

# LOW DOSE RADIATION TEST REPORT OP270S

February 2015

Generic

## Radiation Test Report

Product:	OP270S
Gamma:	0, 15k, 30k, 50k, 75k, 100k
Gamma Source:	Co60/TM1019 Condition D
Dose Rate:	8.3 mRad/s
Facilities:	VPT RAD
Tested:	4/2014 - 9/2014

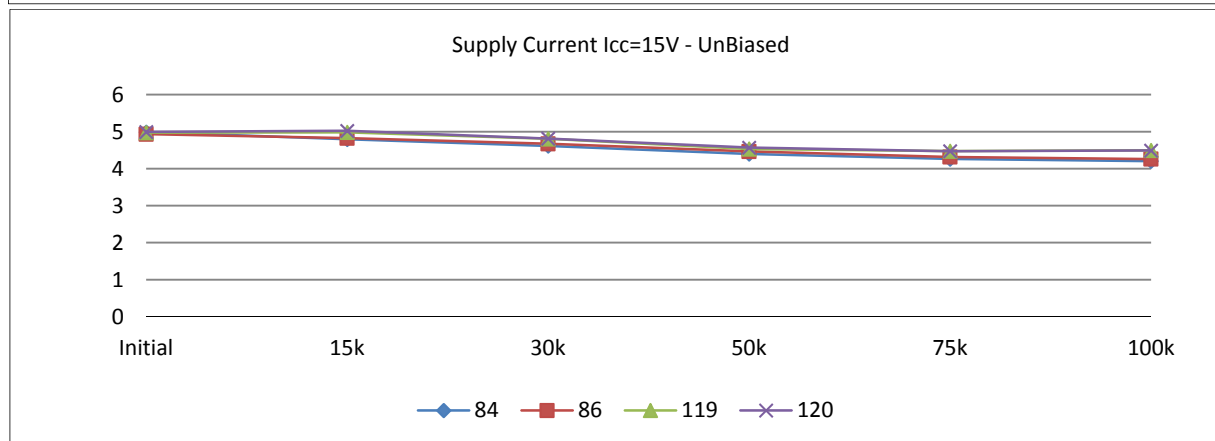
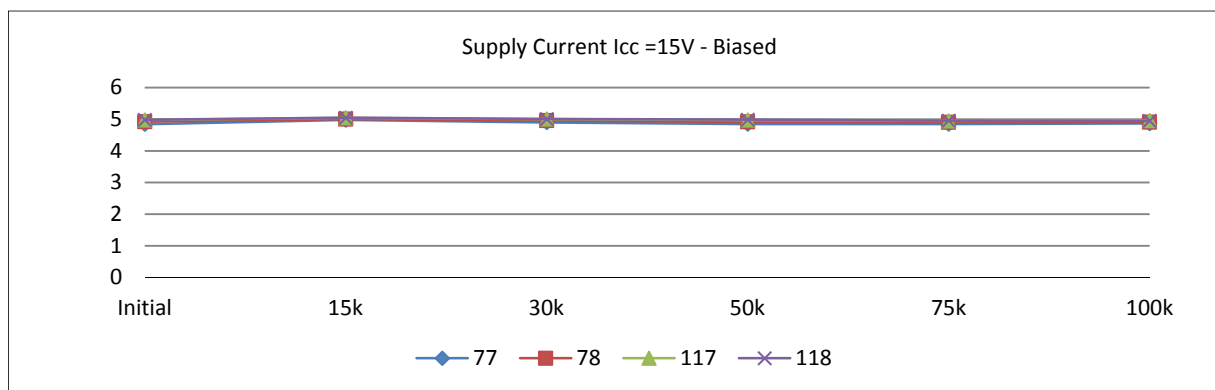
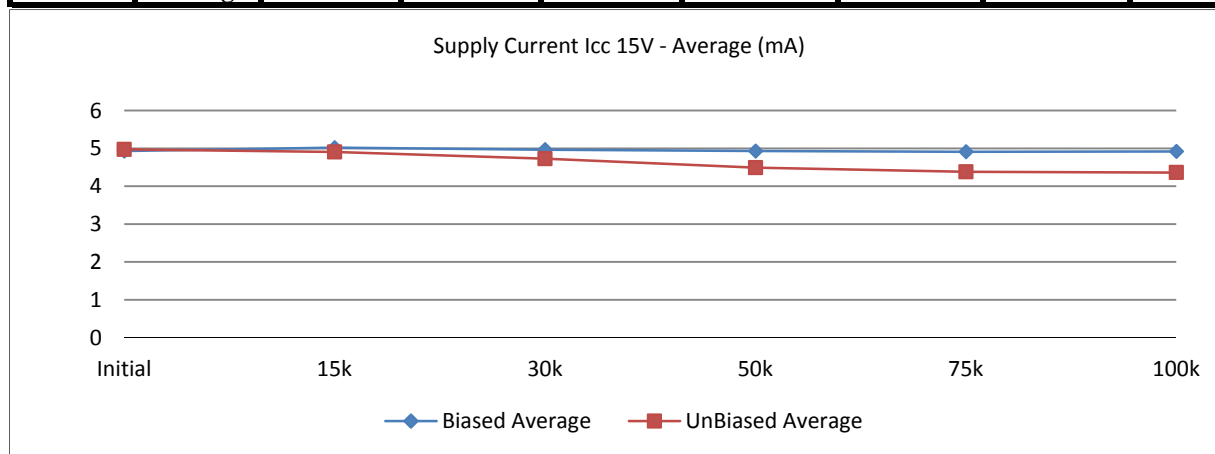
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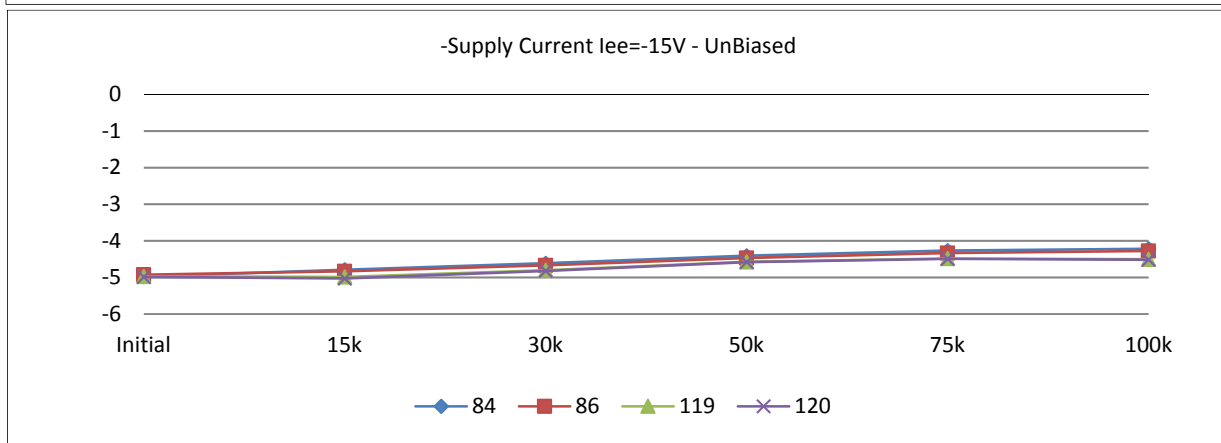
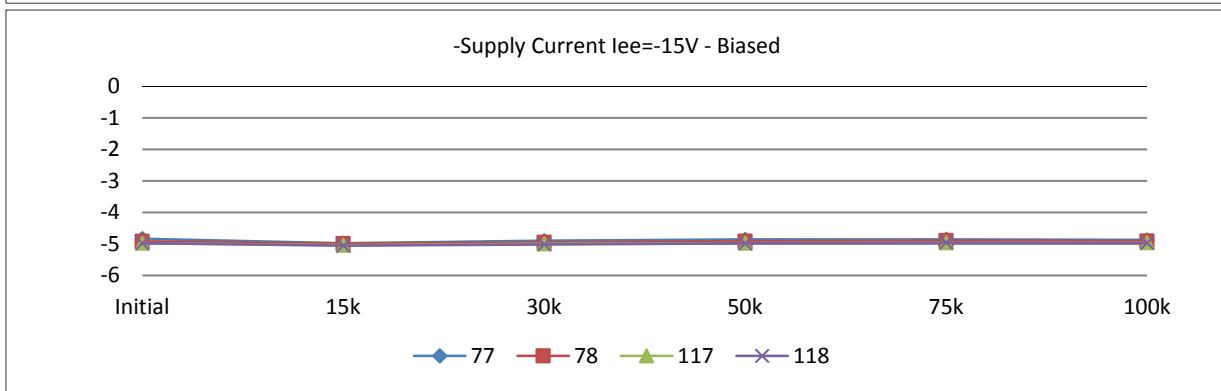
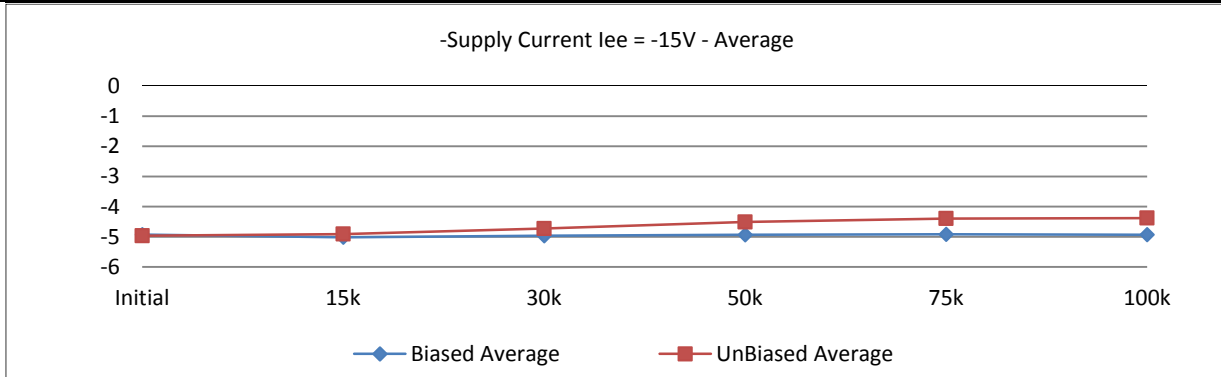
### Warning:

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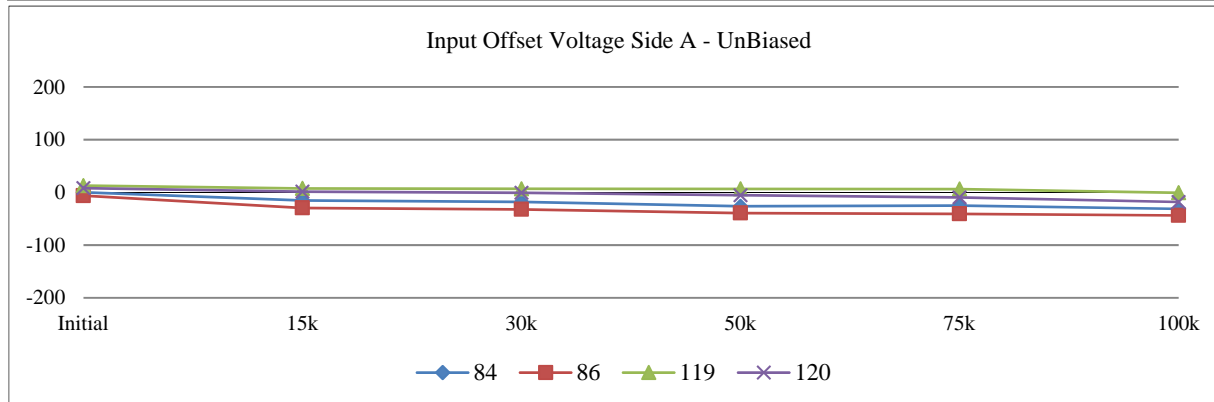
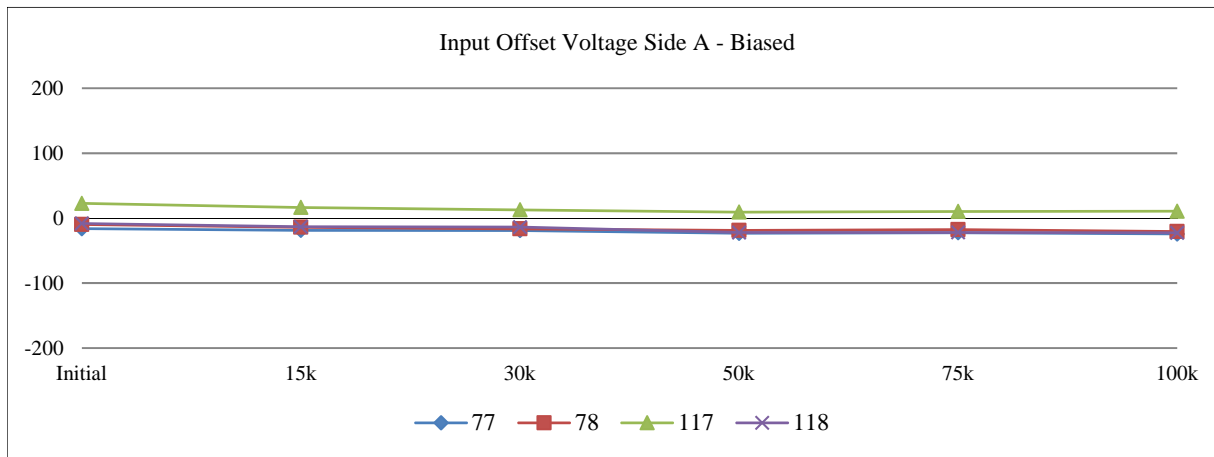
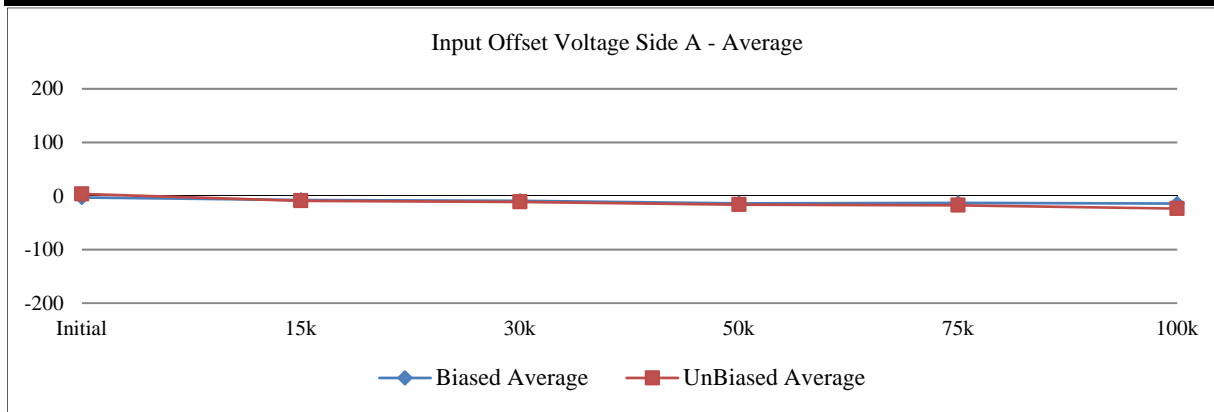
T# 1	+ ISY VS=15V						mA	
SN	Initial	15k	30k	50k	75k	100k	Limit	
<b>Control</b>	<b>116</b>	<b>4.98300</b>	<b>4.93900</b>	<b>4.91800</b>	<b>4.88600</b>	<b>4.90500</b>	<b>4.87900</b>	<b>&lt;6.5</b>
<b>Biased</b>	<b>77</b>	4.84400	4.97900	4.90000	4.85000	4.84900	4.86600	
	<b>78</b>	4.92200	5.00300	4.95850	4.91400	4.89900	4.90400	
	<b>117</b>	4.97700	5.04600	5.00500	4.97500	4.94800	4.95800	
	<b>118</b>	4.98300	5.04800	5.00800	4.98700	4.95500	4.95100	
	<b>Min</b>	4.84400	4.97900	4.90000	4.85000	4.84900	4.86600	
	<b>Max</b>	4.98300	5.04800	5.00800	4.98700	4.95500	4.95800	
	<b>Average</b>	4.93150	5.01900	4.96788	4.93150	4.91275	4.91975	
<b>UnBiased</b>	<b>84</b>	4.98900	4.79300	4.61400	4.39900	4.26300	4.20300	
	<b>86</b>	4.93300	4.82400	4.67300	4.46600	4.31700	4.25900	
	<b>119</b>	4.97300	4.98300	4.80800	4.53300	4.47400	4.49500	
	<b>120</b>	4.99400	5.02400	4.81400	4.56900	4.47100	4.49100	
	<b>Min</b>	4.93300	4.79300	4.61400	4.39900	4.26300	4.20300	
	<b>Max</b>	4.99400	5.02400	4.81400	4.56900	4.47400	4.49500	
	<b>Average</b>	4.97225	4.90600	4.72725	4.49175	4.38125	4.36200	



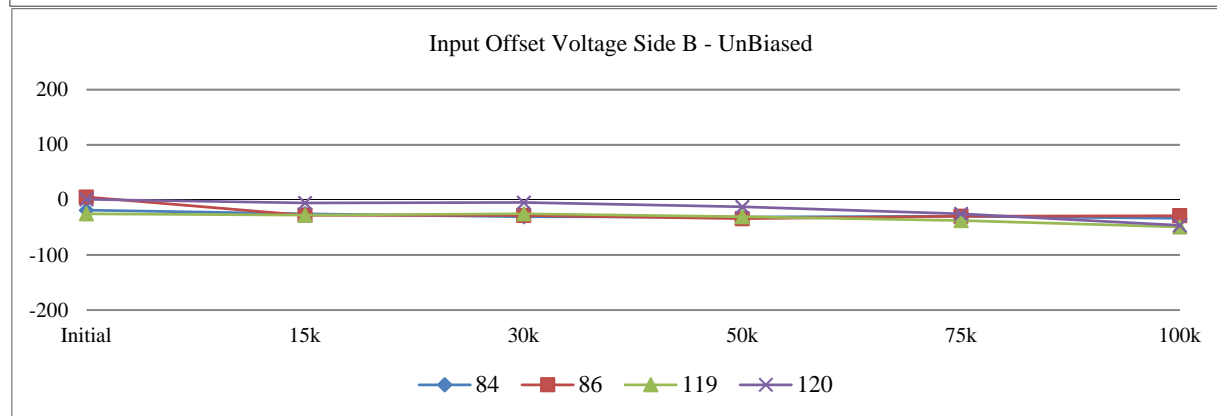
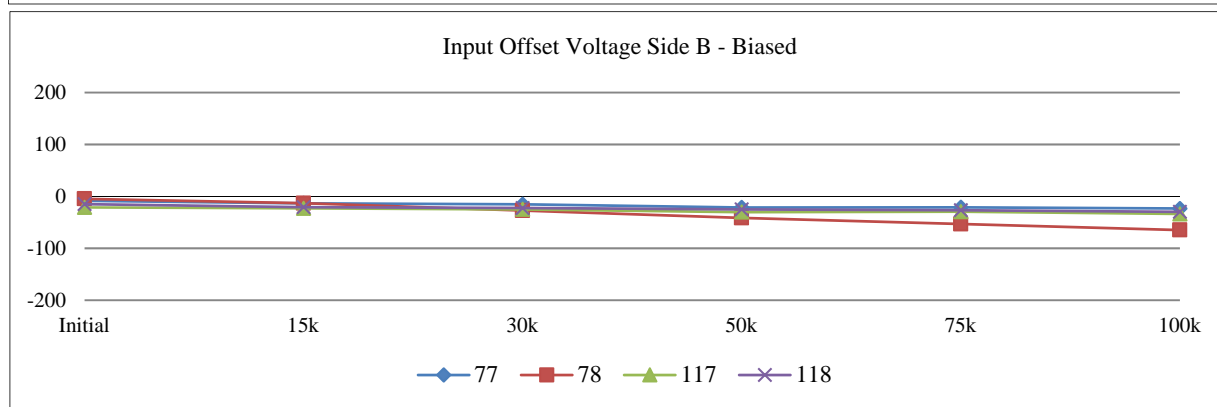
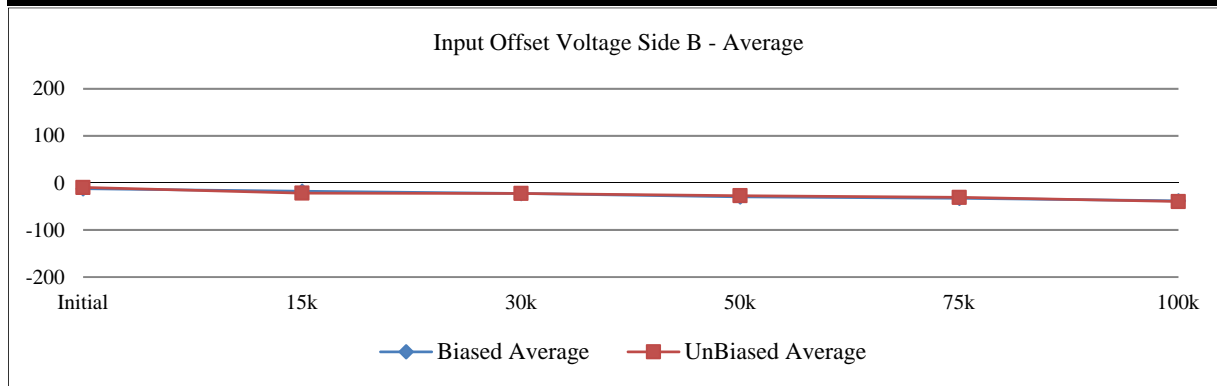
T#6	- ISY VS=15V						mA	
SN	Initial	15k	30k	50k	75k	100k	Limit	
<b>Control</b>	<b>116</b>	<b>-4.97600</b>	<b>-4.94000</b>	<b>-4.92900</b>	<b>-4.90200</b>	<b>-4.91400</b>	<b>-4.89400</b>	<b>&gt;-6.5</b>
<b>Biased</b>	<b>77</b>	-4.83500	-4.97900	-4.90000	-4.86000	-4.85600	-4.87400	
	<b>78</b>	-4.92100	-4.99100	-4.95350	-4.91600	-4.89400	-4.91000	
	<b>117</b>	-4.97500	-5.04100	-4.99700	-4.97600	-4.96100	-4.96400	
	<b>118</b>	-4.97500	-5.05400	-5.01300	-4.98000	-4.95600	-4.96900	
	<b>Min</b>	-4.97500	-5.05400	-5.01300	-4.98000	-4.96100	-4.96900	
	<b>Max</b>	-4.83500	-4.97900	-4.90000	-4.86000	-4.85600	-4.87400	
	<b>Average</b>	-4.92650	-5.01625	-4.96588	-4.93300	-4.91675	-4.92925	
<b>UnBiased</b>	<b>84</b>	-4.97800	-4.79100	-4.61300	-4.40800	-4.26800	-4.21600	
	<b>86</b>	-4.92700	-4.83200	-4.67000	-4.46800	-4.33300	-4.27800	
	<b>119</b>	-4.97100	-4.98700	-4.80400	-4.57300	-4.48400	-4.50400	
	<b>120</b>	-4.98600	-5.02800	-4.82100	-4.58100	-4.49200	-4.51600	
	<b>Min</b>	-4.98600	-5.02800	-4.82100	-4.58100	-4.49200	-4.51600	
	<b>Max</b>	-4.92700	-4.79100	-4.61300	-4.40800	-4.26800	-4.21600	
	<b>Average</b>	-4.96550	-4.90950	-4.72700	-4.50750	-4.39425	-4.37850	



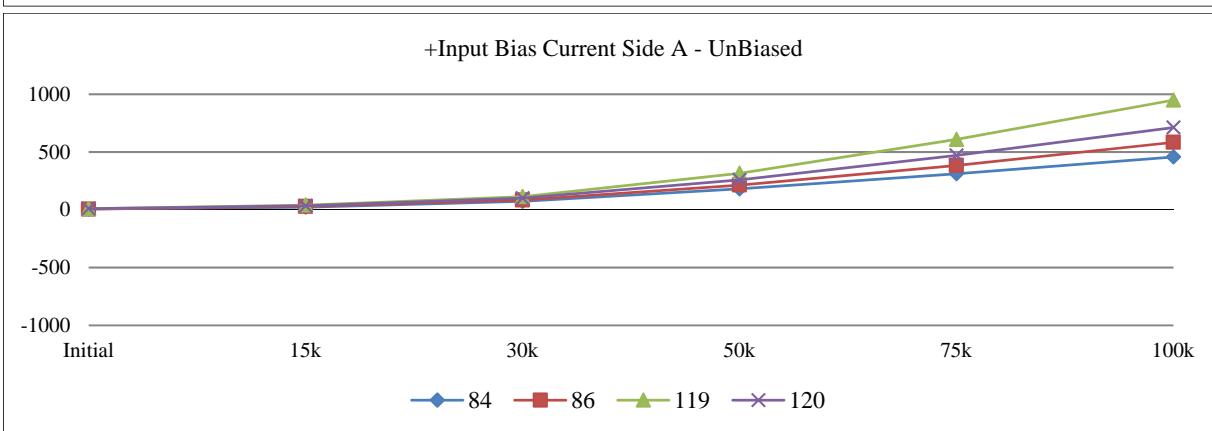
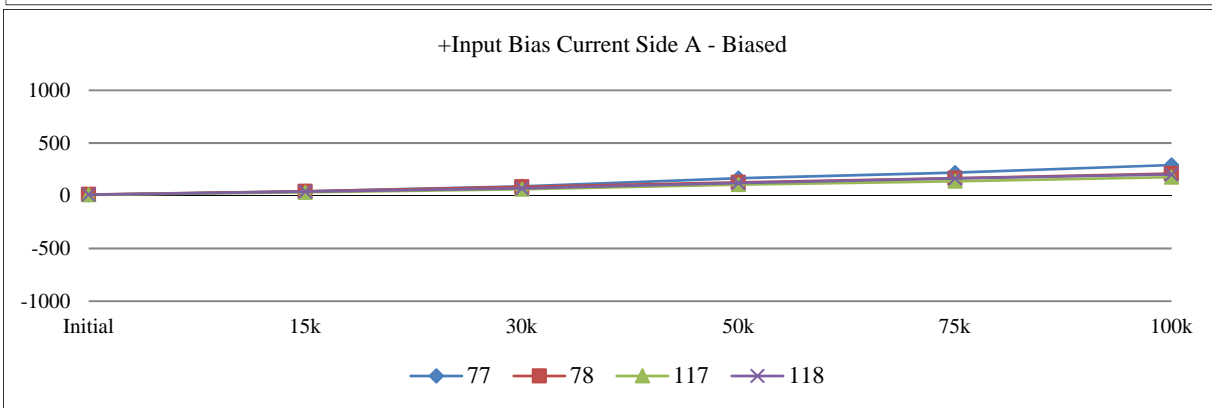
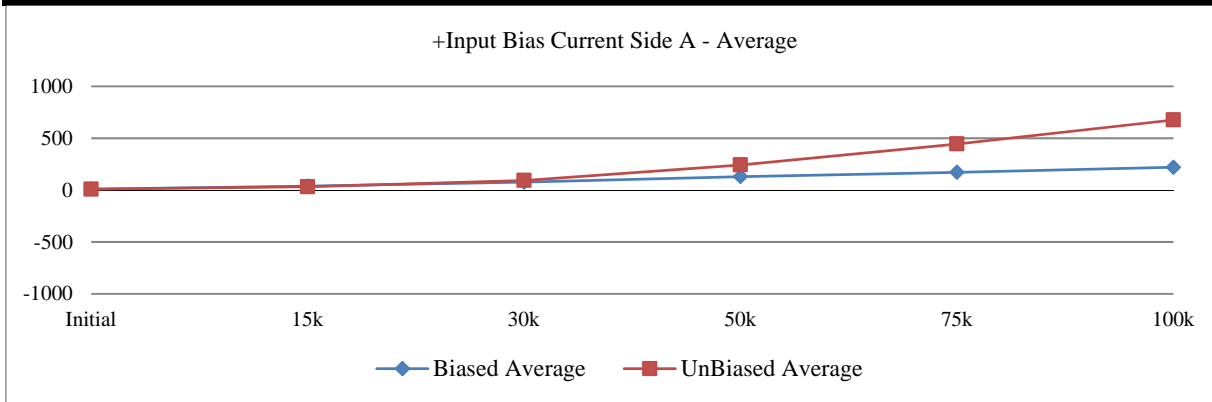
	T#7	VOS SIDE A						uV
	SN	Initial	15k	30k	50k	75k	100k	Limit
<b>Control</b>	<b>116</b>	<b>-5.92500</b>	<b>-6.51300</b>	<b>-1.45300</b>	<b>-6.02900</b>	<b>-9.25300</b>	<b>-5.92500</b>	<b>+/-200</b>
<b>Biased</b>	<b>77</b>	-16.19300	-18.83100	-18.96300	-23.35800	-22.42000	-24.30200	
	<b>78</b>	-9.73500	-14.07300	-16.50750	-18.94200	-17.70600	-20.60300	
	<b>117</b>	22.72900	16.48500	12.72600	9.29300	10.35600	10.66100	
	<b>118</b>	-8.13100	-13.19000	-13.76600	-22.12600	-22.01400	-22.57700	
	<b>Min</b>	-16.19300	-18.83100	-18.96300	-23.35800	-22.42000	-24.30200	
	<b>Max</b>	22.72900	16.48500	12.72600	9.29300	10.35600	10.66100	
	<b>Average</b>	-2.83250	-7.40225	-9.12763	-13.78325	-12.94600	-14.20525	
<b>UnBiased</b>	<b>84</b>	0.14700	-15.21100	-18.06200	-26.35100	-25.02500	-31.23300	
	<b>86</b>	-6.29900	-29.50400	-32.20300	-39.19700	-40.79900	-43.68600	
	<b>119</b>	12.90400	7.51800	6.77700	6.66400	6.35200	-0.71500	
	<b>120</b>	8.14100	1.43000	-0.69200	-5.37900	-9.48500	-18.24800	
	<b>Min</b>	-6.29900	-29.50400	-32.20300	-39.19700	-40.79900	-43.68600	
	<b>Max</b>	12.90400	7.51800	6.77700	6.66400	6.35200	-0.71500	
	<b>Average</b>	3.72325	-8.94175	-11.04500	-16.06575	-17.23925	-23.47050	



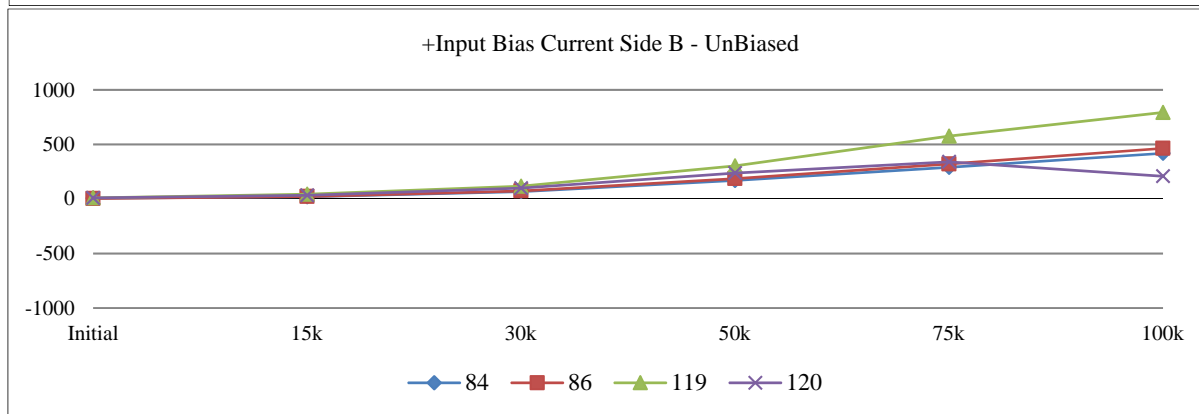
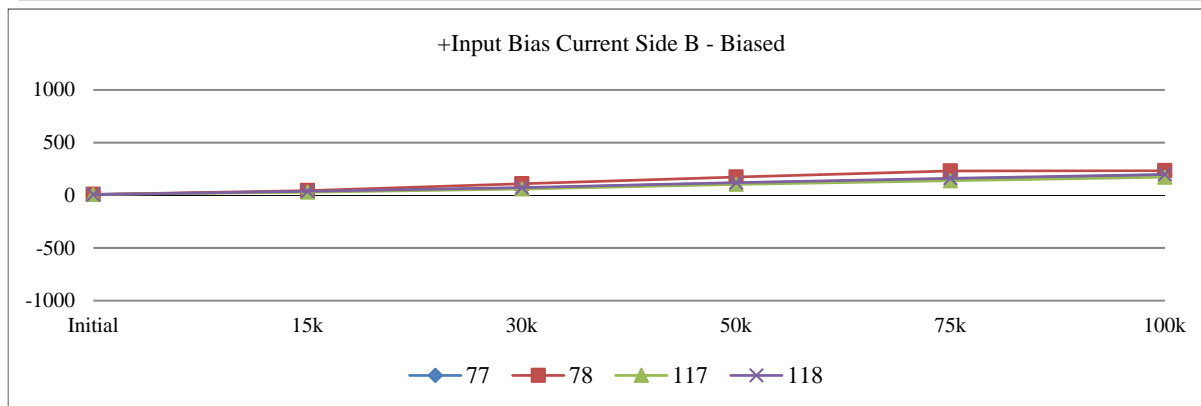
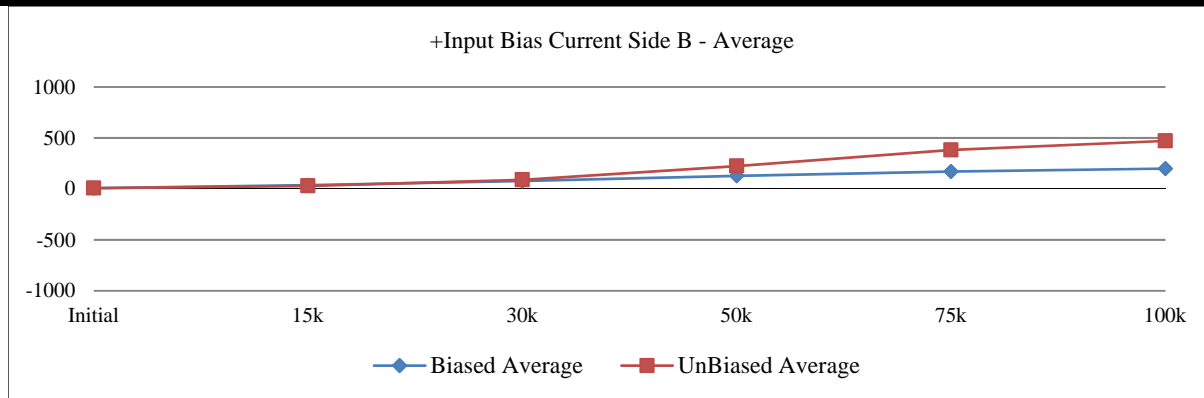
	T#8	VOS SIDE B						uV
	SN	Initial	15k	30k	50k	75k	100k	Limit
<b>Control</b>	<b>116</b>	<b>-2.59600</b>	<b>-2.70600</b>	<b>-1.56600</b>	<b>-3.23200</b>	<b>-2.63000</b>	<b>-2.03600</b>	<b>+/-200</b>
<b>Biased</b>	<b>77</b>	-8.57800	-13.27900	-15.10700	-21.27200	-20.99300	-23.35700	
	<b>78</b>	-4.68400	-13.16700	-27.33850	-41.51000	-53.28400	-64.81700	
	<b>117</b>	-21.23500	-23.04200	-24.98100	-30.20300	-29.46400	-33.77300	
	<b>118</b>	-14.93100	-20.76500	-22.44200	-25.00200	-26.63300	-29.71700	
	<b>Min</b>	-21.23500	-23.04200	-27.33850	-41.51000	-53.28400	-64.81700	
	<b>Max</b>	-4.68400	-13.16700	-15.10700	-21.27200	-20.99300	-23.35700	
	<b>Average</b>	-12.35700	-17.56325	-22.46713	-29.49675	-32.59350	-37.91600	
<b>UnBiased</b>	<b>84</b>	-18.74500	-25.28300	-30.53900	-31.05000	-29.70200	-33.52600	
	<b>86</b>	5.11900	-27.81300	-28.32300	-34.13000	-29.82800	-28.74500	
	<b>119</b>	-25.21300	-27.75100	-25.19600	-30.42000	-37.50100	-49.10900	
	<b>120</b>	0.97300	-5.43400	-4.82700	-12.56600	-25.29100	-46.29100	
	<b>Min</b>	-25.21300	-27.81300	-30.53900	-34.13000	-37.50100	-49.10900	
	<b>Max</b>	5.11900	-5.43400	-4.82700	-12.56600	-25.29100	-28.74500	
	<b>Average</b>	-9.46650	-21.57025	-22.22125	-27.04150	-30.58050	-39.41775	



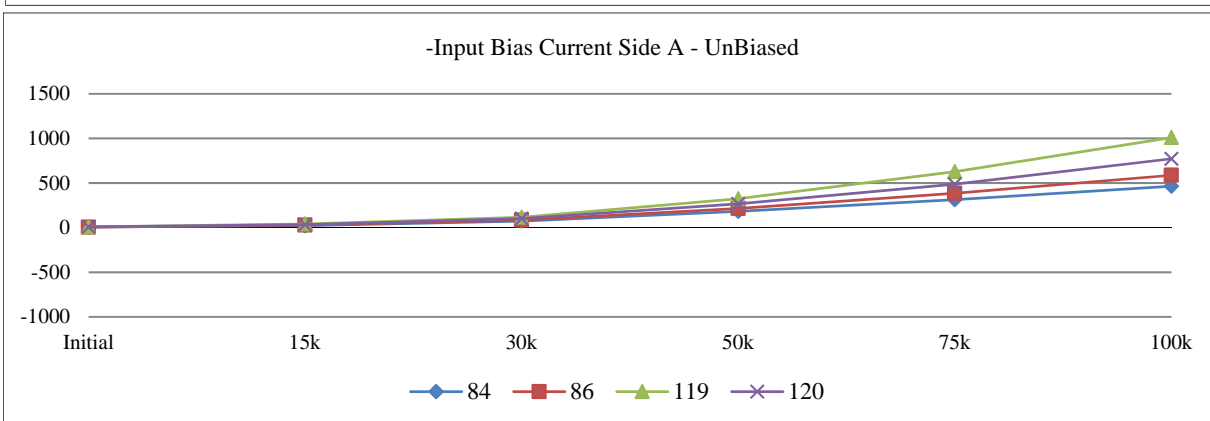
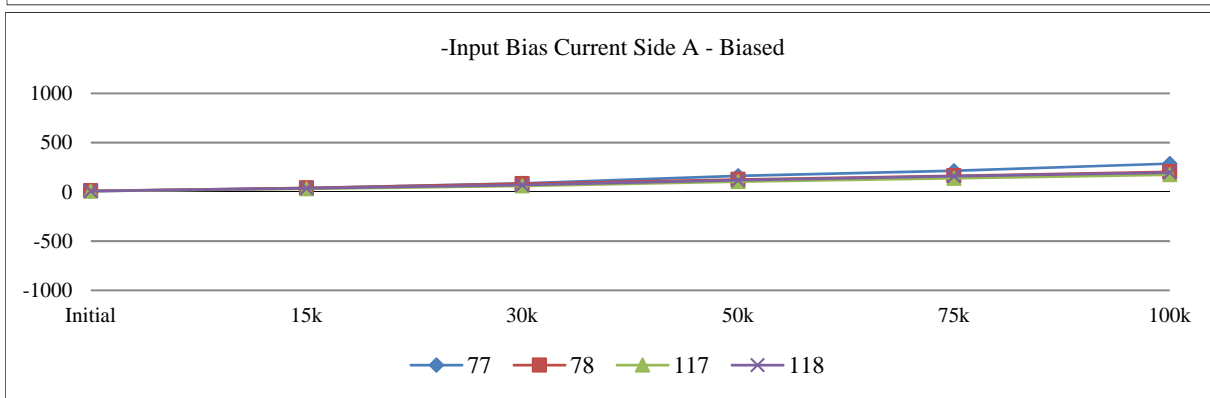
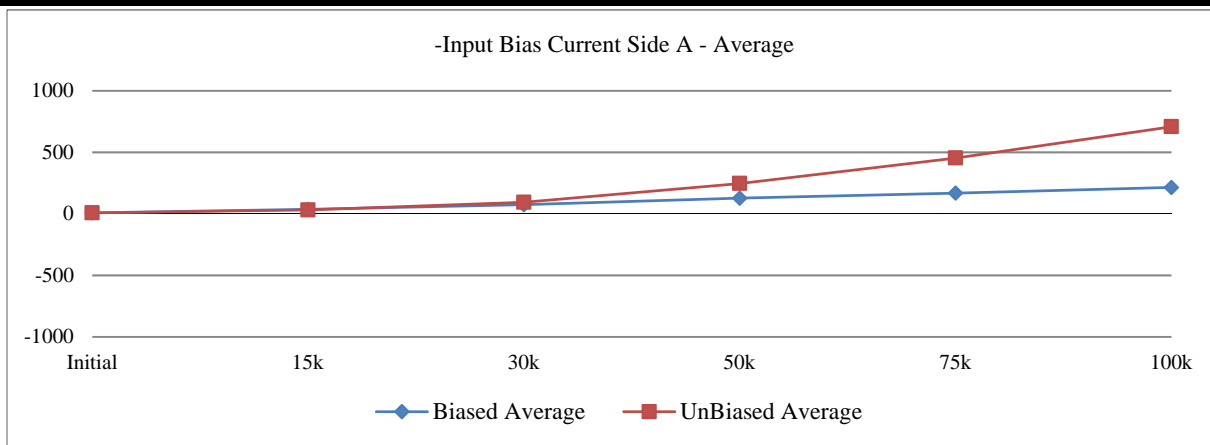
	T#9	+IBias SIDE A						nA
	SN	Initial	15k	30k	50k	75k	100k	Limit
<b>Control</b>	<b>116</b>	<b>10.38500</b>	<b>10.51600</b>	<b>10.92000</b>	<b>11.21200</b>	<b>10.97400</b>	<b>11.23100</b>	<b>&lt;1000</b>
<b>Biased</b>	<b>77</b>	9.52100	42.56500	89.49300	166.89700	219.13100	291.70800	
	<b>78</b>	11.92100	41.55800	84.18200	126.80600	165.55400	209.96300	
	<b>117</b>	8.52300	31.95900	61.91900	105.87900	138.07500	175.99100	
	<b>118</b>	9.95300	38.82100	70.62200	121.11400	164.39500	202.26400	
	<b>Min</b>	8.52300	31.95900	61.91900	105.87900	138.07500	175.99100	
	<b>Max</b>	11.92100	42.56500	89.49300	166.89700	219.13100	291.70800	
	<b>Average</b>	9.97950	38.72575	76.55400	130.17400	171.78875	219.98150	
<b>UnBiased</b>	<b>84</b>	8.21200	22.72900	73.23900	181.26000	312.31600	457.60500	
	<b>86</b>	5.30600	29.35400	84.29400	214.25300	384.49300	584.01600	
	<b>119</b>	10.77100	40.93400	114.27500	316.55500	609.22200	949.59600	
	<b>120</b>	10.45400	34.84300	101.09600	258.74200	471.15100	712.46200	
	<b>Min</b>	5.30600	22.72900	73.23900	181.26000	312.31600	457.60500	
	<b>Max</b>	10.77100	40.93400	114.27500	316.55500	609.22200	949.59600	
	<b>Average</b>	8.68575	31.96500	93.22600	242.70250	444.29550	675.91975	



T#12	+ IBias SIDE B						nA	
SN	Initial	15k	30k	50k	75k	100k	Limit	
<b>Control</b>	<b>116</b>	<b>9.91000</b>	<b>10.07600</b>	<b>10.37200</b>	<b>10.60200</b>	<b>10.38900</b>	<b>10.63300</b>	<b>&lt;1000</b>
<b>Biased</b>	<b>77</b>	9.74200	35.45000	68.59100	116.48300	152.95900	194.30300	
	<b>78</b>	7.88700	44.21400	108.71450	173.21500	230.86300	233.29300	
	<b>117</b>	6.92400	29.70400	59.70300	104.06300	138.23300	171.66200	
	<b>118</b>	6.42700	37.89600	72.85200	120.35100	161.28000	197.84600	
	<b>Min</b>	6.42700	29.70400	59.70300	104.06300	138.23300	171.66200	
	<b>Max</b>	9.74200	44.21400	108.71450	173.21500	230.86300	233.29300	
	<b>Average</b>	7.74500	36.81600	77.46513	128.52800	170.83375	199.27600	
<b>UnBiased</b>	<b>84</b>	6.24200	19.69100	67.60000	169.85600	289.91000	418.38900	
	<b>86</b>	3.88500	22.28400	73.52800	186.16300	321.03200	463.96200	
	<b>119</b>	10.20400	43.35300	116.95800	302.91900	576.20000	793.47600	
	<b>120</b>	9.90400	33.08000	99.19300	237.50900	340.22000	208.17900	
	<b>Min</b>	3.88500	19.69100	67.60000	169.85600	289.91000	208.17900	
	<b>Max</b>	10.20400	43.35300	116.95800	302.91900	576.20000	793.47600	
	<b>Average</b>	7.55875	29.60200	89.31975	224.11175	381.84050	471.00150	

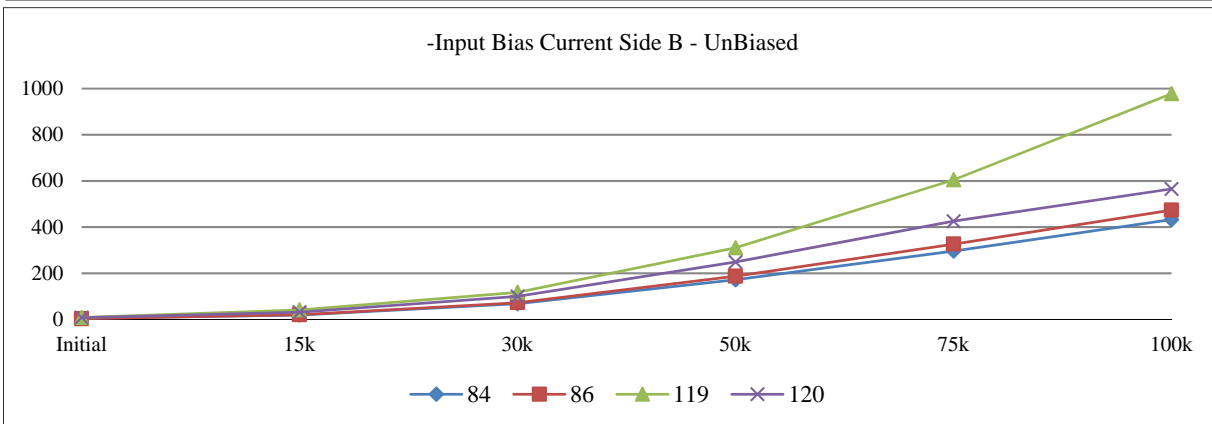
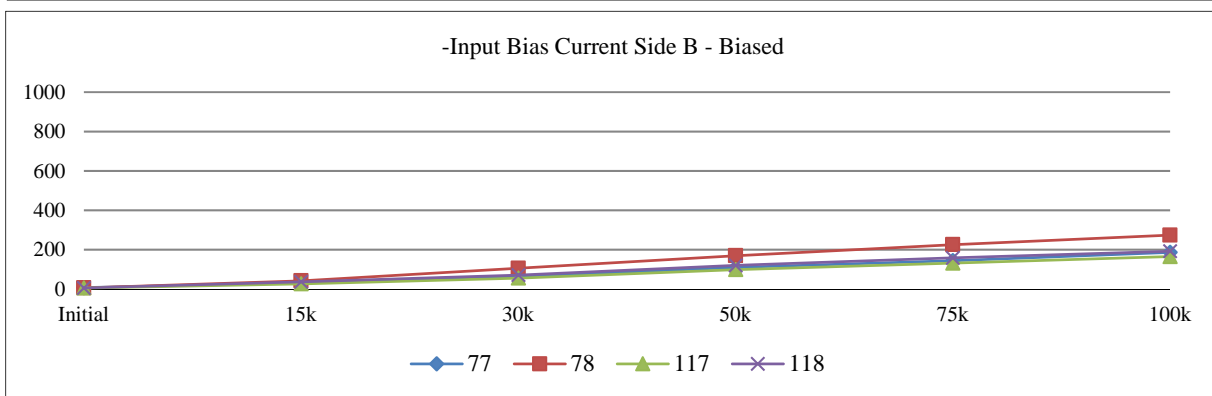
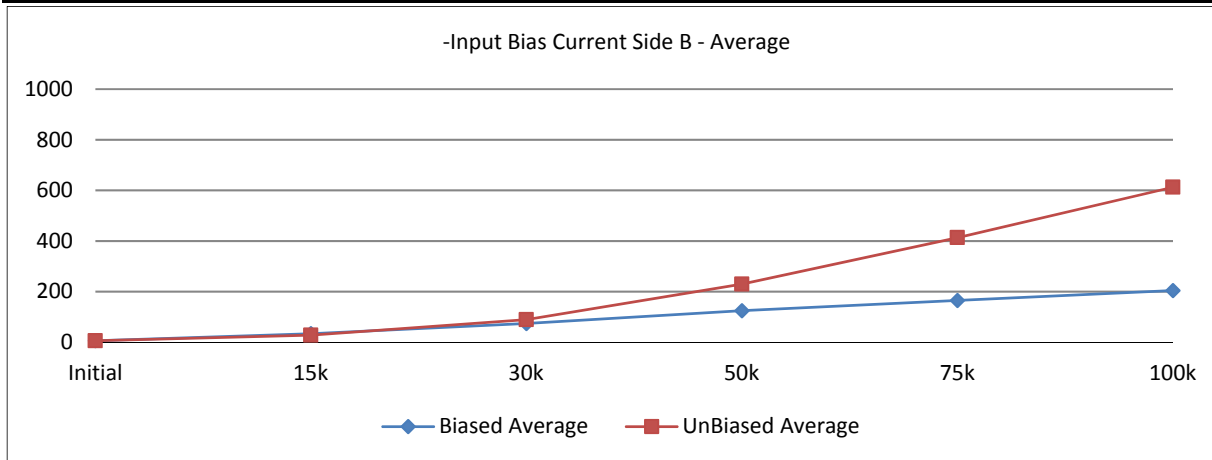


T#13	-IBias SIDE A						nA	
SN	Initial	15k	30k	50k	75k	100k	Limit	
<b>Control</b>	<b>116</b>	<b>9.18600</b>	<b>9.33000</b>	<b>9.55500</b>	<b>9.83600</b>	<b>9.66700</b>	<b>9.89800</b>	<b>&lt;1000</b>
<b>Biased</b>	<b>77</b>	7.90400	39.69100	86.99600	162.76100	214.41100	286.88200	
	<b>78</b>	10.79500	39.78700	82.77500	125.76300	163.19500	203.65700	
	<b>117</b>	7.49500	31.22400	60.32000	104.47300	138.00300	174.20200	
	<b>118</b>	8.64200	36.17100	69.34900	117.98000	160.15200	195.15300	
	<b>Min</b>	7.49500	31.22400	60.32000	104.47300	138.00300	174.20200	
	<b>Max</b>	10.79500	39.78700	86.99600	162.76100	214.41100	286.88200	
	<b>Average</b>	8.70900	36.71825	74.86000	127.74425	168.94025	214.97350	
<b>UnBiased</b>	<b>84</b>	7.78200	22.60400	73.49900	183.07800	314.26300	464.54700	
	<b>86</b>	5.14500	28.35200	83.79800	215.03800	385.32700	587.08200	
	<b>119</b>	9.55500	41.25500	117.13500	323.87000	628.40200	1010.12700	
	<b>120</b>	8.27800	34.03200	102.43000	266.52100	487.35800	772.39000	
	<b>Min</b>	5.14500	22.60400	73.49900	183.07800	314.26300	464.54700	
	<b>Max</b>	9.55500	41.25500	117.13500	323.87000	628.40200	1010.12700	
	<b>Average</b>	7.69000	31.56075	94.21550	247.12675	453.83750	708.53650	

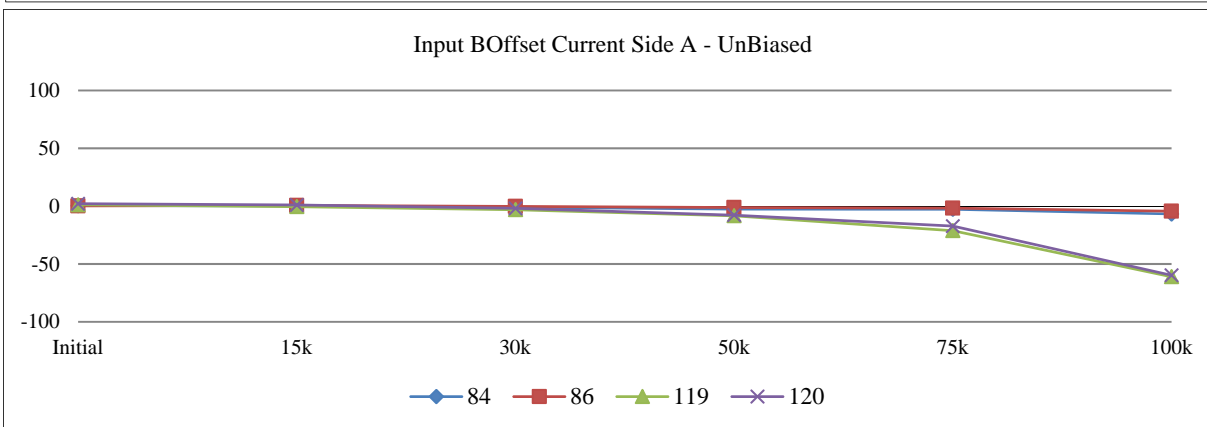
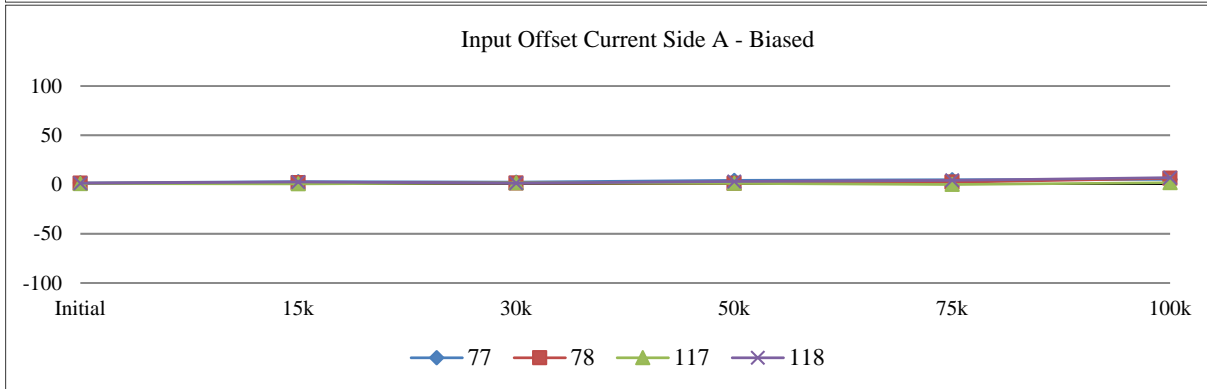
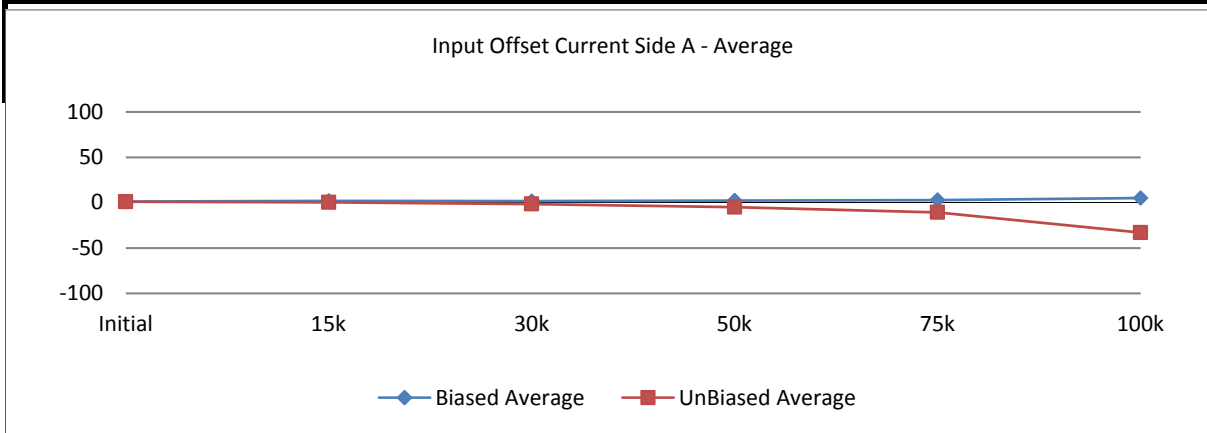




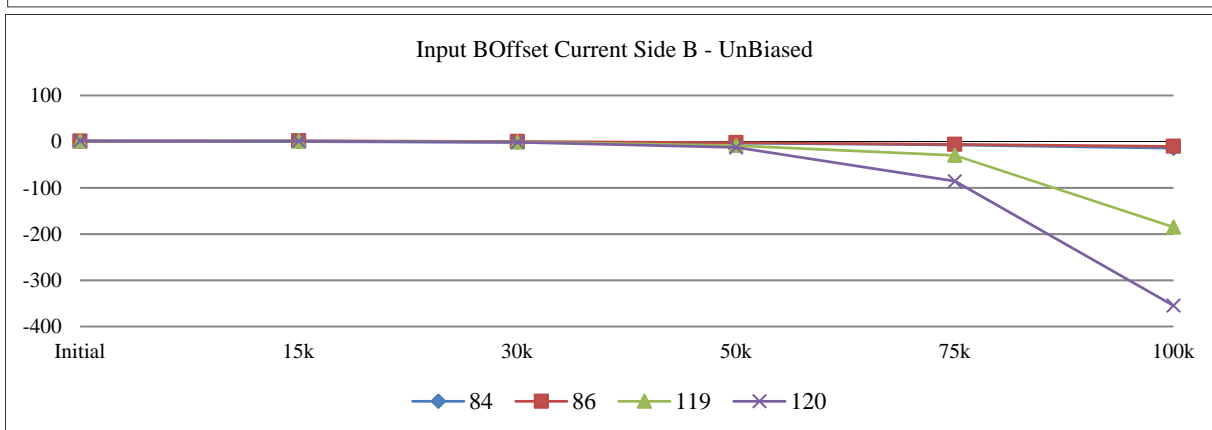
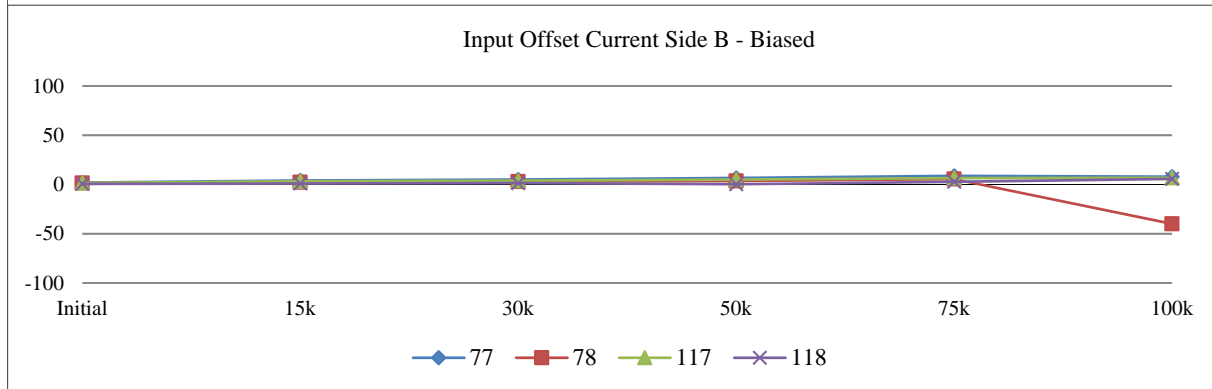
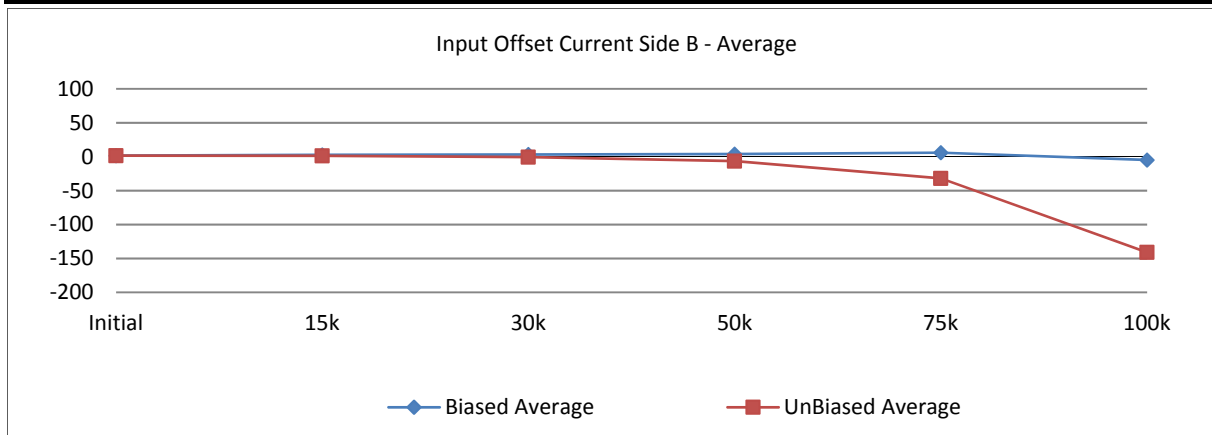
T#14		-IBias SIDE B						nA
SN		Initial	15k	30k	50k	75k	100k	Limit
Control	<b>116</b>	<b>8.76800</b>	<b>8.89200</b>	<b>9.24200</b>	<b>9.43400</b>	<b>9.28900</b>	<b>9.47300</b>	<b>&lt;1000</b>
	<b>77</b>	7.58300	31.38700	63.61600	109.86000	144.25000	186.47200	
	<b>78</b>	6.26400	41.96900	105.82400	169.67900	225.61400	273.90800	
	<b>117</b>	5.39100	26.41200	55.68000	98.98700	131.84300	165.03700	
	<b>118</b>	5.68500	36.88200	71.33800	120.30700	158.64200	192.18200	
	<b>Min</b>	5.39100	26.41200	55.68000	98.98700	131.84300	165.03700	
	<b>Max</b>	7.58300	41.96900	105.82400	169.67900	225.61400	273.90800	
	<b>Average</b>	6.23075	34.16250	74.11450	124.70825	165.08725	204.39975	
UnBiased	<b>84</b>	4.73000	19.29600	68.17400	172.11400	296.49200	432.65200	
	<b>86</b>	2.72200	20.09000	72.44900	187.15800	326.13400	473.55600	
	<b>119</b>	8.39400	41.33200	117.43500	310.47300	604.97800	978.13200	
	<b>120</b>	8.07800	31.72500	99.89200	249.10300	425.52900	565.39300	
	<b>Min</b>	2.72200	19.29600	68.17400	172.11400	296.49200	432.65200	
	<b>Max</b>	8.39400	41.33200	117.43500	310.47300	604.97800	978.13200	
	<b>Average</b>	5.98100	28.11075	89.48750	229.71200	413.28325	612.43325	



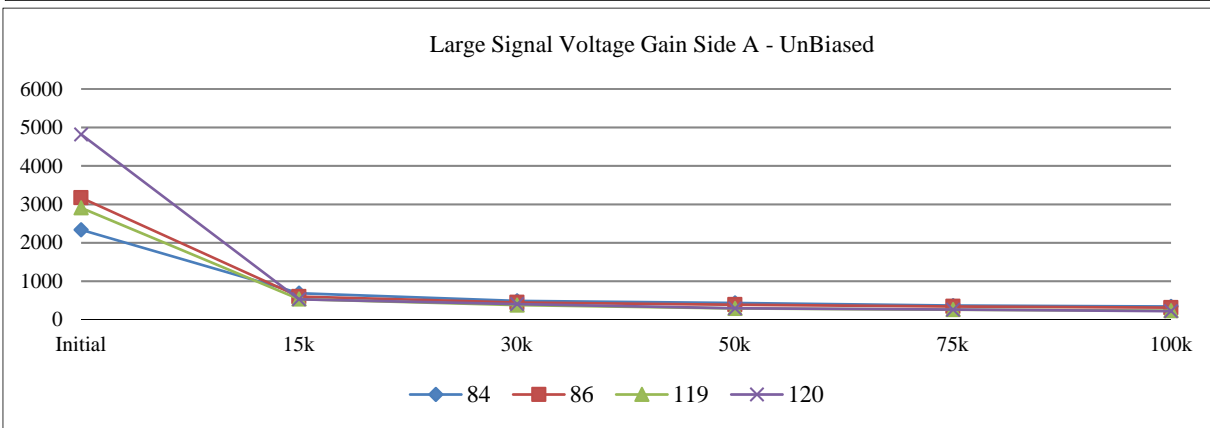
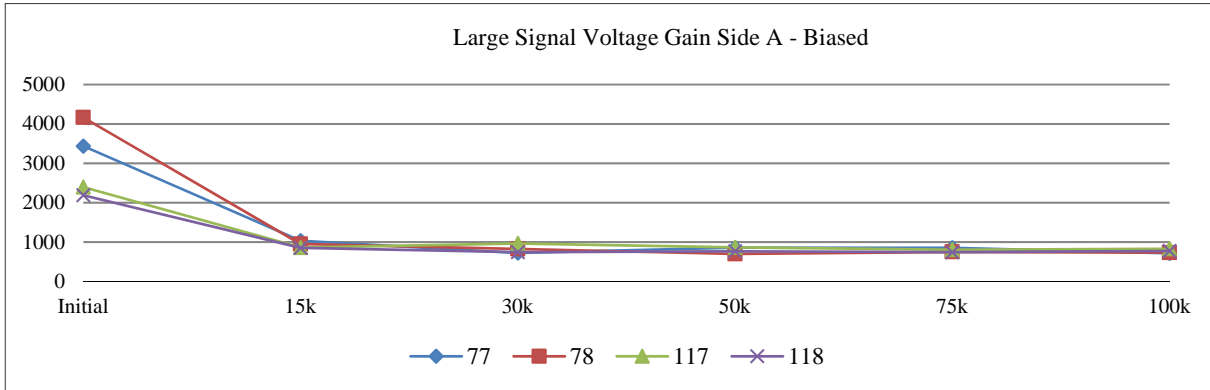
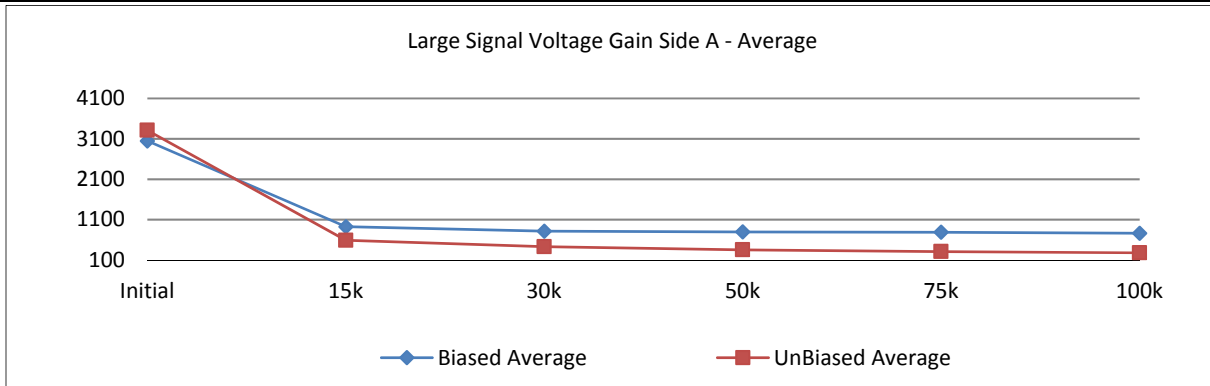
T#15	IOS SIDE A						nA	
SN	Initial	15k	30k	50k	75k	100k	Limit	
<b>Control</b>	<b>116</b>	<b>1.27400</b>	<b>1.18900</b>	<b>1.34200</b>	<b>1.33600</b>	<b>1.30300</b>	<b>1.37200</b>	<b>+/-125</b>
<b>Biased</b>	<b>77</b>	1.63500	2.92400	2.38700	4.16600	4.83900	5.18700	
	<b>78</b>	1.28900	1.78700	1.44500	1.10300	2.32600	6.30700	
	<b>117</b>	0.91100	0.69800	1.70700	1.20900	0.04100	1.88400	
	<b>118</b>	1.27800	2.58500	1.36300	3.05800	4.31400	6.97800	
	<b>Min</b>	0.91100	0.69800	1.36300	1.10300	0.04100	1.88400	
	<b>Max</b>	1.63500	2.92400	2.38700	4.16600	4.83900	6.97800	
	<b>Average</b>	1.27825	1.99850	1.72550	2.38400	2.88000	5.08900	
<b>UnBiased</b>	<b>84</b>	0.45800	0.16500	-0.90800	-2.48400	-2.62800	-6.76900	
	<b>86</b>	0.19100	0.61200	-0.25800	-1.21900	-1.76300	-4.37100	
	<b>119</b>	1.10900	-0.41000	-3.06700	-8.33600	-21.17700	-61.07300	
	<b>120</b>	2.12100	1.04400	-1.88200	-7.74700	-17.22100	-59.77500	
	<b>Min</b>	0.19100	-0.41000	-3.06700	-8.33600	-21.17700	-61.07300	
	<b>Max</b>	2.12100	1.04400	-0.25800	-1.21900	-1.76300	-4.37100	
	<b>Average</b>	0.96975	0.35275	-1.52875	-4.94650	-10.69725	-32.99700	



T#16	IOS SIDE B						nA	
SN	Initial	15k	30k	50k	75k	100k	Limit	
<b>Control</b>	<b>116</b>	<b>0.99000</b>	<b>1.11500</b>	<b>1.14300</b>	<b>1.13500</b>	<b>1.12200</b>	<b>1.16800</b>	<b>+/-125</b>
<b>Biased</b>	<b>77</b>	1.97800	4.14400	4.98200	6.59100	8.74400	7.93500	
	<b>78</b>	1.39400	2.17100	2.87350	3.57600	5.46200	-39.99600	
	<b>117</b>	1.69700	3.29300	3.90000	5.10800	6.53200	6.79300	
	<b>118</b>	0.68200	1.04500	1.46800	0.23700	2.80800	5.72900	
	<b>Min</b>	0.68200	1.04500	1.46800	0.23700	2.80800	-39.99600	
	<b>Max</b>	1.97800	4.14400	4.98200	6.59100	8.74400	7.93500	
<b>Average</b>	1.43775	2.66325	3.30588	3.87800	5.88650	-4.88475		
<b>UnBiased</b>	<b>84</b>	1.30600	0.28400	-1.13300	-2.91700	-7.12000	-14.19500	
	<b>86</b>	0.88600	1.82700	0.44500	-2.23000	-5.87800	-10.18100	
	<b>119</b>	1.97400	1.52400	-0.59400	-8.39400	-29.58000	-185.06400	
	<b>120</b>	1.92500	1.29000	-1.17600	-12.42200	-85.47900	-354.82400	
	<b>Min</b>	0.88600	0.28400	-1.17600	-12.42200	-85.47900	-354.82400	
	<b>Max</b>	1.97400	1.82700	0.44500	-2.23000	-5.87800	-10.18100	
	<b>Average</b>	1.52275	1.23125	-0.61450	-6.49075	-32.01425	-141.06600	



T#18	AVO RL=10K SIDE A						V/mV	
SN	Initial	15k	30k	50k	75k	100k	Limit	
<b>Control</b>	<b>116</b>	<b>4506.700</b>	<b>3798.600</b>	<b>3246.200</b>	<b>4509.000</b>	<b>3286.600</b>	<b>3614.300</b>	<b>&gt;100</b>
<b>Biased</b>	<b>77</b>	3438.400	1034.900	724.500	856.900	855.600	714.300	
	<b>78</b>	4163.500	951.700	824.600	697.500	749.500	732.300	
	<b>117</b>	2395.400	860.900	966.300	865.200	806.600	831.400	
	<b>118</b>	2190.600	854.300	744.200	765.900	744.700	774.400	
	<b>Min</b>	2190.600	854.300	724.500	697.500	744.700	714.300	
	<b>Max</b>	4163.500	1034.900	966.300	865.200	855.600	831.400	
	<b>Average</b>	3046.975	925.450	814.900	796.375	789.100	763.100	
<b>UnBiased</b>	<b>84</b>	2338.400	688.400	489.900	436.200	366.800	343.600	
	<b>86</b>	3172.900	600.800	448.200	388.800	344.100	312.500	
	<b>119</b>	2909.200	535.500	378.900	292.300	260.700	233.700	
	<b>120</b>	4820.000	531.900	405.600	295.600	263.300	222.200	
	<b>Min</b>	2338.400	531.900	378.900	292.300	260.700	222.200	
	<b>Max</b>	4820.000	688.400	489.900	436.200	366.800	343.600	
	<b>Average</b>	3310.125	589.150	430.650	353.225	308.725	278.000	



T#19	AVO RL=10K SIDE B						V/mV	
SN	Initial	15k	30k	50k	75k	100k	Limit	
<b>Control</b>	<b>116</b>	<b>2971.500</b>	<b>3188.400</b>	<b>2978.700</b>	<b>2946.500</b>	<b>4560.900</b>	<b>4001.500</b>	<b>&gt;100</b>
<b>Biased</b>	<b>77</b>	3445.800	968.400	848.400	763.200	840.100	761.700	
	<b>78</b>	2926.100	776.200	734.650	693.100	715.600	699.200	
	<b>117</b>	3061.700	1041.300	793.600	891.100	890.200	887.200	
	<b>118</b>	4611.600	882.300	771.900	691.500	766.600	726.200	
	<b>Min</b>	2926.100	776.200	734.650	691.500	715.600	699.200	
	<b>Max</b>	4611.600	1041.300	848.400	891.100	890.200	887.200	
	<b>Average</b>	3511.300	917.050	787.138	759.725	803.125	768.575	
<b>UnBiased</b>	<b>84</b>	3023.300	773.600	499.300	416.900	382.100	348.600	
	<b>86</b>	3756.100	708.400	494.900	408.700	357.500	324.900	
	<b>119</b>	3240.500	479.700	351.000	293.000	244.600	215.200	
	<b>120</b>	3049.100	500.400	372.400	296.600	247.200	220.300	
	<b>Min</b>	3023.300	479.700	351.000	293.000	244.600	215.200	
	<b>Max</b>	3756.100	773.600	499.300	416.900	382.100	348.600	
	<b>Average</b>	3267.250	615.525	429.400	353.800	307.850	277.250	

