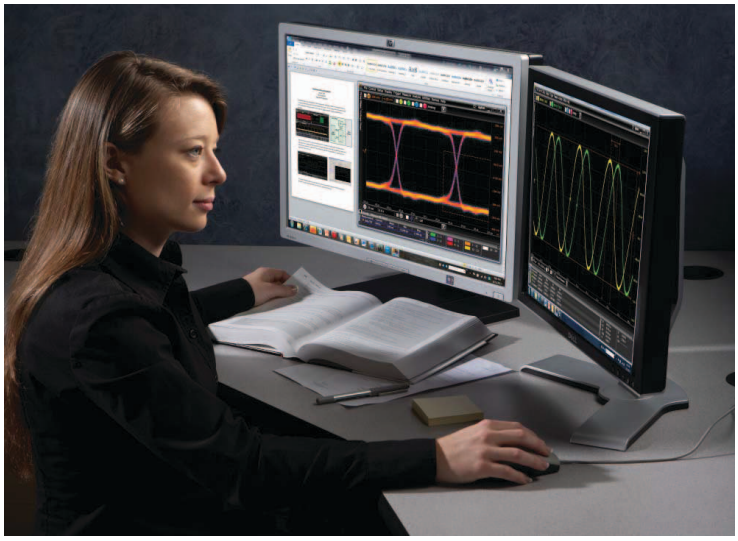
Keysight Technologies

Three Reasons to Complement Your Scope Investment with PC-based Analysis Software

Application Note



KEYSIGHT TECHNOLOGIES

Introduction

Ever wish you could use your PC to view or analyze entire waveform records captured by your scope? Do you ever need a better way to share scope data with your team, supplier, or customers? Are you looking for a faster method to create more useful documentation or reports?

If so, you should consider these three reasons to complement oscilloscope investment with PC-based analysis software.

1. View and analyze anywhere your PC goes
2. Share scope measurements more easily
3. Create useful documentation faster

1. View & Analyze Anywhere Your PC Goes

PC-based oscilloscope analysis software allows increased productivity and optimizes oscilloscope utilization. Eliminate the need for a scope for viewing and analyzing after the initial acquisition has been made. Simply capture waveforms on a scope, save to a file, then recall the data in a PC-based application. This use model provides several advantages over relying exclusively on working at a scope.

- View and analyze results anywhere and anytime that is convenient.
- Share target systems and scopes better. As target systems and test equipment often limit usage to one person at a time, offline analysis enables users, who previously took measurements, to use their PCs to view and analyze result. Return to the target system only when additional new measurements are needed.
- Take advantage of your office environment including big high-resolution monitors. While 15" XGA display sizes may be impressive for instruments, this size and resolution pales in comparison to display sizes and resolutions found in offices. Offline analysis applications take advantage of multiple highresolution displays simultaneously. And, you can work at your desk instead of being required to be at your scope.

Figure 2. View and analyze previously captured scope waveforms.

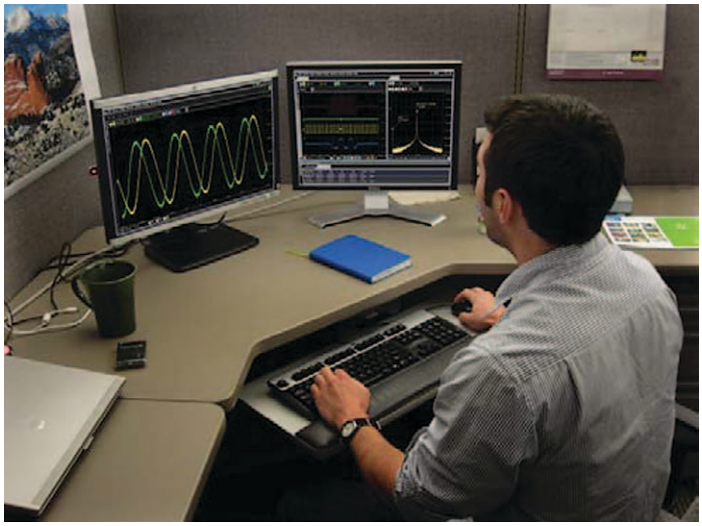


Figure 3. View and analyze in your office environment.

Figure 4. Keysight's InfiniiView includes scope-based controls for quickly and navigating to areas of interest.

2. Share Scope Measurements More Easily

To share data, scope users have historically needed to bring others to the scope or share captured screen images. The former is not always an option, as collaborators may be in a different time zone or just not available when a specific scope measurement is made. Sharing screen images often results in questions about what happened before and after the time that was shown in the image. PC-based scope analysis enables teams to share measurements more easily than if they exclusively relied on a scope.

- Share entire waveform records so others can recall and move to any specific area of interest.
- Annotations and user-definable bookmarks make it easier to interpret shared measurements.
- Use any PC sharing tool (thumb drive, e-mail, Web conferencing).
- Save and open files using composite file formats. These files include all channels, waveform memories, as well as the user's scope setup file.
- Share measurements across multiple vendors' scopes. Keysight Technologies, Inc. N8900A InfiniiView is optimized for compressed file formats produced by Keysight scopes. It also accepts .csv files form other vendors' scopes.

Figure 5. Use PC sharing tools for better collaboration.

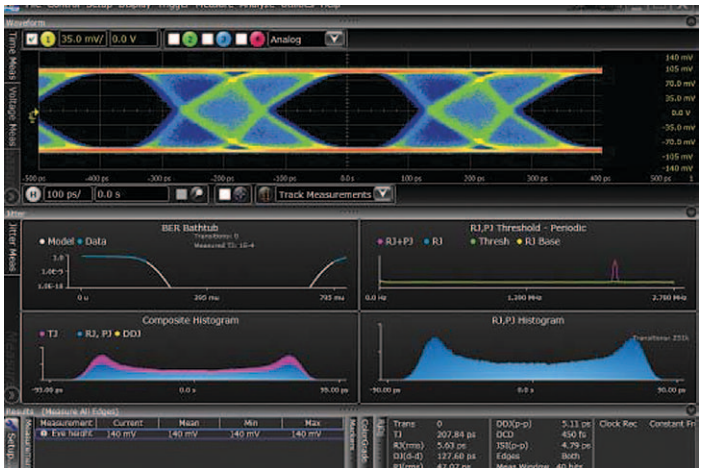


Figure 7. InfiniiView includes an option for jitter characterization when you need to collaborate with team members, suppliers, or customers.

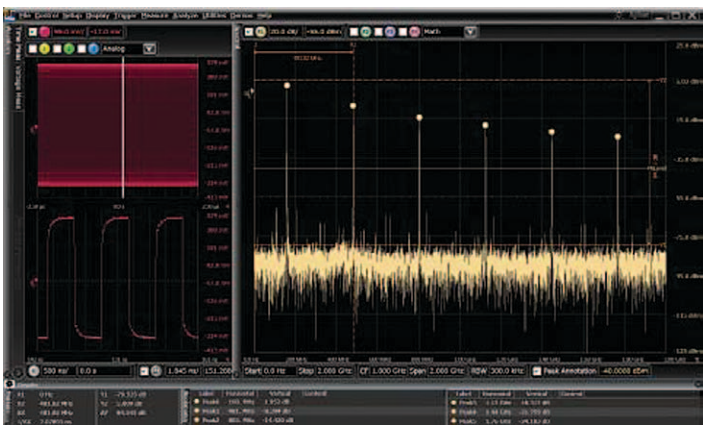


Figure 6. Share scope measurements and analysis including spectral views.

3. Create More Useful Documentation Faster

Looking for an easier and faster way to create required documentation? Searching for a better method than saving screen images and then importing them into your documentation tool?

PC-based analysis tools like Keysight's N8900A InfiniiView allow for screen shots using copy and paste without ever having to save the image to a file. For archival of entire data records, saved waveforms can be recalled on a PC at any point in time, and the user can navigate to any point of interest.

The first step of understanding a scope trace is to locate the scale information.This process is complicated by having up to four channels plus the horizontal scale. Per-channel, on-screen horizontal and vertical scaling annotations enable quicker interpretation.

Markers add significant value to documented measurements. While the markers are visible on the screen, their location (and more importantly, the delta between them) has a different location on each oscilloscope. InfiniiView uses embedded marker values as to make for thorough documentation with less effort. As the user moves the markers, the delta value readout is dynamically updated.

Figure 8. Quickly copy and paste screen shots without ever having to save or recall a file. Or, archive complete acquisitions and easily recall later on any PC.

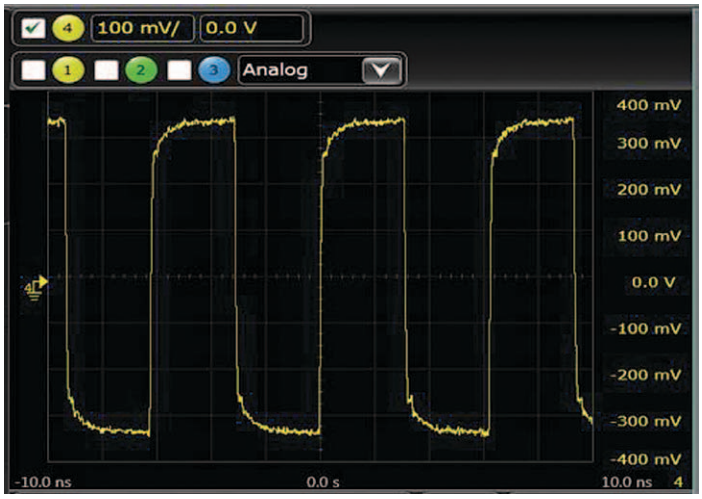


Figure 9. Keysight's InfiniiView shows annotated horizontal and vertical scaling to make it quicker and easier to do and interpret.

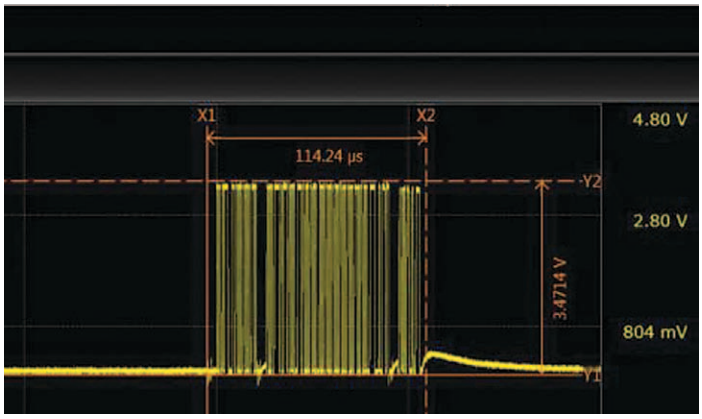


Figure 10. Embedded marker delta values are dynamically in the waveform area updates as the user moves any marker.

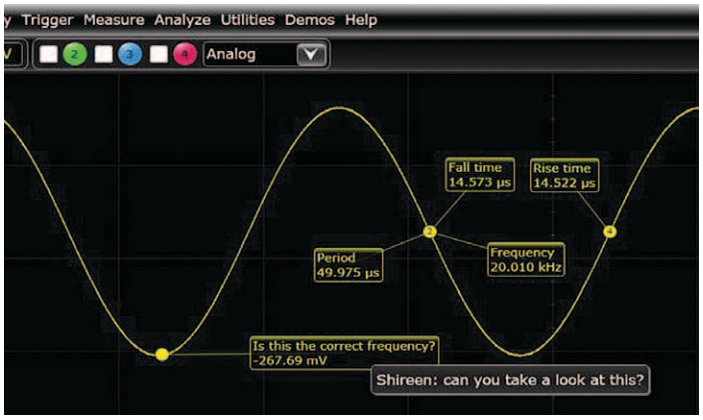


Figure 11. Embedded measurement values and bookmark annotations enable rapid interpretation.

It isn't always easy to match measurements to waveforms. And, with the ability to show up to 20 measurements at a time, this can become more difficult. InfiniiView allows users to embed measurements on the waveforms in addition to showing in the results window, making result interpretation easier.

There are times when it helps to be able to point out a specific part of a waveform. InfiniiView provides a new annotation method for doing this called "Bookmarks." They are a very powerful way of documenting a waveform because arbitrary text is associated with a specific point in time (see figure 13). This picture is much easier to understand than a traditional screenshot.

Almost all oscilloscopes show measurement results at the bottom of the display. These results include measurements statistics, markers, histograms, and several other types of data. The size and attributes in this measurement result area historically had been dictated by the scope vendor.

PC-based analysis tools like InfiniiView allow the user to customize the result window in terms of both size and information content. Users can specify which statistics they would like to see and how big the result window is. For example, here a user has chosen Current, Mean, Max, and Count with the rest of the statistics hidden.

Additional built-in analysis tools enable more thorough documentation. As serial buses often provide critical insight into design behavior, documenting with serial decode can be done readily with offline analysis. Need to document jitter characterization or write your own Matlab analysis script? Keysight's InfiniiView also has these capabilities to make richer report generation.

Are you considering adding offline to complement your scope investment? Download InfiniiView for free at www. keysight.com/find/N8900A, and give it a try.

Figure 12. Size and populate your measurement result window to fit your documentation needs.

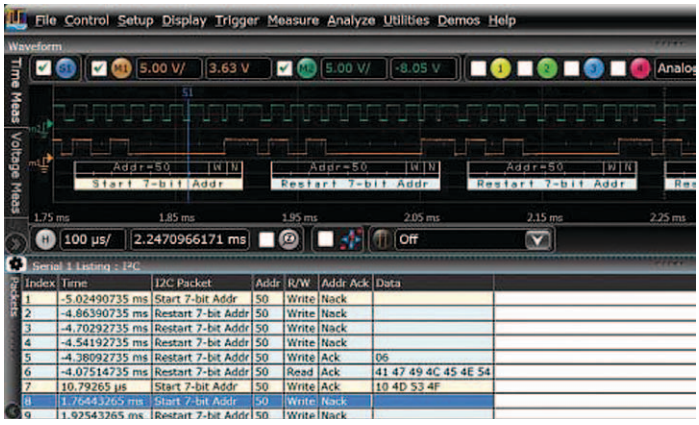


Figure 13. InfiniiView options allow for documentation using serial decode, jitter, and Matlab analysis.

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Published in USA, August 4, 2014
5991-0992EN
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