26	VERTICAL	PASSED
30.09	26.36	20.787	28.68	-2.32	VERTICAL	PASSED
30.24	25.82	19.532	28.25	-2.43	VERTICAL	PASSED
30.33	25.86	19.643	28.35	-2.49	VERTICAL	PASSED
32.014	28.31	26.026	31.97	-3.66	VERTICAL	PASSED
902.948	37.35	73.722	39.72	-2.37	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3921.343	42.85	138.771	43.57	-0.72	HORIZONTAL	PASSED
3931.66	43.43	148.406	44.11	-0.68	VERTICAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3921.343	29.78	30.814	30.5	-0.72	HORIZONTAL	PASSED
3931.66	29.82	30.967	30.5	-0.68	VERTICAL	PASSED

Channel 78 / 2480 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4958	44.6	169.824	44.11	0.49	VERTICAL	PASSED
7440.6	46.32	207.109	41.18	5.14	HORIZONTAL	PASSED

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

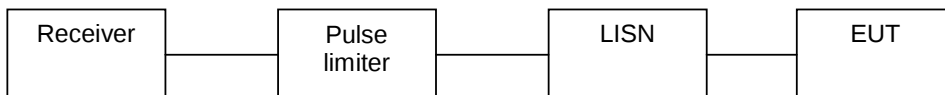
Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4958	32.08	40.17	31.59	0.49	VERTICAL	PASSED
7440.6	33.46	47.119	28.32	5.14	HORIZONTAL	PASSED

6. AC powerline conducted emissions

FCC §15.207, RSS-GEN 7.2.2

EUT with DUT number	RM-849, DUT 52703
Accessories with DUT numbers	BP-3L, DUT 52723 ; AC-50E, DUT 52719 ; CA-190CD, DUT 52721 ; WH-208, DUT 52713
Operation Voltage [V] / [Hz]	115/60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/40/101.1
Date of measurements	09-May-2012
Measured by	Gao Sherina

6.1. Test Setup



6.2. Test method and limit

The measurement is made according to Public notice DA 00-705 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:

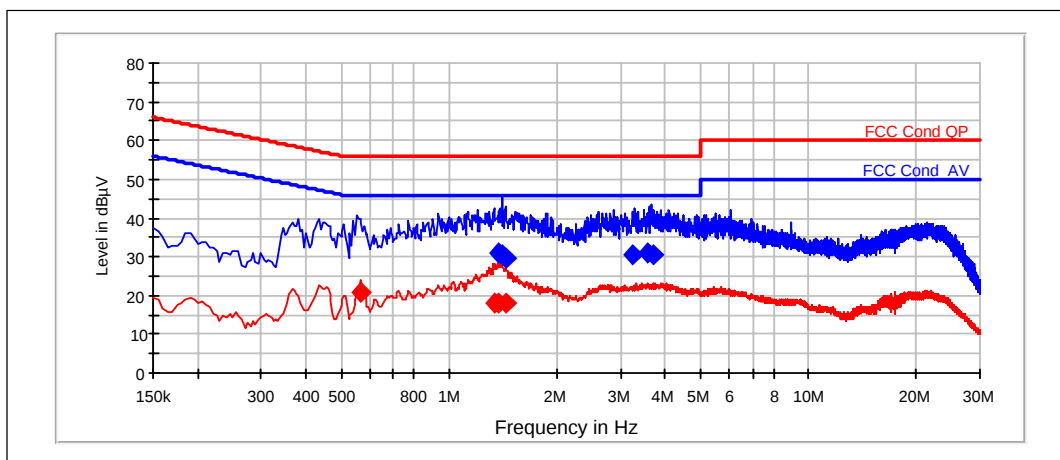
$$U [dB\mu V] = U_{RX} + A_{TOT}$$

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

6.3. Test results



QuasiPeak (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
1.37	30.87	N	PASSED
1.405	30.6	N	PASSED
1.445	29.64	N	PASSED
3.23	30.32	N	PASSED
3.58	30.96	L1	PASSED
3.685	30.32	N	PASSED

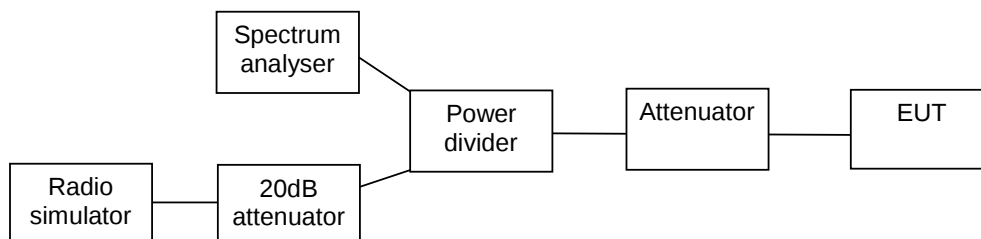
Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.57	20.91	N	PASSED
1.345	18.25	N	PASSED
1.375	18.26	N	PASSED
1.44	18	N	PASSED

7. 20 dB bandwidth 15.247(a)(1), A8.1 (a)

EUT with DUT number	RM-849, DUT 52709
Accessories with DUT numbers	BP-3L, DUT 52711 ; AC-50E, DUT 52719 ; CA-190CD, DUT 52721 ; WH-208, DUT 52713
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/38/100.5
Date of measurements	08-May-2012
Measured by	Gao Sherina

7.1. Test Setup



7.2. Test method and limit

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

Limits for 20 dB bandwidth measurements

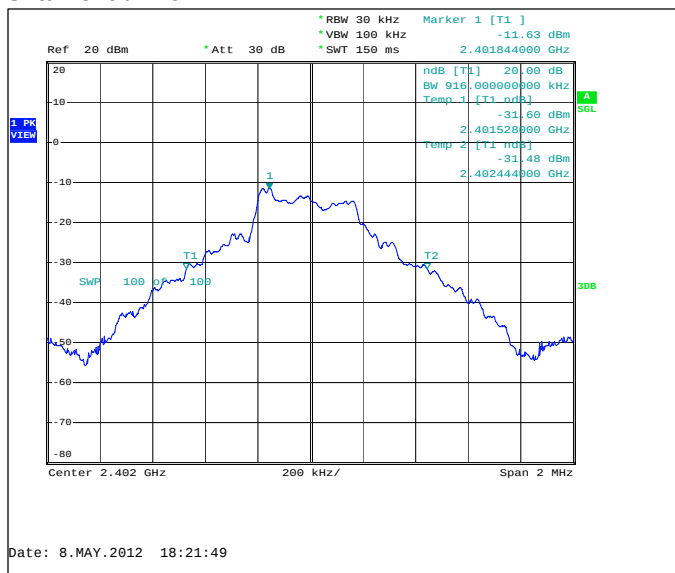
Limit [MHz]
N/A

7.3. Bluetooth Test results

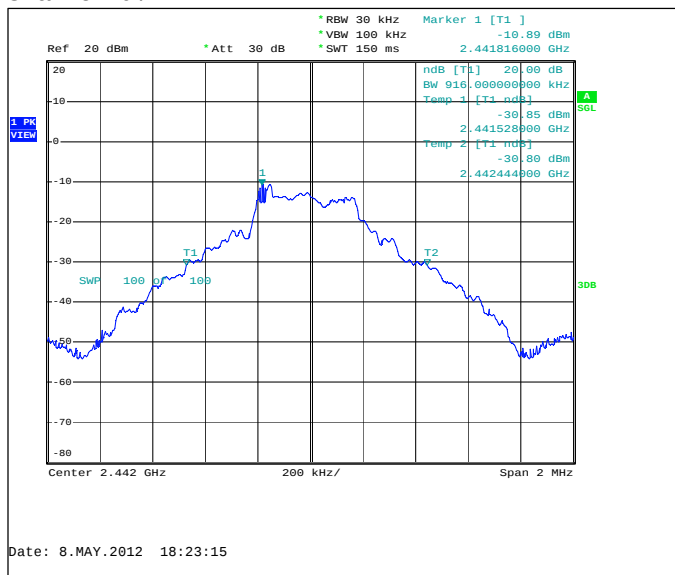
7.3.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	20 dB bandwidth [kHz]
0 / 2402	916
40 / 2442	916
78 / 2480	840

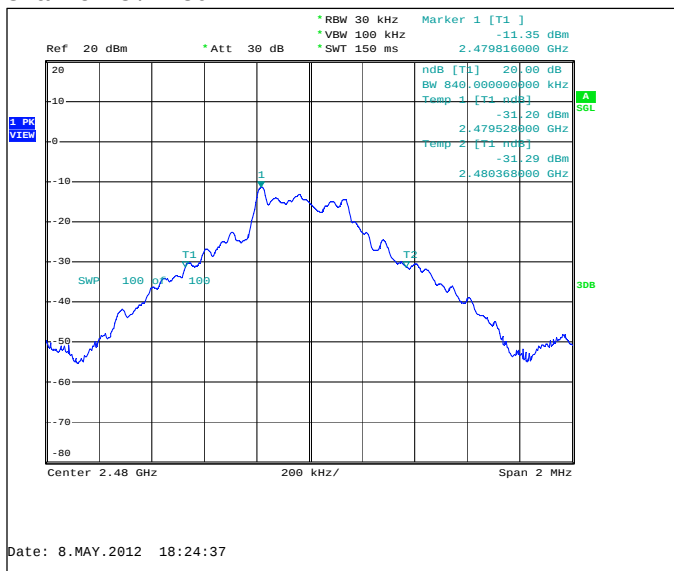
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



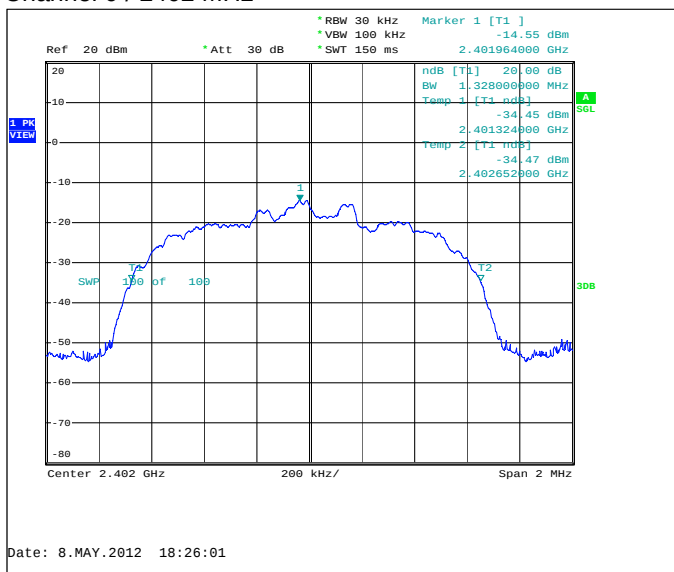
Channel 78 / 2480 MHz



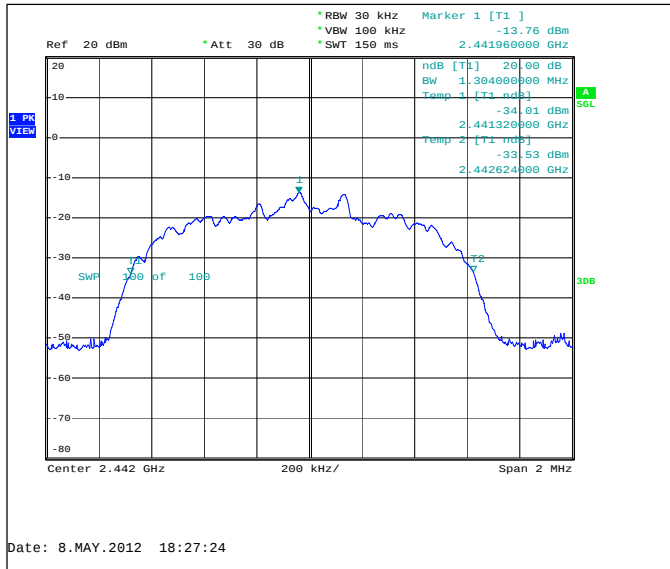
7.3.2 8DPSK modulation, PRBS packet type

Channel / f _c [MHz]	20 dB bandwidth [kHz]
0 / 2402	1328
40 / 2442	1304
78 / 2480	1332

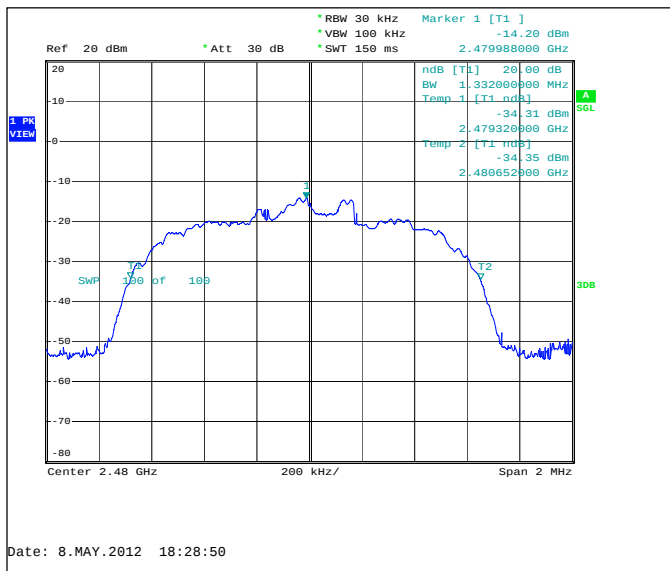
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



Channel 78 / 2480 MHz

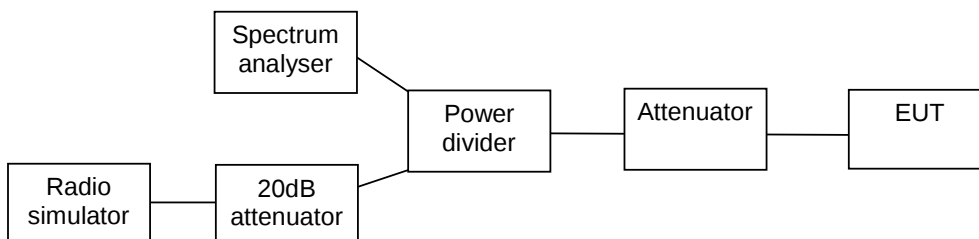


8. Carrier frequency separation

15.247(a)(1), A8.1 (b)

EUT with DUT number	RM-849, DUT 52709
Accessories with DUT numbers	BP-3L, DUT 52711 ; AC-50E, DUT 52719 ; CA-190CD, DUT 52721 ; WH-208, DUT 52713
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/38/100.5
Date of measurements	08-May-2012
Measured by	Gao Sherina

8.1. Test Setup



8.2. Test method and limit

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

Limits for carrier frequency separation measurements

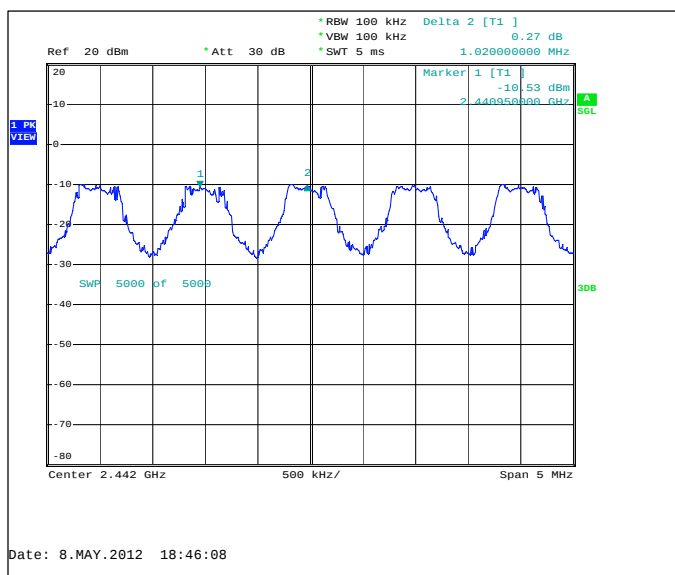
Limit [MHz]
≥ 0.025 or $2/3$ of the 20 dB bandwidth

8.3. Bluetooth Test results

8.3.1 GFSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1020	PASSED

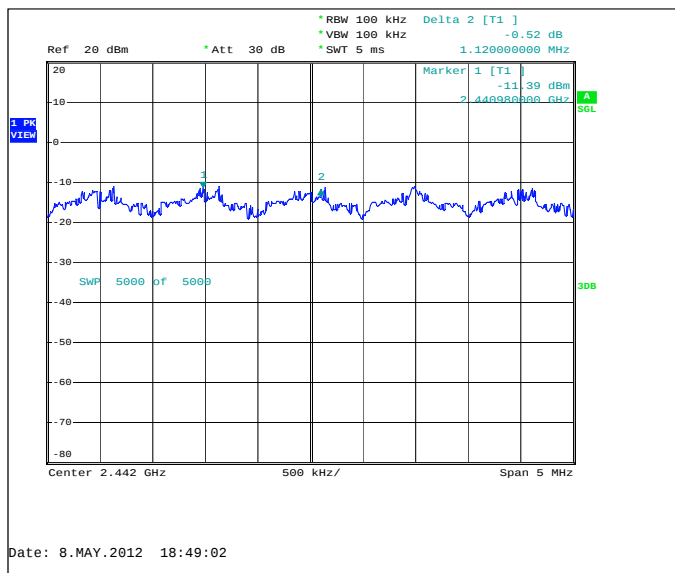
Hopping on, carrier frequency separation of channels 39 / 2441 MHz and 40 / 2442 MHz



8.3.2 8DPSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1120	PASSED

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

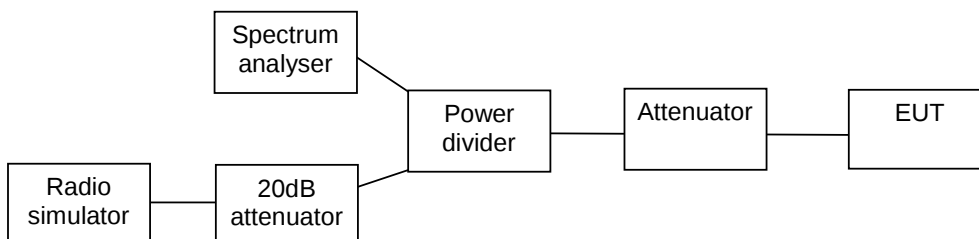


9. Number of hopping frequencies

15.247(a)(1)(iii), A8.1 (d)

EUT with DUT number	RM-849, DUT 52709
Accessories with DUT numbers	BP-3L, DUT 52711 ; AC-50E, DUT 52719 ; CA-190CD, DUT 52721 ; WH-208, DUT 52713
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/38/100.5
Date of measurements	08-May-2012
Measured by	Gao Sherina

9.1. Test Setup



9.2. Test method and limit

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

Limits for number of hopping frequencies measurements

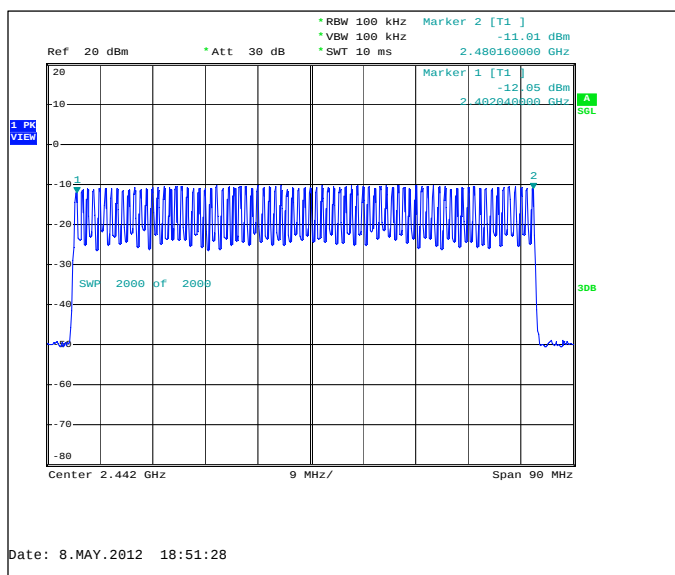
Limit [number]
>= 15

9.3. Bluetooth Test results

9.3.1 GFSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
78	PASSED

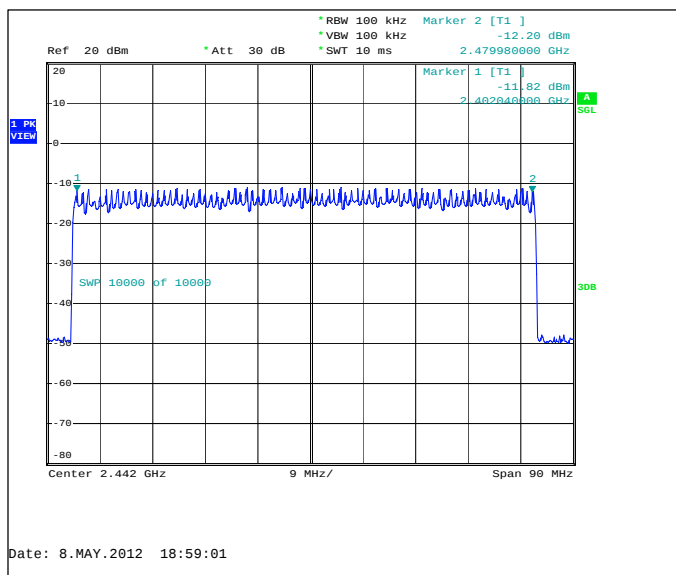
Hopping on, number of hopping frequencies



9.3.2 8DPSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
78	PASSED

Hopping on, number of hopping frequencies

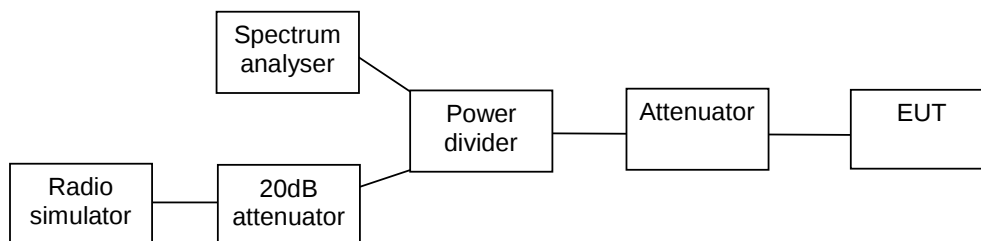


10. Time of occupancy

15.247(a)(1)(iii), A8.1 (d)

EUT with DUT number	RM-849, DUT 52709
Accessories with DUT numbers	BP-3L, DUT 52711 ; AC-50E, DUT 52719 ; CA-190CD, DUT 52721 ; WH-208, DUT 52713
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/38/100.5
Date of measurements	08-May-2012
Measured by	Gao Sherina

10.1. Test Setup



10.2. Test method and limit

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

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

Limits for time of occupancy measurements

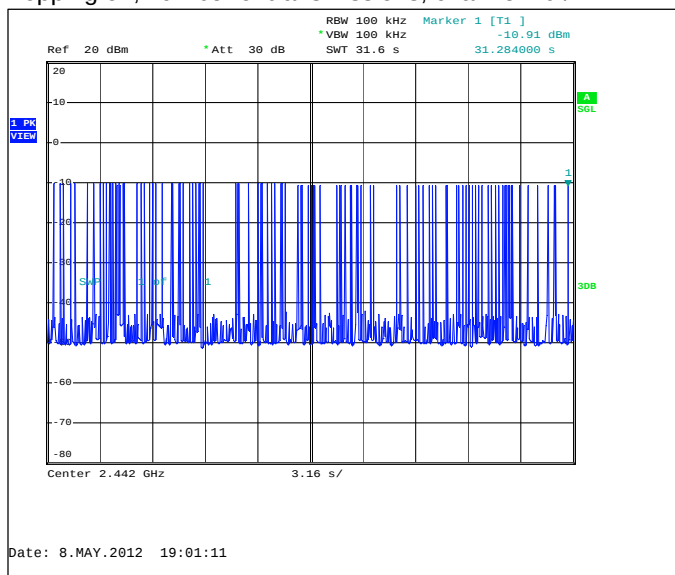
Limit [s]
<= 0.4

10.3. Bluetooth Test results

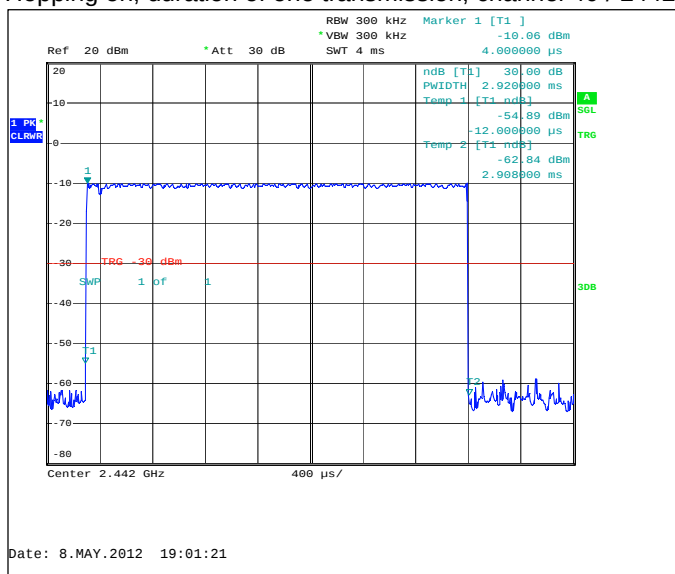
10.3.1 GFSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [ms]	Time of occupancy [s]	Result
87	2.92	0.254	PASSED

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



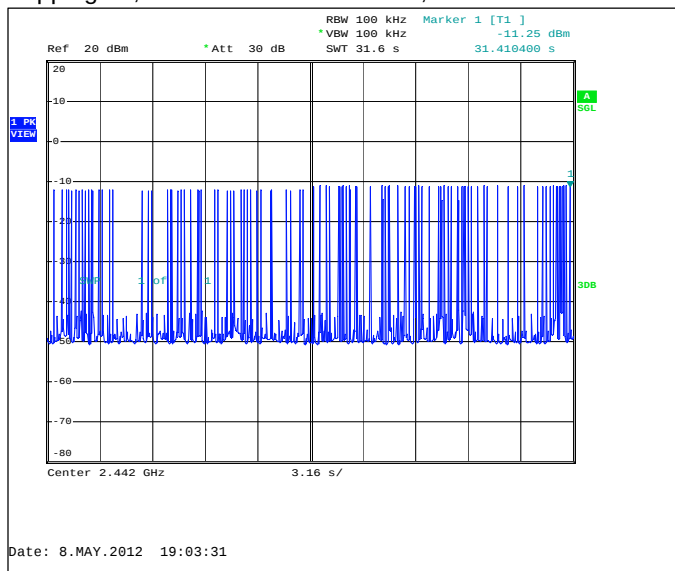
Hopping on, duration of one transmission, channel 40 / 2442 MHz



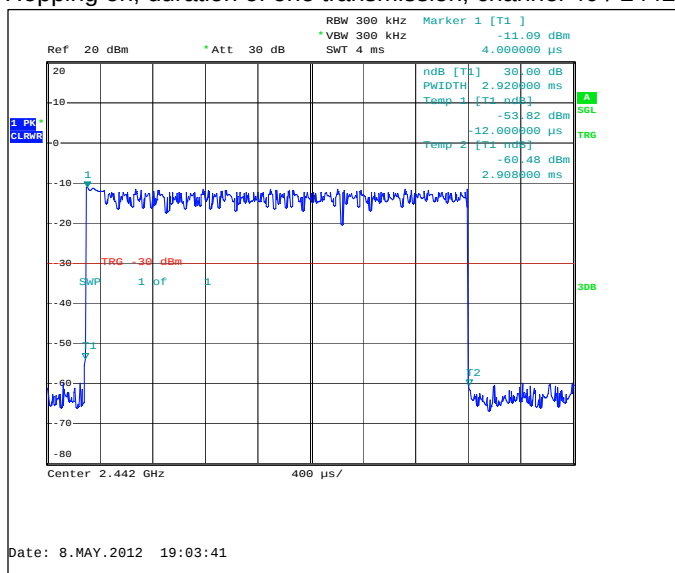
10.3.2 8DPSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [ms]	Time of occupancy [s]	Result
89	2.92	0.26	PASSED

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



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



11. Test Equipment

11.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	RF Emission Software	EMC32 Test Software	R&S	22/24/27, 15C, 15B
BJPCHW0020	DC Power supply	Hp6632B	HP	22/24/27, 15C
BJPCPT0040	Receiver	ESCS30	R&S	15C,15B
BJPCPT0073	Signal Generator	SMR 20	R&S	22/24/27, 15C, 15B
BJPCPT0079	LISN 50 μ H	ESH3-Z5	R&S	15C,15B
BJPCPT0131	Communication Tester	CMU200	R&S	15C,15B
BJPCPT0191	Pulse Limiter	ESH3-Z2	R&S	15C,15B
BJPCTC0017	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0067	Bluetooth Tester	CBT	R&S	22/24/27, 15C
BJPCTC0089	Temperature Test chamber	VT4002	Votsch industrietechnik	22/24/27, 15C
BJPCTC0090	FSP spectrum analyzer	FSP30	R&S	22/24/27, 15C
BJPCTC0094	GPIO-RS232 convertor	GPIO-RS232	NI	22/24/27, 15C
BJPCTC0112	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0114	Signal Generator	E8357C	Agilent	22/24/27, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C

11.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	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	EMC32 Test Software	R&S	22/24/27, 15C, 15B
BJPCPT0072	Receiver	ESI B26	R&S	22/24/27, 15C, 15B
BJPCPT0130	Relay Switch Unit	TS-RSP	R&S	22/24/27, 15C, 15B
BJPCPT0150	High Pass Filter	WHKS1200-10SS	Wainwright	22/24/27, 15C, 15B
BJPCPT0151	Band Reject Filter	WRCD1880/2000-0.2/40-5SSK	Wainwright	24, 15B
BJPCPT0154	Band Reject Filter	WRCT2402/2480-2400/2483.5-30-20SS	Wainwright	15C, 15B
BJPCPT0162	Antenna	HF906	R&S	22/24/27, 15C, 15B
BJPCTC0007	Antenna	HL562	R&S	22/24/27, 15C, 15B
BJPCTC0029	Antenna	HF906	R&S	22/24/27, 15C, 15B
BJPCTC0034	Band Reject Filter	WRCT 800/880-0.2/40-5SSK	Wainwright	22, 15B
BJPCTC0049	Preamplifier	Blma 0118-1A-Bt	Bonn	22/24/27, 15C, 15B
BJPCTC0055	Communication Tester	CMU200	R&S	22/24/27,15C,15B
BJPCTC0058	Bluetooth Tester	CBT	R&S	15C, 15B
BJPCTC0064	Band Reject Filter	WRCG1877/1883-1870/1890-40/6SS	Wainwright	24, 15B
BJPCTC0065	Band Reject Filter	WRCG832/838-825/845-40/5SS	Wainwright	27, 15B
BJPCTC0071	Multi-Device Controller	2090	EMCO	22/24/27, 15C, 15B
BJPCTC0072	Anechoic Chamber	3 m Semi / Full Anechoic Chamber	ETS	22/24/27, 15C, 15B
BJPCTC0073	MAST	Model-TR/POL	ETS	22/24/27, 15C, 15B
BJPCTC0074	MAST	Model 2070-2	ETS	22/24/27, 15C, 15B
BJPCTC0075	Turntable	Model 2188	ETS-EMCO	22/24/27, 15C, 15B
BJPCTC0096	Preamplifier	AFS4-00100300-20-23P-6	Miteq	22/24/27, 15C, 15B
BJPCTC0113	Receiver	ESI B26	R&S	22/24/27, 15B, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C
BJPCTC0124	Attenuator	SA18N200W-40	Fairview Microwave	-