

RADIATION TEST REPORT

PRODUCT:	AD6645ASQ/QMLL
GAMMA/TM:	37.5k, 52.03k, 98.67k, 150k /TM1019 Condition D
GAMMA SOURCE:	Co60
DOSE RATE:	9.2mRad(si)/s
FACILITIES:	University of Massachusetts @ Lowell
TESTED:	2008/2009

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It is the responsibility of the Procuring Activity to screen products from Analog Devices, Inc. for compliance to Nuclear Hardness Critical Items (HCI) specifications.

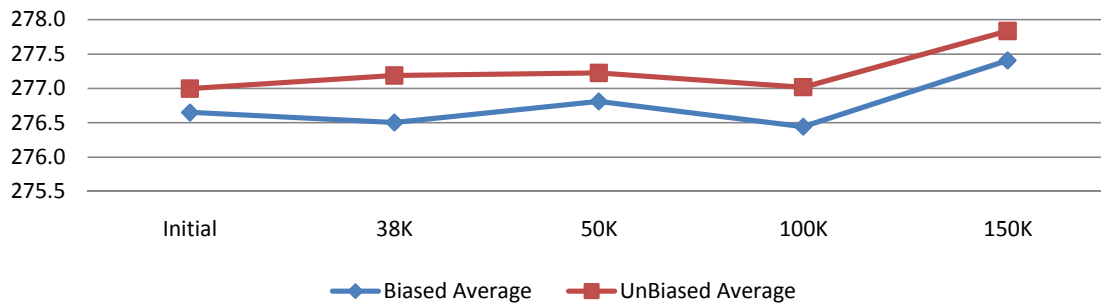
WARNING:

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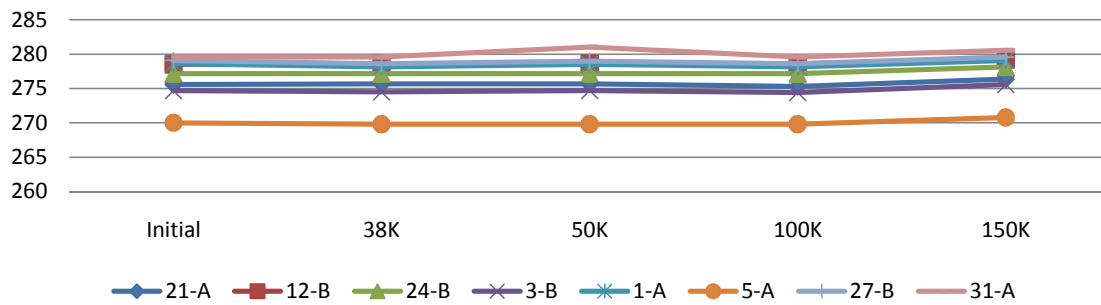


	1	AVCCI @5V					mA
	S/N	Initial	38K	50K	100K	150K	Limit
Control	1-B	278.1162		278.1162	277.7256	278.6046	<320
Biased	21-A	275.5769	275.6745	275.6745	275.2838	276.3582	
	12-B	278.5070	278.6046	278.6046	278.6046	279.1906	
	24-B	277.1396	277.1396	277.1396	277.1396	278.1162	
	3-B	274.6978	274.5025	274.6978	274.4047	275.5769	
	1-A	278.6046	278.1162	278.507	278.1162	279.0930	
	5-A	270.0096	269.8143	269.8143	269.8143	270.7910	
	27-B	279.0930	278.6046	278.9953	278.6046	279.5813	
	31-A	279.5813	279.5813	281.0464	279.5813	280.5580	
	min	270.0096	269.8143	269.8143	269.8143	270.7910	
	max	279.5813	279.5813	281.0464	279.5813	280.5580	
average	276.6512	276.5047	276.8099	276.4436	277.4082		
UnBiased	14-B	278.7999	278.6046	278.6046	278.1162	279.0930	
	17-B	279.1906	279.0930	279.093	278.6046	279.5813	
	31-B	275.6745	275.1862	275.3814	275.1862	277.1396	
	33-B	274.6978	274.6978	274.6978	274.6978	275.1862	
	14-A	276.6512	276.5536	276.6512	276.1628	276.8465	
	32-A	277.7256	277.6279	277.6279	277.6279	278.1162	
	33-A	279.5813	279.0930	279.093	279.0930	279.5813	
	13-A	273.6497	276.6512	276.6512	276.6512	277.1396	
	min	273.6497	274.6978	274.6978	274.6978	275.1862	
	max	279.5813	279.0930	279.093	279.0930	279.5813	
average	276.9963	277.1884	277.225013	277.0175	277.8355		

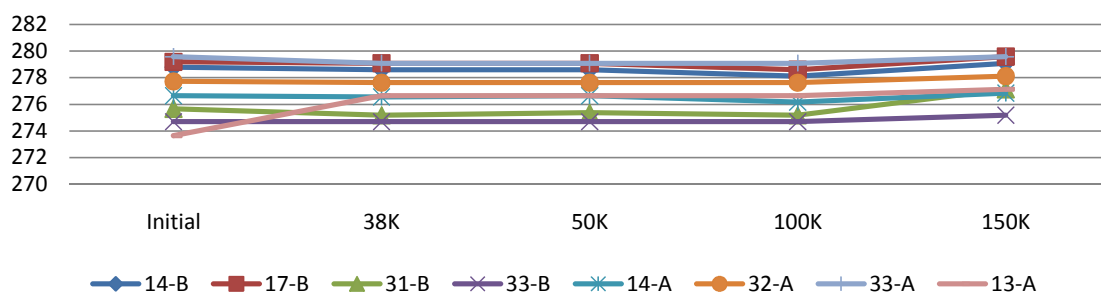
Analog Supply Current - Average



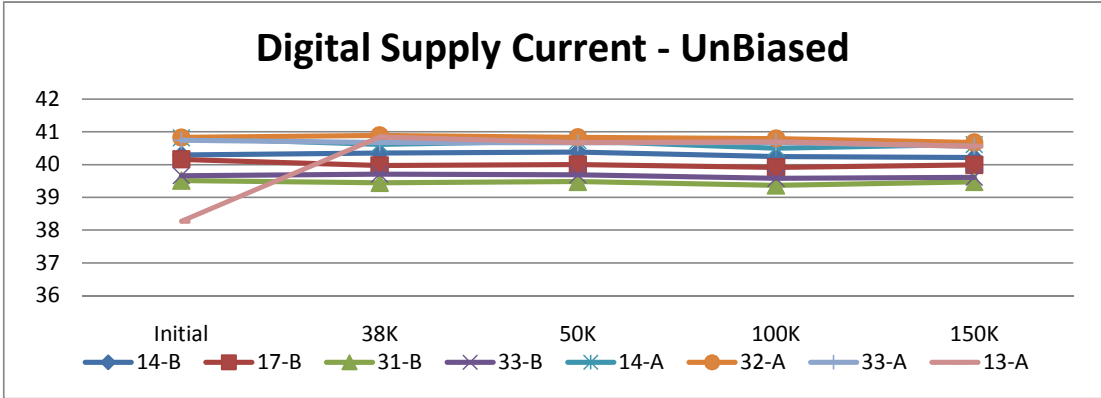
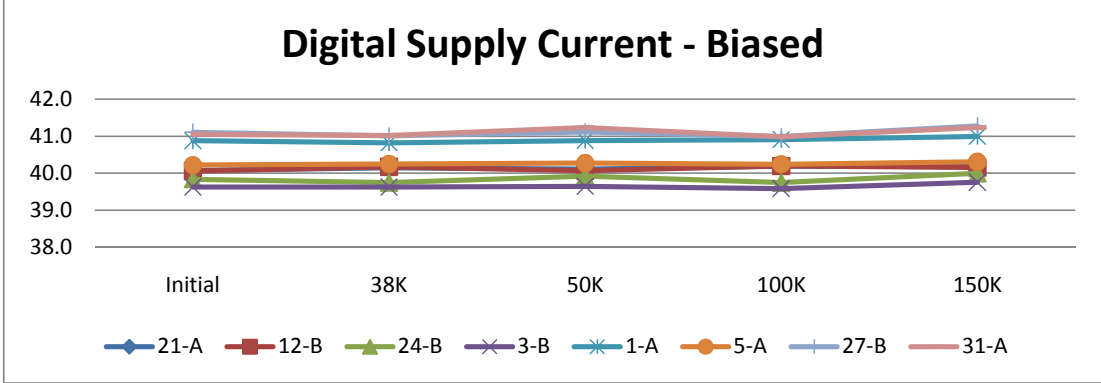
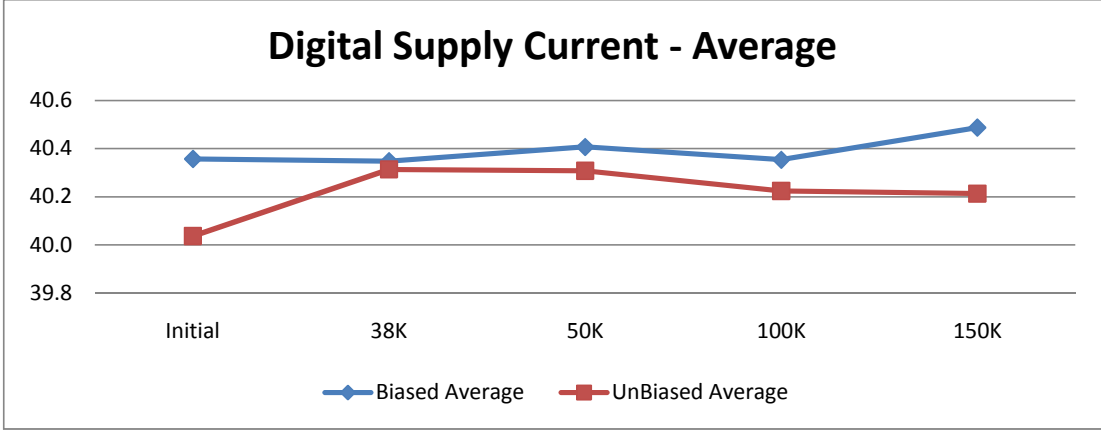
Analog Supply Current - Biased



Analog Supply Current - UnBiased

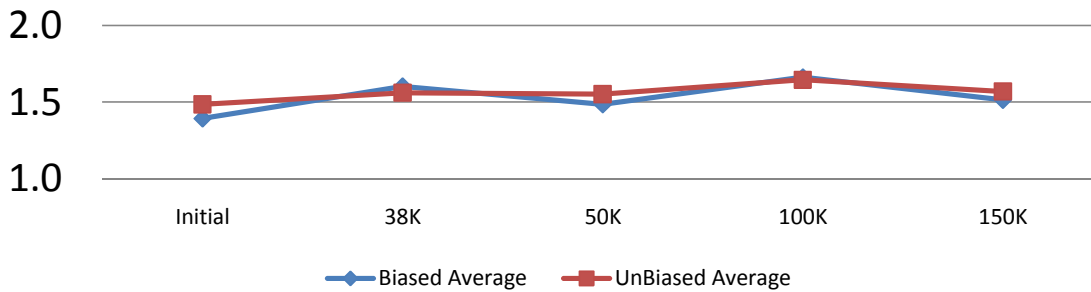


2		DVCCI @3.3V					mA
S/N		Initial	38K	50K	100K	150K	Limit
Control	1-B	40.45260		40.55116	40.42179	40.48340	<45
Biased	21-A	40.07681	40.14458	40.11377	40.18769	40.18154	
	12-B	40.05833	40.16922	40.06449	40.19385	40.15073	
	24-B	39.83655	39.74414	39.92280	39.74414	39.99672	
	3-B	39.62710	39.62710	39.64558	39.58398	39.75647	
	1-A	40.87767	40.82223	40.88383	40.90847	40.99471	
	5-A	40.21850	40.24930	40.27394	40.24314	40.31091	
	27-B	41.10561	41.00704	41.11792	40.98855	41.27810	
	31-A	41.05632	41.01936	41.23497	40.98240	41.23497	
	min	39.62710	39.62710	39.64558	39.58398	39.75647	
	max	41.10561	41.01936	41.23497	40.98855	41.27810	
average	40.35711	40.34787	40.40716	40.35403	40.48802		
UnBiased	14-B	40.29243	40.35403	40.38484	40.24930	40.21234	
	17-B	40.16305	39.97208	40.00288	39.91663	39.99057	
	31-B	39.51620	39.44844	39.47924	39.36836	39.47309	
	33-B	39.66405	39.70719	39.68870	39.58398	39.61478	
	14-A	40.81607	40.61277	40.72982	40.50188	40.61277	
	32-A	40.82838	40.88999	40.83454	40.79758	40.67437	
	33-A	40.74214	40.68053	40.66205	40.68053	40.56348	
	13-A	38.26848	40.84687	40.68053	40.69286	40.56348	
	min	38.26848	39.44844	39.47924	39.36836	39.47309	
	max	40.82838	40.88999	40.83454	40.79758	40.67437	
average	40.03635	40.31399	40.30783	40.22389	40.21311		

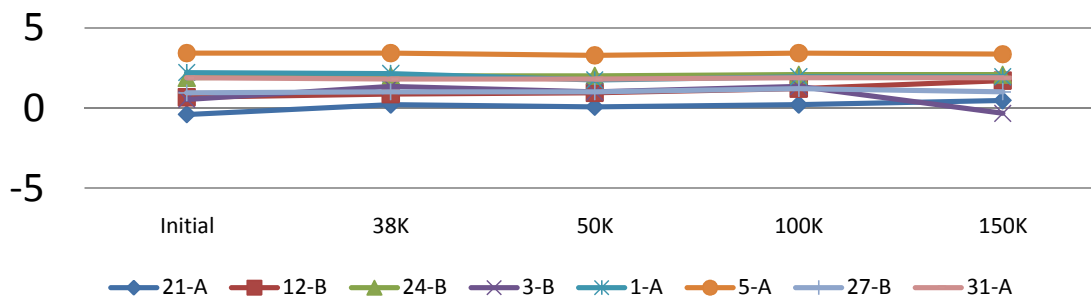


		3	Offset Error				mV	
		S/N	Initial	38K	50K	100K	150K	Limit
Control	1-B	0.46998			0.73854	1.00710	0.60426	+/-10
Biased	21-A	-0.40284	0.20142	0.06714	0.20142	0.47000		
	12-B	0.67140	0.87282	0.93996	1.20852	1.70420		
	24-B	1.87992	2.01420	2.01420	2.08134	2.08134		
	3-B	0.53712	1.34280	1.00710	1.34280	-0.33570		
	1-A	2.21562	2.14848	1.74564	1.94706	1.94706		
	5-A	3.42414	3.42414	3.28986	3.42414	3.35700		
	27-B	0.93996	1.00710	1.00710	1.20852	1.00710		
	31-A	1.87992	1.81278	1.81278	1.87992	1.87992		
	min	-0.40284	0.20142	0.06714	0.20142	-0.33570		
	max	3.42414	3.42414	3.28986	3.42414	3.35700		
average	1.39316	1.60297	1.48547	1.66172	1.51387			
UnBiased	14-B	3.89412	4.09554	4.09554	4.22982	4.09554		
	17-B	1.20852	1.00710	1.00710	1.00710	1.34280		
	31-B	1.00710	1.14138	1.14138	1.20852	0.87282		
	33-B	2.21562	2.28276	2.41704	2.55132	2.41704		
	14-A	0.46998	0.60426	0.53712	0.60426	0.53712		
	32-A	0.53712	0.60426	0.46998	0.53712	0.46998		
	33-A	2.14848	2.21562	2.28276	2.34990	2.28276		
	13-A	0.40284	0.53712	0.46998	0.67140	0.53712		
	min	0.40284	0.53712	0.46998	0.53712	0.46998		
	max	3.89412	4.09554	4.09554	4.22982	4.09554		
average	1.48547	1.56101	1.55261	1.64493	1.56940			

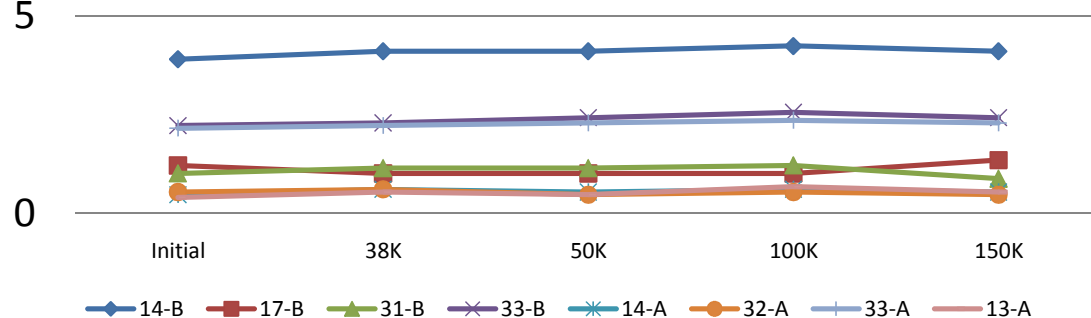
Offset Error - Average



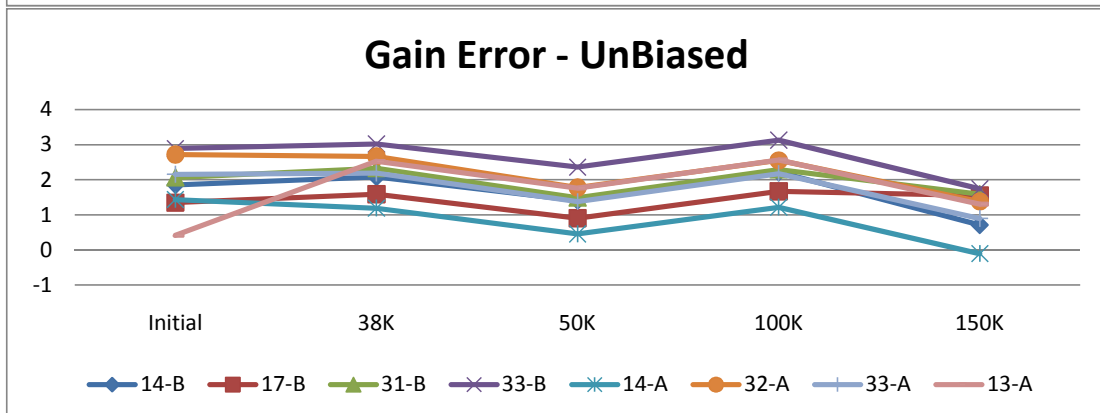
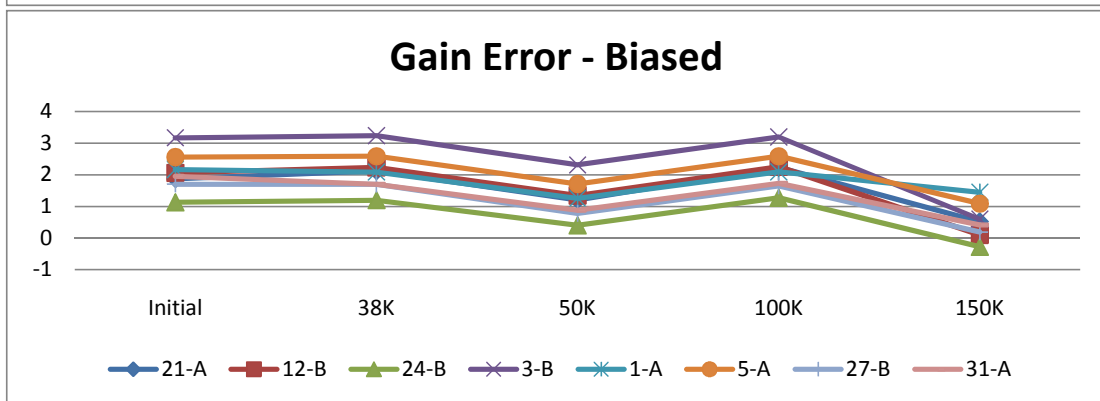
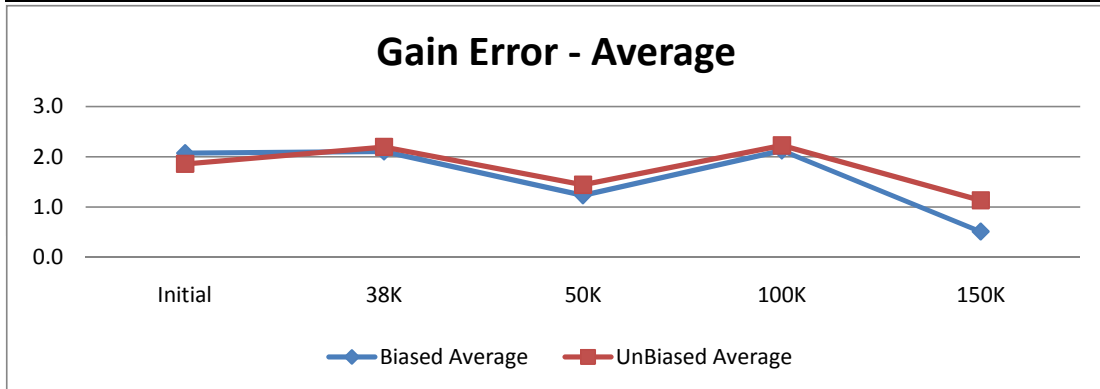
Offset Error - Biased



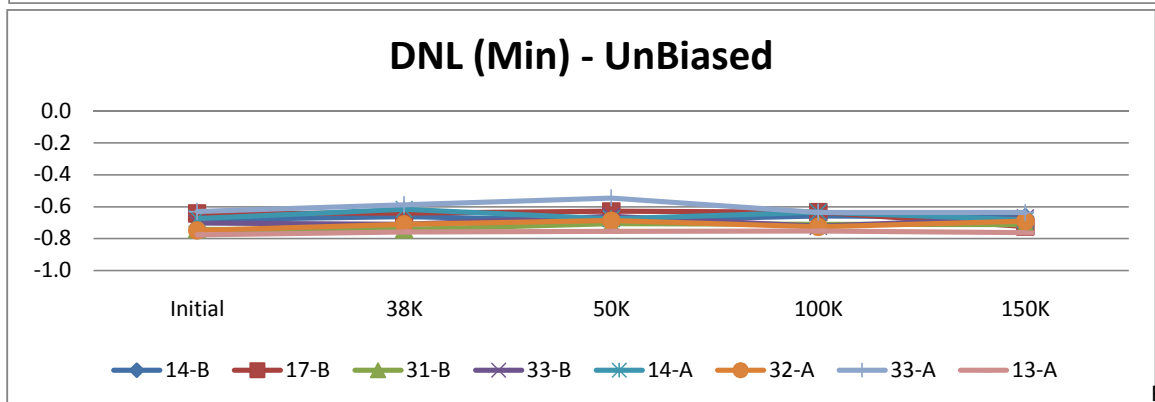
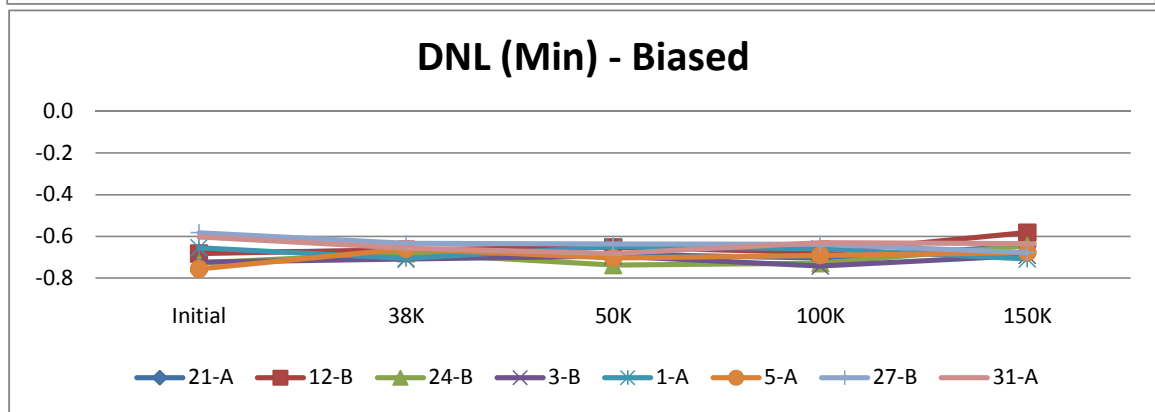
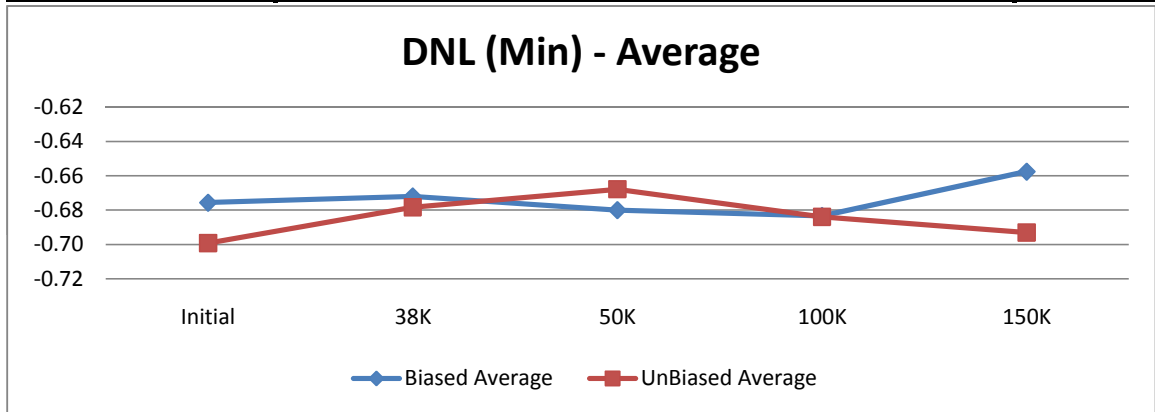
Offset Error - UnBiased



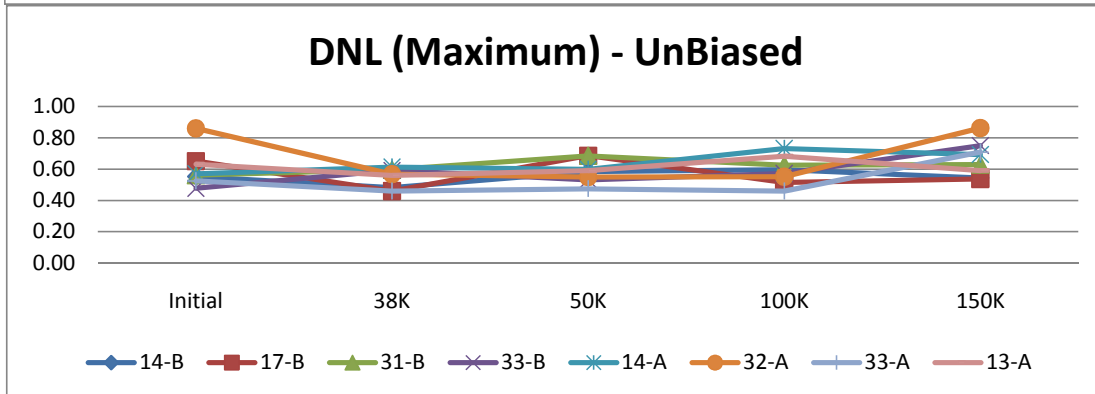
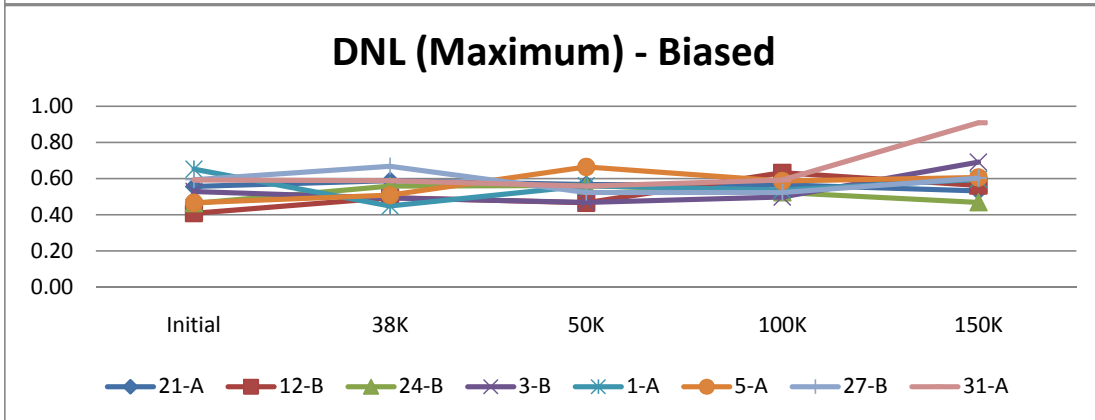
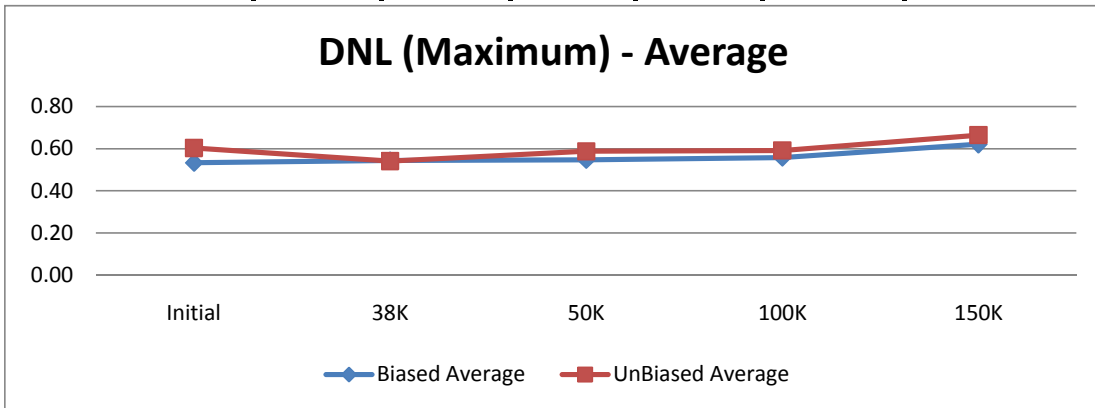
		4	Gain Error					%FS
		S/N	Initial	38K	50K	100K	150K	Limit
Control	1-B	2.77864			1.84728	2.64168	1.45008	+/-10
Biased	21-A	1.86783	2.12121	1.20354	2.23078	0.51870		
	12-B	2.05958	2.23078	1.34736	2.25133	0.10100		
	24-B	1.12821	1.19670	0.40230	1.27203	-0.27568		
	3-B	3.16899	3.23748	2.31296	3.19639	0.60090		
	1-A	2.16230	2.08697	1.25148	2.09382	1.45008		
	5-A	2.55950	2.58689	1.71032	2.58689	1.08712		
	27-B	1.70347	1.69662	0.77895	1.64868	0.19000		
	31-A	1.95000	1.69662	0.87483	1.73086	0.41599		
	min	1.12821	1.19670	0.40230	1.27203	-0.27568		
	max	3.16899	3.23748	2.31296	3.19639	1.45008		
average	2.07499	2.10666	1.23522	2.12635	0.51101			
UnBiased	14-B	1.85413	2.08012	1.40899	2.21709	0.71047		
	17-B	1.34736	1.58705	0.90222	1.66923	1.55281		
	31-B	2.06642	2.32666	1.49117	2.29242	1.58705		
	33-B	2.88822	3.01833	2.36090	3.12790	1.74456		
	14-A	1.43639	1.18985	0.45708	1.21724	-0.10447		
	32-A	2.71701	2.66907	1.77880	2.55265	1.38160		
	33-A	2.15545	2.18969	1.37475	2.17600	0.89537		
	13-A	0.41599	2.52526	1.76510	2.56635	1.30627		
	min	0.41599	1.18985	0.45708	1.21724	-0.10447		
	max	2.88822	3.01833	2.36090	3.12790	1.74456		
average	1.86012	2.19825	1.44238	2.22736	1.13421			



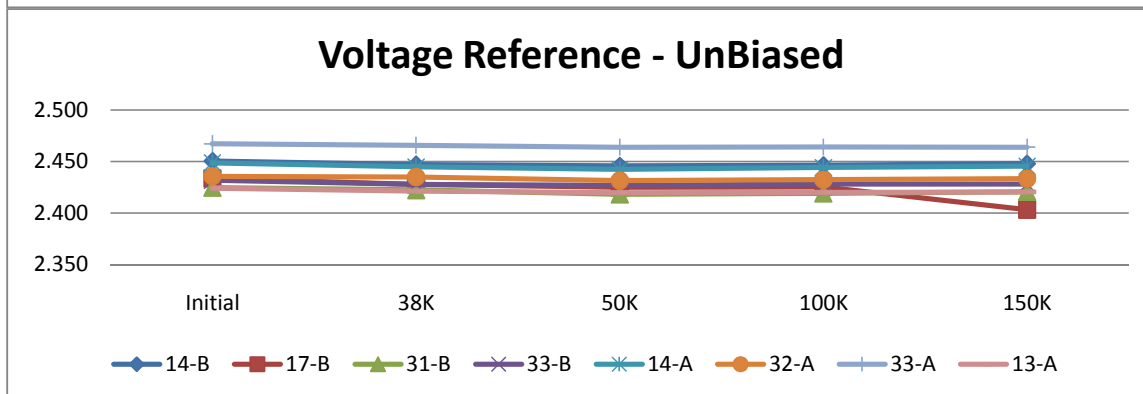
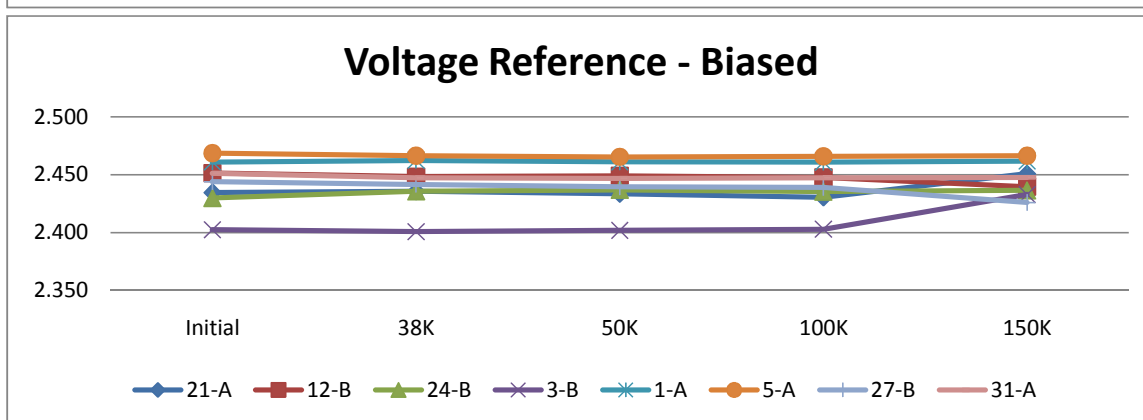
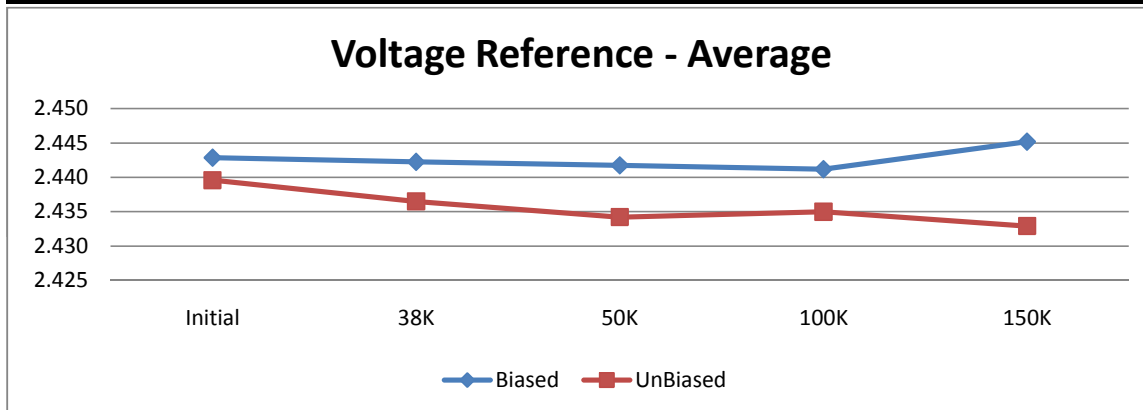
		5	DNL min - Biased				LSB	
		S/N	Initial	38K	50K	100K	150K	Limit
Control	1-B	-0.65321			-0.63232	-0.64941	-0.71626	>-1
Biased	21-A	-0.67662	-0.66838	-0.68560	-0.70294	-0.64600		
	12-B	-0.68200	-0.66320	-0.65197	-0.67695	-0.58130		
	24-B	-0.72655	-0.68034	-0.73705	-0.72857	-0.64435		
	3-B	-0.72418	-0.70866	-0.69506	-0.74237	-0.69175		
	1-A	-0.65465	-0.70565	-0.64827	-0.65867	-0.70804		
	5-A	-0.75571	-0.65955	-0.70321	-0.69084	-0.67686		
	27-B	-0.58214	-0.63372	-0.63586	-0.63724	-0.67696		
	31-A	-0.60298	-0.65624	-0.68257	-0.62928	-0.63522		
	min	-0.75571	-0.70866	-0.73705	-0.74237	-0.70804		
	max	-0.58214	-0.63372	-0.63586	-0.62928	-0.58130		
average	-0.67560	-0.67197	-0.67995	-0.68336	-0.65756			
UnBiased	14-B	-0.68101	-0.66162	-0.68784	-0.65828	-0.66468		
	17-B	-0.64158	-0.63980	-0.62854	-0.63402	-0.72479		
	31-B	-0.74123	-0.74288	-0.70608	-0.70965	-0.71255		
	33-B	-0.70217	-0.71049	-0.65895	-0.72156	-0.67034		
	14-A	-0.67370	-0.61675	-0.67511	-0.63436	-0.68269		
	32-A	-0.74757	-0.70980	-0.68678	-0.72629	-0.68974		
	33-A	-0.63011	-0.58801	-0.54541	-0.63610	-0.63677		
	13-A	-0.77620	-0.75735	-0.75412	-0.75119	-0.76281		
	min	-0.77620	-0.75735	-0.75412	-0.75119	-0.76281		
	max	-0.63011	-0.58801	-0.54541	-0.63402	-0.63677		
average	-0.69920	-0.67834	-0.66785	-0.68393	-0.69305			



		6	DNL max				LSB	
		S/N	Initial	38K	50K	100K	150K	Limit
Control	1-B	0.51665		0.48769	0.60748	0.50610		<1.5
Biased	21-A	0.55607	0.58935	0.56699	0.56560	0.53130		
	12-B	0.40888	0.49502	0.46600	0.63223	0.56160		
	24-B	0.46374	0.55873	0.56272	0.52407	0.46835		
	3-B	0.52881	0.49343	0.46935	0.49876	0.69128		
	1-A	0.65247	0.44923	0.56084	0.53700	0.59632		
	5-A	0.46627	0.50863	0.66480	0.58696	0.60640		
	27-B	0.59462	0.66846	0.52387	0.52413	0.60332		
	31-A	0.59253	0.58869	0.55935	0.59291	0.90862		
	min	0.40888	0.44923	0.46600	0.49876	0.46835		
	max	0.65247	0.66846	0.66480	0.63223	0.90862		
	average	0.53292	0.54394	0.54674	0.55771	0.62090		
UnBiased	14-B	0.55222	0.48134	0.58446	0.59595	0.54365		
	17-B	0.65108	0.45989	0.68577	0.51386	0.53757		
	31-B	0.56093	0.59599	0.68475	0.62562	0.62897		
	33-B	0.47688	0.59140	0.53193	0.57235	0.75048		
	14-A	0.57052	0.61369	0.59800	0.73130	0.69305		
	32-A	0.86047	0.56822	0.54966	0.55139	0.86224		
	33-A	0.52464	0.45941	0.47442	0.45924	0.70844		
	13-A	0.63133	0.56018	0.58977	0.68326	0.59126		
	min	0.47688	0.45941	0.47442	0.45924	0.53757		
	max	0.86047	0.61369	0.68577	0.73130	0.86224		
	average	0.60351	0.54127	0.58735	0.59162	0.66446		



	7	Vref					V
	S/N	Initial	38K	50K	100K	150K	Limit
Control	1-B	2.43440		2.43440	2.43462	2.43558	
Biased	21-A	2.43454	2.43564	2.43345	2.43042	2.45080	
	12-B	2.45138	2.44834	2.44899	2.44761	2.43960	
	24-B	2.42984	2.43561	2.43691	2.43544	2.43640	
	3-B	2.40237	2.40076	2.40182	2.40291	2.43284	
	1-A	2.46098	2.46238	2.46104	2.46085	2.46180	
	5-A	2.46856	2.46638	2.46539	2.46584	2.46640	
	27-B	2.44389	2.44158	2.43946	2.43907	2.42594	
	31-A	2.45131	2.44731	2.44690	2.44741	2.44768	
	min	2.40237	2.40076	2.40182	2.40291	2.42594	
	max	2.46856	2.46638	2.46539	2.46584	2.46640	
average	2.44286	2.44225	2.44175	2.44119	2.44518		
UnBiased	14-B	2.45059	2.44705	2.44585	2.44634	2.44796	
	17-B	2.43361	2.42782	2.42506	2.42551	2.40329	
	31-B	2.42475	2.42243	2.41829	2.41927	2.42074	
	33-B	2.43179	2.42795	2.42677	2.42804	2.42810	
	14-A	2.44878	2.44483	2.44231	2.44422	2.44540	
	32-A	2.43571	2.43499	2.43165	2.43239	2.43342	
	33-A	2.46722	2.46570	2.46393	2.46404	2.46397	
	13-A	2.42426	2.42122	2.41993	2.42010	2.42048	
	min	2.42426	2.42122	2.41829	2.41927	2.40329	
	max	2.46722	2.46570	2.46393	2.46404	2.46397	
average	2.43959	2.43650	2.43422	2.43499	2.43292		



		8	Encode IIL				uA	
		S/N	Initial	38K	50K	100K	150K	Limit
Control	1-B	-546.6255			-547.3333	-546.5820	-546.7757	
Biased	21-A	-530.4751	-531.1422	-531.7769	-531.2952	-531.2952	-553.7480	
	12-B	-549.3156	-549.7828	-550.686	-549.9343	-549.9343	-548.3847	
	24-B	-545.9632	-546.2961	-547.1992	-546.6490	-546.6490	-553.7479	
	3-B	-544.0188	-544.0163	-545.0535	-544.4365	-544.4365	-531.4905	
	1-A	-546.8937	-547.3689	-548.0709	-547.4536	-547.4536	-547.5132	
	5-A	-529.1929	-529.8682	-530.5699	-530.0213	-530.0213	-531.2894	
	27-B	-547.4301	-548.1064	-548.7414	-548.3252	-548.3252	-552.7423	
	31-A	-547.7653	-548.4417	-549.0097	-548.6604	-548.6604	-553.8149	
	min	-549.3156	-549.7828	-550.686	-549.9343	-549.9343	-553.8149	
	max	-529.1929	-529.8682	-530.5699	-530.0213	-530.0213	-531.2894	
average	-542.6318	-543.1278	-543.8884	-543.3469	-543.3469	-546.5914		
UnBiased	14-B	-551.3941	-552.0625	-552.7646	-552.7503	-552.7503	-554.3513	
	17-B	-550.1202	-550.7215	-551.5577	-551.4094	-551.4094	-544.6975	
	31-B	-547.1030	-547.7042	-548.4732	-548.2581	-548.2581	-555.6921	
	33-B	-545.9632	-546.4972	-547.1992	-547.1854	-547.1854	-548.1165	
	14-A	-543.5413	-544.1504	-544.9865	-544.9728	-544.9728	-546.5746	
	32-A	-545.2845	-545.8937	-546.7298	-546.7831	-546.7831	-548.4517	
	33-A	-549.8438	-550.3863	-551.6918	-551.2753	-551.2753	-552.4071	
	13-A	-544.5493	-545.2902	-546.0593	-546.1127	-546.1127	-547.3791	
	min	-551.3941	-552.0625	-552.7646	-552.7503	-552.7503	-555.6921	
	max	-543.5413	-544.1504	-544.9865	-544.9728	-544.9728	-544.6975	
average	-547.2249	-547.8383	-548.6828	-548.5934	-548.5934	-549.7087		

