



NVLAP LAB CODE 200707-0



FCC PART 15.247

MEASUREMENT AND TEST REPORT

For

FIYING TECHNOLOGY DEVELOPMENT CO., LTD

Rm.2312, 23/F.Metropolis tower, 10Metropolis Drive,

Hung Hom, Kowloon, Hong Kong

FCC ID: XJS20070901

Report Type: Class II Permissive Change	Product Type: GSM&GPRS Dual Standby Mobile Phone
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Report Number:	RSZA09063001-WiFi
Report Date:	2009-07-16
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Shenzhen). This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP*, NIST, or any agency of the Federal Government.

* This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk “*” (Rev. 2)

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *FIYING TECHNOLOGY DEVELOPMENT CO., LTD*'s product, model number: *F818, F828, D9*(FCC ID: *XJS20070901*) or the "EUT" as referred to in this report is a *GSM&GPRS Dual Standby Mobile Phone*, which measures approximately: 10.3 cm L x 5.3 cm W x 1.8 cm H, rated input voltage: DC 3.7V battery.

Frequency Range:

Cellular Band: 824-849 MHz (TX), 869-894 MHz (RX)
PCS Band: 1850-1910 MHz (TX), 1930-1990 MHz (RX)
Bluetooth: 2400-2483.5 MHz (TX/RX)
Wi-Fi: 2412-2462MHz (TX/RX)

Modulation Mode: GMSK (GSM/PCS), GFSK (Bluetooth) , Wi-Fi(DSSS/OFDM)

Transmitter Output Power:

Cellular Band: 33±2 dBm
PCS Band: 30±2 dBm
Bluetooth: -10~4 dBm
Wi-Fi: 10±2 dBm

All measurement and test data in this report was gathered from production sample serial number: 0906099(Assigned by BACL, Shenzhen). The EUT was received on 2009-06-30.

**Note: The series products, model F818, F828, D9, we select F818 to test, the difference of these models is in model name, there is no electrical change has been made to the equipment, which was explained in the attached Declaration Letter.*

Objective

This Type approval report is prepared on behalf of *FIYING TECHNOLOGY DEVELOPMENT CO., LTD* in accordance with Part 2, Subpart J, Part 15, Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

This measurement and test report only pertains to the Part 15.247 portion of the EUT; for measurement and test results to the GSM 1900 function please refer to report RSZA09063001-22&24 issued by Shenzhen BACL.

This is the C2PC application of the device. The difference between the original device and the current one is as follows:

Modification	Original	New
Enclosure	Plastic Enclosure	Metal Enclosure
Model Number	F8(Tested), F009, F999, D9a	F818(Tested), F828, D9

For the changes made to the device, spurious emission testing was performed.

Related Submittal(s)/Grant(s)

This is a C2PC application. The original application was granted on 2009-07-16.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 21, 2007. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



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The current scope of accreditations can be found at <http://ts.nist.gov/Standards/scopes/2007070.htm>

SYSTEM TEST CONFIGURATION

Description of Test Configuration

For 802.11b and 802.11g mode, 11 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437	/	/

EUT was tested with Channel 1, 6 and 11.

The worst case data rate is determined with the data rate with highest output power. For 802.11b mode, 1 Mbps data rate was chosen for full testing. For 802.11g mode, 6 Mbps data rate was chosen for full testing.

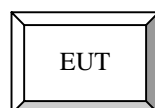
EUT Exercise Software

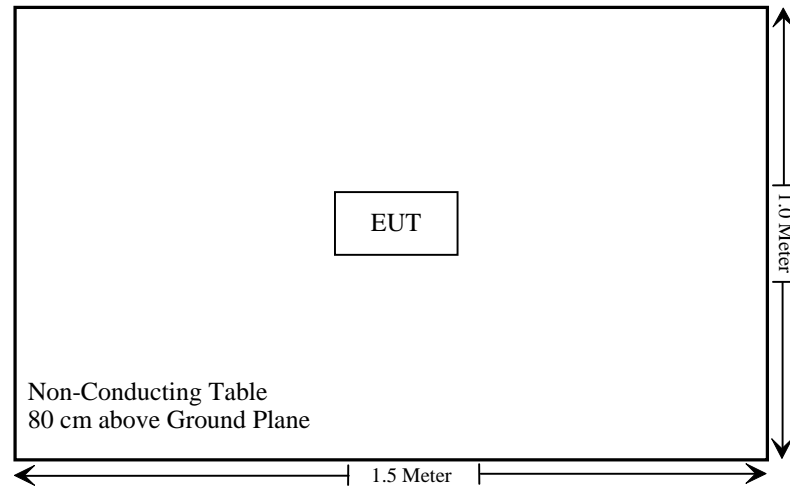
Test software provided by the manufacturer.

Equipment Modifications

No modification was made to the unit tested.

Configuration of Test Setup



Block Diagram of Test Setup

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i) , §1.1307 (b) (1), 2.1093	RF Exposure	Compliance *
§15.203	Antenna Requirement	Compliance **
§15.207 (a)	Conducted Emissions	Compliance **
§15.247(d)	Spurious Emissions at Antenna Port	Compliance **
§15.209, §15.205, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(2)	6 dB Bandwidth	Compliance **
§15.247(b)(3)	Maximum Peak Output Power	Compliance **
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliance **
§15.247(e)	Power Spectral Density	Compliance **

Note: * Please refer to SAR test report released by BACL, report number: R0906227-FCC-SAR

** Please refer to original report, report number: RSZ09062102-WiFi

§15.209, §15.205, §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

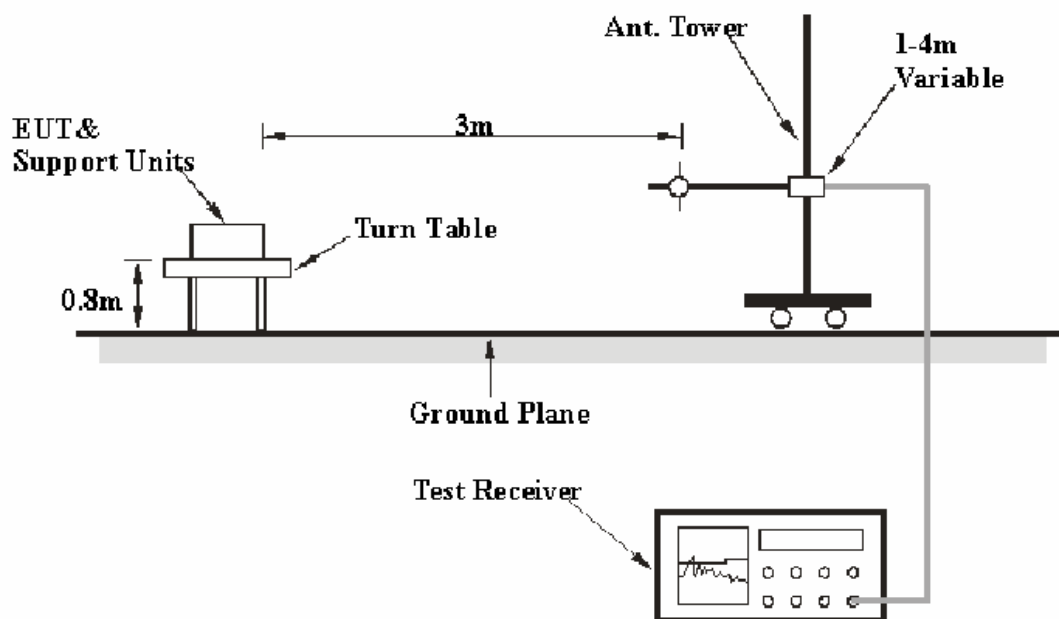
FCC §15.247 (d); §15.209; §15.205;

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is ± 4.0 dB.

EUT Setup



The radiated emission tests were performed in the 3 meters chamber B test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part 15.209 15.205 and 15.247 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

<i>Frequency Range</i>	<i>RBW</i>	<i>Video B/W</i>
30MHz – 1000 MHz	100 kHz	300 kHz
1000 MHz – 25 GHz	1 MHz	3 MHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2008-11-15	2009-11-15
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2008-11-07	2009-11-06
Sunol Sciences	Bilog Antenna	JB1	A040904-2	2009-03-11	2010-03-11
HP	Amplifier	8449B	3008A00277	2008-09-29	2009-09-29
Sunol Sciences	Horn Antenna	DRH-118	A052604	2008-09-25	2009-09-25
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2008-08-28	2009-08-27

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

For the radiated emissions test, the adapter, the host PC and monitor were connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz and peak and Average detection modes for frequencies above 1GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.209, 15.205, and 15.247, with the worst margin reading of:

30 -1000 MHz:

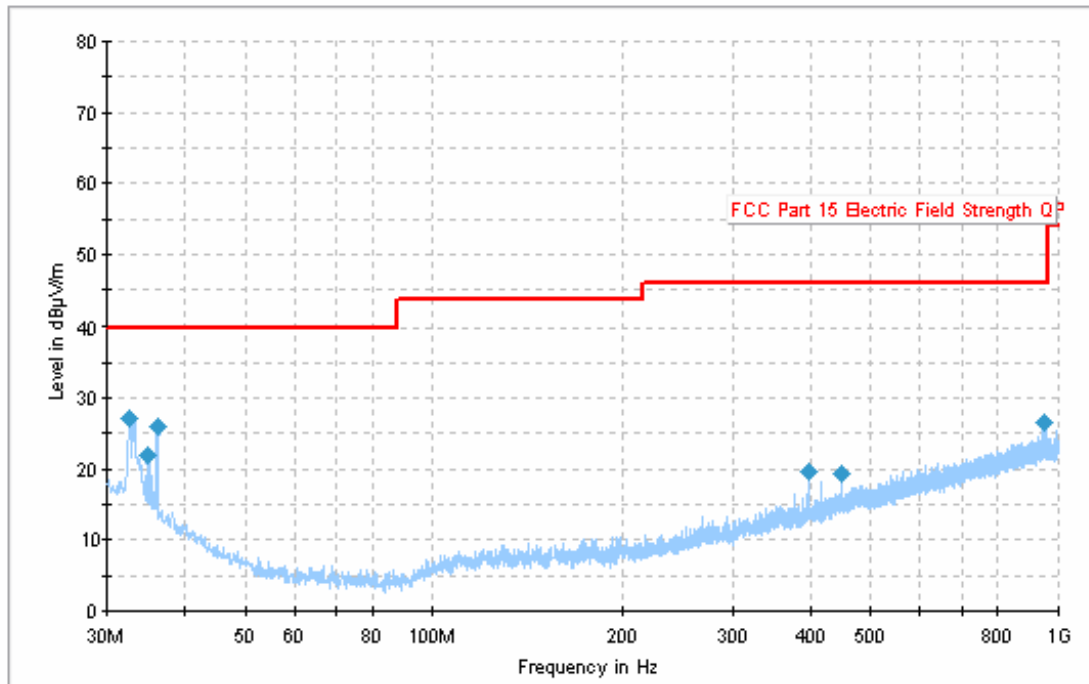
802.11b: 12.9 dB at **32.565550 MHz** in the **Vertical** polarization
802.11g: 13.6 dB at **33.383325 MHz** in the **Vertical** polarization

Test Data

Environmental Conditions

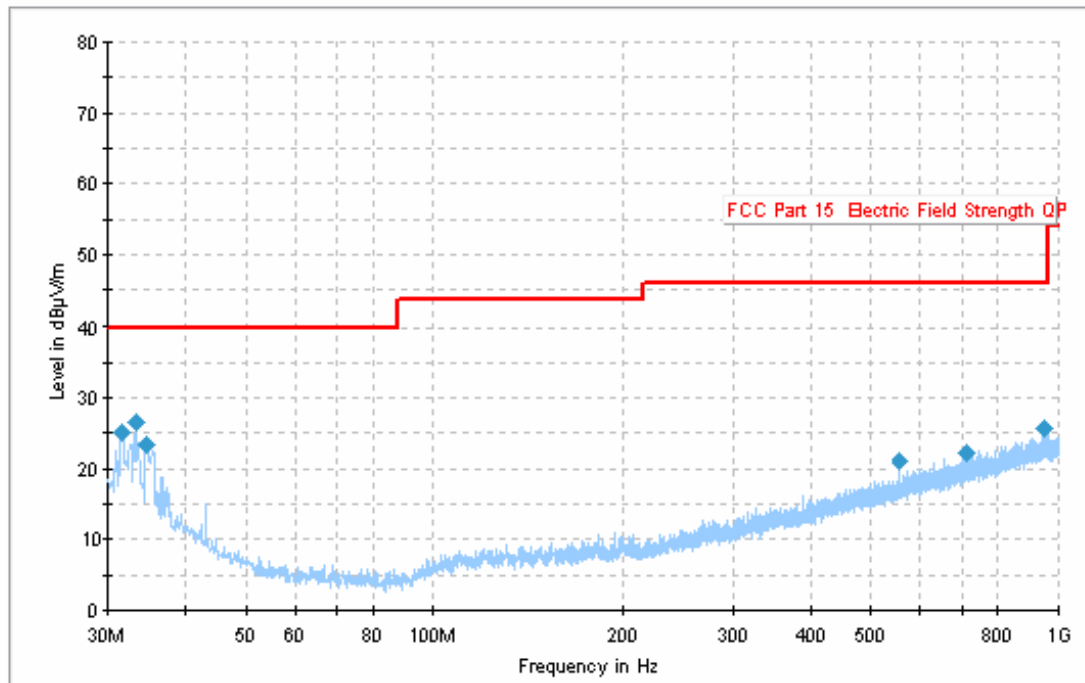
Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Phoenix Liu on 2009-07-13.

30-1000 MHz:*Test Mode: Transmitting (802.11b)*

Frequency (MHz)	Corrected Amplitude (dBμV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBμV/m)	Margin (dB)
32.565550	27.1	100.0	V	0.0	-10.8	40.0	12.9
36.106425	25.4	100.0	V	60.0	-4.0	40.0	14.6
35.162540	21.7	121.0	V	38.0	-12.2	40.0	18.3
951.954975	26.5	111.0	V	76.0	-3.1	46.0	19.5
396.496250	19.6	160.0	V	80.0	-5.1	46.0	26.4
448.312500	19.4	155.0	V	60.0	-4.2	46.0	26.6

Test Mode: Transmitting (802.11g)



Frequency (MHz)	Corrected Amplitude (dBμV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBμV/m)	Margin (dB)
33.383325	26.4	164.0	V	0.0	-10.9	40.0	13.6
31.576250	25.0	156.0	V	210.0	-4.2	40.0	15.0
34.728750	23.2	130.0	V	200.0	-5.8	40.0	16.8
950.613675	25.6	228.0	H	219.0	-3.0	46.0	20.4
710.455000	22.1	110.0	V	105.0	-5.4	46.0	23.9
551.223150	20.9	125.0	V	180.0	-6.3	46.0	25.1

DECLARATION LETTER



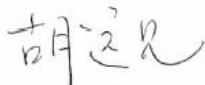
Product Similarity Declaration

To Whom It May Concern,

We, FIYING TECHNOLOGY DEVELOPMENT CO.,LTD, hereby declare that our GSM&GPRS Dual Standby Mobile Phone, Model Number: F828,D9 are electrically identical with the Model Number: F818 that was certified by BACL. F828,D9 and F818 are named differently due to marketing purposes.

Please contact me if you have any question.

Signature:



Print Name: Yuanjian Hu

Title: Engineering Manager

Date:2009-07-13

******* END OF REPORT *******