



Date: 14th December 2001

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

Re: Form 731 Confirmation Number: EA102539 with FCC ID: AZ489FT5815.

Dear Mr. Dichoso;

Motorola Inc., 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322, herein submits its response to the 10th December 2001 request for information in Correspondence Number 21384 and 21385.

We are sorry if our terminology is causing confusion, so first we wish to clarify the way we use these terms as that should eliminate the confusion.

We use the word "maximum" to distinguish the highest numerical value measured, regardless of the measurement means.

RF power measurement is generally done with an average reading (RMS) power meter such as the Hewlett Packard HP437B which we list in the equipment list of Exhibit 7.6; but it can also be performed with a peak reading power meter (e.g. – a Boonton 4500). We use the term "average" to denote that the power measurement is performed using an average-reading (or RMS) power meter to obtain a mean power resultant (as defined in 47 CFR 2.1) by averaging over a period long compared to the signal fluctuations due to modulation.

Since output power is zero except during the TDM transmission pulse we report power readings that are time-synchronized to exclude the non-transmission period. In that manner the average power reading is not reduced by the off period of the TDM duty cycle. The term we elected to use to describe this measurement method is "pulse average". Stating power in this way also has proven to be very practical for predicting communication system coverage and operator licensing, and has the advantage of a value that is duty cycle independent.

Regarding your request for peak values, for a pure sine wave signal like that from an FM transmitter a peak reading meter will report a Peak Envelope Power (as defined in 47 CFR 2.1) value 1.41 times greater than that reported as Mean Power by the average-reading meter. In the case of our Quad QAM signal this

peak-to-average ratio is 3.67 (or equivalently, 5.65 dB). This peak-to-average ratio is a factor that can be used to scale all the pulse average power data we have reported.

Given the above clarifications we believe that what you seek is the maximum values for statement in a Grant based on average power measurements, not the peak Envelope Power values, so the following answers are respectfully provided to your questions.

1) The maximum output power (pulse average) that would be measured at the antenna terminals is 700 milliwatts (or equivalently, 28.45 dBm). We rate the radio at 600 milliwatts (27.78 dBm) output power, with unit-to-unit operational variation extremes limited to the 700 milliwatt maximum. Our radio is rated by output power, rather than ERP, to assure compliance with the output power limits given in 47 CFR 90.635(d; and, that is our preference for a Grant of Authorization.

2) The measured maximum ERP reported in Exhibit 6.7 was 871 milliwatts (pulse average). This value is based on scaling to 700 milliwatts the output power of an ERP test radio with an output power of 679 milliwatts (as reported at the top of the 900 MHz segment of the ERP Data table in Exhibit 6.7). Unfortunately, the heading of those columns of the Data Table were inadvertently mislabeled with the test frequency, rather than labeled Maximum Calculated ERP as we have done in the past for applications you have previously reviewed (e.g. - AZ489FT5808).

Be advised that, during the relatively short (about 1 minute) duration of the ERP measurement in the RF anechoic chamber, output power is essentially constant (within 1% from start to finish). Since there is little benefit in measuring output power at each angular position under this condition or power stability, it was not done.

3) Differing output power values appear in the data supplied because different units were involved; but all are consistent with our rating and expected unit-to-unit variations. In particular, for compliance with the OET 65 Supplement C Edition 01-01 guidelines, the units used for SAR and ERP tests were within 5% of the maximum rated output power. It is noted that the 5% variation tolerated in Edition 01-01 differs from the 20% variation tolerated in 47 CFR 90.205(0).

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

Regards,
/s/ Mike Ramnath
FCC Liaison
Email: mike.ramnath@motorola.com