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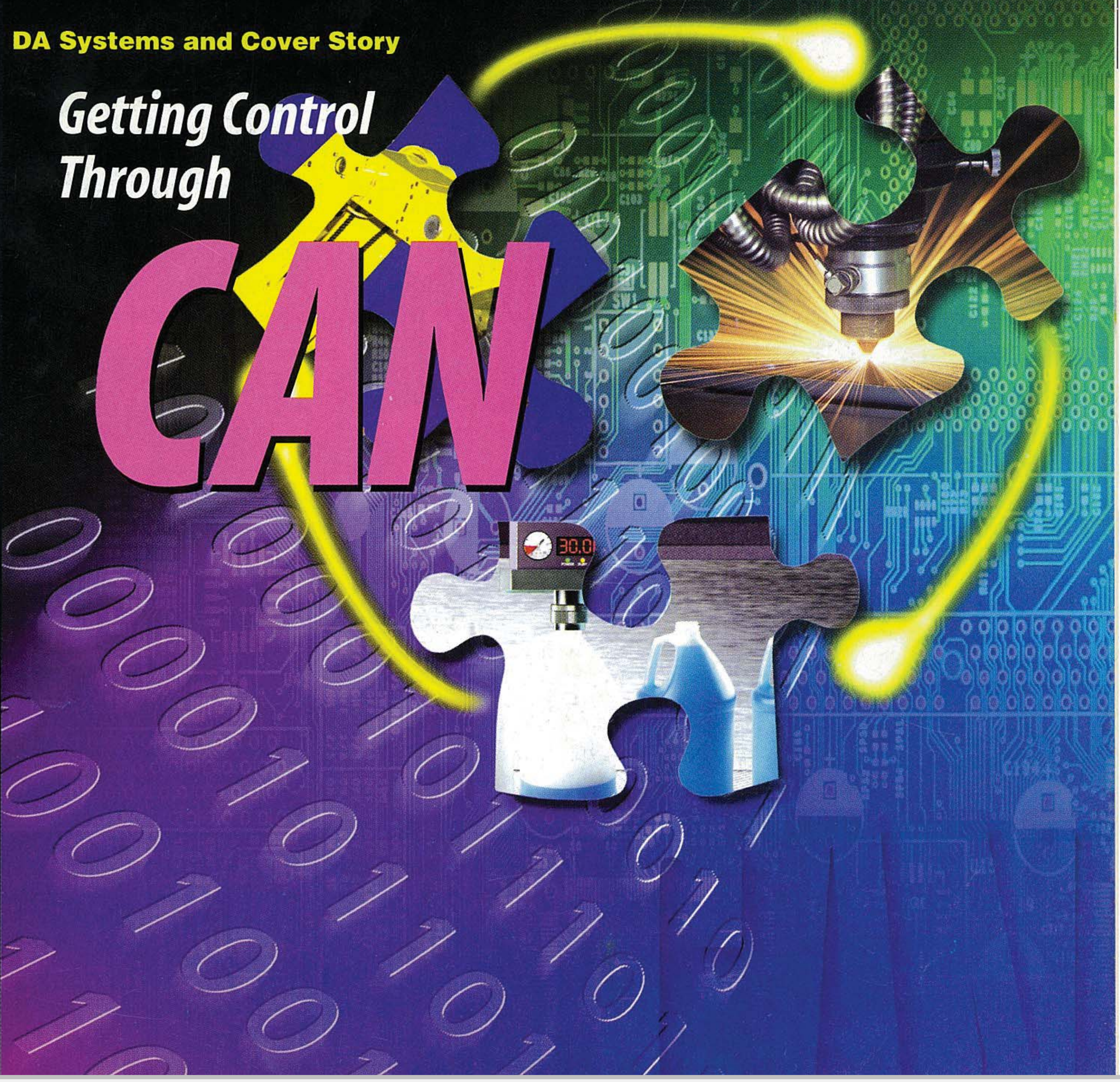

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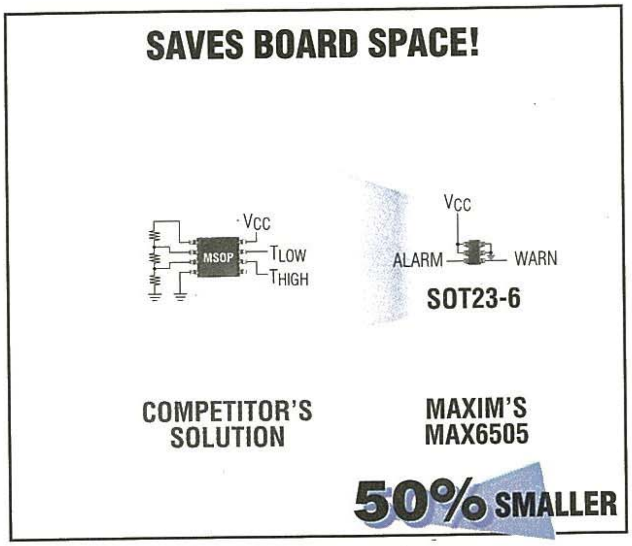

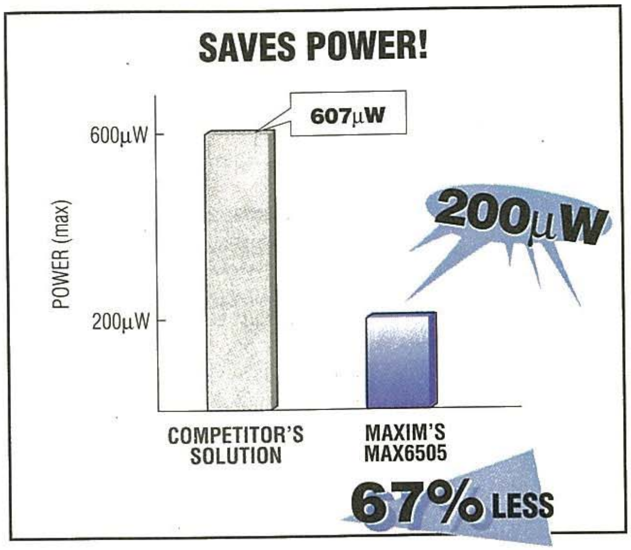

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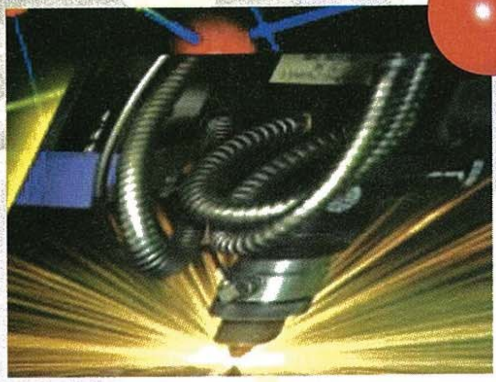


DEPARTMENTS

ABOUT THE COVER

What started as a bus tailored for the automotive industry is now a protocol that has been adopted by the industrial automation, test and measurement, and medical communities. The robust Control Area Network (CAN) is optimized with sophisticated error checking and handling that guarantees that the system will continue to run even when errors and failures occur. To see just how this bus works, read the article that begins on page 18. (Cover image courtesy of Microchip Technology Inc.)

Bruce Negley,
Microchip Technology Inc.

Getting Control Through CAN

The CAN protocol has gained widespread popularity not only in the automotive industry but also in the industrial automation arena. Take a look at what it can do, and see how you can extend your control capabilities.

German automotive system supplier Robert Bosch created the Controller Area Network (CAN) to enable robust serial communications while decreasing wiring harness weight and complexity. The current version of the protocol, 2.0B, provides transmission speeds up to 1 Mbps.

Since its inception, CAN has moved from automotive applications to industrial control. Now technicians and engineers are starting to use it in medical and test equipment. The test, measurement, and control community is discovering just what this bus can do when it is coupled with smart sensing technology.

How Is CAN Used?

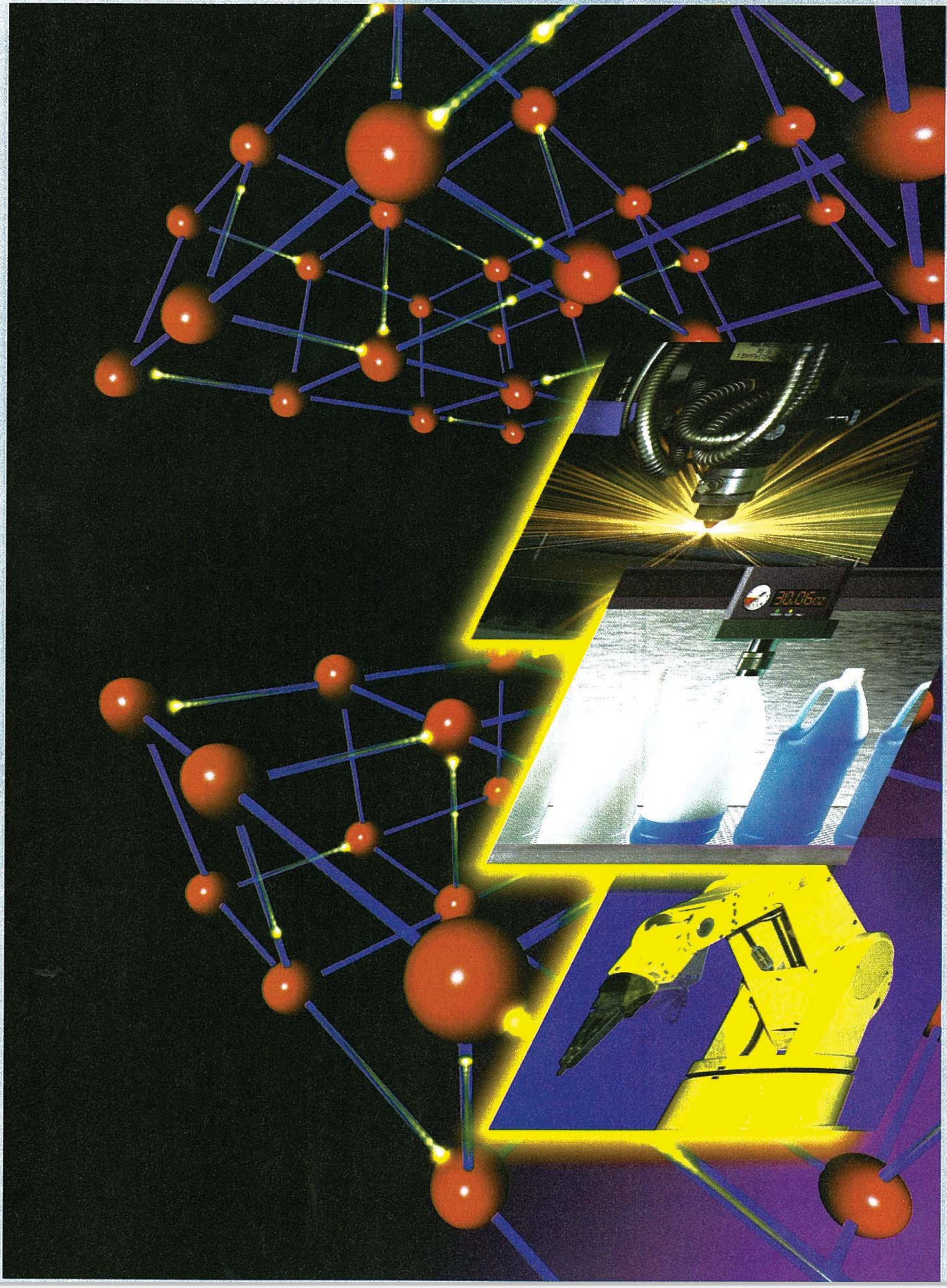
The CAN protocol creates a communications path that links all the nodes connected to the bus and enables them to talk to one another. Depending on how the designer has configured the system, there may or may not be a central, or main, node. The protocol defines aspects of how each node can respond, but it leaves tremendous flexibility to the system designer to implement the nodes in ways that suit the particular application.

Figure 1 (page 20) shows an automotive application in which several nodes in a vehicle door are connected through a door node controller to the main CAN bus. As mentioned before, the network need not have a controller node; each node can just as easily be connected to the main bus. Applying the concept shown in Figure 1 to a sensor network is as easy as changing the type and description of the nodes (see Figure 2, page 20).

What Makes Up a Node?

The term *node* describes a portion of the overall system or network. Each node can have one function, or it can have many functions. Depending on the system configuration, different nodes may transmit messages at different times based on the function(s) of each node. For example:

- A node may transmit a message only when a system failure occurs.



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