ADVANCED BIONICS

September 6, 2007

Re: FCC ID: Q4D-PSC5210W

I, an officer of Advanced Bionics Corporation, do herby authorize Intertek to act on our behalf in front of the Federal Communications Commissions with respect to all matters relating to certification of the above equipment under Part 15 of the FCC Rules until further notice.

The applicant certifies that, in case of an individual applicant, he or she is not subject to a denial of federal benefit, that include FCC benefit, pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853 (a), or, in the case of an non-individual applicant (e.g. corporation, partnership or other unincorporated association), no party to the application is subject to a denial on federal benefits, that includes FCC benefit, pursuant to that section.

Sincerely,

Kaoru Lee Adair
Vice President, Regulatory Affairs

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Technical Information:

1. **Manufacturer name and address:**
   Advanced Bionics Corporation
   12740 San Fernando Road
   Sylmar, CA 91342

2. **FCC Identifier:**
   Q4D-PSC5210W

3. **FRN Number:**
   0008832529

4. **Equipment Specifications:**

Frequency range in MHz	Rated RF power output in watts	Frequency tolerance %, Hz, ppm	Emission designator	Microprocessor model number
0.125	N/A	50 ppm	125KF1D	N/A

5. **A sample FCC ID label containing the FCC identifier and the following compliance statement: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: 1. This device may not cause harmful interference, and, 2. This device must accept any interference received including interference that may cause undesired operation.**
   Because of space constraints, the FCC ID number is on the label, and the rest of the compliance statement is found in the manuals.

6. **A sketch or photo showing the location of the label on the EUT.**
   The picture "Remote Control Back" shows the location of the label on the EUT.

7. **A copy of the User Manual.**
   The content of the following manuals is included in PDF format.
   9055521 A US Physician Implant Manual
   9055426 A US Patient Trial Handbook
   9055520 A US Patient System Handbook

8. **A full operating description of the EUT.**
   The RC is a portable, hand-held unit used by the patient to change stimulation parameters. The patient can use the RC to turn stimulation on/off, change the area being stimulated, switch between different therapy programs, and increase/ decrease stimulation amplitude, and other parameters as set by the physician.

   <u>Microprocessor</u>
   The microprocessor is the system controller that has two crystal oscillators. The microprocessor core logic runs off a 6 MHz clock generated by the 6 MHz crystal oscillator. The processor also uses a 32.678 kHz clock for watchdog timer generated by the 32.678 kHz crystal oscillator.

Telemetry System

The telemetry system is a short range, magnetically coupled system. It is a 2 level Frequency Shift Keying (FSK) transceiver operating at 125 kHz. The data rate is 4115 bits per second and uses ± 4 kHz of deviation. The transmitted bandwidth is 12 kHz. This magnetically coupled system does not transmit RF power per se. The transmitter generates 100 mA of current in a parallel resonant circuit tuned to 125 kHz which generates a magnetic field strength of 98 μA/m at 3 meters. The device does not intentionally generate an E field. The receiver mixes the incoming 125 kHz signal with a 330 kHz local oscillator to create a 455 kHz IF frequency. Filtering and FM demodulation are done at 455 kHz.

Direct Digital Synthesizer

The local oscillator used by the telemetry system is the output from a Direct Digital Synthesizer (DDS). It runs off the 6 MHz clock off the microprocessor its output frequency is controlled by a 32 bit programming word. While transmitting, the DDS is programmed to output either 242 kHz or 258 kHz which is controlled by a frequency select control pin. The output is divided by 2 to give 121 kHz or 129 kHz. The frequency select pin is driven by the data coming from the microprocessor's Universal Asynchronous Receiver/Transmitter (UART). While receiving, the DDS is programmed for 660 kHz which is divided by 2 to give the 330 kHz used by the mixer. Frequency stability for the system is determined by the 6 MHz crystal and is ± 50 PPM.

Antenna

Since far field signals are not intentionally generated, the "antenna" is a magnetic pick-up coil, not an antenna in the traditional sense. It is a 42 turn air wound coil, rectangular in shape, approximately 4.5 cm x 8.6 cm in size. The coil is parallel tuned to resonate at 125 kHz.

Power Supply Module

The Remote Control runs off 3 AAA batteries. All of the circuitry runs off a regulated 3.3 Volts, except for the IRDA module and the transmitter amplifier which are supplied directly from the battery.

IRDA Module

The main communication link to Clinicians Programmer and test systems.

Display Module

Custom made dot matrix graphics LCD.

Key Pad

A push button, dome switch for commands and menu selections.

9. **A block diagram showing the frequency of all oscillators in the device. The signal path and frequency shall be indicated at each block. The tuning range(s) and intermediate frequency(ies) shall be indicated at each block.**

   A block diagram of the Remote Control is included as “Remote Control Block Diagram.pdf”

10. **Photographs**

    The following JPEG files are included:

    DC Card Back
    DC Card Front
    Telemetry Card Back
    Telemetry Card Front
    Remote Control Back
    Remote Control Front

11. **Schematic diagram and a description of all circuitry and devices.**

    The following diagrams are included in PDF format:

    9015305 Schematic Diagram Digital Card
    9015283 Schematic Diagram Telemetry Card