

# Simpler/Better

Automotive wiring in more modern mainstream cars has moved on considerably. Isn't it time the kit car scene took advantage of what they can offer? Simtek UK thinks so...



**Above:** Simtek Logic 10 is most relevant unit for kit car owners. Associated wiring seems a logical purchase.

**F**or many kit car enthusiasts, wiring a kit car is the least favourite part of a project and, quite possibly, the least understood. It's taken years for most of us to become resigned to the fact that any vaguely modern engine will require an ECU, so to suggest that the rest of the loom could and should be significantly modernised is enough to strike fear into even the hardest builder. But hang on a moment. If the move to more modern technology

actually made the job of wiring your car simpler, while improving its functionality and reliability, that would be a good thing wouldn't it?

Here at CKC we could still write all our articles on a traditional typewriter. The words would be exactly the same, the end product would be the same, but you won't find any of us setting aside our iMacs any time soon. The

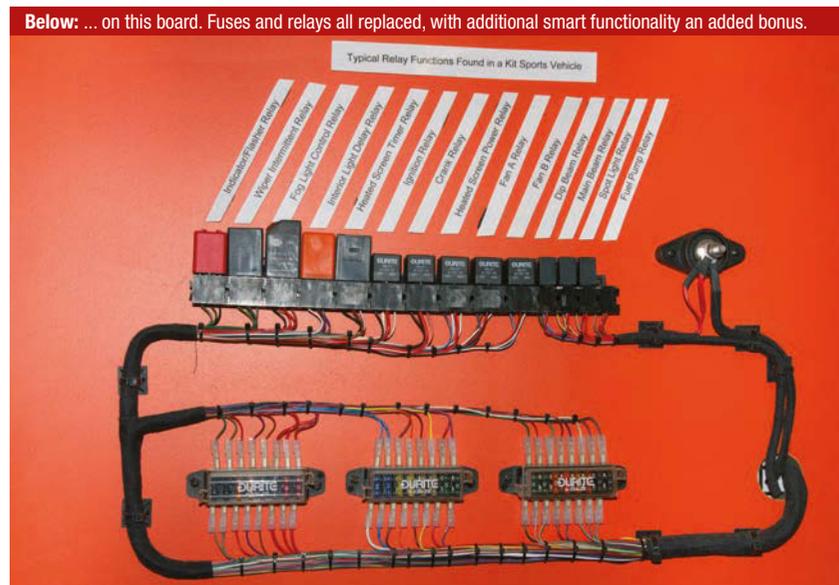
Apple computer makes our lives easier, quicker, has far more functionality and, unlike any traditional typewriter, comes with spell check! It makes no odds that none of us actually understand how an iMac works... just that it does the job brilliantly, better than any conventional typewriter ever could...

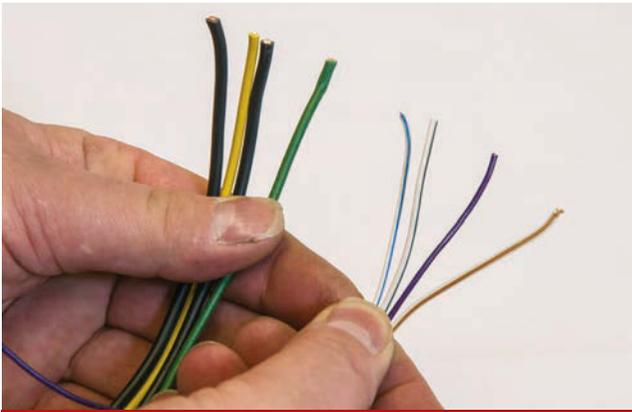
And much the same can be said of a traditional automotive wiring

**Below:** Simtek UK Logic 10 is compact and light, yet does everything seen...



**Below:** ... on this board. Fuses and relays all replaced, with additional smart functionality an added bonus.





**Above:** Standard thick wall wires compared to thin wall wires.

loom. Done correctly and carefully, a conventional loom can do most of the things we need for a simple kit car. It can work perfectly well. But there is another way...

Under its BodyLogic brand of electronic solutions Simtek UK has just launched a new product that, allied to associated modern wiring and end fittings can revolutionise your car's wiring. It's Logic range of Body Control Modules (BCM), take over the role of conventional fuses and relays, while adding in as little or as much additional functionality as you want. In effect, if you think of the ECU controlling your engine's functionality, the BCM can do the same for the rest of the car's electrical components. And if the thought of more electronics is still making you twitch, let us remind you again... upgrading will make the job of wiring your car simpler while providing greater reliability. That doesn't sound so bad, does it?



**Above:** Simtek UK's demonstration board shows how the system works. See it at the Stoneleigh show.

### SIMPLER

Simtek UK currently has three different Logic units, the 1, 10 and 24. The Logic 1 is geared at motorbikes but can also be used in simple kit cars which don't have a windscreen and only simple control requirements, while the Logic 24 is suited to larger more complex cars and serious competition users. So it's the Logic 10 that probably most applies to us. It's designed to be located under the dash and it's a small and light unit, certainly more compact than the combined fuses and relays typically used in a kit car loom. Because of the way a BCM works, you need far fewer wires going to any switches and components... for instance, a Sierra column stalk control uses ten wires on a conventional loom, but would use just five when partnered with a BCM. That

means fewer wires to connect (easier) and less wiring running through the car (saving weight by simply reducing the physical size of wiring looms).

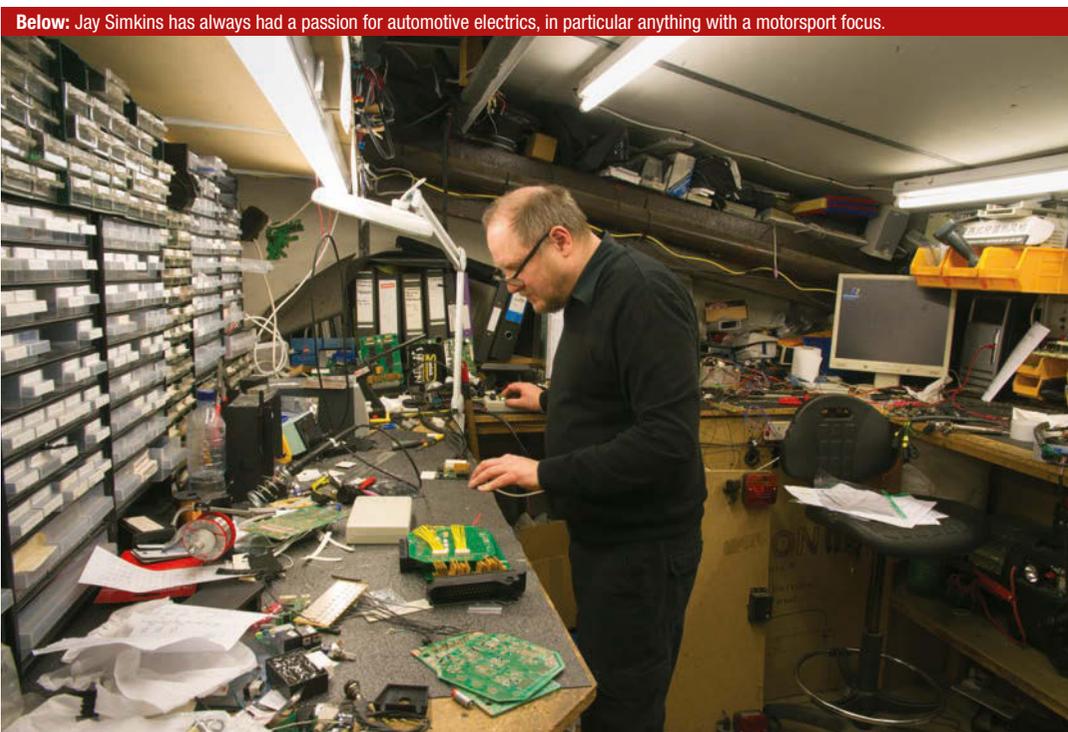
So where have the fuses and relays gone? The BCM still uses fuses, but not in the conventional sense. Inside the unit are Polyswitch fuses, which are not only more accurate than a conventional fuse, but also reset themselves once the problem which caused the fuse to activate has been cured. And in terms of the relays, the BCM replaces these with smart switches (FET Field Effect Transistors) and miniaturised Micro K relays.

In terms of connecting the BCM to the main loom, just two main plugs go into the unit. One carries the wires to the components on the car (indicators etc) while the other takes wires up to the dash for the instrumentation, column stalks and starter switch/button.

### SMART CONTROLS

What do we mean by smart controls? Here's an example. CKC's Ian Stent has a CC Cyclone into which he recently introduced modern LED front indicators and side lights. Because of the different loads these draw from the system compared with the conventional bulbs used for the rear and side indicators when activated, the indicators now blink too fast. So to overcome that in a conventional loom you add a resistor into the system... more wiring and a component that's simply using power to achieve nothing. But with the Body Control Module, the system examines the requirements of all the components within the indicator circuit and simply feeds the required power to each individual indicator in order to achieve the correct rate of blinking... job done.

In terms of added functionality, we can stay with the indicators a moment longer. Most modern cars



**Below:** Jay Simkins has always had a passion for automotive electrics, in particular anything with a motorsport focus.





**Above:** Simtek UK works closely with Specialist Components, which produces this DeltaDash display unit.

makes even more sense when allied to a modern loom. Today's thin wall wire is thinner, lighter, has a higher heat tolerance (105deg working temperature compared to 75deg for conventional thick wall wire) and, because of its size, creates smaller and neater looms that take up less space in a small kit car.

And while all that sounds great, it makes even more sense when you see the connection kit options offered by Simtek UK. The company supplies connection kits for each Logic BCM unit with loom wires already in place (with a spreadsheet to tell you what each colour-coded wire is for), which you

can run through the car to the relevant components and terminate as required for each component. Simtek UK can even supply labels for the cable ends to tell you where they should go if you unplug a component at a later date.

#### THE BASIC UNIT

The Logic 10 can be ordered as a stand alone unit and comes with 12 pre-defined channels to control items such as indicators, lighting functions, ignition, wiper functions etc. but there are also six further channels that can be used for additional functions, such as linking to the ECU, fuel pump, cooling fans etc.

#### CUSTOMISING

As outlined above, the Logic 10 can be tailored for a specific builder's requirements, adding or removing functions as necessary. Simtek UK's Jay Simkins recommends customers list every electrical component they plan to fit on their car, and the company will then add or delete functions/wiring accordingly.



**Below:** Massive store of fittings...



**Below:** Stringing board for the creation of a BAC Mono wiring harness.



**Above:** Simtek UK branded ECU developed for diesel applications, but this Specialist Components ECU is also used in petrol installations.

#### COSTS

The standard Logic 10 starts at £475 plus VAT. A kit of pre-wired connectors, which plug into the Logic units starts at £135 plus VAT. And if you have a very simple wiring requirement for a basic kit car with no windscreen etc then you may be able to get away with the more affordable Logic 1 unit which starts at around £195 plus VAT (exact price still to be confirmed). All told, Simtek UK estimates that you could build a Logic 10 based loom at home from around £760 and a Logic 1 based loom for nearer £490 (both prices including the BCM and wired connector kit).

#### SUMMARY

From the separate panel on Simtek UK itself, it's absolutely clear that Jay and Ginny Simkins really, really know their stuff. But what appears to be extremely appealing about the Logic 10 and associated wiring etc, is that you don't need to know all the technical stuff yourself in order to take advantage of what this new technology can offer. For the first time ever, this writer would consider wiring a kit car from scratch using the package of components available here. But perhaps more significantly, the decision not to head down this route and instead stick with an old-school loom is an even harder one to make. ■

#### Contact

Simtek UK, Rochdale, Lancashire. T: 01706 854857. E: salesandenquiries@simtekuk.co.uk  
W: www.simtekuk.co.uk



**Below:** Modern components such as these BMW column stalks won't work with a conventional loom but have features we now expect of any car.