

# Keysight Technologies

## Simple DMM Enhancements Make a Big Difference to Silicon Designers

### Case Study

#### Introduction

Sometimes minor enhancements make a big difference in usability for test and measurement instruments. At least according to an engineering team in Colorado responsible for the silicon design, debug, and characterization of power-management ICs.

#### Display allows users to add labels on the screen

To troubleshoot and characterize input and output characteristics of their ICs, the engineers typically monitor multiple output and input voltages and currents simultaneously using a stack of digital multimeters. Their big challenge: keeping track of which DMM is measuring which voltage and which current. The engineers currently solve the problem by sticking adhesive-backed notes temporarily on each DMM with a description of the signal it is measuring.

When a Keysight Technologies, Inc. product development team demonstrated the new Truevolt 34461A DMM to the silicon designers, one small feature captured their attention. The 34461A DMM's large, liquid-crystal display allows users to add labels to measurements on the screen. The IC developers immediately saw the feature as a way to eliminate confusion about which instrument is measuring what.

After trying out the new 34461A DMM, one engineer described the labels as “very useful when you are working with others and trying to explain your test setup to them.”

The engineers agreed that the 34461A DMM's front-panel LCD display made it easier to digest info quickly. Not only is the display more visually appealing than the low-resolution numeric displays on their legacy DMMs, but they can read it clearly from across the room.

The engineers also considered the ability to change the screen's color scheme a plus. By using one color scheme for inputs and a different one for outputs, they can tell from a distance which is which.

#### Familiarity and Usability

For many years, the silicon design engineering team has been using the Keysight 34401A, the industry-standard 6.5-digit multimeter, to make its efficiency measurements. They were delighted by the similarities between the 34401A and the new 34461A DMM.

The silicon team also liked the 34461A's 10-amp input range and its usability. They particularly appreciated that they could hold a button down to see a brief description of that button's functionality, which makes it easier to learn. They also like the built-in help topics designed to help them expand their general DMM knowledge.

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