

February 6, 2007

RE: FCC ID: MIVGSM0308_ATCB004517

Attention: Tom Tidwell

I have a few comments on this Application. Please note that further comments may arise in response to answers provided to the questions below.

1. Please note that the FCC states that the actual frequencies used are to be on the grant. This means that for this application the following frequencies are to be on the grant: 824.2-848.8MHz and 1850.2-1909.8MHz. Please correct the 731 to reflect the actual frequencies for this application.

It was my understanding that this is the case only with unlicensed devices. I have updated the Form 731 in any case.

2. Please explain if this is a licensed modular transmitter application.

My understanding was that FCC does not really provide for licensed modular approval. This device is sold for integration into various end products however. The purpose of the integration guide is to warn the integrator that the device can only be used in fixed and mobile rf exposure configurations and that a new approval must be obtained if the device is to be used in a Portable configuration. It looks like for previous certifications ITS did for these guys they put a note about the module but did not include "modular" in the description note. See the attached grant for a previous version of this device.

3. Please explain how the label is permanently attached to the device.

The label is silk screened onto the PWB.

4. Please note that it appears that the manual uses 7watts for the part 22 MPE information. Please note that this is not correct. Please note the highest gain antenna usable for this device under part 22 MPE at 824.2MHz to keep the 20cm separation would be 2.1dBi ($32.3+2.1=34.4\text{dBm}$) or about 2.75W. For the part 24 MPE the highest gain antenna usable would be about 5.8dB. However, as noted in the manual, the limiting factor at 1999MHz PCS is the 2W eirp allowed for mobile devices. This means that the highest gain antenna usable for the part 24 configuration would be less than that of the part 22 configuration or about 1.84dBi. Please correct the manual to reflect the actual maximum antenna gains for this device.

I agree that the 7 watts should be changed in the user manual. However, for the MPE prediction I believe it would be appropriate to use a duty cycle of 50% rather than 100% since the GSM technology has a source-based time duty cycle. In most cases the time slice for a GSM signal would be such that the duty cycle would be less than 50%. In this case the maximum gain for MPE compliance would be 4.5 dBi for GSM850 (to comply with MPE at 20 cm) and 2 dBi for GSM1900 (to comply with the maximum 2 watts eirp). Please see the revised MPE data sheets.

For a fixed installation (antenna mounted on a permanent outdoor structure as per integration guide) with 2 meters minimum separation, a higher gain antenna could be used.

5. Please correct your MPE reports to reflect the actual measured antenna conducted power from the report. For part 22, as the highest power was measured at the 824MHz end and since this is the lower MPE rating this would be a power of 32.3dBm and an antenna gain of 2.1 and for part 24 this would be a power of 31.17 and a max antenna gain of 1.84dB.

Please see above notes concerning duty cycle.

6. Please note that the part 22 radiated spurious emissions data appears to be in EIRP and not ERP as required by the rules. Please correct the data to show ERP values for part 22.

See the revised FCC report with erp fs of spurious data.