

FCC Part 15C Compliance Test Report

Test Report no.:	Cph_FCC_0633_10.doc	Date of Report:	25-08-2006
Number of pages:	21	Customer's Contact person:	Ole Sørensen
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FCC listing no.:	99059		
IC recognition no.:	4820 and 4820-1		
Tested devices/ accessories:	Phone; RM-140 (HW 0330) & Battery; BP-5M & Headset; HS-60 & AC Charger; AC-3E		
FCC ID:	QTKRM-140	IC:	661AD-RM140
Supplement reports:			
Testing has been carried out in accordance with:	CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), IC standards RSS-GEN and RSS-210. 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:			

Niels Christian Andersen, Engineer

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	31-07-2006
Testing completed	15-08-2006
The customer's contact person	Ole Sørensen
Test Plan referred to	\\EMC\\TESTPLAN\\
Notes	None
Document name	T:\\Projects\\RM-140\\EMC\\Results\\FCC\\Cph_FCC_0633_10.doc

1.1. EUT and Accessory Information

The EUT is a quadri band (GSM900/1800/1900 and WCDMA2100) mobile phone with GPRS, EGPRS and Bluetooth. Bluetooth is tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-140	004400/97/170381/2	0330	-	Vp03.14	29074
Battery	BP-5M	393213N172110102527;0670509	-	-	-	29075
Headset	HS-60	-	-	-	-	29077
AC Charger	AC-3E	1103336133141301706;0675370	-	-	-	29076

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)	Peak output power	NP
15.247(c)	A8.5	Band edge compliance of RF emissions	Passed
15.247(c)	A8.5	Spurious RF conducted emissions	NP
15.247(c), 15.209	A8.5	Spurious radiated emissions	Passed
15.207	7.2.2	AC powerline conducted emissions	NP
15.247(a)(1)	A8.1 (1)	20 dB bandwidth	NP
15.247(a)(1)	A8.1 (2)	Carrier frequency separation	NP
15.247(a)(1)(iii)	A8.1 (4)	Number of hopping frequencies	NP
15.247(a)(1)(iii)	A8.1 (4)	Time of occupancy	NP

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.

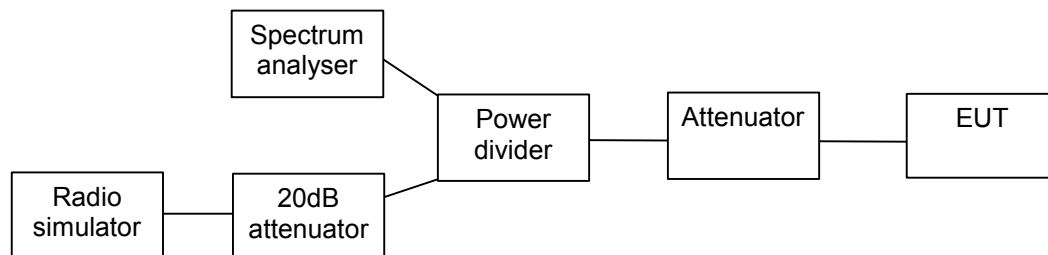
The test was not performed by the TCC Nokia Copenhagen Laboratory.

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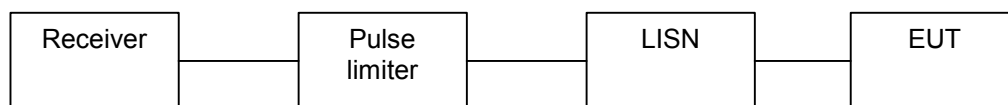
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2. Test setups

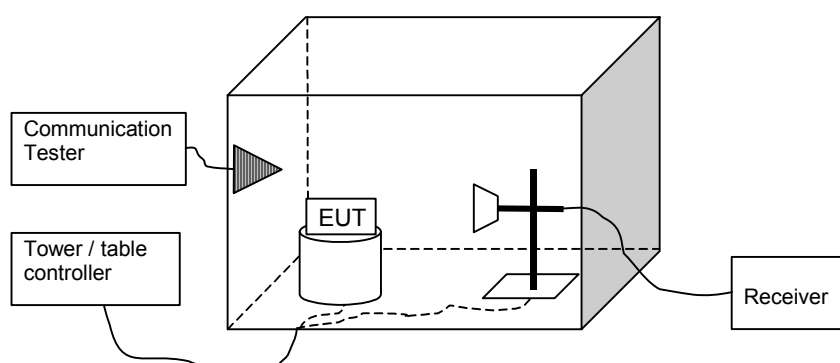
2.1. Conducted RF test setup



2.2. AC powerline conducted emissions test setup



2.3. Spurious radiated emissions test setup



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

EUT with DUT number	RM-156 Dut#29074
Accessories with DUT numbers	BP-5M Dut#29075
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	23 / 53 / 1023
Date of measurements	15-08-2006
Measured by	Christian Andersen

3.1. Test method and limit

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210.

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

3.2. Bluetooth Test results

3.2.1 Phone flip open

3.2.2 GFSK modulation, PRBS packet type

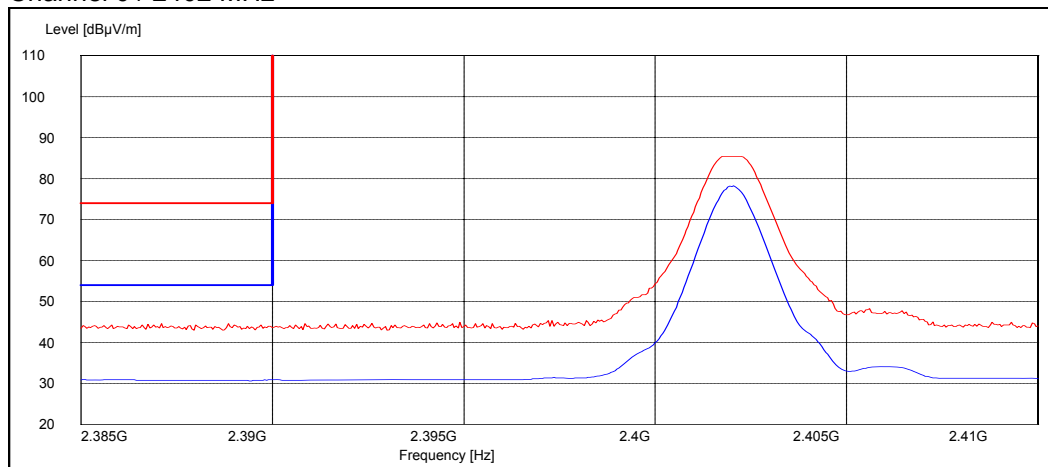
Average (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
0 / 2402	30.90	Passed
78 / 2480	33.23	Passed
Hopping on, low end	30.65	Passed
Hopping on, high end	32.03	Passed

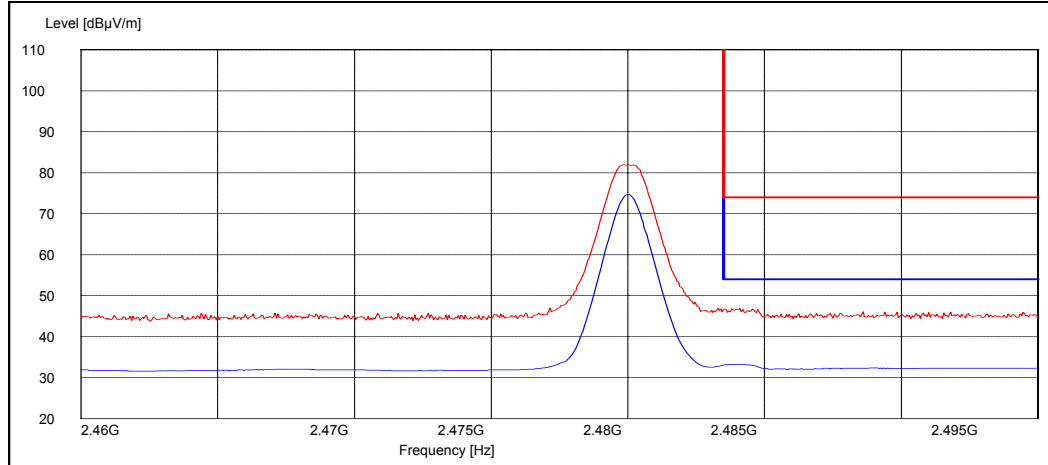
Peak (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
0 / 2402	44.01	Passed
78 / 2480	46.91	Passed
Hopping on, low end	44.83	Passed
Hopping on, high end	57.72	Passed

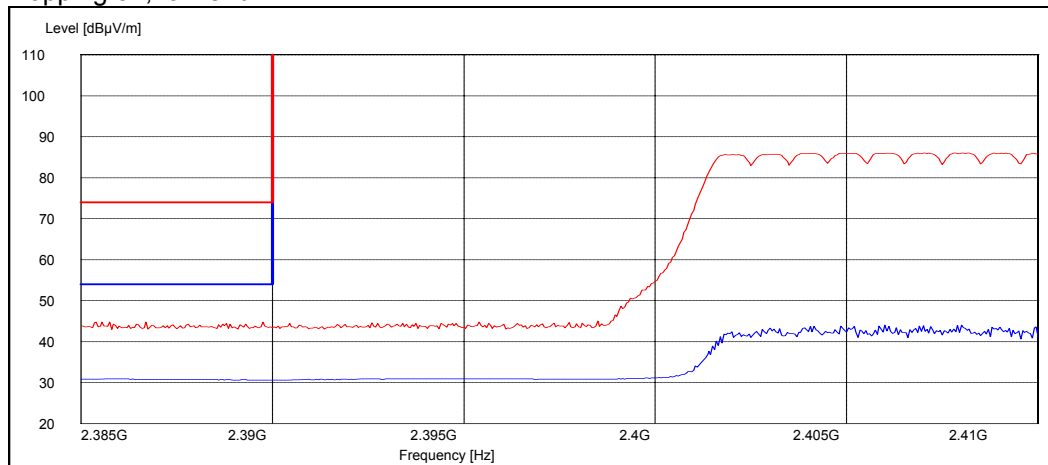
Channel 0 / 2402 MHz



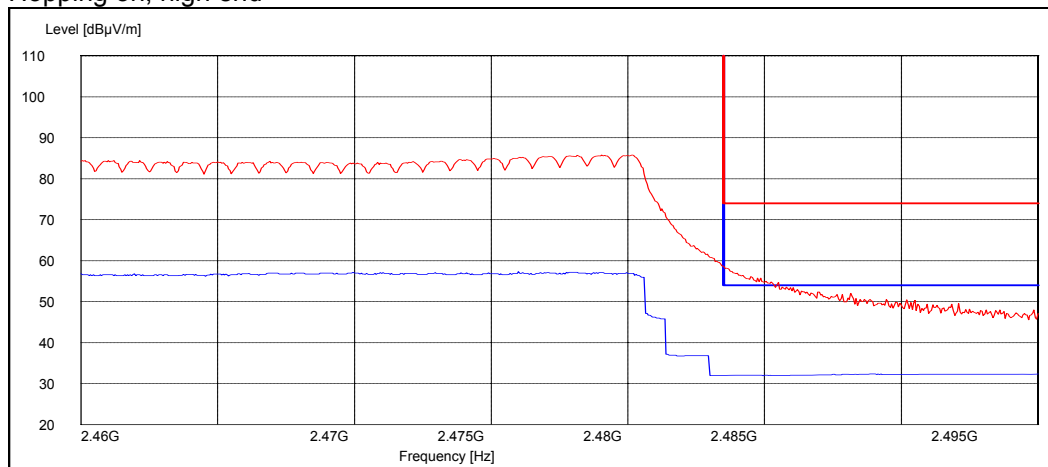
Channel 78 / 2480 MHz



Hopping on, low end



Hopping on, high end



3.2.2.1 8DPSK modulation, PRBS packet type

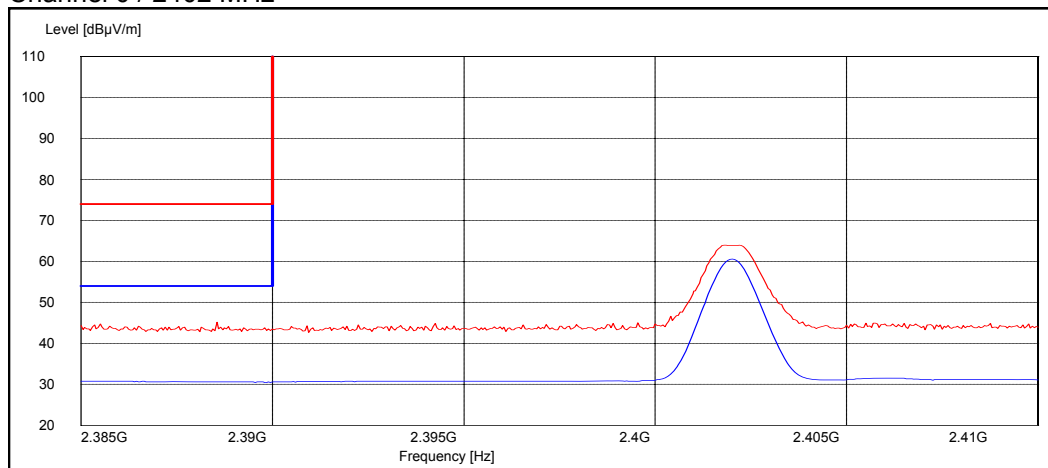
Average (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
0 / 2402	30.66	Passed
78 / 2480	32.16	Passed
Hopping on, low end	30.65	Passed
Hopping on, high end	31.92	Passed

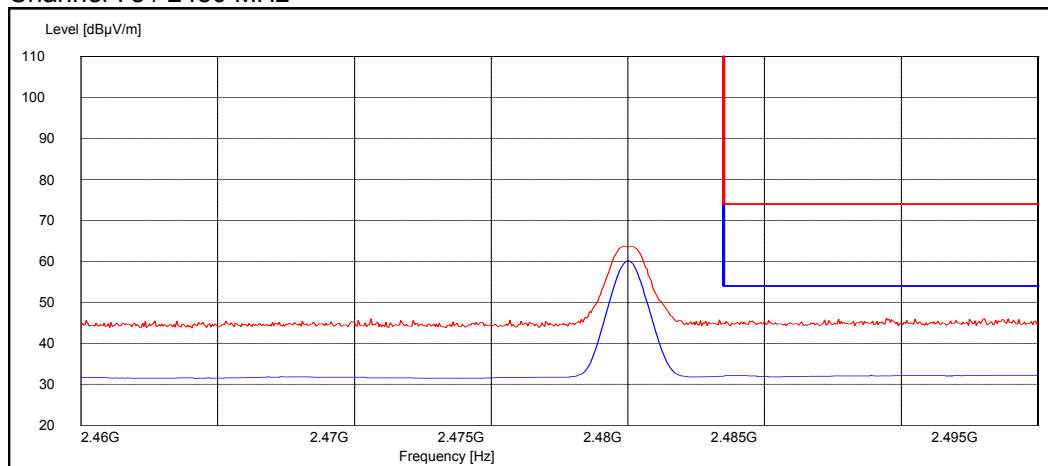
Peak (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
0 / 2402	45.20	Passed
78 / 2480	45.36	Passed
Hopping on, low end	44.63	Passed
Hopping on, high end	46.17	Passed

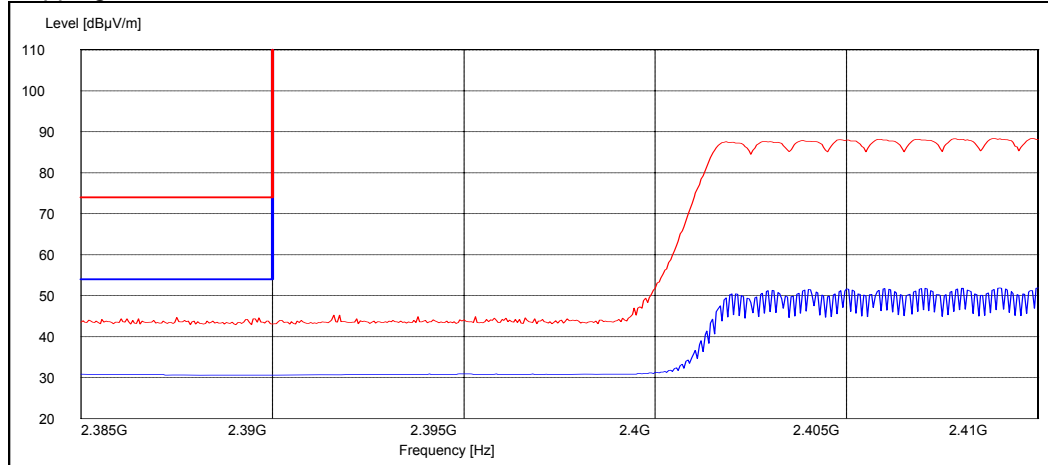
Channel 0 / 2402 MHz



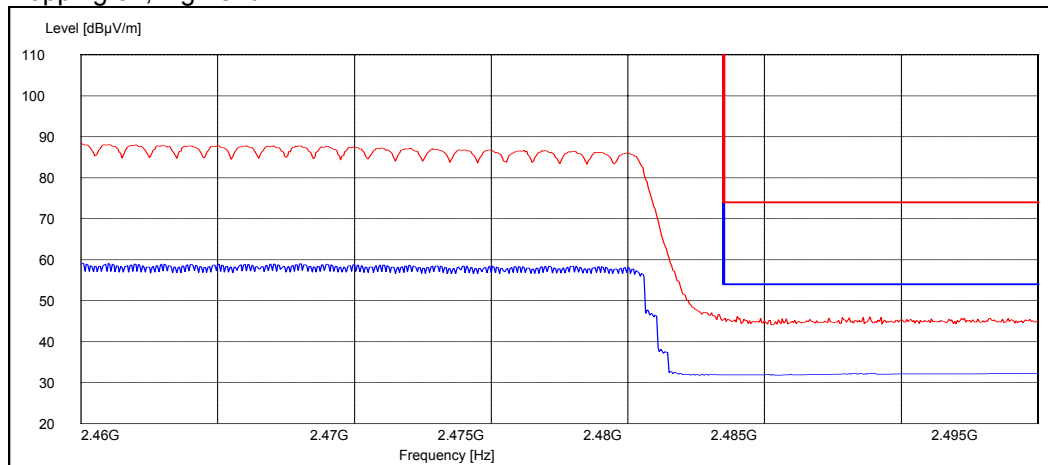
Channel 78 / 2480 MHz



Hopping on, low end



Hopping on, high end



3.2.3 Phone flip closed

3.2.4 GFSK modulation, PRBS packet type

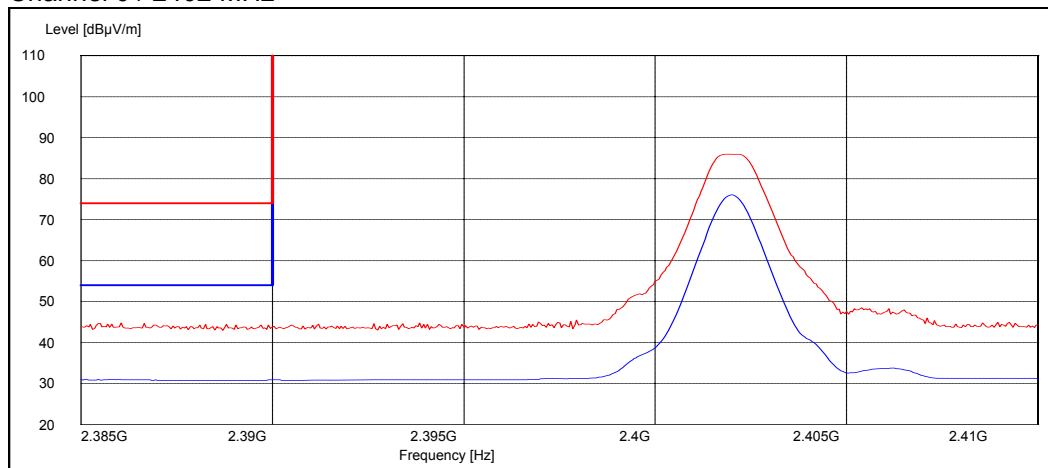
Average (RBW: 1 MHz)

Channel / f_c [MHz]	E [dBμV/m]	Result
0 / 2402	30.90	Passed
78 / 2480	32.76	Passed
Hopping on, low end	30.78	Passed
Hopping on, high end	32.04	Passed

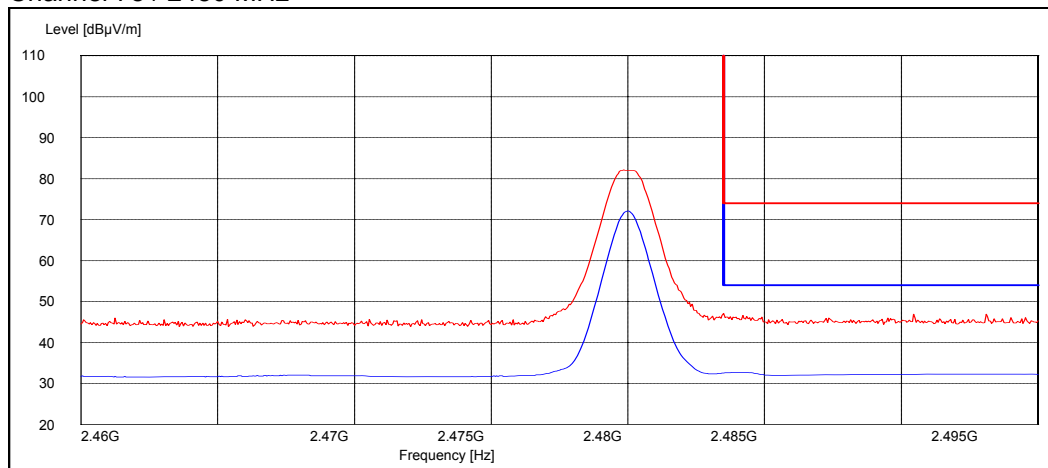
Peak (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
0 / 2402	44.29	Passed
78 / 2480	47.16	Passed
Hopping on, low end	44.42	Passed
Hopping on, high end	54.10	Passed

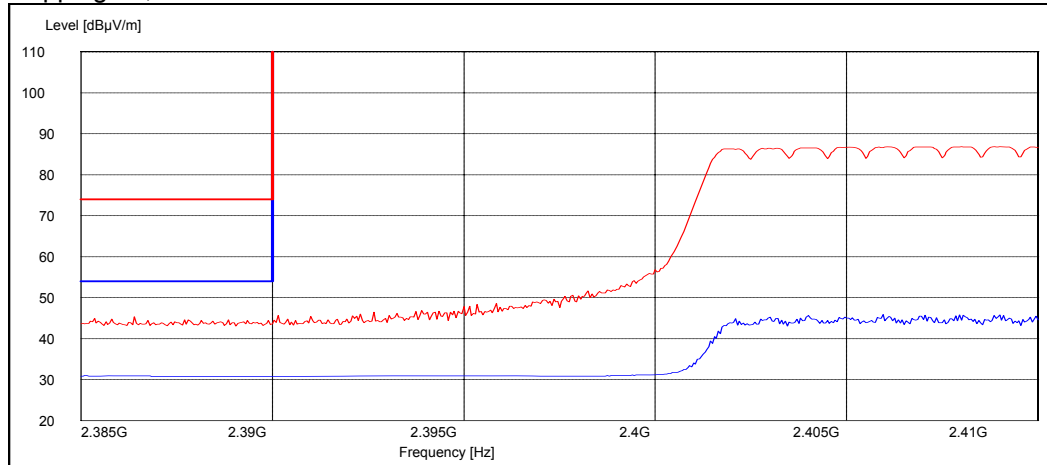
Channel 0 / 2402 MHz



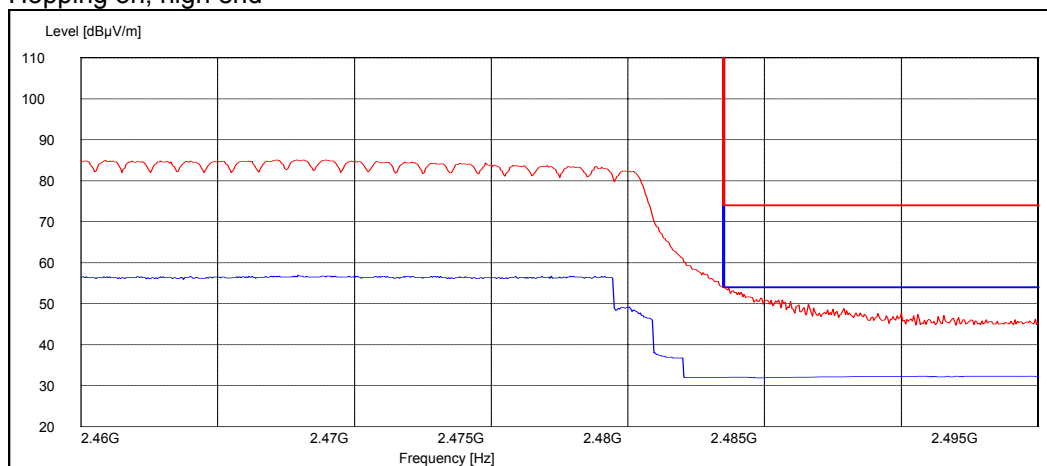
Channel 78 / 2480 MHz



Hopping on, low end



Hopping on, high end



3.2.4.1 8DPSK modulation, PRBS packet type

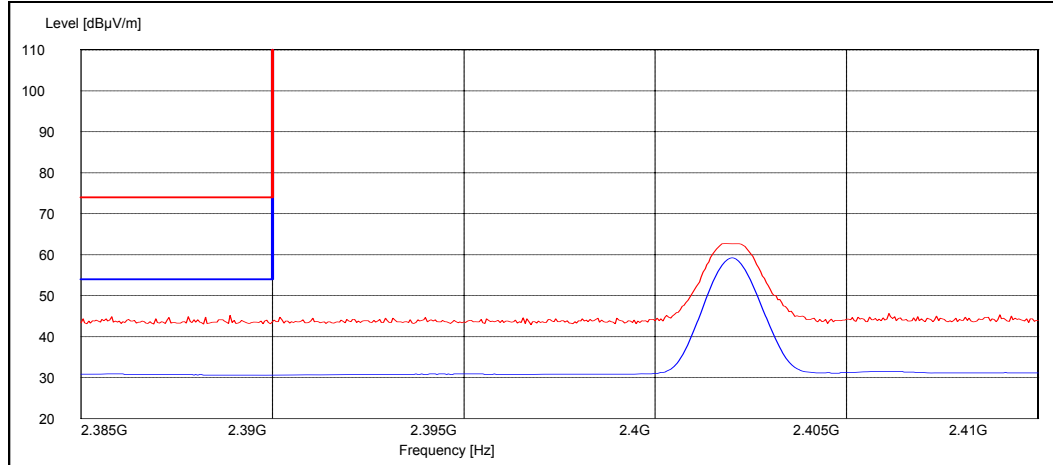
Average (RBW: 1 MHz)

Channel / f_c [MHz]	E [dBμV/m]	Result
0 / 2402	30.66	Passed
78 / 2480	31.41	Passed
Hopping on, low end	30.65	Passed
Hopping on, high end	31.90	Passed

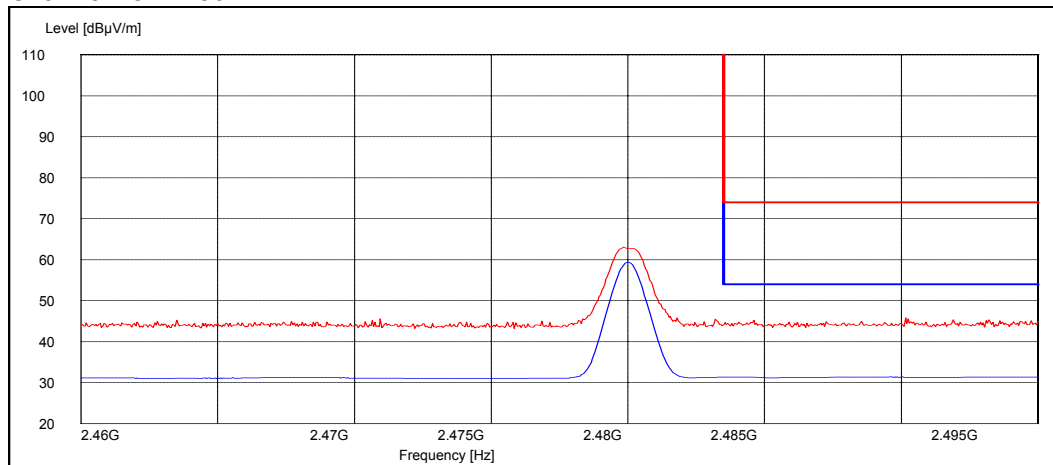
Peak (RBW: 1 MHz)

Channel / f_c [MHz]	E [dBμV/m]	Result
0 / 2402	45.19	Passed
78 / 2480	45.26	Passed
Hopping on, low end	44.36	Passed
Hopping on, high end	45.88	Passed

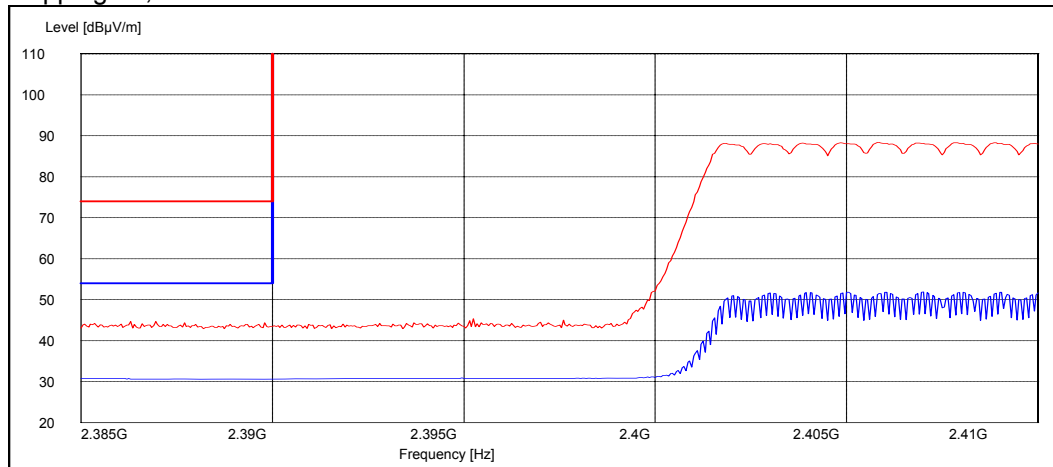
Channel 0 / 2402 MHz



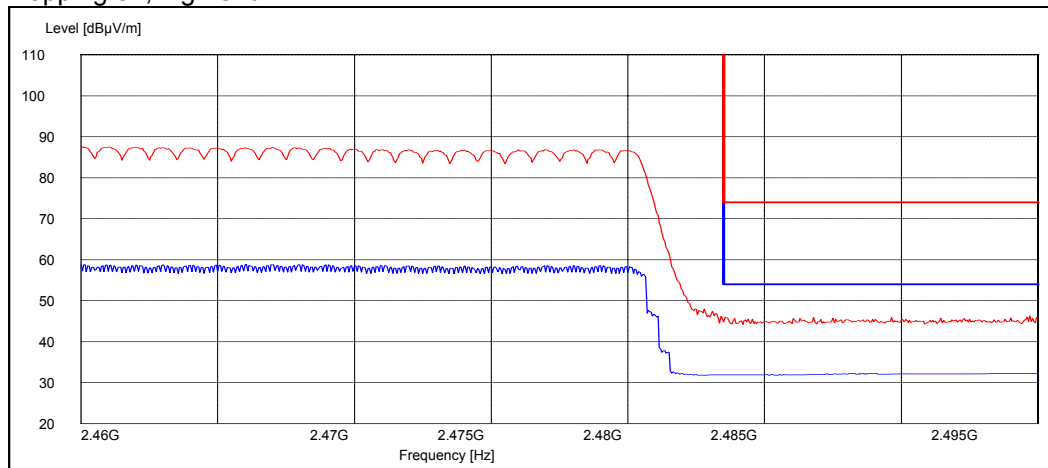
Channel 78 / 2480 MHz



Hopping on, low end



Hopping on, high end



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

EUT with DUT number	RM-156 Dut#29074
Accessories with DUT numbers	BP-5M Dut#29075, AC-3E Dut#29076, HS-60 Dut#29077
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	23 / 53 / 1023
Date of measurements	15-08-2006
Measured by	Christian Andersen

4.1. Test method and limit

The measurement is made according to FCC rules part 15.247 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 ($A_{TOT} = L_{CABLES} + AF - G_{PREAMP}$).

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

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

4.2. Bluetooth Test results

4.2.1 Phone flip open

4.2.1.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	45.50	188.36	47.50	-2.00	VERTICAL	Passed
7206.000000	42.40	131.83	38.20	4.20	HORIZONTAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	35.80	61.66	37.80	-2.00	VERTICAL	Passed
7206.000000	31.80	38.90	27.60	4.20	VERTICAL	Passed

Channel 40 / 2442 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
37.735872	22.90	13.96	40.80	-17.90	VERTICAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4883.767535	45.90	197.24	47.80	-1.90	VERTICAL	Passed
7325.651303	45.30	184.08	41.10	4.20	VERTICAL	Passed
17829.661323	57.10	716.14	32.40	24.70	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4883.767535	32.40	41.69	34.30	-1.90	VERTICAL	Passed
7325.651303	31.50	37.58	27.30	4.20	VERTICAL	Passed
17831.161323	44.10	160.32	19.40	24.70	VERTICAL	Passed

Channel 78 / 2480 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	47.00	223.87	48.60	-1.60	VERTICAL	Passed
7440.000000	43.80	154.88	38.90	4.90	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	37.20	72.44	38.80	-1.60	VERTICAL	Passed
7440.000000	32.40	41.69	27.50	4.90	VERTICAL	Passed

4.2.1.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	37.70	76.74	39.70	-2.00	VERTICAL	Passed
7206.000000	41.40	117.49	37.20	4.20	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	25.60	19.05	27.60	-2.00	VERTICAL	Passed
7206.000000	28.40	26.30	24.20	4.20	VERTICAL	Passed

Channel 40 / 2442 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
37.535872	22.60	13.49	40.30	-17.70	VERTICAL	Passed
127.575752	16.70	6.84	42.50	-25.80	VERTICAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4881.263527	37.30	73.28	39.30	-2.00	VERTICAL	Passed
4919.339679	37.90	78.52	39.40	-1.50	VERTICAL	Passed
7322.645291	42.10	127.35	37.90	4.20	VERTICAL	Passed
7417.827655	41.80	123.03	36.80	5.00	VERTICAL	Passed
7419.335671	41.80	123.03	36.90	4.90	VERTICAL	Passed
17871.239479	58.10	803.53	32.70	25.40	HORIZONTAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4881.763527	26.20	20.42	28.20	-2.00	VERTICAL	Passed
4920.839679	24.80	17.38	26.30	-1.50	VERTICAL	Passed
7322.645291	30.10	31.99	25.90	4.20	VERTICAL	Passed
7414.327655	29.00	28.18	23.90	5.10	VERTICAL	Passed
7415.335671	29.10	28.51	24.00	5.10	VERTICAL	Passed
17873.239479	44.90	175.79	19.50	25.40	HORIZONTAL	Passed

Channel 78 / 2480 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	39.00	89.13	40.60	-1.60	HORIZONTAL	Passed
7440.000000	40.80	109.65	35.90	4.90	HORIZONTAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	27.00	22.39	28.60	-1.60	VERTICAL	Passed
7440.000000	29.40	29.51	24.50	4.90	VERTICAL	Passed

4.2.2 Phone flip closed

4.2.2.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	44.60	169.82	46.60	-2.00	HORIZONTAL	Passed
7206.000000	42.40	131.83	38.20	4.20	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	23.70	15.31	25.70	-2.00	VERTICAL	Passed
7206.000000	26.70	21.63	22.50	4.20	VERTICAL	Passed

Channel 40 / 2442 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
37.595391	22.40	13.18	40.20	-17.80	VERTICAL	Passed
73.146092	18.70	8.61	46.00	-27.30	VERTICAL	Passed
242.685170	28.30	26.00	53.50	-25.20	VERTICAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4824.647295	36.30	65.31	38.50	-2.20	HORIZONTAL	Passed
4912.331663	45.10	179.89	46.80	-1.70	HORIZONTAL	Passed
7332.165331	41.10	113.50	36.70	4.40	VERTICAL	Passed
7414.833667	42.00	125.89	36.90	5.10	VERTICAL	Passed
7421.843687	41.90	124.45	37.00	4.90	VERTICAL	Passed
17884.269539	57.50	749.89	32.20	25.30	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4819.647295	23.40	14.79	25.60	-2.20	HORIZONTAL	Passed
4911.831663	24.10	16.03	25.80	-1.70	HORIZONTAL	Passed
7336.665331	28.00	25.12	23.50	4.50	VERTICAL	Passed
7418.333667	29.00	28.18	24.00	5.00	VERTICAL	Passed
7419.343687	29.00	28.18	24.10	4.90	VERTICAL	Passed
17886.269539	44.40	165.96	19.10	25.30	VERTICAL	Passed

Channel 78 / 2480 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	37.10	71.61	38.70	-1.60	HORIZONTAL	Passed
7440.000000	41.00	112.20	36.10	4.90	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	24.80	17.38	26.40	-1.60	VERTICAL	Passed
7440.000000	28.00	25.12	23.10	4.90	VERTICAL	Passed

4.2.2.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	37.10	71.61	39.10	-2.00	VERTICAL	Passed
7206.000000	41.40	117.49	37.20	4.20	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	25.50	18.84	27.50	-2.00	VERTICAL	Passed
7206.000000	28.90	27.86	24.70	4.20	VERTICAL	Passed

Channel 40 / 2442 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
37.835872	9.80	3.09	27.70	-17.90	VERTICAL	Passed
73.286573	16.70	6.84	44.00	-27.30	VERTICAL	Passed
74.269940	14.10	5.07	41.20	-27.10	VERTICAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4886.265531	36.80	69.18	38.70	-1.90	HORIZONTAL	Passed
4890.779559	36.30	65.31	38.20	-1.90	HORIZONTAL	Passed
7343.191383	41.30	116.14	36.60	4.70	VERTICAL	Passed
7419.341683	41.90	124.45	37.00	4.90	VERTICAL	Passed
17859.219439	57.60	758.58	32.50	25.10	HORIZONTAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4882.265531	24.70	17.18	26.70	-2.00	HORIZONTAL	Passed
4893.279559	23.80	15.49	25.70	-1.90	HORIZONTAL	Passed
7347.691383	27.90	24.83	23.00	4.90	VERTICAL	Passed
7423.341683	28.90	27.86	24.10	4.80	VERTICAL	Passed
17858.719439	44.70	171.79	19.60	25.10	HORIZONTAL	Passed

Channel 78 / 2480 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	39.00	89.13	40.60	-1.60	HORIZONTAL	Passed
7440.000000	43.20	144.54	38.30	4.90	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	26.70	21.63	28.30	-1.60	HORIZONTAL	Passed
7440.000000	29.50	29.85	24.60	4.90	VERTICAL	Passed

5. Test Equipment

5.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
13037	Power Supply 0-15V 10A	EA3012	LP Instruments	15B,15C
13513	Pulse Limiter 9KHz-30MHz	ESH3Z2	Rohde&Schwarz	15B,15C
13666	EMI Test Reciever 9KHz-2,5GHz	ESPC	Rohde&Schwarz	15B,15C
13935	Two Lines Artificial Mains Network	ESH3-Z5	Rohde&Schwarz	15B,15C
16995	Directional Coupler 20dB 0,5-2,0 GHz SMA Conn.	1538RA-20	Weinschel	15B,15C
18772	Shielded Chamber	RFD-100	ETS-Lindgren	15B,15C
19171	Universal Radio Communication Tester	CMU200	Rohde&Schwarz	15B,15C
11386	System DC Power Supply	HP6632A	Hewlett Packard	22.24
11487	Network analyzer 300KHz-3,0GHz	HP8753A	Hewlett Packard	22.24
11584	Spectrum analyzer 50Hz-6,5GHz	HP8561B	Hewlett Packard	22.24
13134	Tracking generator	HP85645A	Hewlett Packard	22.24
13302	Spectrum Analyzer 9KHz-12.8GHz	HP8596E	Hewlett Packard	22.24
13371	Temperature Chamber	S-1,2C	Thermotron	22.24
13524	Digital Radiocomm. Tester	CMD55	Rohde&Schwarz	22.24
14807	S - Parameter Test Set 300KHz-6GHz	HP85047A	Hewlett Packard	22.24
15859	Digital Radio Communication Test Set	4201S	Wavetek	22.24
17277	Multimeter Digital 6 1/2 Digit	AT34401A	Agilent Technologies	22.24
17796	Radio Communication Test Set	4400M	Wavetek	22.24
19374	Resonant Dipole Antenna 850MHz SMA m Conn.	-	NMP Cph	22.24
19375	Resonant Dipole Antenna 1900MHz SMA m Conn.	-	NMP Cph	22.24
13037	Power Supply 0-15V 10A	EA3012	LP Instruments	15B,15C

5.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
14020	Programmable Relay Switching System	-	Pickering	15B,15C,22,24
18792	Multi Device Controller	2090	ETS-EMCO	15B,15C,22,24
13829	Turntable Controller	4630-100	Comtest	15B,15C,22,24
14963	RF Preamplifier 100MHz-4GHz (Metal Chassis)	AFS3-00100400	Miteq/NMP Cph	15B,15C,22,24
13668	BiLog Antenna 30-2000MHz	BiLog-CBL6112A	Chase	15B,15C,22,24
18861	EMI Test Receiver 20Hz-26,5GHz	ESI	Rohde&Schwarz	15B,15C,22,24
12679	Dual Log Periodic Antenna 1-18 GHz	HL025	Rohde&Schwarz	15B,15C,22,24
18860	Ultra Broadband Antenna	HL562	Rohde&Schwarz	15B,15C,22,24

Eq. No	Equipment	Type	Manufacturer	Used in
	Ultralog 30-3000MHz			
18773	Shielded Chamber	RFD-100	ETS-Lindgren	15B,15C,22,24
18774	Shielded Chamber	RFSD-F/A-100	ETS-Lindgren	15B,15C,22,24
18324	High Pass Filter 3GHz SMA f Conn	WHJS3000-10SS	Wainwright	15B,15C,22,24
14114	Highpass Filter 1000MHz-4500MHz	WHK1000-12SS	Wainwright	15B,15C,22,24
13918	Highpass Filter 2000-4000MHz 50OHM SMA Conn	WHKS2000-10SS	Wainwright Instruments	15B,15C,22,24
13937	Ultra Stable Notch Filter 902,4MHz	WRCA902.4-0.2/40-6SS	Wainwright Instruments	15B,15C,22,24
13936	Ultra Stable Notch Filter 1747,5MHz	WRCD1747.5-0.2/40-10SS	Wainwright Instruments	15B,15C,22,24
13917	Highpass Filter 1000-3000MHz 50OHM SMA Conn	WHKS1000-10SS	Wainwright Instruments	15B,15C,22,24
14188	Ultra Stable Notch Filter 902,4MHz	WRCA902.4-0.2/40-6SS	Wainwright	15B,15C,22,24
14187	Ultra Stable Notch Filter 1747,5MHz	WRCD1747.5-0.2/40-10SS	Wainwright	15B,15C,22,24
16633	Ultra Stable Notch Filter 1880,0MHz	WRCD1880.0-0.2/40-10SS	Wainwright	15B,15C,22,24
18323	Band reject filter 1947-1953MHz 40dB	WRCG1947/1953-1940/1960-40/6SS	Wainwright	15B,15C,22,24
15190	Infra Red Remote Control Unit	4630	Emco	22,24,15B,15C
14993	EMI Test Receiver 9KHz-2750MHz	ESCS30	Rohde&Schwarz	22,24,15B,15C
15191	Turntable Contoller Unit	G-800SDX	YAESU	22,24,15B,15C
14900	Antenna Controller	HD100	HD GmbH	22,24,15B,15C