



基于XML的EtherCAT工业以太网协议解析技术

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Parser of industrial Ethernet EtherCAT based on XML

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摘要

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摘要 重点研究了基于可扩展标记语言(XML,eXtensible Markup Language)的EtherCAT工业以太网协议解析器技术和实现方法.介绍了EtherCAT协议报文格式和特点,分析了以太网数据侦听器 and 协议解析器的结构,针对通用以太网解析器在工业以太网领域应用的局限性,提出使用XML语言描述协议报文的方法,在此基础上开发出一种开放式、可重构的EtherCAT协议解析器.实验结果表明基于XML的协议报文描述方法及解析器能够有效地描述和解析EtherCAT协议报文,使用者可以根据解析对象格式使用XML语言自定义、修改和扩展协议解析规则,获得清晰、直观的解析结果.

关键词: 可扩展标记语言 工业以太网 EtherCAT 协议解析器

Abstract: The technology and realization method of industrial Ethernet EtherCAT parser based on extensible markup language(XML) were studied. The format of EtherCAT datagram was introduced. The structure of Ethernet probe and parser was analyzed. A method of protocol datagram description based on XML was proposed to deal with the problem that common Ethernet parsers are limitative in the applications of industrial Ethernet. Then an open and reconfigurable industrial Ethernet parser was designed. Performance test of the method of protocol datagram description and open parser was carried out. The implementation shows that the method of protocol datagram description based on XML can describe EtherCAT datagram clearly, and the open industrial Ethernet parser can parser EtherCAT datas. Users can define, modify and extend parsing rules according to the protocol object format, and obtain clear display of the protocol telegram.

Keywords: XML(extensible markup language) industrial Ethernet EtherCAT parser

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