Connections for previous RPCs (AB01, ABO2 etc) are done as shown in figure 1 below.
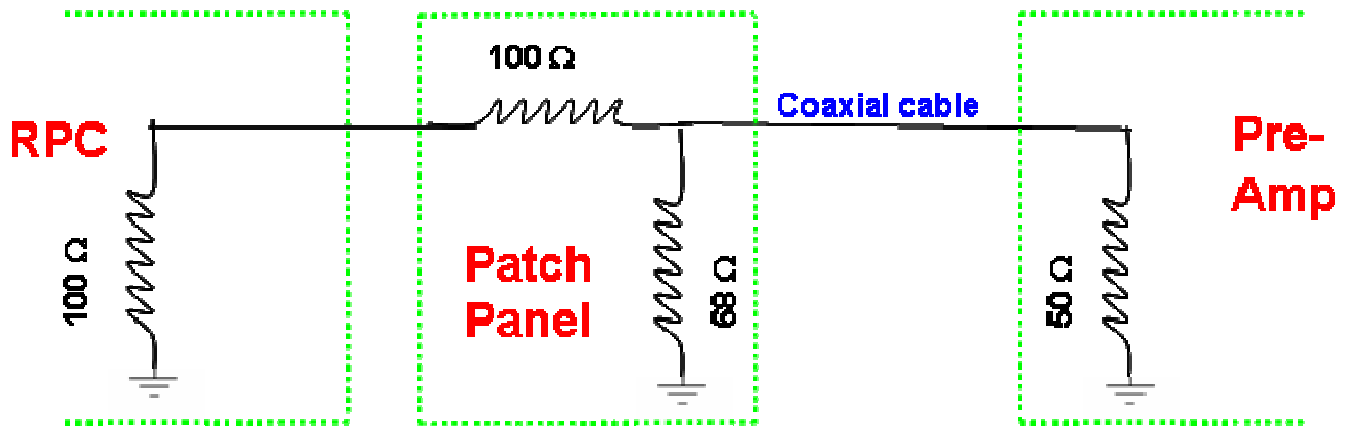

Fig 1

We wanted to remove the patch panel in between. Then the circuit will look like Fig 2. Here the 100Ω is placed inside preamplifier board.
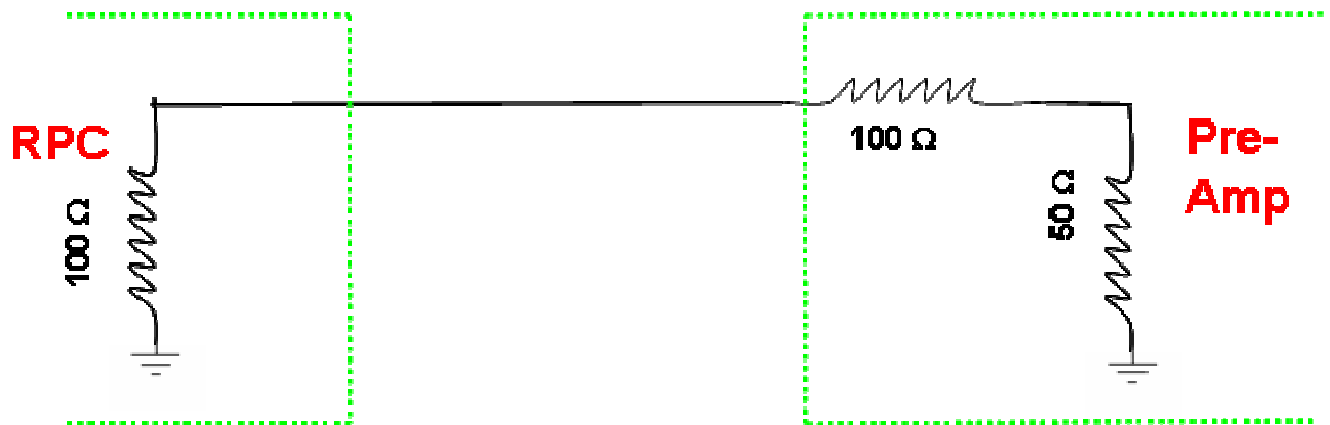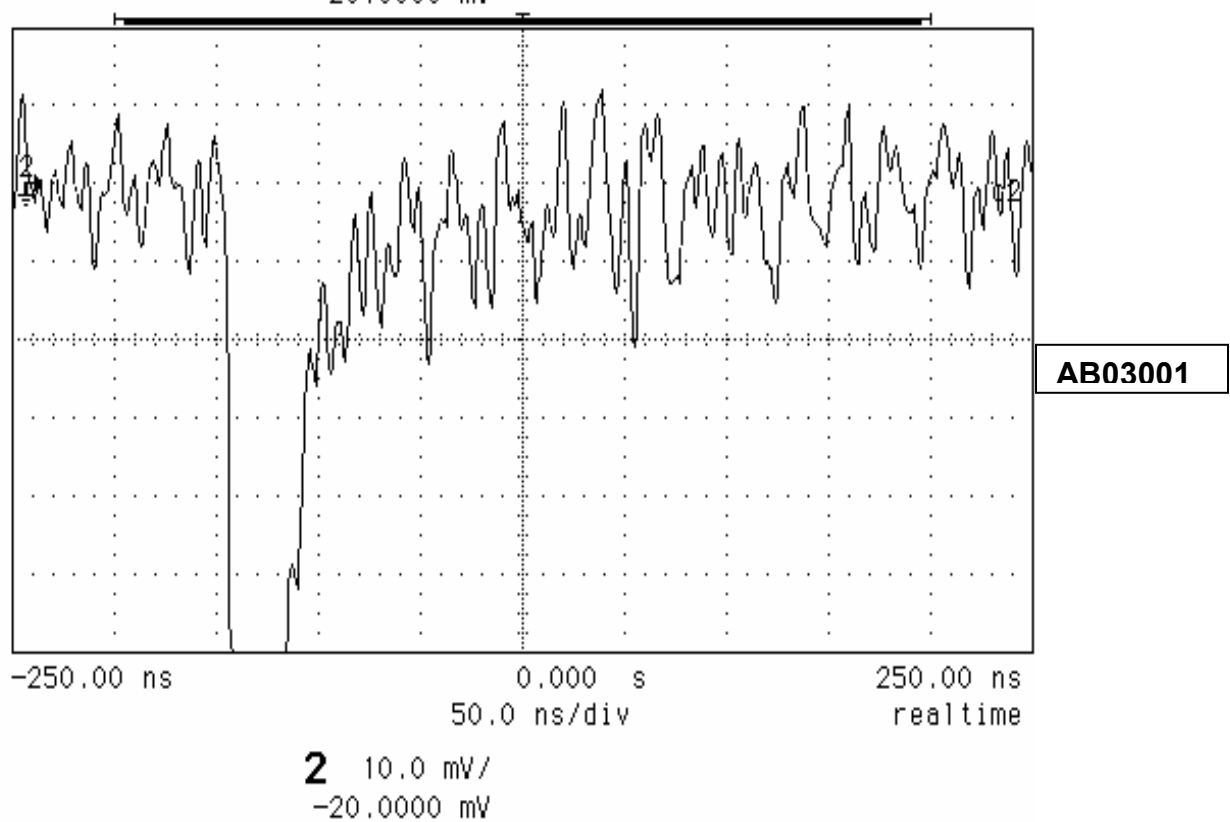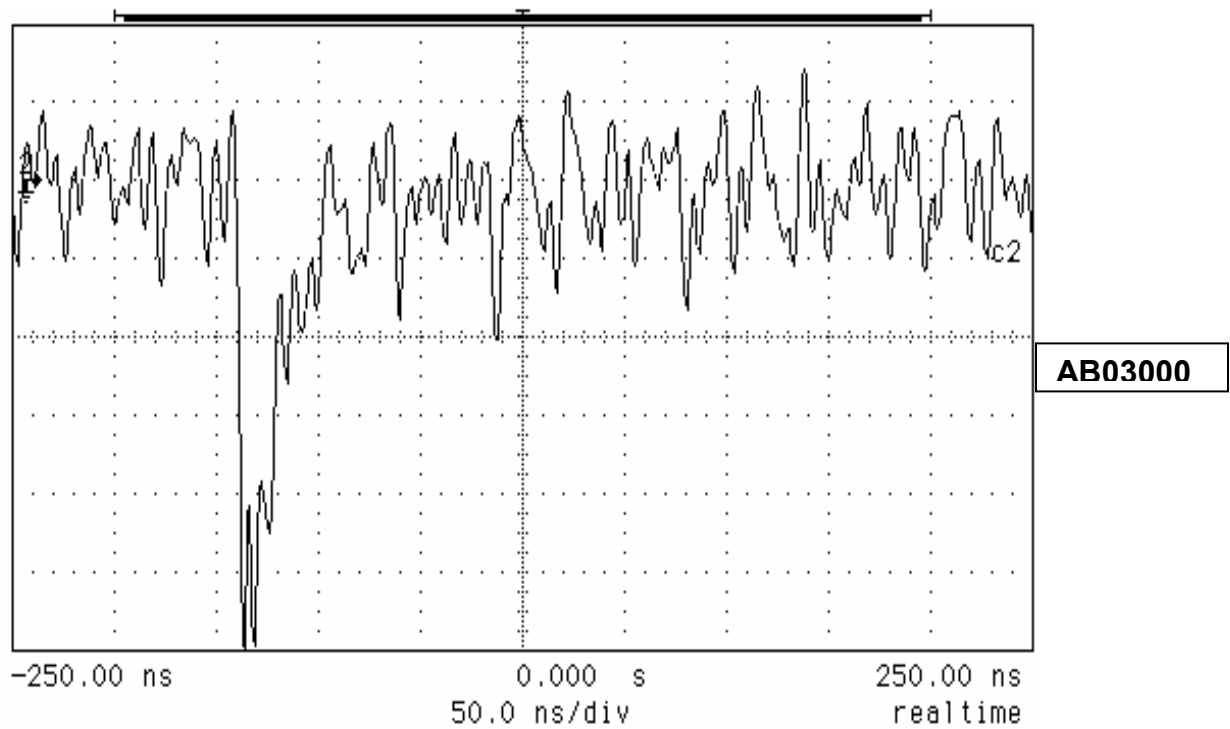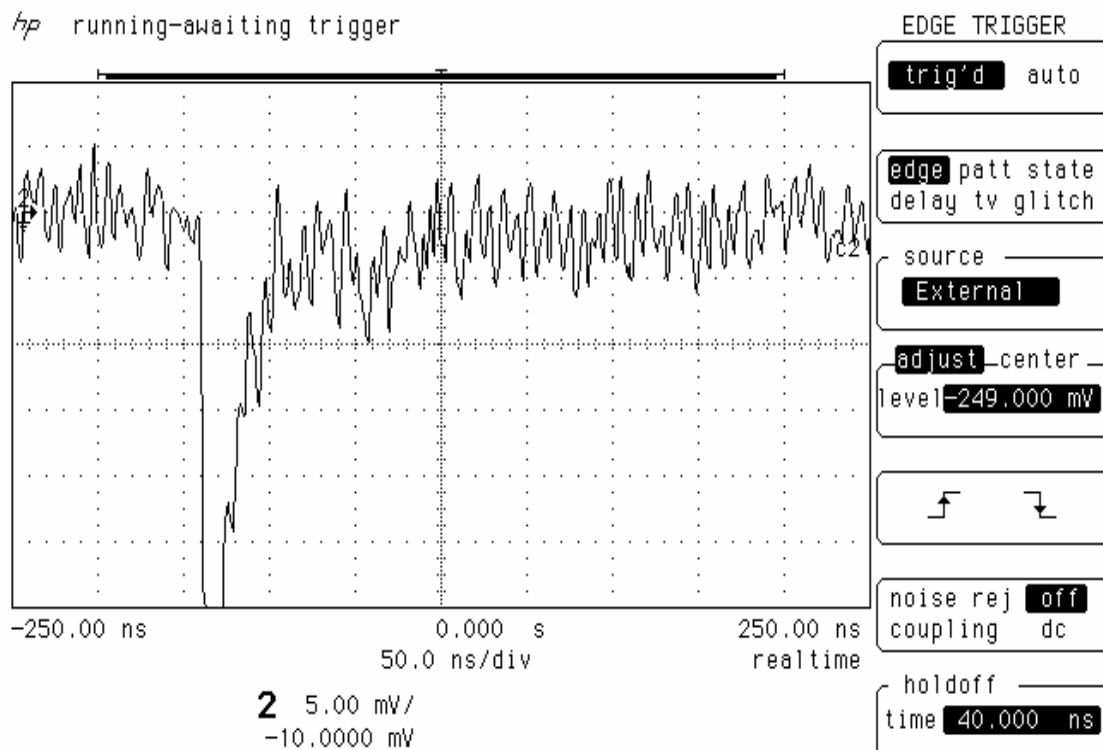

Fig 2

With normal setup without Patch panel (AB03000, AB03001)

AB03000

−250.00 ns   0.000 s   250.00 ns
50.0 ns/div   realtime

2 10.0 mV/
−20.0000 mV

AB03001

−250.00 ns   0.000 s   250.00 ns
50.0 ns/div   realtime

2 10.0 mV/
−20.0000 mV

With Patch panel (AB03003, AB03004) as on Fig 1.
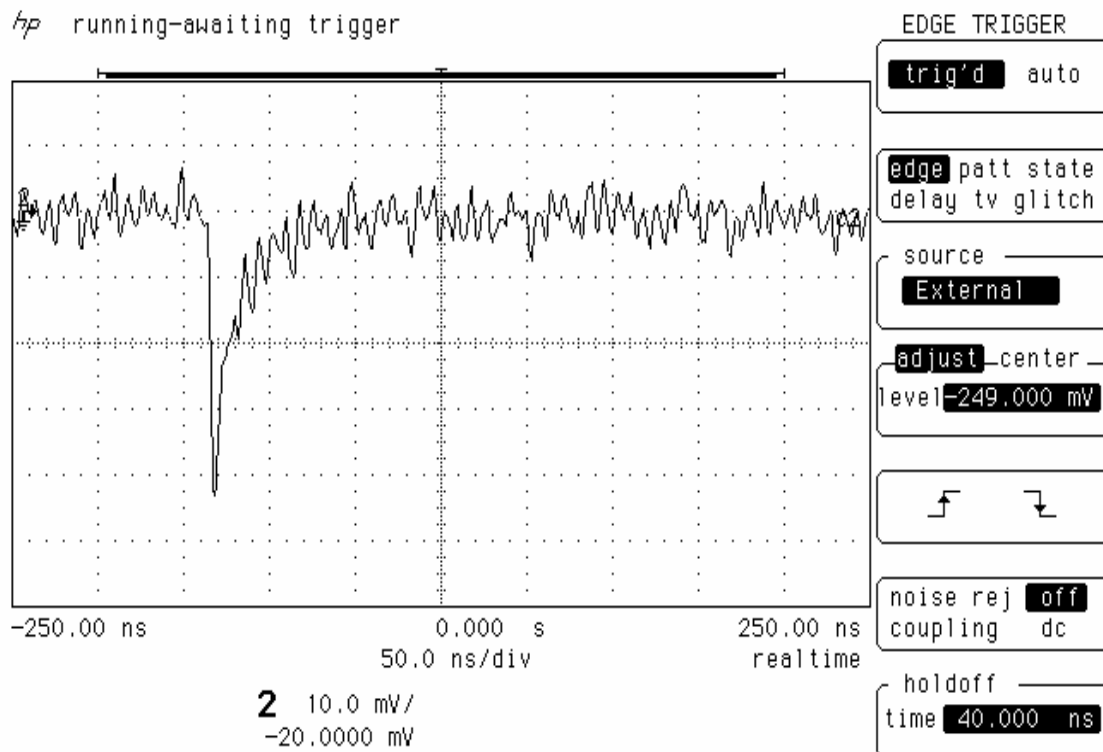
With Patch panel (AB03005, AB03007) For AB01
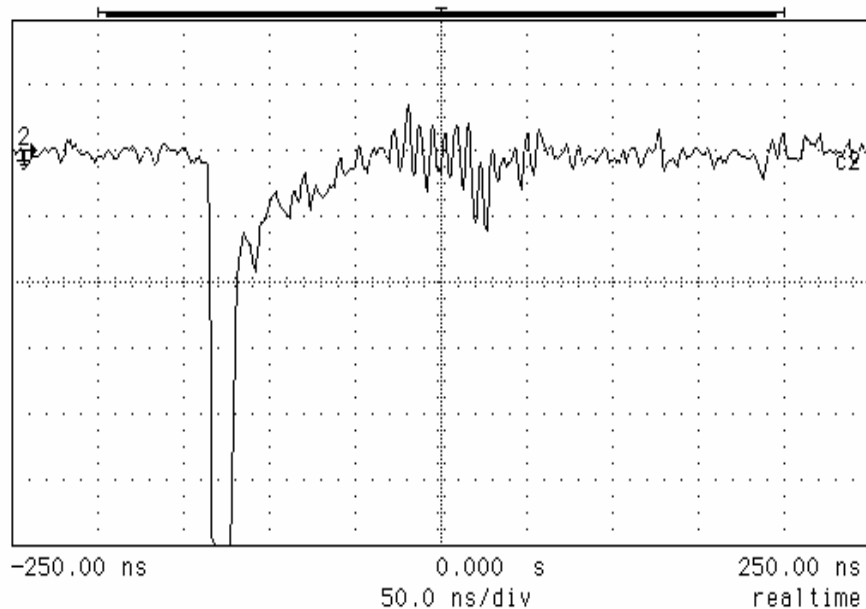
4
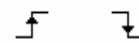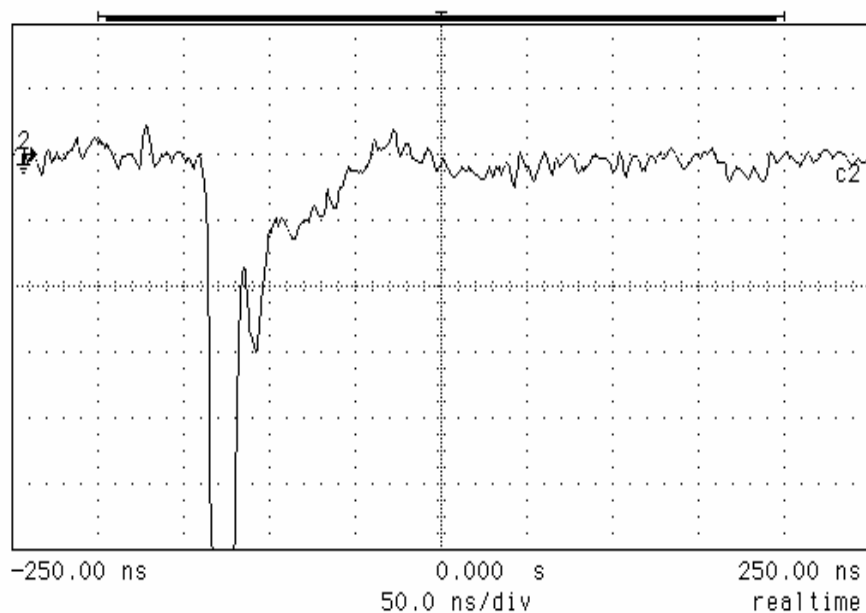
With Patch panel (AB03008, AB03009) For AB03 assuming Characteristics Impedance Z = 90 Ω (R$_1$ = 60Ω, R$_2$ = 75Ω)
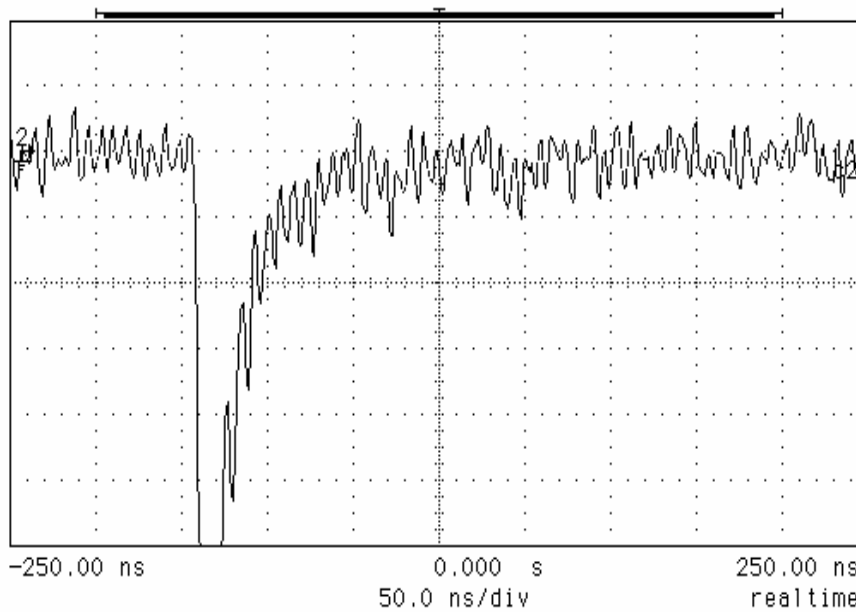
With Patch panel (AB03010, AB03011) For AB03 assuming Characteristics Impedance Z = 80 Ω (R$_1$ = 49Ω, R$_2$ = 81Ω)

With Patch panel (AB03000, AB03X001) For AB03 assuming Characteristics Impedance Z = 70 Ω (R$_1$ = 37.4Ω, R$_2$ = 93.5 Ω)

With No input signal

hp running-awaiting trigger
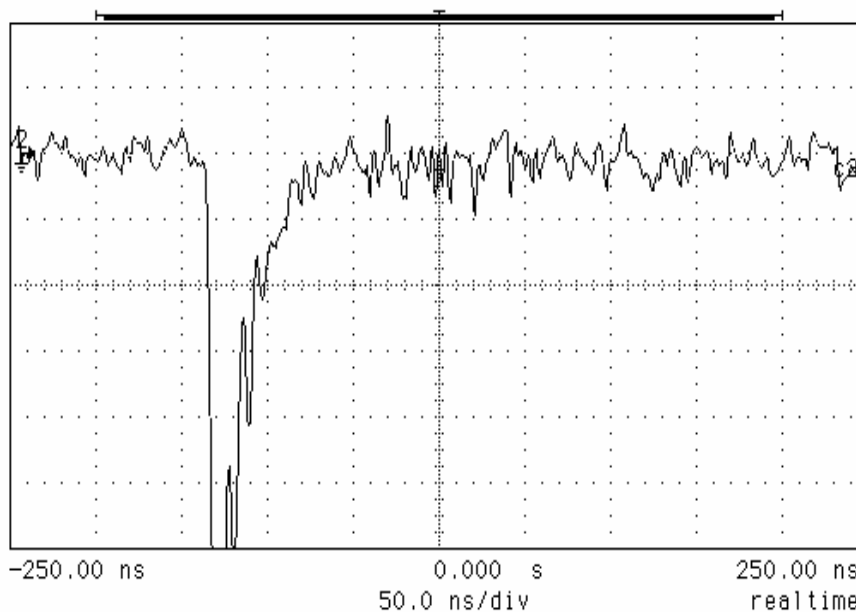
EDGE TRIGGER

trig'd auto

edge patt state
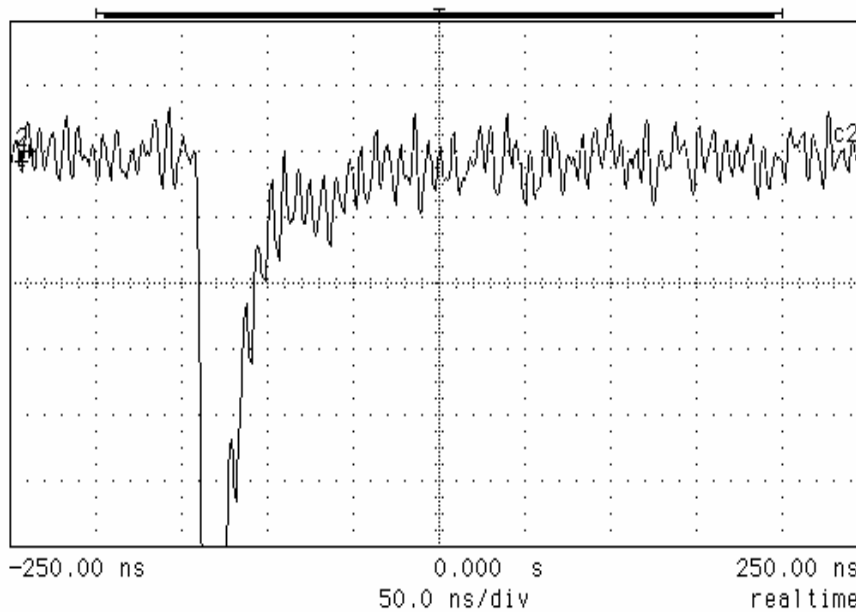delay tv glitch

source
External

adjust center
level -269.750 mV

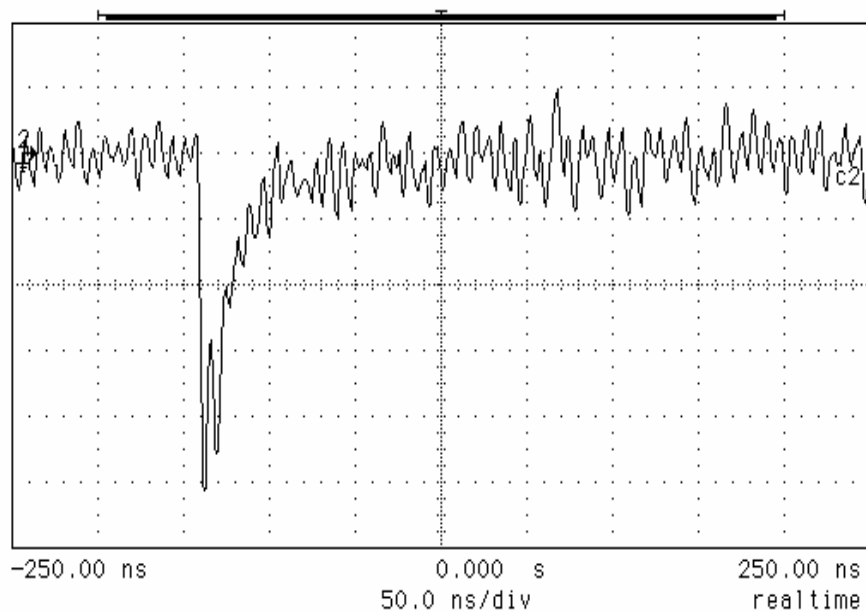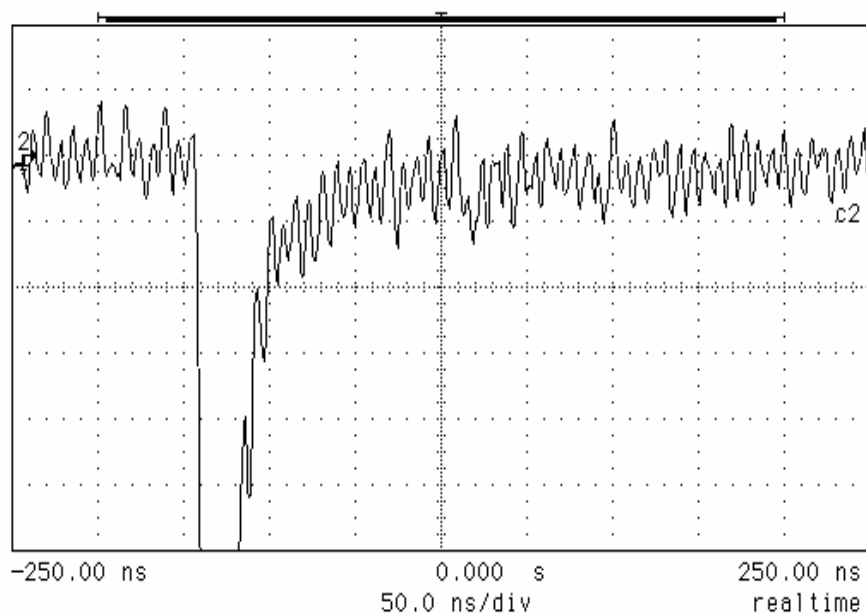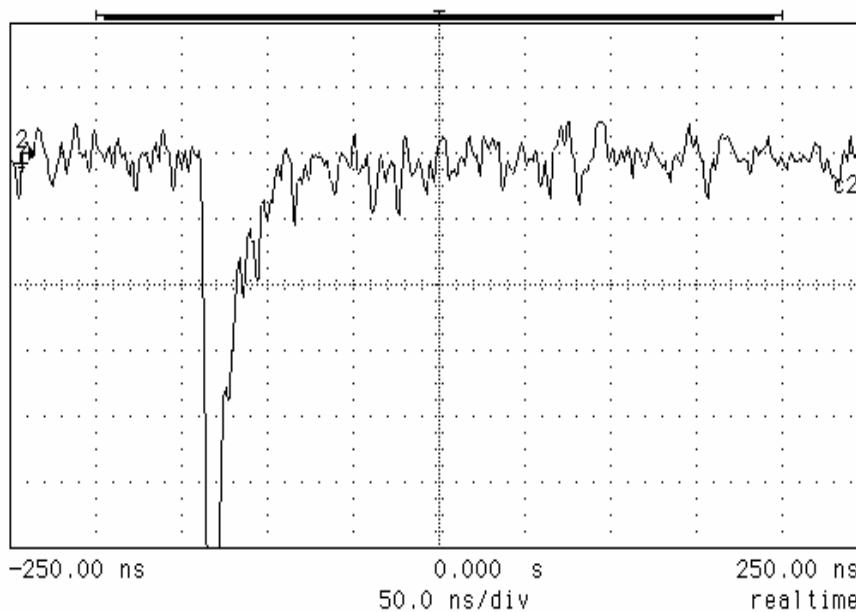noise rej off
coupling dc

holdoff
time 40.000 ns

-250.00 ns   0.000 s   250.00 ns
            50.0 ns/div   realtime

2 10.0 mV/
   -20.0000 mV
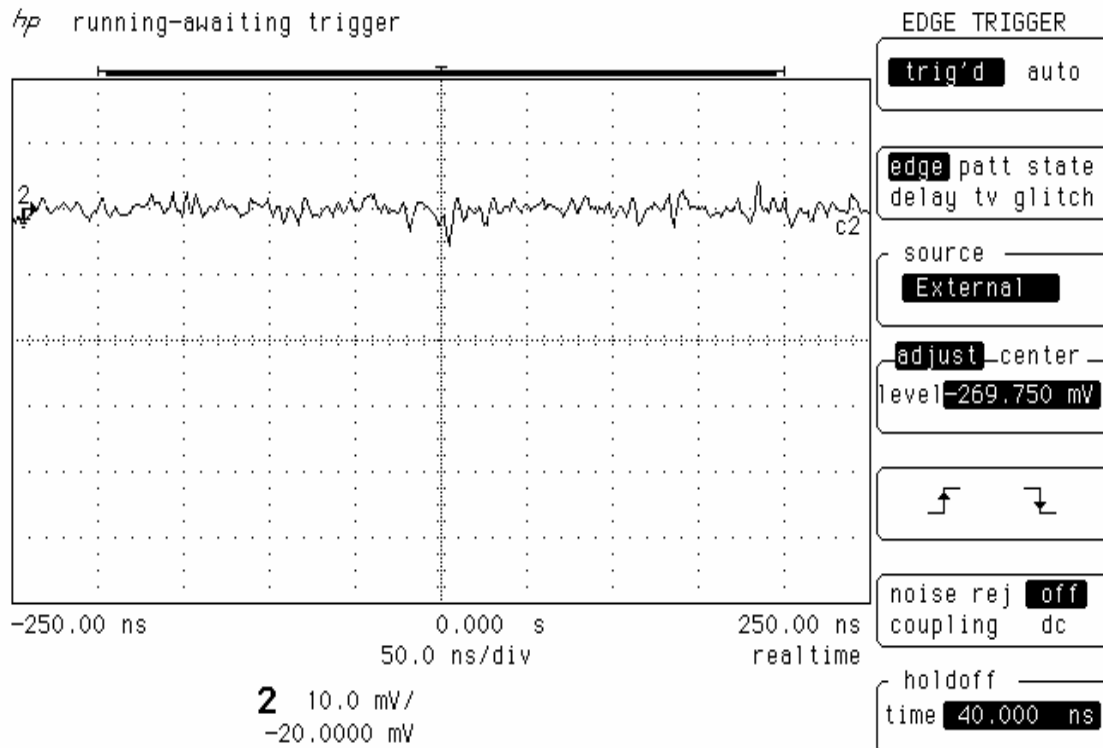
After that GI sheet is put above and below Amplifier box and found that noise level has reduced drastically.

On Board Patch Panel (Fig 2)

hp running-awaiting trigger

EDGE TRIGGER

trig'd auto

edge patt state
delay tv glitch

source
External
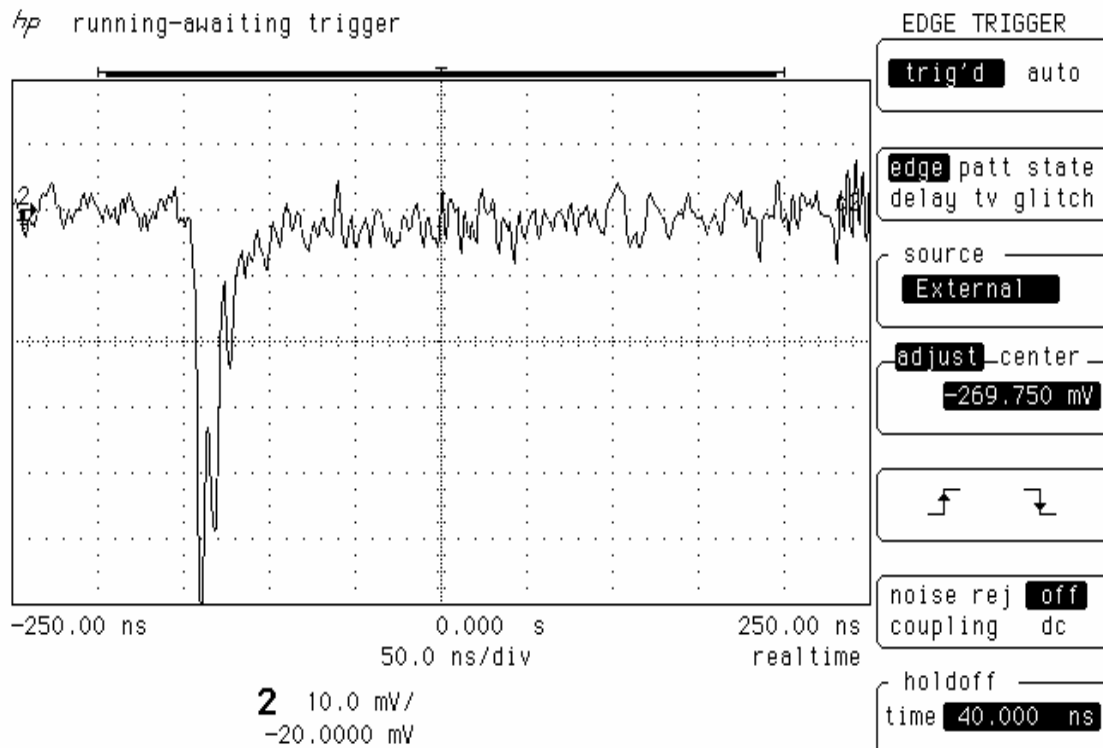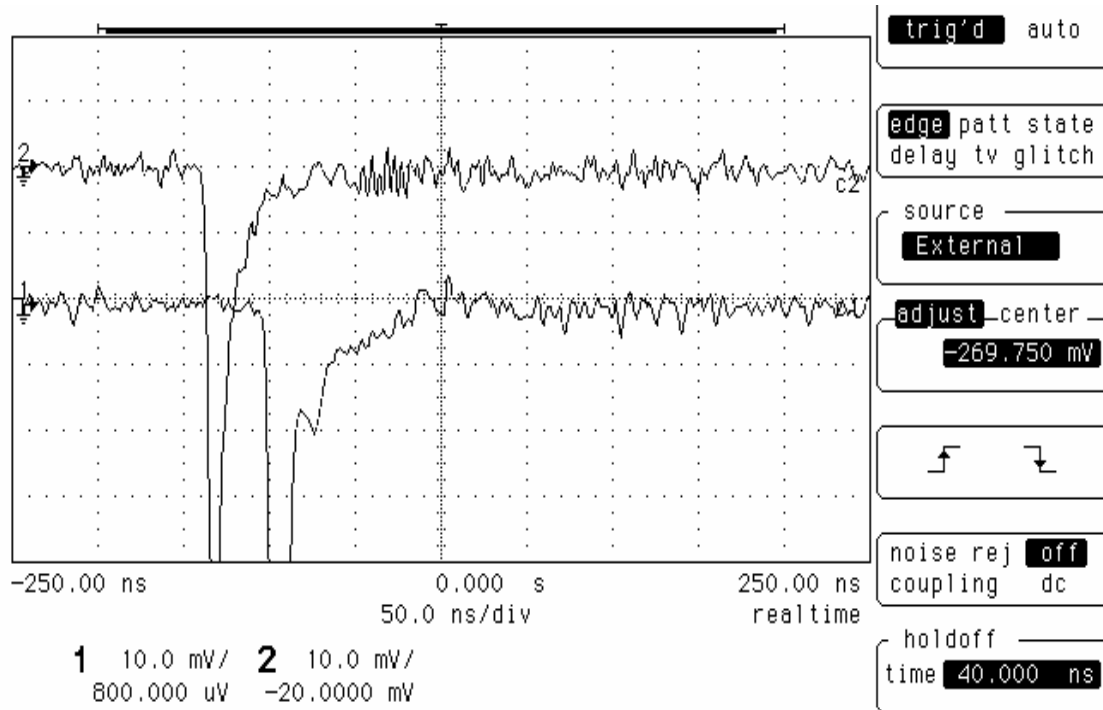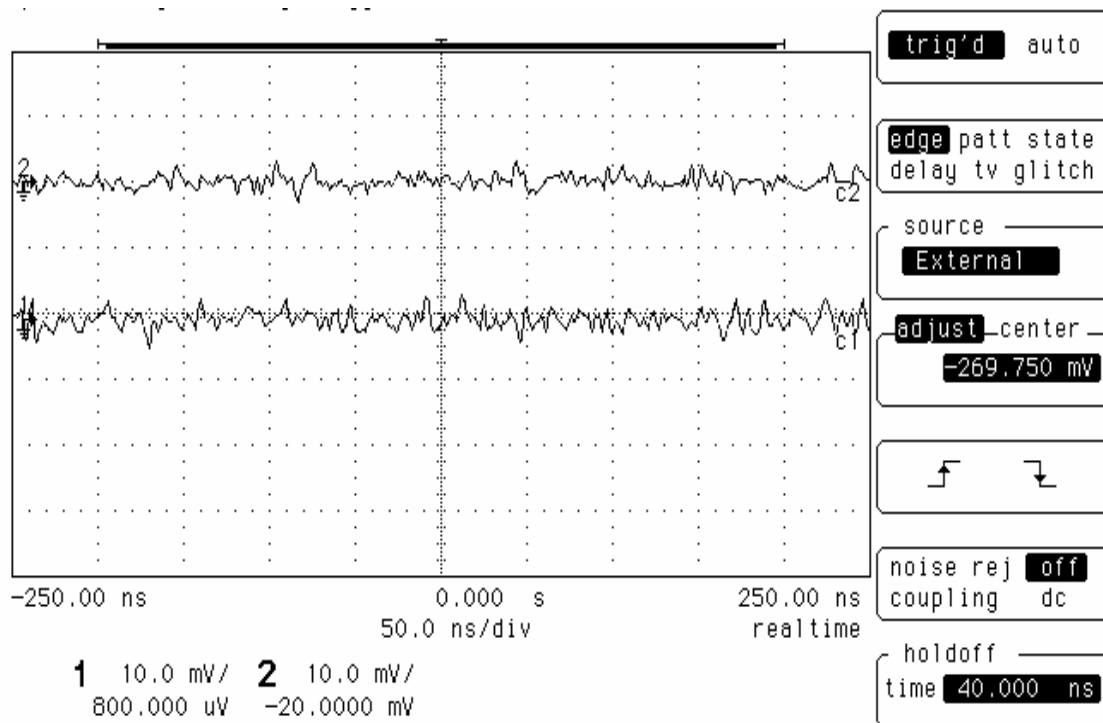
adjust center
-269.750 mV

noise rej off
coupling dc

holdoff
time 40.000 ns

-250.00 ns   0.000 s   250.00 ns
            50.0 ns/div   realtime

2 10.0 mV/
   -20.0000 mV

8

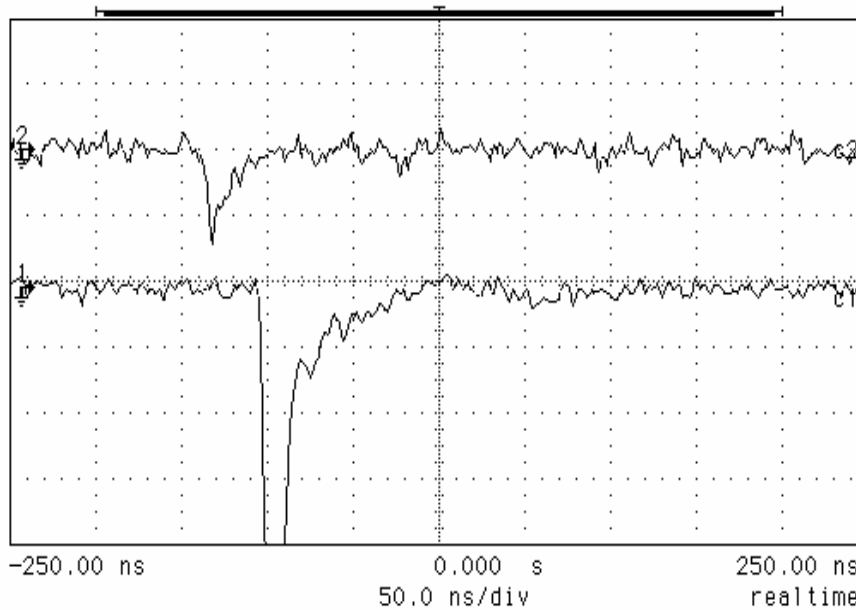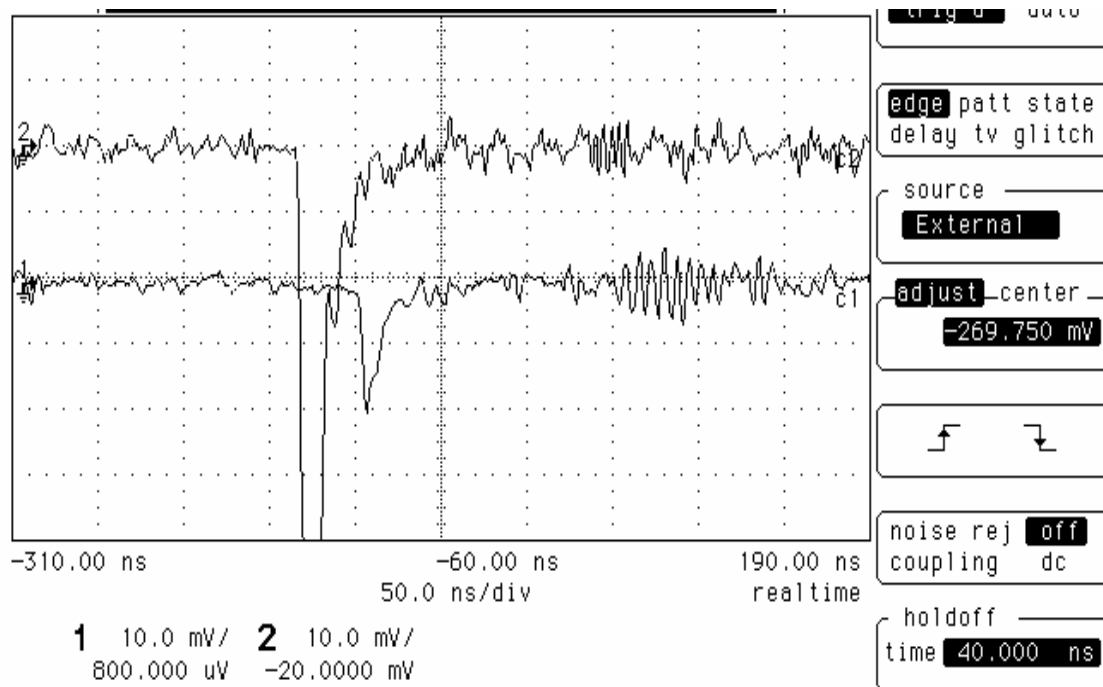**Assuming Z = 70 Ω (R$_1$ = 37.4Ω, R$_2$ = 93.5 Ω) using GI sheets (Ch 1 = AB03 and Ch 2 = AB01)**

With No Input Signal (Ch 1 = AB03 and Ch 2 = AB01)

Using (R_1 = 100Ω, R_2 = 68 Ω) using GI sheets (Ch 1 = AB03 and Ch 2 = AB01)

On Board Patch Panel (Fig 2) using GI sheets (Ch 1 = AB03 and Ch 2 = AB01)
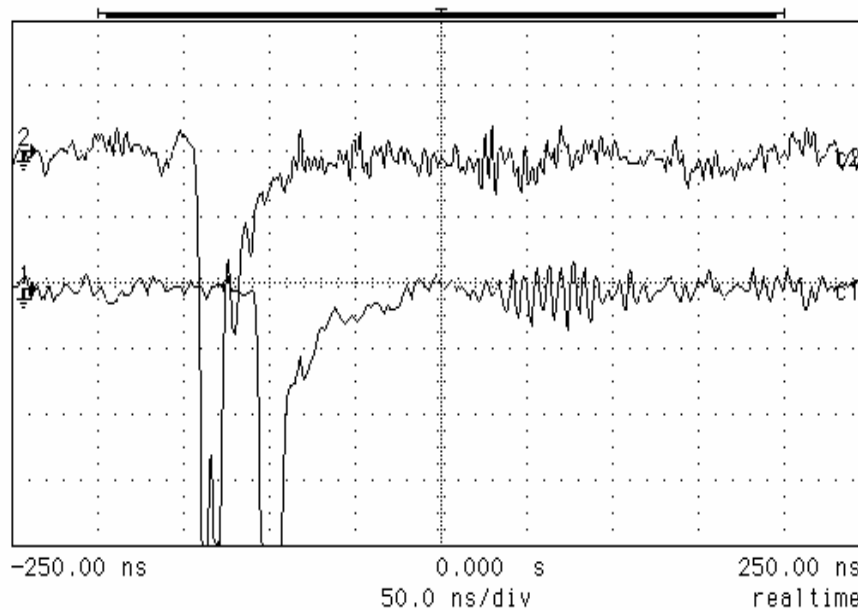

Assuming Z = 80 Ω Using Ω (R$_1$ = 49 Ω, R$_2$ = 81 Ω) using GI sheets (Ch 1 = AB03 and Ch 2 = AB01)

Assuming Z = 90 Ω Using Ω (R_1 = 60Ω, R_2 = 75 Ω)using GI sheets (Ch 1 = AB03 and Ch 2 = AB01)