

FCC Part 15C Compliance Test Report

Test Report no.:	Cph_FCC_0701_05.doc	Date of Report:	02-01-2007
Number of pages:	21	Customer's Contact person:	Timo Seppala
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FCC listing no.:	99059		
IC recognition no.:	4820 and 4820-1		
Tested devices/ accessories:	Phone; RM-227 (HW: 2004), Battery; BP-4L, AC-Charger; AC-4E, Headset; HS-23		
FCC ID:	PYARM-227	IC:	661V-RM227
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 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:			

Allan F. Henriksen, Engineer

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	30-11-2006
Testing completed	02-01-2007
The customer's contact person	Timo Seppala
Test Plan referred to	\\EMC\\TESTPLAN\\
Notes	None
Document name	T:\\Projects\\RM-227\\EMC\\Results\\FCC\\Cph_FCC_0701_05.doc

1.1. EUT and Accessory Information

The EUT is a 4-band (GSM850/900/1800/1900) 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-227	004400/96/165032/0	1.0633.08.01	-	2004	29109
Battery	BP-4L	Proto 4/06wk28/Tue	-	-	-	27763
AC Charger	AC-4E	4090496113960100313; 0675384	3.22	-	-	27778
Headset	HS-23	350853623102	1.1	2.1	2.1	27772

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	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

WLAN:

Section in CFR 47	Section in RSS-210	Name of the test	Result
15.247(b)(1)	A8.4 (4)	Conducted 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)(2)	A8.2 (1)	6 dB bandwidth	NP
15.247(e)	A8.2 (2)	Power spectral density	NP

PASSED
FAILED
NP

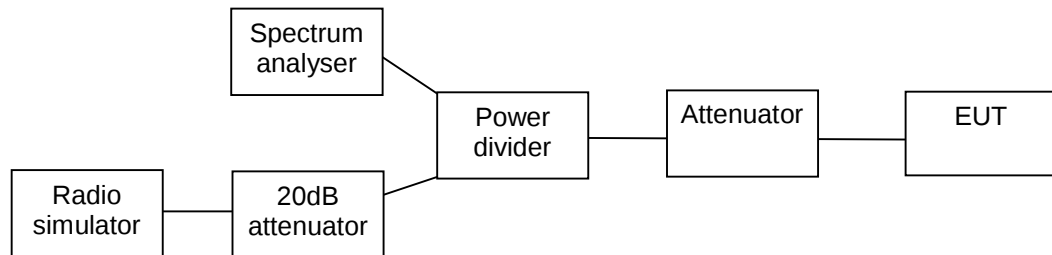
The EUT complies with the essential requirements in the standard.
The EUT does not comply with the essential requirements in the standard.
The test was not performed by the TCC Nokia Copenhagen Laboratory.

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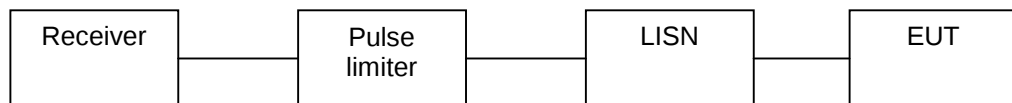
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2. Test setups

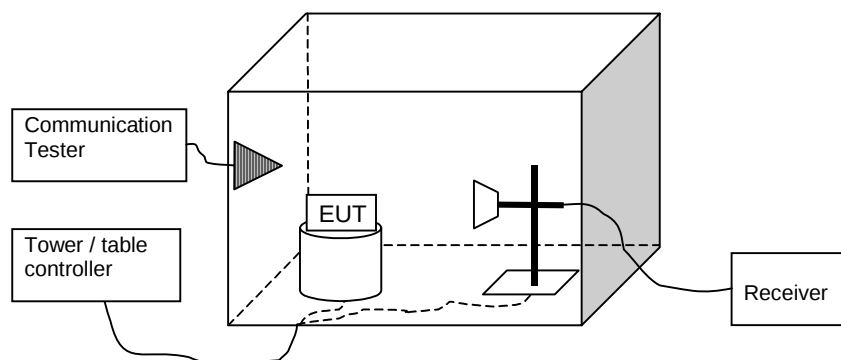
2.1. Conducted RF test setup



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-227 Dut # 29109
Accessories with DUT numbers	BP-4L Dut # 27763 + AC-4E Dut # 27778 + HS-23 Dut # 27772
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	22.4 / 45.0 997.0
Date of measurements	05-12-2006
Measured by	Allan F. Henriksen

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

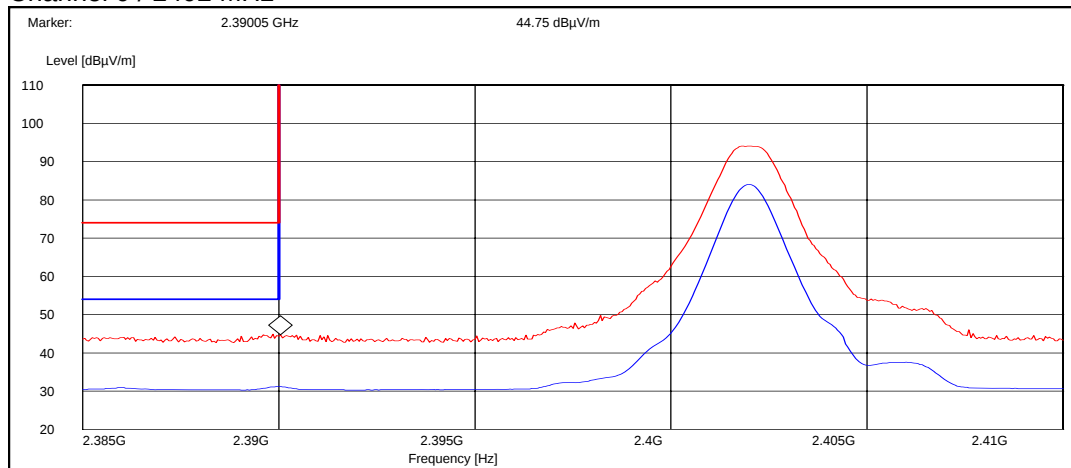
Average (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
0 / 2402	31.23	Passed
78 / 2480	35.79	Passed
Hopping on, low end	36.57	Passed
Hopping on, high end	45.89	Passed

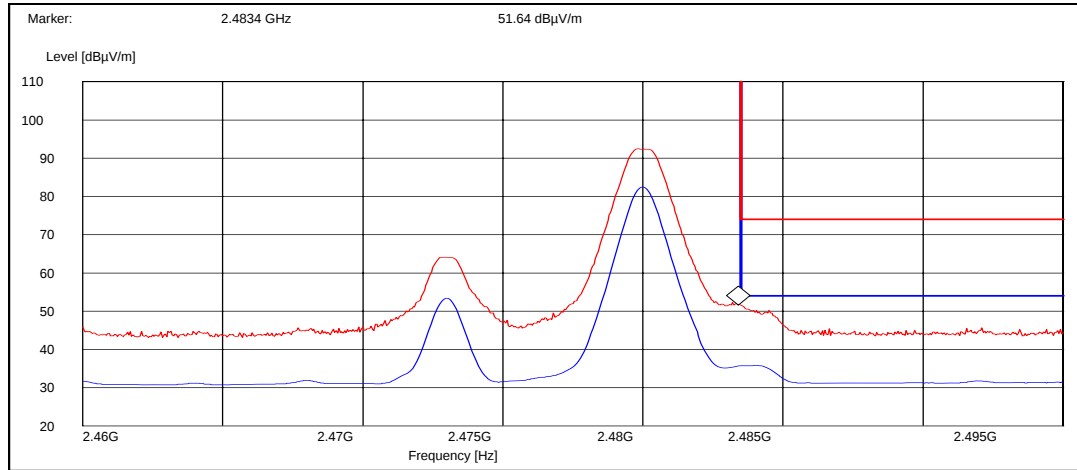
Peak (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
0 / 2402	44.75	Passed
78 / 2480	51.64	Passed
Hopping on, low end	49.72	Passed
Hopping on, high end	54.03	Passed

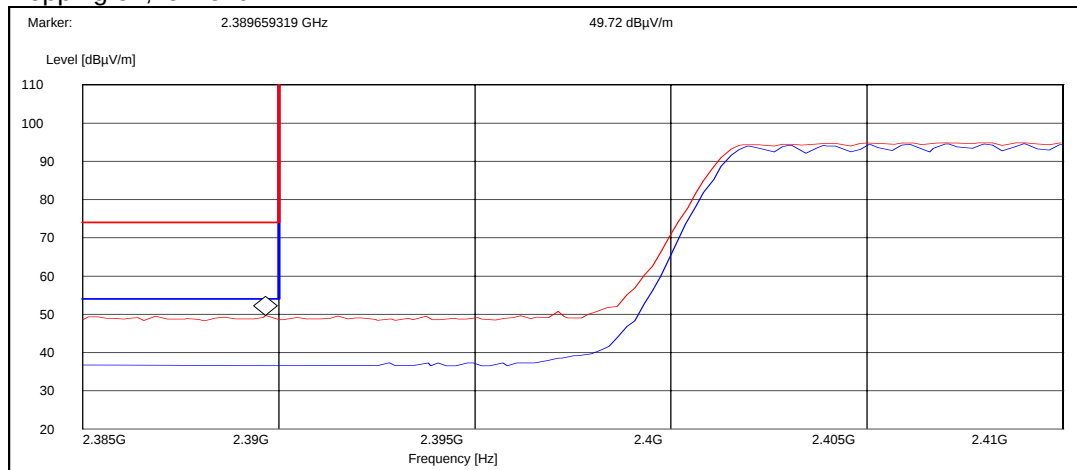
Channel 0 / 2402 MHz



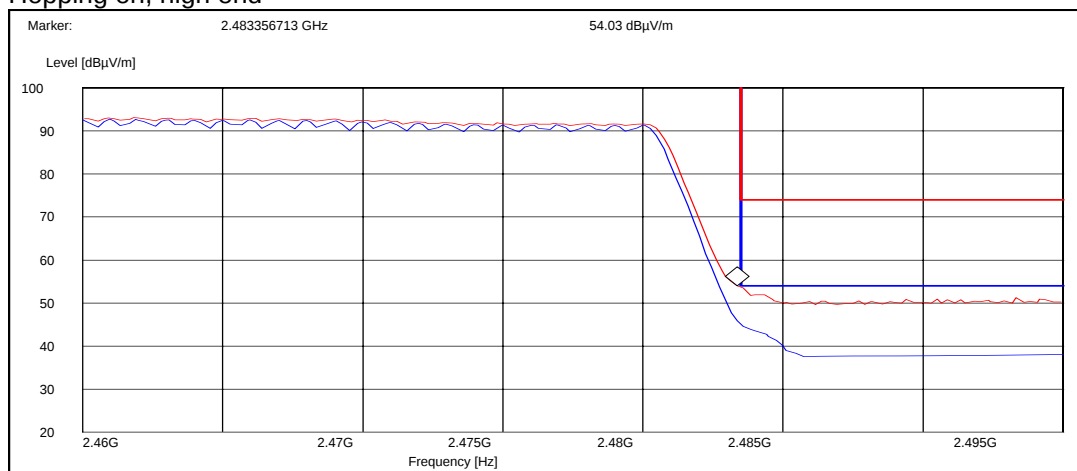
Channel 78 / 2480 MHz



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-227 Dut # 29109
Accessories with DUT numbers	BP-4L Dut # 27763 + AC-4E Dut # 27778 + HS-23 Dut # 27772
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [mBar]	21.5 / 41.5 1002.0
Date of measurements	06-12-2006
Measured by	Allan F. Henriksen

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)

Frequency [MHz]	E [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	36.40	66.07	38.40	-2.00	HORIZONTAL	Passed
7206.000000	39.80	97.72	35.60	4.20	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
4804.000000	23.60	15.14	25.60	-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 [dB $\mu\text{V/m}$]	E [$\mu\text{V/m}$]	U _{RX} [dB μV]	A _{TOT} [dB]	Polarisation	Result
30.100000	15.50	5.96	28.40	-12.90	VERTICAL	Passed
38.176353	8.30	2.60	26.40	-18.10	VERTICAL	Passed
73.908016	0.30	1.04	27.40	-27.10	HORIZONTAL	Passed
75.069940	13.50	4.73	40.40	-26.90	HORIZONTAL	Passed
97.775150	1.70	1.22	27.70	-26.00	HORIZONTAL	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
4812.127255	44.00	158.49	46.10	-2.10	VERTICAL	Passed
4843.691383	44.60	169.82	46.80	-2.20	VERTICAL	Passed
4886.277555	38.60	85.11	40.50	-1.90	VERTICAL	Passed
4942.381764	43.50	149.62	45.20	-1.70	VERTICAL	Passed
4945.891784	37.50	74.99	39.20	-1.70	VERTICAL	Passed
7317.139279	41.20	114.82	36.90	4.30	VERTICAL	Passed
7419.839679	42.20	128.82	37.30	4.90	VERTICAL	Passed
17878.761523	57.40	741.31	32.00	25.40	HORIZONTAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4816.127255	24.40	16.60	26.50	-2.10	VERTICAL	Passed
4845.691383	24.20	16.22	26.40	-2.20	VERTICAL	Passed
4890.277555	24.00	15.85	25.90	-1.90	VERTICAL	Passed
4944.881764	24.60	16.98	26.30	-1.70	VERTICAL	Passed
4947.391784	24.60	16.98	26.30	-1.70	VERTICAL	Passed
7317.139279	28.20	25.70	23.90	4.30	VERTICAL	Passed
7422.339679	29.00	28.18	24.10	4.90	VERTICAL	Passed
17881.261523	44.70	171.79	19.30	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	37.20	72.44	38.80	-1.60	HORIZONTAL	Passed
7440.000000	40.20	102.33	35.30	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	24.80	17.38	26.40	-1.60	VERTICAL	Passed
7440.000000	28.00	25.12	23.10	4.90	VERTICAL	Passed

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

EUT with DUT number	RM-227 Dut # 29109
Accessories with DUT numbers	BP-4L Dut # 27763 + AC-4E Dut # 27778 + HS-23 Dut # 27772
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22.4 / 45.0 997.0
Date of measurements	05-12-2006
Measured by	Allan F. Henriksen

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

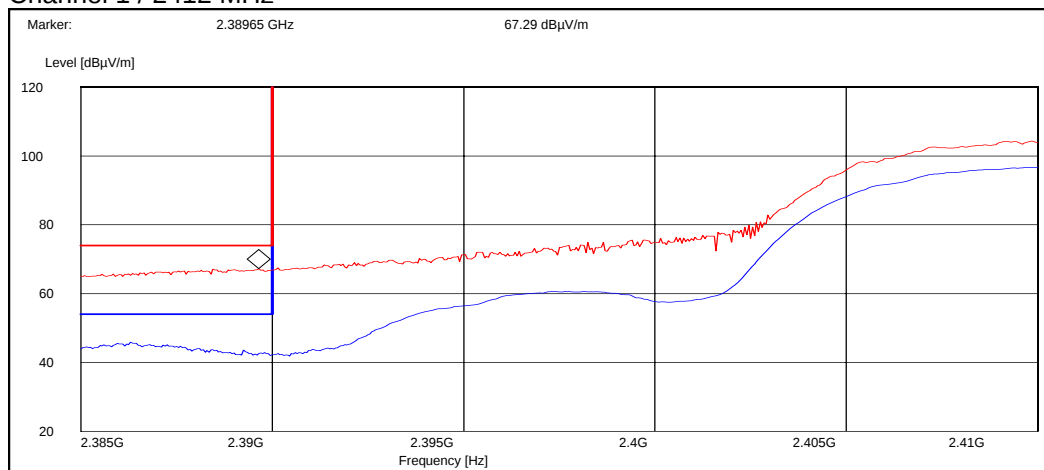
Average (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	45.61	Passed
11 / 2462	43.04	Passed

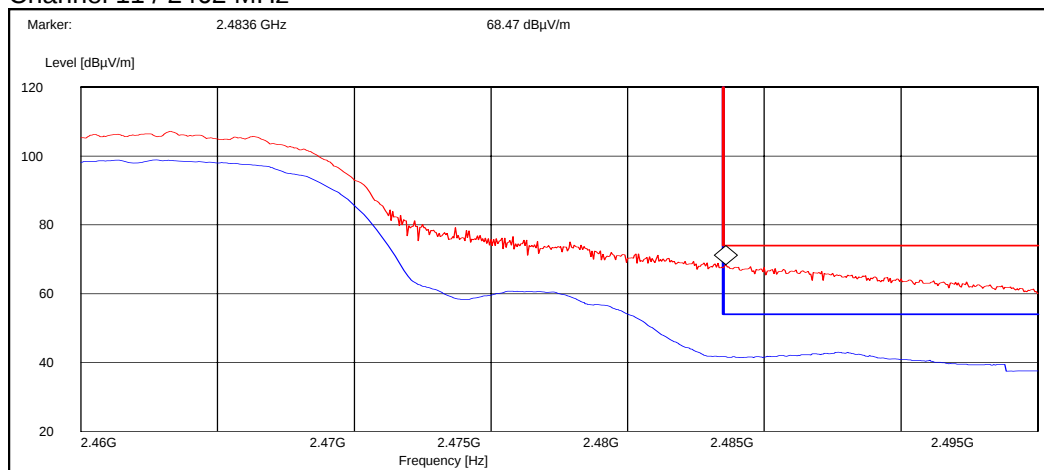
Peak (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	67.29	Passed
11 / 2462	68.47	Passed

Channel 1 / 2412 MHz



Channel 11 / 2462 MHz



5.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

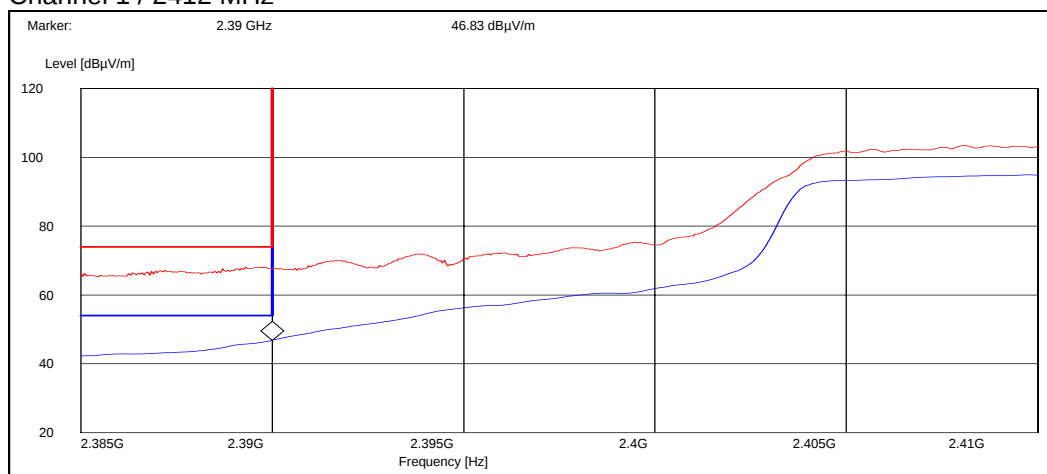
Average (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	46.83	Passed
11 / 2462	47.19	Passed

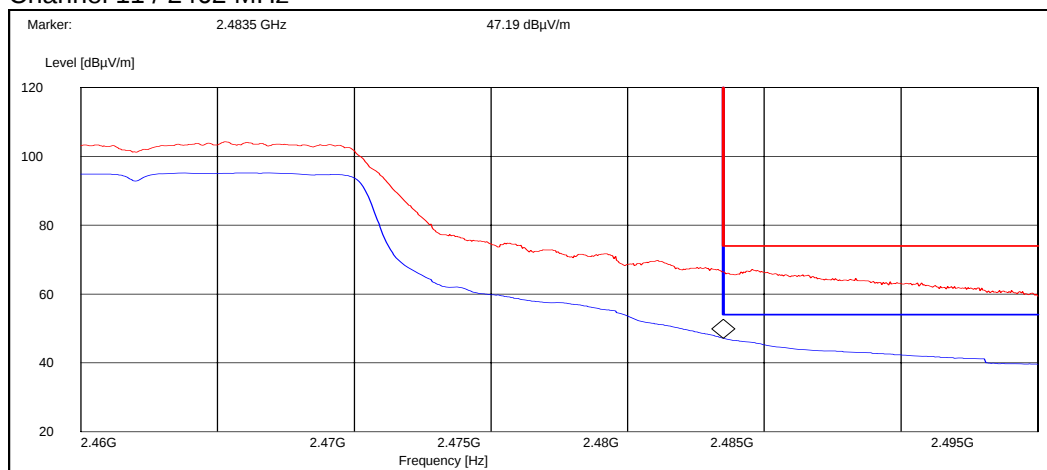
Peak (RBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	68.12	Passed
11 / 2462	66.96	Passed

Channel 1 / 2412 MHz



Channel 11 / 2462 MHz



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

EUT with DUT number	RM-227 Dut # 29109
Accessories with DUT numbers	BP-4L Dut # 27763 + AC-4E Dut # 27778 + HS-23 Dut # 27772
Operation Voltage [V] / [Hz]	230 / 50
Result	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21.5 / 41.5 1002.0
Date of measurements	06-12-2006
Measured by	Allan F. Henriksen

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

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
30.000000	29.70	30.55	42.50	-12.80	VERTICAL	Passed
37.976353	23.70	15.31	41.70	-18.00	VERTICAL	Passed
47.917034	22.70	13.65	47.40	-24.70	VERTICAL	Passed
74.548497	15.10	5.69	42.10	-27.00	HORIZONTAL	Passed
75.169940	13.10	4.52	40.00	-26.90	HORIZONTAL	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
2388.500000	67.30	2317.39	66.40	0.90	HORIZONTAL	Passed
4824.147295	40.40	104.71	42.60	-2.20	VERTICAL	Passed
4824.149299	40.50	105.93	42.70	-2.20	VERTICAL	Passed
7328.657315	40.30	103.51	36.00	4.30	HORIZONTAL	Passed
7416.837675	41.70	121.62	36.70	5.00	HORIZONTAL	Passed
17876.249499	57.90	785.24	32.40	25.50	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
2389.000000	39.60	95.50	38.70	0.90	HORIZONTAL	Passed
4824.147295	27.20	22.91	29.40	-2.20	VERTICAL	Passed
4824.149299	28.10	25.41	30.30	-2.20	VERTICAL	Passed
7332.157315	28.00	25.12	23.60	4.40	HORIZONTAL	Passed
7416.837675	28.80	27.54	23.80	5.00	HORIZONTAL	Passed
17876.749499	44.90	175.79	19.50	25.40	VERTICAL	Passed

Channel 7 / 2442 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
30.000000	29.50	29.85	42.30	-12.80	VERTICAL	Passed
38.035872	23.80	15.49	41.80	-18.00	VERTICAL	Passed
47.555110	22.80	13.80	47.30	-24.50	VERTICAL	Passed
73.748497	14.10	5.07	41.30	-27.20	HORIZONTAL	Passed
74.969940	11.90	3.94	38.90	-27.00	HORIZONTAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2387.456914	55.90	623.73	55.00	0.90	VERTICAL	Passed
2492.012024	58.50	841.40	53.40	5.10	VERTICAL	Passed
2496.048096	56.20	645.65	53.70	2.50	VERTICAL	Passed
4883.767535	39.00	89.13	40.90	-1.90	VERTICAL	Passed
4965.931864	37.60	75.86	39.10	-1.50	VERTICAL	Passed
7319.139279	40.80	109.65	36.50	4.30	VERTICAL	Passed
7333.163327	40.90	110.92	36.50	4.40	VERTICAL	Passed
7415.839679	41.60	120.23	36.60	5.00	VERTICAL	Passed
7421.337675	41.90	124.45	37.00	4.90	VERTICAL	Passed
17874.255511	57.80	776.25	32.30	25.50	HORIZONTAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2387.456914	34.20	51.29	33.30	0.90	VERTICAL	Passed
2492.012024	40.10	101.16	35.00	5.10	VERTICAL	Passed
2495.548096	37.80	77.62	35.30	2.50	VERTICAL	Passed
4883.767535	26.60	21.38	28.50	-1.90	VERTICAL	Passed
4964.431864	24.40	16.60	25.90	-1.50	VERTICAL	Passed
7322.639279	28.10	25.41	23.90	4.20	VERTICAL	Passed
7327.663327	27.90	24.83	23.60	4.30	VERTICAL	Passed
7417.337675	28.70	27.23	23.70	5.00	VERTICAL	Passed
7421.839679	28.70	27.23	23.80	4.90	VERTICAL	Passed
17876.255511	44.80	173.78	19.30	25.50	HORIZONTAL	Passed

Channel 11 / 2462 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
30.300000	26.40	20.89	39.50	-13.10	VERTICAL	Passed
37.795391	22.00	12.59	39.80	-17.80	VERTICAL	Passed
75.469940	10.70	3.43	37.60	-26.90	HORIZONTAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2492.000000	65.10	1798.87	60.00	5.10	VERTICAL	Passed
2495.548096	61.50	1188.50	59.00	2.50	VERTICAL	Passed
4923.847695	38.80	87.10	40.20	-1.40	VERTICAL	Passed

4946.889780	36.50	66.83	38.20	-1.70	HORIZONTAL	Passed
7317.131263	40.80	109.65	36.50	4.30	VERTICAL	Passed
7367.729459	40.90	110.92	36.30	4.60	VERTICAL	Passed
7415.833667	41.50	118.85	36.50	5.00	VERTICAL	Passed
17864.725451	57.90	785.24	32.70	25.20	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2491.000000	40.60	107.15	34.70	5.90	VERTICAL	Passed
2496.548096	39.10	90.16	36.60	2.50	VERTICAL	Passed
4923.847695	26.00	19.95	27.40	-1.40	VERTICAL	Passed
4948.389780	23.90	15.67	25.60	-1.70	HORIZONTAL	Passed
7319.131263	28.00	25.12	23.70	4.30	VERTICAL	Passed
7368.729459	28.30	26.00	23.70	4.60	VERTICAL	Passed
7417.833667	28.90	27.86	23.90	5.00	VERTICAL	Passed
17863.725451	44.70	171.79	19.50	25.20	VERTICAL	Passed

6.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel 1 / 2412 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
30.000000	29.80	30.90	42.60	-12.80	VERTICAL	Passed
37.935872	24.10	16.03	42.00	-17.90	VERTICAL	Passed
74.169940	15.00	5.62	42.10	-27.10	HORIZONTAL	Passed
74.308016	15.10	5.69	42.20	-27.10	HORIZONTAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2387.228457	66.80	2187.76	66.00	0.80	VERTICAL	Passed
2492.012024	55.60	602.56	50.50	5.10	VERTICAL	Passed
4823.143287	38.20	81.28	40.40	-2.20	VERTICAL	Passed
4923.849699	36.90	69.98	38.30	-1.40	HORIZONTAL	Passed
7255.007014	40.90	110.92	36.70	4.20	VERTICAL	Passed
7320.635271	40.90	110.92	36.70	4.20	VERTICAL	Passed
7434.863727	40.90	110.92	36.10	4.80	VERTICAL	Passed
17876.253507	58.50	841.40	33.00	25.50	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2388.228457	43.30	146.22	42.40	0.90	VERTICAL	Passed
2493.012024	42.20	128.82	38.00	4.20	VERTICAL	Passed
4820.143287	24.60	16.98	26.80	-2.20	VERTICAL	Passed
4927.349699	24.20	16.22	25.70	-1.50	HORIZONTAL	Passed
7251.007014	27.60	23.99	23.40	4.20	VERTICAL	Passed
7318.635271	28.20	25.70	23.90	4.30	VERTICAL	Passed
7430.363727	28.70	27.23	23.90	4.80	VERTICAL	Passed
17873.253507	45.00	177.83	19.60	25.40	VERTICAL	Passed

Channel 7 / 2442 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
30.100000	29.30	29.17	42.20	-12.90	VERTICAL	Passed
38.095391	23.90	15.67	41.90	-18.00	VERTICAL	Passed
73.708016	13.80	4.90	41.00	-27.20	HORIZONTAL	Passed
74.469940	14.10	5.07	41.10	-27.00	HORIZONTAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2389.000000	55.30	582.10	54.40	0.90	HORIZONTAL	Passed
2492.500000	57.00	707.95	52.30	4.70	VERTICAL	Passed
2497.548096	56.50	668.34	54.10	2.40	VERTICAL	Passed
4885.269539	37.90	78.52	39.80	-1.90	VERTICAL	Passed
7315.631263	40.60	107.15	36.30	4.30	VERTICAL	Passed
7321.141283	41.10	113.50	36.90	4.20	HORIZONTAL	Passed
7418.833667	41.30	116.14	36.30	5.00	VERTICAL	Passed
7431.863727	41.30	116.14	36.50	4.80	VERTICAL	Passed
17867.237475	57.60	758.58	32.30	25.30	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2388.000000	35.60	60.26	34.70	0.90	HORIZONTAL	Passed
2492.000000	40.70	108.39	35.60	5.10	VERTICAL	Passed
2496.548096	40.60	107.15	38.10	2.50	VERTICAL	Passed
4886.269539	24.30	16.41	26.20	-1.90	VERTICAL	Passed
7317.141283	27.50	23.71	23.20	4.30	HORIZONTAL	Passed
7319.131263	27.90	24.83	23.60	4.30	VERTICAL	Passed
7419.833667	28.80	27.54	23.90	4.90	VERTICAL	Passed
7434.363727	28.20	25.70	23.40	4.80	VERTICAL	Passed
17871.237475	44.90	175.79	19.50	25.40	VERTICAL	Passed

Channel 11 / 2462 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
30.000000	29.30	29.17	42.10	-12.80	VERTICAL	Passed
38.095391	16.70	6.84	34.70	-18.00	VERTICAL	Passed
46.852705	19.50	9.44	43.50	-24.00	VERTICAL	Passed
74.148497	7.30	2.32	34.40	-27.10	HORIZONTAL	Passed
74.369940	9.20	2.88	36.30	-27.10	HORIZONTAL	Passed
91.103607	10.70	3.43	36.80	-26.10	HORIZONTAL	Passed

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2493.012024	64.40	1659.59	60.20	4.20	HORIZONTAL	Passed
2495.548096	61.90	1244.51	59.40	2.50	HORIZONTAL	Passed

4910.819639	36.70	68.39	38.40	-1.70	HORIZONTAL	Passed
4920.337675	37.70	76.74	39.20	-1.50	VERTICAL	Passed
7315.135271	40.90	110.92	36.60	4.30	VERTICAL	Passed
7338.681363	40.80	109.65	36.20	4.60	HORIZONTAL	Passed
7368.737475	42.10	127.35	37.50	4.60	VERTICAL	Passed
7420.335671	41.60	120.23	36.70	4.90	VERTICAL	
17875.253507	57.30	732.82	31.80	25.50	VERTICAL	

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2492.012024	44.30	164.06	39.20	5.10	HORIZONTAL	Passed
2496.048096	42.10	127.35	39.60	2.50	HORIZONTAL	Passed
4912.819639	23.80	15.49	25.50	-1.70	HORIZONTAL	Passed
4918.337675	24.50	16.79	26.10	-1.60	VERTICAL	Passed
7317.635271	27.80	24.55	23.50	4.30	VERTICAL	Passed
7338.181363	27.40	23.44	22.80	4.60	HORIZONTAL	Passed
7368.737475	28.30	26.00	23.70	4.60	VERTICAL	Passed
7418.335671	28.70	27.23	23.70	5.00	VERTICAL	Passed
17872.753507	44.90	175.79	19.50	25.40	VERTICAL	Passed

7. Test Equipment

7.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
13037	Power Supply 0-15V 10A	EA3012	LP Instruments	15C, 15B
13513	Pulse Limiter 9KHz-30MHz	ESH3Z2	Rohde&Schwarz	15C, 15B
13666	EMI Test Reciever 9KHz-2,5GHz	ESPC	Rohde&Schwarz	15C, 15B
13935	Two Lines Artificial Mains Network	ESH3-Z5	Rohde&Schwarz	15C, 15B
16995	Directional Coupler 20dB 0,5-2,0 GHz SMA Conn.	1538RA-20	Weinschel	15C, 15B
18772	Shielded Chamber	RFD-100	ETS-Lindgren	15C, 15B
19171	Universal Radio Communication Tester	CMU200	Rohde&Schwarz	15C, 15B
11386	System DC Power Supply	HP6632A	Hewlett Packard	22/24, 15C, 15B
19678	Spectrum Analyzer 26 GHz	FSP	Rohde&Schwarz	22/24, 15C, 15B
16601	Universal Radio Communication Tester	CMU200	Rohde&Schwarz	22/24, 15C, 15B
19625	Vötsch Climatic Chamber	VT4002EMC	Vötsch	22/24, 15C, 15B
13357	Rohde & Schwartz Signal Generator	SMP02	Rohde&Schwarz	22/24, 15C, 15B

7.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
18416	Universal Radio Communication Tester	CMU200	Rohde&Schwarz	22/24, 15C, 15B
	Programmable Relay Switching System	-----	Pickering	22/24, 15C, 15B
15742	Programmable Relay Switching System	-----	Pickering	22/24, 15C, 15B
14020	Power Supply Module Relay Switching System 45W	10-910-002	Pickering	22/24, 15C, 15B
15743	Power Supply Module Relay Switching System 50W	10-910L-001	Pickering	22/24, 15C, 15B
16490	RS-232/IEEE-488.2 Interface	10-921-001	Pickering	22/24, 15C, 15B
	RS-232/IEEE-488.2 Interface	10-921-001	Pickering	22/24, 15C, 15B
20078	Relay 2x6 Chnl μ Wave Mux	10-785B-522	Pickering	22/24, 15C, 15B
14021	Relay Dual 6 Chnl μ Wave Mux	10-785-522		22/24, 15C, 15B
	Relay Dual 6 Chnl μ Wave Mux	10-785-522		22/24, 15C, 15B
17644	Dual 6 Channel MUX Microwave Relay SMA 50 Ohm	10-785-522	Pickering	22/24, 15C, 15B
16948	Dual 6 Channel MUX Microwave Relay SMA 50 Ohm	10-785-522	Pickering	22/24, 15C, 15B
16949	Dual 6 Channel MUX Microwave Relay SMA 50 Ohm	10-785-522	Pickering	22/24, 15C, 15B
18792	Multi Device Controller	2090	ETS-EMCO	22/24, 15C, 15B
14963	RF Preampifier 100MHz-4GHz (Metal Chassis)	AFS3-00100400	Miteq/NMP Cph	22/24, 15C, 15B
18861	EMI Test Receiver 20Hz-26,5GHz	ESI	Rohde&Schwarz	22/24, 15C, 15B

Eq. No	Equipment	Type	Manufacturer	Used in
18860	Ultra Broadband Antenna Ultralog 30-3000MHz	HL562	Rohde&Schwarz	22/24, 15C, 15B
19830	Ultra Broadband Antenna Ultralog 30-3000MHz	HL562	Rohde&Schwarz	22/24, 15C, 15B
18773	Shielded Chamber	RFD-100	ETS-Lindgren	22/24, 15C, 15B
18774	Shielded Chamber	RFSD-F/A-100	ETS-Lindgren	22/24, 15C, 15B
19151	High Pass Filter 3GHz WHK3.0/18G-10ss	WHJS3000-10SS	Wainwright	22/24, 15C, 15B
13937	Ultra Stable Notch Filter 850MHz	WRCA902.4-0.2/40-6SS	Wainwright Instruments	22/24, 15C, 15B
13936	Ultra Stable Notch Filter 1747,5MHz	WRCD1747.5-0.2/40- 10SS	Wainwright Instruments	22/24, 15C, 15B
13917	Highpass Filter 1000-3000MHz 50OHM SMA Conn	WHKS1000-10SS	Wainwright Instruments	22/24, 15C, 15B
14188	Ultra Stable Notch Filter 902,4MHz	WRCA902.4-0.2/40-6SS	Wainwright	22/24, 15C, 15B
14187	Ultra Stable Notch Filter 1747,5MHz	WRCD1747.5-0.2/40- 10SS	Wainwright	22/24, 15C, 15B
16633	Ultra Stable Notch Filter 1880,0MHz	WRCD1880.0-0.2/40- 10SS	Wainwright	22/24, 15C, 15B
19587	BT/WLAN Band Reject Filter	WRCG2400/2483- 2390/2493-35/10SS	Wainwright	22/24, 15C, 15B
	WDCMA Band 4 filter	WRCG1737/1743- 1733/1747-40/6SS	Wainwright	22/24, 15C, 15B
	WDCMA Band 5&6 filter	WRCG832/83/-825/845- 40/5SS	Wainwright	22/24, 15C, 15B
	WDCMA Band 8 filter	WRCG894.6/900.6- 890.6/904.6-40/80SS	Wainwright	22/24, 15C, 15B
18323	Band reject filter 1947-1953MHz 40dB	WRCG1947/1953- 1940/1960-40/6SS	Wainwright	22/24, 15C, 15B
20031	Double Ridged Broadband Horn	BBHA 9120 D	SCHWARZBECK	22/24, 15C, 15B
15190	Infra Red Remote Control Unit	4630	Emco	22/24, 15C, 15B
14993	EMI Test Receiver 9KHz- 2750MHz	ESCS30	Rohde&Schwarz	22/24, 15C, 15B
15191	Turntable Contoller Unit	G-800SDX	YAESU	22/24, 15C, 15B
14900	Antenna Controller	HD100	HD GmbH	22/24, 15C, 15B
15105	Attenuator 30dB DC-1000MHz 50 Ohm Nf - Nm	NAT-30	Mini-Circuits	22/24, 15C, 15B
13302	Spectrum Analyzer 9KHz- 12.8GHz	HP8596E	Hewlett Packard	22/24, 15C, 15B
11584	Spectrum analyzer 50Hz- 6,5GHz	HP8561B	Hewlett Packard	22/24, 15C, 15B
13134	Tracking generator	HP85645A	Hewlett Packard	22/24, 15C, 15B
19374	Resonant Dipole Antenna 850MHz SMA m Conn.	-----	NMP Cph	22/24, 15C, 15B
19375	Resonant Dipole Antenna 1900MHz SMA m Conn.	-----	NMP Cph	22/24, 15C, 15B
11487	Network analyzer 300KHz- 3,0GHz	HP8753A	Hewlett Packard	22/24, 15C, 15B
14807	S - Parameter Test Set 300KHz- 6GHz	HP85047A	Hewlett Packard	22/24, 15C, 15B
17277	Multimeter Digital 6 1/2 Digit	AT34401A	Agilent Technologies	22/24, 15C, 15B