

Telescope Board Parts Stress Analysis				32-04010.01																				
Rev 01				5/8/06																				
Rev 02				5/22/06																				
Schematic: 32-03005 Rev 01																								
<b>Capacitors</b>																								
Quantity	Reference	Part Description	Procurement Info	Spec	Voltage (volts)				Ambient Temperature (C)															
					Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin					
9	C1,C2,C7,C13,C14,C15,C21,C22,C23	Ceramic Chip Capacitor, 39p, 1%, 100V, 0.01% FR	CDR31BP390BFUR	100	60	5	1100%	125	110	50	120%													
3	C8,C10,C18	Ceramic Chip Capacitor, 15p, 5%, 100V, 0.01% FR	CDR31BP150BJUR	100	60	5	1100%	125	110	50	120%													
9	C25,C29,C30,C32,C37,C38,C39,C44,C45	Ceramic Chip Capacitor, 3.9p, 1%, 100V, 0.01% FR	CDR31BP3R9BFUR	100	60	5	1100%	125	110	50	120%													
2	C46,C47	Ceramic Chip Capacitor, 10n, 10%, 100V, 0.01% FR	CDR32BX103BKUR	100	60	5	1100%	125	110	50	120%													
3	C50,C51,C52	Ceramic Chip Capacitor, 2p, 5%, 100V, 0.01% FR	CDR31BP2R0BJUR	100	60	5	1100%	125	110	50	120%													
24	C42,C43	Ceramic Chip Capacitor, 22n, 10%, 1000V, 0.001% FR	SM20B223K102AM	1000	600	240	150%	125	110	50	120%													
2	C48,C49	Tantalum Capacitor, 10u, 10%, 15V	CWR11HH106KD	15	9	5	80%	125	110	50	120%													
<b>Connectors</b>																								
Quantity	Reference	Part Description	Procurement Info	Spec	Working Voltage (volts)				Contact Current (A)				Ambient Temperature (C)											
					Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin					
1	Cable	Connector_combo, Dsub, Cable	Positronic SCBM24W7F3000G	300	225	225	0%	5	5	1	400%	125	100	50	100%									
7	Insert on cable connector	Connector shielded contact, Male, for Dsub	Positronic MC4102M	300	225	10	2150%	5	5	0.01	49900%	125	100	50	100%									
6	DET1,DET2,DET3,DET4,DET5,DET6	Connector, 90 deg 2-row strip, .05" centers	Airborn MA-2E1-004-433-A000	300	225	225	0%	5	5	0.01	49900%	125	100	50	100%									
<b>Crystal Oscillator</b>																								
Quantity	Reference	Part Description	Procurement Info	Spec	Voltage (volts)				Junction Temperature (C)				Output Current (ma)				Radiation (Krad)							
					Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin					
0																								
<b>Magnetics</b>																								
Quantity	Reference	Part Description	Procurement Info	Spec	Working Voltage (volts)				Operating Temperature (C)															
					Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin					
6	L1,L2,L3,L4,L5,L6	Inductor, 10%, 0.01% FR	M39010/03B-471KR	50	25	5	400%	105	85	50	70%													
<b>Microcircuits -- Analog</b>																								
Quantity	Reference	Part Description	Procurement Info	Spec	Voltage (volts)				Power (mW)				Junction Temperature (C)				Output Current (ma)				Radiation (Krad)			
					Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	
1	U7	AD590 Temperature Transducer, SM	AD590LF/883B	30	24	10	140%	n/a	n/a	n/a	n/a	150	110	60	83%	n/a	n/a	n/a	n/a	100	14	5	180%	
<b>Microcircuits -- Digital</b>																								
Quantity	Reference	Part Description	Procurement Info	Spec	Voltage (volts)				Power (mW)				Junction Temperature (C)				Output Current (ma)				Radiation (Krad)			
					Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	
0																								
<b>Microcircuits -- Hybrid</b>																								
Quantity	Reference	Part Description	Procurement Info	Spec	Voltage (volts)				Power (mW)				Junction Temperature (C)				Output Current (ma)				Radiation (Krad)			
					Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	
6	U1,U2,U3,U4,U5,U6	A250 Preampifier Hybrid (no FET), DIP, Option 1 scrm	A250	12	9.6	10	-4%	n/a	n/a	n/a	n/a	125	93.75	70	34%	n/a	n/a	n/a	n/a	100	14	5	180%	
<b>Microcircuits -- Plastic</b>																								
Quantity	Reference	Part Description	Procurement Info	Spec	Voltage (volts)				Input Voltage (volts)				Junction Temperature (C)				Output Current (ma)				Radiation (Krad)			
					Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	
0																								
<b>Resistors</b>																								
Quantity	Reference	Part Description	Procurement Info	Spec	Power (watts)				Voltage (volts)				Temperature (C)											
					Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	Spec	Derated	App.	Margin	
3	R1,R23,R35	Resistor, 3.40K, 1%, 50V, 100mW, Class S	M55342K06B3E40S	0.1	0.06	0.001	5900%	50	40	5	700%	125	70	50	40%									
9	A	R1A,R16,R23A,R28,R35A,R46A,R58,R71A,R73	Resistor, 10, 1%, 50V, 100mW, Class S	M55342K06B100DS	0.1	0.06	0.001	5900%	50	40	5	700%	125	70	50	40%								
7	R2,R8,R15,R27,R45,R48,R59	Resistor, 49.9, 1%, 50V, 100mW, Class S	M55342K06B49D9S	0.1	0.06	0.020	200%	50	40	5	700%	125	70	50	40%									
3	R12,R22,R34	Resistor, 499K, 1%, 50V, 100mW, Class S	M55342K06B499ES	0.1	0.06	0.001	5900%	50	40	5	700%	125	70	50	40%									
3	R44,R49,R60	Resistor, 4.99M, 1%, 50V, 100mW, Class S	M55342K06B4F99S	0.1	0.06	0.001	5900%	50	40	5	700%	125	70	50	40%									
3	R46,R71,R73	Resistor, 499, 1%, 50V, 100mW, Class S	M55342K06B499DS	0.1	0.06	0.012	400%	50	40	5	700%	125	70	50	40%									
1	R70	Resistor, 10K, 1%, 50V, 100mW, Class S	M55342K06B10E0S	0.1	0.06	0.001	5900%	50	40	5	700%	125	70	50	40%									
6	R3,R5,R13,R24,R25,R36	Resistor, 3.57M, 1%, 200V, 1000mW, Class S	M55342K09B3F57S	1	0.6	0.001	59900%	200	160	38	321%	125	70	50	40%									
12	R4,R9,R14,R17,R26,R29,R38,R39,R50,R57,R61,R68	Resistor, SEL, 1%, 200V, 1000mW, Class S	M55342K09BXXXXS	1	0.6	0.001	59900%	200	160	75	113%	125	70	50	40%									
12	R6,R10,R19,R20,R31,R32,R41,R42,R52,R53,R63,R64	Resistor, 200K, 1%, 200V, 1000mW, Class S	M55342K09B200ES	1	0.6	0.001	59900%	200	160	10	1500%	125	70	50	40%									
7	R7,R18,R30,R40,R51,R62	Resistor, 499K, 1%, 200V, 1000mW, Class S	M55342K09B499ES	1	0.6	0.001	59900%	200	160	5	3100%	125	70	50	40%									
6	R11,R21,R33,R43,R54,R65	Resistor, 100K, 1%, 200V, 1000mW, Class S	M55342K09B100ES	1	0.6	0.001	59900%	200	160	5	3100%	125	70	50	40%									
3	R37,R56,R67	Resistor, 2.00M, 1%, 200V, 1000mW, Class S	M55342K09B2F00S	1	0.6	0.005	11900%	200	160	96	67%	125	70	50	40%									
3	R47,R55,R66	Resistor, 3.01M, 1%, 200V, 1000mW, Class S	M55342K09B3F01S	1	0.6	0.007	8471%	200	160	150	7%	125	70	50	40%									
<b>Diodes</b>					<b>Peak Inverse Voltage (volts)</b>				<b>Surge Current (Amps)</b>				<b>Forward Current</b>				<b>Junction Temperature</b>							

