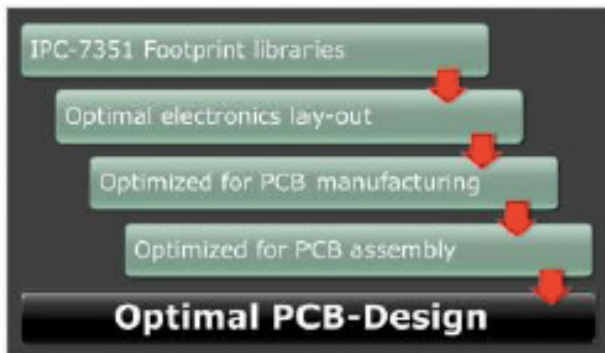


INTRODUCTION

Fineline has many years of experience in the field of the PCB design of the most diverse types of products. Fineline PCB design specialists are not only experienced in using a wide range of PCB design software packages, they also have a lot of experience with the issues of EMC and Signal Integrity. They have a lot of know-how when it comes to production processes and the requirements that a design must satisfy for optimum manufacturability and ease of assembly. This is know-how that the designers use to guarantee you the quality that you're accustomed to from Fineline. A Pre DfM check guarantees optimal producibility.

Good quality PCB designs are essential for realising reliable electronic circuits. Good footprints form the basis for this. The Fineline PCB designer has access to the extensive Fineline libraries with components that are compliant with IPC-7351 Generic Requirements for Surface Mount Design.

All Fineline PCB designers are trained to use the lay-out packages they work with and have a lot of experience with PCB design, but also with issues like EMC and SI.

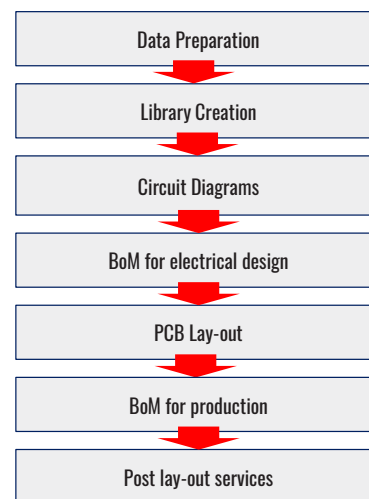


Latest Techniques

The construction of a printed circuit board and the way in which it is manufactured are essential for guaranteeing reliable electronic circuits. The Fineline PCB designers are familiar with the latest PCB manufacturing techniques and production options, so that an extremely reliable product can be guaranteed. If there are very specific questions, the PCB designer can consult with Fineline's printed circuit board developers. And, of course, while designing the PCB, assembly aspects are taken into consideration such as the optimum component placement, the location and number of fiducials and the use of solder dams.

PCB Design Process Flow

To realise an idea into a ready PCB a number of process steps have to be taken. From the moment a sketch of the electrical design is available Fineline can support the complete the creation process of the PCB. If only for a part of the creation process support is needed, also in that case Fineline can be your partner. For example diagrams are designed and library is complete. In that case Fineline can very efficiently make the lay-out in the PCB design package of your choice. Particular in this phase of the design process optimal lay-out of ground layers and signal lines/ layers can make the difference between an average design and an excellent design. At this stage also the design should be optimised for manufacturing, at this stage you can benefit fully of the manufacturing PCB knowledge of the Fineline PCB Designer.



Overview of the PCB-Design programs in use

Fineline can make the design in your preferred program. The Fineline PCB Designers are trained using more PCB Design programs.

PCB-Design package	
Zuken Cadstar	■
Cadence Allegro	■
Cadence Orcad	■
Mentor Graphics Pads XE-ARS Suite	■
Mentor Graphics Expedition	■
Mentor Graphics DX Designer	■
Altium Designer	■

What can we offer to you

Fixed Quote

Based on a quotation. Fineline gives you a quotation for making a PCB design based on the circuit diagram you supply. Very good option in case you have a fixed budget and a well described project or lay-out.

The Fineline PCB designers have access to extensive libraries with thousands of footprints and additional component information, all of which is IPC-7351 compliant. This helps to speed up the design process, reduce the chance of errors and, as such, results in a better quality product.

At Location

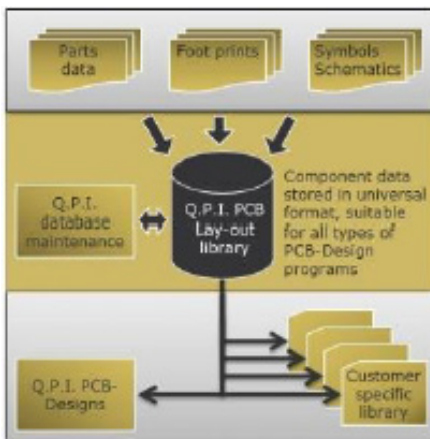
Based on the number of hours worked. Fineline comes to you and our PCB designers sit beside your developers so that they can work together to realise the optimum solution.

The names of the components in the Fineline library are such that an assembly company using the BoM (Bill of Materials) of the design can order the components directly. A specification overview is given for each component.

Fineline Design Centre

Based on the number of hours worked. The Fineline PCB design specialist works from our PCB Design Centre.

The Component Library



The IPC-7351 compliant component libraries that were developed by Fineline are based on a centralised Fineline parts management system that connects the schematic, the PCB design, the BoM and the logistics. The electrical symbols are defined in accordance with the IEC 60617 standard. Using this library has simplified the communications between all those involved from the design phase right up to and including the production phase. This also applies to the organisation of customer support for a product. Contact Fineline for further information.

Name	Value
1-1 Description	Aluminum Electrolytic Capacitor-18
1-2 Part	18AL
1-3 Drawing Code	Manufacturer
1-4 Manufacturer code	18AL
1-5 Value	100µF ±20%
1-6 Pin Mapping	18
1-7 IPC Package	CAPAC1808322040REY2100000
1-8 Alternate Package Name	
1-9 Build Item	Parameter: Expert
1-10 Type (Class)	CAPAC
1-11 Value (Unit)	100µF
1-12 Voltage (V)	50V
1-13 Tolerance (ppm)	±20%
1-14 Dimensions (mm)	18
1-15 Dimensions (inch)	18
1-16 Case Code	1808322040
1-17 Case Code	18
1-18 Alt. Value (Unit)	100µF
1-19 Alt. Voltage (V)	50V
1-20 Alt. Tolerance (ppm)	±20%
1-21 Symbol Name	CAPAC18_18_1
1-22 Data Name	1808322040
1-23 Serial Num. (P/N) (Symbol)	1808322040
1-24 No. of Electrical Pins	2
1-25 Status	IC

The Fineline Advantage

- Fineline has many years of experience with PCB Design
- Fineline can make the design in the program of your choice
- Fineline can offer to do a specific task of the PCB Design only up to: take your idea sketch and turn it in a working PCB
- High quality standards, professional approach
- Sound lay-out but also a sound design of the PCB
- Lay-out designs in Altium at fixed cost
- Experience with cost effective simple designs
- Experience with complex HF and Mixed Signal designs
- Designs are according IPC rules, easy transfer to an EMS company