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Drewery et al.

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(57) **ABSTRACT**

Systems and methods for synchronization of radio frequency (RF) pulsing schemes and of sensor data collection are described. One of the methods includes receiving, by an RF generator, a first set of one or more variable levels and one or more duty cycles of an RF signal. The method further includes receiving, by the RF generator from a pulse controller, a synchronization signal having a plurality of pulses. The method also includes generating, during a clock cycle of a clock signal, multiple instances of a first plurality of states of the RF signal in synchronization with the plurality of pulses of the synchronization signal. Each of the first plurality of states of the RF signal has a corresponding one of the one or more variable levels of the first set and a corresponding one of the one or more duty cycles of the first set.

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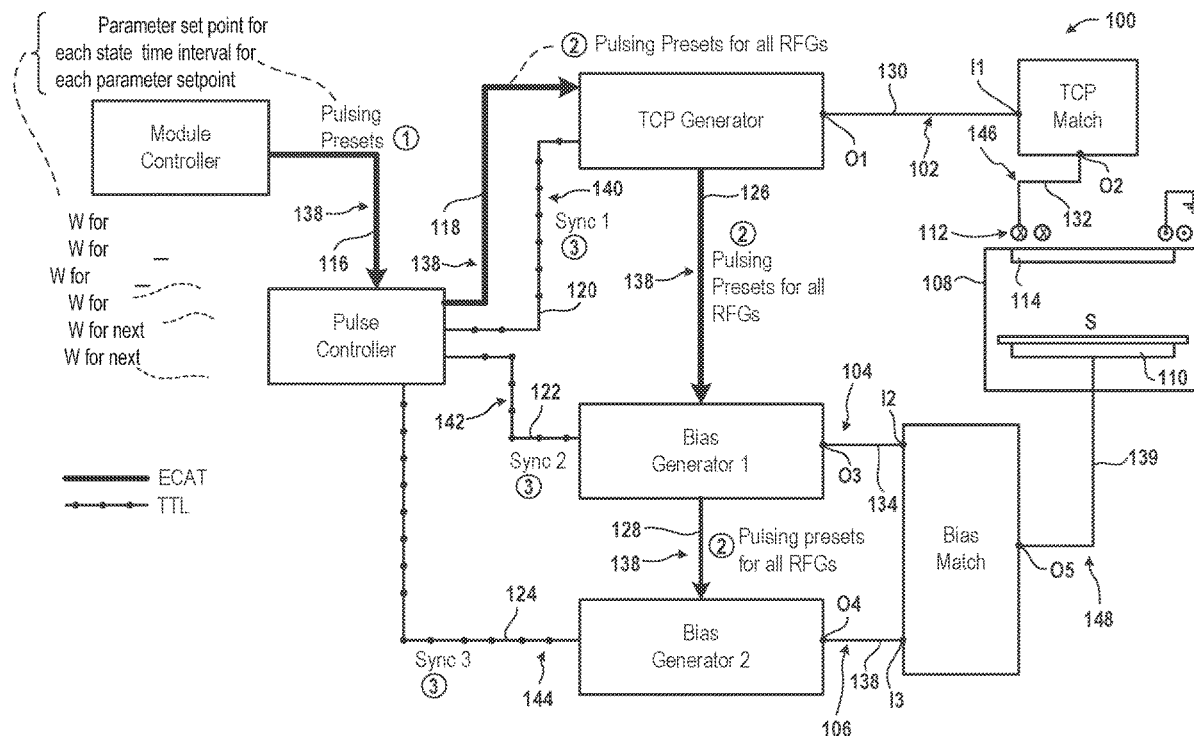
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(Ether CAT to Minimize info Stored in RF Generators)