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(54) **PULL-UP VOLTAGE DETECTION CIRCUIT AND PULL-UP VOLTAGE DETECTION METHOD**

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(57) **ABSTRACT**

A pull-up voltage detection circuit is for use in a serial bus. The serial bus includes a communication signal. During a communication interval, the communication signal is toggled based on a pull-up voltage for communicating on the serial bus via open-drain scheme. The pull-up voltage detection circuit includes: at least one comparator circuit for comparing the communication signal or a divided voltage thereof with at least one reference voltage in a detection procedure, so as to generate at least one comparison result; and a selector circuit for selecting one of plural predetermined voltages according to the at least one comparison result. The selected predetermined voltage serves as a logic threshold voltage corresponding to the pull-up voltage. In the communication interval, the logic state of the communication signal is determined by comparing the communication signal and the logic threshold voltage for communicating on the serial bus.