Top Research Lab Solves Measurement Challenge in Hours Despite Tight Security

A leading research and development (R&D) laboratory needed to make wafer-level measurements on its semiconductor device to keep its project on track. The team supplies products to government agencies to keep the world safe. It applies breakthrough science to solve tough engineering challenges and make state-of-the-art products.

To stay on schedule and to budget, team members need to make measurements to prove their designs. However, one of the technology development teams working on a critical design needed help with new test equipment and software.

Challenges: Getting the Hardware and Software to Work Together

The R&D team purchased a new toolset so it could achieve its aggressive time-to-first-measurement goals with a Keysight E5080B ENA vector network analyzer (VNA) and WaferPro Express software. The E5080B is an integrated VNA that accelerates testing by combining an entire bench of equipment into one instrument. To speed the workflow, WaferPro Express offers a new user interface that makes it easy to set up and run complex, wafer-level test plans. The R&D team relied on this hardware and software toolset to work together to perform accurate and repeatable device and component characterization.
The learning curve of interfacing this new instrument and software raised questions, and the team could not make the necessary measurement.

Another concern: The lab is not a typical working environment. When keeping the world safe is your business, security is paramount, and standard business-to-business practices are not the norm. For example, security rules prohibit the use of videoconferencing.

**Solution: KeysightCare Support Expertise**

The research lab planned for this critical first measurement and purchased KeysightCare Software Support for WaferPro Express. Team members knew they would need technical support and software updates. So, when a question arose, the lead R&D engineer called Keysight and outlined the issue with the KeysightCare software expert. She identified the problem and confirmed that the VNA was not properly set up to interact correctly with the software. The issue was with the hardware, not the software.

The Keysight software expert contacted a colleague with VNA expertise. Because the E5080B VNA comes with KeysightCare Assured, the technical request jumped to the top of the queue, with a committed four-business-hour technical response. The product expert determined that changing the settings on the emulation mode interface of the network analyzer would fix the issue.

An online demo was not an option because of the tight security controls, so the two KeysightCare engineers documented the setup procedures. They used images and screen captures to document how to adjust the unit’s configuration settings so that the customer could follow step-by-step instructions. They emailed the instructions and placed them in the customer’s secure KeysightCare portal for future reference.
Results: Fast Response Keeps Project on Schedule

By following the instructions, the team got the hardware and software to work together. The customer continued work that same day and kept the program on track. The team successfully made its first measurement for the semiconductor device.

The integrated approach of the KeysightCare hardware and software engineers facilitated a quick resolution, saving the customer at least five days. Prior to this event, in order to get support, the customer had to manage several logistical issues such as requesting a demo instrument, getting security access approved for non-lab employees, and coordinating a meeting time that worked for everyone. Often the result was lost time and frustration. With KeysightCare Software Support and KeysightCare Assured, experts collaborated within the committed four-business-hour technical response time.

Unfamiliarity with test equipment, software, and technical procedures slows down workflows and creates obstacles. A recent survey revealed that 53% of R&D engineers pinned this cost at $100,000 a day or more — with 5% saying it was more than $1 million.¹ By reducing its time to competence, the customer easily saved five days, or about $500,000 in productivity.

Related Information

KeysightCare is a priority-one connection between your engineers and Keysight experts. Through committed, accessible, and proactive engagement, we’ll help you remove the barriers to success. Activate KeysightCare and accelerate the win. For more information, visit KeysightCare Service and Support.

¹ Test Trends. Dimensional Research, (December 2019).

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