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(54) **ETHERCAT DEVICE WITH CLOCK GENERATION MODE AND CLOCK PROPAGATION MODE**

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(57) **ABSTRACT**

An EtherCAT device with a node for use in an EtherCAT network is disclosed. The EtherCAT device includes: a clock circuit; a clock input to receive an input clock signal; a clock output to send an output clock signal; and control logic. The control logic is to determine whether to operate the EtherCAT device in a clock generation mode or a clock propagation mode, wherein in the clock generation mode, the clock circuit is to drive an oscillator to generate the input clock signal; and in the clock propagation mode, the clock circuit is to receive the input clock signal from another node in the EtherCAT network. The control logic is further to control the clock circuit to output the output clock signal for a subsequent node in the EtherCAT network based upon the input clock signal.