American Telecommunications Certification Body Inc.

6731 Whittier Ave, McLean, VA 22101

April 21, 2005

RE: Medtronic Inc.

FCC ID: LF537751

After a review of the submitted information, I have a few comments on the above referenced Application.

1) According to ANSI C63.4 (13.1.4.1), Portable devices are required to be positioned in each of 3 axis and measured to obtain worse case. This does not appear to have been done. Please review?

2) It appears the fundamental was measured in average mode. Please note that there is also a limit on the peak emissions that is 20 dB above the average limit (15.35). It is also unsure of what type of modulation was present but information in the operational description suggests this will be pulsed emissions. Therefore the FCC expects the device to have been measured in peak mode and corrected mathematically for average. Please provide further information as necessary. For instance, what was the peak to average ratio. What type of modulation was present. Note that the operational description (section 1.4.1) mentions pulse duration and pulse position as possible encoding schemes. This would suggest that peak emissions corrected for worse case average factors should have been applied.

3) The device appears to have pulse width and amplitude adjustments from the programmer. How do these settings affect the RF output (waveform)? Are these sent only as data commands to the stimulation device or is the RF envelope affected? For instance is a programming of the amplitude of the stimulation device accomplished by sending data to the stimulation device, or does the programmer TX waveform actually change amplitude as well. Note it appears from information in the operational description that the duty cycle is affected directly based upon the duty cycle entered in the programmer and that the amplitude may also vary according to programming. The device should have been tested at maximum RF output levels as well as maximum duty cycle. Please explain.

4) It appears that the extrapolation of this device would be 46 dB per decade and not 48 dB per decade. Please review and correct as necessary.

5) Please explain how the loop antenna (measurement antenna) was positioned and maximized during test. Loop antennas should be checked positioned in Vertical and Horizontal polarities according to ANSI C63.4 at a 1 meter height. Additionally, Vertical polarity should have been rotated about the Vertical axis to obtain worse case (ANSI C63.4 8.2.1). Antenna positioning can dramatically affect the results. No mention of antenna positioning appears in the report. Please explain.

--- Continue on Next Page ---

6)   The recharge circuit (operational description section 5.10.8.2) suggests the recharge circuit can operated from 8.455 to 9.345 kHz. Operation above 9 kHz would be subject to Part 15 for Certification and would require testing and submittal as part of this application. This information does not appear to have been provided. Additionally, note that information in the operational description suggests this field will be much higher than the telemetry field. If operation will be limited only to below 9 KHz, how is compliance to 15.15 assured given the information in the operational description?

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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.