LTA
Laboratory for Test & Approval Co.,Ltd.

243 Jubug-Ri,Yangji-Myeon, Yongin-Si, Gyeonggi-Do, Korea 449-822
Tel: +82-31-323-6008 Fax: +82-31-323-6010
http://www.ltalab.com

YUKYUNG Technologies

Dates of Tests: July. 20 ~ 24, 2009
Test Site : LTA CO., LTD.

CERTIFICATION OF COMPLIANCE

FCC ID. **XBQ-S5**

APPLICANT **YUKYUNG TECHNOLOGIES INC.**

Classification	:	**Licensed Transmitter worn on body (PCT)**
Manufacturing Description	:	**Real Pocket PC**
Manufacturer	:	**YUKYUNG TECHNOLOGIES INC.**
Manufacturer (RF Module)	:	**Huawei Technologies Co.,Ltd (FCC ID:QISEM770W)**
Model name	:	**S5 3G**
Test Device Serial No.:	:	**Identical prototype**
Rule Part(s)	:	**§24(E), §22(H), §2**
Frequency Range (Tx / Rx)	:	**826.40~846.60 MHz / 871.40~891.60 MHz (Cellular WCDMA)**
		1852.4~1907.6 MHz / 1932.4~1987.6 MHz (PCS WCDMA)
Max. RF Output Power	:	**0.09 W ERP Cellular WCDMA**
		0.144 W EIRP PCS WCDMA
Data of issue	:	**July 26, 2009**

This test report is issued under the authority of:

Dong –Min JUNG, Technical Manager

The test was supervised by:

Kyung-Taek LEE, Test Engineer

This test result only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the test laboratory. This report must not be used by the applicant to claim product endorsement by any agency.

NVLAP

NVLAP LAB Code.: 200723-0

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1. General information's

1-1 Test Performed

Company name	:	LTA Co., Ltd.
Address	:	243, Jubug-ri,Yangji-Myeon,Youngin-Si, Kyunggi-Do, Korea. 449-822
Web site	:	http://www.ltalab.com
E-mail	:	chahn@ltalab.com
Telephone	:	+82-31-323-6008
Facsimile		+82-31-323-6010

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competents of calibration and testing laboratory".

1-2 Accredited agencies

LTA Co., Ltd. is approved to perform EMC testing by the following agencies:

Agency	Country	Accreditation No.	Validity	Reference
NVLAP	U.S.A	200723-0	2009-09-30	ECT accredited Lab.
RRL	KOREA	KR0049	Updating	EMC accredited Lab.
FCC	U.S.A	610755	2011-04-22	FCC filing
VCCI	JAPAN	R2133, C2307	2011-06-21	VCCI registration
IC	CANADA	IC5799	2010-05-03	IC filing

2. Information's about test item

2-1 Applicant & Manufacturer

Company name : YUKYUNG TECHNOLOGIES INC.
Address : 200-11, Anyang-Dong, Manan-Ku, Anyang-Si, Kyunggi-Do, Korea
Tel / Fax : TEL No : +82-31-463-6906 / FAX No : +82-31-445-5995

2-2 Equipment Under Test (EUT)

Trade name : Real Pocket PC
FCC ID : XBQ-S5
Model name : S5 3G
Date of receipt : June 29, 2009
EUT condition : Pre-production, not damaged
HSPA Module : Huawei Technologies Co.,Ltd (FCC ID:QISEM770W)
Identification mark: 0682
Antenna type : Swivel Antenna
RF output power : Cellular WCDMA(21.4dBm) / PCS WCDMA (21.9dBm) – Conducted power
Modulation : QPSK
Temperature range : 0℃ ~ +40℃
Power Source : Battery Pack: 3.7V (Li-Ion Polymer RECHARGEABLE BATTERY)

2-3 Tested frequency

	Cellular WCDMA		PCS WCDMA	
	Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
LOW	4132	826.4	9262	1852.4
MID	4182	836.4	9400	1880.0
HIGH	4233	846.4	9538	1907.6

2-5 Model Description

Model Name	3G Modem	WiFi & BT	HDD / SSD	CPU	Note
S5 3G	O	O	SSD 32/**64**	**1.33GHz**	**Tested**
S5 PREMIUM H	X	O	HDD 60G	1.33GHz	-
S5 PREMIUM S	X	O	SSD 32/64	1.33GHz	-

3. Test Report

3.1 Summary of tests

Parameter	Status
Transmitter Requirements	
I. FCC Part Section(s)	
WCDMA Module is certified by FCC(FCC ID: QISEM770W). Refer to the test report of FCC ID:QISEM770W.	
Output Power	C
Spurious emission	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

The sample was tested according to the following specification:

ANSI C-63.4-2003

3.2 Technical Characteristics Test

3.2.1 Effective Radiated Power Output

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For GSM signals, an average detector is used, with RBW=VBW=3MHz, SPAN=10MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

3.2.2 Radiation Spurious and Harmonic Emissions

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

Radiation and harmonic emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 3-meters from the receive antenna.

The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. The Spectrum was investigated from 30MHz to the 10^{th} Harmonic of the fundamental. A peak detector is used. With RBW=VBW=1MHz. The value that we could measure was only reported. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

3.3 DESCRIPTION OF TESTS

3.3.1 Output Power

Effective Radiated Power Output (Cellular WCDMA)

Measurement Data:

Channel	Frequency (MHz)	TEST CONDITIONS				
		Ref. level (dBm)	Pol. (H/V)	ERP (dBm)	ERP (W)	Battery
4132	826.4	-20.71	V	19.53	0.090	STD
4182	836.4	-21.13	V	19.03	0.080	STD
4233	846.4	-20.74	V	18.75	0.075	STD

Note 1: Radiated measurements at 3 meters by Substitution Method.

Equivalent Isotropic Radiated Power (PCS WCDMA)

Measurement Data:

Channel	Frequency (MHz)	TEST CONDITIONS				
		Ref. level (dBm)	Pol. (H/V)	EIRP (dBm)	EIRP (W)	Battery
9262	1852.4	-18.07	V	21.57	0.144	STD
9400	1880.0	-19.19	V	21.33	0.136	STD
9538	1907.6	-18.98	V	20.85	0.122	STD

Note 2: Radiated measurements at 3 meters by Substitution Method.

3.3.2 Field Strength of spurious Radiation

OPERATING FREQUENCY : 826.4 MHz

CHANNEL : 4132(Low)

MEASURED OUTPUT POWER : 19.53 dBm = 0.09 W

MODULATION : WCDMA

DISTANCE : 3 meters

LIMIT : 43 + 10 $\log_{10}$ (W) = 32.53 dBc

Freq. (MHz)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**CORRECT GENERATOR LEVEL** (dBm)	**POL** (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

Note1: Radiated measurements at 3 meters by Substitution Method.

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3.3.2 Field Strength of spurious Radiation --- Continue

OPERATING FREQUENCY : 836.4 MHz

CHANNEL : 4182(Mid)

MEASURED OUTPUT POWER : 19.53 dBm = 0.09 W

MODULATION : WCDMA

DISTANCE : 3 meters

LIMIT : 43 + 10 $\log_{10}$ (W) = 32.53 dBc

Freq. (MHz)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**CORRECT GENERATOR LEVEL** (dBm)	**POL** (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

Note1: Radiated measurements at 3 meters by Substitution Method.

--- Blank ---

3.3.2 Field Strength of spurious Radiation --- Continue

OPERATING FREQUENCY : 846.4 MHz

CHANNEL : 4233(High)

MEASURED OUTPUT POWER : 19.53 dBm = 0.09 W

MODULATION : WCDMA

DISTANCE : 3 meters

LIMIT : 43 + 10 $\log_{10}$ (W) = 32.53 dBc

Freq. (MHz)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**CORRECT GENERATOR LEVEL** (dBm)	**POL** (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

Note1: Radiated measurements at 3 meters by Substitution Method.

--- Blank ---

3.3.2 Field Strength of spurious Radiation --- Continue

OPERATING FREQUENCY : 1852.4 MHz

CHANNEL : 9262(Low)

MEASURED OUTPUT POWER : 21.57 dBm = 0.144 W

MODULATION : WCDMA

DISTANCE : 3 meters

LIMIT : $43 + 10 \log_{10} (W)$ = 34.57 dBc

Freq. (MHz)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

Note1: Radiated measurements at 3 meters by Substitution Method.

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3.3.2 Field Strength of spurious Radiation --- Continue

OPERATING FREQUENCY : 1880.0 MHz

CHANNEL : 9400(Mid)

MEASURED OUTPUT POWER : 21.57 dBm = 0.144 W

MODULATION : WCDMA

DISTANCE : 3 meters

LIMIT : 43 + 10 $\log_{10}$ (W) = 34.57 dBc

Freq. (MHz)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**CORRECT GENERATOR LEVEL** (dBm)	**POL** (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

Note1: Radiated measurements at 3 meters by Substitution Method.

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3.3.2 Field Strength of spurious Radiation --- Continue

OPERATING FREQUENCY : 1907.6 MHz

CHANNEL : 9538(High)

MEASURED OUTPUT POWER : 21.57 dBm = 0.144 W

MODULATION : WCDMA

DISTANCE : 3 meters

LIMIT : $43 + 10 \log_{10} (W)$ = 34.57 dBc

Freq. (MHz)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**CORRECT GENERATOR LEVEL** (dBm)	**POL** (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

Note1: Radiated measurements at 3 meters by Substitution Method.

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APPENDIX

TEST EQUIPMENT USED FOR TESTS

	Description	Model No.	Serial No.	Manufacturer	Next Cal. Date
1	Spectrum Analyzer	FSV-30	100757	R&S	Feb-10
2	Spectrum Analyzer	8563E	3425A02505	HP	Apr-10
3	Spectrum Analyzer	8594E	3710A04074	HP	Oct-09
4	Signal Generator	8648C	3623A02597	HP	Apr-10
5	Signal Generator	83711B	US34490456	HP	Apr-10
6	Attenuator (3dB)	8491A	37822	HP	Oct-09
7	Attenuator (10dB)	8491A	63196	HP	Oct-09
8	Attenuator (30dB)	8498A	1801A06689	HP	Oct-09
9	EMI Test Receiver	ESVD	843748/001	R&S	Apr-10
10	Horn Antenna(18 ~ 40GHz)	SAS-574	154	Schwarzbeck	Nov-10
11	Horn Antenna(18 ~ 40GHz)	SAS-574	155	Schwarzbeck	Nov-10
12	RF Amplifier	8447D	2949A02670	HP	Oct-10
13	RF Amplifier	8449B	3008A02126	HP	Apr-10
14	Test Receiver	ESHS10	828404/009	R&S	Apr-10
15	TRILOG Antenna	VULB 9160	9160-3212	SCHWARZBECK	Apr-11
16	Log.-Per. Antenna	VULP 9118	9118 A 401	SCHWARZBECK	Apr-11
17	Biconical Antenna	BBA 9106	VHA 9103-2315	SCHWARZBECK	Apr-11
18	Horn Antenna	3115	00055005	ETS LINDGREN	Mar-11
19	Horn Antenna	BBHA 9120D	9120D122	SCHWARZBECK	Dec-11
20	Dipole Antenna	VHA9103	2116	SCHWARZBECK	Nov-09
21	Dipole Antenna	VHA9103	2117	SCHWARZBECK	Nov-09
22	Dipole Antenna	VHA9105	2261	SCHWARZBECK	Nov-09
23	Dipole Antenna	VHA9105	2262	SCHWARZBECK	Nov-09
24	Hygro-Thermograph	THB-36	0041557-01	ISUZU	Apr-10
25	Splitter (SMA)	ZFSC-2-2500	SF617800326	Mini-Circuits	-
26	Signal Generator	E4436B	US39260781	Agilent	May-10
27	Power Divider	11636A	6243	HP	Oct-09
28	DC Power Supply	6622A	3448A03079	HP	Oct-09
29	Frequency Counter	5342A	2826A12411	HP	Apr-10
30	Power Meter	EPM-441A	GB32481702	HP	Apr-10
31	Power Sensor	8481A	2702A64048	HP	Apr-10
32	Audio Analyzer	8903B	3729A18901	HP	Oct-09
33	Modulation Analyzer	8901B	3749A05878	HP	Oct-09
34	TEMP & HUMIDITY Chamber	YJ-500	LTAS06041	JinYoung Tech	Oct-09
35	LOOP-ANTENNA	FMZB 1516	151602/94	SCHWARZBECK	Mar-11
36	Communication Equipment	E5515C	GB42230452	Agilent	July-10
37	LISN	ENV216	100408	R&S	Oct-09