

FCC Part 15C Compliance Test Report

Test Report no.:	FCC15CBT_RM-679_09.docx	Date of Report:	08-Apr-2011
Number of pages:	37	Customer's Contact person:	Li Hongwei-Henry
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.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-679 / Battery BL-4D / AC-charger AC-10C / Charging data cable CA-100C / Headset WH-205		
FCC ID:	QTLRM-679	IC:	661AB-RM679
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:			

Jia Dongsheng, System Manager

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	07-Mar-2011
Testing completed	28-Mar-2011
The customer's contact person	Li Hongwei-Henry
Test Plan referred to	T:\Projects\RM-679\TestPlan\RS_testplan_RM-679.xls
Notes	-
Document name	FCC15CBT_RM-679_09.docx

1.1. EUT and Accessory Information

The EUT is a 5-band (GSM850/900/1800/1900) and TD-SCDMA Band I/II mobile phone with GPRS, EGPRS, HSDPA and WLAN and Bluetooth and FM transmitter. Bluetooth and WLAN are tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-679	008600080055923	0301	-	021.002	52100
Phone	RM-679	008600080055063	0301	-	021.002	52104
Battery	BL-4D	4620401012N10312266;0670605	-	-	-	52101
Battery	BL-4D	4620401012N10310290;0670605	-	-	-	52105
AC-charger	AC-10C	3997910096012001230;0675412	-	-	-	52108
Charging data cable	CA-100C	07303390131L2605514	-	-	-	52109
Headset	WH-205	0694821030681R08469	-	-	-	52115

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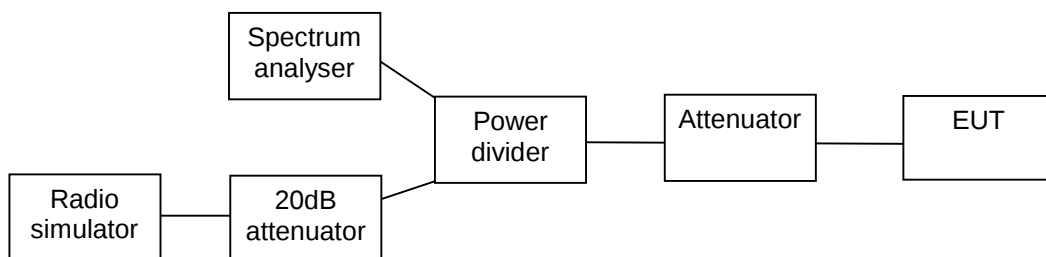
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2. Conducted peak output power (FCC §15.247(b)(1), RSS-210 A8.4 (2))

EUT with DUT number	RM-679, DUT52104
Accessories with DUT numbers	BL-4D, DUT52105; AC-10C, DUT52108; CA-100C, DUT52109; WH-205, DUT52115
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 20 / 102.5
Date of measurements	22-Mar-2011
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

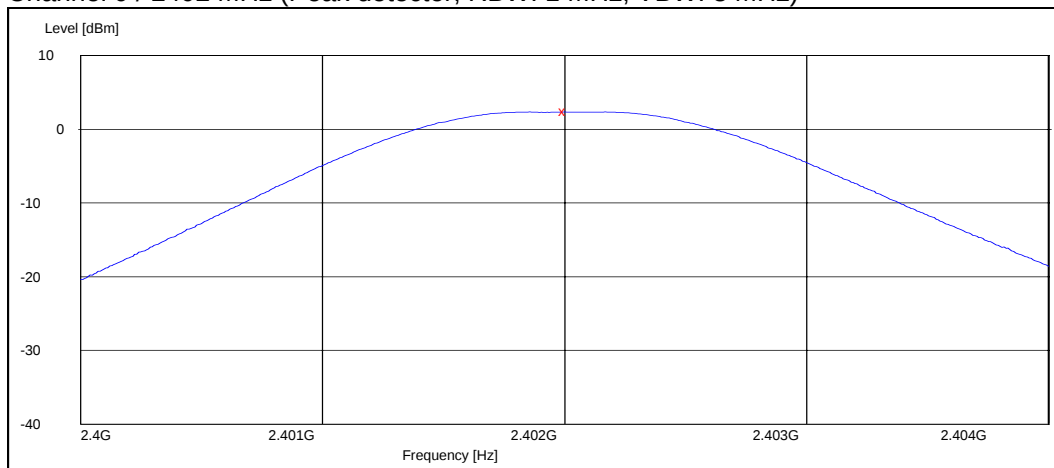
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

2.3. Bluetooth Test results

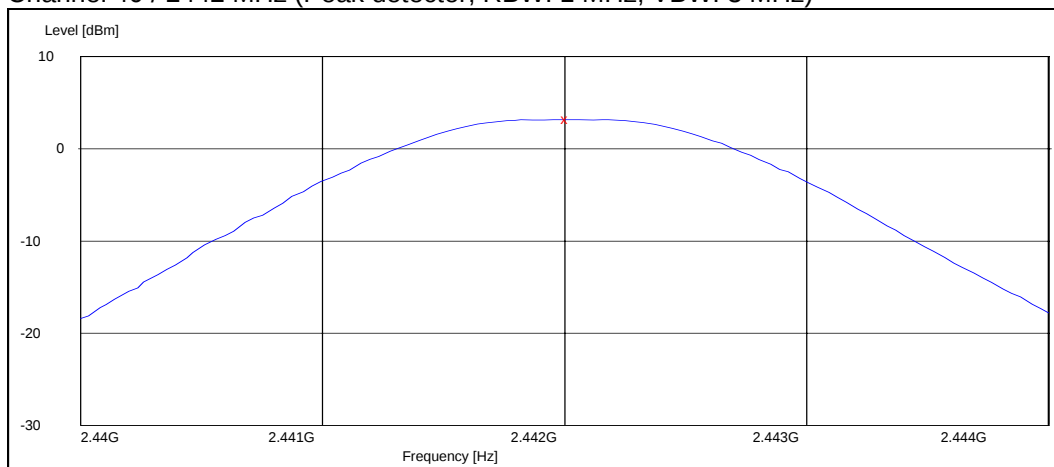
2.3.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	2.40	1.738	PASSED
40 / 2442	3.20	2.089	PASSED
78 / 2480	4.00	2.512	PASSED

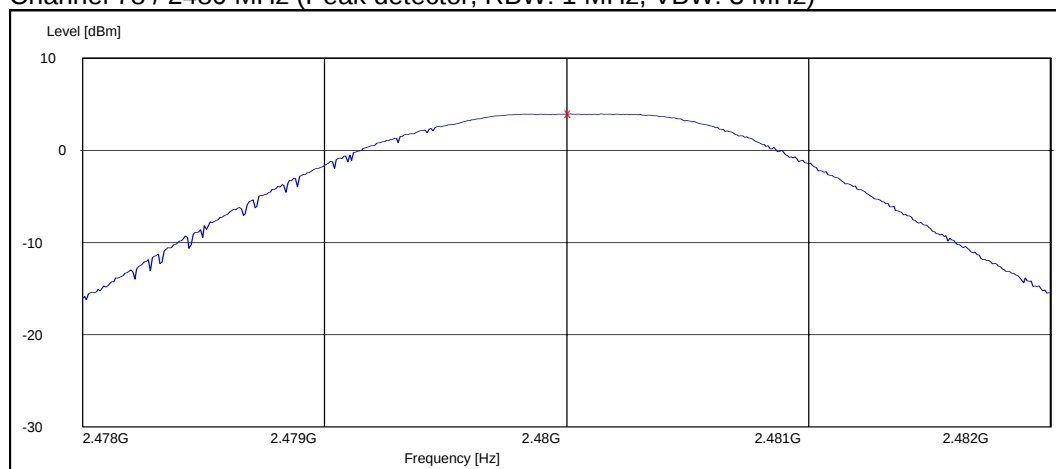
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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



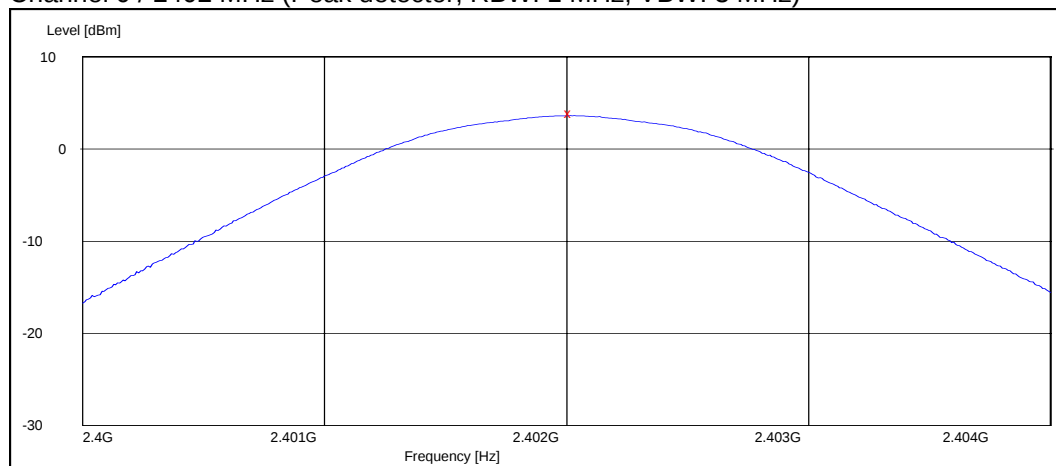
Channel 78 / 2480 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



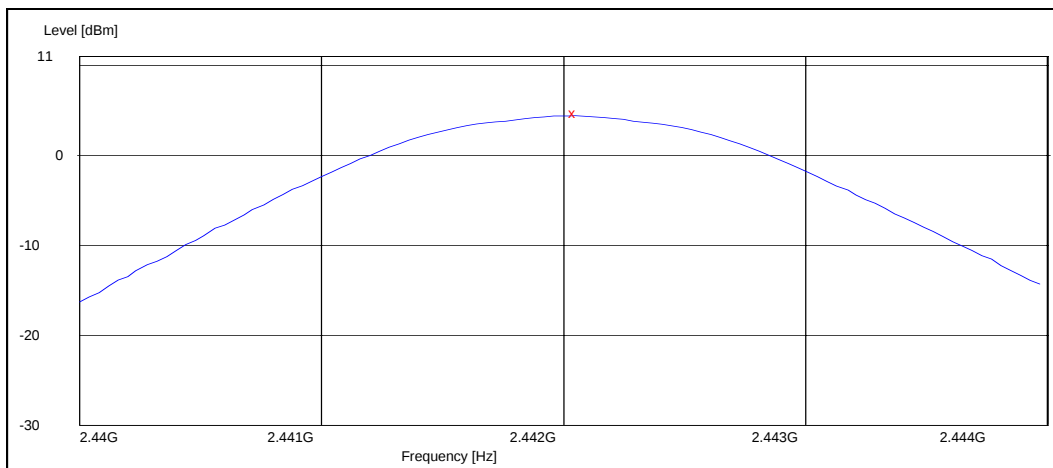
2.3.2 8DPSK modulation, PRBS packet type

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	3.90	2.455	PASSED
40 / 2442	4.70	2.951	PASSED
78 / 2480	5.40	3.467	PASSED

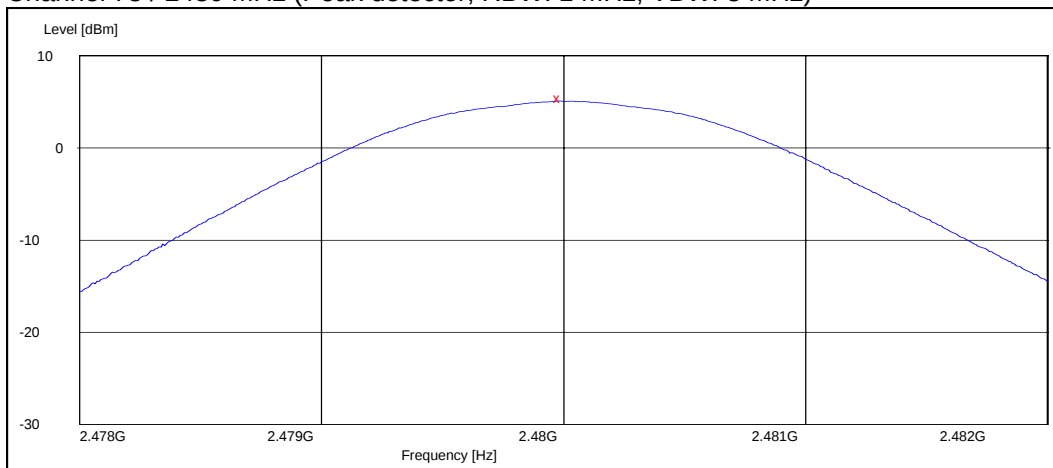
Channel 0 / 2402 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



Channel 40 / 2442 MHz (Peak detector, RBW: 1 7 (37) MHz, VBW: 3 MHz)



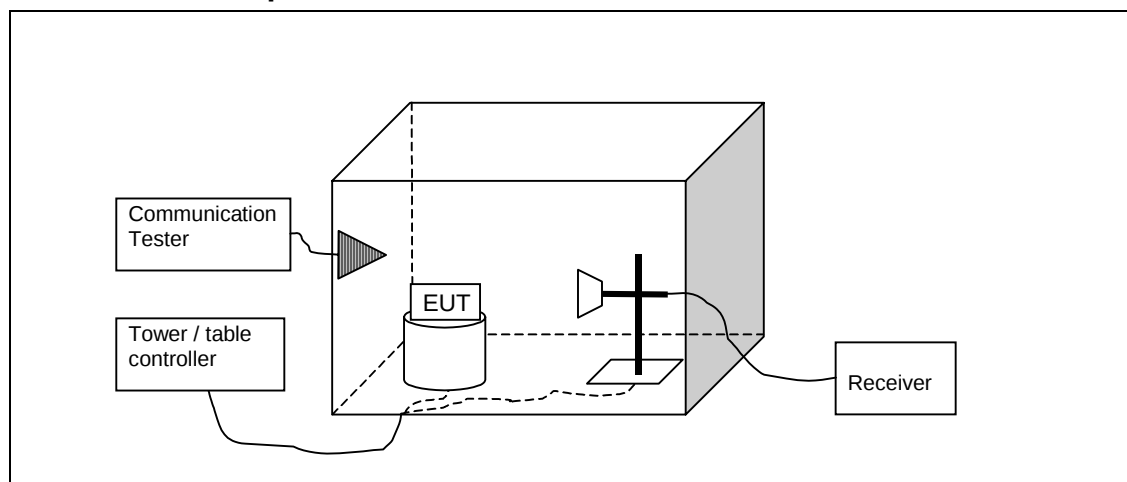
Channel 78 / 2480 MHz (Peak detector, RBW: 1 MHz, VBW: 3 MHz)



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

EUT with DUT number	RM-679, DUT 52100
Accessories with DUT numbers	BL-4D, DUT 52101 ; AC-10C, DUT 52108 ; CA-100C, DUT 52109 ; WH-205, DUT 52115
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	19 / 27 / 102.6
Date of measurements	28-Mar-2011
Measured by	Zou Ming

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

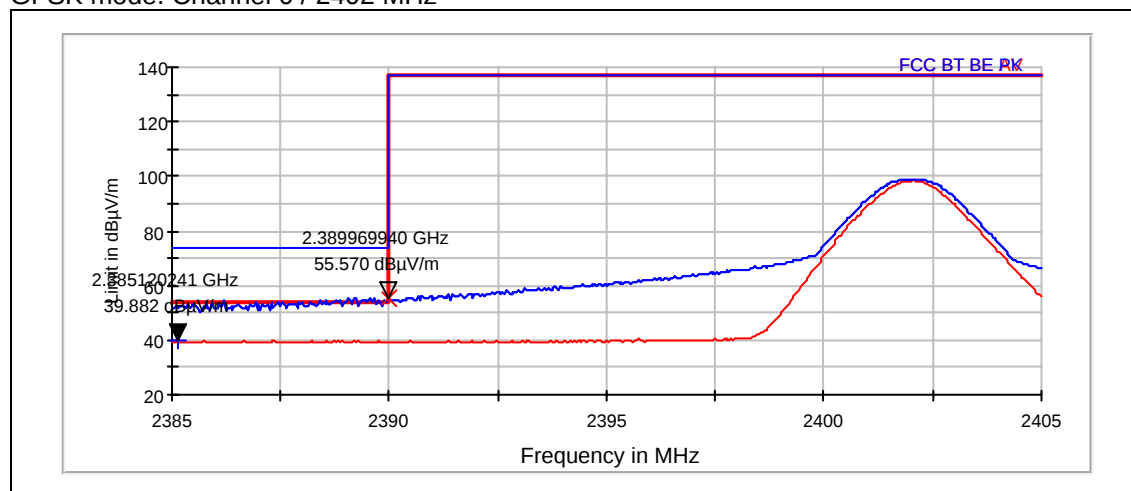
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	E [μ V/m]	U_{RX} [dB μ V]	A_{TOT} [dB]	Result
0 / 2402	39.88	98.646	38.03	1.85	PASSED
78 / 2480	49.94	313.881	47.43	2.51	PASSED
Hopping on, low end	41.16	114.302	39.31	1.85	PASSED
Hopping on, high end	49.94	313.881	47.43	2.51	PASSED

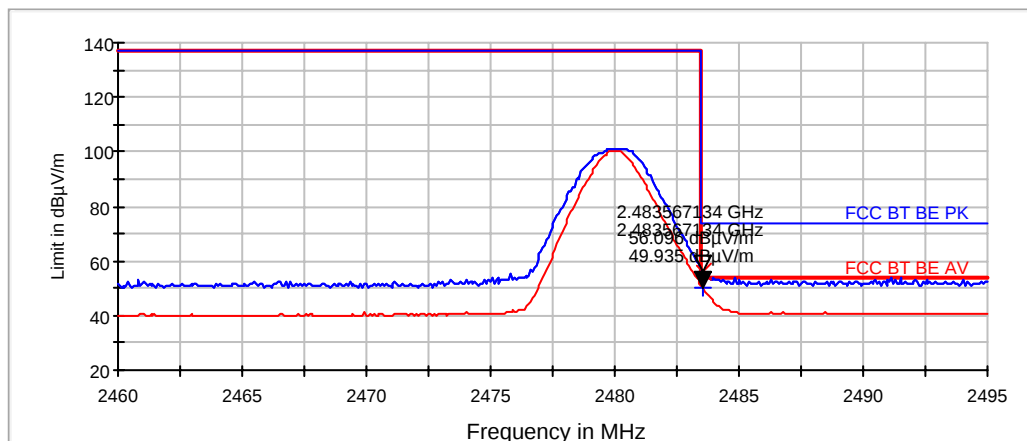
Peak (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	E [μ V/m]	U_{RX} [dB μ V]	A_{TOT} [dB]	Result
0 / 2402	55.57	600.51	53.72	1.85	PASSED
78 / 2480	56.1	637.96	53.59	2.51	PASSED
Hopping on, low end	53.66	482.181	51.81	1.85	PASSED
Hopping on, high end	56.23	647.819	53.72	2.51	PASSED

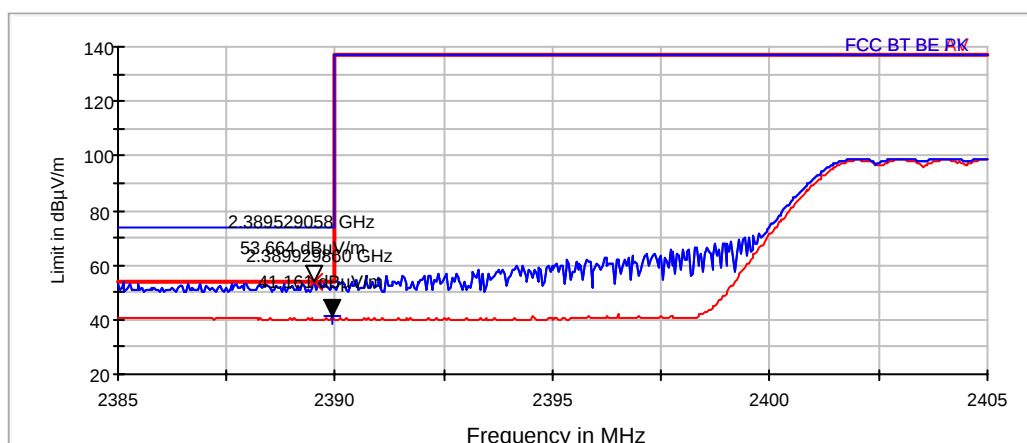
GFSK mode. Channel 0 / 2402 MHz



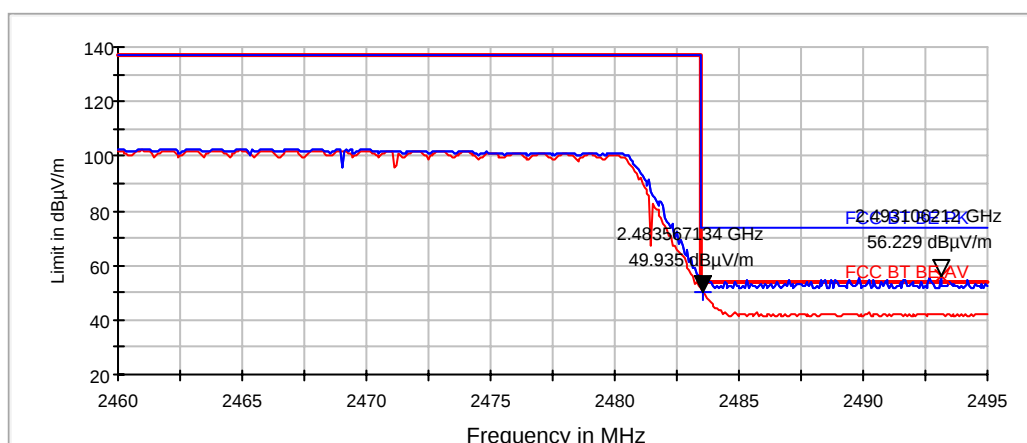
GFSK mode. Channel 78 / 2480 MHz



GFSK mode. Hopping on, low end



GFSK mode. Hopping on, high end



3.3.2 8DPSK modulation, PRBS packet type

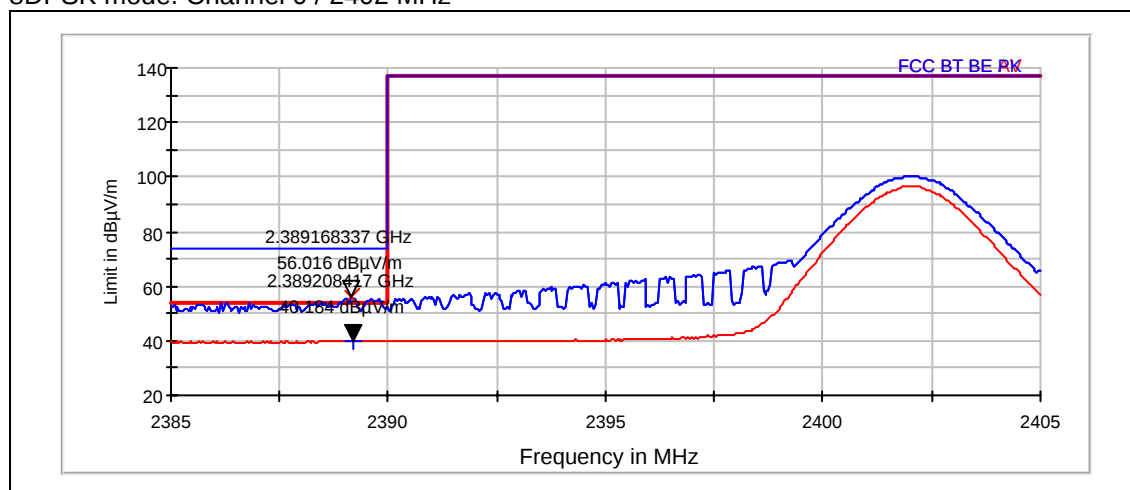
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Result
0 / 2402	40.18	102.137	38.33	1.85	PASSED
78 / 2480	50.89	350.379	48.38	2.51	PASSED
Hopping on, low end	43.32	146.479	41.47	1.85	PASSED
Hopping on, high end	50.89	350.379	48.38	2.51	PASSED

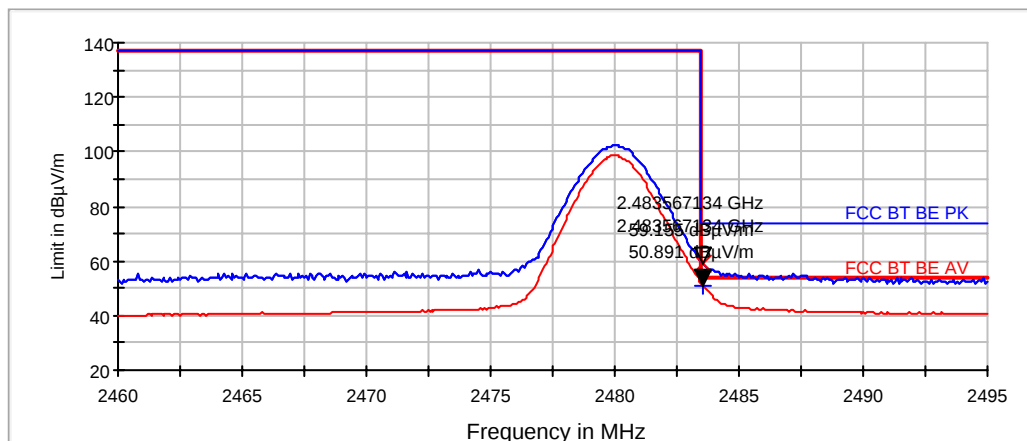
Peak (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Result
0 / 2402	56.02	632.095	54.17	1.85	PASSED
78 / 2480	59.15	907.258	56.64	2.51	PASSED
Hopping on, low end	57.38	739.979	55.53	1.85	PASSED
Hopping on, high end	57.52	751.227	55.01	2.51	PASSED

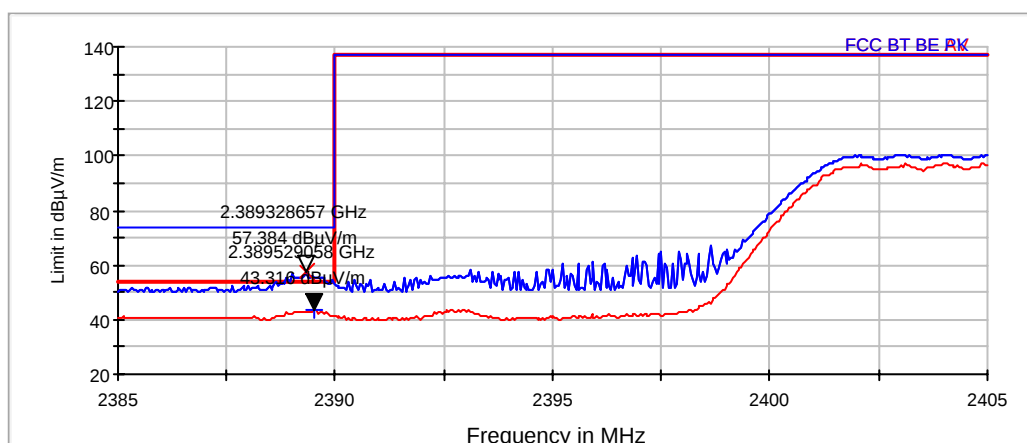
8DPSK mode. Channel 0 / 2402 MHz



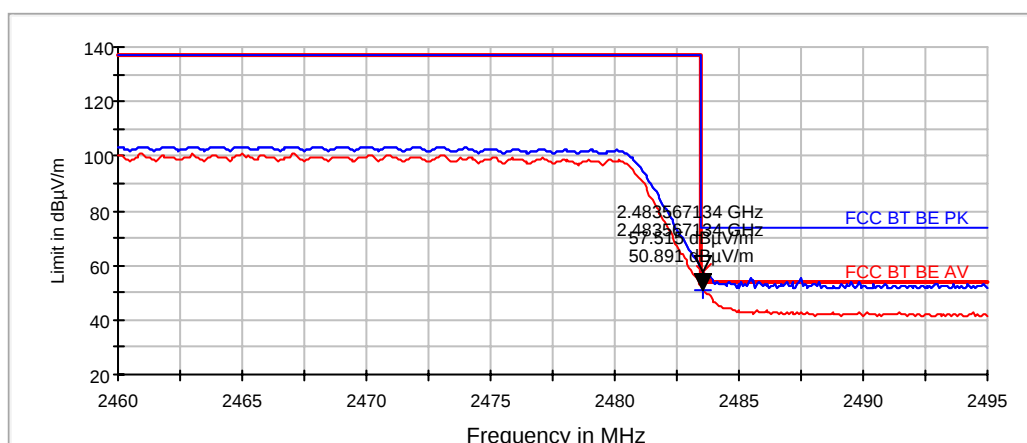
8DPSK mode. Channel 78 / 2480 MHz



8DPSK mode. Hopping on, low end



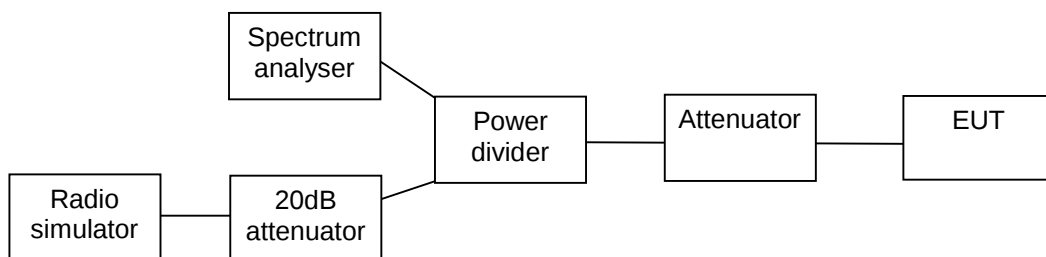
8DPSK mode. Hopping on, high end



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

EUT with DUT number	RM-679, DUT52104
Accessories with DUT numbers	BL-4D, DUT52105; AC-10C, DUT52108; CA-100C, DUT52109; WH-205, DUT52115
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 20 / 102.5
Date of measurements	22-Mar-2011
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.

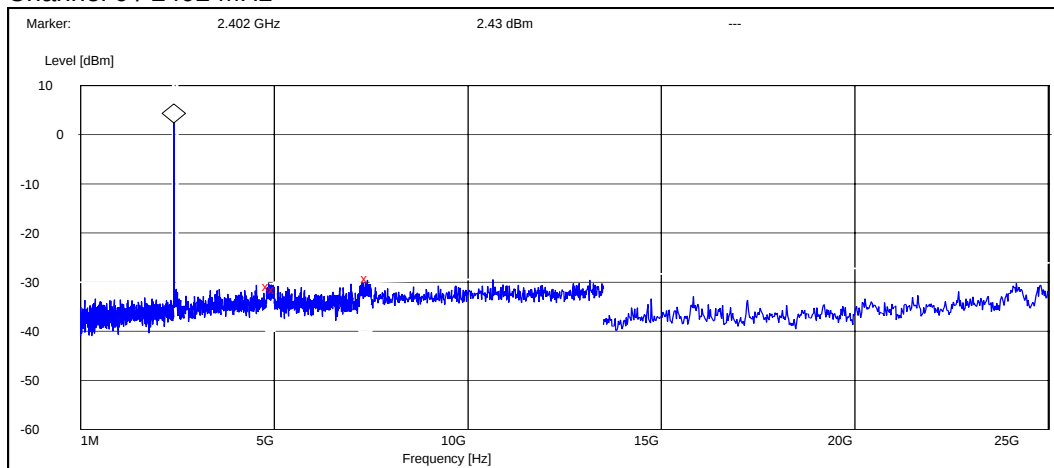
Limits for spurious RF conducted emissions measurements

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

4.3. Bluetooth Test results

4.3.1 GFSK modulation, PRBS packet type

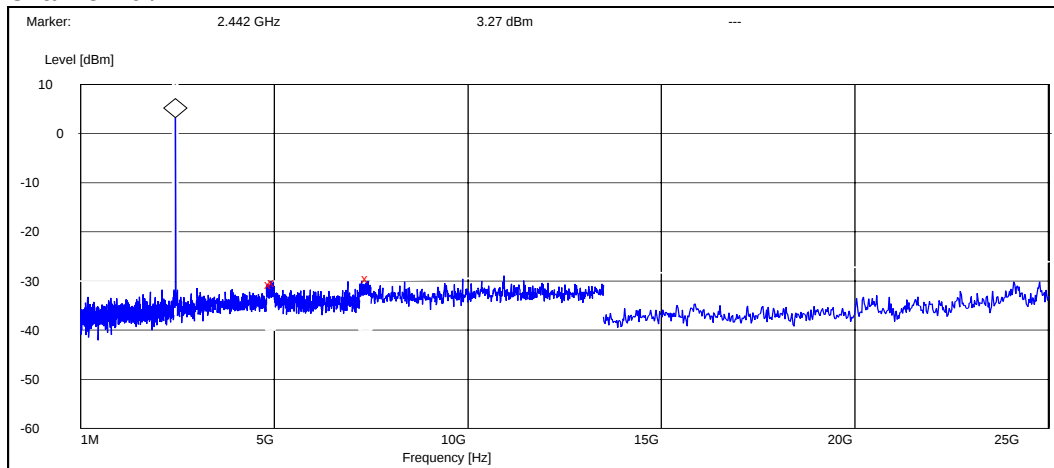
Channel 0 / 2402 MHz



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

Frequency [MHz]	P [dBc]	Result
4847.600000	-33.226108	PASSED
5000.000000	-33.826108	PASSED
7415.400000	-31.626108	PASSED

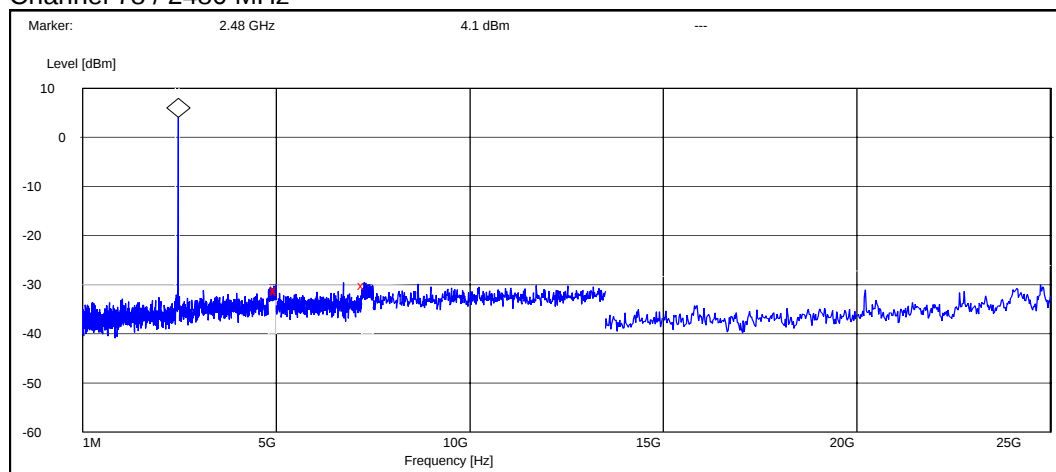
Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4927.200000	-34.072888	PASSED
5000.000000	-33.572888	PASSED
7426.800000	-32.672888	PASSED

Channel 78 / 2480 MHz

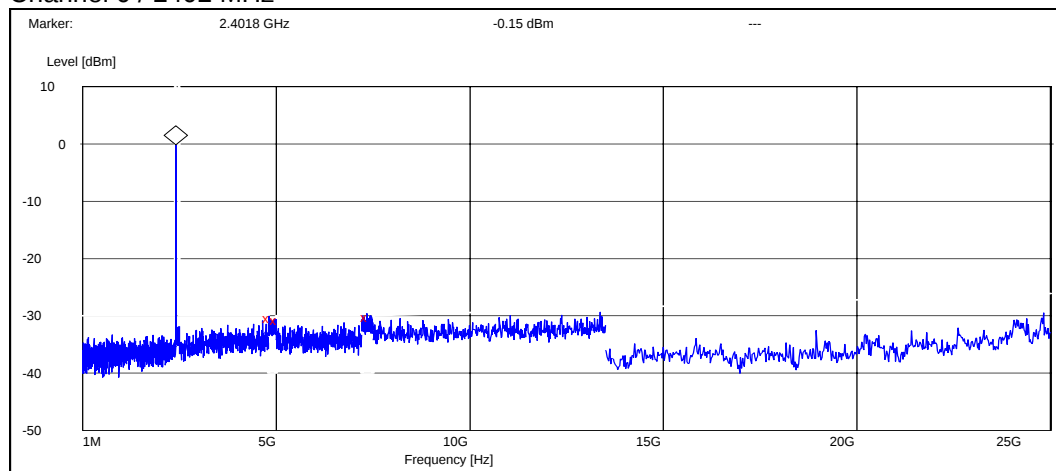


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4999.200000	-35.499654	PASSED
5000.000000	-35.099654	PASSED
7277.400000	-34.299654	PASSED

4.3.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz

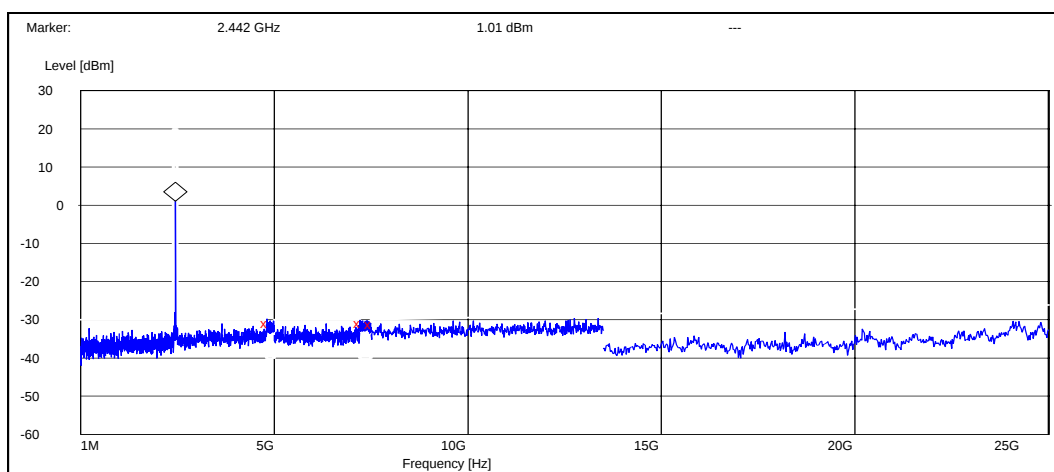


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4807.200000	-30.253785	PASSED
5000.000000	-30.653785	PASSED
7334.400000	-30.153785	PASSED

Channel 40 / 2442 MHz

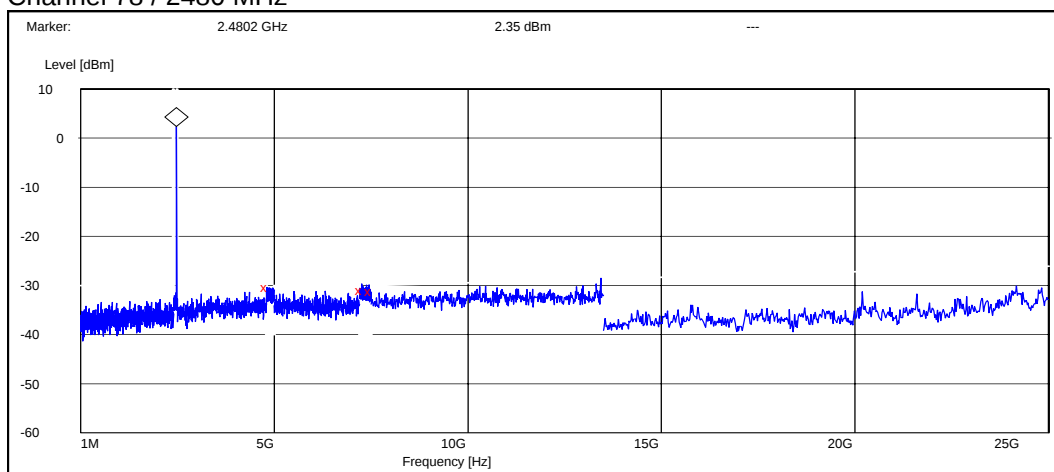
16 (37)



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

Frequency [MHz]	P [dBc]	Result
4808.000000	-32.010612	PASSED
7211.400000	-31.810612	PASSED
7500.000000	-32.110612	PASSED

Channel 78 / 2480 MHz



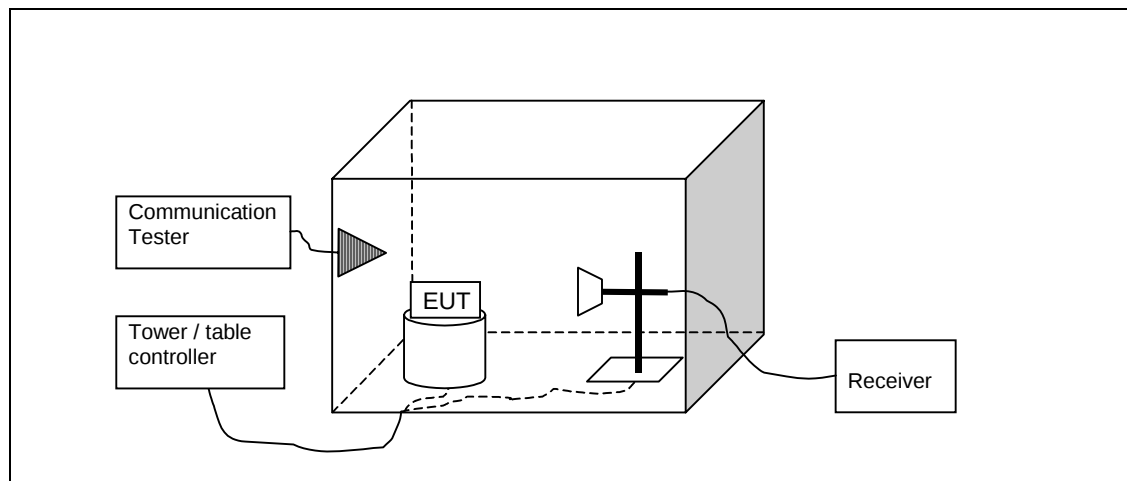
Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4812.800000	-32.748521	PASSED
7258.800000	-33.448521	PASSED
7500.000000	-33.548521	PASSED

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

EUT with DUT number	RM-679, DUT 52100
Accessories with DUT numbers	BL-4D, DUT 52101 ; AC-10C, DUT 52108 ; CA-100C, DUT 52109 ; WH-205, DUT 52115
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	19 / 27 / 102.6
Date of measurements	28-Mar-2011
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:

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

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

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4959.5	46.62	214.338	46.55	0.07	HORIZONTAL	PASSED
7439.5	54.77	547.772	49.69	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
4959.5	30.54	33.655	30.47	0.07	HORIZONTAL	PASSED
7439.5	34.83	55.144	29.75	5.08	HORIZONTAL	PASSED

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
4803.7	47.23	229.959	47.48	-0.25	HORIZONTAL	PASSED
7206.1	54.71	543.814	49.69	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
4803.7	29.51	29.874	29.76	-0.25	HORIZONTAL	PASSED
7206.1	34.21	51.369	29.19	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
44.088	28.12	25.474	40.43	-12.31	VERTICAL	PASSED
44.098	27.98	25.052	40.3	-12.32	VERTICAL	PASSED
47.715	28.58	26.841	43.06	-14.48	VERTICAL	PASSED
77.577	29.29	29.124	48.04	-18.75	HORIZONTAL	PASSED
78.226	29.63	30.294	48.33	-18.7	HORIZONTAL	PASSED
78.245	29.34	29.312	48.04	-18.7	HORIZONTAL	PASSED
78.257	29.48	29.799	48.17	-18.69	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
7343.989	54.37	522.878	49.15	5.22	HORIZONTAL	PASSED
7430.462	54.02	502.227	48.88	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
7343.989	34.62	53.827	29.4	5.22	HORIZONTAL	PASSED
7430.462	34.6	53.703	29.46	5.14	HORIZONTAL	PASSED

5.3.2 8DPSK modulation, PRBS packet type

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
4958.4	52.8	436.566	52.72	0.08	HORIZONTAL	PASSED
7440.7	47.78	244.794	42.71	5.07	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
4958.4	31.1	35.872	31.02	0.08	HORIZONTAL	PASSED
7440.7	34.75	54.607	29.68	5.07	HORIZONTAL	PASSED

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
4804.2	53.24	459.145	53.49	-0.25	HORIZONTAL	PASSED
7206.8	52.37	415.241	47.35	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
4804.2	29.55	30.016	29.8	-0.25	HORIZONTAL	PASSED
7206.8	34.22	51.393	29.2	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
44.109	18.68	8.586	31.01	-12.33	VERTICAL	PASSED
78.057	11.07	3.575	29.78	-18.71	HORIZONTAL	PASSED
78.406	21.42	11.771	40.1	-18.68	HORIZONTAL	PASSED
79.057	15.29	5.816	33.92	-18.63	HORIZONTAL	PASSED
80.798	15.78	6.15	34.21	-18.43	HORIZONTAL	PASSED
904.036	24.35	16.506	26.91	-2.56	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
4836.076	53.19	456.667	53.36	-0.17	HORIZONTAL	PASSED
7277.356	55.11	569.508	49.96	5.15	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
4836.076	29.88	31.192	30.05	-0.17	HORIZONTAL	PASSED
7277.356	34.54	53.352	29.39	5.15	HORIZONTAL	PASSED

5.3.3 $\pi/4$ DQPSK modulation, PRBS packet type

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
4960.3	47.44	235.369	47.37	0.07	HORIZONTAL	PASSED
7440.5	51.1	358.881	46.03	5.07	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
4960.3	30.43	33.243	30.36	0.07	HORIZONTAL	PASSED
7440.5	33.76	48.77	28.69	5.07	HORIZONTAL	PASSED

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
4803.9	48.76	274.284	49.01	-0.25	HORIZONTAL	PASSED
7206.3	54.16	510.681	49.14	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
4803.9	29.34	29.302	29.59	-0.25	HORIZONTAL	PASSED
7206.3	33.23	45.856	28.21	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
40.662	19.1	9.017	29.34	-10.24	VERTICAL	PASSED
48.126	21.6	12.024	36.32	-14.72	VERTICAL	PASSED
50.309	17.88	7.83	33.84	-15.96	HORIZONTAL	PASSED
51.032	19.35	9.277	35.59	-16.24	HORIZONTAL	PASSED
74.913	22.07	12.694	41.04	-18.97	HORIZONTAL	PASSED
75.944	19.73	9.694	38.62	-18.89	HORIZONTAL	PASSED
76.731	9.91	3.129	28.73	-18.82	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
4821.74	44	158.526	44.24	-0.24	VERTICAL	PASSED
7262.727	54.19	512.448	49.14	5.05	VERTICAL	PASSED

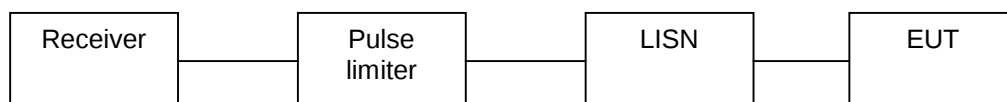
Average(RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4821.74	29.46	29.71	29.7	-0.24	VERTICAL	PASSED
7262.727	33.41	46.811	28.36	5.05	VERTICAL	PASSED

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

EUT with DUT number	RM-679, DUT 52100
Accessories with DUT numbers	BL-4D, DUT 52101 ; AC-10C, DUT 52108 ; CA-100C, DUT 52109 ; WH-205, DUT 52115
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 27 / 101.4
Date of measurements	30-Mar-2011
Measured by	Jia Dongsheng

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:

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

Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable and pulse limiter attenuations.

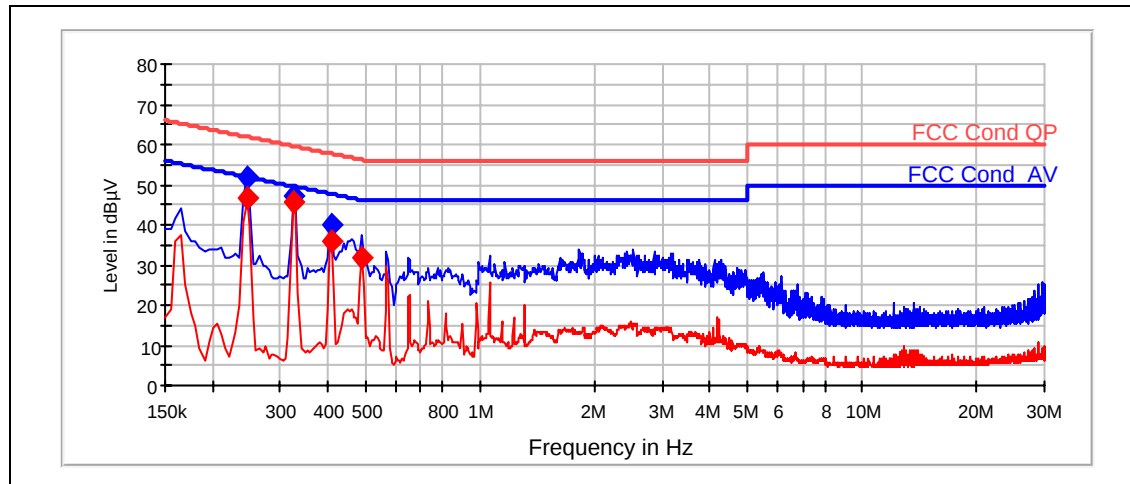
CISPR 22 Class B limits

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

6.3. Bluetooth Test results

6.3.1 GFSK modulation, PRBS packet type

Channel 40 / 2442 MHz



QuasiPeak (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.245	51.95	N	PASSED
0.325	47.14	N	PASSED
0.41	40.06	N	PASSED

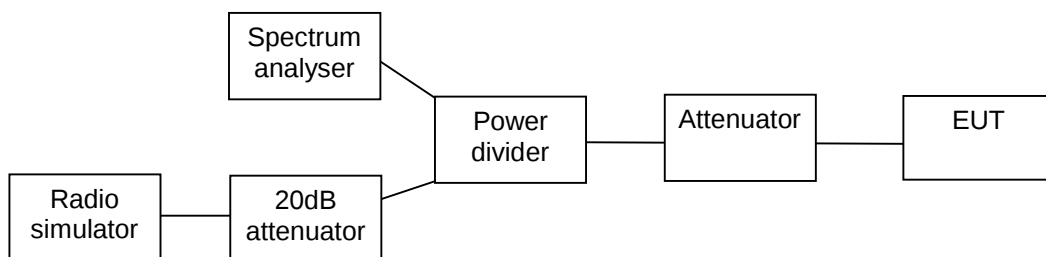
Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.245	46.6	N	PASSED
0.325	45.39	N	PASSED
0.41	35.87	N	PASSED
0.49	31.83	N	PASSED

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

EUT with DUT number	RM-679, DUT52104
Accessories with DUT numbers	BL-4D, DUT52105; AC-10C, DUT52108; CA-100C, DUT52109; WH-205, DUT52115
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 20 / 102.5
Date of measurements	22-Mar-2011
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

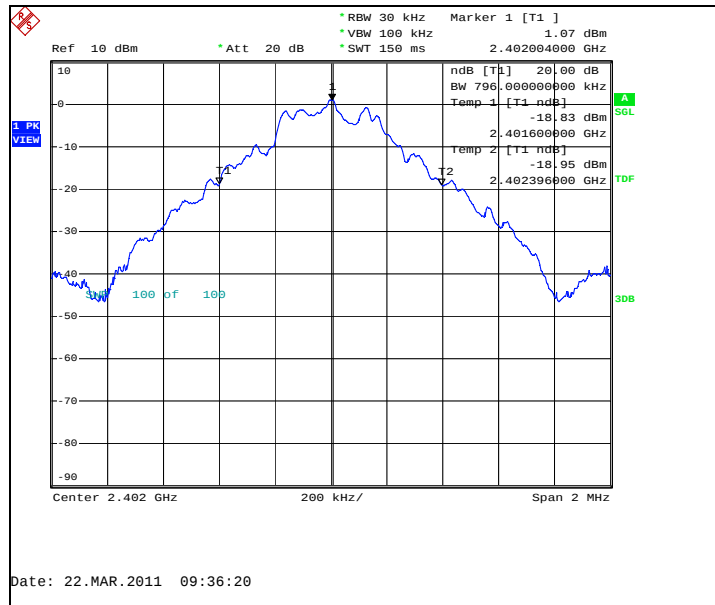
Limit [MHz]
N/A

7.3. Bluetooth Test results

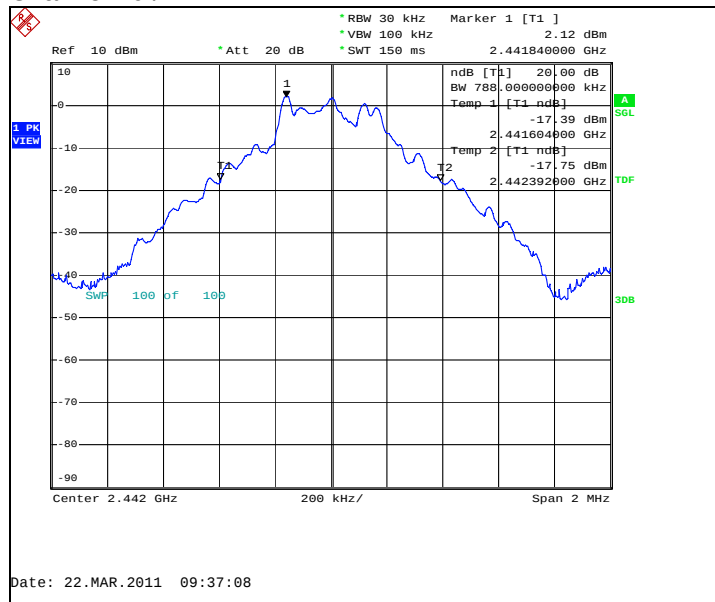
7.3.1 GFSK modulation, PRBS packet type

Channel / f_c [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	796.000	PASSED
40 / 2442	788.000	PASSED
78 / 2480	792.000	PASSED

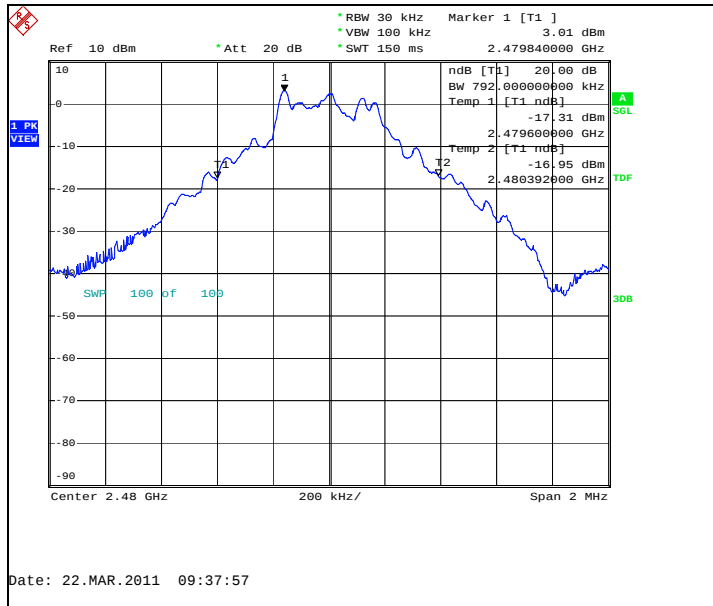
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



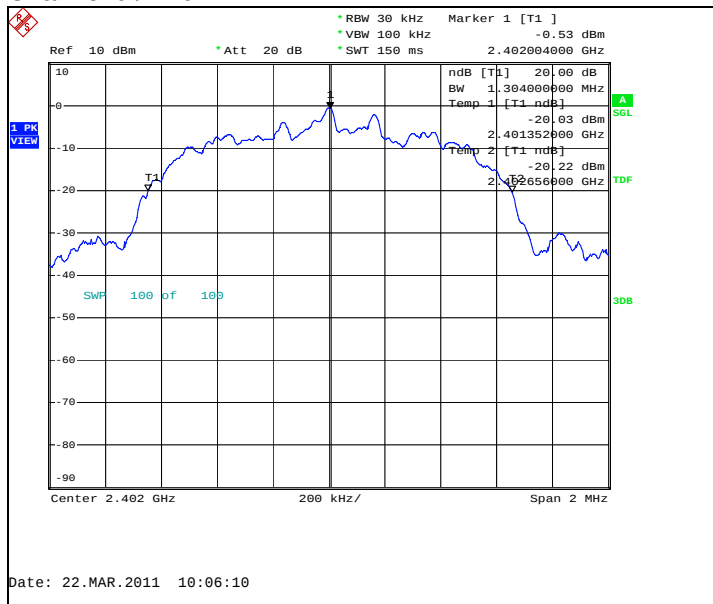
Channel 78 / 2480 MHz



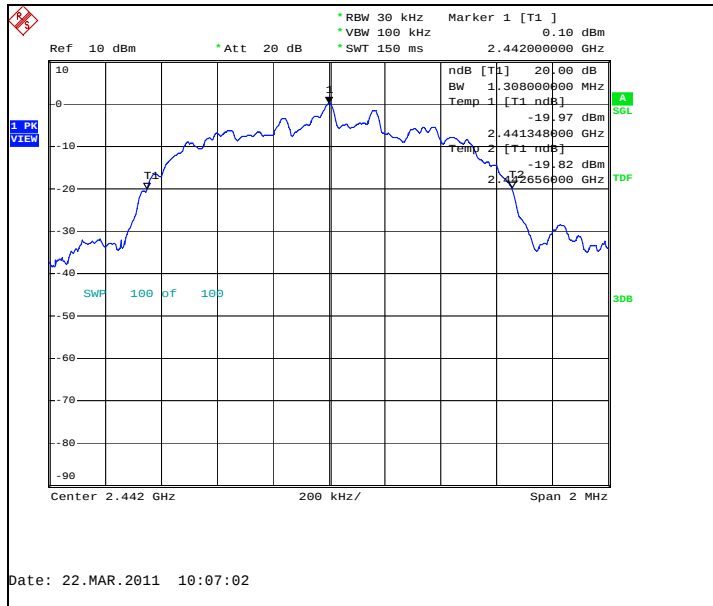
7.3.2 8DPSK modulation, PRBS packet type

Channel / f_c [MHz]	20 dB bandwidth [kHz]	Result
0 / 2402	1304.000	PASSED
40 / 2442	1308.000	PASSED
78 / 2480	1304.000	PASSED

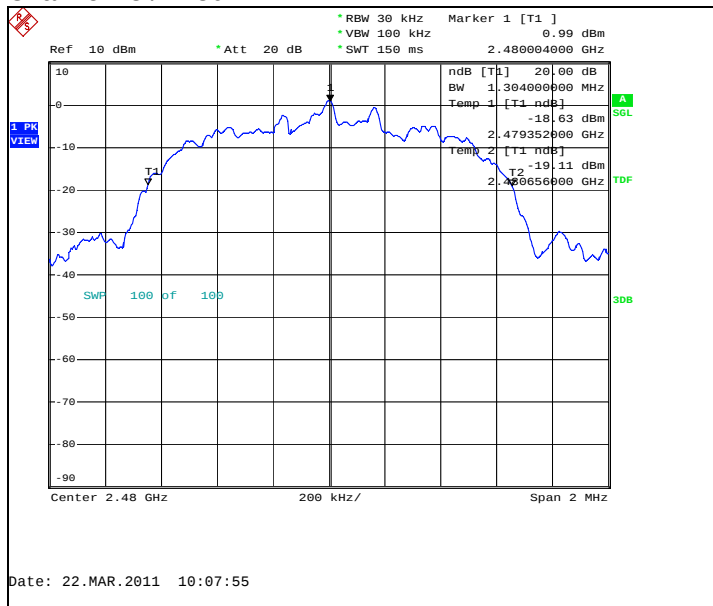
Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



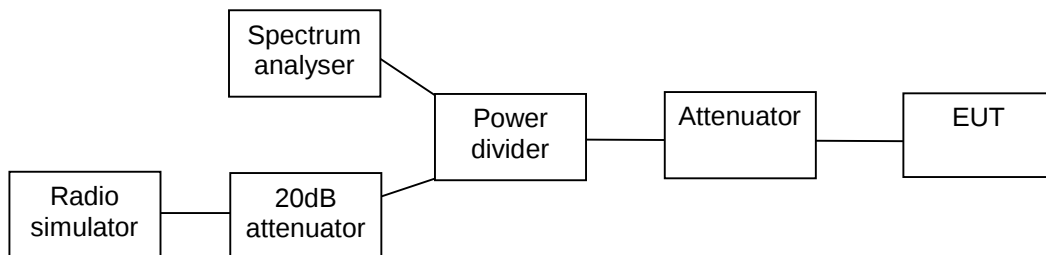
Channel 78 / 2480 MHz



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

EUT with DUT number	RM-679, DUT52104
Accessories with DUT numbers	BL-4D, DUT52105; AC-10C, DUT52108; CA-100C, DUT52109; WH-205, DUT52115
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 20 / 102.5
Date of measurements	22-Mar-2011
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

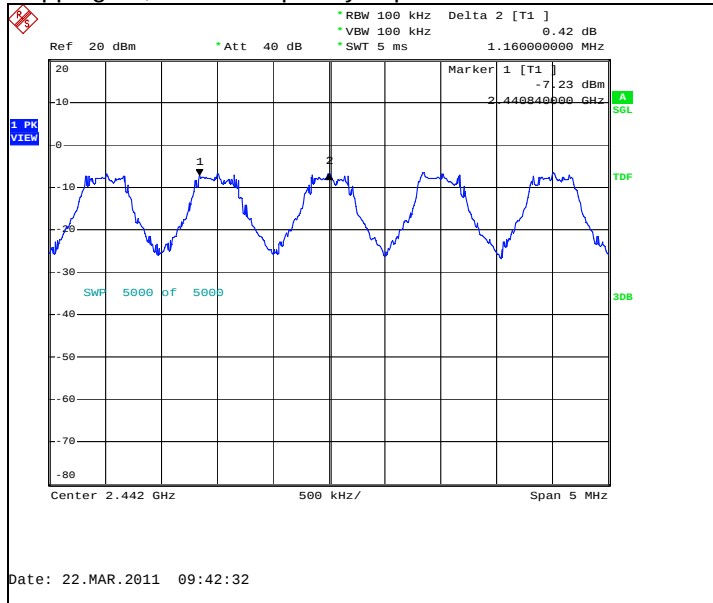
Limit [MHz]
≥ 0.025 or $2/3$ of the 20 dB bandwidth

8.3. Bluetooth Test results

8.3.1 GFSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1160	PASSED

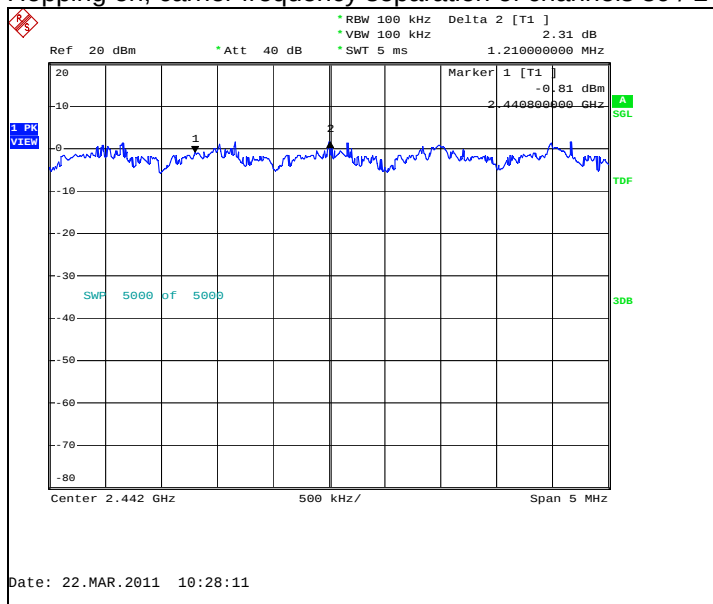
Hopping on, carrier frequency separation of channels 39 / 2441 MHz and 40 / 2442 MHz



8.3.2 8DPSK modulation, PRBS packet type

Carrier frequency separation [kHz]	Result
1210	PASSED

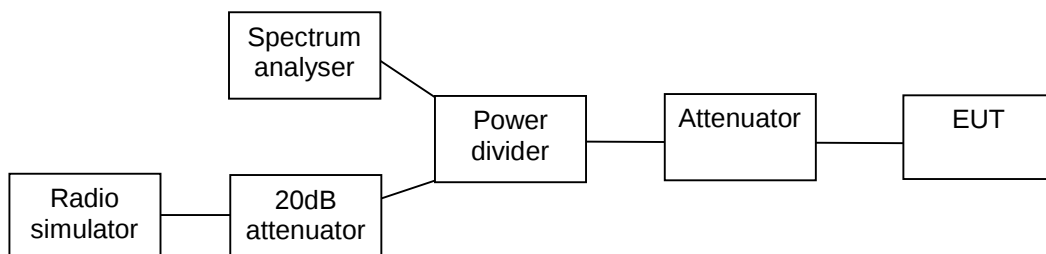
Hopping on, carrier frequency separation of channels 39 / 2441 MHz and 40 / 2442 MHz



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

EUT with DUT number	RM-679, DUT52104
Accessories with DUT numbers	BL-4D, DUT52105; AC-10C, DUT52108; CA-100C, DUT52109; WH-205, DUT52115
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 20 / 102.5
Date of measurements	22-Mar-2011
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

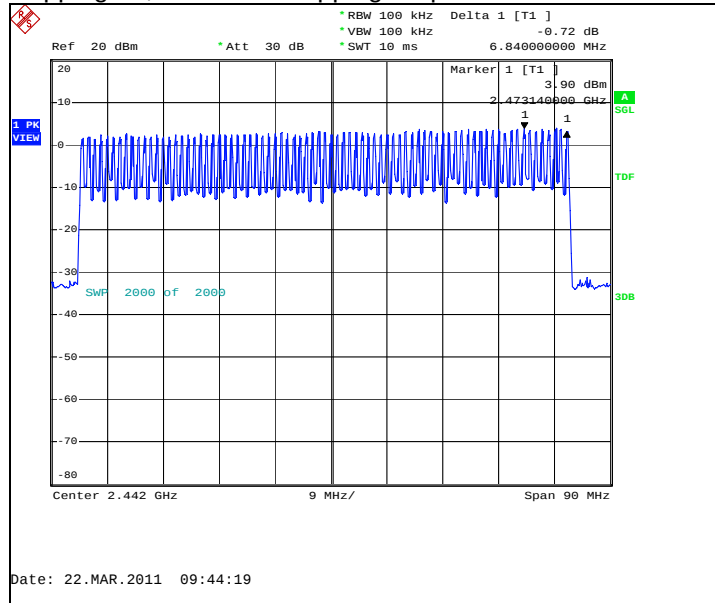
Limit [number]
≥ 15

9.3. Bluetooth Test results

9.3.1 GFSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
78	PASSED

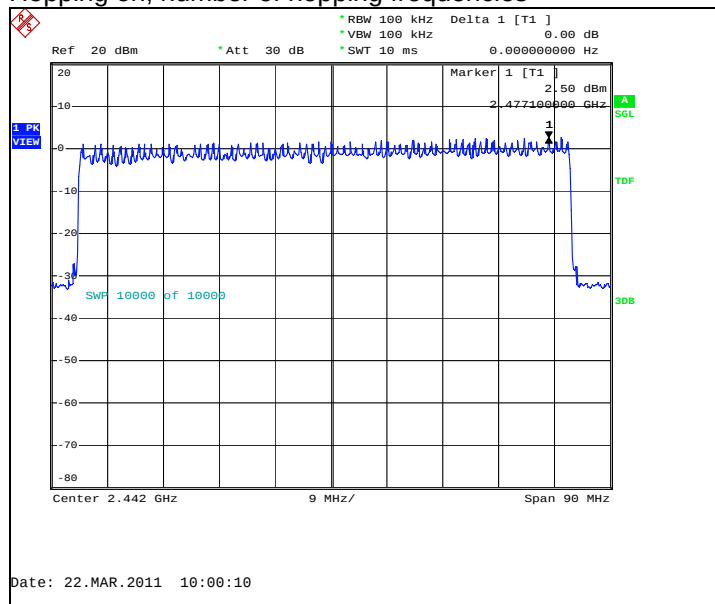
Hopping on, number of hopping frequencies



9.3.2 8DPSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
78	PASSED

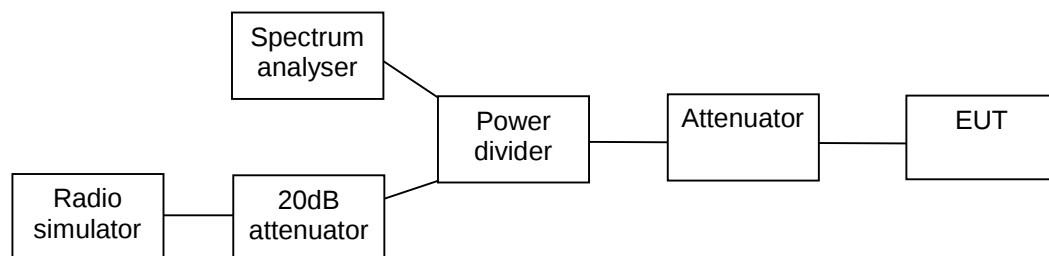
Hopping on, number of hopping frequencies



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

EUT with DUT number	RM-679, DUT52104
Accessories with DUT numbers	BL-4D, DUT52105; AC-10C, DUT52108; CA-100C, DUT52109; WH-205, DUT52115
Operation Voltage [V] / [Hz]	Nominal
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 20 / 102.5
Date of measurements	22-Mar-2011
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

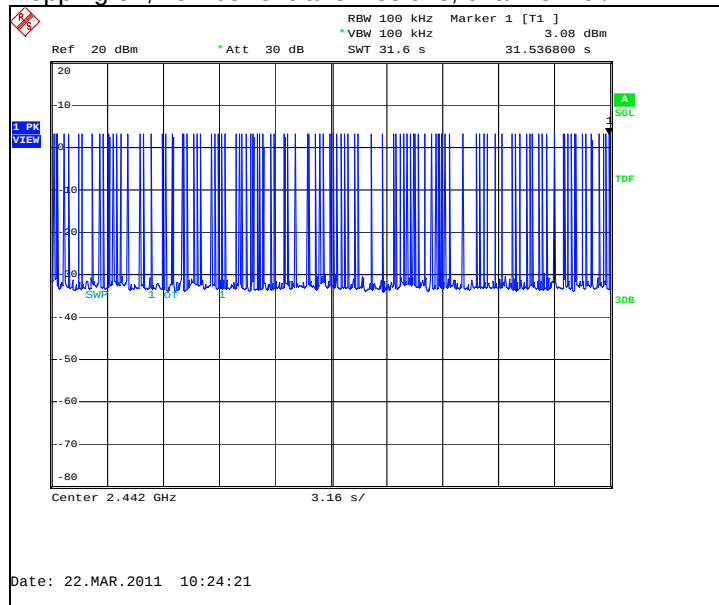
Limit [s]
≤ 0.4

10.3. Bluetooth test results

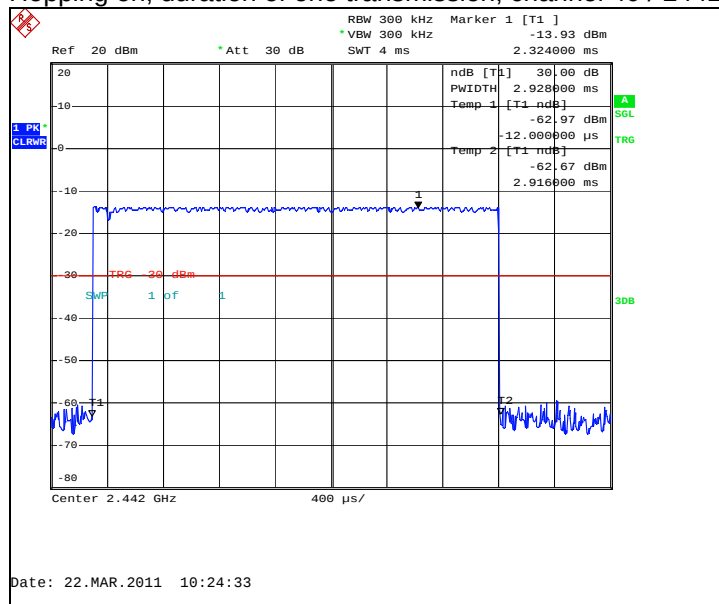
10.3.1 GFSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [μs]	Time of occupancy [s]	Result
102	2,928	0.298656	PASSED

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



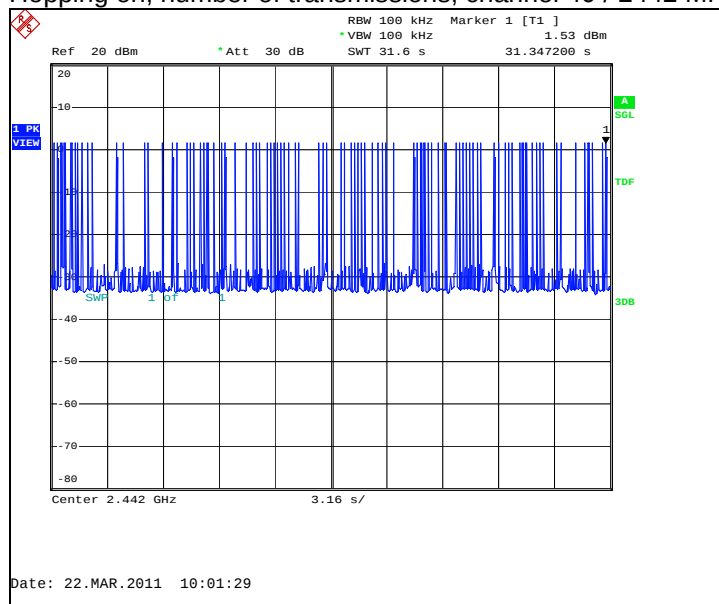
Hopping on, duration of one transmission, channel 40 / 2442 MHz



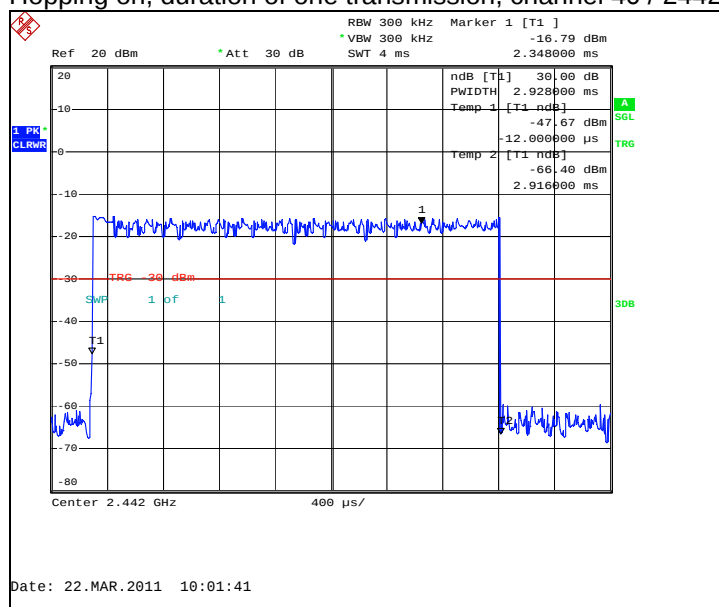
10.3.2 8DPSK modulation, PRBS packet type

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

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



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



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