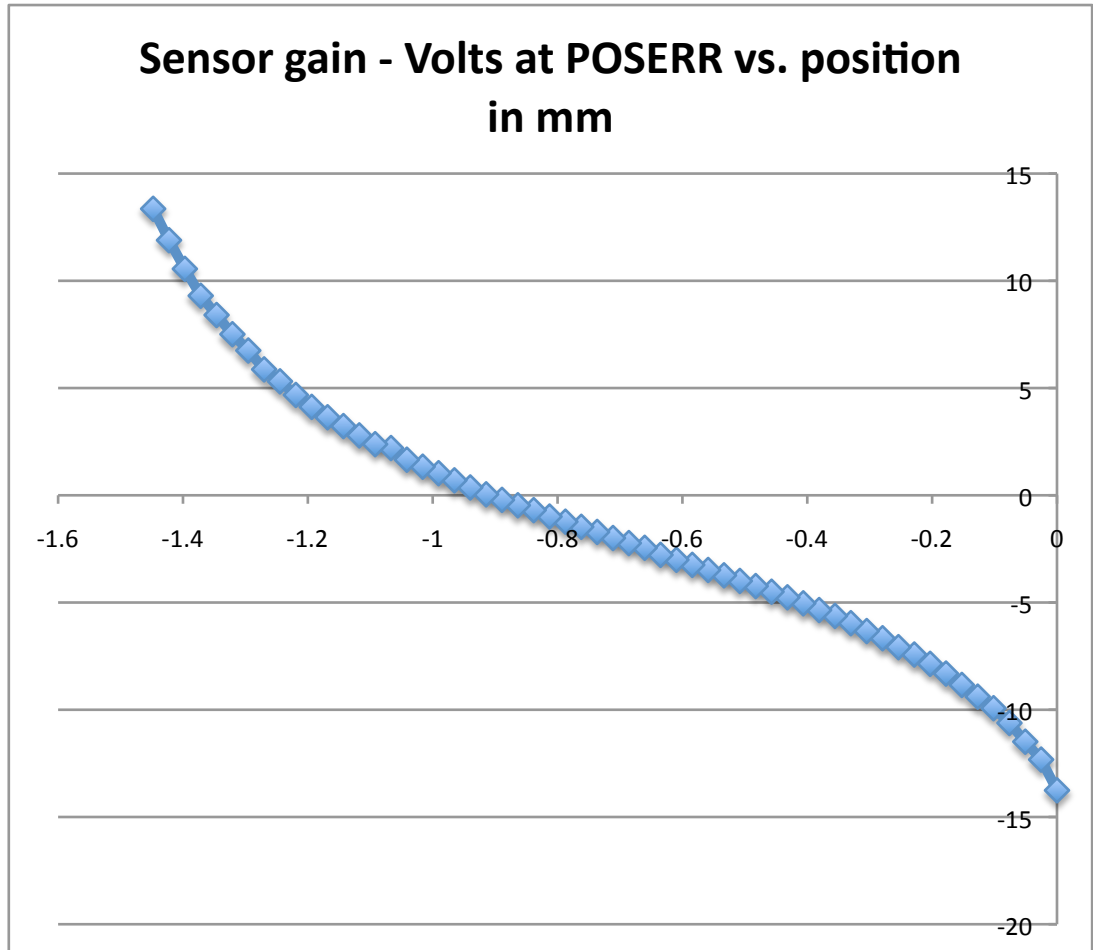


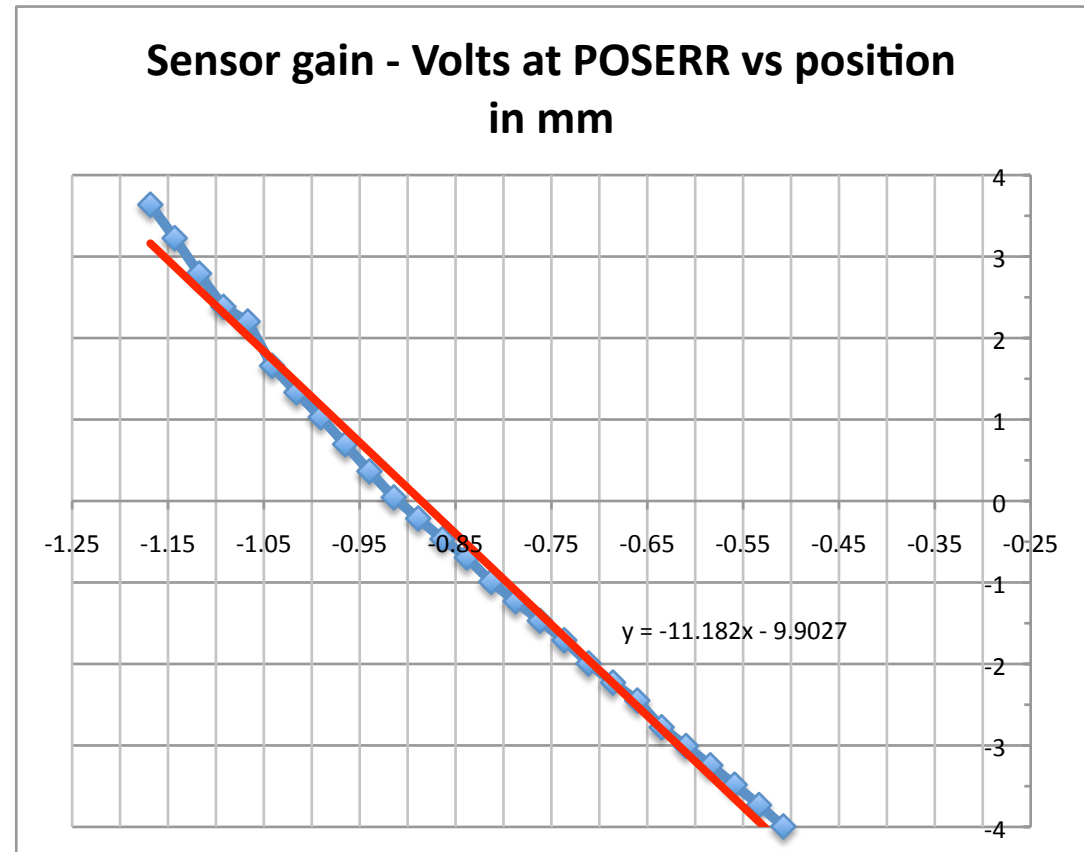
Sensor gain measurement 3/29/15

Position the Yuma on the mill. Rubber bands to provide upward tension on boom.
Pointed tip in chuck, pressing downward on boom at coil mount screw.
Use Z-axis DRO on mill to measure position, and record voltage of POSERR output.

Position (mil)	Position (mm)	Voltage
0	0	-13.757
-0.001	-0.0254	-12.323
-0.002	-0.0508	-11.489
-0.003	-0.0762	-10.617
-0.004	-0.1016	-9.928
-0.005	-0.127	-9.389
-0.006	-0.1524	-8.843
-0.007	-0.1778	-8.313
-0.008	-0.2032	-7.859
-0.009	-0.2286	-7.425
-0.01	-0.254	-7.082
-0.011	-0.2794	-6.666
-0.012	-0.3048	-6.331
-0.013	-0.3302	-5.964
-0.014	-0.3556	-5.625
-0.015	-0.381	-5.351
-0.016	-0.4064	-5.038
-0.017	-0.4318	-4.758
-0.018	-0.4572	-4.496
-0.019	-0.4826	-4.233
-0.02	-0.508	-3.994
-0.021	-0.5334	-3.732
-0.022	-0.5588	-3.482
-0.023	-0.5842	-3.244
-0.024	-0.6096	-3.007
-0.025	-0.635	-2.777
-0.026	-0.6604	-2.449
-0.027	-0.6858	-2.228
-0.028	-0.7112	-1.993
-0.029	-0.7366	-1.709
-0.03	-0.762	-1.47
-0.031	-0.7874	-1.231
-0.032	-0.8128	-0.9912
-0.033	-0.8382	-0.6931
-0.034	-0.8636	-0.4666
-0.035	-0.889	-0.2146
-0.036	-0.9144	0.0443



-0.037	-0.9398	0.3645
-0.038	-0.9652	0.6962
-0.039	-0.9906	1.0291
-0.04	-1.016	1.333
-0.041	-1.0414	1.6593
-0.042	-1.0668	2.20278
-0.043	-1.0922	2.383
-0.044	-1.1176	2.792
-0.045	-1.143	3.226
-0.046	-1.1684	3.637
-0.047	-1.1938	4.122
-0.048	-1.2192	4.678
-0.049	-1.2446	5.312
-0.05	-1.27	5.87
-0.051	-1.2954	6.75
-0.052	-1.3208	7.509
-0.053	-1.3462	8.405
-0.054	-1.3716	9.303
-0.055	-1.397	10.557
-0.056	-1.4224	11.893
-0.057	-1.4478	13.357



Note: Curve is not symmtric at zero-crossing point. Boom misaligned.

Slope of Sensor gain	-11.182 volts/mm
Gain of POSERR buffer	-10
Rsensor	1118.2 V/m