



NATIONAL OPTICAL
ASTRONOMY
OBSERVATORY

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**TORRENT
PARTS LIST
ANALOG FRONT END CCD (AFE CCD)**

Dwg No.: TRNT-EL-04-4004 Rev: C1
Next Assembly: TRNT-EL-04-0004

APPROVED FOR
CONSTRUCTION

LTR	DESCRIPTION	ECO	DATE	BY	APPRVD
OD	intital release		1-Jul-09	dms	mhunten, pmoore
-1	correct typos #58, #61, #87, #94, correct part number Item #4		1-Jul-09	dms	mhunten, pmoore
A	See ECO for details	TRNT-007,008	3-Jun-10	dms	mhunten
A1	change part number on item 56		7/1/2010	dms	
B	moved all line items listed as "not installed" or "open" to notes sheet major revision see ECO for details	TRNT-019	May-11	DMS	MHUNTEN
C	correct CDS lines and optimize performance to be within specification	TRNT-025	12-Oct-11	dms	pmoore
C1	remove C616 line item 42, add C616 to note 5.	TRNT-028	12-Dec-11	dms	r.george

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| 1. Components shall only be crossed to equivalent or improved performance parts. |
| 2. All components are listed in the Materials tab |
| 3. This board is rohs compliant, all rework shall be done on a rohs work station |
| 4. If modifications are performed on this board, the cleaning process should be confined to the modified areas. Do not subject the board to any all-over cleaning processes. |
| 5. Components not installed:
0603 Caps: C33, C431, C433, C435, C437, C445, C448, C450, C452, C469, C471, C472, C474, C483, C486, C489, C492, C533, C534, C535, C616

0805 Caps: C204, C231, C262, C295
0603 Res: R12, R90, R108, R126, R140, R142
Misc: TP51, TP54 |
| 6. All 24 parts should be either LESE or LCSE, do not combine part type onto one board. |
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ITEM	QTY	RefDes	Value	Part Number	MFR	Description
1	1			TRNT-EL-04-1004 Rev C	NOAO	PCB Blank, Analog Front End CCD
2	1	U140		24AA128I/SN	Microchip	IC, SOIC8 EEPROM 128K CMOS serial
3	4	U114, U119, U124, U130		AD829ARZ	Analog Devices	IC, Op Amp Hi Speed Lo noise
4	4	U13, U27, U48, U92		AD5391BSTZ-5	Analog Devices	IC, 52 pin LQFP, 16 CH 12 bit voltage output DAC
5	3	U57, U139, U144		AD7921ARMZ	Analog Devices	IC, MSOP8 2 CH, 2.35V to 5.25V 250 KSPS 12 bit ADC
6	4	U76, U85, U94, U106		AD7982BRMZ	Analog Devices	IC, MSOP10, 18 bit, 1msps pular 7.0mW ADC
7	12	U80, U83, U89, U91, U98, U101, U109, U112, U113, U118, U122, U129		AD8065ARTZ	Analog Devices	IC, op amp hi performance fastFET 145 MHz SOT-23-5
8	6	U127, U134, U143, U145, U148, U150		AD8628AUJZ	Analog Devices	IC, SOT 5 pin, op amp 0 drift, single supply rail to rain input/output
9	4	U75, U84, U93, U103		ADA4941-1YRZ	Analog Devices	IC, Diff driver 18 bit ADC, single supply
10	4	U2, U3, U64, U68		MM74HC259M	Fairchild	IC, SOIC16N, 8 bit addressable latch/3 to 8 line decoder
11	4	U79, U88, U97, U108		MAX4648EUT-T	Maxim	Analog Switch, 25 ohm SPST SOT23-6
12	16	U14, U15, U16, U17, U23, U24, U25, U26, U28, U29, U30, U31, U36, U37, U38, U39		ADG719BRTZ	Analog Devices	IC, SOT-23 CMOS 2:1 Mux/SPDT Analog Switch
13	2	U40, U66		ADG731BSUZ	Analog Devices	IC, TQFP48 32 Ch Serial ctrl 4 ohm analog mux
14	7	U21, U62, U115, U120, U123, U125, U131		ADR431BRZ	Analog Devices	IC, SOIC8 XFET VRef w/current sink & source capability
15	1	U107		SN74ALVC244PWR	TI	IC, TSSOP20 Octal buffer/line driver w/3 st out
16	1	U100		SN74ALVC16834DGVR	TI	IC, 18 bit universal bus driver w/3 state TVSOP 56
	4	U41, U141, U146, U149		SN74ALVC16834DGGR	TI	IC, 18 bit universal bus driver w/3 state TSSOP 56
18	1	U67	1A	LM337IMP / NOPB	National Semi	IC, Regulator SOT223, 3 Terminal Adj Neg 2W, 1A
19	2	U128, U135		LT1175CS8#PBF	Linear Technology	IC, Regulator SOIC8 500mA negative adj LDO uPwr
20	4	U82, U90, U99, U111		LT1357CS8#PBF	Linear Technology	IC, SO8 hi speed op amp
21	4	U1, U136, U137, U152		LT1358CS8#PBF	Linear Technologies	IC, Dual op amp 25Mhz 600V/uS soic8
22	4	U65, U74, U81, U133		LT1763CS8#PBF	Linear Technology	IC, SO8 Regulator, micropower lo noise LDO 500mA
23	1	U56		LT3080EMS8E#PBF	Linear Technology	IC, Regulator, MS8E adj 1.1A single resistor lo dropout
24	4	U11, U61, U69, U138		LT6234CS8#PBF	Linear Technology	IC, SOIC8 op amp dual rail to rail low noise
25	2	U142, U147		SN74LVC08APWR	TI	IC, TSSOP 14 Quad 2 Input AND Gates
26	24	U4, U5, U6, U7, U8, U9, U10, U12, U46, U47, U53, U54, U59, U60, U71, U73, U77, U78, U86, U87, U95, U96, U104, U105	note 6	MAX313LESE + MAX313LCSE +	Maxim	IC, quad NO Analog Switch 10 ohm
27	1	U153		DG447DV-T1-E3	Vishay	IC, TSOP6 Analog switch, spst low power, high voltage NC
28	4	U116, U121, U126, U132		MAX6350CSA+	Maxim	IC, SOIC8 Precision V Ref / Temp Transducer
29	2	U70, U151		MCP9803-M/MS	Microchip	IC, MSOP 2 wire temperature sensor, high accuracy
30	3	U55, U63, U110		NC7WZ16P6X	Fairchild	IC, SOT6 pin buffer UHS Dual tiny logic
31	8	U42, U43, U44, U45, U49, U50, U51, U52		OP285GSZ	Analog Devices	IC, SOIC8 Dual Op Amp 9 MHz precision
32	2	U102, U117		SN74ALVCH16952DGVR	TI	IC, 16 bit registered transceiver with 3 state outputs
33	1	U72		DS28CM00R-A00+	Maxim	IC, I2C SMBus Silicon Serial Number
34	1	Q2		NTR2101PT1G	On Semi	Transistor, MOSFET SOT-23 Pch 8V 3.7A
35	8	U18, U19, U20, U22, U32, U33, U34, U35		LT1497CS8#PBF	Linear Technology	IC, SOIC8 Dual op amp 125mA, 50MHz, current feedback
36	4	C225, C248, C284, C314	82pF	GRM1885C1H820JA01D	Murata Electronics	Cap, Cerc 0603 50V NPO 5% 82pF
37						
38	4	C81, C146, C334, C349	15uF	T495X156K050ATE300	Kemet	Cap, Tant 7343-43 50V 10% 300m ohm 15uF
39	12	C213, C229, C238, C251, C255, C270, C290, C303, C319, C366, C430, C468	1000pF	ECJ-1VC1H102J	Panasonic	Cap, Cerc 0603 1000pF 50V 5% NPO
40	28	C223, C246, C281, C312, C562, C563, C565, C566, C567, C568, C569, C570, C572, C573, C574, C575, C579, C580, C583, C585, C586, C587, C588, C589, C606, C607, C608, C609	22uF	TPSB226K016R0600	AVX	Cap, Tant 3528-21 16V 10% 600m ohm 22uF

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41	64	C2, C3, C35, C77, C78, C79, C80, C90, C102, C105, C107, C111, C112, C113, C114, C122, C134, C138, C143, C145, C147, C148, C155, C164, C166, C168, C170, C173, C174, C182, C191, C193, C197, C198, C199, C201, C207, C208, C220, C228, C230, C232, C233, C243, C254, C256, C263, C264, C275, C277, C280, C289, C291, C296, C297, C308, C318, C320, C322, C337, C409, C516, C531, C532	0.01uF 10000pF	O6035C103KAT2A	AVX	Cap, Cerc 0603 0.01uF 50V 10% X7R .035" thickness max Alt PN: ECJ-1VB1H103K Panasonic
42	197	C4, C8, C14, C16, C17, C18, C23, C25, C26, C28, C30, C34, C38, C40, C42, C44, C46, C49, C51, C53, C55, C58, C60, C61, C63, C65, C67, C69, C71, C72, C73, C74, C75, C76, C82, C85, C86, C88, C89, C91, C92, C93, C94, C98, C110, C118, C119, C120, C121, C123, C124, C129, C132, C139, C144, C152, C153, C154, C156, C157, C161, C169, C176, C179, C180, C181, C183, C184, C188, C200, C202, C203, C212, C215, C216, C219, C222, C237, C239, C240, C242, C257, C260, C261, C269, C271, C272, C273, C276, C287, C292, C301, C302, C304, C305, C307, C311, C324, C327, C328, C330, C331, C332, C335, C336, C338, C339, C340, C341, C342, C345, C346, C348, C353, C354, C355, C356, C357, C358, C360, C365, C375, C378, C382, C387, C391, C392, C396, C401, C404, C411, C416, C417, C418, C424, C426, C427, C429, C432, C434, C436, C443, C444, C446, C447, C449, C451, C453, C455, C456, C459, C460, C461, C462, C464, C465, C466, C467, C470, C473, C482, C484, C485, C487, C488, C490, C491, C493, C494, C495, C499, C503, C507, C508, C509, C510, C511, C512, C513, C514, C515, C519, C520, C521, C523, C525, C527, C528, C529, C530, C536, C537, C538, C539, C557, C559, C560	0.1uF	GRM188R71H104KA93D	Murata Electronics	Cap, Cerc 0603 0.1uF 50V 10% X7R
43	4	C553, C554, C555, C556	22pF	C0603C220J5GACTU	Kemet	Cap, Cerc 0603 50V 5% NPO 22pF

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44	16	C218, C221, C224, C244, C245, C249, C278, C279, C285, C309, C310, C316, C364, C613, C614, C615	2700pF	GRM1885C1H272JA01D	Murata Electronics	Cap, Cerc 0603 2700pF 50V 5% NPO
45	12	C226, C247, C283, C315, C376, C377, C388, C389, C405, C406, C421, C422	68pF	ECJ-1VC1H680J	Panasonic	Cap, Cerc 0603 68pF 50V 5% NPO
46	8	C373, C374, C385, C386, C402, C403, C419, C420	470pF	GRM188R71H471KA01D	Murata	Cap, Cerc 0603 50V X7R 10% 470pF
47	42	C21, C22, C24, C27, C29, C36, C37, C39, C41, C43, C45, C47, C48, C50, C52, C54, C62, C64, C66, C68, C363, C367, C368, C369, C370, C380, C381, C383, C384, C397, C398, C399, C400, C412, C413, C414, C415, C423, C540, C541, C542, C543	1uF	GRM21BR71H105KA12L	Panasonic	Cap, Cerc 0805 1uF 50V 10% X7R
48	4	C104, C136, C165, C192	3900pF	08055C392KAT2A	AVX	Cap, Cerc 0805 3900pF (3.9nF) 50V 10% X7R (.037" thk)
49	77	C5, C19, C20, C59, C83, C87, C97, C99, C103, C115, C116, C117, C128, C130, C137, C150, C151, C160, C175, C177, C178, C186, C210, C211, C214, C217, C241, C253, C259, C268, C274, C293, C294, C306, C313, C321, C329, C344, C347, C359, C361, C362, C390, C393, C394, C395, C410, C425, C428, C439, C440, C441, C442, C458, C463, C478, C479, C480, C481, C496, C498, C501, C504, C505, C526, C558, C561, C564, C571, C576, C577, C578, C581, C582, C584, C610, C611	22uF	GRM31CR61C226ME15L	Murata	Cap, Cerc 1206 16V 20% X5R 22uF
50						
51	4	C108, C141, C171, C195	1000pF	ECHU1H102JX5	Panasonic	Cap, Film 0805 50V 5% 1000pF
52	54	C95, C96, C100, C101, C106, C109, C126, C127, C131, C133, C135, C140, C142, C158, C159, C162, C163, C167, C172, C185, C187, C189, C190, C194, C196, C205, C206, C209, C227, C234, C235, C236, C250, C252, C265, C266, C267, C282, C288, C298, C299, C300, C317, C379, C438, C477, C544, C545, C546, C547, C548, C549, C550, C551	1.0uF	TPSA105K035R3000	AVX	Cap, Tant 3216-18 1.0uF 35V 10% low ESR
53						
54						
55	1	C497	100uF	B45197A1107K309	Kemet	Cap, Tant 6032-28 100uF 6.3V 10% Lo ESR

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56	58	C1, C6, C7, C9, C10, C11, C12, C13, C15, C31, C32, C56, C57, C70, C84, C125, C149, C258, C286, C323, C325, C326, C350, C351, C352, C371, C372, C407, C408, C454, C457, C475, C476, C500, C502, C506, C517, C518, C522, C524, C552, C590, C591, C592, C593, C594, C595, C596, C597, C598, C599, C600, C601, C602, C603, C604, C605, C612	15uF	TPSC156K035R0350	AVX	Cap, Tant 6032-28 35V 10% 350m ohm 15uF
57	2	C333, C343	33uF	TPSE336K035R0100	AVX	Cap, Tant 7343-43 33uF 35V 10% 100 mOhm lo ESR
58	8	R175, R180, R199, R203, R221, R225, R246, R250	1.18K	ERJ-3EKF1181V	Panasonic	Resistor, 0603 1% 1/10W 100ppm 1.18K ohm
59	2	P1, P2		ERM8-050-01-S-D-EM2	Samtec	Con, 100 pos edge mount .8mm pitch
60	2	FB2, FB3	30 ohms	MPZ1608S300A	TDK	Ferrite Bead, 1608 size 30 ohm + 10 ohm, 5A
61	5	R87, R122, R125, R137, R138	51.1K	ERJ-3EKF5112V	Panasonic	Resistor, 0603 1/10W 1% 51.1K
62	2	JT2, JT3		TMM-104-02-G-D	Samtec	Header, 2 x 4 positions 2 mm ctr vertical
63	1	JT1		68602-110HLF	FCI / Berg	Header, 2 x 5 positions .1 ctr vertical
64	1	J1		LS2-130-01-S-D-RA2	Samtec	Con, 2mm term/socket header 30x2 right angle through hole fricti
65	1	J2		LS2-110-01-S-D-RA2	Samtec	Con, 2mm term/socket header 10x2 right angle through hole fricti
66	5	L1, L2, L3, L4, L5	220uH	DR74-221-R	Coiltronics	Inductor, high pwr density, efficiency, shld 220uH 0.56 Irms A .90
67	1	Q1		NDS331N	Fairchild Semi	Transistor, SOT-23-3 MOSFET N Ch
68						
69	1	D1		ZHCS500TA	Zetex	Diode, SOT-23 high current silicon, schottky barrier diode 40V 500
70	5	R97, R115, R133, R151, R155	0	ERJ-3GEYOR00V	Panasonic	Resistor, 0603 0 ohm 1/10W 5%
71	60	R91, R96, R98, R109, R114, R116, R127, R132, R134, R143, R150, R156, R163, R165, R166, R172, R181, R183, R187, R189, R190, R196, R204, R206, R210, R211, R212, R218, R226, R228, R232, R234, R235, R243, R251 R252, R254, R256, R259, R260, R263, R264, R265, R268, R362, R364, R366, R368, R370, R372, R374, R376, R402, R404, R406, R408, R410, R412, R414, R416	10	ERJ-3EKF10R0V	Panasonic - ECG	Resistor, 0603 10 1/10W 1%
72	19	R2, R48, R100, R118, R136, R158, R162, R186, R208, R229, R231, R266, R267, R271, R272, R312, R431, R433, R435	49.9	ERJ-3EKF49R9V	Panasonic - ECG	Resistor, 0603 49.9 1/10W 1%
73	4	R164, R188, R209, R233	100	ERJ-3EKF1000V	Panasonic	Resistor, 0603 100 ohm 1/10W 1%
74	1	R62	825	ERJ-3EKF8250V	Panasonic	Resistor, 0603 825 ohm 1/10W 1%
75	4	R95, R113, R131, R149	330	RC0603FR-07330RL	Yageo	Resistor, 0603 330 1/10W 1%
76	4	R92, R110, R128, R145	499	ERJ-3EKF4990V	Panasonic - ECG	Resistor, 0603 499 1/10W 1%
77	24	R69, R71, R76, R77, R83, R85, R161, R167, R176, R185, R191, R200, R207, R213, R222, R230, R236, R237, R247, R269, R273, R274, R429, R430	1.0K	ERJ-3EKF1001V	Panasonic	Resistor, 0603 1.0K 1/16W 1%
78	2	R46, R258	1.5M	ERJ-3EKF1504V	Panasonic	Resistor, 0603 1.5M 1/10W 1%

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79	1	R270	1.82K	ERJ-3EKF1821V	Panasonic - ECG	Resistor, 0603 1.82K 1/10W 1%
80	14	R81, R88, R89, R105, R106, R123, R124, R141, R144, R261, R436, R437, R438, R439	10.0K	ERJ-3EKF1002V	Panasonic	Resistor, 0603 10.0K 1/10W 1%
81	24	R282, R283, R308, R309, R319, R320, R329, R330, R350, R353, R356, R359, R379, R382, R385, R388, R390, R393, R396, R399, R419, R422, R425, R428	12.4K	ERJ-3EKF1242V	Panasonic - ECG	Resistor, 0603 12.4K 1/10W 1%
82	5	R45, R47, R102, R257, R440	2.0K	ERJ-3EKF2001V	Panasonic - ECG	Resistor, 0603 2.0K 1/10W 1%
83	1	R86	3.09K	ERJ-3EKF3091V	Panasonic	Resistor, 0603 3.09K 1/10W 1%
84	1	R238	3.48K	ERJ-3EKF3481V	Panasonic	Resistor, 0603 3.48K 1/10W 1%
85	32	R4, R6, R8, R10, R13, R15, R17, R19, R21, R23, R25, R27, R29, R31, R33, R35, R361, R363, R365, R367, R369, R371, R373, R375, R401, R403, R405, R407, R409, R411, R413, R415	3.65K	ERJ-3EKF3651V	Panasonic	Resistor, 0603 3.65K 1/10W 1%
86	16	R285, R287, R292, R294, R300, R302, R310, R311, R322, R324, R331, R333, R340, R342, R347, R348	36.0K	RC0603FR-0736KL	Yageo	Resistor, 0603 36.0K 1/10W 1%
87	56	R1, R3, R39, R40, R43, R44, R56, R57, R60, R61, R74, R75, R78, R79, R168, R169, R170, R173, R192, R193, R194, R197, R214, R215, R216, R219, R239, R240, R241, R244, R278, R280, R284, R286, R289, R291, R293, R295, R297, R299, R301, R303, R315, R317, R321, R323, R326, R328, R332, R334, R337, R339, R341, R343, R432, R434	4.99K	ERJ-3EKF4991V	Panasonic - ECG	Resistor, 0603 4.99K 1/10W 1%
88	1	R120	49.9K	ERJ-3EKF4992V	Panasonic	Resistor, 0603 49.9K 1/10W 1%
89	35	R5, R7, R9, R11, R14, R16, R18, R20, R22, R24, R26, R28, R30, R32, R34, R36, R70, R184, R275, R349, R352, R355, R358, R377, R380, R383, R386, R389, R392, R395, R398, R417, R420, R423, R426	511	ERJ-3EKF5110V	Panasonic - ECG	Resistor, 0603 511 1/10W 1%
90	16	R41, R279, R281, R288, R290, R296, R298, R306, R307, R316, R318, R325, R327, R336, R338, R346	56.2K	RC0603FR-0756K2L	Yageo	Resistor, 0603 56.2K 1/10W 1%
91	8	R276, R277, R304, R305, R313, R314, R344, R345	8.25K	ERJ-3EKF8251V	Panasonic - ECG	Resistor, 0603 8.25K 1/10W 1%
92	24	R42, R52, R53, R58, R59, R66, R67, R335, R351, R354, R357, R360, R378, R381, R384, R387, R391, R394, R397, R400, R418, R421, R424, R427	88.7K	ERJ-3EKF8872V	Panasonic - ECG	Resistor, 0603 88.7K 1/10W 1%
93	8	R37, R38, R50, R51, R54, R55, R64, R65	93.1K	ERJ-3EKF9312V	Panasonic	Resistor, 0603 93.1K 1/10W 1%
94	1	R107	47.5K	RC0603FR-0747K5L	Yageo	Resistor, 0603 1/10W 1% 47.5K
95	1	R72	274K	ERJ-6ENF2743V	Panasonic	Resistor, 0805 1% 1/8W 100ppm 274K ohm

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96	1	R255	2.10K	ERJ-6ENF2101V	Panasonic	Resistor, 0805 2.10K 1/10W 1%
97	1	R73	3.16M	RC0805FR-073M16L	Yageo	Resistor, 0805 3.16M 1/8W 1%
98						
99	2	R101, R104	150K	ERJ-3EKF1503V	Panasonic	Resistor, 0603 1/10W 1% 150K
100	1	R84	243K	ERJ-3EKF2433V	Panasonic	Resistor, 0603 1/10W 1% 243K
101	1	R80	7.32K	ERJ-3EKF7321V	Panasonic	Resistor, 0603 1/10W 1% 7.32K
102	12	R171, R174, R179, R195, R198, R202, R217, R220, R224, R242, R245, R249	500	MPMT1001AT	Vishay	Resistor, network SOT-23 series divider 500
103	8	R103, R121, R139, R159, R177, R201, R223, R248	1K	MPMT2001AT5	Vishay	Resistor, network SOT-23 series divider 1K
104	4	R182, R205, R227, R253	5K	MPMT1002AT1	Vishay	Resistor, network SOT-23 series divider 5K
105	8	R93, R94, R111, R112, R129, R130, R147, R148	39.2	ERJ-3EKF39R2V	Panasonic	Resistor, 0603 39.2 1/10W 1%
106	4	R63, R68, R152, R178	20	ERJ-3EKF20R0V	Panasonic	Resistor, 0603 1% 1/10W 100ppm 20.0 ohm
107	46	TP1, TP4, TP5, TP6, TP8, TP9, TP10, TP11, TP12, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21, TP23, TP24, TP25, TP26, TP27, TP28, TP30, TP34, TP36, TP37, TP38, TP39, TP40, TP41, TP42, TP46, TP47, TP50, TP52, TP55, TP63, TP64, TP65, TP66, TP67, TP68, TP69, TP70, TP73		TP-108-02-1-T(S)	Components Corp	Test point, SMT low profile loop
108	15	TP2, TP7, TP13, TP22, TP29, TP32, TP33, TP43, TP49, TP56, TP57, TP58, TP60, TP61, TP74	BLK	TP-105-01-00 5001	Components Corp Keystone Elect.	Test point, black .1 center wire form loop
109	1	TP31	BLU	TP-105-01-06	Components Corp	Test point, blue .1 center wire form loop
110	1	TP44	BRN	TP-105-01-01	Components Corp	Test point, brown .1 center wire form loop
111	1	TP53	GRY	TP-105-01-08	Components Corp	Test point, grey .1 center wire form loop
112	1	TP48	ORG	TP-105-01-03	Components Corp	Test point, orange .1 center wire form loop
113	1	TP3	RED	TP-105-01-02	Components Corp	Test point, red .1 center wire form loop
114	2	TP62, TP72	VIO	TP-105-01-07	Components Corp	Test point, violet .1 center wire form loop
115	2	TP35, TP45	WHT	TP-105-01-09	Components Corp 5001 Keystone	Test point, white .1 center wire form loop
116	2	TP59, TP71	YEL	TP-105-01-04	Components Corp	Test point, yellow .1 center wire form loop
117	2	NA (NOAO TO APPLY)		88087	Seton	Sticker ROHS compliant
118						
119	6	RA1, RA2, RA3, RA4, RA5, RA6	10K	742C083103JPTR	CTS	Resistor array, 0603x4 ccv, isolated 1/16W 5% 10K
120	4	R99, R117, R135, R157	75	RC0603FR-0775RL	Yageo	Resistor, 0603 1/10W 1% 75 ohm
121	1	R82	15.0K	RC0603FR-0715KL	Yageo	Resistor, 0603 1/10W 1% 15.0K
122	1	R49	180K	ERJ-3EKF1803V	Panasonic	Resistor, 0603 1/10W 1% 180K
123	2	R119, R262	3.32K	RC0603FR-073K32L	Yageo	Resistor, 0603 1/10W 1% 3.32K

Part Number	MFR	Description	Package Markings	COMMENTS
1N4148W-7-F	Diodes, Inc.	Diode, SOD-123 fast switching	T4	
ADR510ARTZ-REEL7	Analog Devices	IC, V Ref 1.0V precision low noise SOT23-3	RAA#	
SN74ALVC244PWR	TI	IC, TSSOP20 Octal buffer/line driver w/3 st out	VA244	
EEF-CD1C4R7R	Panasonic	Cap, AElect low ESR 7343-17 4.7uF 16V 20%	475	
EEF-CD1C2R2R	Panasonic	Cap, AElect low ESR 7343-17 2.2uF 16V 20%	225	
EEF-SL0J560R	Panasonic	Cap, AElect low ESR 7343-17 56uF 6.3V 20%	566	
EEF-HD0J101R	Panasonic	Cap, 7343x28 100uF 6.3V Spec polymer 15 ohm 20%	100	
EEF-UE0D331R	Panasonic	Cap, AElect SP 7343-43 330uF 2V 20%	337	
LT3080EMS8E#PBF	Linear Technology	IC, Regulator, adj 1.1A single resistor lo dropout		
LTC2801CDE#PBF	Linear Technoolgies	IC, 1.8V to 5.5V RS-232 Single transceiver	2801	
LTM4608EV#PBF	Linear Technology	IC, DC/DC uModule w/tracking 8A Freq sync,	LTM4608V	
SN74LV123APWR	TI	IC, TSSOP16 Dual retrig monostable multivibrator	LV123A	
NLSV2T244MUTAG	On Semiconductor	IC, 2 bit dual supply non inverting level translator	UP?	? = date code
NLSX3014MUTAG	On Semiconductor	IC, 4 bit 100 Mb/s configurable dual supply level translator	UT?	? = date code
741X083470JP	CTS Corp	Resistor, network bussed 8 resistors 47 ohm concave	470	
SCAN90CP02VY/NOPB	National Semi	IC, LQFP 32 1.5Gbps 2x2 LVDS Switch w/pre emphasis and IEEE 1149.6	SCAN90 CP02VY	
	TI	IC, SOT23-6 4 CH ESD protection differential interface	NFJK	
XCF32PVO48C	Xilinx	IC, TSOP48 flash in system programmable configuration PROM	XCF32PVOG48	
ZHCS500TA	Zetex	Diode, SOT-23 high current silicon, schottky barrier diode 40V 500mA	ZS5	
SN74ALVC16834DGGR	TI	IC, 18 bit universal bus driver w/3 state TSSOP 56	ALVC16834	
SN74ALVC16834DGVR	TI	IC, 18 bit universal bus driver w/3 state TVSOP 56	VC834	
24AA128I/ST	Microchip	IC, TSSOP8 EEPROM 128K CMOS serial	4AC	
SN74LVC08APWR	TI	IC, TSSOP 14 Quad 2 Input AND Gates	LC08A	
NC7WZ16P6X	Fairchild	IC, SOT 6pin buffer UHS Dual tiny logic	Z16	
SN74ALVCH16952DGVR	TI	IC, 16 bit registered transceiver with 3 state outputs	VH952	
MAX4648EUT-T	Maxim	Analog Switch, 25 ohm SPST, SOT23-6	AARW	
LT1497	Linear Tech	IC, SOIC8 Dual op amp 125mA, 50MHz, current feedback	1497	