



# PCTEST ENGINEERING LABORATORY, INC.

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## CERTIFICATE OF COMPLIANCE FCC Part 90 Certification

**Applicant Name:**

Motorola Inc.  
1301 East Algonquin Road  
Schaumburg, IL 60196  
USA

**Date of Testing:**

September 17, 2007

**Test Site/Location:**

PCTEST Lab., Columbia, MD, USA

**Test Report Serial No.:**

0708020834.ABZ

**FCC ID:** ABZ89FT7626

**APPLICANT:** MOTOROLA INC.

**Application Type:** Certification

**FCC Classification:** Licensed Non-Broadcast Station Transmitter (TNB)

**FCC Rule Part(s):** § 90

**EUT Type:** Mobile Computer with Wireless Modem Module

**Model(s):** ML910

**Tx Frequency Range:** 806 - 821MHz / 821 - 824MHz

**Max. RF Output Power:** 1.39 W ERP (31.43 dBm) / 1.271 W ERP (31.04 dBm)

**Emission Designator(s):** 20K0F1D / 12K0F1D

**Test Device Serial No.:** identical prototype [S/N: 343AA77S0002]

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.



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.

**Grant Conditions:** Power output listed is ERP

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. 862.



  
Randy Ortanez  
President



FCC ID: ABZ89FT7626		FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 1 of 17

# TABLE OF CONTENTS

FCC PART 90 MEASUREMENT REPORT .....	3
1.0 INTRODUCTION .....	4
1.1 MEASUREMENT PROCEDURE .....	4
1.2 SCOPE .....	4
1.3 TESTING FACILITY .....	4
2.0 PRODUCT INFORMATION.....	5
2.1 EQUIPMENT DESCRIPTION .....	5
2.2 EMI SUPPRESSION DEVICE(S)/MODIFICATIONS .....	5
2.3 LABELING REQUIREMENTS.....	5
3.0 DESCRIPTION OF TESTS .....	6
3.1 RADIATED SPURIOUS AND HARMONIC EMISSIONS .....	6
4.0 TEST EQUIPMENT CALIBRATION DATA .....	7
5.0 TEST RESULTS.....	8
5.1 SUMMARY.....	8
5.2 EFFECTIVE RADIATED POWER OUTPUT DATA .....	9
5.3 EQUIVALENT RADIATED POWER OUTPUT DATA .....	10
5.4 CELLULAR MODE RADIATED MEASUREMENTS .....	11
5.5 CELLULAR MODE RADIATED MEASUREMENTS .....	14
6.0 CONCLUSION.....	17

FCC ID: ABZ89FT7626		FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module	Page 2 of 17	



# MEASUREMENT REPORT

## FCC Part 90



### §2.1033 General Information



**APPLICANT:** Motorola Inc.  
**APPLICANT ADDRESS:** 1301 East Algonquin Road  
 Schaumburg, IL 60196  
**TEST SITE:** PCTEST ENGINEERING LABORATORY, INC.  
**TEST SITE ADDRESS:** 6660-B Dobbin Road, Columbia, MD 21045 USA  
**FCC RULE PART(S):** §90  
**BASE MODEL:** ML910  
**FCC ID:** ABZ89FT7626  
**FCC CLASSIFICATION:** Licensed Non-Broadcast Station Transmitter (TNB)  
**EMISSION DESIGNATOR(S):** 20K0F1D / 12K0F1D  
**MODE:** None  
**FREQUENCY TOLERANCE:**  $\pm 0.00025\%$  (2.5 ppm)  
**Test Device Serial No.:** 343AA77S0002 ☐ Production ☒ Pre-Production ☐ Engineering  
**DATE(S) OF TEST:** September 17, 2007  
**TEST REPORT S/N:** 0708020834.ABZ

### Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab. located in Columbia, MD 21045, U.S.A.



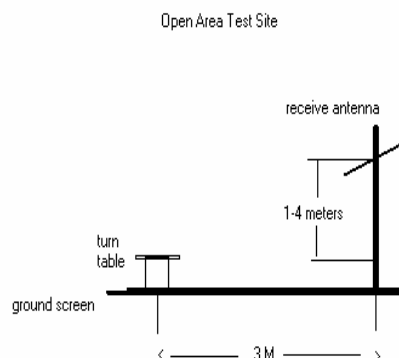
- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (IC-2451).
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST Lab is accredited to ISO 17025:2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (IC-2451) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

FCC ID: ABZ89FT7626	 <b>FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)</b>		 <b>Reviewed by:</b> Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module	Page 3 of 17

## 1.0 INTRODUCTION

### 1.1 Measurement Procedure

The radiated spurious measurements were made outdoors at a 3-meter test range (see Figure 1-1). 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. 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. 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 antenna are taken into consideration.



Deviation from Measurement Procedure.....None

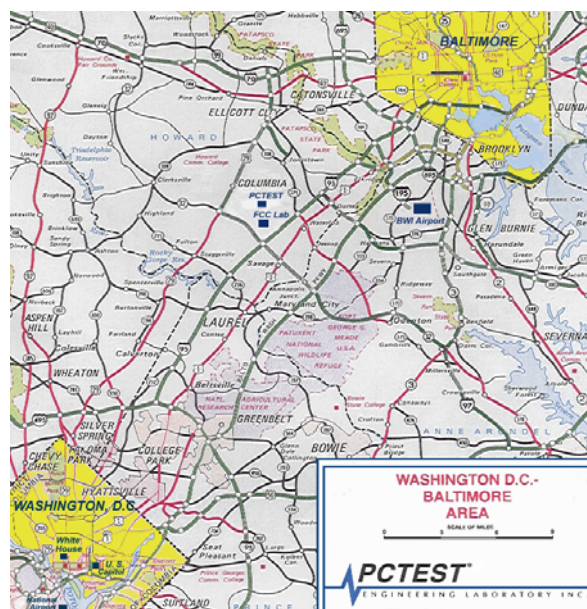
**Figure 1-1. Diagram of 3-meter outdoor test range**

### 1.2 Scope



Measurement 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.

### 1.3 Testing Facility

These measurements were conducted at the PCTEST Engineering Laboratory, Inc. facility in New Concept Business Park, Guilford Industrial Park, Columbia, Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49'38" W longitude. The facility is 1.5 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2003 on January 27, 2006 and Industry Canada.



**Figure 1-2. Map of the Greater Baltimore and Metropolitan Washington, D.C. area.**

FCC ID: ABZ89FT7626		FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 4 of 17

## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Motorola Mobile Computer with Wireless Modem Module FCC ID: ABZ89FT7626**. The EUT consisted of the following component(s):

Trade Name / Base Model	FCC ID	Description
Motorola / Model: ML910	ABZ89FT7626	Mobile Computer with Wireless Modem Module

**Table 2-1. EUT Equipment Description**

The Motorola, Inc. Model: ML910 utilizes an already certified PRM240 Wireless Modem Module (FCC ID: PQS-BM28001). This test report details the radiated spurious emissions test result with the module integrated into the ML910 mobile notebook. Measurements performed at the antenna terminal are reported in a separate test report submitted with this filing.

### 2.2 EMI Suppression Device(s)/Modifications



No EMI suppression device(s) were added and no modifications were made during testing.

### 2.3 Labeling Requirements

Per 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the trade name and FCC ID must be displayed on the device per Section 15.19(b)(2).



Please see attachment for FCC ID label and label location.

FCC ID: ABZ89FT7626		FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 5 of 17

## 3.0 DESCRIPTION OF TESTS

### 3.1 Radiated Spurious and Harmonic Emissions

Spurious and harmonic radiated 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 is scanned from the lowest frequency generated in the equipment up to a frequency including its 10<sup>th</sup> harmonic. 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 1 GHz, 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.



FCC ID: ABZ89FT7626		FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 6 of 17

## 4.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Manufacturer	Model / Equipment	Calibration Date	Cal Interval	Calibration Due	Serial No.
Agilent	E4407B ESA Spectrum Analyzer	04/29/07	Annual	04/28/08	US39210313
Agilent	E5515C Wireless Communications Test Set	07/27/06	Biennial	07/26/08	GB41450275
Agilent	E5515C Wireless Communications Test Set	10/06/06	Biennial	10/05/08	GB43193972
Agilent	8648D (9kHz-4GHz) Signal Generator	10/01/06	Annual	10/01/07	3613A00315
Agilent	E5515C Wireless Communications Test Set	10/26/06	Biennial	10/25/08	GB46310798
EMCO	Model 3115 (1-18GHz) Horn Antenna	09/24/06	Biennial	09/23/08	9203-2178
EMCO	Model 3115 (1-18GHz) Horn Antenna	09/25/06	Biennial	09/24/08	9704-5182
Rohde & Schwarz	NRVS Power Meter	07/03/07	Biennial	07/02/09	835360/079
Rohde & Schwarz	NRV-Z53 Power Sensor	07/03/07	Biennial	07/02/09	846076/007
Rohde & Schwarz	CMU200 Base Station Simulator	11/08/06	Annual	11/08/07	107826
Rohde & Schwarz	CMU200 Base Station Simulator	09/07/07	Annual	09/06/08	833855/010
Rohde & Schwarz	CMU200 Base Station Simulator	05/24/07	Annual	05/23/08	836371/079
Agilent	HP 8566B (100Hz-22GHz) Spectrum Analyzer	12/21/06	Annual	12/21/07	3638A08713
Agilent	E4448A (3Hz-50GHz) Spectrum Analyzer	09/22/06	Annual	09/22/07	US42510244
Agilent	E8257D (250kHz-20GHz) Signal Generator	03/08/07	Annual	03/07/08	MY45470194
Agilent	HP 85650A Quasi-Peak Adapter	12/21/06	Annual	12/21/07	2043A00301
Agilent	HP 8449B (1-26.5GHz) Pre-Amplifier	12/12/06	Annual	12/12/07	3008A00985
Agilent	HP 85650A Quasi-Peak Adapter	12/21/06	Annual	12/21/07	2043A00301
Agilent	HP 8449B (1-26.5GHz) Pre-Amplifier	12/12/06	Annual	12/12/07	3008A00985
Agilent	HP 11713A Attenuation/Switch Driver	12/12/06	Annual	12/12/07	N/A
Agilent	HP 85685A (20Hz-2GHz) Preselector	12/12/06	Annual	12/12/07	N/A
Agilent	HP 8566B Opt. 462 Impulse Bandwidth	12/12/06	Annual	12/12/07	3701A22204
EMCO	Dipole Pair	09/21/06	Biennial	09/20/08	23951
SOLAR	8012-50 LISN (2)	11/18/05	Biennial	11/18/07	0313233, 0310234
K & L	11SH10 Band Pass Filter	N/A	Annual	N/A	1300/4000
K & L	11SH10 Band Pass Filter	N/A	Annual	N/A	4000/12000
Agilent	HP 8495A (0-70dB) DC-4GHz Attenuator	N/A		N/A	N/A
-	263-10dB (DC-18GHz) 10 dB Attenuator	N/A		N/A	N/A
Pasternack	PE2208-6 Bidirectional Coupler	N/A		N/A	N/A
-	No.165 (30MHz - 1000MHz) RG58 Coax Cable	N/A		N/A	N/A
-	No.166 (1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167 (100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A
Rohde & Schwarz	NRVD Dual Channel Power Meter	12/11/06	Biennial	12/10/08	101695
Rohde & Schwarz	NRV-Z33 Peak Power Sensor (1mW-20W)	11/28/06	Biennial	11/27/08	100155

Table 4-1. Test Equipment

FCC ID: ABZ89FT7626	 <b>FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)</b>			Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 7 of 17





## 5.0 TEST RESULTS

### 5.1 Summary

Company Name: Motorola Inc.  
 FCC ID: ABZ89FT7626  
 FCC Classification: Licensed Non-Broadcast Station Transmitter (TNB)  
 Mode(s): None

FCC Part Section(s)	RSS Section	Test Description	Test Limit	Test Condition	Test Result	Reference
<b><u>TRANSMITTER MODE (TX)</u></b>						
90.635(b)	RSS-119	Effective Radiated Power	< 100 Watts max. ERP	RADIATED	PASS	Section 5.2
90.669	RSS-119	Undesirable Emissions	< 43 + 10log <sub>10</sub> (P[Watts]) for all out-of-band emissions		PASS	Sections 5.4, 5.5
<b><u>RECEIVER MODE (RX) / DIGITAL EMISSIONS</u></b>						
15.107	RSS-Gen [7.2.2]	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.207 limits or < RSS-Gen table 2 limits	LINE CONDUCTED	PASS	Pt. 15B Test Report
15.109	RSS-129 (10(a,d)) RSS-133 (6.7(a,b)) RSS-210 (7.3)	General Field Strength Limits (Restricted Bands and Radiated Emissions Limits)	< FCC 15.209 limits or < RSS-Gen limits [Section 6; Table 1]	RADIATED (30MHz-1GHz) (1-25 GHz)	PASS	Pt. 15B Test Report
<b><u>RF EXPOSURE</u></b>						
2.1091 / 2.1093	RSS-102	MPE Test	1 mW/cm² (MPE Limit) @ 20 cm	MPE	PASS	MPE Report

**Table 5-1. Summary of Test Results**

FCC ID: ABZ89FT7626	 <b>FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)</b> 		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module	Page 8 of 17



## 5.2 Effective Radiated Power Output Data

### POWER: (Cellular Mode)

Frequency [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	Battery Type
806.00	-5.970	31.43	0.00	H	31.43	1.390	Standard
815.00	-6.430	30.97	0.00	H	30.97	1.250	Standard
821.00	-6.470	30.93	0.00	H	30.93	1.239	Standard



**Table 5-2. Effective Radiated Power Output Data**

### NOTES:

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 CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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.

This unit was tested with its standard battery.

FCC ID: ABZ89FT7626	 <b>FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)</b>			Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 9 of 17

### 5.3 Equivalent Radiated Power Output Data

POWER: (Cellular Mode)

Frequency [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
821.00	-6.470	30.93	0.00	H	30.93	1.239	Standard
822.50	-6.360	31.04	0.00	H	31.04	1.271	Standard
824.00	-8.520	28.88	0.00	H	28.88	0.773	Standard



Table 5-3. Equivalent Isotropic Radiated Power Output Data

#### NOTES:

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 CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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.

This unit was tested with its standard battery.

FCC ID: ABZ89FT7626	 <b>FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)</b> 			<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0708020834.ABZ	<b>Test Dates:</b> September 17, 2007	<b>EUT Type:</b> Mobile Computer with Wireless Modem Module		Page 10 of 17

## 5.4 Cellular Mode Radiated Measurements

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 806.00 MHz  
 CHANNEL: Low  
 MEASURED OUTPUT POWER: 31.430 dBm = 1.390 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  44.43 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1612.00	-57.44	6.08	-51.36	H	82.8
2418.00	-100.54	6.08	-94.46	H	125.9
3224.00	-64.23	6.53	-57.70	H	89.1
4030.00	-94.23	6.87	-87.35	H	118.8
4836.00	-59.54	7.21	-52.32	H	83.8



**Table 5-4. Radiated Spurious Data (806MHz. Channel)**

#### NOTES:

Radiated Spurious Emission 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 CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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. This spurious 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.

This unit was tested with its standard battery.

FCC ID: ABZ89FT7626		FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 11 of 17

## Cellular Mode Radiated Measurements (Cont'd)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 815.00 MHz  
 CHANNEL: Mid  
 MEASURED OUTPUT POWER: 31.430 dBm = 1.390 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  44.43 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1630.00	-57.18	6.09	-51.09	H	82.5
2445.00	-96.91	6.55	-90.35	H	121.8
3260.00	-61.43	6.89	-54.54	H	86.0
4075.00	-92.19	7.43	-84.76	H	116.2
4890.00	-56.71	8.35	-48.37	H	79.8



**Table 5-5. Radiated Spurious Data (815MHz. Channel)**

#### NOTES:

Radiated Spurious Emission 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 CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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. This spurious 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.

This unit was tested with its standard battery.

FCC ID: ABZ89FT7626		FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 12 of 17

## Cellular Mode Radiated Measurements (Cont'd)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 821.00 MHz  
 CHANNEL: Hi  
 MEASURED OUTPUT POWER: 31.430 dBm = 1.390 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  44.43 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1642.00	-56.19	6.09	-50.10	H	81.5
2463.00	-96.77	6.57	-90.20	H	121.6
3284.00	-61.17	6.91	-54.26	H	85.7
4105.00	-62.29	7.65	-54.65	H	86.1
4926.00	-89.67	8.33	-81.34	H	112.8



**Table 5-6. Radiated Spurious Data (821MHz. Channel)**

#### NOTES:

Radiated Spurious Emission 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 CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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. This spurious 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.

This unit was tested with its standard battery.

FCC ID: ABZ89FT7626		FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 13 of 17

## 5.5 Cellular Mode Radiated Measurements

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 821.00 MHz  
 CHANNEL: Low  
 MEASURED OUTPUT POWER: 31.040 dBm = 1.271 W  
 MODULATION SIGNAL: CDMA (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  44.04 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1642.00	-37.74	9.02	-28.73	H	59.8
2463.00	-89.93	10.40	-79.53	H	110.6
3284.00	-51.60	10.51	-41.09	H	72.1
4105.00	-53.39	11.84	-41.55	H	72.6
4926.00	-85.45	12.76	-72.70	H	103.7



**Table 5-7. Radiated Spurious Data (821MHz. Channel)**

#### NOTES:

Radiated Spurious Emission 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 CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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. This spurious 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.

This unit was tested with its standard battery.

FCC ID: ABZ89FT7626	 <b>FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)</b>			Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 14 of 17



## Cellular Mode Radiated Measurements (Cont'd)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 822.50 MHz  
CHANNEL: Mid  
MEASURED OUTPUT POWER: 31.040 dBm = 1.271 W  
MODULATION SIGNAL: CDMA (Internal)  
DISTANCE: 3 meters  
LIMIT:  $43 + 10 \log_{10} (W) =$  44.04 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1645.00	-40.41	8.99	-31.41	H	62.5
2467.50	-89.66	10.40	-79.26	H	110.3
3290.00	-54.95	10.62	-44.33	H	75.4
4112.50	-51.80	11.70	-40.10	H	71.1
4935.00	-84.99	12.69	-72.30	H	103.3



**Table 5-8. Radiated Spurious Data (822.5MHz. Channel)**

#### NOTES:

Radiated Spurious Emission 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 CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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. This spurious 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.

This unit was tested with its standard battery.

FCC ID: ABZ89FT7626		FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 15 of 17





## Cellular Mode Radiated Measurements (Cont'd)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 824.00 MHz  
CHANNEL: Hi  
MEASURED OUTPUT POWER: 31.040 dBm = 1.271 W  
MODULATION SIGNAL: CDMA (Internal)  
DISTANCE: 3 meters  
LIMIT:  $43 + 10 \log_{10} (W) =$  44.04 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1648.00	-42.44	8.97	-33.47	H	64.5
2472.00	-89.38	10.40	-78.98	H	110.0
3296.00	-49.09	10.71	-38.38	H	69.4
4120.00	-85.75	11.64	-74.12	H	105.2
4944.00	-47.93	12.62	-35.31	H	66.4



**Table 5-9. Radiated Spurious Data (824MHz. Channel)**

#### NOTES:

Radiated Spurious Emission 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 CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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. This spurious 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.

This unit was tested with its standard battery.

FCC ID: ABZ89FT7626		FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 16 of 17

## 6.0 CONCLUSION

The data collected show that the **Motorola Mobile Computer with Wireless Modem Module** **FCC ID: ABZ89FT7626** complies with all the requirements of Parts 2 and 90 of the FCC rules.

FCC ID: ABZ89FT7626		FCC Pt. 90 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0708020834.ABZ	Test Dates: September 17, 2007	EUT Type: Mobile Computer with Wireless Modem Module		Page 17 of 17