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TEST REPORT For FCC

Test Report No.	:	2008090056
Date of Issue	:	September 23, 2008
FCC ID	:	WQRSHT-5180XLUS
Model/Type No.	:	SHT-5180XL/US
Kind of Product	:	Lobby phone
Applicant	:	SEOUL COMMTECH Co., Ltd.
Applicant Address	:	448-11, Seongnae 3-dong, Gangdong-gu, Seoul, Korea
Manufacturer	:	JE Technology Co., Ltd.
Manufacturer Address	:	Dasong building, 694-29, Kumjung dong, Gunpo, Gyeonggi-do, Korea
Contact Person	:	Jeong-jin woo / seniority
Telephone	:	+82-2-2225-6782
Received Date	:	September 16, 2008
Test period	:	Start : September 18, 2008 End : September 23, 2008
Test Results	:	☒ **In Compliance** ☐ **Not in Compliance**

The test results presented in this report relate only to the object tested.

Tested by

H.C. You

Hyun Chae, You
Test Engineer
Date: September 23, 2008

Reviewed by

Y. J. Park

Young-Joon, Park
Technical Manager
Date: September 23, 2008

REPORT REVISION HISTORY

Date	Revision	Page No
September 23, 2008	Issued (2008090056)	All

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1.0 General Product Description

1.0.1 Tested Equipment

☒ Unless otherwise indicated, all tests were conducted on Model SHT-5180XL/US

☐ Tests performed on Model _____ were considered to be representative of Model(s) _____.

1.0.2 Electrical Ratings

AC ADAPTER	Input:	100-240 Vac, 1.0-0.5 A, 50/60 Hz
	Output:	12 Vdc, 3.75 A
EUT	Input:	12 Vdc
	Output:	-

1.0.3 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

Voltage:	120 Vac
Frequency:	60 Hz

1.1 Model Differences

Not applicable

1.2 Device Modifications

Not applicable

1.3 EUT Configuration(s)

See Appendix A for individual test set-up configuration(s). The following peripheral devices and/or interface cables were connected during the measurement:

☒ Peripheral Devices

Device	Manufacturer	Model No.	Serial No.	FCC ID or DoC
Lobby phone (EUT)	JE Technology Co., Ltd.	SHT-5180XL/US	Prototype	WQRSHT-5180XLUS

☐ Cable Description

#	Description	Ferrite Core	Length (m)	Other Details

1.4 Test Software

☐ EMC Test V 1.0
☐ Display Test Patterns – V1.5
☐ Ping.exe
☒ Not applicable

1.5 EUT Operating Mode(s)

Equipment under test was operated during the measurement under the following conditions:

☐ Standby
☐ Display circles pattern
☒ Practice operation : EUT transmitting at 13.56 MHz continuously
☐ Scrolling 'H'
☐ Read / Write

1.6 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

1.7 Test Facility

The measurement facility is located at 386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.8 Measurement Procedure

Preliminary AC power line conducted emissions tests were performed shielded room. To find worst mode, several typical mode and typical cable position were tested.
Final AC power line conducted emissions test was performed shielded room. (location is same as Preliminary test)
Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

Preliminary radiated emissions test were performed anechoic chamber (Distance of antenna and EUT was 3 m). To find worst mode, several typical mode and typical cable position were tested and peak level and frequency were recorded.

Final radiated emissions test was performed Open Area Test Site. Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

* Measurement procedures was In accordance with ANSI C63.4-2003 7.2.3, 7.2.4, 8.3.1.1, 8.3.1.2

1.9 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	**FCC**	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	93250
JAPAN	**VCCI**	10 meter Open Area Test Site and one conducted site.	R-948, C-986
KOREA	**MIC**	EMI (10 meter Open Area Test Site and two conducted sites) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	No. 51, KR0025
International	**KOLAS**	EMC	
Europe	**GLAS**	EMC EN 55011, EN 55022, EN 61000-6-3, EN 61000-6-4, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 50130-4, EN 55024, EN 61204-3, EN 60601-1-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11	No.13000796-02

2.0 Emissions Test Regulations

The emissions tests were performed according to following regulations:

☐ EN 61000-6-3:2001	☐ Class A	☐ Class B
☐ EN 61000-6-4:2001	☐ Class A	☐ Class B
☐ EN 50083-2:2001		
☐ EN 55011:1998 +A1:1999 +A2:2002	☐ Group 1 ☐ Class A	☐ Group 2 ☐ Class B
☐ EN 55013:2001 +A1:2003		
☐ EN 55014-1:2000 +A1:2001 +A2:2002		
☐ EN 55015:2000 +A1:2001 +A2:2002		
☐ EN 61204-3:2000	☐ Class A	☐ Class B
☐ EN 55022:1994 +A1:1995 +A2:1997	☐ Class A	☐ Class B
☐ EN 55022:1998	☐ Class A	☐ Class B
☐ EN 55022:1998 +A1:2000	☐ Class A	☐ Class B
☐ EN 55022:1998 +A1:2000 +A2:2003	☐ Class A	☐ Class B
☐ EN 61000-3-2:2000		
☐ EN 61000-3-3:1995 +A1:2001		
☐ VCCI V-3/2004.04	☐ Class A	☐ Class B
☐ AS/NZS 3548:1995 +A1:1997 +A2:1997	☐ Class A	☐ Class B
☒ FCC Part 15 Subpart C		
☐ CISPR 22:1997	☐ Class A	☐ Class B
☐ CISPR 22:1997 +A1:2000	☐ Class A	☐ Class B

The unit was tested to CISPR 22 and complied with the alternate methods allowed by FCC under paragraphs 15.107 and 15.109.

2.1 Radiated Electric Field Emissions - 15.225(a)

Reference Standard
FCC Part 15.225(a)

Test Date
September 19, 2008

Test Location
☒ EMI-OATS: Testing was performed at a test distance of 3 m

Test Equipment

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
☒	EMI Test Receiver	Rohde & Schwarz	ESHS30	828144/002	2009-02-27
☒	Loop Antenna	EMCO	6502	9107-2652	2008-10-17

Frequency Range of Measurement
13.553 MHz to 13.567 MHz

Instrument Settings
IF Band Width: 10 kHz

Radiated emission limits

Frequency (MHz)	Field Strength of Fundamental uV/m	Field Strength of Fundamental dBuV/m (30 m)	Field Strength of Fundamental dBuV/m (3 m)
13.553-13.567	15,848	84	104

Test Results
The requirements are:

☒ MET
☐ NOT MET
☐ NOT APPLICABLE

Remarks
See Appendix A for test data

2.2 Radiated Electric Field Emissions - 15.225(b)(c)

Reference Standard
FCC Part 15.225(b)(c)

Test Date
September 19, 2008

Test Location
☒ EMI-OATS: Testing was performed at a test distance of 3 m

Test Equipment

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
☒	EMI Test Receiver	Rohde & Schwarz	ESHS30	828144/002	2009-02-27
☒	Loop Antenna	EMCO	6502	9107-2652	2008-10-17

Frequency Range of Measurement
13.410 MHz to 13.553 MHz, 13.567 MHz to 13.710 MHz
13.110 MHz to 13.410 MHz, 13.710 MHz to 14.010 MHz

Instrument Settings
IF Band Width: 10 kHz

Radiated emission limits

Frequency (MHz)	Field Strength of Fundamental uV/m	Field Strength of Fundamental dBuV/m (30 m)	Field Strength of Fundamental dBuV/m (3 m)
13.410-13.553	334	50.4	70.4
13.567-13.710	334	50.4	70.4
13.110-13.410	106	40.5	60.5
13.710-14.010	106	40.5	60.5

Test Results
The requirements are:

☒ MET
☐ NOT MET
☐ NOT APPLICABLE

Remarks
Emissions 20dB's below the limit were not necessarily recorded.

2.3 Radiated Electric Field Emissions - 15.225(d)

Reference Standard
FCC Part 15.225(d), 15.209

Test Date
March 27, 2007

Test Location
☒ EMI-OATS: Testing was performed at a test distance of 3 m

Test Equipment

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
☒	ULTRA Broadband Antenna	Rohde & Schwarz	HL562	361324/014	2010-06-20
☒	EMI Test Receiver	Rohde & Schwarz	ESHS30	828144/002	2009-02-27
☒	Loop Antenna	EMCO	6502	9107-2652	2008-10-17

Frequency Range of Measurement
9 kHz to 1000 MHz

Instrument Settings
IF Band Width: 10 kHz (9 kHz to 30 MHz)
IF Band Width: 120 kHz (30 MHz to 1000 MHz)

Radiated emission limits

Frequency (MHz)	Field Strength of Fundamental uV/m	Field Strength of Fundamental dBuV/m (3 m)
1.705-30.0	30	49.5
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	600	54

Test Results
The requirements are:

☒ MET
☐ NOT MET
☐ NOT APPLICABLE

Remarks
See Appendix A for test data

2.4 Frequency Stability – 15.225(e)

Reference Standard
FCC Part 15.225(e)

Test Date
March 28, 2007

Test Equipment

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
☒	Spectrum Analyzer	R&S	FSP-30	100994	2008-11-19
☒	Temp & Humi Chamber	Kunpoong Engineering	KP-1000	2002KP050041	2009-01-21

Test Results
The requirements are:

☒ MET
☐ NOT MET
☐ NOT APPLICABLE

Test Data

Timing	power	-20˚C	-10˚C	0˚C	10˚C	20˚C	30˚C	40˚C	50˚C
Start-up	AC 120V	13.56175	13.56170	13.56167	13.56160	13.56158	13.56158	13.56152	13.56150
10 min		13.56175	13.56171	13.56167	13.56160	13.56158	13.56158	13.56152	13.56150
30 min		13.56176	13.56171	13.56168	13.56160	13.56158	13.56157	13.56151	13.56149
Start-up	AC 102V	13.56175	13.56170	13.56167	13.56160	13.56158	13.56158	13.56152	13.56150
10 min		13.56175	13.56171	13.56167	13.56160	13.56158	13.56158	13.56152	13.56150
30 min		13.56176	13.56171	13.56168	13.56160	13.56158	13.56157	13.56151	13.56149
Start-up	AC 138V	13.56175	13.56170	13.56167	13.56160	13.56158	13.56158	13.56152	13.56150
10 min		13.56175	13.56171	13.56167	13.56160	13.56158	13.56158	13.56152	13.56150
30 min		13.56176	13.56171	13.56168	13.56160	13.56158	13.56157	13.56151	13.56149

2.5 Conducted Voltage Emissions – 15.207

Reference Standard
FCC Part 15.207

Test Date
September 23, 2008

Test Location
Shielded Room

Test Equipment

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
☐	Field Strength Meter	Rohde & Schwarz	ESHS30	828144/002	2009-02-27
☐	LISN	EMCO	3825/2	9607-2575	2009-08-19
☐	LISN	EMCO	3825/2	9409-2246	2009-08-19
☒	Field Strength Meter	Rohde & Schwarz	ESHS30	862024/001	2009-03-04
☒	LISN	Rohde & Schwarz	ESH3-Z5	100207	2008-12-20
☐	LISN	EMCO	3825/2	9206-1971	2008-12-20

Frequency Range of Measurement
150 kHz to 30 MHz

Conducted Emission limits

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Test Results
The requirements are:

☒ MET
☐ NOT MET
☐ NOT APPLICABLE

Remarks

See Appendix A for test data

APPENDIX A – TEST DATA

Radiated Electric Field Emissions (Quasi-Peak reading)

1) Fundamental Frequency Test Data

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Cable			
13.56	59.0	H	1.0	9.7	0.8	104.0	69.5	34.6
13.56	60.0	V	1.0	9.7	0.8	104.0	70.5	33.5

2) Frequency Range from 9 kHz to 30 MHz Test Data

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Cable			
27.15	23.5	H	1.0	8.5	1.3	49.5	33.3	16.2
27.15	23.7	V	1.0	8.5	1.3	49.5	33.5	16.0

3) Frequency Range from 30 MHz to 1000 MHz Test Data

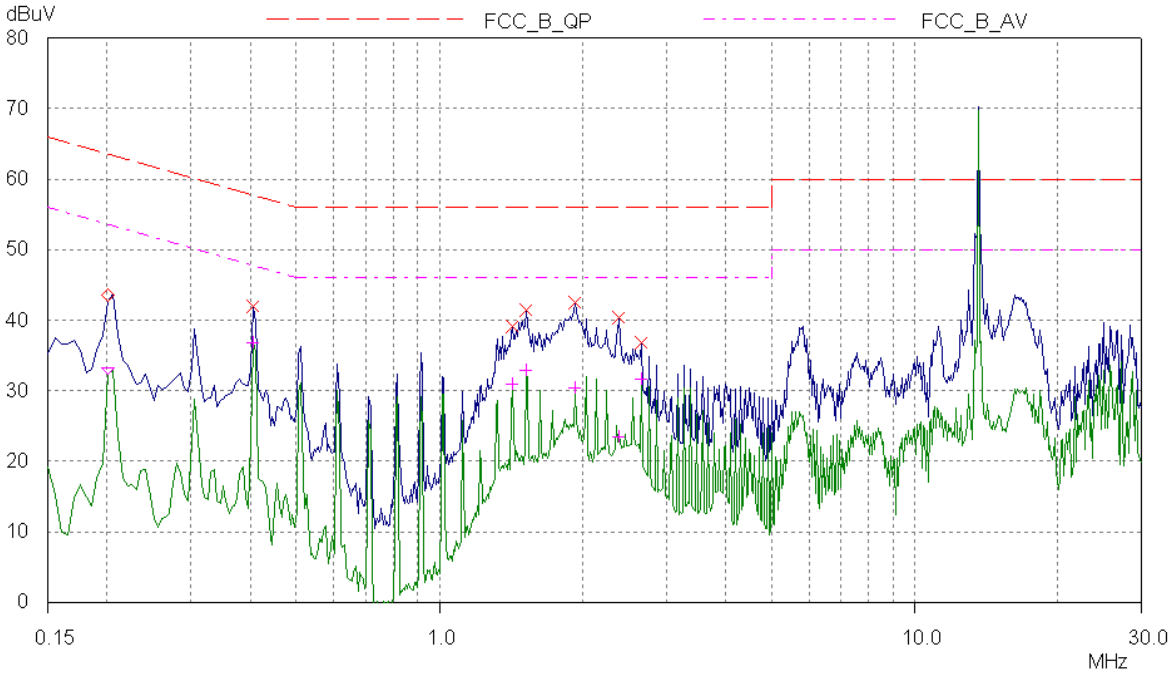
Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Cable			
270.00	30.4	H	1.5	10.1	2.1	46.0	42.6	3.4
378.50	27.4	H	2.0	12.9	2.7	46.0	43.0	3.0
398.50	26.0	H	1.0	13.3	2.8	46.0	42.1	3.9
435.25	23.1	V	1.2	14.3	3.1	46.0	40.5	5.5
485.50	22.4	V	1.1	15.2	3.4	46.0	41.0	5.0
511.25	23.8	V	1.0	15.6	3.5	46.0	42.9	3.1

Conducted Voltage Emissions

Frequency	Correction Factor		Line	Quasi-peak				Average			
				Limit	Reading	Result	Margin	Limit	Reading	Result	Margin
[MHz]	LISN	Cable		[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]
0.40	0.1	0.6	N	57.9	40.8	41.5	16.4	47.9	36.8	37.5	10.4
0.51	0.1	0.6	N	56.0	35.2	35.9	20.1	46.0	31.9	32.6	13.4
1.42	0.1	0.6	H	56.0	38.4	39.1	16.9	46.0	30.2	30.9	15.1
1.52	0.1	0.6	H	56.0	40.7	41.4	14.6	46.0	32.2	32.9	13.1
1.93	0.1	0.6	H	56.0	41.9	42.6	13.4	46.0	29.6	30.3	15.7
2.64	0.1	0.7	H	56.0	36.1	36.9	19.1	46.0	30.8	31.6	14.4

H : HOT, N : NEUTRAL

[HOT]



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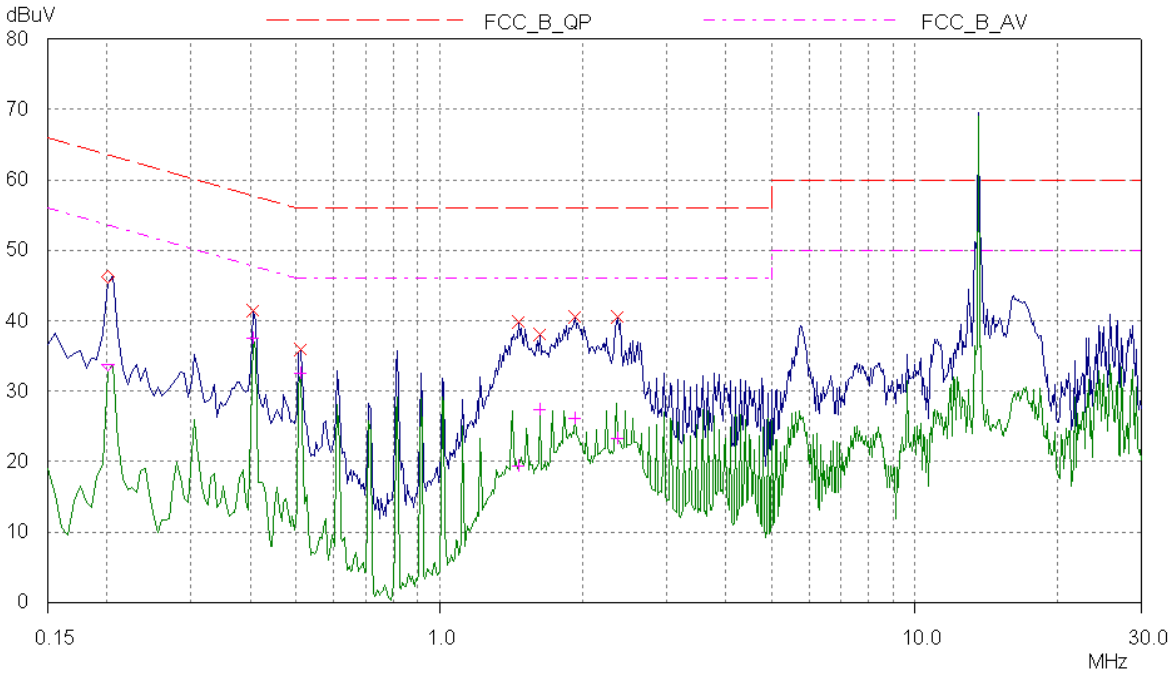
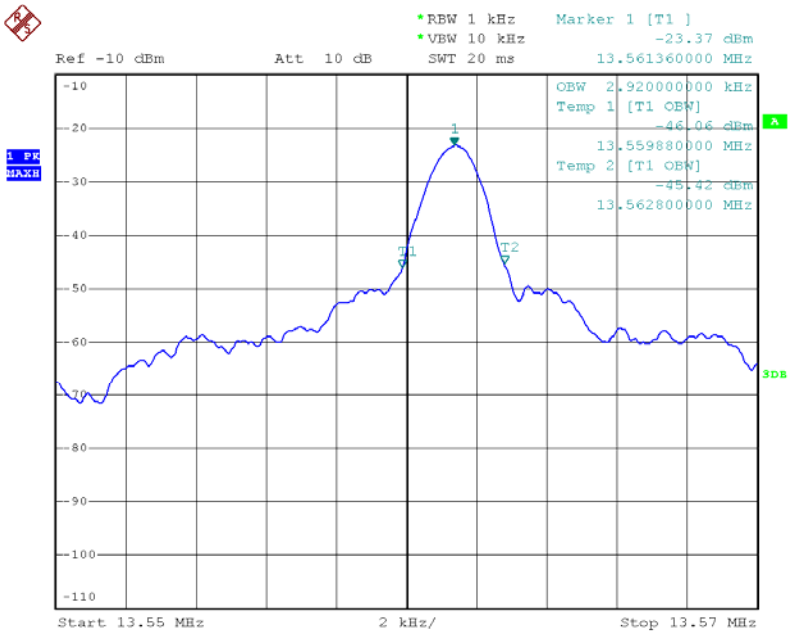


Bandwidth of the Operating Frequency



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