



Date: September 20, 2000

Mr. Frank Coperich  
 Authorization & Evaluation Division  
 Federal Communications Commission Laboratory  
 7435 Oakland Mills Road  
 Columbia, MD 21046

Re: 731 Confirmation Number: EA 98258

Dear Mr. Coperich;

Motorola Inc., 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322, herein submits its response to the August 14, 2000 and August 28, 2000 request for information on FCC ID: AZ489FT5800, EA98258 via correspondence numbers 15584 and 15791.

Q1. The operator's manual describes a battery belt-clip and a leather carry-case for body-worn use. The SAR summary indicates body-worn SAR was tested with leather carry-case and belt-clip. It is not clear from the SAR results if both accessories have been tested for body-worn SAR compliance. The test setup photo appears to indicate the carry-case was used. Please clarify body-worn test configurations and also identify the separation distances provided with each of these two accessories.

A1. This product offers 3 body attachment systems: 2 different size belt clips and 1 D-ring/belt loop combination, additionally a leather case is offered useable with any of the above systems. All accessories were tested as described in section 5.0 of the SAR report. Body worn test configurations include the following body attachment systems and separation distances:

<b>Body Worn Test Configuration</b>	<b>Distance from surface of antenna base to phantom</b>
Small belt clip (kit # HLN9844)	3.8 cm
Large belt clip (kit # HLN9714)	3.5 cm
D-ring/belt loop (kit # NTN1535A)	7.5 cm
Large belt clip and leather case (kit # FLN9580)	3.5 cm

The test configuration that indicated highest SAR result was with large belt clip and leather case. The final results were summarized in SAR report section 7.2.

Q2. Filing is requesting for 1.47 W ERP. Maximum conducted output is reported as 1.25 W. There does not appear to be any ERP measurement results to support the 1.47 W ERP requested for the filing; please clarify.

A2) Since the ERP is the product of the transmitter RF output power and the free-space radiation gain of the transmitter antenna relative to a dipole antenna, the ERP was determined by antenna radiation measurements performed in an Emmerson & Cummings No. 1203 RF anechoic chamber in our Plantation, FL location. Two measurements were performed.

First a signal generator was attached to an end-fed dipole antenna mounted on a stand atop a turntable, and the radiated output was measured on a vertically polarized receiving antenna to establish a reference level. Second, a radio sample replaced the dipole antenna on the stand. For this sample the antenna on the radio housing was attached to an added cable emanating from the bottom of the radio rather than the transceiver power amplifier. The signal generator was then connected to the cable at the same signal level applied to the reference antenna, and measurements taken at 2-degree intervals as the turntable was rotated. This measurement data is provided in the second column (B) of the attached Microsoft Excel spreadsheet file, and the reference antenna measurement is provided in spreadsheet cell C2.

To determine the reference antenna reading relative to a dipole rather than to the reference antenna it is necessary to adjust the reference reading by the calibrated gain of the reference antenna. This gain value is reported in cell C3 and the difference provides the dipole reference reading given in cell C4. The radio antenna gain relative to a dipole (dBd) was then calculated in column C by taking the difference between the measurement data in column B and the reference reading in cell C4. The maximum value was determined mathematically in cell C5. Further, the data in column C was then plotted as a function of the rotation angle, and the maximum is seen to occur at an angle of 220 degrees.

After checking antenna calibration, it was determined that the previously reported maximum gain of 0.7 dBd in Exhibit 12.1.7 and 1.47 watts ERP in Exhibit 12.1.8 were overstated; these values should have been 0.05 dBd and 1.26 watts ERP respectively. Consequently a revised Exhibit 12 is attached.

As a result of overstating the maximum power, please amend the Form 731 to reflect a Variable Power of 0.2 milliWatts---1.26 Watts ERP.

Contact me at (954) 723-5793 if you require any additional information.

Regards,

Mike Ramnath  
FCC Liaison  
Email: [emr003@email.mot.com](mailto:emr003@email.mot.com)