ANALOG DEVICES
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HIGH DOSE RADIATION TEST REPORT ADL8142-2

October 2022

Generic

Radiation Test Report	
Product:	ADL8142S-2C-CSL
Gamma:	0, 30k, 50k,100k
Gamma Source:	Co60/TM1019 Condition A
Dose Rate:	92 Rad(Si)/s
Facilities:	VPT RAD
Tested:	10/14/22

The RADTEST® DATA SERVICE is a compilation of radiation test results on Analog Devices' Space grade products. It is designed to assist customers in selecting the right product for applications where radiation is a consideration. Many products manufactured by Analog Devices, Inc. have been shown to be radiation tolerant to most tactical radiation environments. Analog Devices, Inc. does not make any claim to maintain or guarantee these levels of radiation tolerance without lot qualification test.

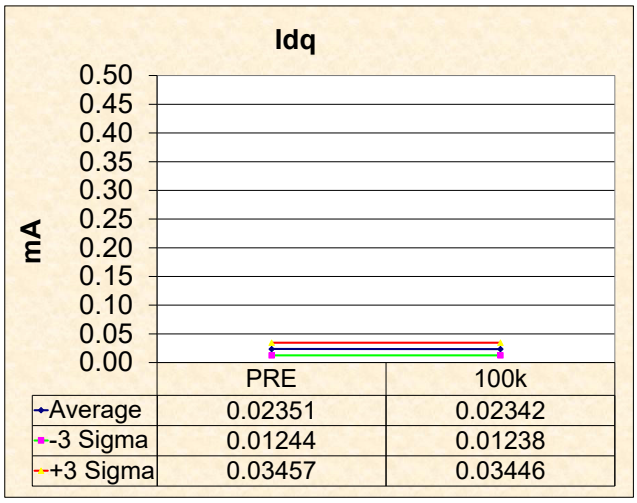
It is the responsibility of the Procuring Activity to screen products from Analog Devices, Inc. for compliance to Nuclear Hardness Critical Items (HCI) specifications.

Warning:

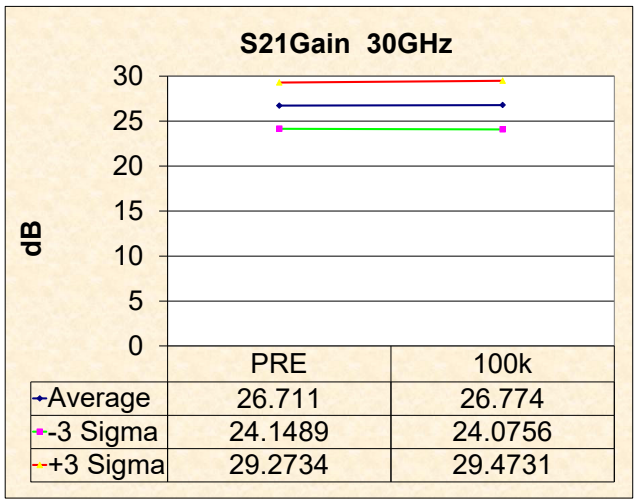
Analog Devices, Inc. does not recommend use of this data to qualify other product grades or process levels. Analog Devices, Inc. is not responsible and has no liability for any consequences, and all applicable Warranties are null and void if any Analog Devices product is modified in any way or used outside of normal environmental and operating conditions, including the parameters specified in the corresponding data sheet. Analog Devices, Inc. does not guarantee that wafer manufacturing is the same for all process levels.

		Idq (mA)		S21Gain 30GHz (dB)		P1dB 30GHz (dBm)	
	SN	PRE	100k	PRE	100k	PRE	100k
CTRL	c1	**0.02046**	**0.02045**	**25.764**	**25.795**	**11.12778**	**10.29930**
100k	1	0.02030	0.02025	26.045	26.005	10.394	10.999
	2	0.02527	0.02516	27.496	27.757	11.105	10.772
	3	0.01960	0.01956	25.529	25.598	11.041	10.995
	4	0.02611	0.02599	27.407	27.799	11.075	11.250
	5	0.02194	0.02184	26.515	26.730	10.796	10.826
	6	0.03209	0.03203	28.145	28.034	11.009	10.964
	7	0.02301	0.02288	27.050	27.049	10.998	10.927
	8	0.02037	0.02030	25.623	25.779	10.999	11.186
	9	0.02368	0.02360	26.986	26.987	10.847	10.936
	10	0.02269	0.02263	26.315	26.005	11.046	10.610
	Min	0.01960	0.01956	25.529	25.598	10.394	10.610
	Max	0.03209	0.03203	28.145	28.034	11.105	11.250
	Mean	0.02351	0.02342	26.711	26.774	10.931	10.946
	Std. Dev	0.00369	0.00368	0.8541	0.8996	0.212	0.187
	Mean - 3 Sigma	0.01244	0.01238	24.1489	24.0756	10.294	10.387
	Mean + 3 Sigma	0.03457	0.03446	29.2734	29.4731	11.568	11.506

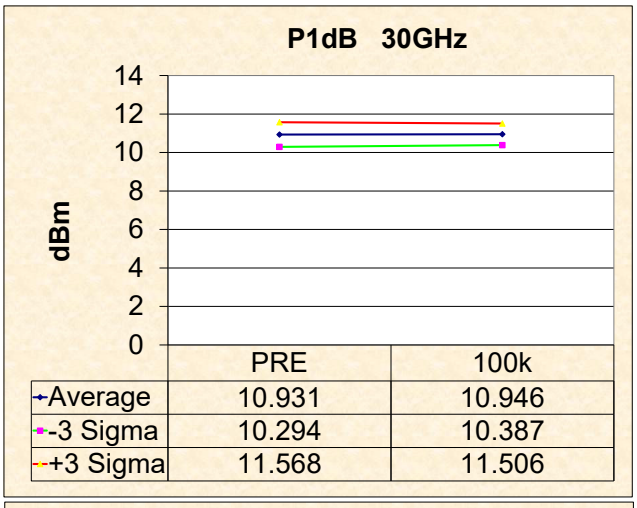
		S21Gain 31.5GHz (dB)		P1d 31.5GHz (dBm)	
	SN	PRE	100k	PRE	100k
CTRL	c1	**24.900**	**25.044**	**10.819**	**10.821**
100k	1	26.200	26.261	10.848	10.803
	2	27.840	27.871	10.746	10.912
	3	25.977	26.150	10.867	10.844
	4	27.878	28.213	10.837	10.970
	5	25.941	26.057	10.869	10.860
	6	28.255	28.438	10.997	10.305
	7	26.235	26.341	11.048	10.697
	8	26.196	26.414	10.897	11.066
	9	26.055	26.171	10.947	11.052
	10	26.572	26.569	10.671	10.622
	Min	25.941	26.057	10.671	10.305
	Max	28.255	28.438	11.048	11.066
	Mean	26.715	26.849	10.873	10.813
	Std. Dev	0.9041	0.9354	0.1111	0.2278
	Mean - 3 Sigma	24.0024	24.0423	10.5395	10.1297
	Mean + 3 Sigma	29.4272	29.6549	11.2060	11.4966



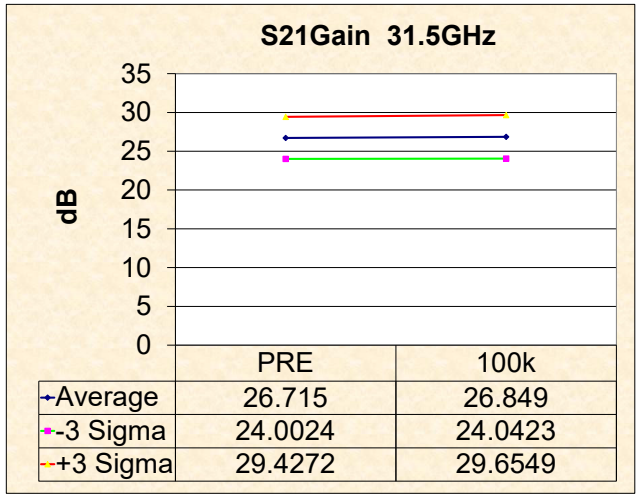
	PRE	100k
Average	0.02351	0.02342
-3 Sigma	0.01244	0.01238
+3 Sigma	0.03457	0.03446



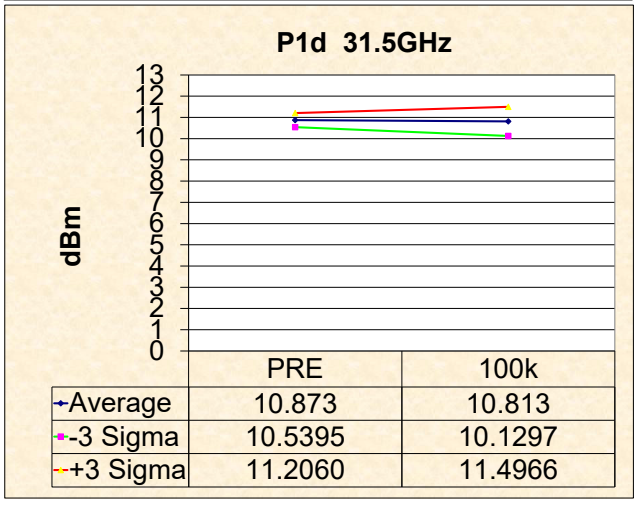
	PRE	100k
Average	26.711	26.774
-3 Sigma	24.1489	24.0756
+3 Sigma	29.2734	29.4731



	PRE	100k
Average	10.931	10.946
-3 Sigma	10.294	10.387
+3 Sigma	11.568	11.506



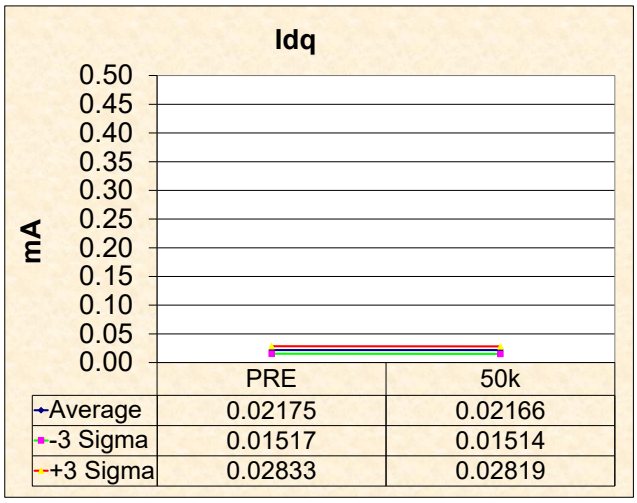
	PRE	100k
Average	26.715	26.849
-3 Sigma	24.0024	24.0423
+3 Sigma	29.4272	29.6549



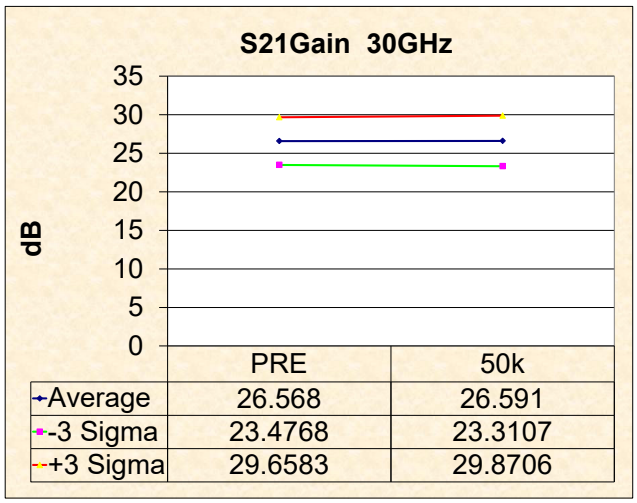
	PRE	100k
Average	10.873	10.813
-3 Sigma	10.5395	10.1297
+3 Sigma	11.2060	11.4966

		Idq (mA)		S21Gain 30GHz (dB)		P1dB 30GHz (dBm)	
	SN	PRE	50k	PRE	50k	PRE	50k
CTRL	c1	**0.02046**	**0.02045**	**25.764**	**25.795**	**11.12778**	**10.29930**
50k	11	0.01986	0.01983	25.003	25.795	11.247	10.299
	12	0.02309	0.02299	27.445	26.005	11.076	10.999
	13	0.01891	0.01882	26.058	27.757	10.883	10.772
	14	0.02327	0.02311	27.005	25.598	10.771	10.995
	15	0.02363	0.02356	27.327	27.799	10.959	11.250
	Min	0.01891	0.01882	25.003	25.598	10.771	10.299
	Max	0.02363	0.02356	27.445	27.799	11.247	11.250
	Mean	0.02175	0.02166	26.568	26.591	10.987	10.863
	Std. Dev	0.00219	0.00217	1.0302	1.0933	0.183	0.358
	Mean - 3 Sigma	0.01517	0.01514	23.4768	23.3107	10.439	9.790
	Mean + 3 Sigma	0.02833	0.02819	29.6583	29.8706	11.536	11.935

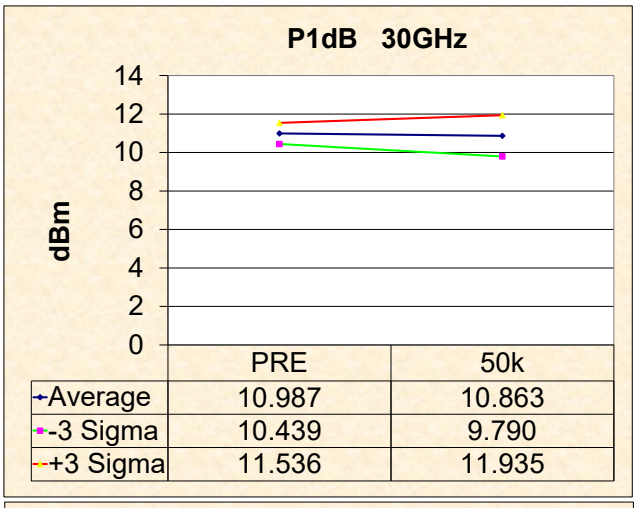
		S21Gain 31.5GHz (dB)		P1d 31.5GHz (dBm)	
	SN	PRE	50k	PRE	50k
CTRL	c1	**24.900**	**25.044**	**10.819**	**10.821**
50k	11	25.450	25.044	11.029	10.821
	12	26.327	26.261	11.044	10.803
	13	25.333	27.871	10.987	10.912
	14	27.240	26.150	10.925	10.844
	15	27.014	28.213	10.807	10.970
	Min	25.333	25.044	10.807	10.803
	Max	27.240	28.213	11.044	10.970
	Mean	26.273	26.708	10.958	10.870
	Std. Dev	0.8730	1.3130	0.0963	0.0696
	Mean - 3 Sigma	23.6539	22.7690	10.6694	10.6612
	Mean + 3 Sigma	28.8921	30.6472	11.2472	11.0789



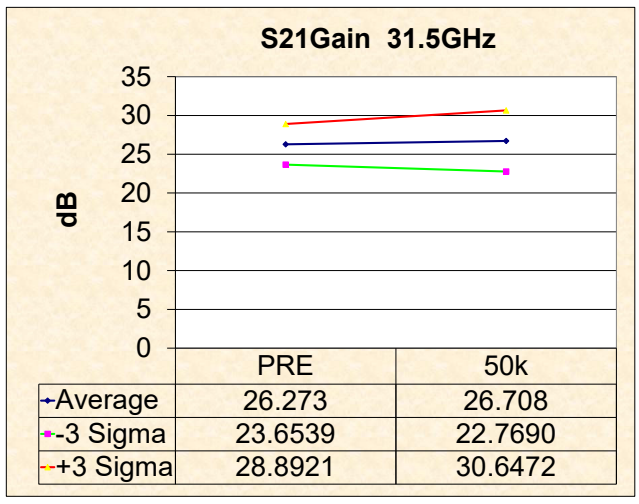
	PRE	50k
Average	0.02175	0.02166
-3 Sigma	0.01517	0.01514
+3 Sigma	0.02833	0.02819



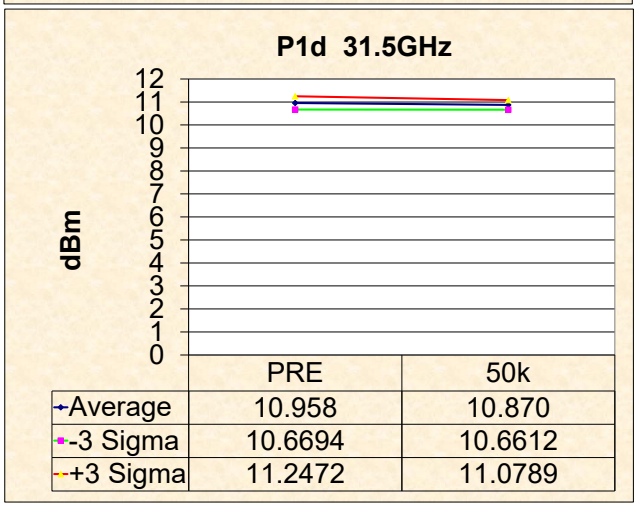
	PRE	50k
Average	26.568	26.591
-3 Sigma	23.4768	23.3107
+3 Sigma	29.6583	29.8706



	PRE	50k
Average	10.987	10.863
-3 Sigma	10.439	9.790
+3 Sigma	11.536	11.935



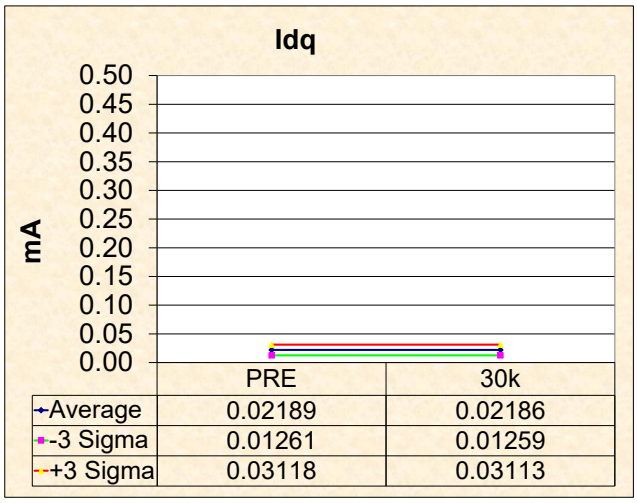
	PRE	50k
Average	26.273	26.708
-3 Sigma	23.6539	22.7690
+3 Sigma	28.8921	30.6472



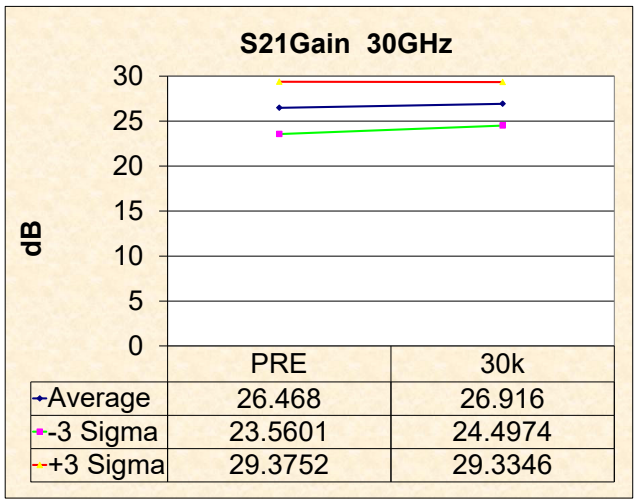
	PRE	50k
Average	10.958	10.870
-3 Sigma	10.6694	10.6612
+3 Sigma	11.2472	11.0789

		Idq (mA)		S21Gain 30GHz (dB)		P1dB 30GHz (dBm)	
	SN	PRE	30k	PRE	30k	PRE	30k
CTRL	c1	**0.02046**	**0.02045**	**25.764**	**25.795**	**11.128**	**10.299**
30k	16	0.02235	0.02231	27.056	26.730	10.674	10.826
	17	0.01910	0.01905	25.656	28.034	10.904	10.964
	18	0.01955	0.01948	25.435	27.049	10.668	10.927
	19	0.02687	0.02680	27.766	25.779	11.220	11.186
	20	0.02162	0.02167	26.425	26.987	11.134	10.936
	Min	0.01910	0.01905	25.435	25.779	10.668	10.826
	Max	0.02687	0.02680	27.766	28.034	11.220	11.186
	Mean	0.02189	0.02186	26.468	26.916	10.920	10.968
	Std. Dev	0.00310	0.00309	0.9692	0.8062	0.255	0.133
	Mean - 3 Sigma	0.01261	0.01259	23.5601	24.4974	10.155	10.569
	Mean + 3 Sigma	0.03118	0.03113	29.3752	29.3346	11.685	11.367

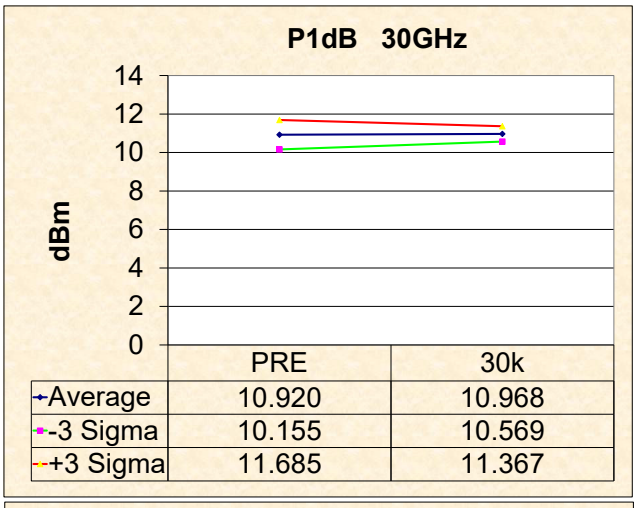
		S21Gain 31.5GHz (dB)		P1d 31.5GHz (dBm)	
	SN	PRE	30k	PRE	30k
CTRL	c1	**24.900**	**25.044**	**10.819**	**10.821**
30k	16	26.113	26.057	10.929	10.860
	17	25.922	28.438	10.860	10.305
	18	25.567	26.341	11.048	10.697
	19	27.950	26.414	10.760	11.066
	20	26.754	26.171	10.648	11.052
	Min	25.567	26.057	10.648	10.305
	Max	27.950	28.438	11.048	11.066
	Mean	26.461	26.684	10.849	10.796
	Std. Dev	0.9370	0.9902	0.1537	0.3136
	Mean - 3 Sigma	23.6502	23.7135	10.3881	9.8552
	Mean + 3 Sigma	29.2723	29.6549	11.3101	11.7369



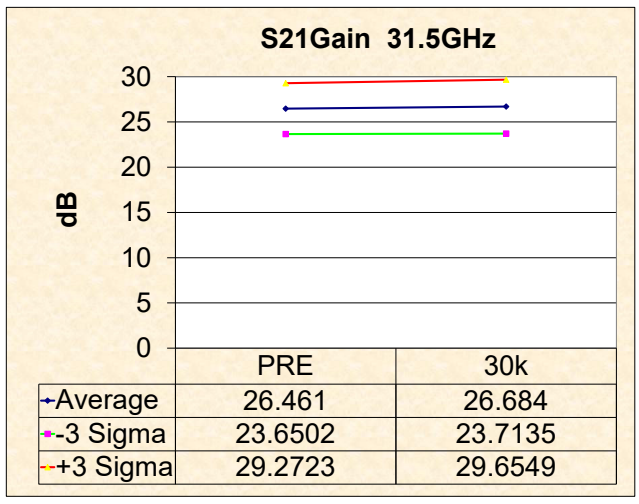
	PRE	30k
Average	0.02189	0.02186
-3 Sigma	0.01261	0.01259
+3 Sigma	0.03118	0.03113



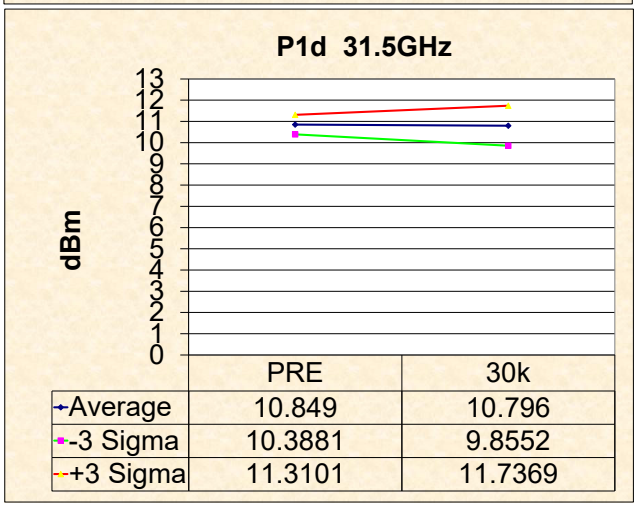
	PRE	30k
Average	26.468	26.916
-3 Sigma	23.5601	24.4974
+3 Sigma	29.3752	29.3346



	PRE	30k
Average	10.920	10.968
-3 Sigma	10.155	10.569
+3 Sigma	11.685	11.367



	PRE	30k
Average	26.461	26.684
-3 Sigma	23.6502	23.7135
+3 Sigma	29.2723	29.6549



	PRE	30k
Average	10.849	10.796
-3 Sigma	10.3881	9.8552
+3 Sigma	11.3101	11.7369