

GATEWAY TO INTERNETWORK CAN AND ETHERNET

R.B. TENNAKOON, S.B. WIJAYASEKARA, I.B. WIJAYASINGHE,
B. G. L. T SAMARANAYAKE

*Department of Electrical and Electronic Engineering, Faculty of Engineering,
University of Peradeniya*

Most of the gateways to CAN (Controller Area Network) available today are of CAN to slower serial networks such as RS232, RS485, etc. This obviously creates a bottleneck for the communication as the CAN specifications allow a data rate of 1Mbps to 12Mbps, whereas for RS232 it is typically less than 0.1Mbps. Consequently, this project aims at designing and constructing a gateway to internetwork CAN to a faster network such as Fast Ethernet/WLAN (Wireless Local Area Network) offering remote handling capability while retaining the maximum data rate. Hence the final system is a CAN to Fast Ethernet/WLAN gateway.

As both the Ethernet and WLAN easily facilitate 1Mbps, the data rate of the data transmission is decided by the maximum data rate of CAN. The block diagram of its hardware implementation is shown in Fig. 01. There the use of path 1 or path 2 will be context dependant based on the available WLAN transceiver interfaces. This system gives CAN the remote operation capability, which out performs the existing CAN technology. Obviously it can shorten the length of CAN buses required to cover a certain operating area in a factory floor.

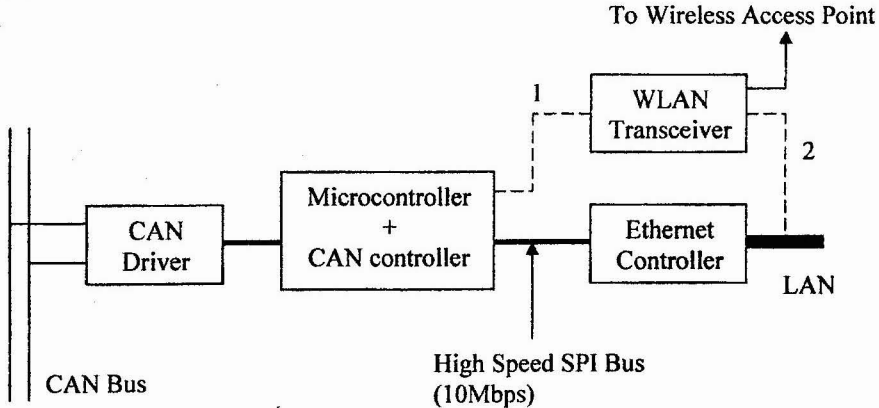


Fig. 01: Block diagram of the CAN to Ethernet / WLAN system