Oscilloscope Experience Redeined ~ Experience the Speed, Usability, and Integration

InfiniiVision 4000 X-Series provides three convenient ways to access menus and setups of the oscilloscope: capacitive touch operation, front panel operation, and pull down operation.

Experience the usability: Getting familiarized with the capacitive touch interface on the InfiniiVision 4000 X-Series

1. Turn on your 4000 X-Series.
2. Push [Help] button then touch Auto Demo.
3. Connect channel 1 probe to demo 1 and channel 2 probe to demo 2 (shown in a diagram).
4. Touch Zone Trigger then Next.
5. Touch Exit and try it for yourself. Draw a zone, then select “Zone 1: Must Intersect”. This is the InfiniiScan Zone touch trigger.
6. Touch Blue Box of the side bar and then select “Measurements.”
7. Touch '+' to add measurements. Slide the scroll bar up and double touch “Maximum.”
8. Touch channel 1 vertical setting values next to yellow channel “1” icon. Touch Channel 1 Offset number. Note, a numeric pad comes up. Touch [1] and [Enter] to enter 1V offset.
9. Touch the Arrow pull down in the upper left corner for a pull down menu. You have full control via this menu. Touch Default Setup to bring the scope back to its default setup. You can now touch and drag this annotation around on the display.

InfiniiVision 4000 X-Series Keysight Technologies, Inc. and partner demonstration units have a built-in Auto Demo to illustrate their compelling features and benefits.

1. Push [Help] button then touch Auto Demo.
2. Auto Demo provides following quick demonstrations:
   - Update Rate – demonstrate the power of 1-million-waveforms-per-second update rate.
   - Zone Trigger – the new InfiniiScan Zone touch trigger means if you can see it, you can trigger on it.
   - MSO – quick demo to show both analog and digital channels simultaneously.
   - Serial busses – shows trigger, decode, and lister example for a serial bus (USB 2.0 is the example).
   - Segmented Memory – shows how segmented memory captures selective signal detail over very long time periods.
   - WaveGen – quick tour of signals generated by dual-channel WaveGen, including differential signals.
Demo Guide

InfiniiVision 4000 X-Series provides industry leading 1-million-waveforms-per-second update rate, InfiniiScan Zone touch trigger, and standard segmented memory. See the oscilloscope experience redefined.

1-M-wfm/sec update rate

"If you can’t see the problem, you can’t fix the problem"

InfiniiScan Zone touch trigger

"If you can see it, you can trigger on it"

Standard segmented memory

"Smart and efficient way to capture waveforms"

A oscilloscope is first and foremost a signal visualization debug tool. Let’s “see” the anomalies that others miss.

1. Press [Default Setup].
2. Press [Help] then touch Auto Demo.
3. Connect probes as shown in the diagram. Close the connection diagram.
4. Touch Update Rate.
5. You are seeing one glitch signal in one million waveform cycles and how it compares to other scopes in the market.
6. Touch Exit.

With InfiniiScan Zone touch triggering, even complex triggering is now as easy as finding a signal and drawing a zone.

1. Draw an InfiniiScan Zone around the glitch signal. Select “Zone 1: Must Intersect.”
2. InfiniiScan Zone just triggered on a one-in-a-million waveform glitch.
3. Touch the Blue Box in the side bar, and select Cursors.
4. Drag X1 and X2 cursors to measure the width of the glitch (should be 40 ~ 50 ns).
5. Touch the Blue Box in the side bar, and select “Controls.” Now the control panel appears.
6. Press [Run/Stop] to stop the acquisition.
7. Press [Zone] button on the front panel to turn off InfiniiScan Zone.
8. Press Run/Stop to stop the acquisition.
9. Push the [Acquire] button and then touch Segmented at the bottom of the screen.
10. Touch # of Segs and type in “20” then [Enter].
11. Turn on segmented memory by touching Segmented toggle softkey (check box becomes blue).
12. Press [Run/Stop] to start the segment memory acquisition.
13. Touch the Blue Box in the sidebar and select “Navigate.”
14. Press the arrow to move to the next segment.
15. Notice the time tag shows 280 ms, revealing the next glitch occurred 280 ms after the first glitch.
16. Double touch Current Seg softkey at the bottom. Touch [Max] to go to the last segment.
17. You are now at the last segment. This glitch happened 5.3 seconds after the first glitch.
18. With the traditional memory architecture, you would need 27 Gpts of memory to capture the same time duration as a single-shot acquisition.

Only with 1 million waveforms per second are you guaranteed minimum acquisition dead-time. Now let’s trigger on the signal.

By isolating (triggering on) the glitch, you can characterize the entire waveform for the first time. What if you want to capture multiple glitches?

Segmented memory captures greater selective signal detail over very long time periods.

1. Touch the Trigger icon.
2. Touch Trigger Type and double touch Pulse Width at the bottom of the screen.
3. Double touch < softkey and type in “60” and “n.”
4. Press [Run/Stop] to start the acquisition.
5. You will see multiple signals. The scope is auto triggering to other signals, since the glitch is extremely infrequently.
6. Touch Auto near the trigger icon in the top right of the display. This toggles the trigger mode from Auto to Normal.
7. Now the pulse width trigger is triggering on one-in-a-million glitches continuously.
8. Press Run/Stop to stop the acquisition.
9. Push the [Acquire] button and then touch Segmented at the bottom of the screen.
10. Touch # of Segs and type in “20” then [Enter].
11. Turn on segmented memory by touching Segmented toggle softkey (check box becomes blue).
12. Press [Run/Stop] to start the segment memory acquisition.
13. Touch the Blue Box in the sidebar and select “Navigate.”
14. Press the arrow to move to the next segment.
15. Notice the time tag shows 280 ms, revealing the next glitch occurred 280 ms after the first glitch.
16. Double touch Current Seg softkey at the bottom. Touch [Max] to go to the last segment.
17. You are now at the last segment. This glitch happened 5.3 seconds after the first glitch.
18. With the traditional memory architecture, you would need 27 Gpts of memory to capture the same time duration as a single-shot acquisition.

Segmented memory captures selective signal detail over very long time periods. You can turn your oscilloscope into an effective ultra-deep memory oscilloscope with standard Segmented Memory. In this example, if an oscilloscope without Segmented Memory were to characterize this glitch over 20 occurrences, it would require 27 Gpts of acquisition memory, which doesn’t exist in any oscilloscope on the market today.