FCC Part 15C Compliance Test Report

Test Report no.:	FCC15CBT_RM-942_10.docx	**Date of Report:**	20-Jun-2013
Number of pages:	43	**Customer's Contact person:**	Wang Jinling (jinliwan)
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-942 / Battery BP-4GWA / AC-Charger AC-20U / Headset WH-108 / Dummy battery -**		
FCC ID:	QTLRM-942	**IC:**	661AB-RM942
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:	Sherina Gao Digitally signed by Gao Sherina DN: cn=Gao Sherina, o=NOKIA, ou=PSCL, email=sherina.gao@nokia.com, c=CN Date: 2013.06.20 11:12:54 +08'00'		

Gao Sherina, Engineer, EMC

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1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	21-May-2013
Testing completed	29-May-2013
The customer's contact person	Wang Jinling (jinliwan)
Test Plan referred to	T:\Projects\RM-941\TestPlan\RS_TestPlan_RM-941.xlsm
Notes	-
Document name	FCC15CBT_RM-942_10.docx

1.1. EUT and Accessory Information

The EUT is a mobile phone with following features:
GSM/WCDMA/WLAN/Bluetooth
The EUT is tested with maximum rated TX power.

Devices under tests

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-941	004402472996440	2001	-	3037.0000.1318.0000	53377
Dummy battery	-	-	-	-	-	53378
Headset	WH-108	122	0.1	0.3	-	53379
Phone	RM-941	004402472993215	2000	-	3037.0000.1318.0000	53350
Battery	BP-4GWA	-	-	-	-	53351
AC-Charger	AC-20U	486867311234050997O;0675629	-	-	-	53340
Headset	WH-108	1253	0.1	0.3	-	53343
Phone	RM-941	004402472993447	2000	-	3037.0000.1318.0000	53347
Battery	BP-4GWA	-	-	-	-	53353
AC-Charger	AC-20U	486867311235050882;0675629	-	-	-	53339
Headset	WH-108	1046	0.1	0.3	-	53341

1.2. Summary of Test Results

Bluetooth:

Section in CFR 47	Section in RSS-GEN or RSS-210	Name of the test	Result
15.247(b)(1)	A8(0.4(2))	Conducted peak output power	PASSED
15.247(d), 15.205(b)	A8(0.5)	Band edge compliance of RF emissions	PASSED
15.247(d)	A8(0.5)	Spurious RF conducted emissions	PASSED
15.247(d), 15.209	A8(0.5)	Spurious radiated emissions	PASSED
15.207	7.2.2	AC powerline conducted emissions	PASSED
15.247(a)(1)	A8(0.1(1))	20dB(bandwidth)	PASSED
15.247(a)(1)	A8(0.1(2))	Carrier frequency separation	PASSED
15.247(a)(1)(iii)	A8(0.1(4))	Number of hopping frequencies	PASSED
15.247(a)(1)(iii)	A8(0.1(4))	Time of occupancy	PASSED

PASSED	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 Laboratory.

The test results of QTLRM-941 are re-used for certification of the QTLRM-942. The table above indicates the results, which will be re-used.

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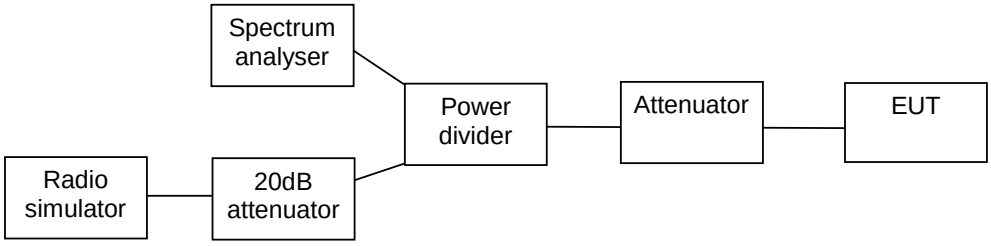
2. Conducted peak output power
(15.247(b)(1), RSS-210 A8.4 (2))

EUT with DUT number	RM-941, DUT 53377
Accessories with DUT numbers	Dummy battery, DUT 53378; WH-108, DUT 53379
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/42/100.7
Date of measurements	22-May-2013
Measured by	Gao Sherina

2.1. Test Setup



2.2. Test method and limit

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

Limits for conducted peak output power measurements

Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5 5725 - 5850	<= 1	<= 30

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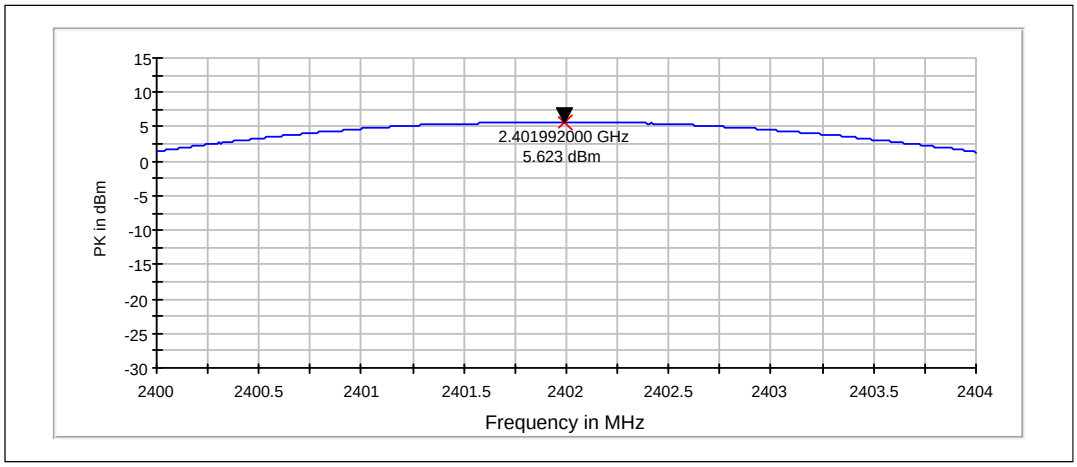
2.3. Bluetooth Test results

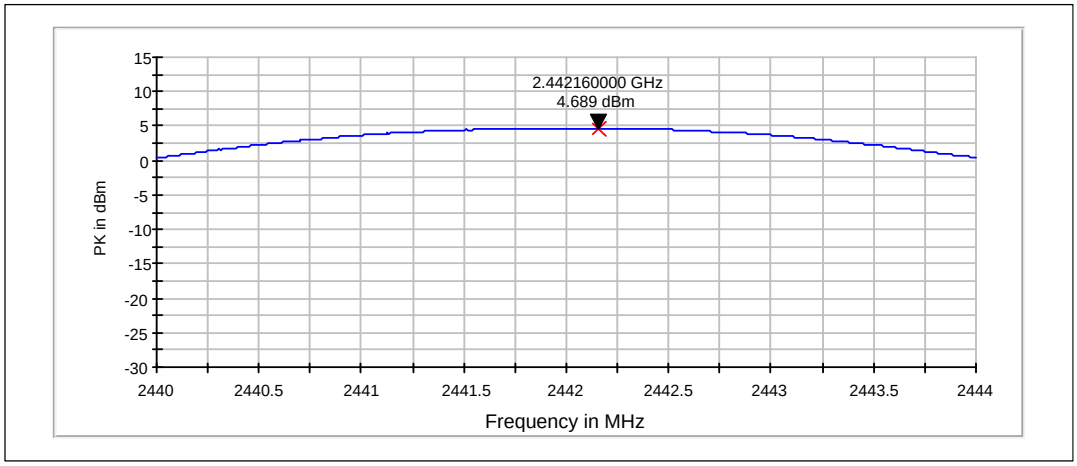
2.3.1 GFSK modulation, PRBS packet type

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
0 / 2402	5.62	3.648	PASSED
40 / 2442	4.69	2.944	PASSED
78 / 2480	3.01	2	PASSED

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



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



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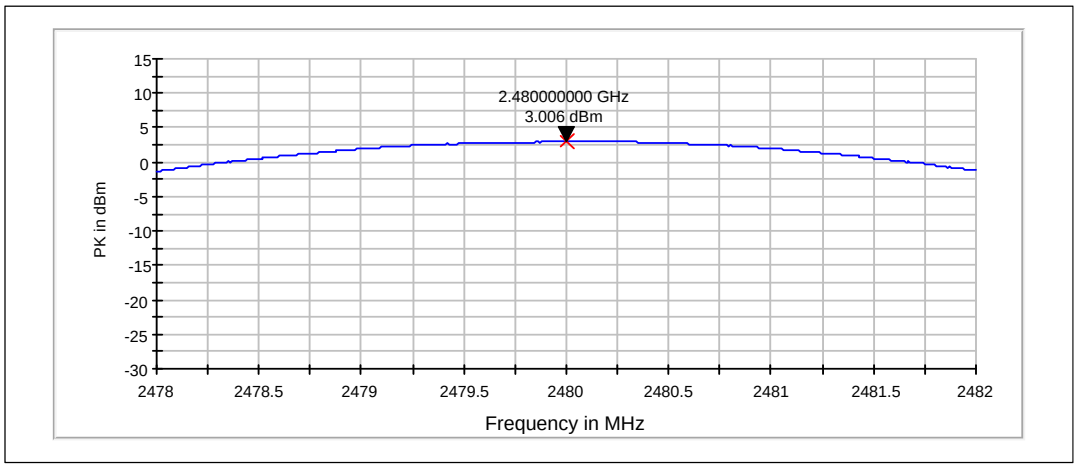
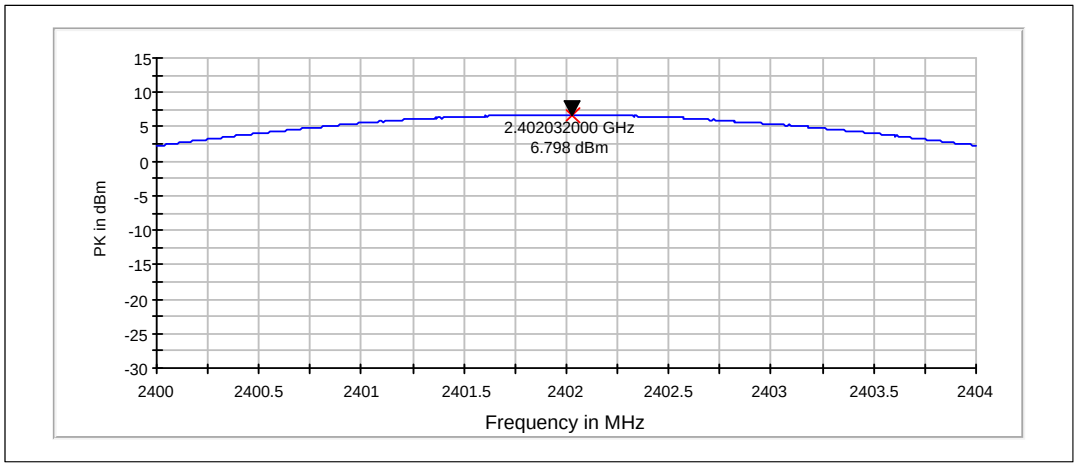
Channel 78 / 2480 MHz (Peak detector, RBW: 3 MHz, VBW: 3 MHz)



2.3.2 8DPSK modulation, PRBS packet type

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
0 / 2402	6.8	4.786	PASSED
40 / 2442	5.56	3.597	PASSED
78 / 2480	3.79	2.393	PASSED

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



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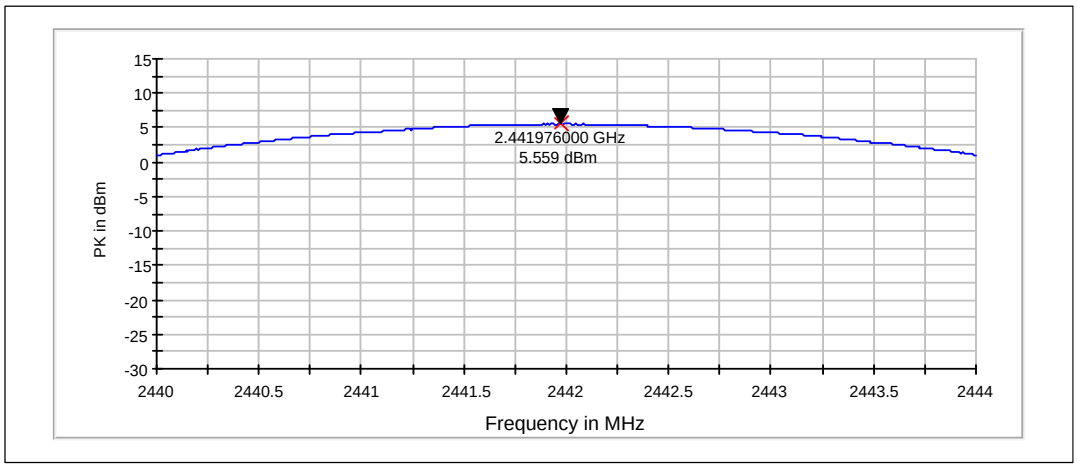
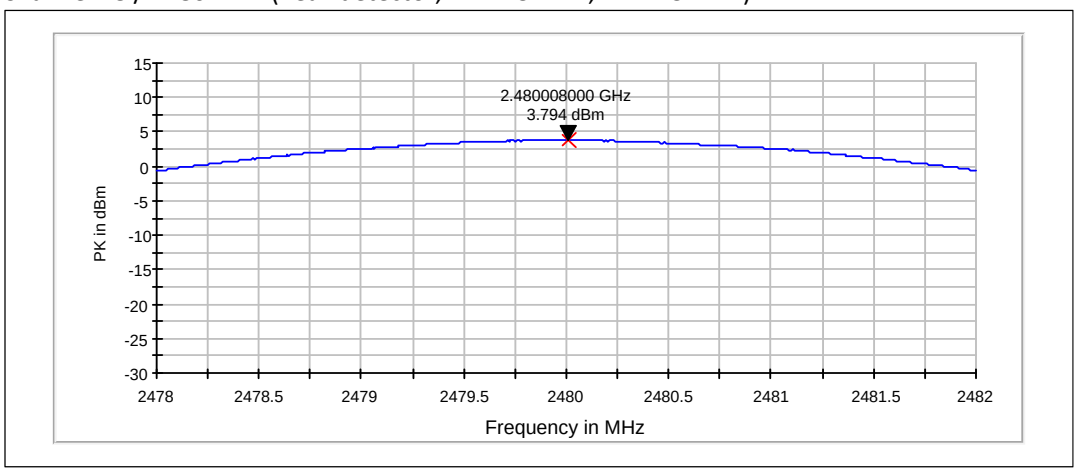
Channel 40 / 2442 MHz (Peak detector, RBW: 3 MHz, VBW: 3 MHz)



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



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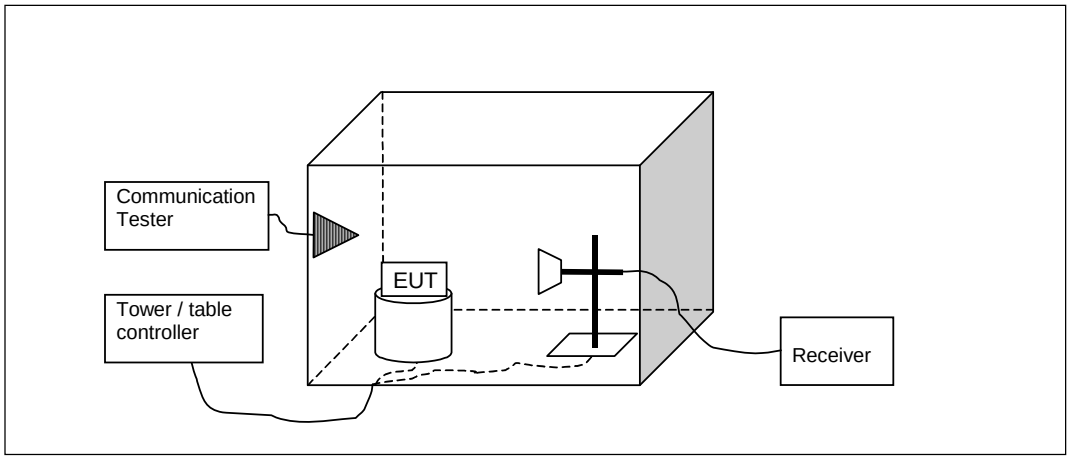
3. Band edge compliance of RF emissions
(FCC §15.247(d), 15.205(b), RSS-210 A8.5)

EUT with DUT number	RM-941, DUT 53350
Accessories with DUT numbers	BP-4GWA, DUT 53351 ; AC-20U, DUT 53340 ; WH-108, DUT 53343
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/40/100.1
Date of measurements	21-May-2013
Measured by	Zou Ming

3.1.1 Test setup



3.2. Test method and limit

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

The measurement results are obtained as described below:

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

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

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

Frequency range [MHz]	Limit
Below 2390 and above 2483.5	54 dBuV/m (avg) and 74 dBuV/m (pk)

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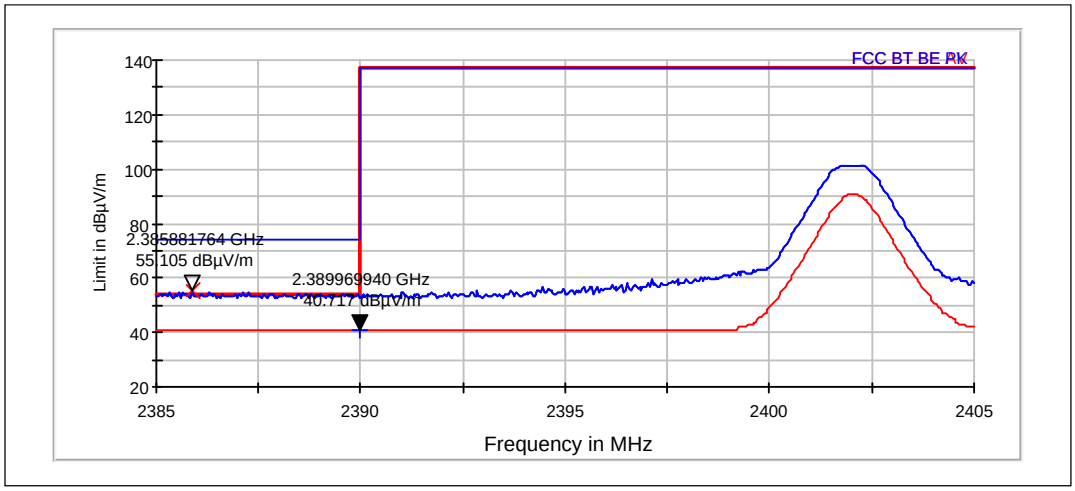
3.3. Bluetooth test results

3.3.1 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]	Correction [dB]	Results
2386	55.11	569.18	55.71	-0.6	-0.602	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2390	40.72	108.605	41.32	-0.6	-0.602	PASSED

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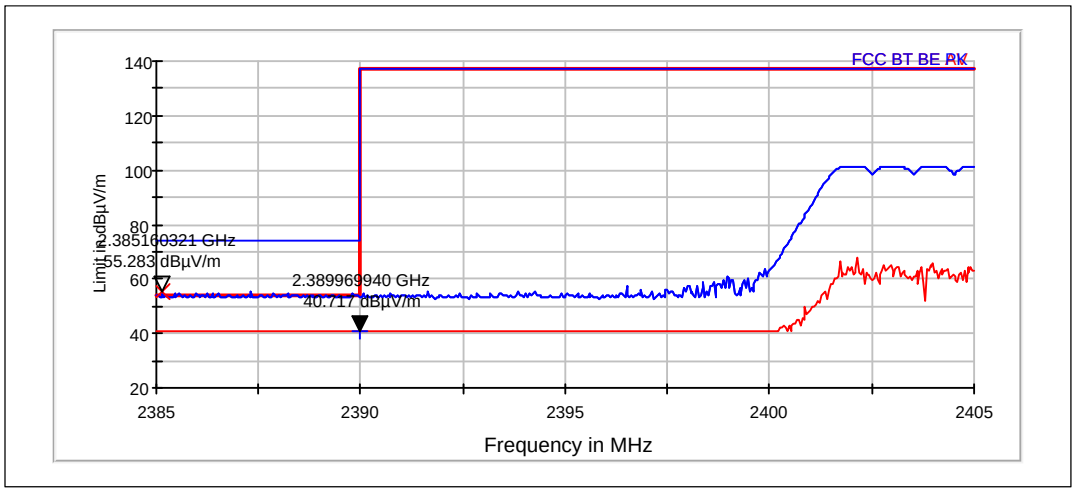
Hopping on. Low end.



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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2385	55.28	580.965	55.88	-0.6	-0.602	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2390	40.72	108.605	41.32	-0.6	-0.602	PASSED

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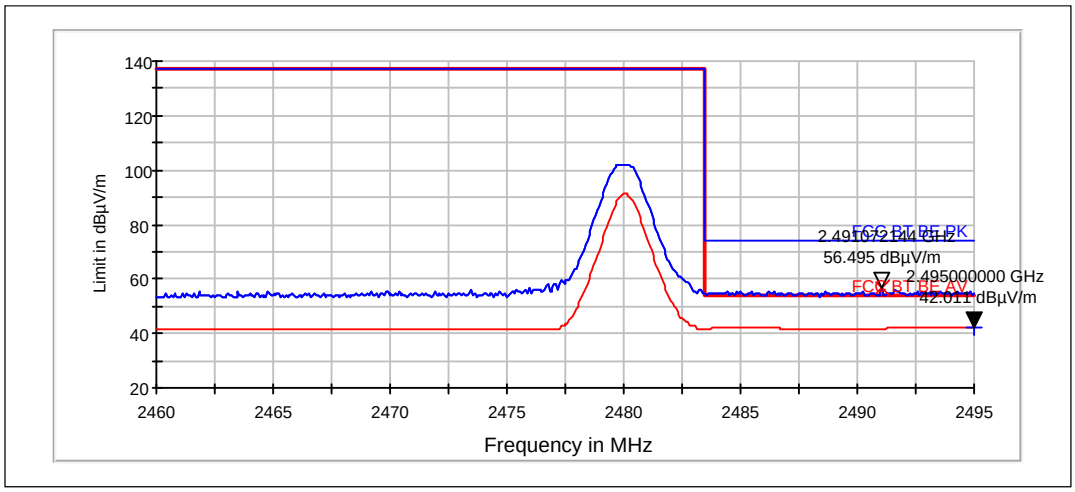
Channel 78 / 2480 MHz



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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2491	56.5	667.959	56.05	0.45	0.451	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2495	42.01	126.052	41.56	0.45	0.451	PASSED

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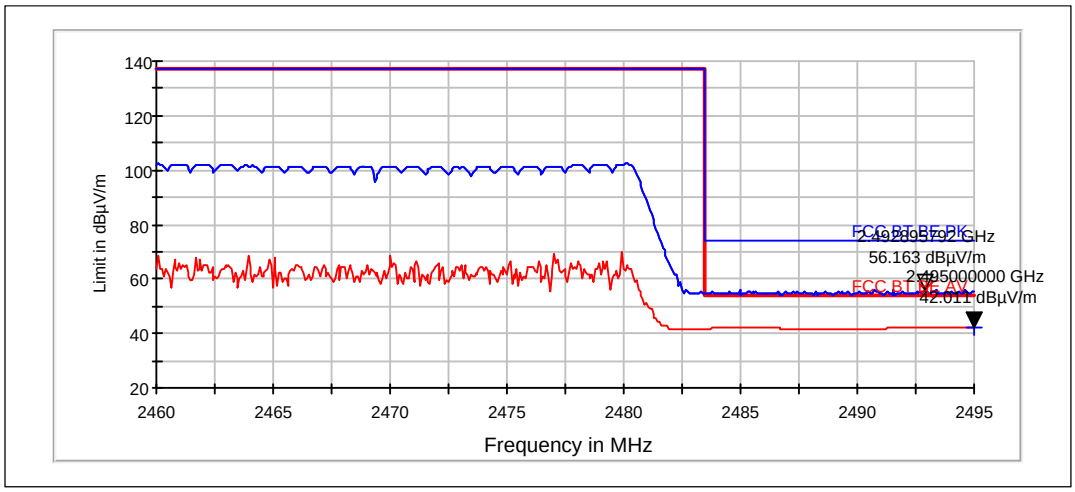
Hopping on. High end.



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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2493	56.16	642.91	55.71	0.45	0.451	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2495	42.01	126.052	41.56	0.45	0.451	PASSED

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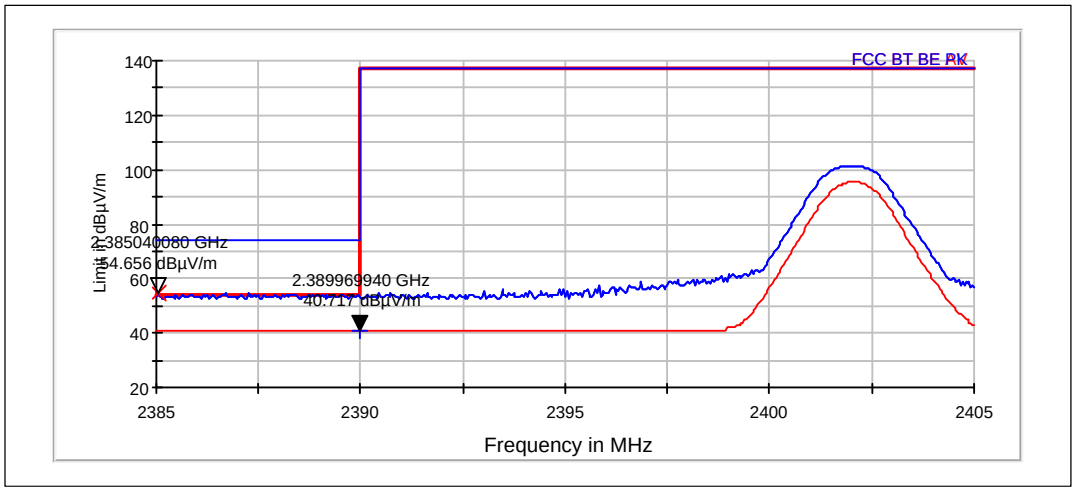
3.3.2 8DPSK modulation, PRBS packet type

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]	Correction [dB]	Results
2385	54.66	540.505	55.26	-0.6	-0.602	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2390	40.72	108.605	41.32	-0.6	-0.602	PASSED

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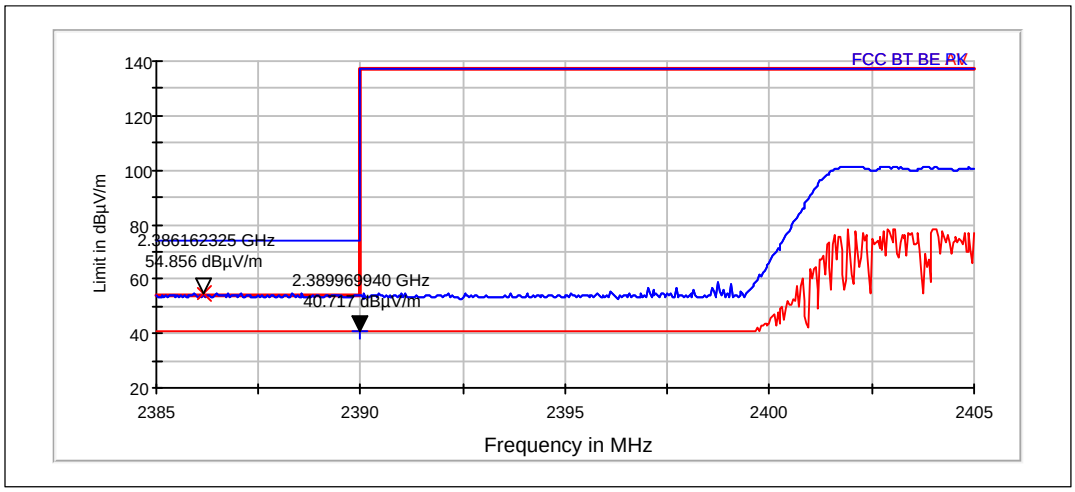
Hopping on. Low end.



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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2386	54.86	553.095	55.46	-0.6	-0.602	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2390	40.72	108.605	41.32	-0.6	-0.602	PASSED

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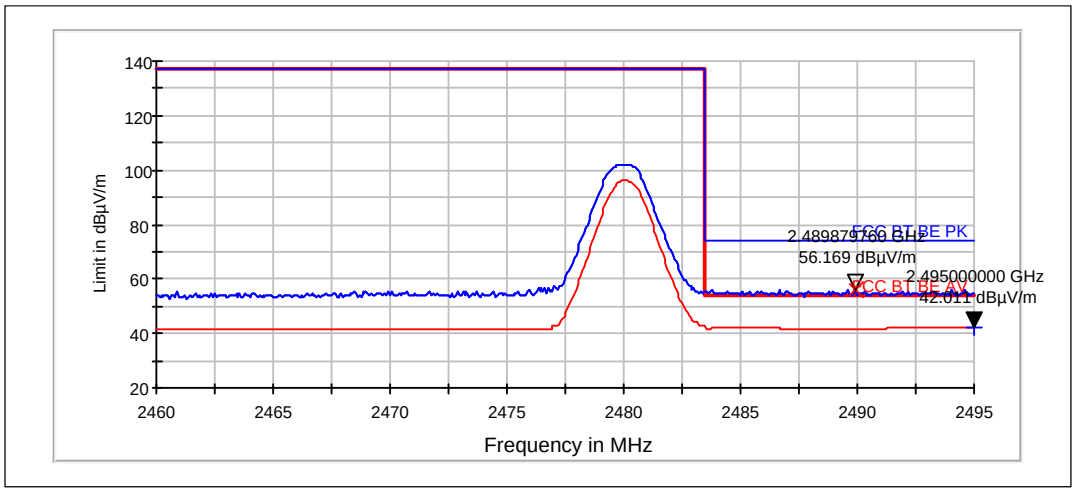
Channel 78 / 2480 MHz



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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2490	56.17	643.354	55.72	0.45	0.451	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2495	42.01	126.052	41.56	0.45	0.451	PASSED

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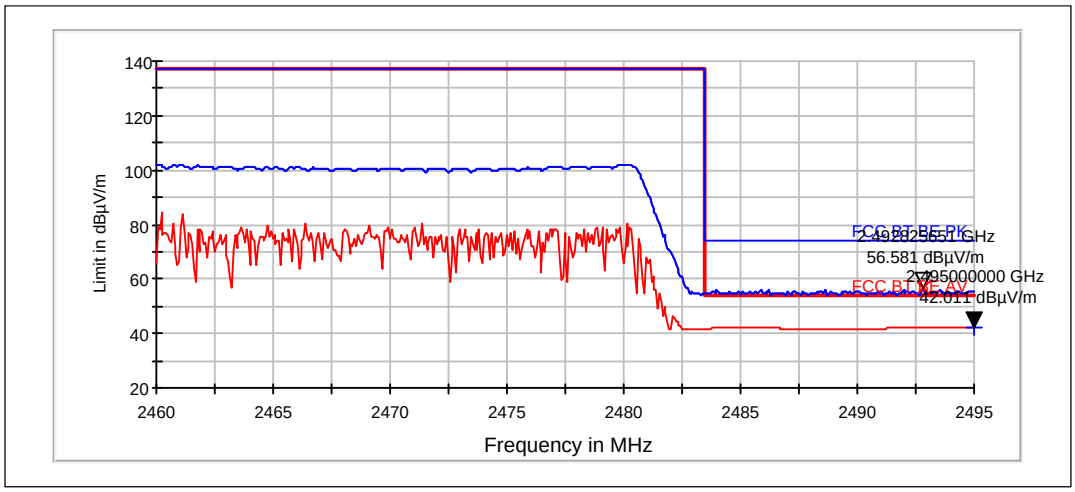
Hopping on. High end.



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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2493	56.58	674.606	56.13	0.45	0.451	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Correction [dB]	Results
2495	42.01	126.052	41.56	0.45	0.451	PASSED

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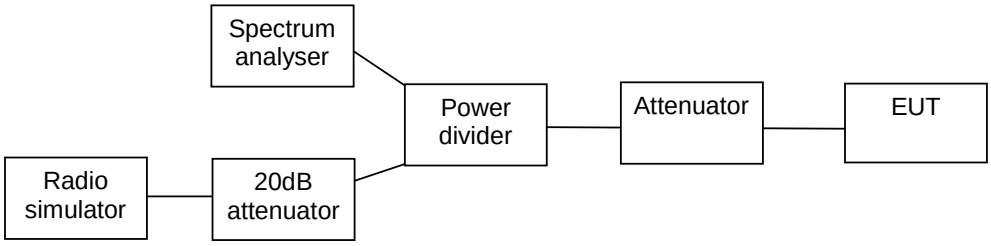
4. Spurious RF conducted emissions
(FCC §15.247(d), RSS-210 A8.5)

EUT with DUT number	RM-941, DUT 53377
Accessories with DUT numbers	Dummy battery, DUT 53378; WH-108, DUT 53379
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/42/100.7
Date of measurements	22-May-2013
Measured by	Gao Sherina

4.1. Test Setup



4.2. Test method and limit

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

Limits for spurious RF conducted emissions measurements

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

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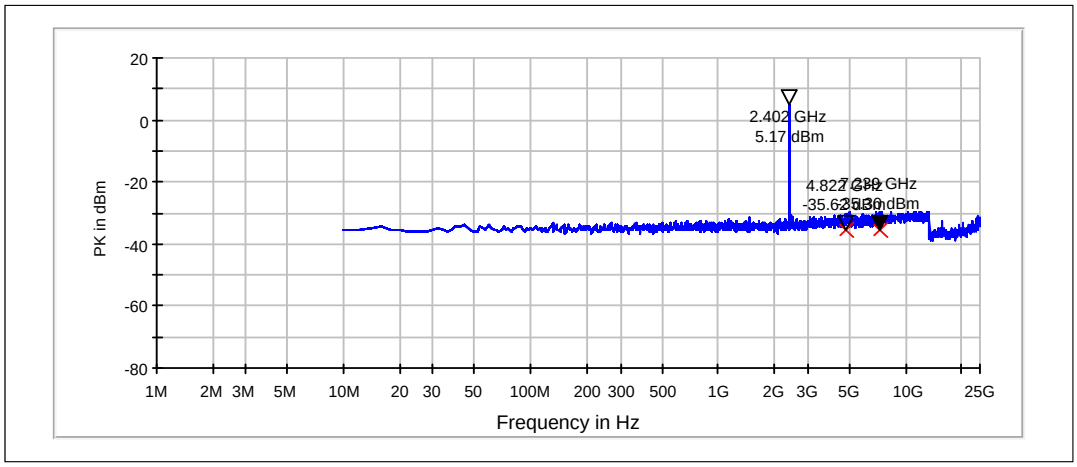
4.3. Bluetooth Test results

4.3.1 GFSK modulation, PRBS packet type

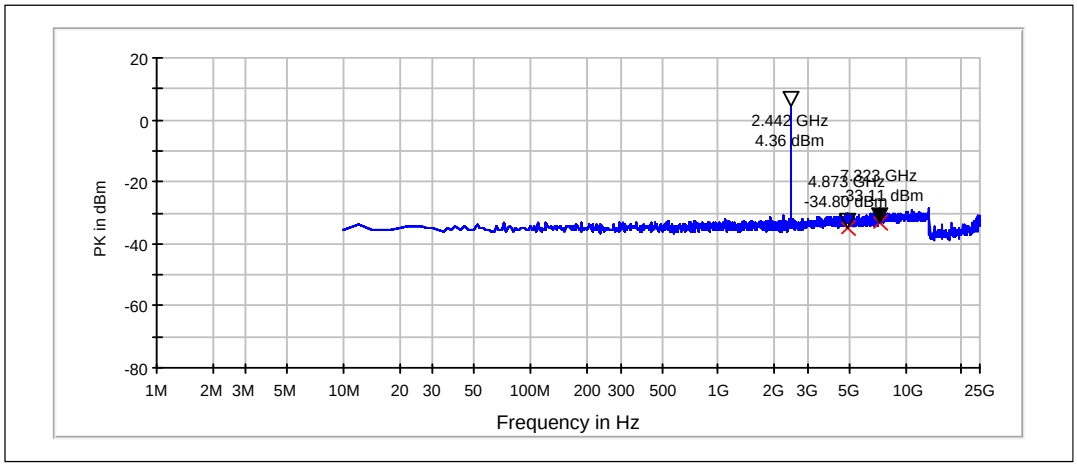
Channel 0 / 2402 MHz



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

Frequency [MHz]	P [dBc]	Result
4822.000	-35.62	PASSED
7239.000	-35.30	PASSED

Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4873.200	-34.80	PASSED
7323.000	-33.11	PASSED

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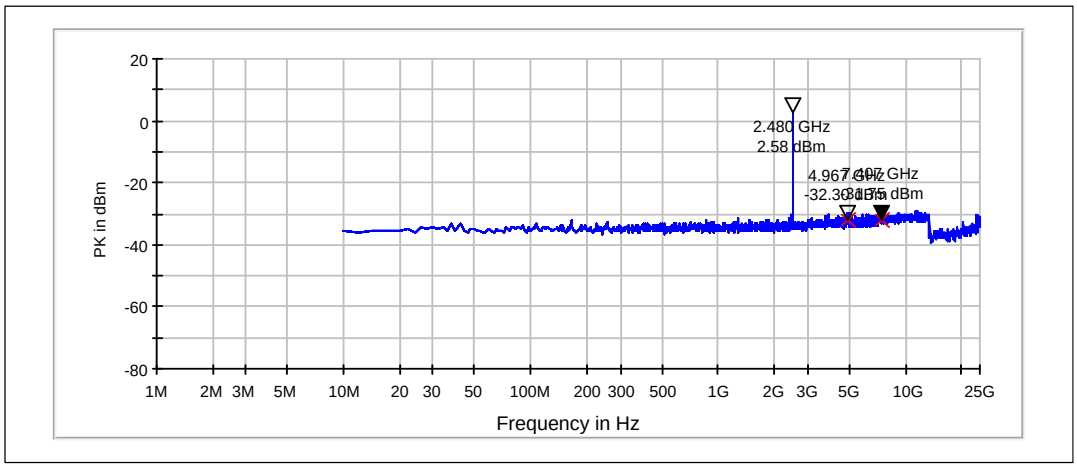
Channel 78 / 2480 MHz

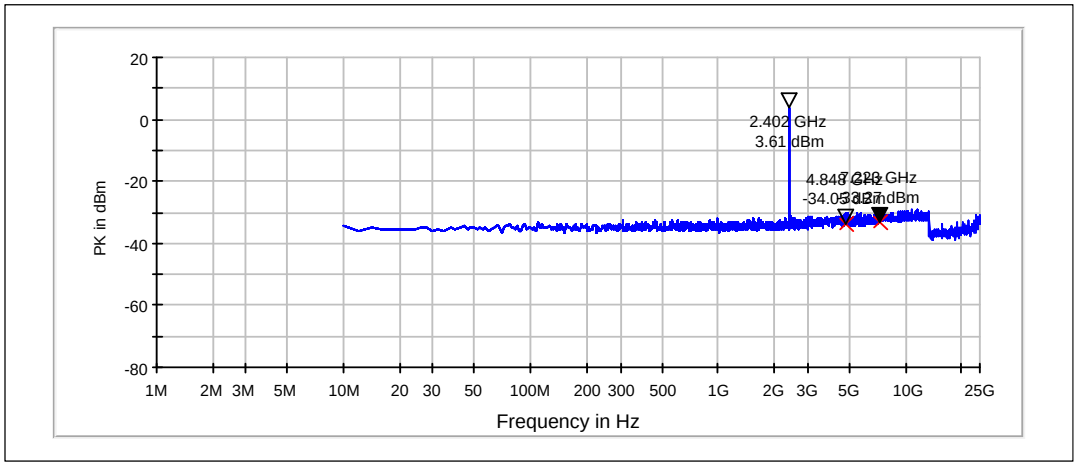


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4967.200	-32.30	PASSED
7407.000	-31.75	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
4847.600	-34.05	PASSED
7222.800	-33.27	PASSED

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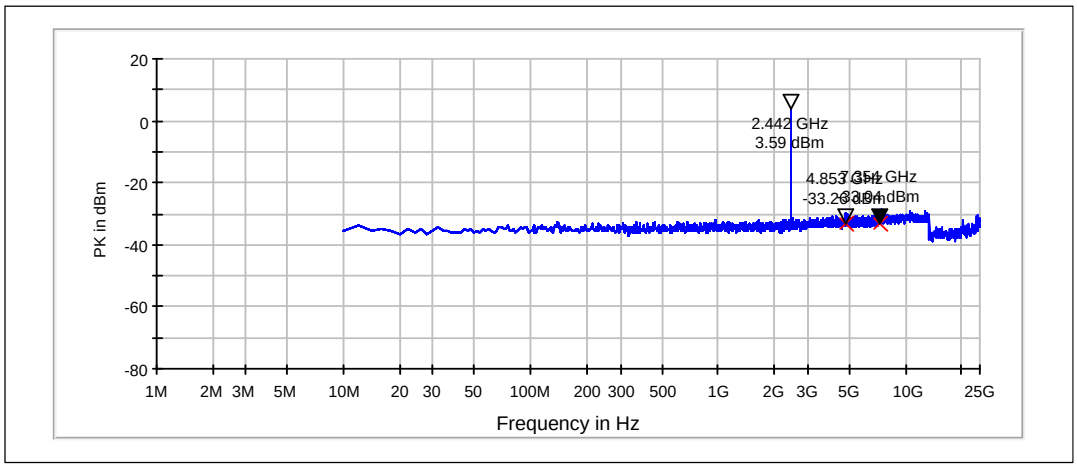
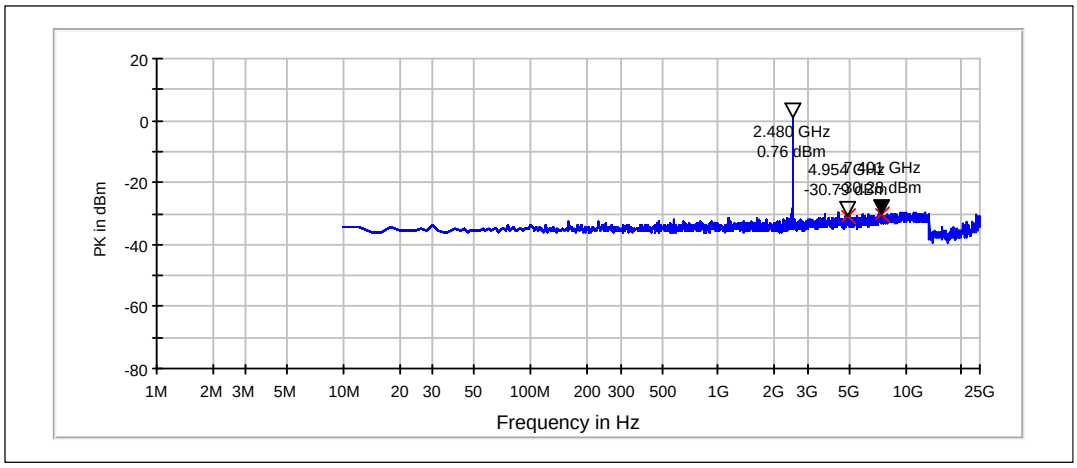
Channel 40 / 2442 MHz



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

Frequency [MHz]	P [dBc]	Result
4852.800	-33.26	PASSED
7354.200	-33.04	PASSED

Channel 78 / 2480 MHz



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

Frequency [MHz]	P [dBc]	Result
4954.000	-30.79	PASSED
7401.000	-30.28	PASSED

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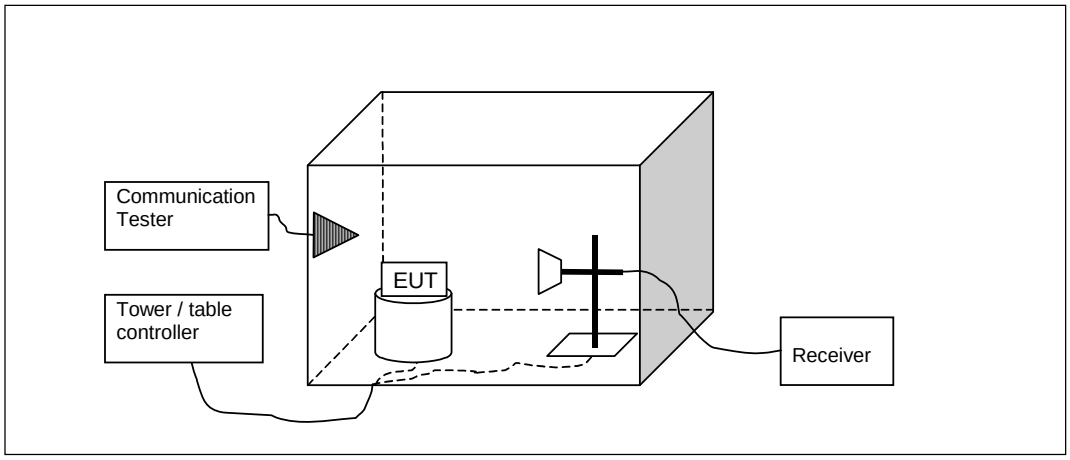
5. Spurious radiated emissions
(FCC §15.247(d), §15.209, RSS-210 A8.5)

EUT with DUT number	RM-941, DUT 53350
Accessories with DUT numbers	BP-4GWA, DUT 53351 ; AC-20U, DUT 53340 ; WH-108, DUT 53343
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/43/100.1
Date of measurements	21-May-2013
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.

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The measurement results are obtained as described below:

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

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

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

Frequency range [MHz]	Limit [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 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]	Margin	Limit [dBµV/m]	Results
4803.4	45.58	190.02	44.28	1.3	28.4	74	PASSED
7207.4	48.89	278.292	38.87	10.02	76.3	125	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Margin	Limit [dBµV/m]	Results
4803.4	32.91	44.213	31.61	1.3	21.1	54	PASSED
7207.4	35.97	62.885	25.95	10.02	---	---	PASSED

Channel 40 / 2442 MHz

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Margin	Limit [dBµV/m]	Results
11188.381	55.08	567.414	39.12	15.96	18.9	74	PASSED
11538.575	56.45	664.584	39.97	16.48	17.5	74	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Margin	Limit [dBµV/m]	Results
31.86	26.01	19.98	34.45	-8.44	14	40	PASSED
31.98	31.79	38.855	40.31	-8.52	8.2	40	PASSED
32.068	30.13	32.089	38.71	-8.58	9.9	40	PASSED
35.392	24.84	17.452	35.54	-10.7	15.2	40	PASSED
38.949	23.69	15.29	36.48	-12.79	16.3	40	PASSED
870.633	32.99	44.612	37.46	-4.47	13	46	PASSED
955.324	35.49	59.498	38.99	-3.5	10.5	46	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Margin	Limit [dBµV/m]	Results
11188.381	42.58	134.54	26.62	15.96	11.4	54	PASSED
11538.575	43.33	146.656	26.85	16.48	10.7	54	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]	Margin	Limit [dBµV/m]	Results
4959.6	44.25	163.174	42.67	1.58	29.7	74	PASSED
7439	49.42	295.767	39.12	10.3	24.6	74	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Margin	Limit [dBµV/m]	Results
4959.6	31.31	36.762	29.73	1.58	22.7	54	PASSED
7439	36.32	65.464	26.02	10.3	17.7	54	PASSED

5.3.2 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]	Margin	Limit [dBµV/m]	Results
4803.9	46.44	209.942	45.16	1.28	27.5	74	PASSED
7206.8	48.63	269.96	38.62	10.01	76.6	125	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Margin	Limit [dBµV/m]	Results
4803.9	34.09	50.652	32.81	1.28	19.9	54	PASSED
7206.8	35.96	62.835	25.95	10.01	---	---	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]	Margin	Limit [dBµV/m]	Results
31.74	34.97	56.027	43.34	-8.37	5	40	PASSED
31.95	32.84	43.828	41.34	-8.5	7.2	40	PASSED
35.422	31.33	36.868	42.05	-10.72	8.7	40	PASSED
35.578	26.11	20.209	36.92	-10.81	13.9	40	PASSED
35.776	27.54	23.826	38.47	-10.93	12.5	40	PASSED
39.129	22.17	12.838	35.06	-12.89	17.8	40	PASSED
206.664	21.28	11.582	40.76	-19.48	22.2	44	PASSED
870.633	33.07	45.014	37.54	-4.47	13	46	PASSED
944.471	30.87	34.97	34.53	-3.66	15.1	46	PASSED
955.324	35.68	60.835	39.18	-3.5	10.3	46	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]	Margin	Limit [dBµV/m]	Results
4958	42.69	136.301	41.08	1.61	31.3	74	PASSED
7440.9	48.92	279.126	38.62	10.3	25.1	74	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Margin	Limit [dBµV/m]	Results
4958	29.93	31.376	28.32	1.61	24	54	PASSED
7440.9	36.07	63.577	25.77	10.3	17.9	54	PASSED

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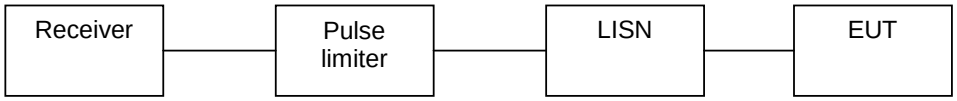
6. AC powerline conducted emissions

FCC §15.207, RSS-GEN 7.2.2

EUT with DUT number	RM-941, DUT 53347
Accessories with DUT numbers	BP-4GWA, DUT 53353 ; AC-20U, DUT 53339 ; WH-108, DUT 53341
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	25/43/100.7
Date of measurements	17-May-2013
Measured by	Gao Sherina

6.1. Test Setup



6.2. Test method and limit

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

The EUT is placed on a wooden table 80 cm above the reference groundplane.

The EUT is connected via LISN to a test power supply.

The measurement results are obtained as described below:

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

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

CISPR 22 Class B limits

Frequency range [MHz]	Quasi peak limit [dBµV]	Average limit [dBµV]
0.15 - 0.5	66 - 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

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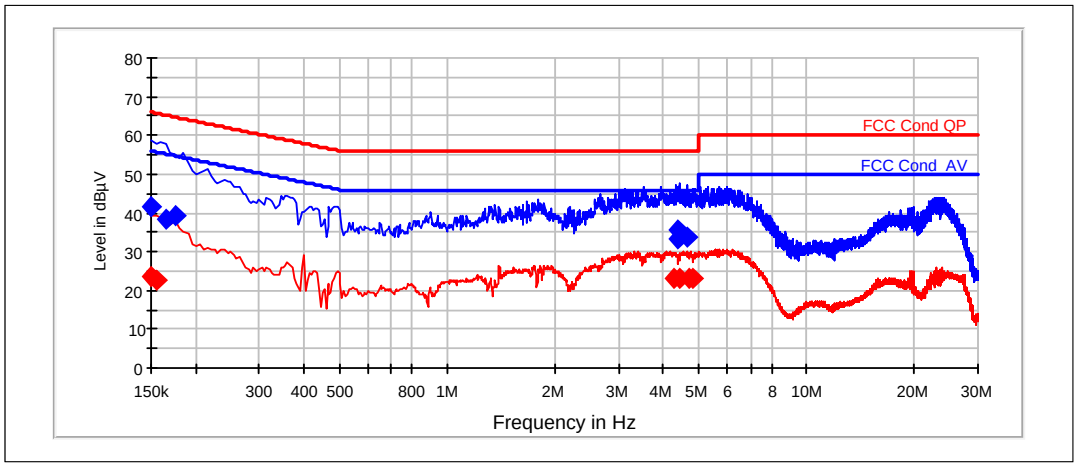
6.3. Bluetooth Test results

6.3.1 GFSK modulation, PRBS packet type

Channel 40 / 2442 MHz



QuasiPeak (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.15	41.68	N	PASSED
0.165	38.6	L1	PASSED
0.175	39.09	L1	PASSED
4.385	35.5	L1	PASSED
4.39	33.4	N	PASSED
4.675	33.97	L1	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.15	23.79	L1	PASSED
0.155	22.87	L1	PASSED
4.255	23.23	L1	PASSED
4.43	23.17	L1	PASSED
4.725	23.09	L1	PASSED
4.805	23.3	L1	PASSED

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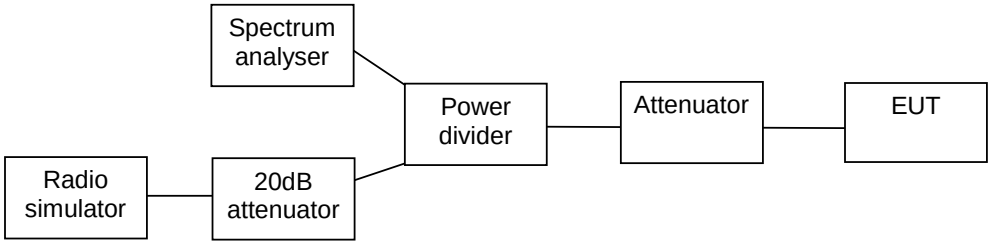
7. 20 dB bandwidth

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

EUT with DUT number	RM-941, DUT 53377
Accessories with DUT numbers	Dummy battery, DUT 53378; WH-108, DUT 53379
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/42/100.7
Date of measurements	22-May-2013
Measured by	Gao Sherina

7.1. Test Setup



7.2. Test method and limit

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

Limits for 20 dB bandwidth measurements

Limit [MHz]
N/A

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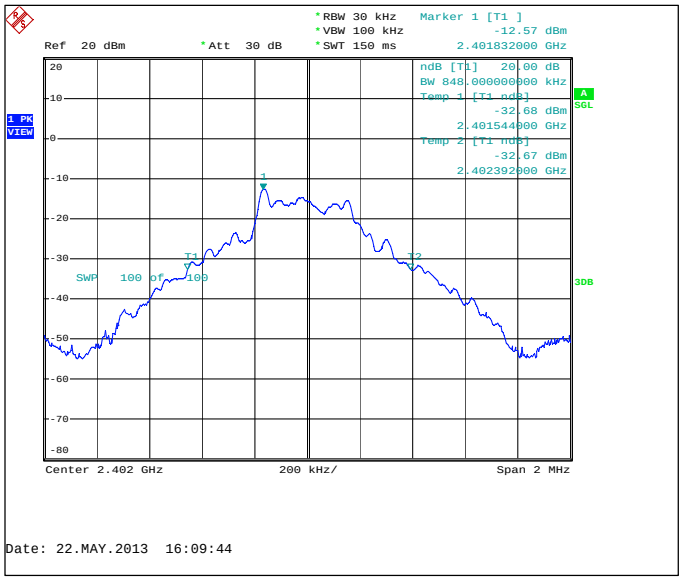
7.3. Bluetooth Test results

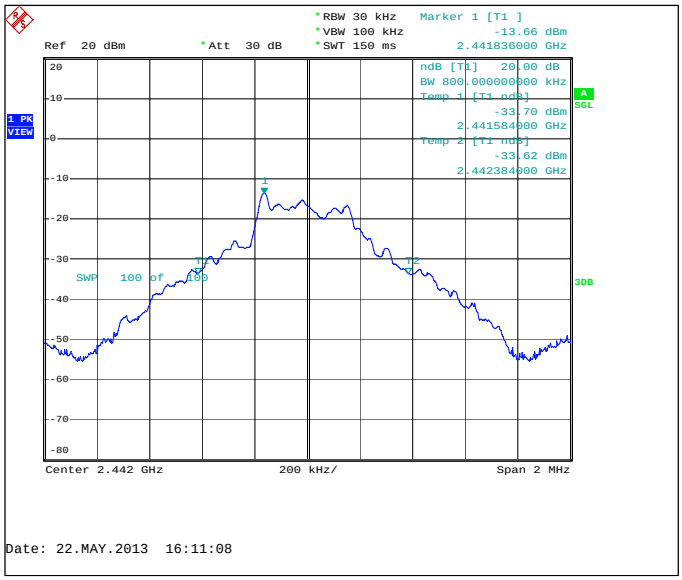
7.3.1 GFSK modulation, PRBS packet type

Channel / f_C [MHz]	20 dB bandwidth [kHz]
0 / 2402	848
40 / 2442	800
78 / 2480	796

Channel 0 / 2402 MHz



Channel 40 / 2442 MHz



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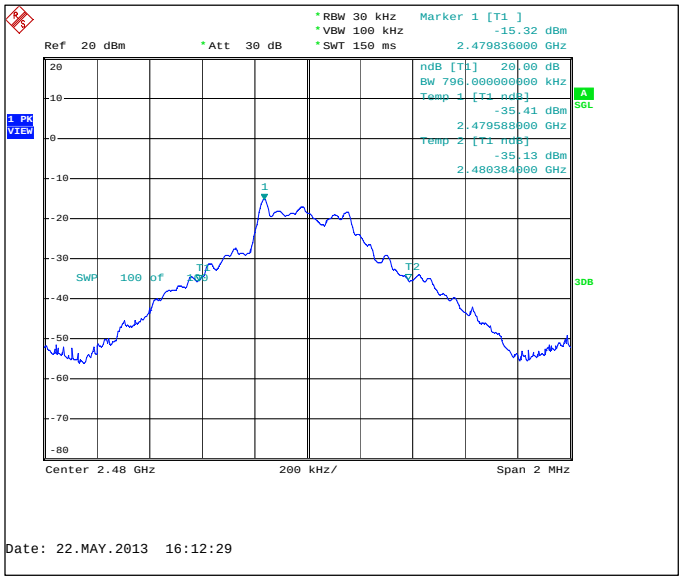
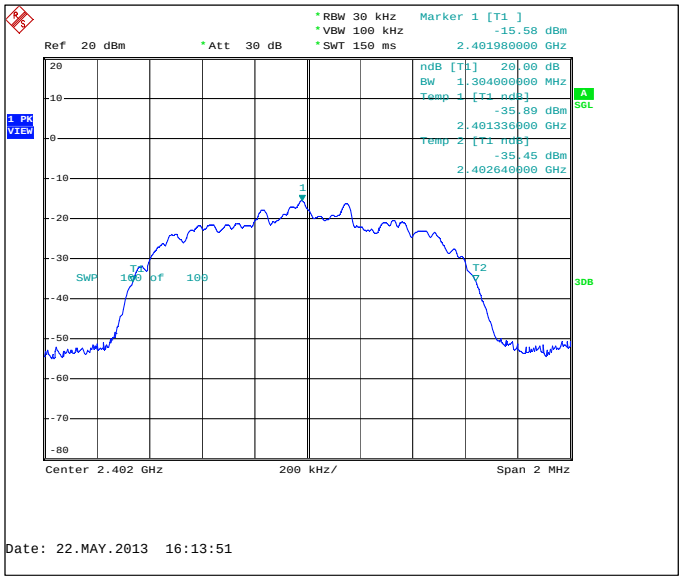
Channel 78 / 2480 MHz



7.3.2 8DPSK modulation, PRBS packet type

Channel / f_C [MHz]	20 dB bandwidth [kHz]
0 / 2402	1304
40 / 2442	1308
78 / 2480	1308

Channel 0 / 2402 MHz



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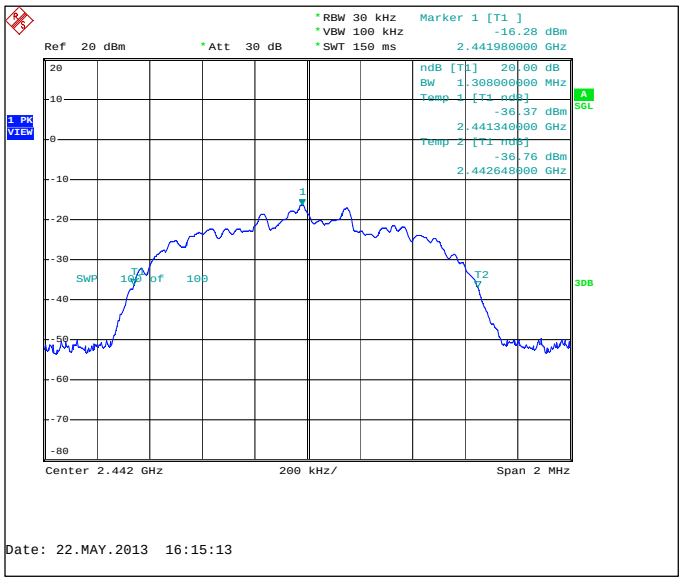
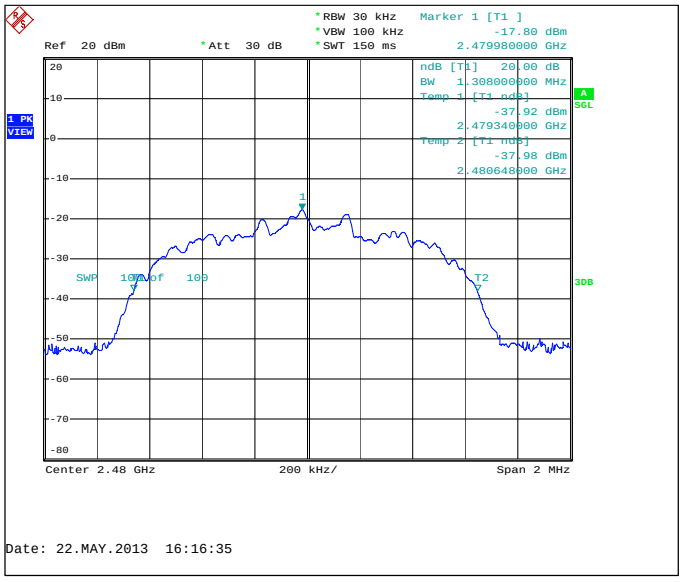
Channel 40 / 2442 MHz



Channel 78 / 2480 MHz



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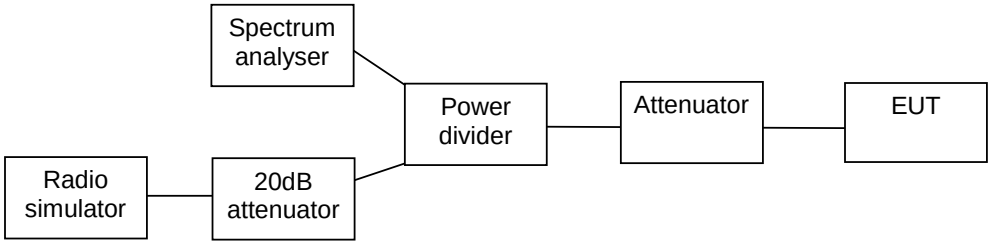
8. Carrier frequency separation

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

EUT with DUT number	RM-941, DUT 53377
Accessories with DUT numbers	Dummy battery, DUT 53378; WH-108, DUT 53379
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/42/100.7
Date of measurements	22-May-2013
Measured by	Gao Sherina

8.1. Test Setup



8.2. Test method and limit

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

Limits for carrier frequency separation measurements

Limit [MHz]
>= 0.025 or 2/3 of the 20 dB bandwidth

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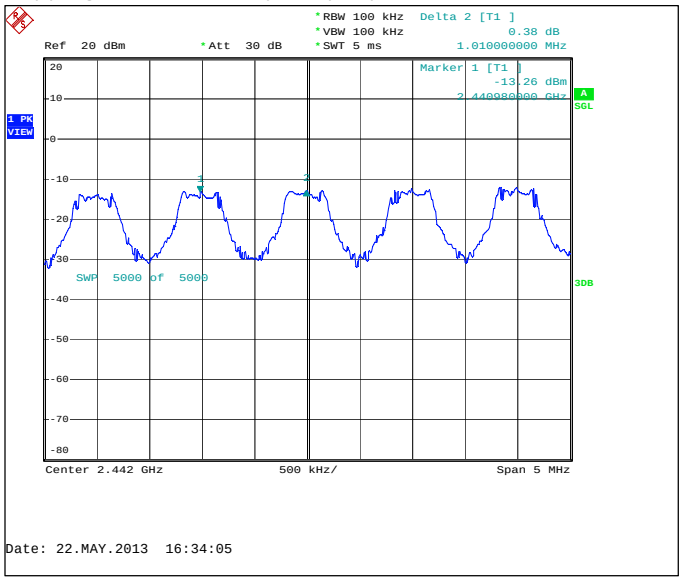
8.3. Bluetooth Test results

8.3.1 GFSK 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



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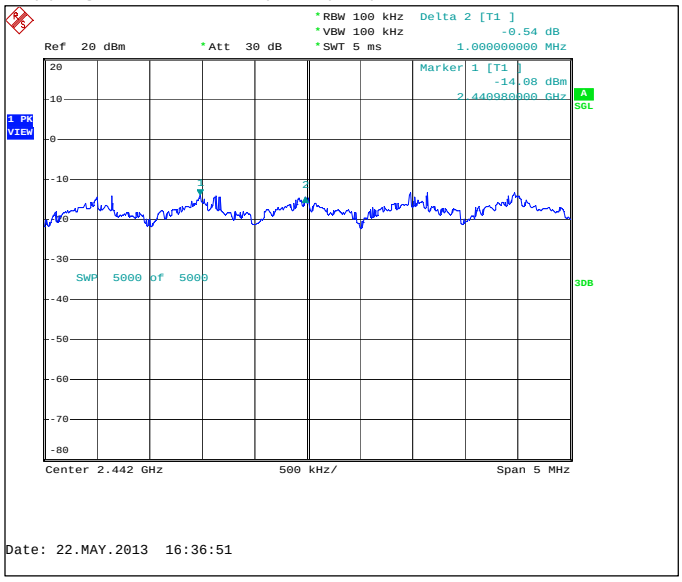
8.3.2 8DPSK modulation, PRBS packet type

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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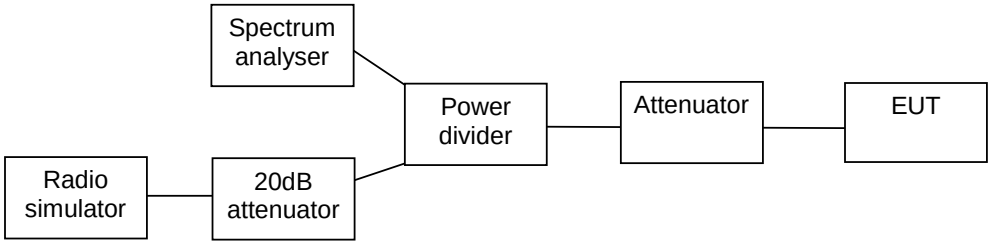
9. Number of hopping frequencies

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

EUT with DUT number	RM-941, DUT 53377
Accessories with DUT numbers	Dummy battery, DUT 53378; WH-108, DUT 53379
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/42/100.7
Date of measurements	22-May-2013
Measured by	Gao Sherina

9.1. Test Setup



9.2. Test method and limit

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

Limits for number of hopping frequencies measurements

Limit [number]
>= 15

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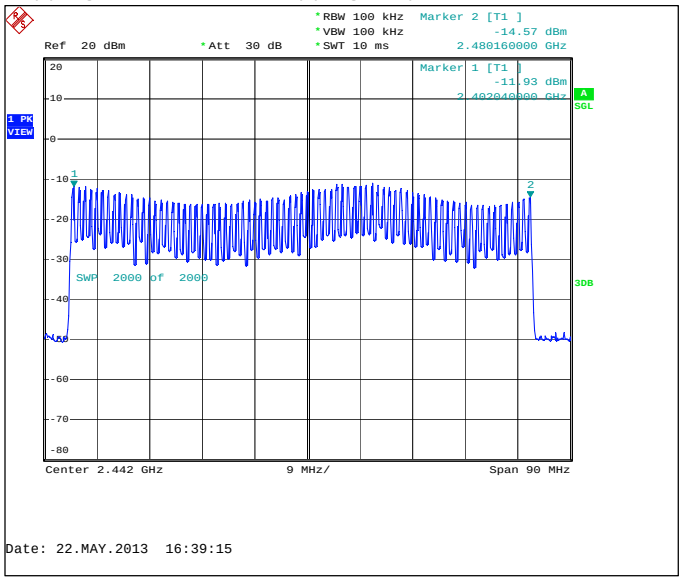
9.3. Bluetooth Test results

9.3.1 GFSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
78	PASSED

Hopping on, number of hopping frequencies



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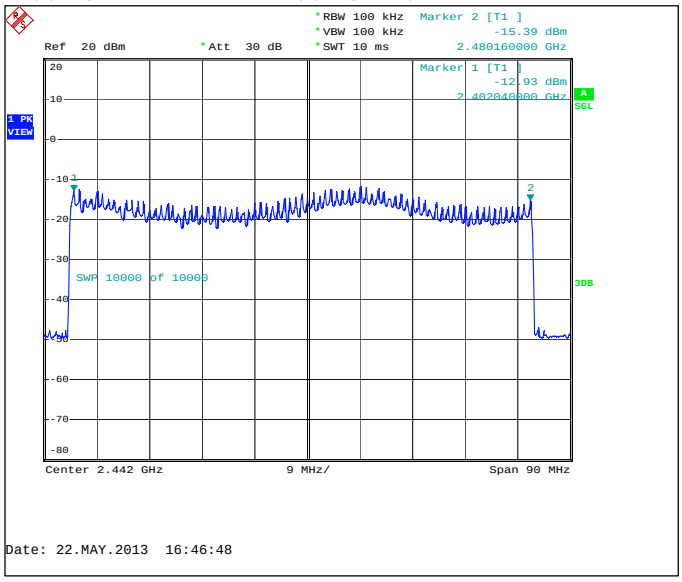
9.3.2 8DPSK modulation, PRBS packet type

Measured number of hopping frequencies	Result
78	PASSED

Hopping on, number of hopping frequencies



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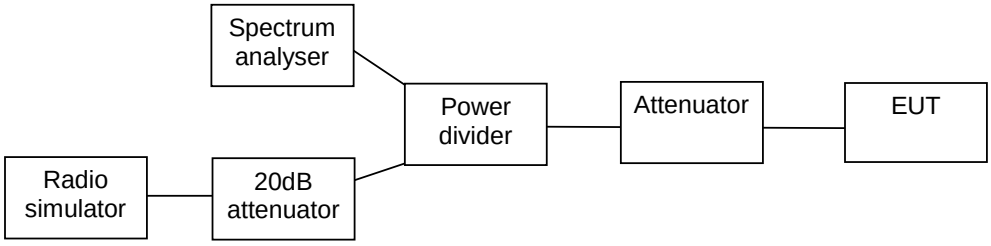
10. Time of occupancy

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

EUT with DUT number	RM-941, DUT 53377
Accessories with DUT numbers	Dummy battery, DUT 53378; WH-108, DUT 53379
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/42/100.7
Date of measurements	22-May-2013
Measured by	Gao Sherina

10.1. Test Setup



10.2. Test method and limit

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

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

Limits for time of occupancy measurements

Limit [s]
<= 0.4

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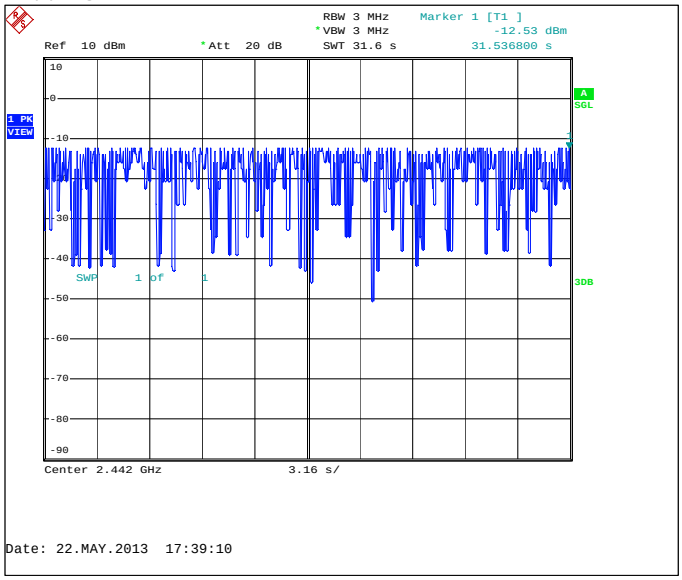
10.3. Bluetooth Test results

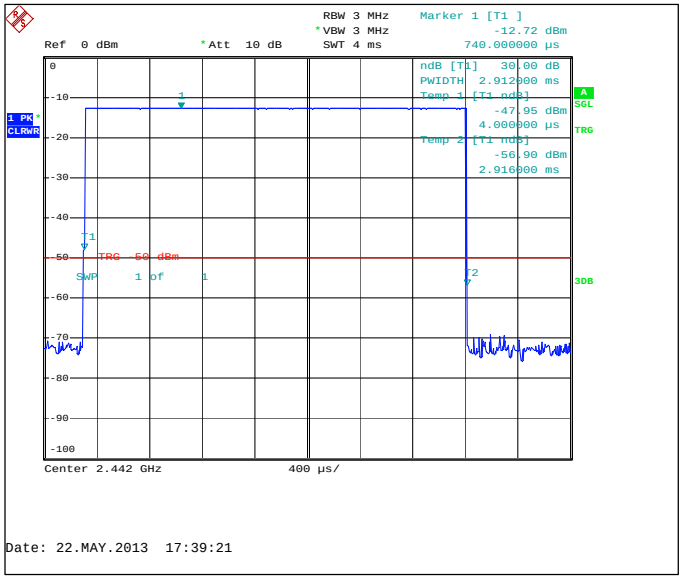
10.3.1 GFSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [ms]	Time of occupancy [s]	Result
100	2.912	0.291	PASSED

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



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



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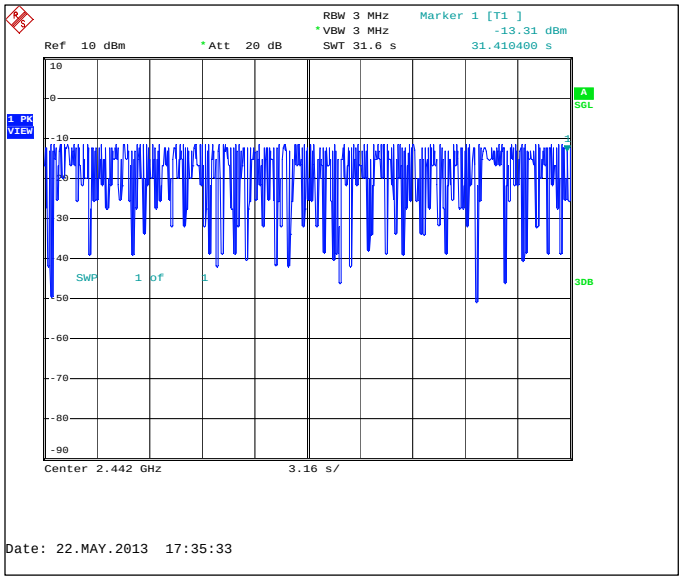
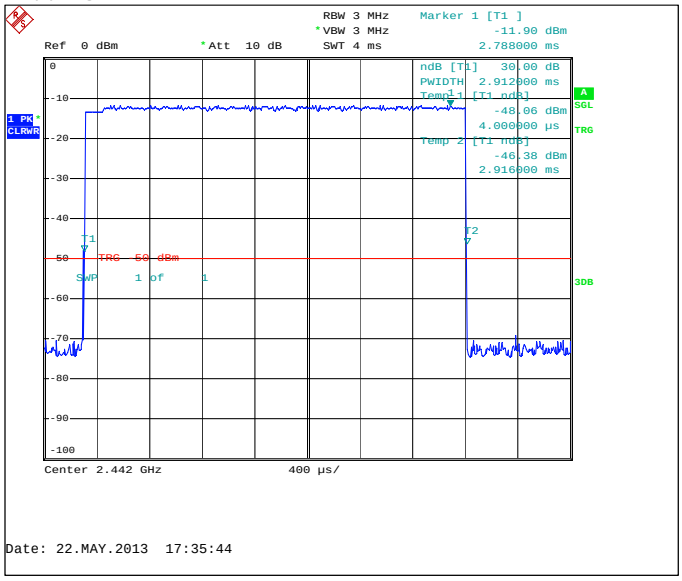
10.3.2 8DPSK modulation, PRBS packet type

Measured number of transmissions	Duration of one transmission [ms]	Time of occupancy [s]	Result
105	2.912	0.306	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	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
BJPCPT0069	LISN 50 µH	ESH3-Z5	R&S	15C,15B
BJPCPT0073	Signal Generator	SMR 20	R&S	22/24/27, 15C, 15B
BJPCPT0191	Pulse Limiter	ESH3-Z2	R&S	15C,15B
BJPCPT0208	UPS	PULSAR RX10	Merlin gerin	15C.15B
BJPCTC0001	DIGITAL CAMERA	PC1015	CANON	15C.15R
BJPCTC0017	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0062	AC Power source	6812B	Hp	15C.15B
BJPCTC0067	Bluetooth Tester	CBT	R&S	22/24/27, 15C
BJPCTC0082	Humidity and Temperature Sensor	175-H2	Testo	15B,15C
BJPCTC0088	Absolut pressure meter	testo 511	Testo	22/24/27, 15B,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
BJPCTC0112	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0114	Signal Generator	E8257C	Agilent	22/24/27, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C
BJPCTC0127	AC Power source	SOYI-500VA	SOYI	15B 15C
BJPCTC0128	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0129	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0131	Communication tester	CMW500	R&S	22/24/27 15B 15C
BJPCTC0136	Communication antenna	JXTXLB-880-NF	A-INFOMW	15B 15C
BJPCTC0306	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0305	GPIB converter	GPIB-RS232	NI	22/24/27, 15C
BJPCTC0304	Spectrum Analyser	FSV30	R&S	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	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
BJPCPT0208	UPS	PULSAR RX10	Merlin gerin	15C.15B
BJPCTC0001	DIGITAL CAMERA	PC1015	CANON	15C.15R
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
BJPCTC0062	AC Power source	6812B	Hp	15C.15B
BJPCTC0064	Band Reject Filter	WRCG1877/1883-1870/1890-40/6SS	Wainwright	24, 15B

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Eq. No	Equipment	Type	Manufacturer	Used in
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
BJPCTC0081	Humidity and Temperature Sensor	175-H2	Testo	15B, 15C
BJPCTC0088	Absolut pressure meter	testo 511	Testo	22/24/27, 15B,15C
BJPCTC0096	Preamplifier	AFS4-00100300-20-23P-6	Miteq	22/24/27, 15C, 15B
BJPCTC0113	Receiver	ESI B26	R&S	22/24/27, 15B, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C
BJPCTC0124	Attenuator	SA18N200W-40	Fairview Microwave	-
BJPCTC0125	Loop Antenna	HFH2-Z2	R&S	15C
BJPCTC0126	Tripod	FHU-Z	R&S	15C
BJPCTC0128	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0129	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0131	Communication tester	CMW500	R&S	22/24/27 15B 15C
BJPCTC0133	Open Swith and contril unit	OSP 150	R&S	15B,15C
BJPCTC0134	Open Swith and contril unit	OSP 150	R&S	15B,15C
BJPCTC0135	Open Swith and contril unit	OSP 130	R&S	15B,15C
BJPCTC0136	Communication antenna	JXTXLB-880-NF	A-INFOMW	15B 15C

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