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The FlexRay Diagnosis System on the Basis of ARM

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ABSTRACT - FlexRay is the next-generation network protocol for vehicle applications, such as X-by-wire. FlexRay features high flexibility and reliability; it is deterministic and fault-tolerant. In this paper, we design a diagnostic system for FlexRay network. In order to implement the diagnostic system, we design an embedded platform using PXA270 and MFR4310 microcontroller. MFR4310 is used as FlexRay controller and PXA270 is used as diagnostic and monitoring system. We use embedded linux as the operating system. In order to verify the diagnostic system, we configure six nodes in a FlexRay network. One is the main system and the others are the sub system. The main system manages the sub system's status. If an error occurs in the subsystem, such as wire disconnecting, then the main system can recognize this status and graphically displays the error on the screen.