ROBISON ON ROVERS
The SuperScan II Land Rover Test System
By John Robison

A few months ago, I wrote a review of the two principal Land Rover test systems – the factory T4 / RDS / IDS and the independent Autologic. While both of those systems will meet the needs of any Land Rover service professional, they are costly. After that article came out, there was quite a bit of talk in emails and the forums about Land Rover testing. People asked if there were any less expensive testers that would do 90% of the job for half the price.

It sounds like a reasonable question. After all, the Honda Element has all wheel drive for half the cost of an LR3, and a third the cost of a Range Rover and won't it go 90% of the places?

Well, not for me it won't. I'll keep my Discovery and my Defender, thank you. But there seems to be a real demand for a $2,500 product that would do most of the things the full-feature Land Rover testers do, for a more affordable price. I began asking around for products that might fit the bill.

The $200 OBD II scanners you can buy in parts stores and online will read fault codes from engine management computers of 1996-newer Rovers. But they won't communicate with any other systems on a modern Land Rover, and all they give is codes. $200 scanners don't explain what the codes mean. I figured there must be some test product whose functionality lay between the $200 scanner and the $10,000 full-capability system.

Many people suggested the Rovacom Lite system. As many of you know, Rovers North distributed that product for some time in the United States. I myself used the Lite and the full-size Rovacom and I have to say, I didn't like either one.

Both Rovacom products proved unreliable. The Pro consistently failed if we left it turned on too long, and it frequently crashed while I was using it. The Lite crashed my system regularly. Tech support was very weak, unlike for the T4 and Autologic. Rovers North had enough problems with these products that they stopped distributing them.

Several other Land Rover service managers in the USA had experiences that mirror mine.

While I recognize that some people have these products and they are getting good use from them, I don't recommend them for new purchase because of the troubles I encountered. It's certainly possible that the products will be improved and we may review future versions and have a different opinion.

Anything's possible. I'm sure many of you ate spinach this past summer and didn't get sick. I knew a guy who did a high dive into a water barrel at county fairs, too. That doesn't make me want to try it. For now, I do not recommend Rovacoms for new users, but if you have one and it's working, by all means stay with it.

This summer, I received a brand new tester - the SuperScan II. It consists of a vehicle interface box, the software, and some cables. The

SuperScan II is powered by the vehicle's OBD II port and it works in conjunction with a user-supplied laptop.

SuperScan II works on OBD II compatible Land Rovers, which include 1995-2002 P38A Range Rover, 2003-2005 Range Rover, 1996-1999 Discovery I, 1999-2004 Discovery II, 1997 Defender, and some Freelander. Based upon the correspondence I receive, those models make up 90% of the hobbyist and independent Land Rover shop work.

The SuperScan II does not connect to the older Land Rover products and it does not have software to talk to the newest products. With compatible Rovers, the SuperScan II talks to all major vehicle systems, including engine, transmission, ABS, airbags, air suspension, climate control, and security. The SuperScan II also talks to most of the BECM functions in the P38A Rovers.

This is what the SuperScan II does:
• It will show the identity of system modules in the car.

• You can read and clear fault codes.
• You can see all the live data for the engine, transmission, ABS, and other systems.
• You can set certain parameters, like the EKA code.
• You can do activations of things like windows or fuel injectors.
• You can see switch positions and sensor readings.
You can read fault codes, most of which include text descriptions. It's a lot more useful to have a tester say, "Cylinder 3" Misfire than to see "P303." Who knows what "P303" means? With some faults, you can also see certain engine data that was stored at the time the fault was recorded. That can be useful in diagnosis. For example, knowing your truck had a misfire at full throttle at 3,000 rpm, you might proceed differently than you would to diagnose a misfire at idle.

You can see live data for all of the key systems. For the engine, you can see all the sensors that feed data into the controller. That includes the mass air meter, the throttle position sensor, the temperature sensors, and the oxygen sensors.

You can see the outputs – the injector pulse widths and the cycling of the idle speed motor.

Often, it's necessary to look at that live data to properly diagnose a problem. For example, you might look at the air flow rate or watch the switching of o2 sensors to make a decision about what's actually wrong when an emission fault is set.

The SuperScan II has live data displays for antilock brakes, the transmission, the climate control, and various body modules. The live data and fault code retrieval and clearing are the two principal activities that test systems are used for.

There is an interesting wrinkle on this tester that I have not seen on any other. When you are showing live data there is also a little box that shows if a fault is present in the system at that moment. So, for example, if

you were watching the idle speed stepper motor in real time, and the speed dropped too low, you would see the display flash a warning that idle motor fault was active.

I can see how that would be useful in diagnosis, and I have not seen this feature presented as clearly in any other tester.

When compared to the T4 and Autologic, the SuperScan II does have some limitations. These are the principal tasks a SuperScan II owner would still have to refer to the dealer:

• It will not program a new engine ECU or alter engine setup parameters.
• It will not program a new BECM.
• It will not code keys.
• It will not set some coding parameters in the BECM and other systems.

I've thought about those limitations in the context of the letters I've received from people wanting a less costly Land Rover tester. While I think a true professional Land Rover shop needs the ability to do everything on the list above, I think all those things are beyond the purview of the occasional Land Rover mechanic or hobbyist. That's who this tool is aimed at.

The things that SuperScan II won't do are all things that I'd describe as risky for an occasional Land Rover technician. Errors in programming the engine ECU or the BECM will leave those $1,000 components useless. Errors coding keys can leave all the keys useless. Coding invalid parameters can cause all kinds of unexpected problems.

The SuperScan II does not appear to have many capabilities that would get a user into trouble. For example, its Security menu allows you to read and change the EKA code, but there is no provision to program keys or set security options. So you can't inadvertently disable all your keys, as you can with the full-feature systems. The flip side, though, is that you could not activate a new PLIP for a Discovery II key.

So what does that mean? If you've gone to Land Rover school and you're a trained Land Rover master technician who knows how to do programming and coding, you may want to spend the extra money and buy the Autologic or T4 so you can do those things. But remember, 99% of the service problems you will see have nothing to do with coding or programming, and the SuperScan will work fine for those other tasks.

Installation of the software

When we received this tool, we tried to install the software on a Toshiba laptop that we had around the shop. The Superscan II software installed OK, but we could not communicate with cars. Our network person tried to reinstall it, and he ended up getting the program to run on a fresh installation of Windows XP Pro with SP2. It seems like there are issues installing this software when other programs are already there.

So, if you plan to install a SuperScan II on your existing laptop, you should be aware of the possibility that you may need to reinstall Windows to get SuperScan running. We did not try the package on any other operating systems and we don't know how it will work there.

We also found the system requires the use of a specific USB port. When you set the system up and connect it, the software will find the interface box at whichever USB jack you have installed it. Forever more, the software will look for the interface at that jack only. USB is supposed to be portable, but for some reason this connection isn't.

If we plugged the SuperScan's USB cable in when the computer was running, it would crash it. I'm not sure why that was, but the lesson is simple. Plug the cable in before you turn it on, and don't unplug it when it's running. That will crash it, too.

Once we overcame these issues, installation and operation of the tool went smoothly.

Our company, Robison Service, uses the Land Rover Omnitec T4 factory test system and we have a number of PC based test systems for other cars. All of those products run on four laptop computers owned by the company, and two desktop machines. The difficulties we experienced setting up the SuperScan were similar to the difficulties we encountered setting up those other systems for the first time. I guess plug-n-play has not come to automotive test software quite yet.

Making sense of the data

The biggest limitation of this tool – and most other test tools - lies in

interpretation of its data. You can view live data for the engine and you might see a number like 118. How do you know if that reading is normal, or high, or low? What does it mean?

That's the biggest problem faced by users of today's sophisticated scan tools. There are so many parameters and values that it's hard to remember what they should be. I get queries about this all the time. I even have trouble with test data myself. Shocking, I know, but there it is.

The only tool that identifies abnormal values is the factory test system and even that does not work all the time. That's a great feature that I wish other test equipment makers would copy. Until they do, you will need to know how to make sense of what your tester is telling you.

I strongly suggest you obtain the training materials for all the systems in Land Rover cars and study them carefully. Go to the factory support site, "http://www.landrovertechinfo.com", select each model, and select training material. Download it all and learn it. No test system is any good without the knowledge of what's being tested.

Here are some examples of training material available from Land Rover as of October 2006:
• Introduction to Land Rover Products
• Engine Management Systems – includes 14CUX, GEMS, Bosch, and Siemens.
• Automatic Transmission Diagnosis and Service
• 1999 New Products (Bosch cars and the Discovery II)
• New Range Rover Technical Introduction
• Freelander Technical Introduction

The Land Rover service web site was developed to meet a government mandate that all dealer service information be made available online, to anyone, at reasonable cost. The first version of the site was not very good, but I and others worked as volunteers in the EPA's evaluation program to help Land Rover make the site better. I think it's a success. Having invested quite a bit of my own labor in that project, I hope to see all of you getting good use from it.

I also recommend another source of training material, "http://www.boschtechinfo.com". Robert Bosch of Germany designed and built many of the key systems in Land Rover vehicles. Bosch sells training manuals on their site that cover fuel injection, sensors, entertainment systems, electronic transmission control, and more. Their books are detailed and inexpensive. Look under Technical Instruction Booklets, Books, and Training Materials.

Limitations

At this moment, the technical support is web based for this tool, with free upgrades for the first year. After the first year, upgrades require a subscription fee that are good for The tool is designed and manufactured in South America, and distributed by Rovers North here in the States. If you buy one of the first ones you and RN will have to figure out support issues together.

I should say that I did succeed in installing and running this tool with no support, and I am not any kind of computer wizard. I'm tempted to say, if I can do it, you can too, but I know some of you are even less computer adept than me, so that may not be true.

Conclusion

My two month test of this tool showed that it can be useful in most Land Rover service situations. You will still have to refer some jobs to the dealer or a better-equipped independent, but you'll be able to do a lot more than you could with a simple OBD II scanner.

Is it worth the price?

That's up to you. For a shop like mine, nothing but 110% capability is acceptable, but for a Land Rover club, a hobbyist, a guy in a remote area with a small fleet of Rovers, or even a shop that fixes a handful of Rovers . . . this tool could be a great value.

If you have questions or issues you'd like discussed email: robison@robisonservice.com