CLAIMS

1. A conducted electrical weapon comprising:

a signal generator comprising a first conductor and a second conductor, wherein the signal generator is located within a handle of the conducted electrical weapon, wherein the signal generator is configured to provide a stimulus signal through the first conductor and the second conductor, and wherein the first conductor has a positive potential and the second conductor has a negative potential;

at least three electrodes configured to deliver the stimulus signal through a target, wherein each electrode from the at least three electrodes comprises a projectile configured to be launched from the handle towards the target; and

a selector circuit in electrical series between the signal generator and the at least three electrodes, wherein the selector circuit is located within the handle, and wherein the selector circuit is configured to selectively electrically couple an electrode from the at least three electrodes to either of the first conductor or the second conductor of the signal generator.

2. The conducted electrical weapon of claim 1, further comprising a processing circuit in communication with the selector circuit, wherein the processing circuit is configured to select a first electrode and a second electrode from the at least three electrodes to deliver the stimulus signal through the target.

3. The conducted electrical weapon of claim 2, wherein the processing circuit is configured to assign a first polarity assignment to the first electrode and the second electrode, and wherein in accordance with the first polarity assignment, the selector circuit electrically couples the first electrode to the first conductor and the second electrode to the second conductor.

4. The conducted electrical weapon of claim 3, wherein the processing circuit is configured to assign a second polarity assignment to the first electrode and the second electrode, and wherein in accordance with the second polarity assignment, the selector circuit electrically couples the first electrode to the second conductor and the second electrode to the first conductor.

5. The conducted electrical weapon of claim 2, wherein:

the selector circuit comprises a plurality of multiplexers,

the processing circuit provides one or more select signals to the plurality of multiplexers, and

in accordance with the one or more select signals, the selector circuit electrically couples the first electrode to the first conductor and the second electrode to the second conductor.

6. The conducted electrical weapon of claim 5, wherein:

the processing circuit provides one or more second select signals to the plurality of multiplexers,

the one or more second select signals have a different value than the one or more select signals, and

in accordance with the one or more second select signals, the selector circuit electrically couples the first electrode to the second conductor and the second electrode to the first conductor.

7. The conducted electrical weapon of claim 6, wherein:

the processing circuit provides the one or more select signals to the plurality of multiplexers prior to the signal generator providing a first pulse of the stimulus signal, and

the processing circuit provides the one or more second select signals to the plurality of multiplexers prior to the signal generator providing a second pulse of the stimulus signal.

8. The conducted electrical weapon of claim 2, wherein:

the selector circuit comprises a plurality of relays,

the processing circuit provides one or more select signals to the plurality of relays, and

in accordance with the one or more select signals, the selector circuit electrically couples the first electrode to the first conductor and the second electrode to the second conductor.

9. The conducted electrical weapon of claim 8, wherein:

the processing circuit provides one or more second select signals to the plurality of relays,

the one or more second select signals have a different value than the one or more select signals, and

in accordance with the one or more second select signals, the selector circuit electrically couples the first electrode to the second conductor and the second electrode to the first conductor.

10. The conducted electrical weapon of claim 9, wherein:

the processing circuit provides the one or more select signals to the plurality of relays prior to the signal generator providing a first pulse of the stimulus signal, and

the processing circuit provides the one or more second select signals to the plurality of relays prior to the signal generator providing a second pulse of the stimulus signal.

11. The conducted electrical weapon of claim 2, wherein:

the selector circuit comprises a plurality of relays and an h-bridge,

the h-bridge electrically couples to the first conductor and the second conductor of the signal generator,

the processing circuit provides a first select signal to the plurality of relays to select the first electrode and the second electrode for providing the stimulus signal through the target, and

the processing circuit provides a second select signal to the h-bridge to electrically couple the first electrode to the first conductor and the second electrode to the second conductor.

12. The conducted electrical weapon of claim 11, wherein:

the processing circuit provides a third select signal to the h-bridge,

the third select signal has a different value than the second select signal, and

in accordance with the third select signal, the h-bridge electrically couples the first electrode to the second conductor and the second electrode to the first conductor.

13. The conducted electrical weapon of claim 2, wherein the processing circuit selects the first electrode and the second electrode from the at least three electrodes in accordance with testing an electrical connectivity of deployed electrodes from the at least three electrodes to the target.

14. The conducted electrical weapon of claim 1, wherein the selector circuit is integrated into the signal generator.

15. A method performed by a conducted electrical weapon ("CEW") for providing a stimulus signal through a target, the CEW comprising a handle, the method comprising:

selecting a first electrode and a second electrode from at least three electrodes, the at least three electrodes launched toward the target to deliver the stimulus signal through the target, wherein each electrode from the at least three electrodes comprises a projectile launched from the handle towards the target, and wherein the first electrode and the second electrode are configured to selectively couple to either of a first conductor and a second conductor of a signal generator that is located within the handle of the CEW;

electrically coupling the first electrode to the first conductor of the signal generator, wherein the first conductor has a positive polarity;

electrically coupling the second electrode to the second conductor of the signal generator, wherein the second conductor has a negative polarity, and wherein the signal generator provides the stimulus signal as a voltage potential across the first conductor and the second conductor; and

providing, via the signal generator, the stimulus signal through the target via the first electrode and the second electrode.

16. The method of claim 15, further comprising:

electrically coupling the first electrode to the second conductor;

electrically coupling the second electrode to the first conductor; and

providing, via the signal generator, the stimulus signal through the target via the first electrode and the second electrode.

17. The method of claim 15, wherein electrically coupling the first electrode to the first conductor and electrically coupling the second electrode to the second conductor comprises:

providing a first select signal to a selector circuit in communication with the signal generator, wherein based on the first select signal the selector circuit electrically couples the first electrode to the first conductor and the second electrode to the second conductor.

18. The method of claim 17, further comprising:

providing a second select signal to the selector circuit, wherein the second select signal is different from the first select signal;

electrically coupling, via the selector circuit, the first electrode to the second conductor; and

electrically coupling, via the selector circuit, the second electrode to the first conductor.

19. The method of claim 15, wherein electrically coupling the first electrode to the first conductor and electrically coupling the second electrode to the second conductor comprises:

providing one or more select signals to one or more multiplexers to electrically couple the first electrode to the first conductor and the second electrode to the second conductor.

20. The method of claim 15, wherein electrically coupling the first electrode to the first conductor and electrically coupling the second electrode to the second conductor comprises:

providing one or more select signals to one or more relays to electrically couple the first electrode to the first conductor and the second electrode to the second conductor.

21. A conducted electrical weapon comprising:

a housing comprising:

a processing circuit;

a tangible, non-transitory memory in electronic communication with the processing circuit, the tangible, non-transitory memory having instructions stored therein;

a signal generator configured to provide a stimulus signal as a voltage potential across a first conductor and a second conductor of the signal generator, the first conductor having a positive polarity and the second conductor having a negative polarity; and

a selector circuit electrically coupled to the first conductor and the second conductor of the signal generator;

a plurality of cartridges removably positioned within a bay of the housing, wherein each cartridge of the plurality of cartridges is configured to electrically couple to the selector circuit; and

at least three electrodes positioned within the plurality of cartridges prior to launch, wherein each electrode from the at least three electrodes comprises a projectile configured to be launched from the plurality of cartridges toward a target to deliver the stimulus signal through the

target, wherein all of the at least three electrodes are configured to selectively couple to either of the first conductor or the second conductor via the plurality of cartridges, and

wherein in response to the processing circuit executing the instructions of the tangible, non-transitory memory, the processing circuit is configured to perform operations comprising:

launching the at least three electrodes towards the target,

selecting a first electrode and a second electrode from the at least three electrodes to deliver the stimulus signal through the target,

providing a first select signal to the selector circuit, wherein based on the first select signal the selector circuit is configured to electrically couple the first electrode to the first conductor and the second electrode to the second conductor, and

activating the signal generator to provide the stimulus signal through the target via the first electrode and the second electrode.

22. The conducted electrical weapon of claim 21, wherein the processing circuit is configured to perform operations further comprising:

providing a second select signal to the selector circuit, wherein based on the second select signal the selector circuit is configured to electrically couple the first electrode to the second conductor and the second electrode to the first conductor.

23. The conducted electrical weapon of claim 21, wherein the processing circuit is configured to perform operations further comprising:

selecting the first electrode and a third electrode from the at least three electrodes to deliver the stimulus signal through the target.

24. The conducted electrical weapon of claim 23, wherein the processing circuit is configured to perform operations further comprising:

providing a second select signal to the selector circuit, wherein based on the second select signal the selector circuit is configured to electrically couple the first electrode to the second conductor and the third electrode to the first conductor, and

activating the signal generator to provide the stimulus signal through the target via the first electrode and the third electrode.

25. The conducted electrical weapon of claim 21, wherein:

the selector circuit comprises a multiplexer, and

the first select signal drives a select input of the multiplexer to electrically couple the first electrode to the first conductor and the second electrode to the second conductor.

26. The conducted electrical weapon of claim 21, wherein:

the selector circuit comprises a relay, and

the first select signal drives a select input of the relay to electrically couple the first electrode to the first conductor and the second electrode to the second conductor.

27. The conducted electrical weapon of claim 21, wherein:

the selector circuit comprises a plurality of relays and an h-bridge,

the h-bridge electrically couples to the first conductor and the second conductor of the signal generator, and

the first select signal drives a select input of the h-bridge to electrically couple the first electrode to the first conductor and the second electrode to the second conductor.

28. The conducted electrical weapon of claim 21, wherein the processing circuit is configured to perform operations further comprising:

testing an electrical connectivity of the at least three electrodes with the target, and

selecting the first electrode and the second electrode to deliver the stimulus signal through the target based on testing the electrical connectivity.