

## Micross Components Technical Paper

### **NOTES FOR CHECK LIST FOR DESIGN REVIEW 2.**

Design Review 2 is held when the electrical design is complete and any layout work necessary to support parasitic and other assumptions has been drafted. Approval of this stage is an acceptance by all attendees that the proposed electrical design meets the required specification and satisfied the assembly, test and other requirements..

The points in the checklist are not expected to be a complete list of every possible thing which may require to be discussed and agreed. They are intended to promote discussion and to attempt to ensure that problems which have occurred before do not recur. Any significant new problem area which arises in the future should be added in the form of a new check list point. The following notes outline the areas of discussion relevant to each point on the list.

#### 1.0 Progress Report.

This is mainly an introduction and should be presented by the designer and project manager. It is intended to refresh the memories of the other attendees who will have had less contact with the project since the first review and to outline any difficulties and their solutions.

1.1 The designer should cover the design requirement in sufficient detail to form a basis for the rest of the meeting. The application area and environment should be described and any key or particularly difficult areas brought out for discussion.

1.2 The project manager should summarise the project status and any outstanding problems. This should cover all areas, not only design, to ensure that the remainder of the meeting can consider each area in context.

1.3 If this is a redesign has the cause of the original problem been unambiguously identified? Are any other problems likely to have been masked by this? Is the solution clear and what are the risks of another failure?

1.4 Have all DR1 actions required for this review been completed satisfactorily (mandatory).

1.5 is there consensus on any specification, timescale, cost etc. changes since DR1?

## 2.0 Documentation.

It is important that sufficient documentation exists at this review to confirm the status of project. All of these items are mandatory. Exceptionally, minor specification issues can be carried over to the next review provided that the risks and costs are understood and agreed.

2.1 The original target specification must be firm and agreed for this review to be passed. It is acceptable that non-critical areas of the specification can be left to be defined during the detail design phase but only provided any associated risks and or costs are well understood and agreed. Check that the version of the specification which the designer has used is current.

2.2 The block diagram must exist and should reflect (or be) the top level of the design. The customer and designer should be happy with it.

2.3 A full set of schematics is required. The design should be 'checked in' in the design system so that the issues of the various levels of the hierarchy can be clearly identified.

2.4 Has the customer agreed the simulation results and approved progress to the next phase of the design? This is a requirement unless the original job specification waives it.

2.5 Is the project on schedule? If not can it be recovered? Does the Gantt chart reflect everyone's view of what will be achieved?

### 3.0 Design Route.

The design points cover all work done to date. All of these points must be agreed before the review is passed.

3.1 The designer should present the simulation results and describe clearly what simulations have been done. If the design has not been demonstrated to be fully tolerated, are any assumptions valid? Has adequate account been taken of likely layout effects? Is the specification demonstrably met in terms of functionality and parametrics?

3.2 Does the design use only precharacterised cells or are there any custom elements? If there are custom elements is the simulation sufficiently detailed to be confident? Has account been taken of parameter spreads, operating regions, breakdown effects etc? Have any novel techniques been developed and are they robust? Are there any patent implications? Are there any alternatives? What are the risks?

3.3 Is the die size estimate still valid? If not is the costing still acceptable? Are there any design alternatives to recover any problem?

3.4 Are initial yields and reliability estimates or assumptions made at DR1 still valid? Are the risks understood?

3.5 Is the test specification agreed? Can the required test coverage and cost be met? Does test agree that the design presented is acceptable?

3.6 Is progress on schedule? Is it expected to stay on schedule? If not is the slip acceptable or can anything be done to improve?

### 4.0 Production

There should be no production issues at this point with the possible exception that novel design techniques or structures have been used which will have an unforeseen effect .

4.1 Are there any requirements for a test vehicle or test structures to demonstrate that novel techniques have not introduced any problems?

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