

FCC Part 15B Compliance Test Report

Test Report no.:	FCC15B_RM-356_10.doc	Date of Report:	14-Sep-2009
Number of pages:	16	Customer's Contact person:	Sonja Länkinen
Testing laboratory:	TCC Nokia Tampere Laboratory P.O. Box 68 Sinitaival 5 FIN-33720 TAMPERE, FINLAND Tel. +358 (0) 7180 46800 Fax. +358 (0) 7180 46880	Customer:	Nokia Corporation P.O. Box 50 Elektroniikkatie 10 FIN-90571 OULU, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 47222
FCC listing no.:	94436		
IC recognition no.:	3608		
Tested devices/ accessories:	Phone RM-356 / Battery BL-5J, AC charger AC-8E, Audio adapter AD-54, Headset HS-45, Data cable CA-101, Laptop IBM Thinkpad T22, AC adapter 02K6543, Printer HP deskjet 1600CC3540A, Digital camera FUJI DS-7, Serial cable for camera, Parallel cable for printer		
FCC ID:	LJPRM-356X	IC:	661E-RM356
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:			

Jari Jantunen, Test System Manager

1. Summary for FCC Part 15B Compliance Test Report

Date of receipt	04-Apr-2008
Testing completed	21-May-2008
The customer's contact person	Sonja Länkinen
Test Plan referred to	T:\Projects\RM-356\TestPlan_RS\RS_Testplan_RM-356.xls
Notes	-
Document name	T:\Projects\RM-356\EMC\Results\FCC\Tre_FCC_0814_08.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. GSM bands are tested in idle mode. Bluetooth and WLAN are tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-356	004401100484449	0502	-	V01.10.1	41449
Battery	BL-5J	-	-	-	-	41453
AC-Charger	AC-8E	-	-	-	-	41451
Audio Adapter	AD-54	46	0.5	1.5	0.1	41045
Headset	HS-45	-	-	-	-	41046
Data cable	CA-101	-	1.2	1.1	-	41244
Laptop	IBM Thinkpad T22	555V2PT	-	-	-	40201
AC Adapter	02K6543	-	-	-	-	40202
Printer	HP deskjet 1600CC3540A	USB8302546	-	-	-	40077
Digital camera	FUJI DS-7	7102516	-	-	-	40076
Serial cable for camera	-	-	-	-	-	40088

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	PASSED
15.109, a	5.5 (6.6)	Radiated emissions	PASSED

Bluetooth:

Section in CFR 47	Section in ICES-003	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	PASSED
15.109, a	5.5	Radiated emissions	PASSED

WLAN:

Section in CFR 47	Section in ICES-003	Name of the test	Result
15.107, a	5.3	AC powerline conducted emissions	NP
15.109, a	5.5	Radiated emissions	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 Tampere Laboratory.

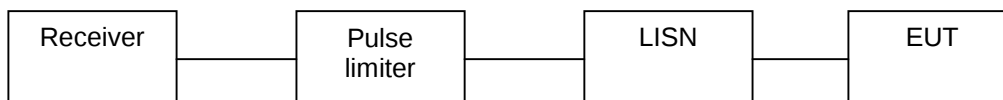
CONTENTS

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)	5
2.1. Test setup	5
2.2. Test method and limit	5
2.3. GSM 1900 + FM radio on test results	6
2.4. Bluetooth + GPS receiver on test results	7
3. AC powerline conducted emissions with computer peripherals (FCC §15.107, ICES-003 section 5.3)	8
3.1. Test setup	8
3.2. Test method and limit	8
3.3. GSM 850 Test results	9
4. Radiated emissions with computer peripherals (FCC §15.109, ICES-003 section 5.5, RSS-132 4.6, RSS-133 6.6, RSS-139 6.6)	10
4.1. Test setup	10
4.2. Test method and limit	10
4.3. GSM 850 + FM radio on + GPS receiver on test results	11
4.4. GSM 1900 + FM radio on + GPS receiver on test results test results	12
4.5. Bluetooth + GPS receiver on test results test results	13
5. Test Equipment.....	15
5.1. Conducted measurements	15
5.2. Radiated measurements	15

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

EUT with DUT number	RM-356 DUT 41449
Accessories with DUT numbers	BL-5J DUT 41453 / AC-8E DUT 41451 / AD-54 DUT 41045 / HS-45 DUT 41046
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	GSM 1900+FM radio, Bluetooth+GPS
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	19 / 41 / 102.1
Date of measurements	23-Apr-2008
Measured by	Jari Jantunen

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:

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

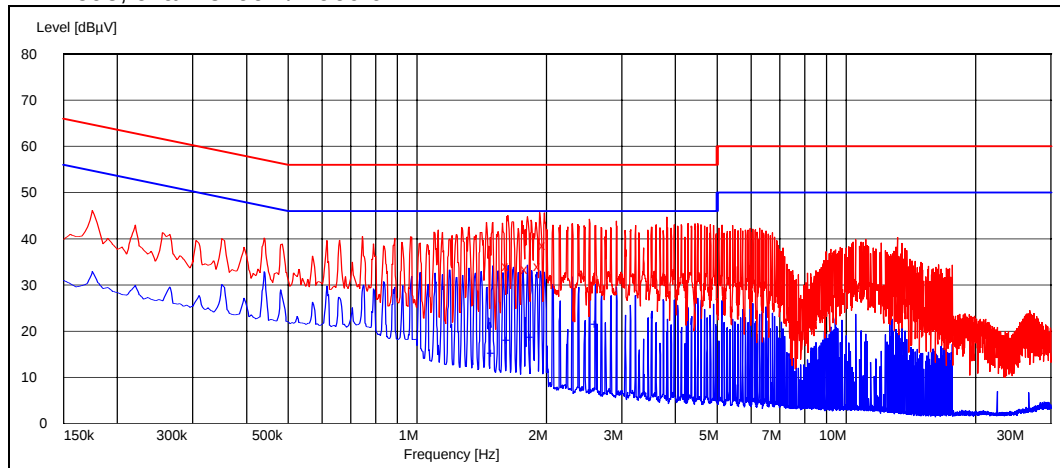
Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable and pulse limiter attenuations.

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

2.3. GSM 1900 + FM radio on test results

RX mode, channel 661 / 1960.0 MHz



Quasi peak (RBW: 9 kHz)

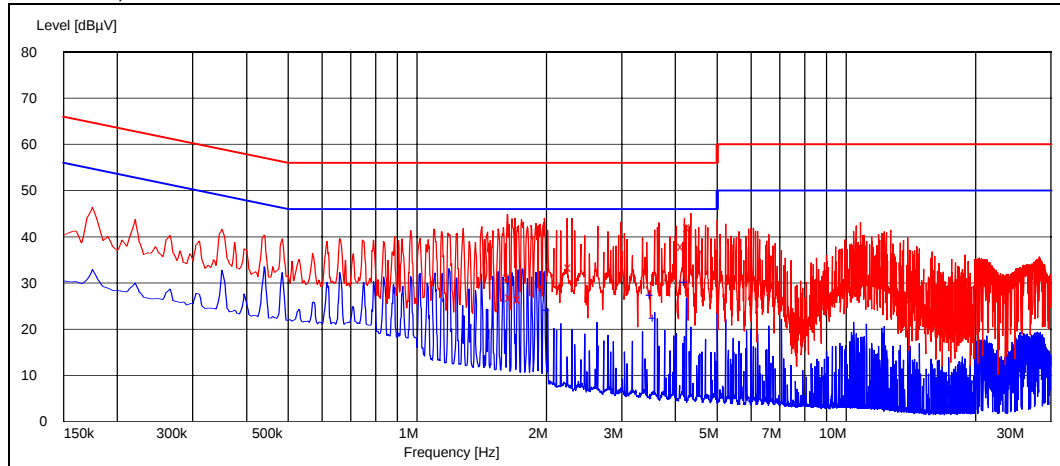
Frequency [MHz]	U [dBμV]	Line	Result
1.630000	34.00	N	PASSED
1.805000	33.40	N	PASSED
1.935000	34.10	N	PASSED
1.985000	38.70	L1	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
1.505000	15.30	N	PASSED
1.635000	18.20	L1	PASSED
1.855000	18.70	L1	PASSED
2.625000	21.60	L1	PASSED

2.4. Bluetooth + GPS receiver on test results

TX mode, channel 40 / 2442 MHz



Quasi peak (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
1.640000	31.30	L1	PASSED
1.660000	26.90	L1	PASSED
1.735000	26.40	L1	PASSED
1.980000	29.30	L1	PASSED
2.280000	33.40	N	PASSED
4.170000	37.90	N	PASSED
4.315000	42.20	L1	PASSED

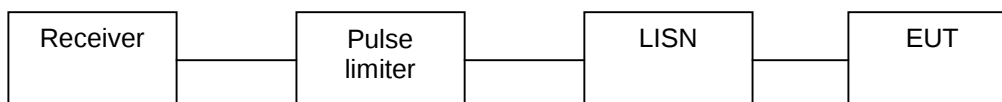
Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
2.025000	24.00	N	PASSED
3.530000	27.30	L1	PASSED
3.585000	22.40	N	PASSED
4.240000	30.10	L1	PASSED

3. AC powerline conducted emissions with computer peripherals (FCC §15.107, ICES-003 section 5.3)

EUT with DUT number	RM-356 DUT 41449
Accessories with DUT numbers	BL-5J DUT 41453 / AC-8E DUT 41451 / AD-54 DUT 41045 / HS-45 DUT 41046, CA-101 DUT 41244, IBM Thinkpad T22 DUT 40201, 02K6543 DUT 40202, HP deskjet 1600CC3540A DUT 40077, FUJI DS-7 DUT 40076, Serial cable for camera DUT 40088, Parallel cable for printer DUT 40087
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Continuous data transfer was active between the phone and the computer during the test.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	19 / 41 / 102.1
Date of measurements	23-Apr-2008
Measured by	Jari Jantunen

3.1. Test setup



3.2. 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:

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

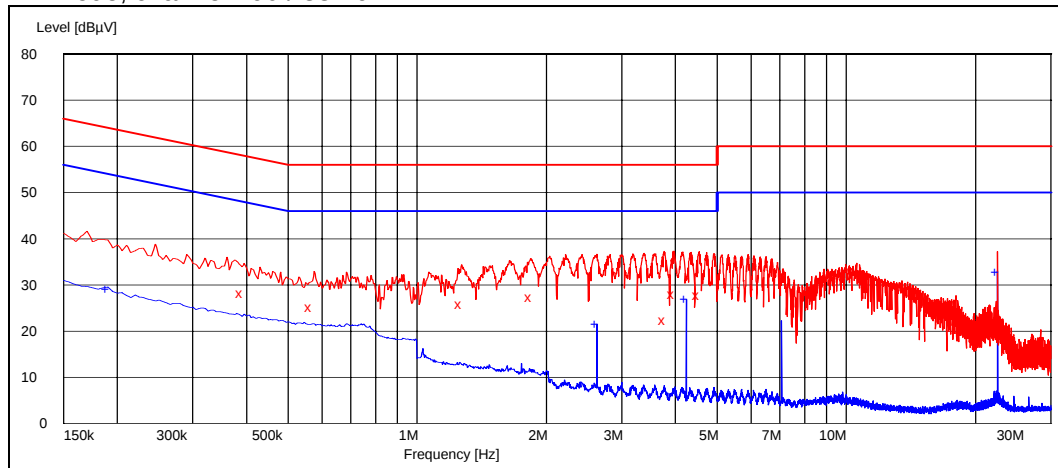
Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable and pulse limiter attenuations.

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

3.3. GSM 850 Test results

RX mode, channel 190 / 881.6 MHz



Quasi peak (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.390000	28.30	L1	PASSED
0.565000	25.30	L1	PASSED
1.265000	25.80	L1	PASSED
1.840000	27.30	L1	PASSED
3.775000	22.30	N	PASSED
3.965000	28.10	L1	PASSED
4.525000	27.90	L1	PASSED

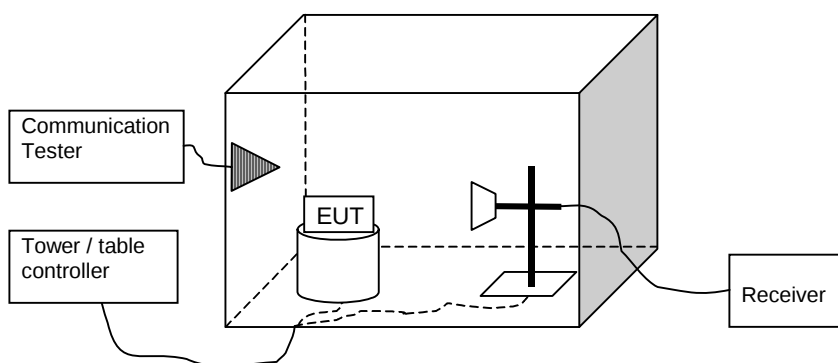
Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.190000	29.20	N	PASSED
2.625000	21.50	L1	PASSED
4.240000	26.90	L1	PASSED
22.500000	32.80	L1	PASSED

4. Radiated emissions with computer peripherals (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-356 DUT 41449
Accessories with DUT numbers	BL-5J DUT 41453 / AC-8E DUT 41451 / AD-54 DUT 41045 / HS-45 DUT 41046, CA-101 DUT 41244, IBM Thinkpad T22 DUT 40201, 02K6543 DUT 40202, HP deskjet 1600CC3540A DUT 40077, FUJI DS-7 DUT 40076, Serial cable for camera DUT 40088, Parallel cable for printer DUT 40087
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Continuous data transfer was active between the phone and the computer during the test.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23-24 / 45-46 / 101.7-102.1
Date of measurements	20...21-Apr-2008
Measured by	Jari Jantunen

4.1. Test setup



4.2. 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.

The measurement results are obtained as described below:

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

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

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

4.3. GSM 850 + FM radio on + GPS receiver on 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	38.20	81.28	43.50	-5.3	HORIZONTAL	PASSED
6953.600000	43.80	154.88	42.20	1.6	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U_{RX} [dBμV]	A_{TOT} [dB]	Polarisation	Result
3476.800000	25.00	17.78	30.30	-5.3	VERTICAL	PASSED
6953.600000	30.80	34.67	29.20	1.6	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
32.164329	33.50	47.32	60.10	-26.6	VERTICAL	PASSED
644.990581	19.00	8.91	44.20	-25.2	VERTICAL	PASSED
648.996593	19.20	9.12	44.30	-25.1	VERTICAL	PASSED
796.493186	21.00	11.22	44.20	-23.2	HORIZONTAL	PASSED

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U_{RX} [dBμV]	A_{TOT} [dB]	Polarisation	Result
3526.400000	38.00	79.43	43.10	-5.10	VERTICAL	PASSED
7052.800000	42.20	128.82	40.40	1.80	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U_{RX} [dBμV]	A_{TOT} [dB]	Polarisation	Result
1260.521042	34.60	53.70	53.50	-18.9	VERTICAL	PASSED
1328.651303	27.10	22.65	45.80	-18.7	VERTICAL	PASSED
1672.348697	24.30	16.41	39.70	-15.4	HORIZONTAL	PASSED
2510.018036	29.30	29.17	37.20	-7.9	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	38.20	81.28	43.10	-4.9	VERTICAL	PASSED
7150.400000	42.00	125.89	39.60	2.4	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3575.200000	25.20	18.20	30.10	-4.9	VERTICAL	PASSED
7150.400000	29.00	28.18	26.60	2.4	VERTICAL	PASSED

4.4. GSM 1900 + FM radio on + GPS receiver on test results 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	40.10	101.16	42.80	-2.7	VERTICAL	PASSED
7720.000000	45.40	186.21	41.70	3.7	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3860.000000	27.20	22.91	29.90	-2.7	HORIZONTAL	PASSED
7720.000000	30.60	33.88	26.90	3.7	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
30.400000	31.10	35.89	56.90	-25.8	VERTICAL	PASSED
99.679960	34.40	52.48	69.80	-35.4	VERTICAL	PASSED
654.106613	23.20	14.45	48.10	-24.9	VERTICAL	PASSED
730.860922	26.80	21.88	50.40	-23.6	VERTICAL	PASSED
796.593186	20.50	10.59	43.70	-23.2	VERTICAL	PASSED
894.189579	30.20	32.36	52.10	-21.9	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
3920.000000	42.10	127.35	44.60	-2.50	HORIZONTAL	PASSED
7840.000000	46.20	204.17	42.60	3.60	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
1166.832665	28.40	26.30	48.10	-19.7	VERTICAL	PASSED
1259.521042	34.10	50.70	53.00	-18.9	VERTICAL	PASSED
1492.989980	32.50	42.17	49.40	-16.9	VERTICAL	PASSED
2977.459920	32.40	41.69	36.70	-4.3	VERTICAL	PASSED
3529.562124	25.20	18.20	30.30	-5.1	VERTICAL	PASSED
7840.181363	31.50	37.58	27.90	3.6	VERTICAL	PASSED

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	44.50	167.88	47.10	-2.6	VERTICAL	PASSED
7960.000000	46.40	208.93	42.20	4.2	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3980.000000	27.90	24.83	30.50	-2.6	HORIZONTAL	PASSED
7960.000000	31.30	36.73	27.10	4.2	VERTICAL	PASSED

4.5. Bluetooth + GPS receiver on test results test results

TX mode, channel 0 / 2402 MHz

Peak (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	38.90	88.10	40.70	-1.8	HORIZONTAL	PASSED
7206.000000	51.50	375.84	48.90	2.6	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4804.000000	26.00	19.95	27.80	-1.8	VERTICAL	PASSED
7206.000000	42.50	133.35	39.90	2.6	VERTICAL	PASSED

TX mode, channel 40 / 2442 MHz

Quasi peak (RBW: 120 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
162.925852	14.80	5.50	39.50	-24.7	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4961.429860	39.80	97.72	41.10	-1.3	VERTICAL	PASSED
4964.931864	40.50	105.93	41.80	-1.3	VERTICAL	PASSED
7325.651303	58.10	803.53	55.10	3.0	VERTICAL	PASSED
7325.653307	58.50	841.40	55.50	3.0	VERTICAL	PASSED
17900.305611	53.50	473.15	33.80	19.7	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4965.429860	27.30	23.17	28.50	-1.2	VERTICAL	PASSED
4967.431864	27.30	23.17	28.50	-1.2	VERTICAL	PASSED
7325.651303	43.90	156.68	40.90	3.0	VERTICAL	PASSED
7325.653307	43.30	146.22	40.30	3.0	VERTICAL	PASSED
17900.805611	40.70	108.39	21.00	19.7	VERTICAL	PASSED

TX mode, 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	39.80	97.72	41.10	-1.3	HORIZONTAL	PASSED
7440.000000	52.30	412.10	48.70	3.6	VERTICAL	PASSED

Average (RBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4960.000000	27.20	22.91	28.50	-1.3	VERTICAL	PASSED
7440.000000	42.20	128.82	38.60	3.6	VERTICAL	PASSED

5. Test Equipment

5.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM30597	Power splitter	11667A	Agilent	22/24/27, 15C
TM37499	Power splitter	11667A	Agilent	22/24/27, 15C
TM38111	Multimeter	34401A	Agilent	22/24/27, 15C
TM38112	DC power supply	6632A	Agilent	22/24/27, 15C
TM22901	Attenuator	8496A	Agilent	22/24/27, 15C
TM30636	Artificial mains net	L2-16	PMM	15C, 15B
TM37678	Radio communication tester	CMU-200	R&S	22/24/27, 15C, 15B
TM37773	Radio communication tester	CMU-200	R&S	22/24/27, 15C, 15B
TM30600	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
TM26490	LISN 50 μ H	ESH3-Z5	R&S	15C, 15B
TM37610	Spectrum analyzer	FSU	R&S	22/24/27, 15C
TM22835	Multimeter	87	Fluke	15C, 15B
TM37500	Microwave switch system	7116-MSW	Keithley	22/24/27, 15C, 15B
TM22638	Power supply	OL63743-901	Transmatic	22/24/27, 15C, 15B
	Temperature chamber	VT4002	Vötsch	22/24/27, 15C
2058	EMI Test receiver	ESPC	R&S	15C, 15B
2001	Bluetooth tester	CBT	R&S	22/24/27, 15C, 15B
2002	Radio communication tester	CMU-200	R&S	22/24/27, 15C, 15B

5.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM30599	3m semi-anechoic chamber		TDK	22/24/27, 15C, 15B
TM38845	EMI receiver	ESI 40	R&S	22/24/27, 15C, 15B
TM37498	Preamplifier	AMF-5D-020180-26-10P	MITEQ	22/24/27, 15C, 15B
TM37523	Preamplifier	AMF-4D-10M-3G-25-20P	MITEQ	22/24/27, 15C, 15B
TM37516	Biconilog antenna	HL562	R&S	22/24/27, 15C, 15B
TM26496	Double ridged waveguide antenna	3115	EMCO	22/24/27, 15C, 15B
TM39158	Horn antenna	3116	EMCO	22/24/27, 15C, 15B
TM26492	Reference dipole set	UHAP/VHAP	Schwarzbeck	22/24/27, 15C, 15B
TM37501	Dipole antenna	3125-870	EMCO	22/24/27
TM37502	Dipole antenna	3125-1880	EMCO	22/24/27
TM37773	Radio communication tester	CMU-200	R&S	22/24/27, 15C, 15B
TM38631	Signal generator	83640L	Agilent	22/24/27, 15C, 15B
TM38066	High pass filter	4HC3000/18000-3-KK	Trilithic	22/24/27, 15C, 15B
TM26511	Tunable notch filter	WRCA870	Wainwright	22/24/27
TM38215	Tunable notch filter	WRCD1850/1910-0.2/40	Wainwright	22/24/27
TM38214	Band reject filter	WRCT 2402/2480-2400/2483.5-30	Wainwright	15C
TM30642	Mast/Turntable controller	HD-100	Deisel	22/24/27, 15C, 15B
TM26500	Turntable	DS412	Deisel	22/24/27, 15C, 15B
TM38842	Antenna mast controller	2090	EMCO	22/24/27, 15C, 15B
TM38843	Antenna mast	2075	EMCO	22/24/27, 15C, 15B
TM38114	DC power supply	6632A	Agilent	22/24/27, 15C, 15B
TM38323	Preamplifier	PA-02 18-26 GHz	EMC Automation	22/24/27, 15C, 15B
TM37678	Radio communication tester	CMU-200	R&S	22/24/27, 15C, 15B
TM22638	Power supply	OL63743-901	Transmatic	22/24/27, 15C, 15B
TM23892	Yaesu controller	G-1000SDX	Yaesu	22/24/27, 15C, 15B
2001	Bluetooth tester	CBT	R&S	22/24/27, 15C, 15B

Eq. No	Equipment	Type	Manufacturer	Used in
2002	Radio communication tester	CMU-200	R&S	22/24/27, 15C, 15B