# American Telecommunications Certification Body Inc.
## 6731 Whittier Ave, McLean, VA 22101

December 4, 2003

RE:        Quanta Computer Inc.

FCC ID:        HFS-G51

I have a few comments on the above referenced Application.

### SAR Report

1) The frequency range given in the SAR report for 850 GSM is 824.04 - 848.8.  This does not correspond to the frequency range given in the rest of the application (824.2 - 848.8).  Note that it is our understanding that GSM operates only on the 824.2-848.8 Frequencies.  Please explain and/or correct as necessary.
2) Please explain why the power settings between GMS and GPRS mode appear different as given in section 8.3 of the test report.  We may need a better understanding of what these settings are actually changing since it appears the power levels are being adjusted.  It is our understanding that the only difference between GMS and GPRS should be the number of time slots used, and not a difference in power.  If there is difference in power, please explain. If not, what is the purpose of this setting.  Note that the conducted results given with the plots tend to show the power level is the same between GPRS and GMS.
3) It is uncertain why the GPRS body worn data is less than the voice mode data.  It appears from questions #2  that the power may be higher for GPRS.  Additionally, GPRS usually makes use of additional times slots (typically a crest factor of 4 vs. 8).  Therefore it is expected that these results should be higher than GMS Voice mode results which is not the case from the data provided.  The crest factor alone tends to cause an increase in the GPRS SAR from the typical Crest factor of 8.  It is therefore uncertain why the regular body SAR is a higher value than the GPRS body SAR.  Please explain.  The following is a typical explanation for GPRS:

| Device category | Portable | | |
|---|---|---|---|
| Exposure environment | General population/uncontrolled | | |
| Unit type | Prototype unit | | |
| Modes of Operation | GSM 850 | GSM 1900 | GPRS (GSM) |
| Modulation Mode | GMSK | GMSK | GMSK |
| Duty Cycle | 1/8 | 1/8 | 2/8 |
| Transmitter Frequency Range (MHz) | 824.2 – 848.8 | 1850.2 - 1909.8 | |

4) It appears from items #2 and #3 above that the crest factor used during testing for GPRS may be incorrect.  this may require Body SAR to be retested.
5) Please update main portion of the SAR report to better describe the probe used during testing.  For example, please include:
      a)  description of the probe – including tip diameter, internal sensor offset from tip, etc

6) Please update the main portion of the SAR report to provide the following detail:
      a) descriptions of interpolation procedures used to locate peak SARs at a finer spatial resolution
      b) report probe tip distance to phantom inner surface
      c) descriptions of extrapolation procedures used to estimate SAR values adjacent to phantom surface
        (unreachable due to probe case and boundary effects)
      d) description of averaging (integration) procedures to get 1-g SAR from final interpolated grid
7) FYI, typically the FCC desires 5% tolerance on both Permitivity and conductivity.   The  results show that this was met in spite of the tolerance in some cases being listed as 10%.
8) FYI, it is preferred to use a 1900 MHz dipole for verification instead of the 1800 MHz, even though they are both within 100 MHz of the center of the band.

Timothy R. Johnson
Examining Engineer

mailto: tjohnson@AmericanTCB.com

The items indicated above must be submitted before processing can continue on the above referenced application.  Failure to provide the requested information may result in application termination. Correspondence should be considered part of the permanent submission and may be viewed from the Internet after a Grant of Equipment Authorization is issued.

Please do not respond to this correspondence using the email reply button.  In order for your response to be processed expeditiously, you must submit your documents through the AmericanTCB.com website. Also, please note that partial responses increase processing time and should not be submitted.

Any questions about the content of this correspondence should be directed to the sender.