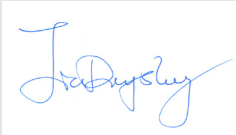
FCC Part 15C Compliance Test Report

Test Report no.:	FCC15C_RM-644_04.doc	**Date of Report:**	13-Sep-2010
Number of pages:	37	**Customer's Contact person:**	Hu Dongji
Testing laboratory:	TCC Nokia Beijing Laboratory Beijing Economic and Technological Development Area No.5 Donghuan Zhonglu Beijing PRC China 100176 Tel. +86 10 8711 8888 Fax. +86 10 8711 4550	**Customer:**	Nokia Corporation Beijing Economic and Technological Development Area No.5 Donghuan Zhonglu Beijing PRC China 100176 Tel. +86 10 8711 8888 Fax. +86 10 8711 4550
FCC listing no.: **IC recognition no.:**	975940 661AH-1		
Tested devices/ accessories:	**Phone RM-644 / Battery BL-5CB / AC-charger AC-3E / Headset WH-102**		
FCC ID:	QTLRM-644	**IC:**	661AB-RM644
Supplement reports:	-		
Testing has been carried out in accordance with:	**CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), Public Notice DA 00-705, DTS procedures KDB 558074, IC standards RSS-GEN (Issue 2, June 2007) and RSS-210 (Issue 7, June 2007). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".**		
Documentation:	The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test Results:	**The EUT complies with the requirements in respect of all parameters subject to the test.** The test results relate only to devices specified in this document.		
Date and signature for the contents:	 Digitally signed by Jia Dongsheng DN: cn=Jia Dongsheng, o=NOKIA, ou=PSCL, email=Dongsheng.jia@nokia.com, c=CN Date: 2010.09.13 17:42:37 +08'00'		

Jia Dongsheng, System Manager

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1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	30-Aug-2010
Testing completed	13-Sep-2010
The customer's contact person	Hu Dongji
Test Plan referred to	T:\Projects\RM-644\TestPlan\RS_testplan_RM-644.xls
Notes	-
Document name	FCC15C_RM-644_04.doc

1.1. EUT and Accessory Information

The EUT is a 2-band (GSM850/1900) mobile phone with GPRS and Bluetooth. Bluetooth is tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-644	001004004060027	0202	-	ck101_10w33	51832
Phone	RM-644	001004004060217	0202	-	ck101_10w33	51831
Battery	BL-5CB	0670620495540R057110200107	-	-	-	51815
AC-charger	AC-3E	44192984320522001l0;0675370	-	-	-	51810
Headset	WH-102	0694323936332609456	-	-	-	51828

1.2. Summary of Test Results

Bluetooth:

Section in CFR 47	Section in *RSS-GEN* or RSS-210	Name of the test	Result
15.247(b)(1)	A8.4 (2)	Conducted peak output power	PASSED
15.247(d)	A8.5	Band edge compliance of RF emissions	PASSED
15.247(d)	A8.5	Spurious RF conducted emissions	PASSED
15.247(d), 15.209	A8.5	Spurious radiated emissions	PASSED
15.207	*7.2.2*	AC powerline conducted emissions	PASSED
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

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 Beijing Laboratory.

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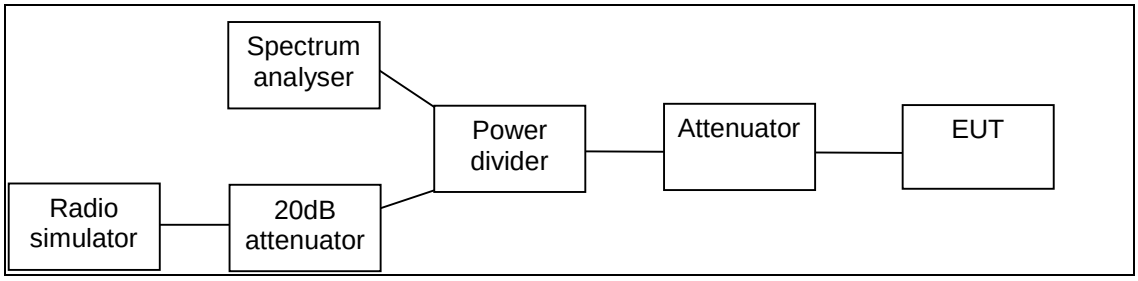
2. Conducted peak output power (FCC §15.247(b)(1), RSS-210 A8.4 (2))

EUT with DUT number	RM-644, DUT 51831
Accessories with DUT numbers	BL-5CB, DUT 51815; AC-3E, DUT51810; WH-102, DUT51828
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 58 / 100.9
Date of measurements	09-Sep-2010
Measured by	Jia Dongsheng

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

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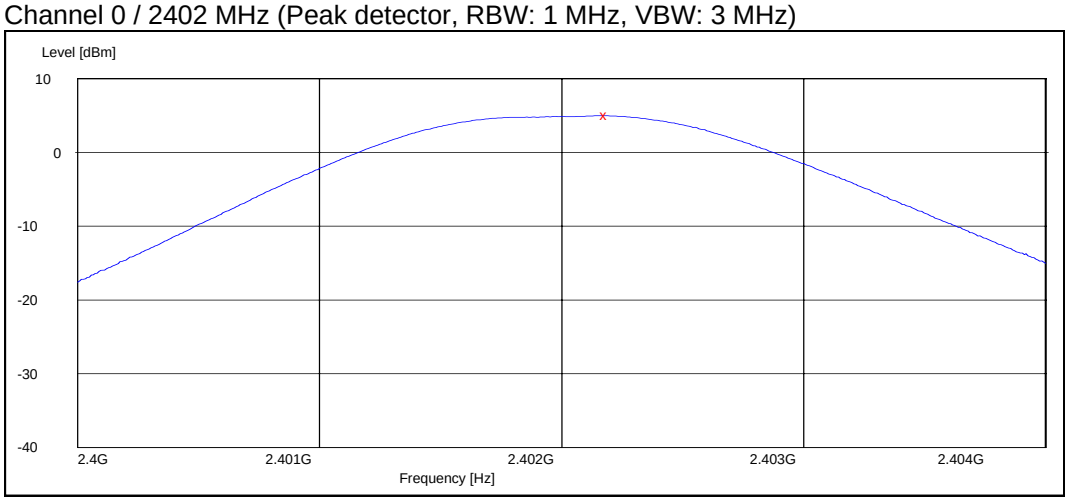
2.3. Bluetooth Test results

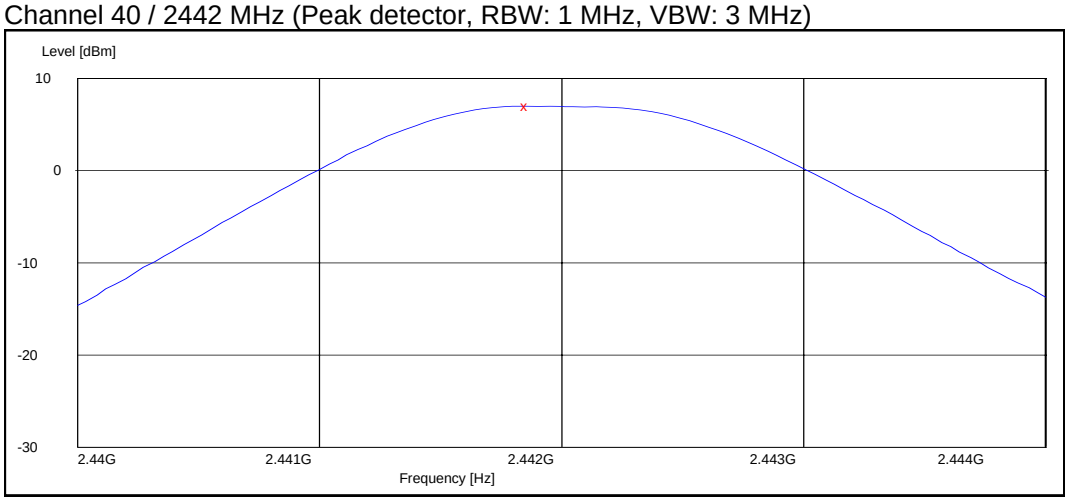
2.3.1 GFSK modulation, PRBS packet type

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
0 / 2402	5.00	3.162	PASSED
40 / 2442	7.00	5.012	PASSED
78 / 2480	7.40	5.495	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)



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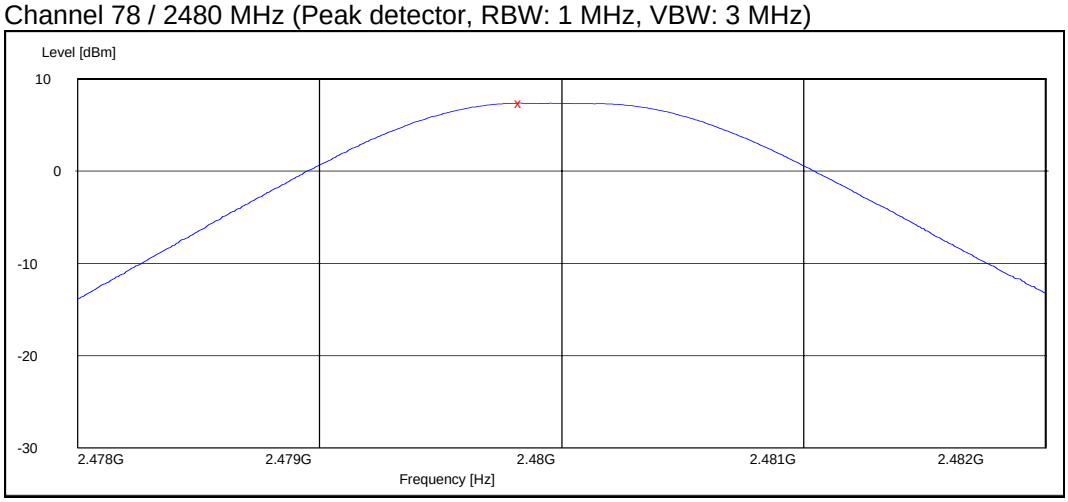
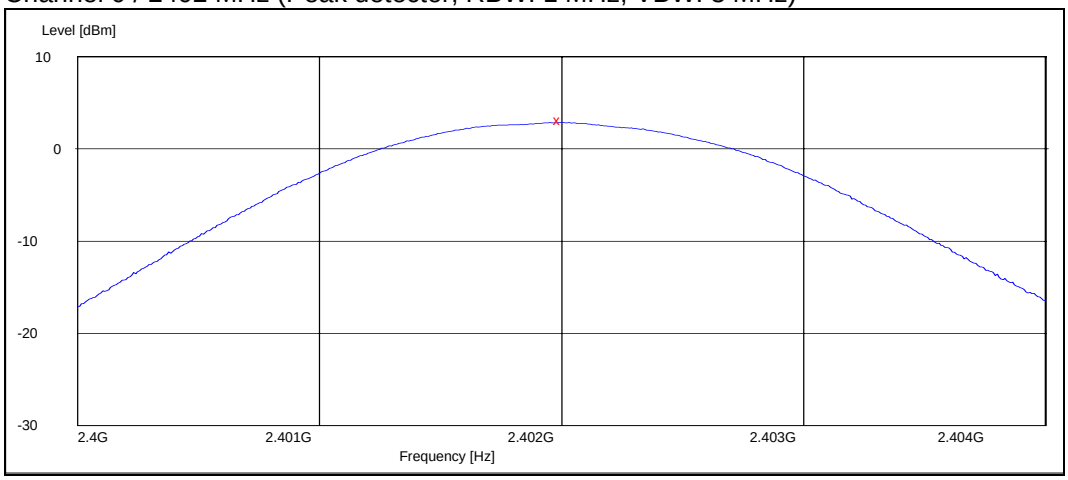
Channel 78 / 2480 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



2.3.2 8DPSK modulation, PRBS packet type

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
0 / 2402	3.10	2.042	PASSED
40 / 2442	5.60	3.631	PASSED
78 / 2480	6.10	4.074	PASSED

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



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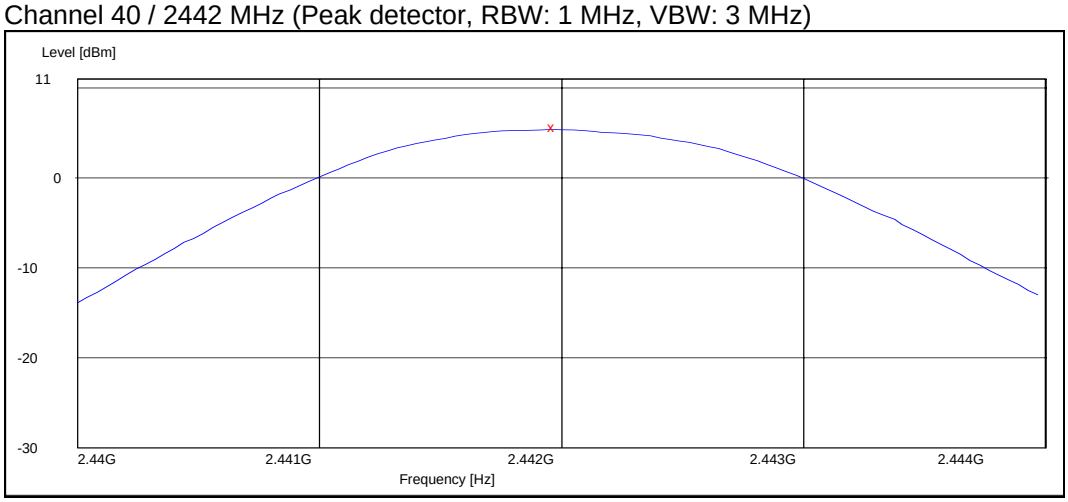
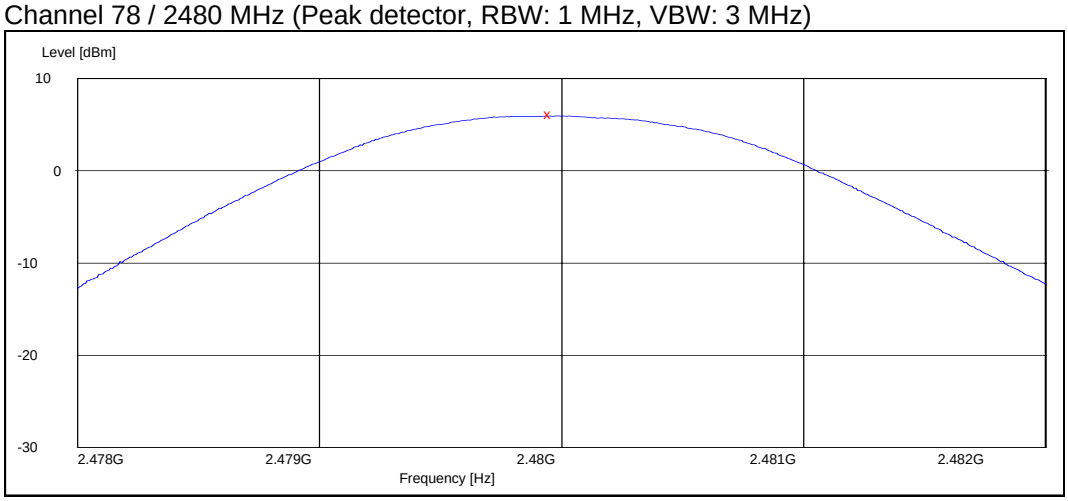
Channel 40 / 2442 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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



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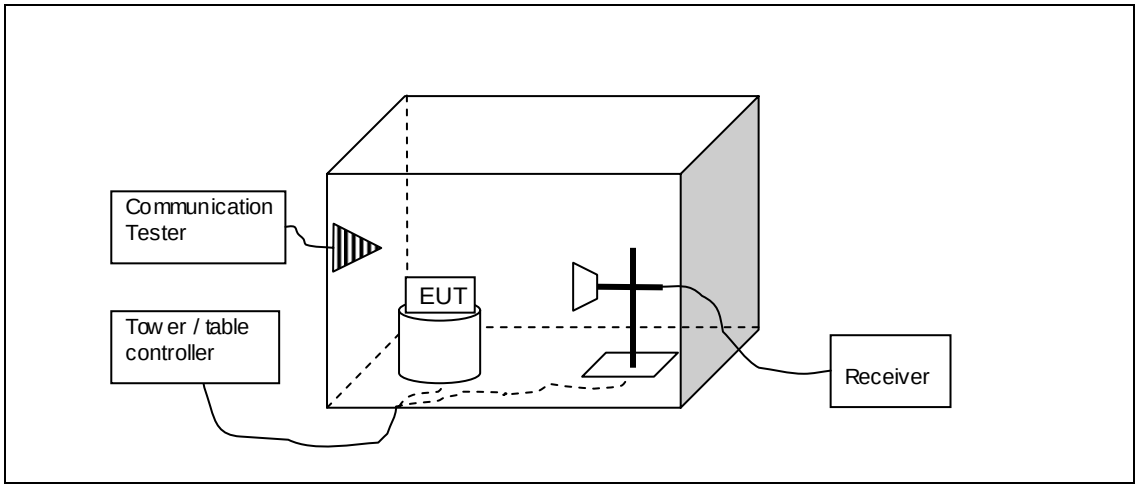
3. Band edge compliance of RF emissions
(FCC §15.247(d), RSS-210 A8.5)

EUT with DUT number	RM-644, DUT 51832
Accessories with DUT numbers	BL-5CB, DUT 51815 ; AC-3E, DUT 51810 ; WH-102, DUT 51828
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 64 / 100.5
Date of measurements	06-Sep-2010
Measured by	Jia Dongsheng

3.1. 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:

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

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

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3.3. Bluetooth Test results

3.3.1 GFSK modulation, PRBS packet type

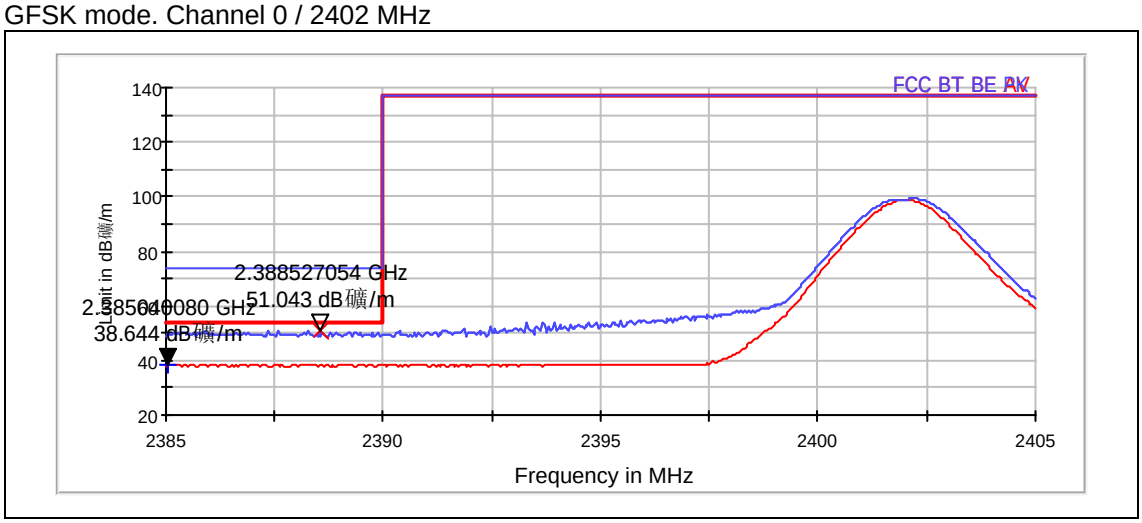
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Result
0 / 2402	38.64	85.543	36.79	1.85	PASSED
Hopping on, low end	40.31	103.638	38.46	1.85	PASSED
78 / 2480	51.75	386.877	49.24	2.51	PASSED
Hopping on, high end	51.75	386.877	49.24	2.51	PASSED

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

Channel / f_C [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Result
0 / 2402	51.04	356.575	49.19	1.85	PASSED
Hopping on, low end	51.09	358.317	49.24	1.85	PASSED
78 / 2480	58.17	810.244	55.66	2.51	PASSED
Hopping on, high end	56.56	673.335	54.05	2.51	PASSED

GFSK mode. Channel 0 / 2402 MHz



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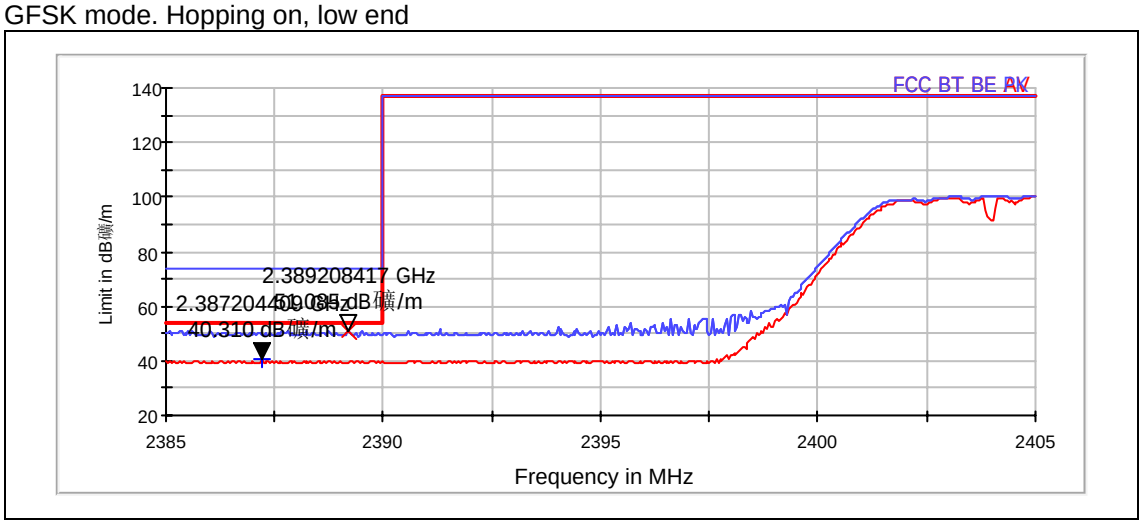
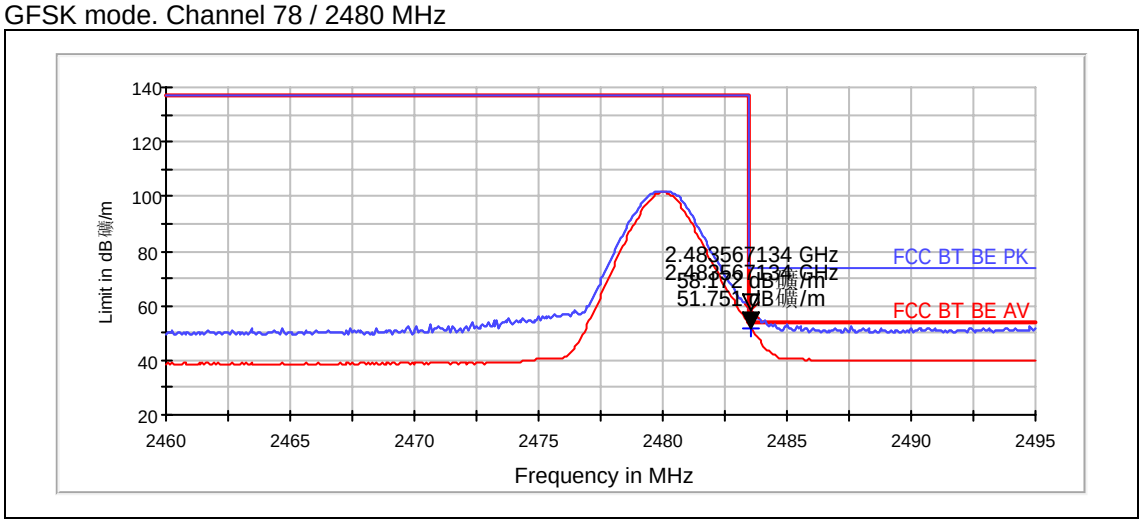
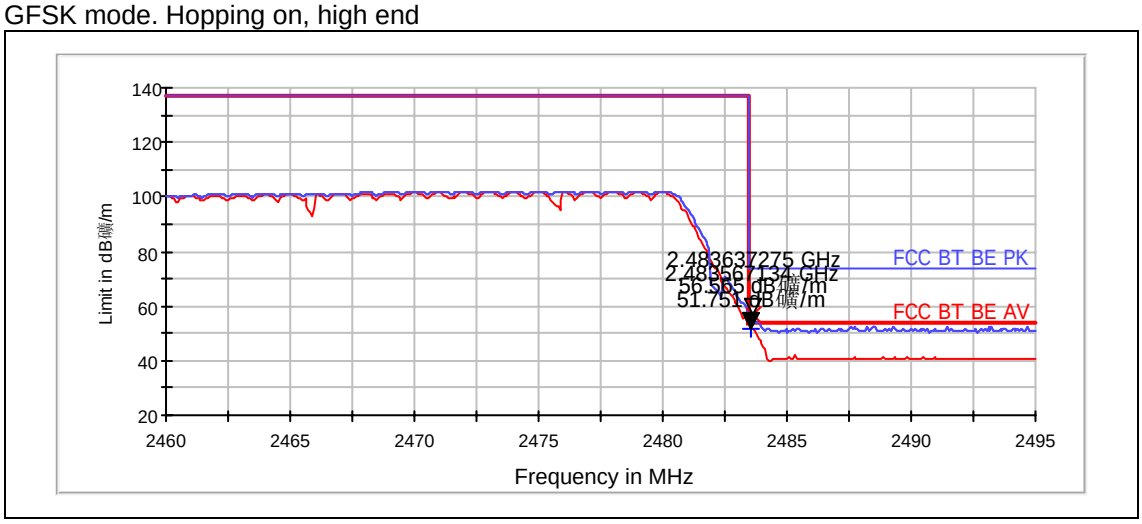
GFSK mode. Hopping on, low end



GFSK mode. Channel 78 / 2480 MHz



GFSK mode. Hopping on, high end



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3.3.2 8DPSK modulation, PRBS packet type

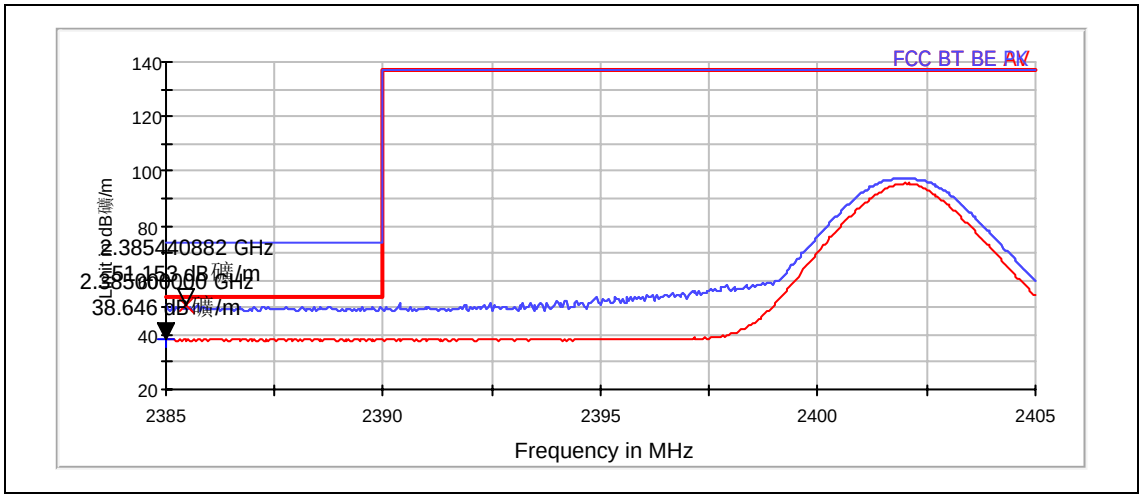
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Result
0 / 2402	38.65	85.568	36.8	1.85	PASSED
Hopping on, low end	39.89	98.703	38.04	1.85	PASSED
78 / 2480	49.73	306.582	47.22	2.51	PASSED
Hopping on, high end	49.31	291.983	46.8	2.51	PASSED

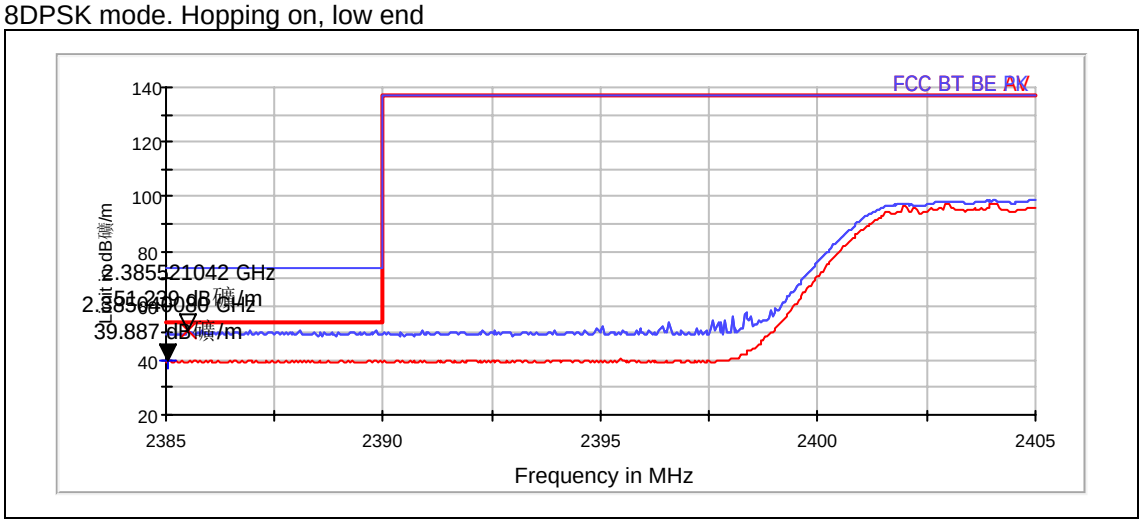
Peak (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_C [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Result
0 / 2402	51.15	361.108	49.3	1.85	PASSED
Hopping on, low end	51.24	364.72	49.39	1.85	PASSED
78 / 2480	56.54	671.683	54.03	2.51	PASSED
Hopping on, high end	55.29	581.603	52.78	2.51	PASSED

8DPSK mode. Channel 0 / 2402 MHz



8DPSK mode. Hopping on, low end



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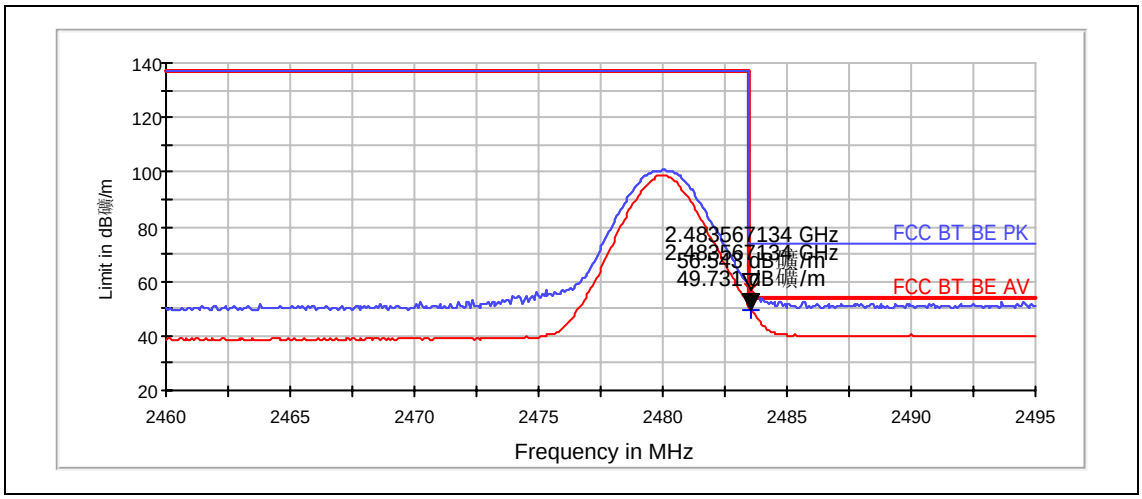
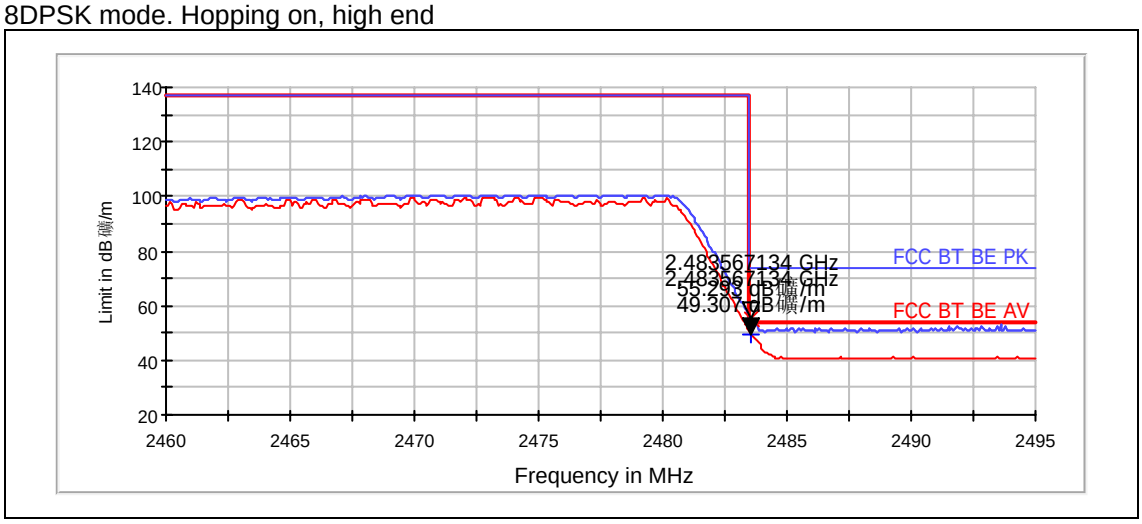
8DPSK mode. Channel 78 / 2480 MHz



8DPSK mode. Hopping on, high end



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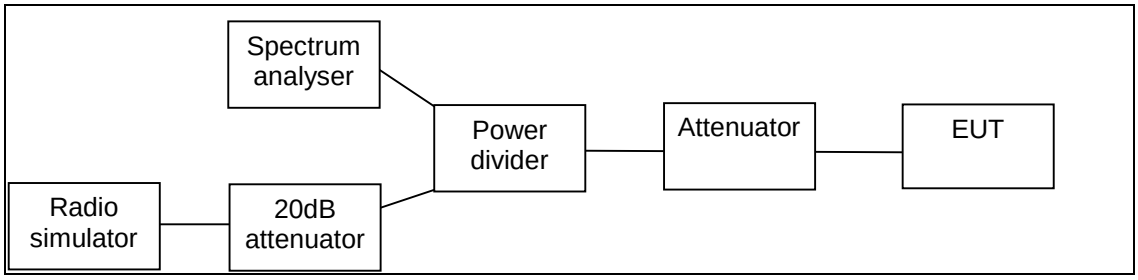
4. Spurious RF conducted emissions
(FCC §15.247(d), RSS-A8.5)

EUT with DUT number	RM-644, DUT 51831
Accessories with DUT numbers	BL-5CB, DUT 51815; AC-3E, DUT51810; WH-102, DUT51828
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 58 / 100.9
Date of measurements	09-Sep-2010
Measured by	Jia Dongsheng

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

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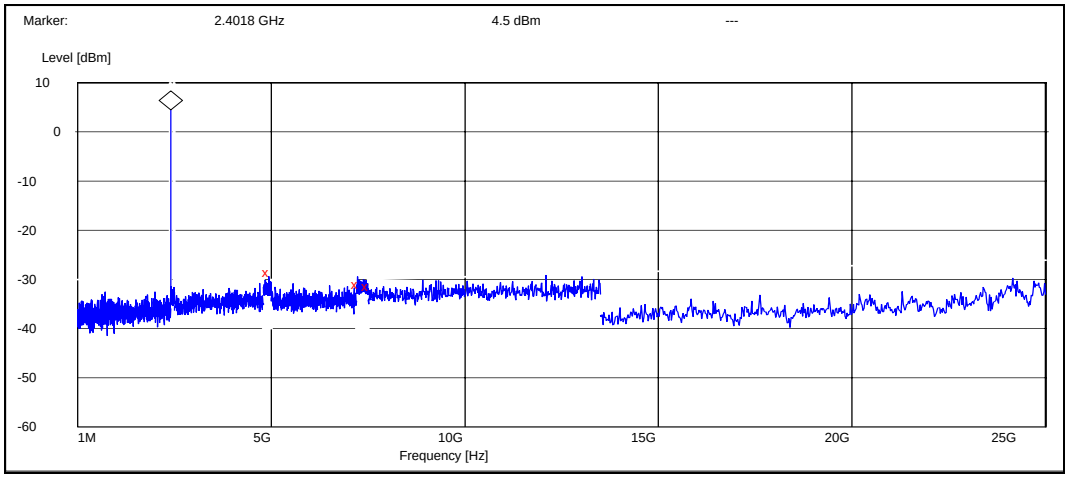
4.3. Bluetooth Test results

4.3.1 GFSK modulation, PRBS packet type

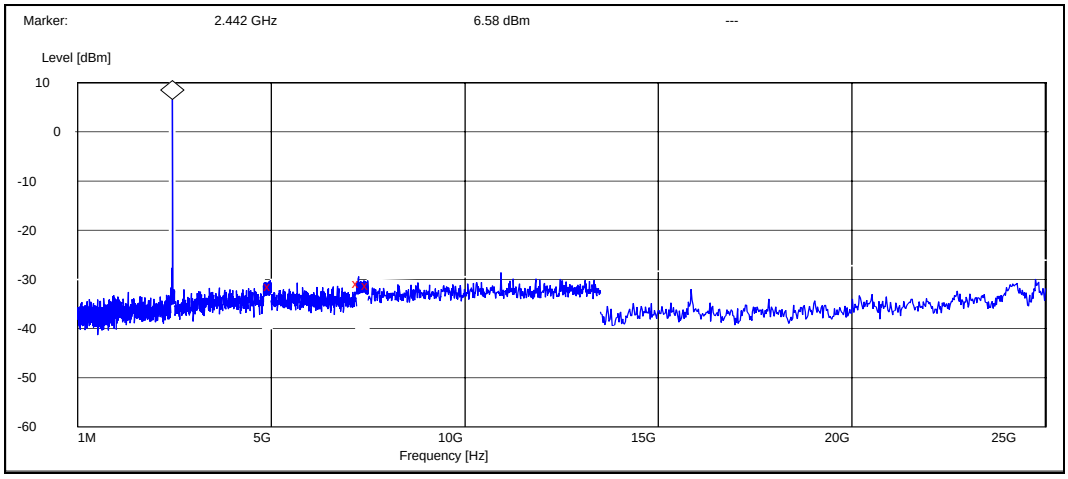
Channel 0 / 2402 MHz



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

Frequency [MHz]	P [dBc]	Result
4937.600000	-33.096287	PASSED
7232.400000	-35.396287	PASSED
7500.000000	-35.896287	PASSED

Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4970.400000	-37.981314	PASSED
7260.000000	-37.381314	PASSED
7500.000000	-37.881314	PASSED

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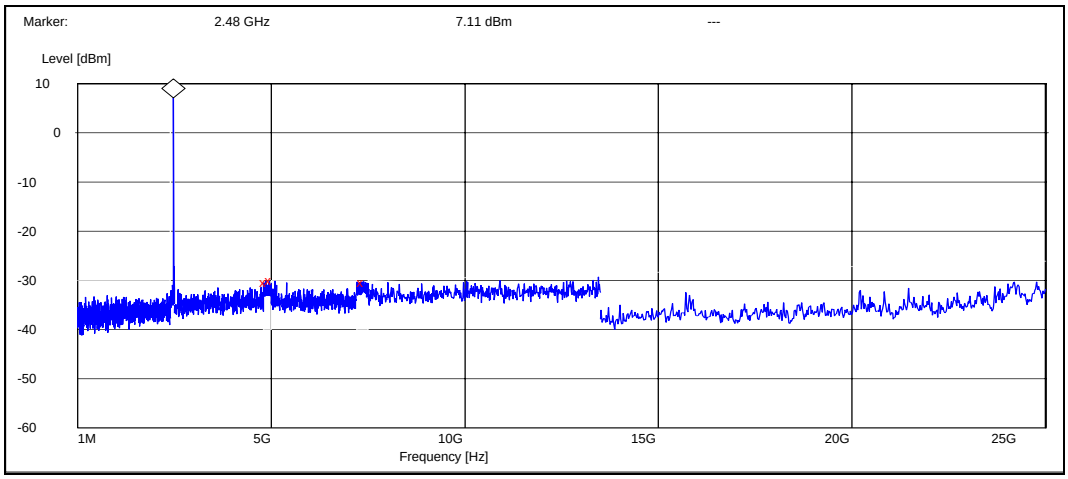
Channel 78 / 2480 MHz

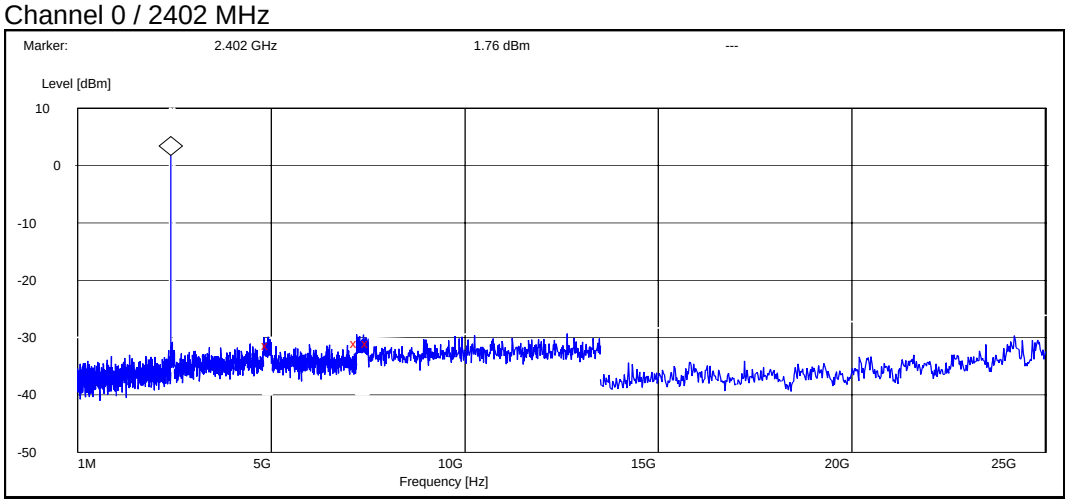


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4863.600000	-37.408572	PASSED
5000.000000	-37.208572	PASSED
7379.400000	-37.608572	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
4921.600000	-33.057567	PASSED
7201.200000	-32.757567	PASSED
7500.000000	-32.757567	PASSED

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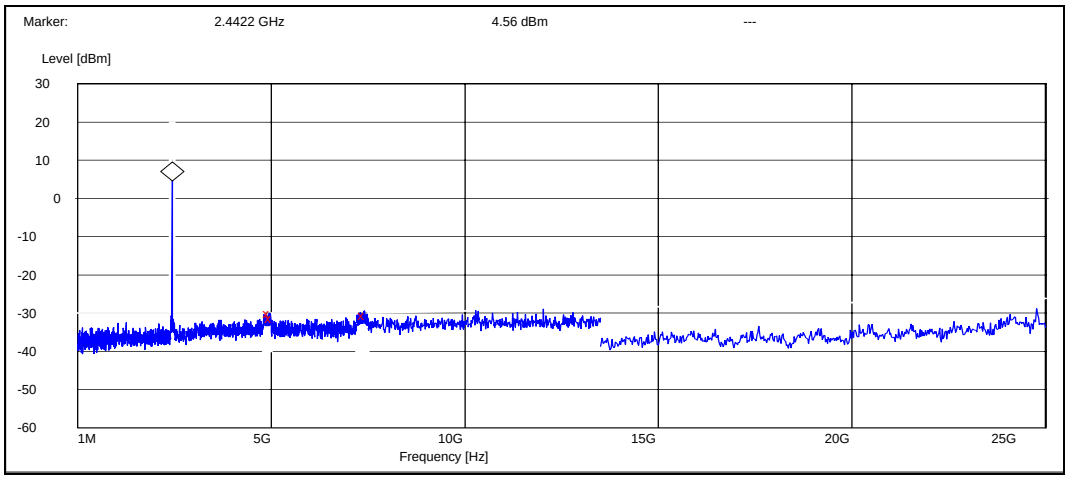
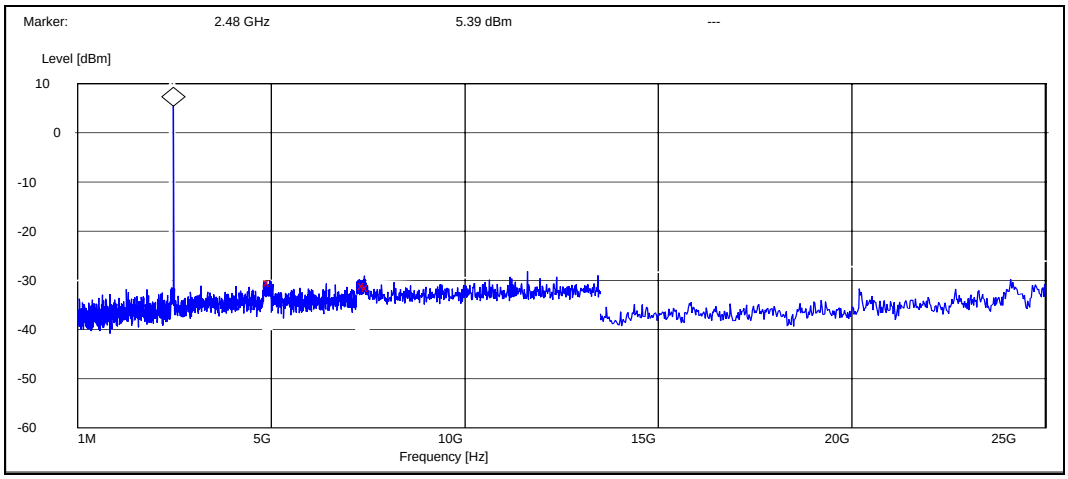
Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4954.000000	-34.657678	PASSED
5000.000000	-35.957678	PASSED
7415.400000	-35.157678	PASSED

Channel 78 / 2480 MHz



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

Frequency [MHz]	P [dBc]	Result
4964.400000	-35.894713	PASSED
7404.000000	-36.394713	PASSED
7500.000000	-36.794713	PASSED

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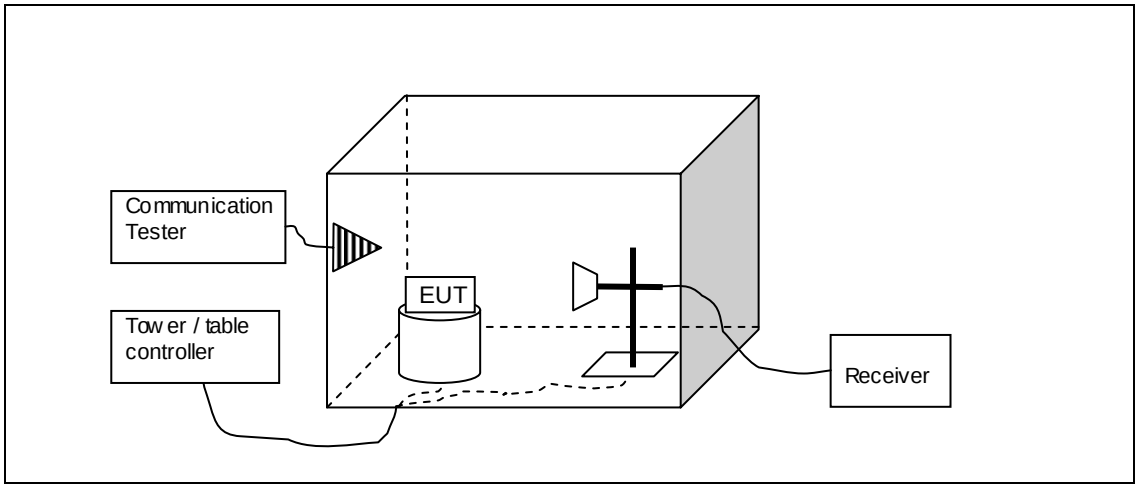
5. Spurious radiated emissions
(FCC §15.247(d), §15.209, RSS-210 A8.5)

EUT with DUT number	RM-644, DUT 51832
Accessories with DUT numbers	BL-5CB, DUT 51815 ; AC-3E, DUT 51810 ; WH-102, DUT 51828
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 64 / 100.5
Date of measurements	06-Sep-2010
Measured by	Jia Dongsheng

5.1. 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.

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

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

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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
4805.7	50.26	325.799	50.51	-0.25	VERTICAL	PASSED
7205.1	46.16	203.236	41.14	5.02	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
4805.7	29.07	28.402	29.32	-0.25	VERTICAL	PASSED
7205.1	32.93	44.305	27.91	5.02	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
41.022	25.79	19.485	36.25	-10.46	VERTICAL	PASSED
44.019	26.73	21.702	39	-12.27	VERTICAL	PASSED
44.027	26.64	21.486	38.92	-12.28	VERTICAL	PASSED
44.059	26.67	21.56	38.97	-12.3	VERTICAL	PASSED
44.558	25.94	19.811	38.54	-12.6	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
2795.41	51.05	356.862	43.03	8.02	VERTICAL	PASSED
2885.571	51.08	357.973	41.94	9.14	HORIZONTAL	PASSED
4932.365	52.61	427.12	52.61	0	VERTICAL	PASSED
12374.249	50.17	322.589	42.89	7.28	HORIZONTAL	PASSED
17999.4	58.97	887.667	39.72	19.25	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
2795.41	37.66	76.419	29.64	8.02	VERTICAL	PASSED
2885.571	38.1	80.371	28.96	9.14	HORIZONTAL	PASSED
4932.365	30.14	32.133	30.14	0	VERTICAL	PASSED
12374.249	35.53	59.765	28.25	7.28	HORIZONTAL	PASSED
17999.4	45.72	193.241	26.47	19.25	VERTICAL	PASSED

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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
4958.2	51.23	364.376	51.15	0.08	VERTICAL	PASSED
7439.7	49.07	284.021	43.99	5.08	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
4958.2	30.38	33.018	30.3	0.08	VERTICAL	PASSED
7439.7	33.59	47.791	28.51	5.08	HORIZONTAL	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
4805.4	44.43	166.571	44.68	-0.25	HORIZONTAL	PASSED
7205.6	46.16	203.259	41.14	5.02	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
4805.4	28.95	28.016	29.2	-0.25	HORIZONTAL	PASSED
7205.6	32.91	44.198	27.89	5.02	VERTICAL	PASSED

Channel 40 / 2442 MHz

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
41.002	25.76	19.411	36.21	-10.45	VERTICAL	PASSED
41.042	25.85	19.606	36.32	-10.47	VERTICAL	PASSED
43.909	26.16	20.314	38.37	-12.21	VERTICAL	PASSED
43.978	26.37	20.828	38.62	-12.25	VERTICAL	PASSED
43.989	26.33	20.73	38.58	-12.25	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
2822.446	51.01	355.181	42.07	8.94	VERTICAL	PASSED
2886.473	50.53	336.047	41.41	9.12	HORIZONTAL	PASSED
4940.478	49.53	299.606	49.44	0.09	VERTICAL	PASSED
4943.987	49.83	310.242	49.71	0.12	VERTICAL	PASSED

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17975.85	58.58	849.278	39.71	18.87	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
2822.446	37.97	79.15	29.03	8.94	VERTICAL	PASSED
2886.473	38.05	79.891	28.93	9.12	HORIZONTAL	PASSED
4940.478	30.19	32.315	30.1	0.09	VERTICAL	PASSED
4943.987	30.51	33.551	30.39	0.12	VERTICAL	PASSED
17975.85	45.54	189.256	26.67	18.87	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
4958.1	49.38	294.544	49.31	0.07	VERTICAL	PASSED
7441	46.47	210.499	41.41	5.06	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
4958.1	30.27	32.614	30.2	0.07	VERTICAL	PASSED
7441	33.55	47.583	28.49	5.06	HORIZONTAL	PASSED

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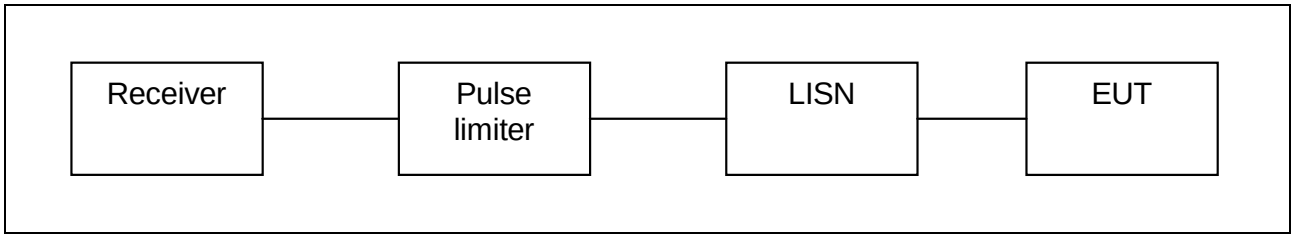
6. AC powerline conducted emissions

(FCC §15.107, ICES-003 section 5.3)

EUT with DUT number	RM-644, DUT 51832
Accessories with DUT numbers	BL-5CB, DUT 51815 ; AC-3E, DUT 51810 ; WH-102, DUT 51828
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 53 / 100.5
Date of measurements	10-Sep-2010
Measured by	Zou Ming

6.1. Test Setup



6.2. Test method and limit

The measurement is made according to ANSI C63.4-2003 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:

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

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

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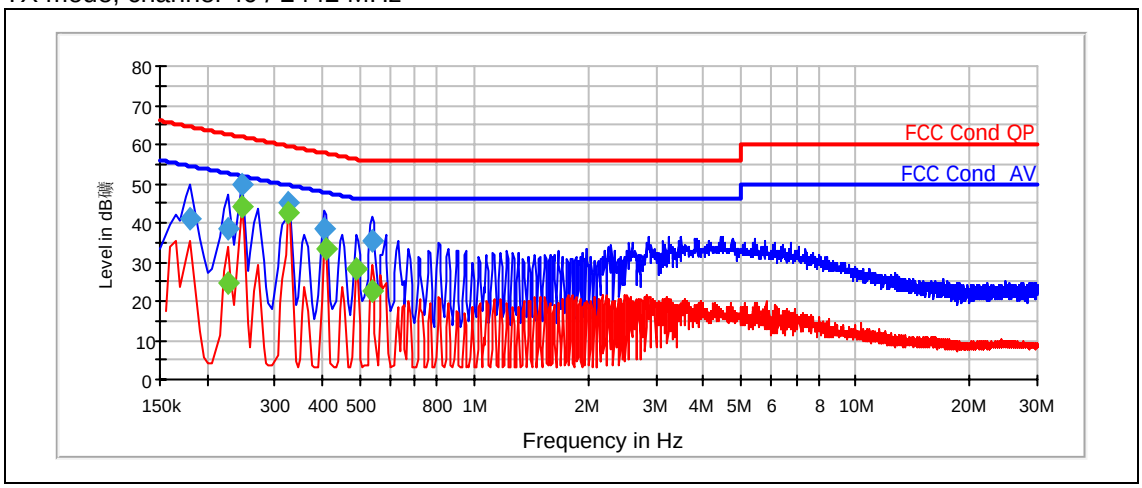
6.2.1 BT Test Results

TX mode, channel 40 / 2442 MHz



Quasi peak

Frequency [MHz]	U [dBµV]	IF-BW[kHz]	Line	Margin	Result
0.18	41.09	9	N	23.39	PASSED
0.225	38.39	9	N	24.23	PASSED
0.245	49.62	9	N	12.32	PASSED
0.325	45.26	9	N	14.28	PASSED
0.405	38.21	9	L1	19.55	PASSED
0.54	35.37	9	N	20.6	PASSED

Average

Frequency [MHz]	U [dBµV]	IF-BW[kHz]	Line	Margin	Result
0.225	24.74	9	N	27.93	PASSED
0.245	44.11	9	N	7.82	PASSED
0.325	42.73	9	L1	6.88	PASSED
0.41	33.13	9	L1	14.55	PASSED
0.49	28.43	9	L1	17.77	PASSED
0.54	22.57	9	L1	23.4	PASSED

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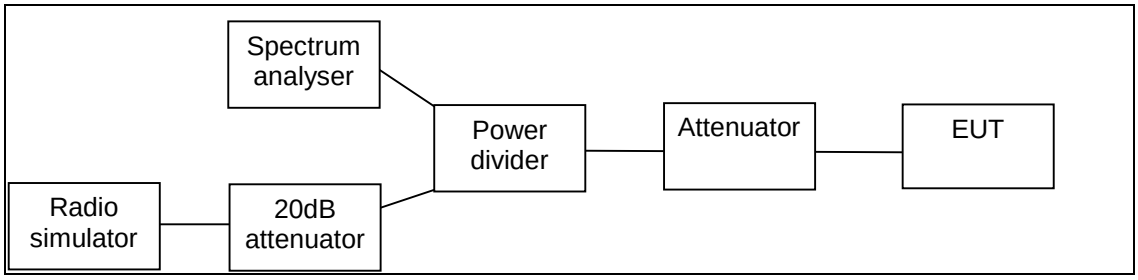
7. 20 dB bandwidth

(FCC §15.247(a)(1), RSS-210 A8.1 (a))

EUT with DUT number	RM-644, DUT 51831
Accessories with DUT numbers	BL-5CB, DUT 51815; AC-3E, DUT51810; WH-102, DUT51828
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 58 / 100.9
Date of measurements	09-Sep-2010
Measured by	Jia Dongsheng

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

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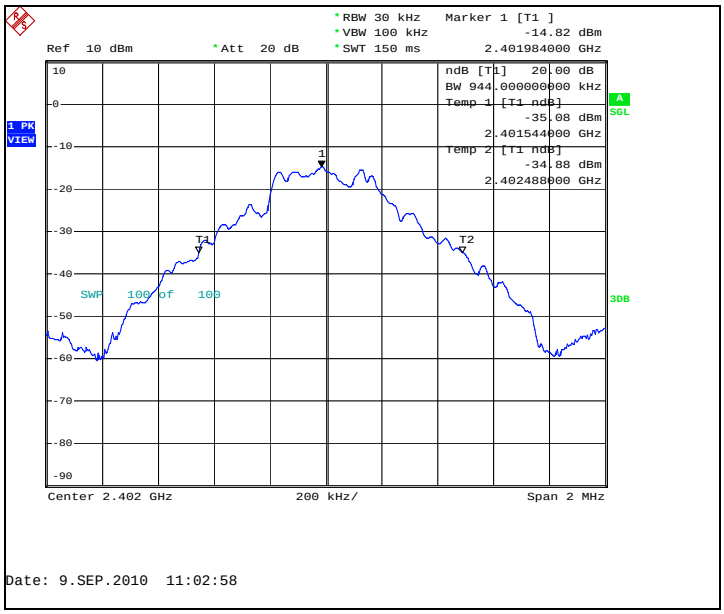
7.3. Bluetooth Test results

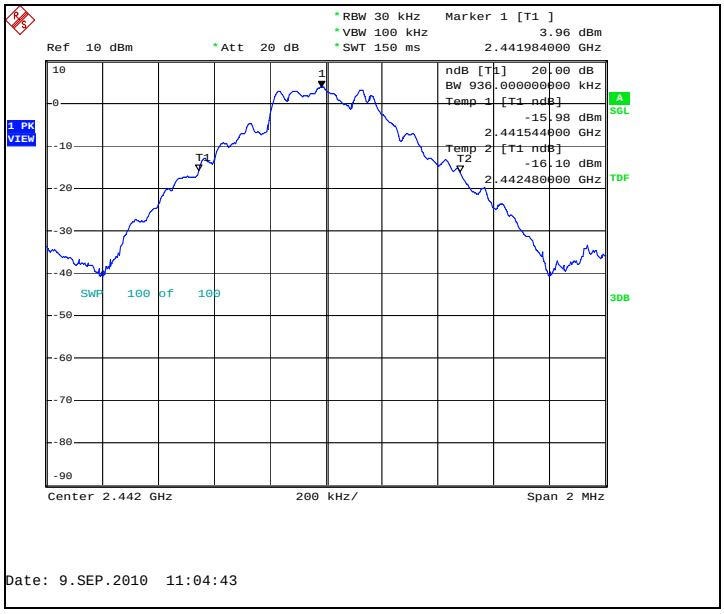
7.3.1 GFSK modulation, PRBS packet type

Channel / f_C [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	944.000	PASSED
40 / 2442	936.000	PASSED
78 / 2480	936.000	PASSED

Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



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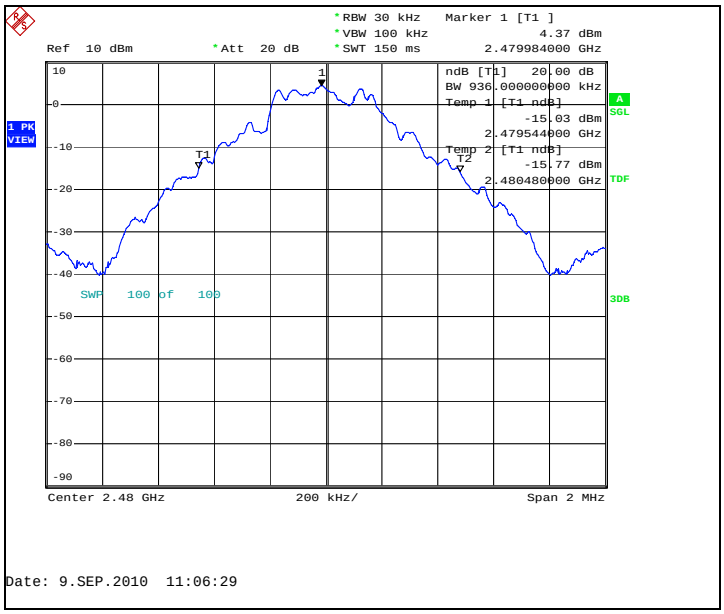
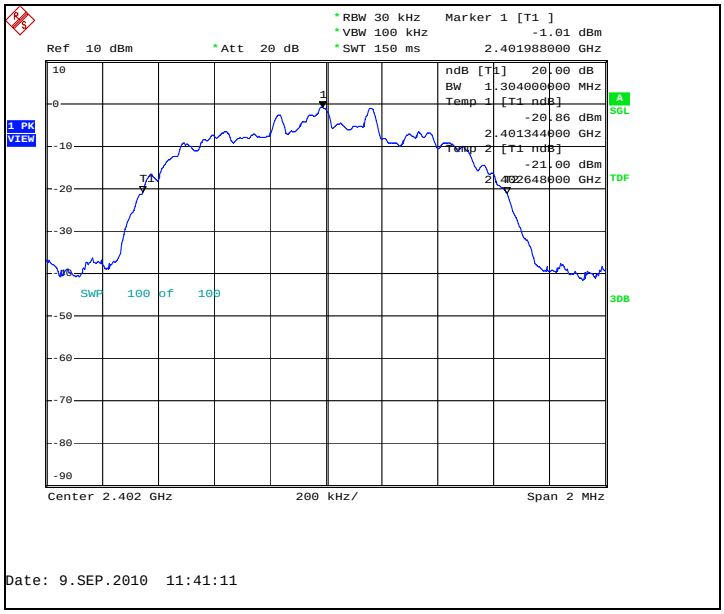
Channel 78 / 2480 MHz



7.3.2 8DPSK modulation, PRBS packet type

Channel / f_C [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	1304.000	PASSED
40 / 2442	1312.000	PASSED
78 / 2480	1320.000	PASSED

Channel 0 / 2402 MHz



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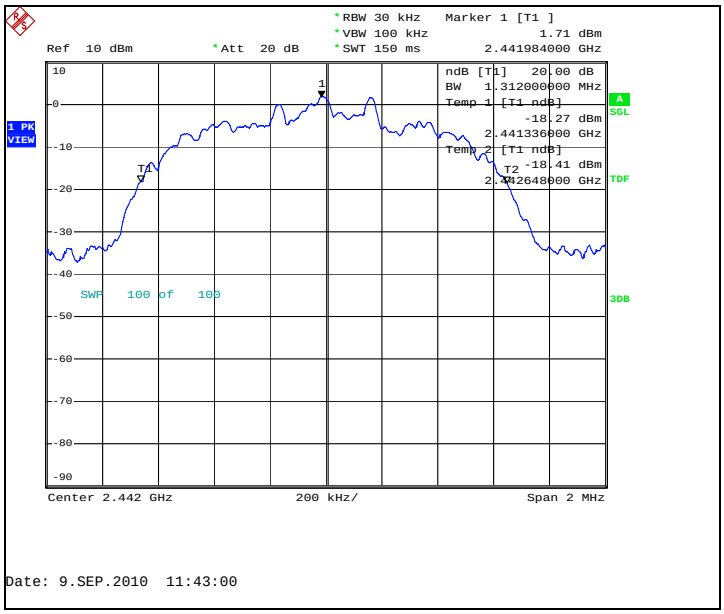
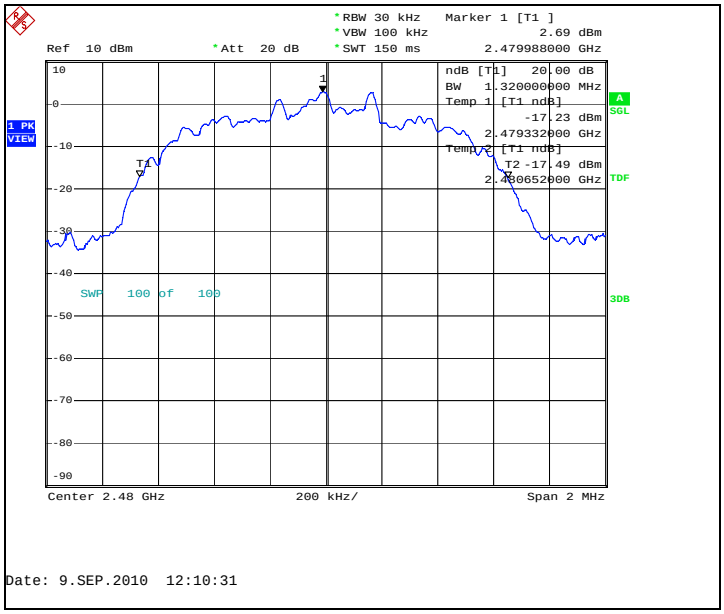
Channel 40 / 2442 MHz



Channel 78 / 2480 MHz



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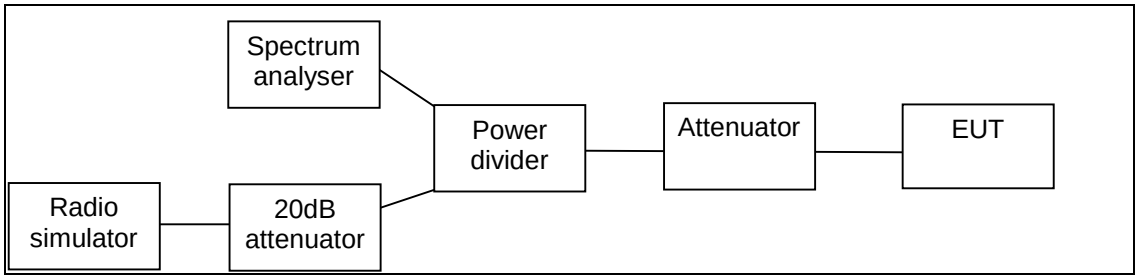
8. Carrier frequency separation

(FCC §15.247(a)(1), RSS-210 A8.1 (b))

EUT with DUT number	RM-644, DUT 51831
Accessories with DUT numbers	BL-5CB, DUT 51815; AC-3E, DUT51810; WH-102, DUT51828
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 58 / 100.9
Date of measurements	09-Sep-2010
Measured by	Jia Dongsheng

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

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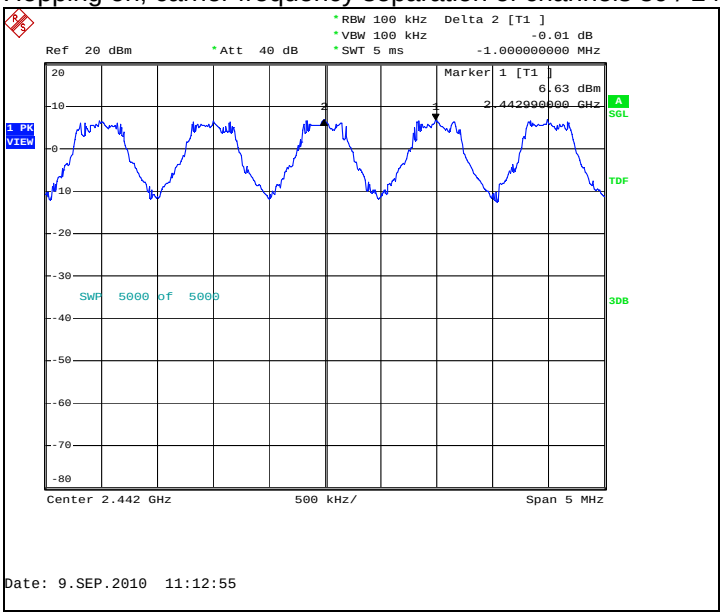
8.3. Bluetooth Test results

8.3.1 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



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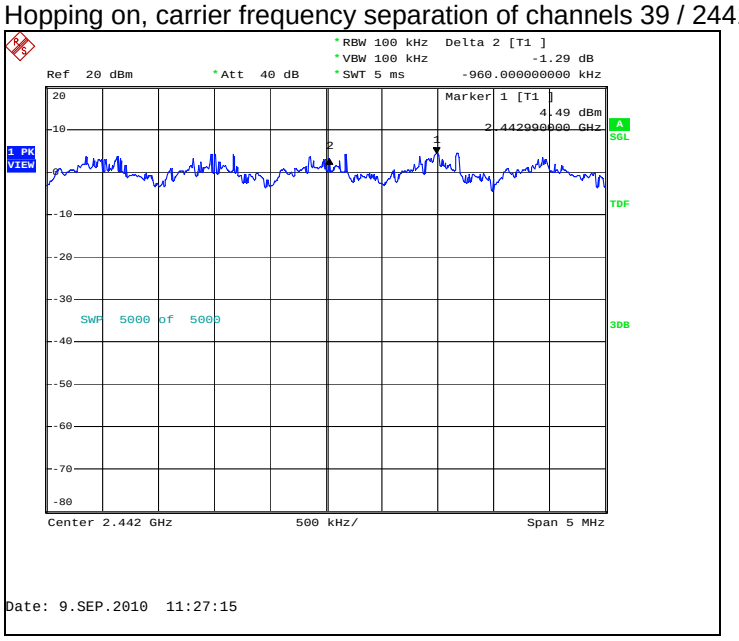
8.3.2 8DPSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
960	PASSED

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



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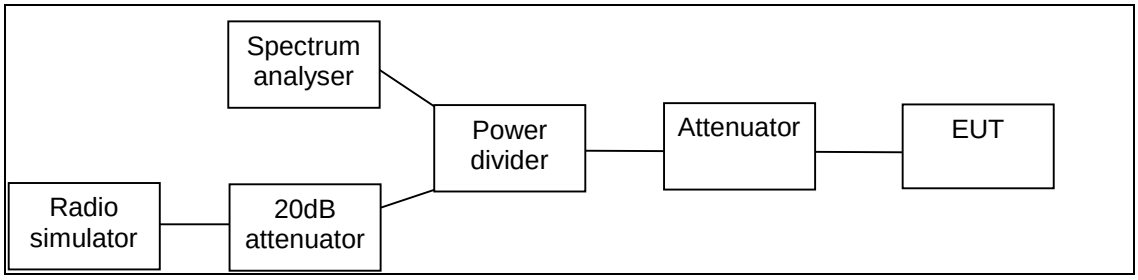
9. Number of hopping frequencies

(FCC §15.247(a)(1)(iii), RSS-210 A8.1 (d))

EUT with DUT number	RM-644, DUT 51831
Accessories with DUT numbers	BL-5CB, DUT 51815; AC-3E, DUT51810; WH-102, DUT51828
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 58 / 100.9
Date of measurements	09-Sep-2010
Measured by	Jia Dongsheng

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

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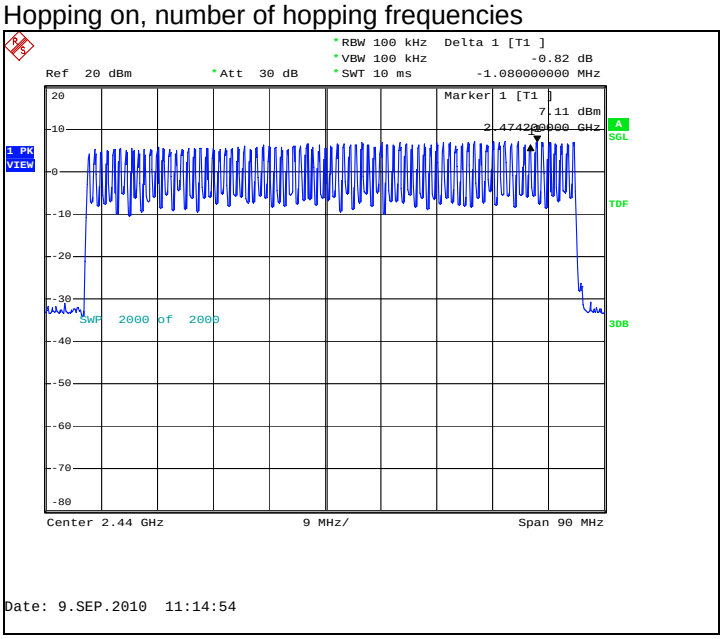
9.3. Bluetooth Test results

9.3.1 GFSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
78	PASSED

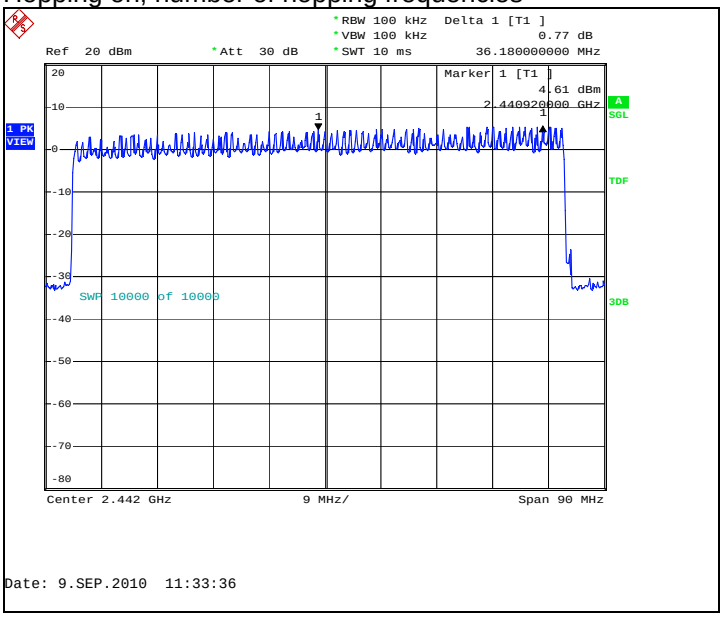
Hopping on, number of hopping frequencies



9.3.2 8DPSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
78	PASSED

Hopping on, number of hopping frequencies



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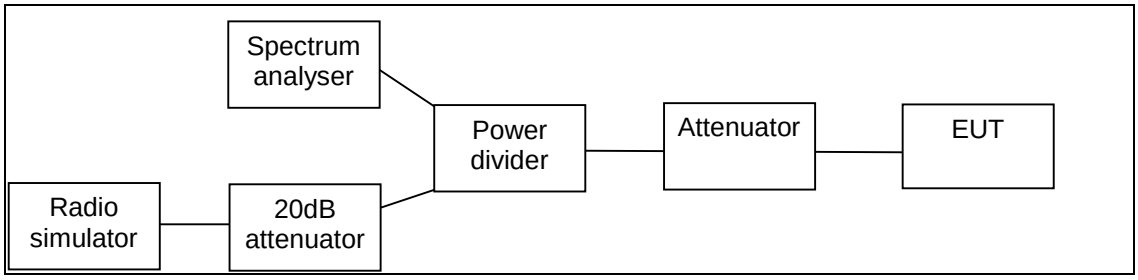
10. Time of occupancy

(FCC §15.247(a)(1)(iii), RSS-210 A8.1 (d))

EUT with DUT number	RM-644, DUT 51831
Accessories with DUT numbers	BL-5CB, DUT 51815; AC-3E, DUT51810; WH-102, DUT51828
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 58 / 100.9
Date of measurements	09-Sep-2010
Measured by	Jia Dongsheng

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 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

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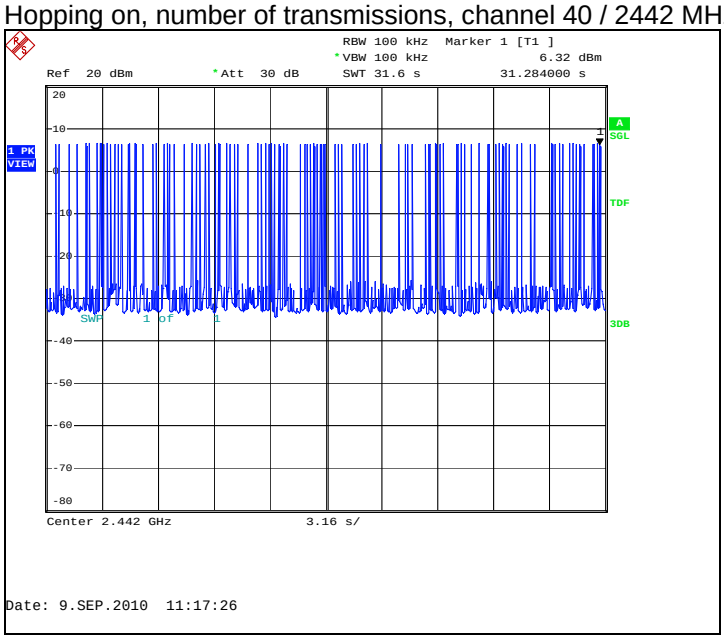
10.3. Bluetooth test results

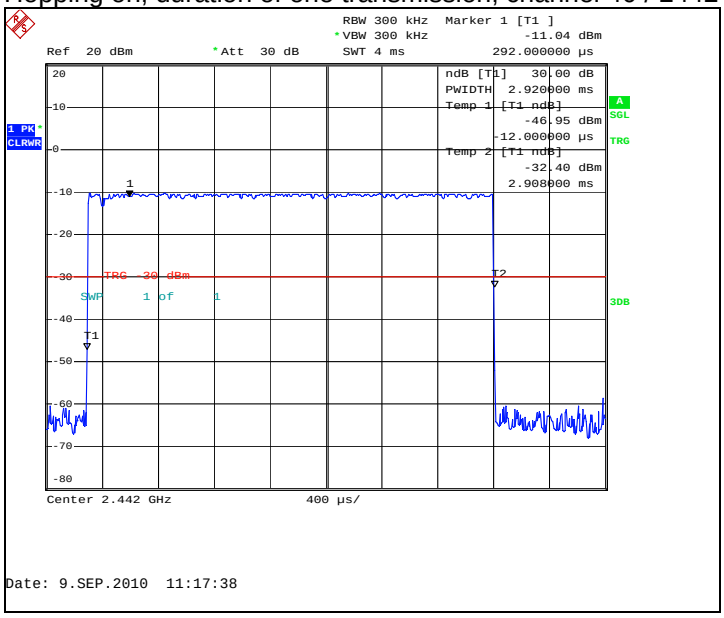
10.3.1 GFSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [µs]	Time of occupancy [s]	Result
99	2,920	0.289080	PASSED

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



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



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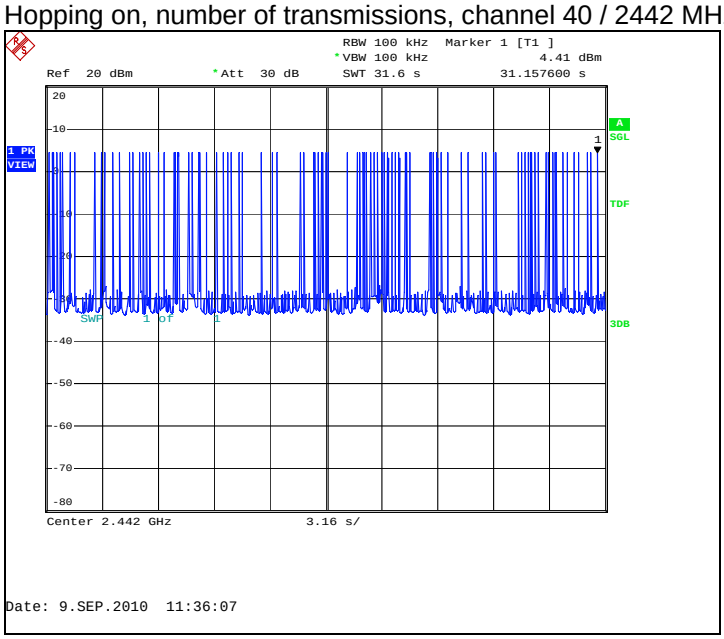
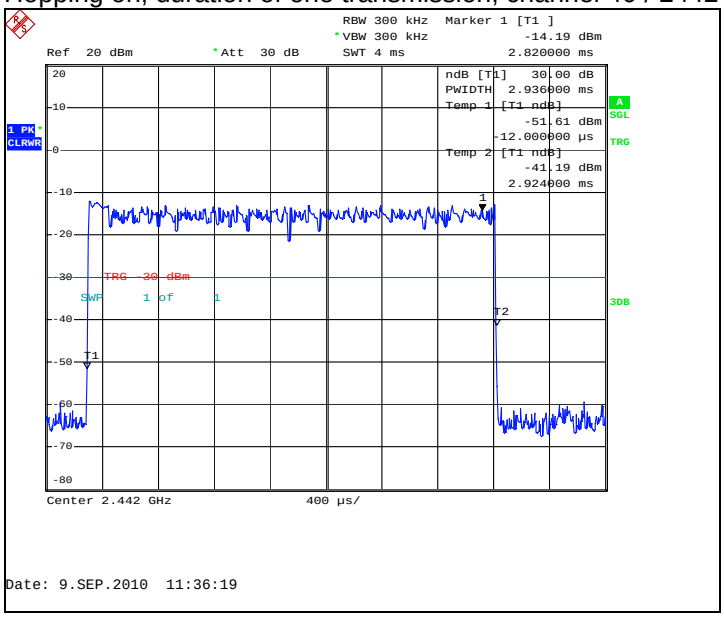
10.3.2 8DPSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [µs]	Time of occupancy [s]	Result
88	2,936	0.258368	PASSED

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



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



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11. Test Equipment

11.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24/27, 15C, 15B
BJPCHW0020	DC Power supply	Hp6632B	HP	22/24/27, 15C
BJPCPT0040	Receiver	ESCS30	R&S	15C,15B
BJPCPT0069	LISN 50 µH	ESH3-Z5	R&S	15C,15B
BJPCPT0073	Signal Generator	SMR 20	R&S	22/24/27, 15C, 15B
BJPCPT0079	LISN 50 µH	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	Tempreture Test chamber	VT4002	Votsch industrietechnik	22/24/27, 15C
BJPCTC0090	FSP spectrum analyzer	FSP30	R&S	22/24/27, 15C
BJPCTC0094	GPIB-RS232 convertor	GPIB-RS232	NI	22/24/27, 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	ES-K1 v.1.71	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

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