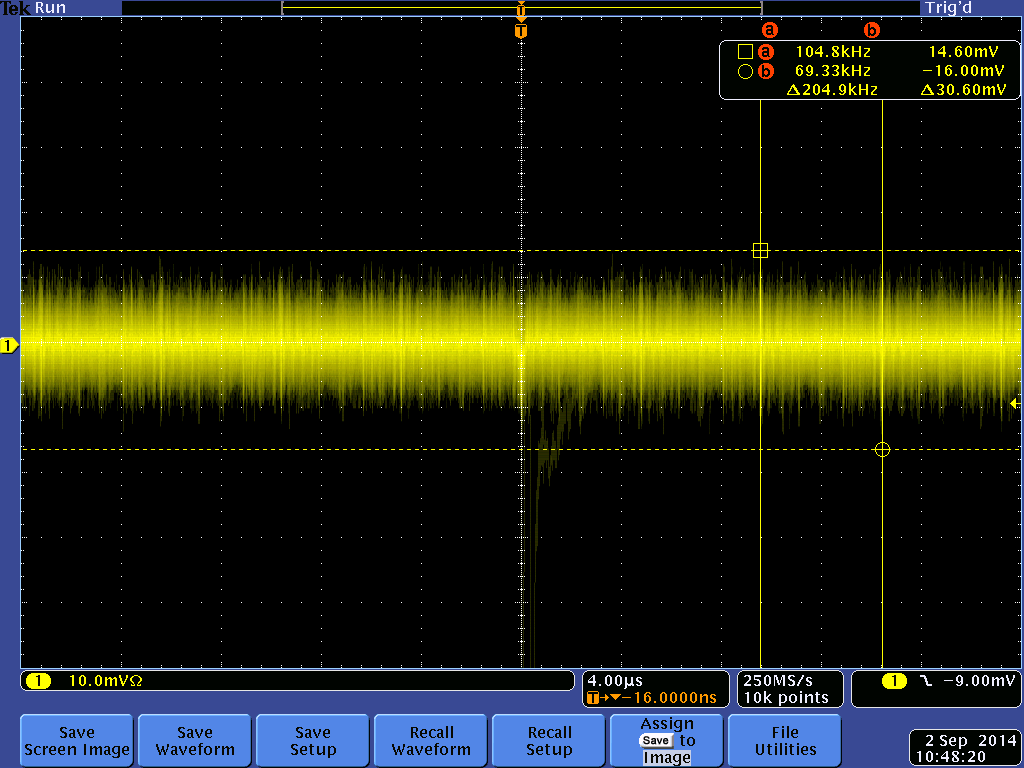
CDC Noise Tests

FJ Barbosa, N. Sandoval

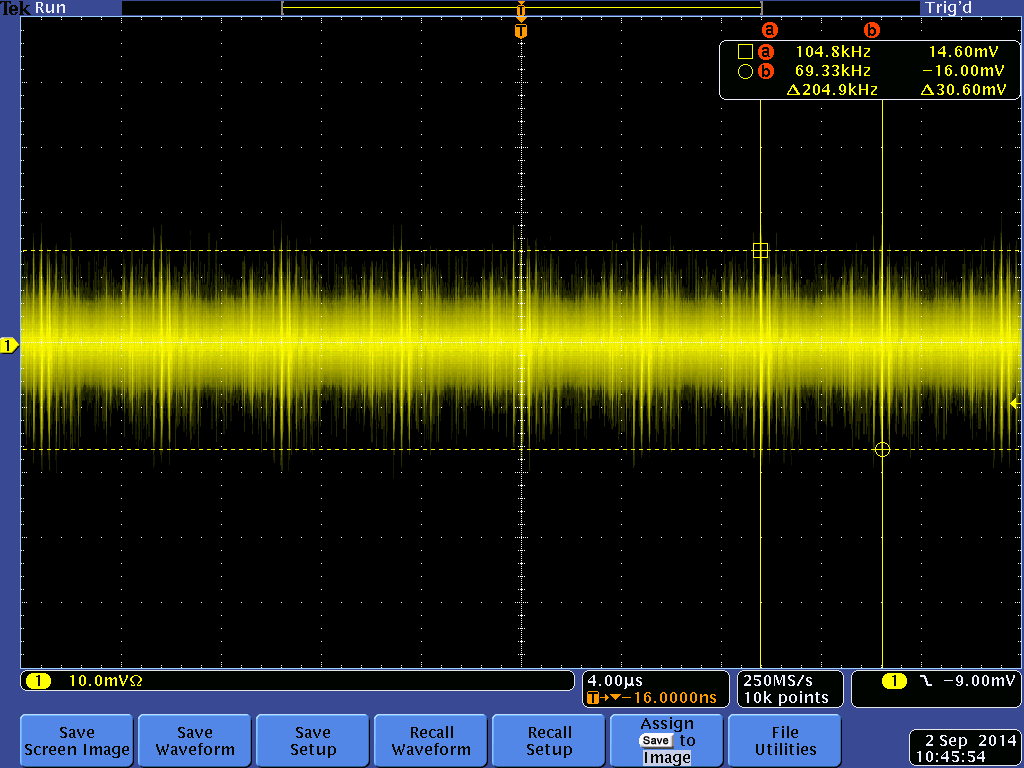
9/4/2014

**Baseline**

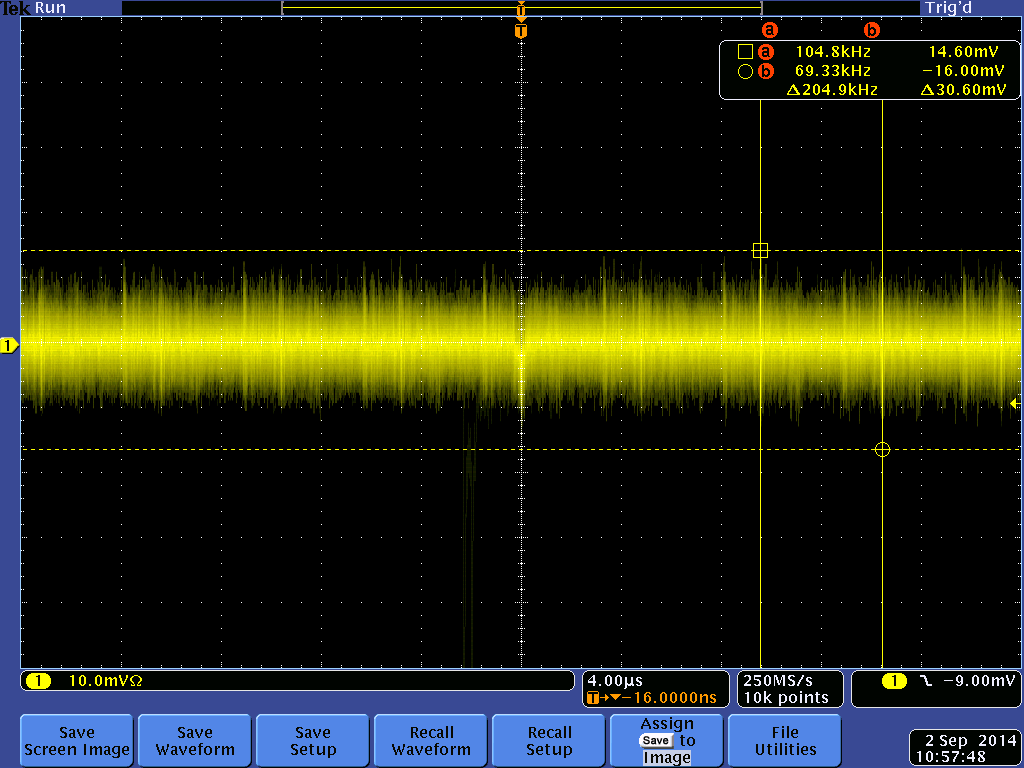
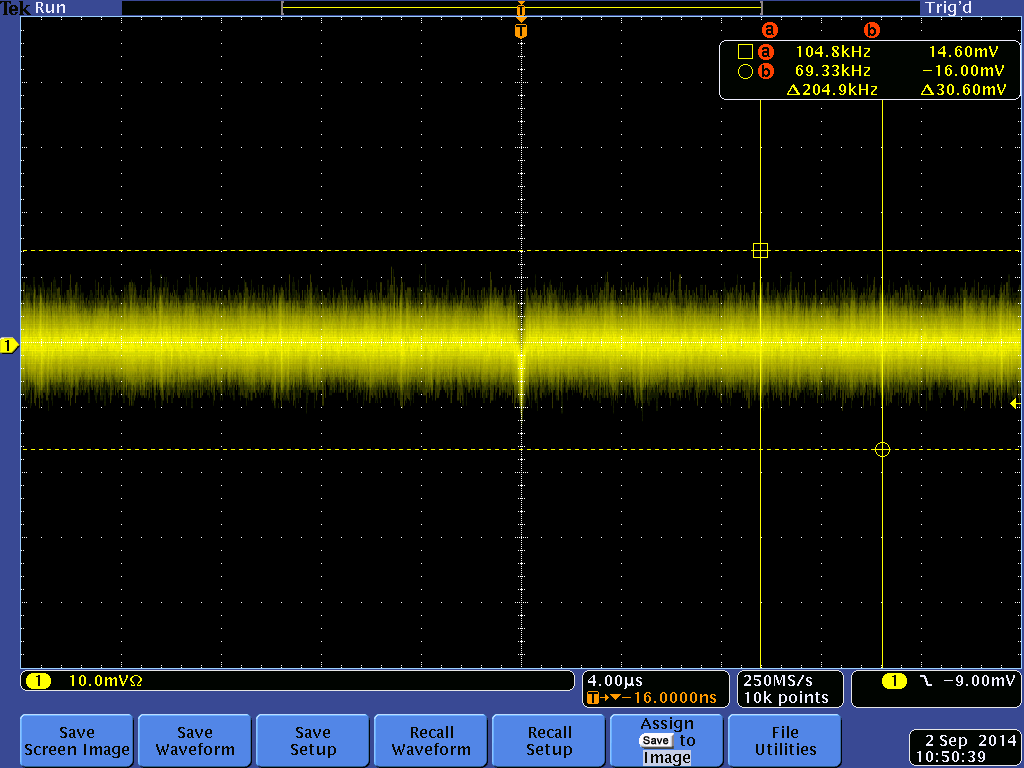
Tests conducted around C6 HVB (C6 “noisy”, C5 “clean”). Adjacent HVBs are B5, B6, C5, C7, D7, D8 and D9. All CDC HV ON.

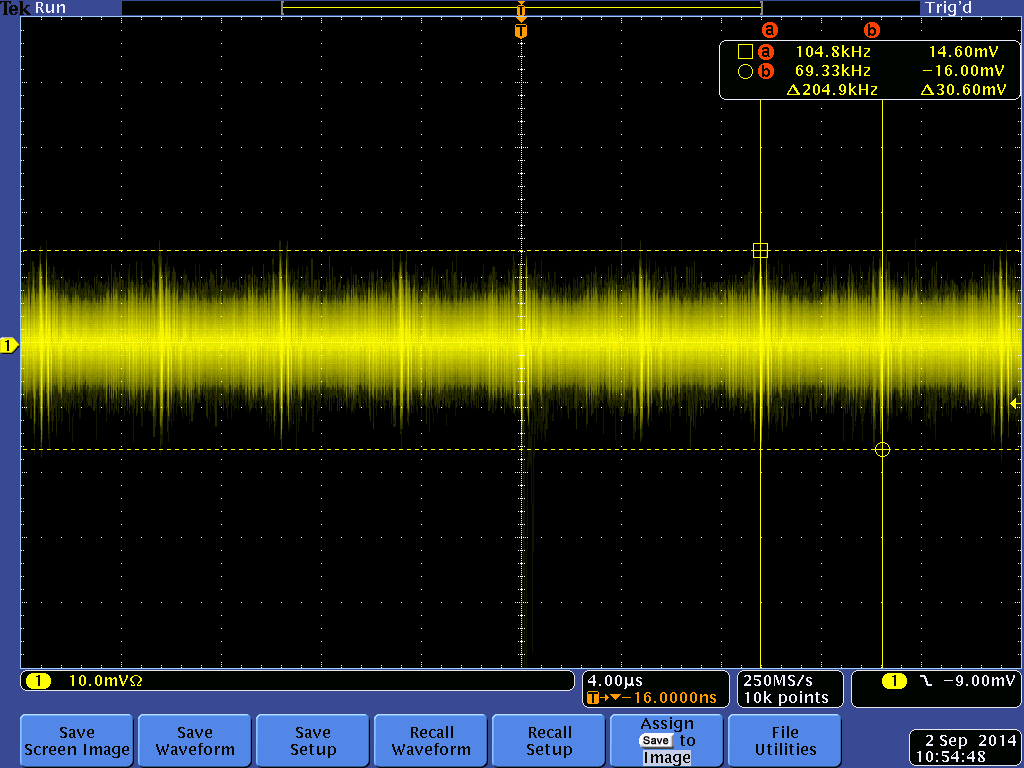
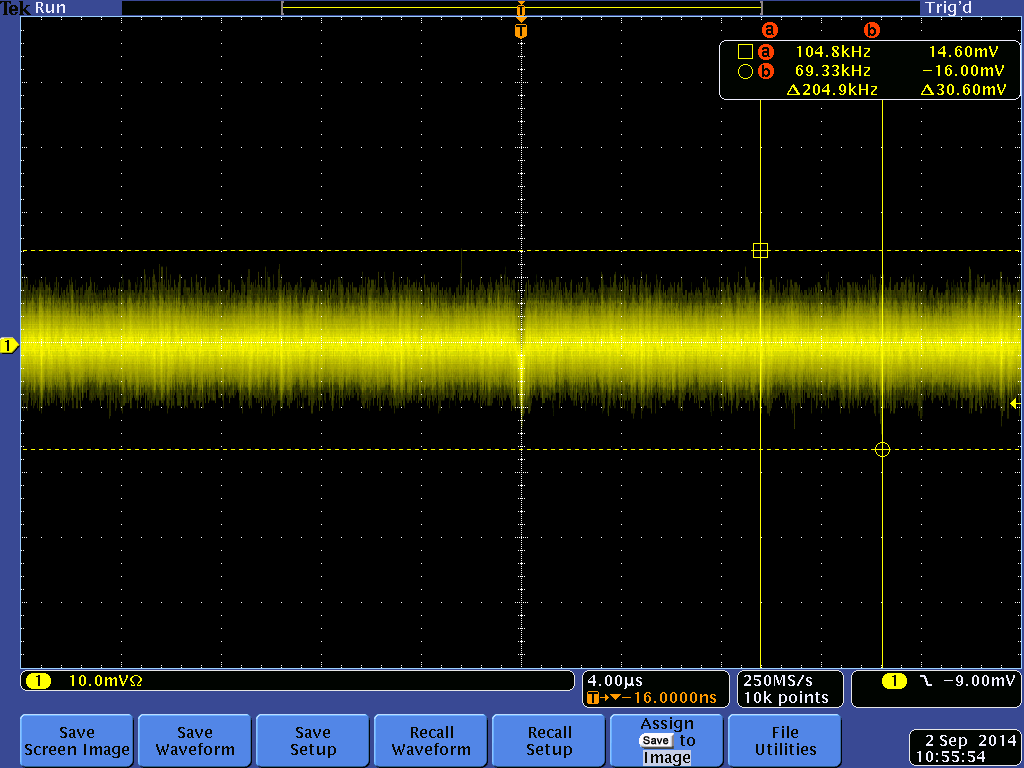
B5 B6

C5 C6

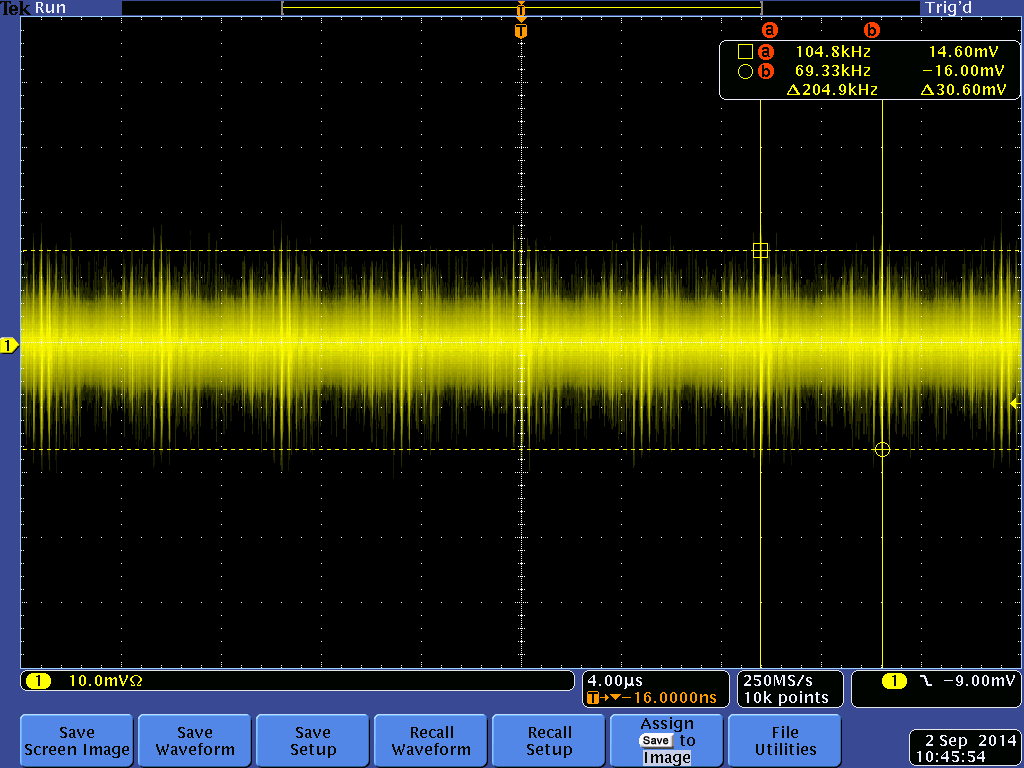
C7 D7

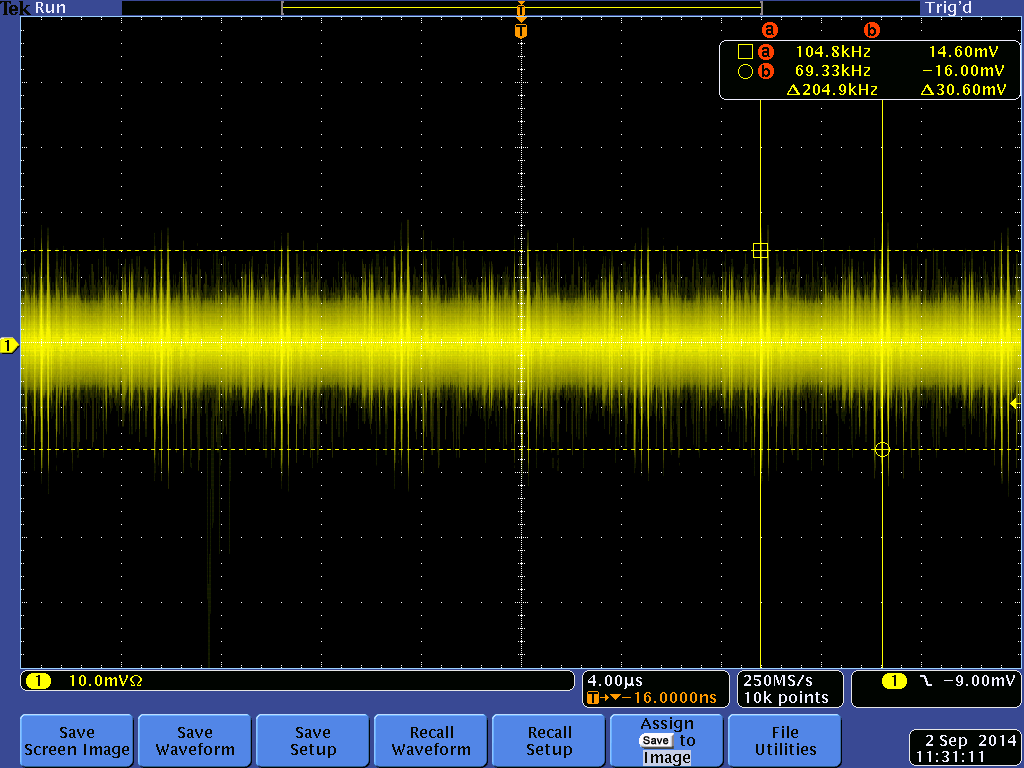
D8 D9

**C6 Tests, Combinations with HV ON/OFF and New Wire Route**

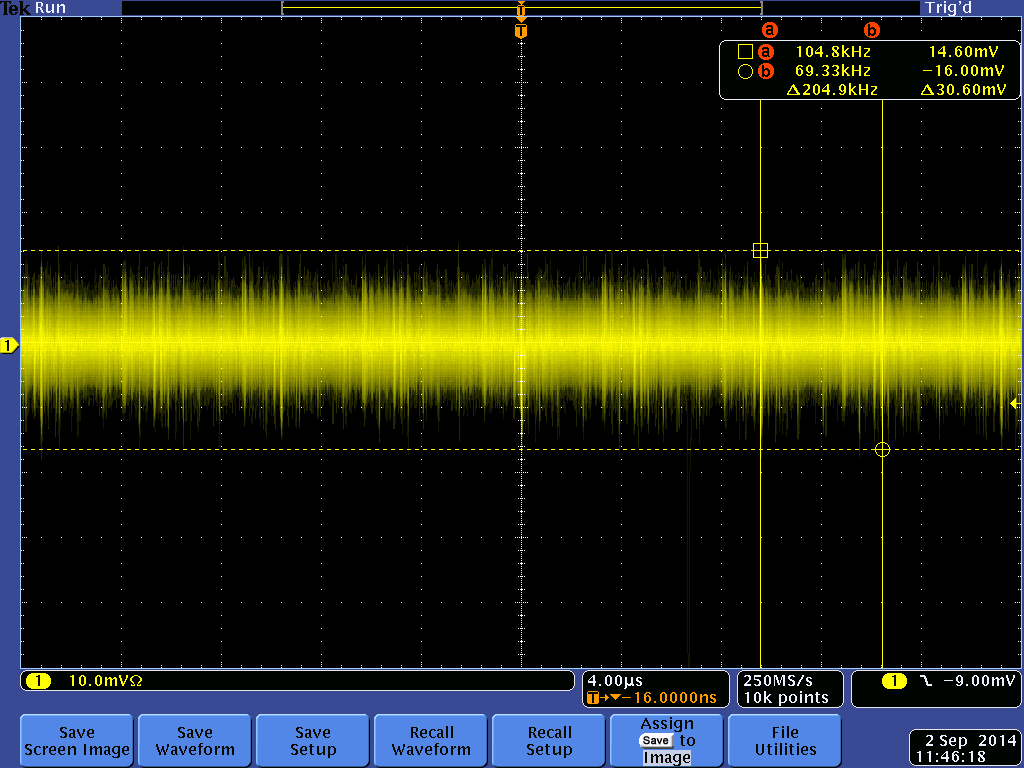
Tested CDC with various combinations of HV ON and OFF. New HV wire route implemented by moving adjacent HV wires from gas plenum to outside of HVBs but these wires are not secured for now

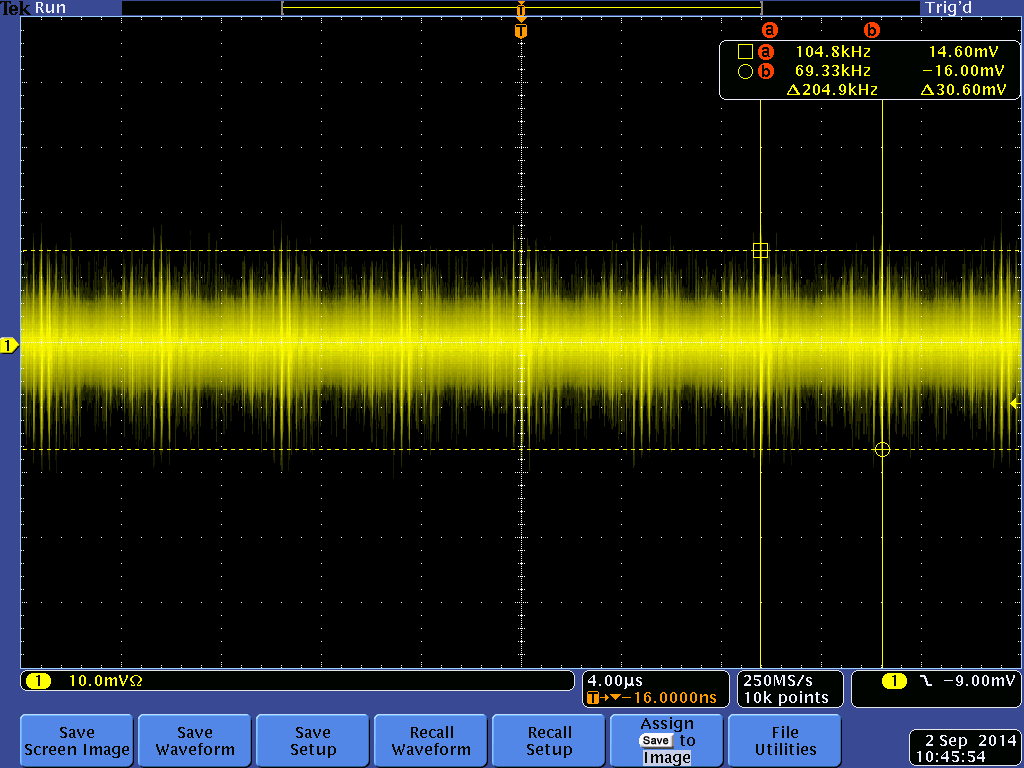
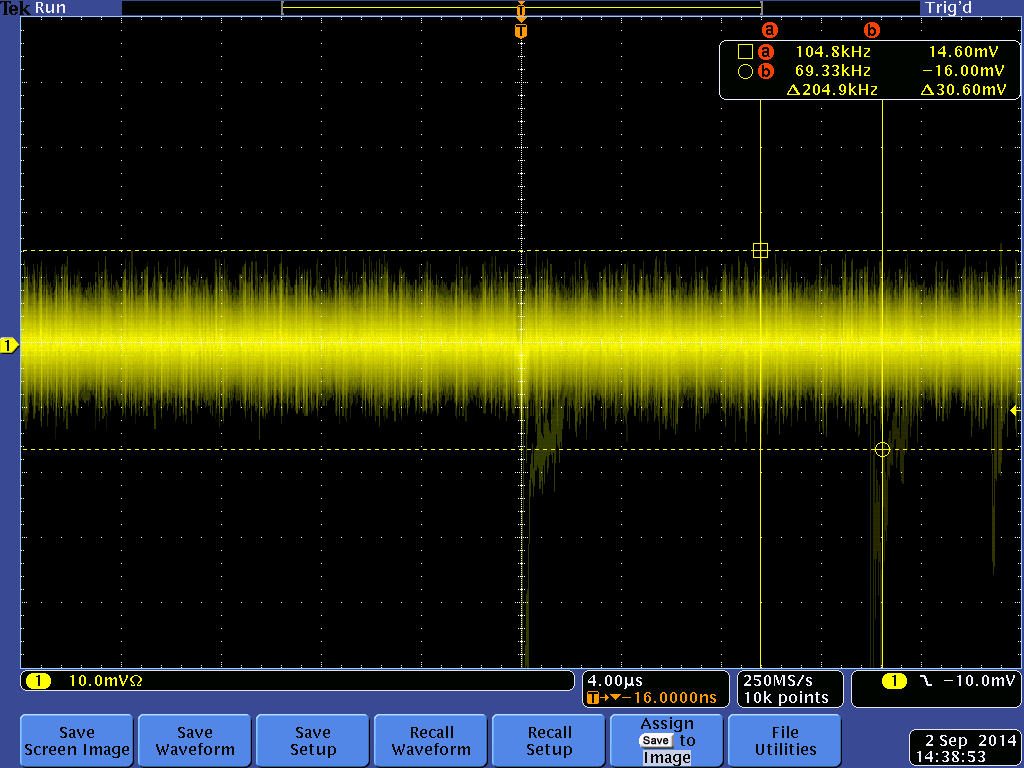
C6, all others HV ON C6 HV OFF, all others HV ON

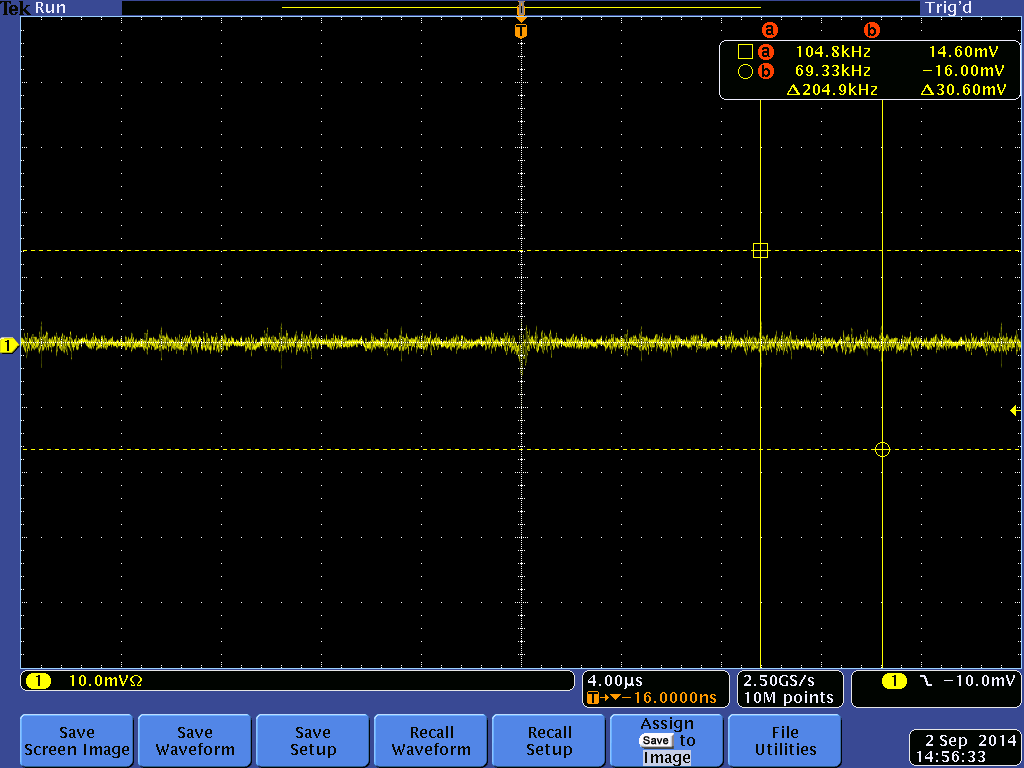
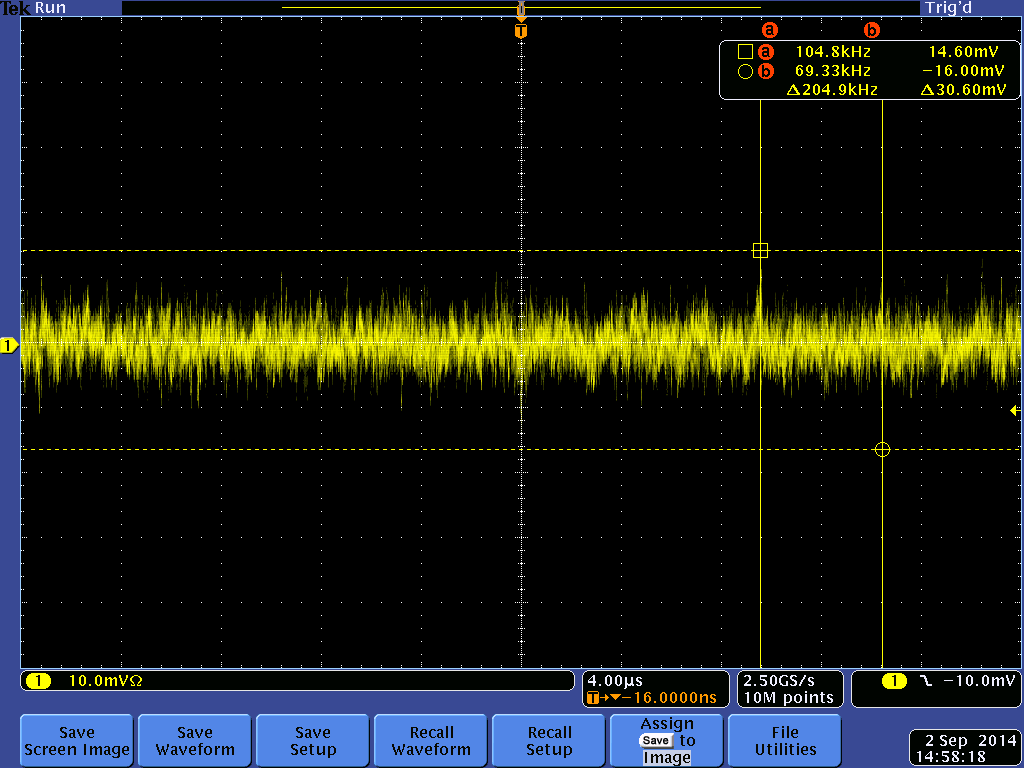
C6, C5C7B5B6D7D8D9 HV OFF, all others HV ON C6, C5 HV ON, all others HV OFF

C6, D8 HV ON, all others HV OFF C6, D9 HV ON, all others HV OFF

C6, all others HV ON, before C6, all others HV ON, New HV Wire Route

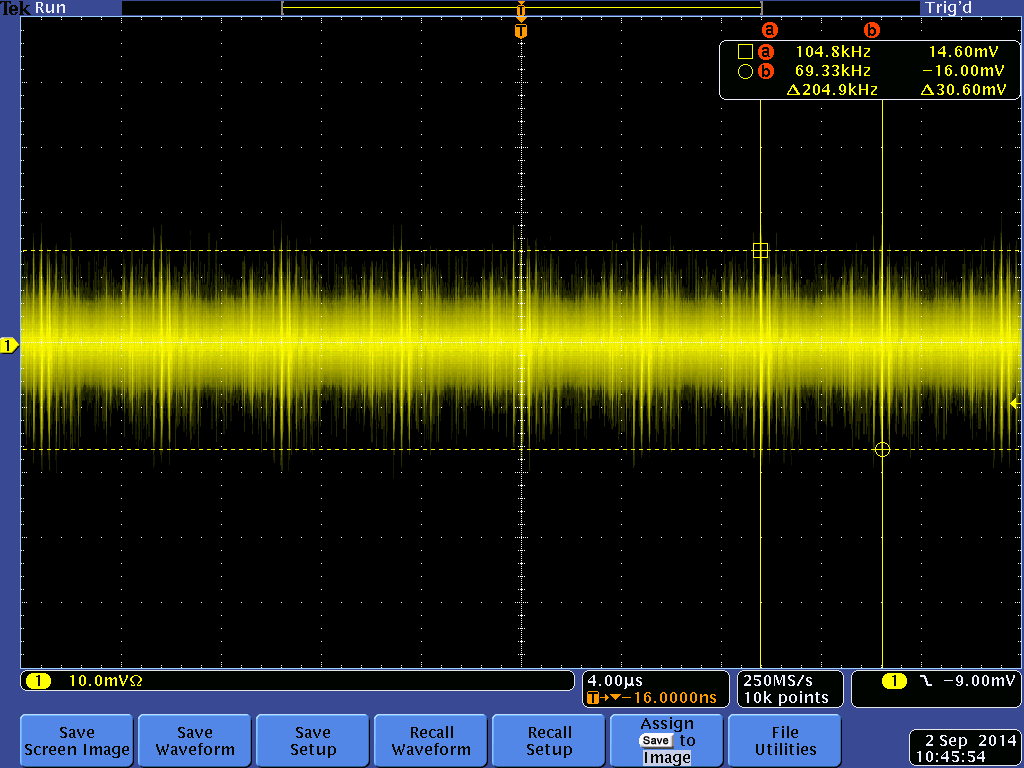
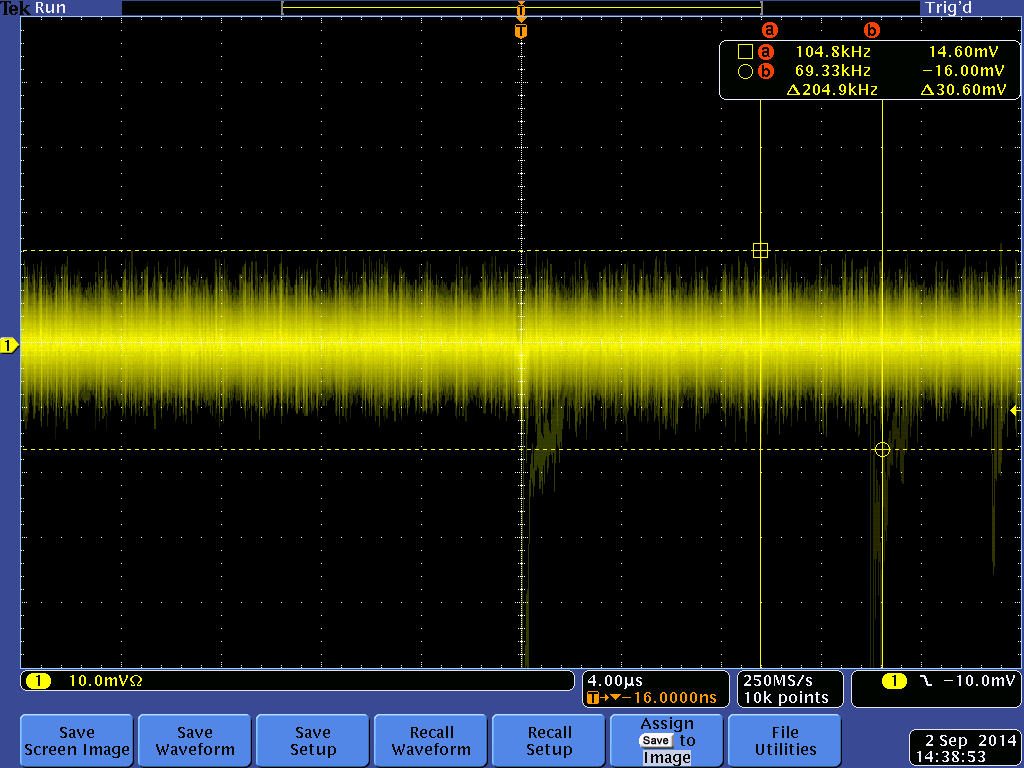
 

C6, all others HV ON, New HV Wire Route – Average C6, all others HV ON, New HV Wire Rte -HiRes

**Before and After New HV Wire Routes**

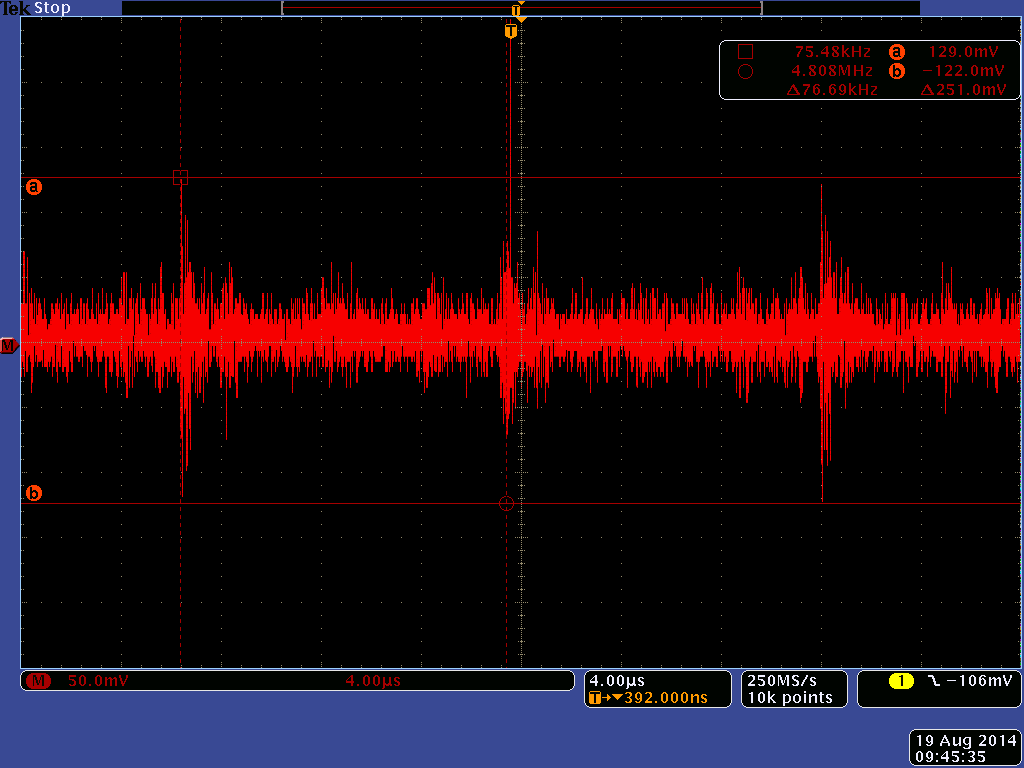
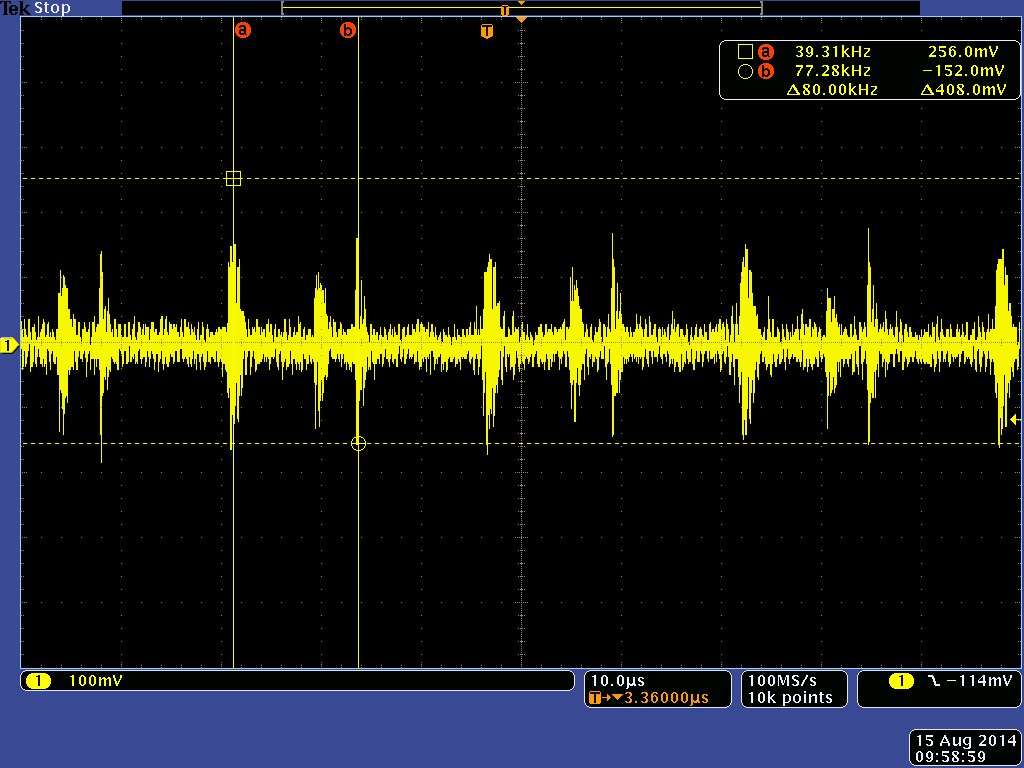
 

C5 Before C5 New HV Wire Route

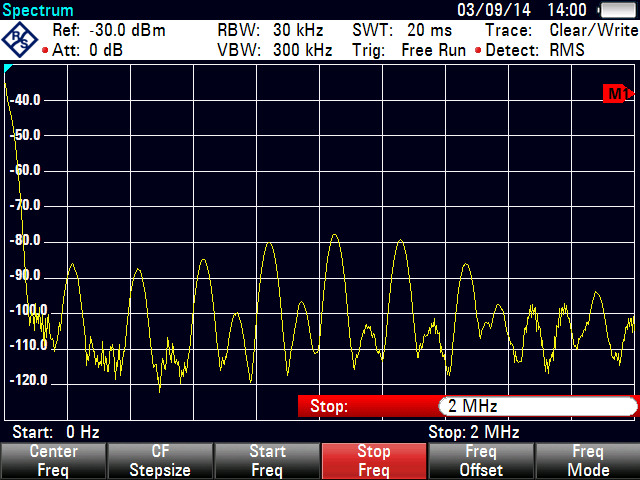
 

C6 Before C6 New HV Wire Route

**Noise & EMI from CAEN Supplies**

CAEN 1550s, Noise across output, Key ON (out,Return) CAEN 1550s, Noise on Return (Return, GND)

CAEN 1550s EMI, rear or module EMI on HV cable, 1 meter from module

EMI on HV wire at CDC (100MHz Span) EMI on HV wire at CDC (500MHz Span)