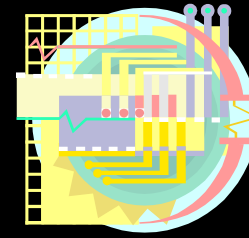


## Somerset Design Services

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### Other Services

#### PCB Fabrication

We have a very good relationship with a number of leading manufacturers who keep up to date with all the latest technologies and developments enabling us to offer prototype, medium and production batches of PCBs

#### PCB Assembly

As with our fabrication service we also work with several first class assembly companies, which use state of the art pick and place and reflow equipment resulting in a perfect finished assembled board

#### Component Procurement

If you wish us to assemble your boards, we are more than happy to procure your components as well .....

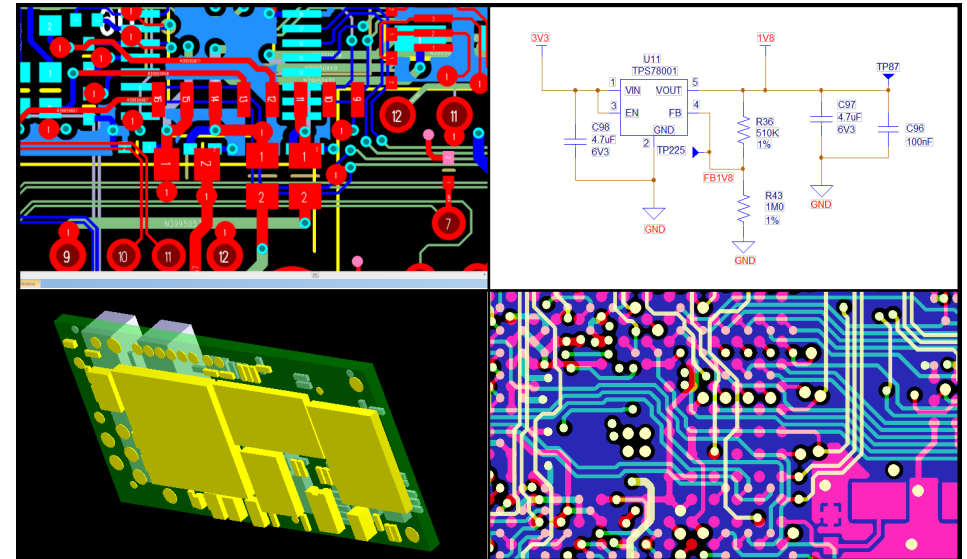
#### Reverse Engineering

Old legacy designs, all you have is some old Gerber's, a BOM and possible a bare board, we can regenerate this information and create new circuit diagrams and layouts in our EDA package



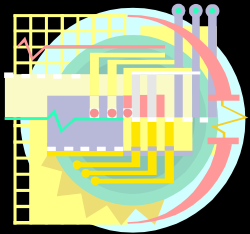
E:info@somersetdesignservices.co.uk W www.somersetdesignservices.co.uk

Formed in 2009 Somerset Design services is a small company servicing all areas of the electronics industry. As a security cleared company we have accreditation to work with protectively marked documents.



With in excess of 30 years experience in the military, commercial and domestic sectors of the industry we are able to produce accurate printed circuit designs from the most basic of information using the latest Mentor Graphics PADS Layout & Logic EDA tools

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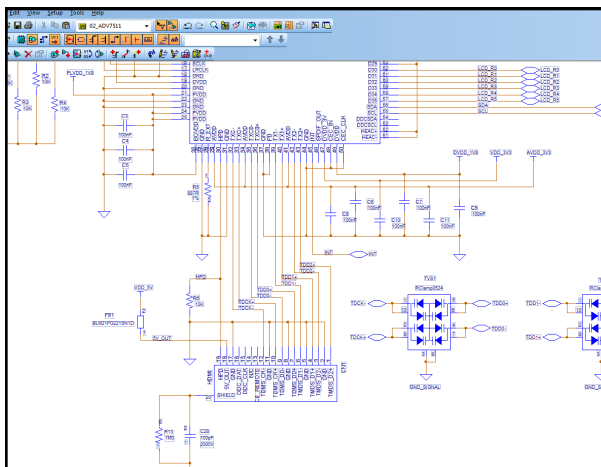


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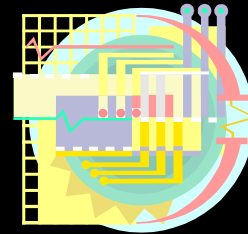
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Somerset Design services offers a very personal bespoke service ensuring very accurate designs, we have been designing printed circuits from a one off prototype to mass volume market for years, attention to detail is paramount in all our work in order to achieve a very high pass rate during manufacture and test. If required a full DFT audit can be run as part of our standard design flow.

Circuit diagrams can be re-created from the most basic of engineers sketches, to provide a fully functioning schematic diagram, we encourage this to enable full cross probing to the PCB design, which we believe gives a better placement, also the ability if required to pass design rules to and from the PCB in the case of more sensitive circuits



We run the latest, (and older versions) of Mentor Graphics Power Logic, which also enables us to bring in and convert circuits from a lot of other common CAD packages such as OrCAD, and Protel (Altium designer)



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### Supplied Data /Documents

#### CAD Design File

A copy of the original PCB & Schematic design files are available for your archive and storage

#### Fabrication Drawing

If required a fully dimensioned fabrication drawing can be produced detailing finishes materials, drawing tolerances etc. These are available in pdf or DXF

#### Mother Panel Drawings

Many of our customers step the single circuit up for production, we offer this service working with customers determining panel size and any off board information, available in pdf or DXF

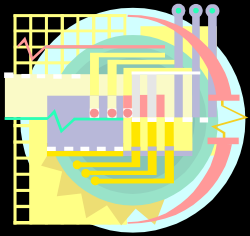
#### Assembly Drawings

If required full assembly drawings can be produced exporting the PCB information to Auto CAD producing a very professional looking drawing, available in pdf or DXF

Note any of the above documents are available on customer drawing blanks. (subject to the success of importing original blank)

BOM data of PCB is available in Microsoft Excel format

X-Y placement data is available in Microsoft Excel format

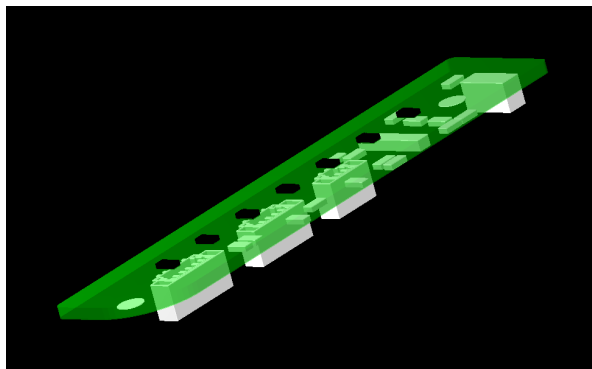


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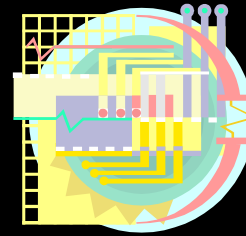
## Reverse Verification

In this day of circuits becoming more complex and boards smaller, the ability to import the final design back into the 3-D package to check for component clashes is very handy, we supply a file on request which can be imported back in to packages such as Solid Works, as an insurance that when the board is finally made everything will fit together



## Production Outputs

Once your design as been fully checked and verified full extended format RS274X Gerber is produced for all electrical and non electrical layers such as solder resist and solder paste Exelon data is provided for the NC drill (ODB++ is available on request)



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Over the last three decades, we have been evolved in producing designs for state of the art security products, including wireless technology, head up and down displays for the MOD, data entry systems, switch mode power supplies the list goes on .....

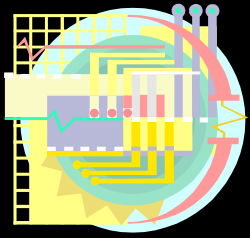


## Technologies Adopted

- |                           |                              |
|---------------------------|------------------------------|
| Single & Double sided     | Multi layer to 16 Layers     |
| Flexible boards           | Flexi-Rigid boards           |
| Micro Vias                | HDI vias                     |
| Partial & Buried Vias     | Fine pitch BGA devices       |
| High speed digital        | Analogue & RF                |
| SMD technology            | mixed Technology             |
| Differential pair routing | Impedance controlled routing |

## Design Flow

Schematic capture creation > Circuit Netlist verification > BOM Generation > PCB Profile creation > Critical component placement > Non critical component placement > Routing > Power planes > DFT audit > Design verification > post processing



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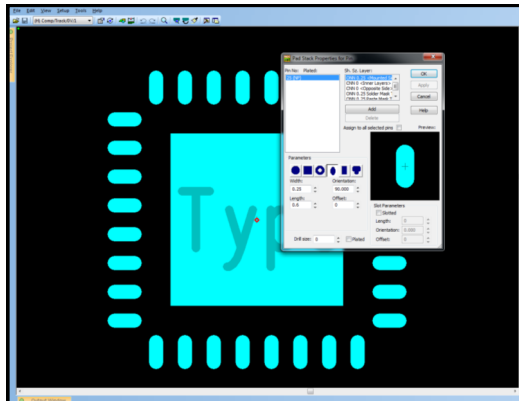
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### PCB Profile creation

There are various ways of creating the profile for your PCB design, simple profiles can be created directly within the PCB design package, more complex profiles and those which have been exported from a 3-D package can be imported directly via DXF

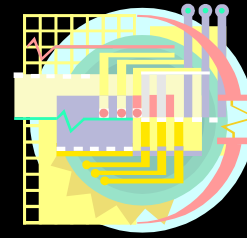
### PCB Footprint creation

The PCB footprint (decals) can also be created again within the design package, all footprints are created to the latest IPC standard and again more complex designs can be imported via DXF



### Component Placement

Most PCB Designs will have some components which are critically placed, mounting holes, switches, connectors etc. These are always done first, verified and then fixed down to eliminate accidental movement later on in the design. A good PCB design is down to a good placement, the use of the schematic capture package to aid this is very beneficial, enabling the flow of the circuit to be transferred to the final design.

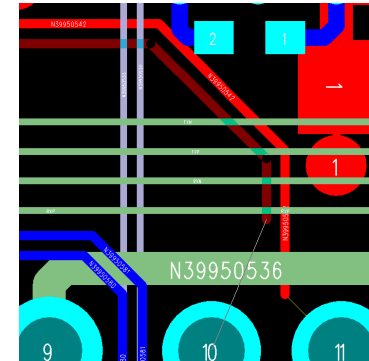


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### Routing

There are some very powerful shape based auto routers available, Blaze router being one of these, but nothing is as good as a experienced PCB designer, with this in mind all our designs are manually routed, any critical tracks such as differential pairs routed first, followed by non critical tracks



### Power planes / copper pour

Most double sided boards would have a copper flood and multi layer designs would have power planes added after routing, these would be defined by the design authority.

