

THE FAULTMATE MV VEHICLE DIAGNOSTIC SYSTEM

Unquestionably the most innovative concept in
PC based vehicle diagnostic technology ever produced.



SYSTEM OVERVIEW

FAULTMATE

**BLACKBOX
SOLUTIONS LTD**

INTRODUCING THE FAULTMATE FAMILY

You may already be aware that Blackbox Solutions Ltd has for many years been producing both the low cost ROVACOM LITE system for private use, and the super advanced ROVACOM PRO wireless system for business use. These systems are well known as the best solutions available in their respective market places. However following a number of ideas and suggestions from some of our existing customers, and our desire to add further enhancements and functionality, we have re-engineered and evolved many aspects of our systems hardware, software and marketing to produce two new systems which we call **FAULTMATE SV** and **FAULTMATE MV**. Both of these systems are better suited to their respective roles. The **SV** is intended for use only on one single vehicle, (**SV**) and is purchased as a complete system covering any model at a fixed all in cost, which is massively lower than an equivalent ROVACOM LITE would have been. (Literature for that system is available from the products page at www.blackbox-solutions.com) The **MV** however is specifically intended for either small or large business use. The system is sold exactly in the same modular way that the ROVACOM LITE and ROVACOM PRO was and is therefore comparatively very similar in all respects, except the hardware which is lower cost than the ROVACOM PRO, but more expensive than the ROVACOM LITE.

WIRELESS COMMUNICATIONS

Unlike the ROVACOM PRO the **MV** does not include built in wireless communication, however both the **FAULTMATE MV** and the **FAULTMATE SV** are designed and manufactured with the capability included to support an add on wireless unit option (Wi Fi or Bluetooth) which we are in the process of developing and should be ready shortly.

THE TECHNOLOGY BEHIND FAULTMATE MV

FAULTMATE MV is quite unlike any other diagnostic system, because the way it works is ultimately inspired by the well-proven and fast growing technology that is responsible for providing everybody with the modern Internet. On the Internet a standard PC user, running very simple and straight forward browsing software such as AOL or Internet Explorer, clicks on a simple text link to request a page of information. It may be the temperature in Melbourne or the wind speed in Alaska, but it is important to realize that the page comes from another computer located anywhere in the world. This computer is called a server. The browser software simply sends out a tiny request message which goes to the relevant server through a modem, and the phone lines that make up the Internet. The message may travel many thousands of miles to get to its destination which causes the small delay many Internet users are familiar with. Naturally a server which gives you the temperature in Melbourne is usually located there, and as well as being connected to the Internet it is also connected to a temperature sensor, and the one in Alaska will also have a wind speed sensor connected. Whenever the server receives the tiny request message it then sends back a page with the sensor information included to the browser software on the users PC. So although the user has just read the temperature of a sensor in Melbourne, their PC does nothing special or timing critical at all, as it is all up to the server to get the information requested from the sensors or equipment connected to it.

With **FAULTMATE MV** the situation is much the same, although instead of connecting to a very large server on the internet through a modem and phone lines, the server (we call it a vehicle server) is now a tiny silver box and is directly connected to the users PC by a simple cable. This means no connection to the Internet, no telephone bill and no time delays. The server is then connected through a simple in line interface (vehicle communications interface) to the vehicles diagnostic socket.

Although we could have used the standard Internet browsing software supplied on your PC already (Microsoft's Internet Explorer) we have actually written a special simplified vehicle version we call our Vehicle Explorer. This gives you a simple menu to guide you to the right page for the vehicle system that you want to access. You simply click on the text link for anything you require and the vehicle explorer tells the vehicle server what you need. Instantly the vehicle server, which will have been constantly interacting with the vehicle system, will return a page with the information on. As well as pages of current fault code information and settings information, it can also supply constantly updating pages with real time (live) data on.

With such simple and instant access to every aspect of any given system, you will soon realize it will be easy to see how **FAULTMATE MV** represents a tool that will turn the powerful self diagnostic features built into all modern vehicle systems, from working against you into working for you.

The benefits of this ingenious solution are far too numerable to mention in full, but here are just a few.

- 1) The system is so deceptively fast and smooth in operation; it completely hides just how difficult and complex it is to achieve such fast, accurate and reliable communications with vehicle systems.

- 2) Although all of the vehicle systems are different and have vastly different ways of doing things or presenting information, the user sees and handles each vehicle system in exactly the same way. That is for every vehicle system you have a read and clear fault codes function, a settings / information page, a live data value monitoring (inputs) page, a page of drivable outputs and a page for any other function not fitting the other pages, such as learning key fobs (PLIPS), reset of adapted (learned) values or immobilization synchronization
- 3) There are very minimalist requirements on the PC's specification, because it does nothing that is timing critical at all. This means that anything from about a 266MHz Pentium 1 PC to the very latest PCs can be used. The software needs only a few MB of hard drive space and no Ram above what the operating system normally requires. It also only needs a minimum screen resolution of 800X600 (SVGA).
- 4) Due to the server being directly connected to the PC and the vehicle communications being kept active, there is very little delay (if any) between the user clicking on a text link and then seeing the result. In essence not only is it as simple as surfing the Internet, but without the traditional Internet problems such as long time delays before requested pages appear that changes according to the time of the day, unfound pages, missing servers, server down time problems, initial dial up waiting.
- 5) The standard serial cable connection to the PC can be as long as you wish, within reason, and can be expanded easily to connect to USB by anyone who requires to connect to a USB only computer (we also supply an optional adaptor for this). In addition we have designed the **Faultmate MV** with the capability to support a plug in Wi Fi and / or Bluetooth module which we intend to introduce as an optional extra before the end of 2007. This is expected to take the form of a small box with an antennae mounted on one side and a single umbilical cable to plug into the server on the other. It will likely have different mounting possibilities including suckers for attaching to bodywork or windows.
- 6) The pages shown are done in the Internet language of HTML, this means they have full colour and graphics capabilities to display any returned information, and full keyboard and mouse inputs for the user to make any selections, enter settings data or make any changes to read data, which is no more difficult than making selections or entering data on any other Internet form. In addition various options and style sheets can be changed to give different fonts, sizes, background and foreground colours. The menu bar can even be toggled between left and right hand sides to better suit use by left handed people on touch screen PC's such as the one shown.
- 7) The Vehicle Explorer software has been styled entirely using the standard windows style and in particular Microsoft's Internet Explorer, which is widely recognized as being the simplest user interface in the world, as testified by the fact that it is used daily by millions of computer incompatible people without any problems.
- 8) The Vehicle Explorer browser software is simple enough to be easily expanded in the near future to possibly include usage on PDA's Pocket PC's or possibly even Palm Organisers; this is where our Blue tooth or Wireless connection options will become really useful.

Having such a fantastic piece of technology as the vehicle server would be spoilt if it were not flexible or expandable in some way. However, in our case we go one better because the vehicle server is very clever in that its entire operation is controlled using software modules, one module for each vehicle system. These are stored in a massive 256 MB capacity flash memory on the server and are uploaded to it from the PC using the provided server software management utility.

THE LOWEST POSSIBLE HARDWARE COST

Although **FAULTMATE MV** is so technically advanced, we specifically wanted to ensure it was affordable enough for just about anybody. As such, we have left no stone unturned and no aspect free from intense scrutiny in our efforts to implement processes of construction that make the hardware as cost effective to purchase and as economical as possible to assemble. Although we still realize that for small businesses or private individuals with more than one vehicle, the purchase of hardware is a bit of an initial lump, it is only fair to point out that any diagnostic system will require the initial purchase of some form of hardware and given how advanced ours is, we feel the resultant price to be outstanding value for money.

THE LOWEST POSSIBLE SOFTWARE COST

The hardware cost is very important because it actually creates other cost saving benefits. This is because reducing the cost of the hardware so significantly causes such a reduction in the overall price of the entire system. This will in turn naturally have an effect of increasing the total number of systems that will be sold. This has the effect of also lowering the cost per system of the software which is calculated by dividing its development writing

costs by the number of copies that will be sold. This in turn actually reduces the final system price even further causing a price lowering cascade effect.

BUY ONLY WHAT YOU WANT OR NEED WHEN IT SUITS YOU

Although reducing the cost of the systems hardware and software significantly is a major step, we have also put much thought and effort in spreading the cost of purchasing the system. Although we are not a bank and do not offer any finance packages, by breaking the software into small modules (one for each vehicle system) and using a clever code based software module licensing system, we have given the system the ability to block the usage of any software module for which the proper license has not been purchased. This means that you do not need to buy any software modules which you do not need or currently want, so you can start your system off by just purchasing the hardware and any selection of software modules you choose, even just one to help you sort out an existing problem in a single vehicle system. Since all modules are actually supplied with and in the vehicle server, adding the ability to use others later is nearly instant. You simply obtain an activation code from us and type it in once. From then on the server will permit any software modules for that vehicle system. Viewing the current state of which systems are blocked or not and entering codes is incredibly easy and straight forward.

THE ITEM WE HOPE YOU WILL NEVER USE

If you have never invested in professional diagnostic equipment like this, you will be reading this and contemplating your decision to invest, weighing the costs you see against the benefits you imagine. And I wish you the best of luck. Although I can give you the facts and figures, and of course point out the most attractive bits, experience has taught me however that nothing I can write here is guaranteed to instantly convince you of the benefits of having a good diagnostic system. There is however the distinct possibility that you somehow already realise what I also know from experience. It is absolutely guaranteed that you and your business will become utterly dependant upon any decent system. We have been told in the past that ownership of our system is the sole saviour of quite large businesses and has resulted in some companies increasing in size many times over. You are welcome to disbelieve this, but I can tell you categorically that once you have got used to having a system like this, should something happen to it that puts it out of commission, regardless of who's fault it is or what the cost will be, you will do absolutely anything to save having to suffer a few days without it.

Already with this system as with the ROVACOM PRO before it, there is a distinct advantage in that it is based on a standard PC which can easily and quickly be replaced, however that still leaves the hardware and while all the leads and odd bits can be repaired or have spares kept, we have constantly been asked to supply spare servers or simply send out a new replacement for an existing but damaged one. Sadly that was not possible due to the fact that the ROVACOM PRO server also acted as the systems identity / licence validation module. One of the major benefits of the FAULTMATE MV however is that the identity / licence validation module is held in a very small un-pluggable unit at the end of the server.

BUILT IN HELP

Naturally the system has a massive built in help section with pages describing every aspect of using the system in great detail, sometimes even with illustrations, tables of pin outs and other pictures.

TECHNICAL SUPPORT

To provide any technical support for your system that you may require after purchase, we have created a special Owners only interactive forum area on our web site. Once an owner's account has been activated by using the passwords supplied with each system, specific or general questions can be posted here to be read and answered by other owners, distributors and most notably all the staff at Blackbox Solutions Ltd including the systems entire development team.

All help and Information about the system, how to optimize its usage, what we are currently working on, hints, tips and software upgrades can all be accessed here and the collective knowledge of hundreds of like minded, friendly system purchasers can also be a huge benefit to the unsure or advice seeking enthusiast.

It is most important to fully appreciate that the Technical Support forums we provide are the sole source of technical support for FAULTMATE SV, and although many may possibly have expected support to be available by E-mail or telephone, we do not accept or enter into providing support for our systems by any method other than these forums.

The main reason for this is that the forums, are actually a vastly more advanced and cost effective method of providing the highest degree of technical support to the maximum number of customers from all over the world at the same time. Amongst the advantages are:

- 1) In many cases anyone with a problem or a lack of understanding will be able to instantly read posts made previously from other customers who had the same problem or question, and possibly find an immediate solution. This is far more useful than trying to contact us outside our office hours.
- 2) Lack of duplicated effort. Once a subject has been covered, or existence of a problem identified and acknowledged, no more time for either the customer or us needs to be spent on it.
- 3) The forum posts are open to all our customers meaning if there is any problem with us or our systems, customers can group together and combine opinions and findings. Only proud and honest companies with nothing to hide would allow all its customers to interact with each other and us at the same time in such an open way.
- 4) The forums form a common contact point for anything related to the system, we can post notes about know problems, update releases, work in progress and expected delivery times on updates, give helpful pages of instruction and background information and cover matters you may be interested about in far more depth than in other places.
- 5) Blackbox Solutions does not benefit from any cost savings of providing support by forum. They are directly reflected in the systems price. This means the system costs less for you to buy as a direct result of the reduction of technical man hours that would otherwise be used repeating information, writing mails and on the telephone explaining the same things over and over again. which can of course also be better spent on growing and improving the system and thus benefiting everyone.
- 6) Our forums are monitored continuously by our technical staff and we even have a member of staff that has forum moderation as his main role in the company. On seeing any post requiring it, he can speak directly with the most suitable person(s) on the technical team who may well be the person responding to you. Within minutes of your raising a problem, we may well end up having a mini meeting of all the relevant software engineers, developers and designers especially to find the best and speediest resolution to any single problem. In essence you will get answers from the most suitable people in the world to solve your problem.
- 7) Besides our staff reading posts and offering an answer, existing customers, some of who have masses of experience of exactly your problems, can also offer their input.

COVERAGE

Although there are systems which claim to cover all models, it is very often the case that they actually cover only the most common ECU's on any model and at sale time they rely upon a lack of knowledge by the purchaser to hide this fact. However many modern vehicles have in excess of 25 systems on board all with self diagnostic capability, and any system you are thinking of buying really needs to cover these and if you are comparing you should, be sure to compare like for like by systems covered rather than vehicles.

For the **FAULTMATE MV** software modules are available for just about all the vehicle systems used in every single model of Land Rover, it is up to date as it is right up to the current 2007 Defender and covers all optional fitments such as the electric side steps for the Range Rover introduced in May 2007 . There are also modules giving extensive coverage of MG and Rover Cars too. In fact of all the hundreds of systems fitted to all the years and variations of these vehicles that we could mention in a list it is probably easier to tell you quite openly about the four which we do not cover and are still under development, which are ;

- A) Sawdoc Immobiliser, fitted to the Land Rover Freelander from Mid 2003 to end of production
- B) Siemens MS43 V6 Engine management fitted to the North American V6 Freelander (not Rest of World) .
- C) Tyre pressure sensor system in the Latest Range Rover (L322 2002 to present)
- D) V8 specific ECU's (Mainly Power train) in the V8 engine Variants of Rover 75 and ZT

Please also note that expansion possibilities are by no means restricted to Land Rover, MG or Rover vehicles.

FOR MORE INFORMATION

For more detailed information, prices or to download our demonstration software and example files please visit www.Blackbox-solutions.com or mail us with any requirements, questions or comments to info@blackbox-solutions.com.

HOW AND WHERE TO PURCHASE

Orders for systems can also be placed on our secure web site www.Blackbox-solutions.com or by telephone to 00357 25 870698/9. Payments can be made in Sterling, Euros, US Dollars, Canadian Dollars or Australian Dollars, by bank transfer or by credit card. There is a small surcharge for credit card transactions. You will also find a list of distributors on our web site.