



A LINE BALANCING AND PRODUCTIVITY IMPROVEMENT METHOD FOR SURFACE MOUNTING MACHINES

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ABSTRACT—In this paper, we propose a hierarchical optimization technique of the PCB assembly line including multi-head non-identical surface mounting machines. The optimization problem related to the PCB assembly line is generally divided into three sub-problems: a line balancing problem, a reel assignment problem and a pick-and-place sequencing problem. Since each problem is known to be combinatorial and NP-hard, we propose a meta-heuristic algorithm such as genetic algorithm. Computer simulation results show that the proposed algorithm is superior to the heuristic algorithm that is commonly used in industry.

Key Words: PCB assembly line, optimization, line balancing, surface mounting machine, genetic algorithm