

The Application of Gradient Vector Flow Active Contour Algorithms to Locate BGA Boundaries

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ABSTRACT

Continual increases in IC-chip complexity and performance are placing demands on the density and functionality of package I/Os. Therefore, various SMT interconnection techniques are being developed to satisfy this need, including Ball-Grid-Array (BGA). BGA is an area-array interconnection that can achieve a density of 400 I/Os per square inch. Image segmentation is an important preprocessing procedure for image analysis. The result of image segmentation significantly affects the accuracy of subsequent image analysis. Active Contours, or snake, are widely and a powerful technology to segment objects within image. There are two key difficulties in the design and implementation of Snake models. Problem associated with initialization and poor convergence to boundary concavities. GVF (Gradient Vector Flow) Snake is insensitivity to initialization and its ability to move into boundary concavity. Snake and GVF Snake algorithms are often short of the capability in processing multi-objects. In this thesis, we apply GVF Snake algorithm to locate BGA boundaries, which produce a very good result.

Keywords : SMT ; BGA ; Image segmentation ; Snake ; GVF Snake

Table of Contents

第一章 緒論 1 1.1 研究背景與動機 1 1.2 研究目的 3 1.3 研究範圍與限制 3 1.4 研究流程 4 1.5 章節架構 7 第二章 文獻探討 8 2.1 邊界搜尋演算法 8 2.2 BG A瑕疵檢測 10 第三章 輪廓模型 12 3.1 動態輪廓模型 12 3.2 梯度向量流動態輪廓模型 17 3.3 模型參數分析 22 3.3.1 參數 22 3.3.2 參數 23 3.3.3 參數 23 3.3.4 參數 24 3.3.5 參數 26 3.3.6 參數 26 第四章 研究方法與流程 28 4.1 模型參數設定 28 4.2 模型停止機制 34 4.3 BGA初始輪廓 36 4.4 數值分析流程步驟 37 第五章 範例應用及分析 40 5.1 單顆錫球邊界範例 40 5.2 BGA邊界範例 43 第六章 結論與建議 47 6.1 結論 47 6.2 未來展望及建議 47 參考文獻 48 附錄 51

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