

2020/02/03: Monday

Low-power, no-plasma RMF run to see
SDI noise.

SD3, SN 19777, in a midport mount

SD1, SN 27058 in a radial scan mount

X-ray station has single-point ground to AC power ground.
Mylar sheath separates the Faraday cage from the structure
of the shelf.

100ns/12ns peaky/flat top both.

9:36AM

SD3: noise max @ ch 5, noise stops nch 30
SD1: noise max @ ch 5, noise stops nch 26.

9:40AM Trigger pulses start

9:42AM: RMF on. SD3 out to ch 28!! Noise
16W only! SD1 out to ch 32, no problem.

SD3 needs better shielding!!

Removed 1 ferrite from trunk 2 (SD3). 4→3 Ferrites
Noise out to ch 342 only. This helped. 3→2: ch 342 again.

2→1 ferrite: noise out to ch 322. This helped but not much.

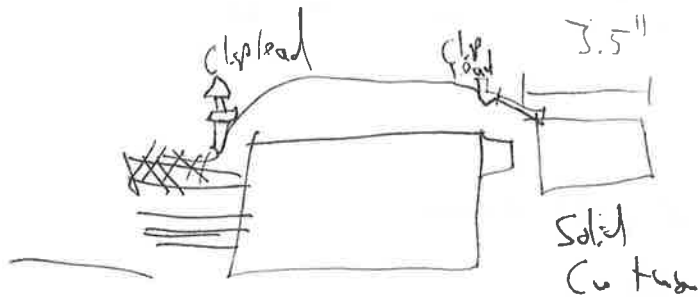
0 ferrites on trunk 2: Noise out to 326ch

9:51AM: Ok, now it's ch 403. This is quite variable. Now 436ch Now 474ch
Now 736

9:58AM: Scrunched the shielding a bit, Now it's ch 411
unplugged the RMF trig from X-ray station. No difference

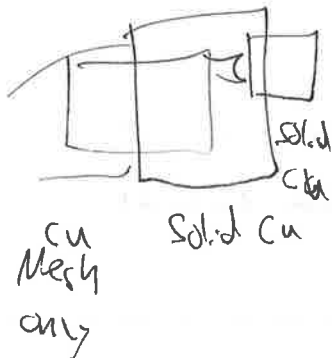
10:36 AM Got down to ch 166 noise.

Did it by:



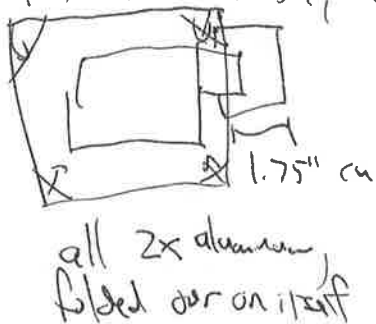
Cu mesh
&
Cu foil

10:47 AM: ~~ch 166~~ ch 128!

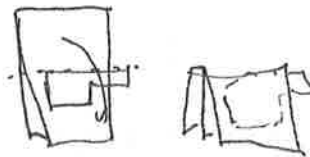


But very sensitive to

11:58 AM: Got to ch 37, with max @ ch 14 by dog this



all 2x aluminum
folded over on itself



Al

12:01 PM: 21W. Same. No problems

12:02 PM: 15W. 2 peaks. ch 65 ~~noise~~ ^{uncutoff.}, ch 14 peak

12:21 PM: Pe-shielded, with 1x & longer nose. WORSE

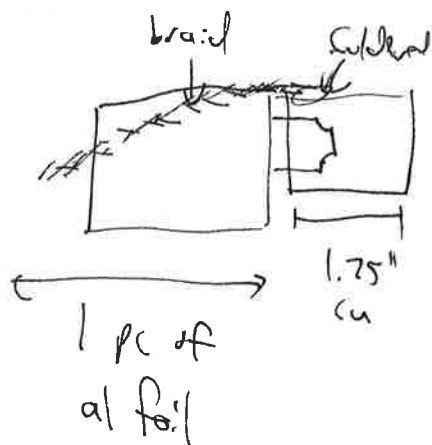
1:34pm re-shelled. 18kW.

out to ch2. Max at ch23. This isn't too bad. This is usable.

100ns[↑]

at 200ns → 1µs, there's no visible deformation.

This looks quite good.



1:40pm we'll start making plasma. 200ns/12ns: counts out to 23rd, max at ch4. This is no RMF. SDD3.

SDD3 at ap2 3

SDD1 at 3d.v.s

we'll definitely get a few ~~xxx~~. one was above 1kV.

1:57pm (01,02) 60kW RMF. That "No Lines Mode" or "anomalous" phenomenon is back in SDD3 only. 10,000% above ch40, 200ns.

2:00pm: Ap2 now. ~15 % above ch40. This is nonlinear with aperture size.

(03) A again, (04)

1995 Jeff Wray beam volition

2:15 PM ap8 Now. Looks very Poisson-like. T_{eff} is pileup.
60,000 c/s. (06)

2:22 PM ap3 L2 \rightarrow 200 A. 50,000 c/s. Very high. (07)

2:27 PM ap3 L2 \rightarrow 200 A. 30,000 c/s. (08)

2:31 PM ap2 500 c/s only. (09)

Is that an oxygen line? Maybe... we'll see.

To Do:

- check the energy of that peak.
- print out calibrations
- 1st draft of graph (as SD written)