

FCC Part 15C Compliance Test Report

Test Report no.:	FCC15C_RM-688_04.docx	Date of Report:	13-Jun-2010
Number of pages:	36	Customer's Contact person:	Alison Lenaghan
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 Nokia House Summit Avenue, Southwood FARNBOROUGH HAMPSHIRE GU14 0NG UK Tel. +44 1252 866000 Fax. +44 1252 866001
FCC listing no.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-688 / Battery BL-5CT / AC-charger AC-8C / Charger adapter CA-100C / Headset WH-102 / Memory Card MU-37		
FCC ID:	QFXRM-688	IC:	661Z-RM688
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. 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:			

Yin Hongpeng, System Specialist, EMC

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	29-May-2010
Testing completed	13-Jun-2010
The customer's contact person	Alison Lenaghan
Test Plan referred to	T:\Projects\RM-688\TestPlan\RS_testplan_RM-688.xls
Notes	-
Document name	FCC15C_RM-688_04.docx

1.1. EUT and Accessory Information

The EUT is a 6-band (GSM850/900/1800/1900) and WCDMA Band (I/V(850)) mobile phone with GPRS, EGPRS, HSDPA, HSUPA and Bluetooth. Bluetooth and WLAN are tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-688	004402130836046	4500	-	032.006	51683
Battery	BL-5CT	3635639385150103997;0670555	-	-	-	51691
AC-charger	AC-8C	4419299414010343131;0675391	-	-	-	51697
Charger adapter	CA-100C	0730339805111830435	-	-	-	51700
Headset	WH-102	06943239375c4106664	-	-	-	51703
Memory Card	MU-37	M24U2GTM1BRN11PK3991Q	-	-	-	51695
Phone	RM-688	004402130835089	4500	-	032.006	51706
Battery	BL-5CT	3635639385150103979;0670555	-	-	-	51694
AC-charger	AC-8C	4419299414010343046;0675391	-	-	-	51699
Charger adapter	CA-100C	0730339828511823010	-	-	-	51702
Headset	WH-102	06943239375c4106666	-	-	-	51704

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
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 Beijing Laboratory.

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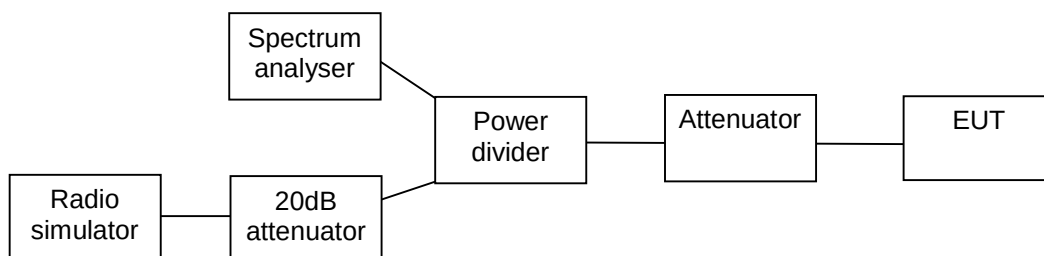
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2. Conducted peak output power (FCC §15.247(b)(1), RSS-210 A8.4 (2))

EUT with DUT number	RM-688, DUT 51706
Accessories with DUT numbers	BL-5CT, DUT 51694 ; AC-8C, DUT 51699 ; CA-100C, DUT 51702 ; WH-102, DUT 51704 ; MU-37, DUT 51695
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 58 / 100.9
Date of measurements	10-Jun-2010
Measured by	Yin Hongpeng

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

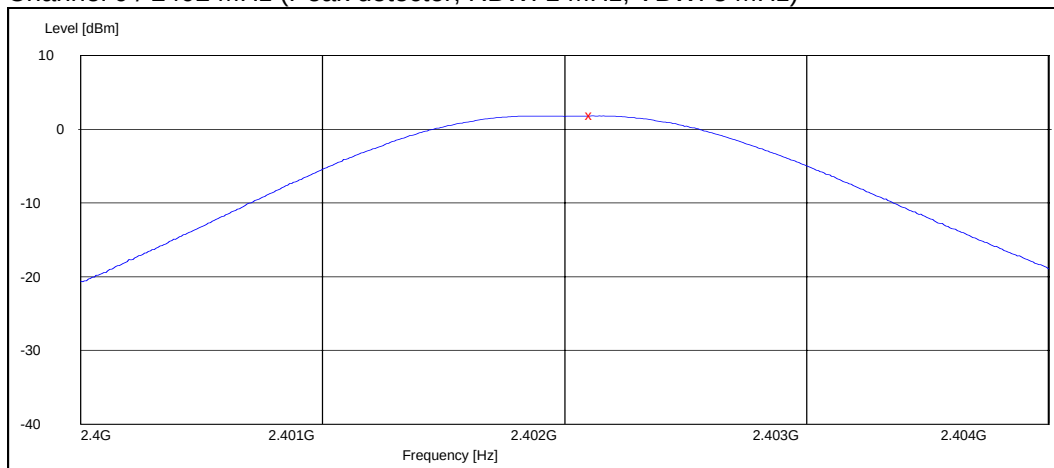
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

2.3. Bluetooth Test results

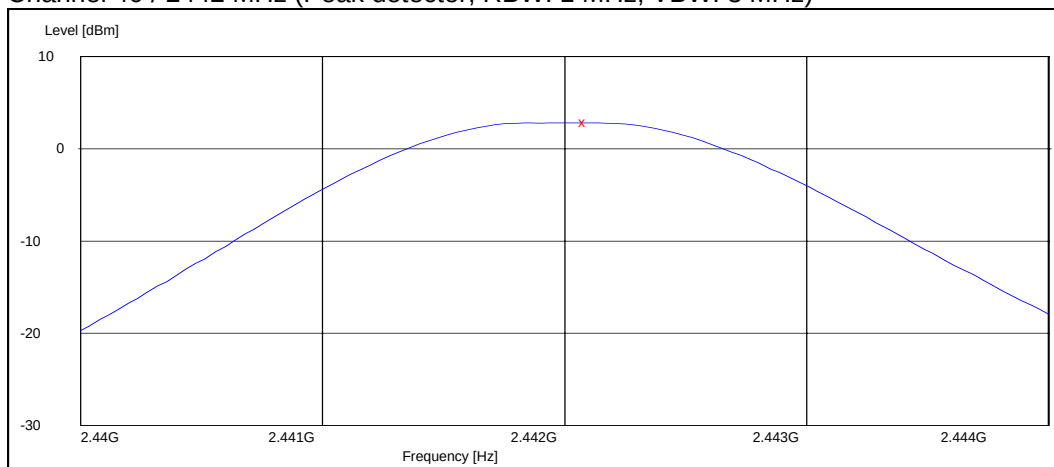
2.3.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	1.90	1.549	PASSED
40 / 2442	2.90	1.950	PASSED
78 / 2480	2.50	1.778	PASSED

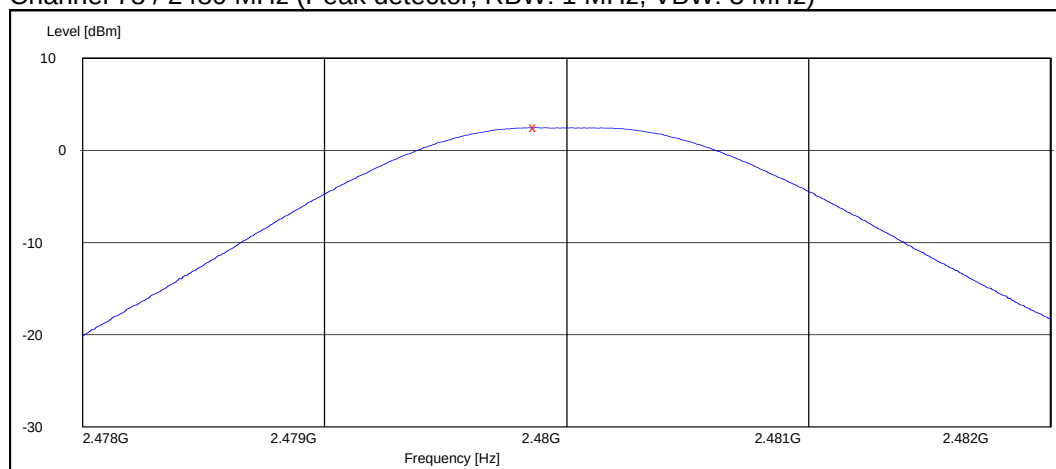
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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



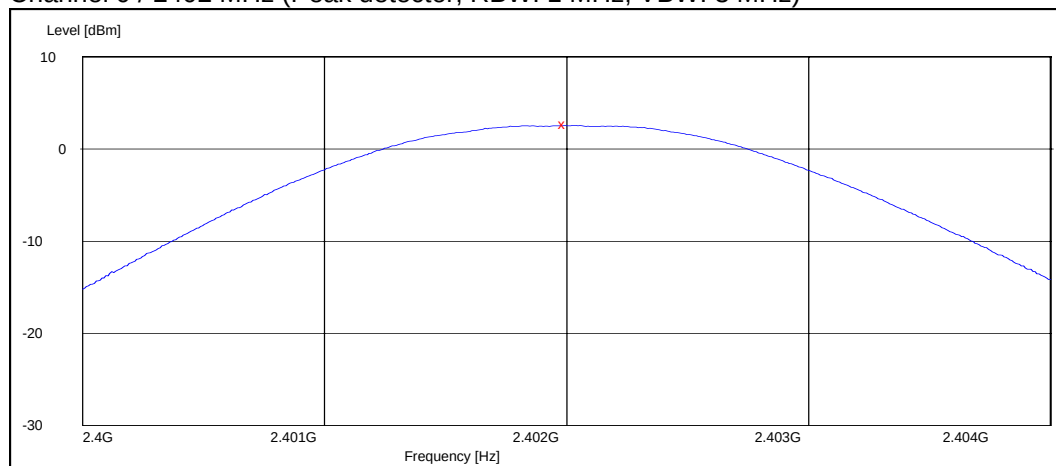
Channel 78 / 2480 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



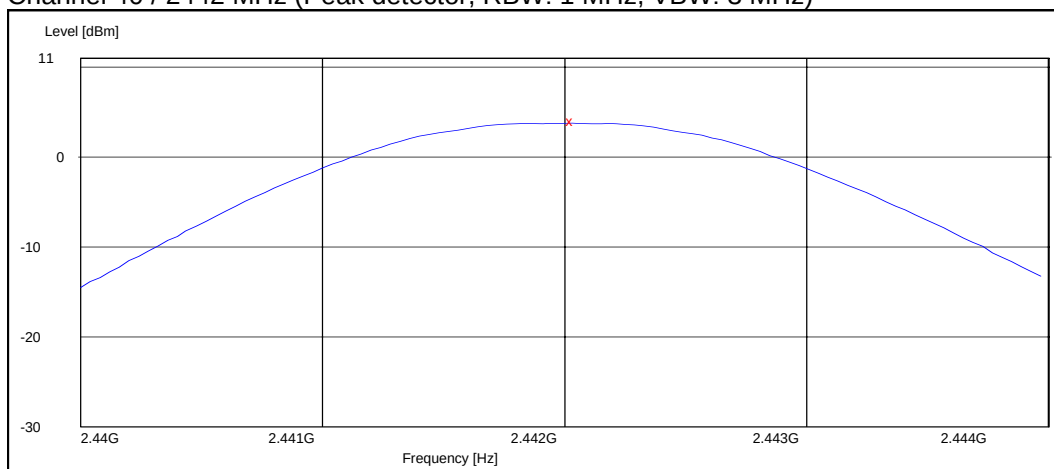
2.3.2 8DPSK modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	2.70	1.862	PASSED
40 / 2442	4.00	2.512	PASSED
78 / 2480	4.00	2.512	PASSED

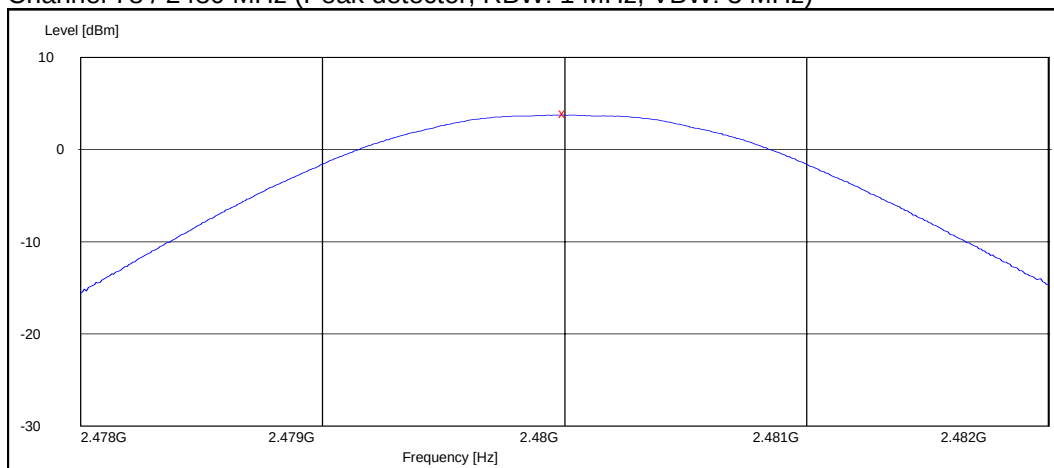
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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

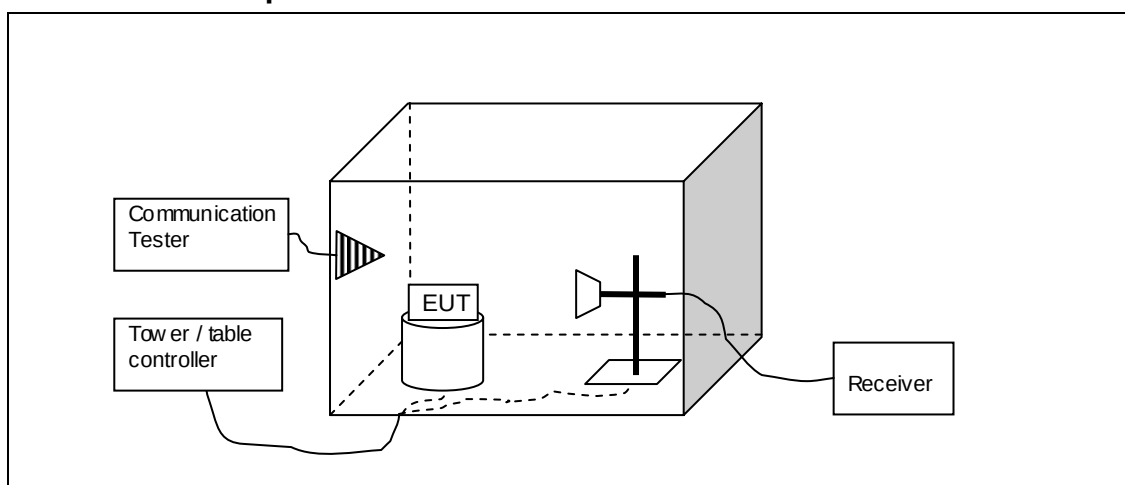
8 (36)

RF emissions

(FCC §15.247(d), RSS-210 A8.5)

EUT with DUT number	RM-688, DUT 51683
Accessories with DUT numbers	BL-5CT, DUT 51691 ; AC-8C, DUT 51697 ; CA-100C, DUT 51700 ; WH-102, DUT 51703 ; MU-37, DUT 51695
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 61 / 101.1
Date of measurements	09-Jun-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

3.3. Bluetooth Test results

3.3.1 GFSK modulation, PRBS packet type

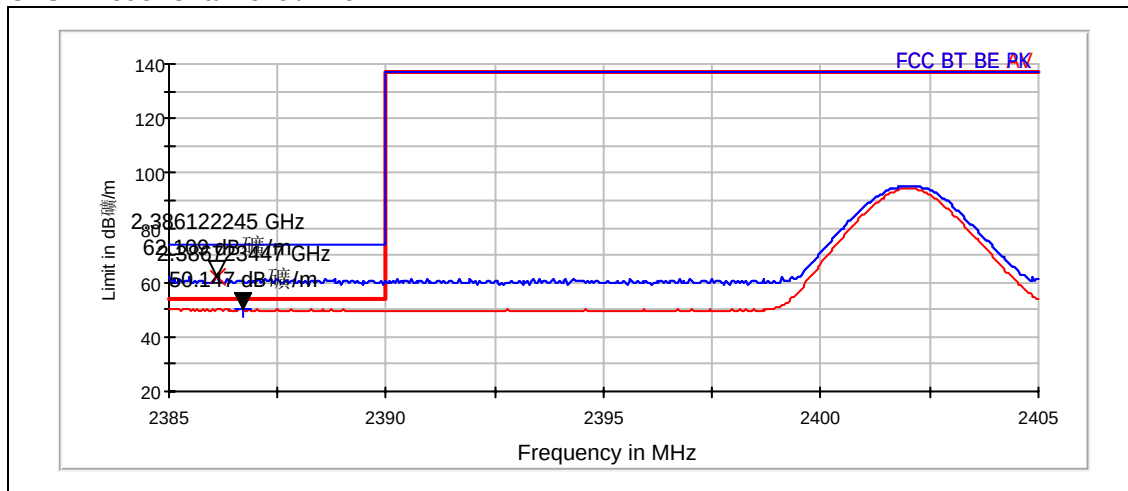
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	E [μ V/m]	U_{RX} [dB μ V]	A_{TOT} [dB]	Result
0 / 2402	50.15	321.634	46.87	3.28	PASSED
Hopping on, low end	51.43	372.95	48.15	3.28	PASSED
78 / 2480	51.61	380.7	47.81	3.8	PASSED
Hopping on, high end	52.89	441.131	49.09	3.8	PASSED

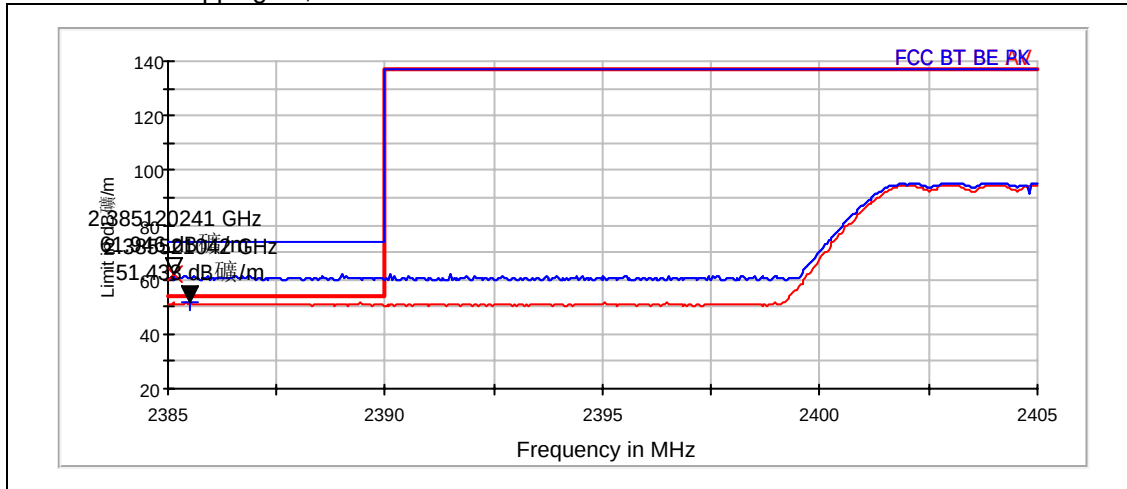
Peak (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	E [μ V/m]	U_{RX} [dB μ V]	A_{TOT} [dB]	Result
0 / 2402	62.11	1274.868	58.83	3.28	PASSED
Hopping on, low end	61.95	1251.136	58.67	3.28	PASSED
78 / 2480	62.6	1348.966	58.8	3.8	PASSED
Hopping on, high end	62.92	1399.785	59.12	3.8	PASSED

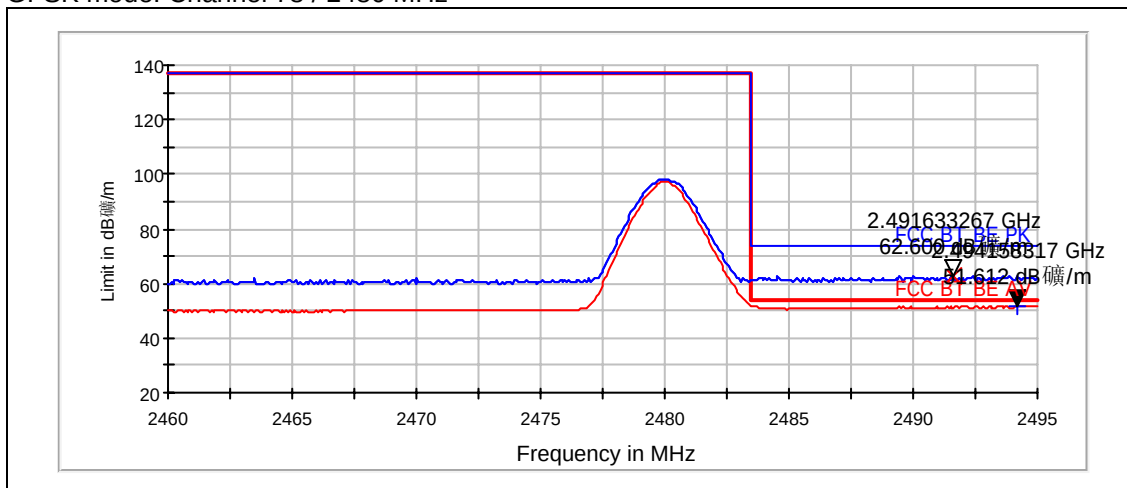
GFSK mode. Channel 0 / 2402 MHz



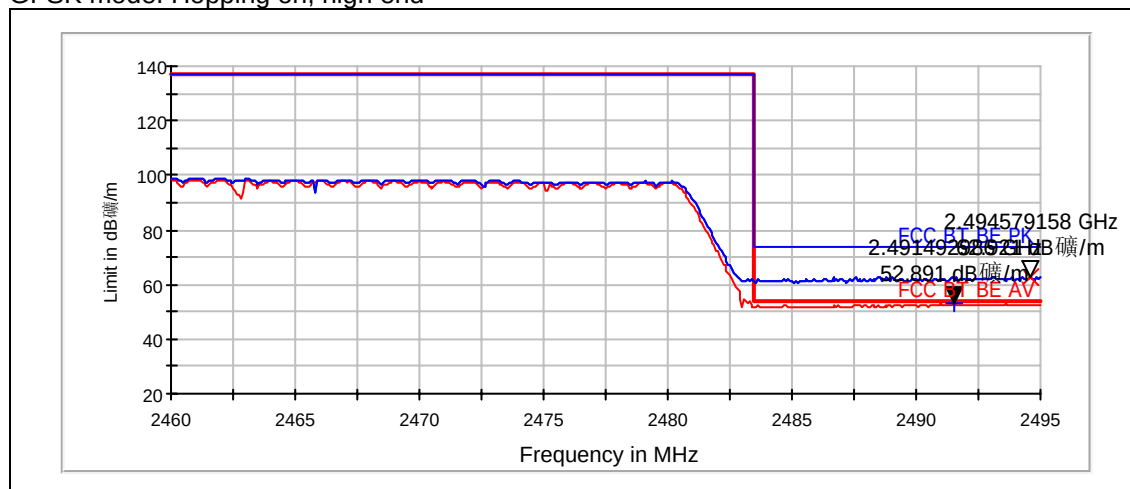
GFSK mode. Hopping on, low end



GFSK mode. Channel 78 / 2480 MHz



GFSK mode. Hopping on, high end



3.3.2 8DPSK modulation, PRBS packet type

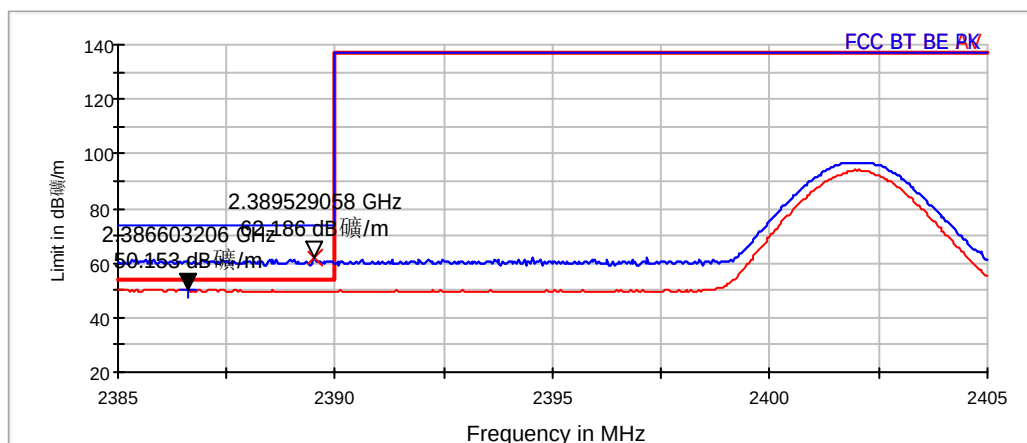
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dBμV/m]	E [μV/m]	U_{RX} [dBμV]	A_{TOT} [dB]	Result
0 / 2402	50.15	321.858	46.87	3.28	PASSED
Hopping on, low end	51.41	371.776	48.13	3.28	PASSED
78 / 2480	52.45	419.195	48.65	3.8	PASSED
Hopping on, high end	52.89	441.059	49.09	3.8	PASSED

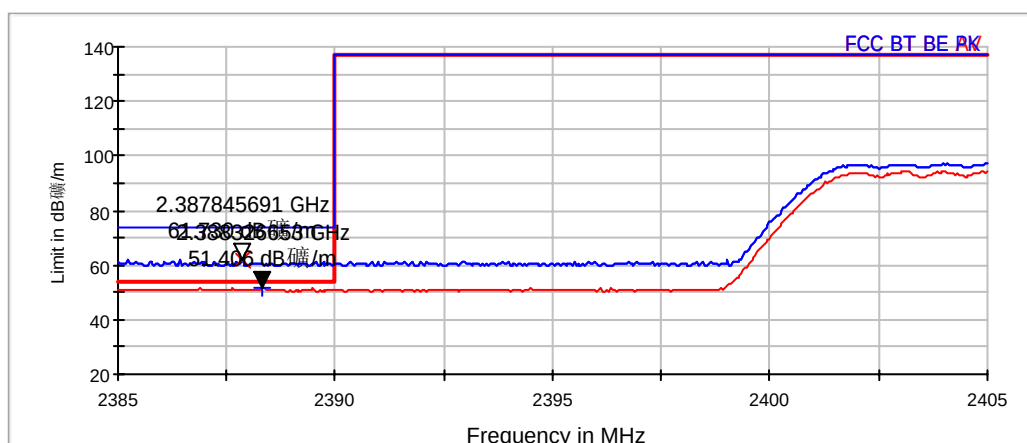
Peak (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dBμV/m]	E [μV/m]	U_{RX} [dBμV]	A_{TOT} [dB]	Result
0 / 2402	62.19	1286.218	58.91	3.28	PASSED
Hopping on, low end	61.73	1220.375	58.45	3.28	PASSED
78 / 2480	62.93	1401.446	59.13	3.8	PASSED
Hopping on, high end	63.15	1437.229	59.35	3.8	PASSED

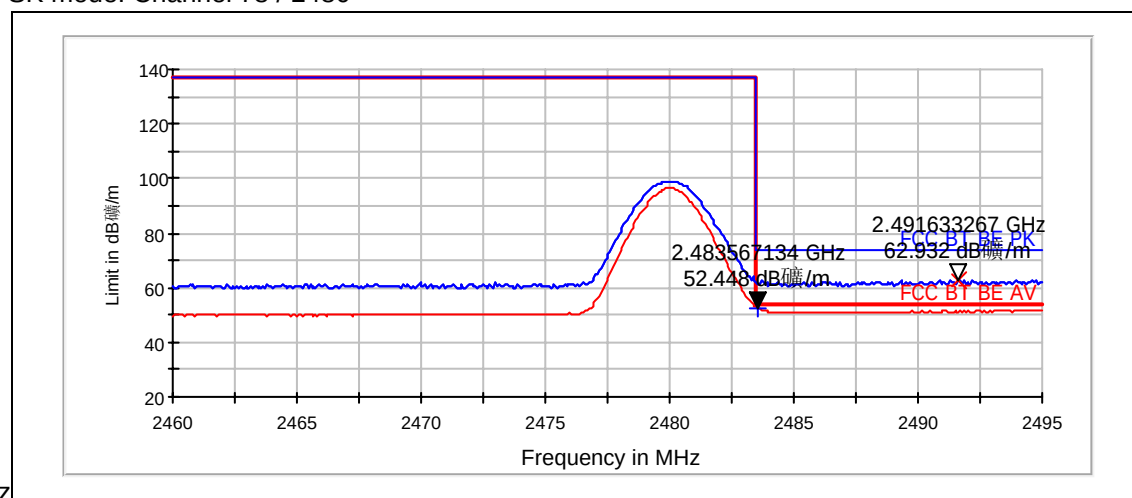
8DPSK mode. Channel 0 / 2402 MHz



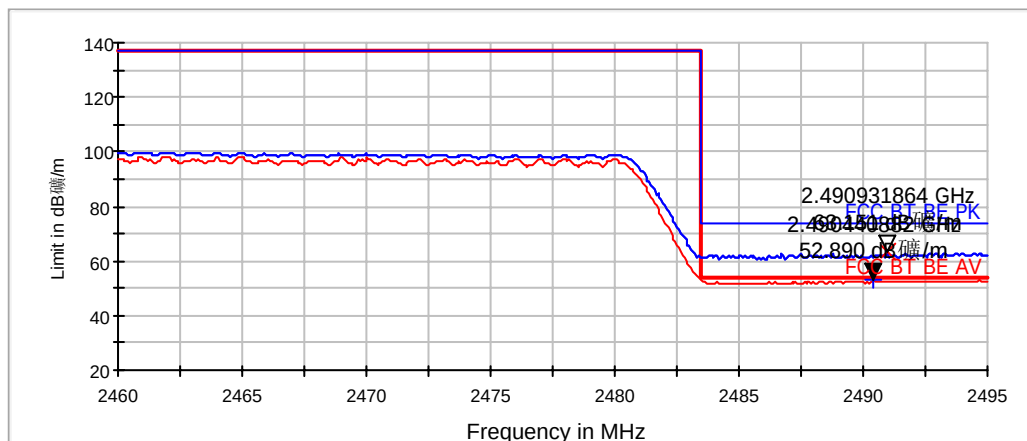
8DPSK mode. Hopping on, low end



8DPSK mode. Channel 78 / 2480



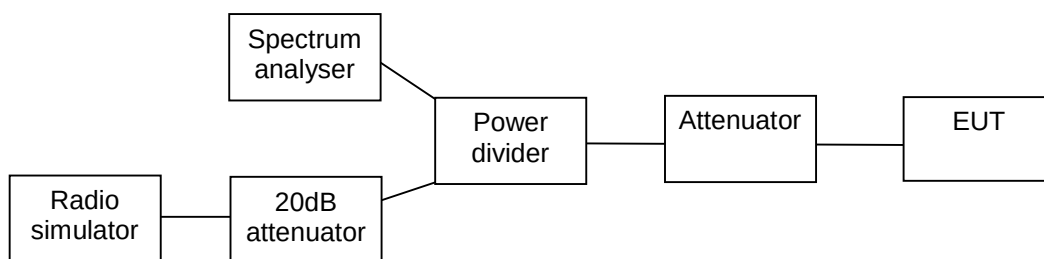
8DPSK mode. Hopping on, high end



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

EUT with DUT number	RM-688, DUT 51706
Accessories with DUT numbers	BL-5CT, DUT 51694 ; AC-8C, DUT 51699 ; CA-100C, DUT 51702 ; WH-102, DUT 51704 ; MU-37, DUT 51695
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 58 / 100.9
Date of measurements	10-Jun-2010
Measured by	Yin Hongpeng

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.

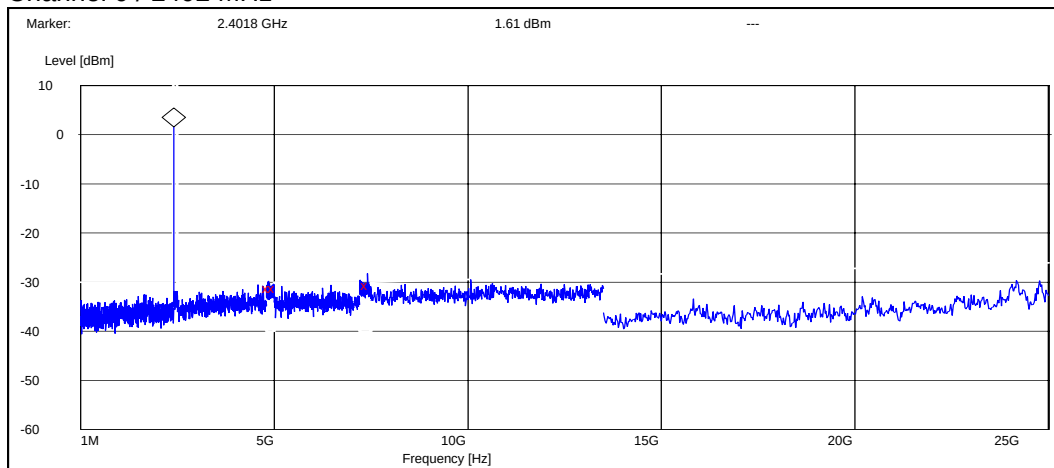
Limits for spurious RF conducted emissions measurements

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

4.3. Bluetooth Test results

4.3.1 GFSK modulation, PRBS packet type

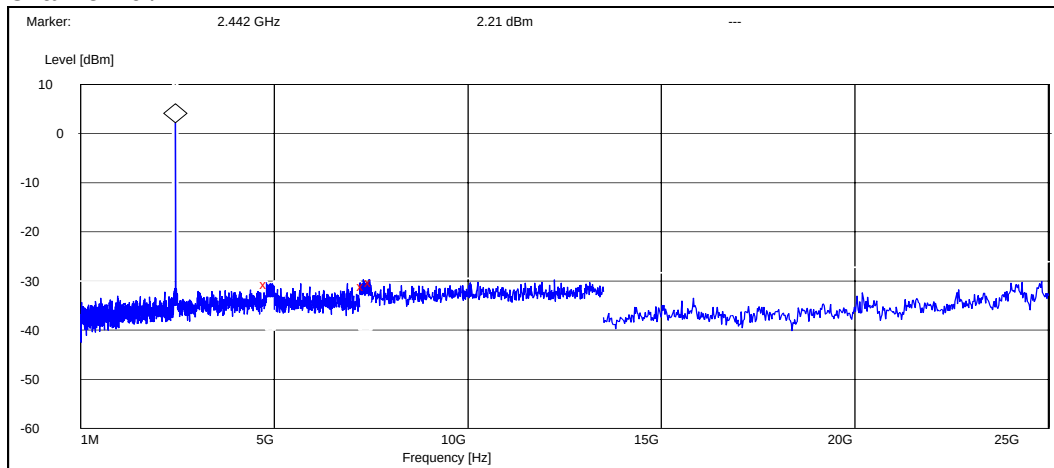
Channel 0 / 2402 MHz



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

Frequency [MHz]	P [dBc]	Result
4846.400000	-32.912299	PASSED
5000.000000	-32.912299	PASSED
7404.000000	-32.212299	PASSED

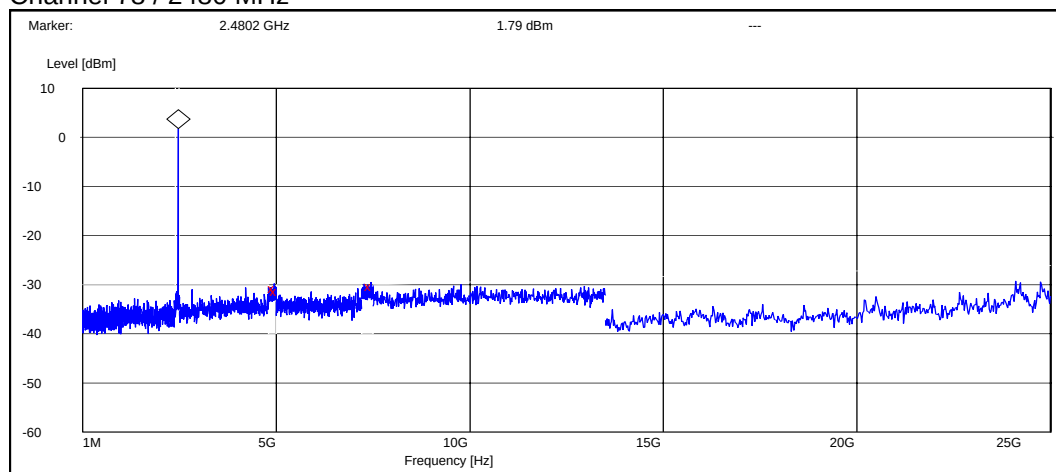
Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4805.200000	-33.014249	PASSED
7296.600000	-33.314249	PASSED
7500.000000	-32.414249	PASSED

Channel 78 / 2480 MHz

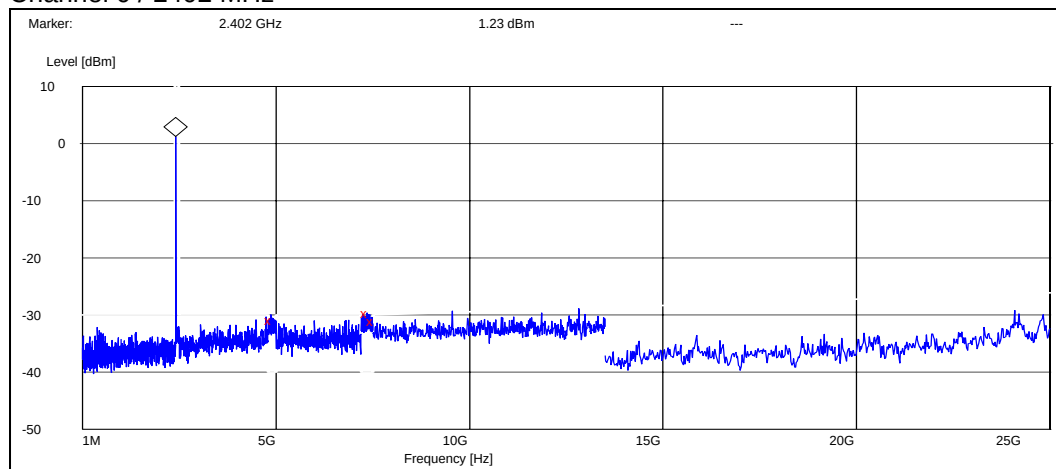


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4951.600000	-32.594200	PASSED
5000.000000	-33.194200	PASSED
7443.600000	-32.094200	PASSED

4.3.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz

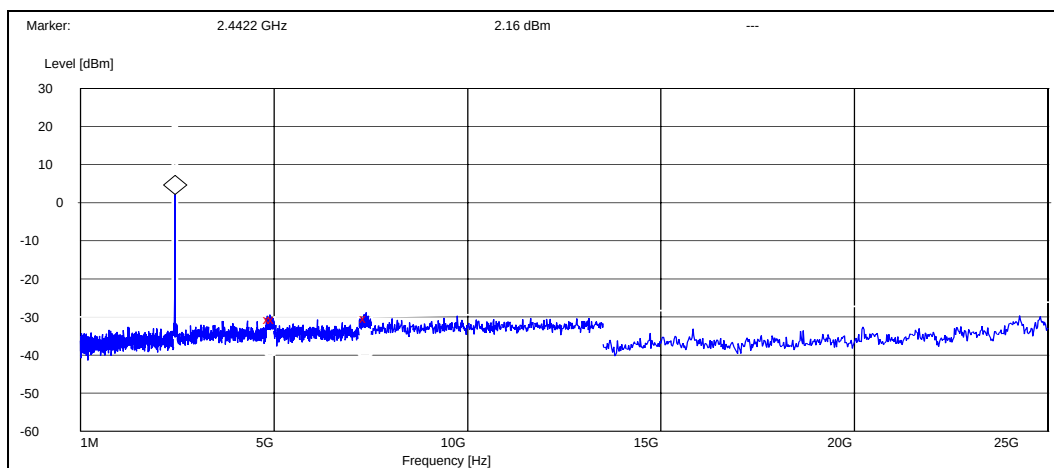


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4866.400000	-32.126035	PASSED
7353.000000	-30.926035	PASSED
7500.000000	-32.326035	PASSED

Channel 40 / 2442 MHz

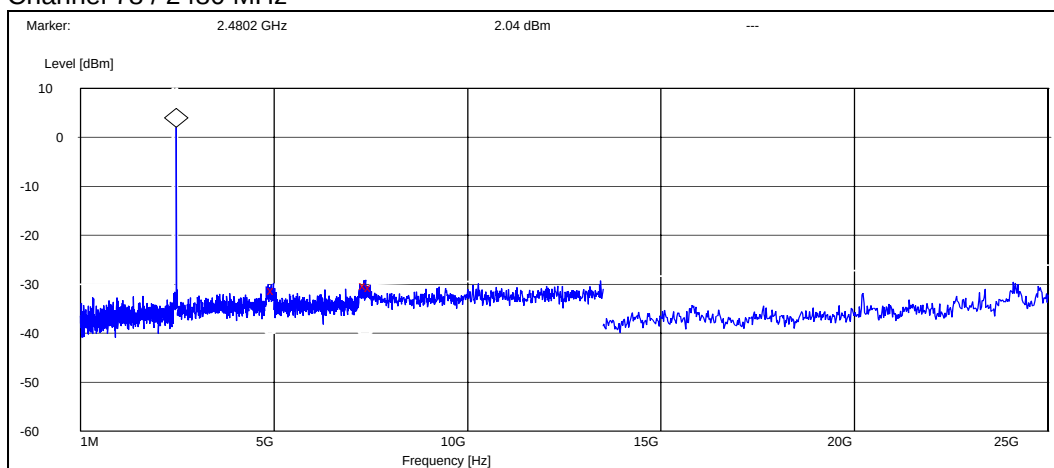
16 (36)



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

Frequency [MHz]	P [dBc]	Result
4891.200000	-32.757753	PASSED
5000.000000	-32.757753	PASSED
7383.000000	-32.457753	PASSED

Channel 78 / 2480 MHz



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

Frequency [MHz]	P [dBc]	Result
4994.800000	-33.343971	PASSED
7366.200000	-32.243971	PASSED
7500.000000	-32.643971	PASSED

5. Spurious radiated emissions

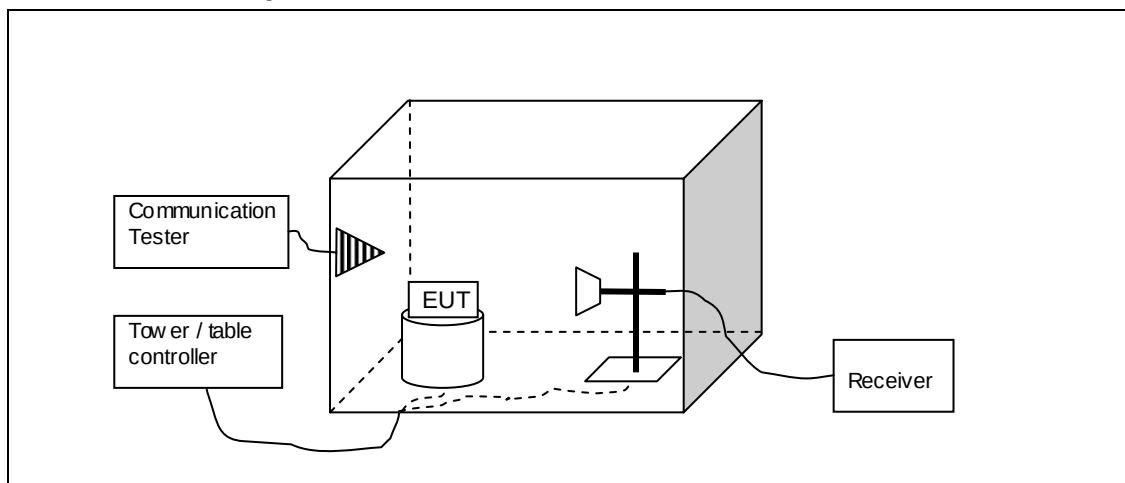
(FCC §22.917(a), §24.238(a), §2.1053,

17 (36)

RSS-132 4.5, RSS-133 6.5)

EUT with DUT number	RM-688, DUT 51683
Accessories with DUT numbers	BL-5CT, DUT 51691 ; AC-8C, DUT 51697 ; CA-100C, DUT 51700 ; WH-102, DUT 51703 ; MU-37, DUT 51695
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 61 / 101.1
Date of measurements	09-Jun-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.

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 [$\mu V/m$]	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 78 / 2480 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4959.7	37.47	74.688	37.17	0.3	HORIZONTAL	PASSED
7438.8	32.77	43.496	28.56	4.21	HORIZONTAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4959.7	50.83	348.097	50.53	0.3	HORIZONTAL	PASSED
7438.8	45.5	188.387	41.29	4.21	HORIZONTAL	PASSED

Channel 0 / 2402 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.3	38.33	82.49	38.19	0.14	HORIZONTAL	PASSED
7206.5	32.3	41.205	28.02	4.28	VERTICAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.3	52.01	398.566	51.87	0.14	HORIZONTAL	PASSED
7206.5	45.31	184.289	41.03	4.28	VERTICAL	PASSED

Channel 40 / 2442 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2811.622	40	99.942	29.66	10.34	HORIZONTAL	PASSED
2848.599	39.47	94.124	29.13	10.34	VERTICAL	PASSED
3900.904	29.41	29.529	29.92	-0.51	VERTICAL	PASSED
4884.268	39.28	92.066	38.81	0.47	HORIZONTAL	PASSED
17972.944	46.53	212.056	26.76	19.77	HORIZONTAL	PASSED

Quasi peak (RBW: 100 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
30.12	22.65	13.569	26.23	-3.58	VERTICAL	PASSED
32.606	24.9	17.569	30.24	-5.34	VERTICAL	PASSED
40.542	26.06	20.1	37.34	-11.28	VERTICAL	PASSED
44.298	25.36	18.533	39.72	-14.36	VERTICAL	PASSED

78.137	26.59	21.362	47.24	-20.65	HORIZONTAL	PASSED
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Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
2811.622	52.7	431.271	42.36	10.34	HORIZONTAL	PASSED
2848.599	52.7	431.37	42.36	10.34	VERTICAL	PASSED
3900.904	42.52	133.69	43.03	-0.51	VERTICAL	PASSED
4884.268	52.71	432.215	52.24	0.47	HORIZONTAL	PASSED
17972.944	59.62	957.084	39.85	19.77	HORIZONTAL	PASSED

5.3.2 8DPSK modulation, PRBS packet type

Channel 78 / 2480 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
4960.4	38.02	79.588	37.72	0.3	HORIZONTAL	PASSED
7439.8	32.96	44.484	28.76	4.2	HORIZONTAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
4960.4	50.7	342.886	50.4	0.3	HORIZONTAL	PASSED
7439.8	46.7	216.172	42.5	4.2	HORIZONTAL	PASSED

Channel 0 / 2402 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
4804	40.84	110.179	40.69	0.15	HORIZONTAL	PASSED
7204.3	32.31	41.271	28.03	4.28	HORIZONTAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
4804	52.91	441.876	52.76	0.15	HORIZONTAL	PASSED
7204.3	45.45	187.219	41.17	4.28	HORIZONTAL	PASSED

Channel 40 / 2442 MHz

Average(RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
2810.419	39.9	98.867	29.69	10.21	VERTICAL	PASSED
2828.256	40.05	100.554	29.25	10.8	HORIZONTAL	PASSED
3895.993	29.45	29.679	29.97	-0.52	HORIZONTAL	PASSED
4883.968	41.54	119.371	41.07	0.47	HORIZONTAL	PASSED
17968.138	46.63	214.511	26.78	19.85	VERTICAL	PASSED

Quasi peak (RBW: 100 kHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
32.876	27.2	22.917	32.73	-5.53	VERTICAL	PASSED
32.896	24.95	17.689	30.5	-5.55	VERTICAL	PASSED
33.026	26.96	22.289	32.6	-5.64	VERTICAL	PASSED
78.518	27.15	22.775	47.78	-20.63	HORIZONTAL	PASSED
78.547	27.93	24.917	48.56	-20.63	HORIZONTAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
2810.419	52.71	431.817	42.5	10.21	VERTICAL	PASSED
2828.256	53.02	447.713	42.22	10.8	HORIZONTAL	PASSED
3895.993	42.79	137.8	43.31	-0.52	HORIZONTAL	PASSED
4883.968	53.75	486.855	53.28	0.47	HORIZONTAL	PASSED
17968.138	59.57	951.7	39.72	19.85	VERTICAL	PASSED

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

EUT with DUT number	RM-688, DUT 51683
Accessories with DUT numbers	BL-5CT, DUT 51691 ; AC-8C, DUT 51697 ; CA-100C, DUT 51700 ; WH-102, DUT 51703 ; MU-37, DUT 51695
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 58 / 100.8
Date of measurements	08-Jun-2010
Measured by	Yin Hongpeng

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.

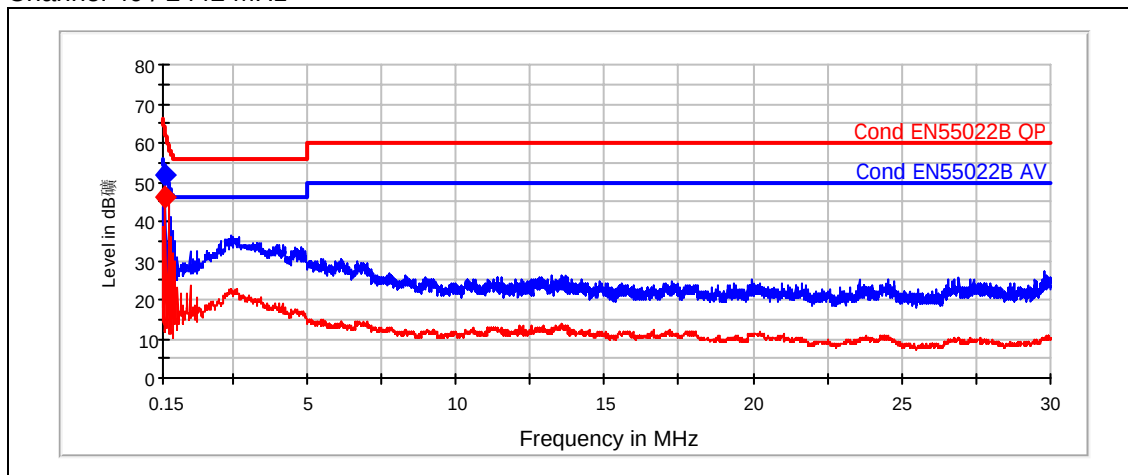
CISPR 22 Class B limits

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. Bluetooth Test results

6.3.1 GFSK modulation, PRBS packet type

Channel 40 / 2442 MHz



Quasi peak

Frequency [MHz]	Level [dBμV]	IF-BW[kHz]	Line	Margin	Result
0.245	51.76	9	N	10.12	PASSED

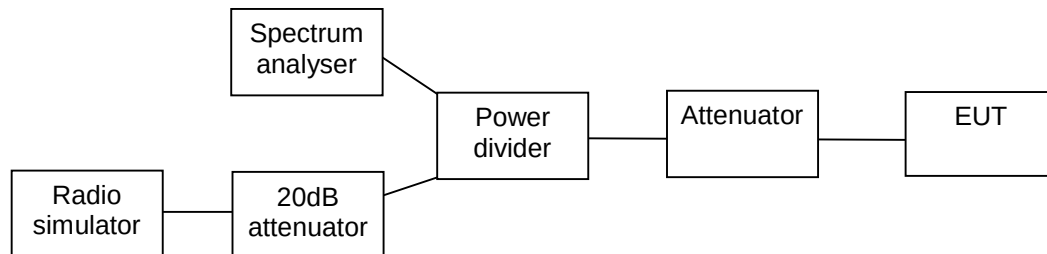
Average

Frequency [MHz]	Level [dBμV]	IF-BW[kHz]	Line	Margin	Result
0.245	46.38	9	N	5.52	PASSED

7. 20 dB bandwidth (FCC §15.247(a)(1), RSS-210 A8.1 (a))

EUT with DUT number	RM-688, DUT 51706
Accessories with DUT numbers	BL-5CT, DUT 51694 ; AC-8C, DUT 51699 ; CA-100C, DUT 51702 ; WH-102, DUT 51704 ; MU-37, DUT 51695
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 58 / 100.9
Date of measurements	10-11-Jun-2010
Measured by	Yin Hongpeng

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

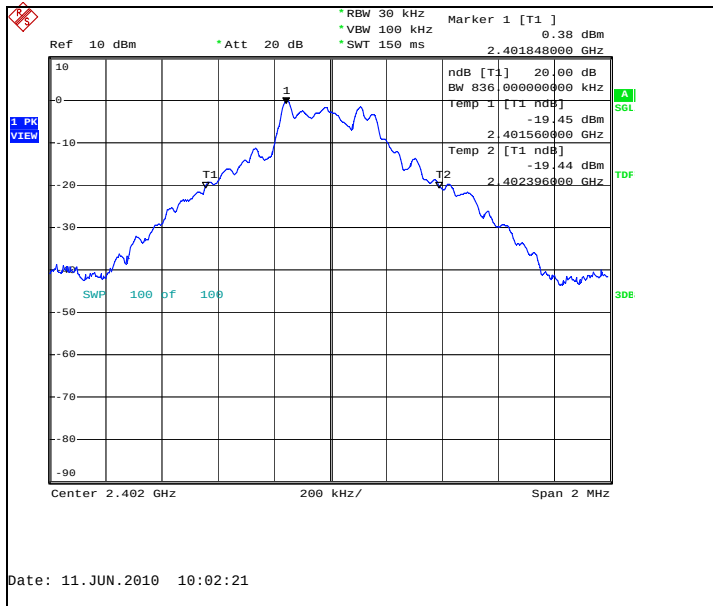
Limit [MHz]
N/A

7.3. Bluetooth Test results

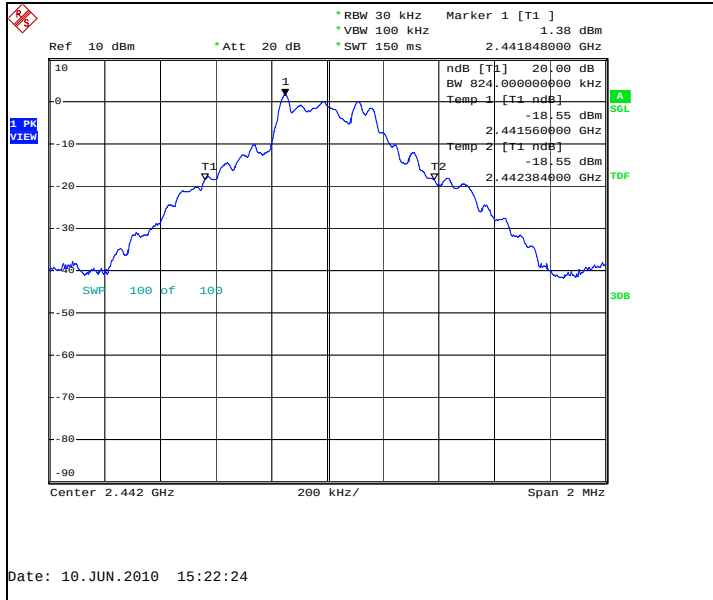
7.3.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	836.000	PASSED
40 / 2442	824.000	PASSED
78 / 2480	788.000	PASSED

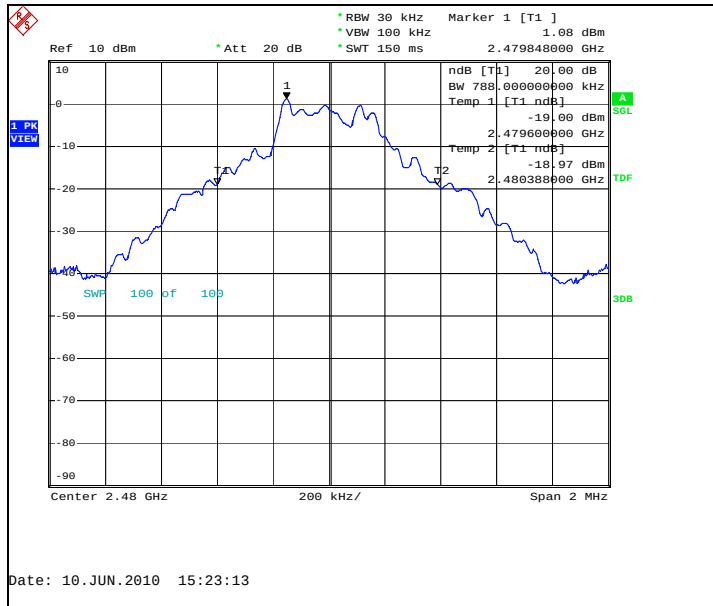
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



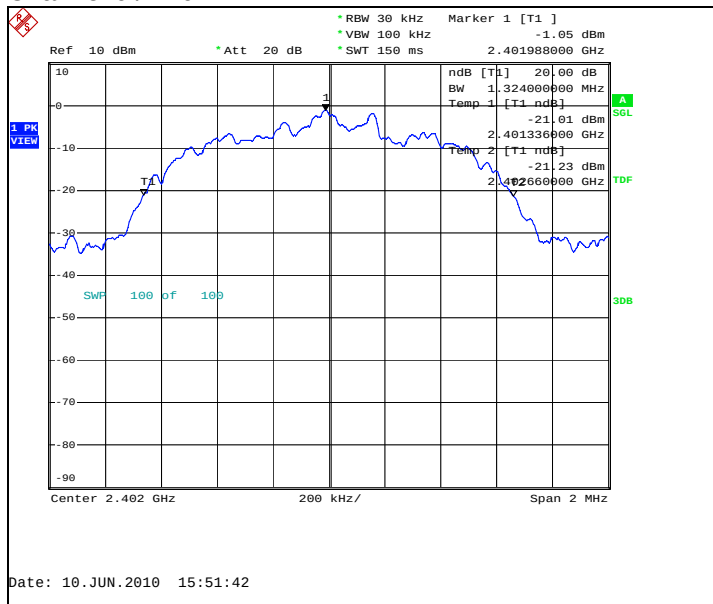
Channel 78 / 2480 MHz



7.3.2 8DPSK modulation, PRBS packet type

Channel / f_c [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	1324.000	PASSED
40 / 2442	1324.000	PASSED
78 / 2480	1312.000	PASSED

Channel 0 / 2402 MHz

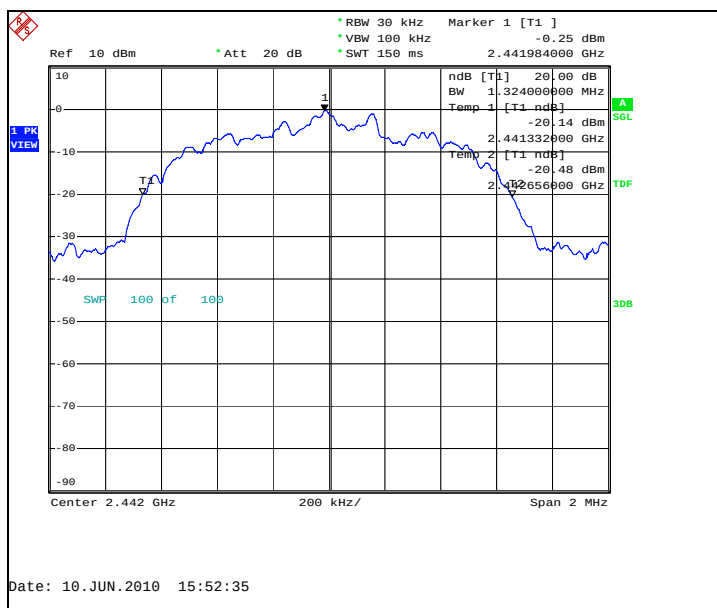


Channel 40 / 2442 MHz

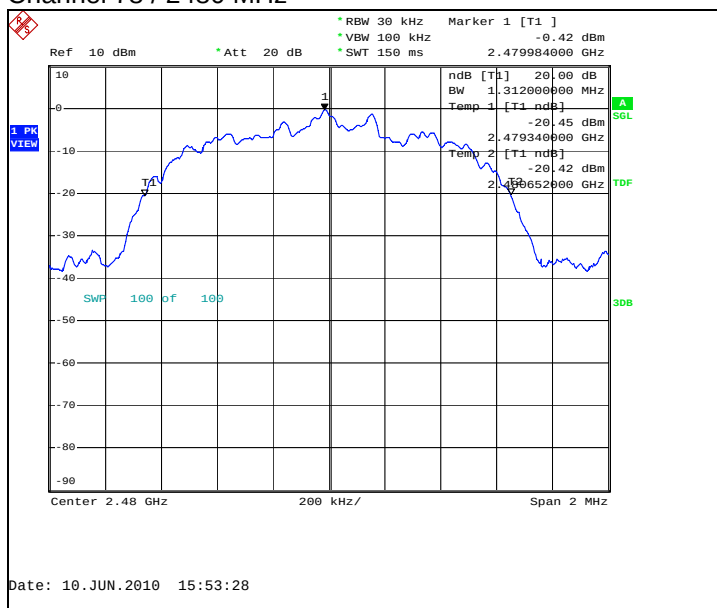
27 (36)

FCC Part Compliance Test Report
/ Template Version 00.0

Address



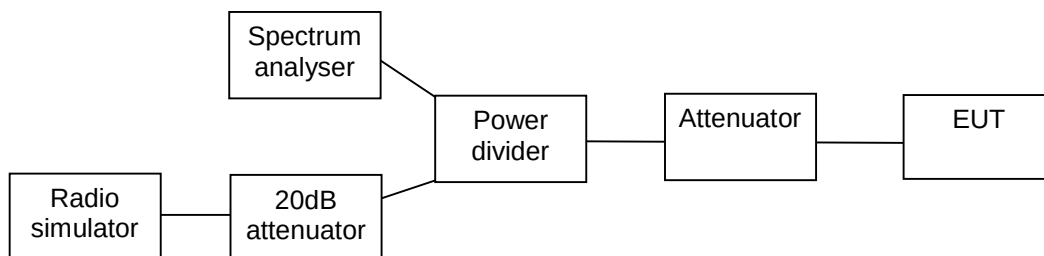
Channel 78 / 2480 MHz



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

EUT with DUT number	RM-688, DUT 51706
Accessories with DUT numbers	BL-5CT, DUT 51694 ; AC-8C, DUT 51699 ; CA-100C, DUT 51702 ; WH-102, DUT 51704 ; MU-37, DUT 51695
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 58 / 100.9
Date of measurements	10-11-Jun-2010
Measured by	Yin Hongpeng

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

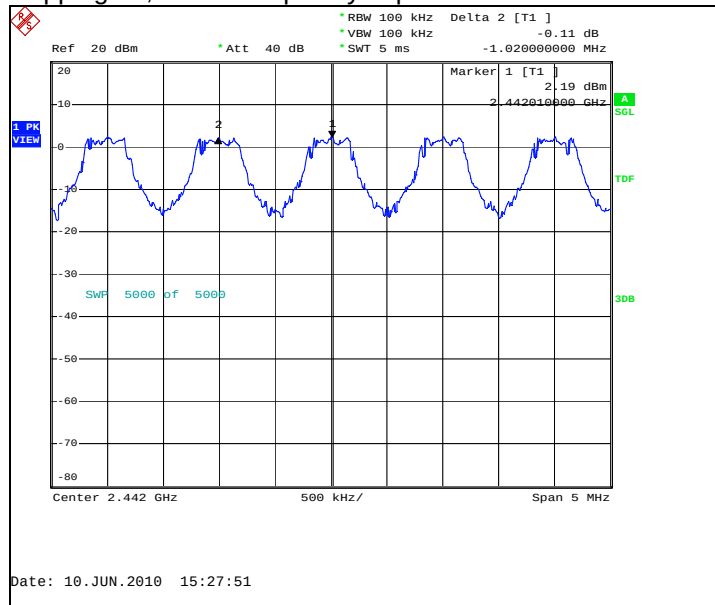
Limit [MHz]
≥ 0.025 or $2/3$ of the 20 dB bandwidth

8.3. Bluetooth Test results

8.3.1 GFSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1020	PASSED

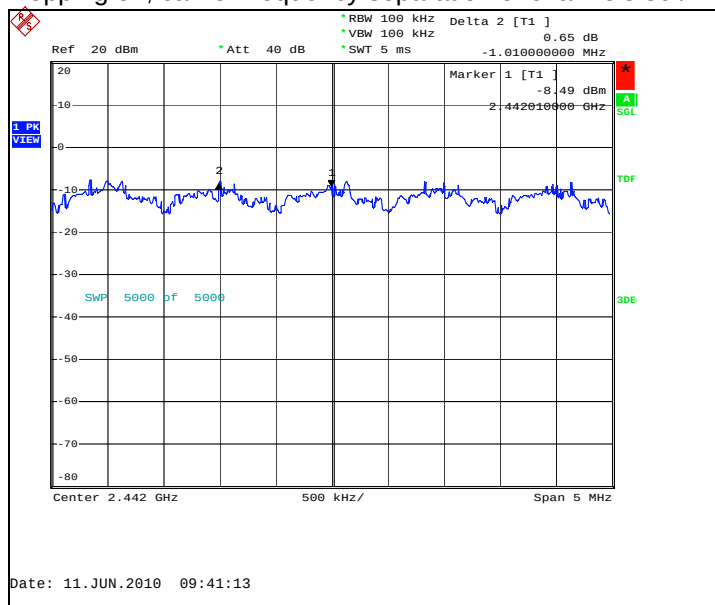
Hopping on, carrier frequency separation of channels 39 / 2441 MHz and 40 / 2442 MHz



8.3.2 8DPSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1010	PASSED

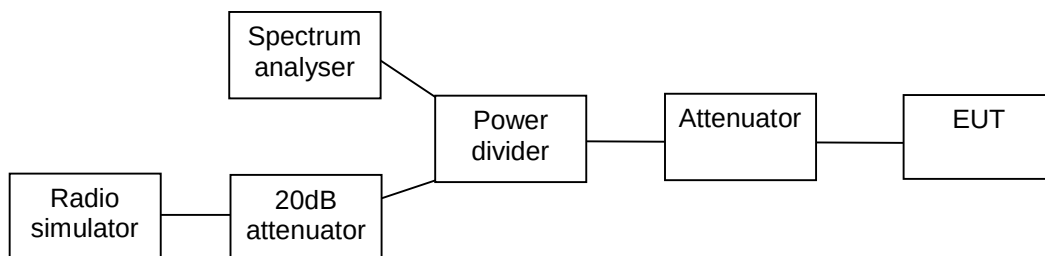
Hopping on, carrier frequency separation of channels 39 / 2441 MHz and 40 / 2442 MHz



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

EUT with DUT number	RM-688, DUT 51706
Accessories with DUT numbers	BL-5CT, DUT 51694 ; AC-8C, DUT 51699 ; CA-100C, DUT 51702 ; WH-102, DUT 51704 ; MU-37, DUT 51695
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 58 / 100.9
Date of measurements	10-Jun-2010
Measured by	Yin Hongpeng

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

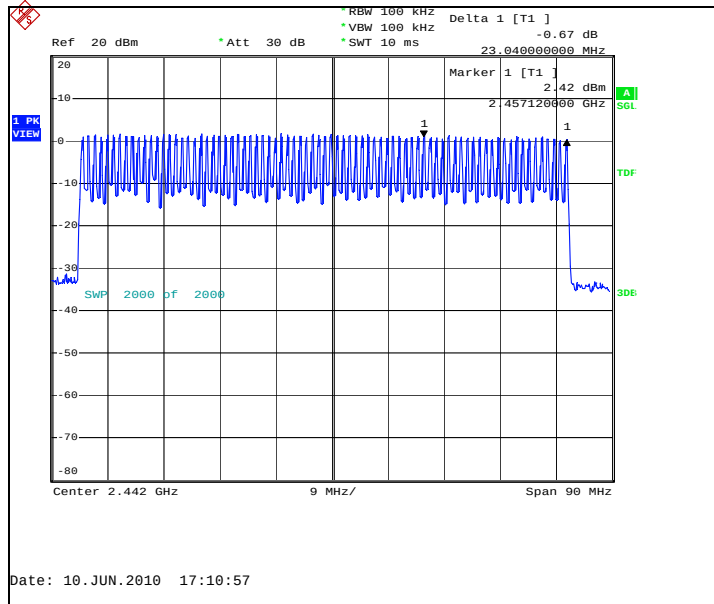
Limit [number]
≥ 15

9.3. Bluetooth Test results

9.3.1 GFSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
78	PASSED

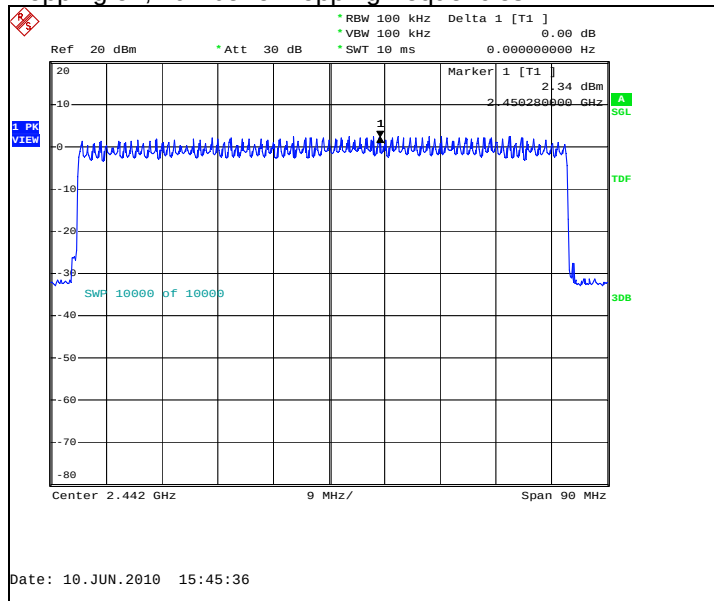
Hopping on, number of hopping frequencies



9.3.2 8DPSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
79	PASSED

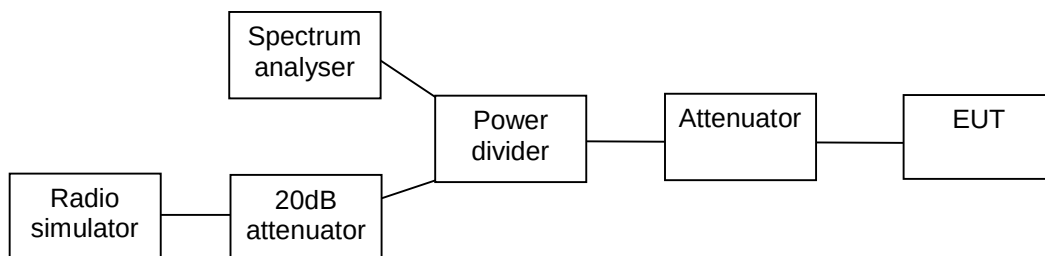
Hopping on, number of hopping frequencies



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

EUT with DUT number	RM-688, DUT 51706
Accessories with DUT numbers	BL-5CT, DUT 51694 ; AC-8C, DUT 51699 ; CA-100C, DUT 51702 ; WH-102, DUT 51704 ; MU-37, DUT 51695
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 58 / 100.9
Date of measurements	10-Jun-2010
Measured by	Yin Hongpeng

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

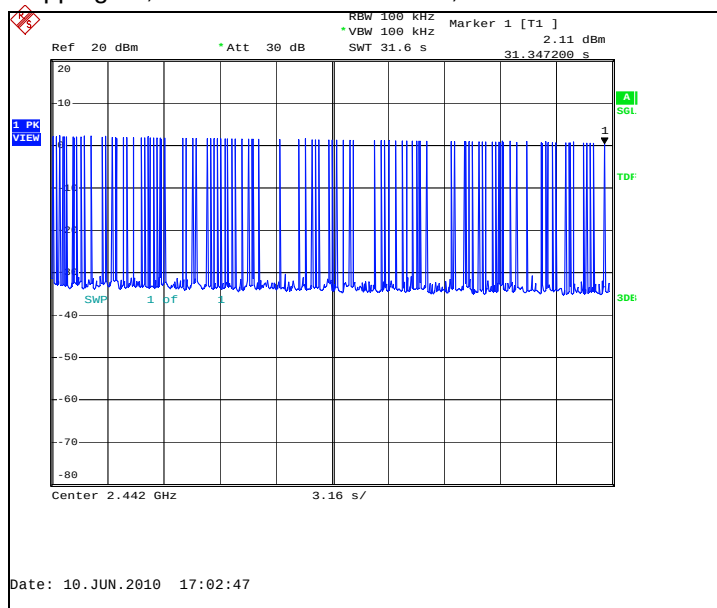
Limit [s]
≤ 0.4

10.3. Bluetooth test results

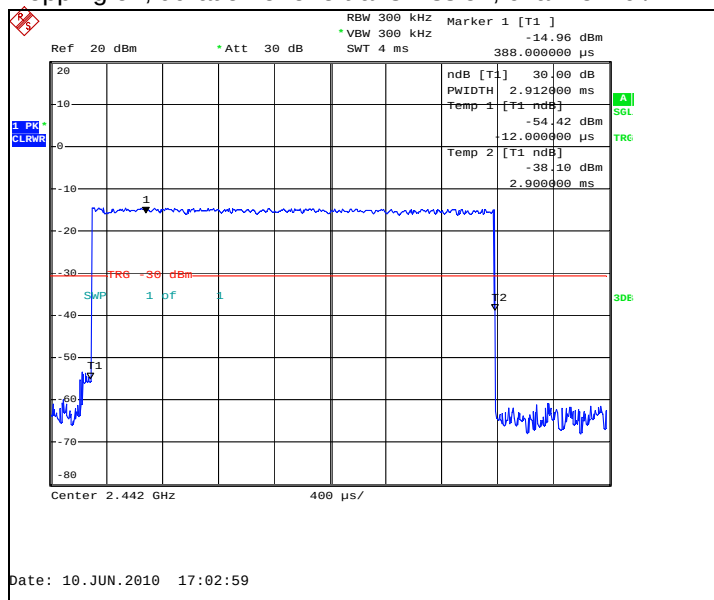
10.3.1 GFSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [μs]	Time of occupancy [s]	Result
94	2,912	0.273728	PASSED

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



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

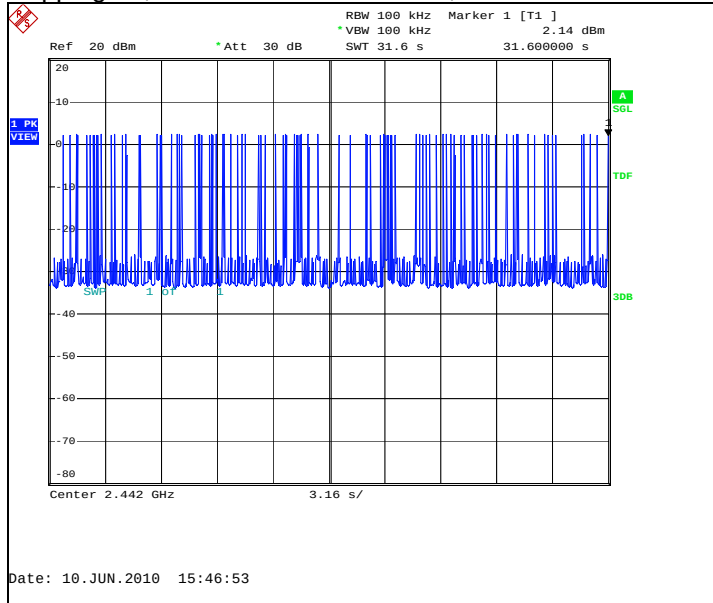


10.3.2 8DPSK modulation, PRBS packet type

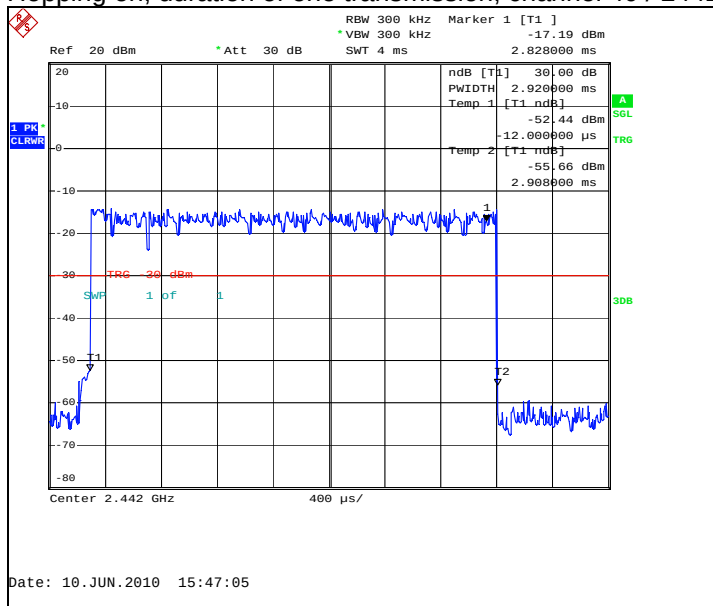
Measured number of transmissions	Duration of one transmission [μs]	Time of occupancy [s]	Result
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83	2,920	0.242360	PASSED
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Hopping on, number of transmissions, channel 40 / 2442 MHz



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	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	Temperature 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