

29	CHANGED D90,D91,D92,D93,D31,D37,D42,D44 TO 1N6081, REDREW 100V AREA	10-26-99
30	CHANGED PINOUT ON T5	10-28-99
31	ADDED R123, R124 ,R125, CHANGED VALUES ON R122, R10 R11, R12, R17,R19, R31,R36, R40, R51, R52,R7, R74, R77, R78 R79, R82,R83,R87, R88, R92,R93 JUMPED R107, R108, R109, R110	11-02-99
32	CHANGED R65 TO 1 Ohm; CHANGED R24, R29, R53 TO 4.99K, CHANGED R48 TO 28.0K, CHANGED R54 TO 6.04K; ADDED D97, D98; ADDED +5VD CONNECTION TO PIN 12 AND DGND TO PIN 13, REPOSITIONED C92, R53, R54, LABELLED DO NOT INSTALL PARTS, CHANGED D35 AND D40 TO 1N6081. CHANGED R114 TO 127K	11-17-99
33	ADDED R126 IN 400V OUTPUT, SHORTED C AND B GROUND ON B BOARD	12-12-99

+5R

-12R

+12R

+28R

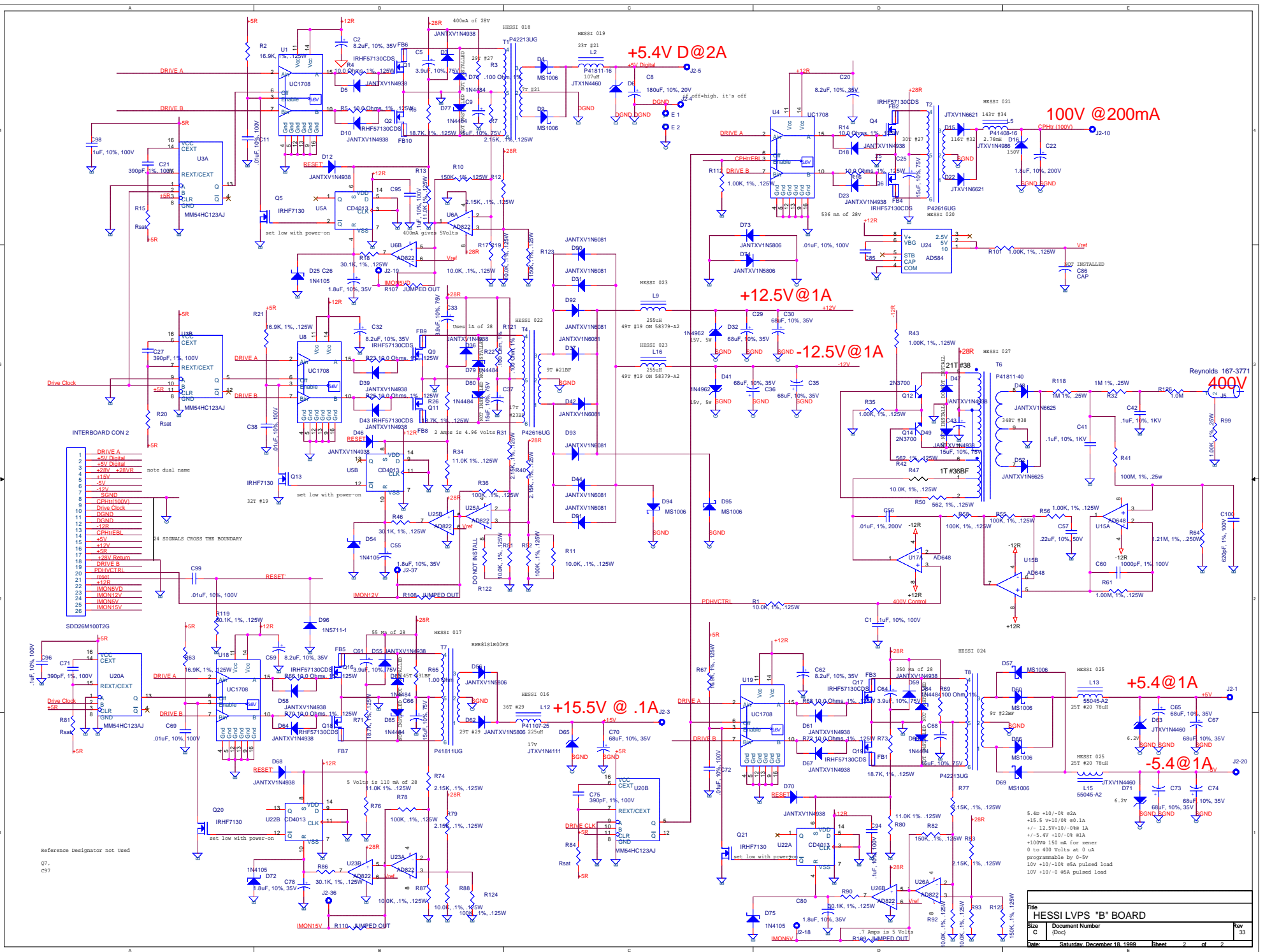
10V@5A

INTERBOARD CON 1

1	DRIVE A
2	+5V Digital
3	+5V Analog
4	+28V
5	+15V
6	-5V
7	-12V
8	SGND
9	Divis Clock
10	CPHnt(100V)
11	DGND
12	DGND
13	-12R
14	CPHnEBL
15	+28V
16	+12V
17	+5R
18	+28V Return
19	DRIVE B
20	PRDHVCTRL
21	+12R
22	IMON5VD
23	IMON12V
24	IMON5V
25	IMON15V
26	IMON15V

24 SIGNALS CROSS THE BOUNDARY

Title	HESSI LVPS "A" BOARD	
Size	Document Number	Rev 33
Date	Monday, December 13, 1999	Sheet 1 of 2



**+5.4V D@2A**

**100V @200mA**

**+12.5V@1A**

**-12.5V@1A**

**400V**

**+15.5V @ .1A**

**+5.4@1A**

**-5.4@1A**

5.40 +10% -0% @2A  
 -15.5 +10% -0% @0.1A  
 +/- 12.5V@10% -0% 1A  
 +/-5.4V +10% -0% @1A  
 +100V 150 mA For gener  
 0 to 400 Volts at 0 mA  
 programmable by 0-5V  
 10V +10% -10% @5A pulsed load  
 10V +10% -0% @5A pulsed load

Title		HESSI LVPS "B" BOARD
Size	Document Number	(Doc)
Date	Saturday, December 18, 1999	Sheet 2 of 2

INTERBOARD CON 2

1	DRIVE A	+5V Digital
2	DRIVE B	+5V Digital
3	DRIVE A	+12V +28V
4	DRIVE B	+15V
5	DRIVE A	+5V
6	DRIVE B	+5V
7	DRIVE A	+5V
8	DRIVE B	+5V
9	DRIVE A	+5V
10	DRIVE B	+5V
11	DRIVE A	+5V
12	DRIVE B	+5V
13	DRIVE A	+5V
14	DRIVE B	+5V
15	DRIVE A	+5V
16	DRIVE B	+5V
17	DRIVE A	+5V
18	DRIVE B	+5V
19	DRIVE A	+5V
20	DRIVE B	+5V
21	DRIVE A	+5V
22	DRIVE B	+5V
23	DRIVE A	+5V
24	DRIVE B	+5V
25	DRIVE A	+5V
26	DRIVE B	+5V

note dual name  
 24 SIGNALS CROSS THE BOUNDARY

Reference Designator not Used  
 07.  
 C37

HESSI LVPS Revised: Saturday, December 18, 1999  
 Revision: 33

Item	Quantity	Reference	Part	Mil
1	136	1, 1,2,3, 3,4,5,6,7, 7,8, 9,10,11, 11,12, 12,13, 13,14, 14,15,16, 16,17, 18,19,20, 20,21, 21,22, 22,23, 23, 24, 25, 26, 27, 28, 29, 30, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 60, 61, 62, 63, 64, 65, 67, 72, 73, 74, 75, 77, 78, 79, 82, 88, 89, 90, 91, 92, 93, 94, 95, 97, 98, 99, 100, 102, 103, 105, 107, 108, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146,?, ?	B	
2	32	1,2,3,4, 4,5, 5,6,7,8, 15, 17, 19, 31, 32, 43, 59, 66, 68, 69, 70, 71, 80, 81, 83, 84, 85, 86, 87, 96, 101, 106	A	
3	3	8, 9, 10	D	
4	1	Csat	CK05	M123A02BXC103KC
5	19	C1,C3,C4,C6,C7,C39,C63, C76,C79,C81,C84,C89,C90, C92,C93,C94,C95,C96,C98		.1uF, 10%, 100V M123A02BXC104KC
6	5	C2,C20,C32,C59,C62		8.2uF, 10%, 35V M39003/10-2543S
7	4	C5,C33,C61,C64	3.9uF, 10%, 75V	M39003/10-2114S
8	4	C8,C44,C45,C87	180uF, 10%, 20V	M39003/10-2541S
9	9	C9,C25,C37,C43,C47,C54, C66,C68,C91		15uF, 10%, 75V M39003/10-2121S
10	9	C10,C12,C13,C14,C15,C16, C17,C18,C19		220uf, 10%, 75V M39006/25-0248HR
11	6	C11,C38,C69,C72,C85,C99		.01uF, 10%, 100V M123A02BXC103KC
12	4	C21,C27,C71,C75	390pF, 1%, 100V	CCR05CG391FS
13	1	C22	1.8uF, 10%, 200V	M83421/1-4276R
14	2	C23,C24	47uF, 10%, 35V	M39003/10-2547S
15	4	C26,C55,C78,C80	1.8uF, 10%, 35V	M39003/10-2542S
16	2	C31,C28	33uF, 10%, 35v	M39003/10-2545S
17	8	C29,C30,C35,C36,C65,C67,		68uF, 10%, 35V M39003/1--2549S

18	1	C73,C74			
18	1	C34	3900pF 1%, 100V	CCR06CG392FSV	
19	1	C40	1500pF 1%, 100V	CCR05CG152FR	
20	2	C42,C41	.1uF, 10%, 1KV	87043-73	
21	1	C46	51pF, 1%, 200V	CCR05CG510FS	
22	6	C48,C49,C50,C51,C52,C53	110uF, 10%, 75V	M39006/22-0620H	
23	1	C56	.01uF, 1%, 200V	M123A02BXC103KC	
24	1	C57	.22uF, 10%, 50V	M39014/02-1356	
25	1	C58	3uF, 10%, 50V	M83421/01-2300	
26	1	C60	1000pF, 1%, 100V	CCR05CG102FR	
27	1	C70	68uF, 10%, 35V	M39003/10--2549S	
28	1	C77	4.7uF, 10%, 50V	M39003/10-2086	
29	1	C82	2200pF, 1%, 100V	CCR06CG222FR	
30	1	C83	.01uF, 1%, 100V	M123A02BXC103KC	
31	1	C86	CAP	DO NOT INSTALL	
32	1	C88	220pF, 1%, 200V	CCR05CG221FS	
33	1	C100	620pF, 1%, 100V	CCR05CG621FR	
34	3	D1,D2,D7	JTXV1N5811	JTXV1N5811	
35	18	D3,D5,D10,D12,D18,D23, D36,D39,D43,D46,D55,D58, D59,D61,D64,D67,D68,D70		JANTXV1N4938	JANTXV1N4938
36	9	D4,D9,D51,D57,D60,D66, D69,D94,D95		MS1006	MS1006
37	1	D6	JTX1N4460	JTX1N4460	
38	1	D11	1N6156A	JANTXV1N6156A	
39	1	D13	1N5811	JTX1N5811	
40	1	D14	JANTXV1N6642	JANTXV1N6642	
41	2	D22,D15	JTXV1N6621	JTXV1N6621	
42	1	D16	JTXV1N4986	JTXV1N4986	
43	12	D17,D20,D24,D26,D27,D29, D30,D33,D56,D62,D73,D74		JANTXV1N5806	JANTXV1N5806
44	1	D19	JANTXV4105-1	JANTXV4105-1	
45	1	D21	1N4626	JTXV1N4626	
46	4	D25,D54,D72,D75	1N4105	JTXV1N4105	
47	4	D28,D32,D34,D41	1N4962	JTXV1N4962	
48	12	D31,D35,D37,D40,D42,D44, D90,D91,D92,D93,D97,D98		JANTXV1N6081	JANTXV1N6081
49	5	D38,D45,D78,D81,D96		1N5711-1	JTXV1N5711-1
50	2	D49,D47	JANTXV1N4938	DO NOT INSTALL	
51	2	D48,D52	JANTXV1N6625		
52	1	D50	JANTXV1N4938	JANTXV1N4938-1	
53	1	D53	JTXV1N4969	JTXV1N4969	
54	2	D63,D71	JTXV1N4460	JTXV1N4460	
55	1	D65	JTXV1N4111	JTXV1N4111	
56	8	D76,D77,D79,D80,D83,D84, D85,D86		1N4484	DO NOT INSTALL
57	1	D82	1N5711-1	JANTXV1N5711-1	
58	1	D87	1N5806	JANTXV1N5806	
59	1	D88	1N4106-1	JTX1N4106-1	
60	1	D89	JANTXV1N4106-1	JANTXV1N4106-1	
61	6	E 1,E 2,E 3,E 4,E 5,E 6		VIA	tbd
62	10	FB1,FB2,FB3,FB4,FB5,FB6, FB7,FB8,FB9,FB10		FERRITE BEAD	PHILLIPS 56 590 65-3E2A
63	1	INTERBOARD CON 1	SDD26F10EHE2G	SDD26F10EHE2G	
64	1	INTERBOARD CON 2	SDD26M100T2G	SDD26M100T2G	
65	1	J1	SND9M100T2G	SND9M100T2G	
66	1	J2	SND37F100T2G	SND37F100T2G	
67	1	J5	Reynolds 167-3771		Reynolds 167-3771
68	1	J6	SND9F100T2G	SND9F100T2G	
69	10	J2-1,J2-3,J2-4,J2-5, J2-10,J2-18,J2-19,J2-20,		VIA	

		J2-36,J2-37				
70	1	L2	P41811-16	HESSI 019		
71	1	L3	767 uH	HESSI 030		
72	1	L4	3.5mHy	HESSI 031		
73	1	L5	P41408-16	HESSI 021		
74	1	L6	P41107-25	HESSI 015		
75	1	L7	P-1408 -31	HESSI 014		
76	1	L8	2.3mH	HESSI 013		
77	2	L9,L16	P41811-16	HESSI 023		
78	1	L10	693uH	HESSI 011		
79	1	L11	58930-A2	HESSI 010		
80	1	L12	P41107-25	HESSI 016		
81	2	L13,L15	55045-A2	HESSI 025		
82	1	L14	55120-A2	HESSI 032		
83	10	Q1,Q2,Q4,Q6,Q9,Q11,Q16, Q17,Q18,Q19		IRHF57130CDS	IRHF57130CDS	
84	1	Q3	JTXV2N3019	JTXV2N3019		
85	4	Q5,Q13,Q20,Q21	IRHF7130	IRHF7130		
86	2	Q10,Q8	IRHF57130CDS	IRHF57130C 84830USA		
87	2	Q12,Q14	2N3700			
88	1	Q15	2N5004	JTX2N5004		
89	1	Q22	IRHM57064	IRHM57064		
90	1	Q24	IRHM9064	IRHM9064SCS		
91	2	Q25,Q27	JTXV2N2222A	JTXV2N2222A		
92	1	Q26	2N3635	JTX2N3635		
93	1	RT1	AD590F-2A	AD590MF/883B		
94	1	RT2	10K	311P18-08S7R6		
95	8	R1,R28,R47,R57,R85,R89, R97,R115		10.0K, 1%, .125W	D55342H07B10E0R	
96	4	R2,R21,R63,R67	16.9K, 1%, .125W	D55342K07B16E9R		
97	4	R3,R22,R69,R121	.100 Ohm, 1%	WSL-1206 (.1 Ohm)		
98	11	R4,R5,R14,R16,R23,R25, R30,R66,R68,R70,R72		10.0 Ohms, 1%, .125W	D55342H07B10D0R	
99	4	R6,R26,R71,R73	18.7K, 1%, .125W	D55342H07B18E76R		
100	8	R7,R12,R31,R40,R74,R77, R79,R83		2.15K, .1%, .125W	D55342E07B2B15R	
101	1	R8	100 Ohms, 1%, .125W		D55342H07B100DR	
102	6	R9,R24,R29,R53,R60,R95		4.99K, 1%, .125W	D55342H07B4E99R	
103	4	R10,R82,R123,R125	150K, .1%, .125W	D55342E07B150BR		
104	8	R11,R17,R19,R51,R87,R88, R92,R93		10.0K, .1%, .125W	D55342E07B10B0R	
105	4	R13,R34,R76,R80	11.0K 1%, .125W	D55342H07B11E0R		
106	4	R15,R20,R81,R84	Rsat			
107	5	R18,R46,R86,R90,R119		30.1K, 1%, .125W	D55342E07B30E1R	
108	1	R27	150K, 1%, .125W	D55342H07B150ER		
109	2	R32,R118	1M 1%, .25W	RLR-07C1004FS		
110	1	R33	1.30K, 1%, .125W	D55342H07B1E30R		
111	5	R35,R43,R56,R98,R101		1.00K, 1%, .125W	D55342H07B1E00R	
112	4	R36,R52,R78,R124	100K, .1%, .125W	D55342E07B100BR		
113	1	R38	7.32K 1%, .125W	D55342E07B7E32R		
114	3	R39,R94,R96	20.0 Ohms, 1%, .125W		D55342H07B20D0R	
115	1	R41	100M, 1%, .25w	MOX400-23 100MEG		
116	2	R42,R50	562, 1%, .125W	D55342H07B562DR		
117	1	R44	604 Ohms, 1%, .125W		D55342H07B604DR	
118	2	R61,R45	1.00M, 1%, .125W	D55342H07B1F00R		
119	1	R48	28.0K, 1%, .125W	D55342H07B28E0R		
120	1	R54	6.04K, 1%, .125W	D55342H07B6E04R		
121	6	R55,R58,R75,R103,R106, R116		100K, 1%, .125W	D55342H07B100ER	
122	2	R59,R117	HEATER	Minco HK5320-106		
123	1	R62	1.00K, 1%, .125W	D55342H07B1E00ER		

124	1	R64	1.21M, 1%, .250W	D55342K07B1F21R	
125	1	R65	1.00 Ohm	RWR81S1R00FS	
126	1	R91	49.9 Ohms, 1%, .125W		D55342H07B49D9R
127	1	R99	1.00K, 1%, .25W	RLR-07C1001FS	
128	1	R100	12.1K, 1%, .125W	D55342H07B12E1R	
129	1	R102	49.9K, .1%, .125W	D55342E07B49B9R	
130	1	R104	3.32 Ohms, 1%, 10Watts		RER65F3R32R
131	1	R105	20.0K, 1%, .125W	D55342H07B20E0R	
132	4	R107,R108,R109,R110		JUMPED OUT	NOT INSTALLED
133	1	R112	1.00K, 1%, .125W	D55342H07B100ER	
134	2	R114,R113	127K, 1%, .125W	D55342H07B127ER	
135	1	R120	5.62Ohms, 1%, .125W		D55342H07B5D62R
136	1	R122	DO NOT INSTALL		
137	1	R126	1.0M	RLRO7C1004FS	
138	1	TH1	-28.9 C	ELMWOOD 3200-11-75	
139	1	T1	P42213UG	HESSI 018	
140	1	T2	P42616UG	HESSI 020	
141	1	T3	P43019-UG	HESSI 009	
142	1	T4	P42616UG	HESSI 022	
143	1	T5	266CT125-3B7		
144	1	T6	P41811-40	HESSI 027	
145	1	T7	P41811UG	HESSI 017	
146	1	T8	P42213UG	HESSI 024	
147	1	T9	266CT125-3D3	HESSI 012	
148	5	U1,U4,U8,U18,U19	UC1708	UC1708JE/883	
149	3	U2,U10,U14	54AC109	54AC109DMQB	
150	2	U20,U3	MM54HC123AJ	MM54HC123AJ/883B	
151	2	U22,U5	CD4013	M38510/05151	
152	6	U6,U21,U23,U25,U26,U28		AD822	AD822SQ/883
153	1	U7	UC1526A/883	UC1526A/883	
154	1	U9	54AC161	54AC161DMQB	
155	1	U11	54AC20	54AC20DMQB	
156	1	U13	20MHz	QT50ACD11-20	
157	2	U15,U17	AD648	AD648TQ/883B	
158	1	U16	LM139	LM139J/883	
159	2	U24,U27	AD584	AD584TH/883B	