Educator's Corner
Experiments

Search

Hewlett-Packard
Test & Measurement

HEWLETT
PACKARD

Finding The "Hidden" Pulse Stream

By: Hewlett-Packard Company

Purpose:

In this hands-on exercise, you will learn how to use the oscilloscope's Peak Detect acquisition mode to capture and view narrow pulses, while still viewing waveform activity on slow timebase ranges.

Equipment:

- HP 54520-Series Oscilloscope
- HP 54720-66506 Application Training board

1. Connect channel 1 to TP6 and ground to TP10 on the HP 54720-66506 Application Training Board.
   a. Close switch #2 and #4 on S1. All other switches should be open.
   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 **[LAB1A.SET]**.
   d. Press **execute**.

3. Adjust the **vertical sensitivity**, **position**, and **trigger level** for a properly scaled and triggered display

   What is the sample rate at the current timebase setting (sample rate is displayed in the **HORIZONTAL** setup menu)?
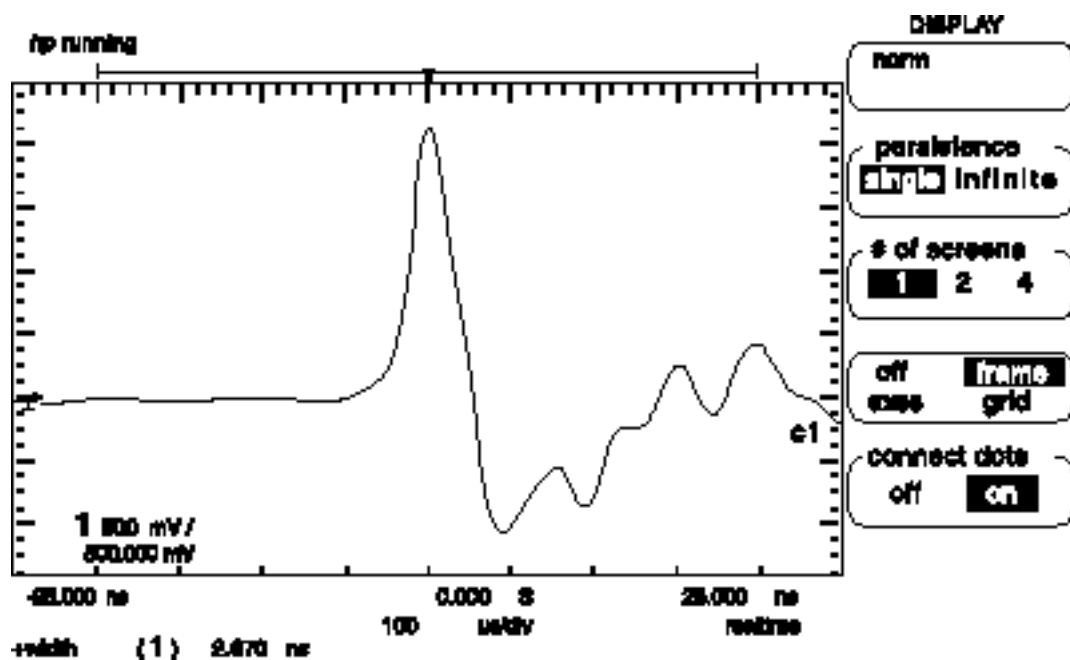
4. Using the automatic measurements, measure the width of this pulse: _____

5. While observing the display, change the **timebase** to **500 us/div**.   What happens to the display of this narrow pulse as you slow down the timebase? _____

6. Select the **HORIZONTAL** setup menu and note the sample rate: _____

7. What are the statistical odds of capturing a pulse this narrow at this sample rate on any random acquisition cycle? (Hint: Pulse Width/Sample Interval) _____

8. Select the **Peak Detect** mode in the **[Display]** menu. What are the odds of capturing the narrow repetitive pulses using 1 nanosecond peak detection? _____