A PSD based CAN to LonWorks bridge/gateway

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Abstract

Distributed control systems are widely used in today's even more complex technologies. Usually they are built on networks basis, where the nodes belongs to heterogeneous networks. Due to their specific advantages, CAN and LonWorks networks became *de facto* standard in different, often overlapping areas in industry, science and many others. The common operation of CAN and LonWorks devices involves however sustained high speed communication, transferring data in differing formats, with different data rates and using network's specific communication medias.

These particular conditions require an appropriate protocol and physical link converter - a CAN-to-LonWorks gateway, in order to satisfy the requirements of both networks and to combine additional functions to control the direction and the amount of the transferred data, information updating, data integrity etc.

A powerful gateway proposed in this paper is designed using In Application reprogrammables PSD components, poviding for flexible functionality, small size, low power consumption and low cost - all the qualities of prime importance.

It is structured as two independent CAN and LonWorks nodes, each one running in its own network on peer-to-peer basis. Internally, they communicate via high speed Dual Port RAM, used as postbox, without need of any kind of software or hardware synchronization.

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