FCC Part 15B Compliance Test Report

Test Report no.:	Cph_FCC_0906_03.doc	**Date of Report:**	04-Feb-2009
Number of pages:	11	**Customer's Contact person:**	Hu Dongji
Testing laboratory:	TCC Nokia Copenhagen Laboratory Frederikskaj 1790 COPENHAGEN V DENMARK Tel. +45 33 292929 Fax. +45 33 292934	**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.:**	99059 661AD-1		
Tested devices/ accessories:	**Phone; RM-525 (HW 0102), Battery; BL-5C, AC Charger; AC-3E, Headset; HS-105W**		
FCC ID:	QTLRM-525	**IC:**	661AB-RM525
Supplement reports:			
Testing has been carried out in accordance with:	**CFR 47, FCC rules Part 15 Subpart B, ANSI C63.4 (2003), ICES-003, CISPR 22 and IC standards RSS-132 (Issue 2, September 2005), RSS-133 (Issue 4, February 2008), RSS-139 (Issue 1, February 2008) 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:	Digitally signed by Niels Christian Andersen DN: cn=Niels Christian Andersen, c=DK, o=TCC Nokia, ou=EMC, email=christian.n.andersen@nokia.com Date: 2009.02.04 12:59:22 +01'00'		

Niels Christian Andersen, Test System Manager

1. Summary for FCC Part 15B Compliance Test Report

Date of receipt	21-Jan-2009
Testing completed	03-Feb-2009
The customer's contact person	Hu Dongji
Test Plan referred to	T:\Projects\RM-525\TestPlan_RS\RS_testplan_RM-525.xls
Notes	None
Document name	T:\Projects\RM-525\EMC\Results\FCC\Cph_FCC_0906_03.doc

1.1. EUT and Accessory Information

The EUT is a 2-band (GSM850/1900) mobile phone. GSM bands are tested in idle mode.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-525	001004/00/375332/5	0102	-	2.18	25514
Battery	BL-5C	0670400363563P391213705969	-	-	-	25511
AC Charger	AC-3E	486867847371131667 1;0675370	-	-	-	25516
Headset	HS-105W	95	0.2	1	-	25517
Phone	RM-525	001004/00/375088/3	0102	-	2.18	26793
Battery	BL-5C	0670400363563P391213705968	-	-	-	26787
AC Charger	AC-3E	486867847371131667 5;0675370	-	-	-	26783
Headset	HS-105W	0694299808402100213	0.2	1	-	26781

1.2. Summary of Test Results

GSM 850:

Section in CFR 47	Section in ICES-003 (RSS-132)	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	Passed
15.109, a	5.5 (4.6)	Radiated emissions	Passed

GSM 1900:

Section in CFR 47	Section in ICES-003 (RSS-133)	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	NP
15.109, a	5.5 (6.6)	Radiated emissions	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 Copenhagen Laboratory.

TCC Nokia Copenhagen Laboratory
Frederikskaj
1790 COPENHAGEN V
DENMARK
Tel. +45 33 292929
Fax. +45 33 292934

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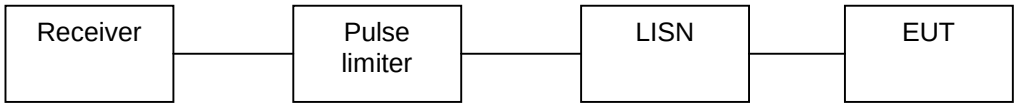
TCC Nokia Copenhagen Laboratory
Frederikskaj
1790 COPENHAGEN V
DENMARK
Tel. +45 33 292929
Fax. +45 33 292934

2. AC power line conducted emissions

(FCC §15.107, ICES-003 section 5.3)

EUT with DUT number	RM-525 dut 26793, BL-5C dut 26787
Accessories with DUT numbers	HS-105 dut 26781, AC-3E dut 26783
Operation Voltage [V] / [Hz]	nominal
Result	Passed
Remarks	GSM850 Idle mode with FM receiver switched on.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21.4 / 30.0 101.53
Date of measurements	03-Jan-2009
Measured by	Jan Engelbrechtsen

2.1. Test setup



2.2. Test method and limit

The measurement is made according to ANSI C63.4-2003 as follows:

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

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.

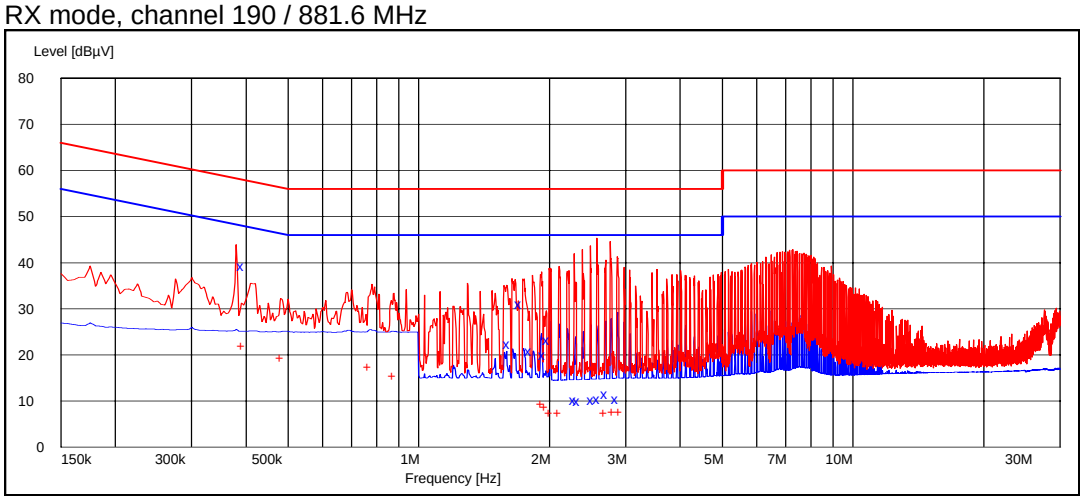
CISPR 22 Class B limits

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

TCC Nokia Copenhagen Laboratory
Frederikskaj
1790 COPENHAGEN V
DENMARK
Tel. +45 33 292929
Fax. +45 33 292934

2.3. GSM 850 Test results

RX mode, channel 190 / 881.6 MHz



Quasi peak (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.395000	39.30	L1	Pass
1.615000	22.30	L1	Pass
1.720000	31.10	N	Pass
1.815000	20.90	L1	Pass
1.950000	20.00	L1	Pass
1.995000	23.20	L1	Pass
2.300000	10.20	L1	Pass
2.350000	10.00	L1	Pass
2.530000	10.10	L1	Pass
2.610000	10.50	N	Pass
2.715000	11.50	N	Pass
2.870000	10.40	L1	Pass

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.395000	21.90	L1	Pass
0.485000	19.30	L1	Pass
0.770000	17.40	L1	Pass
0.880000	15.50	L1	Pass
1.930000	9.30	L1	Pass
1.965000	8.80	L1	Pass
2.020000	7.40	N	Pass
2.115000	7.40	N	Pass
2.700000	7.40	N	Pass
2.820000	7.70	N	Pass
2.920000	7.70	N	Pass
2.925000	7.70	N	Pass

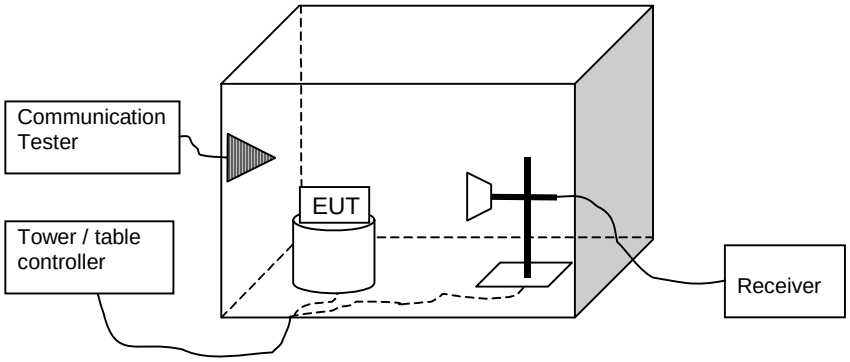
TCC Nokia Copenhagen Laboratory
Frederikskaj
1790 COPENHAGEN V
DENMARK
Tel. +45 33 292929
Fax. +45 33 292934

3. Radiated emissions

(FCC §15.109, ICES-003 section 5.5, RSS-132 4.6, RSS-133 6.6, RSS-139 6.6)

EUT with DUT number	RM-525 DUT 25514
Accessories with DUT numbers	BL-5C DUT 25511, AC-3E DUT 25516, HS-105W DUT 25517
Operation Voltage [V] / [Hz]	115 / 60
Result	Passed
Remarks	Test performed with FM-Radio active.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 38 / 100.9
Date of measurements	27-Jan-2009
Measured by	Christian Andersen

3.1. Test setup



3.2. Test method and limit

The measurement is made according to ANSI C63.4-2003as follows:

The measurement is performed in the Semi-Anechoic Chamber with conducting metal floor.

The measurement distance is 3 m.

The EUT is placed on a nonconductive plate at 80 cm height.

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.

TCC Nokia Copenhagen Laboratory
Frederikskaj
1790 COPENHAGEN V
DENMARK
Tel. +45 33 292929
Fax. +45 33 292934

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

CISPR 22 and FCC Part 15 Class B limits (3 m measurement distance)

Frequency range [MHz]	Quasi peak limit [dBµV/m]	Average limit [dBµV/m]	Peak limit [dBµV/m]
30 – 230	40	-	-
230 – 1000	47	-	-
Above 1000	-	54	74

3.3. GSM 850 Test results

RX mode, channel 128 / 869.2 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3476.800000	35.10	56.89	39.10	-4.0	VERTICAL	Passed
6953.600000	45.30	184.08	37.70	7.6	HORIZONTAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3476.800000	21.60	12.02	25.60	-4.0	VERTICAL	Passed
6953.600000	32.60	42.66	25.00	7.6	VERTICAL	Passed

RX mode, channel 190 / 881.6 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
38.235872	32.80	43.65	43.40	-10.6	VERTICAL	Passed
45.812224	31.40	37.15	47.20	-15.8	VERTICAL	Passed
73.467535	19.20	9.12	39.00	-19.8	VERTICAL	Passed
98.056112	54.70	543.25	72.80	-18.1	HORIZONTAL	Passed
157.915631	19.50	9.44	39.40	-19.9	VERTICAL	Passed
881.563527	53.90	495.45	60.50	-6.6	VERTICAL	Passed

*98.0 MHz frequency is coming from FM-Radio tester and thus ignored.
*881.6 MHz frequency is coming from communication tester and thus ignored.

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3526.050100	38.60	85.11	42.40	-3.8	VERTICAL	Passed
3526.052104	37.80	77.62	41.60	-3.8	VERTICAL	Passed

TCC Nokia Copenhagen Laboratory
Frederikskaj
1790 COPENHAGEN V
DENMARK
Tel. +45 33 292929
Fax. +45 33 292934

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
2964.929860	39.50	94.41	28.80	10.7	VERTICAL	Passed
3525.552104	23.20	14.45	27.00	-3.8	VERTICAL	Passed
3526.050100	23.90	15.67	27.70	-3.8	VERTICAL	Passed

RX mode, channel 251 / 893.8 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3575.200000	36.00	63.10	39.30	-3.3	VERTICAL	Passed
7150.400000	42.70	136.46	34.00	8.7	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3575.200000	22.10	12.74	25.40	-3.3	VERTICAL	Passed
7150.400000	29.10	28.51	20.40	8.7	VERTICAL	Passed

3.4. GSM 1900 Test results

RX mode, channel 512 / 1930.2 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3860.000000	37.10	71.61	39.60	-2.5	VERTICAL	Passed
7720.000000	42.20	128.82	32.70	9.5	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3860.000000	23.70	15.31	26.20	-2.5	VERTICAL	Passed
7720.000000	29.20	28.84	19.70	9.5	VERTICAL	Passed

RX mode, channel 661 / 1960.0 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
32.485772	31.70	38.46	38.50	-6.8	VERTICAL	Passed
38.057315	33.00	44.67	43.50	-10.5	VERTICAL	Passed
43.866934	30.60	33.88	45.10	-14.5	VERTICAL	Passed
57.195792	26.90	22.13	49.20	-22.3	HORIZONTAL	Passed
98.056112	55.20	575.44	73.30	-18.1	HORIZONTAL	Passed

*98.0 MHz frequency is coming from FM-Radio tester and thus ignored.

TCC Nokia Copenhagen Laboratory
Frederikskaj
1790 COPENHAGEN V
DENMARK
Tel. +45 33 292929
Fax. +45 33 292934

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
1959.919840	63.80	1548.82	62.70	1.1	VERTICAL	Passed
3919.839679	37.60	75.86	40.20	-2.6	VERTICAL	Passed

*1960.0 MHz frequency is coming from communication tester and thus ignored.

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
1959.919840	63.60	1513.56	62.50	1.1	VERTICAL	Passed
2960.929860	39.00	89.13	28.70	10.3	VERTICAL	Passed
3919.839679	23.70	15.31	26.30	-2.6	VERTICAL	Passed

*1960.0 MHz frequency is coming from communication tester and thus ignored.

RX mode, channel 810 / 1989.8 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3980.000000	36.70	68.39	39.10	-2.4	VERTICAL	Passed
7960.000000	43.20	144.54	32.70	10.5	VERTICAL	Passed

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3980.000000	23.20	14.45	25.60	-2.4	VERTICAL	Passed
7960.000000	29.90	31.26	19.40	10.5	VERTICAL	Passed

TCC Nokia Copenhagen Laboratory
Frederikskaj
1790 COPENHAGEN V
DENMARK
Tel. +45 33 292929
Fax. +45 33 292934

4. Test Equipment

4.1. 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 Receiver 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	22/24/27, 15C, 15B
19678	Spectrum Analyzer 26 GHz	FSP	Rohde&Schwarz	22/24/27, 15C, 15B
16601	Universal Radio Communication Tester	CMU200	Rohde&Schwarz	22/24/27, 15C, 15B
19625	Vötsch Climatic Chamber	VT4002EMC	Vötsch	22/24/27, 15C, 15B
13357	Rohde & Schwartz Signal Generator	SMP02	Rohde&Schwarz	22/24/27, 15C, 15B
20168	Bluetooth EDR Tester	CBT	Rohde&Schwarz	22/24/27, 15C, 15B

4.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
18416	Universal Radio Communication Tester	CMU200	Rohde&Schwarz	22/24/27, 15C, 15B
	Programmable Relay Switching System	----------	Pickering	22/24/27, 15C, 15B
15742	Programmable Relay Switching System	----------	Pickering	22/24/27, 15C, 15B
14020	Power Supply Module Relay Switching System 45W	10-910-002	Pickering	22/24/27, 15C, 15B
15743	Power Supply Module Relay Switching System 50W	10-910L-001	Pickering	22/24/27, 15C, 15B
16490	RS-232/IEEE-488.2 Interface	10-921-001	Pickering	22/24/27, 15C, 15B
	RS-232/IEEE-488.2 Interface	10-921-001	Pickering	22/24/27, 15C, 15B
20078	Relay 2x6 Chnl µWave Mux	10-785B-522	Pickering	22/24/27, 15C, 15B
14021	Relay Dual 6 Chnl µWave Mux	10-785-522		22/24/27, 15C, 15B
	Relay Dual 6 Chnl µWave Mux	10-785-522		22/24/27, 15C, 15B
17644	Dual 6 Channel MUX Microwave Relay SMA 50 Ohm	10-785-522	Pickering	22/24/27, 15C, 15B
16948	Dual 6 Channel MUX Microwave Relay SMA 50 Ohm	10-785-522	Pickering	22/24/27, 15C, 15B
16949	Dual 6 Channel MUX Microwave Relay SMA 50 Ohm	10-785-522	Pickering	22/24/27, 15C, 15B
18792	Multi Device Controller	2090	ETS-EMCO	22/24/27, 15C, 15B
14963	RF Preamplifier 100MHz-4GHz (Metal Chassis)	AFS3-00100400	Miteq/NMP Cph	22/24/27, 15C, 15B
18861	EMI Test Receiver 20Hz-26,5GHz	ESI	Rohde&Schwarz	22/24/27, 15C, 15B
20335	Ultra Broadband Antenna Ultralog 30-3000MHz	HL562	Rohde&Schwarz	22/24/27, 15C, 15B
18773	Shielded Chamber	RFD-100	ETS-Lindgren	22/24/27, 15C, 15B
18774	Shielded Chamber	RFSD-F/A-100	ETS-Lindgren	22/24/27, 15C, 15B
19151	High Pass Filter 3GHz	WHJS3000-10SS	Wainwright	22/24/27, 15C, 15B

TCC Nokia Copenhagen Laboratory
Frederikskaj
1790 COPENHAGEN V
DENMARK
Tel. +45 33 292929
Fax. +45 33 292934

Eq. No	Equipment	Type	Manufacturer	Used in
	WHK3.0/18G-10ss			
13937	Ultra Stable Notch Filter 850MHz	WRCA902.4-0.2/40-6SS	Wainwright Instruments	22/24/27, 15C, 15B
13936	Ultra Stable Notch Filter 1747,5MHz	WRCD1747.5-0.2/40-10SS	Wainwright Instruments	22/24/27, 15C, 15B
14114	High pass filter	WHK1000-12SS	Wainwright Instruments	22/24/27, 15C, 15B
14188	Ultra Stable Notch Filter 902,4MHz	WRCA902.4-0.2/40-6SS	Wainwright	22/24/27, 15C, 15B
14187	Ultra Stable Notch Filter 1747,5MHz	WRCD1747.5-0.2/40-10SS	Wainwright	22/24/27, 15C, 15B
16633	Ultra Stable Notch Filter 1880,0MHz	WRCD1880.0-0.2/40-10SS	Wainwright	22/24/27, 15C, 15B
19587	BT/WLAN Band Reject Filter	WRCG2400/2483-2390/2493-35/10SS	Wainwright	22/24/27, 15C, 15B
20115	WDCMA Band 2 filter		Wainwright	24, 15C, 15B
20114	WDCMA Band 4 filter	WRCG1737/1743-1733/1747-40/6SS	Wainwright	27, 15C, 15B
20116	WDCMA Band 5&6 filter	WRCG832/83/-825/845-40/5SS	Wainwright	22, 15C, 15B
18323	Band reject filter 1947-1953MHz 40dB	WRCG1947/1953-1940/1960-40/6SS	Wainwright	22/24/27, 15C, 15B
20031	Double Ridged Broadband Horn	BBHA 9120 D	SCHWARZBECK	22/24/27, 15C, 15B
19966	Magnetic Loop Antenna 9 kHz - 30 MHz	HFH2-Z2	Rohde&Schwarz	15C, 15B
14993	EMI Test Receiver 9KHz-2750MHz	ESCS30	Rohde&Schwarz	22/24/27, 15C, 15B
15191	Turntable Controller Unit	G-800SDX	YAESU	22/24/27, 15C, 15B
14900	Antenna Controller	HD100	HD GmbH	22/24/27, 15C, 15B
19374	Resonant Dipole Antenna 850MHz SMA m Conn.	---------	NMP Cph	22/24/27, 15C, 15B
19375	Resonant Dipole Antenna 1900MHz SMA m Conn.	----------	NMP Cph	22/24/27, 15C, 15B
20168	Bluetooth EDR Tester	CBT	Rohde&Schwarz	22/24/27, 15C, 15B

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DENMARK
Tel. +45 33 292929
Fax. +45 33 292934