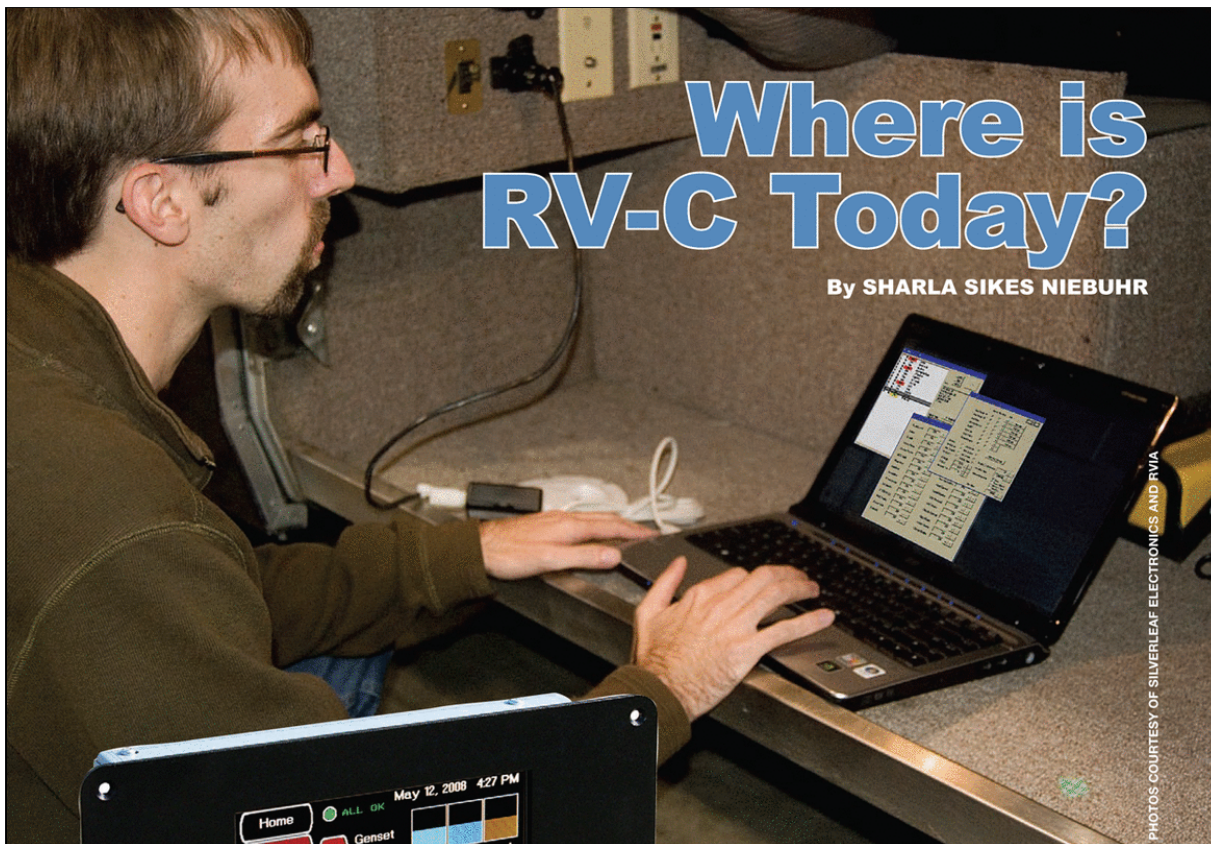


# Where is RV-C Today?

By SHARLA SIKES NIEBUHR



PHOTOS COURTESY OF SILVERLEAF ELECTRONICS AND RVIA



**The technology making it easier to network RV components and troubleshoot problems in units is in the process of being adopted and implemented.**

One of the advantages of RV-C is that it makes it possible to operate RV components such as an RV's awning, generator and hot water heater remotely, from one location.

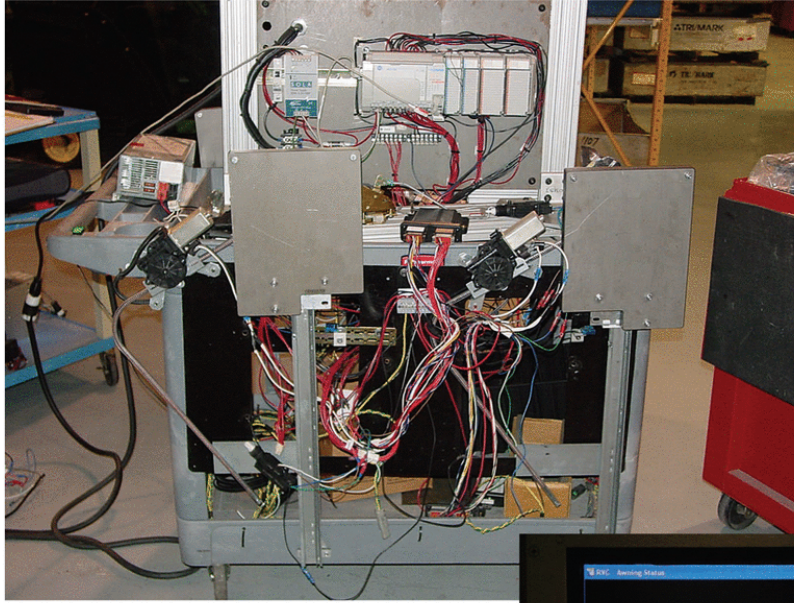
(Top) The Omniscope by Silverleaf Electronics is a laptop-based diagnostic tool for RV-C. A technician can use the device to troubleshoot the generator, inverter/charger, air conditioning, transfer switch, and more all at once. He can run diagnostic tests involving multiple components, and log the results. A single tool is all it takes, regardless who manufactured the RV and its various components.

New technology that creates greater functionality and safety for electronic components in RVs is available now from many manufacturers, and more will be offering it soon, according to industry suppliers. This technology, RV-C protocol – which allows electronic products to communicate with one another – is in the process of being adopted by more and more manufacturers.

RV-C was formally introduced to the RV world in 2007 at the National RV Trade Show in Louisville, Ky. Attendees watched a live demonstration of the network in action featuring more than 20 different components using the technology, as awnings, generators, heaters, levelers and other electronic devices were networked together for greater safety and diagnostic abilities.

So where is RV-C today, nearly two years later?

The answer is, it's coming, say manufacturers of electronic components and suppliers.



RV-C proponents note that extensive testing and development was done before the RV-C technology came into being. Currently the technology is in the early implementation stages.

### What is RV-C?

Similar to the electronics in place in most modern automobiles, RV-C uses controller area network technology to link electronic components together. This provides technicians with the ability to more easily troubleshoot problems, and also allows for more failsafes to be built into the system, such as interlocks.

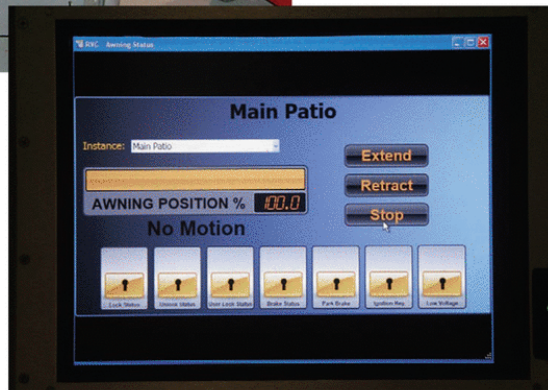
“RV-C can also provide interlock capabilities: You don’t want the transmission to move out of ‘Park’ if the awning is still out, and if the transmission is in ‘Drive,’ the interlock can automatically pull the awnings in while not letting the vehicle move until they are in. The same interlocks can be used for generators and battery control systems. There’s greater functionality with RV-C,” says Anita Reichling, advanced new products electrical engineer for TriMark Corp.

RV-C is an open protocol, which means any manufacturer can use the language to build compatible devices.

“One advantage of the RV-C system is that, for instance, Trimark has a user-interface keypad that can open doors, turn on lights and lower or raise awnings. RV-C is an open protocol, so the keypad can send commands to the awning, while at the same time communicating with other control boxes and switches. Since we’re on the same network, a switch made by TRC can send commands to a Trimark lock,” says Reichling.

Because RV-C uses a two-wire data pair, wiring can be simplified and streamlined by replacing individual signal wires. In addition to streamlining wiring at the OEM level, with RV-C, aftermarket integration of new devices will also be simpler.

“One of the things that is exciting about RV-C is that, compared to the auto world, the networks installed in cars



The RV industry got its first look at RV-C back in 2007, at the National RV Trade Show in Louisville, Ky., where suppliers linked together more than a dozen different pieces of equipment, including generators, heaters, and awnings.

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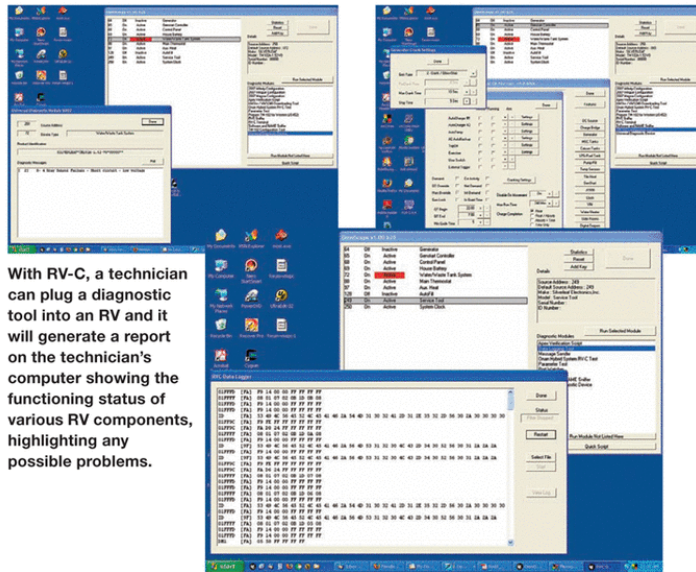
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With RV-C, a technician can plug a diagnostic tool into an RV and it will generate a report on the technician's computer showing the functioning status of various RV components, highlighting any possible problems.

are essentially closed. They are not to be altered at the aftermarket level. RV-C is open; once the network is installed, at the aftermarket level it can be expanded. New products can be added and integrated into the network. That will open the market for new control panels and remote controls and a variety of appliances and accessories to be integrated into the RV," says Martin Perlot, president of Silverleaf Electronics.

Companies currently manufacturing RV-C compliant products include Tri-Mark Corp., TRC, Carefree of Colorado awnings, Powertech and Onan generators, HWH hydraulics, Spyder Controls switching systems, Garnet Instruments sensors, Aqua-Hot and ITR furnace systems, RV Products air conditioning and Silverleaf Electronics controls, displays and tools.

"The legwork is done; there's not much more we need to do besides getting the information out and making it available. It's off and running. The protocol is set, and companies are pursuing it," says Bruce Hopkins, vice president of standards and education at the RV Industry Association. "Now it's up

to the manufacturers to purchase and employ it."

#### Where is RV-C Now?

While the concept draws enthusiasm from component makers, OEMs and dealers, the adoption rate hasn't exactly been a flood. The main reason cited by electronics manufacturers is the economy.

The last two years have been tough ones for many industries, and the RV business has felt the impact more than others. Many OEMs and manufacturers are afraid to spend money on product development – despite admitting the benefits – at a time when finances are tight and the times uncertain.

"I know other large OEMs had people on staff looking at RV-C implementation, but that effort got stopped. I do know that other OEMs have been looking at it. For implementation, it's a cost problem; RV-C is used for accessories, and it is more expensive," Reichling says. "If they don't need it, it's not worth the cost to them to get that functionality. It's not the RV-C itself that makes the components more expensive, but the fact that it is