Keysight Technologies

B4610A Data Import Tool
for Offline Viewing and Analysis

Data Sheet

KEYSIGHT
TECHNOLOGIES
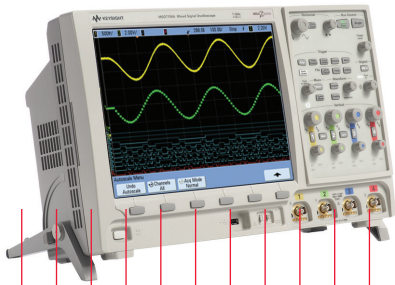
Introduction

Increase your team's productivity and equipment usage

– View and analyze acquired data when the oscilloscope or logic analyzer that acquired it is no longer available
– Share the entire data capture with local and geographically dispersed team members
– Gain instant insight into your target's operation and quickly identify the root cause of your debug problems with multiple analysis and viewing tools
– Enable others to make additional measurements with the acquisition hardware
– Take advantage of an efficient method for data storage, retrieval and sharing

The B4610A data import tool lets you view and analyze data from

– Keysight Technologies, Inc. 16900, 16800, 1680 and 1690 Series logic analyzers
– Keysight InfiniiVision 5000, 6000, and 7000 Series oscilloscopes
– Data files created in a compatible CSV format from EDA or other tools.

A quick tour of the application

Once you receive the B4610A data import tool, you can install the free offline viewer on a PC and quickly view and analyze your saved data in just a few simple steps. Thereafter, simply import new data files for viewing. This example goes through the steps for importing data captured from a Keysight InfiniiVision MSO 7000 Series oscilloscope into the offline viewer.
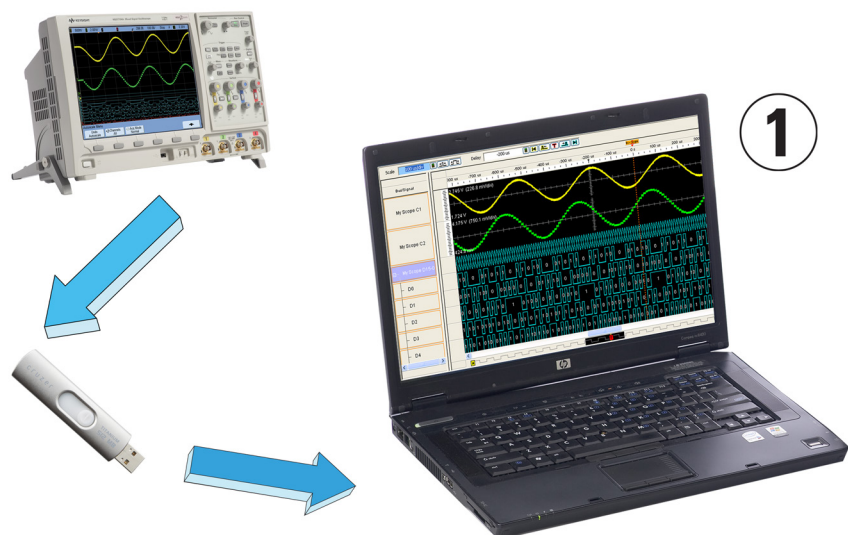

Figure 1. The B4610A data import tool can be used with all InfiniiVision scopes, including the 7000 Series, for advanced offline analysis

Step 1. Install the free offline viewer software on your PC and enable the B4610A license

The B4610A is shipped with a CD that includes the free offline viewer software. You can also download the free viewer from www.keysight.com/find/la-sw-download Follow the instructions on your entitlement certificate to redeem and enable the purchased B4610A license.
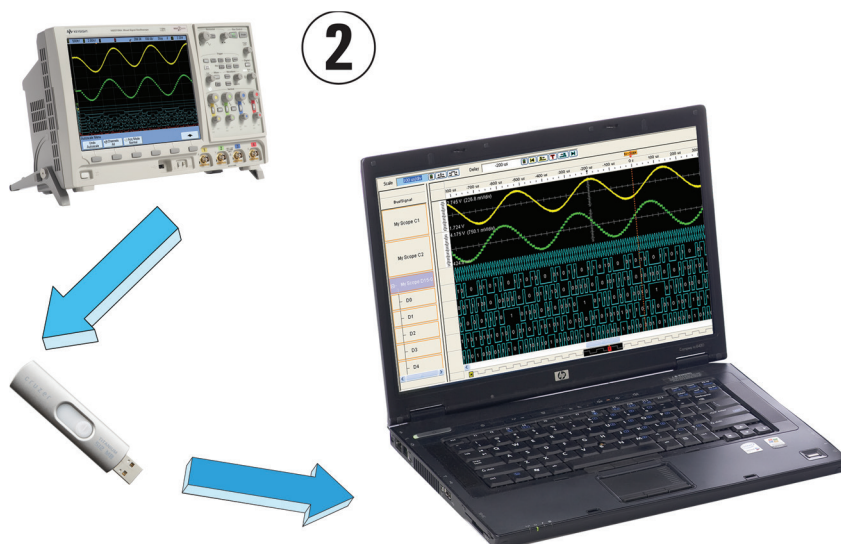
Step 2. Acquire, save and transfer the data via a USB drive to the PC with the offline viewer

For this oscilloscope example, the B4610A data import tool enables you to import InfiniiVision [5000, 6000, or 7000] Series DSO/MSO oscilloscope data that you save to a thumb drive in .alb format.

1. Acquire a trace with your InfiniiVision DSO/MSO oscilloscope
2. Save the data in the ALB format
   – Insert a USB thumb drive into a USB port of the oscilloscope
   – Press the Save/Recall key on the front panel of the scope
   – Press Formats from the menu below the screen
   – Select ALB data file from the format menu
   – Press Save. This will save the file onto the USB drive you plugged into the scope.
3. Transfer the data from your oscilloscope via a USB drive to your PC to view and analyze the entire deep-memory record.
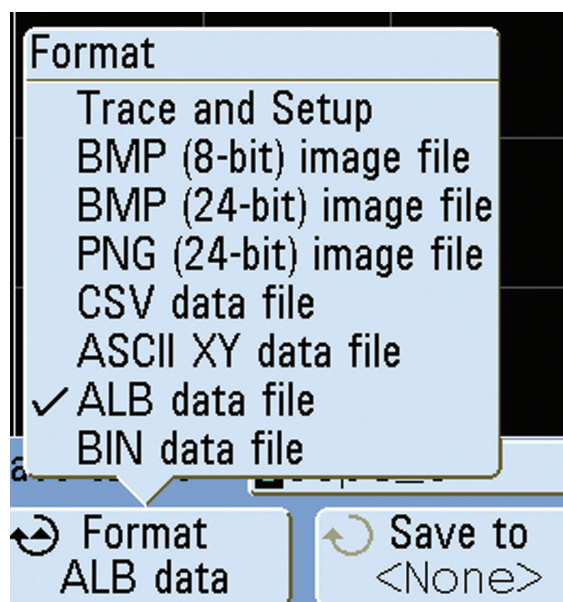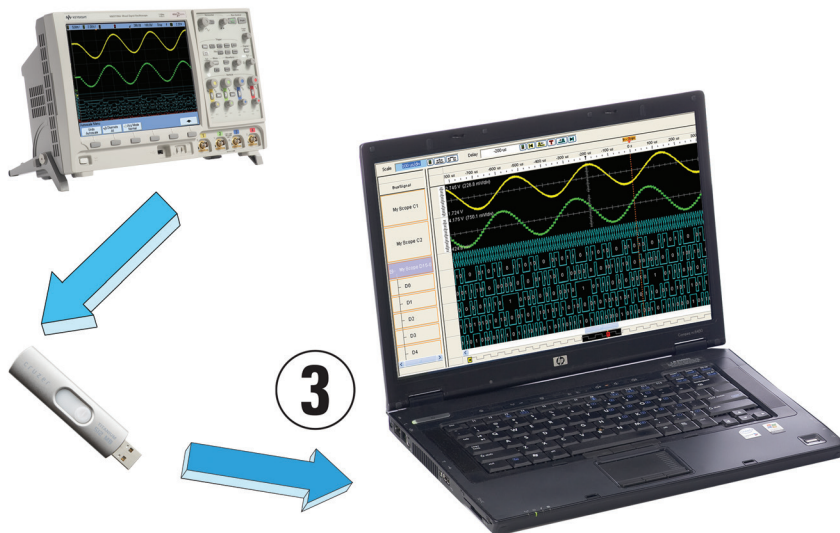

Figure 2. Save acquired data from any InfiniiVision scope to a USB drive using .ALB Format

Step 3. Start the offline viewer and import the acquired or created data for viewing and analysis.

To start the off line viewer select start --> all programs --> Keysight logic analyzer --> Keysight logic analyzer
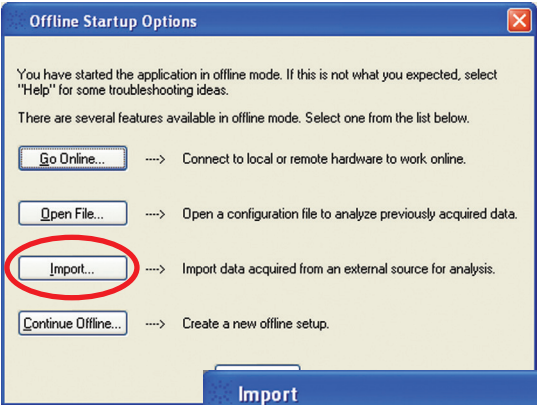
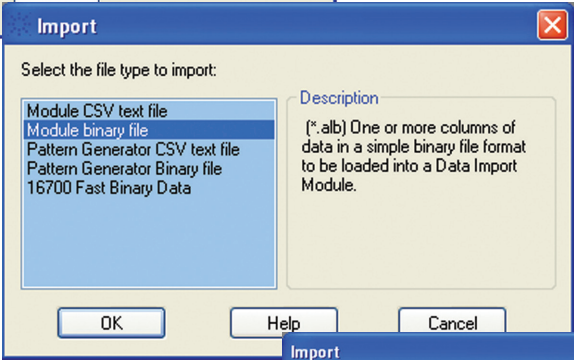Figure 3. Select "Import..." from the Offline Startup Options dialog

Figure 4. Select the appropriate module file type for data import. Select "Module binary file" for InfiniiVision oscilloscopes
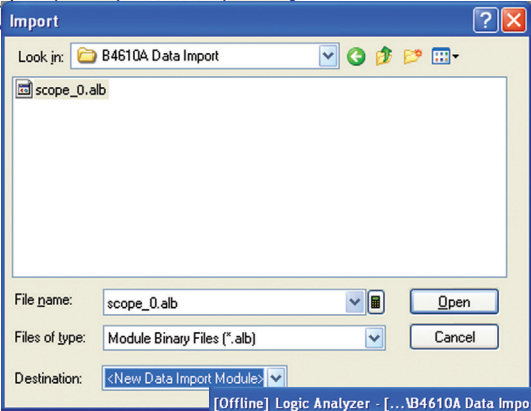

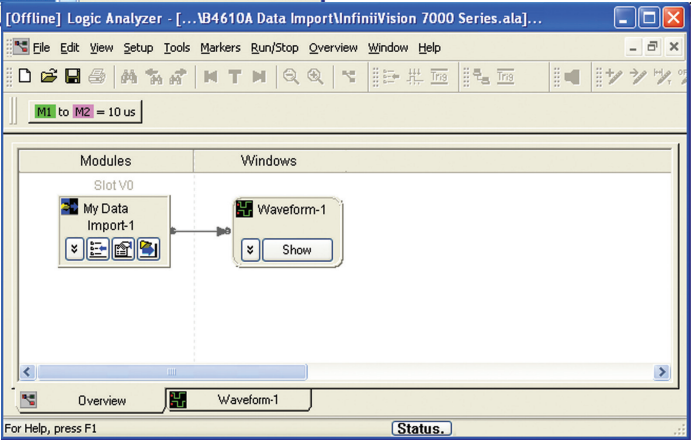Figure 5. Import the .ALB file previously saved in step 2

Figure 6. Once the data is imported a new data import module is created on the overview tab

Gain rapid insight from display and analysis tools

Once you have imported your data you can add disply and analysis tools to get rapid insight and solve problems.

– With the Waveform/Chart Display you can:
  – Validate correct hardware operation by viewing timing relationships between multiple buses and signals, including analog and digital signals from a Keysight InfiniiVision oscilloscope.
  – Group signals into an unlimited number of buses.
  – Re-order signals/buses to group related signals or place signals of interest next to each other.
  – Individually color and size the signals/buses to highlight and differentiate areas of interest.
  – View data in a format you understand—binary, hex, decimal, ASCII, or user-defined symbols.
  – Compare signals/buses directly with the Overlay feature. The ability to overlay waveforms can be useful when you are looking for problems concering the relationship between digital and analog signals.
  – Graphically validate digitized signals to and from A/D converters by charting the values of a bus over time.
  – Display a bus or signal using meaningful names (symbols) rather than numeric values.
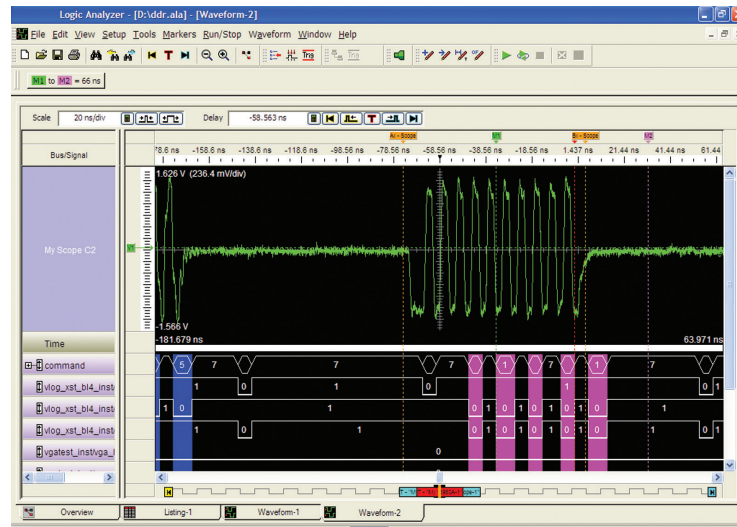

Figure 7. Simultaneously view time-correlated analog and digital waveforms on your PC screen
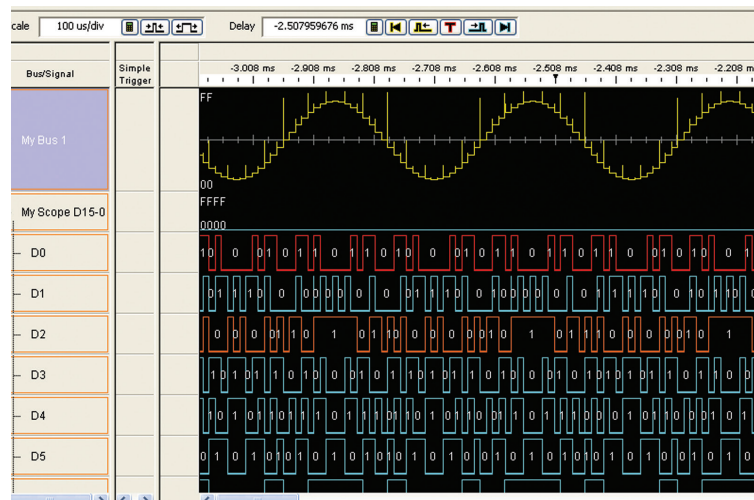

Figure 8. Chart mode for A/D or DSP design verification

Easily make measurements and mark areas of interest with time and voltage markers

– Track down tough problems and accurately place markers to make critical timing and voltage measurements.
– Designate the same point in time throughout every display with up to 1,024 time-correlated markers.
– Mark and navigate to points of interest with individually colored, named and annotated markers.
– Make quick, precise measurements on digital signals with snap-to-edge marker placement.
– Receive instant feedback on the exact position of the display data relative to the entire trace.
– Track a symptom on one bus to its cause on another bus or signal using time-correlated global markers.
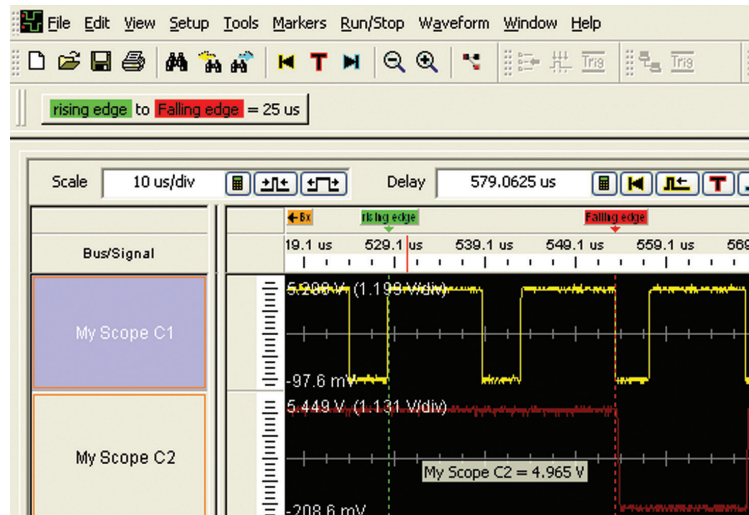
Figure 9. Use markers to measure the time between the rising edge and falling edge on a signal of interest

Quickly navigate through deep traces to find the data of interest

– Draw a box to zoom in and out to get just the view you want.
– Scroll rapidly through the measurement using the scroll bars.
– Traverse the trace quickly using beginning, trigger and end icons.
– Receive instant feedback on the exact position of the display data relative to the entire trace.

Find meaning in the most complex data with Find and Filter tools

- The Find tool allows you to quickly search for specific bus/signal patterns in deep traces.
- Focus on just the information you need. Filter uninteresting data such as idle states from deep, complex acquisition traces.
- Perform multiple analysis scenarios without re-acquiring data when you're not sure what you're looking for.
- Gain quick insight into the frequency of an event. Scroll through the trace with the filter tool's color highlighting enabled.
- Save time performing your favorite analysis scenarios. Store, recall and share your favorite search/ filter conditions, each individually named for easy recognition.
- Locate the next occurrence of a given event in the trace by simply drawing a box around the event of interest.
- The Filter tool lets you show or suppress events, based on criteria such as the cycle type or chip select. You can also display each type of event in a different color.

Figure 10. Gain quick insights into event frequency throughout a trace by using the color selection in the Filter tool. Advanced filtering capabilities of data record. Shown here is a data write value of D5 on My Bus 1 and voltage level range of 2 to 2.5 V.

Other display and analysis tools

Listing	Displays data patterns and sequences of events in the same order they were captured and placed into memory.
Packet viewer	Displays summarized and detailed packet information simultaneously within two panes. The window is automatically customized for the protocol family being decoded. The upper packet summary pane displays decoded packets and fields. The lower pane contains tabs for viewing selected packet details, header, payload, and lane information.
Source correlation	Displays time-correlated source code and inverse assembly simultaneously in a split display. Requires access to source files via the LAN or instrument hard drive to provide source code correlation. Source correlation does not require any modification or recompilation of your source code.
VBA View	The VbaView window works with the integrated Microsoft® Visual Basic for Applications (VBA) to provide custom data visualization charts. VBA View is a licensed feature that requires purchase of the B4606A advanced customization environment.

The offline viewer also supports additional analysis tools for data captured with a logic analyzer. Refer to the 16800 (5989-5063EN) or 16900 Series logic analyzer (5989-0421EN) data sheets for more information.

B4610A characteristics

When used with a logic analyzer or a file generated in a compatible CSV format

Logic analyzer compatibility	Keysight 16900, 16800, 1680, or 1690 Series logic analyzers with software version 3.70 or higher.
Supported data to import file formats	The data import tool reads data from module CSV or module binary (ALB) files and makes it available analysis tools and display windows. Module CSV or module binary (ALB) files can be: – Created by external tools – Created by instruments like Keysight 16900, 16800, 1680 or 1690 Series logic analyzers – Saved from any logic analyzer module using the main menu's File>Export... command
Supported saved file formats	Data import modules (and import file names) are saved with logic analyzer configurations (both ALA and XML format). If a configuration is saved "with data" and then opened again, the import module's data is present, and is not re-read from the import file. If a configuration is saved "without data" (setup only) and opened again, the data import module file must re-read the import file
Data sharing	Once the data has been imported using the B4610A and saved as a .ala file, the .ala file can be shared with any number of other users who have downloaded the offline viewer without the need for additional B4610A licenses.
Requires	Keysight logic analyzer application software version 3.70 or higher. The software is included with the B4610A data import tool or it can be downloaded from www.keysight.com/find/la-sw-download

When used with an InfiniiVision oscilloscope

Oscilloscope compatibility	Keysight InfiniiVision 5000, 6000 and 7000 Series oscilloscopes with software version 5.0 or higher.
Data import file format	InfiniiVision oscilloscopes create module binary (ALB) files compatible with the B4610A data import tool. The traces viewed are single-shot measurements.
Supported saved file formats	Data import modules (and import file names) are saved in an ALA configuration. If a .ala configuration is saved "with data" and then opened again, the import module's data is present, and is not re-read from the import file. If a configuration is saved "without data" (setup only) and opened again, the data import module with must re-read the import file
Data sharing	Once the data has been imported using the B4610A and saved as a .ala file, the .ala file can be shared any number of other users who have downloaded the offline viewer without the need for additional B4610A licenses.
Requires	Keysight logic analyzer application software version 3.70 or higher. The software is included with the B4610A data import tool or it can be downloaded from www.keysight.com/find/la-sw-download

Ordering information

Ordering options for the Keysight B46104 data import tool

The B4610A creates data import modules. Data import modules are a licensed feature. You can use data import modules without a license, but the amount of data that can be imported is limited to 16 rows (states). When ordering the B4610A you are required to select one of the following licensing options.

B4610A-010	Perpetual node-locked license
	B4610A-010 provides a perpetual node-locked license that is locked to a specific PC. The user can create an unlimited number of data import modules on the Overview tab. Each data import module can import a different .alb file. Includes entitlement certificate and CD with application software
B4610A-020	Perpetual server (floating) license
	The B4610A-020 provides a perpetual server (floating) license that is locked to a license server. The PC with the free offline viewer checks out a license from the license server. Each floating license enables the user to create a single data import module on the Overview tab. The data import module can import one .alb file at a time. Includes entitlement certificate and CD with application software

For the most up-to-date and complete application and product information, please visit our web site at:
www.keysight.com/find/logic-sw-apps
or
www.keysight.com/find/InfiniiVisionoffline

Related literature

Publication title	Publication type	Publication number
Keysight 16900 Series Logic Analysis System Mainframes	Data sheet	5989-0421EN
Keysight 16800 Series Portable Logic Analyzers	Data sheet	5989-5063EN
Keysight InfiniiVision 7000 Series Oscilloscopes	Data sheet	5989-7736EN
Keysight InfiniiVision 6000 Series Oscilloscopes	Data sheet	5989-2000EN
Keysight InfiniiVision 5000 Series Portable Oscilloscopes	Data sheet	5989-6110EN

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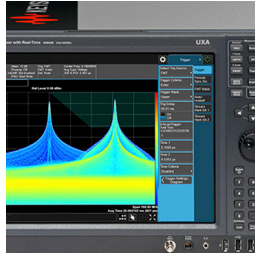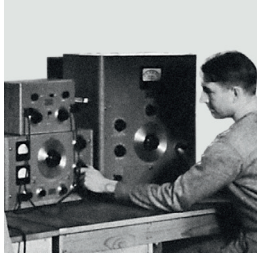
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