

Using Computer Simulation to Optimize Lot Size in Printed Circuit Board Manufacturing

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ABSTRACT

For IC carrier plant, lot size is a key factor for effective production. Setting proper lot sizes is an important decision making. Because of the complex process production flow and equipment, it is impractical to conduct tests on various lot sizes in a real factory. Computer simulation is an appropriate tool for this purpose.

This research uses a computer simulation software and constructs a simulation model for a real IC carrier plant. The model is used to simulate the effective output of the system under various lot size settings. Analysis on bottleneck stations with various product mixes is conducted based on the utilization of stations. In addition, effective output and proper amount of equipment are evaluated through simulation when increasing the amount of equipment at bottleneck stations. The result of the simulation experiment shows that 96 panels is the best lot size with the current equipment. Laser drilling station is identified as the bottleneck for product group one and plugging station is the bottleneck for product group two. Finally, the best amounts of bottleneck equipment is obtained through simulation.

Key words: Lot sizing 、 System simulation 、 Bottleneck analysis