



NATIONAL OPTICAL
ASTRONOMY
OBSERVATORY

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MONSOON
Bill of Materials
Master Control Board
SN018-SN023

Dwg No.: MNSN-EL-04-4001-018 Rev: A1
Next Assembly: MNSN-EL-10-0400-001

LTR	DESCRIPTION	ECR	DATE	BY	APPRVD
-1	rearranged component list for clarity, changed P/N for item 47	devel	13-May-04	DMS	
-2	add resistors R181 and R182	mnsn-0100	18-May-04	dms	pcm, pjs
-3	change fuse part numbers Item 45, item 59	mnsn-0101	18-Aug-04	dms	pjs
-4	correct refdes item 4, item 53 P/N & description correction,		3-Sep-04	dms	dms
-5	title and headers, include additional serial numbers through 012		26-Oct-04	dms	dms
-6	include addition serial number through 017		4/20/2005	dms	dms
A	revise layout to include R181, R182, chg fuses to low profile, move frnt panel comps	MNSN-0113	16-Dec-05	dms	mhunten, pjs
A1	correct fuse part numbers item 45 & 59 for the 1206 part replace in MNSN-0113		8-Feb-06	dms	

ITEM	QTY	Value	RefDes	Part Number	MFR	PN Digikey	Description
1	1			MNSN-EL-04-1001	NOAO		PCB Blank, Master Control Board
2	1		J1	2AF1105F001-1-H	Sullins	S3101-ND	Con, right angle female cPCI 110 pin J1, J4 position
3	2		J2, J5	2B22F1105F001-1-H	Sullins	S3109-ND	Con, right angle female cPCI 110 pin J2, J5 position
4	1		U30	24LC02B-I/SN	Microchip	24LC02B-I/SN-ND	IC, 2K serial eeprom
5	0.300		JP1, JP3, JP4, JP5	4-103185-0	amp /tyco	A26508-ND	Jumper, header strip 3 x 1 .1 center .025 sq posts (break to size)
6	0.100		JP2, JP11	4-103185-0	amp /tyco	A26508-ND	Jumper, header strip 2 x 1 .1 center .025 sq posts (break to size)
7	0.2		J10	4-103325-0	amp /tyco	A26516-ND	Header, right angle 8 position single row (break to size)
8	2		J14, J19	53462-0611	Molex	WM17300-ND	Con, Fire wire RA flat header
9	2		J9, J18	NOT INSTALLED	Molex	WM17300-ND	Con, Fire wire RA flat header
10	1		J15	54819-0511	Molex	WM5974-ND	Con, USB mini -B receptacle 5 pin
11	1		J13	NOT INSTALLED	Molex	WM5974-ND	Con, USB mini -B receptacle 5 pin
12	8		J3A, J3B, J4A, J4B, J6A, J6B, J7, J8	71439-0164	Molex	WM17201-ND	Con, 64 pin 1mm board to board receptacle w/pegs, tube pkging
13	18	10	R51, R54, R67, R69, R70, R79, R83, R86, R92, R166, R168, R172, R173, R174, R177, R178, R179, R180	742C163 100 J	CTS		Resistor, Concave chip Array 8 iso 10 5% 1/16 W
14	1		P1	NOT INSTALLED	Amphenol Corp	ARF1243-ND	Con, SMB 50 ohm PCB receptacles
15	1		P2	903-373J-51A	Amphenol Corp	ARF1243-ND	Con, SMB 50 ohm PCB receptacles
16	21	10.0K	R44, R45, R46, R47, R52, R53, R84, R85, R90, R91, R99, R151, R152, R154, R156, R158, R159, R160, R161, R162, R181	9C06031A1002FKHFT	Yageo	311-10.0KHCT-ND	Resistor, 0603 10.0K 1/10W 1%
17	10	10.0K	R4, R12, R21, R34, R36, R39, R98, R107, R116, R137	NOT INSTALLED	Yageo	311-10.0KHCT-ND	Resistor, 0603 10.0K 1/10W 1%
18	4	20K	R71, R72, R73, R74	9C06031A2002FKHFT	Yageo	311-20.0KHCT-ND	Resistor, 0603 20K 1/10W 1%
19	1		U24	AD7814ARM	Analog Devices		IC, 10 bit digital temp sensor
20	1	40 MHz	Y1	CB3LV-3C-40M0000	CTS	CTX280LVCT-ND	Oscillator, low voltage 40.0 MHz +-50ppm 7x5mm
21	1		U27	DS2401	Dallas	DS2401-ND	IC, Silicon serial number
22	8		U1, U2, U3, U10, U28, U32, U33, U34	NOT INSTALLED	Burr Brown		IC, Precision low pwr instrumentation amplifier
23	8		U4, U5, U6, U7, U8, U9, U11, U12	NOT INSTALLED	National Semi	LM334ZNS-ND	IC, adj current source 40V 10mA
24	2		U13, U14	NOT INSTALLED	National Semi	LM78L05ACZNS-ND	IC, Regulator +5V 100mA TO-92
25	2		U15, U16	NOT INSTALLED	Linear Technology	{PN Digikey}	IC, low power prec op amp
26	1		U17	NOT INSTALLED	Maxim		IC, multirange, 8 ch serial 12-bit ADC
27	1		U18	NOT INSTALLED	Maxim	{PN Digikey}	IC, Low pwr, low glitch, octal 12 bit Vout DAC w/serial interface
28	1		U23	NOT INSTALLED	Maxim		IC, LVDS line driver w/ultra low pulse skew
29	20	0.1uF	C4, C5, C13, C14, C19, C20, C27, C28, C39, C40, C58, C64, C65, C72, C73, C74, C79, C80, C84, C126	NOT INSTALLED	Panasonic	PCC2277CT-ND	Cap, Cerc 0603 0.1uF 25V 10% X7R
30	103	0.1uF	C9, C42, C43, C46, C51, C52, C53, C54, C59, C60, C68, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C121, C122, C123, C124, C125, C127, C128, C129, C130, C131, C132, C133, C134, C135, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C146, C147, C148, C149, C150, C151, C153, C154, C155, C156,	ECJ-1VB1E104K	Panasonic	PCC2277CT-ND	Cap, Cerc 0603 0.1uF 25V 10% X7R

ITEM	QTY	Value	RefDes	Part Number	MFR	PN Digikey	Description
			C157, C158, C159, C160, C161, C162, C163, C164, C165, C166, C167, C168, C169, C170, C171, C172, C173, C174, C175, C176, C177, C178				
31	1	1uF	C152	ECJ-2YB1A105K	Panasonic	PCC1807CT-ND	Cap, Cerc 0805 1uF 10V 10% X7R
32	4	22uF	C7, C8, C41, C50	ECS-T1ED226R	Panasonic	PCS5226CT-ND	Cap, Tant 22uF 25V 20% SMT7343
33	1		SW1	EP12SD1ABE	ITT Cannon	CKN4008-ND	Switch, SPDT momentary push button right angle
34	5	100	R48, R49, R50, R167, R176	ERJ-3EKF1000V	Panasonic - ECG	P100HCT-ND	Resistor, 100 1/16 W 1% 0603 SMD
35	3	49.9	R80, R165, R175	ERJ-3EKF49R9V	Panasonic - ECG	P49.9HCT-ND	Resistor, 49.9 1/16 W 1% 0603 SMD
36	6	10.0K	R78, R163, R164, R169, R170, R171	ERJ-6ENF1002V	Panasonic	P10.0KCCT-ND	Resistor, 10.0K 1% 1/10 Watt 0805
37	1	10	R55	ERJ-6ENF10R0V	Panasonic	P10.0CCT-ND	Resistor, 10 1% 1/10 Watt 0805
38	2	15	R66, R68	ERJ-6ENF15R0V	Panasonic	P15.0CCT-ND	Resistor, 15.0 1% 1/10 Watt 0805
39	1	20.0K	R77	ERJ-6ENF2002V	Panasonic	P20.0KCCT-ND	Resistor, 20.0K ohm 1% 1/10 Watt 0805
40	2	301	R89, R93	ERJ-6ENF3010V	Panasonic	P301CCT-ND	Resistor, 301 1% 1/10 Watt 0805
41	2	4.75K	R87, R88	ERJ-6ENF4751V	Panasonic	P4.75KCCT-ND	Resistor, 4.75K 1% 1/10 Watt 0805
42	6	0	JP6, JP7, JP8, JP9, JP10, R65	ERJ-6GEY0R00V	Panasonic	P0.0ATR-ND	Resistor, 0 ohm 5% 1/10 Watt 0805
43	2		U29, U36	MAX9112EKA-T	Maxim	{PN Digikey}	IC, Dual LVDS Line Drvrs w/Ultra low pulse skew
44	2		U31, U35	MAX9113EKA	Maxim	{PN Digikey}	IC, Dual LVDS Line Rcvr w/ultra low Pulse skew
45	2	2A	F1, F4	429 002	Littelfuse	F1238CT-ND	Fuse, very fast acting 429 2.0A 1206
46	1		U19	PI6C3991J	Pericom		IC, hi speed, low voltage prog skew clock buffer
47	2		D17, D20	SMCJ5.0CA-13	Diodes, Inc.	SMCJ5.0CADICT-ND	Diode, TVS 1500W SMC 5V Bi-directional
48	2		U21, U37	SN74AHC1G04DBVR	TI	296-1089-1-ND	IC, single inverter gate
49	2		D18, D19	SSF-LXH4RAID	Lumex	67-1303-ND	LED, T-1 Red right angle mount
50	3	47uF	C47, C48, C49	T494B476M010AS	Kemet	399-3007-1-ND	Cap, Tant 47uF 10V 20% T494 SERIES size B (3528)
51	6		TP1, TP4, TP5, TP10, TP27, TP28	TP-105-xx-00	Components Corp		Test point, black .1 center wire form loop
52	3		TP6, TP25, TP26	TP-105-xx-02	Components Corp		Test point, red .1 center wire form loop
53	19		TP2, TP3, TP7, TP8, TP9, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21, TP22, TP23,	TP-105-xx-09	Components Corp		Test point, white .1 center wire form loop
54	1		U39	TPS75218QPWP	TI	296-2680-5-ND	IC, Voltage regulator, 1.8V 2A low dropout, fast transient
55	1		U38	TPS75233QPWP	TI	296-2682-5-ND	IC, Voltage regulator, 3.3V 2A low dropout, fast transient
56	2		U25, U26	XC18v02VQ44I	Xilinx		IC, Configuration Prom w/ in sys programming 2M capacity
57	2		U20, U22	XCV300E-6PQ240C	Xilinx	{PN Digikey}	IC, FPGA Virtex 1.8V
58	2		D2, D8	SMCJ12A-13	Diodes, Inc.	SMCJ12ADICT-ND	Diode, TVS 1500W SMC 12V unidirectional
59	2		F2, F3	429 005	Littelfuse	F1275CT-ND	Fuse, very fast acting 429 5.0A 1206
60	8	2.2uF	C6, C15, C21, C29, C66, C67, C75, C81	NOT INSTALLED	Panasonic	PCC2324CT-ND	Cap, Cerc 0805 2.2uF 10V 10% X5R
61	2	10uF	C30, C37	NOT INSTALLED	Kemet	399-1593-1-ND	Cap, Tant 10uF 16V 10% T491 SERIES size B (3528)
62	4	0.01uF	C22, C23, C31, C33	NOT INSTALLED	Panasonic	PCC1784CT-ND	Cap, Cerc 0603 0.01uF 50V 10% X7R
63	2	0.1uF	C36, C82	NOT INSTALLED	Panasonic	PCC1762CT-ND	Cap, Cerc 0603 0.1uF 16V 10% X7R
64	1	4.7uF	C38	NOT INSTALLED	Panasonic	P11322CT-ND	Cap, Tant 4.7uF 20WVDC +-20%
65	2	1.0uF	C35, C83	NOT INSTALLED	Panasonic	PCC2230CT-ND	Cap, Cerc 0805 1.0uF 25V +80%/-20% F
66	1	TBD	C1	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
67	1	TBD	C2	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
68	1	TBD	C3	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
69	1	TBD	C10	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
70	1	TBD	C11	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
71	1	TBD	C12	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
72	1	TBD	C16	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
73	1	TBD	C17	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD

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74	1	TBD	SW1	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
75	1	TBD	C24	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
76	1	TBD	C25	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
77	1	TBD	C26	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
78	1	TBD	C32	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
79	1	TBD	C34	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
80	1	TBD	C44	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
81	1	TBD	C45	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
82	1	TBD	C55	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
83	1	TBD	C56	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
84	1	TBD	C57	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
85	1	TBD	C61	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
86	1	TBD	C62	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
87	1	TBD	C63	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
88	1	TBD	C69	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
89	1	TBD	C70	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
90	1	TBD	C71	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
91	1	TBD	C76	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
92	1	TBD	C77	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
93	1	TBD	C78	NOT INSTALLED	TBD		Cap, Cerc 0603 TBD
94	8		D1, D3, D4, D9, D21, D22, D23, D24	NOT INSTALLED	Diodes, Inc.	BZT52C5V1SDICT-ND	Diode, zener 5.1V SOD323
95	8		D5, D6, D7, D10, D11, D12, D13, D14	NOT INSTALLED	International Rectifier	10MQ040N-ND	Diode, Schottky rectifier 40V 1.5A SMA
96	2		D15, D16	NOT INSTALLED	Diodes, Inc.	B130DICT-ND	Diode, SCHOTTKY 30V 1A SMA
97	0.23		J11	NOT INSTALLED	amp /tyco	A26508-ND	Jumper, header strip 9 x 1 .1 center .025 sq posts (break to size)
98	4		Q1, Q2, Q3, Q4	NOT INSTALLED			NPN Darlington Bipolar Transistor
99	1	0	R43	NOT INSTALLED	Yageo	311-0.0GCT-ND	Resistor, 0603 0 ohm 1/16W 5%
100	2	2.0K	R35, R38	NOT INSTALLED	Yageo	311-2.00KHCT-ND	Resistor, 0603 2.0K 1/10W 1%
101	1	2.0K	R182	9C06031A2001FKHFT	Yageo	311-2.00KHCT-ND	Resistor, 0603 2.0K 1/10W 1%
102	4	4.99K	R22, R23, R24, R25	NOT INSTALLED	Yageo	311-4.99KHCT-ND	Resistor, 0603 4.99K 1/10W 1%
103	2	8.34K	R37, R40	NOT INSTALLED			Resistor, 0603
104	1	TBD	R1	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
105	1	TBD	R2	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
106	1	TBD	R3	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
107	1	TBD	R5	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
108	1	TBD	R6	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
109	1	TBD	R7	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
110	1	TBD	R8	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
111	1	TBD	R9	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
112	1	TBD	R10	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
113	1	TBD	R11	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
114	1	TBD	R13	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
115	1	TBD	R14	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
116	1	TBD	R15	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
117	1	TBD	R16	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
118	1	TBD	R17	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
119	1	TBD	R18	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
120	1	TBD	R19	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
121	1	TBD	R20	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
122	1	TBD	R26	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603

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123	1	TBD	R27	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
124	1	TBD	R28	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
125	1	TBD	R29	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
126	1	TBD	R30	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
127	1	TBD	R31	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
128	1	TBD	R32	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
129	1	TBD	R33	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
130	1	TBD	R41	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
131	1	TBD	R42	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
132	1	OPEN	R56	NOT INSTALLED			Resistor, 0603
133	1	OPEN	R57	NOT INSTALLED			Resistor, 0603
134	1	OPEN	R58	NOT INSTALLED			Resistor, 0603
135	1	OPEN	R59	NOT INSTALLED			Resistor, 0603
136	1	OPEN	R60	NOT INSTALLED			Resistor, 0603
137	1	OPEN	R61	NOT INSTALLED			Resistor, 0603
138	1	OPEN	R62	NOT INSTALLED			Resistor, 0603
139	1	OPEN	R63	NOT INSTALLED			Resistor, 0603
140	1	OPEN	R75	NOT INSTALLED			Resistor, 0603
141	1	OPEN	R76	NOT INSTALLED			Resistor, 0603
142	1	TBD	R81	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
143	1	TBD	R82	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
144	1	TBD	R94	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
145	1	TBD	R95	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
146	1	TBD	R96	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
147	1	TBD	R97	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
148	1	TBD	R100	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
149	1	TBD	R101	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
150	1	TBD	R102	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
151	1	TBD	R103	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
152	1	TBD	R104	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
153	1	TBD	R105	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
154	1	TBD	R106	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
155	1	TBD	R108	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
156	1	TBD	R109	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
157	1	TBD	R110	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
158	1	TBD	R111	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
159	1	TBD	R112	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
160	1	TBD	R113	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
161	1	TBD	R114	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
162	1	TBD	R115	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
163	1	TBD	R129	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
164	1	TBD	R130	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
165	1	TBD	R131	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
166	1	TBD	R132	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
167	1	TBD	R133	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
168	1	TBD	R134	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
169	1	TBD	R135	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
170	1	TBD	R136	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603
171	1	TBD	R150	NOT INSTALLED	Panasonic	P (value) HCT-ND	Resistor, TBD 1% 1/16W 0603

Part Number	MFR	Description	Package Markings	COMMENTS
AD7814ARM	Analog Devices	IC, 10 bit digital temp sensor	C AA	
CB3LV-3C-40M0000	CTS	Oscillator, low voltage 40.0 MHz +-50ppm 7x5mm	09-CB3 40M00000	
MAX9112EKA-T	Maxim	IC, Dual LVDS Line Drvrs w/Ultra low pulse skew	AAD0	
MAX9113EKA	Maxim	IC, Dual LVDS Line Rcvr w/ultra low Pulse skew	AAED	
SMCJ5.0CA-13	Diodes, Inc.	Diode, TVS 1500W SMC 5V Bi-directional	BDE	SN001-SN009 GDE
SN74AHC1G04DBVR	TI	IC, single inverter gate	AD4S	
TPS75218QPWP	TI	IC, Voltage regulator, 1.8V 2A low dropout, fast transient	PT75218 33T DF8J	
TPS75233QPWP	TI	IC, Voltage regulator, 3.3V 2A low dropout, fast transient	PT75233 39T EL2H	
XC18v02VQ44I	Xilinx	IC, Configuration Prom w/ in sys programming 2M capacity	XC1802VQ44AEN0345	
XCV300E-6PQ240C	Xilinx	IC, FPGA Virtex 1.8V	XCV300E PQ240AMS0101 6C	0101 is the date code
SMCJ12A-13	Diodes, Inc.	Diode, TVS 1500W SMC 12V unidirectional	LT02 GEE	