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Automated visual inspection for missing or misaligned components in SMT assembly

Abstract

Automated visual inspection (AVI) is becoming an integral part of modern surface mount technology assembly (SMTa) process. With the increase in demand, high-volume production has to cater for both the quantity and zero defect quality assurance. A wide range of defect detecting techniques and algorithms have been reported in the past decade. In this paper, we focus on missing and misalignment defects in SMTa. Thresholding and pixel frequency summation are some of the techniques which have been used for defect detection. Here, a new approach using color background subtraction is presented to address the stated defect.

Keywords — Automated Visual Inspection (AVI), Surface Mount Technology assembly (SMTa), background subtraction.