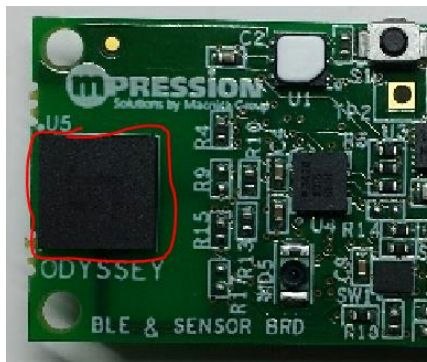Operational Description:

The Odyssey Max 10 FPGA and BLE Sensor Kit uses a Broadcom BLE module (BCM20737S). This module includes all the BLE radio components including the antenna and a microcontroller to run the BLE stack and application code. The BLE module complies with the Bluetooth SIG 4.1 specification. Data received over the BLE link is processed by the BLE module microcontroller and the module interrogates other devices on the board via serial I2C or SPI busses to retrieve sensor data or offload additional processing tasks (implemented by the EFM microcontroller or FPGA). USB to the EFM microcontroller allows for an additional control and debug port.

When power is applied to the board (either via USB or coin cell), the Odyssey kit automatically wakes, advertises via BLE, and can establish a connection with a compatible client (per Bluetooth SIG 4.1 specification).

Antenna Details:

The antenna is molded into the BLE module (SIP package), so is not visible. Broadcom describes it as a PCB antenna with a gain of -1.5dBi. The ground plane surrounding the module is removed per recommendations from Broadcom.

BLE module SIP including antenna outlined in red:

Frequency Range: 2402-2480 MHz
Peak Output Power (EIRP): 0.414 mW