

 MOTOROLA	 TESTING CERT # 2518.01
---	--

FCC ID: AZ492FT5854
DECLARATION OF COMPLIANCE: MPE ASSESSMENT

Government & Public Safety EME Test Laboratory 8000 West Sunrise Blvd Fort Lauderdale, FL. 33322	Date of Report: October 23, 2007 Report Revision: Rev. O Report ID: FCC MPE rpt_ M710 Rev O_071023_SR5690
--	--

<p>Responsible Engineer: Stephen C. Whalen (EME Principle Staff Eng.)</p> <p>Date/s Tested: N/A (MPE-Numerical assessment)</p> <p>Manufacturer/Location: Motorola, Israel South</p> <p>Date submitted for test: 10/15/07</p> <p>DUT Description: M710 Car Phone, iDEN 800/900MHz and ISM 902-928MHz</p> <p>Test TX mode(s): N/A (MPE-Numerical assessment)</p> <p>Max. Power output: 489.78mW for 800MHz; 426.58mW for 900MHz (w/ 6dBi antenna gain) 324mW for 902-928MHz (w/ 6dBi antenna gain)</p> <p>TX Frequency Bands: 806-825MHz, 896-901 MHz and 902-928 MHz</p> <p>Signaling type: iDEN TDMA QPSK, 16QAM, 64QAM; ISM FHSS FSK</p> <p>Model(s) Tested: N/A (MPE-Numerical assessment)</p> <p>Model(s) Certified: F321501GNAA (FLN3733A)</p> <p>Serial Number(s): NA</p> <p>Classification: General Population/Uncontrolled</p> <p>Rule Part(s): 15</p> <p>Approved Accessories:</p> <p>Antenna(s): 6dBi antenna</p>	
--	--

Final RF Exposure Results:
Highest calculated power density is 0.14mW/cm²

Based on the information and the testing results provided herein, the undersigned certifies that when used as stated in the operating instructions supplied, said product complies with the national and international reference standards and guidelines listed in section 3.0 of this report. This report shall not be reproduced without written approval from an officially designated representative of the Motorola EME Laboratory. I attest to the accuracy of the data and assume full responsibility for the completeness of these measurements. This reporting format is consistent with the suggested guidelines of the TIA TSB-159 April 2006. The results and statements contained in this report pertain only to the device(s) evaluated herein.

Signature on file Deanna Zakharia G&PS EME Lab Senior Resource Manager, Laboratory Director, Approval Date: 10/23/2007	Certification Date: 10/23/2007 Certification No.: L1071037
---	---

TABLE OF CONTENTS

- 1.0 Product and System Description
- 2.0 Evaluation Methods
- 3.0 MPE Analysis
- 4.0 Conclusion

REVISION HISTORY

Date	Revision	Comments
10/23/07	0	Original release

1.0 Product and System Description

FCC ID AZ492FT5854 is a fixed mobile car phone designed for dedicated access to voice and data communication from within a vehicle. This device incorporates enhanced display, well spaced keypad with all around hands-free environment and voice activation features. This device operates in the iDEN 806-825MHz and 896-901MHz bands. The maximum operational duty cycle is 67.5%. The maximum conducted output power is 489.78mW (800MHz) and 426.58mW (900MHz) as defined by the upper limit of the production line final test station.

This device also possesses MOTotalk, which is a Part 15 service, employing Frequency Hopping Spread Spectrum technology in the 902-928MHz ISM band. MOTotalk emissions have a duty cycle of 95.0%, and uses 8FSK modulation. Only dispatch (i.e. PTT) operation is possible when operating in this mode. The maximum conducted output power is 0.324 watts as defined by the upper limit of the production line final test station.

No simultaneous transmission is possible.

Motorola does not offer an antenna for this device and the recommended maximum antenna gain to be used for this device is +6dBi.

The User manual for this product instructs the Systems Integrator to assure that transmission occurs only when the operator and nearby persons are at least 30 cm from the antenna. Therefore, this product will be evaluated as a mobile device per 47 CFR §1.1310 titled "Radio frequency radiation exposure limits", generally referred to as Maximum Permissible Exposure (MPE) limits, for General Population.

2.0 Evaluation methods

MPE numerical assessment is used to evaluate the RF exposure for model F321501GNAA (FLN3733A) based on a maximum antenna gain of 6dBi.

According to OET Bulletin 65 Edition 97-01 Section 2, calculations can be made to predict RF field strength and power density levels around typical RF sources. For example, in the case of a single radiating antenna, a prediction for power density in the far-field of the antenna can be made by use of the general Equations (1) or below. These equations are generally accurate in the far-field of an antenna but will over-predict power density in the near field, where they could be used for making a "worst case" or conservative prediction.

$$S = P G / 4 \pi r^2 = \text{EIRP} / 4 \pi r^2 \quad (1)$$

Where: S = power density (mW/cm²)
 P = Power input into antenna (mW)
 G = numeric gain of antenna (dBi).
 r = distance to centre of radiation (cm)
 EIRP = Effective (isotropic) radiated power

Or

$$S = \frac{P_t G_t}{4\pi d^2 L} F = \frac{c P_m G_t}{4\pi d^2 L} F$$

To include the maximum duty cycle of the signal, and the factor, F, to provide a worst-case prediction of power density according to the FCC.

- Where: S = power density (mW/cm²)
- P_t = Total output power (W) = maximum output power, P_m, scaled by the maximum duty cycle of the signal, c.
- G_t = power gain of the antenna in the direction of interest relative to an isotropic radiator (dBi).
- L = cable loss (dB)
- d = distance from the antenna (cm)
- F = 2.6

3.0 MPE Analysis

Tx Frequency (MHz)	Env./ User Category	MPE Spec Limit (mW/cm ²)		TX Duty cycle (%)	PTT Duty cycle (%)	Max Power (W)	Ant Gain G _t (dBi)	Cable loss, L (dB)	Dist. d. (cm)	MPE Calc. (mW/cm ²)
		FCC	ICNIRP							
902.5MHz	Uncontrolled	0.60	0.45	95%	50%	0.324	6	0	30	0.14

Note: a conservative 0dB cable loss was used for the MPE compliance calculation.

4.0 Conclusion

The MPE results per the assessment above are compliant to the FCC General population/Uncontrolled exposure limits of 0.60-0.62 mW/cm² for the frequency ranges of 902-928 MHz, per 47 CFR §1.1310 titled “Radio frequency radiation exposure limits”.

The MPE results are also compliant to the ICNIRP General population/Uncontrolled exposure limits of 0.45-0.46 mW/cm² for the frequency range of 902-928 MHz, per ICNIRP (1998) Guidelines for limiting exposure in time-varying electric, magnetic, and electromagnetic fields (up to 300GHz).