Todd Moore		Vicor Power Supply Noise Test Summary Report					5/17/2006		
Environment:									
	1	Monsoon is running Fermilab focalplane on cyclone:/home/monsoon/cfg/_fnalShort/.							
		Sequencer is ReadType1d.ucd							
		Readout time remains at 11uS/pixel, while the # of pixels was decreased to 400 rows X 300 columns to reduce the readout time.							
		All Offsets are set to 1.0v. Channel 0 & 2 video inputs are connected to CCD sim board through Fermilab supplied video cable.							
	2	Power cables for Vicor supplies are 6 feet long, 16awg, not shielded & are twisted pairs.							
		Sense cables for Vicor supplies are 6 feet long, 20awg, not shielded, & are twisted pairs.							
		Cables going to external loads are 3-5 feet, 12awg, not shielded, & are twisted pairs.							
	3	All datasets are located on cyclone.hep.uiuc.edu:/home/monsoon/data/vicor_noisetest/….							
		In /home/monsoon/data/vicor_noisetest/ are folders which named by the date the data was taken.							
			Channel 0		Channel 2				
Test#	Date	Conditions	Mean	RMS	Mean	RMS	Notes	FITS Filename	Postscript Filename
Test5	11-May-06	All linear supplies attached to monsoon, 3.3v is derived from a regulator using +5v linear	8.09E+04	9.493	8.09E+04	7.636	What is the baseline noise count with all linear supplies attached to Monsoon?	all_linear_May11_test5.fits	all_linear_May11_test5.ps
Test6	11-May-06	All Vicor supplies (+/-15va, +/-5va, +5vdc), except 3.3v, are attached to Monsoon and loaded to at least 85%. 3.3v is derived from a regulator using Vicor +5vdc.	8.10E+04	11.2	8.10E+04	10.36	Does replacing all linears with all Vicor supplies increase the noise? No.	all_vicor_wo3_3_May11_test6.fits	all_vicor_wo3_3_May11_test6.ps
Test8	12-May-06	Same as Test6, except 3.3v is being derived from Vicor Supply and **IS NOT FILTERED** using uRAM.	8.10E+04	11.12	8.10E+04	10	Does Vicor 3.3v attached and not filtered cause an increase in noise?	all_vicor_w3_3unfiltered_May12_test8_2.fits	all_vicor_w3_3unfiltered_May12_test8_2.ps
Test10a1	15-May-06	Same as Test8, except 3.3v **IS FILTERED** using uRAM.	8.10E+04	25.19	8.10E+04	17.21	Does Vicor 3.3v attached and filtered using uRAM cause an increase in noise? Yes.	all_vicor_w3_3filtered_May15_test10a1.fits	all_vicor_w3_3filtered_May15_test10a1.ps
Test10b1	15-May-06	Same as Test8.	8.10E+04	16.29	8.10E+04	12.36	Remove uRAM filter and see if noise is still high. Sigma didn't get as low as it did during Test8 on the previous day.	all_vicor_w3_3filtered_May15_test10b1.fits	all_vicor_w3_3filtered_May15_test10b1.ps
Test11	16-May-06	Same as Test8.	8.10E+04	18.49	8.10E+04	13.32	Another test was taken to validate the same # of Sigmas for this test as was in Test10b1.	all_vicor_w3_3unfiltered_May16_test11.fits	all_vicor_w3_3unfiltered_May16_test11.ps
Test12	16-May-06	Same as Test6.	8.10E+04	17.31	8.10E+04	15.19	Removed Vicor 3.3 supply to see if noise lowers. It did not.	all_vicor_wo3_3_May16_test12.fits	all_vicor_wo3_3_May16_test12.ps
Test13	16-May-06	Same as Test5.	8.09E+04	10.19	8.09E+04	9.42	Went back to linear to see if noise lowers to previous levels of Test5. Sigma is close but is higher by about 2	all_linear_May16_test13.fits	all_linear_May16_test13.ps
Test14	16-May-06	Same as Test6.	8.09E+04	51.98	8.10E+04	42.42	Went back to Vicor supplies without using Vicor 3.3v supply. Sigma went up considerably.	all_vicor_wo3_3_May16_test14.fits	all_vicor_wo3_3_May16_test14.ps
Preliminary Conclusion:		Vicor power supplies have shown to operate quietly while being loaded to at lest 85%. We are concerned about the replicability of the data set due to the fact the sigmas change considerably when we re-attach the Vicor supplies to Monsoon. We also concerned about the reliability of the converterpacs as we have had 3 fail to date.							