

FCC Part 15C Compliance Test Report

Test Report no.:	Salo_FCC_0923_22.doc	Date of Report:	10-Jun-2009
Number of pages:	22	Customer's Contact person:	Teuvo Miettinen
Testing laboratory:	TCC Nokia Salo Laboratory P.O. Box 86 Joensuunkatu 7H / Kiila 1B FIN-24101 SALO, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 45220	Customer:	Nokia Corporation P.O. Box 86 Joensuunkatu 7 FIN-24101 SALO, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 44277
FCC listing no.:	533467		
IC recognition no.:	661V-1		
Tested devices/ accessories:	Phone RM-482 / Battery BP-4L, Headset HS-48 and AC-Charger AC-10		
FCC ID:	PYARM-482	IC:	661V-RM482
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), Public Notice DA 00-705, DTS procedures KDB 558074, IC standards RSS-GEN (Issue 2, June 2007) and RSS-210 (Issue 7, June 2007). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		
Documentation:	The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test Results:	The EUT complies with the requirements in respect of all parameters subject to the test. The test results relate only to devices specified in this document.		
Date and signature for the contents:			

Sami Lehtonen, System Specialist

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	01-Jun-2009
Testing completed	05-Jun-2009
The customer's contact person	Teuvo Miettinen
Test Plan referred to	T:\Projects\RM-482\TestPlan_RS\RS_testplan_RM-482_CR_HW5002.xls
Notes	-
Document name	T:\Projects\RM-482\EMC\Results\FCC\Salo_FCC_0923_22.doc

1.1. EUT and Accessory Information

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

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-482	004401106746635	5002		021.006	13879
Battery	BP-4L	3932138385410718936;0670519	-	-	-	13400
Charger	AC-10E	3997918367090504566;0675408	-	-	-	13687
Headset	HS-48	06945818472L3100971	-	-	-	13876

1.2. Summary of Test Results

Bluetooth:

Section in CFR 47	Section in RSS-GEN or RSS-210	Name of the test	Result
15.247(b)(1)	A8.4 (2)	Conducted peak output power	
15.247(d)	A8.5	Band edge compliance of RF emissions	PASSED
15.247(d)	A8.5	Spurious RF conducted emissions	
15.247(d), 15.209	A8.5	Spurious radiated emissions	PASSED
15.207	7.2.2	AC powerline conducted emissions	
15.247(a)(1)	A8.1 (a)	20 dB bandwidth	
15.247(a)(1)	A8.1 (b)	Carrier frequency separation	
15.247(a)(1)(iii)	A8.1 (d)	Number of hopping frequencies	
15.247(a)(1)(iii)	A8.1 (d)	Time of occupancy	

WLAN:

Section in CFR 47	Section in RSS-GEN or RSS-210	Name of the test	Result
15.247(b)(1)	A8.4 (4)	Conducted peak output power	
15.247(d)	A8.5	Band edge compliance of RF emissions	PASSED
15.247(d)	A8.5	Spurious RF conducted emissions	
15.247(d), 15.209	A8.5	Spurious radiated emissions	PASSED
15.207	7.2.2	AC powerline conducted emissions	
15.247(a)(2)	A8.2 (a)	6 dB bandwidth	
15.247(e)	A8.2 (b)	Power spectral density	

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 Salo Laboratory.

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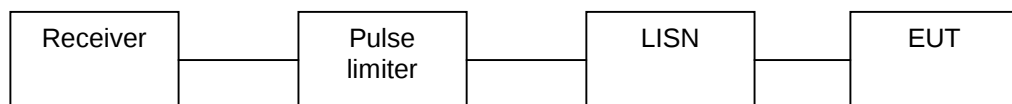
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2. Test setups

2.1. Conducted RF test setup



2.2. AC powerline conducted emissions test setup



2.3. Radiated test setup



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

EUT with DUT number	RM-482, DUT 13879
Accessories with DUT numbers	BP-4L, DUT 13400; HS-48, DUT 13876; AC-10E, DUT 13687
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 43 / 102.4
Date of measurements	05-Jun-2009
Measured by	Kalle Hannila

3.1. Test method and limit

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

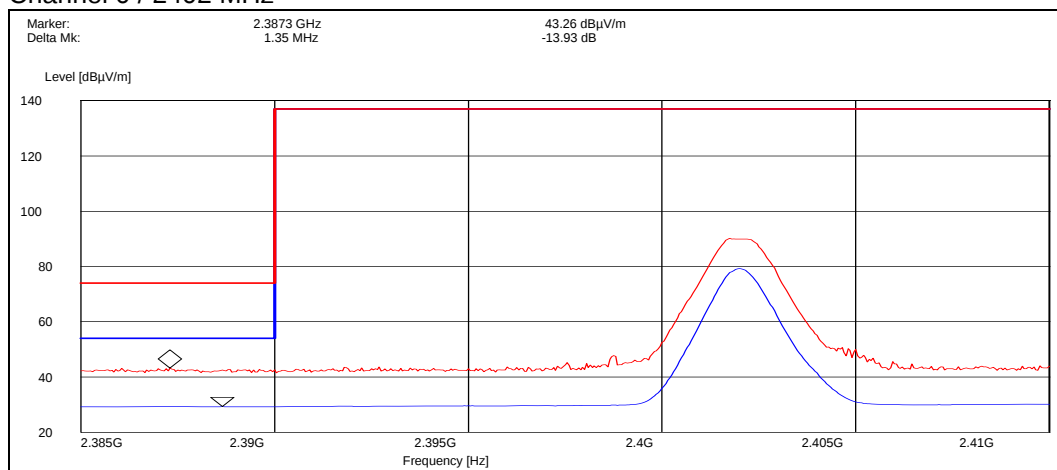
Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

Frequency range [MHz]	Limit Average [dBμV/m]	Limit Peak [dBμV/m]
Below 2390 and above 2483.5	≤ 54	≤ 74

3.2. Bluetooth Test results

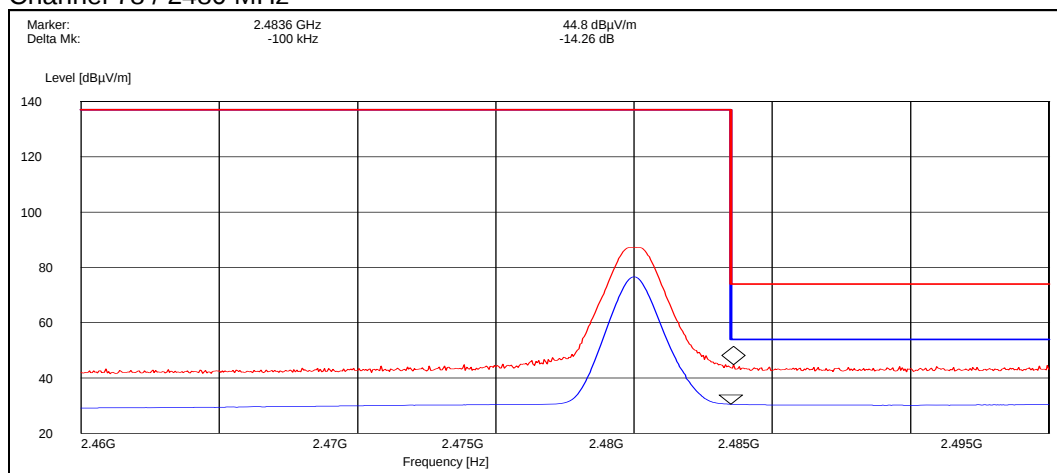
3.2.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz



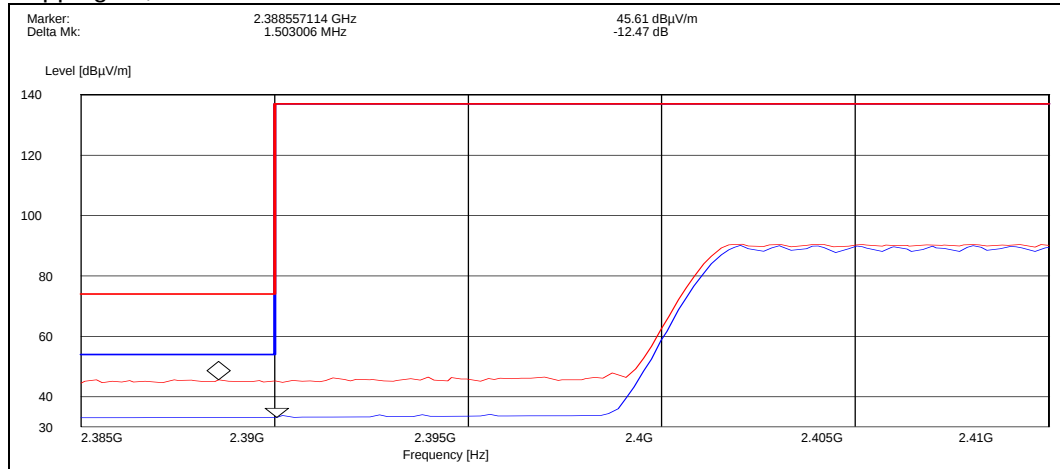
Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	43.30	PASSED
Average	29.30	PASSED

Channel 78 / 2480 MHz



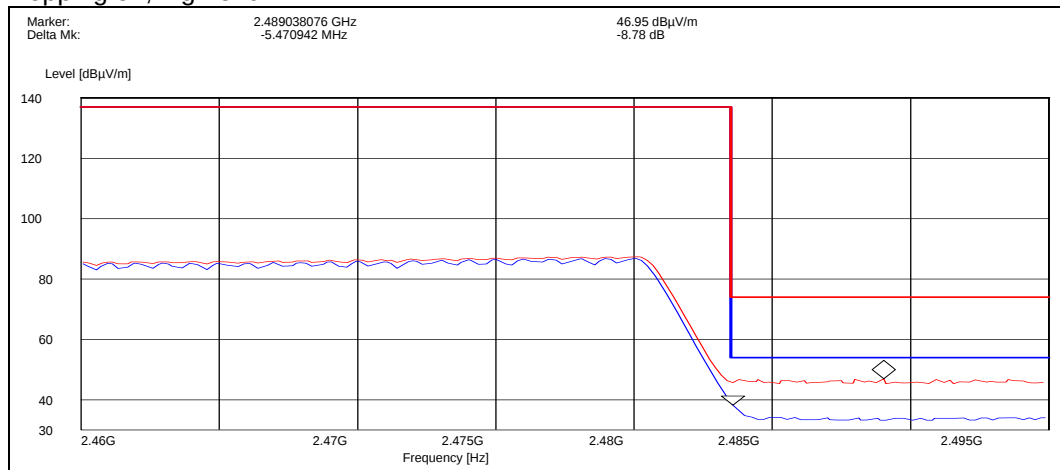
Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	44.80	PASSED
Average	30.50	PASSED

Hopping on, low end



Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	45.60	PASSED
Average	33.10	PASSED

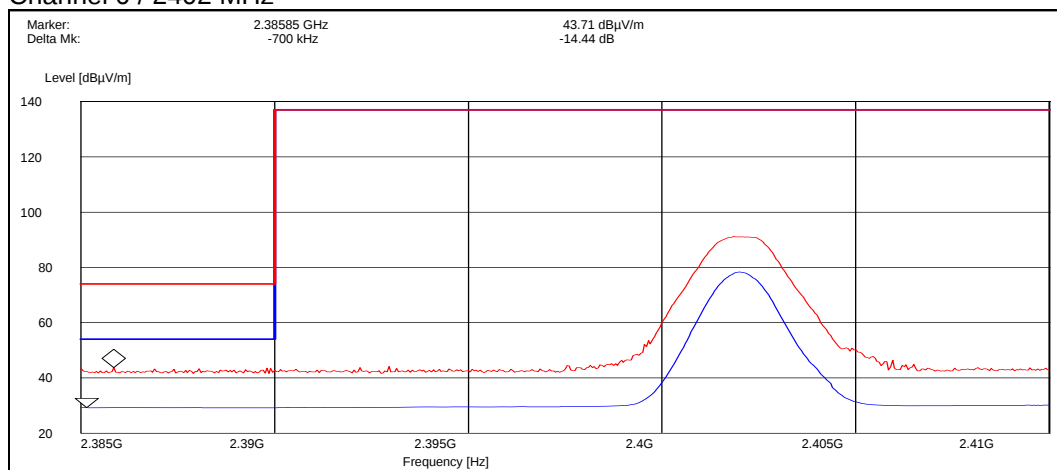
Hopping on, high end



Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	47.00	PASSED
Average	38.20	PASSED

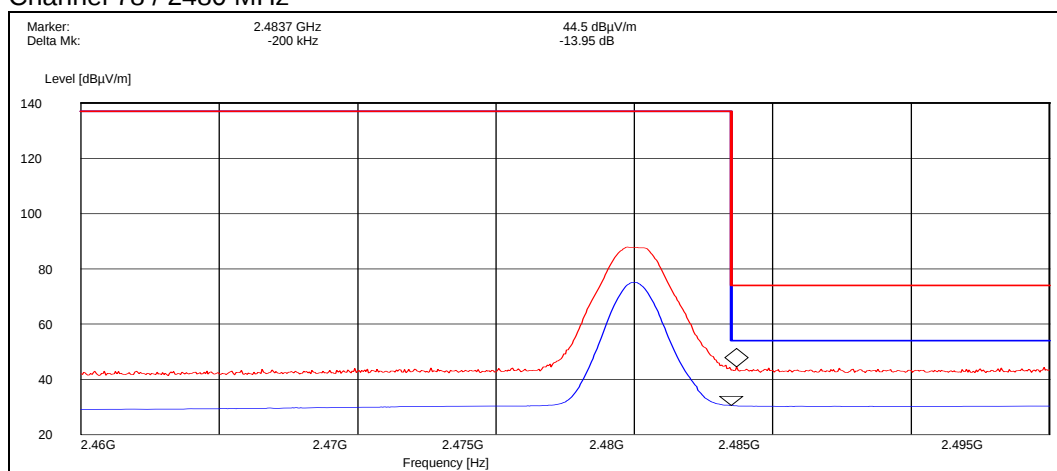
3.2.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz



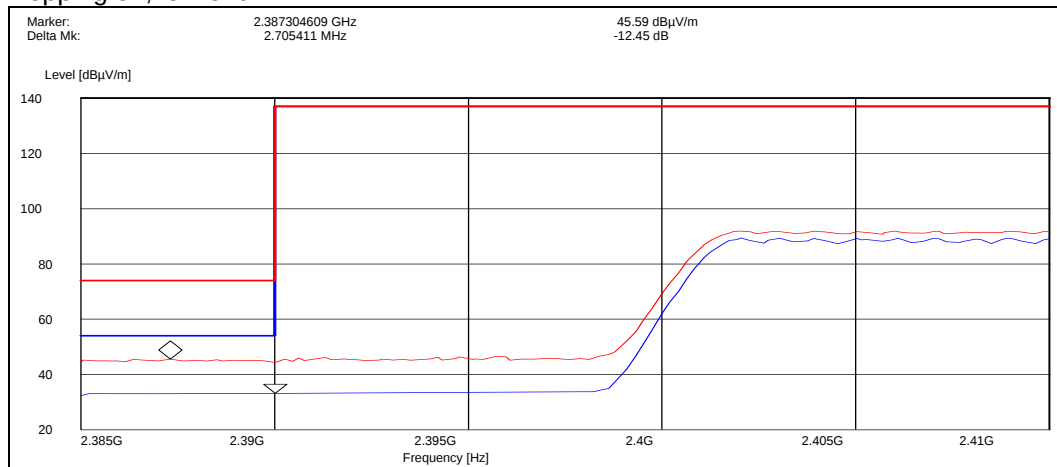
Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	43.70	PASSED
Average	29.30	PASSED

Channel 78 / 2480 MHz



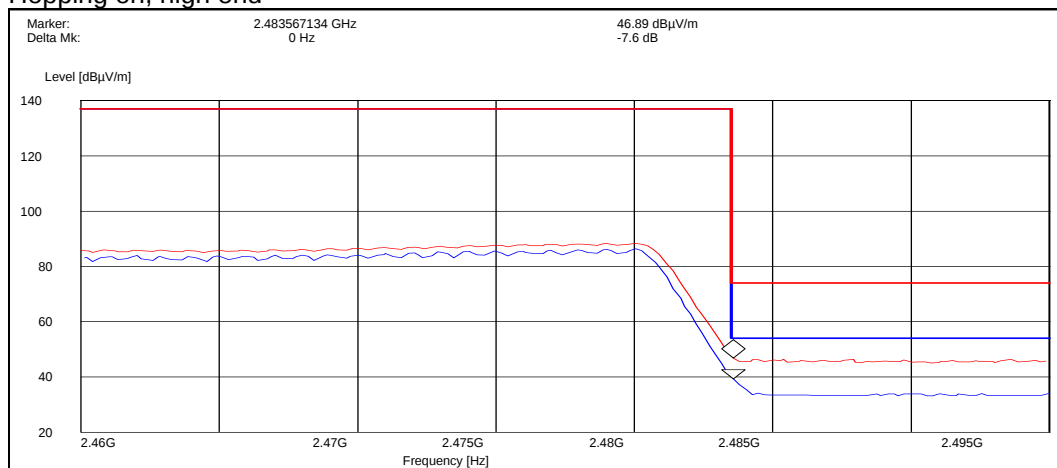
Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	44.50	PASSED
Average	30.50	PASSED

Hopping on, low end



Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	45.60	PASSED
Average	33.10	PASSED

Hopping on, high end



Detector (RBW: 1 MHz)	E [dB μ V/m]	Result
Peak	46.90	PASSED
Average	39.30	PASSED

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

EUT with DUT number	RM-482, DUT 13879
Accessories with DUT numbers	BP-4L, DUT 13400; HS-48, DUT 13876; AC-10E, DUT 13687
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 43 / 102.4
Date of measurements	08-Jun-2009
Measured by	Kalle Hannila

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

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 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz

Peak (RBW: 1 MHz, VBW: 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	47.90	248.31	46.90	1.0	VERTICAL	PASSED
7206.000000	48.70	272.27	45.80	2.9	HORIZONTAL	PASSED

Average (RBW: 1 MHz, VBW: 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	34.50	53.09	33.50	1.0	VERTICAL	PASSED
7206.000000	35.70	60.95	32.80	2.9	VERTICAL	PASSED

Channel 40 / 2442 MHz

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
37.876353	17.40	7.41	36.10	-18.7	VERTICAL	PASSED
108.056313	13.10	4.52	39.60	-26.5	HORIZONTAL	PASSED
136.794990	23.90	15.67	52.70	-28.8	VERTICAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4884.269539	47.20	229.09	45.90	1.3	VERTICAL	PASSED
7326.153307	51.90	393.55	48.60	3.3	VERTICAL	PASSED
12457.415832	52.80	436.52	41.10	11.7	VERTICAL	PASSED
13389.781563	53.90	495.45	40.40	13.5	VERTICAL	PASSED
15374.247495	56.60	676.08	38.20	18.4	HORIZONTAL	PASSED
15873.749499	55.50	595.66	38.00	17.5	VERTICAL	PASSED
16047.592184	57.00	707.95	36.30	20.7	HORIZONTAL	PASSED
17968.937876	57.90	785.24	37.60	20.3	VERTICAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4883.769539	33.80	48.98	32.50	1.3	VERTICAL	PASSED
7326.153307	36.90	69.98	33.60	3.3	VERTICAL	PASSED

12459.415832	40.30	103.51	28.60	11.7	VERTICAL	PASSED
13393.281563	40.90	110.92	27.40	13.5	VERTICAL	PASSED
15372.747495	43.40	147.91	25.10	18.3	HORIZONTAL	PASSED
15874.749499	42.70	136.46	25.20	17.5	VERTICAL	PASSED
16050.092184	44.70	171.79	24.00	20.7	HORIZONTAL	PASSED
17969.437876	44.90	175.79	24.60	20.3	VERTICAL	PASSED

Channel 78 / 2480 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	46.60	213.80	46.40	0.2	HORIZONTAL	PASSED
7440.000000	52.20	407.38	47.80	4.4	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
4960.000000	34.20	51.29	34.00	0.2	HORIZONTAL	PASSED
7440.000000	38.70	86.10	34.30	4.4	VERTICAL	PASSED

4.2.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	47.70	242.66	46.70	1.0	VERTICAL	PASSED
7206.000000	51.10	358.92	48.20	2.9	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
4804.000000	36.40	66.07	35.40	1.0	VERTICAL	PASSED
7206.000000	37.60	75.86	34.70	2.9	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
38.195391	15.40	5.89	34.30	-18.9	VERTICAL	PASSED
108.196794	22.40	13.18	48.90	-26.5	HORIZONTAL	PASSED
136.371142	24.30	16.41	53.10	-28.8	VERTICAL	PASSED
150.000000	24.20	16.22	53.80	-29.6	VERTICAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4883.767535	47.00	223.87	45.70	1.3	VERTICAL	PASSED
7325.653307	53.20	457.09	49.90	3.3	VERTICAL	PASSED
12123.254509	52.90	441.57	40.60	12.3	HORIZONTAL	PASSED

13394.791583	54.50	530.88	41.00	13.5	HORIZONTAL	PASSED
15465.437876	56.00	630.96	38.80	17.2	VERTICAL	PASSED
15540.584168	55.40	588.84	37.70	17.7	HORIZONTAL	PASSED
16040.578156	57.40	741.31	36.90	20.5	HORIZONTAL	PASSED
17967.937876	57.40	741.31	37.10	20.3	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
4883.767535	35.10	56.89	33.80	1.3	VERTICAL	PASSED
7325.653307	40.90	110.92	37.60	3.3	VERTICAL	PASSED
12128.754509	40.00	100.00	27.80	12.2	HORIZONTAL	PASSED
13398.791583	41.00	112.20	27.50	13.5	HORIZONTAL	PASSED
15466.437876	42.50	133.35	25.30	17.2	VERTICAL	PASSED
15546.084168	42.30	130.32	24.60	17.7	HORIZONTAL	PASSED
16042.078156	44.30	164.06	23.80	20.5	HORIZONTAL	PASSED
17965.937876	44.60	169.82	24.40	20.2	HORIZONTAL	PASSED

Channel 78 / 2480 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	48.00	251.19	47.80	0.2	HORIZONTAL	PASSED
7440.000000	54.50	530.88	50.10	4.4	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
4960.000000	36.60	67.61	36.40	0.2	HORIZONTAL	PASSED
7440.000000	42.30	130.32	37.90	4.4	VERTICAL	PASSED

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

EUT with DUT number	RM-482, DUT 13879
Accessories with DUT numbers	BP-4L, DUT 13400; HS-48, DUT 13876; AC-10E, DUT 13687
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 43 / 102.4
Date of measurements	08-Jun-2009
Measured by	Kalle Hannila

5.1. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210.

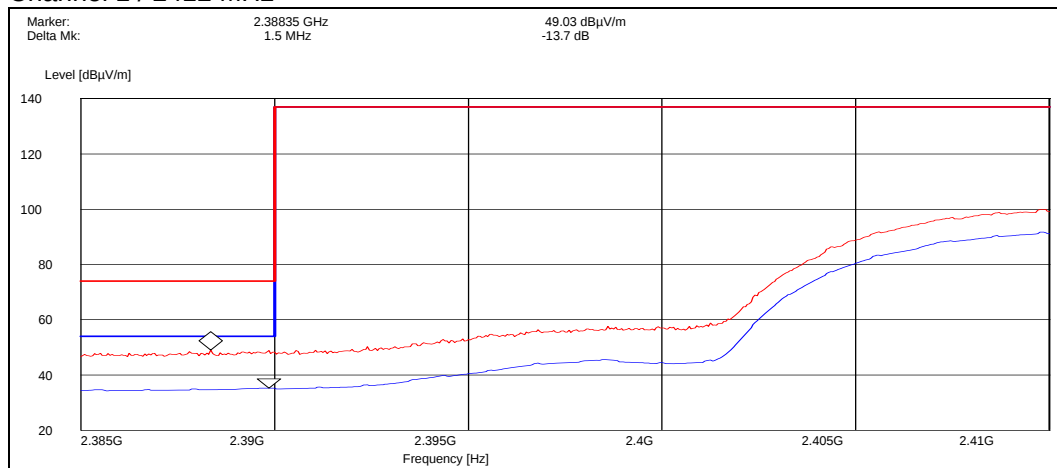
Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

Frequency range [MHz]	Limit Average [dBμV/m]	Limit Peak [dBμV/m]
Below 2390 and above 2483.5	≤ 54	≤ 74

5.2. WLAN Test results

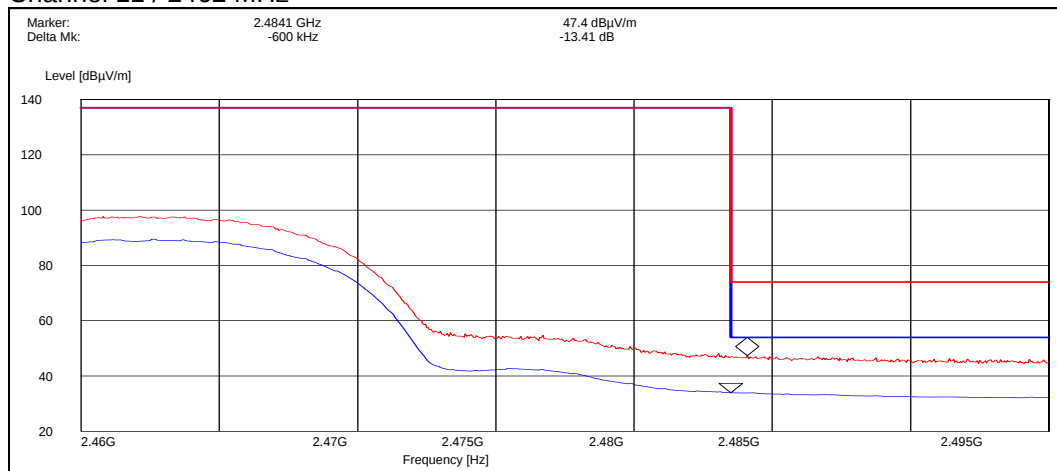
5.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel 1 / 2412 MHz



Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	49.00	PASSED
Average	35.30	PASSED

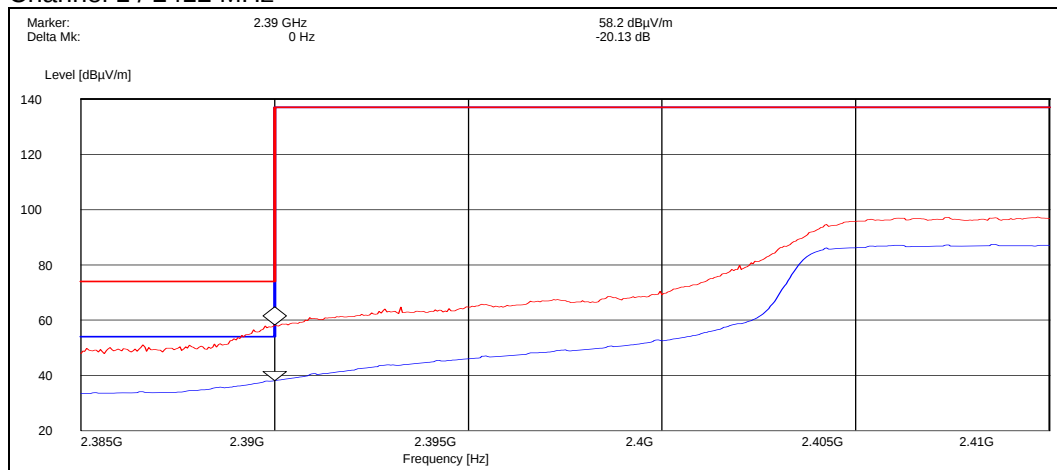
Channel 11 / 2462 MHz



Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	47.40	PASSED
Average	34.00	PASSED

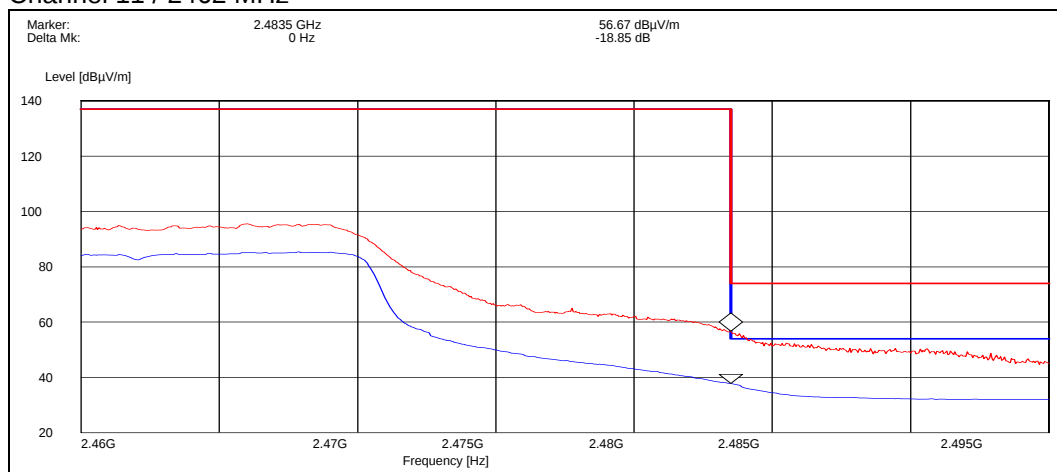
5.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel 1 / 2412 MHz



Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	58.20	PASSED
Average	38.10	PASSED

Channel 11 / 2462 MHz



Detector (RBW: 1 MHz)	E [dBμV/m]	Result
Peak	56.70	PASSED
Average	37.80	PASSED

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

EUT with DUT number	RM-482, DUT 13879
Accessories with DUT numbers	BP-4L, DUT 13400; HS-48, DUT 13876; AC-10E, DUT 13687
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 43 / 102.4
Date of measurements	07-Jun-2009
Measured by	Kalle Hannila

6.1. Test method and limit

The measurement is made according to DTS procedures KDB 558074 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

6.2. WLAN Test results

6.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel 1 / 2412 MHz

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4824.000000	53.70	484.17	52.40	1.3	VERTICAL	PASSED
7236.000000	46.40	208.93	43.40	3.0	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4824.000000	40.80	109.65	39.50	1.3	VERTICAL	PASSED
7236.000000	34.00	50.12	31.00	3.0	HORIZONTAL	PASSED

Channel 7 / 2442 MHz

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
37.595391	20.50	10.59	39.00	-18.5	VERTICAL	PASSED
108.556313	21.80	12.30	48.30	-26.5	HORIZONTAL	PASSED
133.668737	29.20	28.84	57.70	-28.5	VERTICAL	PASSED
150.000000	23.30	14.62	52.90	-29.6	VERTICAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4877.255511	54.50	530.88	53.10	1.4	VERTICAL	PASSED
13397.295591	54.30	518.80	40.80	13.5	VERTICAL	PASSED
14485.963928	53.40	467.74	38.60	14.8	VERTICAL	PASSED
15373.745491	56.30	653.13	37.90	18.4	HORIZONTAL	PASSED
15802.099198	55.20	575.44	37.20	18.0	HORIZONTAL	PASSED
16050.598196	57.90	785.24	37.20	20.7	VERTICAL	PASSED
17942.389780	57.70	767.36	37.90	19.8	VERTICAL	PASSED

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

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4877.255511	41.70	121.62	40.30	1.4	VERTICAL	PASSED
13394.295591	41.00	112.20	27.50	13.5	VERTICAL	PASSED

14483.463928	40.50	105.93	25.80	14.7	VERTICAL	PASSED
15372.245491	43.50	149.62	25.20	18.3	HORIZONTAL	PASSED
15802.599198	42.70	136.46	24.60	18.1	HORIZONTAL	PASSED
16051.098196	44.80	173.78	24.20	20.6	VERTICAL	PASSED
17948.889780	44.80	173.78	25.00	19.8	VERTICAL	PASSED

Channel 11 / 2462 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4924.000000	49.90	312.61	49.20	0.7	VERTICAL	PASSED
7386.000000	48.80	275.42	44.60	4.2	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
4924.000000	37.80	77.62	37.10	0.7	VERTICAL	
7386.000000	35.50	59.57	31.30	4.2	VERTICAL	

6.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel 1 / 2412 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4824.000000	52.00	398.11	50.70	1.3	VERTICAL	PASSED
7236.000000	47.60	239.88	44.60	3.0	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
4824.000000	38.90	88.10	37.60	1.3	VERTICAL	PASSED
7236.000000	34.10	50.70	31.10	3.0	VERTICAL	PASSED

Channel 7 / 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
38.195391	20.10	10.12	39.00	-18.9	VERTICAL	PASSED
108.056313	21.90	12.45	48.40	-26.5	HORIZONTAL	PASSED
133.066333	29.60	30.20	58.10	-28.5	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
4884.269539	55.40	588.84	54.10	1.3	VERTICAL	PASSED
7329.653307	49.00	281.84	45.60	3.4	VERTICAL	PASSED
12131.764529	52.90	441.57	40.70	12.2	HORIZONTAL	PASSED
14494.981964	53.20	457.09	38.30	14.9	VERTICAL	PASSED
15361.725451	55.40	588.84	37.80	17.6	HORIZONTAL	PASSED

15807.617234	55.90	623.73	37.70	18.2	HORIZONTAL	PASSED
16050.596192	57.60	758.58	36.90	20.7	VERTICAL	PASSED
17956.919840	57.70	767.36	37.70	20.0	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
4885.769539	40.40	104.71	39.10	1.3	VERTICAL	PASSED
7325.153307	35.50	59.57	32.20	3.3	VERTICAL	PASSED
12131.764529	40.10	101.16	27.90	12.2	HORIZONTAL	PASSED
14494.481964	40.80	109.65	25.90	14.9	VERTICAL	PASSED
15363.725451	42.90	139.64	25.20	17.7	HORIZONTAL	PASSED
15810.117234	42.90	139.64	24.70	18.2	HORIZONTAL	PASSED
16048.096192	44.70	171.79	24.00	20.7	VERTICAL	PASSED
17959.919840	44.90	175.79	24.80	20.1	VERTICAL	PASSED

Channel 11 / 2462 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4924.000000	49.00	281.84	48.30	0.7	VERTICAL	PASSED
7386.000000	48.60	269.15	44.40	4.2	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
4924.000000	35.70	60.95	35.00	0.7	VERTICAL	PASSED
7386.000000	35.40	58.88	31.20	4.2	VERTICAL	PASSED

7. Test Equipment

7.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1742	EMI Test Receiver	ESMI	R&S	15C, 15B
1759	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
1872	Thermo- Hygrograph	00.02520.150700	Lambrecht	15C, 15B
1916	Radio Communication tester	CMTA84	R&S	15C, 15B
2039	Power Supply	PL330QMD	THURLBY	15C, 15B
2060	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
2068	CDN-Antenna line	S1	NMP	15C, 15B
2097	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
2111	Multimeter	TX3	Tektronix	15C, 15B
2156	Digital Radio Communication Tester	CMU200	R&S	15C, 15B
2206	Signal generator	SMX	R&S	15C, 15B
2335	GPIB Switch 2 to 1	-	National Instruments	15C, 15B
2347	Digital Radio Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2352	Spectrum Analyzer	FSP	R&S	22/24/27, 15C
2359	Temperature Test system	VT4002	Vötsch Industrietechnik	22/24/27
2360	Serial Bus Converter	Serial 488A	IO Tech	22/24/27
2362	Power Supply	NGPX 70/5	R&S	22/24/27
2388	Bluetooth Tester	CBT	R&S	15C, 15B
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24/27, 15C, 15B

7.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1748	Log. per. Antenna	HL025	R&S	22/24/27, 15C
1749	Log. per. Antenna	HL025	R&S	22/24/27, 15C
1875	Thermo- Hygrograph	00.02520.150700	Lambrecht	22/24/27, 15C, 15B
1917	Radio Communication tester	CMTA84	R&S	22/24/27, 15C, 15B
1933	Precision half-wave dipole antennas	HZ-13	R&S	22/24/27, 15C
1938	Precision half-wave dipole antennas	HZ-12	R&S	22/24/27, 15C
2006	Radiation Reference Source	VSQ	MEB	22/24/27, 15C, 15B
2009	Signal generator	SMP 22	R&S	22/24/27, 15C, 15B
2019	Multimeter	34401A	HP	22/24/27, 15C, 15B
2027	Coupling and Decoupling Network	M2 (modified) DC1	MEB	22/24/27, 15C, 15B
2028	Coupling and Decoupling Network	M3 (modified) DC2	MEB	22/24/27, 15C, 15B
2029	Power Supply	PL330	THURLBY	22/24/27, 15C, 15B
2043	Band Reject Filter	WRCA824/849-0.2-6SS	Wainwright	22, 15C, 15B
2047	Band Reject Filter	WRCC1800/2000-0.2-10SS	Wainwright	24, 15C, 15B
2048	Band Reject Filter	WRCC1700/1800-0.2-10SS	Wainwright	27, 15C, 15B
2051	High Pass Filter	4HC1700-1-KK	R&S	22/24/27, 15C
2057	Log. per. Antenna	HL025	R&S	22/24/27, 15C
2109	Power Supply	PL330QMD	THURLBY	22/24/27, 15C, 15B
2110	Multimeter	34401A	HP	22/24/27, 15C, 15B
2112	Multimeter	TX3	Tektronix	22/24/27, 15C, 15B
2116	Controller	EMCO MODEL 2090	ETS	22/24/27, 15C, 15B
2133	Power Meter	NRVS	R&S	22/24/27, 15C
2134	Power Sensor	NRV-Z32	R&S	22/24/27, 15C
2135	Coupling and Decoupling Network	CDN 801-M3	LÜTHI	22/24/27, 15C, 15B

Eq. No	Equipment	Type	Manufacturer	Used in
2138	Ultra Broadband Antenna	HL562	R&S	22/24/27, 15C, 15B
2140	Biconical Antenna	EMCO93110B	EMCO	22/24/27, 15C
2142	Log.-per.-dipol Antenna	3146	EMCO	22/24/27, 15C
2144	Attenuator	6803.17B	Huber-Suhner	22/24/27, 15C, 15B
2150	High Pass Filter	F-15041	RLC ELECTRONICS	22/24/27, 15C
2176	Coupling and Decoupling Network	CDN 801-M3	LÜTHI	22/24/27, 15C, 15B
2180	Digital Radio Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2188	Preamplifier	AFS4-00100300-20-23P-6	MITEQ	22/24/27, 15C, 15B
2330	EMI Test receiver	ESIB26	R&S	22/24/27, 15C, 15B
2334	GPIB Switch 2 to 1	-	National Instruments	22/24/27, 15C, 15B
2348	Yaesu controller	G-1000DXC	YAESU	22/24/27, 15C, 15B
2349	Computer controller (Yaesu)	GS-232B	YAESU	22/24/27, 15C, 15B
2350	Preamplifier	AMF-6D-020180-29-20P	MITEQ	22/24/27, 15C
2361	Anechoic chamber	3 meter semi/full anechoic chamber	Euroshield	22/24/27, 15C, 15B
2398	Horn antenna	HF906	R&S	22/24/27, 15C
2363	Band Reject Filter	WRCG 832/838-825/845/5SS	Wainwright	22/24/27
2364	Band Reject Filter	WRCG1877/1883 - 1870/1890-40/6SS	Wainwright	22/24/27
2365	Relay Switch Unit	TS-RSP	R&S	22/24/27, 15C, 15B
2366	Relay Switch Unit	TS-RSP	R&S	22/24/27, 15C, 15B
2384	Band Reject Filter	WRCG832/838-825/845-40/5SS	Wainwright	22/24/27
2388	Bluetooth Tester	CBT	R&S	15C, 15B
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24/27, 15C, 15B