Operation of the Bluetooth Transmitters inside the MOD Live module

1. Operation of the Bluetooth (BT) Transmitter

   The main function of the BT transceiver is to receive or transmit data from other BT devices such as cell phones and video camera.

   The BT transmitter in MOD Live has a power class 2 RF power as outlined in the Bluetooth V4.0 Specifications, and its limited output is about 0 dBm (1 mW) at the BT antenna's input.

   A BT transceiver is operating in a spread spectrum technique which utilizes a pseudorandom frequency hopping scheme with a hopping rate of 1600 hops per second over 78 channels. The channel bandwidth is 1 MHz over the frequency range from 2402 to 2480 MHz. The transmitter's carrier is modulated with digital modulation methods. Basically, the BT transceiver has three different data transfer rate – 1, 2 and 3-Mbps, depending on the type of data being used. The GSFK (Gaussian Frequency Shift Key) is implemented for the 1-Mbps data, π/4-DQPSK (Differential encoded Phase Shift Keying) for 2-Mbps data, and 8-ary PSK for the 3-Mbps data.

2. Operation of the Bluetooth Low Energy (BLE) Transmitter

   The function of the BLE transceiver in MOD Live is used to receive control signals from a Recon remote control to navigate the MOD Live's manual on the display.

   The BLE transmitter in MOD Live transmits with RF power of about +2 dBm (1.6 mW) at the BT antenna's input.

   The BLE transmitter operates with a frequency hopping scheme in pseudorandom patterns over 40 channels (2402 to 2480 MHz). Each channel occupies a 1-MHz bandwidth and is 2 MHz apart from the adjacent channels. The only modulation scheme used is GFSK.