**Design for Manufacturing**
maximising design

**Our early design analyses and recommendations allow us to guarantee the best delivery quality. This early supplier involvement service has various facets, including Design for Manufacturing (DfM). DfM involves maximising the manufacturability of your design in partnership with your designer. Our principle is: 'we want to do everything right at the first attempt and only do what is necessary. This allows us to offer you the highest *value of ownership*.**

**Design for eXcellence**
Our overall approach is called Design for eXcellence (DfX). Individual analyses relate to manufacturability (DfM), test accessibility and test coverage (Design for Testing, DfT), availability of components (Design for Logistics) and the cost of the total life cycle (Design for Cost). All assessments take place in the design phase.

DfM and DfT are used during the design phase to calculate the anticipated percentages for production yield and delivery quality (slip through). We are the only EMS company that includes them as result commitments in our quotations.

**right first time**
Our DfM engineers advise your designer to use as many priority components (so-called A-components) as possible. These are of the very highest quality and always available under controlled conditions. We prefer to use printed circuit board assembly (pcba) using exclusively smt components, which can be processed automatically. Designers sometimes choose alternatives for technical design reasons. Even in

such cases, we have solutions that optimise the production process.
The DfM analysis involves checking whether software or footprints on the pcb match the physical components. We investigate whether all components can be accurately placed and whether the solder joints are reliable.

Our DfM reports feature specific recommendations about the manufacturability of the design. Your designer will thus be able to optimise this design to ensure efficient and effective production. In your interests, we also continue to improve our production process, thanks to its self-correcting and self-learning capacity.

**the benefits of Design for Manufacturing**
We work together with your designers to make sure the design of the pcba works perfectly. As a result, production is automated wherever possible and right first time. Our early supplier involvement services mean customers are assured of the highest possible production yield, the best delivery quality, maximum supply flexibility, custom-made designs and the lowest total costs. Design for eXcellence, including Design for Manufacturing, plays an important role in this.

'we supply the highest quality, which means you and your clients can realise the best possible quality and reliability'

for more information:
tbp.nl
Visit us at WoTS or the Precision Fair

**Design for Testing**
maximising test accessibility

**Our early design analyses and recommendations allow us to guarantee the best delivery quality. This early supplier involvement service consists of various perspectives, including Design for Testing (DfT). Dft involves maximising the test accessibility and test coverage of your design in partnership with your designer. Our principle is: 'we want to do everything right at the first attempt and only do what is necessary. We use a smart test strategy to offer you the highest *value of ownership*.**

### Design for eXcellence
Our overall approach is called Design for eXcellence (DfX). Individual analyses relate to manufacturability (DfM), test accessibility and test coverage (Design for Testing, DfT), availability of components (Design for Logistics) and the cost of the total life cycle (Design for Cost). All assessments take place in the design phase. DfM and DfT are used during design phase to calculate the anticipated percentages for production yield and delivery quality (slip through). We are the only EMS company that includes them as result commitments in our quotations.

### smart test strategy
We use an expertly formulated test strategy to advise you on the best approach, which includes recommendations for optimising test accessibility and test coverage in the design. The most effective strategy is determined by the required delivery quality, the complexity of the design and the desired investments in test solutions. We include the options in a selection menu with percentages for production yield and delivery quality (slip through) so you can make the right choices.

Our DfT engineers research the testing options, while considering all economic factors. This is possible by efficiently incorporating test accessibility into the design.
**effective test solutions**

The most effective and efficient option is the extended boundary scan test solution, which automatically detects any faults on a printed circuit board assembly (pcba). Thanks to the double signal functionality, the workings of both the analogue and digital elements of the design are tested. This test method leads to the best possible slip through and makes costly investment in specific functional requirements unnecessary.

We use the following standard control techniques in our production processes: 3D solder paste inspection, automated placement measurements and two automated 3D optical inspections. If necessary, we also use the so-called 'flying probe' test.

### the benefits of Design for Testing
We work together with your designers to make sure the design of the pcba works perfectly. As a result, production is automated wherever possible and first time right. As a result, production is automated wherever possible and first time right. Our early supplier involvement services mean customers are assured of the highest possible production yield, the best delivery quality, maximum supply flexibility, custom-made designs and the lowest total costs. Design for eXcellence, which includes Design for Testing, plays an important role in this.

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