ABSTRACT

INTERFACING THE VMEbus MULTIPROCESSOR SYSTEM

TO A TOKEN BUS LOCAL AREA NETWORK

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The interfacing of a Multiprocessor System to a Local Area Network provides superior benefits for embedded realtime processing and the connectivity of network entities.

This thesis examines the implementation of the IEEE 802.4 Token Passing Bus Access Method to connect a MC68000 based Multiprocessor System to a Token Bus Local Area Network.

Designed for the transmission and reception of Token Bus Frames, the implemented circuit design constitutes most aspects of the Medium Access Protocol for the IEEE 802.4. Though modular testing of the circuitry was done using a logic analyzer, final field testing was not possible due to the non availability of another Token Bus node.

The circuitry, although functional, proved to be far too complex for implementing mainly the rudiments of the Medium Access Control (MAC)layer of the IEEE 802.4 standards.To encompass the full body of the of the IEEE standards, the use of Integrated Circuit design seems inevitable, both on a point of efficiency and economy.