

FCC Part 15B Compliance Test Report

Test Report no.:	FCC15B_RM-963_03.docx	Date of Report:	17-Jul-2013
Number of pages:	12	Customer's Contact person:	Qiu Rain
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.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-963 / Battery BL-5CB / AC-Charger AC-8C / Charging data cable CA-187C / Headset WH-108		
FCC ID:	QTLRM-963	IC:	
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, 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:			

Gao Sherina, Engineer, EMC

1. Summary for FCC Part 15B Compliance Test Report

Date of receipt	09-Jul-2013
Testing completed	15-Jul-2013
The customer's contact person	Qiu Rain
Test Plan referred to	T:\Projects\RM-963\TestPlan\RS_testplan_RM-963.xlsm
Notes	-
Document name	FCC15B_RM-963_03.docx

1.1. EUT and Accessory Information

The EUT is a mobile phone with following features:
GSMThe EUT is tested with maximum rated TX power.

Devices under tests

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-963	004402474643040	0102	-	01.90	53483
Battery	BL-5CB	0670619495540U122J11708155	-	-	-	53485
AC-Charger	AC-8C	4884751407310822611;0675391	-	-	-	52637
Charging data cable	CA-187C	07304521464168	-	-	-	52638
Headset	WH-108	3185D71	-	-	-	53410
Phone	RM-963	004402474642885	0102	-	01.90	53482
Battery	BL-5CB	0670619495540U122J11708134	-	-	-	53477
Headset	WH-108	3185D71	-	-	-	53478

1.2. Summary of Test Results

GSM850:

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

GSM1900:

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
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 Laboratory.

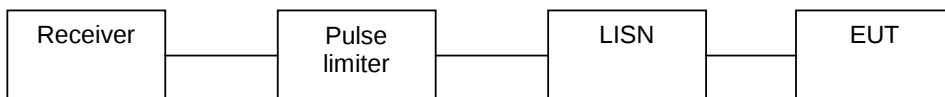
CONTENTS

1. Summary for FCC Part 15B Compliance Test Report.....	2
1.1. EUT and Accessory Information.....	2
1.2. Summary of Test Results.....	2
2. AC powerline conducted emissions (FCC §15.107, ICES-003 section 5.3)	4
2.1. Test Setup.....	4
2.2. Test method and limit.....	4
2.3. GSM 850 Test results; FM radio on	5
3. Radiated emissions (FCC §15.109, ICES-003 section 5.5, RSS-132 4.6, RSS-133 6.6)	6
3.2. Test method and limit.....	6
3.3. GSM850 test results, FM radio on.....	8
3.4. GSM1900 test results, FM radio on.....	9
4. Test Equipment.....	11
4.1. Conducted measurements	11
4.2. Radiated measurements	11

2. AC powerline conducted emissions (FCC §15.107, ICES-003 section 5.3)

EUT with DUT number	RM-963, DUT 53482
Accessories with DUT numbers	BL-5CB, DUT 53477 ; AC-8C, DUT 52637 ; CA-187C, DUT 52638 ; WH-108, DUT 53478
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	FM radio active GSM850 idle mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	25/68/99.4
Date of measurements	15-Jul-2013
Measured by	Gao Sherina

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 groundplane.

The EUT is connected via LISN to a test power supply.

The measurement results are obtained as described below:

$$U [dB\mu V] = U_{RX} + A_{TOT}$$

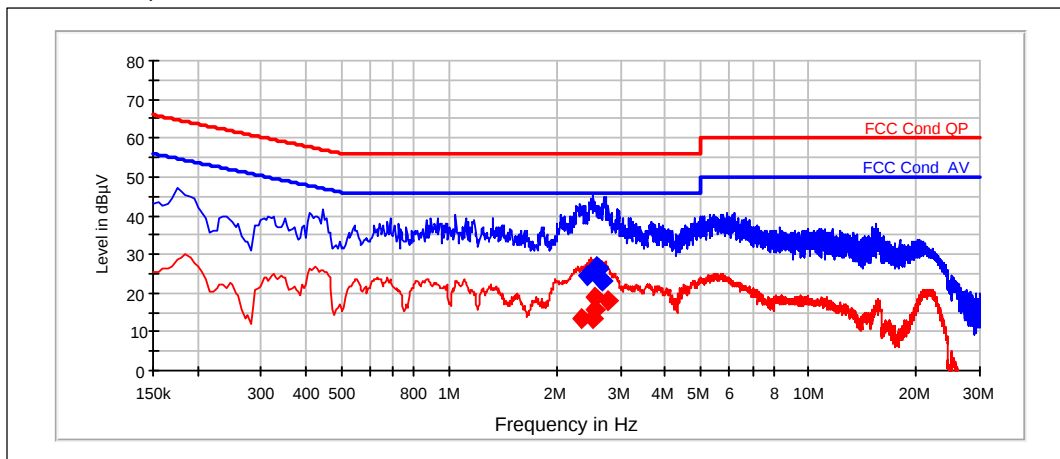
Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable and pulse limiter attenuations.

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

2.3. GSM 850 Test results; FM radio on

Channel 190 / 836.6 MHz



QuasiPeak (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
2.43	24.63	N	PASSED
2.575	27.05	L1	PASSED
2.58	25.96	N	PASSED
2.62	26.17	L1	PASSED
2.645	23.75	N	PASSED
2.665	23.28	N	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
2.34	13.57	L1	PASSED
2.525	13.26	N	PASSED
2.54	18.92	L1	PASSED
2.55	15.78	N	PASSED
2.775	18.13	L1	PASSED

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

EUT with DUT number	RM-963, DUT 53483
Accessories with DUT numbers	BL-5CB, DUT 53485 ; AC-8C, DUT 52637 ; CA-187C, DUT 52638 ; WH-108, DUT 53410
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	FM radio active GSM850 and GSM1900 idle mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24/67/100.1
Date of measurements	10-Jul-2013
Measured by	Zou Ming

The diagram illustrates the experimental setup. A central 3D box represents the environment. Inside, a cylinder labeled 'EUT' (Equipment Under Test) is positioned on the left. To its right, a small horn antenna is mounted on a vertical stand. A dashed line indicates a signal path from the EUT to the antenna. Outside the box on the left, a 'Communication Tester' is connected to the EUT via a cable. Below it, a 'Tower / table controller' is connected to the base of the box. On the right side of the box, a 'Receiver' is connected to the antenna via a cable.

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

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.

The measurement results are obtained as described below:

$$E \text{ [dB}\mu\text{V/m]} = U_{RX} + A_{TOT}$$

Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable loss, antenna factor and preamplifier gain ($A_{TOT} = L_{CABLES} + A_F - G_{PREAMP}$).

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

Frequency range [MHz]	Quasi peak limit [dB μ V/m]	Average limit [dB μ V/m]	Peak limit [dB μ V/m]
30 - 230	40	-	-
230 – 1000	47	-	-
1000 - 3000	-	50	70
Above 3000	-	54	74

3.3. GSM850 test results, FM radio on

RX mode, channel 128 / 869.2 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3476.4	39.82	97.893	40.6	-0.78	34.2	74	PASSED
6953.5	52.02	399.117	43.81	8.21	22	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3476.4	26.22	20.472	27	-0.78	27.8	54	PASSED
6953.5	39.31	92.31	31.1	8.21	14.7	54	PASSED

RX mode, channel 190 / 881.6 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
30.12	21.68	12.131	29.4	-7.72	18.3	40	PASSED
43.727	16.28	6.514	38.73	-22.45	23.7	40	PASSED
72.869	3.93	1.572	32.6	-28.67	36.1	40	PASSED
74.858	3.85	1.558	32.22	-28.37	36.1	40	PASSED
87.063	9.57	3.009	36.92	-27.35	30.4	40	PASSED
95.592	3.4	1.479	30.14	-26.74	36.6	40	PASSED
98.046	39.15	90.719	65.72	-26.57	0.8	40	PASSED*
136.817	8.07	2.532	35.01	-26.94	31.9	40	PASSED
147.204	9.75	3.071	37.21	-27.46	30.3	40	PASSED
154.329	15.78	6.153	43.4	-27.62	24.2	40	PASSED
154.371	13.45	4.705	41.07	-27.62	26.5	40	PASSED

*98.0 MHz frequency is FM-Radio signal and thus ignored.

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3000	45.89	197.061	41.46	4.43	28.1	74	PASSED
3525	39.72	96.817	39.88	-0.16	34.3	74	PASSED
7052.1	48.88	277.811	39.64	9.24	25.1	74	PASSED
7820.645	50.21	323.929	39.63	10.58	23.8	74	PASSED
7840.38	49.37	294.137	38.77	10.6	24.6	74	PASSED
7849.8	49.5	298.435	38.9	10.6	24.5	74	PASSED
7862.327	49.22	288.935	38.52	10.7	24.8	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3000	33.3	46.254	28.87	4.43	20.7	50	PASSED
3525	26.44	20.989	26.6	-0.16	27.6	54	PASSED
7052.1	35.41	58.959	26.17	9.24	18.6	54	PASSED
7820.645	36.63	67.827	26.05	10.58	17.4	54	PASSED

7840.38	36.61	67.655	26.01	10.6	17.4	54	PASSED
7849.8	36.5	66.85	25.9	10.6	17.5	54	PASSED
7862.327	36.58	67.468	25.88	10.7	17.4	54	PASSED

RX mode, channel 251 / 893.8 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3575.6	38.8	87.106	39.63	-0.83	35.2	74	PASSED
7151.4	47.9	248.428	38	9.9	26.1	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3575.6	25.81	19.516	26.64	-0.83	28.2	54	PASSED
7151.4	35.22	57.657	25.32	9.9	18.8	54	PASSED

3.4. GSM1900 test results, FM radio on

RX mode, channel 512 / 1930.2 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3858.2	39.98	99.713	40.36	-0.38	34	74	PASSED
7721.8	48.5	266.134	38.13	10.37	25.5	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3858.2	26.62	21.424	27	-0.38	27.4	54	PASSED
7721.8	35.78	61.482	25.41	10.37	18.2	54	PASSED

RX mode, channel 661 / 1960.0 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
30.12	20.241	170	H	-20	19.8	40	PASSED
34.81	17.16	7.211	34.01	-16.85	22.8	40	PASSED
47.625	27.34	23.284	52.45	-25.11	12.7	40	PASSED
98.046	40.76	109.106	67.33	-26.57	-0.8	40	PASSED*

*98.0 MHz frequency is FM-Radio signal and thus ignored.

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3001.4	38.82	87.257	40.24	-1.42	35.2	74	PASSED
3919.1	39.47	94.07	39.88	-0.41	34.5	74	PASSED

7814.73	49.56	300.642	39.02	10.54	24.4	74	PASSED
7837.575	49.75	307.114	39.15	10.6	24.3	74	PASSED
7840.5	49.62	302.796	39.02	10.6	24.4	74	PASSED
7845.191	49.37	294.137	38.77	10.6	24.6	74	PASSED
7853.209	49.27	290.703	38.64	10.63	24.7	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3001.4	25.75	19.387	27.17	-1.42	28.2	54	PASSED
3919.1	26.63	21.456	27.04	-0.41	27.4	54	PASSED
7814.73	36.54	67.151	26	10.54	17.5	54	PASSED
7837.575	36.62	67.725	26.02	10.6	17.4	54	PASSED
7840.5	36.57	67.383	25.97	10.6	17.4	54	PASSED
7845.191	36.55	67.228	25.95	10.6	17.4	54	PASSED
7853.209	36.57	67.336	25.94	10.63	17.4	54	PASSED

RX mode, channel 810 / 1989.8 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3980.3	39.41	93.476	39.63	-0.22	34.6	74	PASSED
7960.5	49.69	305	38.64	11.05	24.3	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
3980.3	26.39	20.879	26.61	-0.22	27.6	54	PASSED
7960.5	36.67	68.171	25.62	11.05	17.3	54	PASSED

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
BJPCWH0020	DC Power supply	HP6632B	HP	22/24/27, 15C
BJPCPT0040	Receiver	ESCS30	R&S	15C, 15B
BJPCPT0069	LISN 50 μ H	ESH3-Z5	R&S	15C, 15B
BJPCPT0073	Signal Generator	SMR 20	R&S	22/24/27, 15C, 15B
BJPCPT0191	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
BJPCPT0208	UPS	PULSAR RX10	Merlin gerin	15C, 15B
BJPCTC0001	DIGITAL CAMERA	PC1015	CANON	15C, 15R
BJPCTC0017	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0062	AC Power source	6812B	Hp	15C, 15B
BJPCTC0067	Bluetooth Tester	CBT	R&S	22/24/27, 15C
BJPCTC0082	Humidity and Temperature Sensor	175-H2	Testo	15B, 15C
BJPCTC0088	Absolut pressure meter	testo 511	Testo	22/24/27, 15B, 15C
BJPCTC0089	Tempreture Test chamber	VT4002	Votsch industrietechnik	22/24/27, 15C
BJPCTC0090	FSP spectrum analyzer	FSP30	R&S	22/24/27, 15C
BJPCTC0094	GPIO-RS232 convertor	GPIO-RS232	NI	22/24/27, 15C
BJPCTC0112	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C
BJPCTC0127	AC Power source	SOYI-500VA	SOYI	15B 15C
BJPCTC0128	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0129	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0131	Communication tester	CMW500	R&S	22/24/27 15B 15C
BJPCTC0136	Communication antenna	JXTXLB-880-NF	A-INFOMW	15B 15C
BJPCTC0306	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0305	GPIO converter	GPIO-RS232	NI	22/24/27, 15C
BJPCTC0304	Spectrum Analyser	FSV30	R&S	22/24/27, 15C
BJPCTC0309	GPIO-RS232 convertor	RS232	NI	22/24/27, 15C
BJPCTC0307	Dual channel battery/charger simulator	2306	KEITHLEY	22/24/27, 15C
BJPCTC0308	Dual channel battery/charger simulator	2306	KEITHLEY	22/24/27, 15C
BJPCWH0571	Signal Generator 20GHz	MG3692B	Anritsu	22/24/27, 15C
BJBDATC0169	Tempreture Test chamber	VT4002	Votsch	22/24/27, 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
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
BJPCPT0166	Antenna	VUBA 9117	Swarzbeck	22/24/27
BJPCPT0208	UPS	PULSAR RX10	Merlin gerin	15C, 15B
BJPCTC0001	DIGITAL CAMERA	PC1015	CANON	15C, 15R
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

Eq. No	Equipment	Type	Manufacturer	Used in
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
BJPCTC0062	AC Power source	6812B	Hp	15C, 15B
BJPCTC0064	Band Reject Filter	WRCG1877/1883-1870/1890-40/6SS	Wainwright	24, 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
BJPCTC0081	Humidity and Temperature Sensor	175-H2	Testo	15B, 15C
BJPCTC0088	Absolut pressure meter	testo 511	Testo	22/24/27, 15B, 15C
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	-
BJPCTC0125	Loop Antenna	HFH2-Z2	R&S	15C
BJPCTC0126	Tripod	FHU-Z	R&S	15C
BJPCTC0128	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0129	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0131	Communication tester	CMW500	R&S	22/24/27 15B 15C
BJPCTC0133	Open Swith and contril unit	OSP 150	R&S	15B, 15C
BJPCTC0134	Open Swith and contril unit	OSP 150	R&S	15B, 15C
BJPCTC0135	Open Swith and contril unit	OSP 130	R&S	15B, 15C
BJPCTC0136	Communication antenna	JXTXLB-880-NF	A-INFOMW	15B 15C
BJPCTC0171	Broad-band Horn Antenna	BBHA9120 D	SCHWARZBECK MESS - ELEKTRONIK	22/24/27, 15C, 15B
BJPCTC0310	Horn Antenna	QSH20SMA	Q-par	22/24/27, 15C, 15B
BJPCTC0311	Horn Antenna	QSH18SMA	Q-par	22/24/27, 15C, 15B
BJPCTC0312	Relay Switch Unit	-	-	22/24/27, 15C, 15B
BJPCTC0313	High Pass Filter	WHKX1.0/15G-12SS	Wainwright	22/24/27, 15C, 15B
BJPCTC0314	High Pass Filter	WHKX8.0/18G-88SS	Wainwright	22/24/27, 15C, 15B
BJPCTC0315	High Pass Filter	WHKX3.0/18G-12SS	Wainwright	22/24/27, 15C, 15B
BJPCTC0316	Preamplifier	AMT-5F-18002550-25-108	-	22/24/27, 15C, 15B
BJPCTC0317	Preamplifier	AMF-6D-02001800-29-20P	-	22/24/27, 15C, 15B
BJPCTC0318	Preamplifier	AFS42-00101500-25-10P-42	-	22/24/27, 15C, 15B
BJPCTC0324	Preamplifier	AFS4-00100300-20-23P-6	Miteq	22/24/27, 15C, 15B
BJPCTC0329	Relay Switch Unit	-	-	22/24/27, 15C, 15B