particular order shown, or sequential order, to achieve desirable results. In certain implementations, multitasking and parallel processing may be useful.

What is claimed is:

1. A method for use with a two dimensional sensor array, the method comprising:

in a transmission mode, configuring a device having a circuit and an electrode for transmitting a voltage to a node of the two dimensional sensor array coupled electrostatically to the electrode by:

generating a voltage using a switchmode power supply circuit, wherein the switchmode power supply circuit comprises at least an inductor and a diode, the diode being coupled to a transformer,

permitting the diode to be intermittently forward-biased, and permitting current to flow through the diode into a stray capacitance, and

configuring a switch to electrically isolate a component in the circuit; and

in a receiving mode, configuring the circuit for receiving the current through the node coupled to the electrode by:

configuring the switch to receive the current into the electrically isolated component in the circuit , and

configuring the diode to be reversed-biased such that the component is electrically isolated from an inductance of the transformer in the switchmode power supply circuit; and

further in the receiving mode, configuring the circuit for determining a position of the electrode with respect to the two dimensional sensor array based on the received current.

2. The method of claim 1, wherein a resistor is coupled to the diode, the method further comprising providing a reference voltage on at least one terminal of the resistor that is greater than a ground voltage of the circuit.

3. The method of claim 1, further comprising, in the receiving mode, sending at least part of the received current into a current receiver circuit, wherein the current receiver circuit is controlled by a microcontroller.

4. The method of claim 1, wherein configuring comprises configuring the switch to open in the transmission mode to electrically isolate the component in the circuit configured for receiving the current in the receiving mode from the voltage formed across a

parasitic capacitance associated with one or more components on the node coupled to the electrode.

5. The method of claim 4, further comprising placing a second deliberate capacitance in parallel with the stray capacitance at the node coupled to the electrode.

6. The method of claim 5, further comprising receiving the current on an order of one microamp, and transmitting the voltage on an order of one hundred volts.

7. The method of claim 1, wherein the switchmode power supply circuit comprises a flyback circuit.

8. An apparatus for use with a two dimensional sensor array, the apparatus comprising:

an electrode;

components configured for receiving current in a receiving mode;

a switchmode power supply circuit comprising at least a transformer and a diode, wherein the diode is coupled to the transformer; and

a switch configured to switch between a receiving mode and a transmission mode;

wherein

in the transmission mode, a circuit for transmitting the voltage to the electrode is configured to:

generate the voltage using the switchmode power supply circuit,

permit the diode to be intermittently forward-biased, and for current to flow through the diode into a stray capacitance, and

open the switch to electrically isolate at least some of the components configured for receiving the current in the receiving mode from the voltage formed across the stray capacitance; and

in the receiving mode, the circuit for receiving the current from the electrode is configured to:

close the switch to receive the current into the electrically isolated components configured for receiving the current, and

permit the diode to be reversed-biased in the receiving mode such that at least some of the components configured for receiving the current in the receiving mode are electrically isolated from an inductance of the transformer in the switchmode power supply circuit and

further in the receiving mode, the circuit is configured to determine a position of the electrode with respect to the two dimensional sensor array based on the received current.

9 . The apparatus of claim 8, wherein the switchmode power supply circuit comprises a flyback circuit.

10. The apparatus of claim 8, further comprising a resistor, wherein the resistor is coupled to the diode, wherein the circuit is configured to provide a reference voltage on at least one terminal of the resistor that is greater than a ground voltage of the circuit.

11. The apparatus of claim 8, wherein the circuit is configured to send, in the receive mode, at least part of the received current into a current receiver circuit, wherein the current receiver circuit is controlled with a microcontroller.

12. The apparatus of claim 8, wherein the stray capacitance comprises a parasitic capacitance associated with one or more components on a node coupled to the electrode.

13. The apparatus of claim 8, further comprising a second deliberate capacitance that is located in parallel with the stray capacitance at a node coupled to the electrode.

14. The apparatus of claim 8, wherein the received current is on an order of one microamp, and wherein the transmitted voltage is on an order of one hundred volts.

15. A system for use with a two-dimensional sensor array, the system comprising:

an electrode;

components configured for receiving current in a receiving mode;

a switchmode power supply circuit comprising at least a transformer and a diode, wherein the diode is coupled to the transformer; and

a switch configured to switch between a receiving mode and a transmission mode;

wherein:

in the transmission mode, a circuit for transmitting the voltage onto the electrode is configured to:

generate the voltage using the switchmode power supply circuit,

permit the diode to be intermittently forward-biased, and for current to flow through the diode into a stray capacitance,

open the switch to electrically isolate at least some of the components

configured for receiving the current in the receiving mode from the voltage

formed across the stray capacitance; and

in the receiving mode, the circuit for receiving the current from the electrode is configured to:

close the switch to receive the current into the components configured for receiving the current in the receiving mode,

electrically isolate at least some of the components configured for receiving the current in the receiving mode from an inductance of the transformer in the switchmode power supply circuit; and

further in the receiving mode, the circuit is configured to determine a position of the electrode with respect to the two dimensional sensor array based on the received current..

16. The system of claim 15, wherein the switchmode power supply circuit comprises a flyback circuit.

17. The system of claim 15, further comprising a resistor, wherein the resistor is coupled to the diode, wherein the circuit comprises means for providing a reference voltage on at least one terminal of the resistor that is greater than a ground voltage of the circuit.

18. The system of claim 15, wherein the circuit comprises means for sending, in the receiving mode, at least part of the received current into a current receiver circuit, wherein the current receiver circuit is controlled with a microcontroller.

19. The system of claim 15, wherein the stray capacitance comprises a parasitic capacitance associated with one or more components on a node coupled to the electrode.

20. The system of claim 15, further comprising a second deliberate capacitance that is located in parallel with the stray capacitance at a node coupled to the electrode.

21. The system of claim 15, wherein the received current is on an order of one microamp, and wherein the transmitted voltage is on an order of one hundred volts.