To: T10 Membership
From: WC Gintz for Adaptec
        Advanced Technology Group
Date: March 12, 1998 - San Diego, CA

Hot Plugging on U3 Busses
(Second Report)

Fig 1   Photograph of Backplane cabling and drives

Fig 2   Close up photo showing probes on Hot Plugged drive.

Fig 3   Schematic of Probes & two scope triggering

Fig 4   a) Single Hot Plug Event at fast sweep speed scope trace
        b) Same event triggering slow sweep scope trace

Fig 5   a) Multiple Hot Plug events at fast frame viewing
        b) First of multiple events triggering slow sweep scope traces.

Fig 6   a) Hot UN-plug events at fast sweep speed
        b) Same first event triggering slow speed triggering slow sweep.

Fig 7   a) Spice Simulation Schematic for Lossy 40ft differential cable
        b) Spice Schematic detail at "Victim" and "Hot Plug" locations.

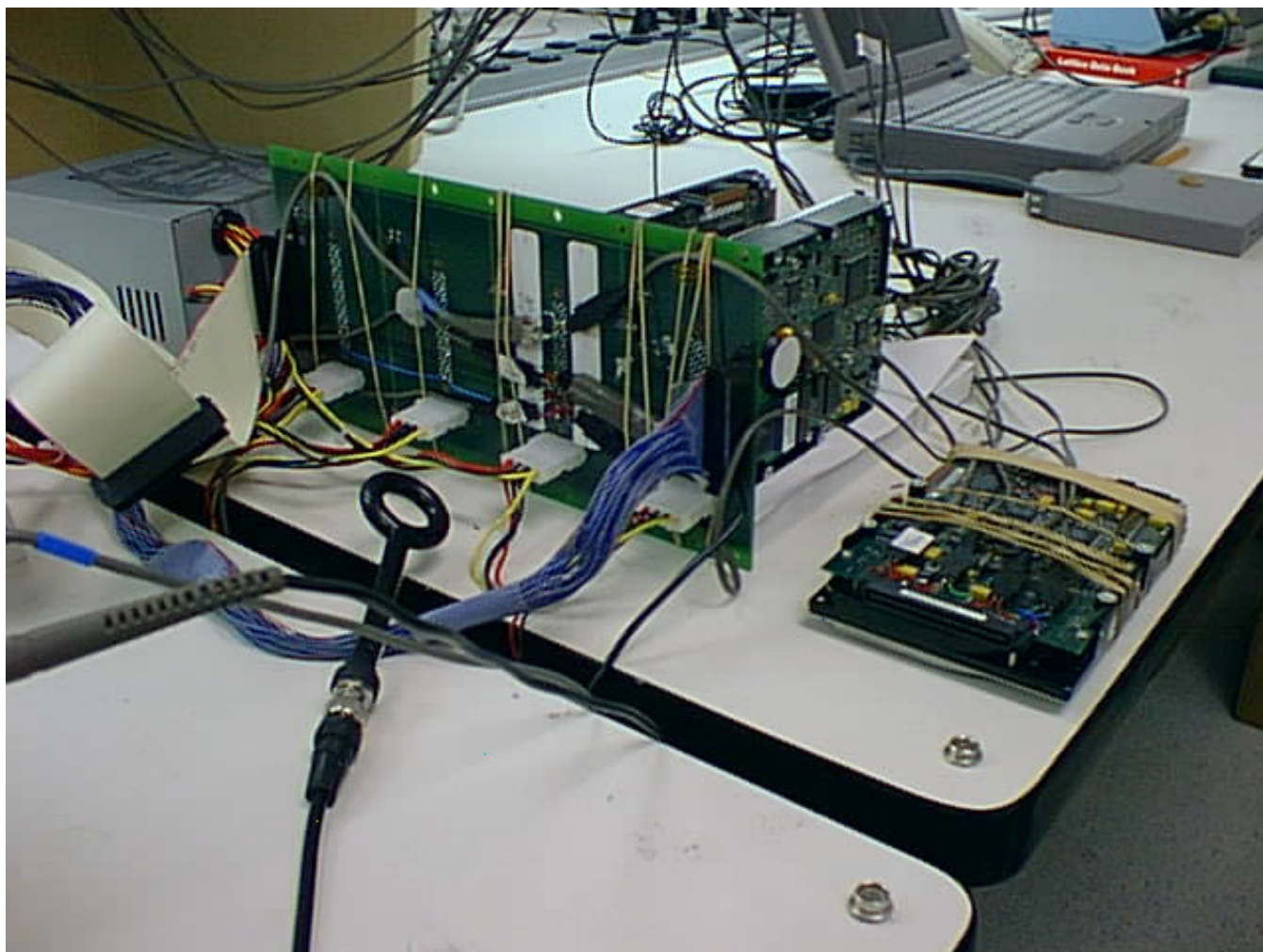Fig 8   Spice U3 Waveforms with Hot Plug noise injected.
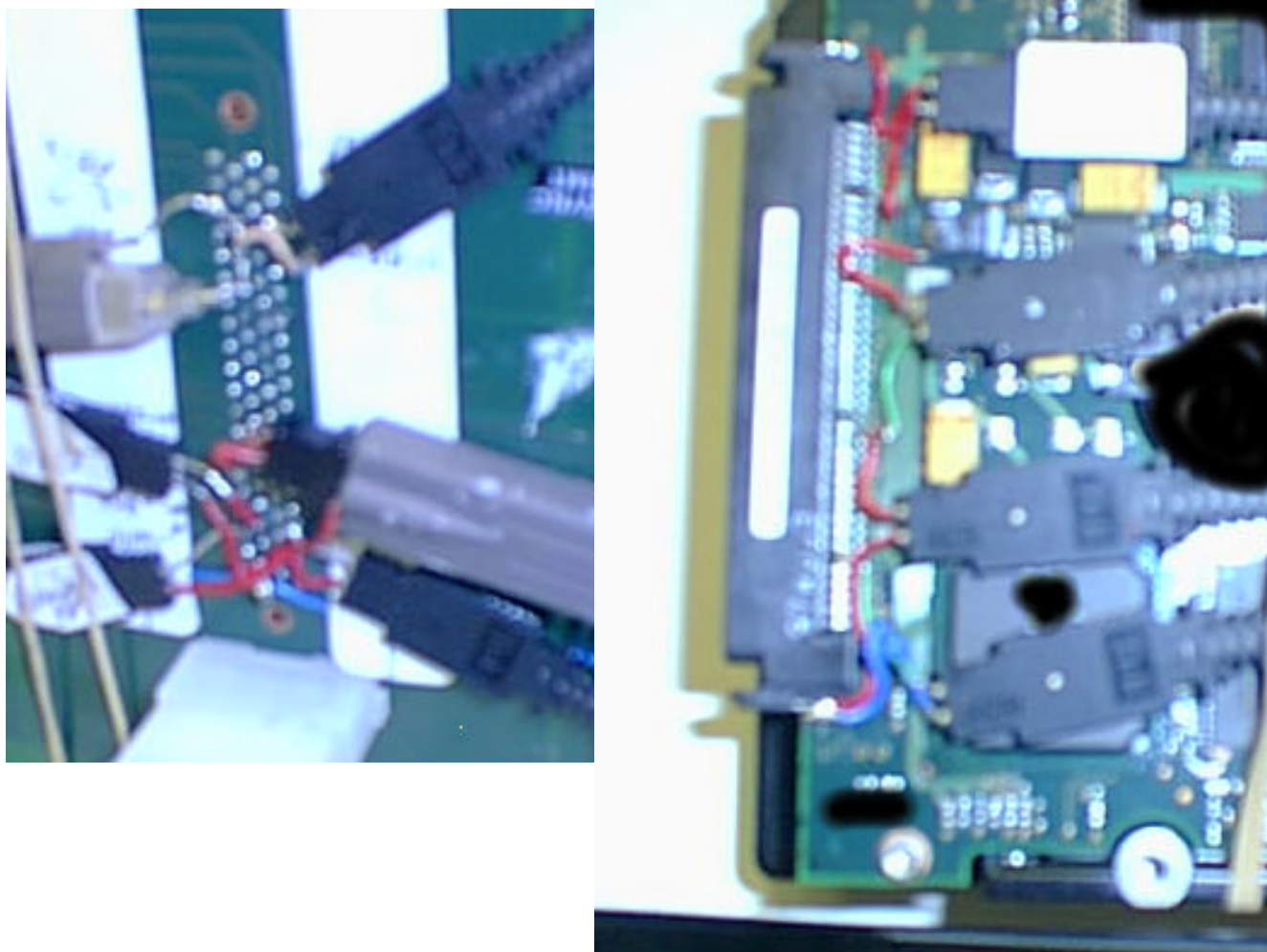
Figure 1 - Backplane cabling and drives

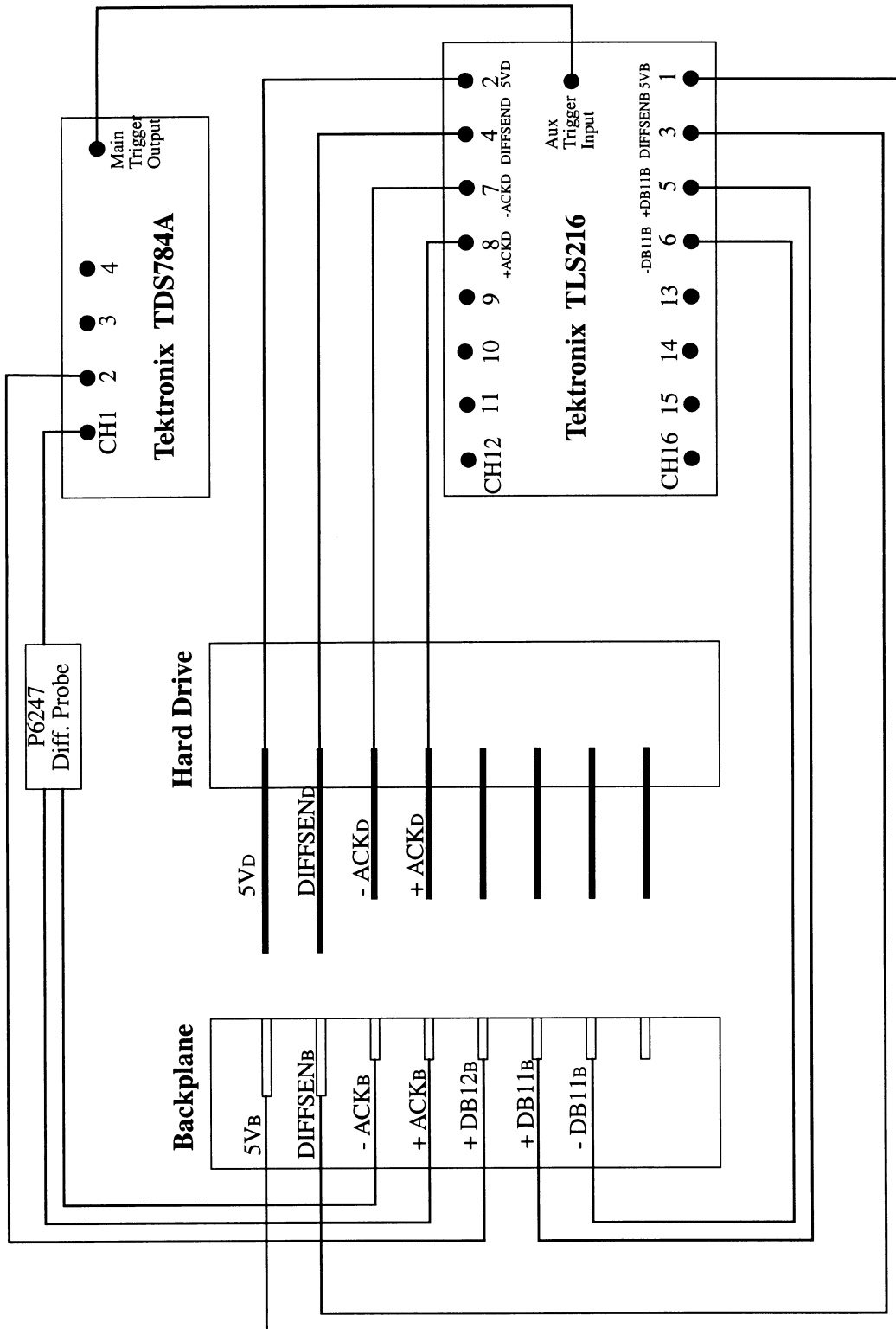Figure 2- Close up photo showing probes on Hot Plugged drive

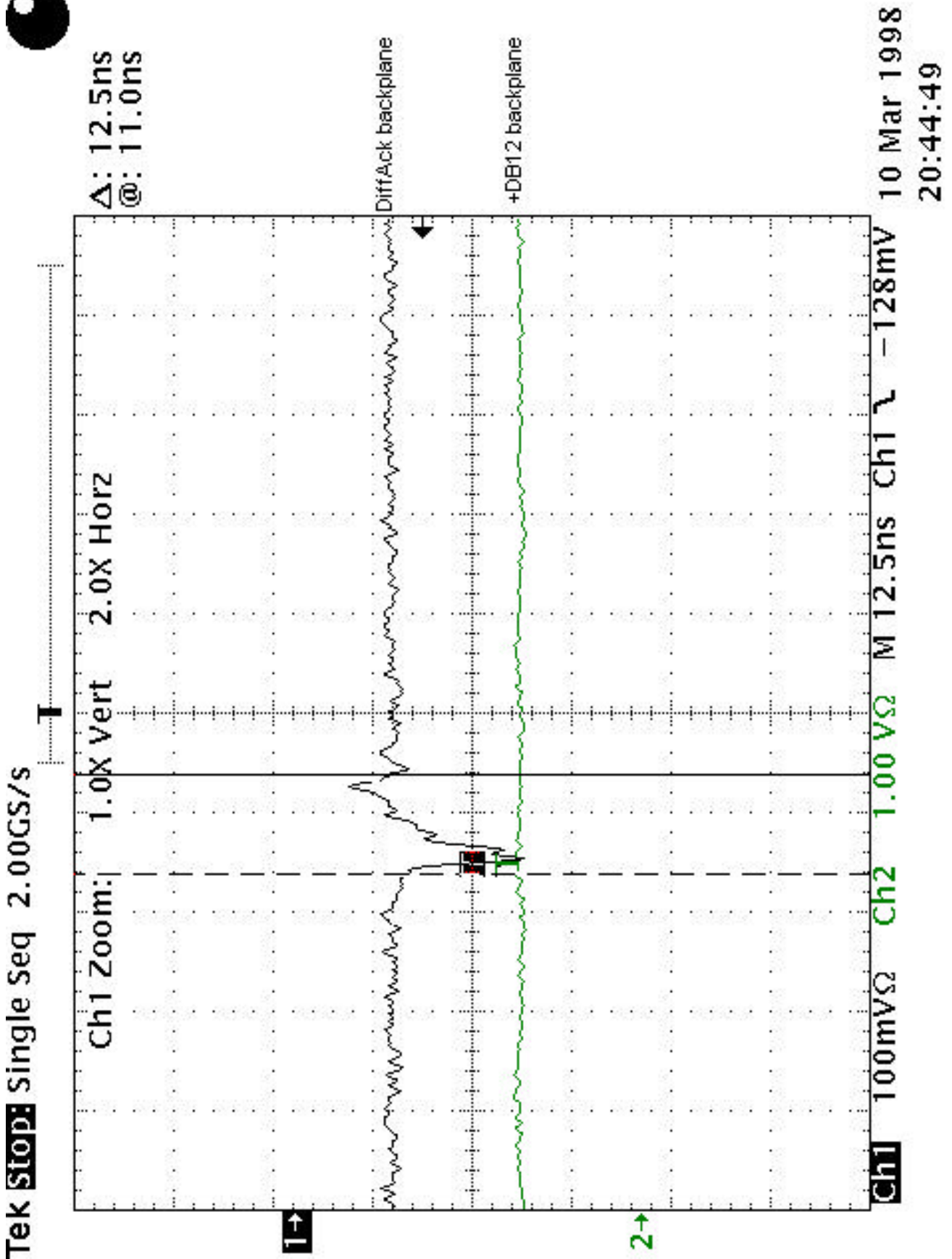Figure 3 - Schematic of Probes & two scope triggering

Figure 4a - Single-event hot-plug at fast sweep speed scope trace
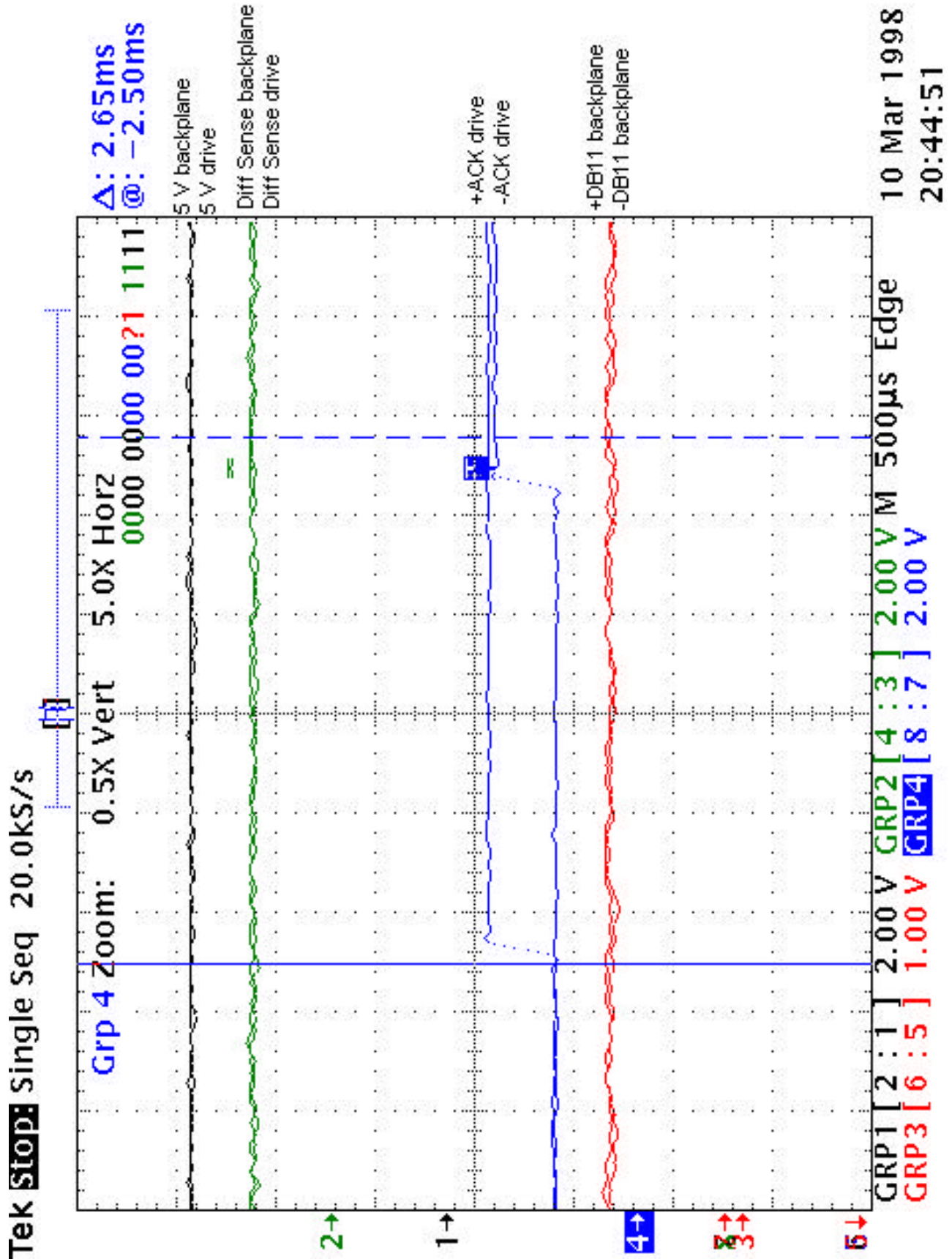
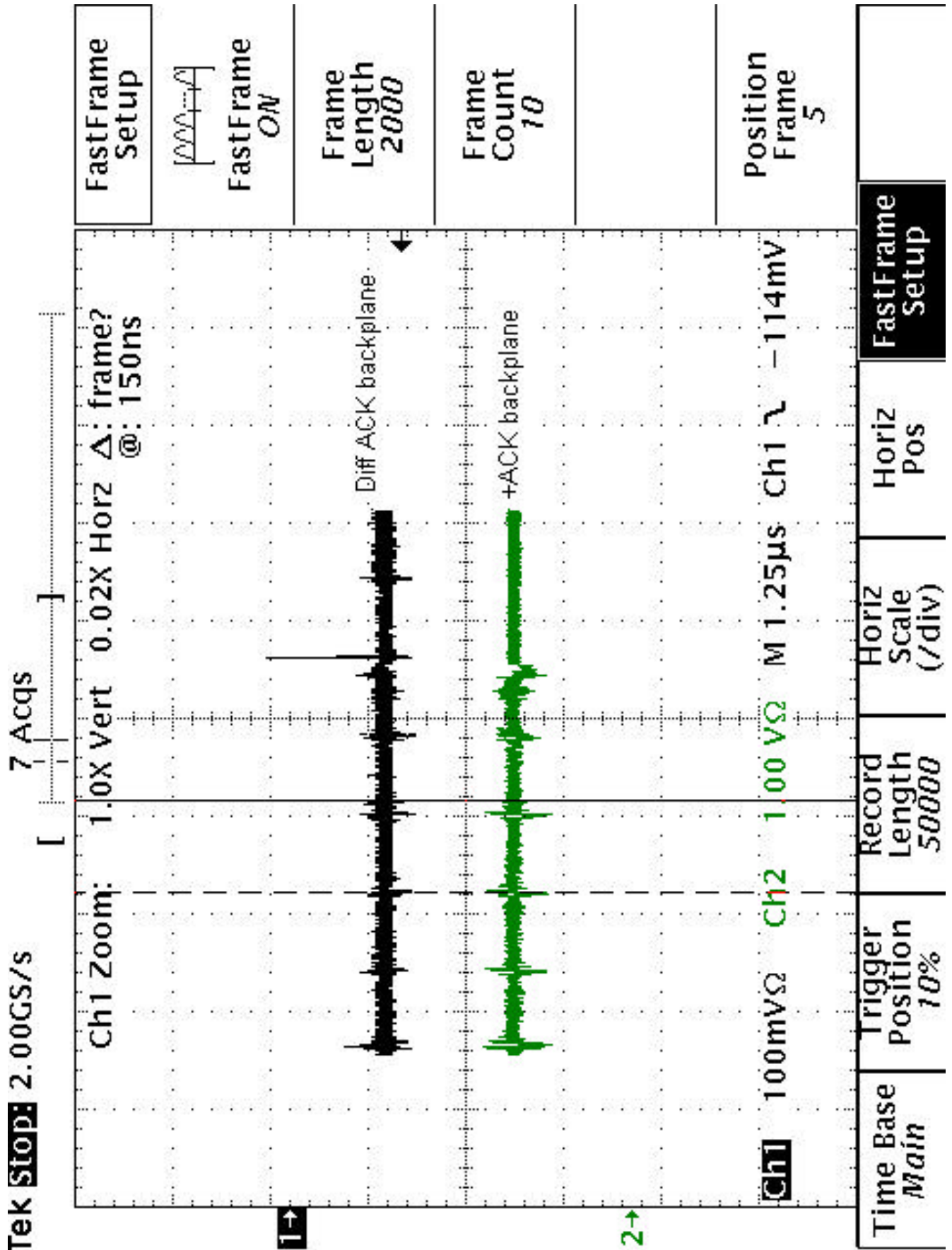Figure 4b - Same event triggering slow sweep scope trace

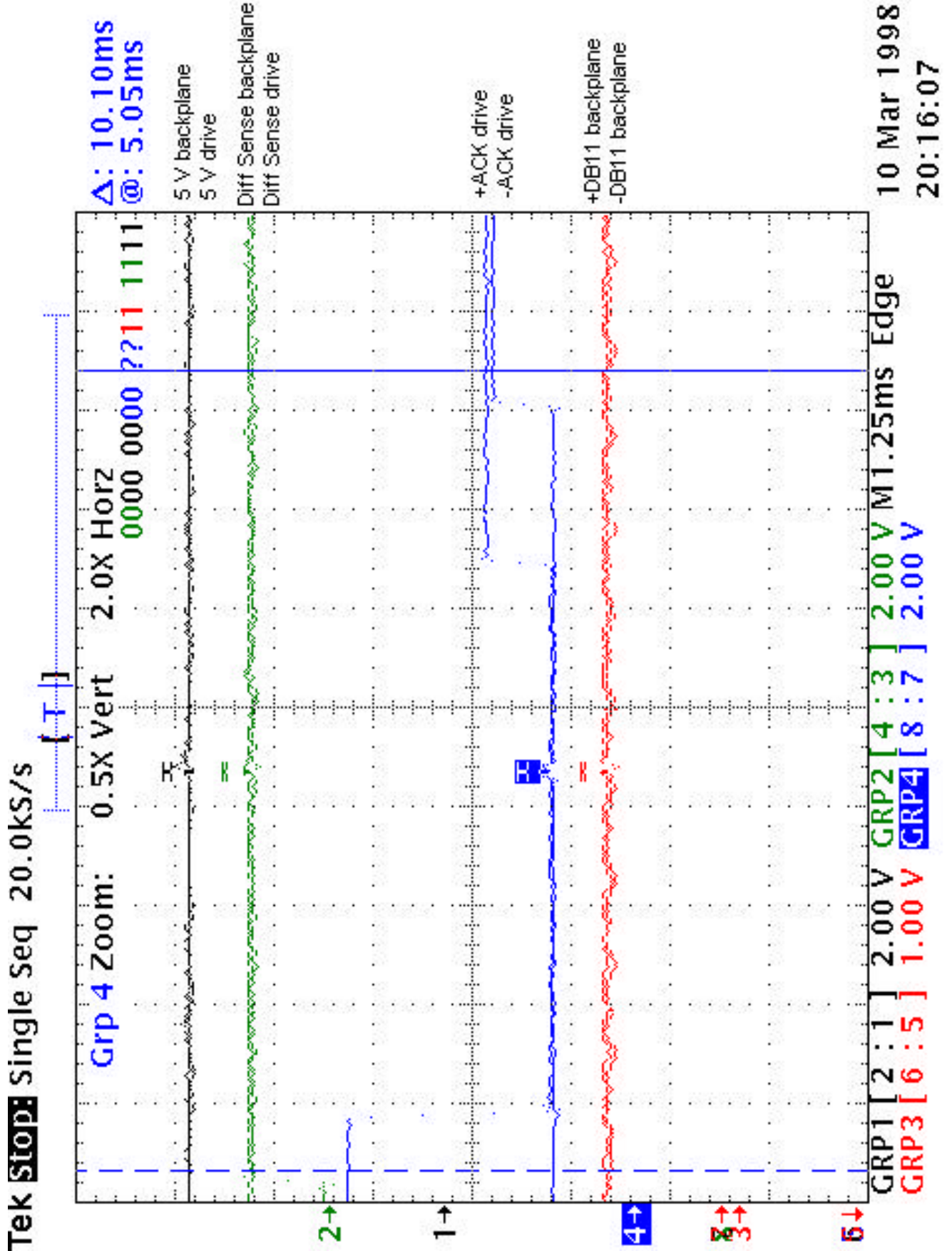Figure 5a - Multiple-event hot-plug at fast frame viewing

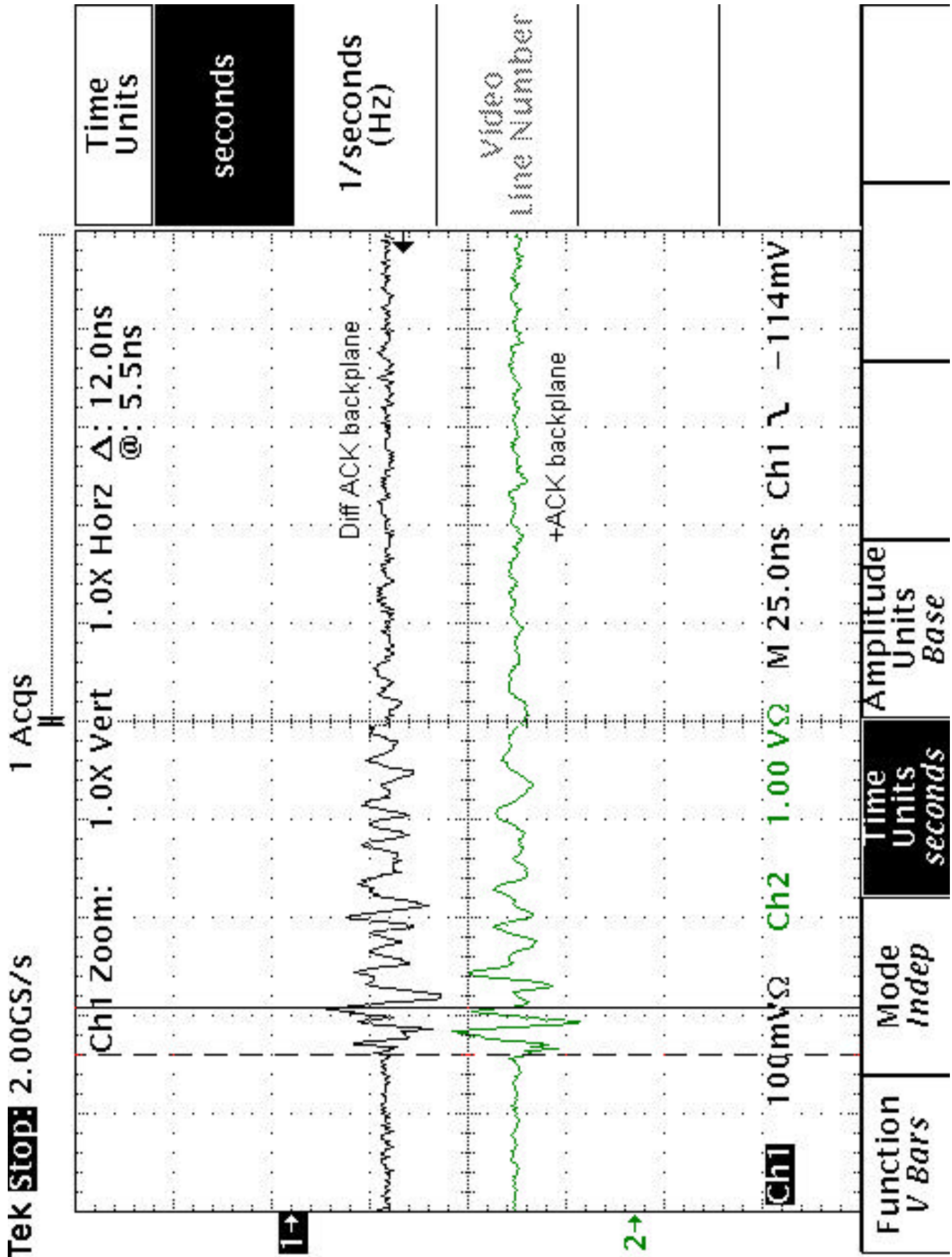Figure 5b - First of multiple events triggering slow sweep scope traces

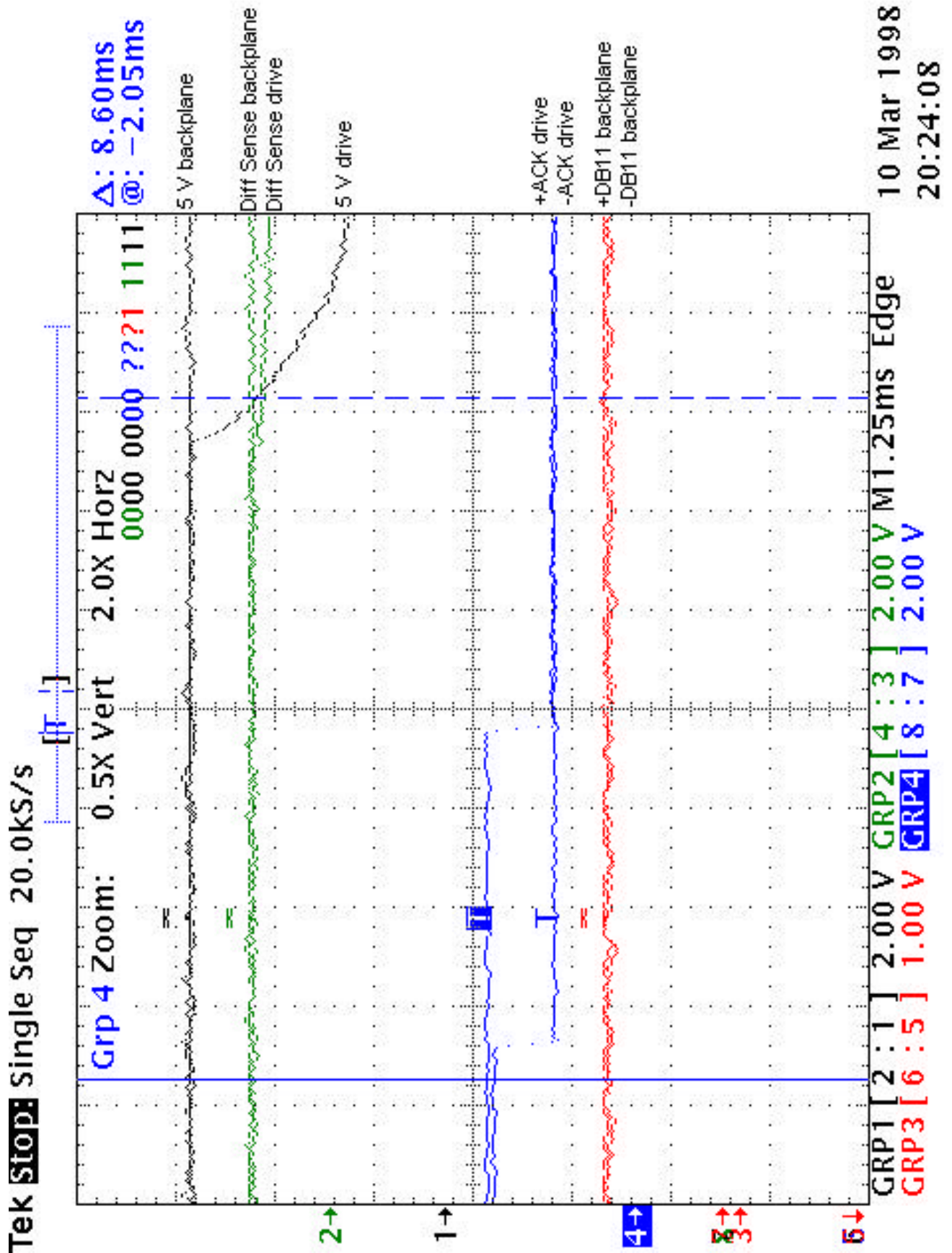Figure 6a - Hot un-plug events at fast sweep speed

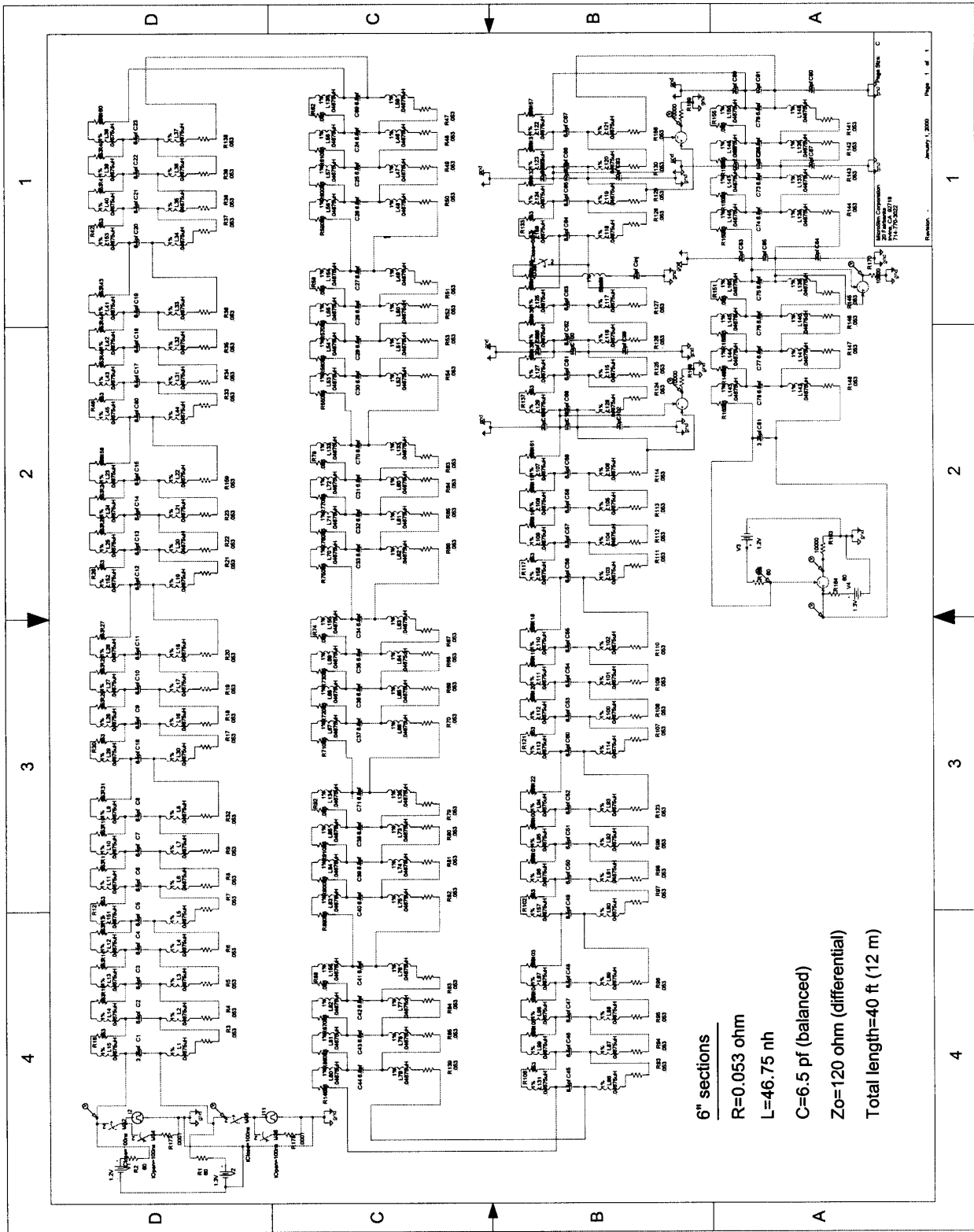Figure 6b - Same first event triggering slow speed triggering slow sweep

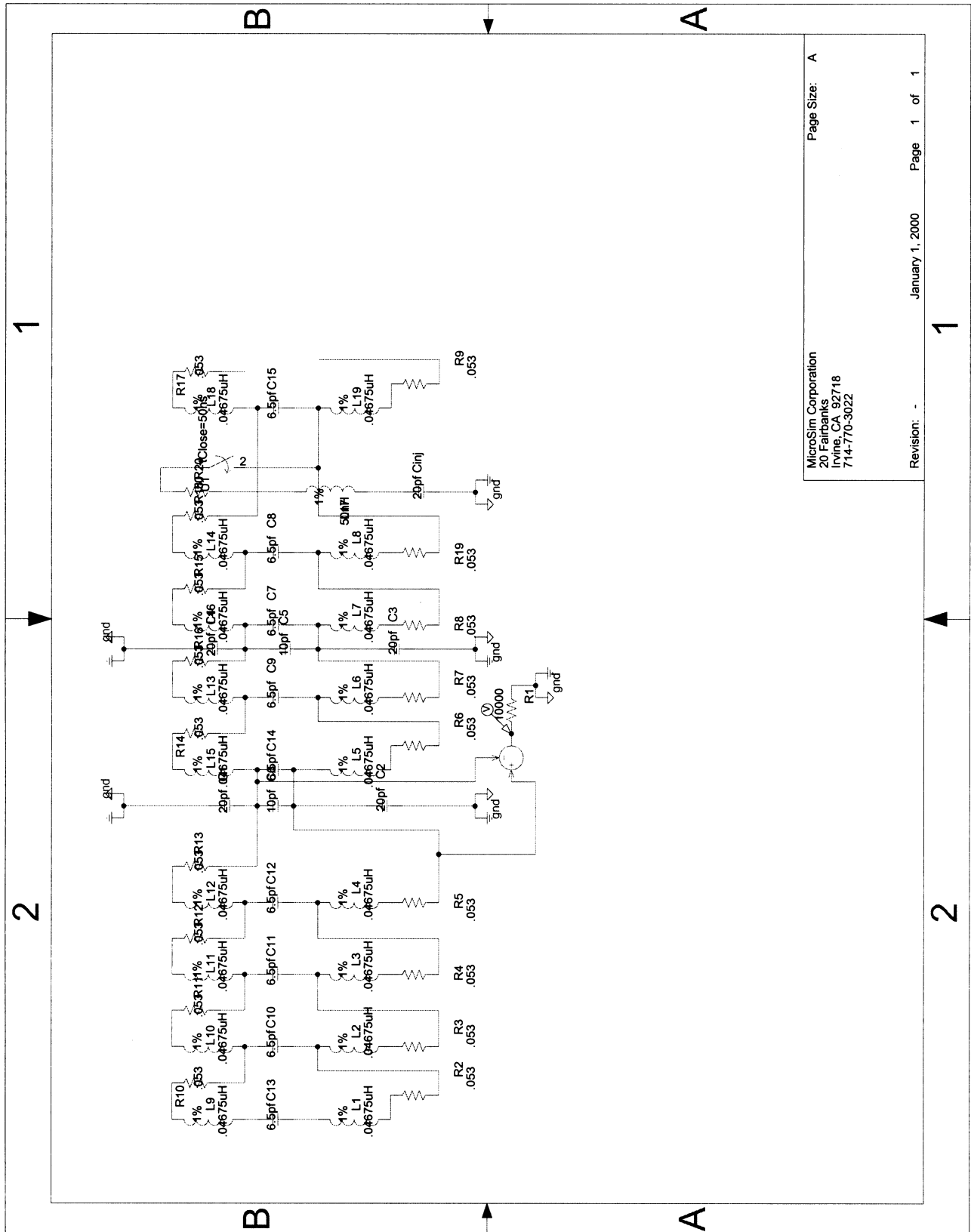Figure 7a - Spice Simulation Schematic for Lossy 40ft differential cable

6" sections

R=0.053 ohm

L=46.75 nh

C=6.5 pf (balanced)

Zo=120 ohm (differential)

Total length=40 ft (12 m)

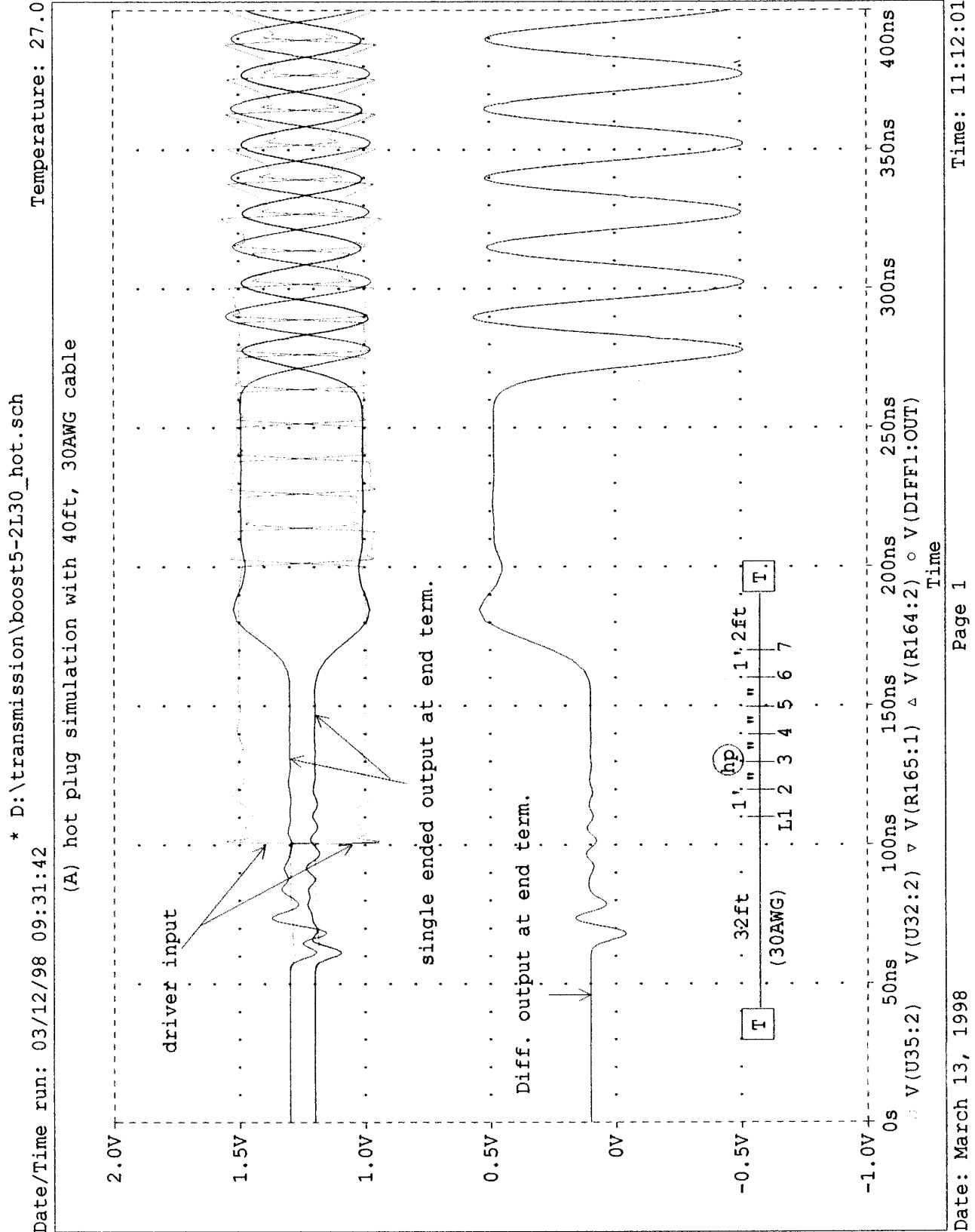Figure 7b - Spice Schematic detail at "Victim" and "Hot Plug" locations

Figure 8 - Spice U3 Waveforms with Hot Plug noise injected