CLAIMS

1. A communication device, comprising:

(a) a water-tight housing;

(b) at least two antennae disposed outside of the housing, said antennae comprising a radiative element configured to propagate an electric field signal through water; and/or a receptive element configured to detect an electric field signal being propagated though water; and

(c) a communications section disposed within the housing, said communications section comprising:

(i) at least one transmitter and/or at least one receiver;

(ii) a waveform generator configured for digital modulation and/or demodulation of digital data by direct sequence spread spectrum (DSSS) digital modulation, orthogonal frequency division modulation (OFDM) digital modulation, frequency hopping spread spectrum (FHSS) digital modulation, quadrature phase shift key (QPSK) digital modulation, quadrature amplitude (QAM) digital modulation, binary phase shift key (BPSK) digital modulation, or a combination thereof;

(iii) a digital to analog converter coupled to the waveform generator; and

(iv) a power driver and/or a low noise amplifier coupled to said antennae;

said communications section is configured to transmit and/or receive digitally modulated data as an electric field signal propagated and/or sensed by the antennae.

2. The device of claim 1, wherein the radiative element comprises a conducting material, a semi-conducting material, or a combination thereof.

3. The device of claim 1 or 2, wherein the antennae comprise a pair of copper antennae.