

Waters Corporation - Test Record

Part Number: <u>210001115</u>	Product:
Operator: <u>administrator</u>	Start Time: <u>03/12/2019, 15:20:</u>
Serial Number: <u>21/066</u>	End Time: <u>03/12/2019, 16:28:</u>
Test System: <u>TE82988-12</u>	
Test Software: <u>C</u>	Location: <u>GES Venture, Singapore</u>

Name	LSL	Measurement	USL	Unit	Outcome
R001.Input Board Revision					DONE
R008.Test.BUTP.ON					PASS
R011.Test.Backing Pump Isolated Output.J18					PASS
BPI Switched Output OFF	-0.1	0.228750005	1		PASS
BPI ISO Output OFF	22	24.001969348	25.2		PASS
BPI Switched Output ON	22	22.8125	25.2		PASS
BPI ISO Output ON	-0.1	0.303283013	1		PASS
R012.Enter VxWorks					PASS
R013.Set Board ID					DONE
R014.Set Board BatchNumber					DONE
R015.Set Board SerialNumber					DONE
R016.Set Board Revision					DONE
R017.Set Board DOT					DONE
R018.Set Board SealInfo					DONE
R019.Test.LV Power.HEADER J8					PASS
12V	11.87	12.061211212	12.37	volt	PASS
12V Readback	-2	-0.134382384	2	%	PASS
-12V	-12.4	-12.082036425	-11.9	volt	PASS
-12V Readback	-4	-0.442371174	4	%	PASS
5V ANA1	4.75	5.024737802	5.25	volt	PASS
1V2	1.176	1.199648209	1.224	volt	PASS
1V2 Readback	-1	0.239571524	1	%	PASS
2V5	2.45	2.495691525	2.55	volt	PASS
2V5 Readback	-1	0.085873514	1	%	PASS
3V3	3.25	3.306983222	3.39	volt	PASS
3V3 Readback	-2	0.211165945	2	%	PASS
5V VREF	4.999	5.000255489	5.001	volt	PASS
5V ANA	4.75	4.988875442	5.25	volt	PASS
24V post filter	22.8	23.968982128	25.2	volt	PASS
12VCE	11.87	12.101781097	12.37	volt	PASS
VCC	4.91	4.965068497	5.08	volt	PASS
VCC Readback	-2	0.595855337	2	%	PASS
RFSupply	32.9	34.285231732	35.3	volt	PASS
R020.Test.HV Power.Internal					PASS
PHT +430	400	429.137728947	460	V	PASS
PHT Readback	-2.5	-1.211561473	2.5	%	PASS
NHT -430	-460	-429.355515342	-400	V	PASS
NHT Readback	-5	-1.016610995	5	%	PASS
Impactor +ve (750)	712.5	758.580255985	787.5	V	PASS
Impactor +ve (750) RBK	-2.5	0.205581275	2.5	%	PASS
Impactor +ve (1500)	1425	1508.815362154	1575	V	PASS
Impactor +ve (1500) RBK	-2.5	-0.24926512	2.5	%	PASS
Impactor -ve (750)	-787.5	-745.101273303	-712.5	V	PASS

Impactor -ve (750) RBK	-2.5	-1.534165038	2.5	%	PASS
Impactor -ve (1500)	-1575	-1480.707955539	-1425	V	PASS
Impactor -ve (1500) RBK	-2.5	-1.030773177	2.5	%	PASS
ETD +ve (750)	712.5	759.232970665	787.5	V	PASS
ETD +ve (750) RBK	-2.5	-0.544891076	2.5	%	PASS
ETD +ve (1500)	1425	1509.831986051	1575	V	PASS
ETD +ve (1500) RBK	-2.5	-1.087507773	2.5	%	PASS
ETD -ve (750)	-787.5	-745.666362687	-712.5	V	PASS
ETD -ve (750) RBK	-2.5	-0.998729566	2.5	%	PASS
ETD -ve (1500)	-1575	-1481.681311886	-1425	V	PASS
ETD -ve (1500) RBK	-2.5	-1.195141449	2.5	%	PASS
Settling Time	1	8.2735	15	mSec	PASS
R021.Test.LV					PASS
Power.External.ChromaLoad					
24V FAN1 J28.1 - Load On	22	23.040000916	25.2	volt	PASS
24V FAN2 J28.5 - Load On	22	23.036249161	25.2	volt	PASS
12V HA J1.6 - Load On	11	11.77875042	12.25	volt	PASS
-12V HA J1.3 - Load On	11	11.78374958	12.25	volt	PASS
5V ANA J24.B2 - Load On	4.2	4.647500038	5.2	volt	PASS
24V BPI J18.4 - Load On	22	23.67124939	25.2	volt	PASS
24LV SRCEXH J4.7 - ON	22	23.101249695	25.2	volt	PASS
24LV SRCEXH J4.7 - OFF	-1	0	1	volt	PASS
24V APIGAS J4.6 - ON	22	23.104999542	25.2	volt	PASS
24V APIGAS J4.6 - OFF	-0.1	0	0.1	volt	PASS
24V ISO DIS J4.5 - ON	22	23.066249847	25.2	volt	PASS
24V ISO DIS J4.5 - ON RBK	0.9	1	1.1	B	PASS
24V ISO DIS J4.5 - OFF	-1	0	1	volt	PASS
24V INT LCK J1.9 - Load On	22	22.777500153	25.2	volt	PASS
24V INT LCK J1.16 - Load On	22	22.76625061	25.2	volt	PASS
24LV RF J13.2 - Load On	22	23.348749161	25.2	volt	PASS
24V Turbo j6.1 - Load On	22	23.293750763	25.2	volt	PASS
24V BPI SW J18.5.9 - On	-1	0.177499995	1	volt	PASS
24V PMT J1.1 - Load On	22	23.622499466	25.2	volt	PASS
24V PMT J1.1 - ON RBK	0.9	1	1.1	B	PASS
24V Calib_Valve J29.3 - ON	22	23.440000534	25.2	volt	PASS
24V Calib_Valve J29.3 - ON RBK	0.9	1	1.1	B	PASS
24V Calib_Valve J29.3 - OFF	-1	0.167500004	1	volt	PASS
R022.Test.PSU Status+SIP+SRC DOOR					PASS
Status LED Red_on_J19	1.8	2.018401003	2.2	volt	PASS
Status LED Red_off_J19	-0.1	0	0.75	volt	PASS
Status LED Green_on_J19	1.7	1.852397265	2.1	volt	PASS
Status LED Green_off_J19	-0.1	0	0.75	volt	PASS
Power On LED_on_J19	0.7	0.906088886	1.1	volt	PASS
SIP_J18 ON	-0.1	-0.000213193	0.65	volt	PASS
SIP_J18 OFF	3	3.306499609	3.37	volt	PASS
OK_24V Hi	-0.1	0	0.1	B	PASS
OK_24V Lo	0.9	1	1.1	B	PASS
R023.Test. Fan1 Output.J28					PASS
Fan1 Frequency	23750	25000	26250	hertz	PASS
Fan1 Duty Cycle 1	40	57.54	60	%PWM	PASS
Fan1 Tacho RBK OK		0		B	PASS
Fan1 Tacho RBK Stalled		1		B	PASS
R024.Test. Fan2 Output.J28					PASS
Fan2 Frequency	23750	25000	26250	hertz	PASS
Fan2 Duty Cycle 1	40	57.235	60	%PWM	PASS

Fan2 Tacho RBK OK		0		B	PASS
Fan2 Tacho RBK Stalled		1		B	PASS
R025.Test.Events+Analogue.J17					PASS
Event out 0 OFF	10000000	9.9E+37	1E+39	ohm	PASS
Event out 0 ON	0	4.621232587	7	ohm	PASS
Event out 1 OFF	10000000	9.9E+37	1E+39	ohm	PASS
Event out 1 ON	0	3.752741411	7	ohm	PASS
Events In 0 LO	0.9	1	1.1	B	PASS
Events In 0 Hi	-0.1	0	0.1	B	PASS
Events In 1 Lo	0.9	1	1.1	B	PASS
Events In 1 Hi	-0.1	0	0.1	B	PASS
Analogue Output10	9.7	9.989892712	10.3	V	PASS
Analogue Output6	5.82	5.995319381	6.18	V	PASS
Analogue Output1	0.97	0.996921135	1.03	V	PASS
Analogue Output0	-0.1	0.000408486	0.01	V	PASS
Analogue Output-1	-1.03	-1.000941326	-0.97	V	PASS
Analogue Output-6	-6.18	-6.000204752	-5.82	V	PASS
Analogue Output-10	-10.3	-9.996905673	-9.7	V	PASS
R026.Test.HA+PMT IF.J1					PASS
PMT Analogue out 10	9.7	10.021764024	10.3	V	PASS
PMT Analogue out 9	8.73	9.022668838	9.27	V	PASS
PMT Analogue out 7	6.79	7.017313863	7.21	V	PASS
PMT Analogue out 5	4.85	5.009414658	5.15	V	PASS
PMT Analogue out 3	2.91	3.006752101	3.09	V	PASS
PMT Analogue out 1	0.97	0.999966945	1.03	V	PASS
PMT Analogue out 0	-0.011	-0.00004121	0.011	V	PASS
PMT RBK AIN6 -5	4.87	5	5.13	volt	PASS
PMT RBK AIN6 -4	3.9	4.004884005	4.1	volt	PASS
PMT RBK AIN6 -3	2.92	3.003663004	3.08	volt	PASS
PMT RBK AIN6 -2	1.95	2.002442002	2.05	volt	PASS
PMT RBK AIN6 -1	0.97	1.001221001	1.03	volt	PASS
PMT RBK AIN6 0	-0.004	0	0.004	volt	PASS
Headamp input 0	-0.011	0	0.011	volt	PASS
Headamp input 1	-1	0.175478752	1	%	PASS
Headamp input 2	-0.5	0.114442664	0.5	%	PASS
Headamp input 3	-0.5	0.094097302	0.5	%	PASS
Headamp input 4	-0.5	0.080109865	0.5	%	PASS
Headamp input 5	-0.5	0.065613794	0.5	%	PASS
Headamp input 6	-0.5	0.063579258	0.5	%	PASS
Headamp input 7	-0.5	0.059946157	0.5	%	PASS
Headamp input 8	-0.5	0.05912871	0.5	%	PASS
Headamp input 9	-0.5	0.05679747	0.5	%	PASS
Headamp input 10	-0.5	0.053406577	0.5	%	PASS
Headamp input 0	-0.011	0	0.011	volt	PASS
PMT Scan OK?		1		B	PASS
R027.Test.Heater.PROBE.J33					PASS
Heater Voltage	22	23.992358733	25.2	volt	PASS
Heater Current	6.67	6.96750021	7.64	amps	PASS
Saturation Voltage	0	0.574046256	1	volt	PASS
Slew Rate rise	38	44.456020815	62	volt/msec	PASS
Slew Rate fall	5	9.698780691	15	volt/msec	PASS
TC temp. 0	-2.43	0	2.43	degrees Celsius	PASS
TC temp. 100	98	99.990427764	102	degrees Celsius	PASS
TC temp. 200	198	199.864553779	202		PASS

				degrees Celsius	
TC temp. 300	298	299.825906106	302	degrees Celsius	PASS
TC temp. 400	398	399.787258432	402	degrees Celsius	PASS
TC temp. 500	498	499.690459885	502	degrees Celsius	PASS
TC temp. 600	598	599.593661338	602	degrees Celsius	PASS
TC temp. 700	698	699.525938227	702	degrees Celsius	PASS
TC temp. 800		799.487290554		degrees Celsius	PASS
TC temp. 900		899.448642881		degrees Celsius	PASS
Therm temp. 0		-0.003360966		degrees Celsius	PASS
Therm temp. 5		5.006159146		degrees Celsius	PASS
Therm temp. 10		10.010637809		degrees Celsius	PASS
Therm temp. 15		15.006714056		degrees Celsius	PASS
Therm temp. 20	19.6	20.002790303	20.4	degrees Celsius	PASS
Therm temp. 25	24.5	25.010629932	25.5	degrees Celsius	PASS
Therm temp. 30	29.4	30.010067145	30.6	degrees Celsius	PASS
Therm temp. 35	34.3	35.002782426	35.7	degrees Celsius	PASS
Therm temp. 40	39.2	39.99717819	40.8	degrees Celsius	PASS
Therm temp. 45	44.1	44.996615404	45.9	degrees Celsius	PASS
Therm temp. 50	49	49.984289236	51	degrees Celsius	PASS
Therm temp. 55	53.9	54.985406932	56.1	degrees Celsius	PASS
Therm temp. 60	58.8	59.988205112	61.2	degrees Celsius	PASS
R028.Test.Heater.CALIBRATION.J31					PASS
Heater Voltage	22	23.992340007	25.2	volt	PASS
Heater Current	0.92	0.96656251	1.05	amps	PASS
Saturation Voltage	0	0.303819624	0.7	volt	PASS
Slew Rate rise	38	44.915807469	62	volt/msec	PASS
Slew Rate fall	5	8.788000552	15	volt/msec	PASS
TC temp. 0	-2.43	0.029075437	2.43	degrees Celsius	PASS
TC temp. 100	98	100.135804948	102	degrees Celsius	PASS
TC temp. 200	198	200.155308149	202	degrees Celsius	PASS
TC temp. 300	298	300.291113097	302	degrees Celsius	PASS
TC temp. 400	398	400.397842609	402	degrees Celsius	PASS
TC temp. 500	498	500.475496683	502		PASS

				degrees Celsius	
TC temp. 600	598	600.524075321	602	degrees Celsius	PASS
TC temp. 700	698	700.630804832	702	degrees Celsius	PASS
TC temp. 800		800.67938347		degrees Celsius	PASS
TC temp. 900		900.757037545		degrees Celsius	PASS
R029.Test.Heater.SOURCE.J30					PASS
Heater Voltage	22	23.992470773	25.2	volt	PASS
Heater Current	1.69	1.799999952	1.94	amps	PASS
Saturation Voltage	0	0.285968902	0.8	volt	PASS
Slew Rate rise	38	44.658965119	62	volt/msec	PASS
Slew Rate fall	5	9.02906041	15	volt/msec	PASS
TC temp. 0	-2.43	-0.029075437	2.43	degrees Celsius	PASS
TC temp. 100	98	100.106729511	102	degrees Celsius	PASS
TC temp. 200	198	200.24253446	202	degrees Celsius	PASS
TC temp. 300	298	300.378339408	302	degrees Celsius	PASS
TC temp. 400	398	400.543219794	402	degrees Celsius	PASS
TC temp. 500	498	500.679024742	502	degrees Celsius	PASS
TC temp. 600	598	600.785754254	602	degrees Celsius	PASS
TC temp. 700	698	700.950634639	702	degrees Celsius	PASS
TC temp. 800		801.115515025		degrees Celsius	PASS
TC temp. 900		901.222244536		degrees Celsius	PASS
Therm temp. 0		0		degrees Celsius	PASS
Therm temp. 5		5.007839629		degrees Celsius	PASS
Therm temp. 10		10.008957325		degrees Celsius	PASS
Therm temp. 15		15.001672606		degrees Celsius	PASS
Therm temp. 20	19.6	20.007831752	20.4	degrees Celsius	PASS
Therm temp. 25	24.5	25.012310415	25.5	degrees Celsius	PASS
Therm temp. 30	29.4	30.010067145	30.6	degrees Celsius	PASS
Therm temp. 35	34.3	35.006143393	35.7	degrees Celsius	PASS
Therm temp. 40	39.2	39.998858674	40.8	degrees Celsius	PASS
Therm temp. 45	44.1	44.996615404	45.9	degrees Celsius	PASS
Therm temp. 50	49	49.985969719	51	degrees Celsius	PASS
Therm temp. 55	53.9	54.987087415	56.1		PASS

Therm temp. 60	58.8	59.988205112	61.2	degrees Celsius degrees Celsius	PASS
R030.Test.Pressure+Leak.J24					PASS
Pressure_REF_J24 (10)	9.8	10.009110142	10.2	volt	PASS
Pressure_sensor_RBK_J24 5	47.75	49.89010989	52.25	millivolt	PASS
Pressure_sensor_RBK_J24 4	37.8	39.951159951	42.2	millivolt	PASS
Pressure_sensor_RBK_J24 3	27.85	29.914529915	32.15	millivolt	PASS
Pressure_sensor_RBK_J24 2	17.9	19.938949939	22.1	millivolt	PASS
Pressure_sensor_RBK_J24 1	7.95	9.987789988	12.05	millivolt	PASS
Pressure_sensor_RBK_J24 0		0.024420024		millivolt	PASS
R031.Test.Turbo Speed+Backing Speed.J6.J18					PASS
Backing Speed -10	-8.456	-8.161412586	-7.804	volt	PASS
Backing Speed -6	-5.074	-4.898676869	-4.682	volt	PASS
Backing Speed -1	-0.846	-0.81720615	-0.78	volt	PASS
Backing Speed 0	-0.01	0.000486749	0.01	volt	PASS
Backing Speed 1	0.78	0.814295029	0.846	volt	PASS
Backing Speed 6	4.682	4.895652504	5.074	volt	PASS
Backing Speed 10	7.804	8.158195044	8.456	volt	PASS
AIN1 RBK 10	9.5	9.973137973	10.5	volt	PASS
AIN1 RBK 6	5.7	5.992673993	6.3	volt	PASS
AIN1 RBK 3	2.85	3.008547009	3.15	volt	PASS
AIN1 RBK 1	0.94	1.025641026	1.05	volt	PASS
AIN1 RBK 0	-0.05	0.036630037	0.05	volt	PASS
R032.Test.Lens(1) Amplifier DC Output.J34					PASS
Lens1 Output -2.5	-2.533	-2.505772143	-2.467	V	PASS
Readback -2.5	-2.8	0.230353853	2.8	%	PASS
Lens1 Output -1.5	-1.528	-1.5031991	-1.472	V	PASS
Readback -1.5	-3.4	1.268768421	3.4	%	PASS
Lens1 Output -1	-1.07	-1.002326595	-0.93	V	PASS
Readback -1	-4	-2.386939685	4	%	PASS
Lens1 Output 0	-0.02	0.000485148	0.02	V	PASS
Readback 0	-0.02	-0.003788356	0.02	V	PASS
Lens1 Output 1	0.93	1.004618117	1.07	V	PASS
Readback 1	-4	-2.031857436	4	%	PASS
Lens1 Output 1.5	1.472	1.505521867	1.528	V	PASS
Readback 1.5	-3.4	2.556515482	3.4	%	PASS
Lens1 Output 2.5	2.467	2.508123634	2.533	V	PASS
Readback 2.5	-2.8	1.979076109	2.8	%	PASS
R033.Test.Lens(2) Amplifier DC Output.J34					PASS
Lens2 Output -10	-10.07	-10.019074222	-9.93	V	PASS
Readback -10	-2.9	2.481491269	2.9	%	PASS
Lens2 Output -6	-6.05	-6.010734123	-5.95	V	PASS
Readback -6	-3.5	-1.121492882	3.5	%	PASS
Lens2 Output -1	-1.07	-0.998391761	-0.93	V	PASS
Readback -1	-10.5	-1.506347824	10.5	%	PASS
Lens2 Output 0	-0.02	0.000805525	0.02	V	PASS
Readback 0	-0.085	0.037435561	0.085	V	PASS
Lens2 Output 1	0.93	1.005007767	1.07	V	PASS
Readback 1	-10.5	5.479441916	10.5	%	PASS
Lens2 Output 6	5.95	6.017594973	6.05	V	PASS
Readback 6	-3.5	-2.548280474	3.5	%	PASS
Lens2 Output 10	9.93	10.026066683	10.07	V	PASS

Readback 10	-2.9	1.867520431	2.9	%	PASS
R034.Test.Lens(3) Amplifier DC Output.J35					PASS
Lens3 Output -160	-161.7	-160.229956684	-158.3	V	PASS
Readback -160	-2.3	-0.861658025	2.3	%	PASS
Lens3 Output -90	-91	-90.10733276	-89	V	PASS
Readback -90	-2.5	-0.504199228	2.5	%	PASS
Lens3 Output -10	-10.2	-9.952262495	-9.8	V	PASS
Readback -10	-6.3	-0.876798766	6.3	%	PASS
Lens3 Output -5	-5.2	-4.937838883	-4.8	V	PASS
Readback -5	-10.5	-1.137757924	10.5	%	PASS
Lens3 Output 0	-0.08	0.001454089	0.08	V	PASS
Readback 0	-0.422	0.361847251	0.422	V	PASS
Lens3 Output 5	4.8	5.017296362	5.2	V	PASS
Readback 5	-10.5	2.516221718	10.5	%	PASS
Lens3 Output 10	9.8	10.029834672	10.2	V	PASS
Readback 10	-6.3	2.983292315	6.3	%	PASS
Lens3 Output 90	89	90.186539824	91	V	PASS
Readback 90	-2.5	-0.187582828	2.5	%	PASS
Lens3 Output 160	158.3	160.316215925	161.7	V	PASS
Readback 160	-2.3	-0.42201482	2.3	%	PASS
R035.Test.Lens(4) Amplifier DC Output.J35					PASS
Lens4 Output -160	-161.7	-160.32081518	-158.3	V	PASS
Readback -160	-2.3	-0.419133931	2.3	%	PASS
Lens4 Output -90	-91	-90.150898779	-89	V	PASS
Readback -90	-2.5	-0.227191863	2.5	%	PASS
Lens4 Output -10	-10.2	-9.940251994	-9.8	V	PASS
Readback -10	-6.3	0.03719885	6.3	%	PASS
Lens4 Output -5	-5.2	-4.924069206	-4.8	V	PASS
Readback -5	-10.5	-3.511725714	10.5	%	PASS
Lens4 Output 0	-0.08	0.008421579	0.08	V	PASS
Readback 0	-0.422	-0.146032633	0.422	V	PASS
Lens4 Output 5	4.8	5.017485102	5.2	V	PASS
Readback 5	-10.5	2.51988872	10.5	%	PASS
Lens4 Output 10	9.8	10.03580583	10.2	V	PASS
Readback 10	-6.3	4.067036842	6.3	%	PASS
Lens4 Output 90	89	90.253159949	91	V	PASS
Readback 90	-2.5	-0.569988061	2.5	%	PASS
Lens4 Output 160	158.3	160.423447187	161.7	V	PASS
Readback 160	-2.3	-0.483262199	2.3	%	PASS
R036.Test.Lens(5) Amplifier DC Output.J35					PASS
Lens5 Output -160	-161.7	-160.334942073	-158.3	V	PASS
Readback -160	-2.3	-0.538729101	2.3	%	PASS
Lens5 Output -90	-91	-90.157343585	-89	V	PASS
Readback -90	-2.5	-0.334238081	2.5	%	PASS
Lens5 Output -10	-10.2	-9.947379573	-9.8	V	PASS
Readback -10	-6.3	-0.926316679	6.3	%	PASS
Lens5 Output -5	-5.2	-4.932473421	-4.8	V	PASS
Readback -5	-10.5	-3.335356841	10.5	%	PASS
Lens5 Output 0	-0.08	0.001871901	0.08	V	PASS
Readback 0	-0.422	0.053356639	0.422	V	PASS
Lens5 Output 5	4.8	5.0126533	5.2	V	PASS
Readback 5	-10.5	8.588498706	10.5	%	PASS
Lens5 Output 10	9.8	10.029450137	10.2	V	PASS

Readback 10	-6.3	4.006243828	6.3	%	PASS
Lens5 Output 90	89	90.241471667	91	V	PASS
Readback 90	-2.5	-0.240700966	2.5	%	PASS
Lens5 Output 160	158.3	160.421622394	161.7	V	PASS
Readback 160	-2.3	-0.227658071	2.3	%	PASS
R037.Test.Lens(6) Amplifier DC Output.J35					PASS
Lens6 Output -320	-326.6	-320.61917723	-313.4	V	PASS
Readback -320	-2.3	-1.104068624	2.3	%	PASS
Lens6 Output -180	-183.8	-180.318187652	-176.2	V	PASS
Readback -180	-2.4	-0.965697834	2.4	%	PASS
Lens6 Output -20	-20.6	-19.884676639	-19.4	V	PASS
Readback -20	-5.6	-2.908552847	5.6	%	PASS
Lens6 Output -5	-5.3	-4.847924718	-4.7	V	PASS
Readback -5	-16.4	3.986105607	16.4	%	PASS
Lens6 Output 0	-0.16	0.01564824	0.16	V	PASS
Readback 0	-0.72	0.279120768	0.72	V	PASS
Lens6 Output 5	4.7	5.030063238	5.3	V	PASS
Readback 5	-16.4	3.97079635	16.4	%	PASS
Lens6 Output 20	19.4	20.06155026	20.6	V	PASS
Readback 20	-5.6	0.625387102	5.6	%	PASS
Lens6 Output 180	176.2	180.495936413	183.8	V	PASS
Readback 180	-2.4	-0.671640255	2.4	%	PASS
Lens6 Output 320	313.4	320.815765619	326.6	V	PASS
Readback 320	-2.3	-1.042114418	2.3	%	PASS
R038.Test.Lens(7) Amplifier DC Output.J35					PASS
Lens7 Output -320	-326.6	-320.701483477	-313.4	V	PASS
Readback -320	-2.3	-0.913810689	2.3	%	PASS
Lens7 Output -180	-183.8	-180.341514624	-176.2	V	PASS
Readback -180	-2.4	-0.563047535	2.4	%	PASS
Lens7 Output -20	-20.6	-19.875856897	-19.4	V	PASS
Readback -20	-5.6	-4.721672018	5.6	%	PASS
Lens7 Output -5	-5.3	-4.841330267	-4.7	V	PASS
Readback -5	-16.4	-7.028979391	16.4	%	PASS
Lens7 Output 0	-0.16	0.025545306	0.16	V	PASS
Readback 0	-0.72	0.464666185	0.72	V	PASS
Lens7 Output 5	4.7	5.040689393	5.3	V	PASS
Readback 5	-16.4	4.173233181	16.4	%	PASS
Lens7 Output 20	19.4	20.074638946	20.6	V	PASS
Readback 20	-5.6	1.565155848	5.6	%	PASS
Lens7 Output 180	176.2	180.541649807	183.8	V	PASS
Readback 180	-2.4	-0.5488604	2.4	%	PASS
Lens7 Output 320	313.4	320.899883072	326.6	V	PASS
Readback 320	-2.3	-0.90615589	2.3	%	PASS
R039.Test.Lens(8) Amplifier DC Output.J35					PASS
Lens8 Output -320	-325	-319.104411348	-311.8	V	PASS
Readback -320	-2.3	-0.978516636	2.3	%	PASS
Lens8 Output -180	-182.9	-179.459068908	-175.3	V	PASS
Readback -180	-2.5	-0.666035308	2.5	%	PASS
Lens8 Output -20	-20.5	-19.813445813	-19.3	V	PASS
Readback -20	-5.7	-1.505495073	5.7	%	PASS
Lens8 Output -5	-5.3	-4.860029619	-4.7	V	PASS
Readback -5	-16.5	0.611106331	16.5	%	PASS
Lens8 Output 0	-0.16	-0.002838672	0.16	V	PASS

Readback 0	-0.72	0.436282207	0.72	V	PASS
Lens8 Output 5	4.7	5.006448503	5.3	V	PASS
Readback 5	-16.5	3.517839696	16.5	%	PASS
Lens8 Output 20	19.3	19.960176988	20.5	V	PASS
Readback 20	-5.7	2.760667558	5.7	%	PASS
Lens8 Output 180	175.3	179.61593279	182.9	V	PASS
Readback 180	-2.5	-0.382538546	2.5	%	PASS
Lens8 Output 320	311.8	319.268688586	325	V	PASS
Readback 320	-2.3	-0.87154308	2.3	%	PASS
R040.Test.Lens(12) Amplifier DC Output.J34					PASS
Lens12 Output -10	-10.06	-10.026626462	-9.94	V	PASS
Readback -10	-3.3	0.265557533	3.3	%	PASS
Lens12 Output -6	-6.04	-6.018034986	-5.96	V	PASS
Readback -6	-4.2	1.760492826	4.2	%	PASS
Lens12 Output -1	-1.06	-1.003800817	-0.94	V	PASS
Readback -1	-14.7	3.9061387	14.7	%	PASS
Lens12 Output 0	-0.006	0.000679099	0.006	V	PASS
Readback 0	-0.127	0.06172916	0.127	V	PASS
Lens12 Output 1	0.94	1.000236447	1.06	V	PASS
Readback 1	-14.7	-2.783999824	14.7	%	PASS
Lens12 Output 6	5.96	6.013458992	6.04	V	PASS
Readback 6	-4.2	-3.91829823	4.2	%	PASS
Lens12 Output 10	9.94	10.023321473	10.06	V	PASS
Readback 10	-3.3	1.840643692	3.3	%	PASS
R041.Test. MASS DAC Output.E18					PASS
Mass DAC out 10	9.992	9.999436264	10.008	volt	PASS
Mass DAC out 9	8.9928	8.999596113	9.0072	volt	PASS
Mass DAC out 8	7.9936	7.999599961	8.0064	volt	PASS
Mass DAC out 7	6.9944	6.999612222	7.0056	volt	PASS
Mass DAC out 6	5.9952	5.99977006	6.0048	volt	PASS
Mass DAC out 5	4.996	4.999941545	5.004	volt	PASS
Mass DAC out 4	3.9968	3.99994032	4.0032	volt	PASS
Mass DAC out 3	2.9976	2.999953192	3.0024	volt	PASS
Mass DAC out 2	1.9984	2.000105955	2.0016	volt	PASS
Mass DAC out 1	0.9992	1.000274217	1.0008	volt	PASS
Mass DAC out 0	-0.0047	0.000286754	0.0047	volt	PASS
R042.Test.QUAD DC Amplifier (Correction+) Output.J13					PASS
CorrectionDAC+ -10	84	84.165319007	84.4	V	PASS
CorrectionDAC+ -10 RB	-2.9	-1.213675885	2.9	%	PASS
CorrectionDAC+ -6	50.3	50.500091813	50.7	V	PASS
CorrectionDAC+ -6 RB	-3.5	-0.794071997	3.5	%	PASS
CorrectionDAC+ -3	25.1	25.252314735	25.4	V	PASS
CorrectionDAC+ -3 RB	-4.9	-0.610948631	4.9	%	PASS
CorrectionDAC+ 0	-0.068	0.004368326	0.068	V	PASS
CorrectionDAC+ 0 RB	-0.72	-0.259367938	0.72	V	PASS
CorrectionDAC+ 3	-25.4	-25.247081651	-25.1	V	PASS
CorrectionDAC+ 3 RB	-4.9	-2.721044328	4.9	%	PASS
CorrectionDAC+ 6	-50.7	-50.495084409	-50.3	V	PASS
CorrectionDAC+ 6 RB	-3.5	-1.152267939	3.5	%	PASS
CorrectionDAC+ 10	-84.4	-84.159598703	-84	V	PASS
CorrectionDAC+ 10 RB	-2.9	-1.220555349	2.9	%	PASS
R043.Test.QUAD DC Amplifier (Tune+) Output.J13					PASS
TuneDAC+ -10	10.41	10.52471328	10.64	V	PASS

TuneDAC+ -10 RB	-8.9	-2.740915842	8.9	%	PASS
TuneDAC+ -6	6.21	6.316679423	6.41	V	PASS
TuneDAC+ -6 RB	-13.5	3.969575467	13.5	%	PASS
TuneDAC+ -3	3.07	3.160594346	3.24	V	PASS
TuneDAC+ -3 RB	-24.9	-2.915682825	24.9	%	PASS
TuneDAC+ 0	-0.068	0.00410372	0.068	V	PASS
TuneDAC+ 0 RB	-0.72	0.267839984	0.72	V	PASS
TuneDAC+ 3	-3.24	-3.1518245	-3.07	V	PASS
TuneDAC+ 3 RB	-24.9	-8.780531026	24.9	%	PASS
TuneDAC+ 6	-6.41	-6.307531673	-6.21	V	PASS
TuneDAC+ 6 RB	-13.5	-1.74475136	13.5	%	PASS
TuneDAC+ 10	-10.64	-10.515613386	-10.41	V	PASS
TuneDAC+ 10 RB	-8.9	-1.157795048	8.9	%	PASS
R044.Test.QUAD DC Amplifier (ION+) Output.J13					PASS
IONenergyDAC+ -10	22.31	22.448036929	22.59	V	PASS
IONenergyDAC+ -10 RB	-5.3	-1.430832646	5.3	%	PASS
IONenergyDAC+ -6	13.36	13.470569328	13.58	V	PASS
IONenergyDAC+ -6 RB	-7.4	-1.156627419	7.4	%	PASS
IONenergyDAC+ -3	6.64	6.73809588	6.83	V	PASS
IONenergyDAC+ -3 RB	-12.7	-3.071476999	12.7	%	PASS
IONenergyDAC+ 0	-0.068	0.004226155	0.068	V	PASS
IONenergyDAC+ 0 RB	-0.72	-0.61115846	0.72	V	PASS
IONenergyDAC+ 3	-6.83	-6.728555122	-6.64	V	PASS
IONenergyDAC+ 3 RB	-12.7	-0.604522757	12.7	%	PASS
IONenergyDAC+ 6	-13.58	-13.461194175	-13.36	V	PASS
IONenergyDAC+ 6 RB	-7.4	-3.839390448	7.4	%	PASS
IONenergyDAC+ 10	-22.59	-22.438793764	-22.31	V	PASS
IONenergyDAC+ 10 RB	-5.3	0.0945298	5.3	%	PASS
R045.Test.QUAD DC Amplifier (Correction-) Output.J13					PASS
CorrectionDAC- -10	-84.4	-84.165094966	-84	V	PASS
CorrectionDAC- -10 RB	-2.9	-0.37832966	2.9	%	PASS
CorrectionDAC- -6	-50.7	-50.49977494	-50.3	V	PASS
CorrectionDAC- -6 RB	-3.5	-0.446536219	3.5	%	PASS
CorrectionDAC- -3	-25.4	-25.252128182	-25.1	V	PASS
CorrectionDAC- -3 RB	-4.9	-2.004241279	4.9	%	PASS
CorrectionDAC- 0	-0.068	-0.003894966	0.068	V	PASS
CorrectionDAC- 0 RB	-0.72	0.435665474	0.72	V	PASS
CorrectionDAC- 3	25.1	25.247242245	25.4	V	PASS
CorrectionDAC- 3 RB	-4.9	0.761656217	4.9	%	PASS
CorrectionDAC- 6	50.3	50.494897667	50.7	V	PASS
CorrectionDAC- 6 RB	-3.5	0.588367306	3.5	%	PASS
CorrectionDAC- 10	84	84.159105308	84.4	V	PASS
CorrectionDAC- 10 RB	-2.9	0.241282688	2.9	%	PASS
R046.Test.QUAD DC Amplifier (Tune-) Output.J13					PASS
Tune DAC- -10	-10.64	-10.524343306	-10.41	V	PASS
Tune DAC- -10 RB	-8.9	0.596757847	8.9	%	PASS
Tune DAC- -6	-6.41	-6.316137476	-6.21	V	PASS
Tune DAC- -6 RB	-13.5	-1.606123085	13.5	%	PASS
Tune DAC- -3	-3.24	-3.160275405	-3.07	V	PASS
Tune DAC- -3 RB	-24.9	-8.489640581	24.9	%	PASS
Tune DAC- 0	-0.068	-0.003816608	0.068	V	PASS
Tune DAC- 0 RB	-0.72	0.259919656	0.72	V	PASS
Tune DAC- 3	3.07	3.152032238	3.24	V	PASS

Tune DAC- 3 RB	-24.9	2.382880488	24.9	%	PASS
Tune DAC- 6	6.21	6.307880883	6.41	V	PASS
Tune DAC- 6 RB	-13.5	-1.73911867	13.5	%	PASS
Tune DAC- 10	10.41	10.51613601	10.64	V	PASS
Tune DAC- 10 RB	-8.9	0.519178798	8.9	%	PASS
R047.Test.QUAD DC Amplifier (ION-) Output.J13					PASS
IONenergyDAC- -10	-22.59	-22.441667441	-22.31	V	PASS
IONenergyDAC- -10 RB	-5.3	-0.676149187	5.3	%	PASS
IONenergyDAC- -6	-13.58	-13.466119929	-13.36	V	PASS
IONenergyDAC- -6 RB	-7.4	-6.41276333	7.4	%	PASS
IONenergyDAC- -3	-6.83	-6.735245196	-6.64	V	PASS
IONenergyDAC- -3 RB	-12.7	4.716424857	12.7	%	PASS
IONenergyDAC- 0	-0.068	-0.003836665	0.068	V	PASS
IONenergyDAC- 0 RB	-0.72	0.084075423	0.72	V	PASS
IONenergyDAC- 3	6.64	6.728030316	6.83	V	PASS
IONenergyDAC- 3 RB	-12.7	-0.612370211	12.7	%	PASS
IONenergyDAC- 6	13.36	13.459222013	13.58	V	PASS
IONenergyDAC- 6 RB	-7.4	1.370783085	7.4	%	PASS
IONenergyDAC- 10	22.31	22.434717652	22.59	V	PASS
IONenergyDAC- 10 RB	-5.3	0.860092884	5.3	%	PASS
R062.Test.QUAD RF Gen Amplitude+Frequency.J13					PASS
Frequency Phase1 1	1138500	1148600	1161500	hertz	PASS
Frequency Phase2 2	1138500	1151800	1161500	hertz	PASS
Amplitude1 ch1 TUNE ref	2.5	4.1	5.5	volt	PASS
Amplitude2 ch2 TUNE ref	2.5	4.04	5.5	volt	PASS
RF Control RBK T1	2.185	2.241758242	2.321	volt	PASS
Frequency Phase1 3	792000	800030	808000	hertz	PASS
Frequency Phase2 4	792000	800080	808000	hertz	PASS
Amplitude3 ch1 max @ 0.8MHZ	16	20	26	volt	PASS
Amplitude4 ch2 max @ 0.8MHZ	16	19.84	26	volt	PASS
RF Control RBK T2	10	11.050549451	12	volt	PASS
Frequency Phase1 5	1138500	1148500	1161500	hertz	PASS
Frequency Phase2 6	1138500	1149000	1161500	hertz	PASS
Amplitude ch1 max @ 1.15MHZ	20	23.6	31	volt	PASS
Amplitude ch2 max @ 1.15MHZ	20	23.44	31	volt	PASS
RF Control RBK T3	10	11.056410256	12	volt	PASS
Frequency Phase1 7	1287000	1300400	1313000	hertz	PASS
Frequency Phase2 8	1287000	1301000	1313000	hertz	PASS
Amplitude ch1 max @ 1.3MHZ	16	21.36	26	volt	PASS
Amplitude ch2 max @ 1.3MHZ	16	21.04	26	volt	PASS
RF Control RBK T4	10	11.050549451	12	volt	PASS
R049.Test.QUAD RECRF_RAW -Feedback.J13					PASS
DC+ (E10) -10	33.4	33.700998877	33.9	V/V	PASS
DC+ (E10) -7	33.4	33.684764104	33.9	V/V	PASS
DC+ (E10) -5	33.4	33.678062656	33.9	V/V	PASS
DC+ (E10) -3	33.4	33.678543026	33.9	V/V	PASS
DC+ (E10) -1	33.4	33.705621822	33.9	V/V	PASS
DC+ (E10) 0	-0.1	0.000003574	0.1	V/V	PASS
DC+ (E10) -10	-33.9	-33.699779327	-33.4	V/V	PASS
DC+ (E10) -7	-33.9	-33.683798641	-33.4	V/V	PASS
DC+ (E10) -5	-33.9	-33.677403494	-33.4	V/V	PASS
DC+ (E10) -3	-33.9	-33.67743658	-33.4	V/V	PASS
DC+ (E10) -1	-33.9	-33.702892029	-33.4	V/V	PASS

DC+ (E10) 0	-0.1	-0.000003425	0.1	V/V	PASS
DC- (E9) -10	-33.9	-33.698519603	-33.4	V/V	PASS
DC- (E9) -7	-33.9	-33.682785188	-33.4	V/V	PASS
DC- (E9) -5	-33.9	-33.676057708	-33.4	V/V	PASS
DC- (E9) -3	-33.9	-33.676072155	-33.4	V/V	PASS
DC- (E9) -1	-33.9	-33.70083613	-33.4	V/V	PASS
DC- (E9) 0	-0.1	-0.000003258	0.1	V/V	PASS
DC- (E9) -10	33.4	33.699517319	33.9	V/V	PASS
DC- (E9) -7	33.4	33.683966242	33.9	V/V	PASS
DC- (E9) -5	33.4	33.677514024	33.9	V/V	PASS
DC- (E9) -3	33.4	33.678064357	33.9	V/V	PASS
DC- (E9) -1	33.4	33.705802084	33.9	V/V	PASS
DC- (E9) 0	-0.1	0.000003639	0.1	V/V	PASS
DC+ 1>< DC- 1	-0.27	0.007363232	0.27	%	PASS
DC+ 2>< DC- 2	-0.27	0.005877212	0.27	%	PASS
DC+ 3>< DC- 3	-0.27	0.005954524	0.27	%	PASS
DC+ 4>< DC- 4	-0.27	0.007338278	0.27	%	PASS
DC+ 5>< DC- 5	-0.27	0.0142131	0.27	%	PASS
DC+ 6>< DC- 6	-0.01	0.00000094	0.01	%	PASS
DC+ 7>< DC- 7	-0.27	0.000778141	0.27	%	PASS
DC+ 8>< DC- 8	-0.27	-0.000497759	0.27	%	PASS
DC+ 9>< DC- 9	-0.27	-0.000328266	0.27	%	PASS
DC+ 10>< DC- 10	-0.27	-0.001864445	0.27	%	PASS
DC+ 11>< DC- 11	-0.27	-0.008642614	0.27	%	PASS
DC+ 12>< DC- 12	-0.01	-0.000000634	0.01	%	PASS
RECRF RBK -10	9.25	9.833943834	10.75	V	PASS
RECRF RBK -7	6.4	7.015873016	7.6	V	PASS
RECRF RBK -5	4.5	5.003663004	5.5	V	PASS
RECRF RBK -3	2.6	3.006105006	3.4	V	PASS
RECRF RBK -1	0.7	1.003663004	1.3	V	PASS
RECRF RBK 0	-0.25	-0.021978022	0.25	V	PASS
R063.Test.QUAD RF Gen Close Loop.J13					PASS
RESONANCE Frequency (Tune Ref) HZ	800000	1006000	1200000	hertz	PASS
RESONANCE Amplitude (Tune Ref) V	2	2.62	3	volts	PASS
RESONANCE Curve found (Tune Ref)	0.9	1	1.1	B	PASS
MASS DAC Integrator	0.9	1	1.1	B	PASS
R050.Test.QUAD Temp Mon.AIN11.J13					PASS
Input Level 5	-63.6	-62.22984127	-60.4	degrees Celsius	PASS
Input Level 4	-76.2	-74.434920635	-72.4	degrees Celsius	PASS
Input Level 3	-88.7	-86.64	-84.3	degrees Celsius	PASS
Input Level 2	-101.3	-98.874920635	-96.3	degrees Celsius	PASS
Input Level 1	-113.9	-111.094920635	-108.2	degrees Celsius	PASS
Input Level 0	-126.4	-123.3	-120.2	degrees Celsius	PASS
R051.Test.ION Guide RF Gen Frequency.J36					PASS
ION RF CH3 Amplitude :: 50V Lens RF	36.5	53	63.5	V	PASS

ION RF CH3 Frequency :: 50V Lens RF	800000	987130	1200000	Hz	PASS
ION RF CH4 Amplitude :: 50V Lens RF	36.5	52.8	63.5	V	PASS
ION RF CH4 Frequency :: 50V Lens RF	800000	989480	1200000	Hz	PASS
Readback Voltage :: 50V Lens RF	-47	3.021053021	47	%	PASS
Readback Current :: 50V Lens RF	10	17.002197802	50	mA	PASS
ION RF CH3 Amplitude :: 100V Lens RF	83	104.8	117	V	PASS
ION RF CH3 Frequency :: 100V Lens RF	800000	985750	1200000	hertz	PASS
ION RF CH4 Amplitude :: 100V Lens RF	83	105.6	117	V	PASS
ION RF CH4 Frequency :: 100V Lens RF	800000	985860	1200000	hertz	PASS
Readback Voltage :: 100V Lens RF	-26	3.021053021	26	%	PASS
Readback Current :: 100V Lens RF	20	33.05982906	60	mA	PASS
ION RF CH3 Amplitude :: 300V Lens RF	269	310.8	331	V	PASS
ION RF CH3 Frequency :: 300V Lens RF	800000	979610	1200000	hertz	PASS
ION RF CH4 Amplitude :: 300V Lens RF	269	312	331	V	PASS
ION RF CH4 Frequency :: 300V Lens RF	800000	980990	1200000	hertz	PASS
Readback Voltage :: 300V Lens RF	-13.33	1.492188723	13.33	%	PASS
Readback Current :: 300V Lens RF	50	112.63956044	180	mA	PASS
ION RF CH3 Amplitude :: 300V Lens RF SHORTED	0	1.2	10	V	PASS
ION RF CH3 Frequency :: 300V Lens RF SHORTED	2000000	244980000	1E+39	hertz	PASS
ION RF CH4 Amplitude :: 300V Lens RF SHORTED	0	0	10	V	PASS
ION RF CH4 Frequency :: 300V Lens RF SHORTED	2000000	9.9E+37	1E+39	hertz	PASS
Readback Voltage :: 300V Lens RF SHORTED	-1	-0.115067155	1	V	PASS
Readback Current :: 300V Lens RF SHORTED		0.708424908		mA	PASS
RF Noise (%)	0	2.476666667	5	%	PASS
Settling Time 0 to 90%	0	1	2	mSec	PASS
Report Text	Recieved: 0011050006TESTTC196 Response Buffer: 0x82 0x07 0x75 0x54 0x45 0x53 0x54 0x48 0x56 0x3B 0x3A 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00				PASS
Report Text	0x00 0x00 0x00				PASS
R064.BUTP.OFF					PASS
R065.BUTP.ON					PASS
R054.Enter VxWorks					PASS
Report Text	210001115				PASS
Report Text	F30DF8190000				DONE
Report Text	21				PASS
Report Text	066				PASS
Report Text	B				PASS

Report Text
Report Text
R091.BUTP.OFF

Tue, Mar 12, 201
5600

DONE
DONE
DONE

FCT3 Overall Result - PASS

Signed:	Date:
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END OF DATA