



PCTEST Engineering Laboratory, Inc.

6660-B Dobbin Road • Columbia, MD 21045 • U.S.A.

TEL (410) 290-6652 • FAX (410) 290-6654

<http://www.pctestlab.com>



CERTIFICATE OF COMPLIANCE FCC Part 24 Certification

LG Information & Communications, Ltd.
Communication Terminal Research Lab
459-9, Kasan-dong, Keumchun-ku
Seoul 153-023, Korea
Attn: Harris Ahn, Principal Engineer

Dates of Tests: February 16-17, 2000
Test Report S/N: 24.200214050.FFM
Test Site: PCTEST Lab, Columbia MD USA

FCC ID

FFMSP510

APPLICANT

LG Information & Communications, Ltd.

Classification:	Licensed Portable Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§24(E), §2
EUT Type:	Single-Band PCS CDMA Phone
Trade Name/Model(s):	LGIC LG-SP510
Frequency Range:	Tx: 1851.25 – 1908.75MHz Rx: 1931.25 – 1988.75MHz
Max. RF Output Power:	0.327 Watts EIRP (25.15 dBm)
Frequency Tolerance:	0.00025% (2.5 ppm)
Emission Designator:	1M25F9W
Amendment(s):	1. Increased conducted power to 25.0 dBm. 2. Addition of metal plate in rear section of mainboard.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947 with the following remarks (Note Codes):

**(BC) The output power is continuously variable from the value listed in this entry to 5%-10% of the value listed.*

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

PCTEST certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti Drug Abuse Act of 1988, 21 U.S.C. 853(a).

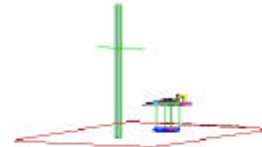

Randy Ortanez
President & Chief Engineer

200214050.FFM





MEASUREMENT REPORT



1.1 Scope

Product Evaluation and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

§2.1033 General Information

Applicant Name:	LG Information & Communications, Ltd. Communication Terminal Research Lab
Address:	459-9, Kasan-dong, Keumchun-ku Seoul 153-023, Korea
Attention:	Harris Ahn, Principal Engineer

- | | |
|-------------------------|---|
| • FCC ID: | FFMSP510 |
| • Trade Name(s): | LGIC |
| • Model(s): | LG-SP510 |
| • Quantity: | Quantity production is planned |
| • Emission Designator: | 1M25F9W |
| • Max. RF Output Power: | 0.327 W EIRP (25.15 dBm) |
| • AC Power Adapter: | LGIC Model: DC-40 |
| • FCC Classification: | Part 24 Licensed Portable Tx Held to Ear (PCE) |
| • Equipment (EUT) Type: | Single-Band PCS CDMA Phone |
| • FCC Rule Part(s): | § 24(E), §2 |
| • Application Type: | Certification |
| • Modulation: | CDMA |
| • Tx Frequency Range: | 1851.25 – 1908.75 MHz |
| • Rx Frequency Range: | 1931.25 – 1988.75 MHz |
| • Frequency Tolerance: | ± 2.5 ppm |
| • Dates of Tests: | February 16-17, 2000 |
| • Place of Tests: | PCTEST Lab, Columbia, MD U.S.A. |
| • Amendment(s): | 1. Increased conducted power to 25.0 dBm
2. Addition of metal plate in rear section of mainboard |

2 0 0 2 1 4 0 5 0 . F F M



5.1 Test Data

5.2 § 24.232(b) Equivalent Isotropic Radiated Power (E.I.R.P.)

Radiated measurements at 3 meters

Supply Voltage: 4.0 VDC

Modulation: PCS CDMA

FREQ. (MHz)	LEVEL (dBm)	AFCL (dB)	POL (H/V)	Height (m)	Azimuth (° angle)	F/S (μ V/m)	EIRP (dBm)	EIRP (W)	Battery
1851.25	-22.00	35.31	V	1.2	10.0	1036334.6	25.08	0.323	Standard
1880.00	-22.10	35.48	V	1.2	10.0	1044720.2	25.15	0.327	Standard
1908.75	-22.30	35.65	V	1.2	10.0	1041118.1	25.12	0.326	Standard
1880.00	-22.15	35.48	V	1.2	10.0	1038723.6	25.10	0.324	Extended

NOTES:

1. The bandwidth is set per §24.238 (RBW = 3MHz, VBW = 3MHz).
2. The spectrum was checked from 25 MHz up to the 10th harmonic.
3. All emissions not listed were found to be more than 20dB below the limit.
4. < -130dBm is below the floor of the spectrum analyzer.
5. The EUT is manipulated through 3 orthogonal axis and the worst-case are reported.
6. The EUT is placed 3m. away from the receiving antenna and the EIRP is calculated using the formula:

$$\text{EIRP (dBm)} = 10 \log_{10} \left(\left((r(\text{mV/m})/1 \times 10^6)^2 / 30.0 / 1 \times 10^{-3} \right) \right)$$

$$\text{EIRP (dBm)} = 10 \log_{10} \left[(3 \times \text{FS} / 1 \times 10^6)^2 / (30.0) \times 1000 \right]$$

$$\text{EIRP (Watts)} = \{ (3 \times \text{FS}) / 1 \times 10^6 \}^2 / 30.0$$

6.1 Test Data

Radiated Measurements

6.2 § 2.993 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1851.25 MHz
 CHANNEL: 0025 (Low)
 MEASURED OUTPUT POWER: 25.15 dBm = 0.327 W
 MODULATION SIGNAL: CDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 38.15 dBc

FREQ. (MHz)	LEVEL (dBm)	AFCL (dB)	POL (H/V)	F/S (μ V/m)	EIRP (dBm)	(dBc)
3702.50	-75.5	44.4	V	6215.8	-19.36	44.5
5553.75	-86.5	49.7	V	3235.9	-25.03	50.2
7405.00	-96.8	53.7	V	1566.8	-31.33	56.5
9256.25	< -130	57.2				
11107.50	< -130					

NOTES:

- The bandwidth is set per §24.238.
- The spectrum was checked from 25 MHz up to the 10th harmonic.
- All emissions not listed were found to be more than 20dB below the limit.
- < -130dBm is below the floor of the spectrum analyzer.
- The EUT is manipulated through 3 orthogonal axis and the worst-case are reported.
- The EUT is placed 3m. Away from the receiving antenna and the EIRP is calculated using the formula:

$$\text{EIRP (dBm)} = 10\log_{10}(((r(\text{mV/m})/1 \times 10^6)^2/30.0)/1 \times 10^{-3})$$

$$\text{EIRP (dBm)} = 10\log_{10}[(3 \times \text{FS}/1 \times 10^6)^2 / (30.0) \times 1000]$$

$$\text{EIRP (Watts)} = [3 \times \text{FS}]/1 \times 10^6]^2 / 30.0$$

6.1 Test Data (Continued)

Radiated Measurements

6.3 § 2.993 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz
 CHANNEL: 0600 (Middle)
 MEASURED OUTPUT POWER: 25.15 dBm = 0.327 W
 MODULATION SIGNAL: CDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 38.15 dBc

FREQ. (MHz)	LEVEL (dBm)	AFCL (dB)	POL (H/V)	F/S (μ V/m)	EIRP (dBm)	(dBc)
3760.00	-79.0	44.7	V	4315.2	-22.53	47.7
5640.00	-87.0	49.9	V	3126.1	-25.33	50.5
7520.00	-98.0	54.0	V	1412.5	-32.23	57.4
9400.00	< -130	57.4				
11280.00	< -130					

NOTES:

- The bandwidth is set per §24.238.
- The spectrum was checked from 25 MHz up to the 10th harmonic.
- All emissions not listed were found to be more than 20dB below the limit.
- < -130dBm is below the floor of the spectrum analyzer.
- The EUT is manipulated through 3 orthogonal axis and the worst-case are reported.
- The EUT is placed 3m. Away from the receiving antenna and the EIRP is calculated using the formula:

$$\text{EIRP (dBm)} = 10\log_{10}(((r(\text{mV/m})/1 \times 10^6)^2/30.0)/1 \times 10^{-3})$$

$$\text{EIRP (dBm)} = 10\log_{10}[(3 \times \text{FS}/1 \times 10^6)^2 / (30.0) \times 1000]$$

$$\text{EIRP (Watts)} = [3 \times \text{FS}]/1 \times 10^6]^2 / 30.0$$

6.1 Test Data (Continued)

Radiated Measurements

6.4 § 2.993 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1908.75 MHz
 CHANNEL: 1175 (High)
 MEASURED OUTPUT POWER: 25.15 dBm = 0.327 W
 MODULATION SIGNAL: CDMA (Internal)
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 38.15 dBc

FREQ. (MHz)	LEVEL (dBm)	AFCL (dB)	POL (H/V)	F/S (μ V/m)	EIRP (dBm)	(dBc)
3817.50	-79.5	45.0	V	4217.0	-22.73	47.9
5726.25	-91.0	50.1	V	2018.4	-29.13	54.3
7635.00	-99.5	54.2	V	1216.2	-33.53	58.7
9543.75	< -130	57.7				
11452.50	< -130					

NOTES:

- The bandwidth is set per §24.238.
- The spectrum was checked from 25 MHz up to the 10th harmonic.
- All emissions not listed were found to be more than 20dB below the limit.
- < -130dBm is below the floor of the spectrum analyzer.
- The EUT is manipulated through 3 orthogonal axis and the worst-case are reported.
- The EUT is placed 3m. Away from the receiving antenna and the EIRP is calculated using the formula:

$$\text{EIRP (dBm)} = 10\text{Log}_{10}(((r(\text{mV/m})/1 \times 10^6)^2/30.0/1 \times 10^{-3})$$

$$\text{EIRP (dBm)} = 10\text{Log}_{10}[(3 \times \text{FS}/1 \times 10^6)^2 / (30.0) \times 1000]$$

$$\text{EIRP (Watts)} = [3 \times \text{FS}]/1 \times 10^6]^2 / 30.0$$