



## Capturing a Burst of 91 Low Duty Cycle Pulses

By: Agilent Technologies

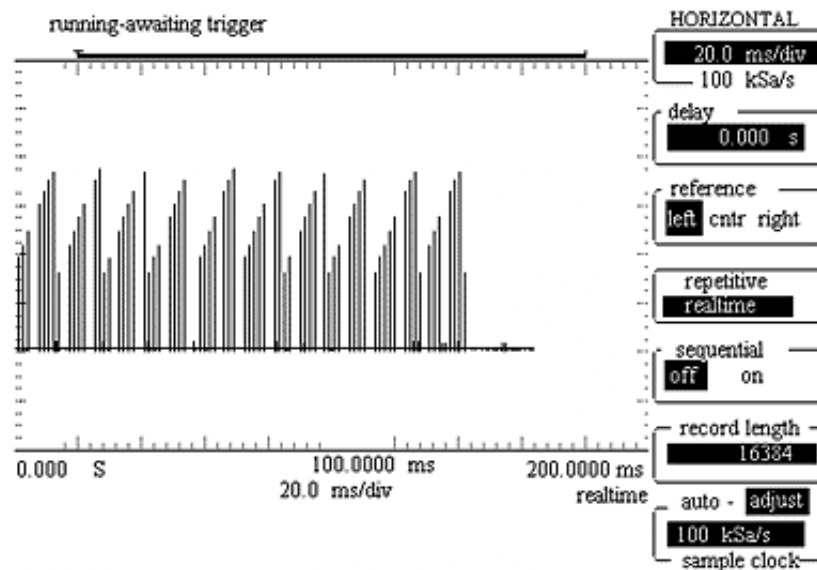
### Purpose:

In this hands-on exercise, you will learn how to use Sequential Single-shot to capture a burst of low duty cycle events with high resolution.

### Equipment:

- Agilent 54520-Series Oscilloscope
- Agilent 54720-66506 Application Training Board

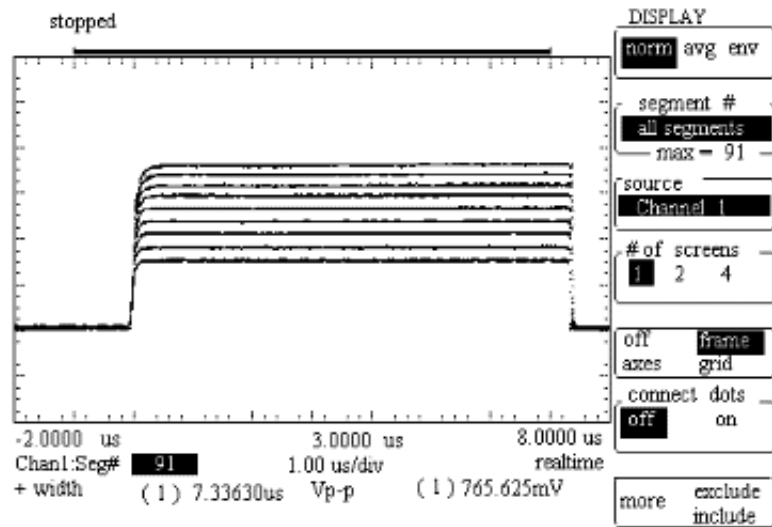
1. Using a 50 (Ohm) BNC cable, **connect J8** of the Agilent 54720-66506 training board to CH1 of the Agilent 54542A scope.
  - a. "Close" switch #1 on S1.
  - b. Set **VAR LFCK** fully **CCW**
2. Load the scope setup from the disk file.
  - a. Press the **[blue shift key]** and then press **[Disk]**.
  - b. Select the **load scope** soft key and then select **SET**.
  - c. Turn the general entry knob to select setup from file **[LAB3A1.SET]**.
  - d. Press **execute**.



3. Press the **SINGLE-SHOT/GLITCH** button on the training board.
4. Select the **HORIZONTAL** setup menu and make note of the present sample rate. \_\_\_\_\_ Notice that by using **peak detect** at this timebase and memory setting (16K on screen), the scope has captured just one point on each of the 91 pulses. Is this sufficient data for detail pulse analysis on each pulse?
5. Change the timebase to **1 ms/div** and then press the **SINGLE-SHOT/GLITCH** button once again to observe the low duty cycle nature of this pulse stream.



6. Load disk setup file **[LAB3A2.SET]** as described in step #2.
7. Select the **HORIZONTAL** setup menu and set **sequential** to **on**. The oscilloscope is now setup to capture 91 successive pulses at 50 MSA/s with a sample density of 500 points on each pulse.



8. Press the scope's **[Run]** key and then press the **SINGLE-SHOT/GLITCH** button on the training board.
9. Select the **[Display]** menu, press the **segment #** softkey, and then rotate the general entry knob to observe all 91 pulses individually and as a composite.
10. What is the precise time from the initial trigger (first pulse) to the 87th pulse?  
(Hint: The time tag of each segment is displayed below the waveform display area.)