



De La Salle University - Dasmariñas

**Reduction of Integrated Circuits (IC) Test Time through  
Statistical Set-Up Verifier (SSUV)**

A Project Study Presented to the Faculty of Graduate Studies

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## Abstract

This paper discusses a way of enhancing the Set-Up Verifier (SUV) and Production (PD) testing process which are part of Analog Devices Inc. (ADI) Final Test procedures. The traditional SUV consumes a lot of time (for about 2 hours 2 complete), redundant in nature (process will be repeated on the next step) and use units that will eventually become waste. Using statistics such as Statistical Process Control (SPC) and Process Capability Index (Cpk), SUV combined in the PD testing process (naming it Statistical Set-Up Verifier or SSUV) had saved a time of almost 2 hours or about 96.3% reduction percentage, redundancies were eliminated because process will be done once, and wasted units were saved. The proposed enhancement involves in creating 2 major tools using NI LabVIEW, first to compute the statistics required by SPC and Cpk from the STDF history library which will be used by the second tool to check the credibility of the set-up based from statistical results. Simulation results show the effectivity and reliability of using SSUV by substantial reduction in total test time for final testing process and achieving about 90% reliability. Cost savings is approximated to be \$264,600 per year with a single device and productivity increases to almost 5 million units per year.

*Keywords: Set-Up Verifier, Production, SPC, Cpk, SSUV, Reduction, LabVIEW, STDF*



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