FCC Part 22/24 Compliance Test Report

Test Report no.:	FCC22&24_RH-131_01.docx	**Date of Report:**	19-Jul-2011
Number of pages:	9	**Customer's Contact person:**	Xu Helen
Testing laboratory:	TCC Nokia Beijing Laboratory Beijing Economic and Technological Development Area No.5 Donghuan Zhonglu Beijing PRC China 100176 Tel. +86 10 8711 8888 Fax. +86 10 8711 4550	**Customer:**	Nokia Corporation Beijing Economic and Technological Development Area No.5 Donghuan Zhonglu Beijing PRC China 100176 Tel. +86 10 8711 8888 Fax. +86 10 8711 4550
FCC listing no.: **IC recognition no.:**	975940 661AH-1		
Tested devices/ accessories:	**Phone RH-131 / Battery BL-5CB**		
FCC ID:	QTLRH-131	**IC:**	661AB-RH131
Supplement reports:	-		
Testing has been carried out in accordance with:	**CFR 47, FCC rules Parts 22/24 , TIA-603-C-2004 and IC standards, RSS-GEN (Issue 3, December 2010), RSS-132 (Issue 2, September 2005), RSS-133 (Issue 5, February 2009). 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 Jia Dongsheng DN: cn=Jia Dongsheng, o=NOKIA, ou=PSCL, email=Dongsheng.jia@nokia.com, c=CN Date: 2011.07.19 16:20:00 +08'00'		

Jia Dongsheng, System Manager

1. Summary for FCC Part 22/24 Compliance Test Report

Date of receipt	01-Jul-2011
Testing completed	04-Jul-2011
The customer's contact person	Xu Helen
Test Plan referred to	T:\Projects\RH-131\TestPlan\RS_testplan_RH-131.xls
Notes	-
Document name	FCC22&24_RH-131_01.docx

1.1. EUT and Accessory Information

The EUT is a 2-band (GSM850/1900) mobile phone.
The EUT is tested with maximum rated TX power, modulated with pseudo random bit sequence (PRBS9).

Product	Type	SN	HW	MV	SW	DUT
Phone	RH-131	004402/13/583374/1	0302	-	02.30	52245
Battery	BL-5CB	0670619382066R505031268667	-	-	-	52054

1.2. Summary of Test Results

GSM850:

Section in CFR 47	Section in RSS-GEN or RSS-132	Name of the test	Result
§2.1046(a), 22.913(a)	4.4	Conducted RF output power	NP
§22.913(a)	4.4	Radiated RF output power	PASSED
§2.1049(h)	4.6.1	99 % occupied bandwidth	NP
§22.917(a)	4.5	Band edge compliance	PASSED
§22.917(a), §2.1051	4.5	Spurious emissions at antenna terminals	NP
§22.917(a), §2.1053	4.5	Spurious radiated emissions	NP
§2.1055(a)	4.3	Frequency stability, temperature variation	NP
§2.1055(d)	4.3	Frequency stability, voltage variation	NP

GSM1900:

Section in CFR 47	Section in RSS-GEN or RSS-133	Name of the test	Result
§2.1046(a)	6.4	Conducted RF output power	NP
§24.232(b)	6.4	Radiated RF output power	PASSED
§2.1049(h)	4.6.1	99 % occupied bandwidth	NP
§24.238(a)	6.5	Band edge compliance	PASSED
§24.238(a), §2.1051	6.5	Spurious emissions at antenna terminals	NP
§24.238(a), §2.1053	6.5	Spurious radiated emissions	NP
§2.1055(a)	6.3	Frequency stability, temperature variation	NP
§2.1055(d)	6.3	Frequency stability, voltage variation	NP

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

TCC Nokia Beijing Laboratory
Beijing Economic and
Technological Development Area
No.5 Donghuan Zhonglu
Beijing
PRC China 100176
Tel. +86 10 8711 8888
Fax. +86 10 8711 4550

CONTENTS

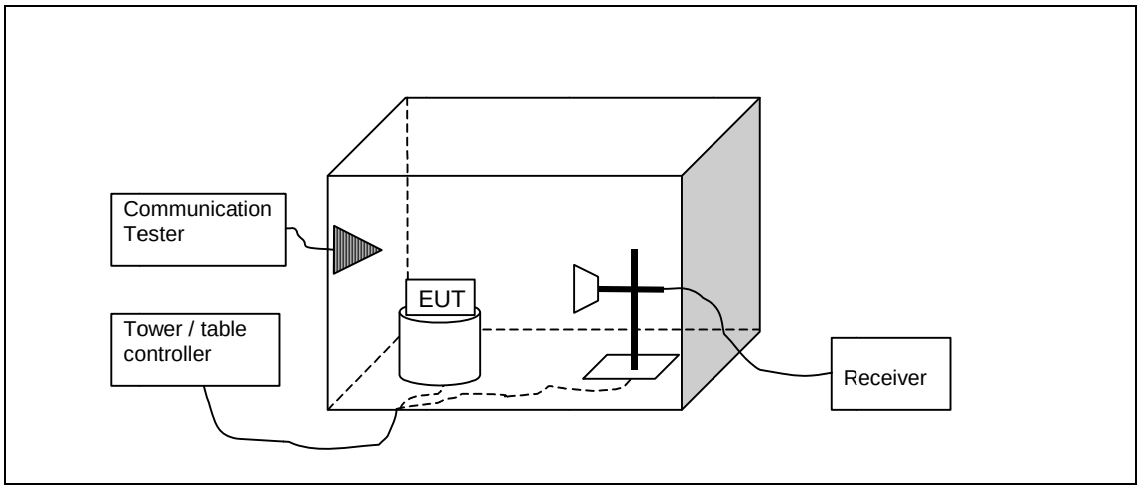
TCC Nokia Beijing Laboratory
Beijing Economic and
Technological Development Area
No.5 Donghuan Zhonglu
Beijing
PRC China 100176
Tel. +86 10 8711 8888
Fax. +86 10 8711 4550

2. Radiated RF output power

(FCC §22.913(a), §24.232(b), RSS-132 4.4, RSS-133 6.4)

EUT with DUT number	RH-131, DUT 52245
Accessories with DUT numbers	BL-5CB, DUT52054
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 57 / 99.8
Date of measurements	04-Jul-2011
Measured by	Zou Ming

2.1.1 Test Setup



2.2. Test method and limit

The measurement is made according to TIA-603-C-2004 as follows:

The measurement is performed in the Anechoic Chamber with absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system. The turntable is rotated 360 degrees and this is repeated for both horizontal and vertical receive antenna polarizations.

The EUT is placed on a nonconductive plate at 170 cm height.

The substitution method is used.

The measurement results are obtained as described below:

$$P\ [dBm] = P_{SUBST\ TX} + P_{MEAS} - P_{SUBST\ RX} - L_{SUBST\ CABLES} + G_{SUBST\ TX\ ANT}$$

Where P_{SUBST_TX} is signal generator level. P_{MEAS} is measured power level from the EUT. $P_{SUBST\ RX}$ is measured power level in substitute measurement. L_{SUBST_CABLE} is the loss of the cable between the signal generator and the substitution antenna *and* $G_{SUBST\_TX\_ANT}$ is substitution antenna gain.

TCC Nokia Beijing Laboratory
Beijing Economic and
Technological Development Area
No.5 Donghuan Zhonglu
Beijing
PRC China 100176
Tel. +86 10 8711 8888
Fax. +86 10 8711 4550

Limits for radiated RF output power measurements

Frequency range [MHz]	Limit [W]	Limit([dBm])
824 - 849	7	38.5
1710 - 1755	1	30
1850 - 1910	2	33

2.3. GSM850 TX Test results

GSM mode

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	$P_{SUBST\ TX}$ [dBm]	$P_{SUBST\ RX}$ [dBm]	$G_{SUBST\ TX\ ANT}$ [dB]	$L_{SUBST\ CABLE}$ [dB]	Polarisation	Result
128 / 824.2	30.26	1.062	-3.75	+10	-30.22	-2.85	3.36	VERTICAL	PASSED
190 / 836.6	31.36	1.368	-3.63	+10	-31.09	-2.73	3.37	HORIZONTAL	PASSED
251 / 848.8	29.73	0.940	-4.62	+10	-30.28	-2.56	3.37	HORIZONTAL	PASSED

2.4. GSM1900 TX Test results

GSM mode

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	$P_{SUBST\ TX}$ [dBm]	$P_{SUBST\ RX}$ [dBm]	$G_{SUBST\ TX\ ANT}$ [dB]	$L_{SUBST\ CABLE}$ [dB]	Polarisation	Result
512 / 1850.2	27.39	0.548	-18.43	+10	-32.61	8.14	4.93	HORIZONTAL	PASSED
661 / 1880	29.97	0.993	-16.28	+10	-32.96	8.27	4.98	HORIZONTAL	PASSED
810 / 1909.8	31.57	1.435	-15.26	+10	-33.41	8.43	5.01	HORIZONTAL	PASSED

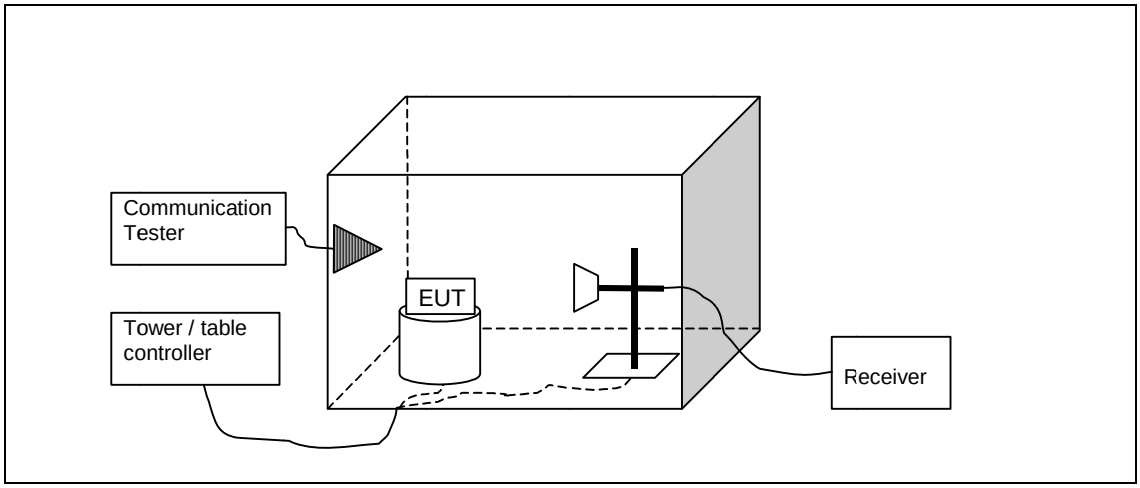
TCC Nokia Beijing Laboratory
Beijing Economic and
Technological Development Area
No.5 Donghuan Zhonglu
Beijing
PRC China 100176
Tel. +86 10 8711 8888
Fax. +86 10 8711 4550

3. Band edge compliance

(FCC §22.917(a), §24.238(a), RSS-132 4.5, RSS-133 6.5)

EUT with DUT number	RH-131, DUT 52245
Accessories with DUT numbers	BL-5CB, DUT52054
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 57 / 99.8
Date of measurements	04-Jul-2011
Measured by	Zou Ming

3.1.1 Test Setup



3.2. Test method and limit

The measurement is made according to FCC rules parts 22, 24 and IC standards , RSS-132, RSS-133.

Limits for band edge compliance measurements

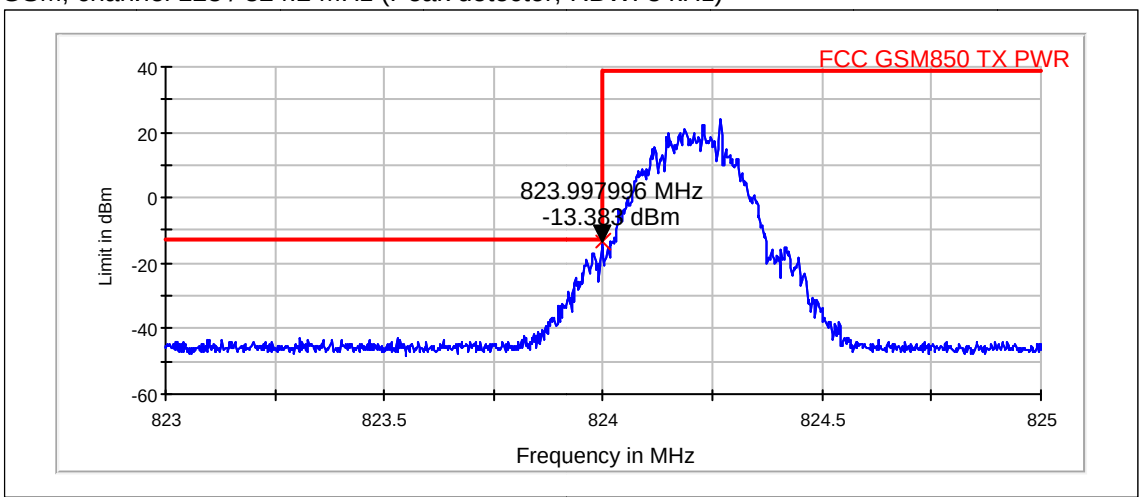
Operation band	Frequency range [MHz]	Limit [dBm]
GSM850 / WCDMA 850	Below 824 and above 849	-13
WCDMA 1700	Below 1710 and above 1755	-13
GSM 1900 / WCDMA 1900	Below 1850 and above 1910	-13

TCC Nokia Beijing Laboratory
Beijing Economic and
Technological Development Area
No.5 Donghuan Zhonglu
Beijing
PRC China 100176
Tel. +86 10 8711 8888
Fax. +86 10 8711 4550

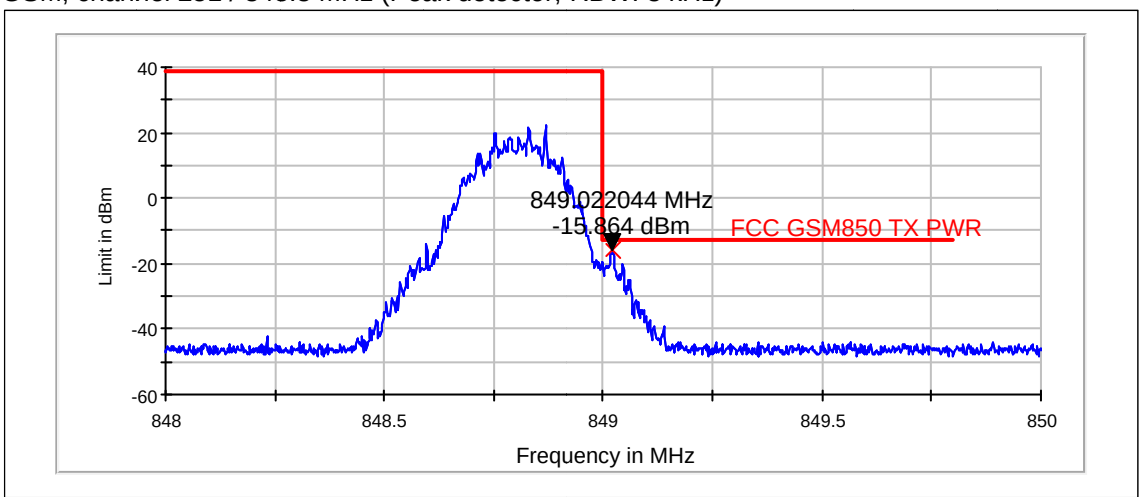
3.3. GSM850 Test results

Operation mode (TX on)	Channel / f_C [MHz]	Level [dBm]	Result
GSM	128 / 824.2	-13.38	PASSED
GSM	251 / 848.8	-15.86	PASSED

GSM, channel 128 / 824.2 MHz (Peak detector, RBW: 3 kHz)



GSM, channel 251 / 848.8 MHz (Peak detector, RBW: 3 kHz)

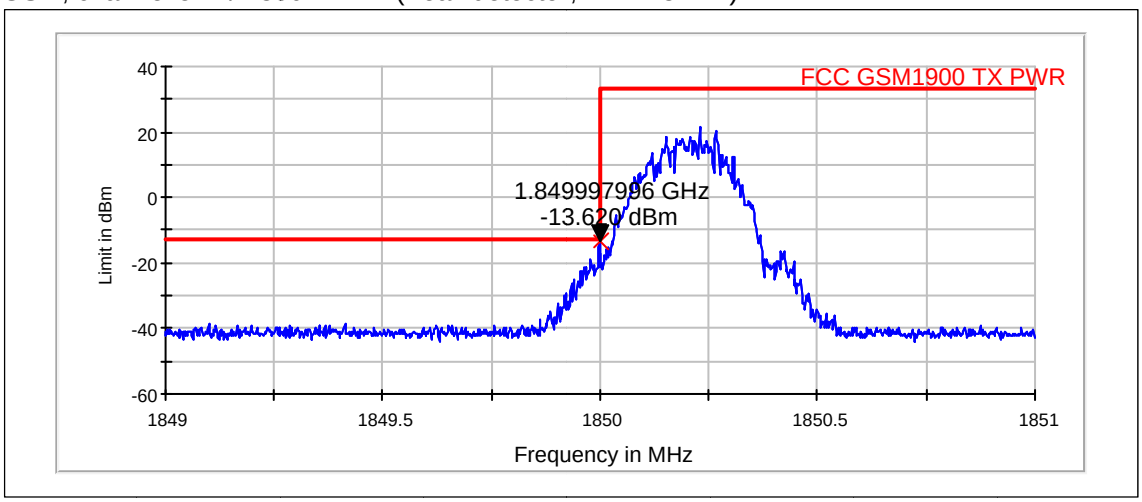


TCC Nokia Beijing Laboratory
Beijing Economic and
Technological Development Area
No.5 Donghuan Zhonglu
Beijing
PRC China 100176
Tel. +86 10 8711 8888
Fax. +86 10 8711 4550

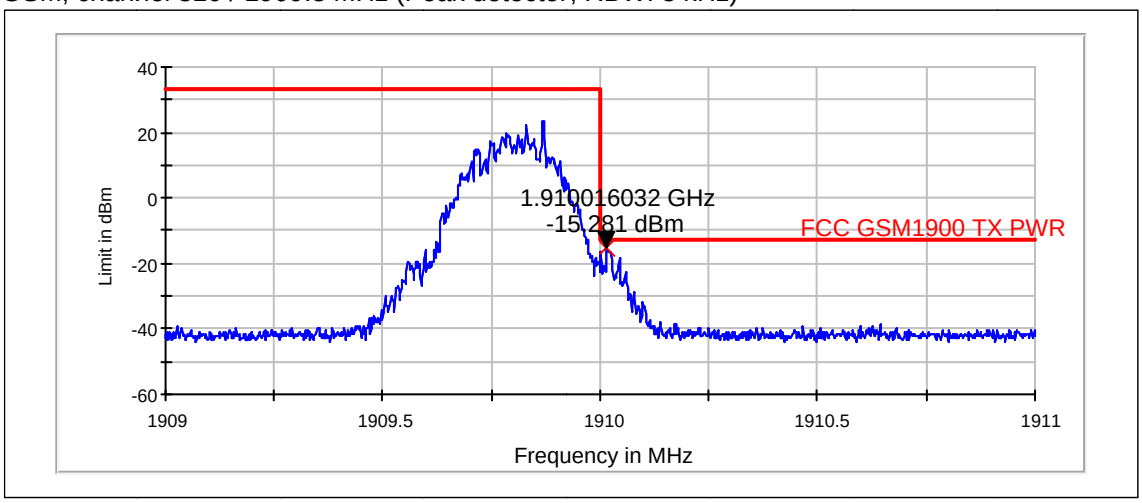
3.4. GSM1900 Test results

Operation mode (TX on)	Channel / f_C [MHz]	Level [dBm]	Result
GSM	512 / 1850.2	-13.62	PASSED
GSM	810 / 1909.8	-15.28	PASSED

GSM, channel 512 / 1850.2 MHz (Peak detector, RBW: 3 kHz)



GSM, channel 810 / 1909.8 MHz (Peak detector, RBW: 3 kHz)



TCC Nokia Beijing Laboratory
Beijing Economic and
Technological Development Area
No.5 Donghuan Zhonglu
Beijing
PRC China 100176
Tel. +86 10 8711 8888
Fax. +86 10 8711 4550

4. Test Equipment

4.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	RF Emission Software	EMC32 Test Software	R&S	22/24/27, 15C, 15B
BJPCHW0020	DC Power supply	Hp6632B	HP	22/24/27, 15C
BJPCPT0040	Receiver	ESCS30	R&S	15C,15B
BJPCPT0073	Signal Generator	SMR 20	R&S	22/24/27, 15C, 15B
BJPCPT0079	LISN 50 µH	ESH3-Z5	R&S	15C,15B
BJPCPT0131	Communication Tester	CMU200	R&S	15C,15B
BJPCPT0191	Pulse Limiter	ESH3-Z2	R&S	15C,15B
BJPCTC0017	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0067	Bluetooth Tester	CBT	R&S	22/24/27, 15C
BJPCTC0089	Tempreture Test chamber	VT4002	Votsch industrietechnik	22/24/27, 15C
BJPCTC0090	FSP spectrum analyzer	FSP30	R&S	22/24/27, 15C
BJPCTC0094	GPIB-RS232 convertor	GPIB-RS232	NI	22/24/27, 15C
BJPCTC0112	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0114	Signal Generator	E8357C	Agilent	22/24/27, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C

4.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	RF Emission Software	EMC32 Test Software	R&S	22/24/27, 15C, 15B
BJPCPT0072	Receiver	ESI B26	R&S	22/24/27, 15C, 15B
BJPCPT0130	Relay Switch Unit	TS-RSP	R&S	22/24/27, 15C, 15B
BJPCPT0150	High Pass Filter	WHKS1200-10SS	Wainwright	22/24/27, 15C, 15B
BJPCPT0151	Band Reject Filter	WRCD1880/2000-0.2/40-5SSK	Wainwright	24, 15B
BJPCPT0154	Band Reject Filter	WRCT2402/2480-2400/2483.5-30-20SS	Wainwright	15C, 15B
BJPCPT0162	Antenna	HF906	R&S	22/24/27, 15C, 15B
BJPCTC0007	Antenna	HL562	R&S	22/24/27, 15C, 15B
BJPCTC0029	Antenna	HF906	R&S	22/24/27, 15C, 15B
BJPCTC0034	Band Reject Filter	WRCT 800/880-0.2/40-5SSK	Wainwright	22, 15B
BJPCTC0049	Preamplifier	Blma 0118-1A-Bt	Bonn	22/24/27, 15C, 15B
BJPCTC0055	Communication Tester	CMU200	R&S	22/24/27,15C,15B
BJPCTC0058	Bluetooth Tester	CBT	R&S	15C, 15B
BJPCTC0064	Band Reject Filter	WRCG1877/1883-1870/1890-40/6SS	Wainwright	24, 15B
BJPCTC0065	Band Reject Filter	WRCG832/838-825/845-40/5SS	Wainwright	27, 15B
BJPCTC0071	Multi-Device Controller	2090	EMCO	22/24/27, 15C, 15B
BJPCTC0072	Anechoic Chamber	3 m Semi / Full Anechoic Chamber	ETS	22/24/27, 15C, 15B
BJPCTC0073	MAST	Model-TR/POL	ETS	22/24/27, 15C, 15B
BJPCTC0074	MAST	Model 2070-2	ETS	22/24/27, 15C, 15B
BJPCTC0075	Turntable	Model 2188	ETS-EMCO	22/24/27, 15C, 15B
BJPCTC0096	Preamplifier	AFS4-00100300-20-23P-6	Miteq	22/24/27, 15C, 15B
BJPCTC0113	Receiver	ESI B26	R&S	22/24/27, 15B, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C
BJPCTC0124	Attenuator	SA18N200W-40	Fairview Microwave	-

TCC Nokia Beijing Laboratory
Beijing Economic and
Technological Development Area
No.5 Donghuan Zhonglu
Beijing
PRC China 100176
Tel. +86 10 8711 8888
Fax. +86 10 8711 4550