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Author Shang-Ming Chiang
Author's Email Address No Public.
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Abstract
With scientific and technological progress, the requirements of electronic products become increasingly thinner, lighter, smaller and functionally more powerful. In view of this perspective, electronics manufacturers have been developing more stable production methods that assure greater stability, which in turn promotes the development of better technologies for printed circuits board assembly (PCBA). Of the latter, the key lies in the development of the Surface Mount Technology (SMT) assembly process. The placement process is generally the bottleneck in a PCB assembly line. The objective of the research is analysis the effect of a calibration process to placement defects in a PCB assembly line. Because, input and output values of the data are uneven, unable to carry on the neural network, so the research mainly applies the integrating genetic algorithms and neural network in configuring process parameters for STMPCB assembly placement machine. In this research, we using neural network to predict the defects caused by the placement machine. Next, a forecasting model using genetic algorithms to correct neural network’s weighted. Finally, optimization of process parameters in STMPCB assembly placement machine use genetic algorithms.
Base on the result of the analysis, engineer can acquire a better process parameters in STMPCB assembly placement machine, it is performed again to reduce the expected defects and increase the production efficiency.
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