Keysight Technologies
SVID Protocol Triggering and Decode for Infiniium Series Oscilloscopes

Data Sheet

![Keysight Technologies logo] **KEYSIGHT** TECHNOLOGIES
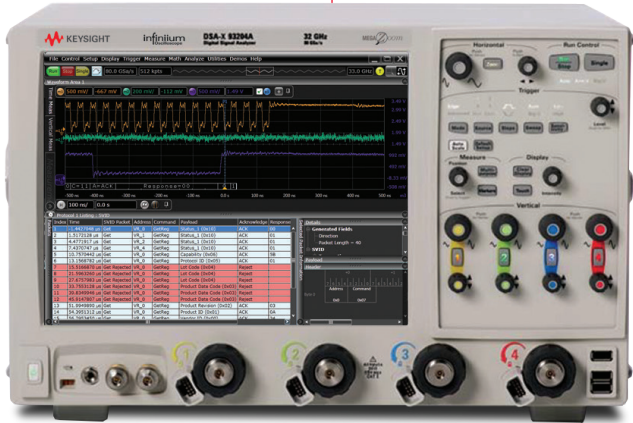
This application is available in the following license variations.

– Order N8812A for a user-installed license
– Order option 046 for a factory-installed license with new 9000 Series oscilloscopes
– Order option 056 for a factory-installed license with 90000 or 90000 X Series oscilloscopes
– Order N5435A option 054 for a server-based license that works on both 9000, 90000 and 90000 X Series oscilloscopes

SVID

SerialVID is a three wire (clock, data, alert) serial synchronous interface used to transfer power management information between a master (typically a microprocessor) and a slave (typically a voltage regulator controller). The bus will operate at a maximum frequency of 26.25 MHz. Since these protocols transfer bits serially, using a traditional oscilloscope has limitations. Manually converting captured 1's and 0's to protocol requires significant effort, can't be done in real-time, and includes potential for human error. As well, traditional scope triggers are not sufficient for specifying protocol-level conditions.

Extend your scope capability with the Keysight Technologies, Inc. SVID triggering and decode application. This application makes it easy to debug and test designs that include SVID buses using your Infiniium Series oscilloscope.

– Set up your scope to show SVID protocol decode in less than 30 seconds.
– Get access to a rich set of integrated protocol-level (Protocol trigger capability available with the 9000 series oscilloscope).
– Save time and eliminate errors by viewing packets at the protocol level.
– Use time-correlated views to quickly troubleshoot serial protocol problems back to their timing or signal integrity root cause.

Easy to find

Turn decode on/off via the "Serial Decode" button on the front of 9000 Series scopes or in the "Setup" menu. View decode embedded on the waveform display or in the protocol viewer listing window.

30 second SVID setup

Configure your oscilloscope to display protocol decode in under 30 seconds. Use "Auto Setup" to automatically configure sample rate, memory depth, threshold and trigger levels for SVID.
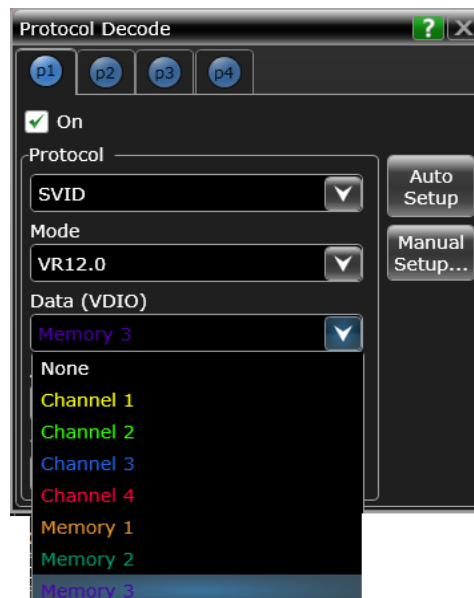
Support for both live and saved waveforms

Perform and view decode information on both live and saved waveforms. Decode up to any combination of 4 live or saved waveforms.

SVID setup, protocol triggering, and search capabilities

Get access to a rich set of integrated protocol level triggers. The application includes a suite of configurable protocol level trigger conditions specific to SVID. When serial triggering is selected, the application enables special real-time triggering hardware inside the scope. Hardware-based triggering ensures that the scope never misses a trigger event when armed. This hardware takes signals acquired using either scope or digital channels and reconstructs protocol frames. It then inspects these protocol frames against specified protocol-level trigger conditions and triggers when the condition is met.

SVID trigger and search setup

Quickly access the hardware-based trigger via the trigger or search menus. Hardware-based triggering enables quick setup of data, remote, or error frames.


Specify the type.

SVID Set, Get and other frames can be acquired.

SVID protocol decode

Keysight's SVID protocol viewer includes correlation between the waveforms and the selected packet. The selected packet, highlighted blue row in the listing, is time-correlated with the blue line in the waveform display. Move the blue tracking marker in time through waveforms and the blue bar will automatically track in the packets window. Or, scroll through the packet viewer and highlight a specific packet. The time-correlation tracking marker will move to the associated point in the waveform.

Quickly move between physical and protocol layer information using the time-correlated tracing marker. Display protocol content using embedded decode in the waveform area, Or, see protocol events in a compact listing format. View the decode information in symbols or packets type.
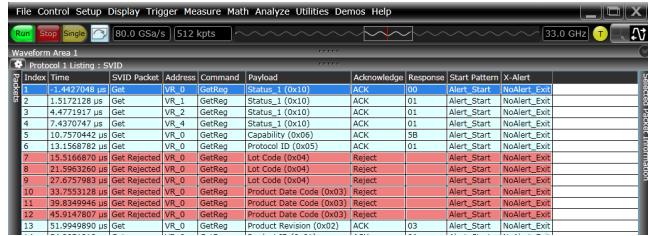
Compact protocol using the full screen listing.

The protocol viewer window shows the index number, time stamp value identifier, packet type, and data values for each SVID packet. Data in the listing window can be saved to a .csv or .txt file for   off-line.

SVID decode embedded in waveform area

Utilize the oscilloscope waveform area to display decode information. Minor ticks indicate clock transitions and major ticks show segments within each SVID packet.

SVID application specifications and characteristics

SVID sources	Analog channels 1, 2, 3, or 4 MSO models can additionally use digital channels D0 to D15 any waveform memory
Maximum frequency	Any waveform memories The application relies on probing and trigger/measurement thresholds to properly condition the signal for triggering and decode.
Signal type	Single ended
Auto setup	Automatically configures scope settings for proper SVID decode and SW-based protocol triggering including memory depth, edge triggering, holdoff, sample rate, and measurement thresholds
Decoded fields	All including extended frame format
Triggering (hardware-based)	Packet Types Set Get Set Rejected Get Rejected Errors

Recommended oscilloscopes

The SVID protocol triggering and decode software is compatible with Keysight Infiniium Series oscilloscopes with operating software revision 4.20 or higher. For oscilloscopes with earlier revisions, free upgrade software is available here: **www.keysight. com/find/scope-apps-sw**.

Data rate	Minimum bandwidth	Minimum channels	Compatible oscilloscopes
Up to 26.25 MHz	1 GHz	3	Infiniium 9000, 90000, S-Series and Z-Series

Ordering information

Software options

Application		License type	Infiniium Z-Series	Infiniium S-Series	Infiniium 90000 Series	Infiniium 9000 Series
SVID protocol	Fixed	Factory-installed	N8812A-1FP	N8812B-1FP	–	–
		User-installed	N8812A-1FP	N8812B-1FP	N8812A-1NL	N8812B-1NL
	Floating	Transportable	N8812A-1TP	N8812B-1TP	N8812A-1TP [1,2]	N8812B-1TP [1,2]
		Server-based			N5435A-054	

1. Requires software 5.00 and above.
2. Software 4.30 or above requires Windows 7. N2753A Infiniium Windows XP to 7 OS upgrade kit (oscilloscope already has M890 motherboard). N2754A Infiniium Windows XP to 7 OS and M890 motherboard upgrade kit (oscilloscope without M890 motherboard). Verify the M890 motherboard using the procedure found in the Windows 7 upgrade kit data sheet with the publication number 5990-8569EN.

Related literature

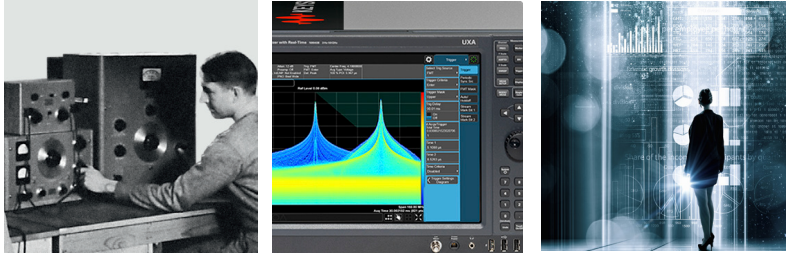| Publication title	Publication type	Publication number
Infiniium 9000 Series Oscilloscopes	Data sheet	5990-3746EN
Infiniium 90000 Series Oscilloscopes	Data sheet	5989-7819EN
Infiniium 90000 X-Series Oscilloscopes	Data sheet	5990-5271EN
Infiniium S-Series Oscilloscopes	Data sheet	5991-3904EN
Infiniium Z-Series Oscilloscopes	Data sheet	5991-3868EN
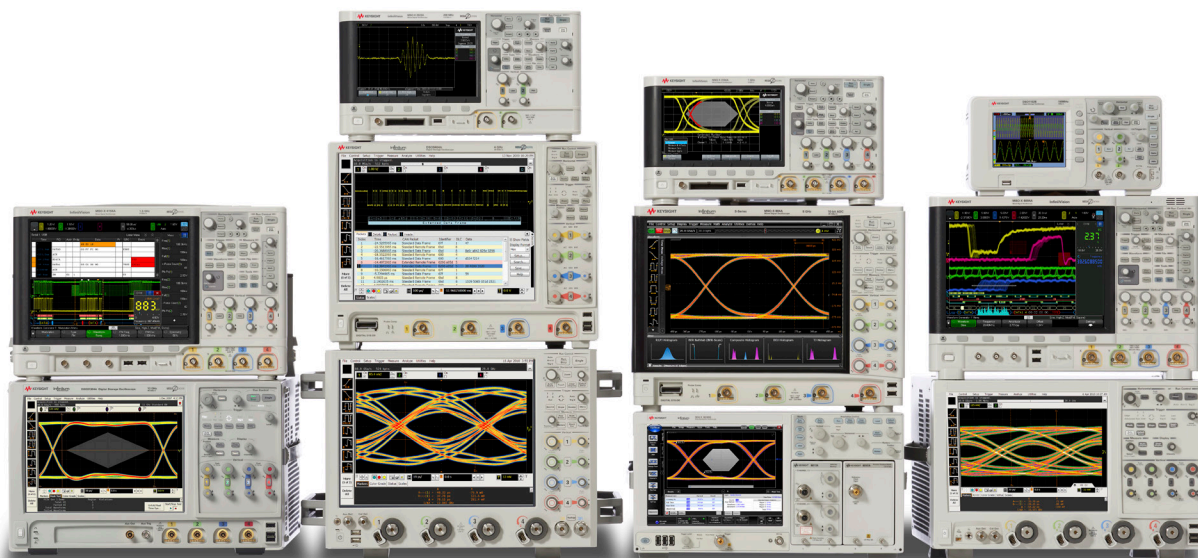
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