Detecting Power-up Transients

By: Hewlett-Packard Company

Purpose:

In this hands-on exercise, you will use Peak Detect to capture single-shot transients during a power supply's power-up cycle.

Equipment:

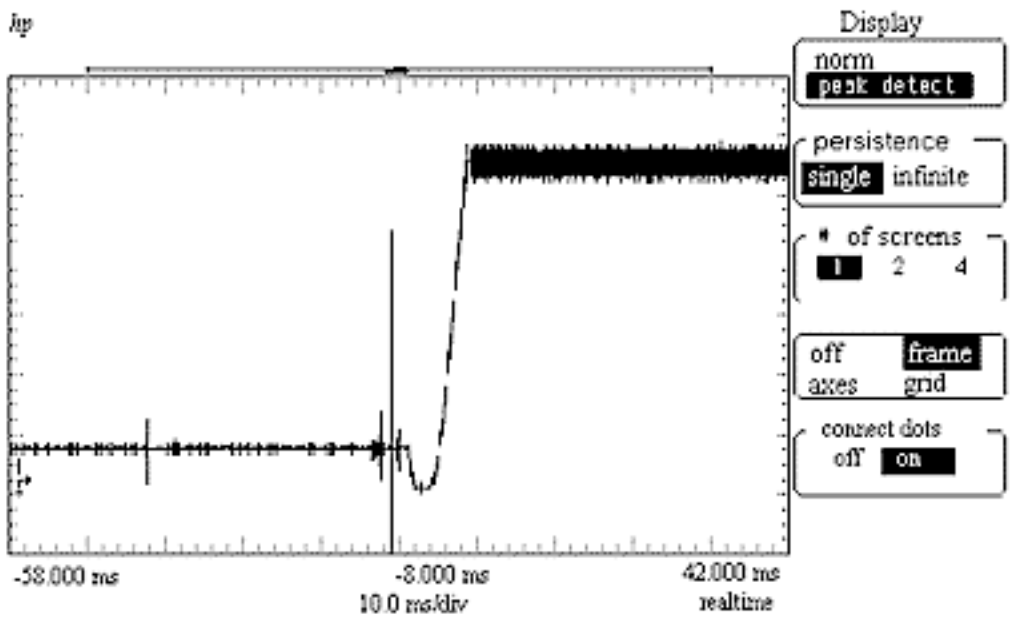
- HP 54520-Series Oscilloscope
- HP 54720-66506 Application Training board

1. Connect channel 1 to TP3 and ground to TP10 on the HP 54720-66506 Application Training Board.

2. Load the scope setup from the disk file.
   a. Press the **[blue shift key]** and then press **[Disk]**. the ***load scope*** soft key and then select ***SET***.
   c. Turn the general entry knob to select setup from file **[LAB1B.SET]**.
   d. Press ***execute***.

3. Press the **[Stop/Single]** key (display should read "stopped" in the upper left corner of screen).

4. Execute the following sequence of instructions:
   a. Disconnect the power cord from the demo board.
   b. Press **[Clear display]**.
   c. Press **[Stop/Single]** to setup a single acquisition upon trigger (display should read "running-awaiting trigger" in the upper left corner of screen).
   e. Rub your feet on the floor to collect some static electricity. (Note: This may not work too well in a humid climate.)
   f. Re-connect the power cord.



5. Observe the entire power-up cycle of this power supply by changing the ***HORIZONTAL TIMEBASE*** setting to compress more of the scope's acquisition memory on screen. Did the scope capture any power-up transients? _____

6. Return the timebase setting to ***2 ms/div***.

7. Press the **[Display]** menu key and select ***peak detect***.

8. Repeat steps #4 & #5. What differences do you observe with the ***peak detect*** mode engaged?